AGENDA
CITY OF GLENWOOD SPRINGS
Planning and Zoning Commission
Regular Meeting
JANUARY 28, 2025
Council Chambers, First Floor
101 W. 8TH STREET
6:00 PM

1 Attendance Instructions

A. This meeting is held in person as well as via Zoom.
Join from PC, Mac, iPad, or Android:
https://us02web.zoom.us/j/86380550264
Or Dial:
+1 719 359 4580 US
+1 253 215 8782 US (Tacoma)
+1 346 248 7799 US (Houston)
Webinar ID: 863 8055 0264

2 Roll Call

3 Conflicts of Interest

4 Receipt of the Minutes

A. December 17, 2024 Draft Meeting Minutes

B. October 22, 2024 Draft Meeting Minutes

C. September 24, 2024 Draft Meeting Minutes

5 Comments from citizens appearing for items not on the agenda

6 Continued Items

A. Planning File #21-24, RFTA 1041 Review and Location & Extent Review for RFTA

7 New Items

A. Discussion, Fire Prevention Requirements in Single Family Homes

8 Commissioner Comments

9 Director Comments

10 Adjournment

MINUTES
CITY OF GLENWOOD SPRINGS
Planning and Zoning Commission

Regular Meeting
December 17, 2024
Council Chambers, First Floor
101 W. 8TH STREET 6:00 PM

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1. Roll Call

Present: Commissioners: Carolyn Cipperly, Amy Connerton, Pete Waller, John Houghton, Gregory Cowan, Connie Geiman

Also Present: Community Development Director Hannah Klausman, Senior Planner Watkins Fulk-Gray, Senior Planner Emery Ellingson, City Attorney Richard Peterson-Cremer

2. Conflicts of Interest

None

3. Receipt of Minutes

No minutes were received.

4. Comments from citizens for items not appearing on the agenda

No public comment was offered.

5. New Items

a. Planning File 36-24 Residential Minor Site and Architectural Plan and Planning File #34-24 Preliminary Plat 619 Overlin Drive

Planner Emery Ellingson presented Action Item 1: Planning File 36-24 Residential Minor Site and Architectural Plan and Action Item 1: Planning File #34-24 Preliminary Plat 614 Overlin Drive.

Staff recommend approval with findings and conditions in the staff report.

Commissioner questions, comments, and staff responses included the following:

- How will the neighboring property's driveway and access be affected? **Staff response**: Staff provided explained that there would be approximately 12' remaining for the access

of the neighboring property which was sufficient for a driveway. Staff also indicated that applicant was open to working with neighbor on what final access would look like.

- Question regarding removal of live vegetation. **Staff response**: Staff provided explained that removal of any living tree with caliper of greater than 14" would require approval by Community Development Director and Parks and Recreation Director.
- Question regarding building height. **Staff response**: Staff confirmed proposed heights of buildings were 25' and 32', both of which are within height limits of the RH Residential High Density Zoning District.
- Question regarding height transition requirements. **Staff response**: Staff explained the four methods for meeting height requirements and indicated that meeting this requirement was a condition of approval and that the applicant was actively working with staff to provide a design solution.
- Question regarding screening of transformer from public right of way. **Staff response**: Staff confirmed that if the transformer were to remain in the proposed location then the transformer would need to be screened with landscaping.
- How long has the area had been zoned as high-density residential zoning? **Staff response**: Staff explained that area had been zoned as high-density since at least 1998 and that existing multi-family buildings constructed in the 1970s seem to indicate the area has been zoned as high density residential for some time.
- Question regarding sidewalk fee-in-lieu option and sidewalk requirements. **Staff response**: Staff explained that Engineering preferred the sidewalk fee-in-lieu option because planning is underway for pedestrian improvements in the area.
- Question on clarification on when height transition is required and if distance from neighboring property had affect on requirement. **Staff response**: Staff explained that requirement is for adjacent properties and that distance from a smaller structure was not a factor in applying the design requirement.
- Question on how many existing multi-family developments currently exist in the neighborhood. **Staff response**: Staff did not have specific number of multi-family properties and provided broad description of neighborhood. Staff also pointed out the neighborhood was a mix of densities.
- Question on sound transmission assembly requirements for the project. **Staff response**: Staff clarified that sound transmission requirements of the International Residential Code would not apply to this project as the City has not adopted Appendix AK of the International Residential Code.
- Question on traffic study and how the numbers were calculated and if Engineering had reviewed and approved the findings **Staff response**: Staff confirmed that Engineering had reviewed and approved the findings of the traffic study and that the proposed volumes did not trigger any improvements per the City's current Engineering Standards.
- Questions on parking lot illumination. **Staff response**: Staff confirmed that the proposed lighting plan did not meet minimum requirements of Lighting District 2 and that a condition of approval was to revise the lighting plan to meeting the minimum parking lot illumination standards.

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- Will the units be modular units? **Staff response**: Staff explained that applicant had indicated the homes were to be modular and that the applicant could confirm whether homes to be modular or stick built.

Applicant Comment:

Applicants Ben West, Glenwood Springs and Roger Giard, Carbondale made a short presentation on the proposed development.

Commissioner questions, comments, and applicant responses included the following:

- Questions on common open space requirement and the areas indicated on the plan and what amenities would be offered in the common open space. **Applicant response**: Applicant explained that the common open spaces would have added amenities that would meet the requirements, most likely benches or garden areas that would provide passive recreation opportunities as opposed to active recreation such as playground equipment. Applicant explained that the square footage would be provided with exact details included later. Applicant also indicated that they had been working on some design revisions specific to this requirement.
- Questions on if eleven units were needed to make the project profitable and if applicant had considered removing a unit to obtain full amount of common open space without a fee-in-lieu. **Applicant response**: Applicant discussed trade off in eliminating a unit and benefits of an additional housing unit versus the amount of open space. Applicant also confirmed that they believed they could achieve the open space with the proposed site plan.
- Questions how parking would be managed and how it would meet parking demands of the development. **Applicant response**: Applicant confirmed they were meeting minimum parking requirements for development per standards of the Code. They also discussed that parking management could be addressed with the HOA. Applicant acknowledged that parking is a concern in the neighborhood and that there could be assigned parking within the property for the units.
- Questions if the development would be modular or stick built. **Applicant response**: Applicant explained that initial idea was to utilize modular housing but that after further review, applicant has decided to stick build the proposed buildings.
- Questions if applicant had made considerations for sound transmission between the units to minimize noise from railroad and neighboring units. **Applicant response**: Applicant explained that they have considered sound transmission and that the constructed units would have some form of sound protection in the construction.
- Questions on common open space requirements and if it needed to be passive or active. **Applicant response**: Staff confirmed that the area could be open to passive recreation and/or active.

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- Questions on public noticing and notes from pre-neighborhood application meeting. Specifically, asking why the minutes from the pre-application meeting read that there were 26 parking spaces. Additional question on placement of public notice sign. **Applicant response**: Applicant explained that this was a typo in the minutes and that the proposed site plan which was shared with the neighborhood showed 20 parking spaces as required by Code. Applicant also explained that public noticing items which were done as required.

Commissioner Waller opened the item to public comment. Following members of the public provided comment:

Laurie Chase, Glenwood Springs provided comment on the following:

- Public notices not reaching the entire neighborhood
- Concerns for overflow parking and the City's current parking requirement of 1.5 spaces per unit not being sufficient.
- Concerns for increase in traffic to 8th Street, adding traffic to connection to Midland, and speed of traffic through the neighborhood.

Jim Richmond, Glenwood Springs provided comment on the following:

- Traffic and safety concerns regarding lack of pedestrian improvements in the neighborhood and increase in traffic from the neighborhood.

Gary Vick, Glenwood Springs provided comment on the following:

- Public notices not reaching the entire neighborhood, beyond the 300' required.
- Concerns for parking and its effect on the neighborhood, particularly the current requirement for 1.5 spaces per unit as opposed to 2 spaces per unit.

Commissioner Waller closed the item for public comment.

Commissioner Connerton made a motion to approve Action Item 1 for Planning File #36-24 Residential Minor Site and Architectural Plan. Commissioner Cipperly seconded the motion.

Discussion after the motion included:

- Discussion of parking demands upon the neighborhood, Code requirements for parking, and management of the on-site parking spaces.
- Common open space requirements and the common open space fee-in-lieu
- How the applicant will meet the height transition design requirement on the east side of Building B.
- Clarification that approval of the Site and Architectural Plan was not approving any variances and that recommending conditions of approval for height transition, common open space, parking lot lighting, and landscaping did not constitute variance approvals.
- Inclusionary zoning requirements for the project

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- Snow storage

Staff also provided additional information related to items discussed.

Roger Giard, Applicant explained to the Commission that the 26 parking spaces in the minutes was a typo and that 20 spaces was the amount described at the pre-application neighborhood meeting.

Commissioner Waller called the item to question. Motion passed unanimously with a vote of 6-0.

Commissioner Cipperly motioned for approval of Action Item 1 for Planning File #34-24 Preliminary Plat with conditions described in the staff report. Commissioner Connerton seconded the motion.

Commissioner Waller called the item to question. Motion passed unanimously with a vote of 6-0.

b. Planning File 21-24, Location & Extent Review and 1041 Review for Roaring Fork Transportation Authority (RFTA)

Planner Watkins Fulk-Gray presented both action items, a Location & Extent Review and 1041 Review, for RFTA at 2302 and 2307 Wulfsohn Rd.

Staff recommends approval with findings and conditions in the staff report.

Commissioner questions, comments, and staff responses included the following:

- Clarification requested about a statement in the staff report that said “sidewalk width not provided.” **Staff response**: Fulk-Gray explained that the application materials did not state the width, but that it is required to be eight feet, and may currently meet code, but verification and detail is needed.
- Question how water would be delivered to the site. **Staff response**: RFTA will do the construction to get the water line to the site and then the City will take it over.
- How will pedestrian circulation work at the roundabout discussed for Wulfsohn and Midland. **Staff response**: The roundabout has not been designed yet, so many details are not known. Roundabouts are not ideal for pedestrians, but they can work and the City will make it work.
- Will the location of the current park’n’ride be the same location as the proposed one? **Staff response**: The new one will be much expanded but it is the same location.
- Will it be possible to make the landscaping compliant? **Staff response**: This will be a better question for the applicant. It should be possible meet most landscaping requirements, but the street trees may be challenging given the length of the bus platforms.
- Question about what the current construction project is near the site. **Staff response**: A new maintenance facility, bus barn, and fuel and wash are under construction or have been recently completed.

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- Why are street trees required? **Staff response**: The City requires that 75% of all new plantings be native and drought resistant, and these plants, once they are established, can live on just the rainfall we get. The purpose of having street trees is for aesthetic reasons and to create a good environment for pedestrians.
- Question about the exterior lighting being out of compliance. **Staff response**: The conditions of approval require the lighting plan to be brought into compliance.
- Question about the GMADA. **Staff response**: It is similar to a PUD in that it is a separate set of zoning regulations, with City zoning as its base. It is an annexation and development agreement, and appended to it are zoning and design standards.
- Is this project the reason for needing to do electric system upgrades and the roundabout at the intersection. **Staff response**: The electric load is higher than the City believed it would be, so the peak load may increase 25% or 30% at worst case scenario. The infrastructure may need to be upgraded more than anticipated. The City has been looking at the Wulfsohn/Midland intersection for a year and a half and looked at other options such as signals, and landed on a double-lane roundabout. There is limited sight distance looking down the hill, so a roundabout is a safer situation. A full design is planned to happen next year. About $2M to $3M is budgeted in 2026 for the project.
- How close is the new transit center to the new large apartment buildings under construction? **Staff response**: About a quarter mile away.

Applicant Comments:

The applicant representative from RFTA, Ben Ludlow, introduced himself. The project has received federal grant funding. He displayed an overall site plan of RFTA's buildings and gave an overview of recent development, then displayed the current site plan for the transit center. He said they planned to move the We-Cycle station out of the right-of-way. He then displayed the site plan for the administration building and described its layout. The maintenance building, which is actually to be for parts storage, is next to the very large retaining wall.

Mr. Ludlow said the lighting plans meet or exceed Glenwood's lighting standards, though they do still receive complaints from residents. He said the priority is safety for employees and passengers, but that they will meet the lighting standards in the places where the photometric plans do not meet it.

He noted that RFTA does not have to follow the Location & Extent conditions of approval, but they prefer to follow them. Mr. Ludlow said the current proposal will not exceed the City's current capacity.

While not arguing that the intersection does not need a roundabout or improvements, Mr. Ludlow said that the transit center parcel falls within an exception that exempts them from having to contribute to the intersection improvements. He said that RFTA would resubmit their traffic study to accurately reflect their now-current RFTA buildout. He said he does not agree with the suggested condition of approval requiring RFTA to contribute toward funding the roundabout; however, he encouraged the City to come to the RFTA board to discuss participation.

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Mr. Ludlow said that the tall retaining walls in phase 6B will not be visible behind their building. He said it will be very difficult to meet the street tree requirements given the needs of buses.

Comments to Applicant from Commissioners:

Question about the difference in current and proposed parking, and whether any alternative shading methods have been considered. Is overnight parking for Bustang users allowed? **Applicant response**: Mr. Ludlow said that introducing water to this area is not something they want to do because of soil conditions. They prefer to not include plantings with their landscaping islands. There are mini shade structures in the waiting area. Doing solar on this site is not feasible because of the lack of sunlight. Geothermal is one green energy source they have considered at this site. The new project would add about 20 spaces. Parking is limited to 24 hours, and there are designated Bustang parking spaces.

Question about parking for trailers and overnight camping. **Applicant response**: No trailer parking is contemplated. The indoor waiting area will be open most of the day but not 24 hours.

Will this project cause any changes to the bus routes and if the electric buses will begin to serve more of the valley? **Applicant response**: More BRT service will be served at this location will be possible. It is difficult to use electric buses for longer routes, so right now the plan is not to run electric buses between Aspen and Glenwood.

Will Glenwood become RFTA's headquarters. **Applicant response**: RFTA has offices in many locations, and their goal is to get every department in one location.

How many employees would work out of the administration building and how many EV parking spots are at the park'n'ride and administration building? **Applicant response**: It is not known how many employees will work there. Two EV parking spaces will be roughed in at the park'n'ride and two at the administration building. They will not be installed until they receive future grant funding.

Does their grant funding include funding for the roundabout. **Applicant response**: No, only site work at the buildings.

Is the project fully funded and question about the timeline for the three phases. **Applicant response**: A Low/No Emission Grant and RAISE Grant and small DOLA grant are all in place. They hope to bid the project in the spring and start construction. Ideally, the project will be done in 2027.

What community amenities are to be provided? **Staff response**: A minimum "community amenity" area is required, but Staff considers that the shade structures and waiting area amenities can count for this.

What is the area of the snowmelt? **Applicant response**: I do not know, but the snowmelt system involves just a boiler.

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Compliment of the 27th St. Station and question about if there is any possibility in the future for adding parking at the Phase 6A site. **Applicant response**: Mr. Ludlow said theoretically it is possible to convert the planned parking to structured parking.

Will motion sensor lighting be incorporated in the parking area. **Applicant response**: Yes, RFTA does this everywhere.

Comments from Assistant City Attorney Richard Peterson-Cremer

The applicant made Staff aware this morning of his position that the ADA exempts RFTA from having to contribute to the roundabout construction. He clarified that contributions to the roundabout are an "exaction," not a "fee," as the language of the ADA uses. The applicant made a request to remove the requirement to contribute to roundabout costs, and if this is so, he recommends continuing the items tonight. Fulk-Gray clarified that contribution to the project is a recommended condition of approval for both the Location & Extent and 1041 Review.

Mr. Langhorst said he has not provided a Can and Will Serve letter for electric service, so they could handle that by not providing service. Both of these projects will impact traffic and electric service beyond their respective lots. He said that an updated traffic report is needed.

In response to a question from Chair Waller about how to proceed, Mr. Peterson-Cremer recommended asking for any clarifications of the applicant now.

Mr. Ludlow said that the 1041 Review should not include the condition of approval requiring contribution to the roundabout project. Location & Extent conditions of approval do not have to be followed, but RFTA always tries to comply with them.

Mr. Peterson-Cremer reiterated his recommendation of continuing both the action items after opening public comment. He has not had any dialog with RFTA's counsel yet. Mr. Ludlow said he prefers approval tonight of the Location & Extent Review.

Commissioner Geiman asked for clarification for why RFTA could ignore Location & Extent conditions of approval. Mr. Peterson-Cremer explained that this process is based on state law, like 1041 Reviews, but 1041 Reviews have much more stringent regulations. Location & Extent conditions of approval can be overridden by the applicant's board, whereas 1041 Reviews cannot be.

Mr. Ludlow confirmed landscaping and roundabout contribution conditions are the only ones that have caused concern.

Comments from the Public

- No public was in attendance.

Commissioner Connerton asked if they have to make a motion to continue the items. Mr. Peterson-Cremer said that yes, and both items can be continued with one motion.

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Commissioner Connerton made a motion to continue Action Items 1 and 2 to January 28, 2025. Commissioner Cowan seconded the motion. Motion passed unanimously with a vote of 6-0.

Commissioner Waller called the item to question. Motion passed unanimously with a vote of 6-0.

6. Commissioner Comments

Commissioner Haughton said he is surprised that the most recent FEMA flood map is from 1985. Mr. Langhorst said all of Garfield County is undergoing floodplain review, but it takes a long time to change these maps and they are not finalized.

Commissioner Geiman said the parking standards are too low and not realistic. Ms. Klausman said that the parking standards were thoroughly reviewed in 2018 and are middle-of-the-pack compared to other cities. Parking is a tricky balance because of the need to provide parking for people's cars but also not creating parking lots everywhere. Some communities are abolishing parking minimums altogether. Mr. Peterson-Cremer noted that the State legislature considered has considered abolishing parking minimums for multifamily development.

Chair Waller thanked Staff. He suggested that a training for P&Z in March might be a good idea. He asked about the status of the City's new permitting system. Ms. Klausman described the purpose of having an electronic permitting system that will go live at the end of February.

7. Director Comments

Community Development Director Hannah Klausman said that RFTA will be on the January agenda and there could be additional items.

8. Adjournment

Meeting adjourned at 9:30 PM.

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MINUTES
CITY OF GLENWOOD SPRINGS
Planning and Zoning Commission

Regular Meeting
October 22, 2024
Council Chambers, First Floor
101 W. 8TH STREET 6:00 PM

1. Roll Call

Present: Commissioners: Carolyn Cipperly, Amy Connerton, Pete Waller, Matthew Simms, John Haughton, Gregory Cowan, Joy White

Also Present: Community Development Director Hannah Klausman, Senior Planner Emery Ellingson, City Engineer Ryan Gordon

2. Conflicts of Interest

None

3. Receipt of Minutes

Continued to next regularly scheduled meeting

4. Comments from citizens for items not appearing on the agenda

No public comment was offered.

5. New Items

a. Infrastructure Project Updates

City Engineer, Ryan Gordon provided the Commission with a presentation detailing City infrastructure project updates including street and debris flow projects.

b. Historic Preservation Overview

Planner, Emery Ellingson, made a presentation to the Commission which provided an overview historic preservation regulations, including a review of the roles and duties of the Historic Preservation Commission and their goals for 2024. This included discussion of potential historic district.

Commissioner questions, comments, and staff responses included the following:

- Commissioner question on clarifying eligibility for State of Colorado tax credit. **Staff response**: In order to be eligible for State of Colorado Preservation tax credit, a structure must be a local landmark or listed on the National Register of Historic Places.
- Commissioner question on process for creating a local landmark and what financial incentives exist for local landmarking. **Staff response**: Staff provided explanation of process and existing incentives for local landmarking.

- Commissioner question on if properties within a local historic district would receive a tax rebate. **Staff response**: Staff confirmed properties within a district would not be eligible for tax rebate form the City and that only local landmarks are eligible.

Further discussion by the Commission included topics such as:

- How a historic district would be established and how it would function, including the differences between contributing and non-contributing structures.
- Discussion of existing local landmarks and other historically significant properties.

6. Commissioner Comments

- Commissioners encouraged residents filling out the Street Safety Survey.
- Commissioners expressed appreciation of the Engineering infrastructure update.
- Commissioners asked about upcoming psilocybin regulations and commented on public art fees.
- Commission Chair Waller is appreciative of public interactions and commented on positive feedback on the joint City Council work session recently and will be looking forward to the next one.

7. Director Comments

Community Development Director Hannah Klausman detailed the following:

- Enterprise Permitting & Licensing, an initiative to convert our application, permitting, and inspection process to implement better customer service, quicker permit processing, and overall smoother operations for staff and applicants.
- We have hired a new Community Development Technician, Halie Paris.
- November 19, 2024, P&Z meeting plans in flux but we will inform you as things are added.

8. Adjournment

Meeting adjourned at 10:09 PM.

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MINUTES
CITY OF GLENWOOD SPRINGS
Planning and Zoning Commission

Regular Meeting
September 24, 2024
Council Chambers, First Floor
101 W. 8TH STREET 6:00 PM

1. Roll Call

Present: Commissioners: Amy Connerton, Pete Waller, Matthew Simms, John Haughton, Gregory Cowan

Also Present: Community Development Director Hannah Klausman, Senior Planner Watkins Fulk-Gray, Long Range Principal Planner Jim Hardcastle, City Engineer Ryan Gordon, Assistant City Engineer Ashley Dostal, City Attorney Richard Cremer-Petterson (online)

2. Conflicts of Interest

None

3. Receipt of Minutes

August 27, 2024 Planning and Zoning Commission meeting minutes

Commissioner Cowan made a motion to approve the meeting minutes, seconded by Commissioner Simms. Voice vote taken, passed unanimously.

4. Comments from citizens for items not appearing on the agenda

No public comment was offered.

5. New Items

a. Strategic Housing Plan Update Yearly Report

Watkins Fulk-Gray presented important information from the 2023 Strategic Housing Plan Update and the City's progress on the recommendations contained in it.

Commissioner Houghton entered the meeting around 6:30pm.

Commissioner questions, comments, and staff responses included the following:

- Is any action requested tonight? **Staff response**: This agenda item is for information only.
- How many housing units could be built on City land if all of it were developed? **Staff response**: Staff was not able to provide a number, but a feasibility study does exist that identifies the properties most feasible for residential development and a number could be brought back to P&Z. All residential development on City-owned land now requires an election.
- Was the affordability gap information presented specific to Glenwood or Garfield County? **Staff response**: It is specific to Glenwood.

- Is there any information about who is buying the above-median homes? **Staff response**: The City does not have any data about this. A 2020 study by NWCCOG looked region-wide at homebuying trends, and found that fewer buyers came from out of town that had been supposed at the time.
- Commissioner Waller made a comment that he is seeing many young families in his neighborhood, even when the homes being bought are over $900,000.
- What would an RFP look like to develop housing on a City-owned parcel? **Staff response**: The RFP process would seek a developer for a partner that is qualified to get the work done and helps to set the developer's expectations for the process.
- Are there concerns about not meeting the City's Proposition 123 commitment? **Staff response**: The City thinks it will be possible because of The Benedict, a possible project at Glenwood Gardens, and two Habitat for Humanity projects.
- Commissioner Waller said the Workforce Housing Fund is one of the most exciting things related to housing in Glenwood.
- Is there a need for more or different public outreach? **Staff response**: Staff and the Housing Commission has discussed the need for community education and the need to have community involvement not related to a specific project.
- Does the City have any public-private partnerships lined up? **Staff response**: The existing partnership with Habitat for Humanity is the only active partnership. There is also a hotel conversion ongoing that could be viewed as a public-private partnership.
- Do RFPs for housing envision a severance, selling the property, or would it be leases? **Staff response**: There are many possibilities for how to use City-owned land for housing, including selling the land once it is developed, keeping ownership and leasing it, or selling just the ground under the new housing.
- Can you provide more information about the possible pre-approved ADU program? **Staff response**: Such programs exist in Eugene, OR, Seattle, WA, places in California, and Summit County. Staff has noticed that proposed ADUs today are often base remodels instead of a new structure in the backyard, and believes that the cost of construction is part of the reason for this. A pre-approved ADU program would let people download plans that are already approved by the building department, though some site work would still be necessary.
- Would the City consider a partnership among multiple employers to create housing for employees? **Staff response**: We are seeing some of this already, with Habitat for Humanity being an example. Vogelaar Park, a project that was under consideration, is another example of this.
- How many years is the Workforce Housing Fund in place? **Staff response**: It will sunset in 20 years. It is a tax paid on short-term rentals and hotel rooms and is projected to raise $1.5 to $2.5 million per year.
- How do projects like the current large project in Glenwood Meadows affect Glenwood's housing market? **Staff response**: This project will affect the housing market, but there will be a lag that takes into account time of construction, the time while it gets to full occupancy, and the period in which the market is adjusting to the new units on the market. Since most of the units will be free market, they will not count toward the need identified in the Plan Update, but they should put downward pressure on rent in other market-rate projects.

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- How many people will work in Glenwood at new projects? **Staff response**: A developer from the Lofts once presented information that 75% of residents worked in the City, but that is not information that the City has or maintains.

Comments from the Public

- No public was present.

b. Energy & Climate Action Plan

Planner Jim Hardcastle presented the present status of the approved Energy & Climate Action Plan 2004 as approved by resolution at City Council on August 15, 2024

Commissioner questions, comments, and staff responses included the following:

- How will external funding be sought, is it up to each individual department or do we have a sustainability coordinator?
    - **Staff response**: At this time, we do not have one position that will champion this, however one of our consultants will likely be retained to generally manage data collection and reporting on a yearly basis. We were encouraged to spread responsibility over multiple departments. Stakeholders are department heads who report back to the City Manager for updates to City Council.
- Will there be an expert be working with the City to support us?
    - **Staff response**: CLEER and Blue Strike Environmental the consultants for this ECAP process are being considered currently to partner with us for program management. Sustainable Strategies is an outside partner consultant we partner with, they look for opportunities for addition leverage for programs in all departments.
- How were City employee commuter emissions taken into account, did you look at housing availability as the City has some control over this?
    - **Staff response**: This was not addressed within this plan as the focus was specifically aligned with municipal emissions, though some action item initiatives were identified to address this significant emissions category.
- Please explain the commercial waste program at the landfill, what is being considered at the landfill regarding management and mitigation measures?
    - **Staff response**: Liz Mauro, the Landfill Director reviewed and supported ECAP initiatives and consistently worked to modernize the landfill with innovative programs. A waste composition methane emissions study is ongoing and to be completed by 2026.
- What data tracker will you use?
    - **Staff response**: The ICLEI ClearPath climate tracker is and will continue to be used.

Comments from the Public

- None present in person or online

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Discussion only with no motion:

- This presentation was for informational purposes only.

c. Design Standards Discussion

Community Development Director Hannah Klausman made a short presentation to the Commission on residential and non-residential design standards, including discussion on the materials and colors for exteriors of residential structures.

Commissioner questions, comments, and staff responses included the following:

- Questions on relationship between variance applications and design standards. **Staff response:** Staff explained that variance applications are tracked and that the frequency of variance applications would not necessarily call for Code changes.
- Discussion regarding use of stucco as a primary exterior material for residential dwellings including comparison of stucco and EIFS in terms of usage, aesthetics, application, durability, fire resistance, and R-value.
- Discussion on Downtown Design Standards and requirements on exterior color and appearance of multi-family dwellings.
- Discussion of approval process and differences in length of review based on development size.

6. Commissioner Comments

- Commissioners expressed general appreciation that they could have the opportunity to get updates on Housing Plan Update as well as the Energy and Climate Action Plan. In addition, Commissioners expressed appreciation they could review and discuss design standards.

7. Director Comments

Community Development Director Hannah Klausman provided the Commission an update on the following items:

- Update on process of creation of new online permitting system to go online in February.
- Staffing update on departure of Building Permit Technician
- Update on October Planning and Zoning Commission agenda.

8. Adjournment

Meeting adjourned at 8:30pm.

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Planning and Zoning Commission Report

Date: January 28, 2025
To: Planning and Zoning Commission
From: Watkins Fulk-Gray, Senior Planner, AICP
Subject: Planning File #21-24, Matters of State Interest 1041 Permit Application, and Location and Extent for Roaring Fork Transportation Authority

REQUEST	Matters of State Interest 1041 Permit for a new transit center and Location & Extent Review for a new administration and maintenance building
APPLICANT	DHM Corporation
OWNER	Roaring Fork Transportation Authority (RFTA)
LOCATION	2307 Wulfsohn Road (PIN 218505337001, 218505337003, and 218505336002)
ZONE	M1 (Mixed Use Corridor) and I1 (Light Industrial)
SURROUNDING LAND USES	North: Right-of-Way Corridor South: Parkland/Open Space East: Vacant West: Vacant
LOT SIZE	12.65 acres, based on Assessor's records

ACTION ITEMS

Action 1 – 1041 Review – to consider recommendation of approval of a 1041 Review for construction of a new 9-bay transit center with a 3,232-square foot building.

Staff recommendation: *Staff recommends **approval** of the 1041 Review with the findings and conditions at the end of this report.*

Action 2 – Location & Extent Review – to consider approval of a Location & Extent Review for construction of a new 29,185-square foot administration building and a 2,720-square foot maintenance building.

Staff recommendation: *Staff recommends **approval** of the Location & Extent Review with the findings and conditions at the end of this report.*

Background and purpose for memo:

At the Planning & Zoning Commission's December 17 meeting, the P&Z continued both the

1041 Review and Location & Extent Review action items. Since then Staff has gained more clarity about three key issues discussed on December 17th: the traffic report, the requirement for the applicant to contribute toward roundabout construction, and about upgrades to the City's electrical infrastructure.

After review by the City's legal counsel, the City believes that nothing in the Annexation and Development Agreement prevents it from requiring contribution to the roundabout. At the December 17th meeting, the applicant requested removal of this condition of approval and argued that the Agreement absolves them from having to make transportation-related improvements. With this question resolved, the City has included a condition of approval for roundabout contribution, discussed below.

The City asked RFTA to revise its traffic report after it was discovered that the traffic report included some land use components that RFTA is not proposing at this time. The revised traffic reports for all three phases have been received, and although they recommend modifications to the existing turn lanes, the City has opted to program a roundabout at the Midland/Wulfsohn intersection. Based on the traffic report's findings, Staff is recommending a condition of approval that RFTA be required to contribute a percentage of the roundabout construction equal to the percentage of traffic volume increase at the Wulfsohn/Midland intersection after the new transit center is completed.

After receiving analysis from the City's electrical consultants, the City believes it can accommodate RFTA's proposed new load in Phases 6A, 6B, and 8 without infrastructure upgrades. A condition of approval has been recommended that will require RFTA to contribute toward electric infrastructure upgrades beyond what will be needed to service the project as it is laid out in the plans, which means that the two "future" bus chargers shown on the plans will need to be negotiated with the City. The improvements necessary to service the project as described in the plans are listed in an attachment to this packet. The attachment is a Glenwood Springs Electric Department estimate titled "RFTA 6A & 6B" and dated January 15, 2025, and also includes Phase 8.

Staff would like to provide a clarification for how the two action items, Location & Extent Review and 1041 Review, interact with each other. For simplicity the two projects were presented on December 17th geographically: Location & Extent applying to the administration building and maintenance building (Phase 6B and Phase 8) and the 1041 Review as the transit center (Phase 6A). Staff would like to clarify that the Location & Extent Review also applies to the transit center phase, including some of the design elements not pertinent to 1041 Review. Staff calls out three areas of nonconformance with the Glenwood Meadows Zoning and Development Plan (GMZDP) contained in the Annexation and Development Agreement, specifically parking lot design, lighting design, and landscaping; the P&Z Commission may choose to apply flexibility towards these elements under the Location & Extent Criteria. This means that both Location & Extent and 1041 Review approvals are required for the ultimate approval of the transit center phase.

Specifically, the parking lot design requirements in the GMZDP include parking lot islands. The City of Glenwood Springs Code eliminated parking lot islands in 2018 instead favoring landscaping areas at the end of rows. The requirement of islands would reduce the parking

spaces further which is not a logical approach for a Park & Ride service. Staff encourages P&Z Commission to review these aspects for flexibility under the Location and Extent application.

Changes to Recommended Conditions of Approval

The recommended findings and conditions of approval have been restated in their entirety in this memo. For clarity Staff has also provided the following summary of changes from the conditions of approval recommended on December 17th:

- Conditions recommending changes to the transit center parcel's landscaping, lighting, and retaining walls were moved to the Location & Extent Review conditions list.
- Modified roundabout contribution conditions
- The electric infrastructure condition of approval has been modified to require Electric Department review for electric infrastructure upgrades beyond what will be needed to service the project as it is laid out in the plans. The electric bus chargers shown as "future" in the plans will be subject to this future review. In other words, no contribution toward electric infrastructure beyond typical system improvement fees are requested for Phases 6A, 6B, and 8.
- The standard condition "The applicant shall comply with and address all City referral comments prior to the issuance of a grading permit or building permit" was not included in the previous staff report, but was noted and recommended in the staff presentation on December 17th. This condition is included in the recommended conditions list in this memo.
- Condition about updating traffic report has been removed because that has been completed.
- Condition about piping for irrigation underneath Wulfsohn Road has been removed because RFTA and the City have agreed on a way to manage this.
- A new condition has been added requiring RFTA to reconstruct per City standards the portions of Wulfsohn Road that will be removed for the transit center construction. Buses can have severe negative impacts on road surfaces, especially in areas where they are turning and braking. A 2023 geotechnical study led to the development of preferred road cross sections for roads built on the particular soils found in Glenwood Meadows that will allow the roads to hold up to the weight and forces of buses. These technical specifications for road cross sections have been included as an attachment in the information packet, and the document also contains general areas where this pavement replacement will need to occur.

ACTION ITEMS & STAFF RECOMMENDATIONS

Staff recommends approval of the **1041 Review application** with the following suggested conditions:

Recommended Conditions of Approval (1041 Review only):

1. The development shall comply with the requirements of the Code. Any future physical changes or improvements to the property or buildings are subject to the review and approval of the Community Development Director for compliance with applicable requirements of the Glenwood Springs Municipal Code.

2. The applicant shall comply with all verbal representations made in the public hearings, as outlined in all application materials, and/or as revised per conditions herein and approved by the Community Development Director.

3. The applicant shall comply with recommendations identified in the technical reports submitted as part of the application including but not limited to geotechnical and drainage reports.

4. At the time of Final Plans Review submission, the plans shall be revised to include the following changes:

    a. The transit center plans shall be amended to include offsets in the retaining walls of at least 12 inches every 50 feet.
    b. The sidewalk along Wulfsohn Rd. adjacent to the transit center parcel shall be eight feet in width.
    c. The stormwater detention plans, civil plans, and structural plans shall be revised in consultation with the geotechnical engineer to ensure compliance with the geotechnical report. The applicant shall provide a letter from the geotechnical engineer stating that the stormwater, civil, and structural designs of the transit center comply with the recommendations of the geotechnical report.
    d. The drainage report and corresponding stormwater plans shall be revised to consider the impacts upon the culvert underneath Midland Avenue.

5. Prior to submitting a building and/or grading permit application, the owner shall:
    a. Submit and receive approval of a Final Plans application in accordance with Municipal Code section 070.060.050(c).
    b. Submit an Engineer's Estimate of all public improvements and provide security for completing said improvements per requirements of the Engineering Standards.
    c. Enter into a Development Agreement that memorializes the development approvals.
    d. Provide all other permits from outside jurisdictions necessary for the project.

6. Prior to issuance of the building permit, the applicant shall:
    a. Obtain Right-of-Way Encroachment Licenses for all private uses or structures to be located within the right-of-way.

7. Prior to issuance of the Certificate of Completion, owner shall provide as-built plans and an Improvement Survey Plat per the Engineering Standards.

8. Before commencement of roundabout construction, RFTA shall contribute funding to the actual construction cost of a roundabout at the western Midland Avenue/Wulfsohn

Road intersection in a percentage amount equal to the percentage increase in traffic volume at the intersection attributable to RFTA's Phase 6A. This will be memorialized in the Development Agreement.

9. RFTA shall request can and will serve letters for electric service for any electric load beyond what is required to service the development as submitted in the plans. These elements included in the plans include all items on the Glenwood Springs Electric Department estimate titled "RFTA 6A & 6B" dated January 15, 2025, and included with the January 28, 2025 staff report packet. All items noted as "future" in the plans, such as future electric bus chargers, shall be subject to review by the Electric Department.

10. All repairs, encroachments and replacements to Wulfsohn Road associated with the transit center construction shall be replaced with road cross sections meeting City standards. These cross section designs are shown in the attachment "Glenwood Meadows City Standard Roadway Details" along with the general locations of roadway replacement areas.

11. The applicant shall comply with and address all City referral comments prior to the issuance of a grading permit or building permit.

Suggested Findings for the 1041 Review:

The full staff analysis for this and the Location & Extent Review can be found in the December 17th staff report.

(1) The health, welfare, and safety of the residents of this City will be protected and served.

(2) The project is in general conformance with the Comprehensive Plan and other duly adopted plans and permit criteria.

(3) The project is financially feasible.

(4) With the Conditions of Approval proposed, the project is not subject to significant risk from natural hazards.

(5) With the Conditions of Approval proposed, the project will not have a significant adverse effect on the capability of local governments affected by the project to provide local infrastructure and services, or exceed the capacity of service delivery systems.

(6) The project will not have a significant adverse effect on the quality or quantity of recreational opportunities and experience.

(7) The project will not significantly degrade air quality.

(8) The project will not significantly degrade existing visual quality.

(9) With the Conditions of Approval proposed, the project will not significantly degrade surface water quality.

(10) With the Conditions of Approval proposed, the project will not significantly degrade groundwater quality.

(11) The project will not significantly degrade wetlands and riparian areas, terrestrial or aquatic plant or animal life.

(12) The project will not significantly deteriorate soils and geologic conditions.

(13) The project will not cause a nuisance.

(14) The project will not result in unreasonable risk of releases of hazardous materials.

(15) Urban development, population densities, and site layout and design of storm water and sanitation systems shall be accomplished in a manner that will prevent the pollution of aquifer recharge areas.

(16) The project shall be reasonably necessary to meet projected community development and population demands in the areas to be served by the project, or to comply with regulatory or technological requirements.

(17) The project shall be constructed in areas which will result in the proper utilization of existing facilities or systems to ensure the orderly and sustainable development of infrastructure in the City and adjacent communities.

(18) Economic impacts including, but not limited to, taxable property, licensed and permitted facilities, and recreation related to the proposed project have been identified and will be compensated for or mitigated.

(19) The project emphasizes the most efficient use of water, including the recycling, reuse, and conservation of water.

(20) With the Conditions of Approval proposed, the project will encourage the smooth flow of motorized and nonmotorized traffic.

(21) With the Conditions of Approval proposed, the project will foster the development of such areas in a manner calculated to preserve the smooth flow of such traffic.

(22) With the Conditions of Approval proposed, the project will preserve desirable existing community patterns.

LOCATION & EXTENT CRITERIA OF APPROVAL

Per section 070.060.050 of the Municipal Code:

In reviewing a proposed Location and Extent application, the Planning Commission shall consider whether or not the proposed location and extent:

i. Is consistent with the Comprehensive Plan and other City plans and policies;
ii. Is consistent with the general purpose and intent of this Code; and
iii. Minimizes adverse impacts to the health, safety, and welfare of the inhabitants of the surrounding areas and the city.

With the conditions of approval recommended in this report, Staff believes that these three criteria are met for the administration building and maintenance building.

Staff recommends approval of the **Location & Extent application** with the following suggested conditions:

Recommended Conditions of Approval for Location & Extent Review:

1. The development shall comply with the requirements of the Code. Any future physical changes or improvements to the property or buildings are subject to the review and approval of the Community Development Director for compliance with applicable requirements of the Glenwood Springs Municipal Code.

2. The applicant shall comply with all verbal representations made in the public hearings, as outlined in all application materials, and/or as revised per conditions herein and approved by the Community Development Director.

3. The applicant shall comply with recommendations identified in the technical reports submitted as part of the application including but not limited to geotechnical and drainage reports.

4. Prior to building permit review of the administration building and maintenance building, the plans shall be revised to include the following changes:
    a. Show required common open space and calculate its percentage of the administration building parcel.
    b. Revise landscaping plan showing compliance with landscaping standards, streetscape standards, and parking area landscaping standards on the administration building parcel.
    c. Provide mounting heights of outdoor light fixtures that do not exceed 35 feet in height.
    d. Revise outdoor lighting plan to reduce estimated illumination levels to within allowed levels.
    e. Wherever feasible, reduce height of retaining walls to allowed limits and include methods such as terracing and screening to reduce the visual impact of these walls.
    f. Add sidewalk width along Wulfsohn Rd. to plans. The minimum width shall be eight feet.
    g. Revise administration building plans to comply with code requirements for maximum height.
    h. A fire hydrant shall be installed on a landscaping island near the

administration building.

i. The stormwater detention plans, civil plans, and structural plans shall be revised in consultation with the geotechnical engineer to ensure compliance with the geotechnical report. The applicant shall provide a letter from the geotechnical engineer stating that the stormwater, civil, and structural designs of the transit center comply with the recommendations of the geotechnical report.

5. Prior to building permit review of the transit center, the plans shall be revised to include the following changes:
    a. The transit center plans shall be amended to include offsets in the retaining walls of at least 12 inches every 50 feet.
    b. The landscaping plans for the transit center parcel shall be revised to meet City and GMZDP landscaping standards, including parking area landscaping, street trees, and minimum rates of native and drought-resistant species.
    c. The transit center building shall be adjusted to meet front setback requirements or shall receive approval through the Municipal Code's flexibility procedures.
    d. The architectural plans for the transit center building shall be revised to incorporate at least two design elements from section V.D.2.c of the Zoning and Development Plan.
    e. Revise plans to include mounting heights of outdoor light fixtures that do not exceed 35 feet in height.
    f. The portion of the retaining wall north of the parking area that is shown encroaching on a utility easement shall be adjusted so that it does not encroach on the utility easement.

6. The drainage report and corresponding stormwater plans shall be revised to consider the impacts upon the culvert underneath Midland Avenue.

7. Prior to submitting a building and/or grading permit application, the owner shall:
    a. Submit an Engineer's Estimate of all public improvements and provide security for completing said improvements per requirements of the Engineering Standards.

8. Prior to approval of a building permit, the Minor Subdivision Plat of Glenwood Springs Municipal Operations Center shall be amended and recorded removing all easements that conflict with the proposed maintenance building, if any conflict.

9. Prior to issuance of the Certificate of Completion, owner shall provide as-built plans and an Improvement Survey Plat per the Engineering Standards.

10. RFTA shall request can and will serve letters for electric service for any electric load beyond what is required to service the development as submitted in the plans. These elements included in the plans include all items on the Glenwood Springs Electric Department estimate titled "RFTA 6A & 6B" dated January 15, 2025, and included with the January 28, 2025 staff report packet. All items noted as "future" in the plans, such as future electric bus chargers, shall be subject to review by the Electric Department.

11. The applicant shall comply with and address all City referral comments prior to the issuance of a grading permit or building permit.

Suggested Findings for Location & Extent Review:

(1) With the Conditions of Approval proposed, the project is consistent with the Comprehensive Plan;
(2) With the Conditions of Approval proposed, the project is consistent with the general purpose and intent of the Municipal Code; and
(3) With the Conditions of Approval proposed, the project minimizes adverse impacts to the health, safety, and welfare of the inhabitants of the surrounding areas and the city.

Planning and Zoning Commission Report

Date: December 17, 2024
To: Planning and Zoning Commission
From: Watkins Fulk-Gray, Senior Planner, AICP
Subject: Planning File #21-24, Matters of State Interest 1041 Permit Application, and Location and Extent for Roaring Fork Transportation Authority

REQUEST	Matters of State Interest 1041 Permit for a new transit center and Location & Extent Review for a new administration and maintenance building
APPLICANT	DHM Corporation
OWNER	Roaring Fork Transportation Authority (RFTA)
LOCATION	2307 Wulfsohn Road (PIN 218505337001, 218505337003, and 218505336002)
ZONE	M1 (Mixed Use Corridor) and I1 (Light Industrial)
SURROUNDING LAND USES	North: Right-of-Way Corridor South: Parkland/Open Space East: Vacant West: Vacant
LOT SIZE	12.65 acres, based on Assessor's records

ACTION ITEMS

Action 1 – 1041 Review – to consider recommendation of approval of a 1041 Review for construction of a new 9-bay transit center with a 3,232-square foot building.

Staff recommendation: *Staff recommends **approval** of the 1041 Review with the findings and conditions at the end of this report.*

Action 2 – Location & Extent Review – to consider recommendation of approval of a Location & Extent Review for construction of a new 29,185-square foot administration building and a 2,720-square foot maintenance building.

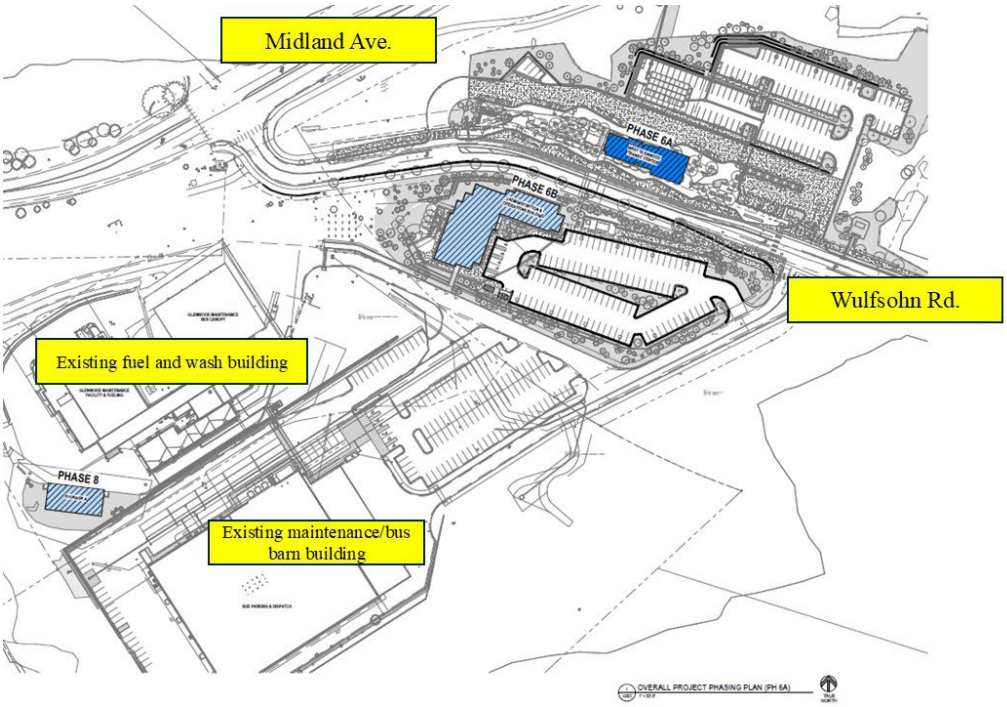
Staff recommendation: *Staff recommends **approval** of the 1041 Review with the findings and conditions at the end of this report.*

The Planning & Zoning Commission is the deciding body for Location & Extent Reviews and the recommending body for 1041 Reviews, which are decided by City Council.

BACKGROUND AND PROJECT SUMMARY

This project consists of two action items, a 1041 Review and Location & Extent Review, that together, encompass three buildings, on three parcels, constituting three phases of the Roaring Fork Transportation Authority's plans to make Glenwood Springs its hub of operations. These two related but separate applications will be governed by different but overlapping sets of regulations. The 1041 Review, for an expanded transit center at the existing West Glenwood Park'n'Ride, is subject to standards for the Glenwood Meadows Annexation and Development Agreement (GMADA), the Municipal Code's 1041 regulations that are described below, and also by certain sections of the Municipal Code where the GMADA is silent. The Location & Extent Review, for a new administration office building and a new maintenance building, is subject to the Municipal Code and its Sensitive Area Protection standards. These sets of regulations will be discussed in the staff analysis sections of this report.

In March of 2022, City Council passed a Code Amendment adopting Article 070.080 – Guidelines and Regulations for Matters of State Interest. The purpose and intent of the regulations is to facilitate the identification, designation, and administration of matters of State interest consistent with the statutory requirements in C.R.S. § 24-65.1-101 and the guidelines established in the Comprehensive Plan. The standards are designed to prevent unsuitable site selection for public utilities, protect scenic and recreational assets, minimize environmental impacts, avoid incompatible uses, avoid conflict with other land use plans, protect the character of the City, promote efficient economic use of public resources, and preserve the health and welfare of the citizens of the City.



Above: Overall site plan of all three proposed facilities.

REVIEW CRITERIA AND STAFF ANALYSIS – 1041 REVIEW

The 1041 Review component of this project, for the proposed transit center, has been reviewed according by regulations set forth in Article 070.080 - Guidelines and Regulations for Matters of State Interest of the Municipal Code that apply to the 1041 Review. This analysis, and the summary table below, is a summary of compliance with regulations for only the **transit center building (Phase 6A)**.

CODE STANDARD		PROPOSED	REQUIREMENT MET
Landscape	30%; 65,732 square feet	42,760	NO
Landscaping specific standards			
Trees	1 per 1,000 s.f. of required landscaped area; 66 trees	97	YES
Shrubs	4 per 1,000 s.f. of required landscaped area; 263 required	210	NO
Native and drought-resistant species	Native and drought tolerant species must account for 75% of plantings	Not provided	NO
Parking Area Landscaping			
Interior Landscaping	20% of total covered parking area; required amount needs clarification	2,325 s.f.	Needs clarification
Parking Area Trees	2 trees per 200 s.f. landscaped island area; required amount needs clarification	19	Needs clarification
Streetscape landscaping			
Street trees	1 tree per 35 linear feet of street frontage; 25 street trees required	16	NO
Setback			

Front	5’ minimum, 25’ maximum	4.8’	NO
Rear	5’	Not provided	YES
Side	5’	Not provided	YES
Height	40’ maximum	28’4”	YES
Parking	1 per 300 s.f.	98	105
Sidewalk	8 feet in width along Wulfsohn Rd.	Not provided	NO
Bike Parking	6 bike parking spaces	6	YES
Exterior lighting			
Parking area lighting	Must be between 0.7 and 7.0 foot-candles	All readings within range	YES
Light mounting heights	35-foot maximum	Not provided	Needs clarification

Setbacks
The proposed transit center is subject to Municipal Code standards for setbacks. The front of the building sits slightly too close to the property line; a condition of approval has been recommended that the building move back 0.2 feet to meet setback requirements, or to pursue a flexibility measure such as administrative adjustment for reducing setbacks.

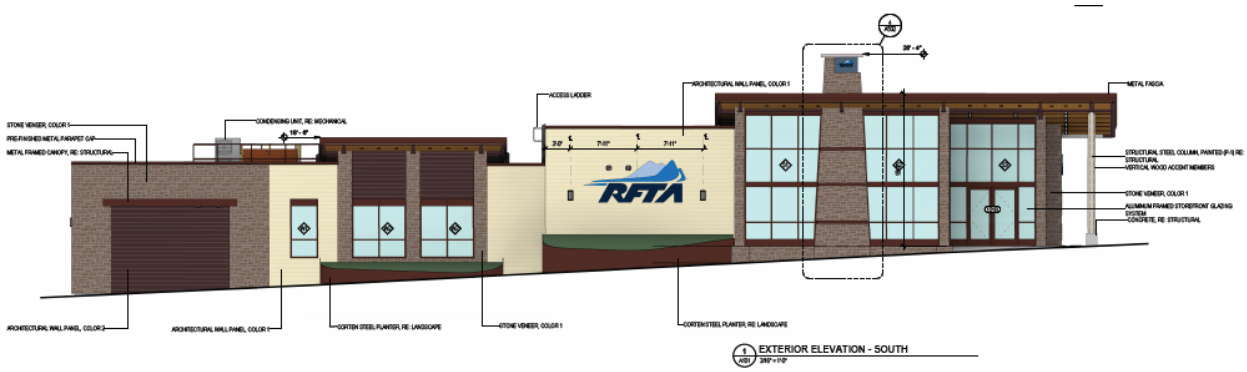
Building height
The proposed transit center building, at 28 feet, is under the maximum allowed height.

Building design and materials
The GMADA contains specific design and building material requirements.

A requirement for recessed customer entrances does not apply to the proposed transit center. While the building has interior spaces, it is not a retail development where people enter and exit and where the entrance would merit special design treatment. As a transit center, the focal point is the outdoor transit platform and outdoor seating area.

As a nonresidential building less than 60,000 square feet, the transit center building must have at least two of the five design elements listed in the GMADA for every 30 feet of building elevation. The design proposed includes changes in color, texture, or materials, meeting one of the design requirements. The design could also incorporate projections and reveals, but not enough detail is available to determine if this second design element is present. A condition of approval has been recommended to ensure that these design criteria are met.

The transit center proposal meets the GMADA requirements for building design and materials. The building design features exterior materials of stone veneer, earth-toned architectural wall panels, and steel accents.



Above: The proposed Wulfsohn Road-facing elevation of the transit center.

Vehicular and Pedestrian Circulation and Access:
The GMADA requires direct and clear vehicular paths from the entrance to parking areas and pedestrian access to the site and to the entrances of buildings. These elements are all achieved.

Parking:
As required by the GMADA, parking is terraced and distributed to where there is less visual impact.

Landscaping
The proposed landscaping and parking area landscaping for the transit center parcel needs revision to meet the GMADA standards. The parcel on which the proposed transit center is located requires a significantly higher amount of landscaping area to be set aside than the Municipal Code would if it were the controlling set of regulations. The GMADA requires 30% of the parcel to be set aside for landscaping, and further specifies the minimum number of plantings within the areas of landscaping. The GMADA requires 20% of the total parking area to be set aside also for landscaping, with specific planting requirements within the parking lot landscaping area.

The GMADA also contains specific requirements for street trees along Wulfsohn Rd. One street tree for every 35 linear feet of street frontage are required to be planted; with 875 linear feet of frontage along Wulfsohn Rd., this equates to 25 required trees. Only 16 are currently proposed. This situation is made more difficult because of the nature of a transit center, which needs a significant amount of the frontage to be open for bus travel.

Below is a summary of landscaping information that needs to be provided in RFTA's next submission or needs to be changed to meet regulations:

- Increase landscaping area to 30%
- Increase number of shrubs or show that requirements are met with existing shrubs on the site
- Increase the percentage of species in the landscaping plan that are native and drought-resistant to at least 75%
- Provide parking area landscaping as percentage of total parking area; if necessary, revise plans to meet these standards
- Provide area of landscaped islands; if necessary, revise plans to include the required number of tree plantings

- Increase street trees to meet requirements

These issues have been included in the recommended conditions of approval.

Parking lot landscaping
Need to redesign to meet standards. The parking area will need to be redesigned to meet GMADA requirements, which state that parking rows need to be broken up by landscaped islands with no more than eight parking spaces in a row, with specific planting requirements in the landscaped islands. This has been included as a recommended condition of approval.

Retaining walls
There are numerous retaining walls proposed that are longer than 50 feet. The GMADA requires a break in retaining walls for every 50 feet. Height limits for retaining walls are six feet, which the project plans state are feasible. A condition of approval has been included requiring offsets in these retaining walls at least every 50 feet.

A small portion of a retaining wall north of the parking area is shown encroaching on a utility easement. A condition of approval has been recommended that the retaining walls be moved outside the easement.

Exterior lighting
The photometric plans for the proposed transit center show that the estimated illumination levels meet the ranges allowed by the Municipal Code. The mounting heights of the light fixtures are not provided in the plans; a condition of approval has been suggested that they be specified as not exceeding the 35' maximum.

Community amenities
The GMADA requires a minimum of 1,000 square feet of outdoor shared community amenity space per 50,000 square feet of commercial building area or a percentage thereof. This amenity space is intended to be a gathering space such as patios or plazas with seating area, mini-parks, water features, and clock towers, with flexibility allowed for developments that are "similar deliberately shaped area and/or focal feature," in the City's judgment. Staff believes that the nature of a transit center, with its seating and the focal point of the platform, meets this requirement without the need for additional amenities.

Improvements in the right-of-way
Several portions of the proposed transit center are in City right-of-way (ROW). This situation is only allowed when the City intends to take ownership of the improvements or when permitted by a ROW Encroachment License. The elements proposed to be located in the ROW include, the We-Cycle station, fences, retaining walls, paneling for electric charging infrastructure, storm sewer, and portions of the bus chargers. A condition of approval has been recommended requiring approval of a ROW Encroachment License for any private property or structures associated with the transit center that are to be located in the ROW.

Development Standards for Parcel "A", Mixed-Use Campus
The GMADA contains standards that are specific to the site location, which is designated "Mixed-Use Campus." The proposed design meets these specific standards in the following

ways:

1) The transit center is oriented toward Wulfsohn as required.
2) No design transitions are necessary because the proposed development does not border residential developments.
3) While the rest of the Mixed Use Campus sub-area is undeveloped, this project will allow it to be connected and integrated with its sidewalk along Wulfsohn Road.

Sidewalks

Sidewalk widths are not shown on the plans. Current sidewalk widths are five feet, but to meet code, they must be upgraded to eight feet. A condition of approval has been recommended for this.

REVIEW CRITERIA SPECIFIC TO 1041 REGULATIONS

All applications for 1041 Review must be evaluated against the following 19 general criteria. Staff review and analysis are included below with inset text below each criterium**.** Where such terms as "reasonable," "feasible" and "adequate" are used in the foregoing criteria, the Community Development Department Director shall determine in each case what is or is not reasonable, feasible, or adequate. Staff analysis is included in **BOLD** below the criteria.

(1) The health, welfare, and safety of the residents of this City will be protected and served.

Staff believes that with the included conditions of approval, the proposed transit center development will serve and improve the health, safety, and welfare of residents.

(2) The project is in general conformance with the Comprehensive Plan and other duly adopted plans and permit criteria.

The proposed transit center is in general conformity with the Comprehensive Plan, supporting goals, policies, and actions such as:

- **Promote transit-oriented development**
- **Expand local transit and enhance regional transit to, from, and through Glenwood Springs**
- **Support the expansion of green transportation options**
- **Plan for transit stations located in all mixed-use neighborhoods by incorporating principles of smart growth, new urbanism and green building**
- **Concentrate growth in Glenwood Springs in locations that can be served by high-frequency transit**

(3) The project is financially feasible. The determination of financial feasibility of the project may include but is not limited to the following considerations:

a. The business plan submitted by the applicant.
b. Relevant bond issue, loan and other financing approval or certifications (ex: approved bond issue; bond counsel opinion).

The applicant organization, RFTA, has provided evidence that they have a diverse and substantial set of funding sources to make the project feasible.

(4) The project is not subject to significant risk from natural hazards. The determination of risk from natural hazards to the project may include but is not limited to the following considerations:

a. Faults and fissures.
b. Unstable slopes including landslides, rock slides, and avalanche areas.
c. Expansive or evaporative soils and risk of subsidence.
d. Wildfire hazard areas.
e. Floodplains.

Geohazards—hydrocompactive soils and debris fan—do exist on this site, according to the City's geohazard mapping. The past ten years have shown that it is possible to build in the challenging geology of Glenwood Meadows, but also that buildings will fail when the conditions are not properly taken into account. Two recommendations for designing the foundations are made in the geotechnical report. Conditions of approval have been recommended to ensure safety and full mitigation from geologic hazards.

(5) The project will not have a significant adverse effect on the capability of local governments affected by the project to provide local infrastructure and services, or exceed the capacity of service delivery systems. The determination of the effects on local government services and infrastructure may include but is not limited to the following considerations:

a. Current and projected capacity of roads, schools, infrastructure, drainage and/or stormwater infrastructure, housing, recreational facilities, emergency services, and other services necessary to accommodate development, and the impact of the project upon the current and projected capacity.
b. Changes caused by the project in the cost of providing education, transportation networks, water treatment and wastewater treatment, stormwater drainage, channel stabilization, recreation facilities, bridges, emergency services, or other governmental services or facilities.
c. Need for temporary roads to access the project for construction and maintenance.
d. Change in demand for public transportation.

The project does challenge the City's electric and road infrastructures. The proposed bus and car chargers, in particular, take significant capacity from the existing substation and transformers serving the area. Ultimately, without infrastructure upgrades with the project as proposed, the City would lose redundancy that has been planned for Glenwood's grid system. However, there are infrastructure upgrades that will allow the project to proceed as proposed without detriment to the City's grid. A condition of approval has been recommended that will establish a separate process for the Electric Department to take stock of its needs and to engage with RFTA in a fair cost-sharing agreement.

The traffic impact study provided by the applicants makes clear that there will be significant impacts to the road system from the additional traffic the project will generate, particularly to the western Wulfsohn Road/Midland Avenue intersection, the Devereux/Midland intersection, the roundabouts at I-70's exit 114, and the 9th/Grand intersection. A closer reading of the traffic impact study reveals, in the opinion of the City's Engineering and Public Works departments, that the provided traffic impact study has flaws that need correcting, which include not providing analysis for three intersections that are important to consider and discrepancies with the traffic counts. The City's Engineering Department has determined that a roundabout is the preferred option to enhance the Wulfsohn/Midland intersection functionality and has already engaged in preliminary designs for a roundabout at this intersection. This project makes the need for intersection improvements acute. A condition of approval has been recommended requiring RFTA update its traffic impact study and pay a share of the construction costs of the roundabout.

(6) The project will not have a significant adverse effect on the quality or quantity of recreational opportunities and experience. The determination of effects of the project on recreational opportunities and experience may include but is not limited to the following considerations:

a. Changes to existing and projected visitor days.
b. Changes in quality and quantity of fisheries.
c. Changes in instream flows or reservoir levels.
d. Changes in access to recreational resources.
e. Changes to quality and quantity of hiking, biking, or horseback riding trails.
f. Changes to hunting experiences.
g. Changes to open space.
h. Changes to existing conservation easements.
i. Changes to regional or neighborhood parks.
j. Changes to recreational scenic experience.

It is possible that the project will promote greater access to the Wulfsohn-area and Red Mountain trails through increased bus service to the site, which is located near the Wulfsohn trails. It is not believed that construction activities will interfere with trail users.

(7) The project will not significantly degrade air quality. The determination of effects of the project on air quality may include but is not limited to the following considerations:

a. Changes in visibility and microclimates.
b. Applicable air quality standards.

The project will enable more bus traffic, but the project also programs additional electrification of RFTA's bus system. Moreover, bus traffic, by its nature, is intended to reduce overall air pollution through removing more polluting vehicles from the roadways. It is believed that the proposal will not degrade air quality.

(8) The project will not significantly degrade existing visual quality. The determination of visual effects of the project may include but is not limited to the following considerations:

a. Visual changes to ground cover and vegetation, waterfalls and streams, or other natural
b. features.
c. Interference with viewsheds and scenic vistas.
d. Changes in landscape character types of unique land formations.
e. Compatibility of structure size and color with scenic vistas and view sheds.
f. Changes to open space.
g. Changes to existing conservation easements.
h. Changes to impacts to regional or neighborhood parks.

The project will not significantly degrade the site's aesthetic qualities because the site is already developed and is surrounded by existing development.

(9) The project will not significantly degrade surface water quality. The determination of effects of the project on surface water quality may include, but is not limited to, the following considerations:

a. Changes to existing water quality, including patterns of water circulation, temperature, conditions of the substrate, extent and persistence of suspended particulates and clarity, odor, color or taste of water.
b. Applicable narrative and numeric water quality standards.
c. Changes in point and nonpoint source pollution loads.
d. Increase in erosion.
e. Changes in sediment loading to waterbodies.
f. Changes in stream channel or shoreline stability.
g. Changes in stormwater runoff flows.
h. Changes in trophic status or in eutrophication rates in lakes and reservoirs.
i. Changes in the capacity or functioning of streams, lakes, or reservoirs.
j. Changes to the topography, natural drainage patterns, soil morphology and productivity, soil erosion potential, and floodplains.
k. Changes to stream sedimentation, geomorphology, and channel stability.

Surface water runoff is designed to be captured through piping and underground chamber systems after being filtered through native and drought-resistant landscaping. The drainage report and stormwater plans need to be revised so as to consider the impact on the culvert underneath Midland Avenue and not overload it, causing it to fail. This has been recommended as a condition of approval.

(10) The project will not significantly degrade groundwater quality. The determination of effects of the project on groundwater quality may include, but is not limited to, the following considerations

a. Changes in aquifer recharge rates, groundwater levels and aquifer capacity including seepage losses through aquifer boundaries and at aquifer-stream interfaces.
b. Changes in capacity and function of wells within the impact area.
c. Changes in quality of well water within the impact area.

Groundwater quality will be protected by using the same practices as protecting surface water quality, including properly sized piping and conveyances, in addition to erosion prevention measures that will be required by building or grading permits.

(11) The project will not significantly degrade wetlands and riparian areas, terrestrial or aquatic plant or animal life.

No large-scale wetland or riparian areas exist in the project's vicinity.

(12) The project will not significantly deteriorate soils and geologic conditions. The determination of effects of the project on soils and geologic conditions may include but is not limited to the following considerations:

a. Loss of topsoil due to wind or water forces.
b. Changes in soil erodibility.
c. Physical or chemical soil deterioration.
d. Terrain deformation/mass wasting/subsidence.
e. Compacting, sealing and crusting.
f. Waterlogging.
g. Soil morphology and productivity.

To avoid unwanted soil and geologic conditions such as erosion and soil compaction, all recommendations from the project's geotechnical experts must be followed and the geotechnical report must support all stormwater, civil, and structural designs. Conditions of approval have been recommended ensuring that this happens.

(13) The project will not cause a nuisance. The determination of nuisance effects of the project may include, but is not limited to, the following considerations: Increase in odors, dust, fumes, glare, heat, noise, vibration or artificial light.

Potential sources of nuisances for this project after buildout would include lighting and noise from buses. The exterior lighting standards should mitigate this situation. Noise from buses will likely exist, though the site already experiences bus traffic at the existing transit stop. It is not anticipated that noise from buses will excessively contribute to a nuisance situation, given that the nearest residential development is approximately a quarter mile away.

(14) The project will not result in an unreasonable risk of releases of hazardous materials. The determination of the risk of release of hazardous materials caused by project may include but is not limited to the following considerations:

a. Plans for compliance with federal and state handling, storage, disposal, and transportation requirements.
b. Use of waste minimization techniques.
c. Adequacy of spill prevention and response plans.

No risk from hazardous material releases is anticipated.

(15) Urban development, population densities, and site layout and design of storm water and sanitation systems shall be accomplished in a manner that will prevent the pollution of aquifer recharge areas. The determination of potential for pollution of the aquifer recharge areas by the project may include but is not limited to the following considerations:

a. Proximity of urban development and population densities to aquifer recharge areas.
b. Proximity of stormwater and sanitation systems to aquifer recharge areas.
c. Changes in water quality in the aquifer recharge areas.

There are no known impacts to aquifer recharge zones.

(16) The project shall be reasonably necessary to meet projected community development and population demands in the areas to be served by the project, or to comply with regulatory or technological requirements. The determination of whether the project is reasonably necessary may include but is not limited to the following considerations:

a. Relationship to reasonable growth projections and local land use plans.
b. Relationship to other providers' service areas.
c. Whether the project is not in compliance with regulatory or technological requirements or will not be in compliance in the near future.

The project represents an expansion of RFTA's transit service and commitment to mass transit. The transit center will expand to nine bus bays, include bus charging infrastructure, include more amenities to riders, and include significantly more parking. A significant portion of Glenwood Springs's workforce commutes from outside the city, and vehicle traffic is a primary concern within the city. This project has the potential to reduce traffic and give commuters greater opportunities to take mass transit.

(17) The project shall be constructed in areas which will result in the proper utilization of existing facilities or systems to ensure the orderly and sustainable development of infrastructure in the City and adjacent communities, including the following considerations:

a. Site selection and construction will not create or encourage growth and development which is incompatible with and cannot be accommodate by the local financial capacity of the area or residents to be served.
b. New systems will not overburden existing systems and current and future demand for services can be met within existing and proposed capacity.
c. The project will not create proliferation of special districts or overlapping of special districts with the boundaries of other special districts or municipalities.
d. The project is the best alternative for the provision of services to the geographical area serviced.
e. To the extent feasible, facilities and systems shall be consolidated with existing facilities and systems in the area.

f. The project will not result in duplicative services or excessive capacity.
g. The project will be administered so as to minimize disruption of utility services and preserve desirable existing community patterns.

As discussed in the criterium addressing service delivery capacity, the project does represent challenges to both the road system and electric infrastructure. The site location is ideal for the expansion of transit services, but conditions of approval and separate agreements will be necessary for cost sharing of upgrades that will be needed to the road and electric systems.

(18) Economic impacts including, but not limited to, taxable property, licensed and permitted facilities, and recreation related to the proposed project have been identified and will be compensated for or mitigated.

The site has previously been used for governmental entities, so no economic detriment is anticipated with the proposal.

(19) The project shall emphasize the most efficient use of water, including the recycling, reuse, and conservation of water, including the following considerations:

a. Whether the project uses readily available conservation techniques.
b. Whether the project recycles water to the greatest extent permissible.
c. Whether the project will use raw water for exterior or irrigation use if available.

The applicant team has identified that they will be using water efficient toilets and plumbing fixtures and will be using raw water for all irrigation. However, it is unclear if it will be possible to transport the raw water to the transit center site. The City's past experience with irrigation lines running underneath streets in Glenwood Meadows, as the applicants propose underneath Wulfsohn, has shown that this is a bad long-term idea and leads to street failures. A condition of approval has been recommended for the applicant to revise the plans removing the irrigation piping beneath Wulfsohn.

Review Criteria Specific to Areas Around Key Facilities

No permit shall issue for a project related to areas around designated key facilities in which development may have a material impact upon the key facility or surrounding community unless it contains conditions tailored to mitigate the environmental, infrastructure, and financial impacts to the City described in subsection (b) below. Conditional permits shall issue at the discretion of the Permit Authority, pursuant to 070.080.360.

Applications for a project related to areas around designated key facilities in which development may have a material impact upon the key facility or surrounding community shall be subject to the following mandatory special review criteria.

1) The project will encourage the smooth flow of motorized and nonmotorized traffic.

2) The project will foster the development of such areas in a manner calculated to preserve the

smooth flow of such traffic.

3) The project will preserve desirable existing community patterns.

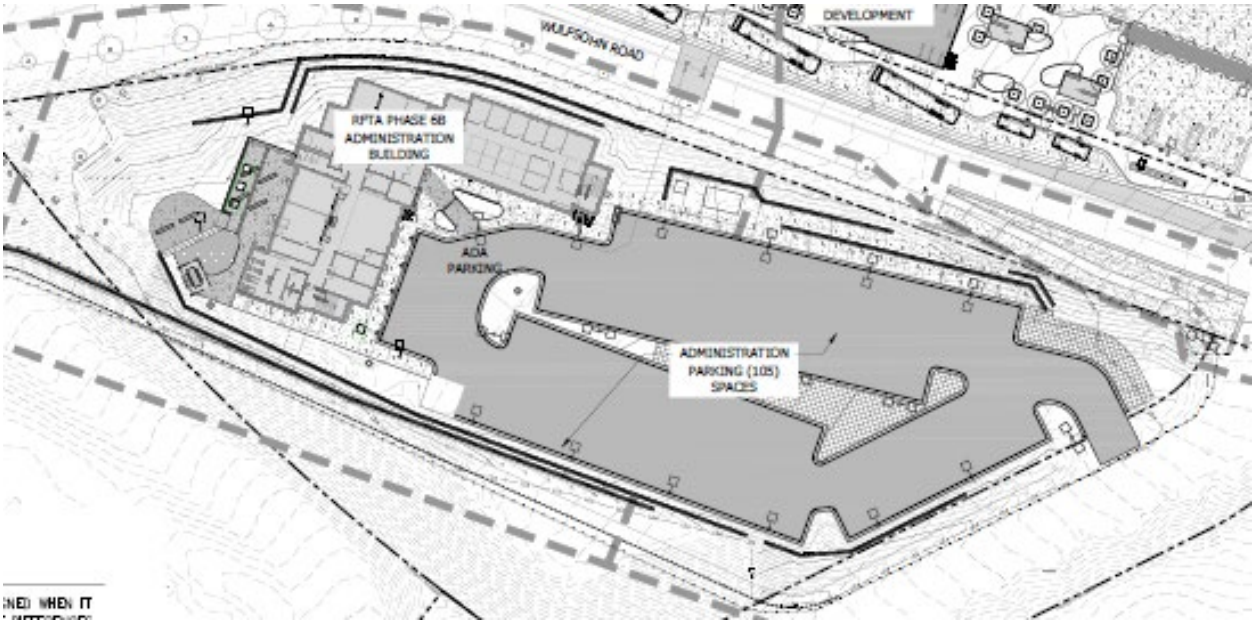
City Staff believes the project's design will have a satisfactory traffic flow internally, but without changes to the nearby Wulfsohn/Midland intersection, there will not be a smooth or safe traffic flow. City Staff has identified that a roundabout is the preferred solution to upgrade this intersection. Because RFTA will be contributing to the undesirable and unsafe condition of this intersection, the City has requested in a condition of approval that they pay a portion of the construction cost of a roundabout.

REVIEWING AGENCY COMMENTS

The City of Glenwood Springs referral agencies were forwarded application materials for the proposed transit center. The Engineering, Public Works, and Electrical Department comments are provided as attachments to this report. All comments have been incorporated as conditions of approval for the project.

REVIEW CRITERIA AND STAFF ANALYSIS – LOCATION & EXTENT REVIEW

Above: The green star represents the land parcel upon which the administration building is proposed.



Above: The overall site plan for the administration building site.

The Location & Extent Review component of this project, for the proposed administration building and maintenance building, has been reviewed against Title 070 of the Municipal Code, the zoning regulations. The Sensitive Area Protection Standards, section 070.040.020, apply to

the Location & Extent Review because of the presence of geohazards. This analysis, and the summary table below, is a summary of compliance with zoning standards for only the **administration building and maintenance building (Phase 6B and 8)**.

Summary of compliance with zoning standards for the **administration building (Phase 6B)**.

CODE STANDARD		**PROPOSED**	**REQUIREMENT MET**
Common Open Space	10%; 22,385 square feet	Not provided	Needs Confirmation
Landscape	15%; 16,505 square feet	46,230 square feet	YES
Landscaping specific standards			
Trees	1 per 400 s.f. of required landscaped area; 42 trees	68	YES
Shrubs	1 per 100 s.f. of required landscaped area; 166 required	154	NO
Perennials	1 per 50 s.f. of required landscaped area; 331 required	Not provided	NO
Native and drought-resistant species	Native and drought tolerant species must account for 75% of plantings	55%	NO
Parking Area Landscaping			
Surface Area Landscape	20% of total surface parking area	Not provided	
Interior Landscape	10 square feet of landscaping per parking space; 1,050 s.f.	Not provided	
Streetscape Landscaping			
Street Trees	1 tree per 75 linear feet of street frontage; 10 required	8	NO
Setback			

Front	5’ minimum, 25’ maximum	12.5’	YES
Rear	7.5’	Not provided	YES
Side	5’	N/A	N/A
Height	40’	48’8” (with mechanical screening);	NO
Parking	1 per 300 s.f.; 98 required	105	YES
Sidewalk	8 feet in width along Wulfsohn Rd.	5’	NO
Bike Parking	9 bike parking spaces	12	YES
Trash Enclosure	Must be enclosed	Enclosed	YES

Summary of compliance with zoning standards for the **maintenance building (Phase 8)**.

CODE STANDARD		**PROPOSED**	**REQUIREMENT MET**
Common Open Space	5%; 11,193 s.f.	Not provided	Needs clarification
Setback			
Front	20	Not provided	YES
Rear	10	Not provided	YES
Side	10	Not provided	YES
Height	40’	19’4”	YES
Parking	None	None	YES
Sidewalk	N/A	None	N/A
Bike Parking	None	None	YES
Trash Enclosure	Must be enclosed	N/A	N/A

Setbacks
While not all the distances from building edges to property lines are provided, it is clear that both buildings meet minimum setbacks.

Building height
The proposed maintenance building meets maximum height requirements. The administration building exceeds maximum building height limits. The administration building has a maximum height of 48’8,” which includes an approximately 30-foot segment of mechanical equipment

screening. The screening of mechanical equipment is allowed an additional five feet of height above the maximum height limit, but the proposal exceeds this allowance by more than three feet. Additional allowances exist in the Municipal Code for parapet walls, the tops of which may extend 2.5 feet above the height limit. The proposed design is broken up by sections of alternating heights. A condition of approval has been recommended requiring compliance with maximum building height, but with the possibility for allowed exceptions.

Building design and materials

Sensitive Area Protection regulations, rather than nonresidential design standards, contain building design standards for areas with mapped geohazards. These design standards emphasize blending the design with natural terrain, requiring neutral and earth-toned hues on exterior building surfaces, roofs, and mechanical equipment. The proposal achieves this goal with its use of dark reds and browns. The brick and stone primary materials with metal accents meet the Sensitive Area Protection requirements materials that can withstand Glenwood's climate.

Above: Two renderings of the proposed administration building.

Landscaping

The proposed landscaping plan for the administration building includes landscaping buffers around the building site and parking lot. While the plan programs more than enough landscaped area, it is still deficient in the number of street trees proposed and the percentage of the planting schedule that is native and drought-resistant species. Further information is also needed to determine compliance with the required number of perennial plantings and parking area landscaping requirements. A condition of approval has been recommended requiring compliance with landscaping standards.

The landscaping requirements apply only to the administration building, which will sit on a different land parcel from the maintenance building. The maintenance building does not add enough floor area to the parcel on which it sits, which contains other large buildings already, to trigger the need to provide a landscaping plan.

Retaining walls
The application materials show plans for retaining walls greater than the six feet allowed due to the very steep slopes on the site. A condition of approval has been recommended that the retaining walls be reduced in height as much as possible and include methods such as terracing and screening wherever feasible to reduce the visual impact of these walls. Any retaining wall over four feet in height requires engineered designs.

Exterior lighting
The photometric plan shows some portions of the parking area out of compliance with the maximum lighting levels. The mounting heights of exterior lights have not been provided. A condition of approval has been recommended that the lighting plans be revised to meet maximum mounting heights and reduce illumination levels in some areas.

Comprehensive Plan compliance
The project is in general compliance with the Comprehensive Plan. The administration building and maintenance building support the following goals, policies or actions:

- Serve as a leader in regional transportation and strengthen partnerships to pursue federal funding and to "regionalize" nonfederal funding commitments. Begin to budget transportation and capital improvement work programs and work with RFTA and others to leverage multi-modal opportunities (such as road/Bus Rapid Transit or road/rail) to fund and implement corridor routes for SH82, Railroad Corridor and South Bridge.
- Continue and strengthen partnerships between Federal, State, and Municipalities to build a more robust transportation system to serve the region such as Bustang, Pegasus, and RFTA.
- Develop and implement mitigation strategies to reduce the impact of regional growth on traffic congestion on major roads, highways, and residential streets.

REVIEWING AGENCY COMMENTS

The City of Glenwood Springs referral agencies were forwarded application materials. The Engineering, Public Works, and Electrical Department comments are provided as attachments to this report. All comments have been incorporated as conditions of approval for the project.

ACTION ITEMS & STAFF RECOMMENDATIONS

Staff recommends approval of the **1041 Review application** with the following suggested conditions:

Recommended Conditions of Approval (1041 Review only):

1. The development shall comply with the requirements of the Code. Any future physical changes or improvements to the property or buildings are subject to the review and approval of the Community Development Director for compliance with applicable requirements of the Glenwood Springs Municipal Code.

2. The applicant shall comply with all verbal representations made in the public hearings, as outlined in all application materials, and/or as revised per conditions herein and approved by the Community Development Director.

3. The applicant shall comply with recommendations identified in the technical reports submitted as part of the application including but not limited to geotechnical and drainage reports.

4. At the time of Final Plans Review submission, the plans shall be revised to include the following changes:

    a. The transit center plans shall be amended to include offsets in the retaining walls of at least 12 inches every 50 feet.
    b. Outdoor lighting fixtures shall not be mounted higher than 35 feet.
    c. Update its traffic impact study to address the shortcomings identified by the Engineering Department.
    d. The sidewalk along Wulfsohn Rd. adjacent to the transit center parcel shall be eight feet in width.
    e. The stormwater detention plans, civil plans, and structural plans shall be revised in consultation with the geotechnical engineer to ensure compliance with the geotechnical report. The applicant shall provide a letter from the geotechnical engineer stating that the stormwater, civil, and structural designs of the transit center comply with the recommendations of the geotechnical report.
    f. The drainage report and corresponding stormwater plans shall be revised to consider the impacts upon the culvert underneath Midland Avenue.
    g. The plans shall be revised to remove irrigation piping underneath Wulfsohn Road.
    h. The landscaping plans shall be revised to meet all City and Glenwood Meadows landscaping standards, including parking area landscaping, street trees, and minimum rates of native and drought-resistant species.
    i. The transit center building shall be adjusted to meet front setback requirements or shall receive approval through the Municipal Code's flexibility procedures.
    j. The architectural plans for the transit center building shall be revised to incorporate at least two design elements from section V.D.2.c of the GMADA.
    k. The retaining walls shall be revised to include offsets of at least 12 inches every 50 feet of retaining wall.
    l. Revise plans to include mounting heights of outdoor light fixtures that do not exceed 35 feet in height.
    m. All plans shall demonstrate compliance with City referral comments.

n. The portion of the retaining wall north of the parking area that is shown encroaching on a utility easement shall be adjusted so that it does not encroach on the utility easement.

5. Prior to submitting a building and/or grading permit application, the owner shall:
    a. Submit and receive approval of a Final Plans application in accordance with Municipal Code section 070.060.050(c).
    b. Submit an Engineer's Estimate of all public improvements and provide security for completing said improvements per requirements of the Engineering Standards.
    c. Enter into a Development Agreement that memorializes the development approvals.
    d. Provide all other permits from outside jurisdictions necessary for the project.

6. Prior to issuance of the building permit, the applicant shall:
    a. Provide evidence of approved and recorded land rights agreements with all involved property owners including the City of Glenwood Springs.
    b. Obtain Right-of-Way Encroachment Licenses for all private uses or structures to be located within the right-of-way.

7. Prior to issuance of the Certificate of Completion, owner shall provide as-built plans and an Improvement Survey Plat per the Engineering Standards.

8. Before commencement of construction, RFTA shall contribute funding to the actual construction cost of a roundabout at the western Midland Avenue/Wulfsohn Road intersection in a percentage amount equal to the average of RFTA's share of peak hour traffic volume increase at the intersection at the opening of the transit center and RFTA's share of peak hour traffic volume increase after the total Meadows buildout. Total Meadows buildout shall mean completion of RFTA's Phase 6A, 6B, and 8, and the completion of the multifamily project at Glenwood Meadows Lots 11C-B and 11C-C, commonly referred to as "BLD."

9. RFTA shall pay a fair share of the upgrades to electrical infrastructure that will be necessary to accommodate the project and future development in the City. This share shall be established by a separate agreement between the City and RFTA.

Suggested Findings for the 1041 Review:
(1) The health, welfare, and safety of the residents of this City will be protected and served.

(2) The project is in general conformance with the Comprehensive Plan and other duly adopted plans and permit criteria.

(3) The project is financially feasible.

(4) The project is not subject to significant risk from natural hazards.

(5) The project will not have a significant adverse effect on the capability of local governments affected by the project to provide local infrastructure and services, or exceed the capacity of service delivery systems.

(6) The project will not have a significant adverse effect on the quality or quantity of recreational opportunities and experience.

(7) The project will not significantly degrade air quality.

(8) The project will not significantly degrade existing visual quality.

(9) The project will not significantly degrade surface water quality.

(10) The project will not significantly degrade groundwater quality.

(11) The project will not significantly degrade wetlands and riparian areas, terrestrial or aquatic plant or animal life.

(12) The project will not significantly deteriorate soils and geologic conditions.

(13) The project will not cause a nuisance.

(14) The project will not result in unreasonable risk of releases of hazardous materials.

(15) Urban development, population densities, and site layout and design of storm water and sanitation systems shall be accomplished in a manner that will prevent the pollution of aquifer recharge areas.

(16) The project shall be reasonably necessary to meet projected community development and population demands in the areas to be served by the project, or to comply with regulatory or technological requirements.

(17) The project shall be constructed in areas which will result in the proper utilization of existing facilities or systems to ensure the orderly and sustainable development of infrastructure in the City and adjacent communities.

(18) Economic impacts including, but not limited to, taxable property, licensed and permitted facilities, and recreation related to the proposed project have been identified and will be compensated for or mitigated.

(19) The project emphasizes the most efficient use of water, including the recycling, reuse, and conservation of water.

LOCATION & EXTENT CRITERIA OF APPROVAL

Per section 070.060.050 of the Municipal Code:

In reviewing a proposed Location and Extent application, the Planning Commission shall consider whether or not the proposed location and extent:

i. Is consistent with the Comprehensive Plan and other City plans and policies;
ii. Is consistent with the general purpose and intent of this Code; and
iii. Minimizes adverse impacts to the health, safety, and welfare of the inhabitants of the surrounding areas and the city.

With the conditions of approval recommended in this report, Staff believes that these three criteria are met for the administration building and maintenance building.

Staff recommends approval of the **Location & Extent application** with the following suggested conditions:

Recommended Conditions of Approval for Location & Extent Review:

1. The development shall comply with the requirements of the Code. Any future physical changes or improvements to the property or buildings are subject to the review and approval of the Community Development Director for compliance with applicable requirements of the Glenwood Springs Municipal Code.

2. The applicant shall comply with all verbal representations made in the public hearings, as outlined in all application materials, and/or as revised per conditions herein and approved by the Community Development Director.

3. The applicant shall comply with recommendations identified in the technical reports submitted as part of the application including but not limited to geotechnical and drainage reports.

4. Prior to building permit review, the plans shall be revised to include the following changes:
    a. Show required common open space and calculate its percentage of the administration building parcel.
    b. Revise landscaping plan showing compliance with landscaping standards, streetscape standards, and parking area landscaping standards.
    c. Provide mounting heights of outdoor light fixtures that do not exceed 35 feet in height.
    d. Revise outdoor lighting plan to reduce estimated illumination levels to within allowed levels.
    e. Reduce height of retaining walls to allowed limits and include methods such as terracing and screening wherever feasible to reduce the visual impact of these walls.
    f. Add sidewalk width along Wulfsohn Rd. to plans. The minimum width shall be eight feet.
    g. Revise administration building plans to comply with code requirements for maximum height.
    h. A fire hydrant shall be installed on a landscaping island near the administration building.

i. The stormwater detention plans, civil plans, and structural plans shall be revised in consultation with the geotechnical engineer to ensure compliance with the geotechnical report. The applicant shall provide a letter from the geotechnical engineer stating that the stormwater, civil, and structural designs of the transit center comply with the recommendations of the geotechnical report.

5. The drainage report and corresponding stormwater plans shall be revised to consider the impacts upon the culvert underneath Midland Avenue.

6. Prior to submitting a building and/or grading permit application, the owner shall:
   a. Submit an Engineer's Estimate of all public improvements and provide security for completing said improvements per requirements of the Engineering Standards.
   b. Provide all other permits from outside jurisdictions necessary for the project.

7. Prior to approval of a building permit, the Minor Subdivision Plat of Glenwood Springs Municipal Operations Center shall be amended and recorded removing all easements that conflict with the proposed maintenance building, if any conflict.

8. Prior to issuance of the Certificate of Completion, owner shall provide as-built plans and an Improvement Survey Plat per the Engineering Standards.

9. Before commencement of construction, RFTA shall contribute funding to the actual construction cost of a roundabout at the western Midland Avenue/Wulfsohn Road intersection in a percentage amount equal to the average of RFTA's share of peak hour traffic volume increase at the intersection at the opening of the transit center and RFTA's share of peak hour traffic volume increase after the total Meadows buildout. Total Meadows buildout shall mean completion of RFTA's Phase 6A, 6B, and 8, and the completion of the multifamily project at Glenwood Meadows Lots 11C-B and 11C-C, commonly referred to as "BLD."

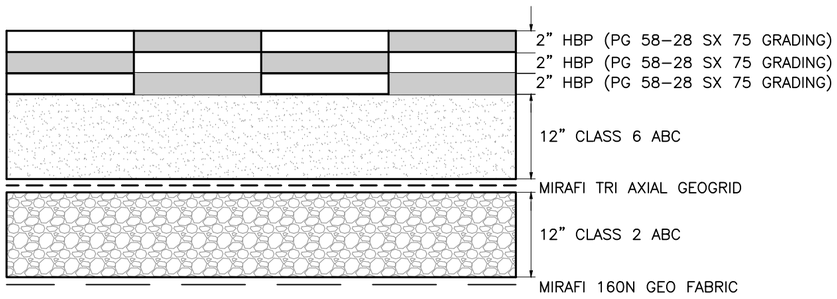
10. RFTA shall pay a fair share of the upgrades to electrical infrastructure that will be necessary to accommodate the project and future development in the City. This share shall be established by a separate agreement between the City and RFTA.

Suggested Findings for Location & Extent Review:

(1) The project is consistent with the Comprehensive Plan;
(2) The project is consistent with the general purpose and intent of the Municipal Code; and
(3) The project minimizes adverse impacts to the health, safety, and welfare of the inhabitants of the surrounding areas and the city.

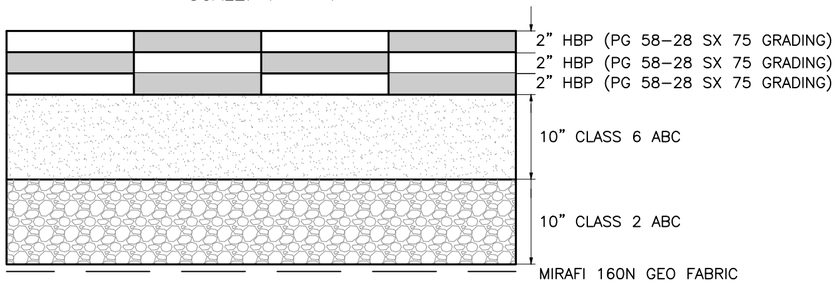
Work Order: 01-15-25 E Input by: kimberly Requested by:
Input Date: 01/15/25 Last Trans Date: 01/15/25 Est Compl Date: 01/15/25
Description: RFTA 6A & 6B UPDATED Accepted: no Department:
UNDERGROUND LINE EXT ESTIMATE Job No: 11525

Line Num	Whse Code	Stock Item Code	Stock Item Description	Sell UOM	Unit Price	Est Qty	Est Cost	Act Qty	Act Cost
1	1	51500-12800	Trans 3ph 750 kva 4w/lf 480/277	ea	22,679.13	1.0000	22,679.13	.0000	.00
2	1	51500-14000	Sectionalizer PME/AIS 11	ea	25,000.00	1.0000	25,000.00	.0000	.00
3	1	51500-13200	Trans 3ph 1000kva 4w/lf	ea	32,395.32	1.0000	32,395.32	.0000	.00
4	1	51500-09000	Trans 3ph 112.5kva 4w/lf 208/120	ea	11,382.40	1.0000	11,382.40	.0000	.00
5	1	50600-21000	Base Lrg 84x84 40200	ea	673.33	3.0000	2,019.99	.0000	.00
6	1	50600-31500	Vault swgear 72x72 40800	ea	841.00	2.0000	1,682.00	.0000	.00
7	1	50600-22000	Trans Pad 84x84 3 phs 40	ea	567.25	1.0000	567.25	.0000	.00
8	1	50600-21500	Vault 4x4 Sq-4'High 4070	ea	832.00	2.0000	1,664.00	.0000	.00
9	1	50600-22500	Trans Pad 72x72 3 phs 40	ea	564.57	2.0000	1,129.14	.0000	.00
10	1	50600-10000	Lid 56" Dia Round 40400	ea	709.50	3.0000	2,128.50	.0000	.00
11	1	50600-11500	Vault Round 4x4 40750	ea	591.70	3.0000	1,775.10	.0000	.00
12	1	50600-11000	Base Sm 56x56 40150	ea	294.04	3.0000	882.12	.0000	.00
13	1	51000-00700	splice pri 4/0 600a 220m	ea	66.57	3.0000	199.71	.0000	.00
14	1	14500-02400	ground rod	ea	21.81	3.0000	65.43	.0000	.00
15	1	14500-02500	clamp ground rod	ea	1.92	3.0000	5.76	.0000	.00
16	1	14500-02700	trans bonding bolt	ea	5.59	6.0000	33.54	.0000	.00
17	1	50500-08000	conn blk 6-500 8 bolt mo USG2-500 R86	ea	32.89	12.0000	394.68	.0000	.00
18	1	50000-02500	ld brk elbow 200a 4/0 22 with seal kit	ea	75.05	18.0000	1,350.90	.0000	.00
19	1	18500-01100	conn comp 3/0-4/0 CU	ea	6.88	21.0000	144.48	.0000	.00
20	1	50500-24000	Spade #2 Str Comp	ea	6.64	3.0000	19.92	.0000	.00
21	1	25000-02500	Meter Box 13t\w test swi 10 Pole Test Switch	ea	458.27	3.0000	1,374.81	.0000	.00
22	1	26000-54900	CT 500:5 SPADE	EA	168.43	9.0000	1,515.87	.0000	.00
23	1	54600-60000	6" pvc Pipe W/Cplg Schd	ft	8.59	1,000.0000	8,590.00	.0000	.00
24	1	53000-01500	UG cable 4/0 15kv 220m p	ft	4.53	3,000.0000	13,590.00	.0000	.00
25	1	54600-69000	6" pvc 90 Degree Elbow S	ea	79.64	1.0000	79.64	.0000	.00
26	1	54600-64500	6" pvc 45 Degree Elbow S	ea	71.22	2.0000	142.44	.0000	.00
27	69	2300004	LABOR - FOUR MAN CREW	HR	260.00	48.0000	12,480.00	.0000	.00
28	89	2400013	Crane Truck Hourly Rate	hr	120.00	16.0000	1,920.00	.0000	.00
29	89	2400010	Service Truck Hourly Rate	hr	25.00	80.0000	2,000.00	.0000	.00
30	89	2400022	Wire Puller Hourly Rate	hr	20.00	16.0000	320.00	.0000	.00
31	89	2400019	Trailers Hourly Rate	hr	25.00	16.0000	400.00	.0000	.00
						4,283.0000	147,932.13	.0000	.00



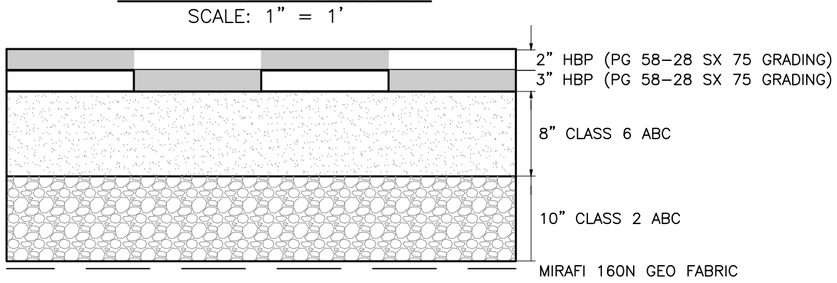
*NOTE: SCARIFY AND RECOMPACT SUBGRADE 8" DEPTH TO 95% STANDARD OR 90% MODIFIED PROCTOR

MUCK EXCAVATION SECTION
SCALE: 1" = 1'



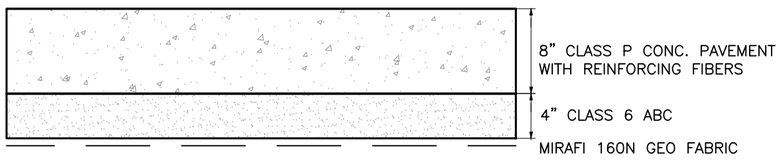
*NOTE: SCARIFY AND RECOMPACT SUBGRADE 8" DEPTH TO 95% STANDARD OR 90% MODIFIED PROCTOR
WEST MEADOWS DRIVE START TO STA: 38+27.87
WULFSOHN DRIVE START TO STA: 45+76.61

HIGH TRAFFIC ASPHALT SECTION
SCALE: 1" = 1'



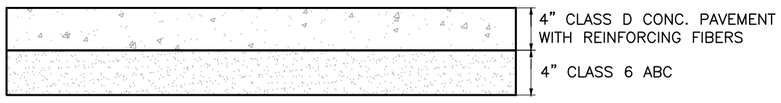
*NOTE: SCARIFY AND RECOMPACT SUBGRADE 8" DEPTH TO 95% STANDARD OR 90% MODIFIED PROCTOR
EAST MEADOWS DRIVE STA: 12+19.52 TO END

LOW TRAFFIC ASPHALT SECTION
SCALE: 1" = 1'



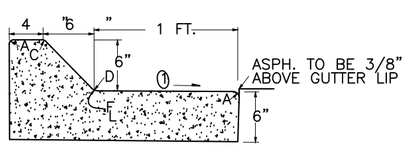
*NOTE: SCARIFY AND RECOMPACT SUBGRADE 8" DEPTH TO 95% STANDARD OR 90% MODIFIED PROCTOR

CONCRETE PAVEMENT SECTION
SCALE: 1" = 1'

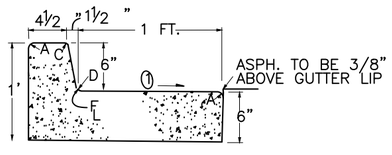


*NOTE: SCARIFY AND RECOMPACT SUBGRADE 8" DEPTH TO 95% STANDARD OR 90% MODIFIED PROCTOR

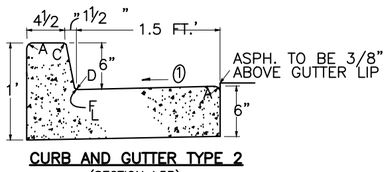
CONCRETE SIDEWALK SECTION
SCALE: 1" = 1'



CURB AND GUTTER TYPE 2
(SECTION IM)
(6" MOUNTABLE – 1.0' GUTTER)



CURB AND GUTTER TYPE 2
(SECTION IB)
(6" BARRIER – 1.0' GUTTER)



CURB AND GUTTER TYPE 2
(SECTION I.5B)
(6" BARRIER – 1.5' GUTTER)

LEGEND FOR RADII

A = 1/8" TO 1/4"
B = 1"
C = 1 1/2"
D = 1 1/2" TO 2"

GENERAL NOTES

1. ALL SUBBASE IS TO BE SCARIFIED AND COMPACTED PRIOR TO PLACEMENT OF CLASS 6. PROOF ROLL TEST ARE TO BE PERFORMED FOR EACH TRAVEL LANE & PARKING AREAS PRIOR TO PLACEMENT OF CLASS 6 ABC.

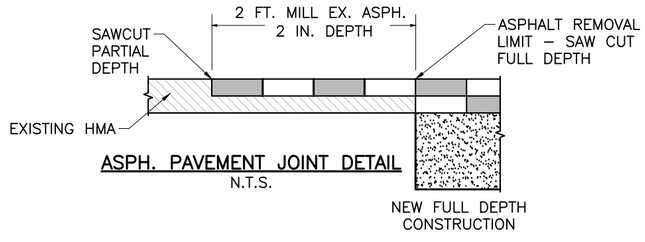
2. CONCRETE SHALL BE CLASS D.

3. A MIN. OF 4" CLASS 6 ABC SHALL BE PLACED UNDER CURB & GUTTER SECTIONS.

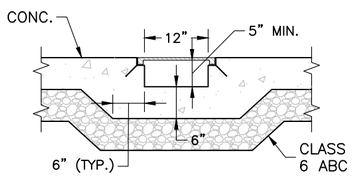
4. DUMMY JOINTS FOR GUTTER TYPE 2 & CURB & GUTTER ARE TO BE SPACED AT 10 FT. ACCORDING TO CDOT SPEC. 609

EXPANSION JOINTS SHALL BE INSTALLED WHEN ABUTTING EXISTING CONCRETE OR FIXED STRUCTURE. EXPANSION JOINT MATERIAL SHALL BE 1/2 IN. THICK AND SHALL EXTEND THE FULL DEPTH OF CONTACT SURFACE.

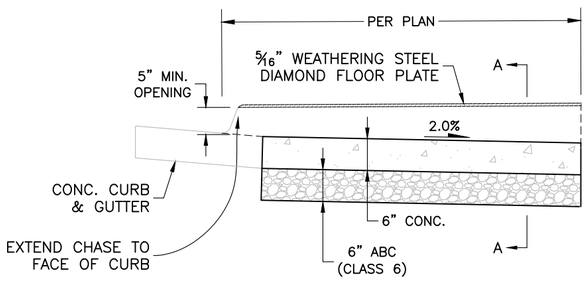
(1) GUTTER CROSS SLOPES SHALL BE 1/2 IN./FT. WHEN DRAINING AWAY FROM CURB AND 1IN./FT. WHEN DRAINING TOWARD CURB.



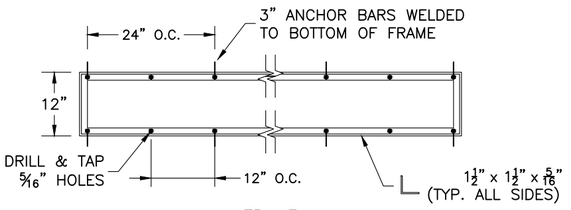
ASPH. PAVEMENT JOINT DETAIL
N.T.S.



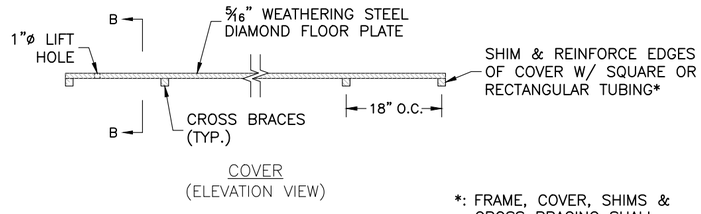
SECTION A–A



SIDEWALK CHASE DETAIL
SCALE: NTS

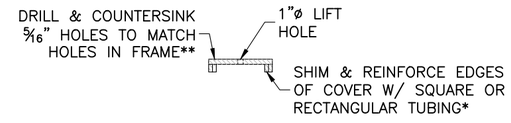


FRAME
(PLAN VIEW)



COVER
(ELEVATION VIEW)

*: FRAME, COVER, SHIMS & CROSS BRACING SHALL BE FABRICATED OF STEEL

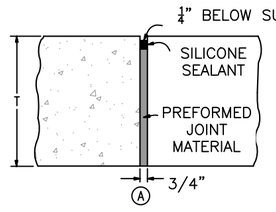


SECTION B–B

**: FASTEN COVER TO FRAME W/ 5/16" STAINLESS STEEL SCREWS WITH COUNTERSUNK HEAD

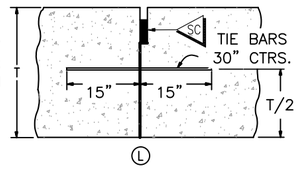
CHASE DRAIN DETAIL
N.T.S.

NOTE:
1. BARS AND DOWELS TO BE GREASED PRIOR TO SECOND POUR.
2. ALL BARS AND DOWELS TO BE EPOXY COATED.



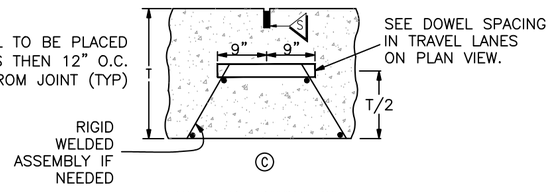
EXPANSION JOINT

30"X NO.5 TIE BARS TO BE 24" O.C., CENTERED BETWEEN JOINTS AS SHOWN ON PLAN

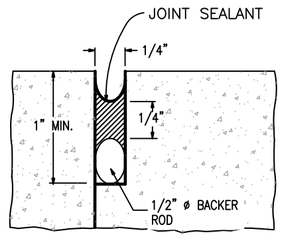


LONGITUDINAL CONSTRUCTION JOINT

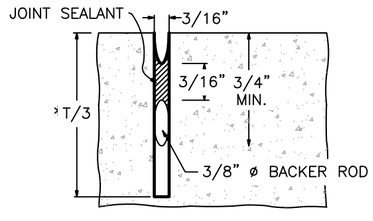
24"X1" ø DOWEL TO BE PLACED 6" FORM JOINTS THEN 12" O.C. (3) DOWELS FROM JOINT (TYP)



DOWELED TRANSVERSE CONSTRUCTION OR CONTRACTION JOINT



SEAL AT CONSTRUCTION JOINT SC

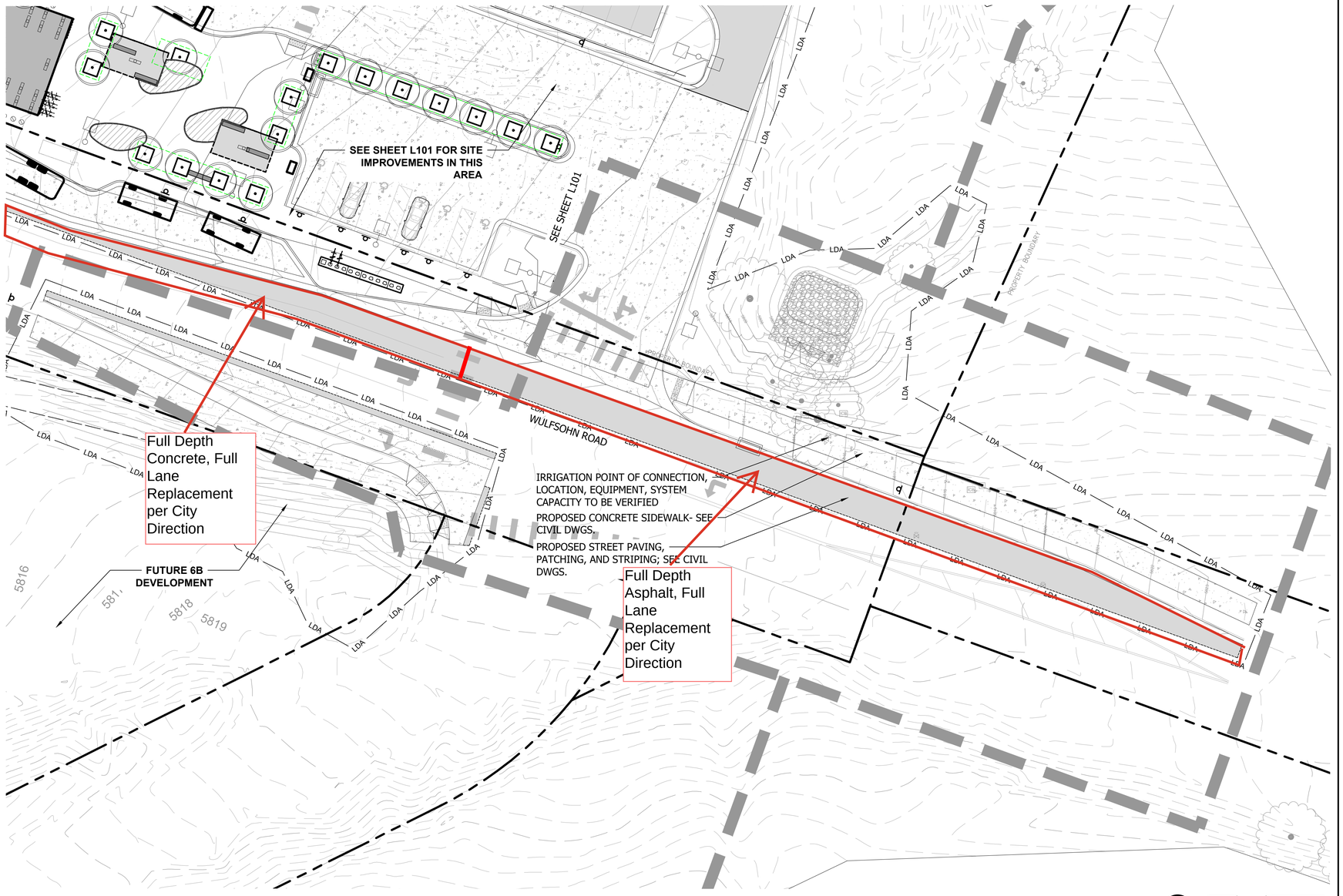


SAWED JOINT S

LEGEND

- PROPERTY BOUNDARY
- SHEET MATCHLINE
- EXISTING CONTOURS
- EXISTING TREES TO REMAIN
- PROPOSED SITE WALLS (SEE CIVIL & STRUCTURAL DWGS.
- PROPOSED BACKLESS BENCH
- PROPOSED TREE GRATE W/ TREE PROTECTION & STRUCTURAL SOIL
- PROPOSED BUS CHARGING STATION (SEE MEP)
- PROPOSED SCREENING FENCE
- PROPOSED SHADE STRUCTURE
- PROPOSED RAISED PLANTER
- PROPOSED SITE LIGHTING (SEE LIGHTING PLANS)
- PROPOSED BEAR–PROOF TRASH AND RECYCLING RECEPTACLE
- PROPOSED BIKE SHARE STATION (SEE CIVIL AND WECYCLE)
- PROPOSED BIKE RACK
- PROPOSED ASPHALT PAVING; SEE CIVIL
- PROPOSED CONCRETE VEHICULAR PAVING; SEE CIVIL
- PROPOSED CONCRETE PEDESTRIAN PAVING; SEE CIVIL
- STRUCTURAL SOIL EXTENTS (SEE PLANTING PLANS & NOTES)

NOTES:
1.SEE CIVIL PLANS FOR ALL GRADING & DRAINAGE.
2.PAVEMENT MARKINGS & ADA CURB RAMPS PER CIVIL.



MATERIALS SCHEDULE

1.0	**PAVEMENTS**			
	CALLOUT	**ITEM**	**DETAIL / SHEET**	**PRODUCT**
	1.1	TYPE 1 - VEHICULAR PAVING	PER CIVIL	
	1.2	TYPE 2 - PED. PAVING CONCRETE(SNOW-MELT)	PER CIVIL	
2.0	**WALLS & STAIRS**			
	2.1	TYPE 1 - CONCRETE RETAINING WALL	PER CIVIL	
	2.2	TYPE 2 - MSE WALL	PER CIVIL	
	2.3	TYPE 1 - CONCRETE STAIR W/ HANDRAIL	PER CIVIL	
3.0	**SITE ELEMENTS**		**DETAIL / SHEET**	
	3.1	BACKLESS BENCH	1/L304	Landscape Forms- Socrates
	3.2	TREE GRATE W/ TREE PROTECTION & STRUCTURAL SOIL	2/L304	Urban Accessories- Jameson
	3.3	BIKE RACK (246 SPACES)	3/L304	Landscape Forms- Key
	3.4	BEAR PROOF TRASH RECEPTACLE	5/L304	BearSaver- HA Series Double Trash Recycle
	3.5	SCREENING FENCE	4/L304	BOK Modern- TBD Perforated Metal
4.0	**PLANTERS & SHELTERS**			
	4.1	RAISED STEEL PLANTER	1-5/L302 & 1-5/L303	ORE Planters- Custom Powdercoated
	4.2	CUSTOM SHADE SHELTER	PER ARCH.	
	4.3	CUSTOM BIKE BARN	PER ARCH.	

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Horiz. Scale: As Noted Vert. Scale: As Noted

Short Elliott Hendrickson Inc.
Colorado Center Tower One
Suite 6000
2000 South Colorado Boulevard
Denver, CO 80222-7900
Tele. (720) 540-6800
(800) 490-4966
Fax (720) 540-6801

Sheet Revisions

Rev.	Date	Comments	Init.
	08/20/24	LAND USE APPLICATION	LW/SH

ROARING FORK TRANSPORTATION AUTHORITY
WEST GLENWOOD TRANSIT CENTER
2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans
No Revisions:
Revised:
Void:

SITE MATERIALS PLAN
6A SOUTH EAST

Designer: LW
Detailer: SH
Sheet Subset:
Structure Numbers:
Subset Sheets: of

Project No./Code
TRG M535-014
25924
Sheet Number **L102**

LEGEND

- PROPERTY BOUNDARY
- SHEET MATCHLINE
- EXISTING CONTOURS
- EXISTING TREES TO REMAIN
- PROPOSED SITE WALLS (SEE CIVIL & STRUCTURAL DWGS.
- PROPOSED BACKLESS BENCH
- PROPOSED TREE GRATE W/ TREE PROTECTION & STRUCTURAL SOIL
- PROPOSED BUS CHARGING STATION (SEE MEP)
- PROPOSED SCREENING FENCE
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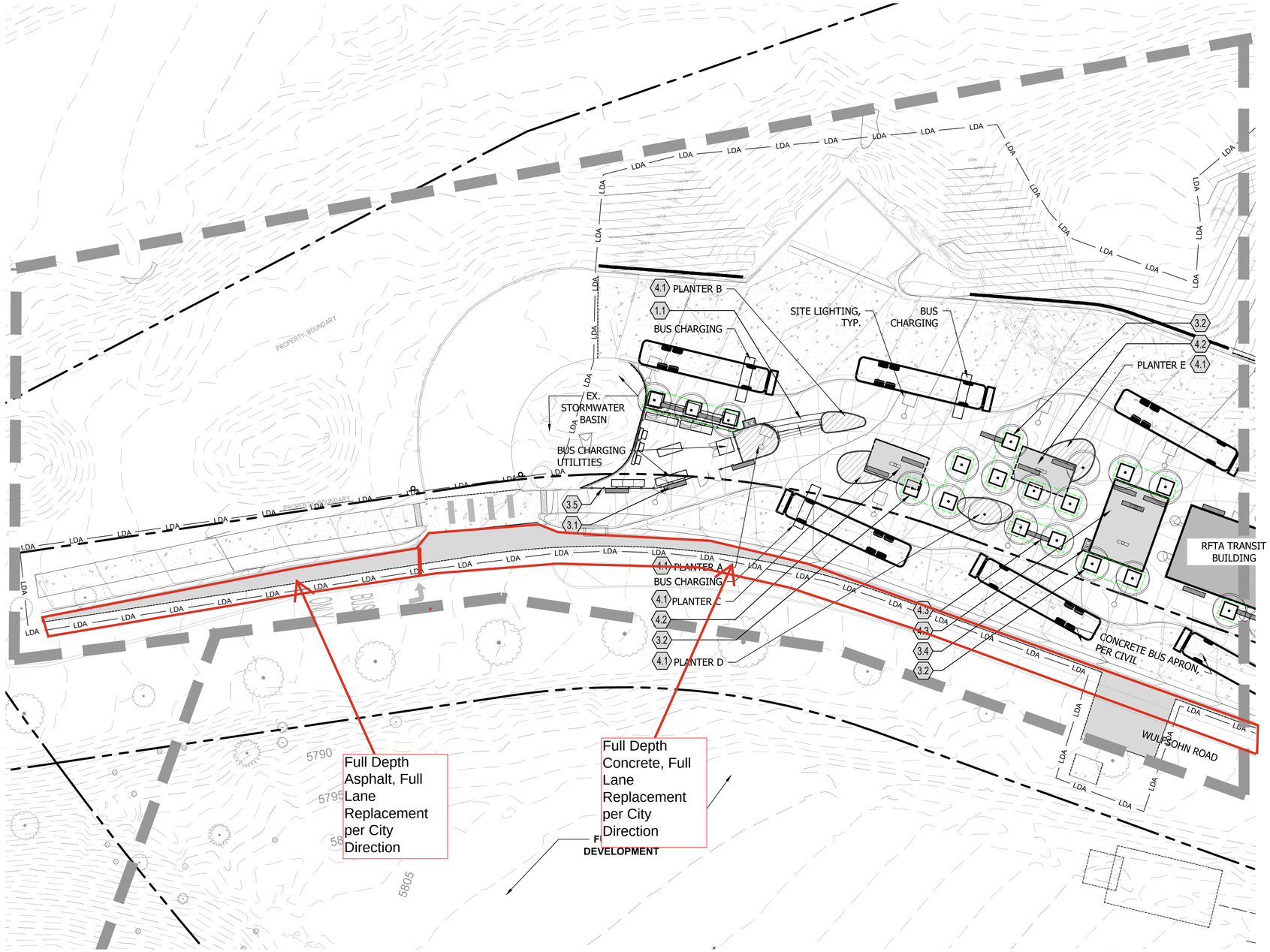
		4.3	CUSTOM BIKE BARN	PER ARCH.	



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ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

Revised:

Void:

SITE MATERIALS PLAN 6A WEST

Designer:	LW	Structure Numbers	
Detailer:	SH		
Sheet Subset:		Subset Sheets:	of

Project No./Code

TRG M535-014

25924

Sheet Number **L103**

RFTA West Glenwood Transit Center (Phase 6A)

Land Use Application: Matters of State Interest Permit

Glenwood Springs, CO

September 2024

VICINITY MAP NTS

Prepared for:

City of Glenwood Springs

101 W 8th St.

Glenwood Springs, CO 81601

Prepared by:

DHM Design

225 Main St. #201

Carbondale, CO 81623

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Matters of State Interest Permit

Transit center – Phase 6A

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Appendix C: Preliminary Soil, Geotechnical, and Geohazard Report
Appendix D: Drainage Study
Appendix E: Project Timeline
Appendix F: Written Authorization & Statement Regarding Mineral Owners & Lessees
Appendix G: Archeological Resources
Appendix H: Historical Resources
Appendix I: Biological Resources
Appendix J: Paleontological Resources
Appendix K: Initial Site Assessment Summary of Environmental Conditions
Appendix L: List of Property Owners within 300'

Introduction

The Roaring Fork Transportation Authority (RFTA) is proposing to develop a West Glenwood Transit Center (Phase 6A), Administration Building (Phase 6B) and a maintenance building (Phase 8). The proposed projects are designated for three distinct parcels as shown on the project context map on page 2. RFTA currently owns all three parcels. Phase 6A is a proposal to upgrade the existing West Glenwood park-and-ride into a regional transit center. Phase 6B is a proposal to construct an administration building for RFTA professional staff. Phase 8 is a proposal to construct an additional maintenance building at the existing RFTA General Maintenance Facility. A complete description of each Phase is provided in this document.

Per the City of Glenwood Springs Municipal Code, the Phase 6A Transit Center is subject to review under Article 070.080 Matters of State Interest. All Phases are subject to review under Article 070.60.050(d) Location and Extent Review. This document, along with the design plans and appendices, encompasses the application for a Matters of State Interest permit.

Matters of State Interest - Development Code Article 070.080

The purpose of the Matters of State Interest process is, in part, to regulate site selection of mass transit stations to ensure that they avoid conflicts with the City's land use plans. The following materials submitted under this category demonstrate the proposed development is consistent with the guidelines established in the City's Comprehensive Plan and the statutory requirements and criteria set forth in C.R.S. § 24-65.1-101 et seq.

This document encompasses the Matters of State Interest permit application for Phase 6A, the proposed Transit Center. As noted above, the Phase 6B Administration Building and Phase 8 Maintenance Building are not subject to the State Interest review and are therefore omitted from this section.

Project Site Context Map

NTS

Phase 6A Transit Center	Phase 6B Administration Building	Phase 8 Maintenance Building
Parcel #: 218505337001 Total Acres: 5.03 Address: 2302 Wulfsohn Rd. Owner: RFTA	Parcel #: 218505337003 Total Acres: 2.48 Address: not assigned Owner: RFTA	Parcel #: 218505336002 Total Acres: 5.14 Address: 2307 Wulfsohn Rd. Owner: RFTA

Note: Parcel acreage and information listed here is per Garfield County Assessor database and may vary from surveyed conditions.

Project Narrative

Background

The Roaring Fork Transportation Authority (RFTA) has been operating in the Roaring Fork Valley since 1983. RFTA provides a variety of public transportation services along the State Highway 82 corridor (Glenwood Springs to Aspen) and along a segment of I-70 (Glenwood Springs to Rifle). Formerly, RFTA was exclusively dedicated to regional transit. Today, RFTA has a role in express and local regional transit, senior/para-transit, bus rapid transit, multi-modal infrastructure, first-and-last mile mobility, and public skier shuttle services. It is the second largest transit system in Colorado and the largest rural transit system in the United States, providing nearly 5 million trips annually with a fleet of over 100 buses.

Currently, RFTA provides transit services spanning 3 counties and 70 linear miles, from Aspen to Rifle. Since 2004, RFTA ridership has grown by 60% and is estimated to increase by at least 25% over the next 20 years, under the most conservative scenarios. To meet the emerging transportation needs, RFTA is expanding services along the I-70 corridor between Glenwood Springs and Parachute.

The Need

Transportation is a component of the built environment and the term “public transportation” includes a wide variety of services that provide regimented and continuous transportation means to the public. Historically, transportation policies and infrastructure investments have emphasized and prioritized road improvements over supporting public transportation systems and facilities. Shifting the focus onto expanding public transportation facilities can increase the use of public transit and simultaneously reduce traffic congestion and air pollution. Additionally, increased access to public transportation can also improve health equity by providing the opportunity to access vital services, employment, and providing a foundation for social connection.[1]

The Roaring Fork Valley is a rapidly growing region with RFTA as a vital connector for the growing workforce and residential communities. In fact, Garfield County demographics data shows that the County will experience continuous growth over the next 25 years with the population expected to grow by more than 50% in the next 30 years.[2] To accommodate this continuous population growth and the changing environmental climate, RFTA developed a plan for the future of public transportation operations throughout the region.

In 2016, RFTA began to take a closer look at regional transit needs referencing the Integrated Transportation System Plan (ITSP) and the Upper Valley Mobility Study (UVMS). In 2018, RFTA developed a strategic improvement plan for the region’s transportation system titled Destination 2040.

Destination 2040 includes project goals and measurable milestones focusing on improvements for the environment, solutions for reducing traffic congestion and improving mobility, and improvements in sustainability and safety. These identified deliverables are specific to the Roaring Fork Valley. The Destination 2040 project will ultimately help RFTA maintain and improve its services, infrastructure and equipment.[3]

As part of these efforts and in response to regional population growth and increasing transit demand, RFTA has identified the need to develop a Regional Transit Center in West Glenwood Springs. The Regional Transit Center (RTC) project includes three phases: Phase 6A Transit Center, Phase 6B Administration Building, and Phase 8, Maintenance Building.

Phase 6A entails upgrading the existing West Glenwood Park & Ride to make it a true transit center with an expanded bus platform, transit building, bathrooms, and various user amenities.

References

[1] "Public Transportation In The US: A Driver Of Health And Equity, "Health Affairs Health Policy Brief, July 29, 2021. https://www.healthaffairs.org/do/10.1377/hpb20210630.810356/

[2] "Continued Growth in Garfield County." Garfield County Demographics – Economic Development.www.garfield-county.com/economic-development/garfield-county-demographics/

[3] Roaring Fork Transportation Authority. "Destination 2040 Roadmap." RFTA.www.rfta.com/2040roadmap/. Accessed 9 Jan. 2024

Project Overview

Context

The RFTA Phase 6A transit center is proposed for a site on Wulfsohn road in west Glenwood Springs where there is currently a park and ride bus station, see context map on page 2.

The transit center will be a main node for the RFTA system in the Roaring Fork Valley, cultivating connections between neighboring towns. The transit center will be the link between the Highway 82 corridor and the I-70 corridor “Hogback” routes. The center will provide amenities such as indoor waiting areas to foster comfortable and seamless connections between these two major transportation corridors as well as first-and-last mile connections to nearby multi-family residential and commercial areas. The site design emphasizes and respects the existing views and is thoughtfully designed to be a bright and welcoming public space.

The administration building is expected to be the face of RFTA and is therefore a critical component of RFTA’s vision for the next 20 years and beyond.

Architectural and Site Design

The style of architecture reflects other RFTA projects in the valley. At the transit center, the roof forms echo those used at the existing BRT stations at 27th Street and up valley. The materials are reflective of the mountain environment and history, with stone, wood and metal elements. The administration building materially connects with the transit center by using similar materials and tones. The Phase 8 maintenance building is intended to be aesthetically similar to the existing GMF building. There will be no public access to this building.

The program for the transit center building includes a portion that is limited for RFTA employees and operations programming on the west side with separate commuter-friendly programming on the east side of the building. The transit center includes programming including but not limited to a driver lounge, ticketing station, public restrooms, lost & found, and mechanical and maintenance storage areas. The proposed project includes an improved ADA parking area and additional parking downslope.

Infrastructure (Roads, Trails, and Utilities)

The park & ride expansion has been designed to prioritize safety and accessibility. The bus platform maximizes space for bus bays while also activating points of access and que areas with raised planting areas. Pedestrian safety signage and a crosswalk is proposed to connect sidewalks along south Wulfsohn with the transit center. The paved path on the north side of Wulfsohn connects directly to the platform. The transit platform has been designed in a way that trail users will be able to safely connect between the north and south segments of the trail using the proposed crosswalk. Reference the Traffic Study summary included on page for more information regarding the proposed crosswalk and pedestrian signage.

All needed utilities are in place, no major extensions are anticipated beyond what would typically be needed for any construction project. Electrical, water, sewer, gas, telephone, and cable, already exist within the project area; these utilities will be adapted and re-aligned as necessary to meet project needs.

Landscape & Green Space

The transit center is designed with raised planters throughout the platform to shape and guide a thoughtful circulation experience around the space. Waiting riders are provided various covered and uncovered seating areas with opportunities for social interaction or quite space. The plant palette emphasizes native and drought tolerant species to be used throughout the project. The landscaping reflects the character and context of the surrounding landscape found along the edges and surrounding the development.

The landscape at the administration building echoes that found at the transit center by using similar elements, such as raised planters at the building entry, covered outside seating, and a similar native and drought tolerant plant pallet. Also included is outdoor gathering and meeting room spill over space, amphitheater seating, and an informal walking path with bench seating.

Plan Set

The Phase 6A Transit Center architectural and engineering plan set submitted separately is intended to be reviewed alongside this document and the appendices. The plan set includes architectural, civil engineering, lighting, and landscape drawings.

Ownership

RFTA (Roaring Fork Transportation Authority)

2307 Wulfsohn Road

Glenwood Spring, CO 81601

Project Team:

Architect

Short Elliot Hendrickson Inc.

2000 S Colorado Blvd (Tower 1, Suite 6000)

Denver, CO 80222

Phone: (720)540-6812

Email: ajauch@sehinc.com

Contact: Alex Jauch

Civil Engineer

Short Elliot Hendrickson Inc.

2000 S Colorado Blvd (Tower 1, Suite 6000)

Denver, CO 80222

Email: tneutzel@sehinc.com

Contact: Tim Nuetzel

Landscape Architect

DHM Design Corporation

225 Main Street, Suite 201

Carbondale, CO 81623

Phone: (970)963-6520

Email: jjaynes@dhmdesign.com

Contact: Jason Jaynes

Electrical

CMO Consulting Engineers, LLC

11646 Sun Bear Trl

Golden, Colorado 80403

Land Use Application From

LAND USE APPLICATION

City of Glenwood Springs
Economic and Community Development Dept.
101 West 8th Street
Glenwood Springs, CO 81601
970-384-6411

Ordinance Amendments		Development Permits	
☐	Rezoning	☐	Site/Architectural Plan Review
☐	Rezoning to Planned Unit Development (PUD)	☐	☐ Administrative
☐	Annexation	☐	☐ Minor
☐	Condominiumization	☐	☐ Major
☐	Annexation	☐	Master Plan
☐	Street Vacation	☐	Construction Plans
☐		☐	Location & Extent
Subdivisions		☐	Right of Way Encroachment License
☐	Minor Subdivision	☐	Floodplain Development Permit
☐	Preliminary Plat	☐	Special Use Permit
☐	Final Plat		**Flexibility and Relief Procedures**
☐	Vacation of Right-of-Way	☐	Variance
☐		☐	Administrative Adjustment
Other Land Use Applications		☐	Appeal
☐	Outdoor Seating	☐	
✓	Matters of State Interest (1041)		

Applicant/Property Owner Information:

Applicant		Owner	
DHM Design Corporation			
Relationship to Owner		Owner	
Subconsultant		Roaring Fork Transportation Authority (RFTA)	
Applicant Address		Owner Address	
225 Main St. #201	Carbondale, CO 81623	2307 Wulfsohn Road	Glenwood Springs, CO 81601
Phone (970)963-6520	Email Address jaynes@dhmdesign.com	Phone 970.384.4858	Email Address bludlow@rfta.com

Property Information:

Address	Parcel Number
See Project Site Context Map on page 5	(Phase 6A) 218505337001, (Phase 6B) 218505337003, (Phase 8) 218505336002
Subdivision	Lot and Block Number
Zone District Mixed-Use Corridor (M1)	Existing Land Use

General Project Description:

Development of existing RFTA property to improve the community transit and RFTA staff experience by providing a new (9) bay transit center, new regional consolidated administration building, and storage building for RFTA bus maintenance staff.

Signatures:

The owner or applicant must be present at the hearing. All public hearings must be property noticed according to G.S.M.C. Section 070.010.030. Signatures of all owners of the property must appear before the application is accepted. Partnerships or corporations may have the authorized general partner or corporate officer sign the

Applicant	Date
Owner	Date

Matters of State Interest Permit

Article 070.80 Guidelines and Regulations for Matters of State Interest

The purpose and intent of the regulations set forth in Article 070.80 is to facilitate the identification, designation, and administration of matters of state interest consistent with the statutory requirements and criteria set forth in Section 24-65.1-101, et seq., C.R.S., and the guidelines established in the Comprehensive Plan, as well as the following [partial]:

(3) To regulate the site selection of rapid or mass transit terminals, stations, and fixed guideways to ensure that the same are located in a manner that will avoid conflicts with the City's land use plans; minimize congestion in the streets; secure safety from fire, floodwaters, and other dangers; promote health and general welfare; provide adequate light and air; prevent the overcrowding of land; avoid undue concentration of population; and facilitate the adequate provision of transportation, water, sewerage, schools, parks, and other public requirements;

Conformance with the Comprehensive Plan

In the following section, pertinent language from the Comprehensive Plan is provided, with an Applicant response at the end.

Goals [partial]:

Address transportation needs and provide multiple convenient travel choices

Action Plan [partial]:

Land Use & Future Growth				
#	Policy/Action	Champion	Timeline	High Priority
1.1	**Promote Transit Oriented Development (TOD).**			
1.1.A	Plan for transit stations located in all mixed-use neighborhoods by incorporating principles of smart growth, new urbanism and green building.	Engineering/RFTA	Near Term	
1.1.B	Concentrate growth in Glenwood Springs in locations that can be served by high-frequency transit.	Engineering and Community Development	Near Term	

Land Use and Growth Management Strategies:

"The City and the Roaring Fork Transportation Authority (RFTA) should continue to promote redevelopment and the expansion of transit infrastructure to enhance the regional bus service..." pg. 44

Community Character & Vitality:

"Glenwood Meadows has seen recent residential and commercial development, with multi-family housing and both small and large-scale retail and restaurants. Glenwood Meadows is also anchored by the Glenwood Springs Community Center. With easy access to

Downtown and commercial uses, the vision for the remainder of buildable land in Glenwood Meadows is mixed-use development to increase housing options in this transit-served area." pg. 53

Transportation and Mobility:

"Investment in transit to improve options to travel within, to and through Glenwood Springs is also a priority." pg. 66

"A major barrier that has been identified by RFTA and the City is that the BRT does not regularly serve downtown or West Glenwood... This has restricted the ability of transit to effectively serve commuters traveling through Glenwood, residents from most of the neighborhoods in Glenwood who commute up-valley, or relieve traffic congestion on CO 82 through town." pg. 68

"A core strategy to mitigate future traffic growth on CO 82 in Glenwood Springs will be to improve regional transit to and through Glenwood Springs." pg. 71

"It is recommended to work with RFTA to improve the VelociRFTA bus rapid transit (BRT) through Glenwood Springs, including prioritizing bus movement, and increasing frequency to Downtown and West Glenwood... This would improve options for two of the three dominant regional travel markets during peak times on CO 82, including commuters from Western Garfield County traveling through Glenwood Springs to the Roaring Fork Valley, and commuters from Glenwood Springs commuting up-valley. Eventually extending the BRT west of Glenwood Springs could further meet demand for the inbound and pass-through travel market originating in Western Garfield County." pg. 71

"Additionally, improving the frequency, reliability and speed of transit service along the Hogback route west of Glenwood Springs both to and within Glenwood Springs would also improve options for the inbound commuter travel market from western Garfield County." pg. 71

RESPONSE:

The Comprehensive Plan identifies several deficiencies in the existing public transportation system which the proposed transit center is designed to address.

One of the identified deficiencies is the absence of BRT connectivity to West Glenwood and the convenience of bus services along the Hogback route west of Glenwood Springs. Both of these issues are directly addressed by the proposed improvements to the existing West Glenwood Park & Ride. The new transit center will allow expansion of BRT to West Glenwood and also provide convenient connectivity to bus services to New Castle and Rifle. The Comp Plan states that in order to reduce traffic on Highway 82 through Glenwood Springs, convenient public transit needs to be available to pass-through commuters coming from western Garfield County. The West Glenwood Springs transit center will enable RFTA to provide these services.

The Comprehensive plan identifies the Glenwood Meadows area as a location for future mixed-use development along an existing transit corridor. There are currently several mixed-use apartment buildings in Glenwood Meadows and additional apartments are under construction. As shown on the Zone District Map on page 31, the property immediately east of the proposed station is zoned for mixed use development and the property directly across Wulfsohn Road is zoned for high density residential development. Locating a transit station near this existing and future development furthers the transit and land-use goals of the Comprehensive Plan.

The proposed improvements to the existing West Glenwood Park & Ride will provide a more comfortable station with expanded service area, which will make public transit a more attractive option to both local and regional residents.

The Comprehensive Plan generally supports expansion of public transportation services and specifically encourages improvements to services in West Glenwood and beyond. The transit center project is in keeping with and furthers these goals.

070.80.250 Submission Requirements for all Permit Applications; Waivers

The Applicant is providing the following responses to specific Sections of the Code as requested by the City of Glenwood Springs Planning Department. The Planning Department did not request responses to certain Sections of the Code and these Sections have been omitted as noted.

(a) Cover Page

Completed application cover page in the format approved and maintained by the Community Development Department.

Please see the completed cover page form on page 8, at the beginning of this document.

(b) Information Describing the Applicant.

1. The names, addresses, including email address and fax number, organizational form, and business of the applicant and, if different, the owner of the project.

Ben Ludlow, Capital Projects Program Manager, bludlow@rfta.com, 970.384.4858

The Roaring Fork Transportation Authority has been in operation since 1983, and functions as a Regional Transportation Authority (RTA). The RTA includes the communities of Aspen, Snowmass Village, Pitkin County, Basalt, and a portion of Eagle County, Carbondale, Glenwood Springs and the newest member New Castle. RFTA provides commuter bus service from Aspen to Glenwood Springs (Roaring Fork Valley), Glenwood to Rifle (Hogback), intra city service in Aspen and Glenwood Springs, ski shuttle service to the four Aspen Skiing Company ski areas, the Maroon Bells Shuttles, and a variety of other seasonal services.

2. The names, addresses and qualifications, including those areas of expertise and experience with projects directly related or similar to that proposed in the application package, of individuals who are or will be responsible for constructing and operating the project.

See table on page 12 for a list of those who are responsible for the constructing and operation of the project and their previous experience with similar project types or expertise.

3. Written authorization of the application package by the project owner, if different than the applicant.

See written authorization in Appendix F provided by the project owner.

4. Documentation of the applicant's financial and technical capability to develop and operate the project, including a description of the applicant's experience developing and operating similar projects.

Not requested, not provided.

5. Written qualifications of report preparers.

Not requested, not provided.

The qualifications of those responsible for the construction and operation of this facility are provided in the table below.

NAME	ADDRESS	QUALIFICATIONS
Ben Ludlow	bludlow@rfta.com, 970.384.4858	RFTA Capital Projects Program Manager
Kyle Eckes	keckes@rfta.com, 970.618.1733	RFTA Capital Projects Project Manager
Alex Jauch	ajauch@sehinc.com, 720.540.6812	SEH Project Manager
Chuck Gustafson	cgustafson@sehinc.com, 719.248.3249	SHE Construction Manager

(c) Information Describing the Project Proposal.

1. A description of the proposed facilities and site.

See Project Narrative which outlines the proposed project.

2. A description of other present or most recent use and zoning.

The project site is currently being used as the West Glenwood Park & Ride. The current zone district for this project parcel is M1, Mixed Use Corridor. See zone district map on page 22 for the zoning for the project site and adjacent parcels. Article 070.020 in the Glenwood Springs Municipal Code outlines each zone district and Table 070.030.020.1 outlines the allowed uses for each zone district. The COGS Planning Department has determined that a separate Special Use Permit is not required for this project.

3. Vicinity map showing the proposed site, including proposed zoning designation, and the surrounding area.

Please see page 22 showing the proposed site and zoning designation in relationship to the surrounding area.

4. Executive summary of the proposal indicating the scope and need for the project.

A summary of the project scope and associated need is provided on page 5 in this application.

5. Plans and specifications of the project in sufficient detail to evaluate the application against the applicable review criteria.

A complete plan set including a site plan, grading plan, utility plan, architectural plans, landscape plans and lighting plans is provided in conjunction with this document.

6. Descriptions of alternatives to the project considered by the applicant. If the Community Development Director determines that the nature or extent of the proposal involves the potential

for significant damage and warrants examination of other specific, less damaging alternatives, the Community Development Director may require the applicant to evaluate and present information on such additional alternatives as part of the application.

Not requested, not provided.

7. Schedules for designing, permitting, constructing and operating the project, including the estimated life of the project.

Construction is anticipated to begin on 2/2/25, pending approval of land use application. The project is expected to be completed in 9/30/26. See Appendix E for a more detailed project schedule that includes expected dates and deadlines throughout the estimated life of the project.

8. The need for the project, including a discussion of alternatives to the project that were considered and rejected; existing/proposed facilities that perform the same or related function; and population projections or growth trends that form the basis of demand projections justifying the project.

The project is needed to accommodate the ridership increase at the West Glenwood Park and ride. This ridership increase has caused a demand for climate controlled waiting space and bike parking. In addition, since the addition of Bustang at this location, there are multiple time during the day that many transit users are left outside waiting for their bus to arrive with no shelter from weather elements. Since this site is already an existing facility, the need to upgrade at this site makes the most sense. There are no other sites within the RFTA network that can be used as this currently is. This site is also important to transit users due to the close proximity to Interstate 70.

9. Description of relevant conservation techniques to be used in the construction and operation of the project.

Architectural and Building Strategies:

The design team has focused on minimizing major impacts to the existing site by focusing building placement at or near existing grades and utilizing the existing topography to reduce major cut and fill. Pre-cast construction is also being utilized to assist in the construction timeline reduce construction waste. Geothermal is being introduced into 6A to help offset energy costs.

Landscape Strategies:

The landscape plant palette focuses on native and drought tolerant plants. RFTA has committed to minimizing or eliminating permanent outside water use and irrigation for this project. The landscaping will be similar in appearance to the existing dryland landscape at the west-most intersection of Midland Avenue and Wulfsohn Road. This planting includes native sagebrush, rabbit brush, Rocky Mountain juniper, one-seed juniper, pinon pine, and ponderosa pine. Non-native deciduous trees will be used where shade is desired as there are very few deciduous trees native to Colorado suitable to use for this purpose. There will also be areas of non-native ornamental shrubs and grasses. The proposed non-native trees, shrubs, and grasses are adapted to and aesthetically compatible with the dryland conditions.

10. Description of demands that this project expects to meet and basis for projections of that demand.

This proposed project will meet the emerging transportation needs throughout the rapidly growing region. To accommodate the continuously growing population, the improvements and expansion to this transit station will ensure that regimented and continuous transportation services will be available to the public and transit users.

11. List of adjacent property owners and their mailing addresses.

See page 22 for a list of all adjacent parcel owners and their mailing addresses (if available) within 300' of the Phase 6A proposed development. The zone district map on page 22 illustrates the extents of 300' from the Phase 6A parcel boundary and shows which adjacent parcel owners are included in the list.

(d) Scope of Proposed Project Relevant to Specific Designated Area and/or Activity.

1. Domestic water or sewage treatment systems and/or major extensions thereof.

a. Detailed plans of the proposal, including not less than thirty (30) percent engineering plans and specifications prepared by a registered professional engineer, and proposed system capacity and service area plans mapped at a scale acceptable to the Department.

Not requested, not provided.

b. A description of all existing or approved proposed domestic water or sewage treatment systems within the proposed project area.

Not requested, not provided.

c. A description of the design capacity of each domestic water or sewage treatment system facility proposed and the distribution or collection network proposed in the proposed project area.

Not requested, not provided.

d. A description of the excess capacity of each treatment system and distribution or collection network in the affected community or proposed project area.

Not requested, not provided.

e. A description of the operational efficiency of each existing system in the proposed project area, including the age, state of repair, and level of treatment.

Not requested, not provided.

f. A description of the existing water utilization, including the historic yield from rights and use by category such as agricultural, municipal, and industrial supply obligations to other systems.

Not requested, not provided.

g. A description of any impacts to the City's water resources used to serve the City's water service area.

The expansion of the Transit center will result in an increase in impervious area. The additional impervious area will increase runoff from the site and the potential for sediment and pollutants to be carried in this runoff. The civil engineer's grading design captures runoff where feasible and diverts the runoff to water quality and detention facilities. These facilities will mitigate the sediment and pollutants in the runoff. The outlet structures of the facilities will restrict flows in the major and minor storms to be released at preconstruction rates to minimize adverse impacts on adjacent and downstream drainageways and properties.

A proposed underground storage facility within the lower parking lot shall be used for water quality and detention. Flows will be routed to the facility through proposed inlets and storm sewers. Flows will be released at historic rates to the north.

2. Major facilities of a public utility.

a. Specifications of approximate floor space of any office building, storage facility, or other enclosed structure.

At the transit center, there is the proposed transit building that is one story and 3,232 gross square feet. The plan also has an enclosed bike storage facility and shade structures on the platform. See the architectural plans submitted separately for more detailed information regarding interior programming and associated square footages for the transit center building (Phase 6A).

RFTA is also proposing an administration office building on a separate parcel on the south side of Wulfsohn road, (Phase 6B) that is 10,820 gross square feet. The administration building is not subject to the Matters of State Interest review and is not a part of this application.

b. Voltage and length of transmission lines.

Not requested, not provided.

c. The power source and generating capacity.

Not requested, not provided.

d. The function and size of any substation.

Not requested, not provided.

e. The diameter and length of any gas pipeline.

Not requested, not provided.

f. The capacity of storage tanks, and type of petroleum derivative to be stored.

Not requested, not provided.

g. The proposed service area.

Not requested, not provided.

h. The resource area (e.g. source of power being generated or transmitted, source of petroleum derivative being transported).

Not requested, not provided.

i. A computer modeled electromagnetic field measurement within the proposed transmission line easement for that portion of the transmission line between substations or transition sites.

Not requested, not provided.

j. Measures taken to comply with the concept of prudent avoidance with respect to planning, siting, construction, and operation of transmission lines, which may be those steps taken to comply with CCR 723-3 § 3206(9)(b) or similar authority, for projects where other similar authority is applicable.

Not requested, not provided.

k. Any impacts to vegetation and wildlife in the City.

The project site is not an undeveloped parcel. There is currently a park-and-ride lot and bus station on this parcel and the proposed project includes improvements to this developed area so there is expected to be minimal impacts to native vegetation or contiguous wildlife habitat. Existing trees and native vegetation will be preserved to the highest extent possible. Revegetation and additional plant material is specified as needed to meet the requirement of 15% landscaped area on the parcel, to comply with the municipal code. See the landscape plan within the 50% DD plan set submitted separately for more information regarding limits of disturbance, revegetation areas, and proposed planting for the proposed project.

l. Possible alternatives to underground transmission lines associated with the facility.

Not requested, not provided.

m. Visuals demonstrating impact to scenic resources.

The project site is surrounded by existing and future development. The existing adjacent development includes the RFTA General Maintenance Facility and bus storage. Zoning for future development includes high density residential housing to the south of the project and mixed use to the east. The proposed development will be consistent in scale and appearance with the surrounding development context and will not be visually out of place to the casual observer. The materials proposed for the project will reflect those seen around Glenwood Springs downtown core and the design of the building is similar to others developed around the city so the building design and materials contribute visually to the sense of place. The ridgeline of Red Mountain is approximately 1500 vertical feet above the project site and the project will not impact the ridgeline.

Additionally, the Historical Resources review notes that the proposed project does not impact any historic visual resources.

3. Efficient utilization of municipal and industrial water projects.

a. A description of efficient water use, recycling and reuse technology intended for the project. Such description shall include estimated stream transit losses of water, reservoir evaporation losses, and power and energy requirements of the project and project alternatives.

Not requested, not provided.

b. Map and description of other municipal and industrial water projects in the City and vicinity, including capacity and service levels, location of intake and discharge points, debt structure, fees and rates, and service plan boundaries.

Not requested, not provided.

c. A description of the water to be used, including the applicant's right to use the water, adjudicated decrees or determinations, quantity, and comments from reviewing authorities.

Not requested, not provided.

4. Development in areas containing, or having a significant impact upon, historical, natural, or archaeological resources of statewide importance.

a. A description of the existing natural environment and an analysis of the impacts of the project on the natural environment and natural resources, including water resources, wildlife, and air quality, to include maps and engineering analyses regarding the surface water quality, groundwater quality, water quantity, flood lands, wetlands, and riparian areas.

As stated previously, the project site is not undisturbed, but is rather currently developed as a park-and-ride and transit station. A majority of the proposed development occurs within these disturbed areas. The provided Historic Resources review, Archaeological Resources review, and the Biological Resources review do not list any anticipated significant impacts due to this project.

b. A description of proposals to mitigate any impact to the natural environment and natural resources, including to the watershed, wildlife, or air quality.

The proposed development is not anticipated to have any major impacts to the surrounding environment due to the fact that the parcel is already developed. However, landscaping is proposed throughout the project to minimize the impact of the proposed site walls and improved transit center building. Drought tolerant and native plant species shall be proposed to promote local wildlife and blend into the natural environment. The Biological Resources review contains recommendations for construction to reduce impacts on wildlife.

3. A description of the existing historical and archaeological resources in the proposed project area and a description of proposals to mitigate any impact to the existing historical and archaeological resources.

The provided Archaeological Resources review finds no archaeological resources have been previously documented in the file search area. The provided Historical Resource review recommends a determination of "no adverse effect" pursuant to 36 CFR 800.5 of the NHPA. See Appendix G

5. Development in areas around key facilities in which development may have a material effect upon the key facility or the surrounding community.

a. A description of the existing key facilities and an analysis of the impacts of the project on the key facilities and the surrounding community to include maps showing the key facilities and including traffic and use studies.

Traffic study has been provided by RFTA/SGM. SEH's team has reviewed the provided traffic study and has worked with RFTA to provide the recommended turn lanes along Wulfshon. See attached civil plans for more detail and placement of these lanes.

b. A description of proposals to mitigate the impact on the key facilities and surrounding communities.

Per the COGS City Planner, RFTA will be subject to fees for a new lift station per the cost sharing agreement that applied to land within the Glenwood Meadows Subdivision parcels.

(e) Proof of Notice. As provided under Section 070.080.280.

Applicant shall mail noticing per 070.080.280. See neighboring property owner list, pg.22

(f) Comments of Other Agencies. Any commentary received by other agencies with review authority over the proposal, including, without limitation, the state Department of Natural Resources, the state Department of Public Health and Environment, and any other federal, state, or local agency.

The project is federally funded and is under direct observation of CDOT Region 3, who is administering a portion of the federal funding. Final approval will need to be received by CDOT prior to construction.

(g) Demonstration of Need.

1. Population trends for the project area, including present population, population growth, and growth rates document the sources used.

According to US Census Bureau data, the current population in Glenwood Springs is estimated at 10,264 as of July 1, 2022. The original transit stop was built in 2005 when the population in Glenwood Springs was significantly lower. Improving the transit station is necessary to support the expansion of RFTA services along the I-70 corridor. The location of this transit station is a central hub connecting communities west of I-70 (Parachute, Rifle, and New Castle) with resources up valley such as Glenwood Springs and Aspen. According to a transportation consultant that analyzed traffic patterns in this community, Fehr and Peer, “60% of inbound commuting trips to Glenwood Springs were from Rifle and New Castle”.

Regarding future population growth, Garfield County reports that the County will experience continuous growth with the population expected to grow by more than 50% in the next 30 years.

2. The predominant types of developments to be served by the proposed new systems and/or facilities or extensions thereof.

Not requested, not provided.

3. The percentage of design capacity at which the current system is now operating.

Not requested, not provided.

4. A description of conditions and projections that prohibit present facilities from being upgraded to adequately accommodate increased demand.

This project entails updating an existing park-and-ride and transit stop for greater functionality as ridership increases.

***5. Potential alternatives**.*

Please see the introduction narrative for an overview of the need for the project and projected growth of ridership to be served by the project. There are no known viable alternative sites for this project.

(h) Property Rights, Other Permits, and Approvals.

1. Description of property rights that are necessary for or that will be affected by the project, including easements and property rights proposed to be acquired through negotiation or condemnation.

RFTA currently owns the parcel proposed for development. All existing easements will remain.

2. A list of all other federal, state, and local permits and approvals that will be required for the project, together with any proposal for coordinating these approvals with the City permitting process. Copies of any permits or approvals related to the project that have been granted.

JURISDICTION	TITLE	CAUSE	STATUTORY REFERENCE	STATUS
City of Glenwood	Location and Extent Permit (L&E)	Project proposed by a quasi-governmental agency	City of Glenwood Springs Code of Ordinances 070.060.050(d)	RFTA and application preparers are complying through this permit application and subsequent process for approval
City of Glenwood Springs	Matters of State Interest (1041) Permit	Site selection of rapid or mass transit terminals, stations, and fixed guideways	City of Glenwood Springs Code of Ordinances 070.080.030	RFTA and application preparers are complying through this permit application and subsequent process for approvial
City of Glenwood	Building Permit	New construction of commercial buildings	City of Glenwood Springs Code of Ordinanc 2022-16	Once planning approval has been grnated, project will be submitted for Building Permit review.
COGS	Grading & Row Permit	Moving of more than 50 CY of soil and implementation of turn lanes in Wulfsohn ROW	City of Glenwood Springs Engineering	Prior to work conducted by TBD contractor, both permits will be submitted for review.
Colorad State of Transportation	CDOT Local Agency Project Approval	CDOT is administrator of federal funding for 6A	NA	30% FIR completed. Waiting submittal of 30% FOR for review.

3. Copies of relevant official federal and state consultation correspondence prepared for the project; a description of all mitigation required by federal, state, and local authorities; and copies of any draft or final environmental assessments or impact statements required for the project.

Please see attached Initial Site Assessment for this documentation. See Appendix K

4. Details of the source and rights for the water supplies for the system, including any permits, decrees, or contracts for such rights, or the application submitted for change of water rights, appropriation of water, or augmentation plans.

Not requested, not provided.

5. Proof of ownership or a contractual right to develop the property.

See Appendix A that includes proof of ownership and concurrent right to develop the property.

(i) Land Use.

1. Provide a map at a scale relevant to the project and acceptable to the Community Development Department describing existing land uses and existing zoning of the proposed project area and the project service area, including peripheral lands which may be impacted. The land use map shall include but need not necessarily be limited to the following categories: residential, commercial, industrial, extractive, transportation, communication and utility, institutional, open space, outdoor recreation, agricultural, forest land and water bodies. Show all special districts (school, fire, water, sanitation, etc.) within the project area.

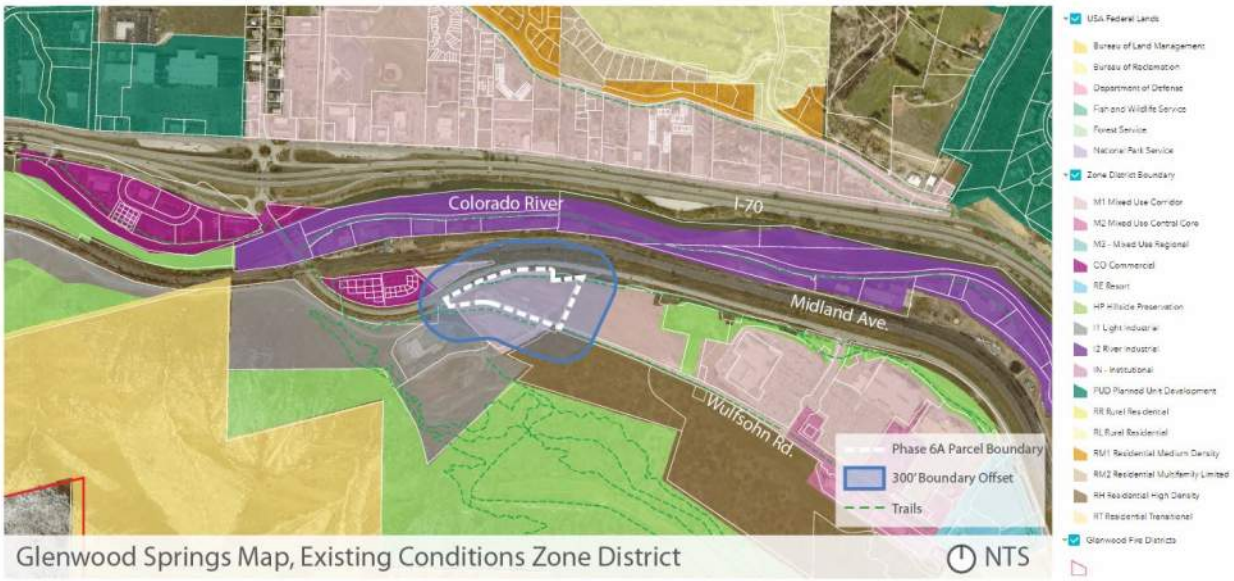
See zone district map below, on page 31 that illustrate the project area and adjacent parcels. The proposed project is currently located in the Mixed Use Corridor (M1) zone district. According to the Glenwood Springs Municipal Code, Article 070.020.090, “The M1 district is intended to accommodate mixed-use development with walkable and active streetscapes on Glenwood’s primary roadways. The mix of uses in the M1 district is intended to accommodate lighter-intensity commercial districts with limited auto-oriented uses compatible with surrounding residential neighborhoods. The M1 district is also intended to offer a diverse mix of housing opportunities at varying densities.” The table below outlines the dimensional standards required for any proposed development within the M1 District.

The existing conditions of surrounding parcels are a mix of Mixed Use Corridor (M1), Light Industrial (I1), River Industrial (I2), Commercial (CO), and Hillside Preservation (HP) zoning districts. There are no special districts located within the project area.

Table 020.11: M1 District		
Dimensional Standards		
Lot Standards, Minimum		
A	Lot area (sq ft)	None
	Landscaped area (%)	15
Setbacks, Minimum		
B	Front, min (ft)	5
	Front, max (from arterials) (ft)	60
	Front, max (from other streets) (ft)	25
C	Side, min (ft)	5
D	Rear, with alley, min (ft)	10
	Rear, without alley, min (ft)	7.5
Building Standards, Maximum		
E	Building height (ft)	40

2. All immediately affected public land boundaries should be indicated on the map. Potential impacts of the proposed development upon public lands will be visually illustrated on the map as well as described in the text.

See table below for a list of adjacent owners whose parcels are completely or partially contained within 300 ft. of the project site. The Existing Conditions Zone District map below contextualizes the Phase 6A parcel boundary and 300' offset from this parcel. A traffic impact study was performed to evaluate the project's contribution to overall traffic patterns and how any increased densities or impacts could be mitigated. See the summary of traffic study on page 48 and the full Traffic Impact Study report in Appendix B.



Glenwood Springs Map, Existing Conditions Zone District

Parcel Number	Account Number	Address	Owner Name	Owner Address
218505338014	R041501	Not available	CENTURA VENTURES LLC	9100 E MINERAL CIRCLE ENGLEWOOD, CO 80112
218505337003	R041405	Not available	ROARING FORK TRANSPORTATION AUTHORITY	0766 INDUSTRY WAY CARBONDALE, CO 81623
218508143001	R084916	Not available	GLENWOOD MEADOWS, LLC	710 E DURANT AVENUE, SUITE W6 ASPEN, CO 81611
218505336004	R084509	Not available	ROARING FORK TRANSPORTATION AUTHORITY	2307 WULFSOHN ROAD GLENWOOD SPRINGS, CO 81601
218505336002	R009167	2307 WULFSOHN RD GLENWOOD SPRINGS CO 81601	ROARING FORK TRANSPORTATION AUTHORITY	1340 MAIN STREET CARBONDALE, CO 81623
218505336003	R009168	Not available	GLENWOOD SPRINGS, CITY OF	101 W 8TH STREET GLENWOOD SPRINGS, CO 81601
218505335004	R009105	Not available	GLENWOOD SPRINGS, CITY OF	101 W 8TH STREET GLENWOOD SPRINGS, CO 81601
218505335003	R009104	130 MIDLAND AVE GLENWOOD SPRINGS CO 81601	INTEGRATED MOUNTAIN GROUP INC	1001 GRAND AVENUE #201 GLENWOOD SPRINGS, CO 81601

3. Specify whether and how the proposed project conforms to the Comprehensive Plan.

Glenwood Springs Comprehensive Plan is a guide for making future land use decisions based on the collective values and visioning of the community. The Comprehensive Plan outlines strategies and actions to address future growth across various avenues such as; Land Use & Future Growth, Community Vitality, Tourism Management, Transportation & Mobility, Housing, etc. RFTA has been specified as a responsible party in the Comprehensive Plan to implement and promote transit oriented development. According to the Comprehensive Plan, “Redeveloped areas of the city provide the opportunity to create compact forms of development that are transit-supportive. These development types are located along transit corridors and are intended to support walking, biking, and public transit. The City and the Roaring Fork Transportation Authority (RFTA) should continue to promote redevelopment and the expansion of transit infrastructure to enhance the regional bus service, including Bus Rapid Transit (BRT) between Aspen and Glenwood Springs, and station improvements in Glenwood Springs.”

The project supports the goals outlined in the Comprehensive Plan by improving and rebuilding aging infrastructure. The proposed project will be activating and expanding on an existing transit station to meet current and future demand of transit users. With the additional bus bays and improved site amenities, this development will enhance the commuter experience and promote transit oriented mobility in West Glenwood Springs.

In addition, looking at land use designations surrounding the proposed project site, the future development in this area shall include mixed-use and multi-family residential districts that will have a direct connection, due to their close proximity, to the transit center. Not only will the project be collecting

and encouraging commuters who are entering Glenwood Springs and heading up valley to take public transit, but the location makes it highly accessible to an expanding community in West Glenwood.

4. Specify whether and how the proposed project conforms to applicable regional and state planning policies.

RFTA has been in constant coordination with local agencies (COGS, CDOT) to ensure planning policies and application are being conformed to. Specifically, as part of the grant funding requirements, the project will be need approval from CDOT Region 3 after an extensive review prior to completion. CDOT will also manage a portion of the project during construction as well.

5. Specify whether and how the proposed project conforms to applicable federal land management policies.

There are no federal land uses applicable to this site.

6. Specify how the proposed project will utilize existing easements or right-of-way to achieve project objectives.

The Project relies on the use of the public right-of-way to provide transit services to the general public. No existing easements are necessary for the function of the project.

7. If relevant to the project design, describe the agricultural productivity capability of the land in the project area, using Soils Conservation Service soils classification data.

Not requested, not provided.

8. Describe the probability that the project may be significantly affected by earthquakes, floods, fires, snow, slides, avalanches, rockslides or landslides and any measures that will be taken to reduce the impact of such events upon the project.

Based on Geotechnical Report provided by WSP on August 25, 2023, the design team is following WSP's Compaction Grouting Ground Improvement with spread footings for building components to help combat poor existing soil conditions

9. Specify if excess service capabilities created by the proposed project will prove likely to generate sprawl or strip development.

Not requested, not provided.

10. Specify whether the demand for the project is associated with development within or contiguous to existing service areas.

The project is intended to serve the existing community and the projected population growth of the region. The success of the project is not dependent on additional development within the service area.

(j) The Director may require submission of any plan, study, survey, or other information, in addition to the information required by this Section, at the applicant's expense, as in the Director's judgment is necessary to enable it to review and act upon the application.

At time of submission, no additional information has been requested.

***(*k) Any application which requires compliance with Section 24-65.5-101, et seq., C.R.S. (Notification to Mineral Owners of Surface Development), shall not be considered to have been submitted as complete**

until the applicant has provided a certification signed by the applicant confirming that the applicant or its agent has examined the records of the County Clerk and Recorder for the existence of any mineral estate owners or lessees that own less than full fee title in the property which is the subject of the application, and stating whether or not any such mineral estate owners or lessees exist. In addition, for purposes of the City convening its initial public hearing on any application involving property which mineral estate owners or lessees owning less than full fee title in the property have been certified by the applicant to exist, the application shall not be considered to have been submitted as complete until the applicant has provided an additional signed certification confirming that the applicant has, at least 30 days prior to the initial public hearing, transmitted to the City and to the affected mineral estate owners and lessees the notices required by Section 24-65.5-101, et seq., C.R.S.

Owner Certification is included in Appendix F

(l) Project Development Schedule.

1. An estimate of the maximum number of employees, number of shifts and employees per shift during the following phases: construction, operation, and maintenance.

The number of employees during construction will peak at approximately 50 with one 10 hour shift from 7 am to 5 pm Monday through Friday The number of employees during operation within the facility is estimated to be 5 with 2 shifts, 4 am to 1 pm and 1 pm to 10 pm The number of employees for maintenance in the facility and the grounds will be 2 daily between 6am and 5 pm.

2. Information regarding any future phases or extensions of the facility and relationship of the facility (if currently foreseen) to larger programs and plans.

No further phases or extensions of the facility are currently contemplated.

3. A timetable for planning (e.g., federal permits, state permits, local zoning, etc.).

Construction of the proposed project is expected to begin on 2/2/25, pending permit approvals. The table on page 19, outlines and describes all expected permits required for the project. Appendix E provides additional information regarding the anticipated schedule for the project.

4. An estimate beginning and completion of construction and beginning of operation of facility or system.

The project is expected to be completed and the facility to be in service by 9/30/26. Appendix E provides additional information regarding the anticipated schedule for the project.

5. A description of any support facilities (e.g. pollution control parking areas, landscaping, etc.) to be provided.

For a description of the landscaping and any potential impacts to vegetation and wildlife, please see page 13. As noted above, the design team is utilizing underground stormwater detention as indicated on the civil plans.

6. A description of any feasible "non-structural" alternatives to meet the objectives of the proposed site selection and construction.

Not requested, not provided.

(m) Financial Information.

1. Relevant bond issue, loan and other financing approvals or certifications (ex: approved bond issues; bond counsel opinion).

No Bond issue or council will be necessary for construction of this project. The project is funded by a FHWA RAISE grant(4.8 million) FTA LOW/NO grant (33 Million) and RFTA General Fund Balance.

2. A description of the intended financial/economic impacts on the proposed project on the City and surrounding area.

The improved transit system, due to a more efficient transit station, will help to continue to improve ridership and help reduce personal vehicle traffic across the Roaring Fork Valley. The additional electric bus chargers will also increase RFTA's use of this fleet and will help reduce the use of fossil fuel vehicles. The additional opportunities for Bustang this transit station will help to increase ridership across that system as well.

3. Business plan that generally describes the financial feasibility of the project.

RFTA has worked closely with FTA and other federal partners and have been awarded multiple grants to assist in payment for this project.

4. A plan to offset increased demand on the City's existing facilities, systems, or public utilities.

RFTA does not anticipate a major increases of demand as this project includes improvements to existing facilities and systems. The new design does implement improved water quality and geothermal systems to assist with heating and cooling of transit station.

(n) Local Infrastructure and Service Impacts. An impact analysis that addresses the manner in which the applicant will comply with the relevant permit application review criteria. The impact analysis shall include the following information: description of existing capacity of and demand for local government services including but not limited to roads, schools, water and wastewater treatment, water supply, emergency services, transportation, infrastructure, and other services necessary to accommodate the project within the City.

The net impacts are anticipated to be very minor as this project is to provide improvements to an already existing transit stop. The provided traffic study, drainage report, environmental impact assessment describe these impacts and the design responds to the recommendations in these report by incorporating them into the design.

(o) Recreational Opportunities. Description of the impacts and net effect of the project on present and potential recreational opportunities.

The project will not directly impact access to or use of nearby public open space. The increase ease of public transportation connectivity to the transit center from locations within and outside the City of Glenwood Springs will increase recreational opportunities for the public. This includes facilitating travel to the Glenwood Recreation Center, access to nearby hiking and mountain bike trails, and access to the Colorado River Whitewater Park, all located within walking distance of the station.

(p) Social Impacts. A description of other intended social impacts of the proposed project, including, by way of illustration, increased access to relevant services.

RFTA's goal for 6A is to improve the rider experience and increase services for the greater West Glenwood area for both RFTA and CDOT bus transit. The installation of the new electrical chargers for RFTA buses will also increase opportunities for their electric fleet in the future.

(q) Areas of Paleontological, Historic, or Archaeological Importance. Description of the impacts and net effect of the project on sites of paleontological, historic, or archaeological interest.

As previously stated, based on the provided historical and archaeological assessments, we see no impacts from this project.

(r) Nuisance. Descriptions of noise, glare, dust, fumes, vibration, and odor levels anticipated to be caused by the project.

RFTA sees no major impacts as each site being developed has similar pre-existing uses.

(s) Air Quality. Description of the impacts and net effect that the project would have on air quality during both construction and operation, and under both average and worst case conditions, considering particulate matter and aerosols, oxides, hydrocarbons, oxidants, and other chemicals, temperature effects and atmospheric interactions.

We see no major impacts as each site being developed have similar pre-existing uses.

(t) Visual Quality. Description of the impacts and net effect that the project would have on visual quality, considering viewsheds, scenic vistas, unique landscapes or land formations within view of the project area.

As described previously, the transit center project is a rebuild of the existing transit stop so the project will have minimal impacts on visual quality. There will be increased operations including the addition of bus bays and larger facilities however, due to the existing conditions currently operating as a bus stop, no significant impact to the viewsheds and scenic vistas is anticipated. The ridgeline of Red Mountain is approximately 1500 vertical feet above the project site and the project will not impact the ridgeline.

Additionally, the Historical Resources review notes that the proposed project does not impact any historic visual resources.

(u) Surface Water Quality.

1. Map and/or description of all surface waters relevant to the project, including description of provisions of Region XII's regional water quality management plan, and NPDES Phase II Permit and necessary Erosion and Stormwater Quality Control Permit ("ESQCP"), Section 404 Federal Clean Water Act Permit that applies to the project and assessment of whether the project would comply with those provisions.

Not requested, not provided.

2. Existing data monitoring sources.

Not requested, not provided.

3. Descriptions of the immediate and long-term impact and net effects that the project would have on the quantity and quality of surface water under both average and worst-case conditions.

The expansion of the Transit center will result in an increase in impervious area. The additional impervious area will increase runoff from the site and the potential for sediment and pollutants to be carried in this runoff. SEH will grade the site to capture runoff where feasible and divert the runoff to water quality and detention facilities. These facilities will mitigate the sediment and pollutants in runoff. The outlet structures of the facilities will restrict flows in the major and minor storms to be release at preconstruction rates to minimize adverse impacts on adjacent and downstream drainageways and properties. Each phase will have a different approach to this.

The Transit Center (Phase 6A) proposes an underground storage facility to be used for water quality and detention. Flows will be routed to the facility through proposed inlets and storm sewer. Flows will be released at historic rates to the north.

The Administration Building (Phase 6B) will propose inlets and storm sewer to carry flows to the west where they will join with existing infrastructure and be conveyed to the existing ponds on the northwest side of the site. These flows were accounted for in the master drainage plan. SEH will confirm that the proposed design will conform with the anticipated flows from the master drainage plan.

Storage Building A (Phase 8) will have little effect on the drainage patterns. Flows will be diverted overland around the building to the west as laid out in the master drainage plan. SEH will confirm that the proposed design will conform with the anticipated flows from the master drainage plan.

(v) Groundwater Quality.

1. Map and/or description of all groundwater, including any and all aquifers relevant to the project. At a minimum, the description should include:

a. Seasonal water levels in each portion of the aquifer affected by the project.

b. Artesian pressure in said aquifers.

c. Groundwater flow directions and levels.

d. Existing aquifer recharge rates and methodology used to calculate recharge to the aquifer from any recharge sources.

e. For aquifers to be used as part of a water storage system, methodology and results of tests used to determine the ability of the aquifer to impound groundwater and aquifer storage capacity.

f. Seepage losses expected at any subsurface dam and at stream-aquifer interfaces and methodology used to calculate seepage losses in the affected streams, including description and location of measuring devices.

g. Existing groundwater quality and classification.

h. Location of all water wells potentially affected by the project and their uses.

Not requested, not provided.

2. Description of the impacts and net effect of the project on groundwater.

Not requested, not provided.

(w) Water Quality.

1. Map and/or description of existing stream flows and reservoir levels relevant to the project.

Not requested, not provided.

2. Map and/or description of existing minimum stream flows held by the state Water Conservation Board.

Not requested, not provided.

3. Descriptions of the impacts and net effect that the project would have on water quantity.

While the net impacts are anticipated to be very minor, we do see increased water use due to additional fixtures from existing facilities.

4. Statement of methods for efficient utilization of water, including recycling and reuse.

Untreated raw water will be the exclusive source for irrigation of the landscaping and revegetation. Toilets and other plumbing fixtures have been selected for water efficiency.

5. Descriptions on the impacts to riparian vegetation and fisheries.

Not requested, not provided.

(x) Floodplains, Wetlands, and Riparian Areas; Terrestrial and Aquatic Animals, Plant Life, and Habitat. Applicant shall only provide description of foregoing natural conditions, animal and plant life at, but not to exceed, the level of detail required by other federal or state permits or reviews which are applicable to the project.

Not requested, not provided.

(y) Soils, Geologic Conditions, and Natural Hazards.

1. Map and/or description of soils, geologic conditions, and natural hazards including but not limited to soil types, drainage areas, slopes, avalanche areas, debris fans, mud flows, rockslide areas, faults and fissures, seismic history, and wildfire hazard areas, all as relevant to the project area.

See the Geotechnical Report included in the Appendix.

2. Descriptions of the risks to the project from natural hazards.

Poor soils are present on site which will require mitigation through tailored soil improvements and foundation design specific to this type of development.

3. Descriptions of the impacts and net effect of the project on soil and geologic conditions in the area.

Soils are to be improved in the area of disturbance as directed by the Geotechnical investigation. Proper stormwater management will also assist in improvement conditions on the site

(z) Hazardous Materials.

1. Description of all solid waste, hazardous waste, petroleum products, hazardous, toxic, and explosive substances to be used, stored, transported, disturbed or produced in connection with the project, including the type and amount of such substances, their location, and the practices and procedures to be implemented to avoid accidental release and exposure.

RFTA does not anticipate hazardous materials being generated by or used for this project.

2. Location of storage areas designated for equipment, fuel, lubricants, and chemical and waste storage with an explanation of spill containment plans and structures.

RFTA does not anticipate storage of these types of materials for this project.

(aa) Monitoring and Mitigation Plan.

1. ***Description of all mitigation that is proposed to avoid, minimize or compensate for adverse impacts of the project and to maximize positive impacts of the project.***

RFTA has taken several measures to ensure quality control and mitigation of any adverse impacts from this project by contracting with multiple independent sub-contractors to ensure all the proper checks are being made for the design of the project. During construction, RFTA will sub-contract construction management services to ensure the selected contractor is adhering to the construction documents and other requirements.

   a. ***Describe how and when mitigation will be implemented and financed.***

      This has been implemented and will continue throughout the duration of the project and is financed by RFTA.

   b. Describe impacts that are unavoidable that cannot be mitigated.

   RFTA does not anticipate any unavoidable adverse impacts which cannot be mitigated.

2. Description of methodology used to measure impacts of the project and effectiveness of proposed mitigation measures.

RFTA does not anticipate any impacts that will require measuring and mitigation.

3. Description, location, and intervals of proposed monitoring to ensure that mitigation will be effective.

Weekly Owner-Architect meetings are currently underway and weekly Owner-Architect-Contractor meetings with the Construction Management team will occur during construction.

4. Emergency procedures to be used in the event of a fire, explosion, or other event which may endanger the public health, safety, and welfare.

All building and site elements are being designed to mitigate or ensure code requirements are met. During construction, Contractor will be made responsible by means of the contract and other regulatory agencies to adhere to such procedures and to ensure they are in place during construction.

(bb) Additional Information. The Director may request that the applicant supply additional information related to the project if the Director and/or the Permit Authority will not be able to make a determination on any one of the applicable review criteria without the additional information. Such additional information may include applicant's written responses to comments by a referral agency.

At the time of this submission, no additional information has been requested.

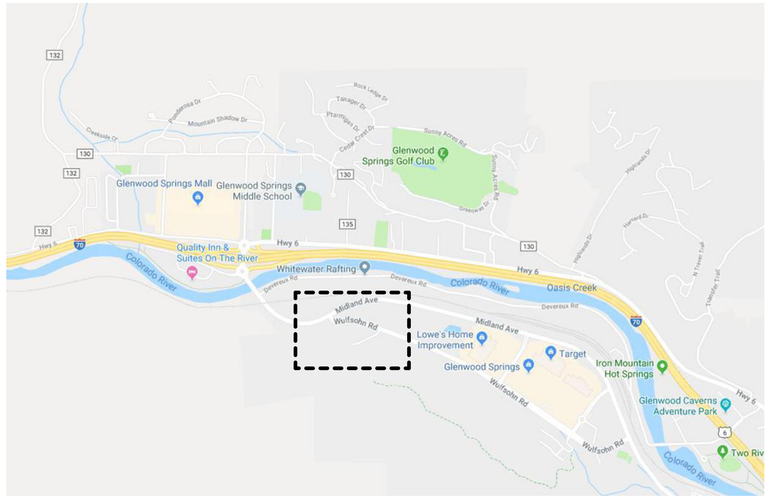
ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER (PHASE 6A)

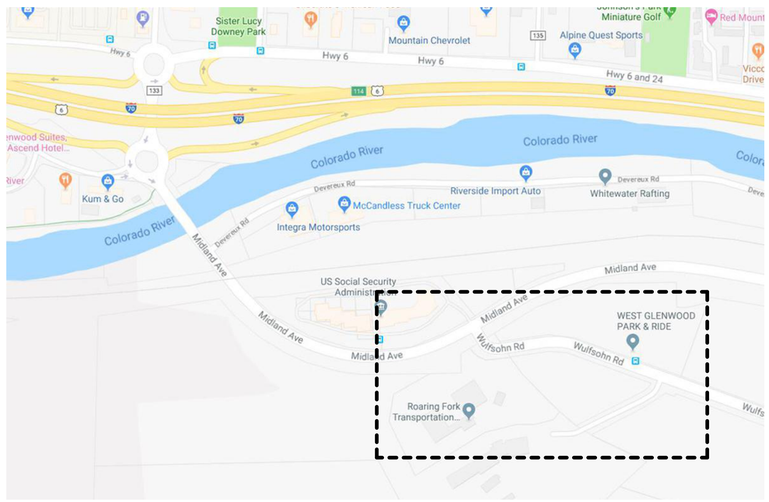
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601

50% CONSTRUCTION DOCUMENTS

VICINITY MAP



LOCATION MAP



PROJECT DIRECTORY

PROJECT OWNER
ROARING FORK TRANSPORTATION AUTHORITY
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601

ARCHITECT / CIVIL / STRUCTURAL
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TOWER ONE, SUITE 6000
DENVER, COLORADO 80222

LANDSCAPE
DHM DESIGN CORPORATION
225 MAIN STREET SUITE 201
CARBONDALE, COLORADO 81623

MECHANICAL / PLUMBING
SHORT ELLIOTT HENDRICKSON, INC.
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TOWER ONE, SUITE 6000
DENVER, COLORADO 80222

ELECTRICAL
CMO CONSULTING ENGINEERS, LLC
11646 SUN BEAR TRL
GOLDEN, COLORADO 80403

TECHNOLOGY / ACOUSTICS
K2 - SALAS O'BRIEN COMPANY
4900 NAUTILUS CT N SUITE 200
BOULDER, CO 80301

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SEH

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PROJECT OWNER
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY
WEST GLENWOOD TRANSIT CENTER (PHASE 6A)
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601

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SEH Project	173800
Checked By	A. JAUCH
Drawn By	SEH

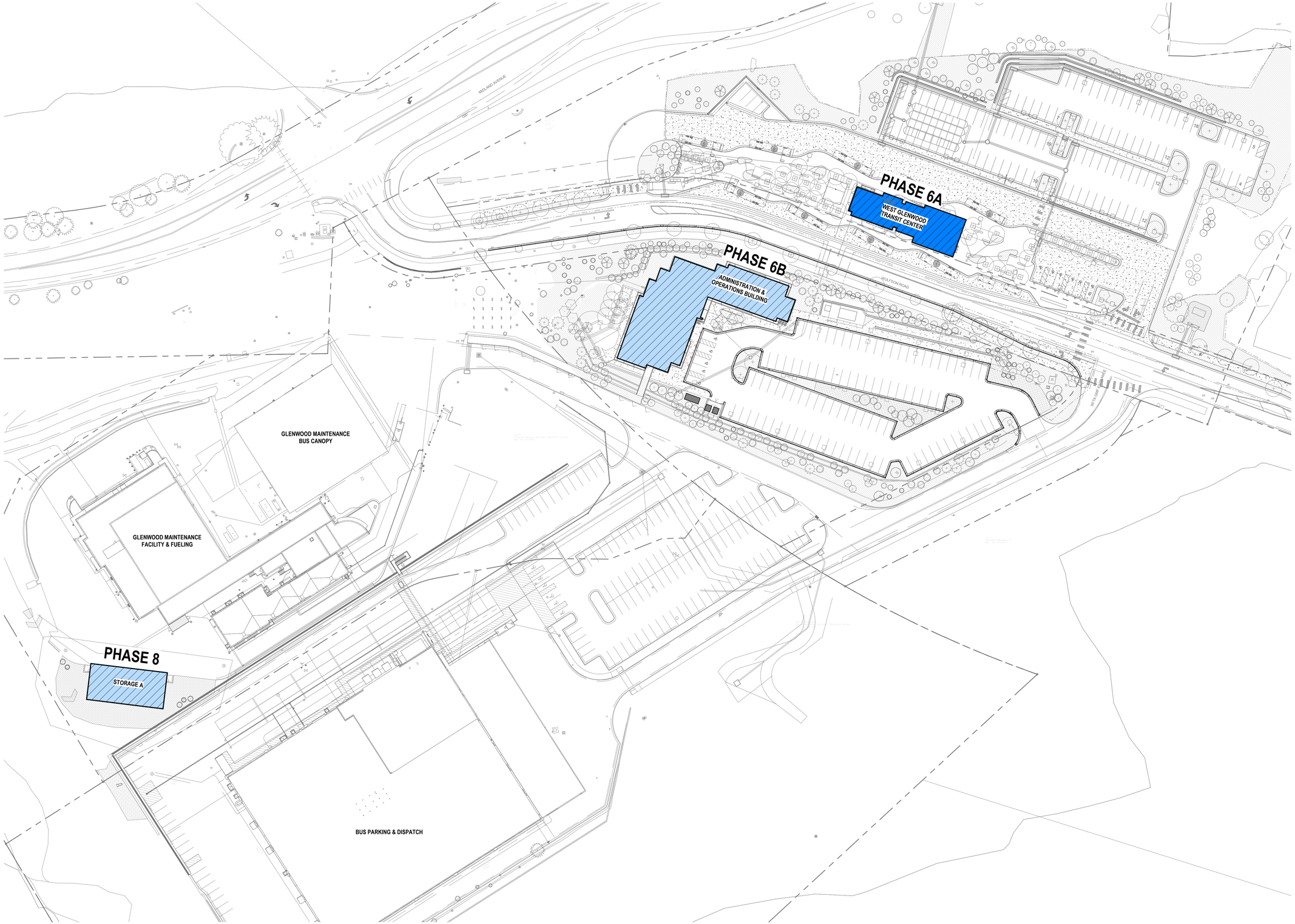
Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/24

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

COVER SHEET (PH-6A)

G001



1 G003 OVERALL PROJECT PHASING PLAN (PH 6A)
1" = 50'-0"

TRUE NORTH

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PROJECT OWNER
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY

W.G. TRANSIT CENTER (PHASE 6A)

2307 WULFSCHN RD.
GLENWOOD SPRINGS,
COLORDO 81601

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SEH Project	173800
Checked By	A. JAUCH
Drawn By	C. RODRIGUEZ

Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/24

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

OVERALL PROJECT PHASING PLAN (PH-6A)

G003

SURVEYING

1. PRIOR TO BEGINNING WORK ON THE PROJECT, THE CONTRACTOR'S SURVEYOR SHALL PERFORM A SURVEY TO VERIFY ALL SURVEY CONTROL POINTS, SECTION CORNERS, AND BENCHMARKS AS SHOWN ON THE HORIZONTAL CONTROL PLAN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL LAND SURVEY MONUMENTS DISRUPTED BY CONSTRUCTION ACTIVITIES OR BY NEGLIGENCE ON THE PART OF THE CONTRACTOR. THE CONTRACTOR IS REQUIRED TO FOLLOW COLORADO STATE LAW REGARDING SURVEY MONUMENTS. THE CONTRACTOR SHALL RETAIN A COLORADO LICENSED PROFESSIONAL LAND SURVEYOR TO RESET ANY AFFECTED SURVEY MONUMENTS. THIS WILL NOT BE PAID SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.

2. PROPOSED FINISHED GROUND ELEVATIONS FOR ITEMS TO BE ADJUSTED, RESET OR MODIFIED SHALL BE FIELD VERIFIED BY THE CONTRACTOR. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IF DISCREPANCIES ARE NOTED.

GENERAL

1. THE CONTRACTOR SHALL PREPARE A TRAFFIC CONTROL PLAN AND OBTAIN CITY APPROVAL PRIOR TO ANY WORK WITHIN PUBLIC RIGHT-OF-WAY. THE CLOSURE AND DETOUR DURATION SHOULD BE LIMITED AS MUCH AS POSSIBLE.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY.

3. THE CONTRACTOR SHOULD REMOVE MATERIALS AND EQUIPMENT FROM THE ROADWAY ROW AT THE CLOSE OF DAILY OPERATIONS. THE CONTRACTOR SHALL NOT STOCKPILE MATERIAL IN THE CLEAR ZONE OF THE TRAVELED WAY.

4. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PROJECT PERMITS ASSOCIATED WITH CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR BEING AWARE OF, NOTIFYING, COORDINATING AND SCHEDULING ALL INSPECTIONS REQUIRED FOR FINAL APPROVALS AND PROJECT ACCEPTANCE. ALL WORK, INCLUDING CORRECTION WORK, IS SUBJECT TO NOTIFICATION AND INSPECTION REQUIREMENTS.

5. IF ANY OF THE CONTRACTOR'S OPERATIONS DESTROY OR DAMAGE ANY PROPERTY, PUBLIC OR PRIVATE, THE CONTRACTOR SHALL PROMPTLY REPAIR OR REPLACE SUCH PROPERTY, TO THE SATISFACTION OF THE PROJECT MANAGER, BEFORE THE CITY WILL ACCEPT OR PAY FOR THE WORK PERFORMED UNDER THE CONTRACT. IF THE CONTRACTOR FAILS TO REPAIR OR REPLACE SUCH PROPERTY, THE CITY, AT THE SOLE DISCRETION OF THE MANAGER, MAY UNDERTAKE SUCH REPAIR OR REPLACEMENT AND DEDUCT THE COST OF THE SAME FROM AMOUNTS PAYABLE TO THE CONTRACTOR UNDER THE CONTRACT.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE, AND AVAILABLE TO THE CITY INSPECTOR AT ALL TIMES. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL SUBMIT RECORD DRAWINGS, IN AN AUTOCAD COMPATIBLE FORMAT, TO THE CITY. THE PRODUCTION OF THESE DOCUMENTS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE WORK.

7. PRIOR TO FINAL ACCEPTANCE, ALL DISTURBED PORTIONS OF ROADWAY ROW SHALL BE CLEANED UP AND RESTORED TO THEIR ORIGINAL CONDITION, SUBJECT TO CITY APPROVAL.

8. NO WORK SHALL BE PERMITTED ON WEEKENDS OR HOLIDAYS WITHOUT PRIOR AUTHORIZATION OR UNLESS OTHERWISE SPECIFIED. THE CITY MAY RESTRICT WORK IN THE ROW DURING ADVERSE WEATHER CONDITIONS OR DURING PERIODS OF HIGH TRAFFIC VOLUME.

9. NO CLEATED OR TRACKED EQUIPMENT MAY WORK IN OR MOVE OVER PAVED SURFACES WITHOUT MATS.

10. IF UNKNOWN/UNIDENTIFIED UNDERGROUND STORAGE TANKS, DRUMS, ODOROUS SOIL, STAINED SOIL, ASBESTOS-CEMENT PIPE, TRANSITE, BUILDING DEBRIS OR WASTE MATERIALS ARE ENCOUNTERED DURING THE PROJECT, CONTRACTOR SHALL IMMEDIATELY STOP WORK IN THE AREA AND INFORM THE OWNER.

11. CONTRACTOR SHALL TAKE REASONABLE MEASURES TO PREVENT PARTICULATE MATTER FROM BECOMING AIRBORNE AND TO PREVENT THE VISIBLE DISCHARGE OF FUGITIVE PARTICULATE EMISSIONS BEYOND THE PROPERTY ON WHICH THE EMISSIONS ORIGINATE. THE MEASURES TAKEN MUST BE EFFECTIVE IN THE CONTROL OF FUGITIVE PARTICULATE EMISSIONS AT ALL TIMES ON THE SITE, INCLUDING PERIODS OF INACTIVITY SUCH AS EVENINGS, WEEKENDS, AND HOLIDAYS AS WELL AS ANY OTHER PERIOD OF INACTIVITY.

12. THE CONTRACTOR SHALL PROPERLY DISPOSE OF ALL WASTE FROM PROJECT IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.

13. A STATE CONSTRUCTION STORMWATER DISCHARGE PERMIT IS REQUIRED AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE PERMIT. 'FOR REFERENCE' EROSION CONTROL PLAN DRAWINGS ARE PROVIDED FOR INFORMATION PURPOSES ONLY.

PROJECT PLANS, SPECIFICATIONS, PERMITS

1. ALL MATERIAL, EQUIPMENT, INSTALLATION AND CONSTRUCTION WITHIN THE ROW SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING STANDARD REFERENCES AS APPLICABLE:
   - 1.1. CITY OF GLENWOOD SPRINGS ENGINEERING STANDARDS
   - 1.2. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STANDARD PLANS, (M&S STANDARDS)
   - 1.3. FEDERAL HIGHWAY ADMINISTRATION (FHWA), MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS AND THE COLORADO SUPPLEMENT THERETO
   - 1.4. AMERICAN ASSOCIATION OF STATE AND HIGHWAY TRANSPORTATION OFFICIALS (AASHTO) ROADSIDE DESIGN GUIDE

2. THE OWNER RESERVES THE RIGHT TO ACCEPT OR REJECT ANY MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO THE LATEST EDITION OF THE APPLICABLE STANDARDS SPECIFICATIONS, OR HALT CONSTRUCTION UNTIL THE CONFLICT IS RESOLVED.

3. THE CONTRACTOR SHALL HAVE ONSITE AT ALL TIMES, ONE COPY OF THE APPROVED PLANS, ONE COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND COPIES OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB.

4. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED ON THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE OWNER IMMEDIATELY.

UTILITIES

1. THE TYPE, SIZE, LOCATION AND NUMBER OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THE DRAWINGS, UNLESS OTHERWISE NOTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK BEFORE COMMENCING NEW CONSTRUCTION. THE CONTRACTOR SHALL COOPERATE WITH COMPANIES TRYING TO COORDINATE THE RELOCATION EFFORT. LINES NOT RELOCATED SHALL BE PROTECTED BY THE CONTRACTOR IN PLACE. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 811, AT LEAST 2 WORKING DAYS PRIOR TO BEGINNING EXCAVATION OR GRADING.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITIES DURING CONSTRUCTION AND SHALL HOLD THE CITY AND ITS ENGINEERS HARMLESS FOR DAMAGES ARISING FROM THE CONTRACTOR'S FAILURE TO ADEQUATELY PROTECT EXISTING UTILITIES. DAMAGED UTILITIES SHALL BE REPAIRED BY AND AT THE EXPENSE OF THE CONTRACTOR.

3. THE CONTRACTOR IS REQUIRED TO RESET, ADJUST OR REPLACE ANY UTILITIES THAT ARE IMPACTED BY CONSTRUCTION AND ARE INTENDED TO REMAIN WITHIN THE PROJECT LIMITS.

4. FIRE HYDRANT ASSEMBLY INCLUDES INSTALLATION OF ALL MATERIALS SHOWN ON WATER STANDARD DETAIL W03 (FIRE HYDRANT ASSEMBLY DETAIL)

5. CITY INSPECTIONS ARE REQUIRED FOR THE ENTIRE LENGTH OF BOTH WATER AND SEWER SERVICE LINES. PROVIDE CITY 2 BUSINESS DAYS' NOTICE.

6. PER SB18-167, ALL NEW UNDERGROUND FACILITIES INSTALLED ON OR AFTER JANUARY 1, 2020, MUST BE ELECTRONICALLY LOCATABLE WHEN INSTALLED.

WATER

1. WATER SERVICE LINES ARE TO BE K COPPER OR PLASTIC POLY ETHYLENE (PE) ONLY, NO COPPER PIPE LARGER THAN 1" IN DIAMETER IS PERMITTED. USE PE OR DUCTILE IRON PIPE (DIP) ABOVE 1" DIAMETER. ONLY NSF61 MATERIALS ARE TO BE USED. GALVANIZED AND BLACK IRON PIPING AND FITTINGS ARE NOT ALLOWED ON THE DOMESTIC LINE AND ARE ONLY PERMITTED AFTER THE BF ON FIRE LINES.

2. SERVICE LINES ARE TO BE ALL NEW MATERIAL WITHOUT ANY UV FADING, KINKS, OR ANY DAMAGE.

3. NO SERVICES SHALL HAVE IN-LINE COUPLINGS UNLESS APPROVED IN ADVANCE BY INSPECTOR.

4. ONLY COMPRESSION TYPE CORPORATION AND CURB-STOP VALVES AND FITTINGS ARE PERMITTED UNDERGROUND, NO SOLDER OR GLUE JOINTS ARE PERMITTED ON UNDERGROUND WATER PIPES.

5. SERVICE VALVE MUST HAVE A MCDONALD TYPE CURB BOX WITH STEM. THE CAP MUST BE PROTECTED AND BE AT OR ABOVE FINISHED GRADE, PROVIDE FLAT 12" STONE OR CONCRETE PAD UNDER VALVE, LOCATED WITHIN 1' PROPERTY LINE.

6. ANY EXTENSION COUPLINGS TO CURB BOX MUST BE WELDED. CAP IS TO BE "HAND TIGHT".

7. 6" MINIMUM BEDDING UNDER PIPE, 12" OVER TOP - ¾" MINUS SCREENED AGGREGATE, BACK FILL WITH 6" MINUS STRUCTURAL FILL OR 6" MINUS PIT RUN.

8. THE MINIMUM EARTH COVER OVER WATER TRANSMISSION AND DISTRIBUTION LINES SHALL BE 5.5 FEET. A GREATER DEPTH SHALL BE PROVIDED TO AVOID EXCESSIVE HIGH POINTS IN THE MAIN OR WHERE IT IS NECESSARY TO CLEAR EXISTING STRUCTURES OR OBSTRUCTIONS. WATER SERVICE LINES SHALL HAVE THE SAME MINIMUM COVER.

9. CONNECTIONS TO CITY WATER MAINS MUST BE PERFORMED WITH CITY INSPECTOR ON SITE.

10. CONTRACTOR MUST PROVIDE AS-BUILT DRAWING OF ALL NEW PRIVATE LINES.

SANITARY SEWER

1. SDR-35 PUSH-ON GASKET JOINT, PVC PIPE ONLY – 90 DEGREE GASKET SDR-35 WYE FOR CLEANOUT REQUIRED.

2. NO GLUE TOGETHER PIPE JOINTS UNDERGROUND OUTSIDE FOUNDATION.

3. 6" MINIMUM BEDDING UNDER PIPE, 12" OVER TOP - ¾" MINUS SCREENED AGGREGATE, BACK FILL WITH 6" MINUS STRUCTURAL FILL OR 6" MINUS PIT RUN.

4. BELL ENDS MUST FACE UP-HILL, ALL JOINTS FULLY INSERTED.

5. USE FOOD GRADE LUBRICANT "DUCK BUTTER" AT ALL SLIP JOINTS.

6. SEWER LINES MUST BE AT LEAST 10' FROM WATER LINES.

7. IF CROSSING WATER LINES, CENTER A 20' STICK OF C-905 OR SDR-35 OF SEWER SERVICE PIPE AT THE CROSSING.

8. SLOPE MUST BE GREATER THAN 2%.

9. NO 90 DEGREE FITTINGS.

10. CLEAN OUT WITH "Y" EVERY 150' OF PIPE RUN OR EVERY 180 DEGREES OF BENDS.

11. CLEAN OUT WITH DOUBLE "Y" WITHIN 5' OF OUTSIDE BUILDING FOUNDATION WALL, A SINGLE "Y" CLEANOUT IS ALLOWED IF A CO IS ACCESSIBLE INSIDE BUILDING.

12. ACCESS TO CLEAN OUT WILL BE AT 4" (+/-1") ABOVE FINISH GRADE, WATERTIGHT CAPPED AND MARKED WITH REBAR OR IRON POST. ACCESS WITHIN PAVED AREAS WILL REQ. STREET BOX.

13. CONTRACTOR WILL PROVIDE AS-BUILT DRAWING OF ALL NEW PRIVATE SERVICE LINES.

REMOVALS, EXISTING ITEMS, SAW CUTTING

1. ALL ITEMS TO BE REMOVED AND NOT RESET SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.

2. WHERE IT IS REQUIRED TO REMOVE EXISTING CONCRETE OR ASPHALT, CUTTING SHALL BE DONE TO A NEAT WORK LINE TO FULL DEPTH USING A SAW. CUTTING WHEEL, OR OTHER METHOD APPROVED BY THE PROJECT MANAGER. THIS WILL NOT BE PAID SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.

3. REMOVAL OF EXISTING CURB AND GUTTER, SIDEWALK, DRIVEWAYS, CURB CUTS, AND OTHER CONCRETE ITEMS THAT ARE ATTACHED OR ADJACENT TO OTHER CONCRETE ITEMS SHALL BE REMOVED TO THE NEAREST JOINT, AS NEEDED TO AVOID DAMAGING THE REMAINING CONCRETE ITEMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ADJACENT SIDEWALK DURING CURB AND GUTTER REMOVAL AND SHALL REPLACE DAMAGED SECTIONS AT NO ADDITIONAL COST TO THE PROJECT.

4. THE CONTRACTOR IS REQUIRED TO RESET, ADJUST, OR REPLACE ANY UTILITIES, LANDSCAPING, SPRINKLER SYSTEMS, SIGNS, SIDEWALKS, ETC. THAT ARE IMPACTED BY CONSTRUCTION AND ARE NOT DESIGNATED TO BE REMOVED.

PAVEMENT

1. A TACK COAT IS REQUIRED PRIOR TO THE PLACEMENT OF SUBSEQUENT LIFTS OF HMA.

2. WHERE NEW CONSTRUCTION IS TO ABUT EXISTING PAVEMENT, THE EXISTING PAVEMENT SHALL BE REMOVED TO A NEAT VERTICAL LINE TO CREATE A CLEAN CONSTRUCTION JOINT.

3. WHEN AN EXISTING ASPHALT STREET IS CUT, THE STREET MUST BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN ITS ORIGINAL CONDITION. THE EXISTING STREET CONDITION SHALL BE DOCUMENTED BEFORE ANY CUTS ARE MADE. PATCHING SHALL BE DONE IN CONFORMANCE WITH THE PROJECT STANDARDS. THE FINISHED PATCH SHALL BLEND SMOOTHLY INTO THE EXISTING SURFACE. ALL LARGE PATCHES SHALL BE PAVED WITH AN ASPHALT LAY-DOWN MACHINE.

EARTHWORK AND EXCAVATIONS

1. THE CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE AND TOES OF SLOPE AS SHOWN ON THE PLANS. ANY DISTURBANCE BEYOND THESE LIMITS SHALL BE RESTORED TO ORIGINAL CONDITIONS AT THE EXPENSE OF THE CONTRACTOR.

2. WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. COST FOR DUST PALLIATIVE SHALL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE WORK.

3. MOISTURE DENSITY CONTROL SHALL BE APPLIED FULL DEPTH FOR ALL FILL.

4. DURING EACH PHASE OF CONSTRUCTION, THE CONTRACTOR SHALL SHAPE TO DRAIN AND COMPACT THE WORK AREA TO A UNIFORM CROSS-SECTION. ELIMINATE ALL RUTS AND LOW SPOTS THAT COULD HOLD WATER. AREAS AND FACILITIES SUBJECTED TO FLOODING, REGARDLESS OF THE SOURCE OF WATER, SHALL BE PROMPTLY DEWATERED AND RESTORED AT NO ADDITIONAL COST TO THE CITY.

5. WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL IS TO BE PLACED ON THE UPHILL SIDE OF TRENCHES.

6. CONTRACTOR TO REVIEW AND COMPLY WITH RECOMMENDATIONS OF THE "FINAL REPORT, GEOTECHNICAL INVESTIGATION, RFTA WEST GLENWOOD SPRINGS PARK N RIDE, PAVEMENT AND RETAINING WALL RECOMMENDATIONS, GLENWOOD SPRINGS, COLORADO" JULY 30, 2015 PREPARED BY YEH AND ASSOCIATES.

7. EXISTING ONSITE SOIL MATERIALS MAY BE REUSED AS FILL UNDER PAVING AFTER SCREENING AND RECOMPACTION OF MATERIAL TO RECOMMENDATIONS IN PROJECT GEOTECHNICAL STUDY. MATERIALS BENEATH FOUNDATIONS SHALL BE STRUCTURAL FILL.

CONCRETE

1. IF CONCRETE REPLACEMENT IS NECESSARY, THE ENTIRE AFFECTED SLAB OR PANEL MUST REPLACED.

2. SIDEWALK SHALL BE CLASS P CONCRETE. THE USE OF 3/4 INCH (#67) TOP SIZE AGGREGATE IS ALLOWED.

3. BENDER BOARDS (TWO INCH MINIMUM THICKNESS) SHALL BE USED ON ALL CURVES OF LESS THAN 75 FOOT RADIUS.

4. THE CONTRACTOR SHALL INSTALL ½ IN EXPANSION JOINT MATERIAL BETWEEN THE CURB, CURB AND GUTTER AND THE SIDEWALK, AND AROUND INLET STRUCTURES OR BLOCKOUTS OR AS DIRECTED BY THE PROJECT MANAGER.

5. CURB RAMPS SHALL BE CONSTRUCTED USING TRUNCATED DOMES AS SHOWN IN THE CITY STANDARD DETAILS. TRUNCATED DOMES AND GROOVES SHALL NOT BE PAID SEPARATELY, BUT INCLUDED IN THE COST OF THE CONCRETE CURB RAMP.

TRAFFIC

1. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE TRAFFIC CONTROL THROUGHOUT THE PROJECT, INCLUDING PROPER TRAFFIC CONTROL DEVICES AND PERSONNEL.

2. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY PERMITS REQUIRED FOR WORK IN CDOT RIGHT-OF-WAY.

DRAINAGE

1. ALL SEWER PIPES SHALL BE INSTALLED WITH CLASS B BEDDING AS A MINIMUM.

2. SANITARY SEWER PIPES SHALL BE SDR 26 PVC AND CONFORM TO ASTMD3034.

3. THE CONTRACTOR PERFORMING WORK ON ANY PUBLIC OR PRIVATE STORM SEWER FACILITY OR APPURTENANCE MUST BE PROPERLY TRADE LICENSED AS A COMPANY AND HAVE A LICENSED PLUMBER OR CERTIFIED JOURNEYMAN DRAINLAYER ON SITE DURING THE WORK.

4. ACCESS MUST BE MAINTAINED FOR ALL SEWER MANHOLES DURING CONSTRUCTION. MINIMUM ACCESS TO EACH MANHOLE IS A 20 FOOT WIDE LANE FROM THE NEAREST PUBLIC RIGHT OF WAY, CENTERED AT THE MANHOLE INCLUDING A 10 FOOT RADIUS AROUND THE MANHOLE AND 22.0 FEET OF VERTICAL CLEARANCE.

EROSION CONTROL

1. THE CONTRACTOR MUST IMPLEMENT AND COMPLY WITH THE APPROVED EROSION CONTROL PLAN AND ASSOCIATED DOCUMENTS FOR THIS PROJECT.

2. THE CONTRACTOR SHALL PREVENT SEDIMENT, DEBRIS AND ALL OTHER POLLUTANTS FROM ENTERING THE STORM SEWER SYSTEM DURING ALL DEMOLITION, EXCAVATION, TRENCHING, BORING, GRADING, OR OTHER CONSTRUCTION OPERATIONS THAT ARE PART OF THIS PROJECT. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR REMEDIATION OF ANY ADVERSE IMPACTS TO THE MUNICIPAL SEPARATE STORM SEWER SYSTEM, RECEIVING WATERS, WATERWAYS, WETLANDS, AND OR OTHER PUBLIC OR PRIVATE PROPERTIES, RESULTING FROM WORK DONE AS PART OF THIS PROJECT.

3. THE CONTRACTOR SHALL REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO OR, ACCUMULATE IN, THE FLOWLINES, STORM DRAINAGE APPURTENANCES, AND PUBLIC RIGHTS OF WAYS OF THE CITY AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SAID REMOVAL SHALL BE CONDUCTED IN A TIMELY MANNER.

4. SOIL STABILIZATION MEASURES SHALL BE IMPLEMENTED WITHIN FOURTEEN (14) DAYS FOLLOWING COMPLETION OF GRADING ACTIVITIES. STABILIZATION OF DISTURBED AREAS ADJACENT TO RECEIVING WATERS OR WITH SLOPES 3 TO 1 OR GREATER SHALL BE COMPLETED WITHIN SEVEN (7) DAYS FOLLOWING COMPLETION OF GRADING ACTIVITIES. NOTE: FEDERAL AND STATE REGULATIONS MAY SOON REQUIRE STABILIZATION WITHIN SEVEN (7) DAYS OF COMPLETION OF GRADING ACTIVITIES.

5. THE DEVELOPER, GENERAL CONTRACTOR, GRADING CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL INSURE THAT ALL LOADS OF CUT AND FILL MATERIAL IMPORTED TO OR EXPORTED FROM THIS SITE SHALL BE PROPERLY COVERED TO PREVENT LOSS OF THE MATERIAL DURING TRANSPORT ON PUBLIC RIGHTS OF WAY.

6. THE USE OF REBAR TO ANCHOR BEST MANAGEMENT PRACTICES IS PROHIBITED.

7. SOILS THAT WILL BE STOCKPILED FOR MORE THAN THIRTY (30) DAYS SHALL BE PROTECTED FROM WIND AND WATER EROSION WITHIN FOURTEEN (14) DAYS OF STOCKPILE CONSTRUCTION. STABILIZATION OF STOCKPILES LOCATED WITHIN 100 FEET OF RECEIVING WATERS, OR WITH SLOPES 3 TO 1 OR GREATER SHALL BE COMPLETED WITHIN SEVEN (7) DAYS FOLLOWING STOCKPILE CONSTRUCTION. STABILIZATION AND PROTECTION OF THE STOCKPILE MAY BE ACCOMPLISHED BY ANY OF THE FOLLOWING: MULCHING, TEMPORARY/PERMANENT REVEGETATION OPERATIONS, OR EROSION CONTROL MATTING/GEOTEXTILES. IF STOCKPILES ARE LOCATED WITHIN 100 FEET OF RECEIVING WATERS, A DRAINAGEWAY OR THE SITE PERIMETER, ADDITIONAL SEDIMENT CONTROLS SUCH SHALL BE REQUIRED.

EROSION CONTROL

8. APPROVED EROSION AND SEDIMENT CONTROL 'BEST MANAGEMENT PRACTICES' SHALL BE MAINTAINED AND KEPT IN GOOD REPAIR FOR THE DURATION OF THIS PROJECT. AT A MINIMUM, THE PERMITTEE OR CONTRACTOR SHALL PRODUCE AND RETAIN WEEKLY WRITTEN INSPECTION RECORDS FOR ALL BMPS AND AFTER SIGNIFICANT PRECIPITATION EVENTS. ALL NECESSARY MAINTENANCE AND REPAIR SHALL BE COMPLETED IMMEDIATELY. ADDITIONALLY, STREET SWEEPING IS TO BE COMPLETED BY THE CLOSE OF THE BUSINESS DAY OR (AND) ON AN AS NEEDED BASIS THROUGHOUT THE DAY.

9. WATER USED IN THE CLEANING OF CEMENT TRUCK DELIVERY CHUTES SHALL BE DISCHARGED INTO A PREDEFINED, CONCRETE WASHOUT AREA ON THE JOB SITE. BERMED CONTAINMENT OR COMMERCIALLY AVAILABLE CONCRETE WASHOUT DEVICES THAT FULLY CONTAIN ALL WASH WATER ARE ACCEPTABLE. WASH WATER DISCHARGED INTO THE CONTAINMENT AREA OR DEVICE SHALL BE ALLOWED TO INFILTRATE, EVAPORATE, AND OR BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS. DRIED CEMENT WASTE IS TO BE REMOVED FROM THE CONTAINMENT AREA AND PROPERLY DISPOSED.

10. THE CONTRACTOR SHALL PROTECT ALL STORM SEWER FACILITIES ADJACENT TO ANY LOCATION WHERE PAVEMENT CUTTING OPERATIONS INVOLVING WHEEL CUTTING, SAW CUTTING, OR ABRASIVE WATER JET CUTTING ARE TO TAKE PLACE. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL WASTE PRODUCTS GENERATED BY SAID CUTTING OPERATIONS ON A DAILY BASIS OR AS NEEDED THROUGHOUT THE WORK DAY. THE DISCHARGE OF ANY WATER CONTAMINATED BY WASTE PRODUCTS FROM CUTTING OPERATIONS TO THE STORM SEWER SYSTEM IS PROHIBITED.

11. PAVED AND IMPERVIOUS SURFACES WHICH ARE ADJACENT TO CONSTRUCTION SITES MUST BE SWEPT ON A DAILY BASIS AND AS NEEDED DURING THE DAY WHEN SEDIMENT AND OTHER MATERIALS ARE TRACKED OR DISCHARGED ONTO THEM. EITHER SWEEPING BY HAND OR USE OF STREET SWEEPERS IS ACCEPTABLE. STREET SWEEPERS USING WATER WHILE SWEEPING IS PREFERRED IN ORDER TO MINIMIZE DUST. FLUSHING OFF PAVED SURFACES WITH WATER IS PROHIBITED.

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Sheet Revisions

Rev.	Date	Comments	Init.
	09/17/24	50% CONSTRUCTION DOCUMENTS	TN/BR

ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans
No Revisions:
Revised:
Void:

PHASE 6A CIVIL NOTES

Designer: T. Nuetzel
Detailer: B. Risk
Sheet Subset:
Structure Numbers
Subset Sheets: C001 of

Project No./Code
TRG M535-014
25924
Sheet Number

LEGEND

- ROW LINE
- LOT LINE
- EASEMENT LINE
- EXISTING CONTOUR (4000)
- PROPOSED CONTOUR (4000)
- EXISTING FENCE
- EXISTING UNDERGROUND COMMUNICATIONS LINE (TV-BUR)
- EXISTING UNDERGROUND TELEPHONE LINE (T-BUR)
- EXISTING GAS LINE (G)
- EXISTING OVERHEAD POWER LINE (P-OH)
- EXISTING UNDERGROUND POWER LINE (P-BUR)
- EXISTING FIBER OPTIC LINE (FO)
- EXISTING STORM LINE (>>)
- EXISTING FOUNDATION DRAIN
- EXISTING WATER MAIN (W)
- EXISTING SANITARY LINE (S)
- EXISTING SANITARY FORCE MAIN (FM)
- EXISTING IRRIGATION LINE (IRR)
- EXISTING IRRIGATION CONTROL BOX
- EXISTING ELECTRIC VAULT
- EXISTING ELECTRIC METER
- EXISTING ELECTRIC PEDESTAL
- EXISTING ELECTRIC TRANSFORMER
- EXISTING ELECTRIC MANHOLE
- EXISTING FIBER OPTIC VAULT
- EXISTING COMMUNICATIONS PEDESTAL
- EXISTING POWER POLE
- EXISTING WATER SHUTOFF
- EXISTING IRRIGATION CONTROL VALVE
- EXISTING TREE
- EXISTING LANDSCAPING ROCK
- EXISTING SANITARY CLEANOUT
- EXISTING WATER MANHOLE
- EXISTING WATER VALVE
- PROPOSED WATER VALVE
- PROPOSED WATER THRUST BLOCK
- EXISTING SANITARY MANHOLE
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- EXISTING TRAFFIC SIGN
- PROPOSED TRAFFIC SIGN
- EXISTING STORM MANHOLE
- PROPOSED STORM MANHOLE
- EXISTING STORM INLET
- PROPOSED STORM INLET
- PROPOSED FLARED END SECTION

- PROPOSED WATER MAIN (W)
- PROPOSED SANITARY LINE (S)
- PROPOSED STORM PIPE
- PROPOSED PLANTER AND TREE GRATE STORM PIPE
- PROPOSED GAS PIPE (G)
- PROPOSED BURIED TELEPHONE/FIBER (FO)
- EXISTING GUARDRAIL
- PROPOSED GUARDRAIL
- PROPOSED RETAINING WALL
- PROPOSED CONCRETE PAVEMENT
- PROPOSED ASPHALT PAVEMENT
- PROPOSED SNOW STORAGE AREA
- EXISTING RIPRAP
- PROPOSED RIPRAP
- PROPOSED BUS CHARGING
- PROPOSED OVERHEAD LIGHTING

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Designer: T. Nuetzel
Detailer: B. Risk
Structure Numbers
Sheet Subset:
Subset Sheets: C002 of

Project No./Code
TRG M535-014
25924
Sheet Number

MATCHLINE SEE RIGHT

MIDLAND AVE.

GLENWOOD MEADOWS #1 SUBDIVISION, PARCEL A
OWNER: ROARING FORK TRANSPORTATION AUTHORITY

PROTECT EX. LIGHT POLE
N=44250.47
E=10432.77
N=44235.04
E=10454.70
EX. WALL TO REMAIN
SAWCUT
EX. CURB AND GUTTER TO REMAIN
REMOVE EX. WALL
REMOVE EX. GUARDRAIL
REMOVE EX. ROCK WALL
REMOVE EX. SIGN
REMOVE EX. LIGHT POLE (TYP.)
REMOVE EX. CURB AND GUTTER
REMOVE EX. GUARDRAIL
REMOVE EX. CURB AND GUTTER
REMOVE EX. CONC. GUTTER
REMOVE CONCRETE TO NEAREST EXISTING JOINT LINE WEST OF THIS LINE
REMOVE EX. CONC. SIDEWALK
EX. 18" HDPE PIPE TO REMAIN
REMOVE EX. PARKING BLOCKS (TYP.)
REMOVE EX. ASPHALT PAVEMENT
REMOVE EX. TREE
REMOVE EX. BIKE RACKS
HDPE PIPE TO REMAIN
RELOCATE ROCKS NEARBY TO ALLOW CONSTRUCTION
REMOVE EX. SIGN
REMOVE EX. TREE
CONCRETE PAVEMENT TO REMAIN
REMOVE EX. POWER LINE
REMOVE EX. BUILDING
REMOVE EX. IRRIGATION CONTROL BOXES
REMOVE EX. TREES (5)
EX. SANITARY SERVICE TO REMAIN
EX. 18" HDPE PIPE TO REMAIN
REMOVE EX. SANITARY SEWER CLEAN OUT
EX. COMMUNICATIONS LINE TO REMAIN
PROTECT EX. TREE
REMOVE EX. CURB AND GUTTER
EX. 18" HDPE PIPE TO REMAIN
REMOVE EX. CONCRETE PAVEMENT
REMOVE EX. WATER SERVICE
EX. FIBER OPTIC LINE TO REMAIN
RELOCATE ROCKS NEARBY TO ALLOW CONSTRUCTION
EX. POWER LINE TO REMAIN
WULFSOHN RD.
SAWCUT
REMOVE EX. TREES (2)
REMOVE EX. CONC. SIDEWALK
REMOVE EX. STOP SIGN
EX. GAS LINE TO REMAIN
REMOVE EX. CURB AND GUTTER
REMOVE EX. CURB AND GUTTER
PROTECT EX. TREE
EX. 18" HDPE PIPE TO REMAIN
REMOVE EX. CONC. SIDEWALK
EX. 24" HDPE PIPE TO REMAIN
REMOVE EX. STRIPING
12" EX. WATER LINE TO REMAIN
REMOVE EX. TREES (2)
REMOVE EX. CURB AND GUTTER

GLENWOOD MEADOWS #1 SUBDIVISION
OWNER: ROARING FORK TRANSPORTATION AUTHORITY

MATCHLINE SEE SHEET C102

N

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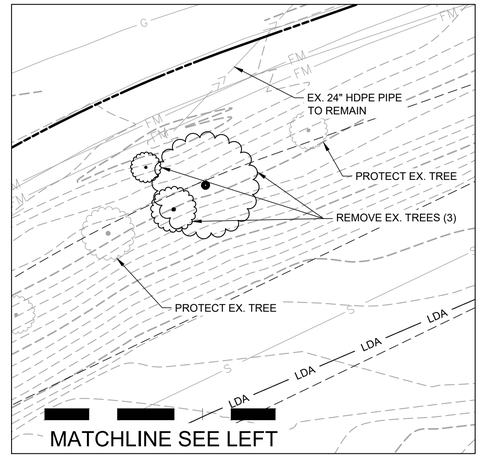
scale 10 feet



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Sheet Revisions

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ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

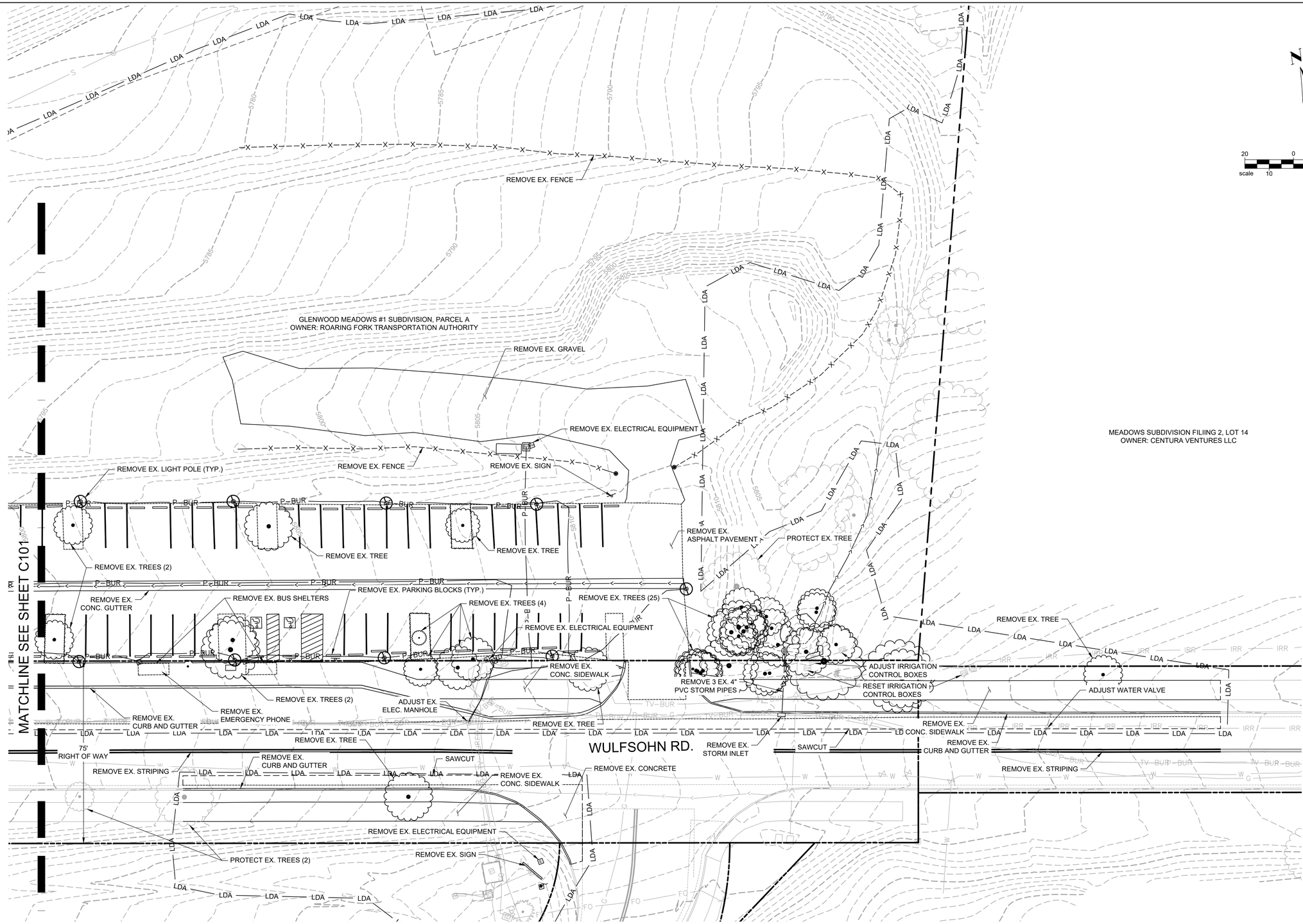
2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans	
No Revisions:	
Revised:	
Void:	

PHASE 6A DEMOLITION PLAN

Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C101 of

Project No./Code
TRG M535-014
25924
Sheet Number



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2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

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PHASE 6A DEMOLITION PLAN

Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C102 of

Project No./Code

TRG M535-014

25924

Sheet Number

MATCHLINE SEE RIGHT

MIDLAND AVE.

24" HDPE STORM PIPE AND FLARED END SECTION

TYPE 16 INLET - DOUBLE

RETAINING WALL

18" HDPE STORM PIPE

SNOW STORAGE (TYP.)

9' (TYP.)

19' (TYP.)

GLENWOOD MEADOWS #1 SUBDIVISION, PARCEL A
OWNER: ROARING FORK TRANSPORTATION AUTHORITY

EX. WALL AND GUARDRAIL TO REMAIN

EX. POWER POLE TO REMAIN

R60'

EX. STORM INLET TO REMAIN

R5'

CONCRETE PAVEMENT (8 INCH)

CURB AND GUTTER TYPE 2 (SECTION B) (1.5 FT GUTTER)

GUARDRAIL TYPE 3 (31 INCH MIDWEST GUARDRAIL SYSTEM) TO CONNECT TO EXISTING

GUTTER TYPE 2 (4 FOOT)

RAISED PLANTER

BIKE BARN

SHELTER

BUS CHARGING, SEE ELEC

TREE GRATE (TYP.)

SAW CUT

BENCH (TYP.)

8 FOOT GATE DOUBLE (CHAIN LINK)

BUS CHARGING UTILITIES

24" HDPE STORM PIPE

SANITARY SEWER SERVICE

30' EASEMENT

FENCE CHAIN LINK (72 INCH)

WATER SERVICE

WULFSOHN RD.

11' (TYP.)

WATER SERVICE FOR FUTURE ADMIN BUILDING

BUS ONLY

MATCHLINE SEE SHEET C202

GLENWOOD MEADOWS #1 SUBDIVISION
OWNER: ROARING FORK TRANSPORTATION AUTHORITY

N

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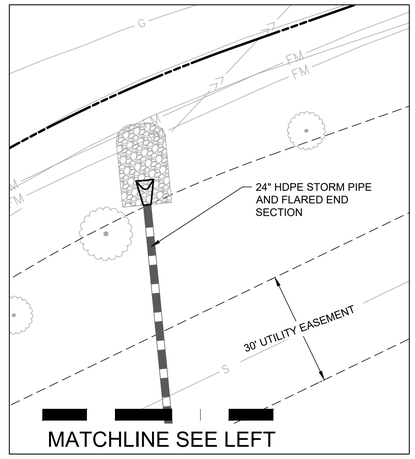
scale 10 feet



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ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

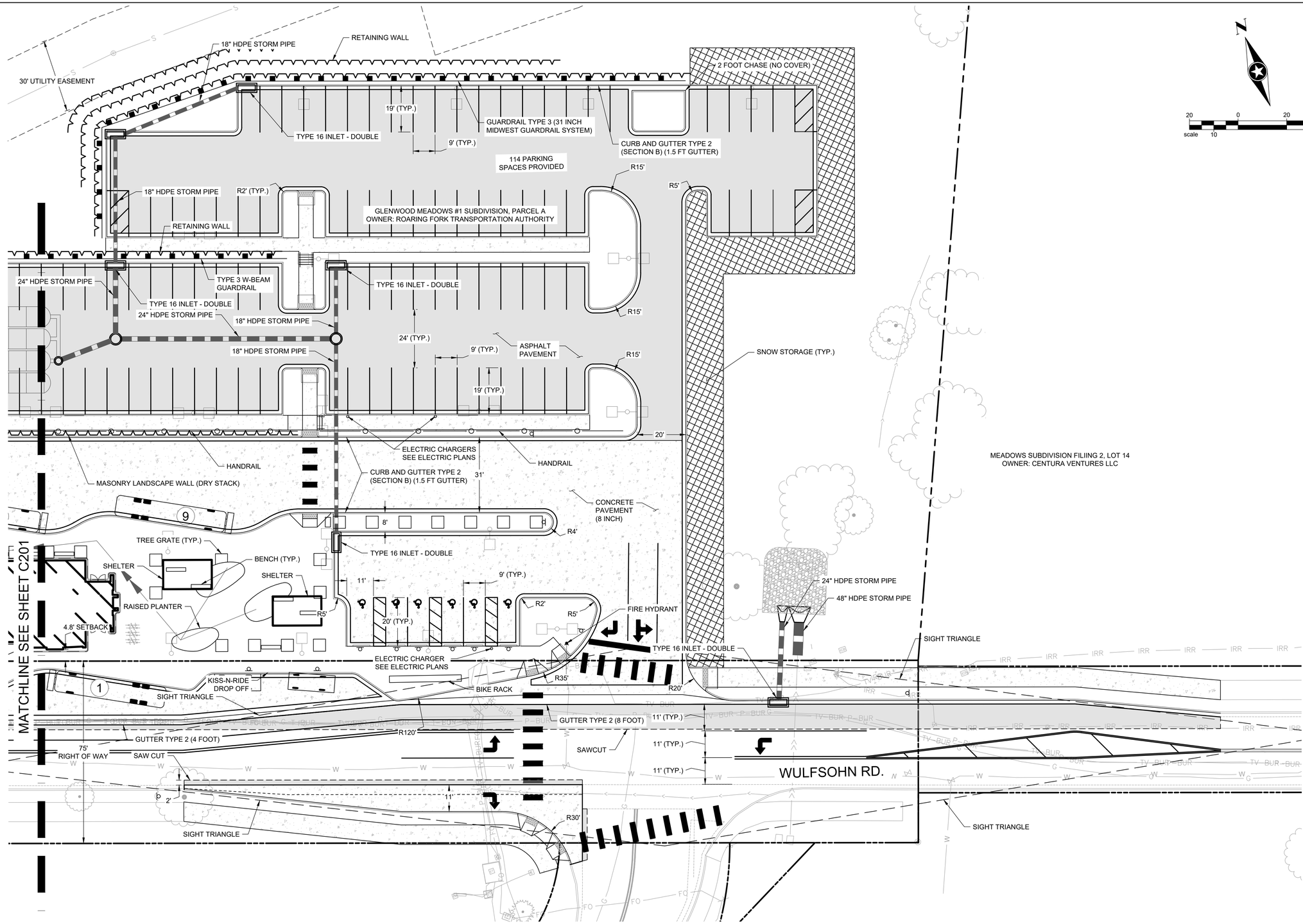
No Revisions:	
Revised:	
Void:	

PHASE 6A SITE PLAN

Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C201 of

Project No./Code

TRG M535-014
25924
Sheet Number



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2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

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Void:

PHASE 6A SITE PLAN

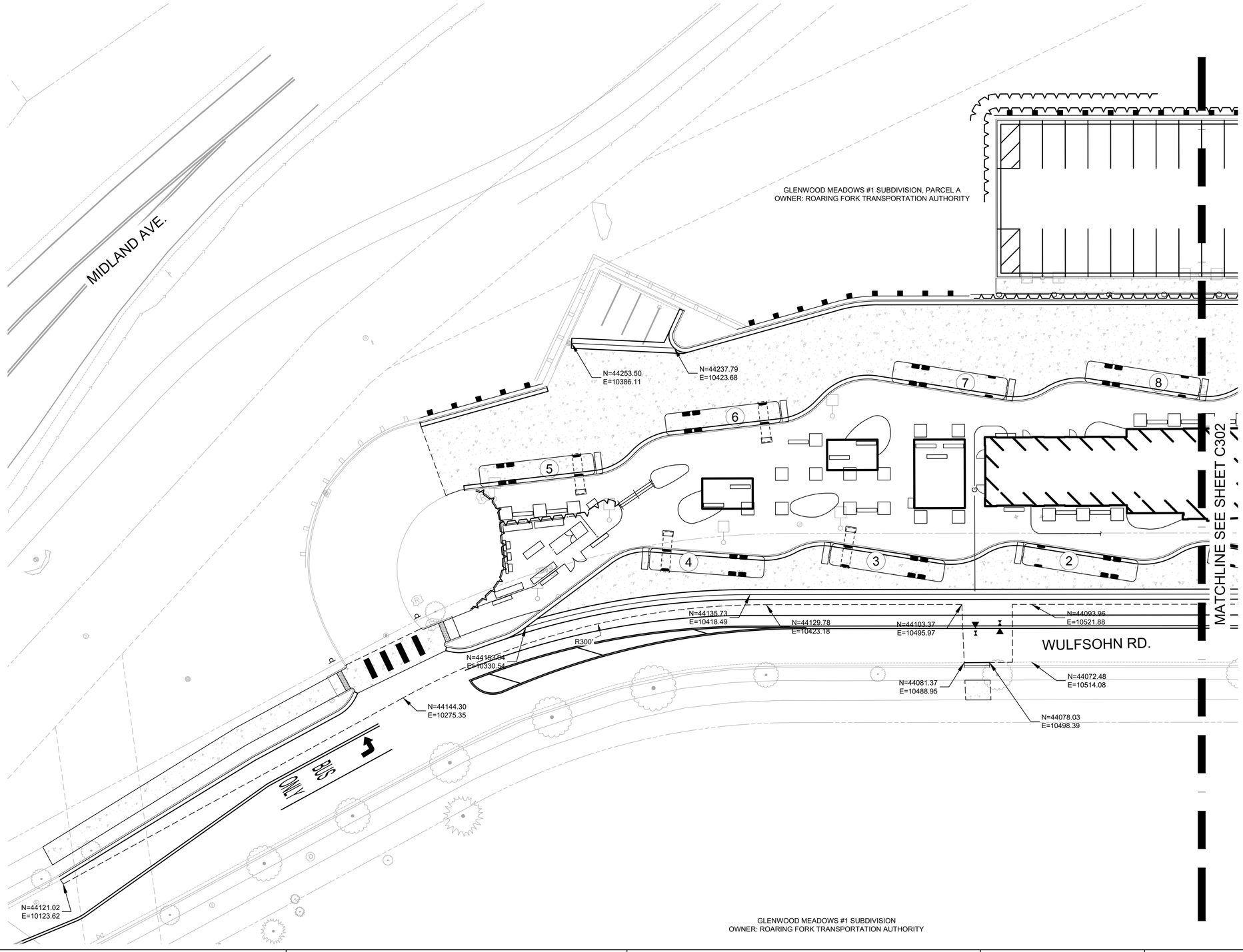
Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C202 of

Project No./Code

TRG M535-014

25924

Sheet Number



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scale 10 feet

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WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:
Revised:
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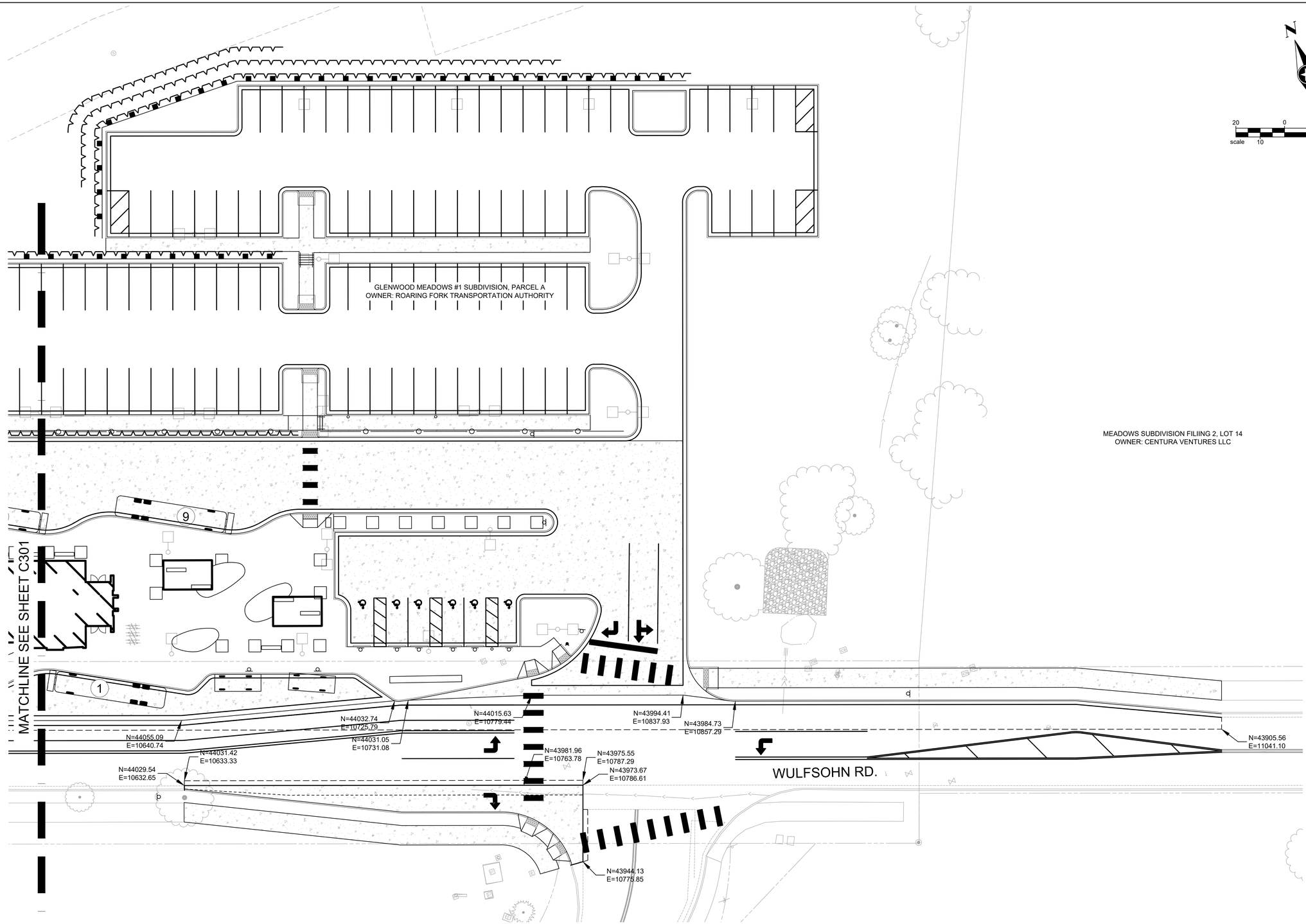
PHASE 6A HORIZONTAL CONTROL PLAN

Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C301 of

Project No./Code

TRG M535-014
25924
Sheet Number



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PHASE 6A HORIZONTAL CONTROL PLAN

Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C302 of

Project No./Code

TRG M535-014

25924

Sheet Number

LINE TABLE						
LINE #	LENGTH	BEARING	START NORTHING	START EASTING	END NORTHING	END EASTING

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH

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2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans
No Revisions:
Revised:
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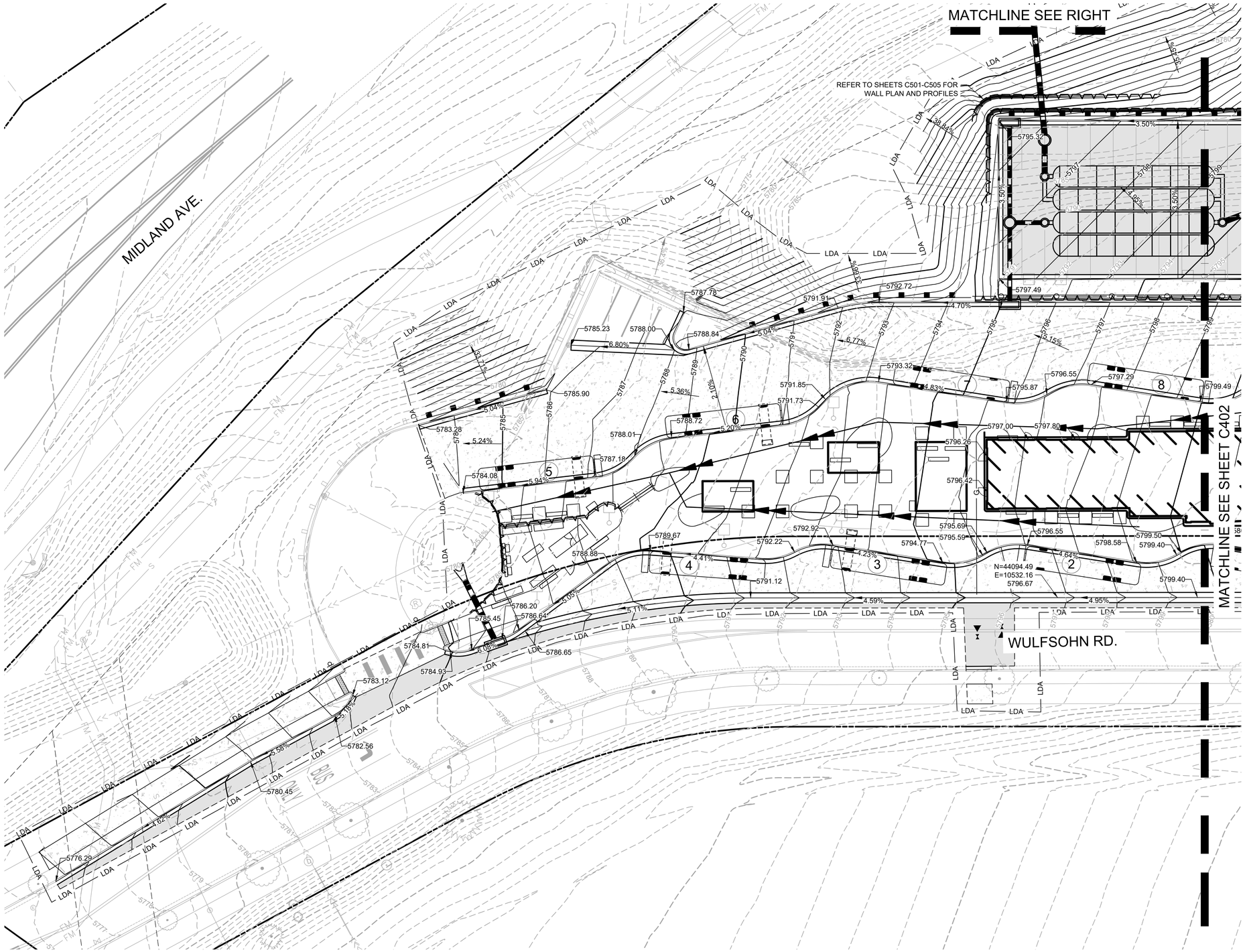
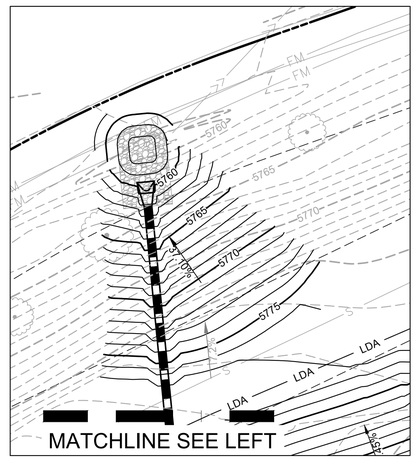
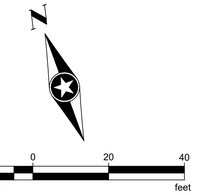
PHASE 6A HORIZONTAL CONTROL PLAN

Designer: T. Nuetzel
Detailer: B. Risk
Sheet Subset:
Structure Numbers
Subset Sheets: C303 of

Project No./Code
TRG M535-014
25924
Sheet Number







LEGEND

FFE = FINISHED FLOOR ELEVATION
LDA = LIMITS OF DISTURBED AREA

GRADING NOTES

1. ALL ELEVATIONS AT CURB ARE FLOWLINE UNLESS OTHERWISE NOTED.
2. ALL CURB AND GUTTER SHOWN IS VERTICAL CURB AND GUTTER TYPE 2 (SECTION B) (1.5 FT. GUTTER).
3. ALL RAMPS AND WALKS TO BE INSTALLED PER CURRENT ADA REQUIREMENTS.
4. SEE UTILITY AND STORM PLANS FOR UTILITY COORDINATES.

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Sheet Revisions

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ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:
Revised:
Void:

PHASE 6A GRADING PLAN

Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C401 of

Project No./Code

TRG M535-014
25924
Sheet Number

MATCHLINE SEE RIGHT

REFER TO SHEETS C501-C505 FOR WALL PLAN AND PROFILES

MATCHLINE SEE LEFT SHEET C401

WULFSOHN RD.

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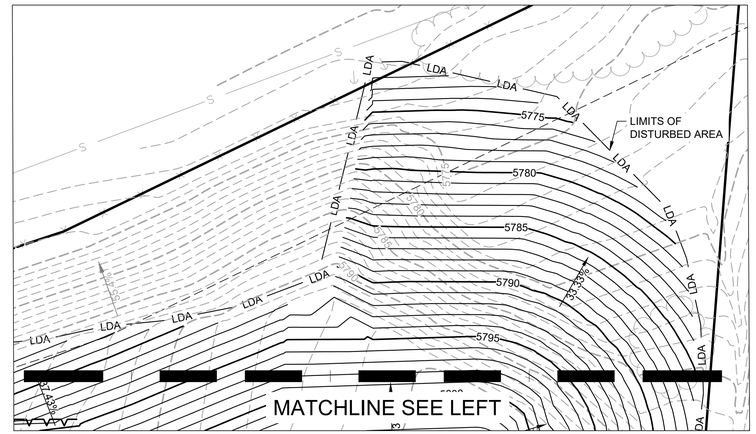
scale 10 feet



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2307 WULFSOHN ROAD
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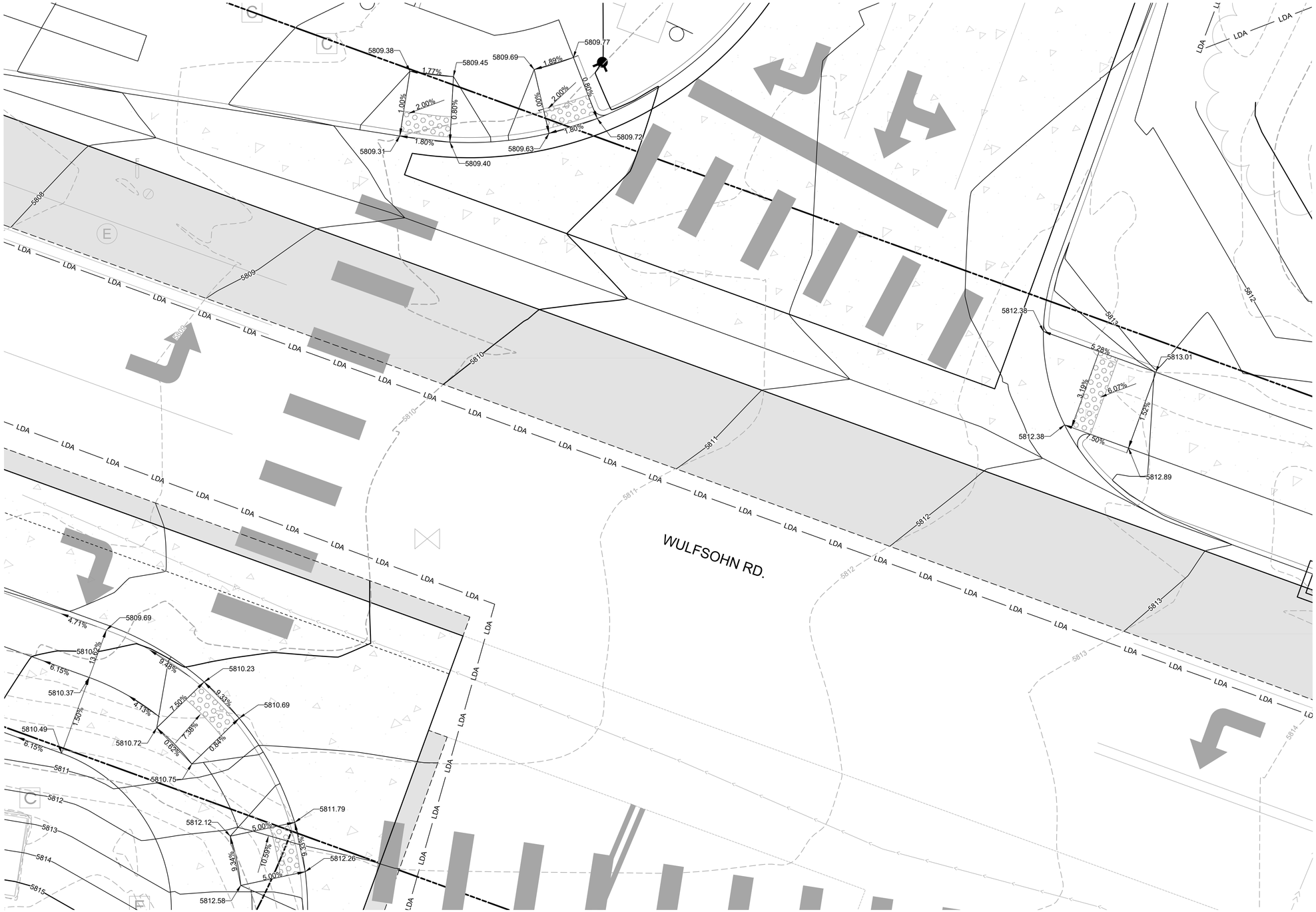
PHASE 6A GRADING PLAN

Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C402 of

Project No./Code
TRG M535-014
25924
Sheet Number



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2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans
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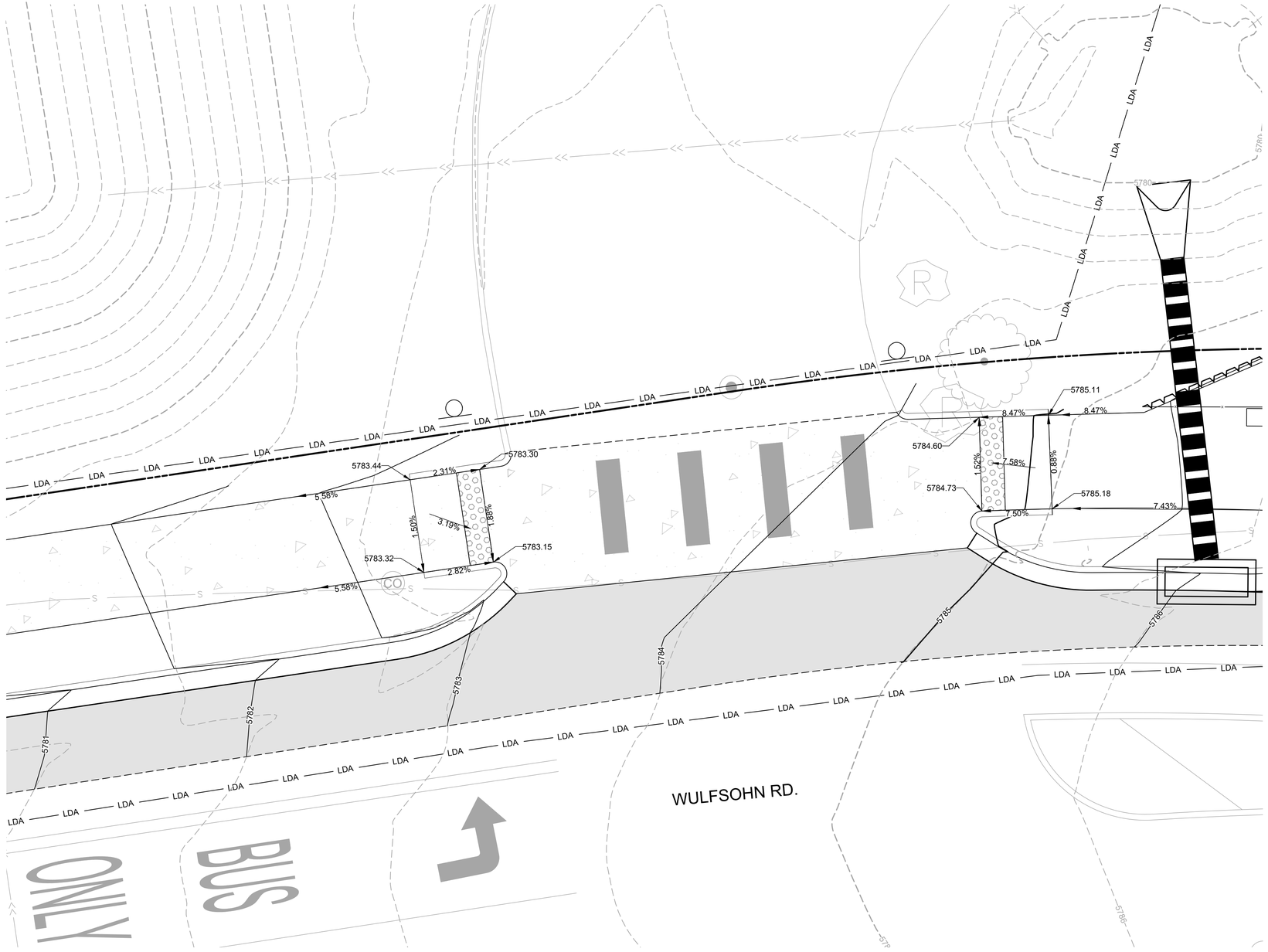
PHASE 6A DETAILED GRADING PLAN

Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C403 of

Project No./Code
TRG M535-014
25924
Sheet Number



N

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scale 2.5 feet

LEGEND

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GLENWOOD SPRINGS, CO 81601

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PHASE 6A DETAILED GRADING PLAN

Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C404 of

Project No./Code

TRG M535-014

25924

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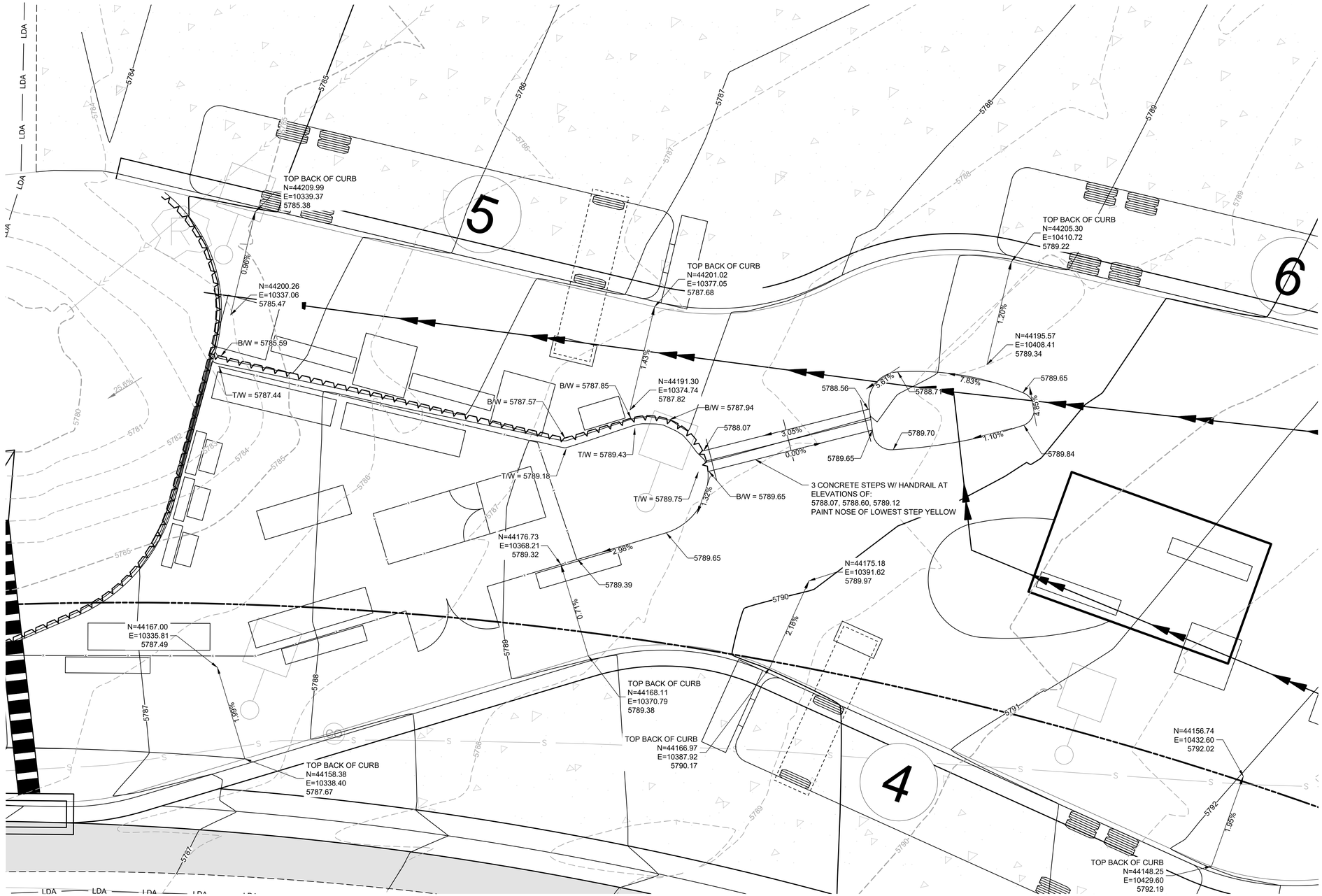

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FIR Plans
No Revisions:
Revised:
Void:

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Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C405 of

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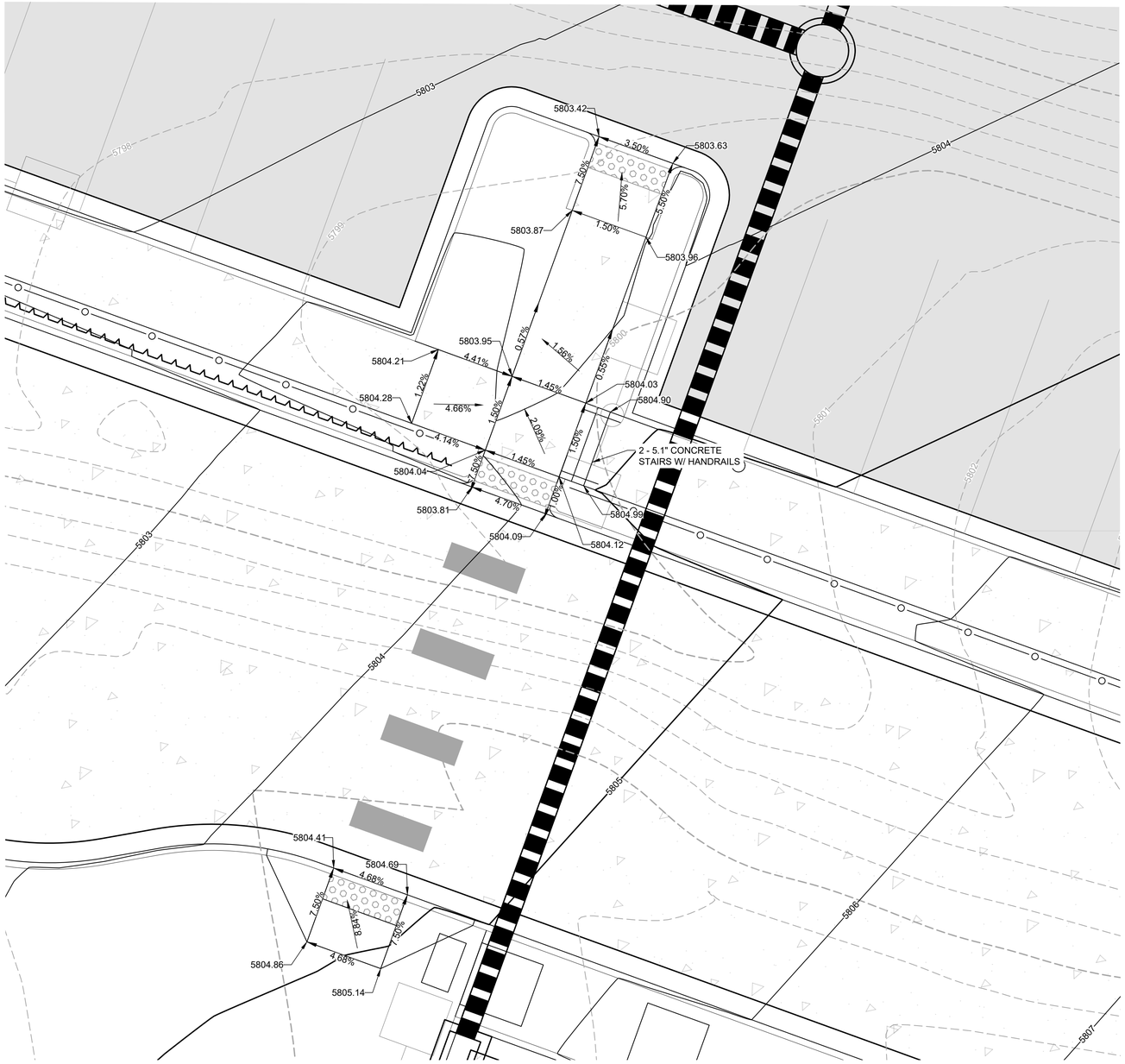
Sheet Number



N

5 0 5 10

scale 2.5 feet

LEGEND

FFE = FINISHED FLOOR ELEVATION
LDA = LIMITS OF DISTURBED AREA

GRADING NOTES

1. ALL ELEVATIONS AT CURB ARE FLOWLINE UNLESS OTHERWISE NOTED.
2. ALL CURB AND GUTTER SHOWN IS VERTICAL CURB AND GUTTER TYPE 2 (SECTION B) (1.5 FT. GUTTER).
3. ALL RAMPS AND WALKS TO BE INSTALLED PER CURRENT ADA REQUIREMENTS.
4. SEE UTILITY AND STORM PLANS FOR UTILITY COORDINATES.

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Sheet Revisions

Rev.	Date	Comments	Init.
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ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

Revised:

Void:

PHASE 6A DETAILED GRADING PLAN

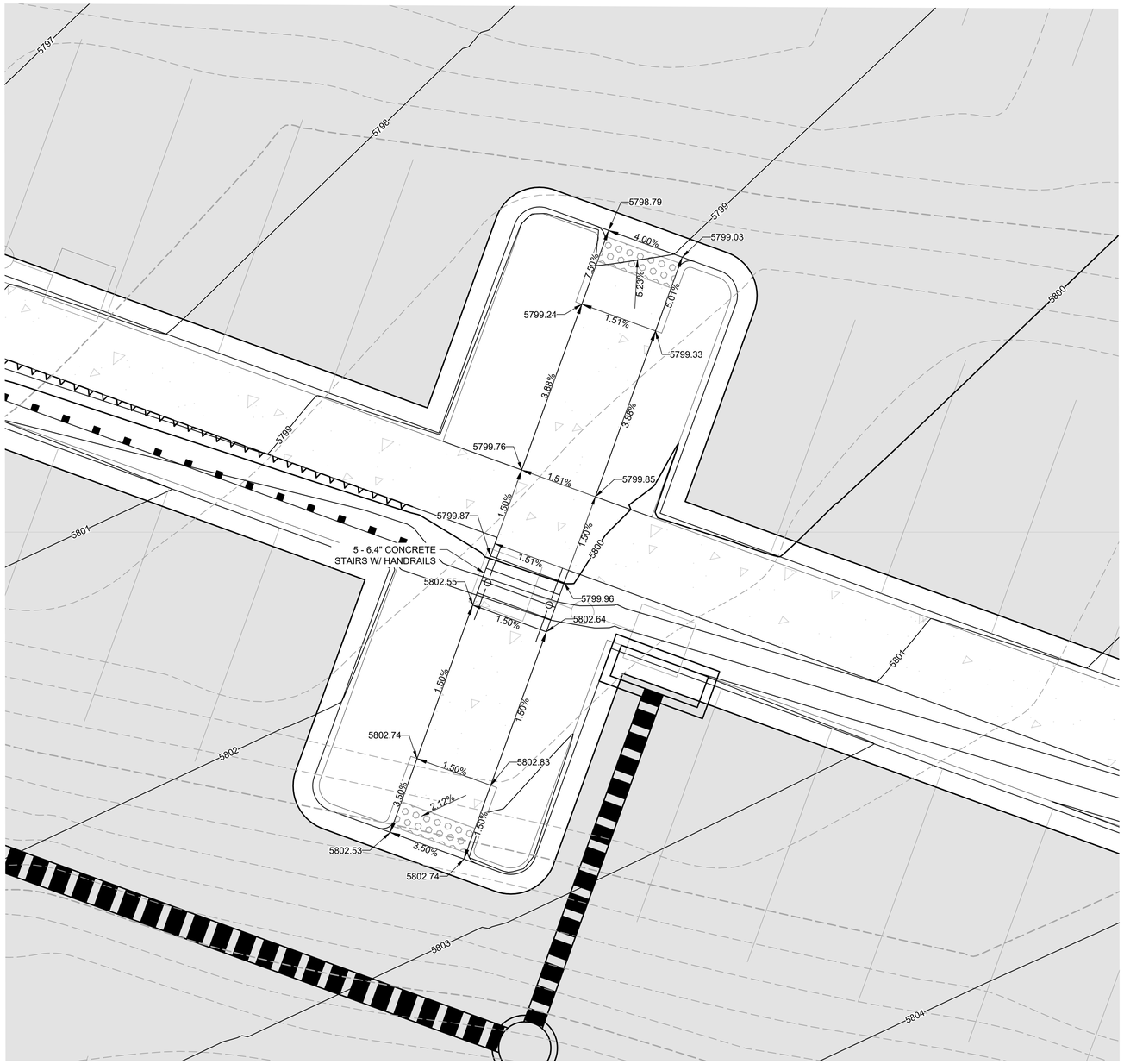
Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C406 of

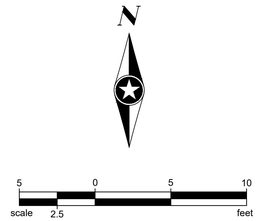
Project No./Code

TRG M535-014

25924

Sheet Number





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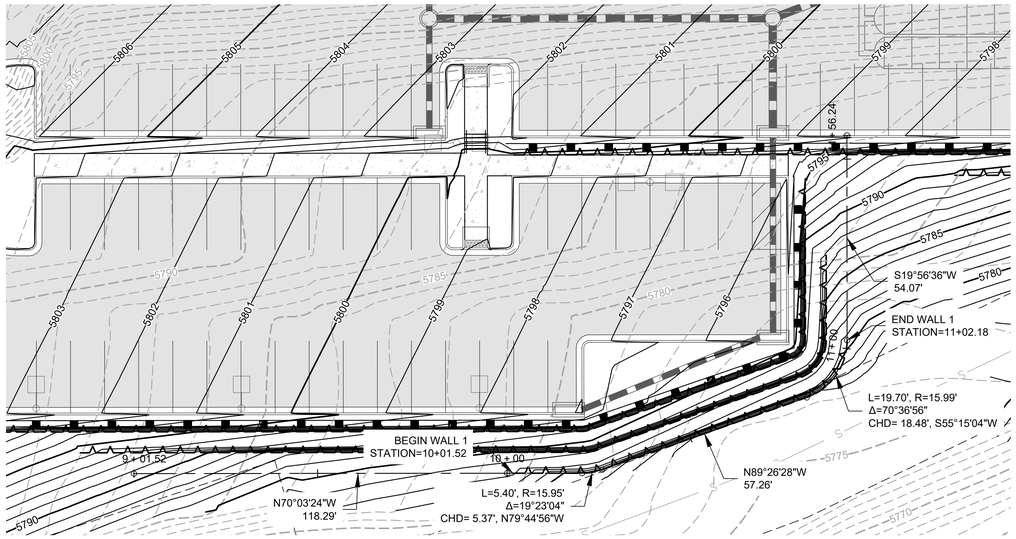
ROARING FORK TRANSPORTATION AUTHORITY
WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES
2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

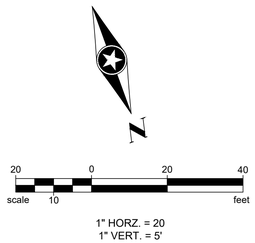
FIR Plans
No Revisions:
Revised:
Void:

PHASE 6A DETAILED GRADING PLAN

Designer: T. Nuetzel
Detailer: B. Risk
Sheet Subset:
Structure Numbers
Subset Sheets: C407 of

Project No./Code
TRG M535-014
25924
Sheet Number





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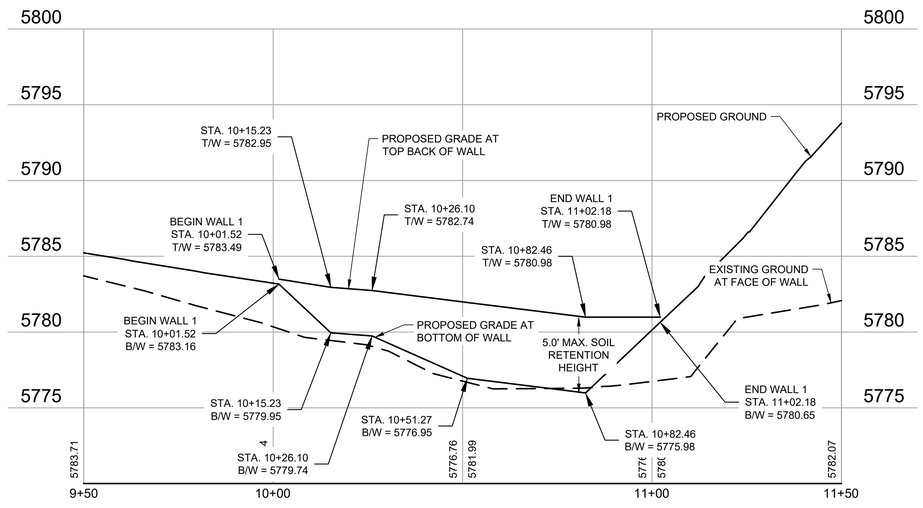

NOTES:

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WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

Revised:

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PHASE 6A WALL 1 PLAN AND PROFILE

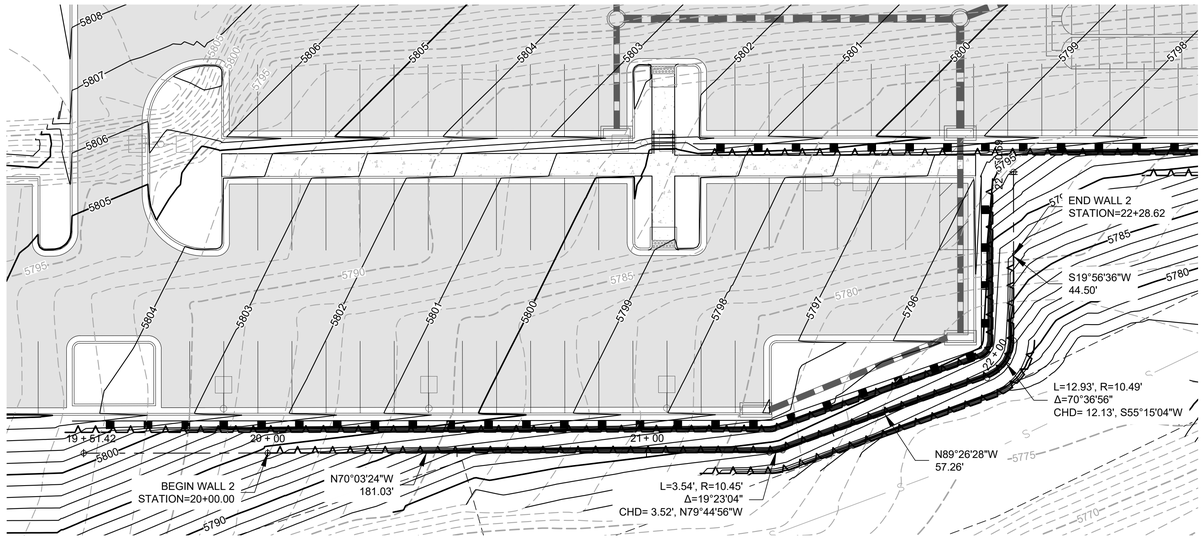
Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C501 of

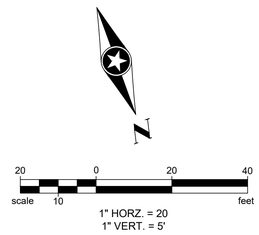
Project No./Code

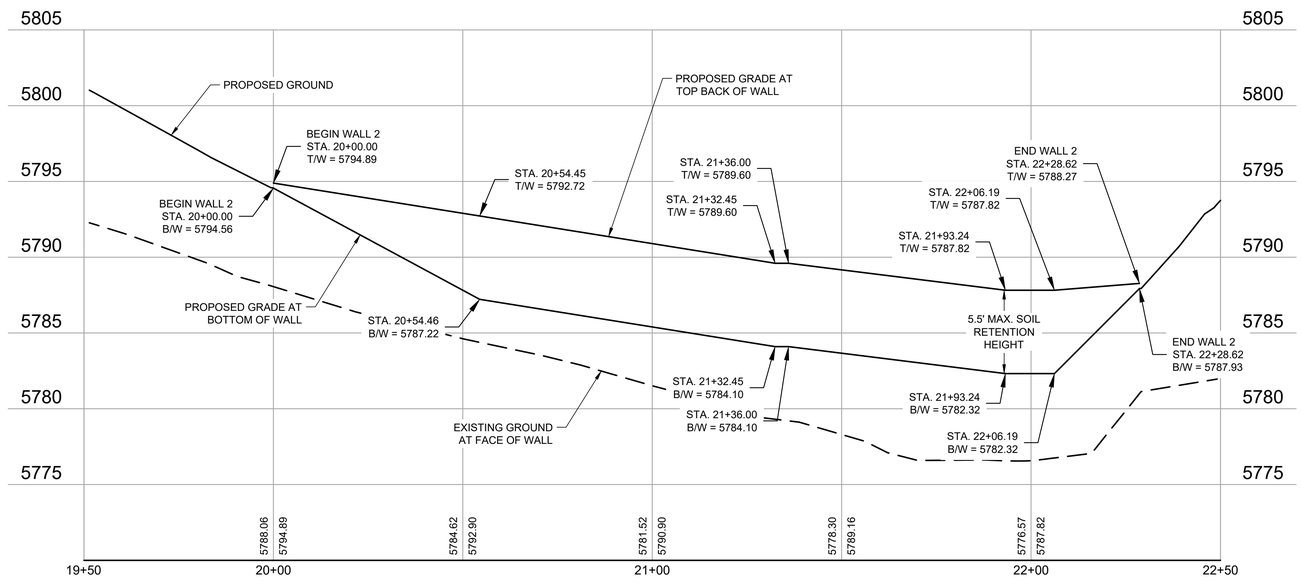
TRG M535-014

25924

Sheet Number







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PHASE 6A WALL 2 PLAN AND PROFILE

Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
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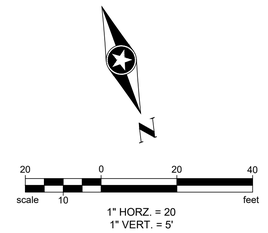

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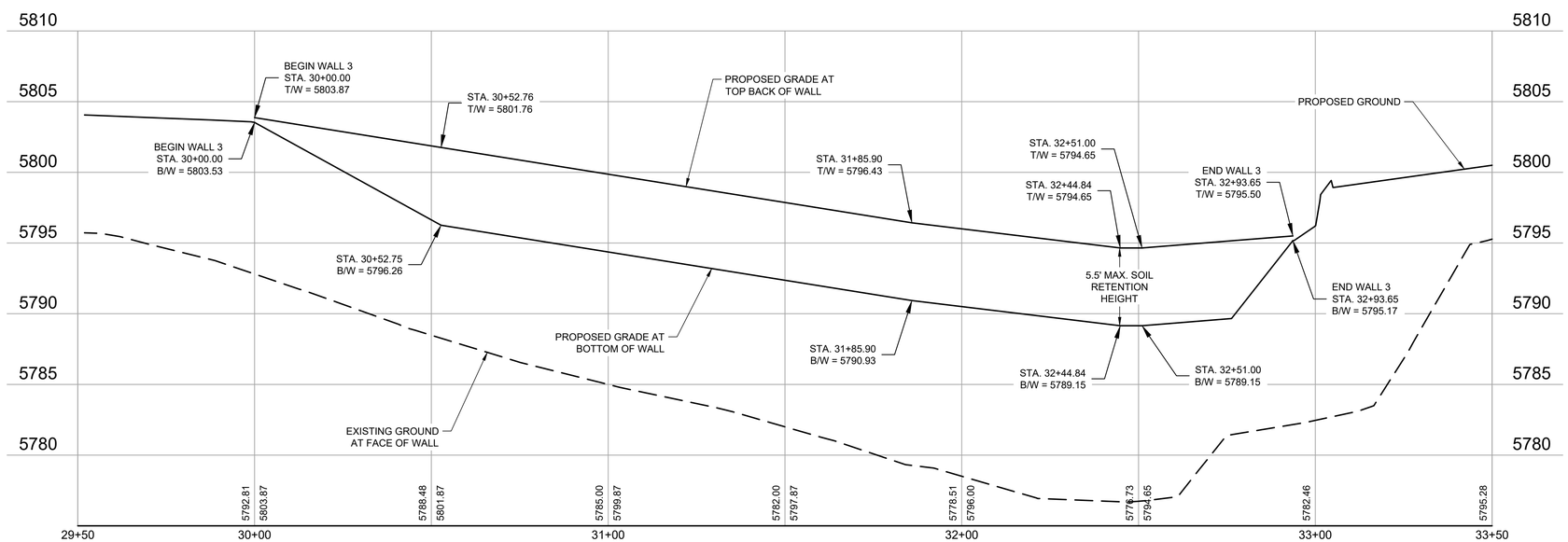

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2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

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PHASE 6A WALL 3 PLAN AND PROFILE

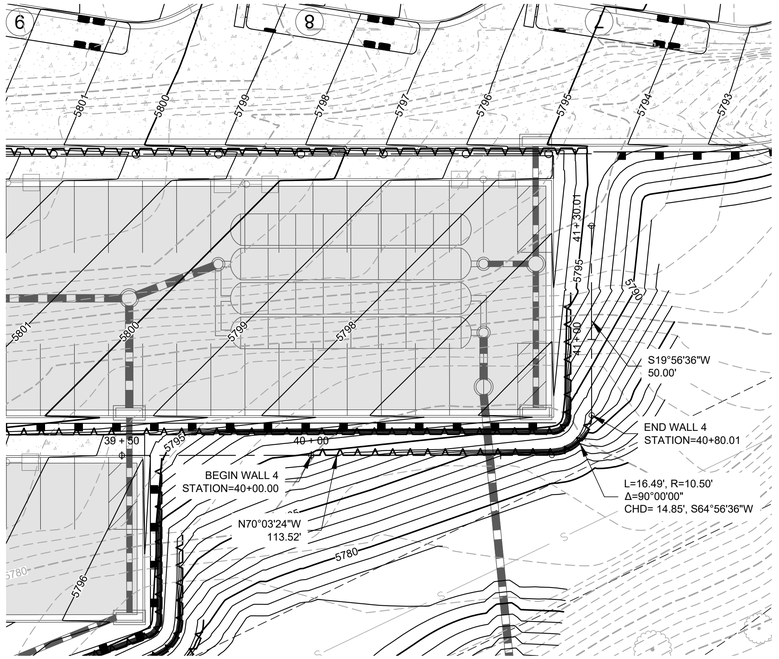
Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C503 of

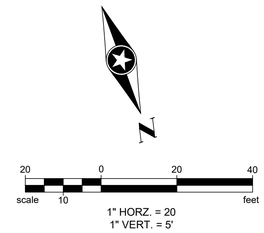
Project No./Code

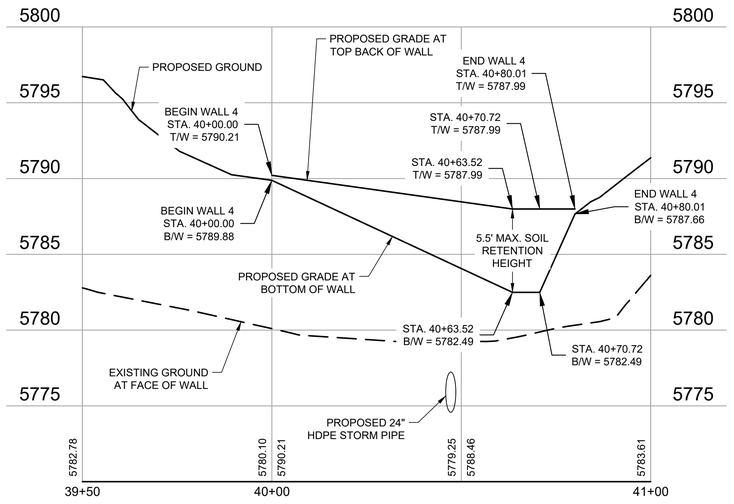
TRG M535-014

25924

Sheet Number







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ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
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FIR Plans

No Revisions:
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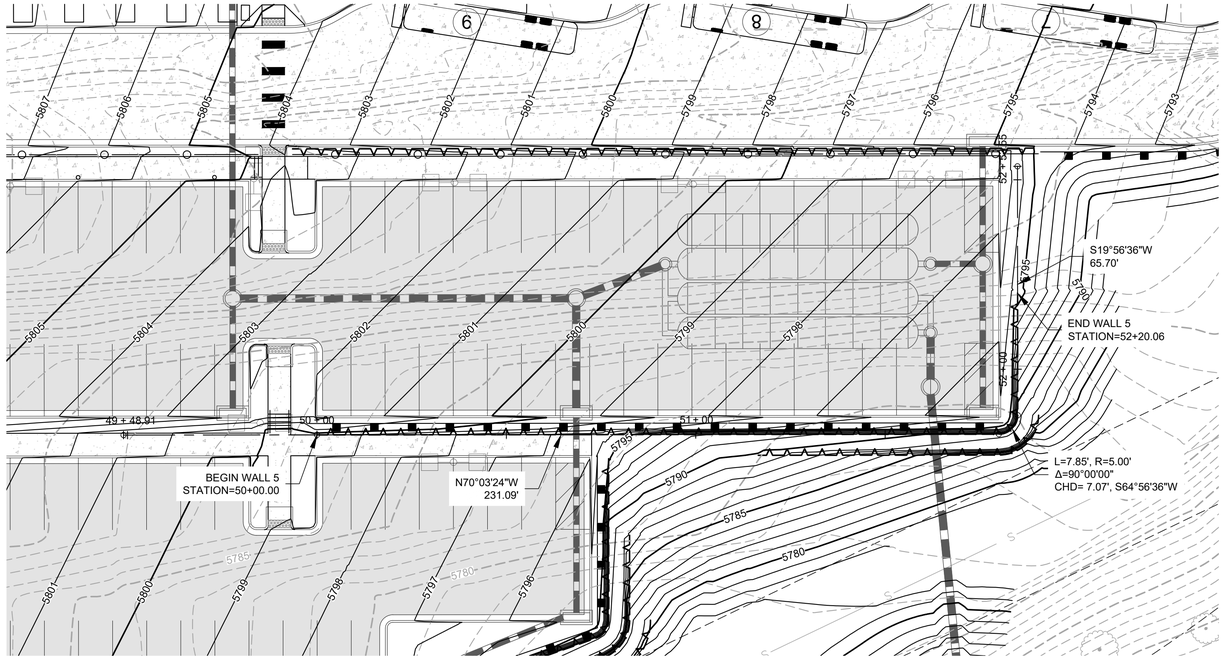
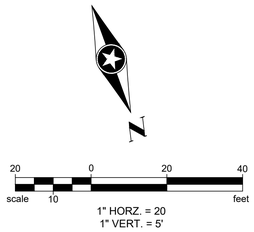
PHASE 6A WALL 4 PLAN AND PROFILE

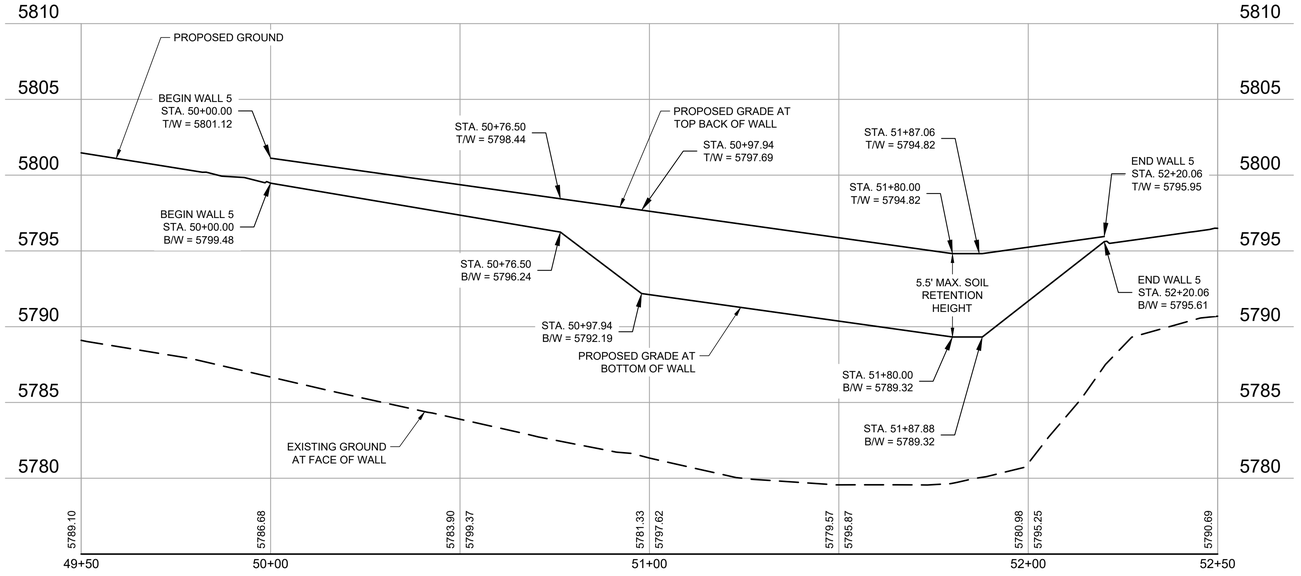
Designer: T. Nuetzel
Detailer: B. Risk
Sheet Subset:
Structure Numbers
Subset Sheets: C504 of

Project No./Code

TRG M535-014
25924
Sheet Number







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2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

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PHASE 6A WALL 5 PLAN AND PROFILE

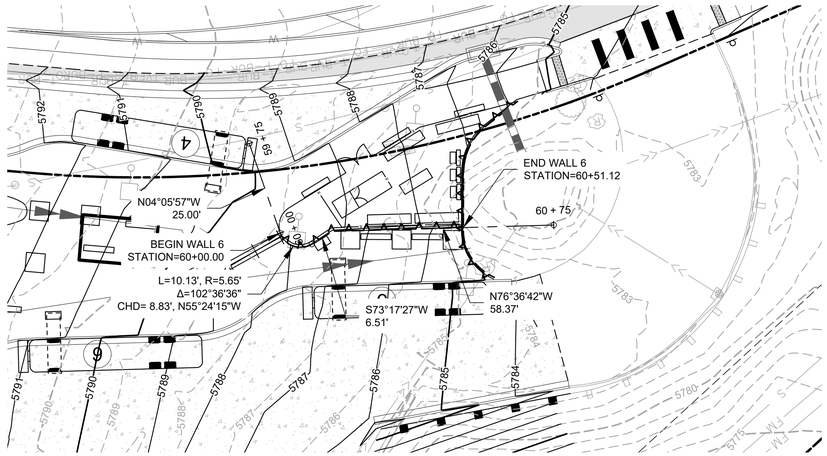
Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C505 of

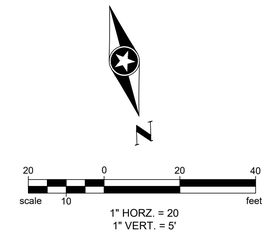
Project No./Code

TRG M535-014

25924

Sheet Number





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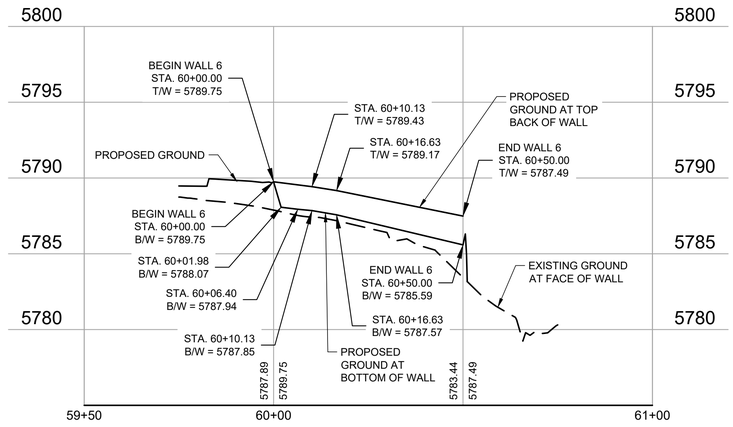

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WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

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PHASE 6A WALL 6 PLAN AND PROFILE

Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C506 of

Project No./Code

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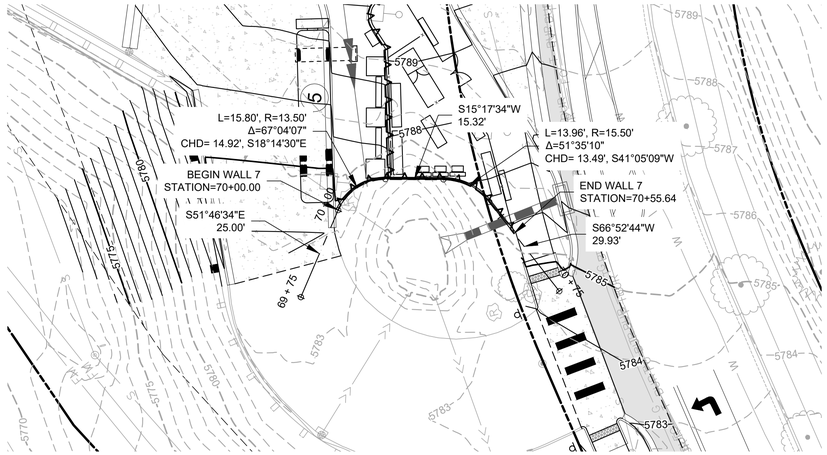

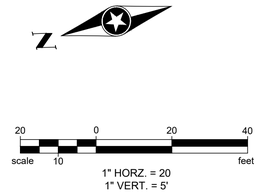

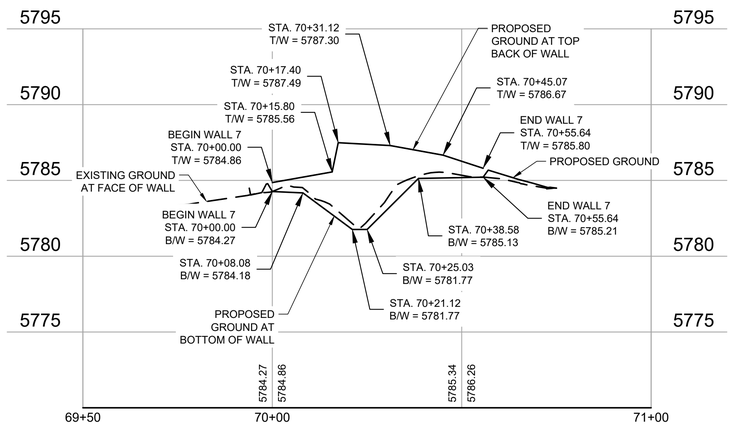

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2307 WULFSOHN ROAD
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PHASE 6A WALL 7 PLAN AND PROFILE

Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C507 of

Project No./Code

TRG M535-014

25924

Sheet Number

MATCHLINE SEE RIGHT

MIDLAND AVE.

EX. MANHOLE TO REMAIN
RIM = 5770.8'
W INV. 5764.6'
E INV. 5764.6'

EX. 8" PVC PIPE

EX. POWER POLE TO REMAIN

EX. STORM INLET TO REMAIN

EX. 18" HDPE PIPE TO REMAIN

EX. 24" HDPE PIPE

EX. 8" PVC PIPE

BUS CHARGING, SEE ELEC

REMOVE EX. POWER LINE

EX. SANITARY SERVICE, SIZE UNKNOWN

EX. 18" HDPE PIPE

24" HDPE STORM PIPE

30' EASEMENT

EX. MANHOLE TO REMAIN
RIM = 5775.5'
SW INV. 5767.0'
E INV. 5766.9'

EX. 18" HDPE PIPE

EX. 8" PVC PIPE

EX. 18" HDPE PIPE

TYPE 16 INLET - DOUBLE

EX. 24" HDPE PIPE

12" EX. WATER LINE

BUS ONLY

OUTLET STRUCTURE AND 24" HDPE STORM PIPE

TYPE 16 INLET - DOUBLE

18" HDPE STORM PIPE

GLENWOOD MEADOWS #1 SUBDIVISION, PARCEL A
OWNER: ROARING FORK TRANSPORTATION AUTHORITY

18" HDPE STORM PIPE

18" HDPE STORM PIPE

TYPE 16 INLET - DOUBLE

PERIMETER DRAIN
SEE SHEET C1005
FOR SECTION

PERIMETER DRAIN
INV. 5790.50

PLANTER STORM PIPE

REMOVE EX. SANITARY SEWER CLEANOUT

N=44112.44
E=10552.84
45° BEND AND CLEANOUT

5 LF 4" SDR 35

N=44116.14
E=10561.90
45° BEND AND CLEANOUT

SEE PLUMBING PLAN FOR CONTINUATION. LINE SPLITS TO FIRE SUPPRESSION SYSTEM AND INSIDE DOMESTIC METER

RESET EX. SANITARY SEWER CLEANOUT

GAS LINE

10 LF 4" SDR 35

REMOVE EX. SANITARY SEWER CLEANOUT

36 LF 4" SDR 35

FIBER OPTIC LINE SEE TECHNOLOGY PLANS

REMOVE EX. WATER SERVICE

49 LF 6" DIP

N=44089.48
E=10506.94
12"x6" WET TAP
WITH GATE VALVE
WITH THRUST BLOCK

WULFSOHN RD.

EX. POWER LINE

EX. GAS LINE

EX. FIBER OPTIC LINE

EX. COMMUNICATIONS LINE

N=44092.72
E=10497.82
12"x6" WET TAP
WITH GATE VALVE
WITH THRUST BLOCK

43 LF 6" DIP
WATER SERVICE FOR
FUTURE ADMIN BUILDING

N=44052.53
E=10485.00
6" TEMPORARY PLUG
WITH THRUST BLOCK

GLENWOOD MEADOWS #1 SUBDIVISION
OWNER: ROARING FORK TRANSPORTATION AUTHORITY

MATCHLINE SEE SHEET C602

N

20 0 20 40
scale 10 feet

EX. 24" HDPE PIPE

OUTLET STRUCTURE AND 24" HDPE STORM PIPE

30' UTILITY EASEMENT

EX. 8" PVC PIPE

MATCHLINE SEE LEFT

NOTES:

UTILITIES SHALL COMPLY WITH THE CITY OF GLENWOOD SPRINGS STANDARDS AND RESPECTIVE UTILITY PROVIDER STANDARDS.

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Print Date:	9/17/2024 9:23 AM
File Name:	PH 6A - Utility Plan.dwg
Horiz. Scale: As Noted	Vert. Scale: As Noted

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Tele. (720) 540-6800
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Fax (720) 540-6801

Sheet Revisions

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ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

Revised:

Void:

PHASE 6A UTILITY PLAN

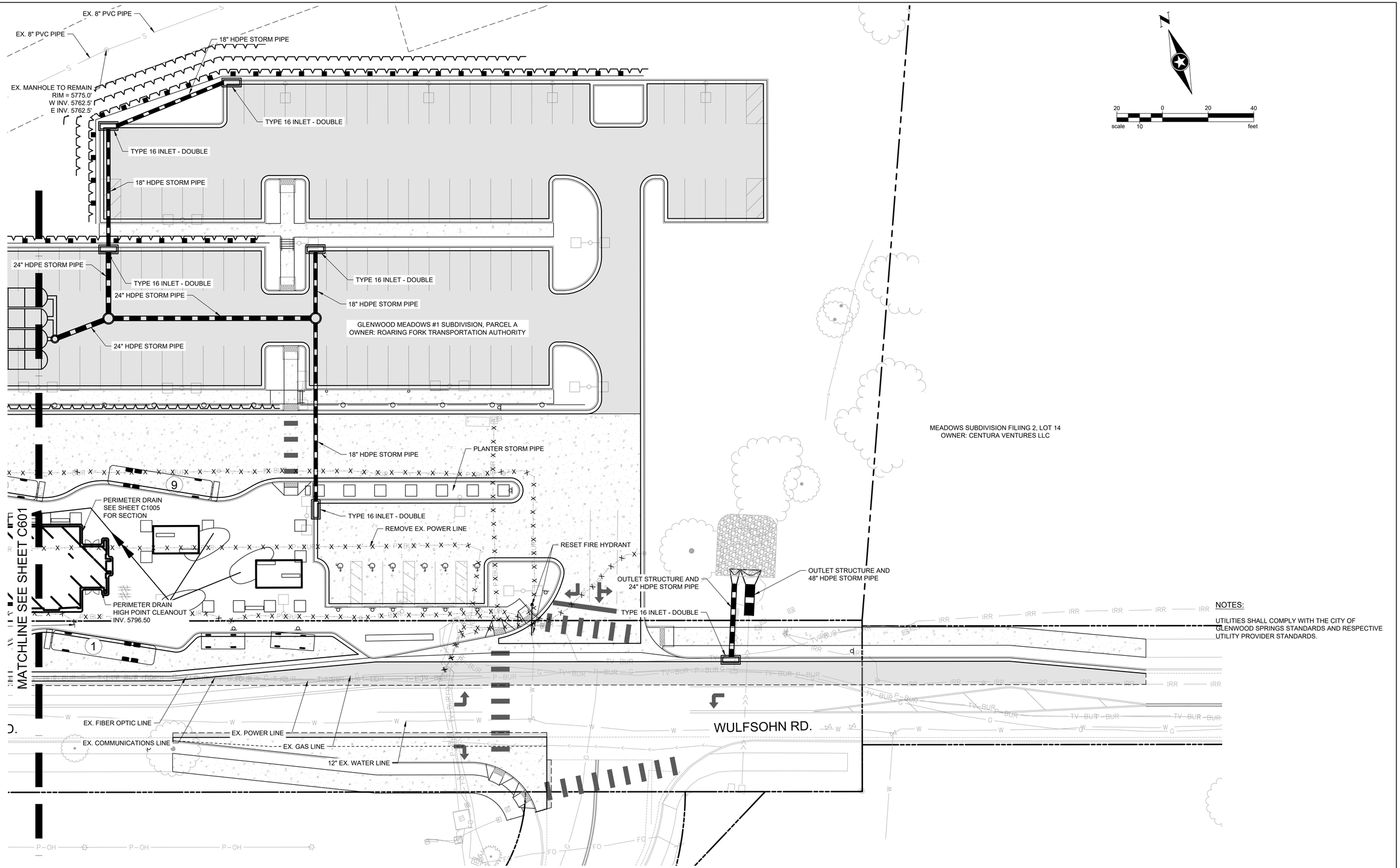
Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C601 of

Project No./Code

TRG M535-014

25924

Sheet Number



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WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

Revised:

Void:

PHASE 6A UTILITY PLAN

Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C602 of

Project No./Code

TRG M535-014

25924

Sheet Number

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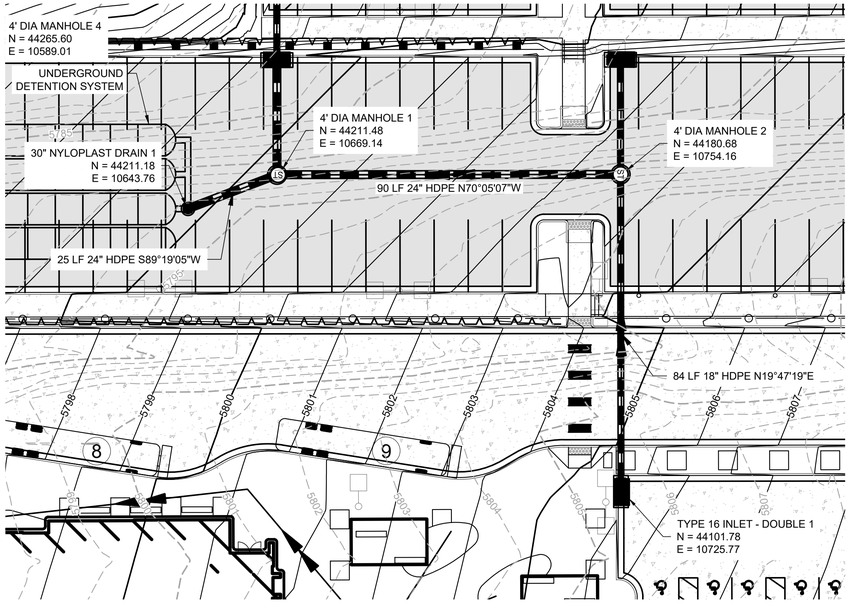

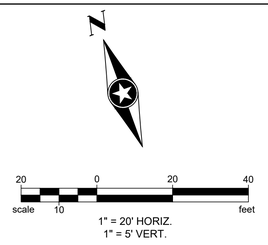

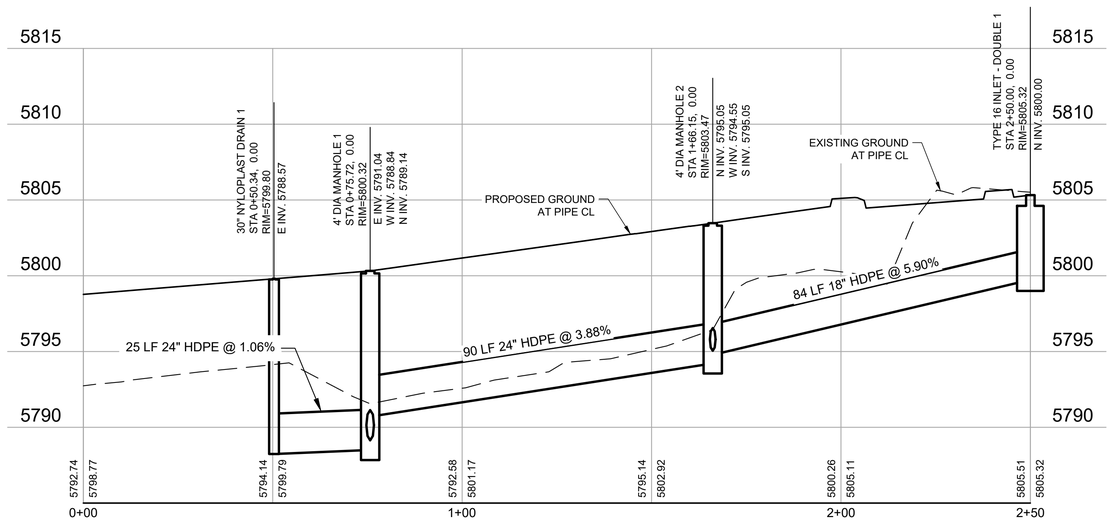

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ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

Revised:

Void:

PHASE 6A STORM PLAN AND PROFILE

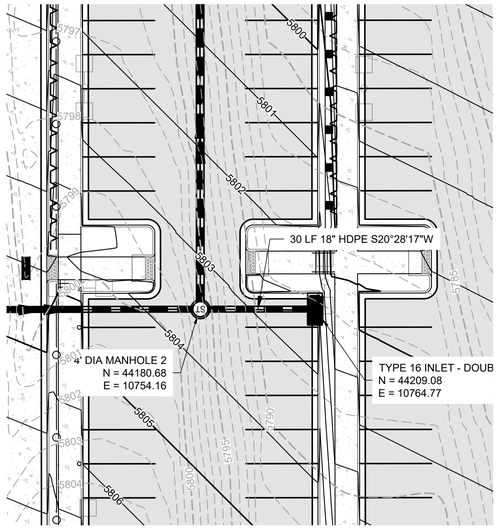
Designer: T. Nuetzel
Detailer: B. Risk
Sheet Subset:
Structure Numbers
Subset Sheets: C701 of

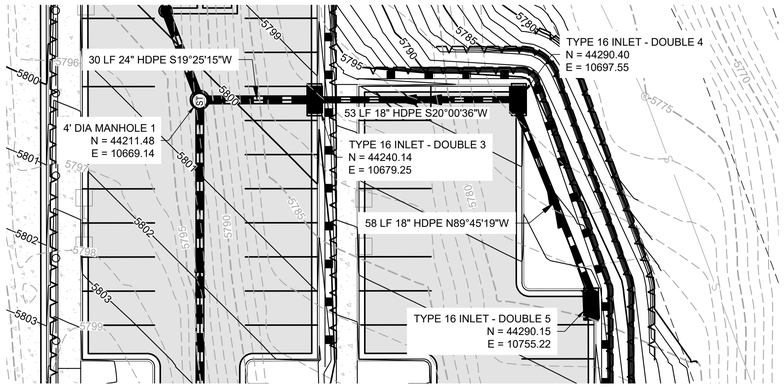
Project No./Code

TRG M535-014

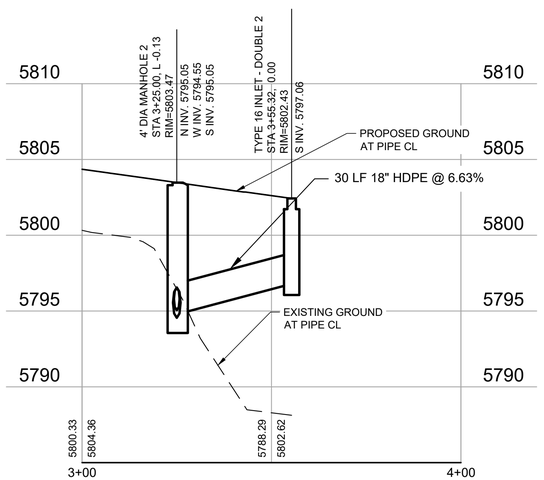
25924

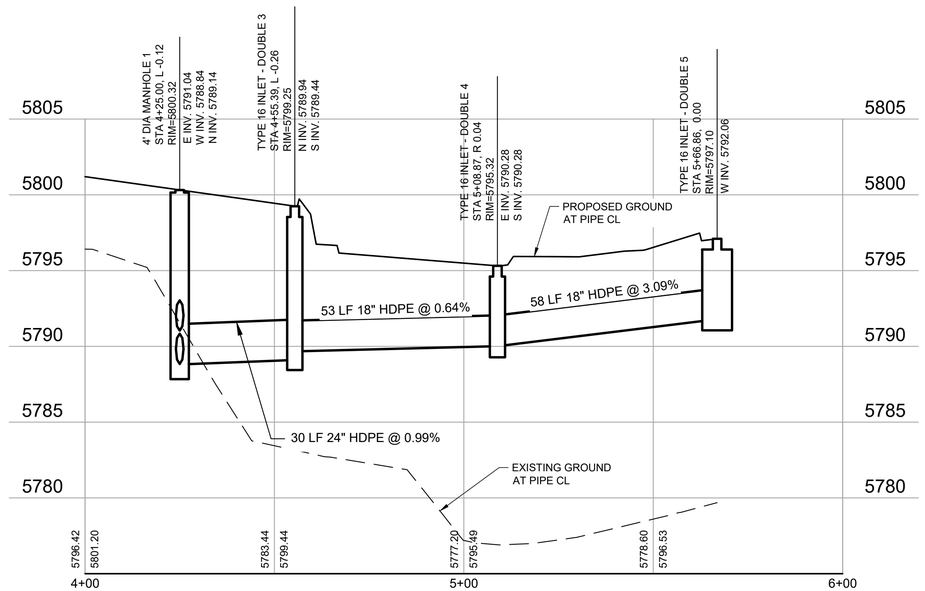
Sheet Number





1" = 20' HORIZ.
1" = 5' VERT.





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ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

Revised:

Void:

PHASE 6A STORM PLAN AND PROFILE

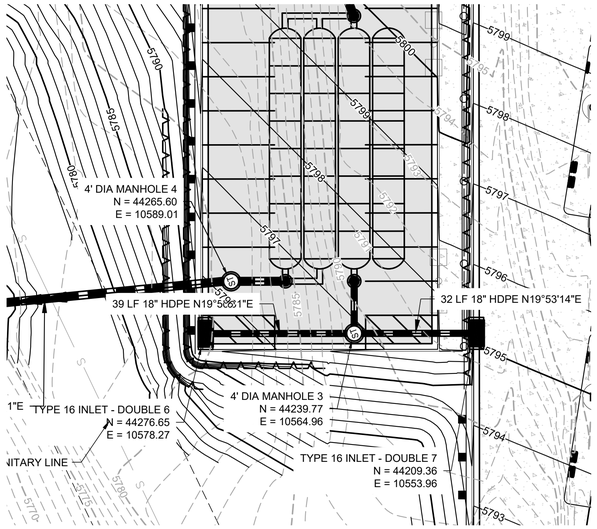
Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C702 of

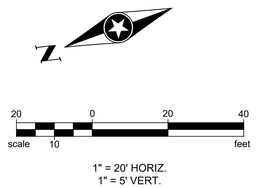
Project No./Code

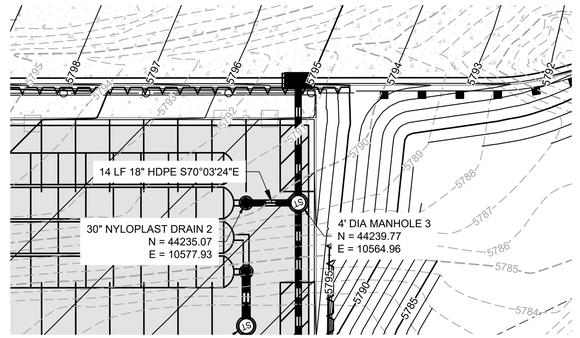
TRG M535-014

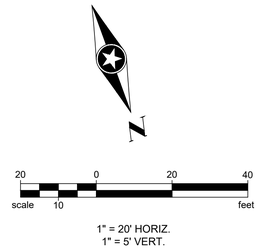
25924

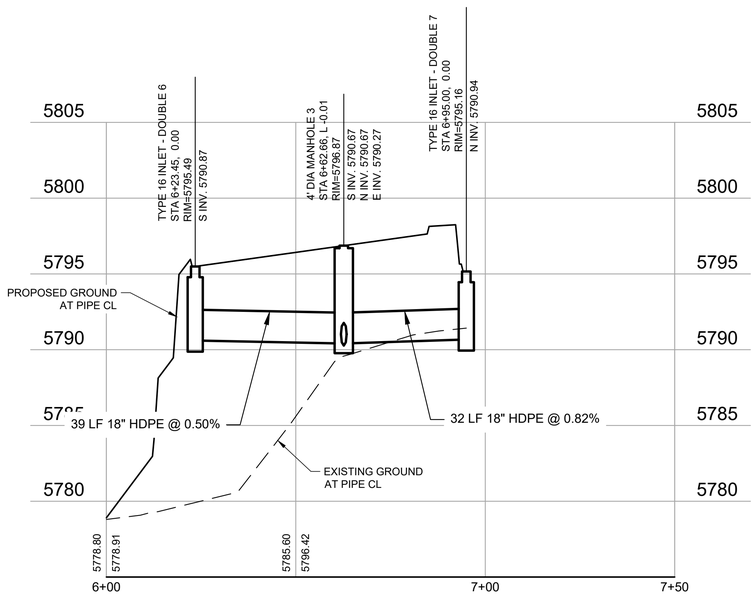
Sheet Number

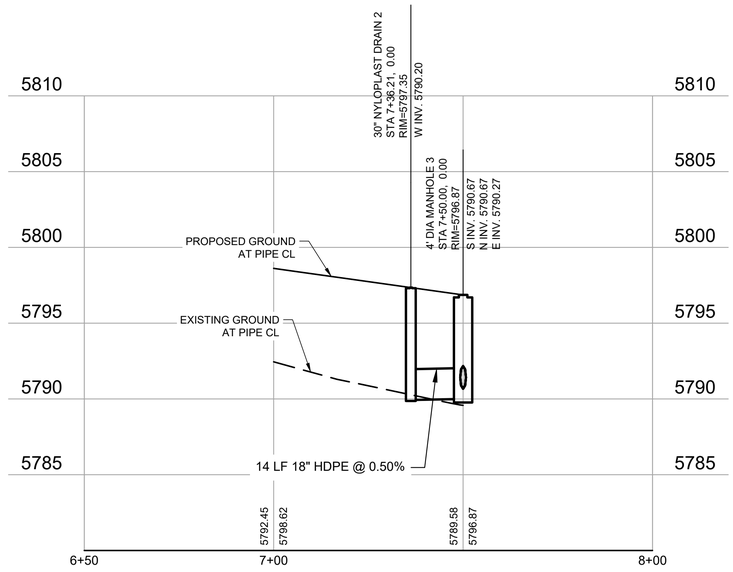












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ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

Revised:

Void:

PHASE 6A STORM PLAN AND PROFILE

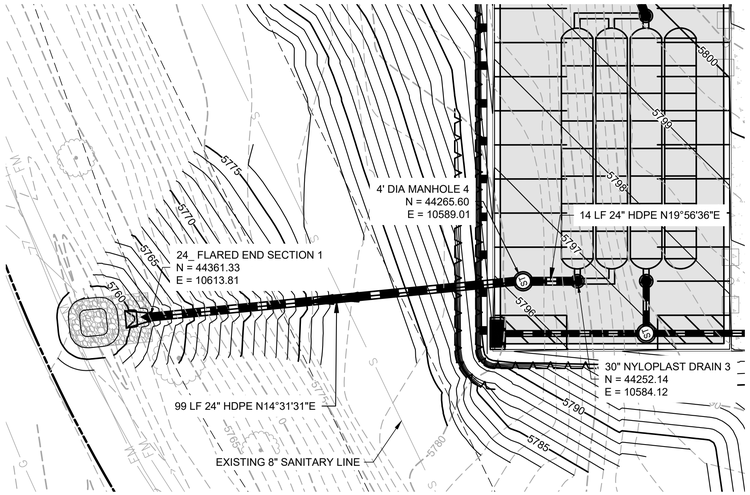
Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C703 of

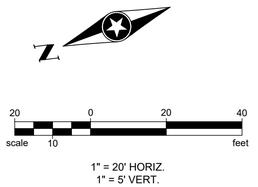
Project No./Code

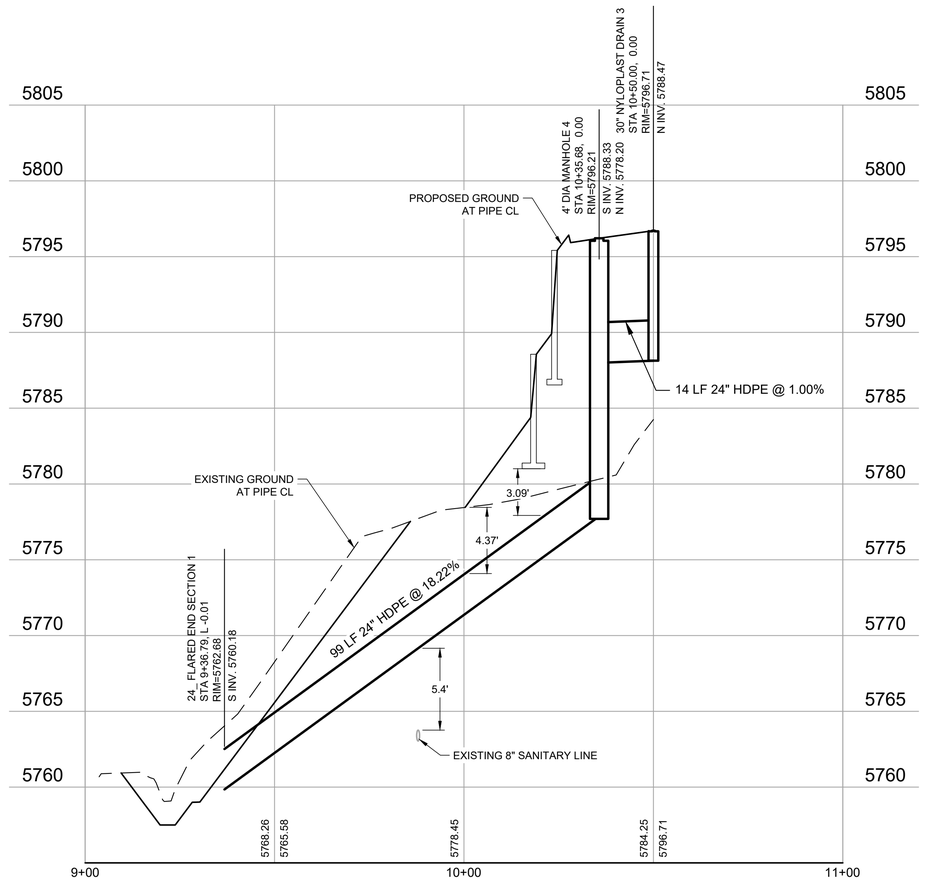
TRG M535-014

25924

Sheet Number







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2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

Revised:

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PHASE 6A STORM PLAN AND PLOT

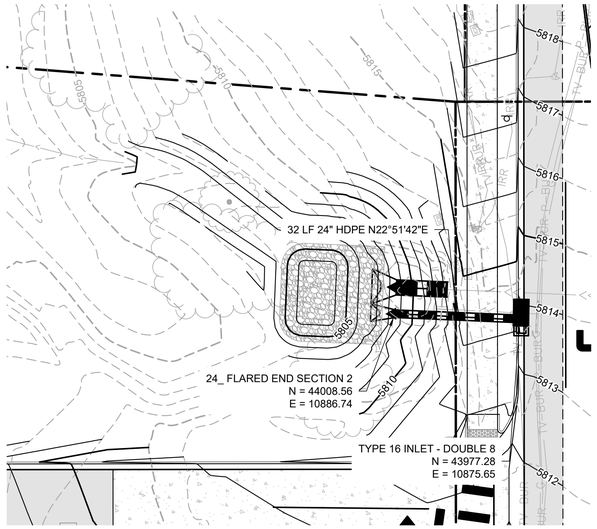
Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C704 of

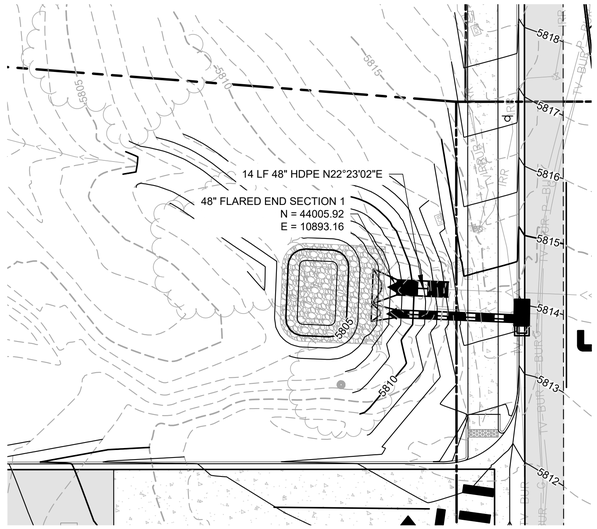
Project No./Code

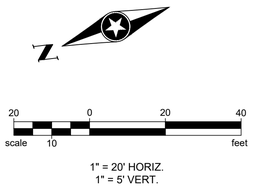
TRG M535-014

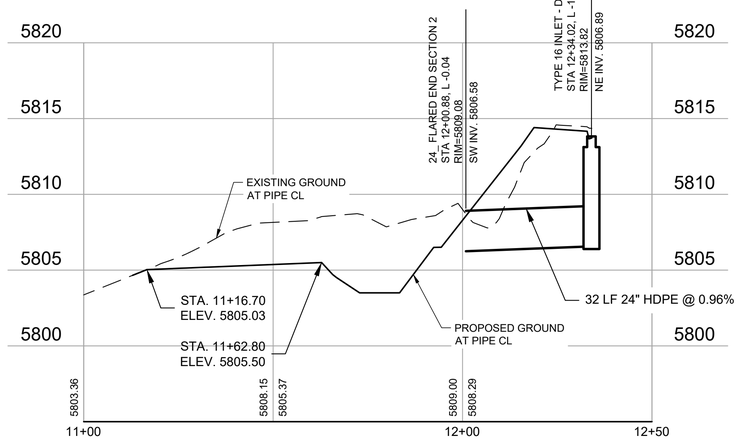
25924

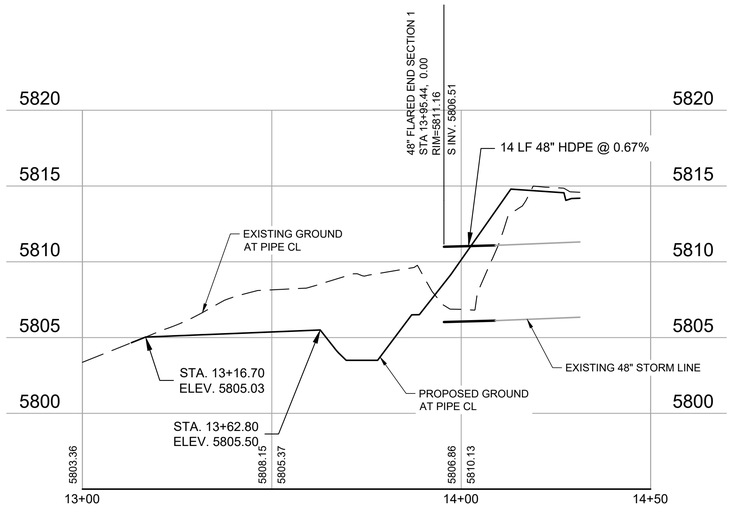
Sheet Number











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ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

Revised:

Void:

PHASE 6A STORM PLAN AND PROFILE

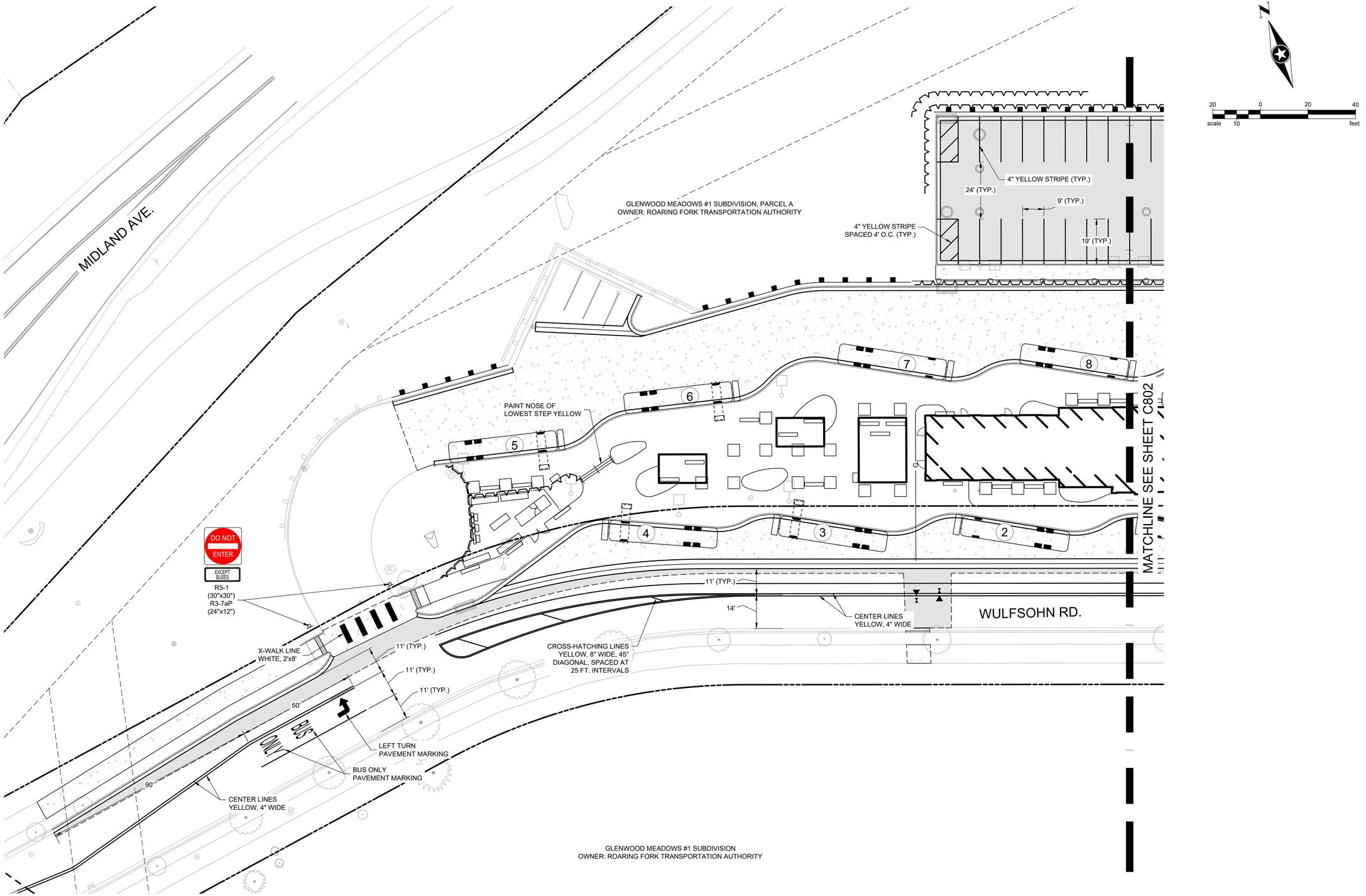
Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C705 of

Project No./Code

TRG M535-014

25924

Sheet Number



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GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

Revised:

Void:

PHASE 6A SIGNING AND STRIPING PLAN

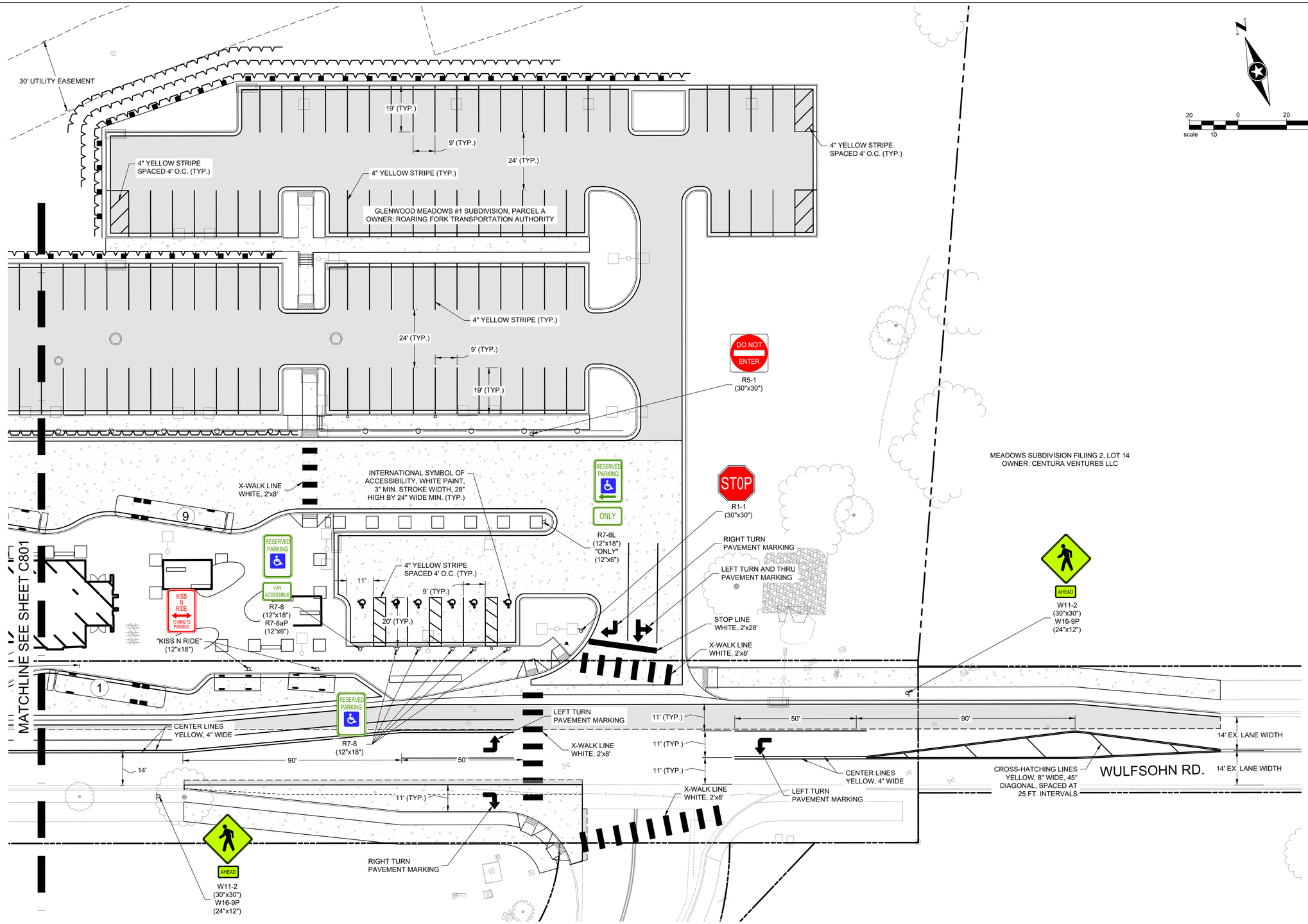
Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C801 of

Project No./Code

TRG M535-014

25924

Sheet Number



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2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

Revised:

Void:

PHASE 6A SIGNING AND STRIPING PLAN

Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C802 of

Project No./Code

TRG M535-014

25924

Sheet Number

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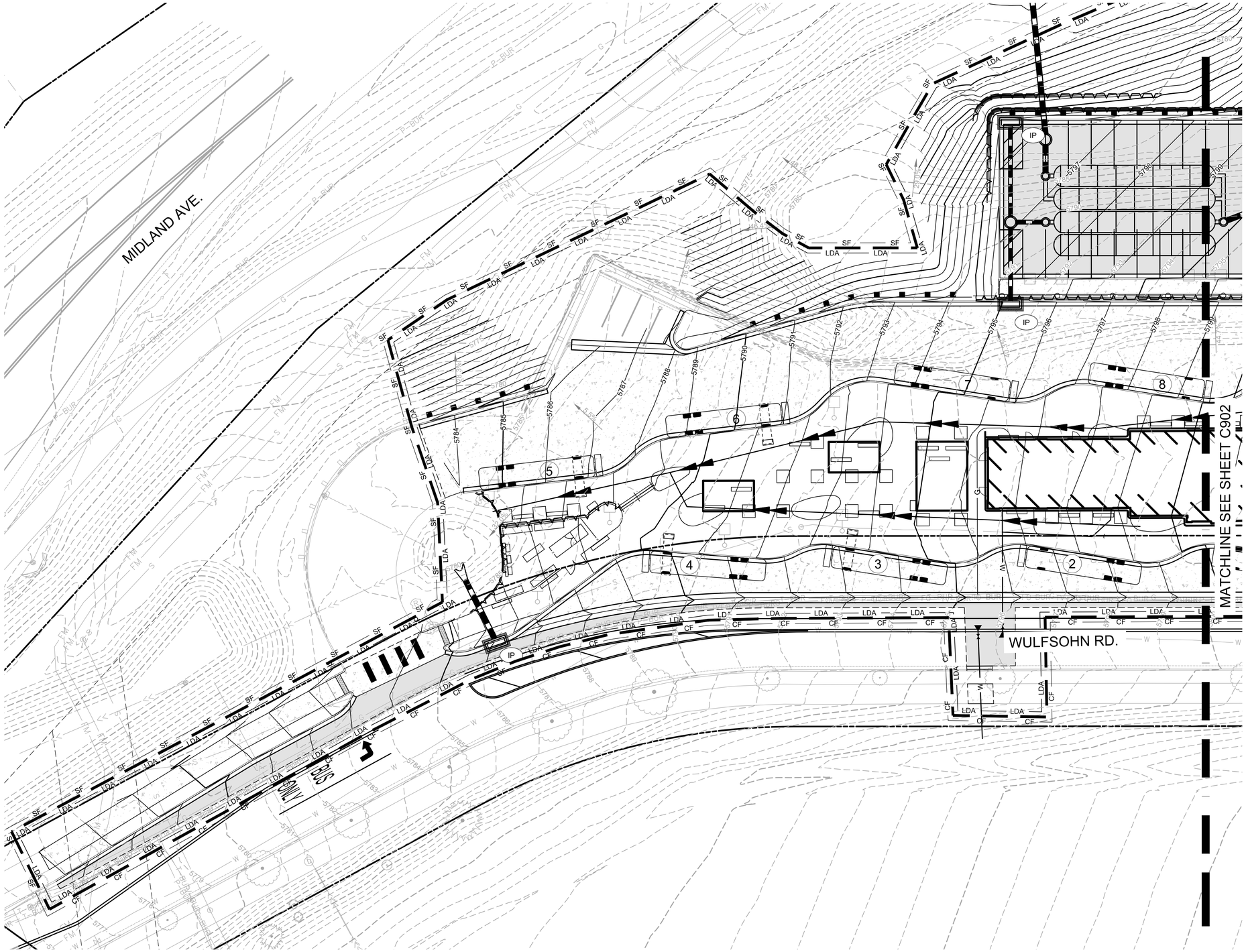

N

20 0 20 40
scale 10 feet

BMP LEGEND

CD	CHECK DAM
CB	COMPOST BLANKET
CFB	COMPOST FILTER BERM
CWA	CONCRETE WASHOUT AREA
CF	CONSTRUCTION FENCE
CM	CONSTRUCTION MARKER
DW	DEWATERING
DD	DIVERSION DITCH
ECB	EROSION CONTROL BLANKET
IP	INLET PROTECTION
RCD	REINFORCED CHECK DAM
RRB	REINFORCED ROCK BERM
RRC	RRB FOR CULVERT PROTECTION
SB	SEDIMENT BASIN
SCL	SEDIMENT CONTROL LOG
ST	SEDIMENT TRAP
SM	SEEDING AND MULCHING
SF	SILT FENCE
SSA	STABILIZED STAGING AREA
SR	SURFACE ROUGHENING
TSD	TEMPORARY SLOPE DRAIN
TSC	TEMPORARY STREAM CROSSING
TER	TERRACING
VTC	VEHICLE TRACKING CONTROL
WW	VTC WITH WHEEL WASH
LOC	ROCK AND RIPRAP GRADATIONS LIMITS OF CONSTRUCTION
LDA	LIMITS OF DISTURBED AREA

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GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:
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Void:

PHASE 6A EROSION CONTROL PLAN

Designer: T. Nuetzel
Detailer: B. Risk
Sheet Subset:
Structure Numbers
Subset Sheets: C901 of

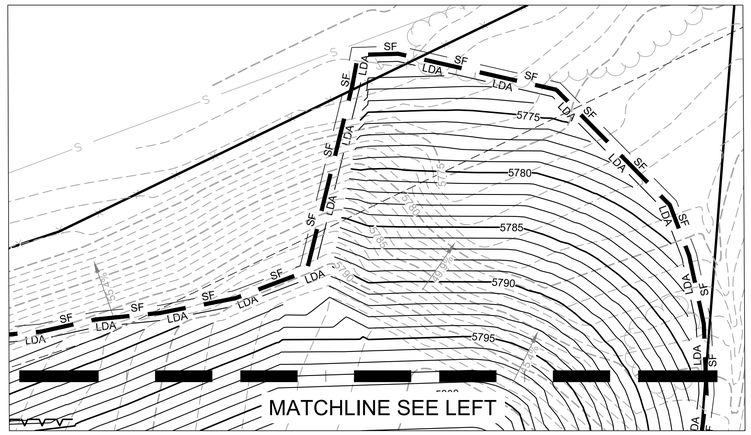
Project No./Code

TRG M535-014
25924
Sheet Number

MATCHLINE SEE RIGHT

MATCHLINE SEE SHEET C901

WULFSOHN RD.



N

20 0 20 40
scale 10 feet

BMP LEGEND

	CD	CHECK DAM
	CB	COMPOST BLANKET
	CFB	COMPOST FILTER BERM
	CWA	CONCRETE WASHOUT AREA
CF	CF	CONSTRUCTION FENCE
	CM	CONSTRUCTION MARKER
	DW	DEWATERING
	DD	DIVERSION DITCH
	ECB	EROSION CONTROL BLANKET
	IP	INLET PROTECTION
	RCD	REINFORCED CHECK DAM
	RRB	REINFORCED ROCK BERM
	RRC	RRB FOR CULVERT PROTECTION
	SB	SEDIMENT BASIN
	SCL	SEDIMENT CONTROL LOG
	ST	SEDIMENT TRAP
	SM	SEEDING AND MULCHING
SF	SF	SILT FENCE
	SSA	STABILIZED STAGING AREA
	SR	SURFACE ROUGHENING
	TSD	TEMPORARY SLOPE DRAIN
	TSC	TEMPORARY STREAM CROSSING
	TER	TERRACING
	VTC	VEHICLE TRACKING CONTROL
	WW	VTC WITH WHEEL WASH
		ROCK AND RIPRAP GRADATIONS
	LOC	LIMITS OF CONSTRUCTION
LDA		LIMITS OF DISTURBED AREA

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Print Date:	9/17/2024 9:26 AM
File Name:	PH 6A - Erosion Control Plan.dwg
Horiz. Scale: As Noted	Vert. Scale: As Noted

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Sheet Revisions

Rev.	Date	Comments	Init.
	09/17/24	50% CONSTRUCTION DOCUMENTS	TN/BR

ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

Revised:

Void:

PHASE 6A EROSION CONTROL PLAN

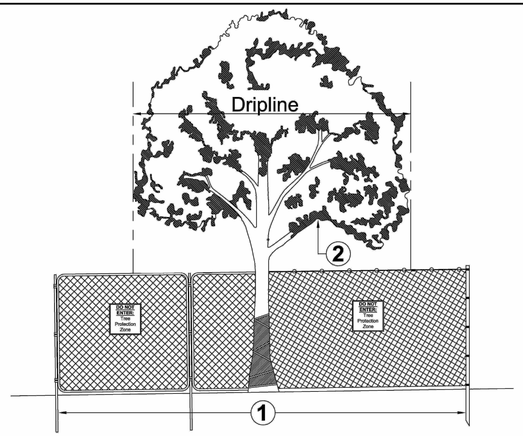
Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C902 of

Project No./Code

TRG M535-014

25924

Sheet Number



Any work in these areas must have written approval of* City. *Contact* City *for instruction.

Area 1: Tree Protection Zone and Critical Root Zone Protection
The Tree Protection Zone (TPZ) shall be equal to dripline or 1.5 feet radially from the tree for every one inch of trunk diameter at breast height (DBH = 4.5' above soil line), whichever is greater.

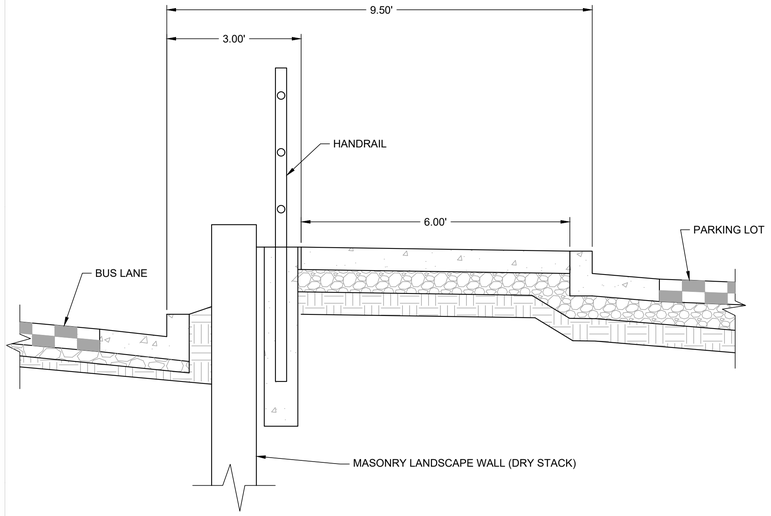
A. Min 6' in height steel chain link fence is required unless otherwise approved by the City. Steel chain link fence panels or rolls are acceptable.
   1. When chain link rolls are installed, it shall be fastened to heavy duty steel posts with safety caps at minimum five (5) attachment points with 12-gauge wire, including points at top and bottom. Weave wire through top of roll to eliminate sag.
   2. Posts shall be driven 2' to 3' below grade and spaced at max. five to ten foot (5' - 10') o.c. intervals. Fencing must be kept taut at all times.
   3. "Tree Protection Zone" signs shall be placed one (1) per each tree protection zone minimum or more per direction of City; maintain in the location and condition in which approved.
   4. TPZ, including signage, shall be maintained in the location and condition in which approved.

The Critical Root Zone (CRZ) shall be equal to one foot radially from the tree for every one inch of trunk diameter at breast height.

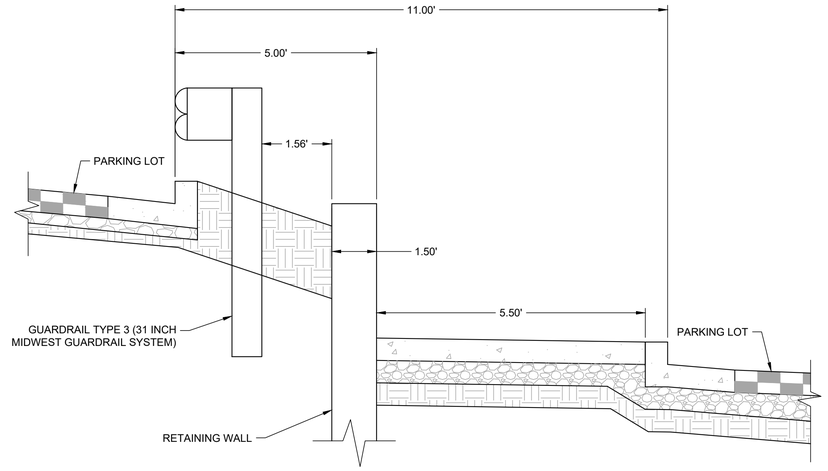
Area 2: Canopy Protection
Contact City if potential for damage exists and/or if pruning is needed for any clearance issues prior to performing work.

Notes
1. City Tree Retention and Protection Specifications shall be followed throughout duration of work.
2. After TPZ is approved;
   A. TPZ shall not be resized, modified, removed, or altered in any manner without prior written approval. TPZ shall be maintained in place as approved until removal is authorized by City.
   B. Entrance/access to the TPZ is not permitted without prior written approval from the City.
   C. No materials, debris, equipment, or site amenities shall be stored within the TPZ without prior written approval from the City.
3. While TPZ fencing is in place, trees shall be deep-root watered at an interval of once every two weeks when temperatures are at or above 40 degrees F. Trees shall be watered at the rate of twenty-five (25) gallons per inch DBH. City may ask for proof of watering.
4. Violation of TPZ or damage to protected trees is subject to penalty per City Ordinance.

Tree Protection Zone Fencing Detail



TYPICAL SECTION ADJACENT TO BUS LANE
NTS

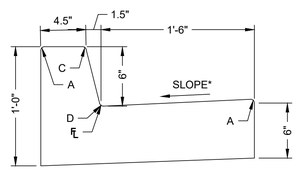


TYPICAL SECTION BETWEEN PARKING LOTS
NTS

GENERAL NOTES

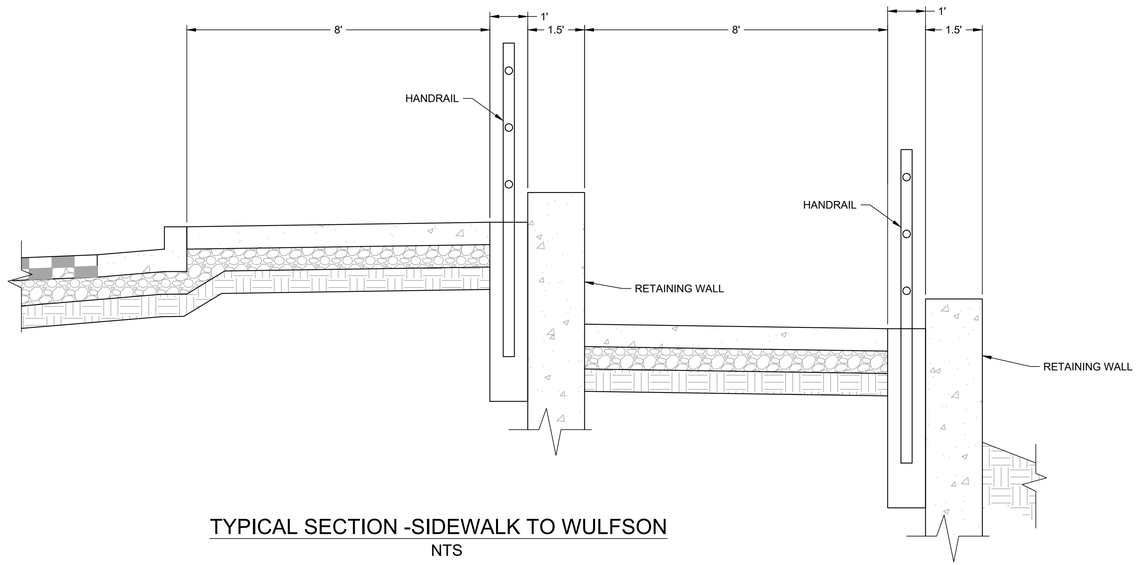
1. CONCRETE SHALL BE CLASS B.
2. PROFILE GRADE OF CURBS AND GUTTERS SHALL BE LOCATED AT THE FLOW LINE.
3. GUTTER CROSS SLOPES MAY BE ADJUSTED TO FACILITATE DRAINAGE FOR PROFILE GRADES AS SHOWN ON THE PLANS.
4. THICKNESS OF CURB AND GUTTER SECTION SHALL MATCH CONCRETE PAVEMENT THICKNESS IF SHOWN ON THE PLANS. CURB AND GUTTER SHALL BE CLASS P CONCRETE IF PLACED MONOLITHICALLY WITH CONCRETE PAVEMENT.
5. INCREASE SIDEWALK THICKNESS TO 6 IN. AT LOCATIONS SHOWN ON THE PLANS.
6. WHEN TIE BARS ARE REQUIRED, THE GUTTER THICKNESS SHALL BE INCREASED TO THE PAVEMENT THICKNESS (T). BARS SHALL BE EPOXY-COATED #4 CONFORMING TO AASHTO M 284 AND SPACED AT 3 FT. INTERVALS. THEY SHALL BE INSERTED T/2 AND 1#2 LENGTH INTO THE GUTTER .

LEGEND FOR RADII
A = $\frac{1}{8}$" TO $\frac{1}{4}$"
B = 1"
C = 1 $\frac{1}{2}$"
D = 1 $\frac{1}{4}$" TO 2"



*GUTTER SLOPE EQUALS 1"/FT. WHEN ADJACENT TO ASPHALT PAVEMENT. GUTTER SLOPE TO MATCH ADJACENT CONCRETE SLOPE WHEN ADJACENT TO CONCRETE PAVEMENT.

CURB AND GUTTER TYPE 2 (SECTION B) (1.5' GUTTER)
NTS



TYPICAL SECTION -SIDEWALK TO WULFSON
NTS

Print Date:	9/17/2024 9:28 AM
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ROARING FORK TRANSPORTATION AUTHORITY
WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES
2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans
No Revisions:
Revised:
Void:

PHASE 6A CIVIL DETAILS

Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C1001 of

Project No./Code
TRG M535-014
25924
Sheet Number

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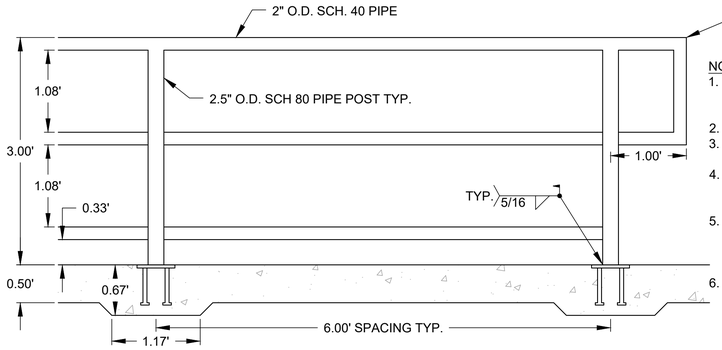
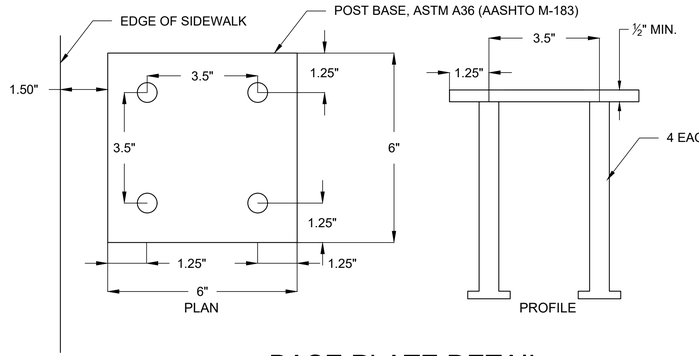


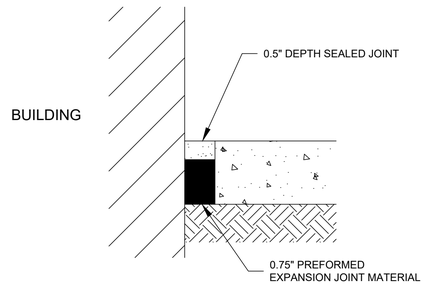
NOTES:
1. PAINT COLOR AND APPLICATION TO MATCH PEDESTRIAN BRIDGE STAIR RAILING.
2. PAINT AFTER FABRICATION.
3. FABRICATION TO SET ANCHOR PLATES AT TIME OF POUR.
4. ANCHOR PLATES WILL BE SET TO FOLLOW GRADE OF SIDEWALK SO THAT POSTS ARE VERTICAL.
5. PROVIDE RAILING EXPANSION JOINTS AT 25' ON CENTER MAX. RAILING EXPANSION MEASURES SHALL BE SHOWN ON SHOP DRAWINGS.
6. ALL RAILING MEMBER CONNECTIONS SHALL BE INDICATED ON THE SHOP DRAWINGS.

RAILING DETAIL



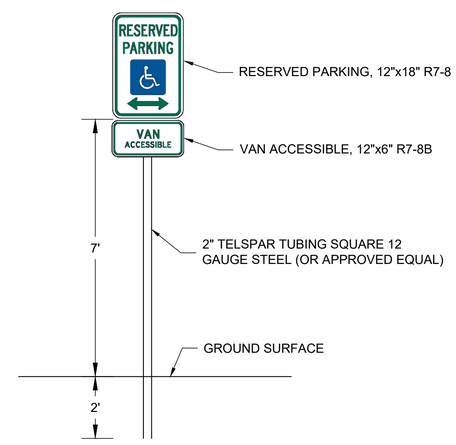
NOTES:
1. PAINT BASE PLATES AFTER FABRICATION.
2. INSTALL BASE PLATES FLUSH WITH CONCRETE.
3. PAINT AFTER WELDING POST.

BASE PLATE DETAIL



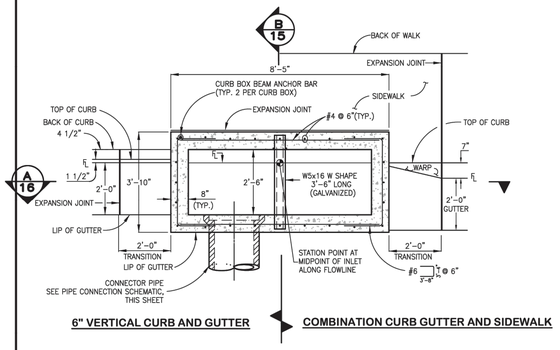
SIDEWALK EXPANSION JOINT AT BUILDINGS

N.T.S.



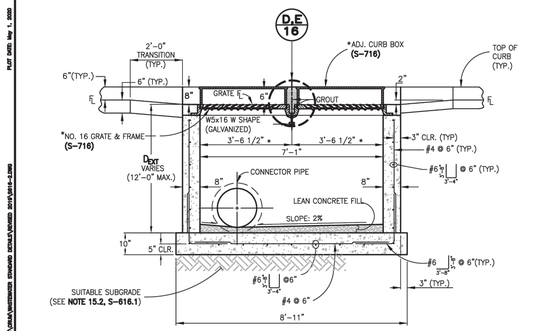
RESERVED PARKING DETAIL

NTS



6" VERTICAL CURB AND GUTTER | **COMBINATION CURB GUTTER AND SIDEWALK**

PLAN
NO SCALE



A SECTION
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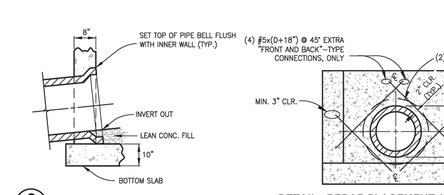
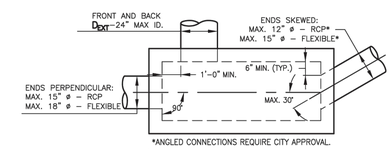
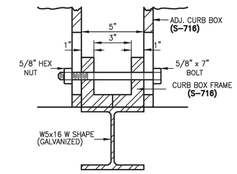


C DETAIL - CONNECTOR OUTLET
NO SCALE

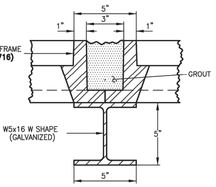
DETAIL - REBAR PLACEMENT AROUND CONNECTOR PIPE
NO SCALE



PIPE CONNECTION SCHEMATIC (NO. 16 INLET)
THIS DIAGRAM IS PROVIDED FOR GENERAL GUIDANCE ONLY. THE DESIGNER IS RESPONSIBLE FOR VERIFYING PROJECT SPECIFIC GEOMETRY.



D DETAIL - PLACEMENT OF ADJ. CURB BOX ON SUPPORT RAIL (TYP.)
NO SCALE



E DETAIL - FRAME PLACEMENT ON SUPPORT RAIL (TYP.)
NO SCALE

DOUBLE NUMBER 16 INLET NOTES:

16.1 SEE DETAIL SPECIFICATIONS SECTION 11.05 STORM INLETS FOR MORE INFORMATION. USE OF THIS DETAIL WITHOUT SPECIFICATIONS SHALL BE CONSIDERED NON-COMPLIANT.

16.2 SEE GENERAL NOTES ON **S–616.1.**

16.3 EXPANSION JOINT MATERIAL SHALL BE PLACED FULL DEPTH OF THE CURB AND GUTTER, SIDEWALK, CONCRETE PAVEMENT, AS APPLICABLE. THE TOP PORTION OF THE JOINT SHALL BE SEALED WITH SILICONE SEALANT.

16.4 SEE **S–616.1** FOR REBAR PLACEMENT AT WALL PENETRATION DETAIL.

* STANDARD DETAIL **S–716** APPLIES TO ALL OF THE GRATE & FRAME GEOMETRIC DIMENSIONS FOR THE DOUBLE NUMBER 16 INLET EXCEPT FOR THE FRAME LENGTH. FRAME LENGTH SHOULD BE MANUFACTURED FOR THE DIMENSIONS CALLED OUT ON THIS SHEET.

PLOT DATE: May 1, 2020
S:\PW_FILES\PW_DRAWINGS\STANDARD DETAILS\DWGS\ 2016\std16-s1.dwg

BY | DATE | DESCRIPTION OF REVISIONS | NO

DENVER THE MILE HIGH CITY

CITY AND COUNTY OF DENVER
2000 W. 3RD AVE. DENVER, CO 80223
www.denvergov.org

STANDARD DETAILS
DOUBLE NUMBER 16 INLET

S-616.2

DRAWN BY: ----
DESIGNED BY: ASP/JDMT
APPROVED BY: ----
DRAWING NAME: std16-s1.dwg
DATE: JUNE 2020
SHEET NO.: 16

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FIR Plans
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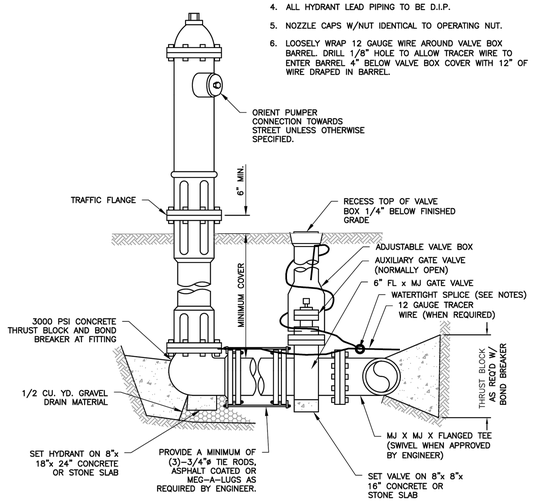
PHASE 6A CIVIL DETAILS
Designer: T. Nuetzel
Detailer: B. Risk
Sheet Subset:
Structure Numbers
Subset Sheets: C1002 of

Project No./Code
TRG M535-014
25924
Sheet Number

NOTES:

1. ALL JOINTS FROM MAIN TO HYDRANT SHALL BE HARNESSED MECHANICAL JOINTS OR FLANGED JOINTS.
2. HYDRANT, VALVE & FITTINGS TO BE 250 PSI RATED.
3. POLYETHYLENE WRAP (WHEN REQUIRED) SHALL COVER ASSEMBLY FROM HYDRANT BASE TO WATER MAIN.
4. ALL HYDRANT LEAD PIPING TO BE D.I.P.
5. NOZZLE CAPS W/NUT IDENTICAL TO OPERATING NUT.
6. LOOSELY WRAP 12 GAUGE WIRE AROUND VALVE BOX BARREL. DRILL 1/8" HOLE TO ALLOW TRACER WIRE TO ENTER BARREL 4" BELOW VALVE BOX COVER WITH 12" OF WIRE DRAPED IN BARREL.

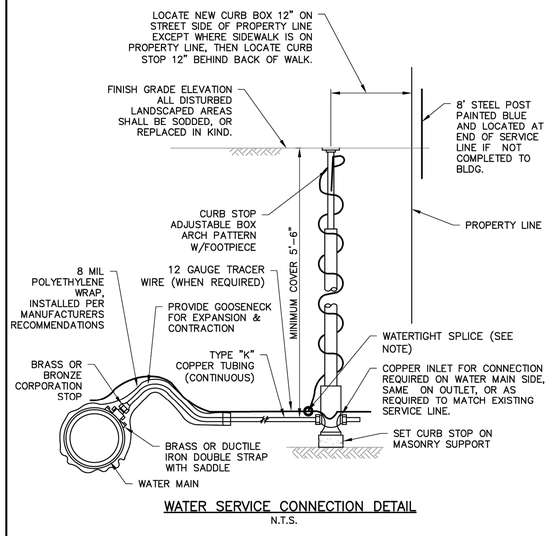


FIRE HYDRANT ASSEMBLY DETAIL

N.T.S.

City of Glenwood Springs 101 West 8th Street Glenwood Springs, CO 81601 970.384.6435 www.ci.glenwood-springs.co.us	Fire Hydrant Assembly Detail	Approved: XX Date: 2/23/18 Modified: 2/23/18 File: WaterFireHydrantDetail	Drawing # W03
	Division: Water Standard Details		

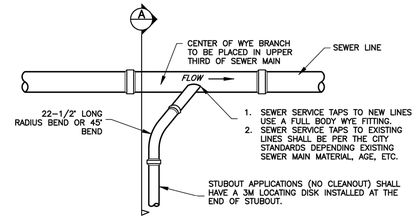
NOTE:
LOOSELY WRAP 12 GAUGE WIRE AROUND VALVE BOX BARREL. DRILL 1/8" HOLE TO ALLOW TRACER WIRE TO ENTER BARREL 4" BELOW VALVE BOX COVER WITH 12" OF WIRE DRAPED IN BARREL.



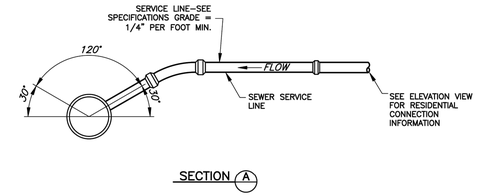
WATER SERVICE CONNECTION DETAIL

N.T.S.

City of Glenwood Springs 101 West 8th Street Glenwood Springs, CO 81601 970.384.6435 www.ci.glenwood-springs.co.us	Water Service Connection Detail	Approved: XX Date: 2/23/18 Modified: 2/23/18 File: WaterServiceDetail	Drawing # W08
	Division: Water Standard Details		



PLAN



SECTION A

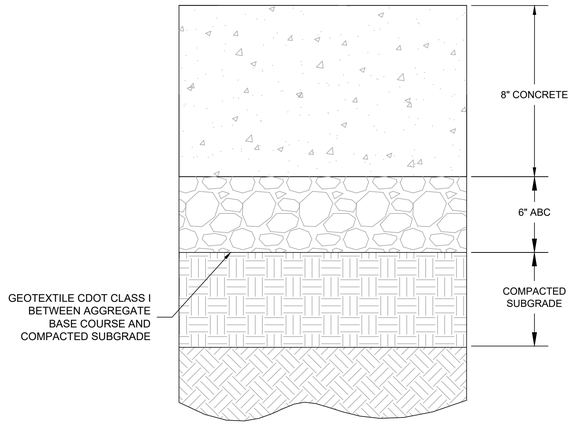
NOTES:

1. MINIMUM SEPARATION BETWEEN TAPS SHALL BE 5' PER STANDARDS.
2. BACKFILL UNDER WYE TO BE ROADBASE AGGREGATE BASE COURSE. 95% COMPACTION DENSITY PER ASTM D-698.

SEWER SERVICE CONNECTION

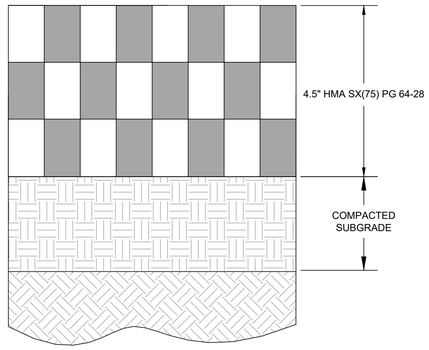
N.T.S.

City of Glenwood Springs 101 West 8th Street Glenwood Springs, CO 81601 970.384.6435 www.ci.glenwood-springs.co.us	Sewer Service Connection Detail	Approved: XX Date: 3/22/16 Modified: 3/22/16 File: SewerServiceDetail	Drawing # S06
	Division: Sewer Standard Details		



CONCRETE PAVEMENT SECTION

NTS



ASPHALT PAVEMENT SECTION

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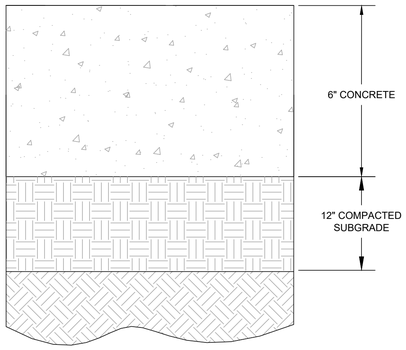

CONCRETE SIDEWALK SECTION

NTS

PAVEMENT NOTES:

ABC: CDOT CLASS 6 AGGREGATE BASE COURSE

PAVEMENT COMPACTED SUBGRADE: THE COLLAPSING SOILS HAVE TO BE ADDRESSED BEFORE ANY PAVEMENT OR STRUCTURE IS CONSTRUCTED AT THIS SITE BY SUBEXCAVATING THE TOP 5 FEET OF THE EXISTING SOIL AND RECOMPACTING IT AT OPTIMUM OR ABOVE OPTIMUM MOISTURE CONTENT, REMOVING AND REPLACING THE EXISTING COLLAPSING SOIL AND PLACING SELECT MATERIAL AT A DEPTH SUFFICIENT TO MINIMIZE COLLAPSING OR SETTLEMENT OR IMPORTING ADDITIONAL FILL AND ALLOWING IT TO SETTLE BEFORE CONSTRUCTION.

SIDEWALK COMPACTED SUBGRADE: SUBEXCAVATION OF 12 INCHES BELOW GRADE FOR PROPOSED SIDEWALK CONSTRUCTION. NATURAL LOOSE SAND AND GRAVEL SOILS BELOW THE SUBGRADE SHALL BE REMOVED AND REPLACED AS RECOMMENDED ABOVE. GREATER DEPTHS OF MOISTURE-DENSITY CONDITIONING OF THE SUBGRADE SOILS MAY BE NEEDED LOCALLY, DEPENDING ON THE CONDITIONS EXPOSED.

PAVEMENT PROOFROLLING: THE PAVEMENT SUBGRADE SHOULD BE PROOF ROLLED WITH A HEAVILY LOADED PNEUMATIC-TIRE VEHICLE. AREAS THAT DEFORM MORE THAN ½-INCH UNDER HEAVY WHEEL LOADS SHOULD BE REMOVED, REPLACED IF NECESSARY, AND REWORKED TO ACHIEVE A STABLE SUBGRADE PRIOR TO PAVING. WE RECOMMEND THAT PROOF ROLLING AND COMPACTION TESTS BE OBSERVED AND DOCUMENTED BY A REPRESENTATIVE OF A REGISTERED PROFESSIONAL ENGINEER.

SIDEWALK PROOFROLLING: PRIOR TO PLACEMENT OF FILL, A PROOF ROLL SHOULD BE PERFORMED TO IDENTIFY AREAS THAT EXHIBIT INSTABILITY AND DEFLECTION. THE DELETERIOUS SOILS IN THESE AREAS SHOULD BE REMOVED AND REPLACED WITH PROPERLY COMPACTED FILL AS MENTIONED ABOVE. PROOFROLL TESTS ARE IN ADDITION TO THE REQUIREMENT TO PLACING AND COMPACTING OF SUBGRADE FILL SOILS WITHIN THE RECOMMENDED RANGES OF MOISTURE CONTENT AND RELATIVE COMPACTION PRESENTED IN THIS REPORT.

THE SIDEWALK CONSTRUCTION SHOULD CONSIST OF CONTROL JOINTS EXTENDING TO AN EFFECTIVE DEPTH IF NECESSARY AND SPACED NO MORE THAN 10 FEET APART.

SECTIONS ARE BASED ON RECOMMENDATIONS BY "FINAL REPORT GEOTECHNICAL INVESTIGATION RFTA WEST GLENWOOD SPRINGS PARK N RIDE PAVEMENT AND RETAINING WALL RECOMMENDATIONS" BY YEH AND ASSOCIATES INC., JULY 30, 2015.

CONTRACTOR TO PREPARE A JOINTING PLAN FOR ENGINEER REVIEW AND APPROVAL MINIMUM 7 DAYS PRIOR TO PLACING ANY CONCRETE PAVEMENT.

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Sheet Revisions

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	09/17/24	50% CONSTRUCTION DOCUMENTS	TN/BR

ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

Revised:

Void:

PHASE 6A CIVIL DETAILS

Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C1003 of

Project No./Code

TRG M535-014

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Sheet Number

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PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	

Advanced Drainage Systems, Inc.

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WEST GLENWOOD TRANSIT CENTER

GLENWOOD SPRINGS, CO, USA

MC-7200 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-7200.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101.
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/% THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-7200 CHAMBER SYSTEM

1. STORMTECH MC-7200 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
10. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
11. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
12. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-7200 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-7200 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

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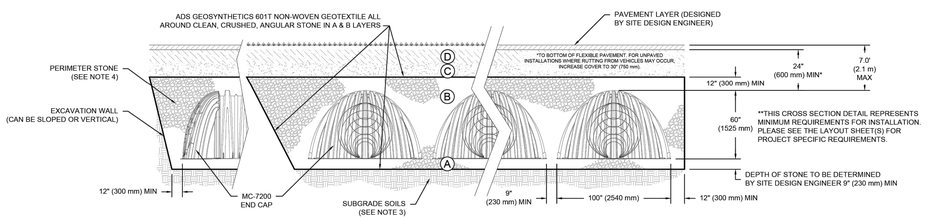
ACCEPTABLE FILL MATERIALS: STORMTECH MC-7200 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[3]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[3]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
2. MC-7200 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/% THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

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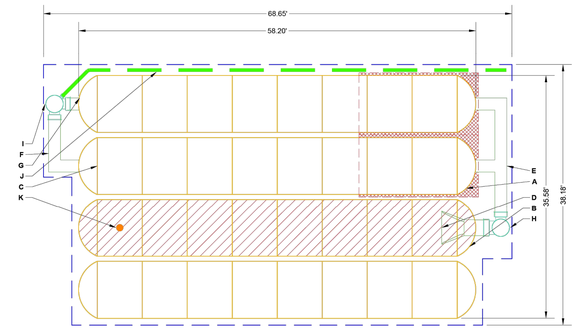
SHEET 3 OF 6

PROPOSED LAYOUT		CONCEPTUAL ELEVATIONS:	
32	STORMTECH MC-7200 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	12.75
8	STORMTECH MC-7200 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	8.25
12	STONE ABOVE (in)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	7.75
9	STONE BELOW (in)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	7.75
40	STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	7.75
10288	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)	TOP OF STONE:	6.75
		TOP OF MC-7200 CHAMBER:	5.75
		18" x 18" TOP MANIFOLD INVERT:	3.25
		24" ISOLATOR ROW PLUS INVERT:	0.54
2489	SYSTEM AREA (SF)	18" x 18" BOTTOM MANIFOLD INVERT:	0.91
213.7	SYSTEM PERIMETER (ft)	18" BOTTOM CONNECTION INVERT:	0.91
		BOTTOM OF MC-7200 CHAMBER:	0.75
		UNDERDRAIN INVERT:	0.00
		BOTTOM OF STONE:	0.00

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED END CAP	A	18" TOP PARTIAL CUT END CAP. PART# MC7200IEPP18T / TYP OF ALL 18" TOP CONNECTIONS	29.36"	
PREFABRICATED END CAP	B	24" BOTTOM PARTIAL CUT END CAP, PART# MC7200IEPP24B / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.26"	
PREFABRICATED END CAP	C	18" BOTTOM PARTIAL CUT END CAP. PART#: MC7200IEPP18B / TYP OF ALL 18" BOTTOM CONNECTIONS	1.97"	
	D	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: MCFLAMP		
	E	18" x 18" TOP MANIFOLD, ADS N-12	29.36"	
	F	18" x 18" BOTTOM MANIFOLD, ADS N-12	1.97"	
	G	18" BOTTOM CONNECTION	1.97"	
NYLOPLAST (INLET W/ ISO PLUS ROW)	H	30" DIAMETER (24.00" SUMP MIN)		11.0 CFS IN
NYLOPLAST (OUTLET)	I	30" DIAMETER (DESIGN BY ENGINEER)		8.0 CFS OUT
UNDERDRAIN	J	6" ADS N-12 DUAL WALL PERFORATED HDPE UNDERDRAIN		
INSPECTION PORT	K	6" SEE DETAIL		



ISOLATOR ROW PLUS (SEE DETAIL)

PLACE MINIMUM 17.50' OF ADSPLUS125 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

NOTES
- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

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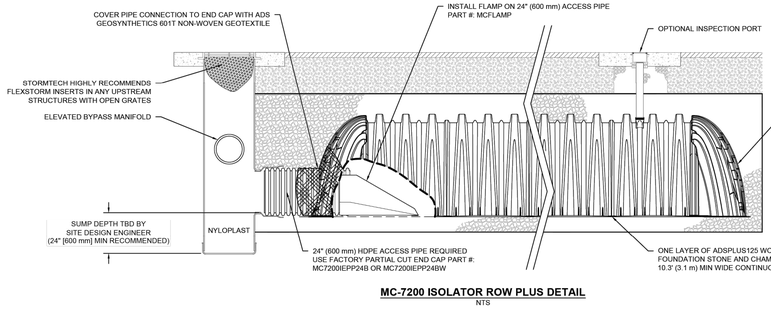


MC-7200 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

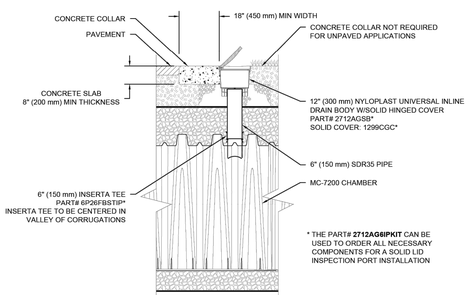
STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



MC-7200 6" (150 mm) INSPECTION PORT DETAIL
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Sheet Revisions

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	09/17/24	50% CONSTRUCTION DOCUMENTS	TN/BR

ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

Revised:

Void:

PHASE 6A CIVIL DETAILS

Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C1004 of

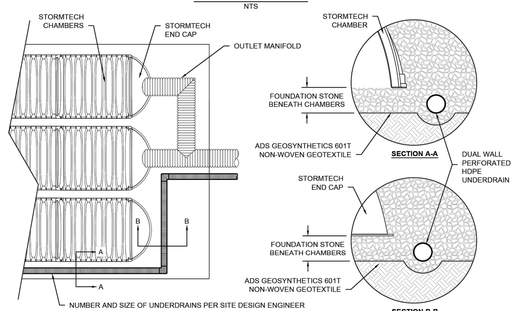
Project No./Code

TRG M535-014

25924

Sheet Number

UNDERDRAIN DETAIL
NTS

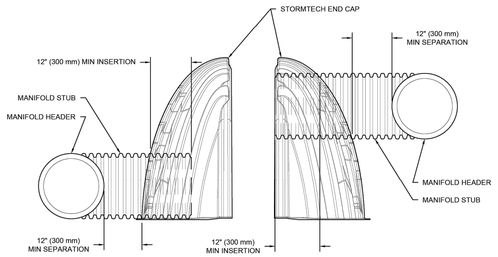


SECTION A-A

SECTION B-B

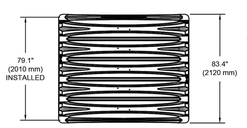
NUMBER AND SIZE OF UNDERDRAINS PER SITE DESIGN ENGINEER
4" (100 mm) TYP FOR SC-310 & SC-160LP SYSTEMS
6" (150 mm) TYP FOR SC-740, SC-800, DC-780, MC-3500, MC-4500 & MC-7200 SYSTEMS

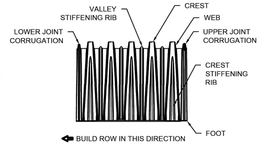
MC-SERIES END CAP INSERTION DETAIL
NTS

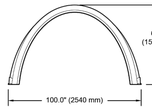


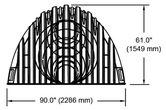
NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

MC-7200 TECHNICAL SPECIFICATION
NTS









NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	100.0" X 60.0" X 79.1"	(2540 mm X 1524 mm X 2010 mm)
CHAMBER STORAGE	175.9 CUBIC FEET	(4.98 m³)
MINIMUM INSTALLED STORAGE*	267.3 CUBIC FEET	(7.56 m³)
WEIGHT (NOMINAL)	205 lbs.	(92.9 kg)

NOMINAL END CAP SPECIFICATIONS

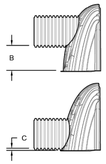
SIZE (W X H X INSTALLED LENGTH)	90.0" X 61.0" X 32.8"	(2286 mm X 1549 mm X 833 mm)
END CAP STORAGE	39.5 CUBIC FEET	(1.12 m³)
MINIMUM INSTALLED STORAGE*	115.3 CUBIC FEET	(3.26 m³)
WEIGHT (NOMINAL)	90 lbs.	(40.8 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC7200IEPP06T	6" (150 mm)	42.54" (1081 mm)	---
MC7200IEPP06B		---	0.86" (22 mm)
MC7200IEPP08T	8" (200 mm)	40.50" (1029 mm)	---
MC7200IEPP08B		---	1.01" (26 mm)
MC7200IEPP10T	10" (250 mm)	38.37" (975 mm)	---
MC7200IEPP10B		---	1.33" (34 mm)
MC7200IEPP12T	12" (300 mm)	35.69" (907 mm)	---
MC7200IEPP12B		---	1.55" (39 mm)
MC7200IEPP15T	15" (375 mm)	32.72" (831 mm)	---
MC7200IEPP15B		---	1.70" (43 mm)
MC7200IEPP18T	18" (450 mm)	29.36" (746 mm)	---
MC7200IEPP18TW		---	---
MC7200IEPP18B		---	1.97" (50 mm)
MC7200IEPP18BW			
MC7200IEPP24T	24" (600 mm)	23.05" (585 mm)	---
MC7200IEPP24TW		---	---
MC7200IEPP24B			2.26" (57 mm)
MC7200IEPP24BW			
MC7200IEPP30BW	30" (750 mm)	---	2.95" (75 mm)
MC7200IEPP36BW	36" (900 mm)	---	3.25" (83 mm)
MC7200IEPP42BW	42" (1050 mm)	---	3.55" (90 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PREFABRICATED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-7200 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

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1-800-733-7473

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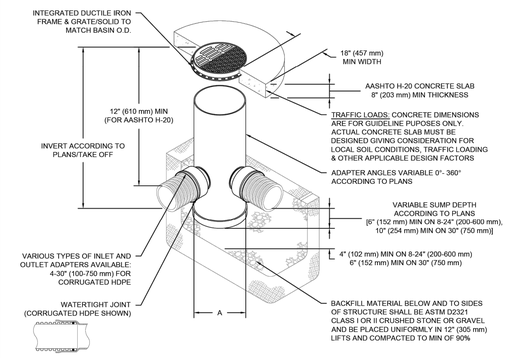
SHEET 5 OF 6

NYLOPLAST DRAIN BASIN
NTS



NOTES

1. 8-30" (200-750 mm) GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
2. 12-30" (300-750 mm) FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS
4. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
5. FOR COMPLETE DESIGN AND PRODUCT INFORMATION: **WWW.NYLOPLAST-US.COM**
6. TO ORDER CALL: **800-821-6710**

A	PART #	GRATE/SOLID COVER OPTIONS		
8" (200 mm)	2808AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
10" (250 mm)	2810AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
12" (300 mm)	2812AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
15" (375 mm)	2815AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
18" (450 mm)	2818AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
24" (600 mm)	2824AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
30" (750 mm)	2830AG	PEDESTRIAN AASHTO H-20	STANDARD AASHTO H-20	SOLID AASHTO H-20

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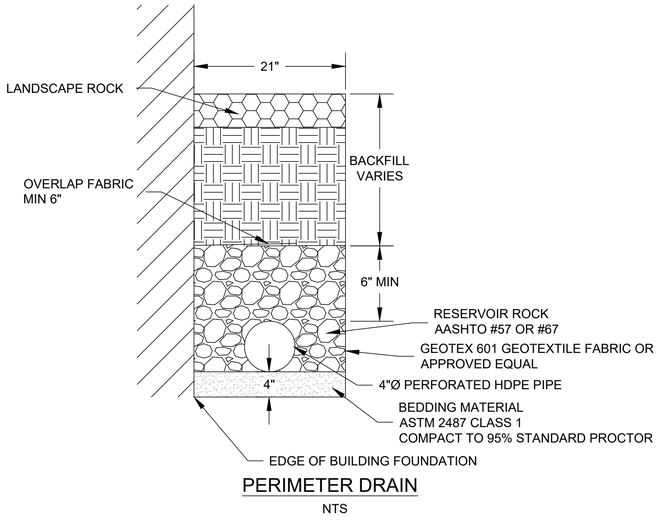
SHEET 6 OF 6



PERIMETER DRAIN
NTS

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ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans
No Revisions:
Revised:
Void:

PHASE 6A CIVIL DETAILS

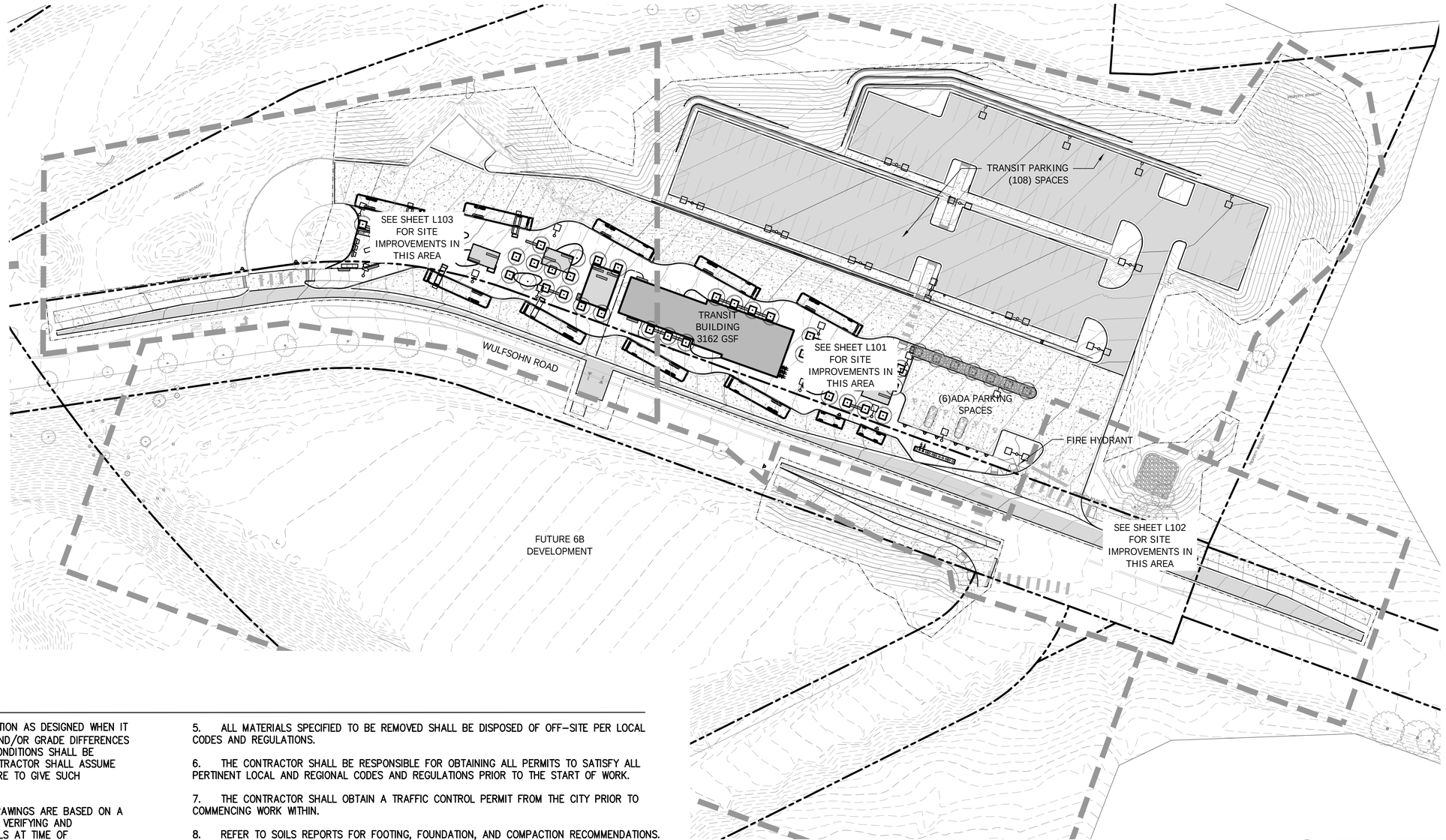
Designer:	T. Nuetzel	Structure Numbers	
Detailer:	B. Risk		
Sheet Subset:		Subset Sheets:	C1005 of

Project No./Code
TRG M535-014
25924
Sheet Number

LEGEND

- PROPERTY BOUNDARY
- SHEET MATCHLINE
- EXISTING CONTOURS
- EXISTING TREES TO REMAIN
- PROPOSED SITE WALLS (SEE CIVIL & STRUCTURAL DWGS.
- PROPOSED BACKLESS BENCH
- PROPOSED TREE GRATE W/ TREE PROTECTION & STRUCTURAL SOIL
- PROPOSED BUS CHARGING STATION (SEE MEP)
- PROPOSED SCREENING FENCE
- PROPOSED SHADE STRUCTURE
- PROPOSED RAISED PLANTER
- PROPOSED SITE LIGHTING (SEE LIGHTING PLANS)
- PROPOSED BEAR–PROOF TRASH AND RECYCLING RECEPTACLE
- PROPOSED BIKE SHARE STATION (SEE CIVIL AND WECYCLE)
- PROPOSED BIKE RACK
- PROPOSED ASPHALT PAVING; SEE CIVIL
- PROPOSED CONCRETE VEHICULAR PAVING; SEE CIVIL
- PROPOSED CONCRETE PEDESTRIAN PAVING; SEE CIVIL

NOTE: SEE INDIVIDUAL PLAN ENLARGEMENTS FOR MATERIAL & FURNISHINGS CALL–OUTS, AND DETAIL REFERENCES.



GENERAL NOTES

1. CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS, AREA DISCREPANCIES AND/OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATIONS.

2. EXISTING UTILITY ALIGNMENTS AND GRADES SHOWN ON THE DRAWINGS ARE BASED ON A FIELD SURVEY. THE CONTRACTOR SHALL STILL BE RESPONSIBLE FOR VERIFYING AND DETERMINING EXACT LOCATIONS, DIMENSIONS, DEPTHS, AND MATERIALS AT TIME OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES FAR ENOUGH IN ADVANCE OF NEW CONSTRUCTION TO ALLOW FOR POSSIBLE GRADE, DEPTH, ALIGNMENT, OR MATERIAL CHANGES. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES DURING ALL DEMOLITION AND CONSTRUCTION OPERATIONS. CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR COSTS INCURRED DUE TO DAMAGE AND REPLACEMENT OF SAID UTILITIES.

3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH ALL CONSTRUCTION OPERATIONS. ALL PIPING, CONDUIT, SLEEVES, ETC., SHALL BE SET IN PLACE PRIOR TO INSTALLATION OF CONSTRUCTION ITEMS.

4. ALL EXISTING IMPROVEMENTS TO REMAIN SHALL BE PROPERLY AND ADEQUATELY PROTECTED FROM DAMAGE DURING CONSTRUCTION AND DEMOLITION OPERATIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESTORE TO THE ORIGINAL CONDITION ANY EXISTING ITEMS THAT ARE DAMAGED OR DISTURBED IN ANY WAY. ALL MATERIALS TO BE REUSED OR SALVAGED SHALL BE STORED IN AN AREA DESIGNATED BY THE OWNER FOR THAT PURPOSE. ALL SALVAGED MATERIALS SHALL REMAIN THE PROPERTY OF THE OWNER.

5. ALL MATERIALS SPECIFIED TO BE REMOVED SHALL BE DISPOSED OF OFF–SITE PER LOCAL CODES AND REGULATIONS.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS TO SATISFY ALL PERTINENT LOCAL AND REGIONAL CODES AND REGULATIONS PRIOR TO THE START OF WORK.

7. THE CONTRACTOR SHALL OBTAIN A TRAFFIC CONTROL PERMIT FROM THE CITY PRIOR TO COMMENCING WORK WITHIN.

8. REFER TO SOILS REPORTS FOR FOOTING, FOUNDATION, AND COMPACTION RECOMMENDATIONS.

9. PRESERVE AND PROTECT ALL EXISTING TREES ON SITE, UNLESS NOTED AS A REMOVAL.

10. ALL DEMOLITION MUST BE COORDINATED WITH THE OWNER, THE CIVIL ENGINEER, AND BE FIELD VERIFIED.

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ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans	
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SITE PLAN 6A

Designer:	LW	Structure Numbers	
Detailer:	SH		
Sheet Subset:		Subset Sheets:	of

Project No./Code	
TRG M535-014	
25924	
Sheet Number	**L100**

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- PROPOSED CONCRETE PEDESTRIAN PAVING; SEE CIVIL
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NOTES:
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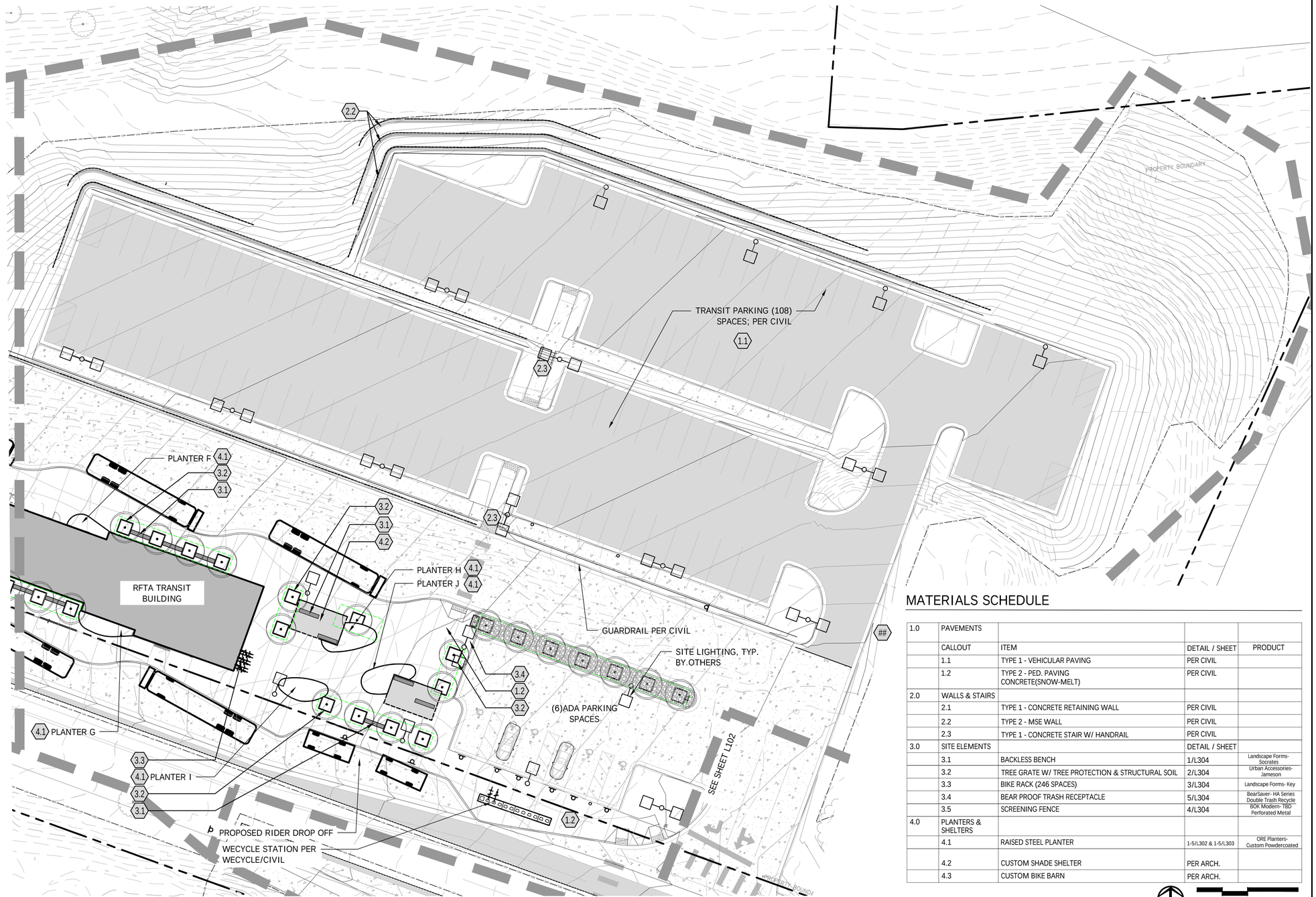
2.PAVEMENT MARKINGS & ADA CURB RAMPS PER CIVIL.



MATERIALS SCHEDULE

1.0	PAVEMENTS			
	CALLOUT	ITEM	DETAIL / SHEET	PRODUCT
	1.1	TYPE 1 - VEHICULAR PAVING	PER CIVIL	
	1.2	TYPE 2 - PED. PAVING CONCRETE(SNOW-MELT)	PER CIVIL	
2.0	WALLS & STAIRS			
	2.1	TYPE 1 - CONCRETE RETAINING WALL	PER CIVIL	
	2.2	TYPE 2 - MSE WALL	PER CIVIL	
	2.3	TYPE 1 - CONCRETE STAIR W/ HANDRAIL	PER CIVIL	
3.0	SITE ELEMENTS		DETAIL / SHEET	
	3.1	BACKLESS BENCH	1/L304	Landscape Forms- Socrates
	3.2	TREE GRATE W/ TREE PROTECTION & STRUCTURAL SOIL	2/L304	Urban Accessories- Jameson
	3.3	BIKE RACK (246 SPACES)	3/L304	Landscape Forms- Key
	3.4	BEAR PROOF TRASH RECEPTACLE	5/L304	BearSaver- HA Series Double Trash Recycle
	3.5	SCREENING FENCE	4/L304	BOK Modern- TBD Perforated Metal
4.0	PLANTERS & SHELTERS			
	4.1	RAISED STEEL PLANTER	1-5/L302 & 1-5/L303	ORE Planters- Custom Powdercoated
	4.2	CUSTOM SHADE SHELTER	PER ARCH.	
	4.3	CUSTOM BIKE BARN	PER ARCH.	

0' 20' 40' 80'
Scale: 1" = 40'-0"
WHEN PRINTED AT 22"x34"

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SITE PLAN 6A

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25924
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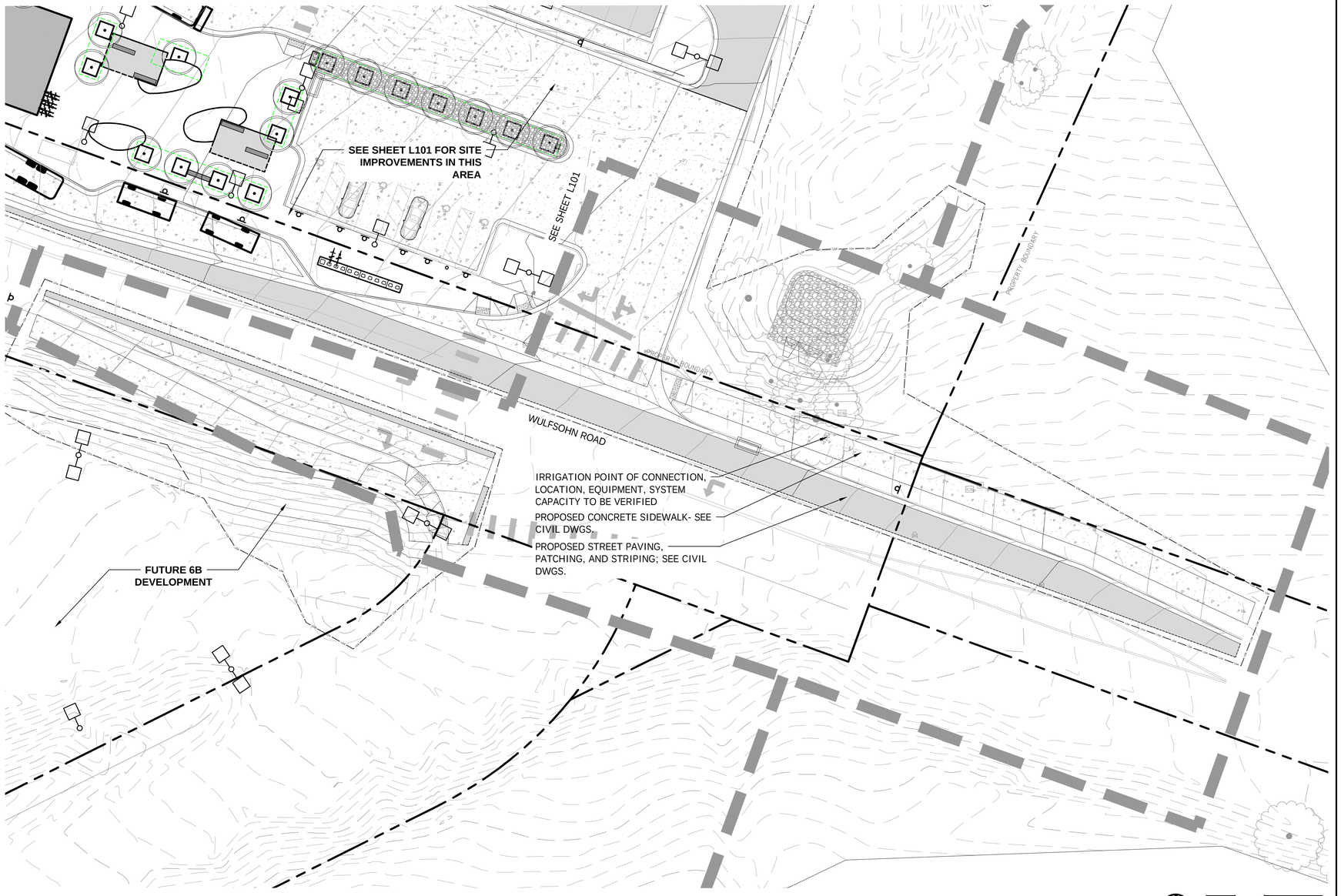

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SITE MATERIALS PLAN
6A SOUTH EAST

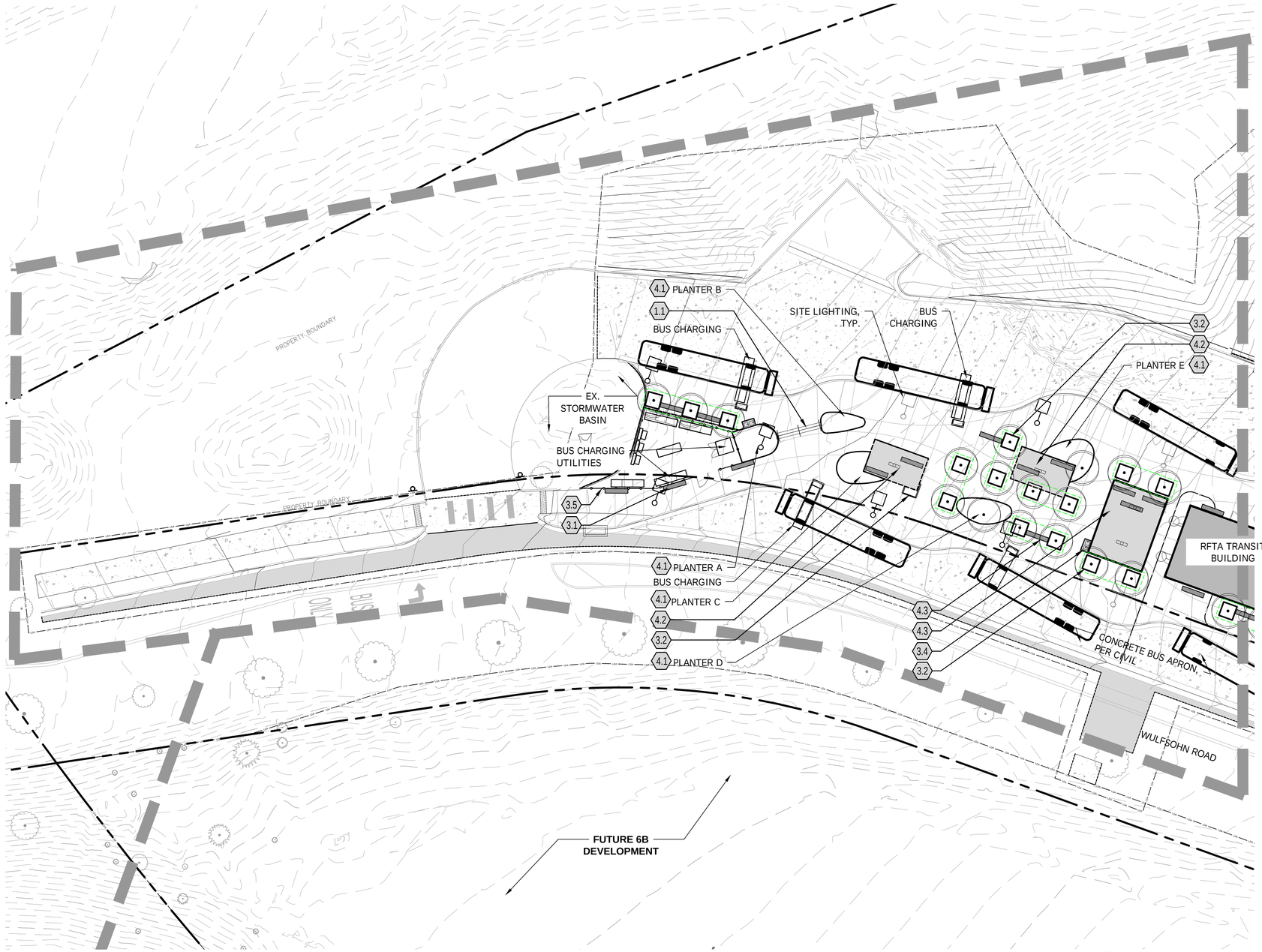
Designer: LW
Detailer: SH
Structure Numbers:
Sheet Subset:
Subset Sheets: of

Project No./Code
TRG M535-014
25924
Sheet Number **L102**

LEGEND

- PROPERTY BOUNDARY
- SHEET MATCHLINE
- EXISTING CONTOURS
- EXISTING TREES TO REMAIN
- PROPOSED SITE WALLS (SEE CIVIL & STRUCTURAL DWGS.
- PROPOSED BACKLESS BENCH
- PROPOSED TREE GRATE W/ TREE PROTECTION & STRUCTURAL SOIL
- PROPOSED BUS CHARGING STATION (SEE MEP)
- PROPOSED SCREENING FENCE
- PROPOSED SHADE STRUCTURE
- PROPOSED RAISED PLANTER
- PROPOSED SITE LIGHTING (SEE LIGHTING PLANS)
- PROPOSED BEAR-PROOF TRASH AND RECYCLING RECEPTACLE
- PROPOSED BIKE SHARE STATION (SEE CIVIL AND WECYCLE)
- PROPOSED BIKE RACK
- PROPOSED ASPHALT PAVING; SEE CIVIL
- PROPOSED CONCRETE VEHICULAR PAVING; SEE CIVIL
- PROPOSED CONCRETE PEDESTRIAN PAVING; SEE CIVIL
- STRUCTURAL SOIL EXTENTS (SEE PLANTING PLANS & NOTES)

NOTES:
1.SEE CIVIL PLANS FOR ALL GRADING & DRAINAGE.
2.PAVEMENT MARKINGS & ADA CURB RAMPS PER CIVIL.



MATERIALS SCHEDULE

##					
	1.0	PAVEMENTS			
		CALLOUT	ITEM	DETAIL / SHEET	PRODUCT
		1.1	TYPE 1 - VEHICULAR PAVING	PER CIVIL	
		1.2	TYPE 2 - PED. PAVING CONCRETE(SNOW-MELT)	PER CIVIL	
	2.0	WALLS & STAIRS			
		2.1	TYPE 1 - CONCRETE RETAINING WALL	PER CIVIL	
		2.2	TYPE 2 - MSE WALL	PER CIVIL	
		2.3	TYPE 1 - CONCRETE STAIR W/ HANDRAIL	PER CIVIL	
	3.0	SITE ELEMENTS		DETAIL / SHEET	
		3.1	BACKLESS BENCH	1/L304	Landscape Forms- Socrates
		3.2	TREE GRATE W/ TREE PROTECTION & STRUCTURAL SOIL	2/L304	Urban Accessories- Jameson
		3.3	BIKE RACK	3/L304	Landscape Forms- Key
		3.4	BEAR PROOF TRASH RECEPTACLE	5/L304	BearSaver- HA Series Double Trash Recycle BOK Modern- TBD Perforated Metal
		3.5	SCREENING FENCE	4/L304	
	4.0	PLANTERS & SHELTERS			
		4.1	RAISED STEEL PLANTER	1-5/L302 & 1-5/L303	ORE Planters- Custom Powdercoated
		4.2	CUSTOM SHADE SHELTER	PER ARCH.	
		4.3	CUSTOM BIKE BARN	PER ARCH.	

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	09/17/24	50% CD	LW/SH

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SITE MATERIALS PLAN 6A WEST

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PLANTING NOTES

1. CONTRACTOR TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO BEFORE DIGGING, INCLUDING BUT NOT LIMITED TO, TRENCHING AND SHRUB AND TREE PLANTING PITS. IF UTILITIES OCCUR AT LOCATIONS OF PROPOSED SHRUBS, OR WITHIN EIGHT (8) FEET OF PROPOSED TREES, THE CONTRACTOR SHALL REPORT SUCH CONDITIONS TO THE OWNER'S REPRESENTATIVE. DAMAGE TO EXISTING UTILITIES BY THE LANDSCAPE CONTRACTOR IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.

2. THE LANDSCAPE PLAN AND DETAILS ARE TO BE USED IN CONJUNCTION WITH THE CIVIL AND ARCHITECTURAL PLANS TO FORM COMPLETE INFORMATION REGARDING SITE WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH ALL CONSTRUCTION OPERATIONS. ALL PIPING, CONDUIT, SLEEVES, ETC., SHALL BE SET IN PLACE PRIOR TO INSTALLATION OF CONSTRUCTION ITEMS.

3. ALL EXISTING IMPROVEMENTS TO REMAIN, INCLUDING BUT NOT LIMITED TO UTILITIES, CURB AND GUTTER, WALKWAYS, EXISTING IRRIGATION , AND EXISTING STRUCTURES, SHALL BE PROPERLY AND ADEQUATELY PROTECTED FROM DAMAGE DURING CONSTRUCTION OPERATIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESTORE TO THE ORIGINAL CONDITION ANY EXISTING ITEMS THAT ARE DAMAGED OR DISTURBED IN ANY WAY, AND AT NO ADDITIONAL COST TO THE OWNER.

4. TO THE MAXIMUM EXTENT POSSIBLE, TOPSOIL THAT IS REMOVED DURING CONSTRUCTION ACTIVITY SHALL BE STOCKPILED ON-SITE FOR LATER USE ON AREAS REQUIRING REVEGETATION AND LANDSCAPING.

6. DURING ROUGH CLEARING AND GRUBBING, AND ESTABLISHMENT OF ROUGH GRADE, EARTHMOVING CONTRACTOR TO REMOVE ROOTS, STUMPS, LARGE BOULDERS, ORGANIC MATERIAL, AND OTHER DELETERIOUS MATERIAL PER THE CIVIL REQUIREMENTS FOR MASS EXCAVATION AND ROUGH GRADING.

7. PRIOR TO PLACING OF TOPSOIL OR SOIL AMENDMENTS, CONTRACTOR TO REMOVE SURFACE STONES AND PREPARE SUBGRADE AS FOLLOWS:
   a. NATIVE SEED AREAS: BOULDERS AND ROCKS RETAINED BY A 4" SCREEN
   b. IN-GROUND PLANTING BED AREAS: SCARIFY NATIVE SOIL TO A DEPTH OF 18" BELOW FINISHED GRADE; REMOVE STONES LARGER THAN 6" (IN ANY DIMENSION); ADDITIONALLY REMOVE A VOLUME OF NATIVE SOIL SUFFICIENT TO ALLOW FOR ADDITION OF COMPOST AMENDMENT AS DESCRIBED BELOW. REMOVE ROCKS LARGER THAN 1" FROM THE TOP 6" OF NATIVE SOIL PRIOR TO AMENDING WITH COMPOST.
   c. ALL PLANTED AREAS IMPACTED BY UTILITY INSTALLATION, PAVING SUBGRADE, OR VEHICLE TRACKING: REMOVE GRAVELS AND SCARIFY SOILS TO CREATE A PLANTING LENS OF SOIL NO LESS THAN 6". SCARIFICATION AND PLANTING SOIL MAY BE DEEPER FOR SPECIFIC AREAS AS IDENTIFIED ON THE LANDSCAPE PLANS.
   d. TREE PLANTING TRENCH AT STRUCTURAL SOILS: EXCAVATE AND REMOVE NATIVE SOILS TO THE DEPTHS INDICATED IN THE PLANS AND DETAILS TO ALLOW FOR THE SPECIFIED VOLUMES OF STRUCTURAL SOIL AND PLANTING SOIL.
   d. IN NO CIRCUMSTANCE SHALL CONTRACTOR EXCAVATE SUBSOILS IN A MANNER THAT WILL UNDERMINE STRUCTURAL SUBGRADE, FOOTINGS, PAVING, UTILITIES, OR VIOLATE SPECIFICATIONS FOR RETAINING WALLS OR THE RECOMMENDATIONS OF THE GEOTECHNICAL SOILS STUDY.

8. CONTRACTOR SHALL FOLLOW THE LANDSCAPE PLAN. ANY DISCREPANCIES BETWEEN THE PLAN AND FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER'S AUTHORIZED REPRESENTATIVE BEFORE PROCEEDING WITH WORK.

9. CONTRACTOR SHALL USE LOCAL BEST MANAGEMENT PRACTICES FOR OBTAINING AND INSTALLING LANDSCAPE MATERIALS. COMPLETE THE WORK USING SKILLED PERSONNEL, PROFICIENT IN THE TRADES REQUIRED & IN A NEAT , ORDERLY AND RESPONSIBLE MANNER & WITH RECOGNIZED STANDARDS OF WORKMANSHIP.

10. ALL PLANTS TO BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. NOTIFY OWNER FOR INSPECTION AND APPROVAL OF PLANT MATERIAL AT TIME OF DELIVERY. TREES ARE TO BE TAGGED AT THE NURSERY BY OWNER'S REPRESENTATIVE. ANY PLANT NOT MEETING OWNER'S APPROVAL MAY BE REJECTED AT ANY TIME PRIOR TO FINAL ACCEPTANCE.

11. PLANT MATERIAL MUST MEET CURRENT LANDSCAPE NURSERY STANDARDS &/OR ANSI Z60.1.

12. IF PLANTS ARE NOT AVAILABLE, NOTIFY OWNER FOR APPROVAL OF CHANGE BEFORE MAKING SUBSTITUTIONS, INCLUDING SUB-SPECIES OR VARIETIES OF SPECIFIED PLANT.

13. THE OWNER'S AUTHORIZED REPRESENTATIVE MUST APPROVE ALL PLANTING LAYOUTS PRIOR TO PLANTING. ALL ADJUSTMENTS SHALL BE MADE BY THE CONTRACTOR PRIOR TO INSTALLING PLANTS. THE CONTRACTOR SHALL NOT DIG PLANT PITS UNTIL LOCATIONS ARE APPROVED.

14. MINOR FIELD ADJUSTMENTS TO THE PLANTING PLANS MAY BE NECESSARY BASED ON THE ACTUAL LOCATION OF LIGHTS, TRANSFORMERS, GROUND-MOUNTED CABINETS, UTILITY PEDESTALS, AND SIMILAR FEATURES. CONTRACTOR MUST OBTAIN APPROVAL FROM THE OWNER PRIOR TO ADJUSTING THE DESIGN.

15. IF THERE IS A DISCREPANCY BETWEEN THE PLANT COUNTS ON THE CALL-OUTS ON THE PLANS & THE ACTUAL NUMBER OF PLANT SYMBOLS DEPICTED ON THE PLANS, THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING THE ACTUAL NUMBER OF PLANTS AS SYMBOLICALLY DEPICTED ON THE PLANS.

16. ALL SHRUB BEDS AND SOD AREAS, IF ANY, SHALL BE CONTAINED BY A STEEL EDGER, OR A CONCRETE CURB, WALK, OR OTHER SHRUB BED DEFINING ELEMENT - AS PER PLANS AND SPECIFICATIONS.

17. SOD AREAS SHALL RECEIVE A MINIMUM OF 5 CU. YDS PER 1000 S.F. OF A-1 ORGANIC'S BIOCOMP, OR A WELL DECOMPOSED COMPOST APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. SHRUB BEDS SHALL RECEIVE A MINIMUM OF 4 CU. YDS. PER 1000 S.F. OF ONE OF THE ABOVE MATERIALS. ALL AMENDMENTS SHALL BE THOROUGHLY TILLED A MIN. OF 6" INTO THE SOIL.

18. SEEDED AREAS ARE TO RECEIVE AN AMENDMENT OF TRITON RICHLAWN OR APPROVED EQUAL. SOIL AMENDMENTS ARE TO BE APPLIED AT MANUFACTURER'S RECOMMENDED RATES AND IN THE SEQUENCE IDENTIFIED IN THESE NOTES.

19. IN-GROUND SHRUB BEDS ARE TO RECEIVE A MINIMUM OF 4 CUBIC YARDS OF COMPOST PER 1,000 SQUARE FEET OF BED AREA, TILLED INTO THE TOP 6" OF NATIVE SOILS FOLLOWING SUBSOIL PREPARATION AS IDENTIFIED ABOVE.

20. PLANTING BEDS, SHRUB PITS, TREE PITS ARE TO BE EXCAVATED PER THE PLANTING DETAILS. PLANTING PIT BACKFILL (AKA PLANTER MIX, AKA PLANTING SOIL) IS TO BE: 1 PART COMPOST TO 3 PARTS TOPSOIL PROVIDED BY A LOCAL TOPSOIL PROCESSING FACILITY. CONTRACTOR TO PROVIDE NUTRIENT ANALYSIS FOR PLANTING PIT BACKFILL FOR APPROVAL.

21. ALL LANDSCAPE AREAS WILL BE IRRIGATED WITH A FULLY AUTOMATIC UNDERGROUND IRRIGATION SYSTEM.

22. IRRIGATION SLEEVING SHALL BE INSTALLED PRIOR TO INSTALLING CONCRETE FLATWORK

23. MULCH - ALL PLANTING BEDS SHALL BE COVERED BY SOIL PEP MULCH (OR ACCEPTED SUBSTITUTION) AS APPROVED BY OWNER. ALSO REFER TO SPECIFICATIONS AND DETAILS.
   23.1. ALL SHRUB BEDS SHALL RECEIVE A MINIMUM OF 4" OF MULCH
      23.1.1. EXCEPT GROUNDCOVERS SHALL RECEIVE 3" OF MULCH.
      23.1.2. DO NOT BURY PERENNIALS OR ORNAMENTAL GRASSES WITH MULCH.
      23.1.3. MULCH RINGS AROUND SHRUBS IN NATIVE AREAS SHALL BE A MINIMUM OF 2' .
      23.1.4. MULCH RINGS AT TREES SHALL BE 4" DEEP IN NON-TURF AREAS & 2" DEEP IN TURF AREAS.
      23.1.1. PULL MULCH BACK 4-6" FROM TRUNK OF TREES AS PER DETAILS.
      23.1.2. DO NOT PROVIDE A WATER BASIN FOR TREES IN LAWN AREAS

24. SPACING / LAYOUT
   24.1. TREES TO BE CENTERED IN LANDSCAPE STRIPS OR TREE LAWNS UNLESS OTHERWISE NOTED. ALL OTHER TREES TO BE A MINIMUM OF 6' FROM HARDSCAPE.
   24.2. TREES TO BE A MINIMUM OF 8' FROM CENTER LINE OF UNDERGROUND UTILITIES SUCH AS STORM SEWERS, WATER MAINS, ETC.
   24.3. ALL EVERGREEN TREES SHALL BE A MINIMUM OF 12' FROM TRAILS, OR WALKS. EDGING SHALL BE MINIMUM OF 8' FROM EVERGREEN TREES.
   24.4. LARGE SHRUBS (THOSE OVER 6' SPACING AS SHOWN IN THE PLANT SCHEDULE) SHALL BE PLANTED A MINIMUM OF 5' FROM EDGER OR WALKS.
   24.5. SMALLER SHRUBS (THOSE LESS THAN 6' SPACING AS SHOWN IN THE PLANT SCHEDULE) SHALL BE PLANTED A MINIMUM OF 3' FROM EDGER OR WALKS.

25. ALL LANDSCAPE EDGING SHALL BE INSTALLED CAREFULLY SO AS TO NOT IMPACT THE ROOTS OF EXISTING TREES.

SEEDING NOTES:

BROADCAST SEEDING

1. SITE PREPARATION
   1.1. PREPARE AND PLAN - LIMIT SITE PREPARATION TO THOSE AREAS THAT WILL BE PLANTED WITHIN 24-48 HOURS AND WILL NOT BE ADVERSELY EFFECTED BY PREDICTED WEATHER PATTERNS. SEED IMMEDIATELY AFTER PREPARATION OF SOILS BETWEEN THE APPROVED SEEDING TIMES.
   1.2. SEED DURING OPTIMAL GERMINATION TIMES - SEEDING EFFORTS SHOULD OCCUR WHEN SOIL MOISTURE AND TEMPERATURE ARE OPTIMUM FOR GERMINATION:
   1.3. SPRING – APPLY SEED FOLLOWING THE SPRING SNOW MELT FROM LATE APRIL TO THE BEGINNING OF MAY.
   1.4. LATE FALL – DORMANT SEEDING PRIOR TO THE FIRST PERENNIAL SNOW FALL, FROM MID-OCTOBER TO EARLY NOVEMBER.
   1.5. REMOVE DEBRIS AND VEGETATION - STONES LARGER THAN 5-INCHES IN SIZE, TRASH, DEBRIS, TWIGS, STEMS, ROOT MAT, AND OTHER MATTER DETRIMENTAL TO VEGETATION GROWTH SHALL BE REMOVED
   1.6. LOOSEN AND TEXTURIZE TOPSOIL - THE SITE SHOULD BE PREPARED BY LOOSENING THE TOPSOIL TO A MINIMUM DEPTH OF TWO (2) INCHES, THE SOIL SHOULD BE TEXTURIZED PARALLEL TO THE CONTOUR OF THE PLANTING BED TO CREATE A ROUGHENED SURFACE. THIS CAN BE ACCOMPLISHED BY DISKING, CHAIN DRAGGING, TRACKED IMPLEMENTS OR USE OF HAND RAKES. FOR SMALLER, PATCHWORK AREAS THAT ARE TO BE BROADCAST SEEDED, HAND RAKES ARE RECOMMENDED. IT IS CRITICAL THAT THE SEEDBED BE LOOSENED TO A POINT THAT THERE ARE SPACES FOR SEED TO FILTER INTO CRACKS AND CREVICES AND DOES NOT JUST SIT ON THE SURFACE OF THE SOIL.
2. SEED INSTALLATON
   2.1. USE SEED THAT IS IN GOOD CONDITION - DO NOT USE WET SEED OR SEED THAT IS MOLDY OR OTHERWISE DAMAGED IN TRANSIT OR STORAGE. DELIVER SEED TO JOB SITE IN THE ORIGINAL UNOPENED CONTAINERS.
   2.2. SEED DURING OPTIMAL CONDITIONS - SEEDING OPERATIONS SHOULD BE PERFORMED ONLY DURING PERIODS WHEN BENEFICIAL RESULTS CAN BE OBTAINED. DO NOT SEED DURING HIGH WINDS OR WHEN THE GROUND IS FROZEN OR OTHERWISE UNABLE TO BE WORKED. AVOID SEEDING DURING TIMES OF DROUGHT OR EXCESSIVE MOISTURE EVENTS.
   2.3. CHECK THE SEEDING RATE - BROADCAST SEEDING RATES SHOULD BE DOUBLE THE SEEDING RATE FOR DRILL SEEDING.
   2.4. EVENLY APPLY SEED – SOW SEED IN AN EVEN AND MEASURED WAY SO THAT APPLICATION ACROSS THE SITE IS UNIFORM AND EVEN.
   2.5. APPLY TWICE - THE SEEDING SHALL BE DONE IN TWO (2) SEPARATE APPLICATIONS CROSSING THE AREA AT RIGHT ANGLES TO ONE ANOTHER TO GUARANTEE EVEN COVERAGE.
   2.6. RAKE - BROADCAST SEEDING SHALL BE RAKED INTO THE SOIL TO A DEPTH OF APPROXIMATELY ONE-QUARTER INCH (1/4") TO ONE-HALF INCH (1/2").
3. MULCHING
   3.1. ONLY SEED AS MUCH AS YOU CAN MULCH – DO NOT SEED MORE IN ONE DAY THAN YOU CAN MULCH IN THAT SAME DAY. SEEDED AREAS SHOULD NOT BE LEFT EXPOSED OVERNIGHT.
   3.2. APPLY MULCH AND TACKIFIER - CERTIFIED WEED FREE STRAW AND TACKIFIER TO BE APPLIED IMMEDIATELY FOLLOWING SEEDING APPLICATION. ALTERNATIVELY, HYDROSTRAW (800) 545-1755 MAY BE APPLIED AT A RATE OF 2,500 LBS/ACRE. HYDROSTRAW MAY NOT BE SPREAD IN A SINGLE APPLICATION.
   3.3. INSTALL CERTIFIED WEED FREE STRAW COMPLETELY AND THOROUGHLY OVER ALL SEEDING AREAS IMMEDIATELY AFTER SEEDING. ADEQUATE MULCH DEPTH IS ACHIEVED WHEN STRAW MULCH COVERS SEEDING AREA WITHOUT MAJOR GAPS.
   3.4. APPLY TACKIFIER ON TOP OF WEED FREE STRAW MULCH IMMEDIATELY AFTER INSTALLING CERTIFIED WEED FREE MULCH. TACKIFIER SHOULD COMPLETELY COVER MULCH. USE APPROVED SPRAYING MACHINES.
   3.5. USE OF ORGANIC TACKIFIER: PLANTAGO OR GUAR BASE TACKIFIER APPLIED AT (150 LB/ACRE). STRICTLY COMPLY WITH EQUIPMENT MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS.
   3.6. SPREAD UNIFORMLY AT A MINIMUM RATE OF 2 TONS PER ACRE (45 KG PER 100 SQ. M) TO FORM A CONTINUOUS BLANKET 1- ½-INCHES LOOSE DEPTH OVER SEEDED AREAS. SPREAD BY HAND, BLOWER OR OTHER SUITABLE EQUIPMENT.
   3.7. WATCH OUT FOR EROSION - PROTECT SEEDED SLOPES EXCEEDING 3:1 AGAINST EROSION WITH EROSION-CONTROL BLANKETS INSTALLED ON TOP OF SEED, MUCH AND TACKIFIER, AND STAPLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
   3.8. PROTECTION OF SEEDED AREAS - PROVIDE BARRIERS AS REQUIRED TO PREVENT PEDESTRIAN TRAFFIC OVER NEWLY SEEDED AREAS UNTIL COMPLETION AND ESTABLISHMENT OF DESIRED VEGETATION.

NATIVE SEED MAINTENANCE

1. ESTABLISHMENT GOALS: TYPICALLY, SUCCESSFULLY ESTABLISHING NATIVE SEED REQUIRES MULTIPLE YEARS OF REGULAR MAINTENANCE. MAINTENANCE INCLUDES MECHANICAL AND CHEMICAL REMOVALS OF WEEDS, MANAGING FOR DISTURBANCE, AND IRRIGATION. ESTABLISHMENT TIMELINE BELOW. UNTIL NATIVE SEED IS ESTABLISHED, IT REQUIRES MAINTENANCE. ONCE IT IS ESTABLISHED, IT WILL REQUIRE MINIMAL MAINTENANCE.
   1.1. ESTABLISHMENT TIMELINE:
      1 YEAR: 50% TOTAL VEGETATION COVER, WITH 80% NATIVE AND 20% NOXIOUS VEGETATION COVER.
      2 YEAR: 70% TOTAL VEGETATION COVER, WITH 90% NATIVE AND 10% NOXIOUS VEGETATION COVER.
      5 YEAR: 85% TOTAL VEGETATION COVER, WITH 90% NATIVE AND 10% NOXIOUS VEGETATION COVER.
      10 YEAR: 85% TOTAL VEGETATION COVER, WITH 95% NATIVE AND 5% NOXIOUS VEGETATION COVER.
   1.2. ESTIMATES FOR SUCCESS BASED UPON PERCENT COVER.
   1.3. ANY AREA GREATER THAN 500 SQ. FT THAT HAS LESS THAN DESIRED TOTAL VEGETATION COVERAGE, WILL NEED TO BE RESEEDED. IF NOXIOUS VEGETATION EXCEEDS DESIRED PERCENTAGE, INCREASE/ALTER MANAGEMENT EFFORTS
2. IN WILDFLOWER AREAS, ADDITIONAL WILDFLOWERS CAN BE ADDED THROUGH INNER SEEDING TO ACHIEVE THE DESIRED EFFECT. MOW DOWN ESTABLISHED NATIVE SEED PRIOR TO INNER SEEDING.
3. ONCE THE LANDSCAPE DESIGN IS FINALIZED, DHM WILL PUT TOGETHER AN ADAPTIVE MANAGEMENT PLAN. THIS WILL INCLUDE HOW TO CONTROL FOR VARIOUS SPECIES OF NOXIOUS VEGETATION TYPICAL TO PITKIN COUNTY.

STRUCTURAL SOILS CHART

TREE SIZE	CROWN PROJECTION (SQ. FT.)	AVAILABLE WATER 8% (CU-Soil)	AVAILABLE WATER 15% (LOAM)
SMALL-MEDIUM TREE, CROWN DIAMETER 20'	*314 square feet under dripline*	*440 cubic feet (16.3 cu. yards) CU-Soil with 100 cubic feet (3.5 yds) loam in tree pit opening*	*330 cubic feet (12 cu. yards)*
MEDIUM-LARGE TREE, CROWN DIAMETER 30'	*706.5 square feet under the dripline*	*1225 cubic feet (45 cu. yards) CU-Soil with 100 cubic feet (3.5 yds) loam in tree pit opening*	*753 cubic feet (28 cu. yards)*

Cornell Urban Horticulture Institute Structural Soil website:
http://www.hort.cornell.edu/uhi/outreach/index.htm#soil

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- PROPERTY BOUNDARY
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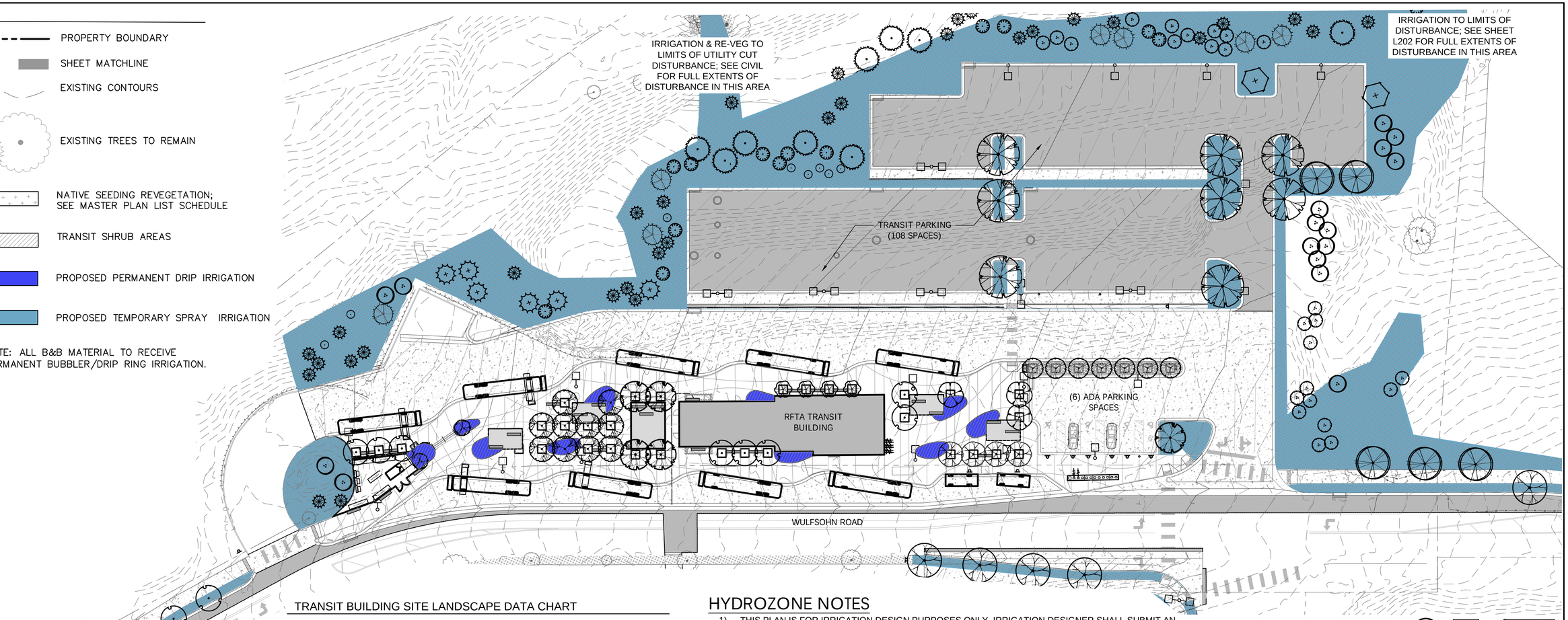
- EXISTING TREES TO REMAIN
- NATIVE SEEDING REVEGETATION; SEE MASTER PLAN LIST SCHEDULE
- TRANSIT SHRUB AREAS
- PROPOSED PERMANENT DRIP IRRIGATION
- PROPOSED TEMPORARY SPRAY IRRIGATION

NOTE: ALL B&B MATERIAL TO RECEIVE PERMANENT BUBBLER/DRIP RING IRRIGATION.



TRANSIT BUILDING SITE LANDSCAPE DATA CHART

LOT SIZE INFORMATION	ACRES	SQUARE FEET
	5.03 ACRES	*219,107 SF.*
LOT AREA TO BE DISTURBED	*3.15 ACRES*	*138,380 SF.*
TOTAL LANDSCAPED AREA	REQUIRED (SQ.FT. + 15% OF DISTURBED AREA)	PROPOSED (SQ.FT. + % OF DISTURBED AREA)
	20,757 SF (15%)	*42,760 SF. (31%)*

TRANSIT BUILDING LANDSCAPE PLANTING DATA CHART

	REQUIRED		PROPOSED
OPEN SPACE (TREES)	20,757 SF	1/400SF	97
		52	
OPEN SPACE (SHRUBS)	20,757 SF	1/100SF	210
		208	
WULFSOHN RD. (TREES)	875 LF (NEW CONSTRUCTION)	1/50 LF	16
		18	
PARKING AREA (TREES)	114 SPACES	1/8 SPACES	19
		15	
PARKING AREA INTERIOR LANDSCAPE	114 SPACES	1140 SF	2325 SF

HYDROZONE NOTES

1) THIS PLAN IS FOR IRRIGATION DESIGN PURPOSES ONLY. IRRIGATION DESIGNER SHALL SUBMIT AN IRRIGATION DESIGN TO LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
2) SOURCE OF WATER: TBD. GLENWOOD MEADOWS RAW WATER SYSTEM PREFERRED SOURCE.
3) FOR DESIGN PURPOSES, ASSUME STATIC PRESSURE OF 75 PSI. MAXIMUM FLOW PER ZONE IS 25 GPM.
4) ALL VALVES SHALL BE SCRUBBER-TYPE SUITABLE FOR USE WITH RAW/DIRTY WATER SYSTEMS.
5) MAINLINE SHALL BE SCHEDULE 40 PVC.
6) SLEEVING IS REQUIRED FOR MAINLINE AND ALL LATERALS LOCATED UNDER HARDSCAPE, SEE PLAN FOR LOCATIONS. (1) 3" PVC PIPE FOR IRRIGATION SLEEVING AND (1) 1 $\frac{1}{2}$" PVC PIPE FOR ELECTRICAL SLEEVING SHALL BE PROVIDED IN EACH LOCATION.
7) THE HYDROZONES INDICATED MAY BE SEPARATED INTO ADDITIONAL ZONES, BUT NO ZONES SHALL BE JOINED TOGETHER.
8) PLANTING BEDS SHALL BE SPRAY IRRIGATED WITH POP-UPS WHERE FEASIBLE; FOR SMALL AREAS OR AREAS WITH RESTRICTIVE GEOMETRY, DRIP CAN BE USED. DO NOT COMBINE DRIP AND SPRAY IRRIGATION ON THE SAME VALVE.
9) ALL TREES OUTSIDE PLANTING BEDS SHALL BE DRIP/BUBBLER IRRIGATED.
10) REVEGETATION AREAS SHALL BE TEMPORARILY IRRIGATED WITH ROTOR SPRAY. TEMPORARY IRRIGATION SHALL BE BURIED AS TYPICAL, BUT ABANDONED UPON ESTABLISHMENT OF LIVE COVER.
11) DO NOT COMBINE DIFFERENT IRRIGATION TYPES ON ONE ZONE.
12) NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES BETWEEN PLANS AND/OR BID AND CONSTRUCTION DOCUMENTS

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Sheet Revisions

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ROARING FORK TRANSPORTATION AUTHORITY
WEST GLENWOOD TRANSIT CENTER
2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans
No Revisions:
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6A HYDROZONE & LANDSCAPE DATA

Designer: LW
Detailer: SH
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Project No./Code
TRG M535-014
25924
Sheet Number **L201**

LEGEND

- PROPERTY BOUNDARY
- SHEET MATCHLINE
- EXISTING CONTOURS
- EXISTING TREES TO REMAIN

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME
TREES		
	ACE GLA	Acer glabrum / Rocky Mountain Maple
	AS2	Acer negundo 'Sensation' / Sensation Box Elder
	AC	Acer platanoides 'Columnare' / Columnar Norway Maple
	AR	Acer platanoides 'Royal Red' / Royal Red Norway Maple
	AT	Acer tataricum 'Hot Wings' / 'Hot Wings' Tatarian Maple
	CC	Celtis occidentalis 'Chicagoland' / Chicagoland Hackberry
	GI	Gleditsia triacanthos inermis 'Imperial' / Imperial Honey Locust
	GS	Gleditsia triacanthos inermis 'Shademaster' / Shademaster Honey Locust
	JS2	Juniperus monosperma / Oneseed Juniper
	JO	Juniperus osteosperma / Utah Juniper
	KP	Koelreuteria paniculata / Golden Rain Tree
	MS	Malus x 'Spring Snow' / Spring Snow Crabapple
	PB	Picea glauca densata / Black Hills Spruce
	PC	Picea pungens / Colorado Spruce
	PP	Pinus edulis / Pinion Pine
	PIN PON	Pinus ponderosa / Ponderosa Pine
	QUE GAM	Quercus gambelii / Gambel Oak
	SA	Sorbus americana / Mountain Ash
	SI	Syringa reticulata 'Ivory Silk' / Ivory Silk Japanese Tree Lilac
	TC	Tilia cordata / Littleleaf Linden
	UI	ulmus davidiana japonica / prospector

SYMBOL	CODE	BOTANICAL / COMMON NAME
SHRUB AREAS		
		TRANSIT SHRUB AREAS
GROUND COVERS		
		NATIVE SEED
		NATIVE STORMWATER BASIN MIX

IRRIGATION & RE-VEG TO LIMITS OF UTILITY CUT DISTURBANCE; SEE CIVIL FOR FULL EXTENTS OF DISTURBANCE IN THIS AREA

RETAINING WALLS PER CIVIL, TYP.

LIMITS OF DISTURBANCE, TYP.

LIMITS OF DISTURBANCE, TYP.

SNOW STORAGE AREA, TYP.

0' 10' 20' 40'

Scale: 1" = 20'-0"

"ORIGINAL" WHEN PRINTED AT 22"x34"

NOTE: DETAILED SHRUB AND PERENNIAL LAYOUT TO BE PROVIDED AT 100 PERCENT CD SET

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ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

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PLANTING PLAN 6A EAST

Designer:	LW	Structure Numbers	
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Project No./Code

TRG M535-014

25924

Sheet Number **L202**

LEGEND

PROPERTY BOUNDARY

SHEET MATCHLINE

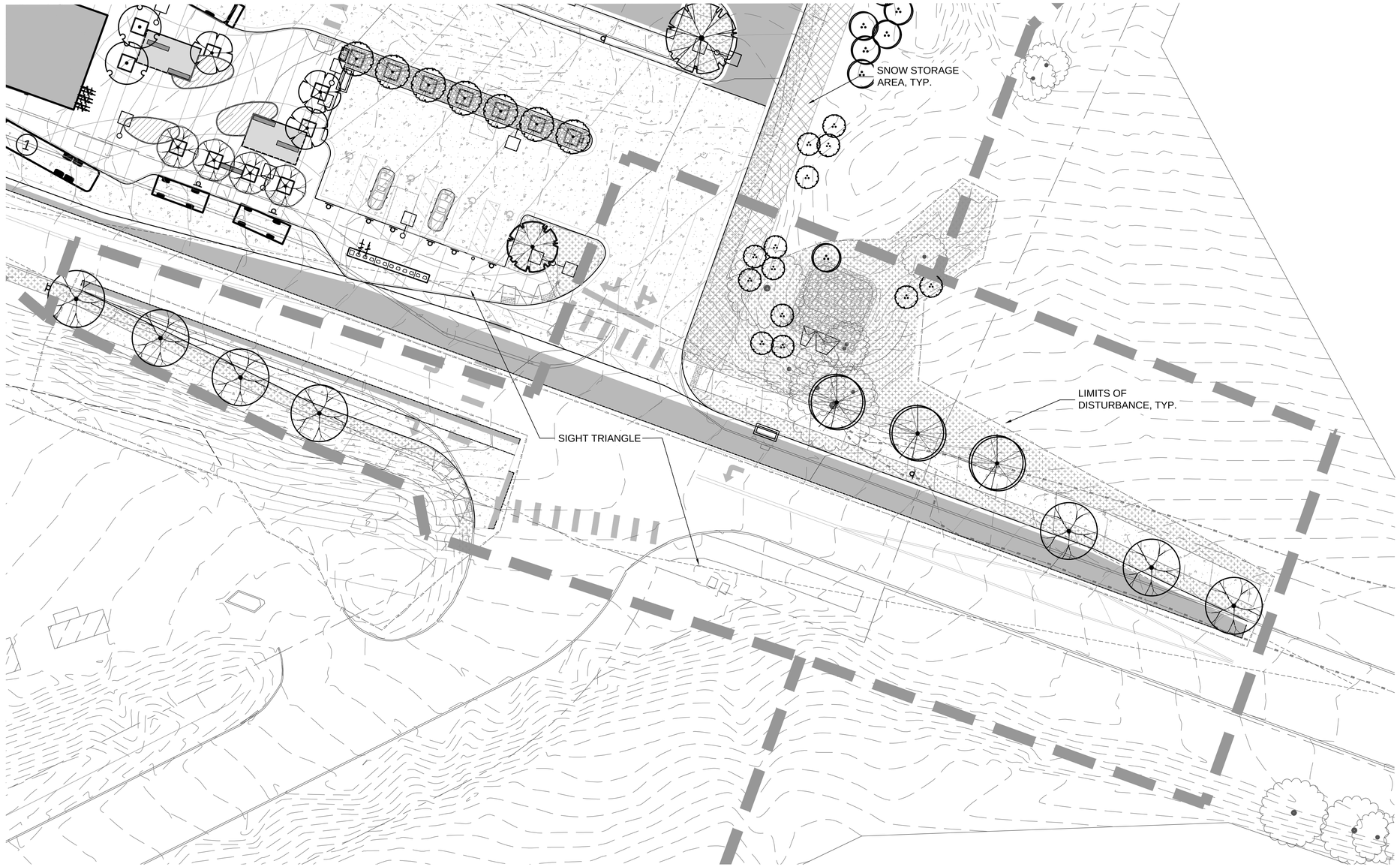
EXISTING CONTOURS

EXISTING TREES TO REMAIN

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT
TREES			
	ACE GLA	Acer glabrum / Rocky Mountain Maple	CLUMP
	AS2	Acer negundo 'Sensation' / Sensation Box Elder	2.5" CAL.
	AC	Acer platanoides 'Columnare' / Columnar Norway Maple	2.5" CAL.
	AR	Acer platanoides 'Royal Red' / Royal Red Norway Maple	2.5" CAL.
	AT	Acer tataricum 'Hot Wings' / 'Hot Wings' Tatarian Maple	CLUMP
	CC	Celtis occidentalis 'Chicagoland' / Chicagoland Hackberry	2.5" CAL.
	GI	Gleditsia triacanthos inermis 'Imperial' / Imperial Honey Locust	2.5" CAL.
	GS	Gleditsia triacanthos inermis 'Shademaster' / Shademaster Honey Locust	2.5" CAL.
	JS2	Juniperus monosperma / Oneseed Juniper	B & B
	JO	Juniperus osteosperma / Utah Juniper	B & B
	KP	Koelreuteria paniculata / Golden Rain Tree	2.5" CAL.
	MS	Malus x 'Spring Snow' / Spring Snow Crabapple	2.5" CAL.
	PB	Picea glauca densata / Black Hills Spruce	B & B
	PC	Picea pungens / Colorado Spruce	B & B
	PP	Pinus edulis / Pinion Pine	B & B
	PIN PON	Pinus ponderosa / Ponderosa Pine	B & B
	QUE GAM	Quercus gambelii / Gambel Oak	B & B
	SA	Sorbus americana / Mountain Ash	2.5" CAL.
	SI	Syringa reticulata 'Ivory Silk' / Ivory Silk Japanese Tree Lilac	2" Cal.
	TC	Tilia cordata / Littleleaf Linden	2.5" CAL.
	UI	ulmus davidiana japonica / prospector	2.5" CAL.

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT
SHRUB AREAS			
		TRANSIT SHRUB AREAS	
GROUND COVERS			
		NATIVE SEED	
		NATIVE STORMWATER BASIN MIX	



NOTE: DETAILED SHRUB AND PERRENIAL LAYOUT TO BE PROVIDED AT 100% CD SET

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2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

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PLANTING PLAN
6A SOUTH WEST

Designer: LW
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Project No./Code
TRG M535-014
25924
Sheet Number **L203**

LEGEND

PROPERTY BOUNDARY

SHEET MATCHLINE

EXISTING CONTOURS

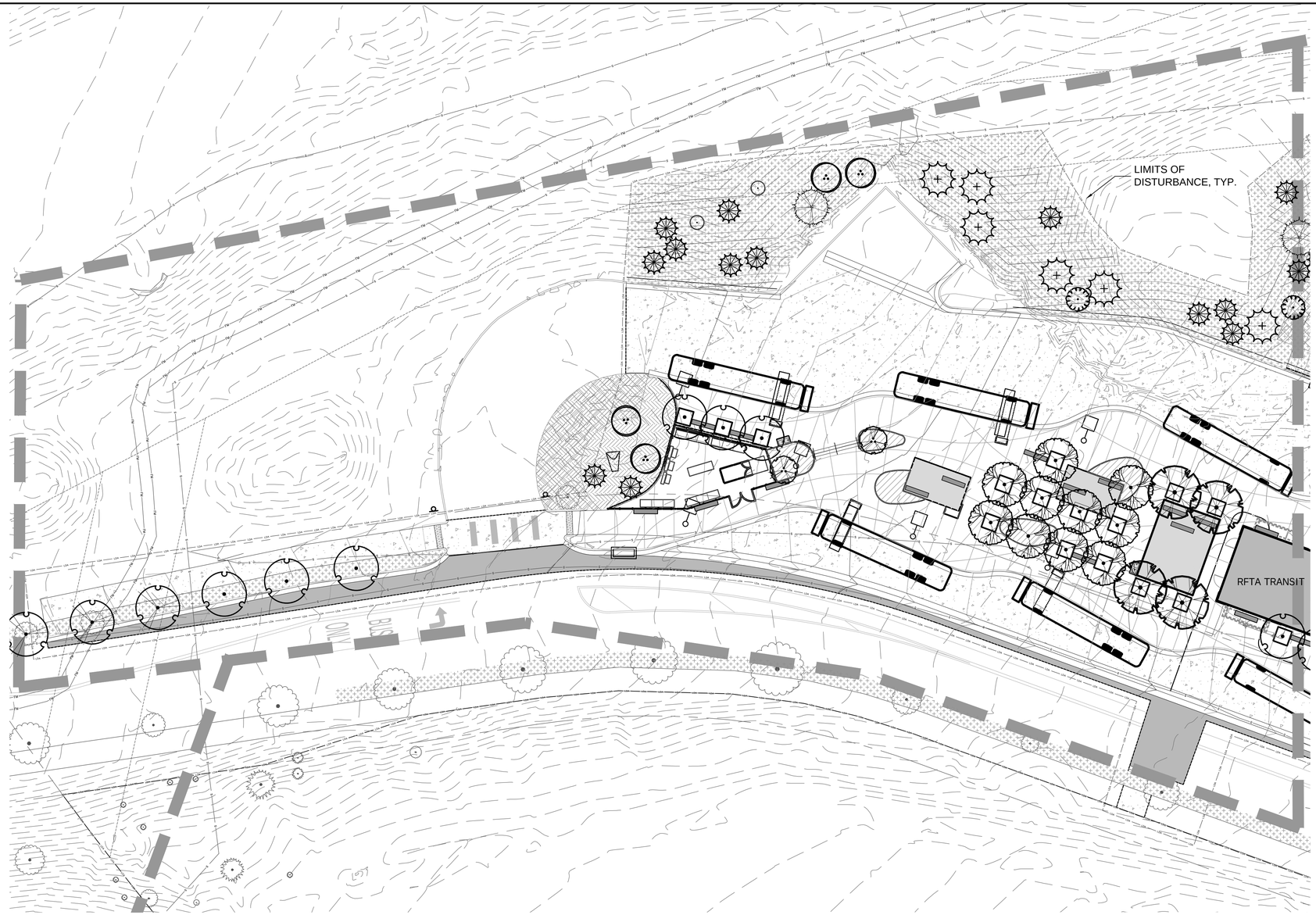
EXISTING TREES TO REMAIN

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT
TREES			
	ACE GLA	Acer glabrum / Rocky Mountain Maple	CLUMP
	AS2	Acer negundo 'Sensation' / Sensation Box Elder	2.5" CAL.
	AC	Acer platanoides 'Columnare' / Columnar Norway Maple	2.5" CAL.
	AR	Acer platanoides 'Royal Red' / Royal Red Norway Maple	2.5" CAL.
	AT	Acer tataricum 'Hot Wings' / 'Hot Wings' Tatarian Maple	CLUMP
	CC	Celtis occidentalis 'Chicagoland' / Chicagoland Hackberry	2.5" CAL.
	GI	Gleditsia triacanthos inermis 'Imperial' / Imperial Honey Locust	2.5" CAL.
	GS	Gleditsia triacanthos inermis 'Shademaster' / Shademaster Honey Locust	2.5" CAL.
	JS2	Juniperus monosperma / Oneseed Juniper	B & B
	JO	Juniperus osteosperma / Utah Juniper	B & B
	KP	Koelreuteria paniculata / Golden Rain Tree	2.5" CAL.
	MS	Malus x 'Spring Snow' / Spring Snow Crabapple	2.5" CAL.
	PB	Picea glauca densata / Black Hills Spruce	B & B
	PC	Picea pungens / Colorado Spruce	B & B
	PP	Pinus edulis / Pinion Pine	B & B
	PIN PON	Pinus ponderosa / Ponderosa Pine	B & B
	QUE GAM	Quercus gambelii / Gambel Oak	B & B
	SA	Sorbus americana / Mountain Ash	2.5" CAL.
	SI	Syringa reticulata 'Ivory Silk' / Ivory Silk Japanese Tree Lilac	2" Cal.
	TC	Tilia cordata / Littleleaf Linden	2.5" CAL.
	UI	ulmus davidiana japonica / prospector	2.5" CAL.

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT
SHRUB AREAS			
		TRANSIT SHRUB AREAS	
GROUND COVERS			
		NATIVE SEED	
		NATIVE STORMWATER BASIN MIX	

NOTE: DETAILED SHRUB AND PERRENIAL LAYOUT TO BE PROVIDED AT 100% CD SET



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ROARING FORK TRANSPORTATION AUTHORITY

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2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

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PLANTING PLAN
6A WEST

Designer: LW
Detailer: SH
Sheet Subset:
Structure Numbers
Subset Sheets: of

Project No./Code
TRG M535-014
25924
Sheet Number **L204**

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	SIZE
TREES				
	ACE GLA	Acer glabrum / Rocky Mountain Maple	CLUMP	5`
	AS2	Acer negundo 'Sensation' / Sensation Box Elder	2.5" CAL.	
	AC	Acer platanoides 'Columnare' / Columnar Norway Maple	2.5" CAL.	
	AR	Acer platanoides 'Royal Red' / Royal Red Norway Maple	2.5" CAL.	
	AT	Acer tataricum 'Hot Wings' / 'Hot Wings' Tatarian Maple	CLUMP	5`
	CC	Celtis occidentalis 'Chicagoland' / Chicagoland Hackberry	2.5" CAL.	
	GI	Gleditsia triacanthos inermis 'Imperial' / Imperial Honey Locust	2.5" CAL.	
	GS	Gleditsia triacanthos inermis 'Shademaster' / Shademaster Honey Locust	2.5" CAL.	
	JS2	Juniperus monosperma / Oneseed Juniper	B & B	5`
	JO	Juniperus osteosperma / Utah Juniper	B & B	5`
	KP	Koelreuteria paniculata / Golden Rain Tree	2.5" CAL.	
	MS	Malus x 'Spring Snow' / Spring Snow Crabapple	2.5" CAL.	
	PB	Picea glauca densata / Black Hills Spruce	B & B	8-10`
	PC	Picea pungens / Colorado Spruce	B & B	8-10`
	PP	Pinus edulis / Pinion Pine	B & B	7`-8`
	PIN PON	Pinus ponderosa / Ponderosa Pine	B & B	8-10`
	QUE GAM	Quercus gambelii / Gambel Oak	B & B	5`
	SA	Sorbus americana / Mountain Ash	2.5" CAL.	
	SI	Syringa reticulata 'Ivory Silk' / Ivory Silk Japanese Tree Lilac	2" Cal.	
	TC	Tilia cordata / Littleleaf Linden	2.5" CAL.	
	UI	ulmus davidiana japonica / prospector	2.5" CAL.	

REVEGETATION SEED MIX

Indian Rice Grass 'Nez Par' – Achnatherum hymenoides 'Nez Par' 3.0 lbs/acre
Sideoats Grama – Bouteloua curtipedula 'Pierre' 4.0 lbs/acre
Sandberg Bluegrass – Poa secunda 'Sherman' 0.5 lbs/acre
Thickspike Wheat Grass – Elymus lanceolatus 2 lbs/acre
'San Luis' Slender Wheatgrass – Elymus trachycalulus 3lbs/acre
'Garnet' Mountain Brome – Bromus marginatus 'Garnet' 3 lbs/acre
Arizona Fescue – Festuca ovina 'Arriba' 2.5 lbs/acre
'Arriba' Western Wheatgrass – Pascopyrum smithii 'Arriba' 2.5 lbs/acre
Mountain Sage – Artemesia tridentate vaseyana 0.25 lbs/acre
Rubber Rabbit Brush – Chrysothamnus nauseosus 2 lbs/acre
Prairie Sage – Artemesia ludviciana 0.25 lbs/acre
Fringed Sage – Artemesia frigida 0.25 lbs/acre
Hairy Golden Aster – Chrysopsis villosa 0.25 lbs/acre
Silver Lupine – Lupinus argenteus 1.0 lb/acre
Blue Flax – Linum lewisii 1.0 lb/acre
Rocky Mountain Penstemon Penstemon strictus 2.0 lbs/acre
Arrowleaf Balsam Root Balsamorhiza sagittata 0.5 lbs/acre

STORMWATER BASIN SEED MIX

Seeding Rate: 2 lb per 1,000 SF

LATIN NAME	COMMON NAME	% of MIX
Carex nebrascensis	Nebraska Carex	10
Deschampsia caespitosa	Tufted Hairgrass	25
Elymus lanceolatus var. Sodar	Streambank Wheatgrass 'Sodar'	15
Juncus torreyi	Torrey's Rush	20
Koeleria macrantha	Prairie Junegrass	20
Iris missouriensis	Rocky Mountain Iris	10

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	SPACING
SHRUB AREAS				
		TRANSIT SHRUB AREAS		
GROUND COVERS				
		NATIVE SEED		
		NATIVE STORMWATER BASIN MIX		

NOTE: DETAILED SHRUB AND PERRENIAL LAYOUT TO BE PROVIDED AT BUILDING PERMIT

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ROARING FORK TRANSPORTATION AUTHORITY
WEST GLENWOOD TRANSIT CENTER
2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans
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PLANTING SCHEDULE

Designer: LW
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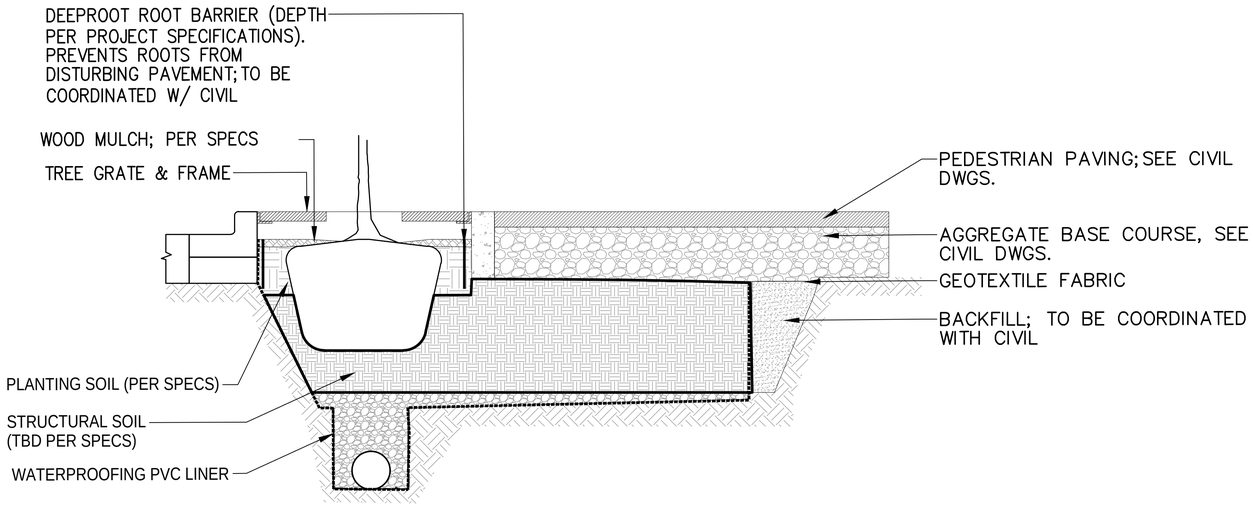
Project No./Code
TRG M535-014
25924
Sheet Number **L205**



1 / L301 STRUCTURAL SOIL @ TREE GRATES

SCALE: 1" = 1' - 0"

STRUCTURAL TOPSOIL MIX & PROCEDURE

1) SUBMITTALS NEEDED:
-SOIL ANALYSIS TOPSOIL/ OVERBURDEN AND COMPOST MIX. SOME PROJECTS HAVE SUCCESSFULLY USED THE OVERBURDEN SEAN MELLOW HAS AT THE PIT AND CACALOCO MATERIAL FOR THE COMPOST.
-PARTICLE SIZE DISTRIBUTION FOR 1.5" SCREENED ROCK

2) WHEN WE RECEIVE AND APPROVE THE SUBMITTALS OUTLINED ABOVE, WE WILL MEET ON SITE TO MIX A TRIAL RUN OF THE STRUCTURAL TOPSOIL. PLEASE PROVIDE SOPRIS ENGINEERING AT LEAST A WEEK NOTICE TO SCHEDULE TRIAL RUN. WE WILL NEED YOUR MATERIALS TESTER ON HAND TO COLLECT A SAMPLE OF WHAT WE MIX.

STEPS TO BUILD:

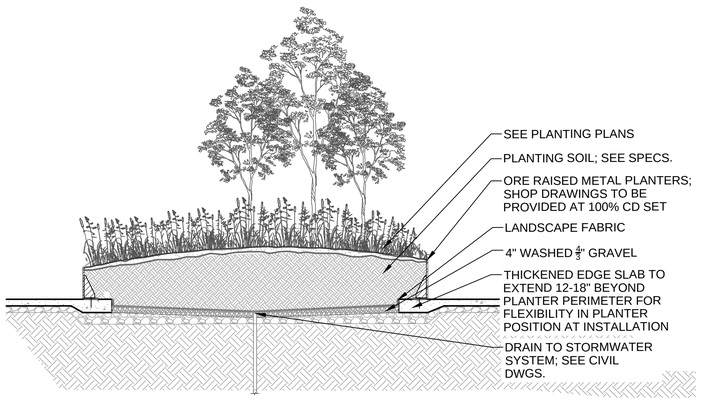
PRELIMINARY RATIOS:
- 1 BUCKET POND TAILINGS/OVERBURDEN
- 3 BUCKETS COMPOST
- 4 BUCKETS 1.5" ROCK

a) WASH 1.5" SCREENED ROCK
b) MIX COMPONENTS IN DOG DISH WITH WATER UNTIL ENTIRE MIX IS WET.
c) MATERIALS TESTER WILL COLLECT A SAMPLE AND PROVIDE US WITH A TOPSOIL GRADATION AND HYDROMETER TEST ON THE MIXED MATERIAL.

WHEN WE RECEIVE THE TEST RESULTS WE WILL DETERMINE IF WE NEED TO ADJUST THE MIX AND RE-TEST. WHEN WE HAVE A SUCCESSFUL MIX WE WILL FOLLOW THE STEPS BELOW TO BUILD AN INSTALL.

1. WASH 1.5" ROCK
2. MIX COMPONENTS IN DOG DISH WITH WATER UNTIL ENTIRE MIX IS WET
3. TRANSPORT MATERIAL IN LOADER
4. PLACE GENTLY IN TRENCH WITH LOADER
5. SPREAD AS NECESSARY WITH MINI
6. 12" LIFTS
7. ONE PASS FORWARD AND BACK WITH WALK BEHIND

NOTE: EXACT STRUCTURAL SOIL SPECIFICATION TO BE COORDINATED W/ CONTRACTOR



2 / L301 RAISED METAL PLANTER (FOR COORDINATION)

SCALE: NTS

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SITE DETAILS

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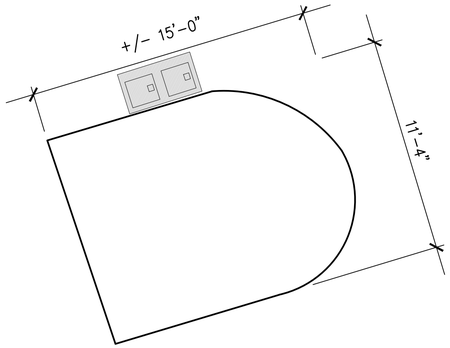
Project No./Code
TRG M535-014
25924
Sheet Number **L301**

NOTE: SHOP DRAWINGS TO BE PROVIDED AT 100% CD SET



1 L302 RAISED METAL PLANTER A

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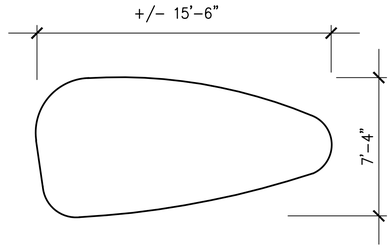

2 L302 RAISED METAL PLANTER B

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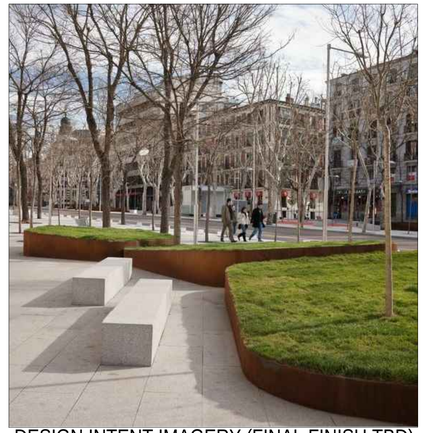

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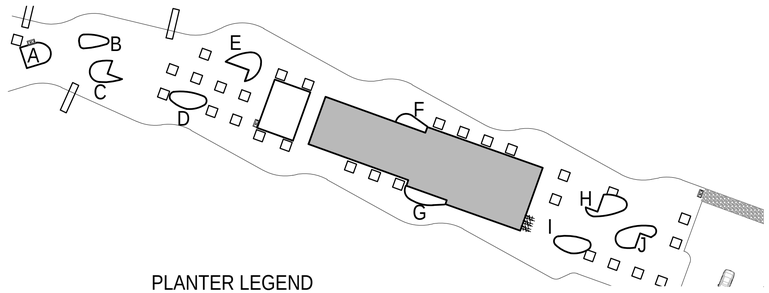

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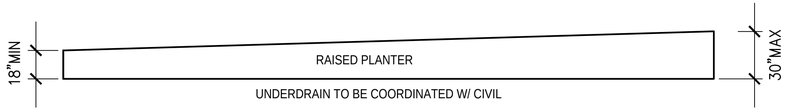
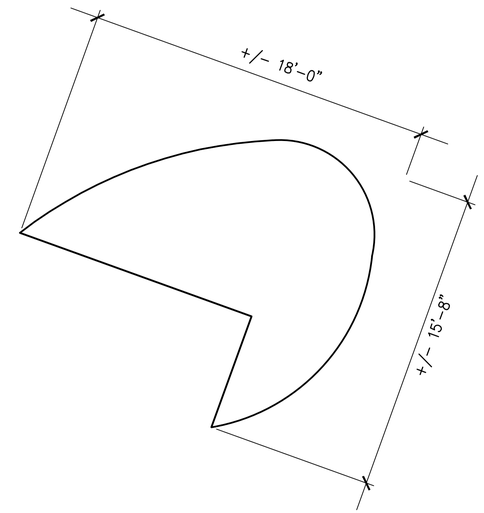


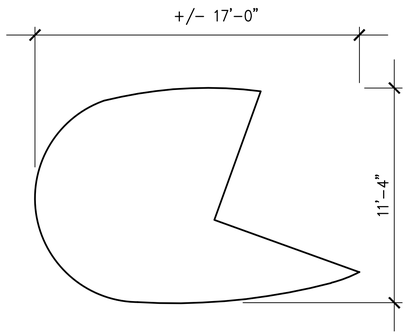
9 L302 RAISED METAL PLANTER TYPICAL VERTICAL DIMENSIONS

SCALE: 1" = 4' - 0"



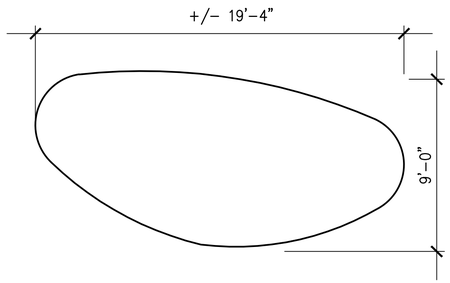
5 L302 RAISED METAL PLANTER E

SCALE: 1" = 4' - 0"



3 L302 RAISED METAL PLANTER C

SCALE: 1" = 4' - 0"



4 L302 RAISED METAL PLANTER D

SCALE: 1" = 4' - 0"

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GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

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SITE DETAILS

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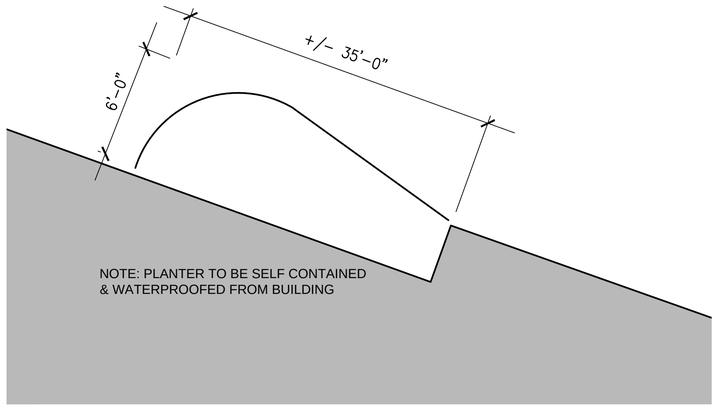
Project No./Code

TRG M535-014

25924

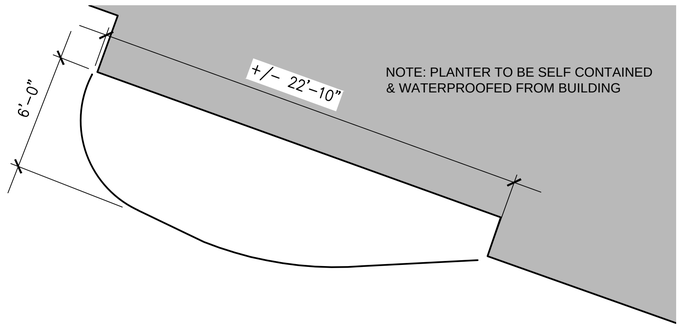
Sheet Number **L302**

NOTE: SHOP DRAWINGS TO BE PROVIDED AT 100% CD SET



1 L303 RAISED METAL PLANTER F

SCALE: 1" = 4' - 0"



2 L303 RAISED METAL PLANTER G

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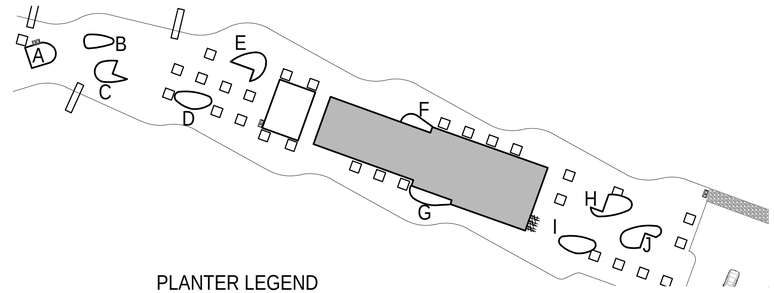
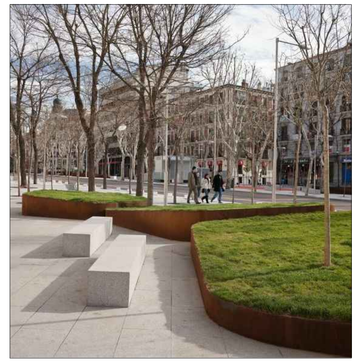


PLANTER LEGEND



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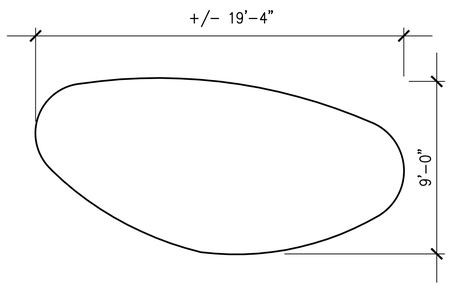
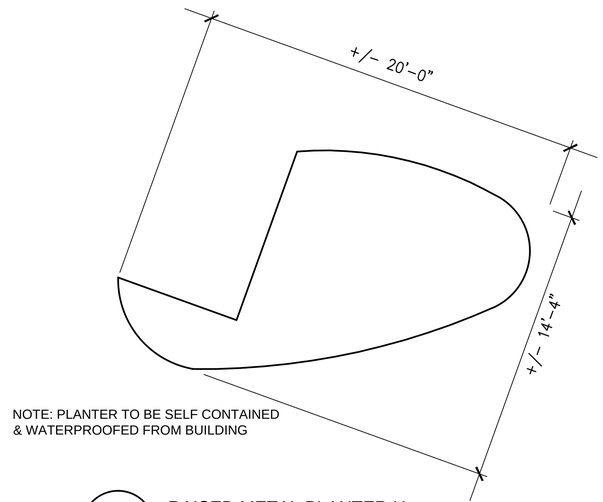


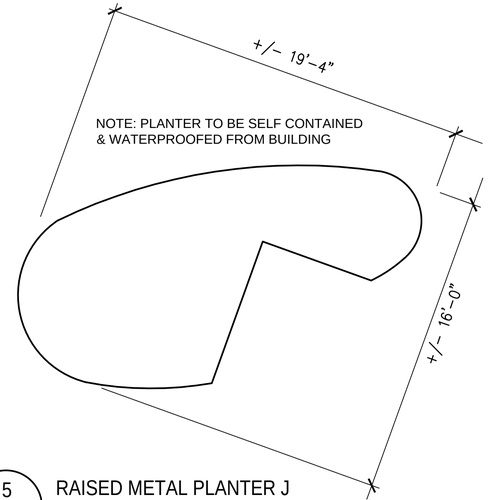
3 L303 RAISED METAL PLANTER I

SCALE: 1" = 4' - 0"



4 L303 RAISED METAL PLANTER H

SCALE: 1" = 4' - 0"



5 L303 RAISED METAL PLANTER J

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ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

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SITE DETAILS

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Detailer:	SH		
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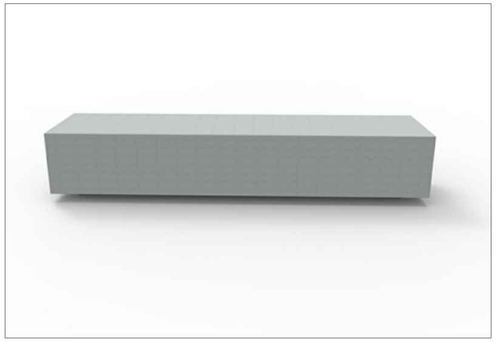
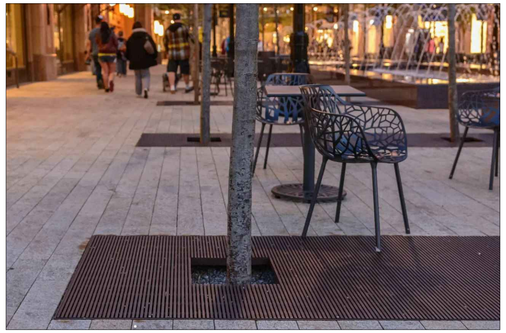


1 L304 BENCH TYPE A

LANDSCAPE FORMS SOCRATES SCALE: NTS



2 L304 TREE GRATE W/ TREE PROTECTION

URBAN ACCESSORIES JAMESON- TREE GUARD TBD SCALE: NTS

3 L304 BIKE RACK

LANDSCAPE FORMS - KEY SCALE: NTS

NOTE: SHOP DRAWINGS TO BE PROVIDED AT 100% CD SET

4 L304 SCREENING FENCE

BOK MODERN - TBD

5 L304 BEAR PROOF TRASH & RECYCLING

BEAR SAVER - HA SERIES SCALE: NTS

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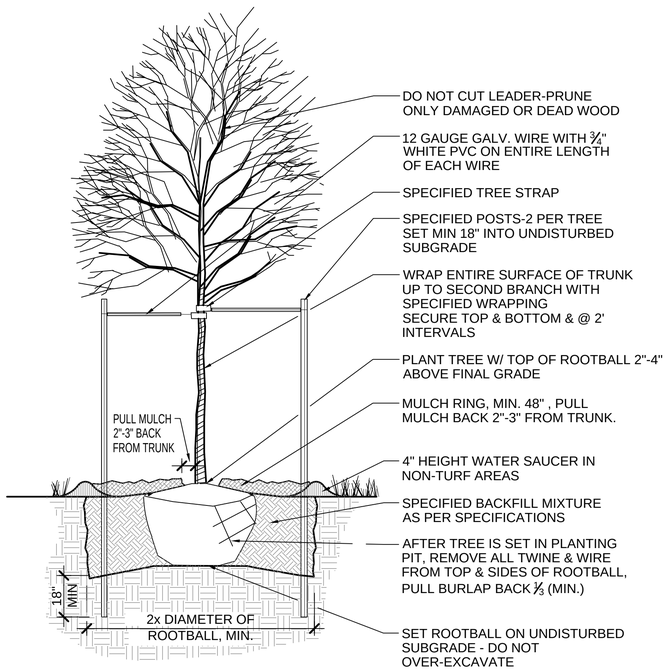
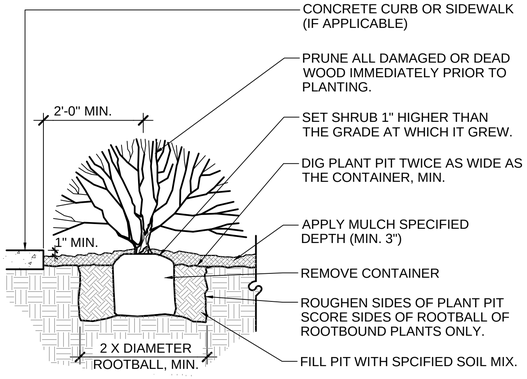


NOTE: MULCH SHOULD BE 4" DEEP IN NON-TURF AREAS, MULCH SHOULD BE 2" DEEP IN TURF AREAS.

1 L305 DECIDUOUS TREE PLANTING

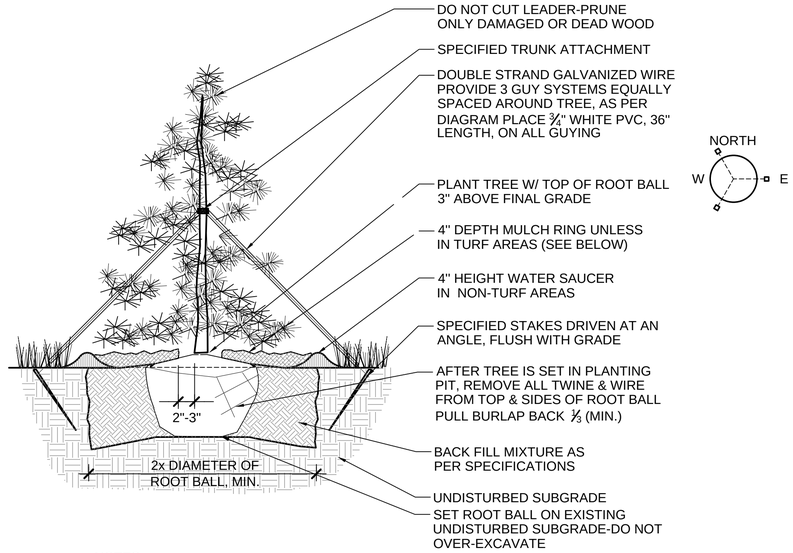
NOT TO SCALE



NOTES:
1. ANY BROKEN OR CRUMBLING ROOTBALLS WILL BE REJECTED.
2. REMOVING THE CONTAINERS WILL NOT BE AN EXCUSE FOR DAMAGED ROOTBALLS.
3. HOLD GRADE 1" BELOW EDGE OF WALK OR CURB

4 L305 SHRUB PLANTING

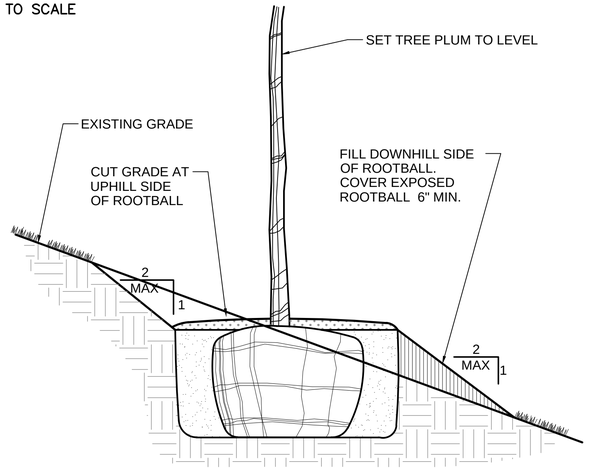
NOT TO SCALE



NOTES:
1. PULL MULCH BACK 2" TO 3" FROM TRUNK OF TREE
2. INSTALL SPECIFIED MULCH TO DRIP LINE OF TREE WHERE PLANTED IN LAWN AREAS. MULCH TO BE 2" DEEP IN LAWN AREAS.
3. DO NOT PROVIDE WATER BASIN IN IRRIGATED LAWN AREAS.

2 L305 EVERGREEN TREE PLANTING

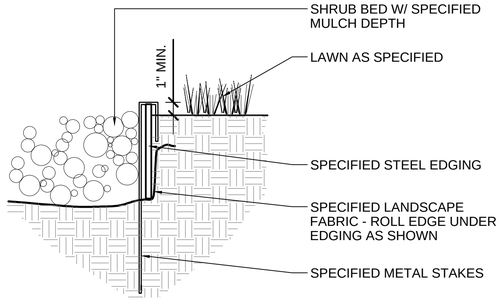
NOT TO SCALE



NOTES:
1. REFER TO VARIOUS SPECIFIC TREE INSTALLATION DETAILS FOR STAKING, GUYING, MULCHING, ETC.
2. THIS INSTALLATION SHALL APPLY TO ALL TREE TYPES AND SIZES PLANTED ON SLOPES LESS THAN 2:1.

5 L305 TREE PLANTING ON SLOPE

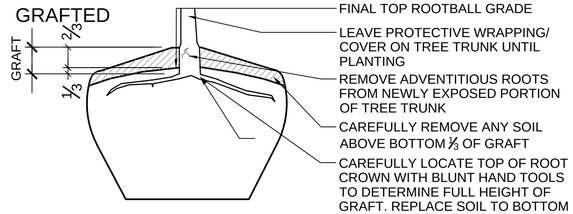
NOT TO SCALE

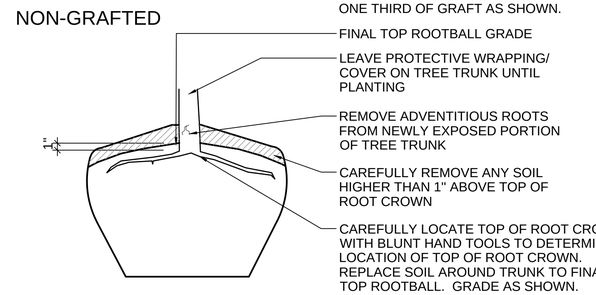


NOTES:
1. SET ALL EDGING 1" ABOVE FINISH GRADE AS SHOWN.
2. EDGING SHALL ABUT ALL CONCRETE CURBS AND WALKS PERPENDICULAR, AND FLUSH W/ GRADES OF CONCRETE.
3. ALL JOINTS TO BE SECURELY STAKED.

7 L305 STEEL EDGER

NOT TO SCALE



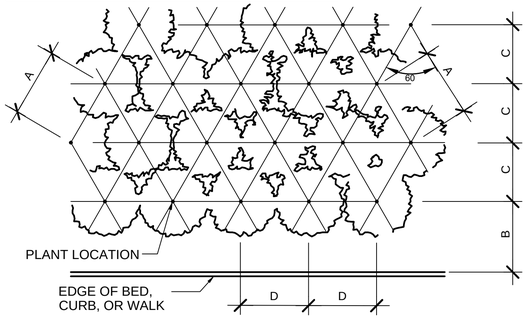


NOTES:
1. ALL WORK TO BE DONE AT TIME OF PLANTING
2. PEEL BACK ONLY TOP OF BURLAP REQUIRED TO PERFORM WORK. REPLACE BURLAP BEFORE MOVING TREE INTO PLANTING PIT. DO NOT REMOVE WIRE BASKET UNTIL INSIDE PLANTING PIT.
3. MEASURE NEW HEIGHT OF ROOTBALL AND DIG PLANTING PIT SO FINAL TOP ROOTBALL GRADE IS 3" ABOVE FINAL GRADE SURROUNDING BALL.

3 L305 FINAL TOP ROOTBALL GRADE

NOT TO SCALE

PLANT SPACING	A	B	C	D
6"	6"	6"	5"	6"
8"	8"	6"	7"	8"
12"	12"	8"	10"	12"
18"	18"	9"	15½"	18"
24"	24"	18"	21"	24"
30"	30"	15"	26"	30"
36"	36"	30"	31"	36"
48"	48"	30"	42"	48"
60"	60"	36"	52"	60"



NOTE: ALIGN FRONT ROW PARALLEL TO BED LINE

8 L305 SHRUB / FLOWERS / GROUNDCOVERS TRIANGULAR SPACING

NOT TO SCALE

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IRRIGATION CONSTRUCTION NOTES

1. DRAWINGS AND BASE INFORMATION - ALL BASE AND PLANTING INFORMATION HAVE BEEN PROVIDED BY DHM DESIGN. THE CONTRACTOR IS RESPONSIBLE TO NOTIFY HYDROSYSTEMS*KDI OF ANY DISCREPANCIES BETWEEN THE UTILITY OR PLANTING PLANS AND THE IRRIGATION PLAN. IF CONTRACTOR FAILS TO NOTIFY HYDROSYSTEMS*KDI AND MAKES CHANGES TO THE IRRIGATION SYSTEM DESIGN, THEY ASSUME ALL COSTS AND LIABILITIES ASSOCIATED WITH THOSE FIELD CHANGES. REFER TO SPECIFICATIONS FOR ADDITIONAL PROJECT REQUIREMENTS. CONTACT IRRIGATION CONSULTANT FOR CURRENT SPECIFICATIONS IF NOT PROVIDED.

2. SYSTEM PRESSURE - HYDROSYSTEMS*KDI HAS CONTACTED THE LOCAL WATER DISTRICT THAT SERVES THIS SITE AND THEY HAVE BEEN TOLD THAT THE STATIC WATER PRESSURE IN THIS AREA SHOULD BE 70-74 PSI. THE CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY PRESSURE PRIOR TO COMMENCING ANY CONSTRUCTION AND NOTIFY HYDROSYSTEMS*KDI OF ANY VARIANCE FROM THE STATED PRESSURE IMMEDIATELY. WRITTEN DOCUMENTATION OF PRESSURE TEST AND RESULTS SHALL BE PROVIDED TO HYDROSYSTEMS*KDI AT CONSTRUCTION ONSET. IF CONTRACTOR FAILS TO FIELD VERIFY PRESSURE AND/OR NOTIFY HYDROSYSTEMS*KDI OR ANY VARIATIONS FROM THIS PRESSURE, THEN THEY ASSUME ALL CONSTRUCTION AND ENGINEERING COSTS ASSOCIATED WITH SYSTEM MODIFICATIONS REQUIRED TO ACCOMMODATE ACTUAL SITE PRESSURE. THIS SYSTEM HAS BEEN DESIGNED FOR A REQUIRED STATIC PRESSURE OF 70-74 PSI MINIMUM (AS NOTED AT EACH LOCATION).

3. IRRIGATION SYSTEM OPERATION INTENT - THIS IRRIGATION SYSTEM HAS BEEN DESIGNED TO IRRIGATE THE ESTABLISHED LANDSCAPE WITHIN A SIX NIGHT PER WEEK, EIGHT HOUR PER NIGHT WATERING WINDOW. ESTABLISHMENT WATERING WILL REQUIRE UP TO TWICE AS MUCH IRRIGATION FOR A FOUR TO SIX WEEK PERIOD. THE DESIGN IS BASED ON THE FOLLOWING PROJECTED WEEKLY APPLICATION RATES AFTER ESTABLISHMENT. THESE FIGURES ARE BASED ON A 30-YEAR AVERAGE WEATHER DATA AND WILL NEED TO BE ADJUSTED DUE TO SEASONAL CHANGES AND WEATHER CONDITIONS ABOVE AND BELOW THE AVERAGE VALUES UTILIZED.
   - BLUEGRASS TURF 1.50" PER WEEK PEAK SEASON
   - ORNAMENTAL PLANTINGS 0.89" PER WEEK PEAK SEASON
   - NATIVE SEED MIXES 0.74" PER WEEK PEAK SEASON (TWO SEASONS)

   NOTE: IT IS THE INTENT OF THIS DESIGN THAT NATIVE AREAS WOULD ONLY BE IRRIGATED FOR ESTABLISHMENT. SYSTEM WILL REMAIN FOR USE DURING YEARS WITH LESS THAN NORMAL RAINFALL.

4. EQUIPMENT INSTALLATION - IT IS THE INTENT OF THIS DESIGN THAT ALL IRRIGATION EQUIPMENT BE INSTALLED WITHIN PROPERTY LIMITS AND WITHIN LANDSCAPED AREAS. INSTALLATION SHALL BE COORDINATED WITH OTHER UTILITY WORK, ALL OTHER UTILITIES SHALL TAKE PRECEDENCE OVER IRRIGATION LOCATION. ANY EQUIPMENT OTHER THAN VALVE BOXES OR SLEEVING THAT CONTAINS PIPE OR WIRES SHOWN OUTSIDE OF THESE LIMITS IS SHOWN IN THAT LOCATION FOR GRAPHICAL CLARITY ONLY. ALL VALVE BOXES SHALL BE INSTALLED A MINIMUM OF 2'-0" FROM EDGE OF ANY PAVED SURFACES UNLESS SPECIFICALLY INDICATED ON PLANS. BOXES INSTALLED IN OPEN TURF AREAS SHALL BE KEPT TO EDGES AND STAKED FOR REVIEW IF ALONG HIGH TRAFFIC AREAS. ALL VALVE BOXES SHALL BE PLACED A MINIMUM OF 3'-0" FROM THE CENTERLINE OF ANY DRAINAGE SWALE. ALL VALVE BOXES WITHIN PAVEMENT SHALL BE TIER 15 RATED BOXES FOR HEAVY DUTY NON-DELIBERATE TRAFFIC. BOX LID COLOR SHALL MATCH ADJACENT MATERIALS, I.E. GREEN IN TURF, TAN IN WOOD MULCH, GRAY IN STONE MULCH, PURPLE FOR RECLAIMED WATER SYSTEMS (IF REQUIRED). REFER TO LANDSCAPE PLANS FOR MATERIAL COLORS AND TYPES. ALL BOXES SHALL BE INSTALLED TO BE FLUSH WITH GRADE AND IN AN ORDERLY MANNER. WHERE MORTAR PAVING LIDS ARE INSTALLED ABOVE BOXES, IRRIGATION BOX WITH LID SHALL BE LOWERED TO ACCOMMODATE PAVING LID. REFER TO LANDSCAPE FOR ADDITIONAL INFORMATION, TO BE INSTALLED PER MANUFACTURE RECOMMENDATIONS.

5. PIPING INSTALLATION - IRRIGATION PIPING SHALL MAINTAIN A MINIMUM DISTANCE FROM BUILDING FOUNDATIONS OF 5 FEET OR AS DESCRIBED IN SOILS REPORT, WHICHEVER IS GREATER. NO SPRAY IRRIGATION SHALL OCCUR WITHIN 10 FEET OF THE FOUNDATION. NO DRIP IRRIGATION SHALL OCCUR WITHIN 5 FEET OF THE FOUNDATION UNLESS SOIL MOISTURE SENSORS ARE INSTALLED ON VALVES SERVICING THESE AREAS. ALL IRRIGATION PIPING AND EMISSION DEVICES LOCATED ON TOP OF OR WITHIN BUILDING STRUCTURE SHALL CONFORM TO WATERPROOFING CONSULTANT REQUIREMENTS. PIPE ROUTING MAY BE SHOWN WITHIN THESE DISTANCES FOR GRAPHICAL CLARITY ONLY.

6. MANUAL DRAIN VALVES - CONTRACTOR TO INSTALL ONE MANUAL DRAIN VALVE AT ALL LOW POINTS AND DEAD ENDS OF PRESSURE SUPPLY PIPING TO ENSURE COMPLETE DRAINAGE OF SYSTEM. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THESE LOCATIONS IN-FIELD AND INSTALLATION LOCATIONS SHALL BE NOTED ON AS-BUILTS.

7. POP-UP SPRAY NOZZLES - CONTRACTOR TO INSTALL PLASTIC NOZZLES ON ALL POP-UP SPRAY HEADS. INSTALL 15 SERIES NOZZLES ON ALL HEADS SPACED AT 12' TO 14'. INSTALL 12 SERIES NOZZLES ON ALL HEADS SPACED 10' TO 11'. INSTALL 10 SERIES NOZZLES ON ALL HEADS SPACED AT 8' TO 9'. INSTALL 8 SERIES NOZZLES ON ALL HEADS SPACED AT 6' TO 7'. INSTALL 5' NOZZLES ON ALL HEADS SPACED AT 5'. INSTALL SIDE STRIP NOZZLES ON ALL HEADS WITH AN "S" DESIGNATION AND RIGHT AND LEFT CORNER STRIP NOZZLES ON ALL HEADS WITH AN "L" OR "R" DESIGNATION. VARIABLE ARC NOZZLES SHOULD BE UTILIZED ADJACENT TO CURVILINEAR SHRUB BEDS OR FOR ANY ANGLES THAT ARE NOT A STANDARD NOZZLE ANGLE.

8. UNLABELED PIPING - ALL UNLABELED LATERAL PIPING SHALL BE 1" MINIMUM UNLESS OTHERWISE NOTED.

9. SLEEVING - ALL SLEEVING UNDER PAVED SURFACES SHOWN ON PLANS IS BY CONTRACTOR UNLESS OTHERWISE NOTED. SLEEVING SHALL BE INSTALLED IN THE SIZES AND QUANTITIES SHOWN ON PLANS OR BASED ON THE SCHEDULE BELOW. WHERE SLEEVES ARE SHOWN, BUT NOT LABELED, FOLLOW THE SCHEDULE BELOW. ALL MAINLINE, CONTROL WIRES AND DRIP LINES UNDER PAVED SURFACES ARE TO BE INSTALLED IN SLEEVING. ALL MAINLINE SLEEVE LOCATIONS TO INCLUDE A SEPARATE WIRE SLEEVE.

SLEEVED PIPE SIZE/WIRE QUANTITY	REQUIRED SLEEVE SIZE & (QUANTITY)
¾" - 1¼" PIPING	2" PVC (1)
1½" - 2" PIPING	4" PVC (1)
2½" - 3" PIPING	6" PVC (1)
2-WIRE CABLE	2" PVC (1)

10. 2-WIRE SYSTEM NOTES - CONTRACTOR SHALL INSTALL ALL TWO-WIRE COMPONENTS PER MANUFACTURER'S RECOMMENDATIONS AND STANDARDS.
    - 10.1. CONTRACTOR SHALL USE ONLY MANUFACTURED 2-WIRE DECODER CABLE (SEE SCHEDULE FOR SPECIFIC 2-WIRE CABLE).
    - 10.2. ONLY USE SINGLE STATION DECODERS (SEE SCHEDULE FOR SPECIFIC MODEL).
    - 10.3. LOOP 5' OF 2-WIRE DECODER CABLE INTO ALL VALVE BOXES (WITH DECODERS AND SPLICES) FOR MAINTENANCE.
    - 10.4. LOOP 2' OF 2-WIRE DECODER CABLE AS AN EXPANSION LOOP AT ALL CHANGES OF DIRECTION.
    - 10.5. USE ONLY 3M DBR-6 WATERPROOF CONNECTORS ON ALL WIRE SPLICES AND ALL WIRE SPLICES ARE TO BE MADE WITHIN A VALVE BOX WITH CONTROL VALVES OR A SEPARATE 10" ROUND VALVE BOX FOR WIRE SPLICES.
    - 10.6. INSTALL SURGE PROTECTOR RODS OR PLATES 8 LF. PERPENDICULARLY FROM VALVES, DECODERS, AND COMMUNICATION WIRE. WHERE 8 LF IS NOT AVAILABLE, REFER TO ASIC GUIDELINES FOR PLATE LAYOUT.
    - 10.7. GROUNDING SHALL BE IN AN IRRIGATED AREA.
    - 10.8. GROUND ALL DECODERS AND DECODER WIRE A MINIMUM OF EVERY 600' AND AT ALL ENDS OF 2-WIRE DECODER CABLE RUN.

11. ADJUSTMENT - CONTRACTOR SHALL FINE TUNE/ADJUST THE IRRIGATION SYSTEM TO REDUCE/AVOID OVERSPRAY ONTO HARD SURFACES BY ADJUSTING NOZZLE DIRECTION AND NOZZLE RADIUS.

12. PLANS AND SPECIFICATIONS - CONTRACTOR RESPONSIBLE TO ENSURE WORK CONFORMS TO PLANS AND SPECIFICATIONS. AT ONSET OF CONSTRUCTION, VERIFY PLANS ARE CURRENT. DO NOT CONSTRUCT ANY PORTIONS OF THE IRRIGATION OFF OF PLANS MARKED NOT FOR CONSTRUCTION OR FOR REVIEW ONLY. FAILURE TO VERIFY CURRENT PLANS MAY RESULT IN RECONSTRUCTION AT CONTRACTOR'S EXPENSE. WHERE REQUIRED BY CITY OR TOWN, CONTRACTOR SHALL CONSTRUCT ONLY OFF CITY OR TOWN STAMPED PLANS. REVISIONS TO CITY OR TOWN STAMPED PLANS SHALL CONFORM TO CITY OR TOWN FIELD CHANGE PROCEDURES AND DOCUMENTATION.

13. EXISTING IRRIGATION DAMAGE - CONTRACTOR SHALL REPAIR OR REPLACE ANY EXISTING IRRIGATION SYSTEMS DAMAGED DURING NEW INSTALLATION. REPAIR OR REPLACEMENT SHALL BE DETERMINED BY OWNER OR OWNER'S REPRESENTATIVE AND PAID FOR BY THE LANDSCAPE CONTRACTOR.

14. EXISTING IRRIGATION COORDINATION - EXISTING IRRIGATION SYSTEM SHALL NOT BE TURNED OFF FOR MORE THAN 24 HOURS MAXIMUM. CONTRACTOR SHALL COORDINATE TURN OFF OF SYSTEM WITH OWNER OR MAINTENANCE STAFF 72 HOURS PRIOR TO ANY NEW CONSTRUCTION.

15. SIMULTANEOUS ZONE OPERATION - THIS IRRIGATION SYSTEM HAS BEEN DESIGNED TO OPERATE MULTIPLE ZONES SIMULTANEOUSLY BASED ON INDIVIDUAL ZONE FLOW. THE DESIGN IS INTENDED TO OPERATE MULTIPLE VALVES, UP TO THE MAXIMUM FLOW IN THE POINT OF CONNECTION NOTE. REFER TO CONTROLLER SPECIFICATION FOR MAXIMUM SIMULTANEOUS VALVE COUNT.

16. WATER BUDGETS AND PROJECTIONS - HYDROSYSTEMS-KDI HAS BASED THE IRRIGATION DESIGN AND THE ASSOCIATED PROJECTED WATER USE UPON SUCH FACTORS AS CITY OR WATER DISTRICT IMPOSED REQUIREMENTS, PUBLISHED PLANT SPECIES WATER NEEDS, SELECTED IRRIGATION METHOD EFFICIENCIES AS REPORTED BY INDEPENDENT TESTING FACILITIES, HISTORICAL WEATHER DATA FOR THE PROJECT LOCATION, AND PROPER MAINTENANCE PROCEDURES. HYDROSYSTEMS*KDI IS NOT RESPONSIBLE, AND ACCEPTS NO RESPONSIBILITY, FOR THE ACTUAL WATER USAGE VARIATION THAT IS A RESULT OF FIELD MODIFICATIONS TO THE SYSTEM NOT MATCHING CONSTRUCTION DOCUMENTS, IMPROPER MAINTENANCE, WASTE DUE TO SYSTEM DAMAGE OR VANDALISM, OR WEATHER CONDITIONS THAT DEVIATE FROM PUBLISHED 30 YEAR HISTORICAL AVERAGES.

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER	MODEL NO.	DESCRIPTION	DETAIL NO.
	RAIN BIRD	RD-06-S-P30 WITH "MPR" FIXED SPRAY NOZZLES (OR APPROVED EQUAL)	POPUP SPRAY HEAD	9
	RAIN BIRD	RD-12-S-P30 WITH "MPR" FIXED SPRAY NOZZLES (OR APPROVED EQUAL)	HI-POP SPRAY HEAD	10
#1.5 #2 #2 #2	RAIN BIRD	5006-PL-PC-SAM-R-NP WITH #NOZZLE (6" USE PC AS REVERSING PC)	GEAR DRIVEN ROTOR	11
#4 #10 #10 #10	RAIN BIRD	5012-PL-PC-SAM-R-NP WITH #NOZZLE (12" USE PC AS REVERSING PC)	HI-POP GEAR DRIVEN ROTOR	12
	RAIN BIRD	1402	BUBBLER	13
	RAIN BIRD	PEB SERIES (OR APPROVED EQUAL)	ELECTRIC CONTROL VALVE	8
	RAIN BIRD	44-LRC (OR APPROVED EQUAL)	QUICK COUPLING VALVE	5
N/S	OLDCASTLE / CARSON	REFER TO SPECIFICATIONS AND DETAILS (OR APPROVED EQUAL)	VALVE BOXES	VARIOUS
N/S	AY MACDONALD	76001 - 1/4 TURN - 1" (OR APPROVED EQUAL)	MANUAL DRAIN VALVE	6
		LINE SIZE - 2½" AND SMALLER	GATE VALVE	7
	RAIN BIRD	PEB (1.5") (OR APPROVED EQUAL)	MASTER CONTROL VALVE	3
FS	BASELINE	BL-PFS100 (1.5") (OR APPROVED EQUAL)	FLOW SENSOR	4
		CLASS 200 BE - 2½" & SMALLER	PVC MAINLINE	1
		CLASS 200 BE	PVC LATERAL	1
		CLASS 200	PVC SLEEVING	2
WS			WIRE SPLICES	17
	RAIN BIRD	XCZ-100-PRB-COM	DRIP VALVE ASSEMBLY	14
	TORO	BLUE STRIPE	POLY DRIP TUBING -¾" MIN. WIDTH	15
N/S	RAIN BIRD	XBCV - XERI-BUG WITH CHECK VALVE	DRIP EMITTERS	15
	HUNTER / NIBCO	ECO-ID-12-R WITH NIBCO BALL VALVE	DRIP LINE BLOW-OUT STUB AND INDICATOR HEAD	16
A		(TO BE REUSED)	EXISTING CONTROLLER	N/S
		(TO BE REUSED)	EXISTING BACKFLOW DEVICE	N/S
M			EXISTING METER	N/S
2sta 8			CONTROLLER & STATION NO. CONTROL VALVE SIZE	
3w A (controller)			NUMBER OF SPARE WIRES - 2 CONTROL AND 1 SPARE WIRES TO WHICH CONTROLLER - SEE CONSTRUCTION NOTES	

IRRIGATION DEVELOPMENT DESIGN NOTES

1. THE IRRIGATION SYSTEM SHALL BE DESIGNED TO PROVIDE PEAK SEASON IRRIGATION WITHIN AN SIX NIGHT, SIX HOUR PER NIGHT WATERING PERIOD. IRRIGATION SHALL OCCUR BETWEEN THE HOURS OF 10:00 PM AND 4:00 AM.
2. THE MAINLINE SYSTEM WILL BE DESIGNED SUCH THAT VELOCITIES WITHIN THE MAINLINE PIPING DO NOT EXCEED FIVE FEET PER SECOND.
3. THE MAXIMUM FLOW RATE REQUIRED FOR THE SITE IS (TBD) GPM. THE STATIC PRESSURE AVAILABLE AT THE SITE IS (TBC) PSI
4. THE IRRIGATION INFORMATION SHOWN ON THESE PLANS IS CONCEPTUAL.
5. IRRIGATION DESIGN APPROACH
   - 5.1. NATIVE AREAS
     - 5.1.1. SMALL AREAS (25 FEET WIDE OR LESS) SHALL BE IRRIGATED WITH FIXED NOZZLE POP-UP SPRAY HEADS (12" HEIGHT) WITH MATCHED PRECIPITATION NOZZLES. NOZZLES SHALL BE SIZES TO PROVIDE HEAD TO HEAD COVERAGE.
     - 5.1.2. LARGE TURF AREAS (WIDER THAN 25 FEET) SHALL BE IRRIGATED WITH GEAR DRIVEN ROTOR HEADS (12" HEIGHT) WITH A MINIMUM PRECIPITATION RATE OF .45" PER HOUR FOR A FULL CIRCLE HEAD.
   - 5.2. SHRUB BED AREAS - BED AREAS WITH PLANT MATERIAL ONE GALLON IN SIZE OR LARGER SHALL BE DRIP IRRIGATED.
   - 5.3. TREES (IN NATIVE AREAS) - SHALL BE SPRAY IRRIGATED WITH 12" POP-UP SPRAY HEADS WITH A BUBBLER NOZZLE (2 PER TREE).
6. IRRIGATION SYSTEM SHALL BE FULLY AUTOMATIC AND INCLUDE A WEATHER SENSING DEVICE.

IRRIGATION DESIGN STRATEGY

HATCH	DESCRIPTION	AREAS < 6'	AREAS 6'-25'	AREAS > 25'
	NATIVE GRASS	N/A	12" POPUP SPRAY	12" ROTOR
	TREES & SHRUBS	POINT SOURCE DRIP	POINT SOURCE DRIP	POINT SOURCE DRIP
	TREES (IN NATIVE)	BUBBLER	N/A	N/A

*SELECTION OF POINT SOURCE DRIP OR INLINE SUBSURFACE DRIP MAY BE DETERMINED BY PLANT DENSITY, GROWTH HABIT OR LOCATION RATHER THAN AREA DIMENSIONS.

DIRECTORY

IRRIGATION NOTES & SCHEDULE	IR.1
IIRRIGATION PLANS	IR.2 - IR.5
IRRIGATION DETAILS	IR.6 - IR.8
IRRIGATION CHARTS	IR.8 - IR.10

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Sheet Revisions			
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IRRIGATION NOTES & SCHEDULE

Designer:	KJD	Structure Numbers	
Detailer:	JSB		
Sheet Subset:	IR400	Subset Sheets:	of

Project No./Code
TRG M535-014
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DESIGN INTENT

1. IRRIGATION DESIGN APPROACH
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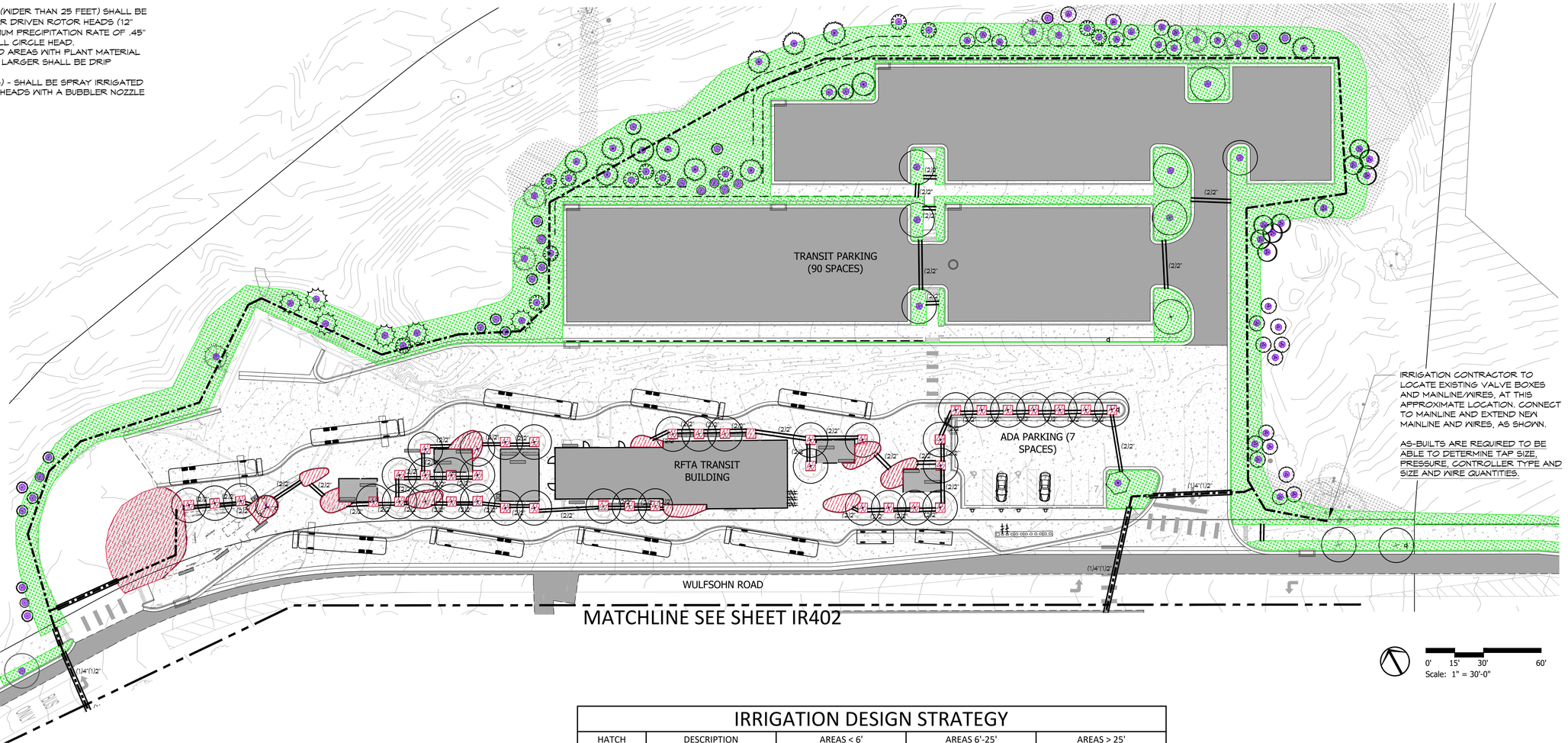

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IRRIGATION PLAN

Designer:	KJD	Structure Numbers	
Detailer:	JSB		
Sheet Subset:	**IR401**	Subset Sheets:	of

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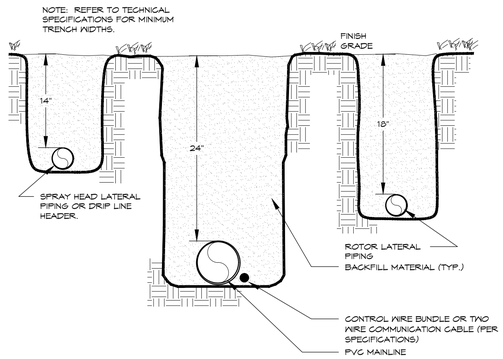
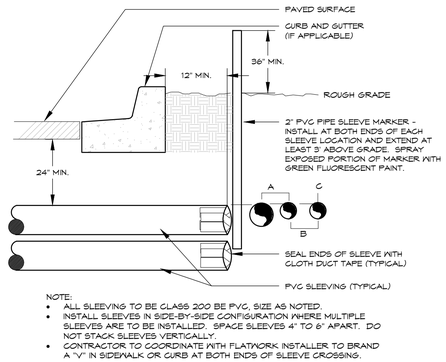
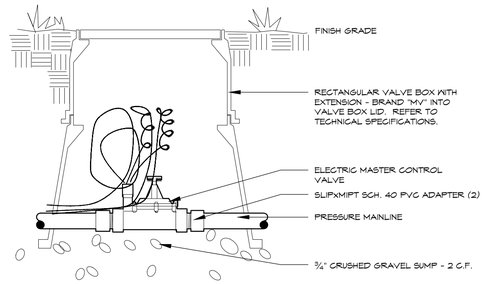


TRENCH 1



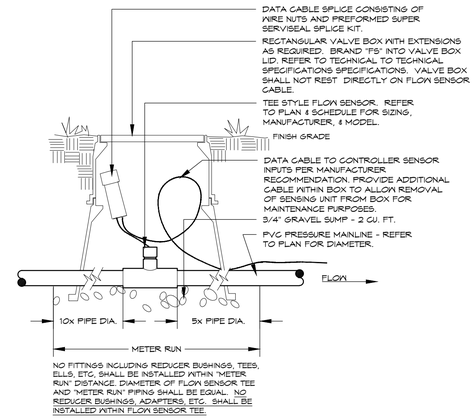
NOTE:
- ALL SLEEVING TO BE CLASS 200 BE PVC, SIZE AS NOTED.
- INSTALL SLEEVES IN SIDE-BY-SIDE CONFIGURATION WHERE MULTIPLE SLEEVES ARE TO BE INSTALLED. SPACE SLEEVES 4" TO 6" APART. DO NOT STACK SLEEVES VERTICALLY.
- CONTRACTOR TO COORDINATE WITH FLATWORK INSTALLER TO BRAND A "V" IN SIDEWALK OR CURB AT BOTH ENDS OF SLEEVE CROSSING.

IRRIGATION SLEEVING 2



MASTER VALVE 3

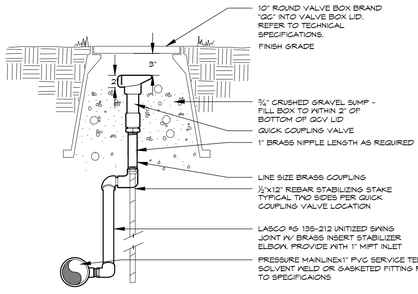
24V - Small - Typical



NO FITTINGS INCLUDING REDUCER BUSHINGS, TEES, ELLS, ETC, SHALL BE INSTALLED WITHIN "METER RUN" DISTANCE. DIAMETER OF FLOW SENSOR TEE AND "METER RUN" PIPING SHALL BE EQUAL. NO REDUCER BUSHINGS, ADAPTERS, ETC. SHALL BE INSTALLED WITHIN FLOW SENSOR TEE.

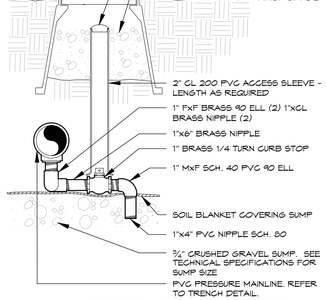
FLOW SENSOR 4

VIA DATA CABLE - TEE STYLE



APPLY TEFLON TAPE TO ALL THREADED NIPPLES

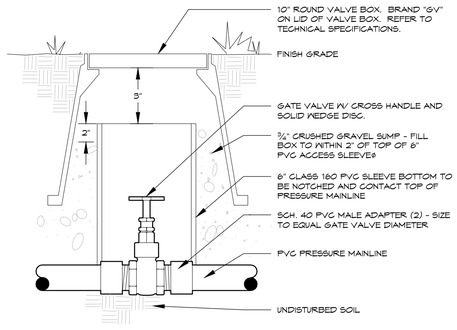
QUICK COUPLING VALVE 5



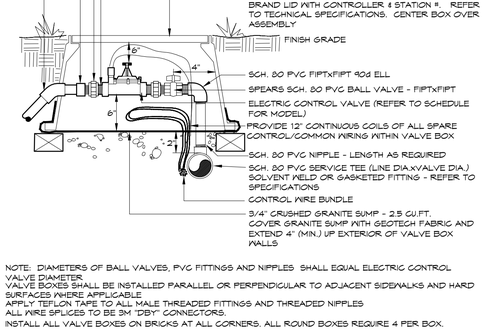
APPLY TEFLON TAPE TO ALL MALE THREADED PVC FITTINGS AND ALL NIPPLES

MANUAL DRAIN VALVE 6

TYPICAL



GATE VALVE 7



NOTE: DIAMETERS OF BALL VALVES, PVC FITTINGS AND NIPPLES SHALL EQUAL ELECTRIC CONTROL VALVE DIAMETER.
VALVE BOXES SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO ADJACENT SIDEWALKS AND HARD SURFACES WHERE APPLICABLE
APPLY TEFLON TAPE TO ALL MALE THREADED FITTINGS AND THREADED NIPPLES
ALL WIRE SPLICES TO BE 3M "DBY" CONNECTORS.
INSTALL ALL VALVE BOXES ON BRICKS AT ALL CORNERS. ALL ROUND BOXES REQUIRE 4 PER BOX.

ELECTRIC CONTROL VALVE 8

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Revised:	Designer: KJD	Structure Numbers		25924
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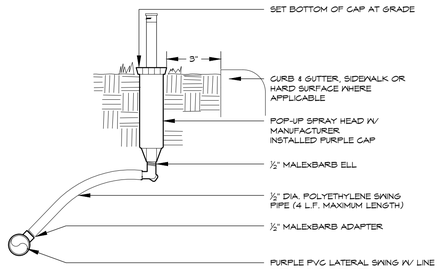
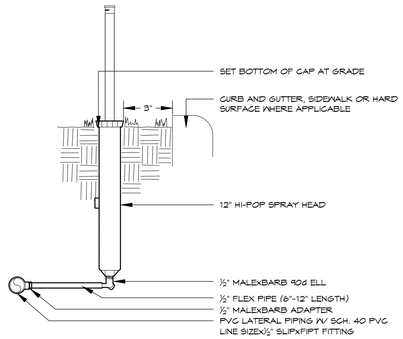
	Sheet Subset: IR403	Subset Sheets:	of	



NOTE:
- SET HEAD PERPENDICULAR TO FINISH GRADE.
- APPLY TEFLON TAPE TO MALE PVC THREADED FITTINGS.
- DOUBLE CLAMP ½" & 2" DIAMETER FITTINGS.

POP-UP SPRAY HEAD

9

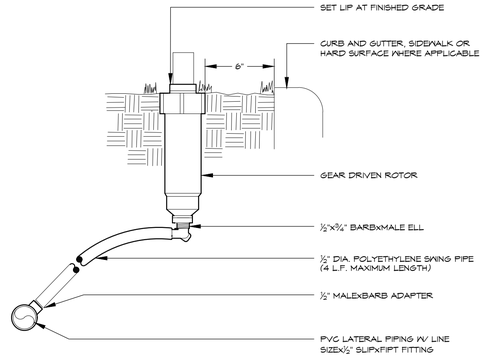


NOTE:
- SET HEAD PERPENDICULAR TO FINISH GRADE SWING.
- FLEX PIPE SHALL BE ATTACHED TO BOTTOM SPRAY HEAD INLET ONLY.
- APPLY TEFLON TAPE TO ALL MALE PVC THREADED FITTINGS AND NIPPLES.

HI-POP SPRAY HEAD

SWING PIPE - PVC

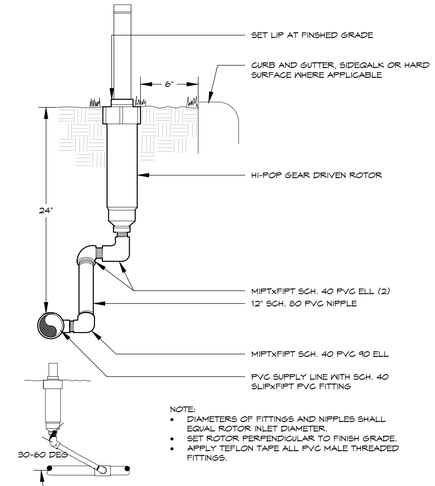
10



SET HEAD PERPENDICULAR TO FINISH GRADE

GEAR DRIVEN ROTOR

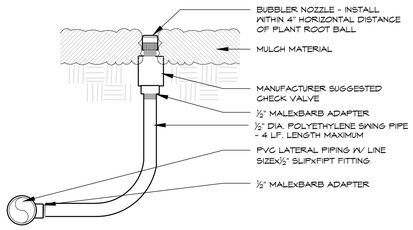
11



NOTE:
- DIAMETERS OF FITTINGS AND NIPPLES SHALL EQUAL ROTOR INLET DIAMETER.
- SET ROTOR PERPENDICULAR TO FINISH GRADE.
- APPLY TEFLON TAPE ALL PVC MALE THREADED FITTINGS.

HI-POP GEAR DRIVEN ROTOR

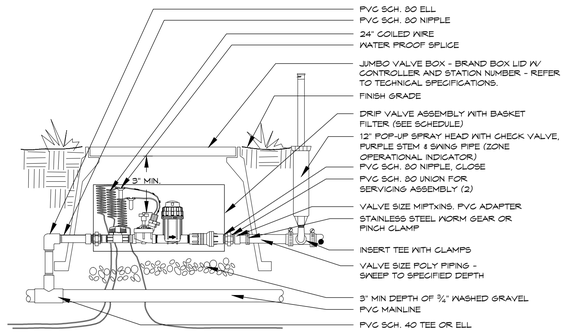
12



NOTE:
- SET BUBBLER(S) ON UPHILL SIDE OF ROOT BALL WHERE TREES PLANTED ON SLOPES EQUAL TO OR GREATER THAN 4 TO 1.
- APPLY TEFLON TAPE TO ALL MIPT FITTINGS

BUBBLER

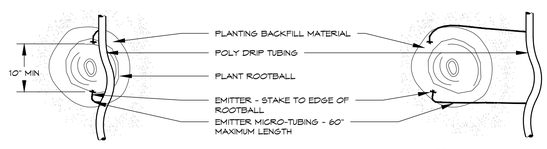
13



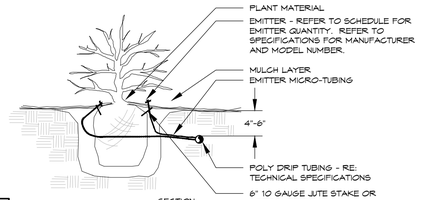
NOTE:
INSTALL ASSEMBLY TO REST ON GRAVEL SUMP. CONTAIN ENTIRE ASSEMBLY WITHIN BOX. NO VALVE BOX EXTENSIONS WILL BE ACCEPTED. PROVIDE 3"-4" CLEARANCE BETWEEN TOP OF CONTROL VALVE SOLENOID AND BOTTOM OF VALVE BOX LID. TOP OF VALVE BOX TO BE FLUSH WITH FINISH GRADE. VALVE BOX SHALL NOT REST ON DRIP TUBING.

DRIP VALVE

14



PLANT SIZE	EMITTER FLOW RATE	EMITTER QTY. AT MULCHED BED LOCATIONS	EMITTER QTY. AT NATIVE SEED LOCATIONS
1 - 2 GALLON MATERIAL	0.5 GPH	ONE EACH	ONE EACH
5 GALLON MATERIAL	0.5 GPH	TWO EACH	TWO EACH
1½" CALIPER TREE	1.0 GPH	THREE EACH	FOUR EACH
2" CALIPER TREE	1.0 GPH	FOUR EACH	SIX EACH
2½" CALIPER TREE	1.0 GPH	SIX EACH	EIGHT EACH
3" CALIPER TREE	1.0 GPH	EIGHT EACH	TEN EACH
3½" CALIPER TREE	1.0 GPH	NINE EACH	ELEVEN EACH
4" CALIPER TREE	1.0 GPH	TEN EACH	TWELVE EACH
6 FT. CONIFEROUS TREE	1.0 GPH	FOUR EACH	SIX EACH
8 FT. CONIFEROUS TREE	1.0 GPH	SIX EACH	NINE EACH
10 FT. CONIFEROUS TREE	1.0 GPH	EIGHT EACH	TWELVE EACH
12 FT. CONIFEROUS TREE	1.0 GPH	TEN EACH	FOURTEEN EACH



SECTION

NOTES:
- INSTALL EMITTERS ON OPPOSING SIDES OF ROOTBALL. THREE OR MORE EMITTERS SHALL BE EQUALLY SPACED AROUND ROOT BALL.
- EMITTERS ARE TO BE INSTALLED TO CLEAR SURFACE BY A MINIMUM OF 1" AND A MAXIMUM OF 2".
- FLUSH ALL LINES THOROUGHLY, INCLUDING EMITTER MICRO-TUBING PRIOR TO EMITTER INSTALLATION.
- IF PLANTING ON A 4:1 SLOPE OR STEEPER, INSTALL BOTH EMITTERS ON UPHILL SIDE OF ROOT BALL.
- EMITTERS SHALL BE SELF-FLUSHING, PRESSURE COMPENSATING-TYPE UNLESS NOTED OTHERWISE WITHIN TECHNICAL SPECIFICATIONS.
- DRIP VALVE ZONES ARE DESIGNED TO ACCOUNT FOR DIFFERENCES IN PLANT REQUIREMENTS (HYDROZONES) AND SUN EXPOSURE.
- CONTRACTOR SHALL ENSURE HYDROZONES ARE VALVED SEPARATELY AS SHOWN ON PLAN.
- SITE CONDITIONS MAY DICTATE THAT MULTIPLE SUN EXPOSURES ARE VALVED TOGETHER DURING THE DESIGN PROCESS. CONTRACTOR SHALL ADJUST EMITTER SCHEDULE AS FOLLOWS:
  - EMITTER QUANTITIES SHALL REMAIN THE SAME BUT EMITTER GALLONAGES SHALL BE DOUBLED FOR PLANTS WITH SOUTH AND WEST EXPOSURES.
  - EMITTER QUANTITIES AND GALLONAGE SHALL BE AS SHOWN IN SCHEDULE FOR PLANTS WITH NORTH AND EAST EXPOSURES.
  - PLANTINGS WITH NORTH AND EAST EXPOSURE SHALL DICTATE VALVE RUN-TIMES AND CONTRACTOR SHALL ADJUST SCHEDULING ACCORDINGLY.

DRIP EMITTER

BELOW GRADE

15

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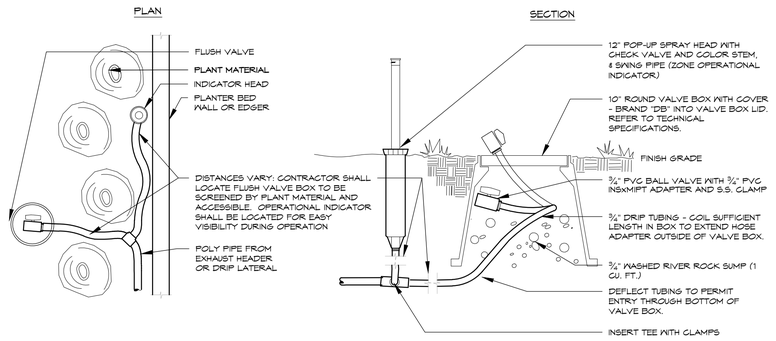
Designer:	KJD	Structure Numbers	
Detailer:	JSB		
Sheet Subset:	**IR404**	Subset Sheets:	of

Project No./Code

TRG M535-014

25924

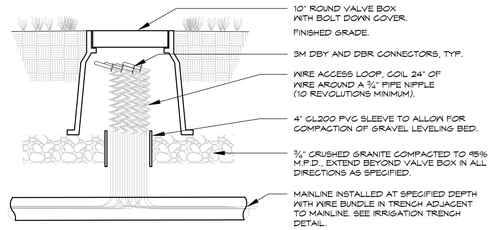
Sheet Number



DRIP FLUSH VALVE

WITH OPERATIONAL INDICATOR

16



NOTE:
1. SET TOP OF BOX LEVEL WITH FINISHED GRADE IN TURF AREAS AND LEVEL WITH TOP OF MULCH IN SHRUB BEDS.
2. USE STANDARD RECTANGULAR VALVE BOX WITH BOLT DOWN LID FOR SPLICES OF MORE THAN TWENTY (20) WIRES.

WIRE SPLICE BOX

24V WIRING SYSTEM

17

DIRECTORY

IRRIGATION NOTES & SCHEDULE	IR.1
IIRRIGATION PLANS	IR.2 - IR.5
IRRIGATION DETAILS	IR.6 - IR.8
IRRIGATION CHARTS	IR.8 - IR.10

811 Know what's below. Call before you dig.
CALL 3 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

KDI HydroSystems
Irrigation Consulting & Water Management
13949 W. Colfax Ave, Suite 260 Lakewood, Colorado 80401
o: 303.980.5327 www.hydrosystemskdi.com

Print Date: 6/27/2024 11:09 AM
File Name: 0-23019-IRRIGATION_TRANSIT.dwg
Horiz. Scale: As Noted Vert. Scale: As Noted

Short Elliott Hendrickson Inc.
Colorado Center Tower One
Suite 6000
2000 South Colorado Boulevard
Denver, CO 80222-7900
Tele. (720) 540-6800
(800) 490-4966
Fax (720) 540-6801

Sheet Revisions

Rev.	Date	Comments	Init.

ROARING FORK TRANSPORTATION AUTHORITY
WEST GLENWOOD TRANSIT CENTER
2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans
No Revisions:
Revised:
Void:

IRRIGATION DETAILS

Designer: KJD
Detailer: JSB
Sheet Subset: **IR405**
Structure Numbers:
Subset Sheets: of

Project No./Code
TRG M535-014
25924
Sheet Number

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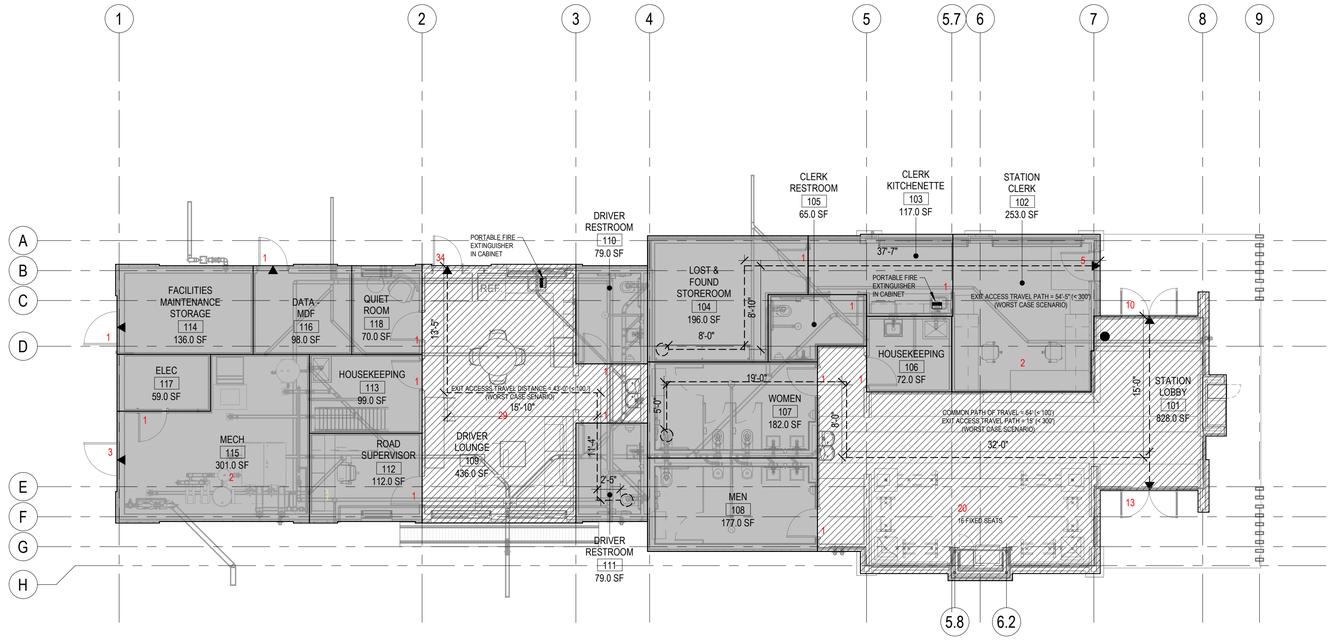

1 CODE PLAN - LEVEL 1
1/8" = 1'-0"

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

Copy and Paste Code Summary Notes in this View

OCCUPANCY SCHEDULE - GROSS

NO.	SPACE CODE	ROOM NAME	GROSS AREA	OCCUPANCY	OCC. FACTOR	OCC. LOAD	NOTES
101	OP251	STATION LOBBY	828.0 SF	ASSEMBLY	20 FIXED SEATS	20	1 PERSON PER SEAT (FIXED)
102	OP155-156	STATION CLERK	253.0 SF	BUSINESS	150	1.7	
103	OP157	CLERK KITCHENETTE	117.0 SF	BUSINESS	150	0.8	
104	OP205	LOST & FOUND STOREROOM	196.0 SF	BUSINESS	150	1.3	
105	OP1243	CLERK RESTROOM	65.0 SF	BUSINESS	150	0.4	
106	FM526B	HOUSEKEEPING	72.0 SF	BUSINESS	150	0.5	
107	OP254	WOMEN	182.0 SF	BUSINESS	150	1.2	
108	OP 254	MEN	177.0 SF	BUSINESS	150	1.2	
109	OP223	DRIVER LOUNGE	436.0 SF	ASSEMBLY	15	29.1	NET A-3 UNCONCENTRATED
110	OP241	DRIVER RESTROOM	490 GSF/436 NSF	BUSINESS	150	0.5	
111	OP242	DRIVER RESTROOM	79.0 SF	BUSINESS	150	0.5	
112	OP151	ROAD SUPERVISOR	112.0 SF	BUSINESS	150	0.7	
113	FM526A	HOUSEKEEPING	99.0 SF	BUSINESS	150	0.7	
114	FM223	FACILITIES MAINTENANCE STORAGE	136.0 SF	BUSINESS	150	0.9	
115	OP253	MECH	301.0 SF	BUSINESS	150	2.0	
116	FM544	DATA - MDF	98.0 SF	BUSINESS	150	0.7	
117		ELEC	59.0 SF	BUSINESS	150	0.4	
118		QUIET ROOM	70.0 SF	BUSINESS	150	0.5	
TOTAL			3359.0 SF 3,413.0 GSF			43.0 63 OCCUPANTS	

CODE ANALYSIS
APPLICABLE CODES
2021 INTERNATIONAL BUILDING CODE (IBC)
INCLUDING GLENWOOD SPRINGS AMENDMENTS TO THE IBC
2021 INTERNATIONAL PLUMBING CODE (IPC)
2021 INTERNATIONAL MECHANICAL CODE (IMC)
2021 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
2021 INTERNATIONAL FIRE CODE (IFC)
2021 INTERNATIONAL FUEL GAS CODE (IFGC)
2020 NATIONAL ELECTRIC CODE (NEC)

CODE LEGEND
- GROUP B OCCUPANCY (SPRINKLERED*)
- GROUP A ASSEMBLY (SPRINKLERED*)
- EXIT
- EXIT ACCESS TRAVEL PATH < 300 FT*
- COMMON PATH OF TRAVEL PATH < 100 FT*
  ONE EXIT ACCESS TRAVEL PATH < 100 FT*
- PORTABLE FIRE EXTINGUISHER IN CABINET
- PORTABLE BRACKET MOUNTED FIRE EXTINGUISHER

IBC CHAPTER 3 USE AND OCCUPANCY

USE: BUSINESS
OCCUPANCY: B

303.1.2 SMALL ASSEMBLY SPACES. THE FOLLOWING ROOMS AND SPACES SHALL NOT BE CLASSIFIED AS ASSEMBLY OCCUPANCIES:
1. A ROOM OR SPACE USED FOR ASSEMBLY PURPOSES WITH AN OCCUPANT LOAD OF LESS THAN 50 PERSONS AND ACCESSORY TO ANOTHER OCCUPANCY SHALL BE CLASSIFIED AS A **GROUP B** OCCUPANCY OR AS PART OF THAT OCCUPANCY.
2. A ROOM OR SPACE USED FOR ASSEMBLY PURPOSES THAT IS LESS THAN 750 SQUARE FEET (70 M 2) IN AREA AND ACCESSORY TO ANOTHER OCCUPANCY SHALL BE CLASSIFIED AS A **GROUP B** OCCUPANCY OR AS PART OF THAT OCCUPANCY.

311.1.1 ACCESSORY STORAGE SPACES. A ROOM OR SPACE USED FOR STORAGE PURPOSES THAT IS ACCESSORY TO ANOTHER OCCUPANCY SHALL BE CLASSIFIED AS PART OF THAT OCCUPANCY.

IBC CHAPTER 4 SPECIAL REQUIREMENTS

IBC CHAPTER 5 BUILDING HEIGHTS AND AREAS (TYPE V-B / S)

TABLE 504.3	BUILDING HEIGHT:	ALLOWED =	60'
		ACTUAL =	21' - 2" TOTAL
TABLE 504.4	NUMBER OF STORIES:	ALLOWED =	3 STORIES
		ACTUAL =	1 STORY
TABLE 506.2	BUILDING AREA:	ALLOWED =	36,000 SF
		ACTUAL =	3,413 GSF

IBC CHAPTER 6 TYPES OF CONSTRUCTION

CONSTRUCTION: TYPE V-B

TABLE 601 FIRE-RESISTANCE RATING REQUIREMENTS

- PRIMARY STRUCTURAL FRAME = 0 HOUR
- BEARING WALLS EXTERIOR = 0 HOUR
- BEARING WALLS INTERIOR = 0 HOUR
- NONBEARING WALLS AND PARTITIONS - EXTERIOR = 0 HOUR
- NONBEARING WALLS AND PARTITIONS - INTERIOR = 0 HOUR
- FLOOR CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS = 0 HOUR
- ROOF CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS = 0 HOUR

IBC CHAPTER 7 FIRE AND SMOKE PROTECTION FEATURES

N/A

IBC CHAPTER 8 INTERIOR FINISHES

TABLE 803.13 INTERIOR WALL AND CEILING FINISH REQ'S

- INTERIOR EXIT STAIRWAYS AND RAMPS AND EXIT PASSAGEWAYS = B
- CORRIDORS AND ENCLOSURE FOR EXIT ACCESS STAIRWAYS AND RAMPS = C
- ROOMS AND ENCLOSED SPACES = C

IBC CHAPTER 9 FIRE PROTECTION SYSTEMS

FIRE SPRINKLER = NOT REQUIRED
PORTABLE FIRE EXTINGUISHERS = REQUIRED
FIRE ALARM AND SMOKE DETECTION SYSTEMS = NOT REQUIRED

IBC CHAPTER 10 MEANS OF EGRESS

1004 OCCUPANT LOAD = 63 OCCUPANTS TOTAL

1005 EGRESS WIDTH AT DOORS (0.20) = 18" MIN 34" ACTUAL
1005 EGRESS WIDTH AT CORRIDORS (0.30) = 27" MIN 4' -7" ACTUAL

TABLE 1006.2.1 COMMON PATH OF TRAVEL = 100 FT MAX FOR OCC <50

1006 MINIMUM NUMBER OF EXITS = 1 EXIT FOR OCC <50

1007 EXIT AND EXIT ACCESS DOORWAY CONFIGURATION

EXCEPTION 2. WHERE A BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1 OR 903.3.1.2, THE SEPARATION DISTANCE SHALL BE NOT LESS THAN ONE-THIRD OF THE LENGTH OF THE MAXIMUM OVERALL DIAGONAL DIMENSION OF THE AREA SERVED.

1008 MEANS OF EGRESS ILLUMINATION = YES
1010.1.1 SIZE OF DOORS = 32" MIN CLEAR
1010.1.10 PANIC HARDWARE = YES AT EXIT DOORS

TABLE 1017.2 EXIT ACCESS TRAVEL DISTANCE = B= 300 FT MAX

1020.1 CORRIDOR FIRE RESISTANCE = 0 HOUR
1020.5 DEAD ENDS = 50 FT

INTERNATIONAL PLUMBING CODE - 2021

CHAPTER 4: FIXTURES, FAUCETS AND FIXTURE FITTINGS

SECTION 403 MINIMUM PLUMBING FACILITIES
(TABLE 403.1) MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES:

Occupancy	Load	Male WC	Female WC	Male Lav.	Female Lav.	Drinking Fnt.
A-3 Assembly	49	1/125	1/65	1/200	1/200	1/500
Required		0.19	0.38	0.12	0.12	0.09
B Business	14	1/25 first 50 1/50 Remain.	1/25 first 50 1/50 Remain.	1/40 first 80 1/80 Remain.	1/40 first 80 1/80 Remain.	1/100
Required		0.28	0.28	0.18	0.18	0.14
Total Required		1	1	1	1	1
Total Provided		1 (+2 Urinal)	3	2	2	4

1 service sink required - 1 provided
3 additional unisex bathrooms provided with one W/C and Lav. each

SECTION 424 URINALS
(424.2) In each bathroom or toilet room, urinals shall not be substituted for more than 67 percent of the required water closets in Assembly occupancies and not more than 50 percent in Business occupancies.

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PROJECT OWNER
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY
WEST GLENWOOD TRANSIT CENTER (PHASE 6A)
2307 WULFSOHN RD.
GLENWOOD SPRINGS,
COLORADO 81601

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SEH Project	173800
Checked By	A. JAUCH
Drawn By	SEH

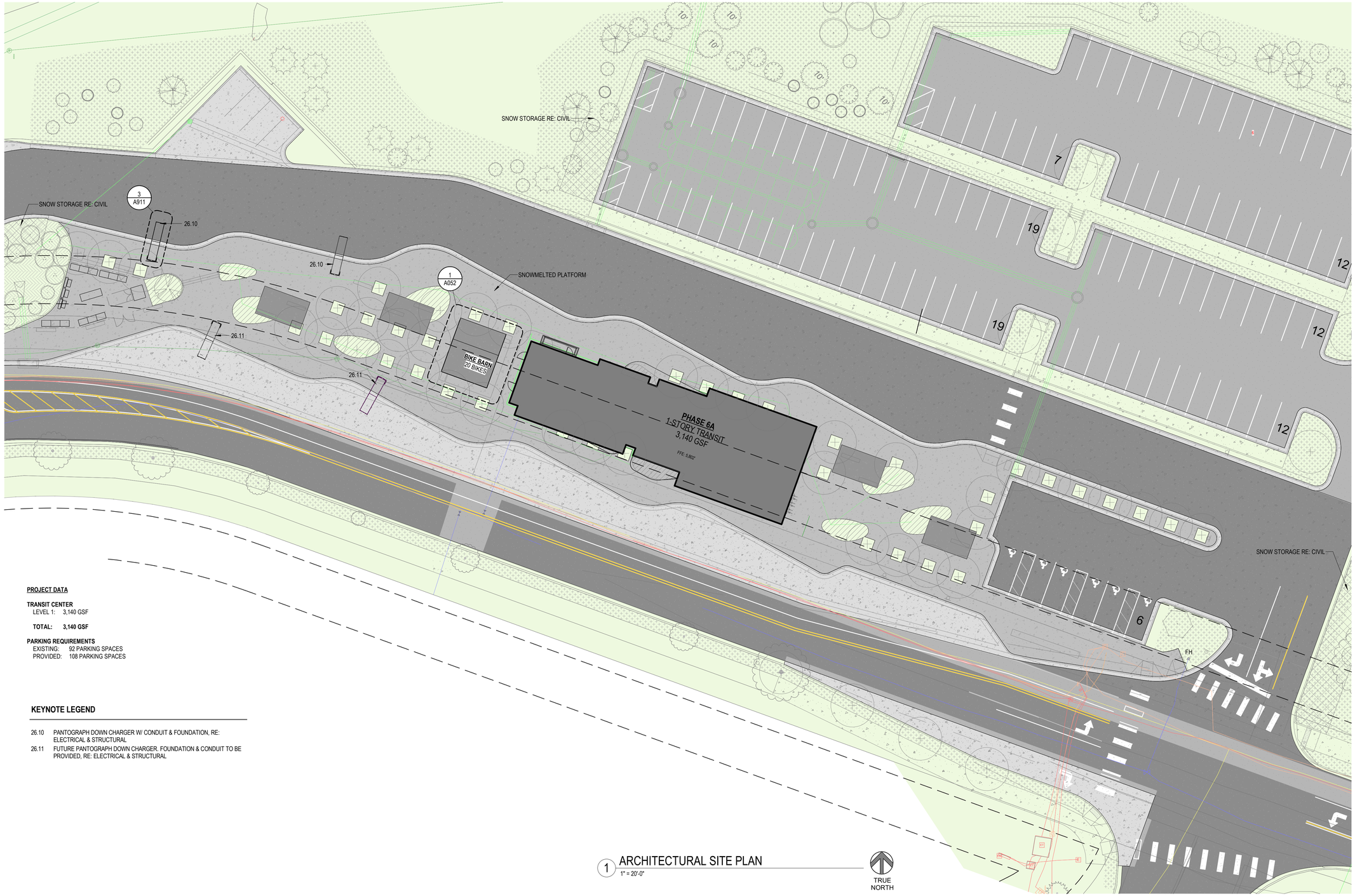
Project Status	**Issue Date**
50% CD SET	09/17/24

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

CODE INFORMATION
(PH-6A)

A004



PROJECT DATA

TRANSIT CENTER
LEVEL 1: 3,140 GSF

TOTAL: 3,140 GSF

PARKING REQUIREMENTS
EXISTING: 92 PARKING SPACES
PROVIDED: 108 PARKING SPACES

KEYNOTE LEGEND

26.10 PANTOGRAPH DOWN CHARGER W/ CONDUIT & FOUNDATION, RE: ELECTRICAL & STRUCTURAL

26.11 FUTURE PANTOGRAPH DOWN CHARGER. FOUNDATION & CONDUIT TO BE PROVIDED, RE: ELECTRICAL & STRUCTURAL

1 ARCHITECTURAL SITE PLAN
1" = 20'-0"

TRUE NORTH

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WEST GLENWOOD TRANSIT CENTER (PHASE 6A)

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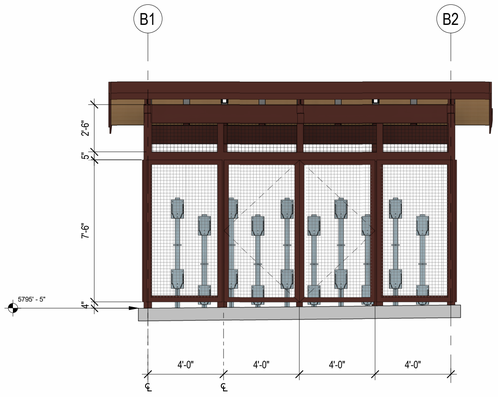
REVISION SCHEDULE

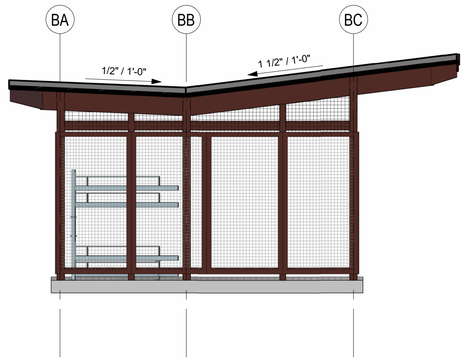
REV. #	DESCRIPTION	DATE

ARCHITECTURAL SITE PLAN (PH-6A)

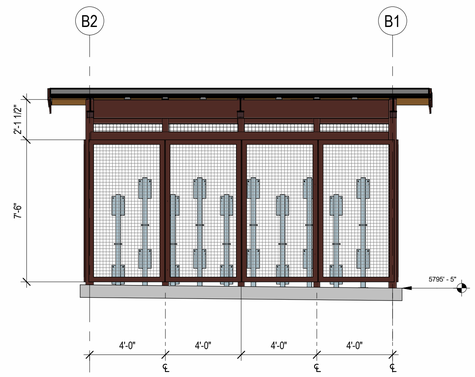
A051



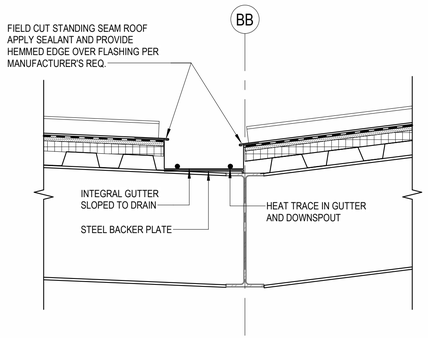
7 BIKE BARN - FRONT ELEVATION
1/4" = 1'-0"



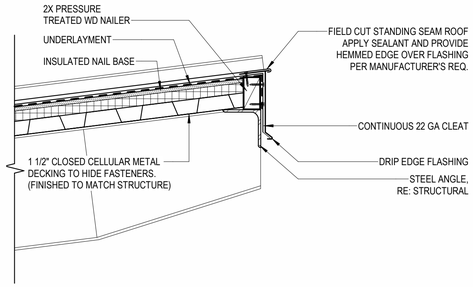
6 BIKE BARN - SIDE ELEVATION
1/4" = 1'-0"



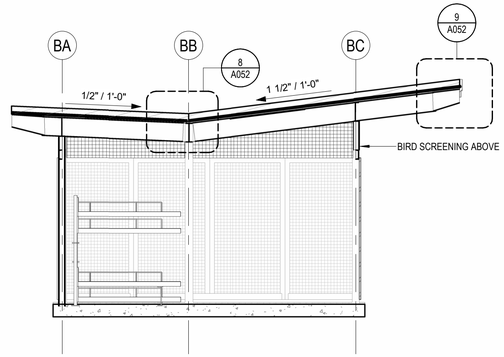
5 BIKE BARN - REAR ELEVATION
1/4" = 1'-0"



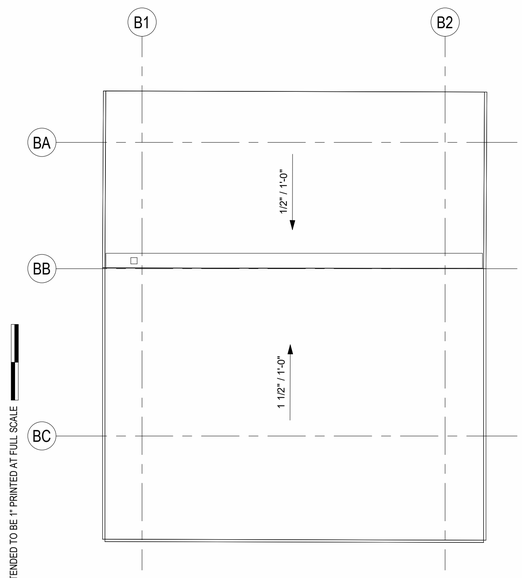
8 BIKE BARN - ROOF VALLEY
1 1/2" = 1'-0"



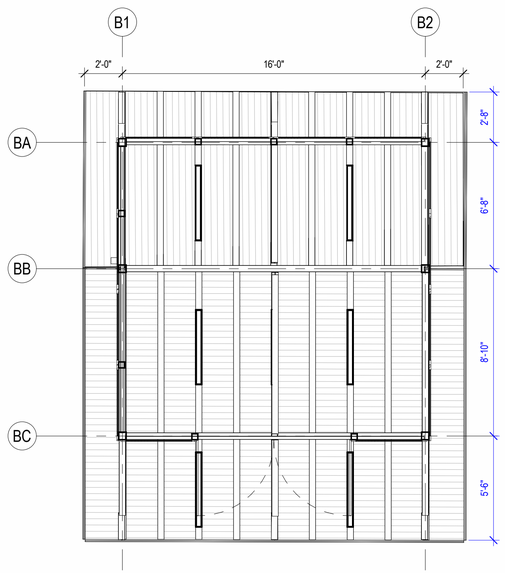
9 BIKE BARN - ROOF EDGE
1 1/2" = 1'-0"



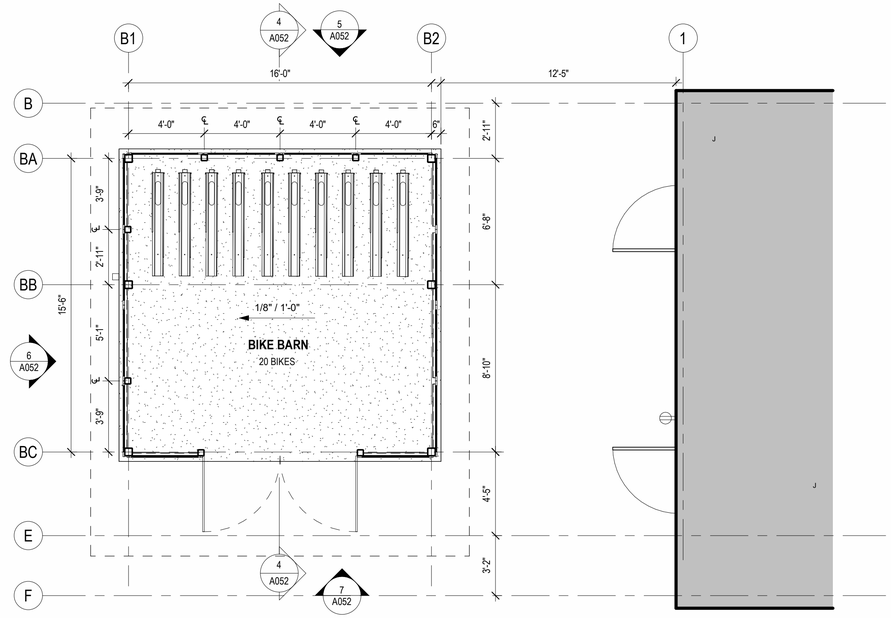
4 BIKE BARN - SECTION
1/4" = 1'-0"



3 BIKE BARN - ROOF PLAN
1/4" = 1'-0"



2 BIKE BARN - RCP
1/4" = 1'-0"



1 BIKE BARN - ENLARGED PLAN
1/4" = 1'-0"

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Project Status	**Issue Date**
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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

BIKE BARN ENLARGED PLANS AND ELEVATIONS (PH-6A)

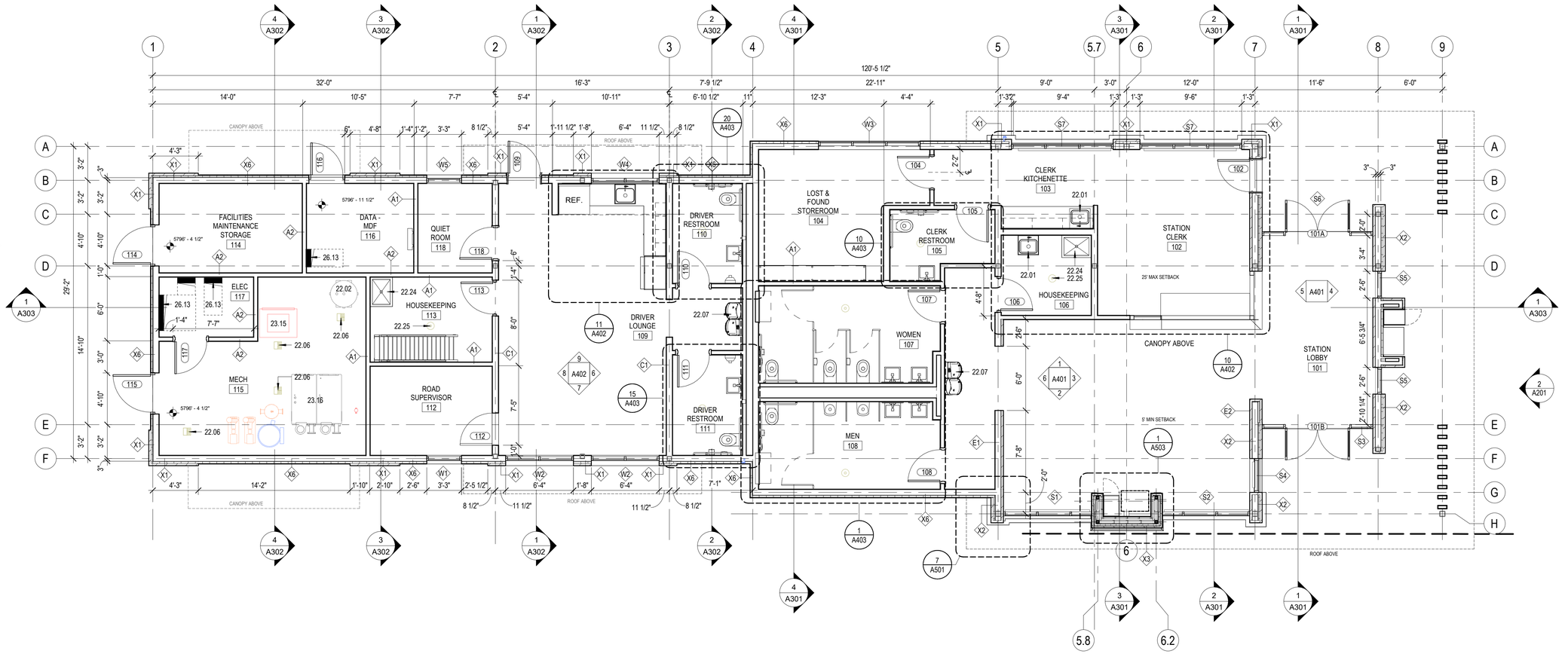
A052

GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
2. ALL DIMENSIONS TO FACE OF STEEL STUD OR CENTERLINE OF STRUCTURE UNLESS NOTED OTHERWISE.

KEYNOTE LEGEND

22.01	SINGLE BOWL SINK, RE: PLUMBING
22.02	DOMESTIC WATER HEATERS, RE: PLUMBING
22.06	FLOOR SINK, RE: PLUMBING
22.07	DRINKING FOUNTAIN (EWC), RE: PLUMBING
22.24	MOP SINK, RE: PLUMBING
22.25	FLOOR DRAIN, RE: PLUMBING
23.15	HEAT PUMP, RE: MECHANICAL
23.16	MECHANICAL EQUIPMENT, RE: MECHANICAL
26.13	ELECTRICAL PANELBOARD, RE: ELECTRICAL



1 TRANSIT STATION PLAN
3/16" = 1'-0"

TRUE NORTH

PROJECT NORTH

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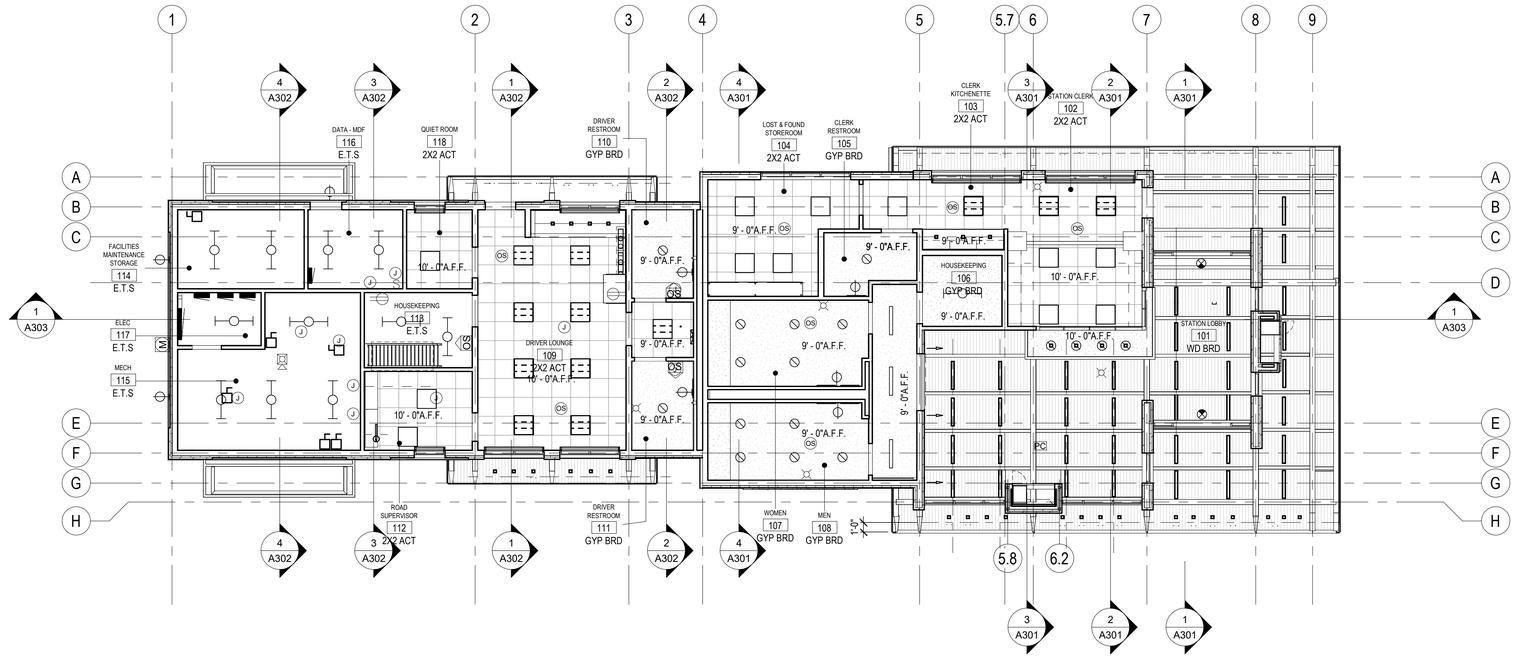
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

TRANSIT STATION FLOOR PLAN (PH-6A)

A101



1 TRANSIT STATION REFLECTED CEILING PLAN
1/8" = 1'-0"

TRUE NORTH

PROJECT NORTH

GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
2. ALL DIMENSIONS TO FACE OF STEEL STUD OR CENTERLINE OF STRUCTURE UNLESS NOTED OTHERWISE.

KEYNOTE LEGEND

REFLECTED CEILING LEGEND

- GYPSUM BOARD
- 2' x 2' SUSPENDED ACOUSTICAL PANELS
- CONCRETE
- WOOD BOARD CEILING
- E.T.S — EXPOSED TO STRUCTURE
- 3' X 4" LINEAR LIGHT FIXTURE
- EXIT SIGN
- 2' x 2' RECESSED LIGHTING TROFFER
- 8' x 5" LINEAR LIGHT FIXTURE
- PENDANT LIGHT FIXTURE
- 1' X 4' CABLE HUNG LIGHT FIXTURE
- RECESSED CAN LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE

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Project Status	**Issue Date**
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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

TRANSIT STATION
REFLECTED CEILING PLAN
(PH-6A)

A102

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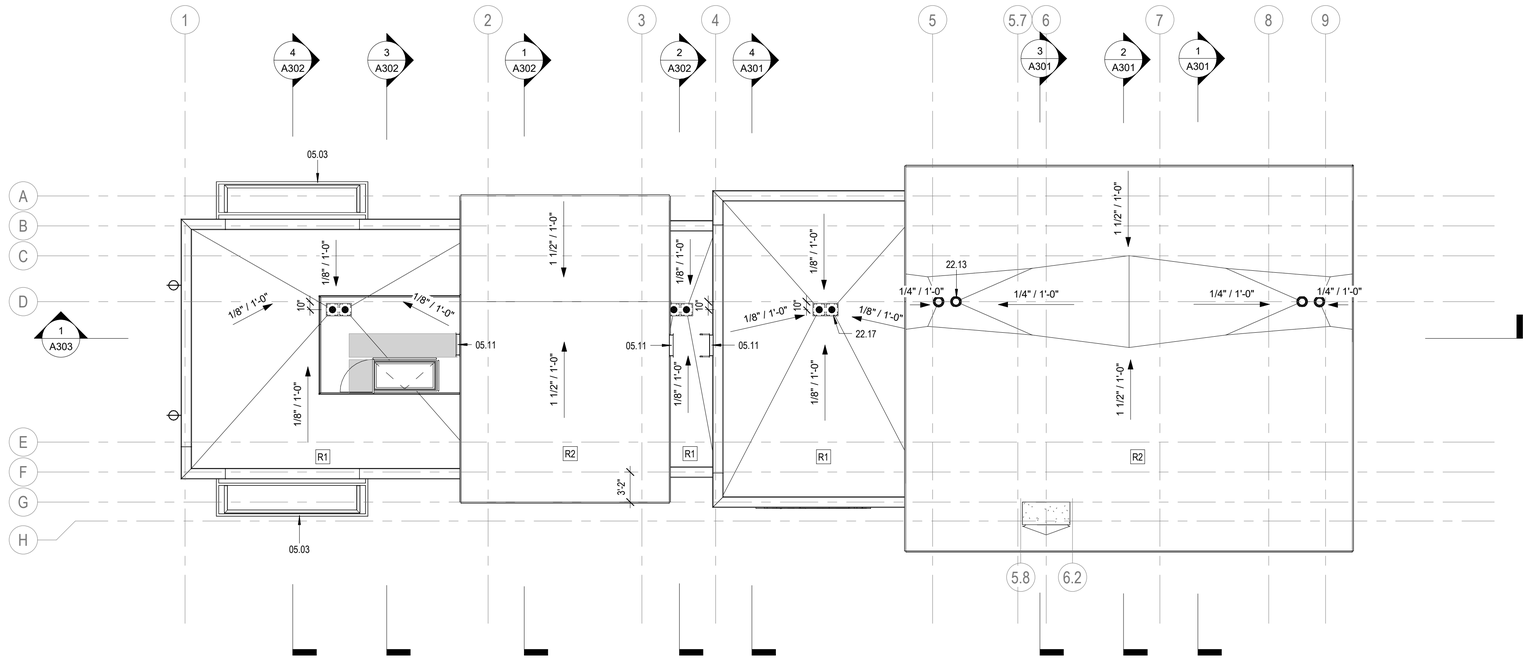
GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
2. ALL DIMENSIONS TO FACE OF STEEL STUD OR CENTERLINE OF STRUCTURE UNLESS NOTED OTHERWISE.

KEYNOTE LEGEND

05.03 METAL FRAMED CANOPY, RE: STRUCTURAL
05.11 ACCESS LADDER
22.13 ROOF DRAIN, RE: PLUMBING
22.17 ROOF DRAIN WITH OVERFLOW, RE: PLUMBING



1 TRANSIT STATION ROOF PLAN
1/8" = 1'-0"

TRUE NORTH
PROJECT NORTH

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

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PROJECT OWNER
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY
WEST GLENWOOD TRANSIT CENTER (PHASE 6A)
2307 WULFSOHN RD.
GLENWOOD SPRINGS,
COLORADO 81601

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SEH Project	173800
Checked By	A. JAUCH
Drawn By	SEH

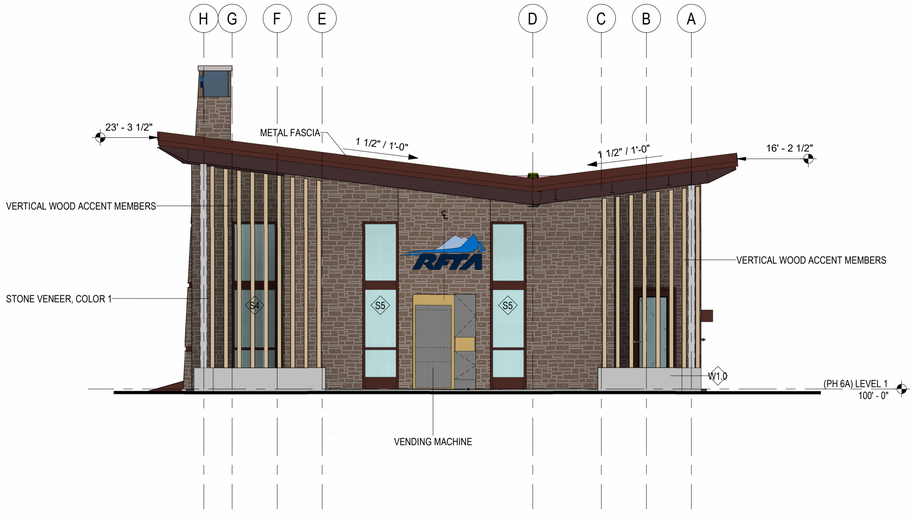
Project Status	**Issue Date**
50% CD SET	09/17/24

REVISION SCHEDULE

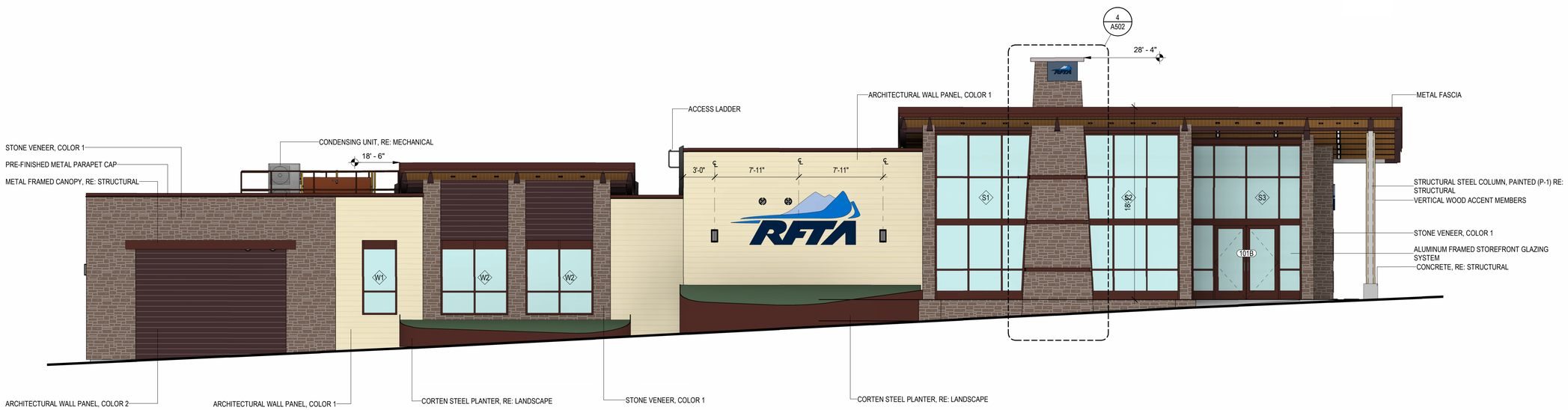
REV. #	DESCRIPTION	DATE

TRANSIT STATION ROOF PLAN (PH-6A)

A103



2 A101 EXTERIOR ELEVATION - EAST
3/16" = 1'-0"



1 A101 EXTERIOR ELEVATION - SOUTH
3/16" = 1'-0"

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GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
2. ALL DIMENSIONS TO FACE OF STEEL STUD OR CENTERLINE OF STRUCTURE UNLESS NOTED OTHERWISE.

KEYNOTE LEGEND

03.01	CONCRETE, RE: STRUCTURAL
04.01	ARCHITECTURAL WALL PANEL, COLOR 1
04.02	ARCHITECTURAL WALL PANEL, COLOR 2
04.04	STONE VENEER, COLOR 1
05.02	STRUCTURAL STEEL COLUMN, PAINTED (P-1) RE: STRUCTURAL
05.03	METAL FRAMED CANOPY, RE: STRUCTURAL
05.08	CORTEN STEEL PLANTER, RE: LANDSCAPE
05.09	METAL FASCIA
05.11	ACCESS LADDER
06.03	VERTICAL WOOD ACCENT MEMBERS
07.01	PRE-FINISHED METAL PARAPET CAP
08.03	ALUMINUM FRAMED STOREFRONT GLAZING SYSTEM
11.04	VENDING MACHINE
23.09	CONDENSING UNIT, RE: MECHANICAL

EXTERIOR FINISH LEGEND

- STONE VENEER, COLOR 1: CORONADO , VENETIAN VILLA, PALAZZO WITH ½" SHALLOW BRUSHED GROUT JOINT. COLOR: MADISON COUNTY.
- ARCHITECTURAL WALL PANEL, COLOR 1: NICHIHA, LATURA V-GROOVE. COLOR: CUSTOM, LIGHT BEIGE
- ARCHITECTURAL WALL PANEL, COLOR 2: NICHIHA, VINTAGE WOOD. COLOR: TABACCO
- RULON FAUX WOOD SOFFIT CEILING, ENDURE LINEAR 800/810 8X0 (3-1/4" WIDTH), WITH 3/4" SPACERS. COLOR: MEDIUM WALNUT
- CORTEN STEEL.

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GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER (PHASE 6A)

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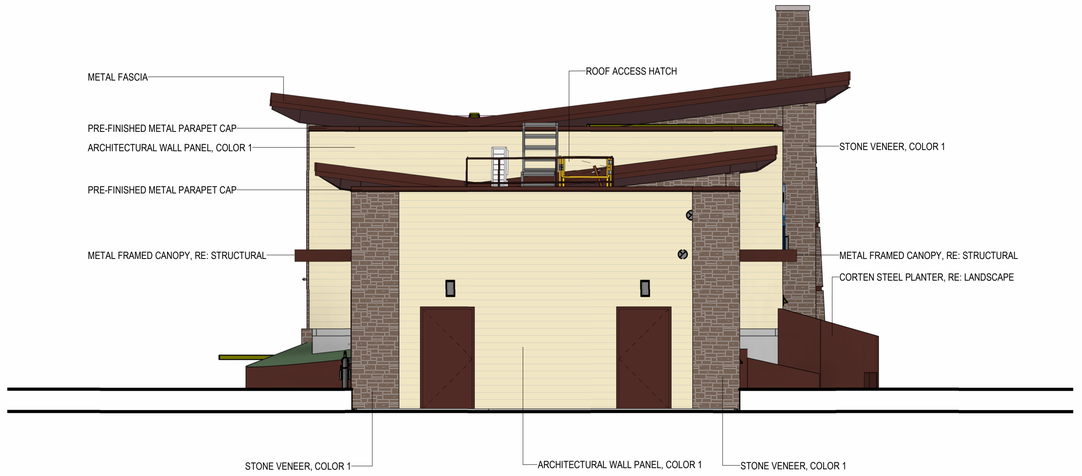
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

EXTERIOR ELEVATIONS (PH-6A)

A201



2 EXTERIOR ELEVATION - WEST
3/16" = 1'-0"

GENERAL NOTES

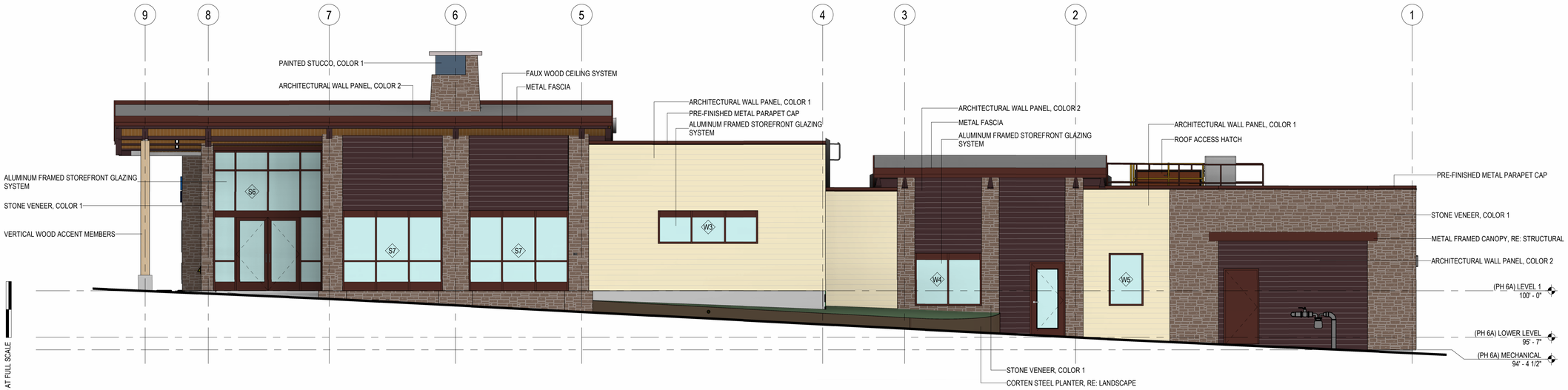
1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
2. ALL DIMENSIONS TO FACE OF STEEL STUD OR CENTERLINE OF STRUCTURE UNLESS NOTED OTHERWISE.

KEYNOTE LEGEND

04.01	ARCHITECTURAL WALL PANEL, COLOR 1
04.02	ARCHITECTURAL WALL PANEL, COLOR 2
04.04	STONE VENEER, COLOR 1
05.03	METAL FRAMED CANOPY, RE: STRUCTURAL
05.06	ROOF ACCESS HATCH
05.08	CORTEN STEEL PLANTER, RE: LANDSCAPE
05.09	METAL FASCIA
06.03	VERTICAL WOOD ACCENT MEMBERS
07.01	PRE-FINISHED METAL PARAPET CAP
08.03	ALUMINUM FRAMED STOREFRONT GLAZING SYSTEM
09.03	FAUX WOOD CEILING SYSTEM
09.04	PAINTED STUCCO, COLOR 1

EXTERIOR FINISH LEGEND

- STONE VENEER, COLOR 1: CORONADO , VENETIAN VILLA, PALAZZO WITH ½" SHALLOW BRUSHED GROUT JOINT. COLOR: MADISON COUNTY.
- ARCHITECTURAL WALL PANEL, COLOR 1: NICHIHA, LATURA V-GROOVE. COLOR: CUSTOM, LIGHT BEIGE
- ARCHITECTURAL WALL PANEL, COLOR 2: NICHIHA, VINTAGE WOOD. COLOR: TABACCO
- RULON FAUX WOOD SOFFIT CEILING, ENDURE LINEAR 800/810 8X0 (3-1/4" WIDTH), WITH 3/4" SPACERS. COLOR: MEDIUM WALNUT
- CORTEN STEEL.



1 EXTERIOR ELEVATION - NORTH
3/16" = 1'-0"

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REVISION SCHEDULE

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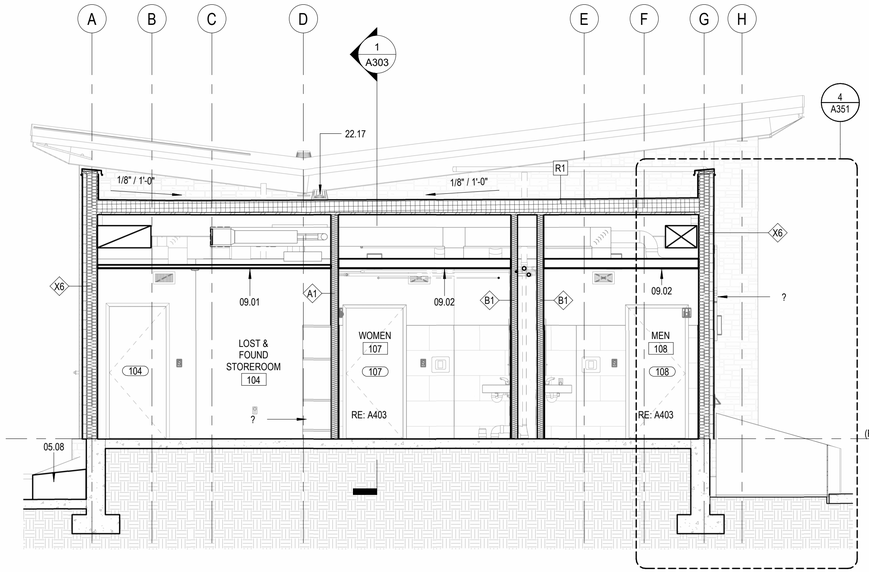
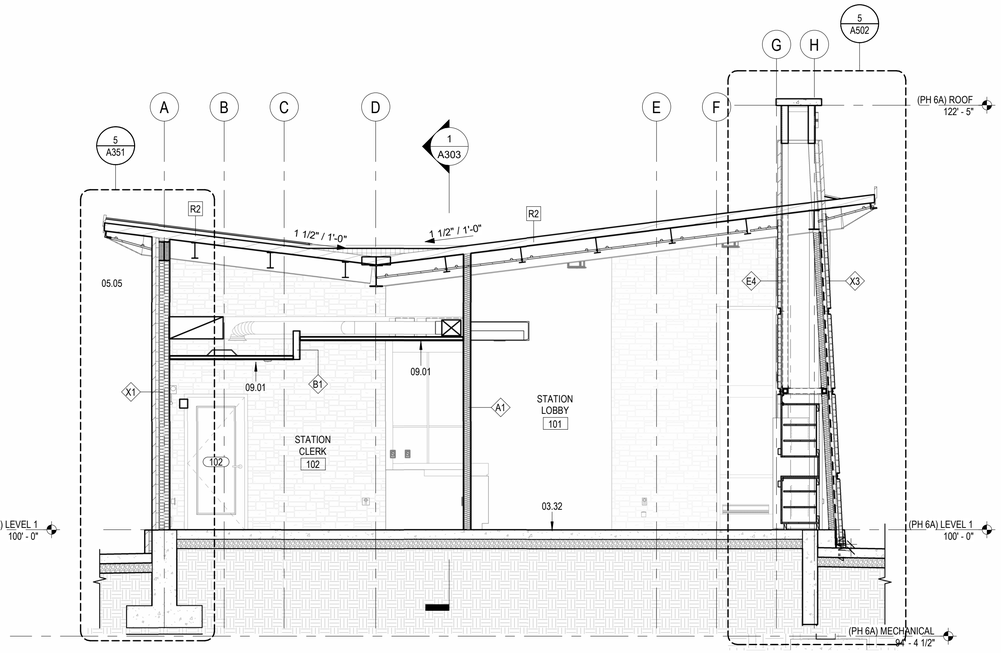
EXTERIOR ELEVATIONS
(PH-6A)

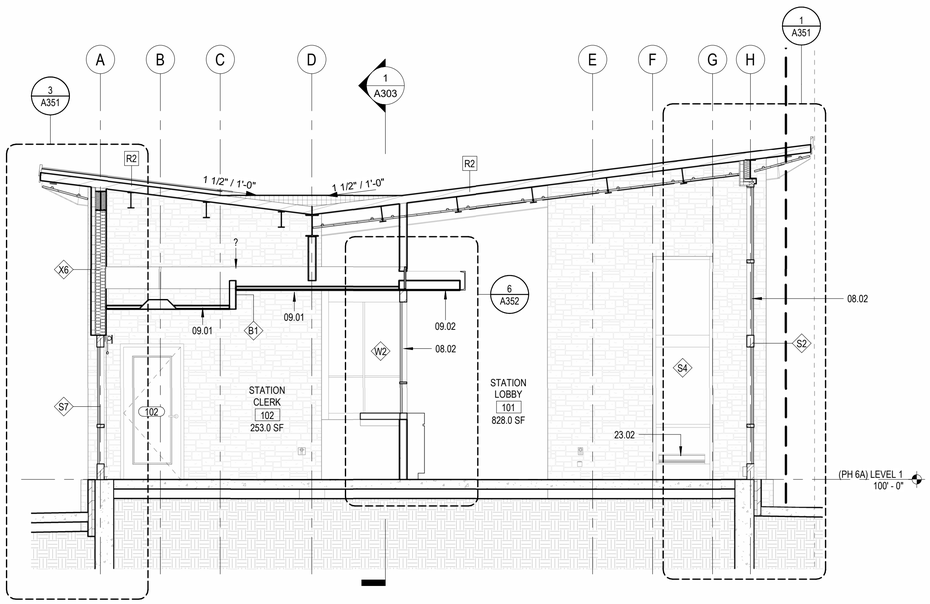
A202



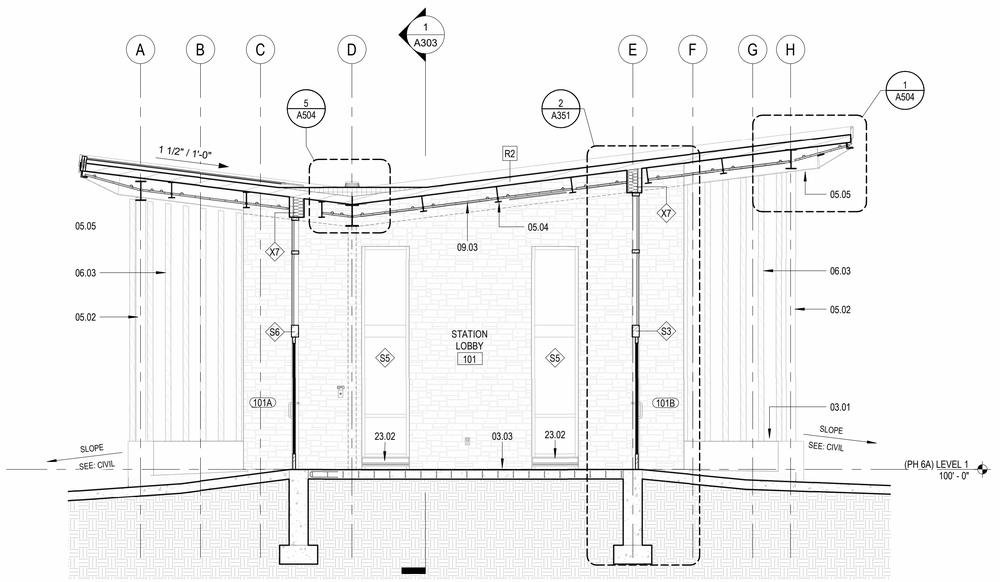
4 A101 BUILDING SECTION - NS RESTROOMS
1/4" = 1'-0"



3 A101 BUILDING SECTION - NS STATION LOBBY
1/4" = 1'-0"



2 A101 BUILDING SECTION - NS STATION CLERK
1/4" = 1'-0"



1 A101 BUILDING SECTION - NS STATION ENTRY
1/4" = 1'-0"

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GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
2. ALL DIMENSIONS TO FACE OF STEEL STUD OR CENTERLINE OF STRUCTURE UNLESS NOTED OTHERWISE.

KEYNOTE LEGEND

03.01	CONCRETE, RE: STRUCTURAL
03.03	CONCRETE SLAB ON GRADE, RE: STRUCTURAL
03.32	
05.02	STRUCTURAL STEEL COLUMN, PAINTED (P-1) RE: STRUCTURAL
05.04	STRUCTURAL STEEL FRAMING, PAINTED (P-1) RE: STRUCTURAL
05.05	EXPOSED STEEL BEAM, PAINTED (P-1) RE: STRUCTURAL
05.08	CORTEN STEEL PLANTER, RE: LANDSCAPE
06.03	VERTICAL WOOD ACCENT MEMBERS
08.02	INSULATED SPANDRAL PANEL
09.01	2' X 2' ACOUSTICAL CEILING TILE
09.02	5/8" GYPSUM BOARD SUSPENDED CEILING
09.03	FAUX WOOD CEILING SYSTEM
22.17	ROOF DRAIN WITH OVERFLOW, RE: PLUMBING
23.02	BASEBOARD HEATER, RE: MECHANICAL

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970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER (PHASE 6A)

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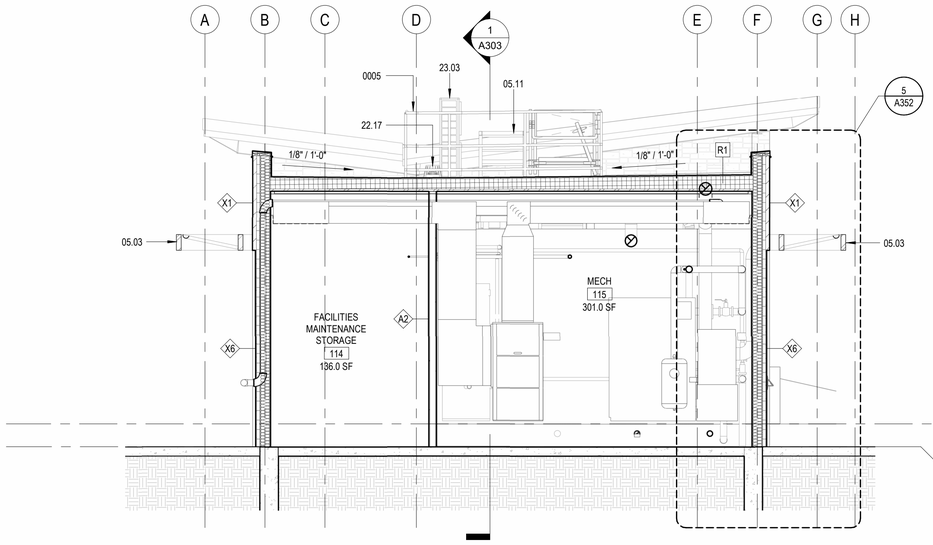
SEH Project	173800
Checked By	A. JAUCH
Drawn By	SEH
Project Status	**Issue Date**
50% CD SET	09/17/24

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

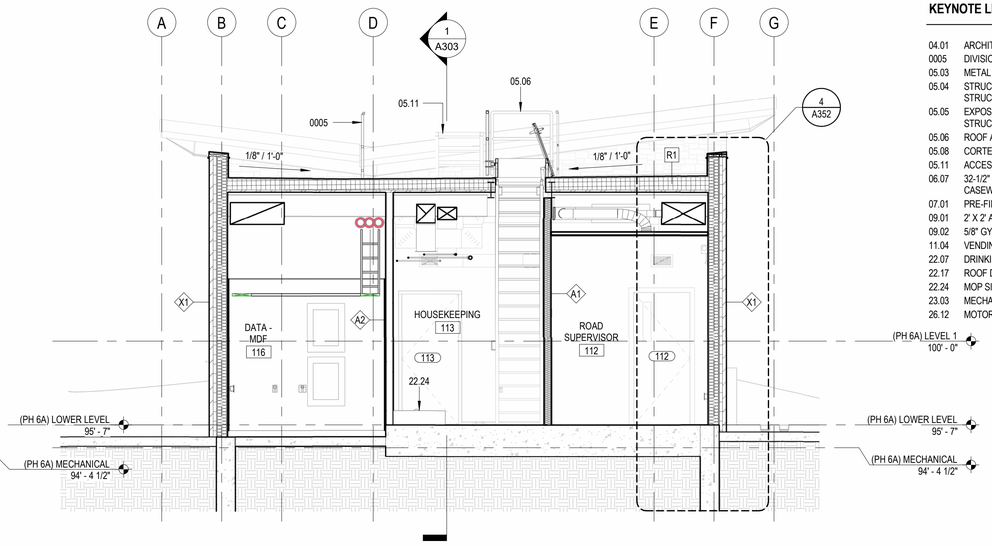
BUILDING SECTIONS (PH-6A)

A301



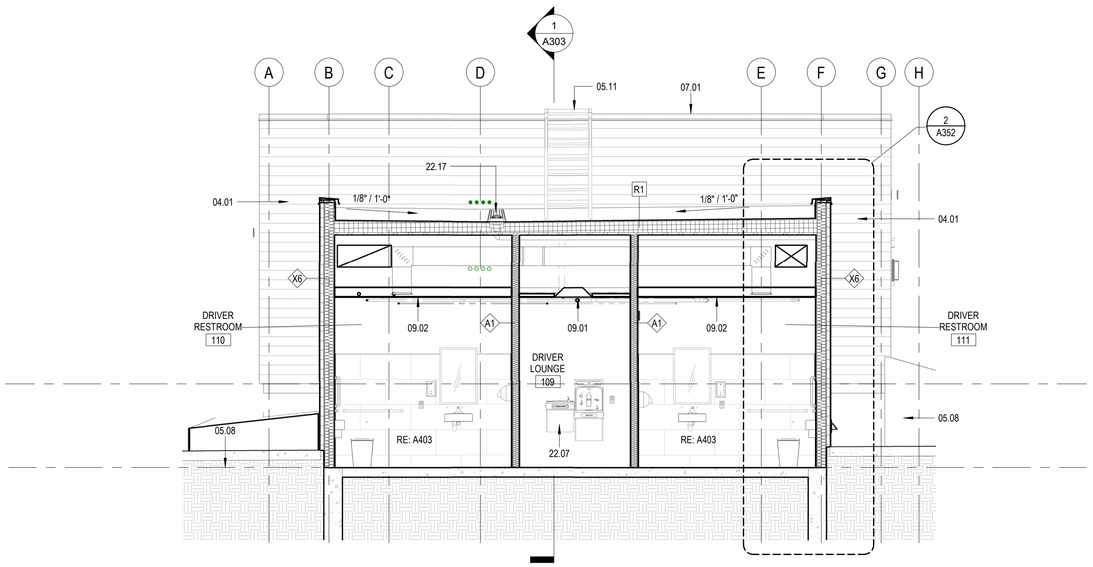
BUILDING SECTION - NS STORAGE / MECHANICAL

4 A101 1/4" = 1'-0"



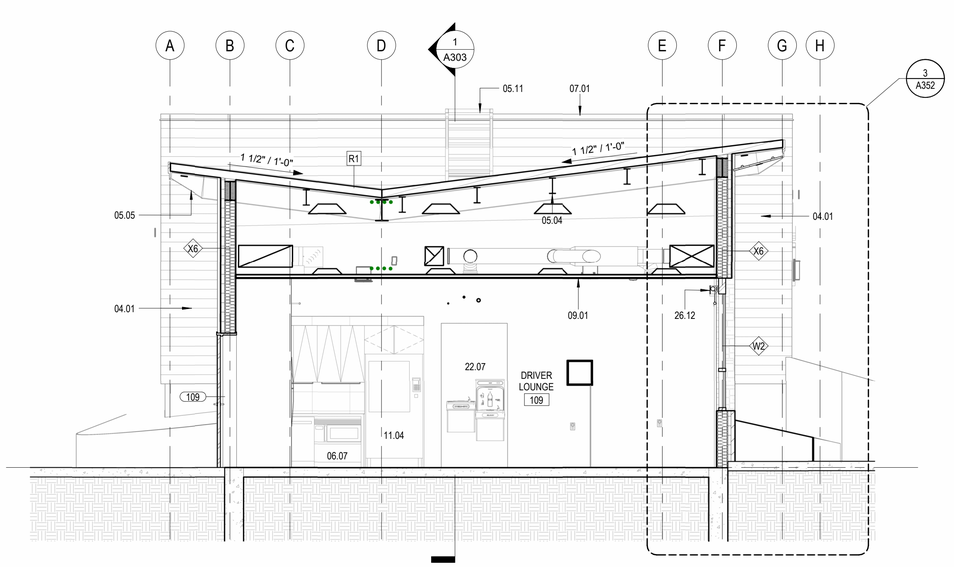
BUILDING SECTION - NS ROAD SUPERVISOR

3 A101 1/4" = 1'-0"



BUILDING SECTION - NS DRIVER RESTROOMS

2 A101 1/4" = 1'-0"



1 BUILDING SECTION - NS DRIVER LOUNGE

A101 1/4" = 1'-0"

GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
2. ALL DIMENSIONS TO FACE OF STEEL STUD OR CENTERLINE OF STRUCTURE UNLESS NOTED OTHERWISE.

KEYNOTE LEGEND

04.01	ARCHITECTURAL WALL PANEL, COLOR 1
0005	DIVISION 5 - METALS
05.03	METAL FRAMED CANOPY, RE: STRUCTURAL
05.04	STRUCTURAL STEEL FRAMING, PAINTED (P-1) RE: STRUCTURAL
05.05	EXPOSED STEEL BEAM, PAINTED (P-1) RE: STRUCTURAL
05.06	ROOF ACCESS HATCH
05.08	CORTEN STEEL PLANTER, RE: LANDSCAPE
05.11	ACCESS LADDER
06.07	32-1/2" TALL SINK CABINET W/ APRON. SEE A842 CASEWORK DETAILS. RE: PLUMBING
07.01	PRE-FINISHED METAL PARAPET CAP
09.01	2' X 2' ACOUSTICAL CEILING TILE
09.02	5/8" GYPSUM BOARD SUSPENDED CEILING
11.04	VENDING MACHINE
22.07	DRINKING FOUNTAIN (EWC), RE: PLUMBING
22.17	ROOF DRAIN WITH OVERFLOW, RE: PLUMBING
22.24	MOP SINK, RE: PLUMBING
23.03	MECHANICAL EQUIPMENT WITH SCREEN WALL
26.12	MOTORIZED ROLLER SHADE, RE: ELECTRICAL

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2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

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WEST GLENWOOD TRANSIT CENTER (PHASE 6A)

2307 WULFSOHN RD.
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Checked By	A. JAUCH
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Project Status	**Issue Date**
50% CD SET	09/17/24

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

BUILDING SECTIONS (PH-6A)

A302

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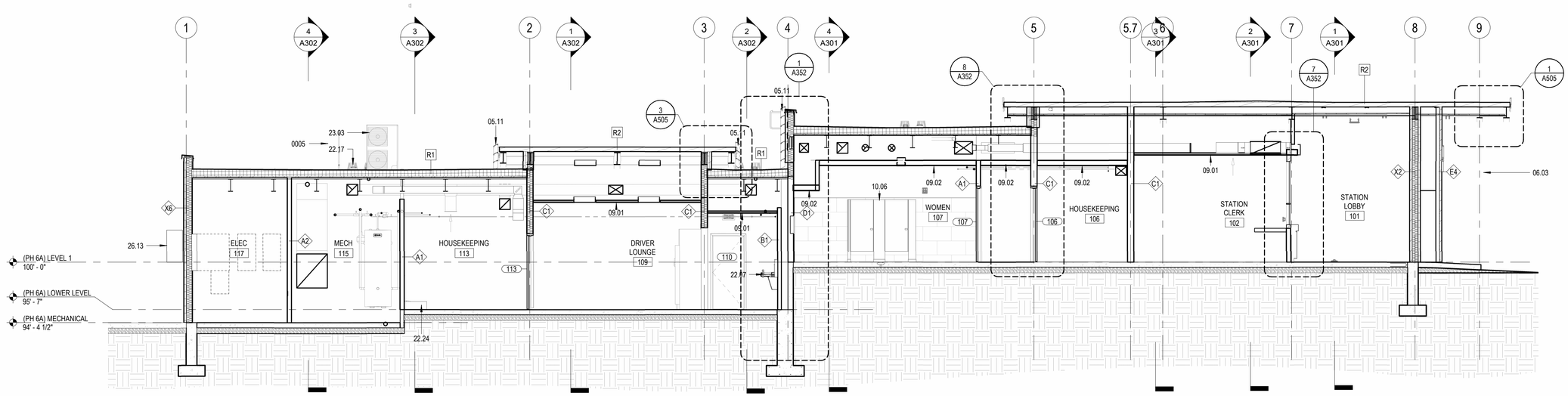

1 BUILDING SECTION - E/W
3/16" = 1'-0"

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ROARING FORK TRANSPORTATION AUTHORITY

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Project Status	**Issue Date**
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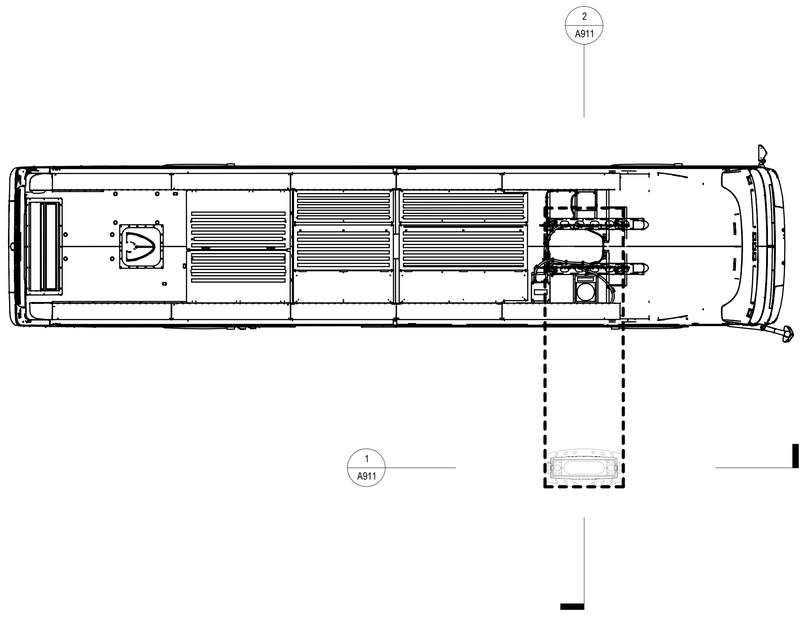
REVISION SCHEDULE

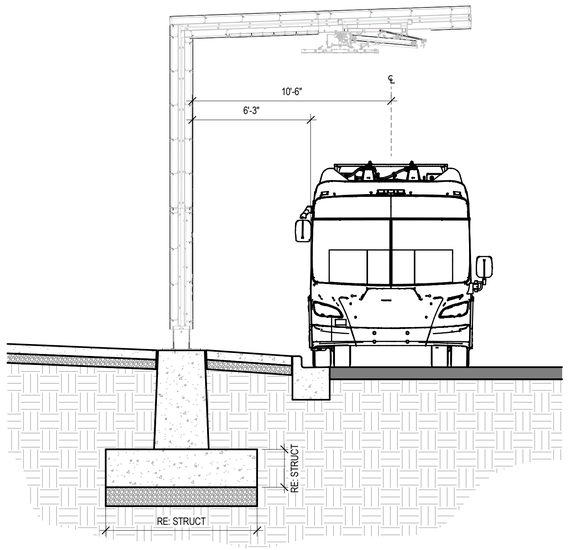
REV. #	DESCRIPTION	DATE

BUILDING SECTIONS (PH-6A)

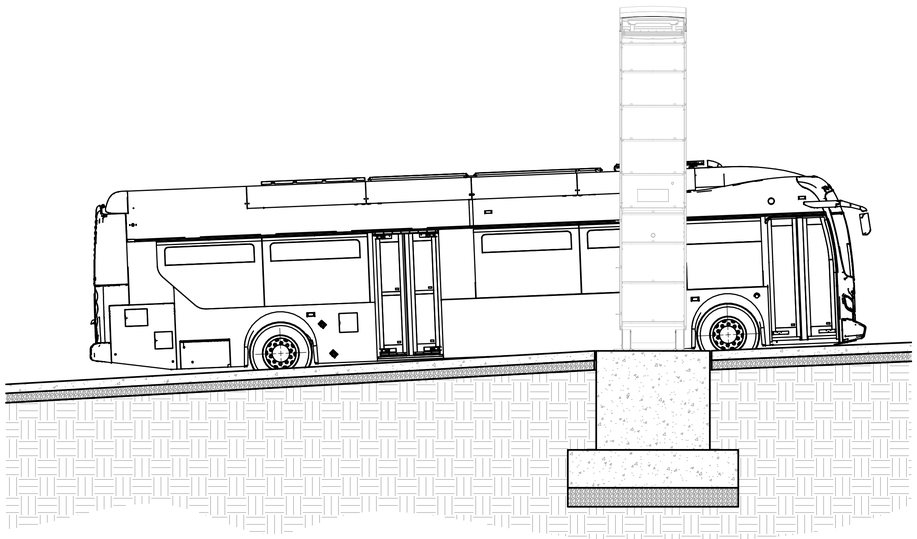
A303



3 ENLARGED PLAN - BUS CHARGING (TYP.)
1/4" = 1'-0"



2 SECTION - BUS CHARGING N/S (TYP.)
1/4" = 1'-0"



1 SECTION - BUS CHARGING E/W (TYP.)
1/4" = 1'-0"

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

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ROARING FORK TRANSPORTATION AUTHORITY
WEST GLENWOOD TRANSIT CENTER (PHASE 6A)
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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

BUS CHARGER ENLARGED PLAN & SECTIONS

A911

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REVISION SCHEDULE

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PERSPECTIVES (PH-6A)

A961

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REVISION SCHEDULE

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PERSPECTIVES (PH-6A)

A962

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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

PERSPECTIVES (PH-6A)

A963

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

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GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER (PHASE 6A)

2307 WULFSOHN RD.
GLENWOOD SPRINGS,
COLORADO 81601

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SEH Project	173800
Checked By	A. JAUCH
Drawn By	SEH

Project Status	**Issue Date**
50% CD SET	09/17/24

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

PERSPECTIVES (PH-6A)

A964

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

SEH

NOT FOR CONSTRUCTION

PROJECT OWNER
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
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A965

ABBREVIATIONS

(E)	EXISTING
(N)	NEW
(D)	DEMOLISH
(R)	RELOCATE
A	AMPERES
AC	MOUNTED WITH BOTTOM OF DEVICE 2" ABOVE COUNTER OR 1" ABOVE COUNTER BACKSPLASH
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
ATS	AUTOMATIC TRANSFER SWITCH
BAS	BUILDING AUTOMATION SYSTEM
BFG	BELOW FINISHED GRADE
C	CONDUIT
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CU	COPPER
DM	DIGITAL METER
EM	EMERGENCY
EP	EXPLOSION PROOF
EPO	EMERGENCY POWER OFF
EWC	ELECTRIC WATER COOLER
FA	FIRE ALARM
FLA	FULL LOAD AMPS
G	GROUND
GFI	GROUND FAULT INTERRUPTER
HP	HORSEPOWER
KW	KILOWATT
LRA	LOCKED ROTOR AMPS
MCB	MAIN CIRCUIT BREAKER
MDC	MAIN DISTRIBUTION CENTER
MH	MOUNTING HEIGHT
MLO	MAIN LUG ONLY
MTS	MANUAL TRANSFER SWITCH
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NL	NIGHT LIGHT
NTS	NOT TO SCALE
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
PB	PULL BOX
TP	TAMPER RESISTANT
TVSS	TRANSIENT VOLTAGE SURGE SUPRESSION
TYP	TYPICAL
UF	UNDER FLOOR
UG	UNDER GROUND
UON	UNLESS OTHERWISE NOTED
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHERPROOF
XFMR	TRANSFORMER

POWER

- DUPLEX RECEPTACLE — AC DENOTES ABOVE COUNTER
- DUPLEX RECEPTACLE, EMERGENCY
- DUPLEX RECEPTACLE SWITCHED
- QUADRUPLEX RECEPTACLE
- CLG — CEILING MOUNTED RECETPACLE
- SIMPLEX RECEPTACLE
- SPECIAL PURPOSE RECEPTACLE
- P — POWER POLE
- FLOOR RECEPTACLE
- DISCONNECT SWITCH (NON FUSED)
- M — MOTOR
- FUSED DISCONNECT (30A/3P U.O.N.)
- R — RELAY
- T — THERMOSTAT
- ATS — AUTOMATIC TRANSFER SWITCH
- J (J) — JUNCTION BOX
- BUS PLUG

PANELS: CONDUIT

- PANEL, POWER
- PANEL, DISTRIBUTION
- CONDUIT, CONCEALED BELOW
- CONDUIT, CONCEALED ABOVE OR IN WALL
- CONDUIT EXPOSED
- CONDUIT UP
- CONDUIT DOWN
- HOMERUN (DESIGNATION INDICATED PANELBOARD-CIRCUIT #)

LIGHT FIXTURE

- A — RECESSED LENSED GRID TROFFER
- A — RECESSED ARCHITECTURAL GRID TROFFER
- A — SUSPENDED PENDANT LUMINAIRE
- A — SURFACE MOUNTED TROFFER
- A — SURFACE MOUNTED TROFFER
- A — SURFACE MOUNTED STRIP
- A — FLANGED TROFFER
- A — RECESSED DOWNLIGHT
- A — RECESSED WALL WASHER
- A — WALL MTD.
- A — SURFACE MOUNT LUMINAIRE
- A — PENDANT MOUNTED LUMINAIRE
- A — RECESSED WALL MOUNTED LIGHT
- A A A — LIGHT TRACK W/NUM. OF HEADS IND.
- A — UNDER CABINET LIGHT
- A — POLE MOUNTED LUMINAIRE
- A — LIGHTED BOLLARD
- A — SPOT OR FLOOD LIGHT
- X — EXIT SIGN - ARROWS AS INDICATED ON DRAWINGS; FACES AS INDICATED BY SHADING

LETTER REFERS TO FIXTURE TYPE - SEE LIGHTING FIXTURE SCHEDULE
SHADING INDICATES FIXTURE FED FROM EMERGENCY INVERTER SYSTEM

SWITCHING

- 3 4 — SINGLE POLE, 3-WAY, 4-WAY SWITCH
- 2 — TWO POLE SWITCH
- D D3 — DIMMER SWITCH - SINGLE POLE, 3-WAY
- a b c — SWITCH OPERATING FIXTURES WITH INDICATING CONTROL LETTER (a, b, c, etc.)
- T — WALL BOX TIMER SWITCH
- P — SWITCH WITH PILOT LIGHT
- OC — WALL BOX OCCUPANCY SENSOR/SWITCH
- K — KEY OPERATED SWITCH
- DS — DOOR JAMB SWITCH
- WP — WEATHERPROOF SWITCH
- M — MOTOR RATED SWITCH
- MC — MOMENTARY CONTROL SWITCH
- XP — EXPLOSIONPROOF SWITCH
- OC — VACANCY SENSOR - WALL
- OC — VACANCY SENSOR - CEILING
- PC — PHOTOCELL

ONE DIAGRAMS

- LSIG — CIRCUIT BREAKER (L=ADJUSTABLE LONG TIME PICKUP; S=ADJUSTABLE SHORT TIME PICK UP; I=ADJUSTABLE INSTANEOUS TRIP; G=ADJUSTABLE GROUND FAULT TRIP.
- LOW VOLTAGE DRAWOUT CIRCUIT BREAKER
- OVERLOADS
- FUSE
- LOAD BREAK SWITCH
- FUSE LOAD BREAK SWITCH
- SAFETY SWITCH W/AUX. CONTACT (30/3 U.O.N.)
- CURRENT TRANSFORMER
- CONTROL POWER TRANSFORMER (CPT) POTENTIAL TRANSFORMER (PTs)
- POWER TRANSFORMER
- ISOLATION POWER TRANSFORMER
- COMBINATION CONTACTOR WITH THERMAL MAGNETIC CIRCUIT BREAKER
- COMBINATION CONTACTOR WITH FUSED SWITCH
- CONTACTOR
- LIGHTNING ARRESTOR
- EL — ELECTRIC INTERLOCK
- BD — BUS DUCT
- PANELBOARD
- N·E·L· — AUTOMATIC TRANSFER SWITCH
- A — AMMMETER
- AS — AMMETER SELECTOR
- R — RELAY
- V — VOLT METER
- VS — VOLT METER SELECTOR
- WM — WATT METER
- M — UTILITY METER

GENERAL NOTES

1. WORK INCLUDED IN THE CONTRACT IS DENOTED IN BOLD. EXISTING CONDITIONS TO REMAIN ARE DENOTED LIGHTLY.
2. ALL ELECTRICAL WORK PERFORMED UNDER THIS CONTRACT SHALL CONFORM WITH THE 2021 INTERNATIONAL BUILDING CODES, 2021 INTERNATIONAL ENERGY CONSERVATION CODE, 2021 INTERNATIONAL FIRE CODE AND LOCAL BUILDING AND FIRE DEPARTMENT REQUIREMENTS AND THE 2023 NATIONAL ELECTRICAL CODE (NEC).
3. ELECTRICAL CONTRACTOR SHALL FULLY COORDINATE WITH OWNER REPRESENTATIVES. PERFORM WORK IN ACCORDANCE WITH REQUIREMENTS OF OWNER REPRESENTATIVES. ELECTRICAL CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER OF ANY CHANGES REQUIRED BY THE BUILDING MANAGEMENT AND TENANT REPRESENTATIVES.
4. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF ELECTRICAL WORK. LOCATIONS ARE APPROXIMATE AND SHALL BE SUBJECT TO MINOR MODIFICATIONS AS DIRECTED BY THE GENERAL CONTRACTOR AND OWNER REPRESENTATIVES. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE EXACT FITTING OF ALL MATERIALS, EQUIPMENT, ETC., IN THE BUILDING AND TENANT SPACE. ALL DIMENSIONS SHALL BE VERIFIED ON THE JOB. ELECTRICAL CONTRACTOR SHALL CUT, CHANNEL, CHASE, AND/OR DRILL FLOORS, WALLS, PARTITIONS, CEILINGS, OR OTHER SURFACES AS REQUIRED FOR INSTALLATION, UPPORT, ANCHORAGE, ETC., OF WORK. PROVIDE X-RAY OF FLOOR PRIOR TO CORE DRILLS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SUBSEQUENT PATCHING WORK.
5. A DETAILED WRITTEN METHOD OF PROCEDURE IS REQUIRED WHEN A CONSTRUCTION ACTIVITY OR AN OUTAGE AFFECTS THE SAFETY OF OCCUPANTS, TELEPHONE/DATA/FIRE ALARM EQUIPMENT OR COMPONENTS OF ANY SYSTEM WHICH SUPPORTS THIS EQUIPMENT OR ESSENTIALLY AFFECTS THE BUILDING MANAGEMENT, OPERATIONS OR SECURITY. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
6. PRIOR TO SUBMITTING BIDS, THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE TO VERIFY EXISTING ELECTRICAL EQUIPMENT CONDITIONS AND DIFFICULTIES THAT WILL AFFECT EXECUTION OF THE WORK. FIELD VERIFY QUANTITIES OF EXISTING LIGHT FIXTURES, ELECTRICAL DEVICES, COMMUNICATION DEVICES, FIRE ALARM DEVICES, AND ELECTRICAL EQUIPMENT. NOTIFY THE ARCHITECT AND ENGINEER OF ANY EXISTING CONDITIONS, WHICH MODIFY THE SCOPE OF WORK AS SHOWN ON THE CONSTRUCTION DOCUMENTS. SUBMISSION OF A BID PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS FOR MOBILIZATION, LABOR, EQUIPMENT, AND/OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WILL NOT BE RECOGNIZED.
7. PROTECT STRUCTURE AND OWNER EQUIPMENT FROM DAMAGE. IMMEDIATELY REPLACE OR REPAIR, TO ORIGINAL CONDITION, DAMAGE CAUSED BY THE CONTRACTOR WHETHER EQUIPMENT APPEARS TO BE CURRENTLY IN USE OR NOT, UNLESS WRITTEN AUTHORIZATION FROM THE OWNER INDICATED OTHERWISE. PREPARE LISTING OF ALL EXISTING DAMAGED ITEMS AND SUBMIT TO OWNER PRIOR TO BEGINNING WORK.
8. EXISTING INFORMATION SHOWN ON THE DRAWINGS HAS BEEN TAKEN FROM OWNER FURNISHED DRAWINGS AND/OR LIMITED FIELD OBSERVATIONS. CMO CONSULTING ENGINEERS, LLC IS NOT RESPONSIBLE FOR THE ACCURACY OF ANY INFORMATION OR THE ADEQUACY, SAFETY AND CONFORMANCE TO CURRENT PREVAILING CODES OF ANY WORK SHOWN AS EXISTING ON THESE DRAWINGS.
9. FIELD LOCATE EXISTING UNDERGROUND PUBLIC AND OWNER UTILITIES OF ALL TRADES AND BUILDING GROUNDING/LIGHTNING PROTECTION SYSTEMS PRIOR TO ANY EXCAVATION. REPLACE OR REPAIR DAMAGED UTILITIES AND GROUNDING/LIGHTNING PROTECTION SYSTEMS TO ORIGINAL CONDITION.
10. INSTALL CONDUIT CONCEALED IN FINISHED AREAS UNLESS OTHERWISE NOTED.
11. DO NOT ROUTE CONDUIT WITHIN STRUCTURAL OR TOPPING SLABS OF FLOORS UNLESS SPECIFICALLY NOTED OTHERWISE AND WRITTEN APPROVAL IS OBTAINED FROM THE STRUCTURAL ENGINEER.
12. FIRE SEAL ALL FIRE RATED WALL AND FLOOR PENETRATIONS. VERIFY RATED WALL LOCATIONS ON ARCHITECTURAL DRAWINGS.
13. PROVIDE SEPARATE INSULATED GROUNDING CONDUCTOR IN ALL FEEDER, HOMERUN AND BRANCH CIRCUITS.
14. REFER TO ARCHITECTURAL AND MECHANICAL EQUIPMENT DRAWINGS FOR EXACT LOCATIONS OF ELECTRICAL DEVICES AND LIGHT FIXTURES. DO NOT SCALE FROM THE ELECTRICAL PLANS. ADDITIONAL ELECTRICAL REQUIREMENTS ON ARCHITECTURAL PLANS, KITCHEN EQUIPMENT PLANS, AND MECHANICAL PLANS SHALL BE INCLUDED IN THE ELECTRICAL CONTRACTOR'S BID.
15. DEMOLITION OF ANY ELECTRICAL, LOW VOLTAGE, AND COMMUNICATIONS CONDUIT, WIRING, CABLING, OR DEVICE MEANS TO REMOVE IN ITS ENTIRETY. REMOVE UNUSED CONDUITS FROM CEILING SPACES IN AREAS OF WORK. RETURN UNUSED ELECTRICAL EQUIPMENT AND LIGHT FIXTURES TO BUILDING MANAGEMENT FOR STORAGE AND/OR REMOVAL FROM SITE AS DIRECTED BY OWNERS.
16. WHERE REMODELING INTERFERES WITH EXISTING CIRCUITS AND EQUIPMENT WHICH ARE NOT TO BE REMOVED OR ARE OUTSIDE OF THE PROJECT AREA, SUCH CIRCUITS AND EQUIPMENT SHALL BE REWORKED AND RELOCATED AS REQUIRED TO COMPLETE THE PROJECT.
17. MINIMUM WORKING CLEARANCES PER THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE SHALL BE PROVIDED AROUND AND IN FRONT OF ALL ELECTRICAL EQUIPMENT.
18. ELECTRICAL CONTRACTOR SHALL MAINTAIN ON THE JOB AN UP TO DATE SET OF WORKING DRAWINGS, MARKED UP TO SHOW ELECTRICAL SYSTEMS AS INSTALLED. PROVIDE TENANT REPRESENTATIVES WITH ONE SET OF REPRODUCIBLES WITH "AS BUILT" PROJECT RECORD INFORMATION CLEARLY INDICATED. ELECTRICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LOCAL FEES, PERMITS, AND SERVICES OF INSPECTION AUTHORITIES REQUIRED BY ELECTRICAL WORK FOR THIS ELECTRICAL CONSTRUCTION
19. PROVIDE TYPED, UPDATED, COMPLETE AND ACCURATE PANELBOARD CIRCUIT DIRECTORIES AT THE COMPLETION OF WORK. CLEAN EXPOSED PANELBOARD SURFACES AND CHECK TIGHTNESS OF ELECTRICAL CONNECTIONS. REPLACE DAMAGED CIRCUIT BREAKERS AS REQUIRED AND ROVIDE FILLER PLATES FOR VACANT SPACES.
20. PROVIDE UPDATED LABELING OF ALL NEW AND RELOCATED ELECTRICAL EQUIPMENT IN SCOPE OF WORK INCLUDING, BUT NOT LIMITED TO, ENGINE GENERATOR SYSTEMS, TRANSFER SWITCHES, TRANSFORMERS, SWITCHGEAR, SWITCHBOARDS, PANELBOARDS, MOTOR CONTROL CENTERS, AND DISCONNECTS TO INDICATE THE AMPERE RATING, VOLTAGE RATING, PHASE, CONDUCTOR COLOR CODING WITHIN THE EQUIPMENT AND APPLICABLE AIC RATING.
21. ALL NEW AND MODIFIED ELECTRICAL EQUIPMENT, SUCH AS SWITCHBOARDS, PANELBOARDS, INDUSTRIAL CONTROL PANELS, METER SOCKET ENCLOSURES, AND MOTOR CONTROL CENTERS, THAT ARE LIKELY TO REQUIRE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE WHILE ENERGIZED SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. THE MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT PER NEC ARTICLE 110.16.

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Horiz. Scale: As Noted Vert. Scale: As Noted

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Sheet Revisions

Rev.	Date	Comments	Init.
	09/17/2024	50% CONSTRUCTION DOCUMENTS	CB

ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER (PHASE 6A)

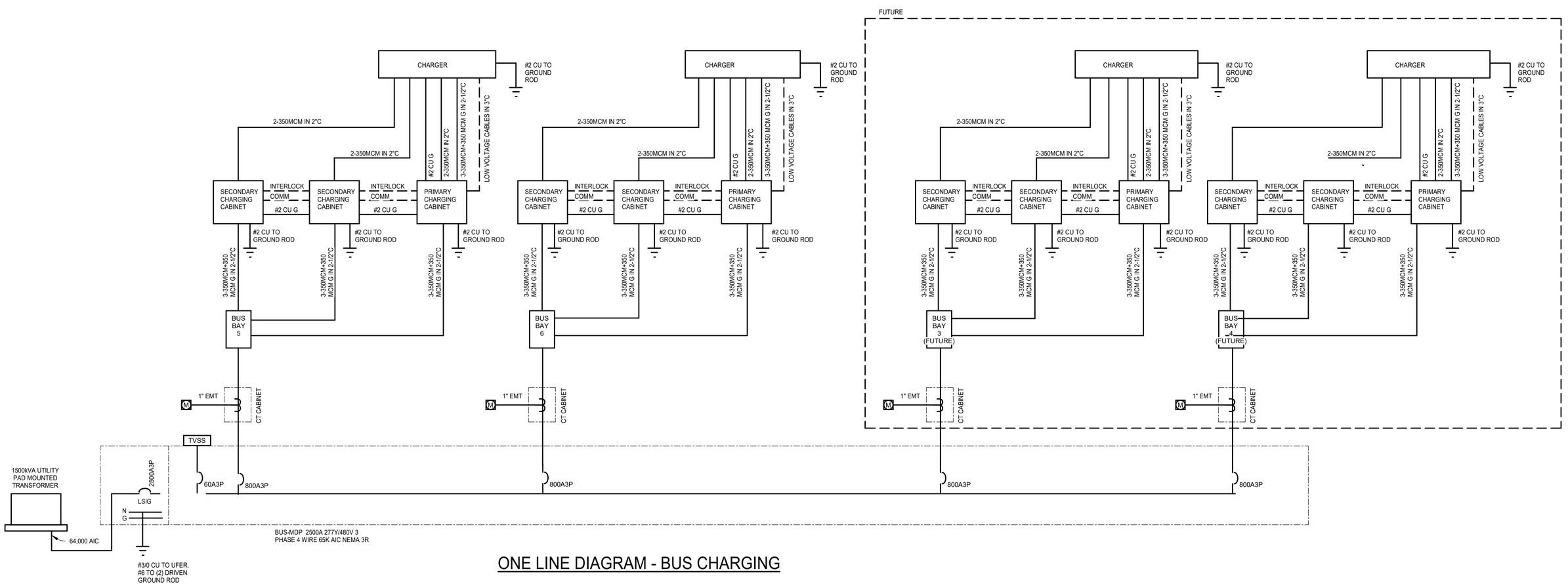
2307 WULFSOHN RD.
GLENWOOD SPRINGS,
COLORADO 81601

FIR Plans
No Revisions:
Revised:
Void:

ELECTRICAL LEGEND

Designer:
Detailer:
Sheet Subset:
Structure Numbers
Subset Sheets: of

Project No./Code
TRG M535-014
25924
Sheet Number CE101



ONE LINE DIAGRAM - BUS CHARGING

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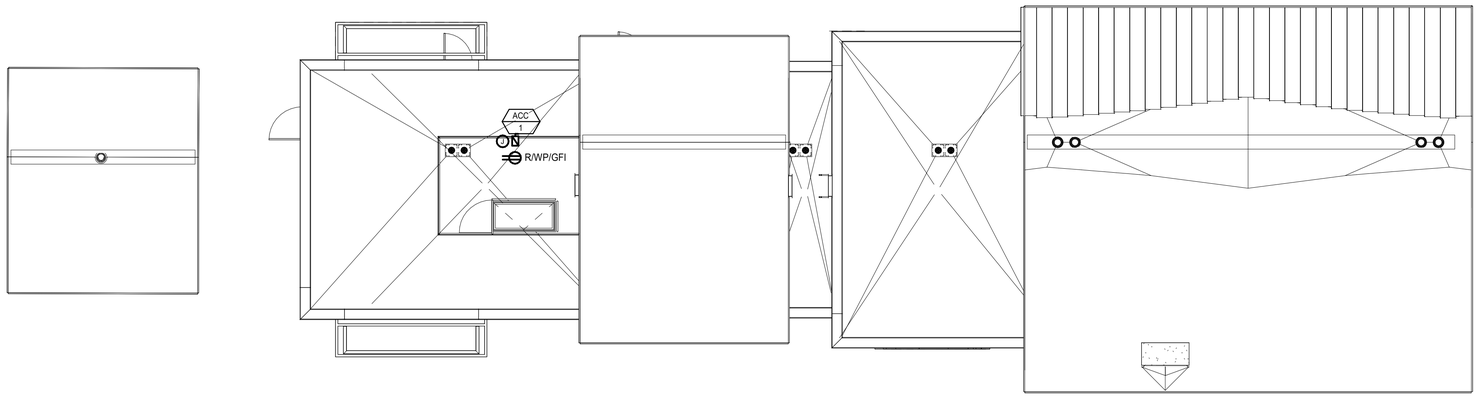
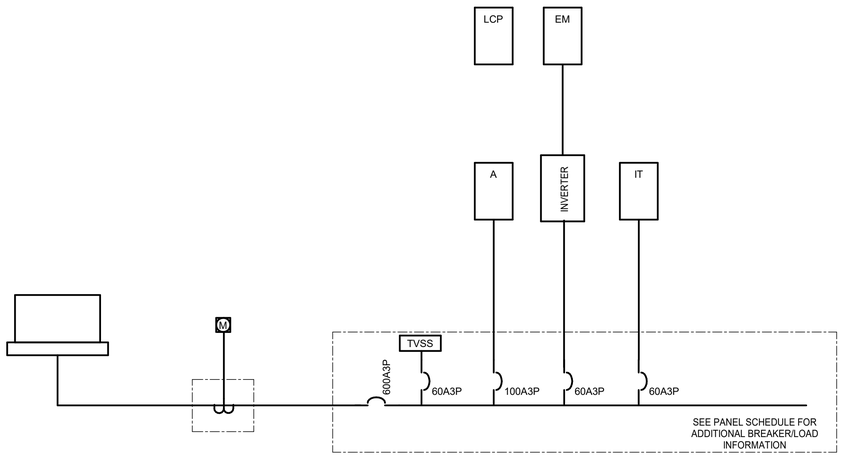
COLORADO 81601

FIR Plans	ONE LINE DIAGRAM - BUS CHARGING	Project No./Code
No Revisions:		TRG M535-014
Revised:	Designer: / Structure Numbers	25924
Void:	Detailer:	Sheet Number CE201
	Sheet Subset: / Subset Sheets: of	



(PH 6A) ROOF

SCALE: 1/8" = 1'-0"



ONE LINE DIAGRAM - TRANSIT CENTER

Mechanical Equipment Schedule

Key	#	Item	HP	FLA	Load	Eq Load (VA)	Voltage	Feeders			Protection			Notes
								Wire	Ground	Conduit	Breaker	Disconnect	Fuse	
ACC	1	AIR CONDITIONING SPLIT SYSTEM	0	2 A	0 VA	416 VA	208V 1ph	2#12	#12G	3/4"	20 A	S		FED FROM FCU-1
B	1	BOILER	0	10 A	0 VA	3603 VA	208V 3ph	3#12	#12G	3/4"	15 A	30 A	15 A	
B	2	BOILER	0	10 A	0 VA	3603 VA	208V 3ph	3#12	#12G	3/4"	15 A	30 A	15 A	
ERV	1	ENERGY RECOVERY VENTILLATION	0	2 A	0 VA	416 VA	208V 1ph	2#12	#12G	3/4"	20 A	S		MCA 2; MOP 15
ERV	2	ENERGY RECOVERY VENTILLATION	0	2 A	0 VA	416 VA	208V 1ph	2#12	#12G	3/4"	20 A	S		MCA 2; MOP 15
EUH	1	ELECTRIC UNIT HEATER	0	0 A	5000 VA	5000 VA	208V 1ph	2#8	#10G	3/4"	35 A	60 A		
EUH	2	ELECTRIC UNIT HEATER	0	0 A	5000 VA	5000 VA	208V 1ph	2#8	#10G	3/4"	35 A	60 A		
FCU	1	FAN COIL UNIT	0	11 A	0 VA	2288 VA	208V 1ph	2#12	#12G	3/4"	20 A	S		
H	101	ELECTRIC HEATER	0	0 A	500 VA	500 VA	208V 3ph	3#12	#12G	3/4"	15 A	30 A	3 A	
H	101	ELECTRIC HEATER	0	0 A	500 VA	500 VA	208V 3ph	3#12	#12G	3/4"	15 A	30 A	3 A	
H	101	ELECTRIC HEATER	0	0 A	500 VA	500 VA	208V 3ph	3#12	#12G	3/4"	15 A	30 A	3 A	
H	102	ELECTRIC HEATER	0	0 A	2000 VA	2000 VA	208V 3ph	3#12	#12G	3/4"	15 A	30 A	10 A	
H	102	ELECTRIC HEATER	0	0 A	2000 VA	2000 VA	208V 3ph	3#12	#12G	3/4"	15 A	30 A	10 A	
VAV	101	VARIABLE AIR UNIT HEAT	0	0 A	16000 VA	16000 VA	208V 3ph	3#4	#10G	1-1/4"	60 A	60 A	60 A	
VAV	102	VARIABLE AIR UNIT HEAT	0	0 A	9500 VA	9500 VA	208V 3ph	3#8	#10G	3/4"	35 A	60 A	35 A	
VAV	103	VARIABLE AIR UNIT HEAT	0	0 A	5000 VA	5000 VA	208V 3ph	3#12	#12G	3/4"	20 A	30 A	20 A	
VAV	104	VARIABLE AIR UNIT HEAT	0	0 A	16000 VA	16000 VA	208V 3ph	3#4	#10G	1-1/4"	60 A	60 A	60 A	
VAV	105	VARIABLE AIR UNIT HEAT	0	0 A	3000 VA	3000 VA	208V 3ph	3#12	#12G	3/4"	15 A	30 A	15 A	
WSHP	1	WATER SOURCE HEAT PUMP	0	35 A	0 VA	12609 VA	208V 3ph	3#6	#10G	1"	45 A	60 A	45 A	MCA 37; MOP 50

Luminaire Schedule

Type	Description	Lamp	Apparent Load	Manufacturer	Catalog #	Voltage	Finish	Mounting	Depth
A2	2'x2' RECESSED ARCHITECTURAL LED TROFFER	LED	32 VA	LITHONIA	2 BLT2 40L ADPT 120 LP835	120.0 V		RECESS	0' - 6"
D4	4" RECESSED DOWNLIGHT	LED 1100 LUMEN	13 VA	FOCAL POINT	FLC3D RO 1100L 120	120.0 V	CLEAR DIFFUSE	RECESSED	
D6	6" RECESSED DOWNLIGHT	LED	15 VA	PRESCOLITE	LFR-6RD-M 20L 30K 80CRI WD LFR-6RD-T MD SS WT	120.0 V	WHITE	RECESSED	
ED4	4" RECESSED DOWNLIGHT - 2000 LM. SUITABLE FOR LOW TEMPERATURES AND WET LOCATION LABELED.	LED	22 VA	FOCALPOINT	FLCS3 RO 1100 120V L11 LTE LC3 RO 1100 30K DNT FLCD	120.0 V		RECESSED	
EP1	DECORATIVE POLE LIGHT. TYPE 3 DISTRIBUTION. FULL CUTOFF. SUITABLE FOR LOW TEMPERATURES AND WET LOCATION LABELED.	LED	71 VA	AAL	UMC2 ANG-36L-615-5K7-3	208.0 V		POLE	0' - 0"
EP2	EXTERIOR AREA LIGHT. TWIN POLE LIGHT WITH 2' BASE. TYPE 3 DISTRIBUTION. FULL CUTOFF. SUITABLE FOR LOW TEMPERATURES AND WET LOCATION LABELED.	LED	143 VA	AAL	UCM2-ANG-36L-615-5 K7-3-CL	208.0 V		POLE	0' - 0"
EP3	DECORATIVE POLE LIGHT. TYPE 5 DISTRIBUTION. FULL CUTOFF. SUITABLE FOR LOW TEMPERATURES AND WET LOCATION LABELED.	LED	71 VA	AAL	PROV2-36L-510-5K7-5 Q-CL	208.0 V		POLE	0' - 0"
EW1	EXTERIOR LED WALL LIGHT. SUITABLE FOR LOW TEMPERATURES AND WET LOCATION LABELED.	LED	40 VA	LITHONIA	DSX2-LED	120.0 V		SURFACE WALL	
L4	4' LED LENSED STRIP	LED	48 VA	LITHONIA	LPT-ML	120.0 V		SURFACE	
LL3	4' LINEAR. DIMMING. SATINE LENS	LED	14 VA	FINELITE	EV4D A 35 3 XX U XX 1 BL	120.0 V		RECESS	0' - 0"
LL3A	4' LINEAR. DIMMING. SATINE LENS	LED	14 VA	FINELITE	EV4D A 35 3 XX U XX 1 BL	120.0 V		RECESS	0' - 0"
LL8	8' PENDANT LINEAR PENDANT WITH UP. DIMMING WITH DAYLIGHT AND OCCUPANCY SENSORS. ADJUSTABLE CABLE	LED	56 VA	MARK LIGHTING	S4LW1 8 2 H 35K AS EOHN120 WHT	120.0 V		PENDANT	0' - 0"
UC	2' UNDERCABINET FIXTURE	LED	18 VA	LITHONIA	RAZ 24 35K	120.0 V		SURFACE	
W1	50 INCH WALL VANITY LIGHT	LED	32 VA	VISA	CB5504	120.0 V		SURFACE WALL	
W2	24" VANITY SCONCE	LED	17 VA	OXYGEN	3-537-XX	120.0 V		SURFACE WALL	
X1	LED EDGELIT EXIT SIGNAGE WITH SINGLE FACE, BATTERY BACK WITH SELF DISGNOSTICS, GREEN LETTERS ON WHITE	LED	3 VA	LITHONIA, DUALLITE	LRP	120.0 V		UNIVERSAL	

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WEST GLENWOOD TRANSIT CENTER (PHASE 6A)

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FIR Plans
No Revisions:
Revised:
Void:

ONE LINE DIAGRAM

Designer:
Detailer:
Sheet Subset:
Structure Numbers
Subset Sheets: of

Project No./Code
TRG M535-014
25924
Sheet Number CE202

Panel MDP

Location: ELEC 117 **Voltage:** 120/208 Wye **A.I.C. Rating:**
Supply From: **Phase:** 3 **Mains Type:** MLO
Mounting: Surface **Wire:** 4 **Bus Rating:** 600 A
Enclosure: Type 1 **Feed:**

Circuit Notes:

No...	Cir...	Load	Type	Trip	P...	A	B	C	P...	Trip	Type	Load	Cir...	No...
	1	BOILER #1	G	15 A	3	1201... 5333...			3	60 A	G	VAV 101 MENS	2	
--	3	--	--	--	--		1201... 5333...		--	--	--	--	4	--
--	5	--	--	--	--			1201... 5333...	--	--	--	--	6	--
	7	BOILER #2	G	15 A	3	1201... 3167...			3	35 A	G	VAV 102 CLERK	8	
--	9	--	--	--	--		1201... 3167...		--	--	--	--	10	--
--	11	--	--	--	--			1201... 3167...	--	--	--	--	12	--
	13	WSHP	G	45 A	3	4203... 1667...			3	20 A	G	VAV 103...	14	
--	15	--	--	--	--		4203... 1667...		--	--	--	--	16	--
--	17	--	--	--	--			4203... 1667...	--	--	--	--	18	--
	19	UNIT HEATER MECH	G	35 A	2	2500... 5333...			3	60 A	G	VAV 104 DRIVERS	20	
--	21	--	--	--	--		2500... 5333...		--	--	--	--	22	--
	23	UNIT HEATER...	G	35 A	2			2500... 5333...	--	--	--	--	24	--
--	25	--	--	--	--	2500... 1000...			3	15 A	G	VAV 105...	26	
	27	ERV - UNITS	G	20 A	2		208 VA 1000...		--	--	--	--	28	--
--	29	--	--	--	--			208 VA 1000...	--	--	--	--	30	--
	31	FCU/ACC-1	G	20 A	2	1144... 0 VA			3	200 A	G	PANEL A	32	
--	33	--	--	--	--		1144... 0 VA		--	--	--	--	34	--
	35							0 VA	--	--	--	--	36	--
	37												38	
	39												40	
	41												42	
	43	PANEL EM	G	60 A	3	0 VA 0 VA			3	40 A	--	FUTURE SOLAR	44	
--	45	--	--	--	--		0 VA 0 VA		--	--	--	--	46	--
--	47	--	--	--	--			0 VA 0 VA	--	--	--	--	48	--
	49	PANEL IT	G	60 A	3	0 VA 0 VA			3	60 A	--	TVSS	50	
--	51	--	--	--	--		0 VA 0 VA		--	--	--	--	52	--
--	53	--	--	--	--			0 VA 0 VA	--	--	--	--	54	--
				Total Load:		29249 VA	26957 VA	25813 VA						
				Phase Balance:		8 % A-B	5 % B-C	14 % C-A						

Load Type		Connected...	Demand...	Demand Load	Panel Totals	
L	Lighting	0 VA	0.00%	0 VA	**Power Factor:**	1
R	Receptacle	0 VA	0.00%	0 VA		
M	Motor	0 VA	0.00%	0 VA	**Total Connected Load:**	82019 VA
C	Continuous	0 VA	0.00%	0 VA	**Total Connected Current:**	228 A
G	General	82019 VA	100.00%	82019 VA		
K	Kitchen	0 VA	0.00%	0 VA	**Total Demand Load:**	82019 VA
E	Existing	0 VA	0.00%	0 VA	**Total Demand Current:**	228 A
O	Other	0 VA	0.00%	0 VA		

General Notes:

Breaker Accessories
* = GFI
** = Shunt Trip

Panel A

Location: ELEC 117 **Voltage:** 120/208 Wye **A.I.C. Rating:**
Supply From: MDP **Phase:** 3 **Mains Type:** MLO
Mounting: Surface **Wire:** 4 **Bus Rating:** 100 A
Enclosure: Type 1 **Feed:**

Circuit Notes:

No...	Cir...	Load	Type	Trip	P...	A	B	C	P...	Trip	Type	Load	Cir...	No...
	1												2	
	3												4	
	5												6	
	7												8	
	9												10	
	11												12	
	13												14	
	15												16	
	17												18	
	19												20	
	21												22	
	23												24	
	25												26	
	27												28	
	29												30	
	31												32	
	33												34	
	35												36	
	37												38	
	39												40	
	41												42	
				Total Load:		0 VA	0 VA	0 VA						
				Phase Balance:		% A-B	% B-C	% C-A						

Load Type		Connected...	Demand...	Demand Load	Panel Totals	
L	Lighting	0 VA	0.00%	0 VA	**Power Factor:**	
R	Receptacle	0 VA	0.00%	0 VA		
M	Motor	0 VA	0.00%	0 VA	**Total Connected Load:**	0 VA
C	Continuous	0 VA	0.00%	0 VA	**Total Connected Current:**	0 A
G	General	0 VA	0.00%	0 VA		
K	Kitchen	0 VA	0.00%	0 VA	**Total Demand Load:**	0 VA
E	Existing	0 VA	0.00%	0 VA	**Total Demand Current:**	0 A
O	Other	0 VA	0.00%	0 VA		

General Notes:

Breaker Accessories
* = GFI
** = Shunt Trip

Panel IT

Location: DATA - MDF 116 **Voltage:** 120/208 Wye **A.I.C. Rating:**
Supply From: MDP **Phase:** 3 **Mains Type:** MLO
Mounting: Surface **Wire:** 4 **Bus Rating:** 100 A
Enclosure: Type 1 **Feed:**

Circuit Notes:

No...	Cir...	Load	Type	Trip	P...	A	B	C	P...	Trip	Type	Load	Cir...	No...
	1												2	
	3												4	
	5												6	
	7												8	
	9												10	
	11												12	
	13												14	
	15												16	
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	23												24	
	25												26	
	27												28	
	29												30	
	31												32	
	33												34	
	35												36	
	37												38	
	39												40	
	41												42	
				Total Load:		0 VA	0 VA	0 VA						
				Phase Balance:		% A-B	% B-C	% C-A						

Load Type		Connected...	Demand...	Demand Load	Panel Totals	
L	Lighting	0 VA	0.00%	0 VA	**Power Factor:**	
R	Receptacle	0 VA	0.00%	0 VA		
M	Motor	0 VA	0.00%	0 VA	**Total Connected Load:**	0 VA
C	Continuous	0 VA	0.00%	0 VA	**Total Connected Current:**	0 A
G	General	0 VA	0.00%	0 VA		
K	Kitchen	0 VA	0.00%	0 VA	**Total Demand Load:**	0 VA
E	Existing	0 VA	0.00%	0 VA	**Total Demand Current:**	0 A
O	Other	0 VA	0.00%	0 VA		

General Notes:

Breaker Accessories
* = GFI
** = Shunt Trip

Panel EM

Location: ELEC 117 **Voltage:** 120/208 Wye **A.I.C. Rating:**
Supply From: MDP **Phase:** 3 **Mains Type:** MLO
Mounting: Surface **Wire:** 4 **Bus Rating:** 100 A
Enclosure: Type 1 **Feed:**

Circuit Notes:

No...	Cir...	Load	Type	Trip	P...	A	B	C	P...	Trip	Type	Load	Cir...	No...
	1												2	
	3												4	
	5												6	
	7												8	
	9												10	
	11												12	
	13												14	
	15												16	
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	27												28	
	29												30	
	31												32	
	33												34	
	35												36	
	37												38	
	39												40	
	41												42	
				Total Load:		0 VA	0 VA	0 VA						
				Phase Balance:		% A-B	% B-C	% C-A						

Load Type		Connected...	Demand...	Demand Load	Panel Totals	
L	Lighting	0 VA	0.00%	0 VA	**Power Factor:**	
R	Receptacle	0 VA	0.00%	0 VA		
M	Motor	0 VA	0.00%	0 VA	**Total Connected Load:**	0 VA
C	Continuous	0 VA	0.00%	0 VA	**Total Connected Current:**	0 A
G	General	0 VA	0.00%	0 VA		
K	Kitchen	0 VA	0.00%	0 VA	**Total Demand Load:**	0 VA
E	Existing	0 VA	0.00%	0 VA	**Total Demand Current:**	0 A
O	Other	0 VA	0.00%	0 VA		

General Notes:

Breaker Accessories
* = GFI
** = Shunt Trip

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Sheet Revisions

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ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER (PHASE 6A)

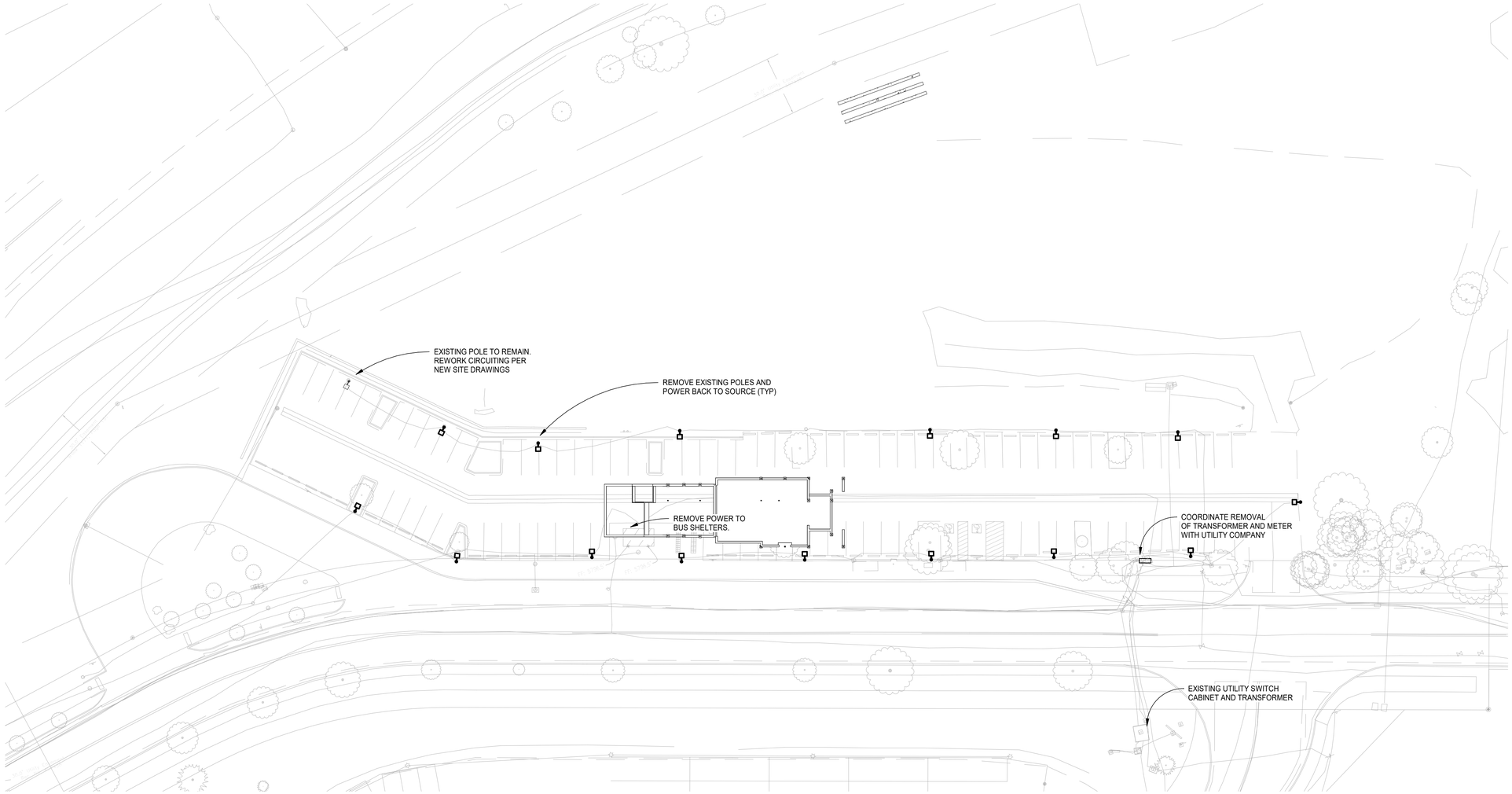
2307 WULFSOHN RD.
GLENWOOD SPRINGS,
COLORADO 81601

FIR Plans
No Revisions:
Revised:
Void:

PANEL SCHEDULES

Designer:
Detailer:
Sheet Subset:
Structure Numbers
Subset Sheets: of

Project No./Code
TRG M535-014
25924
Sheet Number CE204



(PH 6A) SITE DEMO

SCALE: 1" = 30'-0"

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FIR Plans

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SITE ELECTRICAL DEMO PLAN

Designer:	Structure Numbers	
Detailer:		
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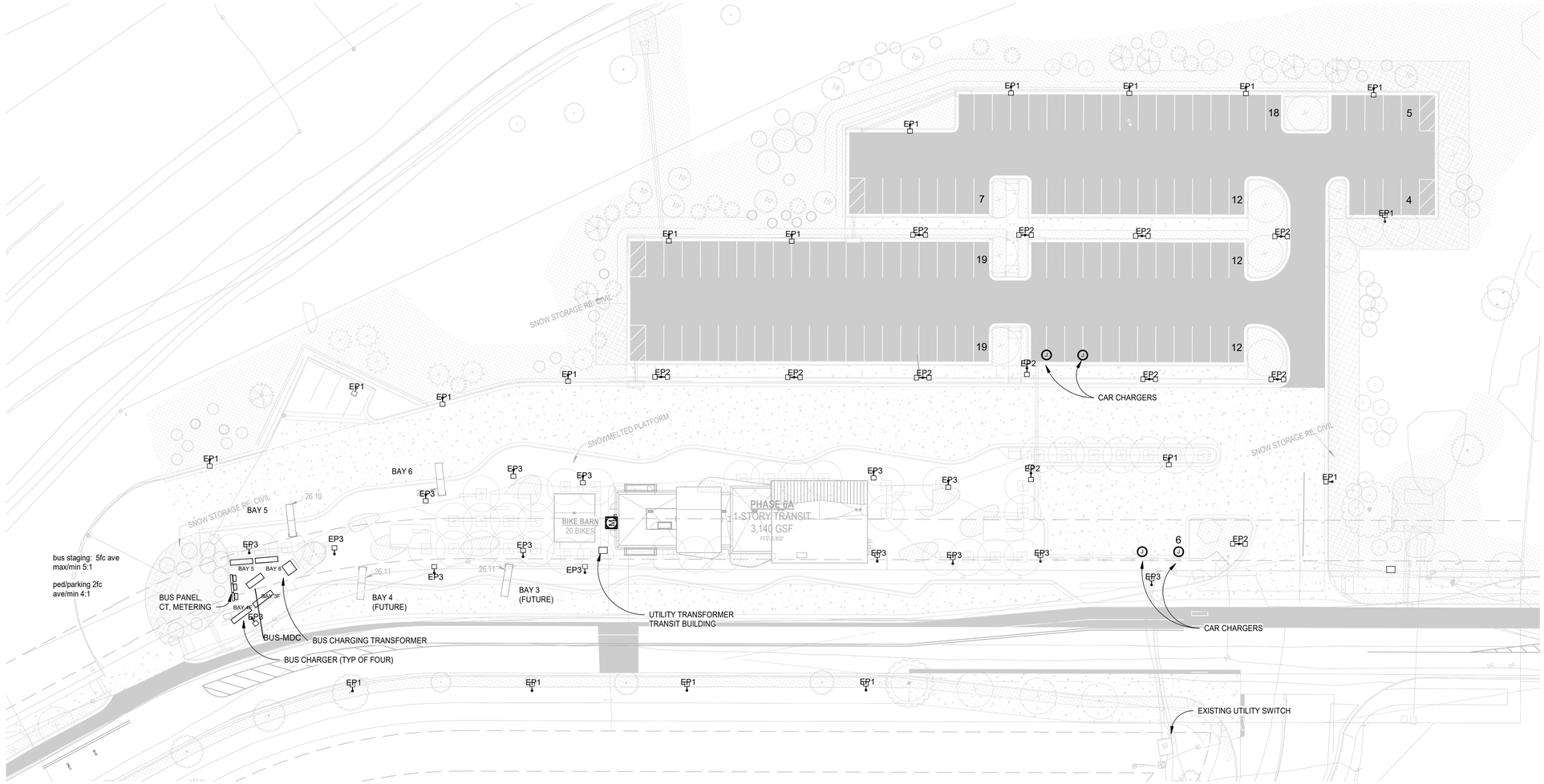
Project No./Code

TRG M535-014

25924

Sheet Number CE300



(PH 6A) SITE

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COLORADO 81601

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SITE PLAN

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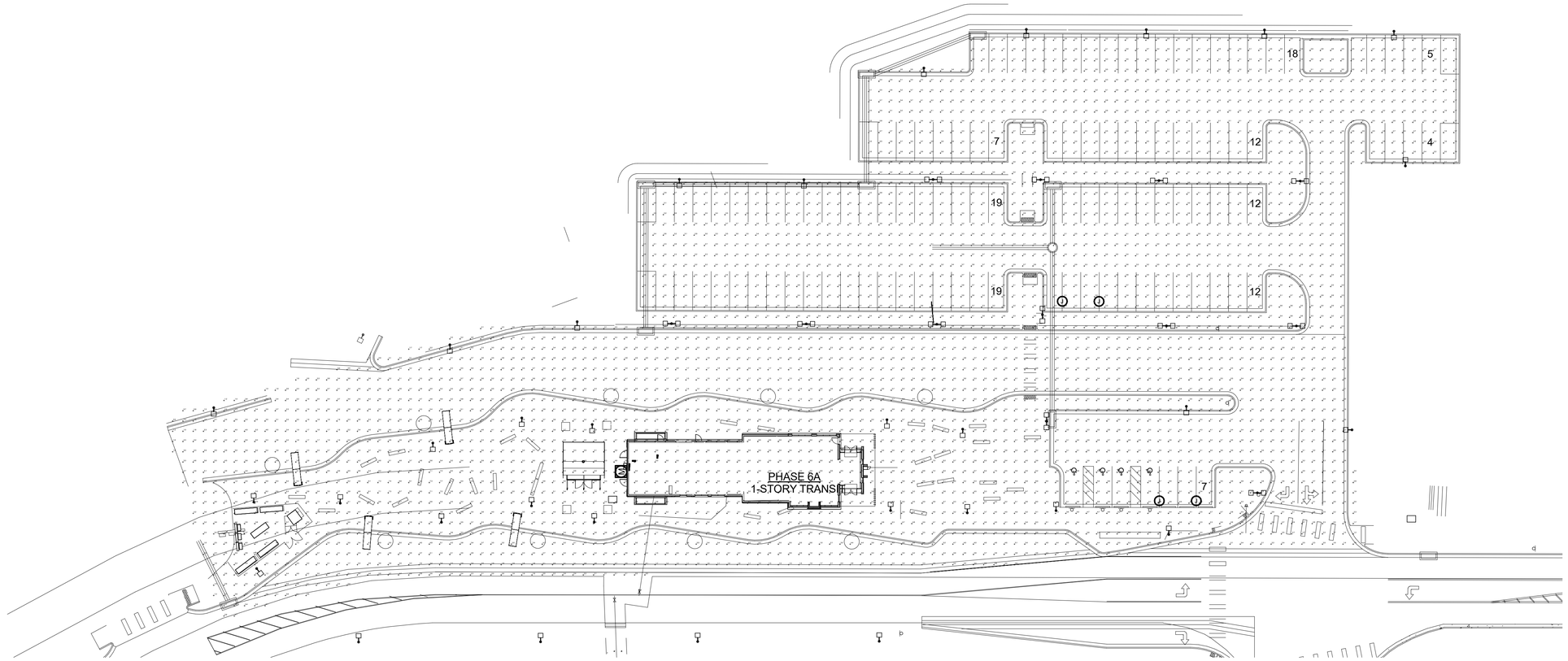
Detailer:			
Sheet Subset:		Subset Sheets:	of

Project No./Code	
TRG M535-014	
25924	
Sheet Number	CE301



(PH 6A) SITE PHOTOMETRICS

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SITE PHOTOMETRICS

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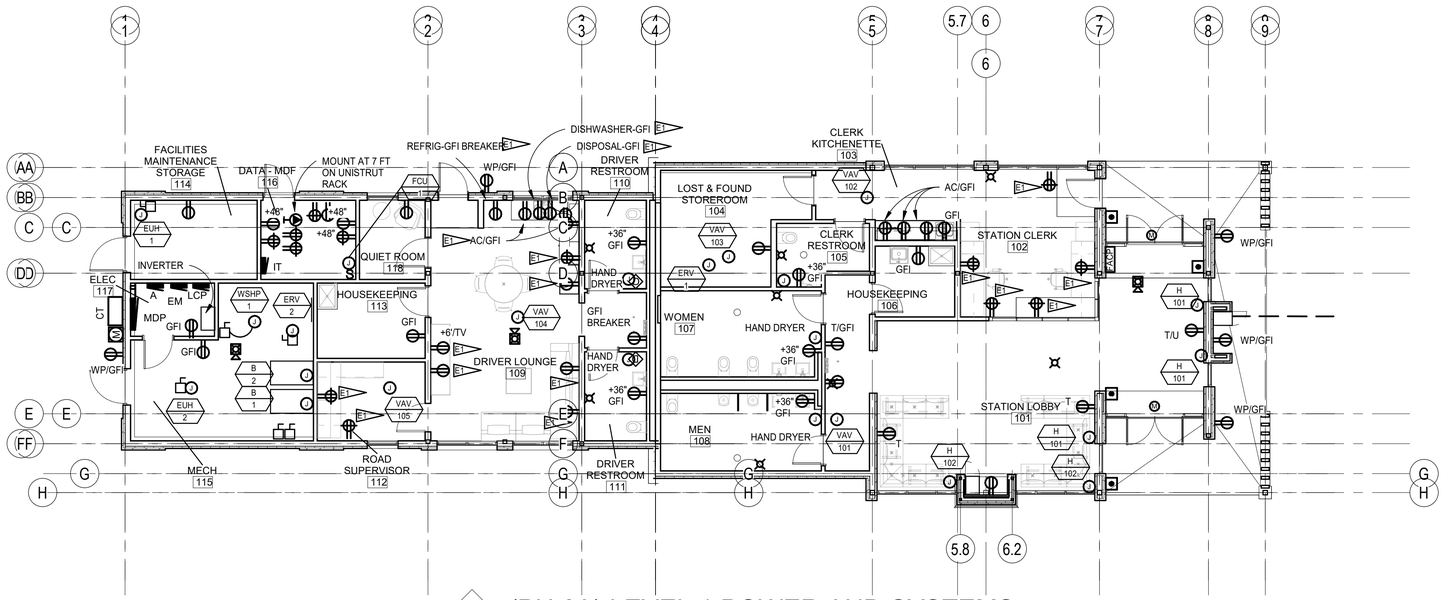
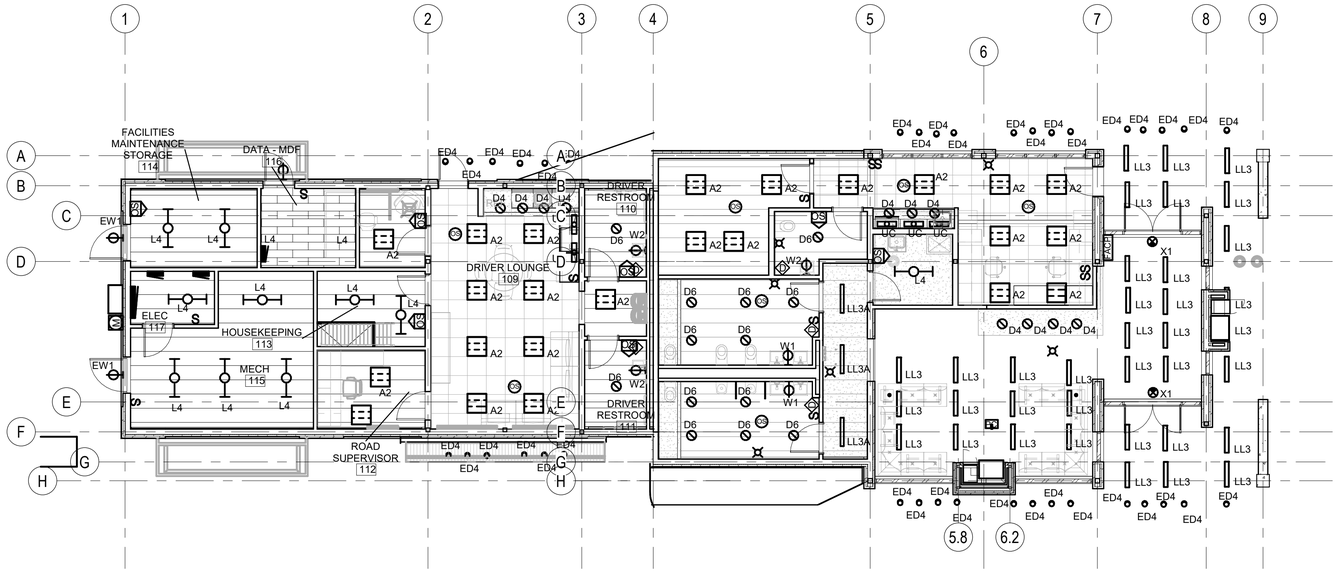
Sheet Number CE302



(PH 6A) LEVEL 1 POWER AND SYSTEMS

SCALE: 1/8" = 1'-0"



(PH 6A) LIGHTING

SCALE: 1/8" = 1'-0"

KEY NOTES	
NUMBER	
E1	RECEPTACLE OUTLET TO BE HALF CONTROLLED BY THE LIGHTING CONTROL PANEL.

FIRE ALARM NOTES:

1. FIRE ALARM DEVICE LOCATIONS ON THE DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY INDICATE EVERY REQUIRED PIECE OF EQUIPMENT AND DEVICE. LOCATE FIRE ALARM DEVICES PER NFPA 72 AND MANUFACTURERS REQUIREMENTS. PROVIDE ALL ITEMS INCLUDING THOSE NOT SPECIFICALLY NOTED ON THE DRAWINGS, BUT WHICH ARE NECESSARY TO MAKE A COMPLETE WORKING INSTALLATION IN ACCORDANCE WITH CODE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING A SYSTEM THAT MEETS ALL NATIONAL AND LOCAL CODES. ALL FIRE ALARM SYSTEM MODIFICATIONS AND WIRING TO BE PERFORMED BY TENANT AND/OR BUILDING MANAGEMENT SHALL BE APPROVED FIRE ALARM CONTRACTOR. CONNECT DEVICES TO FIRE ALARM ZONES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PROVIDE 120 VOLT CIRCUIT FOR ADDITIONAL FIRE ALARM BOOSTER PANELS IF REQUIRED FOR NEW FIRE ALARM DEVICES. PROVIDE SPOT SMOKE DETECTOR ABOVE ADDITIONAL FIRE ALARM BOOSTER PANELS. AFTER THE INSTALLATION IS COMPLETE, TENANT'S FIRE ALARM SYSTEM REPRESENTATIVE SHALL TEST THE ENTIRE FIRE ALARM SYSTEM FOR SYSTEM INTEGRITY AND OPERATION.
2. THE ELECTRICAL CONTRACTOR SHALL PROVIDE FULLY ENGINEERED FIRE ALARM SHOP DRAWINGS FOR REVIEW BY THE LOCAL BUILDING AND FIRE DEPARTMENT. THE FIRE ALARM SHOP DRAWINGS SHALL BE SIGNED ANDSEALED BY A REGISTERED PROFESSIONAL ENGINEER IN THE PROJECT'S STATE AND SHALL MEET ALL REQUIRMENTS OF IFC AND NFPA 72.

POWER NOTES:

1. MAKE ALL FINAL ELECTRICAL CONNECTIONS TO EQUIPMENT REQUIRING ELECTRICAL CONNECTION. THIS SHALL INCLUDE BUT NOT BE LIMITED TO ALL MECHANICAL AND OTHER EQUIPMENT INCLUDED IN THIS PROJECT.
2. PROVIDE FUSES SIZED PER EQUIPMENT MANUFACTURER'S REQUIREMENTS.
3. DISCONNECT SWITCH LOCATIONS ARE SHOWN DIAGRAMMATICALLY AND SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS TO SUIT EQUIPMENT AND SPACE. DISCONNECT SWITCHES SHALL BE WITHIN SIGHT OF THE EQUIPMENT THEY SERVE AND MOUNTED AT 6'-3", MAXIMUM, TO TOP OF CABINET. MAINTAIN NEC WORK SPACE REQUIREMENTS.
4. RECEPTACLES INDICATED TO BE MOUNTED ABOVE COUNTER ARE TO BE MOUNTED HORIZONTALLY 6" ABOVE COUNTER WITH NEUTRAL UP.
5. COORDINATE AND VERIFY EXACT MOUNTING LOCATIONS OF WALL AND FLOOR DEVICES WITH ARCHITECTURAL ELEVATIONS, AND ANY FURNITURE OR SPECIALTY EQUIPMENT SUPPLIER DRAWINGS PRIOR TO ROUGH-IN.
6. COORDINATE EXACT REQUIREMENTS AND LOCATIONS OF MECHANICAL EQUIPMENT WITH MECHANICAL DRAWINGS AND MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
7. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH 120V SINGLE PHASE CIRCUIT.
8. ALL RECEPTACLE OUTLETS LOCATED IN TOILET ROOMS, SHOWER ROOMS, ROOFTOPS, OUTDOOR LOCATIONS, MECHANICAL ROOMS, WITHIN 6 FEET OF A SINK, OR OTHER WET LOCATIONS SHALL BE PROVIDED WITH GFCI PROTECTION PER NEC ARTICLE 210.
9. PROVIDE TAMPER RESISTIVE RECEPTACLES IN ALL HALLWAYS, CORRIDORS, WAITING AREAS, OFFICES, TOILET ROOMS AND EXAM ROOMS.
10. WHERE RECEPTACLES ARE DESIGNATED AS 'USB', PROVIDE DUPLEX RECEPTACLE WITH USB AND USB-C CONNECTIONS.

LIGHTING NOTES:

1. REFER TO ARCHITECTURAL ELEVATIONS AND REFLECTED CEILING PLANS FOR EXACT MOUNTING LOCATIONS AND MOUNTING HEIGHTS OF DEVICES AND LUMINAIRES. MOUNTING HEIGHTS ON ARCHITECTURAL PLANS TAKE PRECEDENCE OVER ELECTRICAL DRAWINGS.
2. COORDINATE LUMINAIRE LOCATIONS WITH MECHANICAL PIPING, DUCTWORK, ETC., TO AVOID CONFLICTS. SEE SPECIFICATIONS FOR COORDINATION REQUIREMENTS.
3. FIELD COORDINATE EXACT LOCATION OF CEILING MOUNTED OCCUPANCY/VACANCY SENSORS PER MANUFACTURER'S INSTRUCTIONS. THE LOCATIONS OF THE OCCUPANCY/VACANCY SENSORS ON THE DRAWINGS ARE DIAGRAMMATIC.
4. EXIT AND EGRESS LIGHTING ARE TO REMAIM UNSWITCHED.
5. COORDINATE DIMMING VACANCY SENSOR TYPE WITH LUMINAIRE.
6. AIM DIRECTIONAL LIGHTING AS DIRECTED BY OWNER.

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ROARING FORK TRANSPORTATION AUTHORITY

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FIR Plans

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ELECTRICAL FLOOR PLANS

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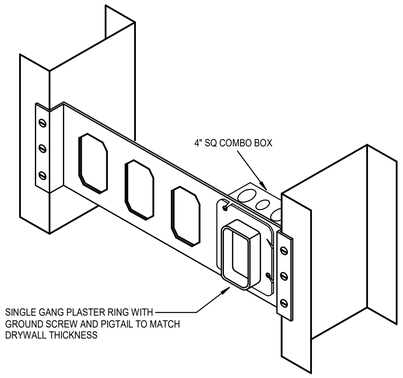
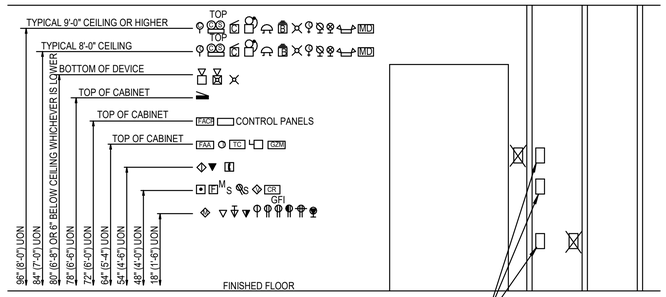
Sheet Number CE401



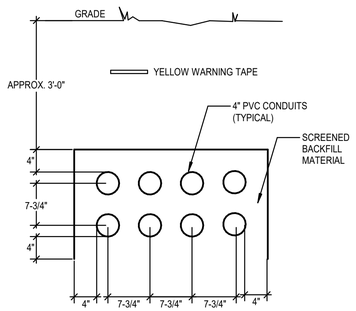
RECEPTACLE BOX SUPPORT DETAIL
NO SCALE



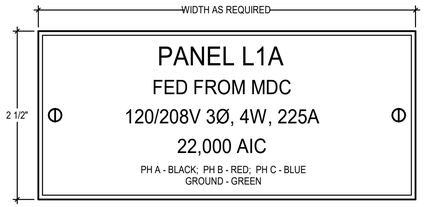
TYPICAL DEVICE MOUNTING HEIGHTS
NO SCALE

NOTES:
1. HEIGHTS SHOWN ARE TYPICAL TO CENTERLINE OF BOX UNLESS NOTED OTHERWISE.
2. WHERE EVER DEVICES ARE INDICATED TO BE ABOVE DOORS, DEVICE SHALL BE CENTERED BETWEEN TOP OF DOOR TRIM AND CEILING LINE.
3. MOUNTING HEIGHTS SHOWN ON ARCHITECTURAL ELEVATIONS SHALL GOVERN OVER THOSE SHOWN ABOVE.

NOTE: ALL DEVICES INDICATED TO BE INSTALLED AT DIFFERENT MOUNTING HEIGHTS AND LOCATED WITHIN ONE STUD SPACE FROM EACH OTHER SHALL ALIGN VERTICALLY, ON THE SAME SIDE OF THE STUD. WHERE WALL MOUNTED TELEPHONES OCCUR OVER LIGHT SWITCHES, VOLUME CONTROLS, ETC. OFFSET ONE STUD SPACE.

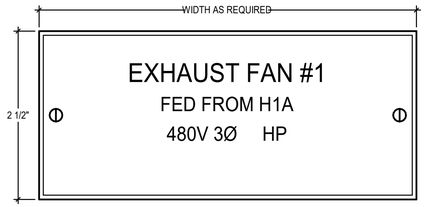


DUCT BANK DETAIL
NO SCALE



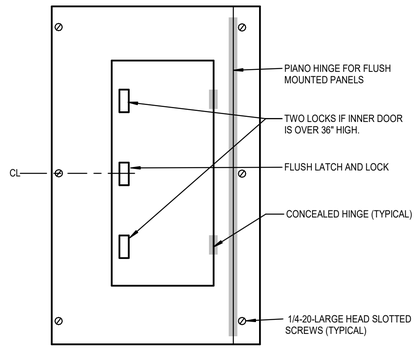
TRANSFORMER AND BRANCH PANELBOARD NAMEPLATE DETAIL
SCALE: FULL

NOTES:
REWORD NAMEPLATE FOR FIELD CONDITIONS.



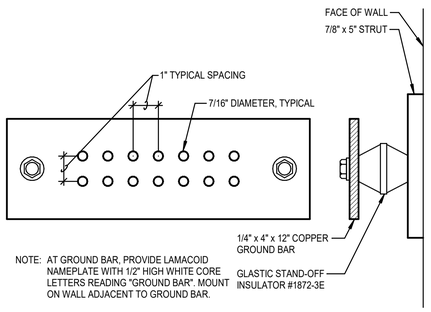
UTILIZATION EQUIPMENT NAMEPLATE DETAIL
SCALE: FULL

NOTES:
1. SEE SPECIFICATIONS FOR ADDITIONAL NAMEPLATE INFORMATION.
2. REWORD NAMEPLATE FOR FIELD CONDITIONS.
3. HP SHALL INDICATE HORSEPOWER.

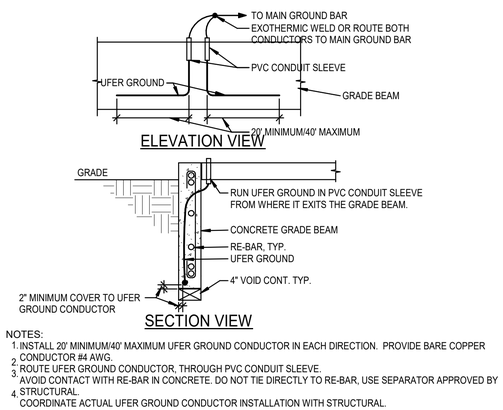


HINGED TRIM TO BOX PANEL FRONT
NO SCALE

NOTES:
1. ALL BOLTS SHALL HAVE LARGE (3/8") ROUND HEAD. NO WASHERS ALLOWED
2. TYPICAL FOR ALL 120/208V BRANCH PANELBOARDS.



GROUND BAR DETAIL
NO SCALE



NOTES:
1. INSTALL 20' MINIMUM/40' MAXIMUM UFER GROUND CONDUCTOR IN EACH DIRECTION. PROVIDE BARE COPPER CONDUCTOR #4 AWG.
2. ROUTE UFER GROUND CONDUCTOR, THROUGH PVC CONDUIT SLEEVE.
3. AVOID CONTACT WITH RE-BAR IN CONCRETE. DO NOT TIE DIRECTLY TO RE-BAR, USE SEPARATOR APPROVED BY STRUCTURAL.
4. COORDINATE ACTUAL UFER GROUND CONDUCTOR INSTALLATION WITH STRUCTURAL.

UFER GROUND DETAIL
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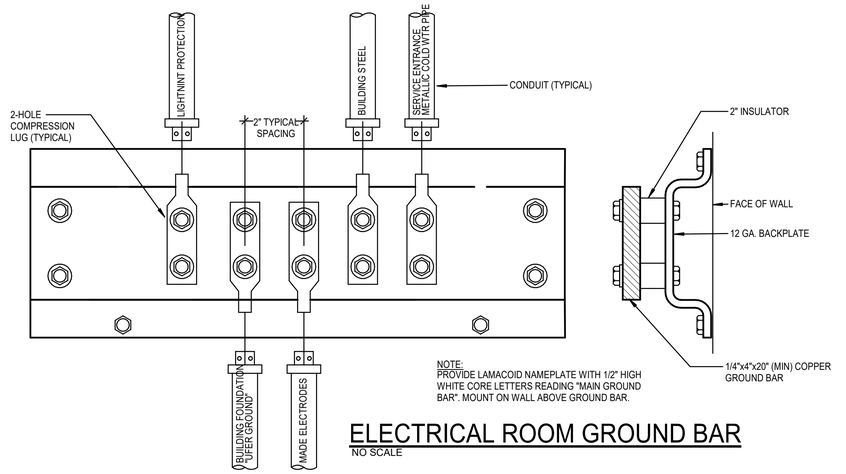

ELECTRICAL ROOM GROUND BAR
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Horiz. Scale: As Noted Vert. Scale: As Noted		09/17/2024	50% CONSTRUCTION DOCUMENTS	CB
Short Elliott Hendrickson Inc.				
Colorado Center Tower One, Suite 6000, 2000 South Colorado Boulevard, Denver, CO 80222-7900				
Tele. (720) 540-6800 (800) 490-4966 Fax (720) 540-6801				

ROARING FORK TRANSPORTATION AUTHORITY
WEST GLENWOOD TRANSIT CENTER (PHASE 6A)
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORADO 81601

FIR Plans	DETAILS		Project No./Code
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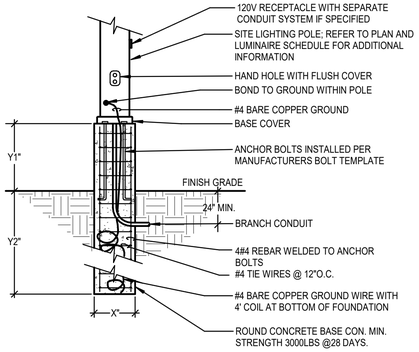
Revised:	Designer:	Structure Numbers	25924
Void:	Detailer:		
	Sheet Subset:	Subset Sheets: of	Sheet Number CE503



POLE BASE DETAIL - RAISED
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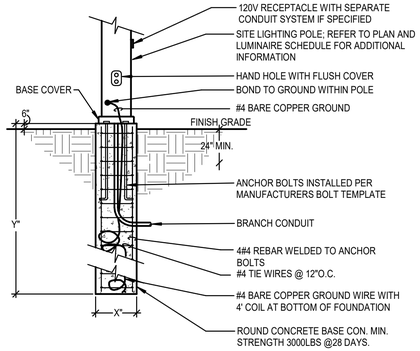

POLE BASE DETAIL - FLUSH
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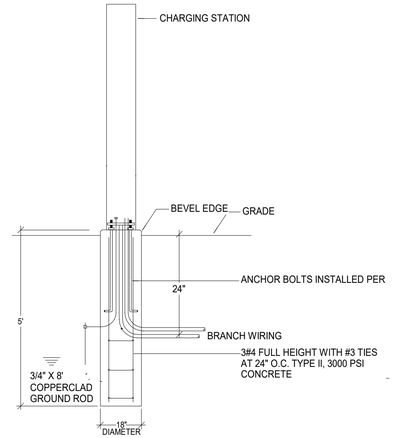

BASE DETAIL
NO SCALE

CAR CHARGER DETAIL
NO SCALE

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Sheet Revisions

Rev.	Date	Comments	Init.
	09/17/2024	50% CONSTRUCTION DOCUMENTS	CB

ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER (PHASE 6A)

2307 WULFSOHN RD.
GLENWOOD SPRINGS,
COLORADO 81601

FIR Plans	DETAILS			Project No./Code
No Revisions:				TRG M535-014
Revised:	Designer:	Structure Numbers		25924
	Detailer:			
Void:	Sheet Subset:	Subset Sheets:	of	Sheet Number CE501

RFTA West Glenwood Transit Center & Administration Building

(Phases 6A, 6B, & 8)

Land Use Application: Location & Extent Review

Glenwood Springs, CO

September 2024

VICINITY MAP NTS

Prepared for:

City of Glenwood Springs

101 W 8th St.

Glenwood Springs, CO 81601

Prepared by:

DHM Design

225 Main St. #201

Carbondale, CO 81623

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Introduction

The Roaring Fork Transportation Authority (RFTA) is proposing to develop a West Glenwood Transit Center (Phase 6A), Administration Building (Phase 6B) and a maintenance building (Phase 8). The proposed projects are designated for three distinct parcels as shown on the project context map on page 2. RFTA currently owns all three parcels. Phase 6A is a proposal to upgrade the existing West Glenwood park-and-ride into a regional transit center. Phase 6B is a proposal to construct an administration building for RFTA professional staff. Phase 8 is a proposal to construct an additional maintenance building at the existing RFTA General Maintenance Facility. A complete description of each Phase is provided in this document.

Per the City of Glenwood Springs Municipal Code, the Phase 6A Transit Center is subject to review under Article 070.080 Matters of State Interest. All Phases are subject to review under Article 070.60.050(d) Location and Extent Review. This document, along with the design plans and appendices, encompasses the application for Location and Extent Review.

Location & Extent Review - Development Code Article 070.60.050(d)

The location and extent review procedure provides the City an opportunity to review projects proposed by a public or quasi-public entity in relation to the applicable policies and goals of the Comprehensive Plan.

All Phases of the RFTA West Glenwood Transit Center and Administration Building project are subject to the Location & Extent review. This document provides general project information, how the proposal meets the goals of the Comprehensive Plan, and Applicant responses to various applicable City development standards. The Architectural, Engineering, Site Lighting and Landscape plan set and appendices are intended to be reviewed alongside this document.

Project Site Context Map

NTS

Phase 6A Transit Center	Phase 6B Administration Building	Phase 8 Maintenance Building
Parcel #: 218505337001 Total Acres: 5.03 Address: 2302 Wulfsohn Rd. Owner: RFTA	Parcel #: 218505337003 Total Acres: 2.48 Address: not assigned Owner: RFTA	Parcel #: 218505336002 Total Acres: 5.14 Address: 2307 Wulfsohn Rd. Owner: RFTA

Note: Parcel acreage and information listed here is per Garfield County Assessor database and may vary from surveyed conditions.

Project Narrative

Background

The Roaring Fork Transportation Authority (RFTA) has been operating in the Roaring Fork Valley since 1983. RFTA provides a variety of public transportation services along the State Highway 82 corridor (Glenwood Springs to Aspen) and along a segment of I-70 (Glenwood Springs to Rifle). Formerly, RFTA was exclusively dedicated to regional transit. Today, RFTA has a role in express and local regional transit, senior/para-transit, bus rapid transit, multi-modal infrastructure, first-and-last mile mobility, and public skier shuttle services. It is the second largest transit system in Colorado and the largest rural transit system in the United States, providing nearly 5 million trips annually with a fleet of over 100 buses.

Currently, RFTA provides transit services spanning 3 counties and 70 linear miles, from Aspen to Rifle. Since 2004, RFTA ridership has grown by 60% and is estimated to increase by at least 25% over the next 20 years, under the most conservative scenarios. To meet the emerging transportation needs, RFTA is expanding services along the I-70 corridor between Glenwood Springs and Parachute.

The Need

Transportation is a component of the built environment and the term “public transportation” includes a wide variety of services that provide regimented and continuous transportation means to the public. Historically, transportation policies and infrastructure investments have emphasized and prioritized road improvements over supporting public transportation systems and facilities. Shifting the focus onto expanding public transportation facilities can increase the use of public transit and simultaneously reduce traffic congestion and air pollution. Additionally, increased access to public transportation can also improve health equity by providing the opportunity to access vital services, employment, and providing a foundation for social connection.[1]

The Roaring Fork Valley is a rapidly growing region with RFTA as a vital connector for the growing workforce and residential communities. In fact, Garfield County demographics data shows that the County will experience continuous growth over the next 25 years with the population expected to grow by more than 50% in the next 30 years.[2] To accommodate this continuous population growth and the changing environmental climate, RFTA developed a plan for the future of public transportation operations throughout the region.

In 2016, RFTA began to take a closer look at regional transit needs referencing the Integrated Transportation System Plan (ITSP) and the Upper Valley Mobility Study (UVMS). In 2018, RFTA developed a strategic improvement plan for the region’s transportation system titled Destination 2040.

Destination 2040 includes project goals and measurable milestones focusing on improvements for the environment, solutions for reducing traffic congestion and improving mobility, and improvements in sustainability and safety. These identified deliverables are specific to the Roaring Fork Valley. The Destination 2040 project will ultimately help RFTA maintain and improve its services, infrastructure and equipment.[3]

As part of these efforts and in response to regional population growth and increasing transit demand, RFTA has identified the need to develop a Regional Transit Center in West Glenwood Springs. The Regional Transit Center (RTC) project includes three phases: Phase 6A Transit Center, Phase 6B Administration Building, and Phase 8, Maintenance Building.

Phase 6A entails upgrading the existing West Glenwood Park & Ride to make it a true transit center with an expanded bus platform, transit building, bathrooms, and various user amenities. Phase 6B Administration Building will provide RFTA with centralized office space for their professional and executive staff, dedicated

meeting space, and driver education and training facilities. Phase 8 is a proposal to construct an additional maintenance building at the existing RFTA General Maintenance Facility.

References

[1] "Public Transportation In The US: A Driver Of Health And Equity, "Health Affairs Health Policy Brief, July 29, 2021. https://www.healthaffairs.org/do/10.1377/hpb20210630.810356/

[2] "Continued Growth in Garfield County." Garfield County Demographics – Economic Development.www.garfield-county.com/economic-development/garfield-county-demographics/

[3] Roaring Fork Transportation Authority. "Destination 2040 Roadmap." RFTA.www.rfta.com/2040roadmap/. Accessed 9 Jan. 2024

Project Overview

Context

The proposed development is located in West Glenwood Springs on Wulfsohn Road near the west-most intersection of Wulfsohn Road and Midland Avenue. The project consists of a phased development across three properties which are all owned by RFTA. Wulfsohn road bisects the project site, the parcel to the north of the road is 5.03 acres and the parcels to the south are 2.48 and 5.14 acres. See page 2 in this package for a vicinity map of the proposed development and surrounding context.

The proposal includes three Phases: Phase 6A transit center on the north side of Wulfsohn Road, Phase 6B administration building on the south side of Wulfsohn Road, and Phase 8 maintenance building at the existing RFTA General Maintenance Facility, located uphill from Phase 6B.

Currently, on the south side of Wulfsohn Road there exists a paved parking area, retaining wall, and dryland landscape. The north parcel is currently being used as the West Glenwood Park & Ride. Access to both the north and south sides of the project site is from Wulfsohn Road.

The transit center will be a main node for the RFTA system in the Roaring Fork Valley, cultivating connections between neighboring towns. The transit center will be the link between the Highway 82 corridor and the I-70 corridor “Hogback” routes. The center will provide amenities such as indoor waiting areas to foster comfortable and seamless connections between these two major transportation corridors as well as first-and-last mile connections to nearby multi-family residential and commercial areas. The site design emphasizes and respects the existing views and is thoughtfully designed to be a bright and welcoming public space.

The administration building is expected to be the face of RFTA and is therefore a critical component of RFTA’s vision for the next 20 years and beyond.

Architectural and Site Design

The style of architecture reflects other RFTA projects in the valley. At the transit center, the roof forms echo those used at the existing BRT stations at 27th Street and up valley. The materials are reflective of the mountain environment and history, with stone, wood and metal elements. The administration building materially connects with the transit center by using similar materials and tones. The Phase 8 maintenance building is intended to be aesthetically similar to the existing GMF building. There will be no public access to this building.

The program for the transit center building includes a portion that is limited for RFTA employees and operations programming on the west side with separate commuter-friendly programming on the east side of the building. The transit center includes programming including but not limited to a driver lounge, ticketing station, public restrooms, lost & found, and mechanical and maintenance storage areas. The proposed project includes an improved ADA parking area and additional parking downslope.

The administration building includes office space for RFTA professional and executive staff, meeting rooms, storage space, exterior lounge space, an informal walking path, etc. The building has ample windows oriented towards the western view, over the Colorado River towards Storm King Mountain and where views are not as dramatic, windows provide workers and visitors with natural light.

Infrastructure (Roads, Trails, and Utilities)

The park & ride expansion has been designed to prioritize safety and accessibility. The bus platform maximizes space for bus bays while also activating points of access and que areas with raised planting areas. Pedestrian safety signage and a crosswalk is proposed to connect sidewalks along south Wulfsohn with the transit center.

The paved path on the north side of Wulfsohn connects directly to the platform. The transit platform has been designed in a way that trail users will be able to safely connect between the north and south segments of the trail using the proposed crosswalk. Reference the Traffic Study summary included on page for more information regarding the proposed crosswalk and pedestrian signage.

All needed utilities are in place, no major extensions are anticipated beyond what would typically be needed for any construction project. Electrical, water, sewer, gas, telephone, and cable, already exist within the project area; these utilities will be adapted and re-aligned as necessary to meet project needs.

Landscape & Green Space

The transit center is designed with raised planters throughout the platform to shape and guide a thoughtful circulation experience around the space. Waiting riders are provided various covered and uncovered seating areas with opportunities for social interaction or quite space. The plant palette emphasizes native and drought tolerant species to be used throughout the project. The landscaping reflects the character and context of the surrounding landscape found along the edges and surrounding the development.

The landscape at the administration building echoes that found at the transit center by using similar elements, such as raised planters at the building entry, covered outside seating, and a similar native and drought tolerant plant pallet. Also included is outdoor gathering and meeting room spill over space, and amphitheater seating.

Plan Sets

The architectural and engineering plan sets submitted separately are intended to be reviewed alongside this document. The plan sets include survey, architectural, civil engineering, lighting, and landscape drawings.

Ownership

RFTA (Roaring Fork Transportation Authority)

2307 Wulfsohn Road

Glenwood Spring, CO 81601

Project Team:

Architect

Short Elliot Hendrickson Inc.

2000 S Colorado Blvd (Tower 1, Suite 6000)

Denver, CO 80222

Phone: (720)540-6812

Email: ajauch@sehinc.com

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2000 S Colorado Blvd (Tower 1, Suite 6000)

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Contact: Tim Nuetzel

Landscape Architect

DHM Design Corporation

225 Main Street, Suite 201

Carbondale, CO 81623

Phone: (970)963-6520

Email: jjaynes@dhmdesign.com

Contact: Jason Jaynes

Electrical

CMO Consulting Engineers, LLC

11646 Sun Bear Trl

Golden, Colorado 80403

Land Use Application From

LAND USE APPLICATION

City of Glenwood Springs
Economic and Community Development Dept.
101 West 8th Street
Glenwood Springs, CO 81601
970-384-6411

	Ordinance Amendments			Development Permits
☐	Rezoning		☐	Site/Architectural Plan Review
☐	Rezoning to Planned Unit Development (PUD)		☐	☐ Administrative
☐	Annexation		☐	☐ Minor
☐	Condominiumization		☐	☐ Major
☐	Annexation		☐	Master Plan
☐	Street Vacation		☐	Construction Plans
			✓	Location & Extent
	Subdivisions		☐	Right of Way Encroachment License
☐	Minor Subdivision		☐	Floodplain Development Permit
☐	Preliminary Plat		☐	Special Use Permit
☐	Final Plat			**Flexibility and Relief Procedures**
☐	Vacation of Right-of-Way		☐	Variance
			☐	Administrative Adjustment
	Other Land Use Applications		☐	Appeal
☐	Outdoor Seating			
✓	Matters of State Interest (1041)			

Applicant/Property Owner Information:			
Applicant		Owner	
DHM Design Corporation			
Relationship to Owner		Owner	
Subconsultant		Roaring Fork Transportation Authority (RFTA)	
Applicant Address		Owner Address	
225 Main St. #201	Carbondale, CO 81623	2307 Wulfsohn Road	Glenwood Springs, CO 81601
Phone (970)963-6520	Email Address jaynes@dhmdesign.com	Phone 970.384.4858	Email Address bludlow@rfta.com

Property Information:	
Address	Parcel Number
See Project Site Context Map on page 5	(Phase 6A) 218505337001, (Phase 6B) 218505337003, (Phase 8) 218505336002
Subdivision	Lot and Block Number
Zone District Mixed-Use Corridor (M1)	Existing Land Use

General Project Description:

Development of existing RFTA property to improve the community transit and RFTA staff experience by providing a new (9) bay transit center, new regional consolidated administration building, and storage building for RFTA bus maintenance staff.

Signatures:

The owner or applicant must be present at the hearing. All public hearings must be property noticed according to G.S.M.C. Section 070.010.030. Signatures of all owners of the property must appear before the application is accepted. Partnerships or corporations may have the authorized general partner or corporate officer sign the

Applicant	Date
Owner	Date

Project Summary Tables

Project Summary Table: WEST GLENWOOD TRANSIT CENTER

Project Description					
Lot Size Information	Acres	Square feet	**Lot Coverage**	Existing (Sq Ft &	Proposed (Sq. Ft. & %)
	5.03	219,107 sf		43,964 SF/20%	93,643 SF/43%
Limits of Disturbance	Existing (Sq & %)	Proposed (Sq. Ft. & %)	**Average Slope within Limits of Disturbance**	Percentage %	
		138,380 sf 63%		8.8%	
Off-street Parking Spaces	Existing # Vehicle Spaces	Proposed # Vehicle Spaces	**Bicycle Parking**	Existing # Spaces	Proposed # Spaces
		114		(6) outside racks (20) inside bike barn	(11-22+) WeCycle
Residential Units	# Existing Units	# Proposed Units	**Non-residential Uses**	Type of Use(s)	Gross Floor Area (Sq. Ft.)
	NA	NA		Transit Station, waiting area, ticket sales	3140 GSF
Open Space	Existing (Sq ft & %)	Proposed (Sq Ft & %)	**Total Landscaped area**	Existing (Sq Ft & %)	Proposed (Sq Ft & %)
	175,143 SF/80%	125,464 SF/57%			42,760 SF/20%
Building Height	Existing	Proposed	**Total Impervious Area**	Existing (Sq Ft & %)	Proposed (Sq Ft & %)
	NA	22'-4"		43,964 SF/20%	93,643 SF/43%
Snow Storage	Required (sq ft)	Proposed (sq ft)	**Other**		
		7145 SF			

Project Summary Table: ADMINISTRATION BUILDING

Project Description					
Lot Size Information	Acres	Square feet	**Lot Coverage**	Existing (Sq Ft &	Proposed (Sq. Ft. & %)
	2.48	108,028 SF		52,274 SF/48%	70,619 SF/64%
Limits of Disturbance	Existing (Sq & %)	Proposed (Sq. Ft. & %)	**Average Slope within Limits of Disturbance**	Percentage %	
		102,450 sf 94%		8.5%	
Off-street Parking Spaces	Existing # Vehicle Spaces	Proposed # Vehicle Spaces	**Bicycle Parking**	Existing # Spaces	Proposed # Spaces
		105			(12) outside racks
Residential Units	# Existing Units	# Proposed Units	**Non-residential Uses**	Type of Use(s)	Gross Floor Area (Sq. Ft.)
	NA	0		Administrative offices	30,790 GSF
Open Space	Existing (Sq ft & %)	Proposed (Sq Ft & %)	**Total Landscaped area**	Existing (Sq Ft & %)	Proposed (Sq Ft & %)
	55,754 SF/52%	37,409 SF/35%			46,230 SF/42%
Building Height	Existing	Proposed	**Total Impervious Area**	Existing (Sq Ft & %)	Proposed (Sq Ft & %)
	NA	41'-6"		52,274 SF/48%	70,619 SF/64%
Snow Storage	Required (sq ft)	Proposed (sq ft)	**Other**		
		3956 SF			

Project Summary Table: MAINTENANCE BUILDING

Project Description					
Lot Size Information	Acres	Square feet	**Lot Coverage**	Existing (Sq Ft &	Proposed (Sq. Ft. & %)
	5.14	223,898 sf			
Limits of Disturbance	Existing (Sq & %)	Proposed (Sq. Ft. & %)	**Average Slope within Limits of Disturbance**	Percentage %	
		10,188 sf 5%		20.9%	
Off-street Parking Spaces	Existing # Vehicle Spaces	Proposed # Vehicle Spaces	**Bicycle Parking**	Existing # Spaces	Proposed # Spaces
		no additional			NA
Residential Units	# Existing Units	# Proposed Units	**Non-residential Uses**	Type of Use(s)	Gross Floor Area (Sq. Ft.)
	NA	NA		Bus Maintenance and parts storage	2752 GSF
Open Space	Existing (Sq ft & %)	Proposed (Sq Ft & %)	**Total Landscaped area**	Existing (Sq Ft & %)	Proposed (Sq Ft & %)
	NA	NA			5600 SF
Building Height	Existing	Proposed	**Total Impervious Area**	Existing (Sq Ft & %)	Proposed (Sq Ft & %)
	NA	18'-2"			6011 SF
Snow Storage	Required (sq ft)	Proposed (sq ft)	**Other**		
		no additional			

Project Description

Description of Proposed Development by Parcel

RFTA owns parcel number 218505337001, currently zoned in the Mixed-Use Corridor (M1) district. This site currently operates and is known to locals and commuters as the West Glenwood Park & Ride that has views of the surrounding mountainous landscape and the nearby West Glenwood area. The proposed project (Phase 6A) will improve and activate this transit stop transforming it into a park & ride facility that will have the capability to support the growing demand. Growing demand due to not only population increases in this region but also the expanded service route that is to be implemented by RFTA and increases in residential housing nearby in Glenwood Meadows. The site is located on the west border of Glenwood Springs and due to its close proximity to I-70, has the opportunity to be a major node along the regional transit systems and serve as a vital connector for communities, from Parachute to Aspen. The Phase 6A proposed project includes the development of a 3,162 gross square foot single story transit building. Additionally, the proposed site plan includes a transit platform with bike storage, shade structures, planting and seating areas for commuters to use as both active and passive space while utilizing the 9 bus bays.

RFTA owns parcel numbers 218505337003 and 218505336002 to the south of the transit center, Phases 6B and 8 of the development. Parcel number 218505337003 (Phase 6B) is currently zoned in the Mixed-Use Corridor (M1) district. This site currently operates as a parking area for RFTA buses that are not currently in operation. Phase 6B proposed development includes a three-story administration building that is 29,185 gross square feet and 105 parking spaces to accommodate employees, visitors, and ADA needs. This phase of the project also includes the design for an employee outdoor space that provides staff with an exterior space with seating and landscaping to use during lunch and other breaks.

Parcel number 218505336002 (Phase 8) is currently zoned in the Light Industrial (I1) district. According to the Glenwood Springs Municipal Code, Article 070.020.140, “The I1 district is intended to accommodate a diverse mix of office, service, commercial, and lower-intensity industrial uses with limited impacts on adjacent neighborhoods. The allowable uses in the I1 district take place mostly indoors, with minimal outdoor storage and assembly.” Phase 8 includes the construction of a 2,720 square foot maintenance building on the parcel that is mostly undeveloped and dryland landscaping.

SEH has provided illustrative elevation and perspective graphics in the architectural and engineering plan set submitted separately to illustrate the materials and architectural aesthetic of the proposed infrastructure for each phase.

Current Use

The Phase 6A parcel is currently operating as a park-and-ride with a transit station on the upper portion of the site and a temporary materials storage area on the lower portion of the site. Across Wulfsohn Road on the south side a paved parking area, retaining wall and dryland landscape occupy the Phase 6B and 8 parcels. The proposed project will expand upon the current transit facilities and include additional administration facilities in order to meet the growing need for improved transportation services in the city. This multi-phased project will transform the partially developed land into an established transportation hub that will serve West Glenwood and surrounding communities.

Neighborhood Context

The development of a larger transit center in this location will certainly affect the dynamic of the Glenwood Meadows area and surrounding lands. The transit center will provide access to the services and establishments located in the Glenwood Meadows retail area.

The transit center will be a vital connector along the I-70 corridor linking daily commuters and communities up-valley. The expanded park & ride project arose to support the community and is entirely reflective and consistent with the community's objectives and vision for the parcels and the developing neighborhood.

Purpose & Need

According to the Comprehensive Plan and data provided by CDOT, "Between 2010 and 2021, traffic on CO82 in South Glenwood Springs grew by 23% (an average of 1.9% annually)". Annual growth in traffic and population for the region is expected to continue.

According to U.S. Census data that compared where workers live and where they are employed, it is estimated that nearly 60% of employed individuals that live in Glenwood Springs commute up-valley. This contributes to traffic congestion for those commuting into and out of Glenwood Springs. Creating a larger transit hub in West Glenwood will serve residents who may be commuting to further park and ride stations, ultimately reducing commuter traffic prior to entering the city of Glenwood Springs.

Description of Compliance

Intercepting commuters as they enter West Glenwood Springs and activating the transit center to encourage users/commuters to travel via bus would help alleviate some of the major traffic congestion concerns and address goals initiated and supported by the Comprehensive Plan. The standards review included in this document will describe how each aspect of the project aligns with the Comprehensive Plan and the Municipal Code.

The tables below outline the dimensional standards applicable for the districts of this multi-phased development. The lot, setback, and building standards are satisfied by the site plans for each phase of the proposed development. See the plan set submitted separately.

(b) Standards

Table 20.16: I1 District Dimensional Standards		
Lot Standards, Minimum		
A	Lot area (sq ft)	10,000
	Landscaped area (%)	10
Setbacks, Minimum		
B	Front, min (ft)	20
C	Side, min (ft)	10
D	Rear, min (ft)	10
Building Standards, Maximum		
E	Building height (ft)	40

Other Key Standards	
Measurements and Exceptions	070.20.190
Table of Allowed Uses	070.30.020
Use-Specific Standards	070.30.030
Development Standards	
Landscaping, Screening, and Fencing	070.40.050
Off-Street Parking and Loading	070.40.060
Nonresidential and Mixed-Use Site and Building Design	070.40.090

(b) Standards

Table 20.11: M1 District Dimensional Standards		
Lot Standards, Minimum		
A	Lot area (sq ft)	None
	Landscaped area (%)	15
Setbacks, Minimum		
B	Front, min (ft)	5
	Front, max (from arterials) (ft)	60
	Front, max (from other streets) (ft)	25
C	Side, min (ft)	5
D	Rear, with alley, min (ft)	10
	Rear, without alley, min (ft)	7.5
Building Standards, Maximum		
E	Building height (ft)	40

Other Key Standards	
Measurements and Exceptions	070.20.190
Table of Allowed Uses	070.30.020
Use-Specific Standards	070.30.030
Development Standards	
Landscaping, Screening, and Fencing	070.40.050
Off-Street Parking and Loading	070.40.060
Nonresidential and Mixed-Use Site and Building Design	070.40.090

The tables below describe the exceptions that are allowed for the setback standards outlined in tables 20.11 and 20.16. These exceptions apply to all zoning districts.

Table 20.20: Authorized Exceptions to Setback Standards	
Accessibility ramps	May be located within required yards. Ramps shall be removed within three months after the need for such ramp is removed. Ramps shall not be located in the public right-of-way without approval by the City.
Front porches and stoops	May encroach 10 feet into required front yard provided such porch or stoop is a minimum of 65 percent open (including screens and/or windows) on the front and each side and is no closer than 10 feet from the front property line.
Ground-mounted solar panels	May encroach five feet into required side and rear yards provided no element is located closer than two feet from any property line.
Ground-mounted mechanical equipment	May encroach five feet into required side and rear yards provided no element is located closer than two feet from any property line and the equipment complies with screening standards in 070.40.050(f), *Screening, Fences, and Walls*.
Roof eaves and other incidental architectural features	May encroach 18 inches into a required yard.
Storage sheds	In residential districts, storage sheds less than 120 square feet in size may be placed up to, but not closer than three feet from a rear or side property line provided they are not placed on a permanent foundation or over an easement.
Uncovered balconies and fire escapes	May encroach 18 inches into required side yard; four feet into required front or rear yard.
Uncovered porches, slabs, patios, walks, and steps	May encroach into required yards by any amount provided all components of the encroachment are no greater than 30 inches above ground level.

Development Standards

070.40.020 - Sensitive Area Protection

070.40.020(a)(1)

070.40.020 is intended to protect and enhance the natural features that contribute significantly to Glenwood Springs' quality and character, including but not limited to the varying topography and hillsides, floodplains, wetlands, viewsheds, and other significant features. This section also is intended to ensure that land subject to natural hazards such as flooding, falling rock, landslides, mud flows, or snowslides is not approved for development without appropriate consideration by the City of potential conditions and safeguards to help protect life, health, and property.

RESPONSE:

Applicant has provided responses below demonstrating general conformity with 070.40.020 as well as to the mapped Sensitive Areas affecting the proposed development.

070.40.020(a)(4) Limits of Disturbance

RESPONSE:

The Limits of Disturbance are shown on the Civil plans. The extents of these Limits have been established to minimize excess site disturbance while maintaining access for construction equipment and materials storage.

070.40.020(a)(5) Clustering

RESPONSE:

The proposed Transit Center (Phase 6A) and Administration Building (Phase 6B) are planned to be constructed on existing disturbed or otherwise previously developed areas of the property. The Phase 8 Maintenance Building is similarly proposed for a site which has previously been disturbed and contains existing development.

070.40.020(b) Hillside Development

RESPONSE:

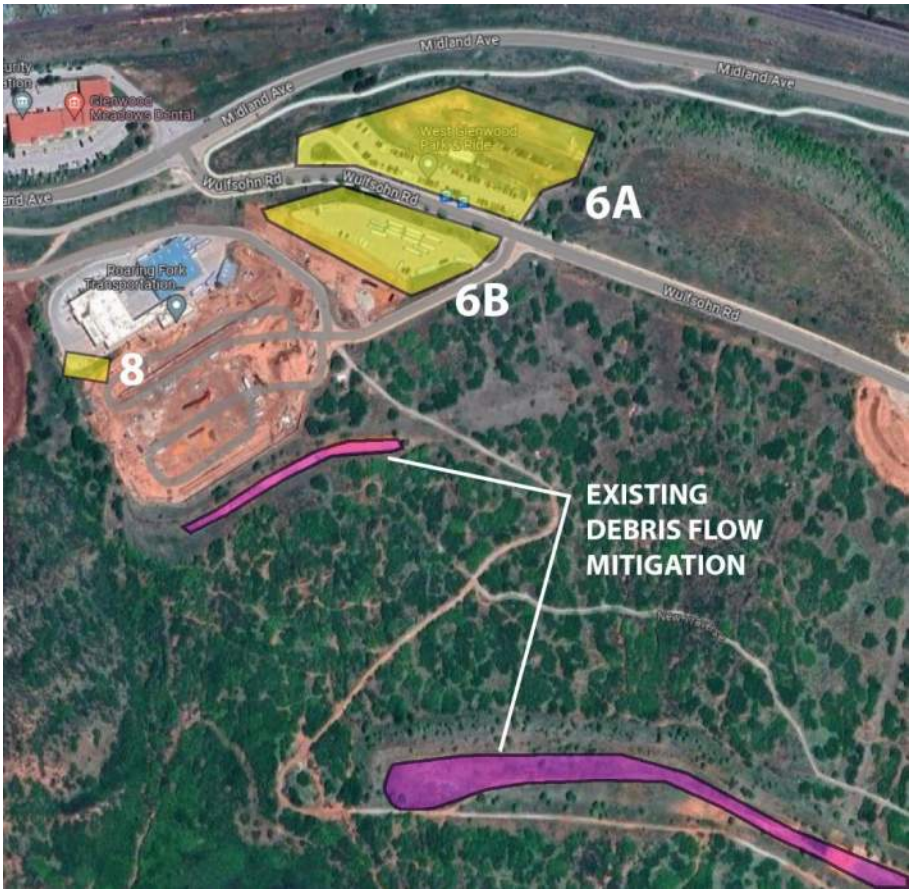
The subject properties are not located within a mapped Hillside Preservation District. For all Phases, there are slopes in excess of 20% within the proposed development area. These slopes are up to 50% (2:1) in certain locations. In general, the existing steep slopes are the result of previous development; at the Transit Center, there are steep slopes between the leveled parking pads, at the Administration Building there is a steep hillside to the south which resulted from access road construction, and at the Maintenance Building there is a steep slope created by the construction of the bus barn. For Phases 6B and 8, these steep slopes will be retained where they conflict with proposed development. For Phase 6A Transit Center, the slopes will be removed to accommodate the new parking lot design with downhill grades being terraced and retained. See the Plan Set for the existing topography and the Civil grading plans for proposed conditions.

070.40.020(c) Development in Areas of Geologic Hazard

RESPONSE:

The Geologic Hazards Map(s) maintained by the City Engineering Department indicate the property is within “Qdf(2)” Debris Fans, Moderate Hazard Zone, and “hc(1)” Potential Hydrocompaction, Severe Hazard Zone.

Regarding the Debris Fan hazard, mitigation has been previously constructed uphill from the project sites within the City owned parcel at the base of Red Mountain. As shown in the map below, there are two debris catchment features in this area, the larger feature extends the length of Red Mountain, above the Wulfsohn trail system, and the second smaller feature is located above the proposed site for the Phase 8 Maintenance Building.



RFTA is aware of the presence of hydrocompactive soils within the project area. The Program of Requirements (POR) for this project contains specific recommendations for monitoring and mitigating this condition, including:

Requiring a detailed and thorough Geotechnical Engineer Investigation and Report

Ensuring the Structural Engineer coordinates foundation design with the Geotechnical recommendations

Minimizing leakage from storm piping by using gasketed connections and other methods

Limiting irrigation and specifying native and drought tolerant plant material

In addition to the above, RFTA has engaged Keller Group North America to specifically address ground improvements for the project.

070.40.030 - Site Development and Improvement

The purpose of this section of the standards is to ensure that every development proposed in Glenwood Springs, the developer shall meet the following:

"1. Provide, pay for, and install or cause to be installed, where needed: water distribution systems, storm drain structures, wastewater lines, pumps and appurtenant devices, curbs and gutters, street base course material and wearing course material, bridges, electrical transformers, streetlights, underground communications systems and wiring, gas distribution systems, fire hydrants, fire alarms and other fire-control devices, street signs and traffic-control devices.

2. Preserve or replace trees, shrubs, ground cover and other vegetation, and structures.

3. Stabilize soil and prevent erosion and culverts or other devices to enclose open ditches and inhibit access to them by children.

4. Reserve and dedicate to the City lands or easements where needed by the nature of the development for public purposes, including, but not limited to: utility easements and easements for drainage purposes, pedestrian easements, parkland or fees in lieu of such dedications;

5. Delay or phase development if necessary to ensure that the City can provide necessary municipal services and facilities; and

6. Ensure the completion of installation of curbs, gutters, street paving, and other improvements and to ensure that dedications are made."

RESPONSE:

The Applicant acknowledges the above and the requirements set forth in Section 070.40.030. See the plan set which demonstrates conformity with these Standards.

070.40.040 - Common Open Space

Table 40.3: Required Common Open Space

Use Classification	Minimum Total Common Open Space Area (as percentage of development site area)
Residential Uses	20%
Mixed-Uses	15%
Institutional Uses	10%
Commercial Uses	10%
Industrial Uses	5%

RESPONSE:

The project complies with the minimum Common Open Space Area for the M1 zone district. The data charts contained within the landscape plans demonstrate compliance.

070.40.050 - Landscaping, Screening and Fencing

The purpose of this Section is to ensure that the proposed project enhances the visual appeal of Glenwood Springs, improves air quality, buffers between any incompatible adjacent land uses, mitigates the environmental and visual impacts, and eliminates outdoor water waste.

RESPONSE:

The subsections below outline these standards in more detail and Applicant responses are provided for each subsection. The landscape area tables on the site plan outline how each Phase is compliant with the minimum plant material standards and lot standards for each district.

070.040.050 (c) General Landscaping Standards

RESPONSE:

The data charts shown on the landscape plans for each phase demonstrate compliance with the minimum landscape area requirements for their zone districts. Landscaping at the transit center (6A) has been designed to enhance the user experience by providing shade, numerous seating options, and visual interest. For the administration building (6B), the landscaping provides visitors and employees with a defined gathering patio and event spill- over space, plus an informal walking path which provides separation from the building.

Both phases have located trees and shrubs to mitigate the visual impacts of surface parking and proposed retaining walls.

Plant material is native-focused where transitioning away from user concentration areas. Native species are used to screen surface parking, buffer retaining walls, infill internal parking islands, and transition to the existing surrounding native landscape. Ornamental species are for the most part limited to more developed areas of the projects, such as on the transit platform or in association with designated gathering areas at the administration building.

Table 40.5: Minimum Plant Material and Standards		
Plant Material	**Minimum Amount**	**Species and Size Standards**
Trees	One tree per 400 square feet of site area required to be landscaped in addition to those required for parking areas	**Deciduous**: minimum caliper 2.5 inches (understory ornamental trees may be two-inch caliper)
		Evergreen: **(a)** minimum height of six feet; **(b)** shall not exceed 50 percent of total required trees; **(c)** if provided, 10 percent of evergreen trees shall have a minimum height of 10 feet.
		Shrub substitution: Up to 50 percent of required trees may be substituted with shrubs (above required amount) at a rate of 10 shrubs = one tree. All such shrubs shall comply with the standards in this table.
Shrubs	One shrub per 100 square feet of site area required to be landscaped in addition to those required for parking areas	**(a)** at least 20 percent of required shrubs shall be an evergreen species; **(b)** shall be a minimum of five gallons in size and shall grow to a minimum height of one foot at maturity; **(c)** if used for screening requirements in 070.40.050(f), shall grow to a minimum height of four feet at maturity.
Perennials	One perennial per 50 square feet of site area required to be landscaped	**(a)** shall be a minimum of one gallon in size; **(b)** shrubs (above required amount) may be substituted for perennials at a rate of one shrub = 5 perennials.

070.040.050(d) Streetscape Requirements

RESPONSE:

Phase 6A, the transit center, cannot comply with the streetscape standards due to functional and operational requirements. There is approximately 888 linear feet of Wulfsohn road right-of-way frontage along the transit parcel. Approximately 620 linear feet of this frontage is occupied by the transit platform and access ways, and there is no planting strip along this portion of the frontage. For operational reasons, RFTA has established a minimum 10’ clearance zone from the edge of curb along the length of the platform. No landscaping is proposed within this 10’ clearance area. Where a planting strip does exist, the plans do call for street trees to be planted on 30’ centers, per the code.

There is a planting strip along the frontage of the Phase 6B parcel, and the data chart shows compliance with the streetscape standards accounting for both existing and proposed street trees.

Phase 8, the maintenance building, has no public street frontage and therefore these requirements are not applicable.

070.040.050(f)(1) Screening, Fences and Walls

This category applies to refuse container enclosures and ground-mounted mechanical equipment/utilities and how they should be screened to reduce visual impacts from public view.

RESPONSE:

The ground-mounted mechanical equipment for Phase 6A shall be screened with a fence that reflects the architectural character of the transit building. Due to the siting requirements of this equipment, using landscaping as a screen would be impractical. The fence also serves as a means to restrict access to this equipment.

All ground mounted mechanical equipment located on the 6B parcel shall be screened from the public right-of-way with landscaping, fencing, or a combination of both. There is a refuse container enclosure proposed for the administration building, see the plan set for the location.

070.040.050(f)(3) Retaining Wall Standards

RESPONSE:

The maintenance building for Phase 8 is retaining the hillside and so this Phase does not require significant retaining walls. The project sites for both Phases 6A and 6B have significant slopes. These slopes have been manipulated by previous development: for 6A there is disturbance below the existing surface parking and for 6B, the recent improvements to the adjacent access road has pushed the hillside towards the proposed building site and surface parking. The development footprint for both 6A and 6B will require the use of retaining walls.

At the 6A transit center, retaining wall heights have been kept to a minimum, with three-tiered terraced walls proposed downhill of the surface parking. The maximum height of any one wall is approximately six feet. Care has been taken to fit the retaining to the existing grade and minimize wall heights. The slope of the site makes it impractical to articulate the faces of these walls without making the walls taller than the six foot limit. A densely planted landscape buffer, consisting primarily of native evergreens such as spruce and junipers, is proposed both downhill and within the terraces to visually screen these retaining walls.

For the 6B administration building, retaining walls are needed to support the hillside below the existing access road, creating the relatively level pad for the building and surface parking. As shown in the plan set for 6B, in order to meet the required number of spaces, the surface parking approaches the southern property line which requires a retaining wall. This retaining wall extends westward along the parking where a second upper wall creates a planting terrace. Both of these walls continue past the proposed building location. The hillside below the existing access road has a slope of approximately 2:1, making significant terracing in this area unfeasible. The steepness of the existing slope, combined with the footprint of the surface parking and it's proximity to the property line, the lower of the two retaining walls approaches eleven vertical feet in some locations. A planting buffer has been provided to screen these walls where feasible considering the soil conditions and associated irrigation restrictions.

070.40.060 - Off-Street Parking and Loading

The purpose of this Section is to ensure that safe and convenient parking areas are provided, respond to transportation and access demands of the project, avoid and mitigate traffic congestion, avoid and mitigate the visual impacts of large concentrations of exposed parking areas, reduce stormwater runoff, reduce heat island effect from large expanses of pavement, and improve water quality, and also to provide necessary access for service and emergency vehicles and to provide for safe and convenient interaction between vehicles and pedestrians.

RESPONSE:

The subsections below outline these standards in more detail and Applicant responses are provided for each

070.040.060(c) Calculation of Off-Street Parking and Loading Requirements

RESPONSE:

For the Phase 6B administration building, the data table on the Architecture Site Plan shows the calculation for the number of required parking spaces and the number of spaces provided. As demonstrated, the project meets the minimum requirement.

For the Phase 6A transit center, the maximum number of parking spaces has been provided based on site constraints.

For the Phase 8 maintenance building, adequate parking is already provided for RFTA employees and service vehicles at the existing bus maintenance building and since this facility is not open to the public, no additional parking is proposed.

070.40.060(f) Bicycle Parking

Per Code, all nonresidential developments shall provide bicycle parking. The table below outlines the number of required bicycle parking spaces. For bicycle parking intended for users to utilize for two hours or less, the feature may be located within 50' of a main building entrance. For long-term bicycle parking, parking for bikes shall be located in an area on the site that is well-lit and within view of building entrances.

(2) Number of Bicycle Parking Spaces Required

Table 40.7: Required Bicycle Parking

Amount of Vehicle Parking Provided	Number of Required Bicycle Parking Spaces
Fewer than 50 spaces	3
51-100 spaces	6
101-150 spaces	9
More than 150 spaces	9, plus 1 space per each 50 vehicle spaces provided after the first 150 spaces

RESPONSE:

Bicycle parking is provided at the transit center and at the administration building. No additional bicycle parking is proposed for the Phase 8 maintenance building.

At the transit center, three uncovered bicycle racks with capacity for six bicycles are provided within 50' of the transit building entry. There is also space allocated for an enclosed "bike barn" for long term, secure bicycle parking. Depending on funding available at the start of construction, the bike barn may be installed after the completion of the transit building. In the event that occurs, additional uncovered bicycle parking shall be provided in this location. In addition to the provided bicycle parking, a We-Cycle bike share station is also contemplated and shown at the transit center.

Based on the number of car parking spaces at the administration building (104), a total of nine bicycle parking spaces are required. Parking for twelve bicycles is proposed; four of these parking spaces are within 50' of the building entry, with the remaining eight spots located a short distance away at the corner of the building.

070.40.060(g) Loading Requirements

RESPONSE:

No loading berths are proposed for any Phase.

070.40.060(h)(5) Snow Storage Areas

RESPONSE:

Proposed snow storage areas are shown on the Architecture Site Plan.

070.40.060(h)(6)(a) Parking Area Landscaping, Amount Required

Parking area landscaping shall be provided according to Table 040.9, below.

RESPONSE:

Phases 6A and 6B include surface parking, while the Phase 8 maintenance building does not. The Phase 6A transit center has a total of 104 proposed parking spaces and the 6B administration building also has 104 proposed parking spaces.

Per Table 040.9, the required interior landscape area for 104 spaces is 1040 square feet. The transit center has 2770 +/- square feet of interior landscape area, and the administration building has 3775 +/- square feet of interior landscaping.

Per Table 040.9, one tree for every 8 parking spaces shall be provided, which equals 13 trees per Phase. The transit center has 13 proposed trees and the administration building has 16 proposed trees within the interior landscape areas.

Table 40.9: Parking Area Landscaping Requirements [1]

	Minimum Amount (Lots with fewer than 20 spaces)	Minimum Amount (Lots with 20 or more spaces)	Other Standards
Total Parking Area Designated for Landscaping	10 percent of total surface parking area	20 percent of total surface parking area	
Interior Parking Area Designated for Landscaping	10 square feet per parking space		
Landscaped Islands; Peninsulas, Tree Diamonds, Bioswales, Rain Gardens	Minimum nine feet wide		**(a)** no more than 50 percent of any landscape area shall be nonliving ground cover; **(b)** landscaped islands, diamonds or peninsulas shall be raised and contained within masonry, concrete, or other nonporous curb that is a minimum of six inches in height **(c)** bioswales and rain gardens shall be sized in accordance with recommendations contained in a drainage plan, study or report as prepared by a licensed engineer.
Terminus Islands	Not required	**Single-loaded parking:** 50 percent of parking blocks, rows, or groups shall terminate in an island; each island shall be a minimum of 90 square feet **Double-loaded parking:** 50 percent of parking blocks, rows, or groups shall terminate in an island; each island shall be a minimum of 180 square feet	**(a)** terminus islands shall be distributed across parking areas to the extent practicable; **(b)** landscaped islands shall be raised and contained within masonry, concrete, or other nonporous curb that is a minimum of six inches in height; and **(c)** nonliving ground cover shall not exceed 50 percent of the required landscaping area.
Planting Materials	Trees, shrubs, ground cover, xeriscaping		Trees shall be planted at a rate of 1 tree per 8 parking spaces and shall be located throughout the parking lot such that at maturity, the parking lot will be shaded, to the greatest extent practicable.
Planting Strip	Pursuant to 070.40.060(h)(6)c.3, *Screening Parking Areas and Drive Aisle*		Additional parking area screening shall be provided pursuant to 070.40.060(h)(6)c.3, *Screening Parking Areas and Drive Aisle*

070.40.060(h)(6)(b) Planting Materials

RESPONSE:

As shown on the plant schedule for each Phase, the proposed trees comply with the minimum size and species requirements in Table 040.5: Minimum Plant Material and Standards.

070.40.060(h)(6)(c)(1) Parking Area Landscape Design

RESPONSE:

As shown in the plan set, the surface parking areas for Phases 6A and 6B are broken up by landscape areas. The transit center has interior planted islands and terminus islands. The administration building has a central continuous planting strip and terminus islands.

070.40.060(h)(6)(c)(2) Tree Characteristics

RESPONSE:

All species of deciduous trees selected for the interior landscape areas meet the minimum requirements for a widely branching growth habit and also meet the minimum growth height of 30 feet.

070.40.060(h)(6)(c)(3) Screening Parking Areas and Drive Aisles

RESPONSE:

At the transit center, downhill from the surface parking, a densely planted landscape buffer is provided which is intended to screen from Midland Avenue. From Wulfsohn Road, the parking is a distance away from the road and it is also considerably lower than the roadway, which will make the parking less visible from this vantage point.

At the administration building, the parking frontage along Wulfsohn Road is screened with a densely planted landscape area varying in width from 45’ to 12’. This parking lot is also higher than the roadway, which will make the landscape buffer more effective in screening views to the parking. The existing access road to the south of the parking is a private drive. Landscaping has been provided along this frontage where feasible in consideration of the site slope, retaining walls, and soil conditions.

The planting within these landscape buffers consists of a combination of trees, shrubs, and ornamental grasses.

070.40.060(h)(7) Parking Area Lighting

RESPONSE:

Please see the site lighting plans included in the plan set.

070.40.070 - Access and Circulation

The purpose of this Section is to ensure the proposed project supports the creation of a highly connected transportation system. According to municipal code item 070.040.070(c), “Generally, access and circulation systems associated with any development shall provide for multiple travel modes (vehicular, transit, bicycle, and pedestrian), as appropriate to the development’s size, character, and relationship to existing and planned community transportation systems.”

RESPONSE:

As Phase 6A is a proposal to upgrade an existing transit station and make it a regional transit center, multi-modal transportation is integral to this project.

The transit center is directly connected to the existing multi-modal path on Wulfsohn Road which is then connected to the paved trails heading east and west along Midland Avenue.

Uncovered bicycle parking is provided at both the administration building at the transit center. The transit center has also set aside space for an enclosed “bike barn” that would provide covered and secure long-term parking for bicycles.

A We-Cycle bike share station is also envisioned for the transit center which will encourage people to use bicycles for short trips to and from the station.

The Phase 6B administration building is located directly across Wulfsohn Road from the transit center, making public transportation convenient to this workplace. A crosswalk is proposed to facilitate pedestrian crossings of Wulfsohn Road between the two projects.

To the south of Phase 6B, there are established trails, the Wulfsohn trail and the Defiance trail serve hiking and mountain biking user groups. The proposed development does not impact the existing trail connections.

070.40.090 - Nonresidential & Mixed-Use Site and Building Design

This Section is intended to promote high-quality building design by protecting and enhancing the visual interest, character, and quality of nonresidential and mixed-use areas; ensuring compatibility between residential neighborhoods and adjacent commercial and mixed-use areas; mitigate negative impacts created by the scale and bulk of large buildings; promoting an environment that is friendly toward multiple modes of transportation and accommodating varying ages and abilities; and protecting and enhancing property values and encouraging further investment and reinvestment.

RESPONSE:

The Phase 6A transit center includes a station building of modest size. It is a single-story structure that responds to the site grade by stepping down as the platform slopes. The building is visually dynamic, with a “butterfly” roof form which continues the aesthetic RFTA established with the Velociraptor BRT stations which were constructed several years ago. The shade structures on the platform mimic this form as well.

The Phase 6B administration building is similar in scale to nearby commercial development and multi-family housing neighborhoods in the Glenwood Meadows. The building is three-stories, with an articulated facade of glass, stone, and other materials which visually interrupt the building massing.

The transit center will expand the service area of the existing bus station. This transit hub will promote multi-modal transportation and, with the location being in proximity to fairly dense multi-family housing in Glenwood Meadows, will make those neighborhoods a more attractive and convenient place to live. This transit center should encourage further investment and reinvestment in the surrounding area.

070.40.090(d)(2) Building Organization and Location

RESPONSE:

The transit center building is parallel with Wulfsohn Road. The 6B property is located on a curve in the road, with the building being parallel with the straight portion of road adjacent to the transit center. The

two buildings are parallel with each other, across Wulfsohn, so the general perception is that both buildings are oriented towards the street.

Both buildings have primary entries that are clearly defined. The transit center has a dramatic roof overhang and covered porch-like area at the main entry doors. The administration building includes a roof overhang extending out from the building, plus planters flanking a distinct paving pattern leading to the front entry.

070.40.090(e) Nonresidential and Mixed-Use Building Design Standards

The general intent of these building design standards is to encourage creative design that: Preserves Glenwood Springs' small-town atmosphere; Enhances the visual and physical qualities of Glenwood Springs; Considers how the building relates to the site, neighboring properties, and the community; Provides strong pedestrian orientation by visually connecting the building's interior with the public exterior; Creates prominent, well-proportioned customer entrances; Uses high quality, long lasting materials with a proven ability to withstand Glenwood Springs' environment; Promote building designs and construction practices that are sustainable and adaptable to multiple uses for extended building life-cycles; and Incorporates a palette of colors that adds visual interest to the development parcel and that is compatible with the surrounding natural environment.

RESPONSE:

The architectural design has taken the above into consideration and has met the intent of the design standards outlined above. The plan set contains building plans and elevations which demonstrate the care taken to enhance the visual quality of the architecture, the durable material pallet and appropriate color selection that compliments the surrounding natural environment.

070.40.090(e)(2) Building Elevations

RESPONSE:

As shown in the architectural plan set, the facade of the administration building is dynamic, with articulation and material patterns that add visual interest. The silhouette includes several parapet projections that interrupt the roofline.

The transit center station building is similarly dynamic, with several materials used to highlight architectural projections and forms. From the roadway, the roof form steps with the building which interrupts the perceived overall building length.

In response to the dimensional requirements of this section, such as maximum roofline length and percent of wall material coverage, etc., please see the architectural plan set.

070.40.100 - Exterior Lighting

The purpose of this Section is to provide for exterior lighting that enhances safety, preserves the city's nighttime character, and improves the ability to view the nighttime sky from within the city. This Section is intended to decrease light pollution, increase energy efficiency, and promote high quality lighting design as it relates to the built environment. The lighting regulations are also intended to: Ensure that parking areas, public gathering places, and other public places have adequate outdoor illumination; Ensure that light levels are

uniform to enhance night vision and security; Minimize adverse impacts on public safety and neighborhood enjoyment due to excessive glare; Minimize spillover of light onto adjacent or nearby properties; and Minimize the effects of skyglow.

The City's standards and limitations for lighting are separated out into three districts. All Phases of the proposed development fall within the Lighting District 1 standards category.

Maximum Allowed

The maximum measured light levels shall not exceed those provided in Table 040.10: :

Table 40.10: Maximum Lighting Trespass Levels

Lighting District	Point A (foot-candles)	Point B (foot-candles)
District 1	5.0	3.0
District 2	0.5	0.2
District 3	0.3	0.1

Table 40.11: Parking Area Lighting Standards

Lighting District	Mounting Height	Minimum light level at grade (foot-candles)	Maximum light level at grade (foot-candles)
District 1	35 feet	0.7	7
District 2	20 feet	0.3	3
District 3	*Not allowed. Public or quasi-public facilities shall comply with the district 2 standards.*		

RESPONSE:

Exterior lighting designs are provided for each Phase; photometric analysis of the proposed lighting is included on the design sheets. The location, type, and intensity of the lighting are fully described in the lighting design sheets. As shown on the design plans, the exterior lighting complies with the standards of this Section.

070.40.110 - Signs

The purpose of this Section is to: Minimize incompatibility between signs and their surroundings; Recognize distinct geographic districts within the city that possess unique characteristics of physical location, building design, land use patterns, and pedestrian and vehicle circulation; Provide for signs within reasonable limitations, consistent with the goals and objectives of the community, to retain the special character and economic advantages that rest largely on the quality of the community's appearance; Protect the public from hazardous conditions by prohibiting signs that are structurally unsafe or obscure, distract the vision of motorists, or compete or conflict with necessary traffic signs and warning signals; Eliminate hazards caused by the size and placement of signs and reduce the possibility of injuries to those coming near or under signs; Promote the health, safety and public welfare of the city, its residents and its visitors; Regulate signs in accordance with the City's policies and with the U.S. and Colorado Constitutions; and Protect the right to free speech by the display of messages on signs through content-neutral regulations.

Freestanding Signs					
Freestanding monument	Residential applications in commercial zoning districts	One freestanding sign per street frontage, up to a total of two signs per subdivision or development access	100 square feet	Six feet	Setback five feet from property lines
	Mixed-use and nonresidential applications in all sign districts	One freestanding monument sign per street frontage per property	**Hwy 6 and 82 sign districts**: 200 square feet **Downtown districts:** 64 square feet **Others**: 120 square feet	Eight feet	Setback a minimum of 10 feet from back of curb or back of pavement; shall be separated from other permanent detached signs by at least 25 feet

RESPONSE:

Permanent freestanding monuments are anticipated for the transit center and the administration buildings; no signs are proposed for the Phase 8 maintenance building. As shown in the plan set, the proposed signs will be similar in scale and appearance to those RFTA has developed for their other nearby transit facilities.

All proposed signs shall comply with the standards of this Section.

Engineering Reports

Preliminary Traffic Study

See complete Traffic Impact Study, Appendix B

Document Background

SGM Engineering prepared a Traffic Impact Study (TIS) for RFTA in September of 2023. The purpose of the traffic impact analysis was to forecast and analyze the impacts of the additional traffic volumes associated with the RFTA Glenwood Maintenance Facility (GMF) and adjacent Park and Ride lot proposed expansion. Traffic growth was based upon projections in the Glenwood Meadows Master Traffic Study (GMMTS) prepared by Kimley-Horn and dated January 2023. The city provided the GMMTS model to provide consistency with previous traffic studies and simulations. The TIS simulates the conditions from the GMMTS and updated the traffic volumes and specific intersections impacted by the proposed phased RFTA development to assess operational and safety traffic impacts.

Study Intersections

A total of 5 intersections were studies in this analysis. The study intersections operate at an overall Level of Service (LOS) C or better.

- Midland Ave. and West Wulfsohn Rd. (#4)
- Wulfsohn Rd. and RFTA GMF/P&R (#20)
- 8th and Colorado (#13)
- 9th and Colorado (#15)
- 9th and Grand (#16)

Multi-modal Improvements & Auxiliary Turn Lanes

In response to potential improvements to the #4 study intersection, consideration should be given to extending the existing eastbound right turn lane an additional 125 ft.

The TIS recommends the addition of an eastbound left turn lane into the RFTA park and ride lot. In addition, the Phase 6A project should include a consideration for a two-lane SB approach to Wulfsohn Road which would address any potential queuing issues.

The TIS determined that the increased traffic volumes that come with the proposed project warrant a WB left turn lane from Wulfsohn to the RFTA Phase 6B access driveway.

A painted crosswalk with pedestrian crossing warning signs is recommended at the west side of the #20 study intersection.

The study recommends that existing trees along Wulfsohn be trimmed or remove to ensure a maximum sight distance of ~475ft.

Traffic Impact Study Summary and Recommendations

Except for the Midland and Wulfsohn intersection and project access intersection, the TIS found that the remaining study intersections will operate acceptably in their existing configurations with the predicted traffic volumes.

The TIS concludes the Midland and Wulfsohn intersections (#4) will need improvements to accommodate the estimated traffic volumes that are anticipated for Glenwood Meadows/RFTA future developments. The RFTA share of the traffic volume at study intersection #4 is 42% of 2023 Baseline Design Hourly Volumes (DHV) and decreases to 20% of the 2043 total GM-RFTA (DHV).

The multi-phased project addresses the traffic study recommendations for improvements as shown on the plan set submitted separately. See Appendix B for the full Traffic Impact Study provided by SGM Engineering.

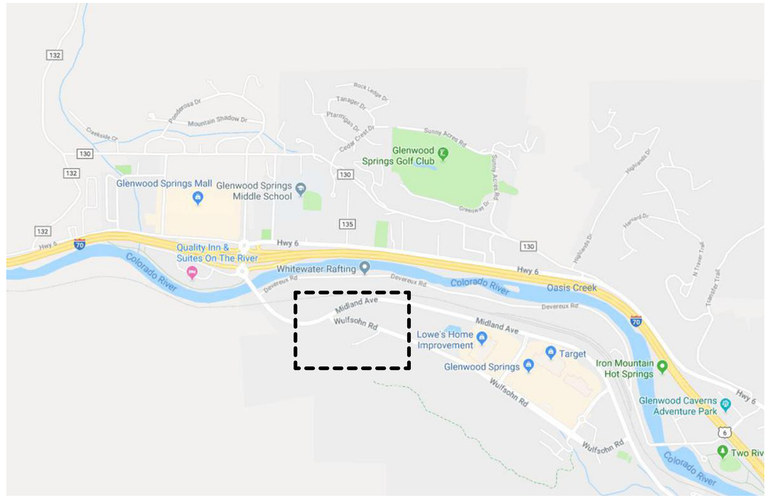
ROARING FORK TRANSPORTATION AUTHORITY

W.G. ADMINISTRATION BUILDING (PHASE 6B)

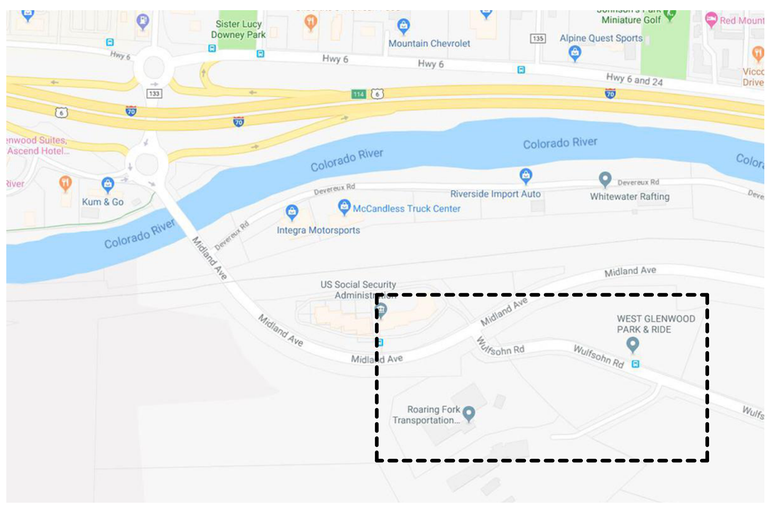
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORADO 81601

50% CONSTRUCTION DOCUMENTS

VICINITY MAP



LOCATION MAP



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SEH

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ROARING FORK TRANSPORTATION AUTHORITY
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SEH Project	173800
Checked By	A. JAUCH
Drawn By	SEH

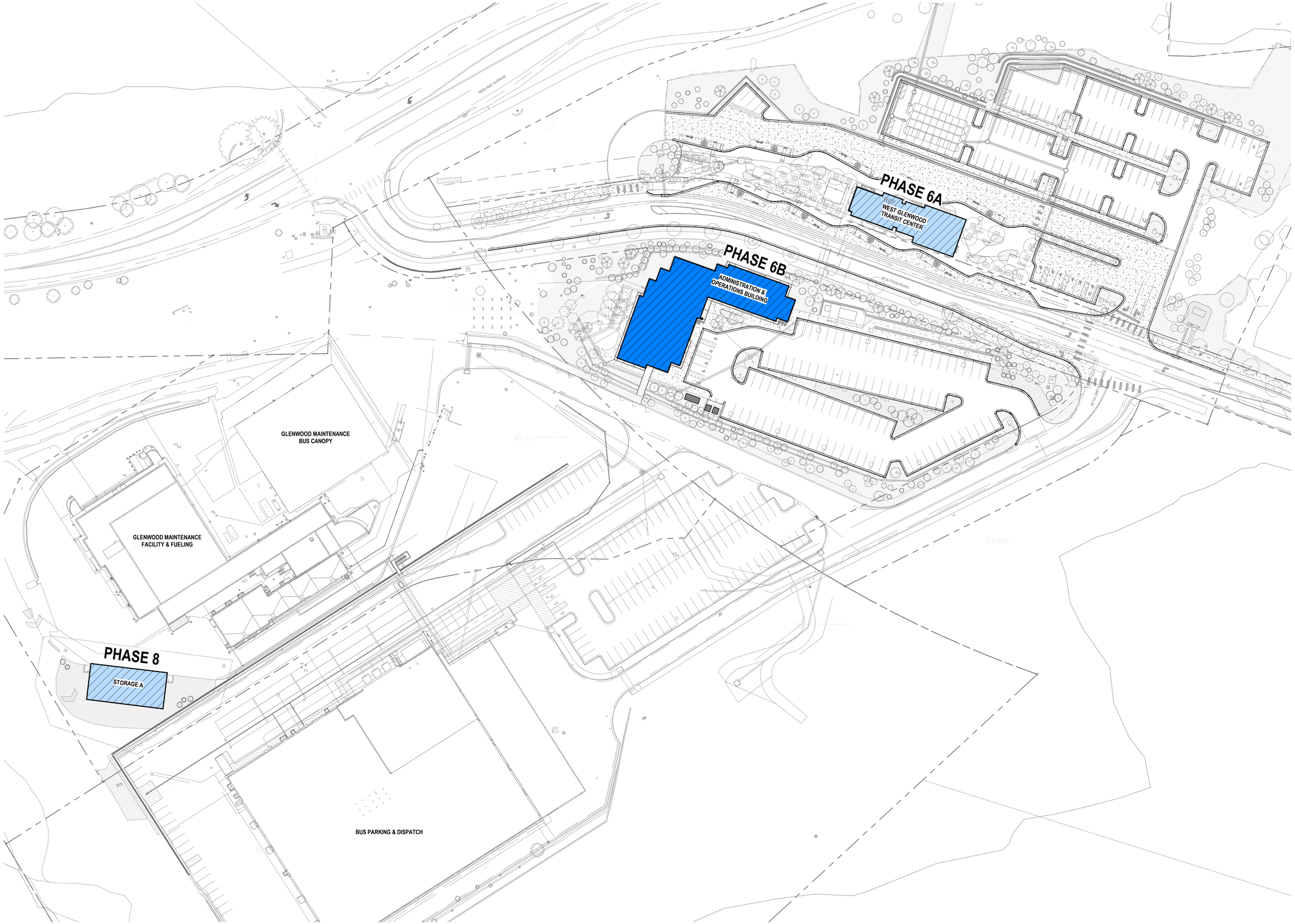
Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/24

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

COVER SHEET

G004



1 G006 OVERALL PROJECT PHASING PLAN (PH 6B)
1" = 50'-0"

TRUE NORTH

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ROARING FORK TRANSPORTATION AUTHORITY

W.G. TRANSIT CENTER (PHASE 6B)

2307 WULFSCHN RD.
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SEH Project	173800
Checked By	A. JAUCH
Drawn By	C. RODRIGUEZ

Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/24

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

OVERALL PROJECT PHASING PLAN (PH-6B)

G006

SURVEYING

1. PRIOR TO BEGINNING WORK ON THE PROJECT, THE CONTRACTOR'S SURVEYOR SHALL PERFORM A SURVEY TO VERIFY ALL SURVEY CONTROL POINTS, SECTION CORNERS, AND BENCHMARKS AS SHOWN ON THE HORIZONTAL CONTROL PLAN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL LAND SURVEY MONUMENTS DISRUPTED BY CONSTRUCTION ACTIVITIES OR BY NEGLIGENCE ON THE PART OF THE CONTRACTOR. THE CONTRACTOR IS REQUIRED TO FOLLOW COLORADO STATE LAW REGARDING SURVEY MONUMENTS. THE CONTRACTOR SHALL RETAIN A COLORADO LICENSED PROFESSIONAL LAND SURVEYOR TO RESET ANY AFFECTED SURVEY MONUMENTS. THIS WILL NOT BE PAID SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.

2. PROPOSED FINISHED GROUND ELEVATIONS FOR ITEMS TO BE ADJUSTED, RESET OR MODIFIED SHALL BE FIELD VERIFIED BY THE CONTRACTOR. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IF DISCREPANCIES ARE NOTED.

GENERAL

1. THE CONTRACTOR SHALL PREPARE A TRAFFIC CONTROL PLAN AND OBTAIN CITY APPROVAL PRIOR TO ANY WORK WITHIN PUBLIC RIGHT-OF-WAY. THE CLOSURE AND DETOUR DURATION SHOULD BE LIMITED AS MUCH AS POSSIBLE.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY.

3. THE CONTRACTOR SHOULD REMOVE MATERIALS AND EQUIPMENT FROM THE ROADWAY ROW AT THE CLOSE OF DAILY OPERATIONS. THE CONTRACTOR SHALL NOT STOCKPILE MATERIAL IN THE CLEAR ZONE OF THE TRAVELED WAY.

4. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PROJECT PERMITS ASSOCIATED WITH CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR BEING AWARE OF, NOTIFYING, COORDINATING AND SCHEDULING ALL INSPECTIONS REQUIRED FOR FINAL APPROVALS AND PROJECT ACCEPTANCE. ALL WORK, INCLUDING CORRECTION WORK, IS SUBJECT TO NOTIFICATION AND INSPECTION REQUIREMENTS.

5. IF ANY OF THE CONTRACTOR'S OPERATIONS DESTROY OR DAMAGE ANY PROPERTY, PUBLIC OR PRIVATE, THE CONTRACTOR SHALL PROMPTLY REPAIR OR REPLACE SUCH PROPERTY, TO THE SATISFACTION OF THE PROJECT MANAGER, BEFORE THE CITY WILL ACCEPT OR PAY FOR THE WORK PERFORMED UNDER THE CONTRACT. IF THE CONTRACTOR FAILS TO REPAIR OR REPLACE SUCH PROPERTY, THE CITY, AT THE SOLE DISCRETION OF THE MANAGER, MAY UNDERTAKE SUCH REPAIR OR REPLACEMENT AND DEDUCT THE COST OF THE SAME FROM AMOUNTS PAYABLE TO THE CONTRACTOR UNDER THE CONTRACT.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE, AND AVAILABLE TO THE CITY INSPECTOR AT ALL TIMES. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL SUBMIT RECORD DRAWINGS, IN AN AUTOCAD COMPATIBLE FORMAT, TO THE CITY. THE PRODUCTION OF THESE DOCUMENTS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE WORK.

7. PRIOR TO FINAL ACCEPTANCE, ALL DISTURBED PORTIONS OF ROADWAY ROW SHALL BE CLEANED UP AND RESTORED TO THEIR ORIGINAL CONDITION, SUBJECT TO CITY APPROVAL.

8. NO WORK SHALL BE PERMITTED ON WEEKENDS OR HOLIDAYS WITHOUT PRIOR AUTHORIZATION OR UNLESS OTHERWISE SPECIFIED. THE CITY MAY RESTRICT WORK IN THE ROW DURING ADVERSE WEATHER CONDITIONS OR DURING PERIODS OF HIGH TRAFFIC VOLUME.

9. NO CLEATED OR TRACKED EQUIPMENT MAY WORK IN OR MOVE OVER PAVED SURFACES WITHOUT MATS.

10. IF UNKNOWN/UNIDENTIFIED UNDERGROUND STORAGE TANKS, DRUMS, ODOROUS SOIL, STAINED SOIL, ASBESTOS-CEMENT PIPE, TRANSITE, BUILDING DEBRIS OR WASTE MATERIALS ARE ENCOUNTERED DURING THE PROJECT, CONTRACTOR SHALL IMMEDIATELY STOP WORK IN THE AREA AND INFORM THE OWNER.

11. CONTRACTOR SHALL TAKE REASONABLE MEASURES TO PREVENT PARTICULATE MATTER FROM BECOMING AIRBORNE AND TO PREVENT THE VISIBLE DISCHARGE OF FUGITIVE PARTICULATE EMISSIONS BEYOND THE PROPERTY ON WHICH THE EMISSIONS ORIGINATE. THE MEASURES TAKEN MUST BE EFFECTIVE IN THE CONTROL OF FUGITIVE PARTICULATE EMISSIONS AT ALL TIMES ON THE SITE, INCLUDING PERIODS OF INACTIVITY SUCH AS EVENINGS, WEEKENDS, AND HOLIDAYS AS WELL AS ANY OTHER PERIOD OF INACTIVITY.

12. THE CONTRACTOR SHALL PROPERLY DISPOSE OF ALL WASTE FROM PROJECT IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.

13. A STATE CONSTRUCTION STORMWATER DISCHARGE PERMIT IS REQUIRED AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE PERMIT. 'FOR REFERENCE' EROSION CONTROL PLAN DRAWINGS ARE PROVIDED FOR INFORMATION PURPOSES ONLY.

PROJECT PLANS, SPECIFICATIONS, PERMITS

1. ALL MATERIAL, EQUIPMENT, INSTALLATION AND CONSTRUCTION WITHIN THE ROW SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING STANDARD REFERENCES AS APPLICABLE:
   - 1.1. CITY OF GLENWOOD SPRINGS ENGINEERING STANDARDS
   - 1.2. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STANDARD PLANS, (M&S STANDARDS)
   - 1.3. FEDERAL HIGHWAY ADMINISTRATION (FHWA), MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS AND THE COLORADO SUPPLEMENT THERETO
   - 1.4. AMERICAN ASSOCIATION OF STATE AND HIGHWAY TRANSPORTATION OFFICIALS (AASHTO) ROADSIDE DESIGN GUIDE

2. THE OWNER RESERVES THE RIGHT TO ACCEPT OR REJECT ANY MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO THE LATEST EDITION OF THE APPLICABLE STANDARDS SPECIFICATIONS, OR HALT CONSTRUCTION UNTIL THE CONFLICT IS RESOLVED.

3. THE CONTRACTOR SHALL HAVE ONSITE AT ALL TIMES, ONE COPY OF THE APPROVED PLANS, ONE COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND COPIES OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB.

4. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED ON THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE OWNER IMMEDIATELY.

UTILITIES

1. THE TYPE, SIZE, LOCATION AND NUMBER OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THE DRAWINGS, UNLESS OTHERWISE NOTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK BEFORE COMMENCING NEW CONSTRUCTION. THE CONTRACTOR SHALL COOPERATE WITH COMPANIES TRYING TO COORDINATE THE RELOCATION EFFORT. LINES NOT RELOCATED SHALL BE PROTECTED BY THE CONTRACTOR IN PLACE. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 811, AT LEAST 2 WORKING DAYS PRIOR TO BEGINNING EXCAVATION OR GRADING.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITIES DURING CONSTRUCTION AND SHALL HOLD THE CITY AND ITS ENGINEERS HARMLESS FOR DAMAGES ARISING FROM THE CONTRACTOR'S FAILURE TO ADEQUATELY PROTECT EXISTING UTILITIES. DAMAGED UTILITIES SHALL BE REPAIRED BY AND AT THE EXPENSE OF THE CONTRACTOR.

3. THE CONTRACTOR IS REQUIRED TO RESET, ADJUST OR REPLACE ANY UTILITIES THAT ARE IMPACTED BY CONSTRUCTION AND ARE INTENDED TO REMAIN WITHIN THE PROJECT LIMITS.

4. FIRE HYDRANT ASSEMBLY INCLUDES INSTALLATION OF ALL MATERIALS SHOWN ON WATER STANDARD DETAIL W03 (FIRE HYDRANT ASSEMBLY DETAIL)

5. CITY INSPECTIONS ARE REQUIRED FOR THE ENTIRE LENGTH OF BOTH WATER AND SEWER SERVICE LINES. PROVIDE CITY 2 BUSINESS DAYS' NOTICE.

6. PER SB18-167, ALL NEW UNDERGROUND FACILITIES INSTALLED ON OR AFTER JANUARY 1, 2020, MUST BE ELECTRONICALLY LOCATABLE WHEN INSTALLED.

WATER

1. WATER SERVICE LINES ARE TO BE K COPPER OR PLASTIC POLY ETHYLENE (PE) ONLY, NO COPPER PIPE LARGER THAN 1" IN DIAMETER IS PERMITTED. USE PE OR DUCTILE IRON PIPE (DIP) ABOVE 1" DIAMETER. ONLY NSF61 MATERIALS ARE TO BE USED. GALVANIZED AND BLACK IRON PIPING AND FITTINGS ARE NOT ALLOWED ON THE DOMESTIC LINE AND ARE ONLY PERMITTED AFTER THE BF ON FIRE LINES.

2. SERVICE LINES ARE TO BE ALL NEW MATERIAL WITHOUT ANY UV FADING, KINKS, OR ANY DAMAGE.

3. NO SERVICES SHALL HAVE IN-LINE COUPLINGS UNLESS APPROVED IN ADVANCE BY INSPECTOR.

4. ONLY COMPRESSION TYPE CORPORATION AND CURB-STOP VALVES AND FITTINGS ARE PERMITTED UNDERGROUND, NO SOLDER OR GLUE JOINTS ARE PERMITTED ON UNDERGROUND WATER PIPES.

5. SERVICE VALVE MUST HAVE A MCDONALD TYPE CURB BOX WITH STEM. THE CAP MUST BE PROTECTED AND BE AT OR ABOVE FINISHED GRADE, PROVIDE FLAT 12" STONE OR CONCRETE PAD UNDER VALVE, LOCATED WITHIN 1' PROPERTY LINE.

6. ANY EXTENSION COUPLINGS TO CURB BOX MUST BE WELDED. CAP IS TO BE "HAND TIGHT".

7. 6" MINIMUM BEDDING UNDER PIPE, 12" OVER TOP - ¾" MINUS SCREENED AGGREGATE, BACK FILL WITH 6" MINUS STRUCTURAL FILL OR 6" MINUS PIT RUN.

8. THE MINIMUM EARTH COVER OVER WATER TRANSMISSION AND DISTRIBUTION LINES SHALL BE 5.5 FEET. A GREATER DEPTH SHALL BE PROVIDED TO AVOID EXCESSIVE HIGH POINTS IN THE MAIN OR WHERE IT IS NECESSARY TO CLEAR EXISTING STRUCTURES OR OBSTRUCTIONS. WATER SERVICE LINES SHALL HAVE THE SAME MINIMUM COVER.

9. CONNECTIONS TO CITY WATER MAINS MUST BE PERFORMED WITH CITY INSPECTOR ON SITE.

10. CONTRACTOR MUST PROVIDE AS-BUILT DRAWING OF ALL NEW PRIVATE LINES.

SANITARY SEWER

1. SDR-35 PUSH-ON GASKET JOINT, PVC PIPE ONLY – 90 DEGREE GASKET SDR-35 WYE FOR CLEANOUT REQUIRED.

2. NO GLUE TOGETHER PIPE JOINTS UNDERGROUND OUTSIDE FOUNDATION.

3. 6" MINIMUM BEDDING UNDER PIPE, 12" OVER TOP - ¾" MINUS SCREENED AGGREGATE, BACK FILL WITH 6" MINUS STRUCTURAL FILL OR 6" MINUS PIT RUN.

4. BELL ENDS MUST FACE UP-HILL, ALL JOINTS FULLY INSERTED.

5. USE FOOD GRADE LUBRICANT "DUCK BUTTER" AT ALL SLIP JOINTS.

6. SEWER LINES MUST BE AT LEAST 10' FROM WATER LINES.

7. IF CROSSING WATER LINES, CENTER A 20' STICK OF C-905 OR SDR-35 OF SEWER SERVICE PIPE AT THE CROSSING.

8. SLOPE MUST BE GREATER THAN 2%.

9. NO 90 DEGREE FITTINGS.

10. CLEAN OUT WITH "Y" EVERY 150' OF PIPE RUN OR EVERY 180 DEGREES OF BENDS.

11. CLEAN OUT WITH DOUBLE "Y" WITHIN 5' OF OUTSIDE BUILDING FOUNDATION WALL, A SINGLE "Y" CLEANOUT IS ALLOWED IF A CO IS ACCESSIBLE INSIDE BUILDING.

12. ACCESS TO CLEAN OUT WILL BE AT 4" (+/-1") ABOVE FINISH GRADE, WATERTIGHT CAPPED AND MARKED WITH REBAR OR IRON POST. ACCESS WITHIN PAVED AREAS WILL REQ. STREET BOX.

13. CONTRACTOR WILL PROVIDE AS-BUILT DRAWING OF ALL NEW PRIVATE SERVICE LINES.

REMOVALS, EXISTING ITEMS, SAW CUTTING

1. ALL ITEMS TO BE REMOVED AND NOT RESET SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.

2. WHERE IT IS REQUIRED TO REMOVE EXISTING CONCRETE OR ASPHALT, CUTTING SHALL BE DONE TO A NEAT WORK LINE TO FULL DEPTH USING A SAW, CUTTING WHEEL, OR OTHER METHOD APPROVED BY THE PROJECT MANAGER. THIS WILL NOT BE PAID SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.

3. REMOVAL OF EXISTING CURB AND GUTTER, SIDEWALK, DRIVEWAYS, CURB CUTS, AND OTHER CONCRETE ITEMS THAT ARE ATTACHED OR ADJACENT TO OTHER CONCRETE ITEMS SHALL BE REMOVED TO THE NEAREST JOINT, AS NEEDED TO AVOID DAMAGING THE REMAINING CONCRETE ITEMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ADJACENT SIDEWALK DURING CURB AND GUTTER REMOVAL AND SHALL REPLACE DAMAGED SECTIONS AT NO ADDITIONAL COST TO THE PROJECT.

4. THE CONTRACTOR IS REQUIRED TO RESET, ADJUST, OR REPLACE ANY UTILITIES, LANDSCAPING, SPRINKLER SYSTEMS, SIGNS, SIDEWALKS, ETC. THAT ARE IMPACTED BY CONSTRUCTION AND ARE NOT DESIGNATED TO BE REMOVED.

PAVEMENT

1. A TACK COAT IS REQUIRED PRIOR TO THE PLACEMENT OF SUBSEQUENT LIFTS OF HMA.

2. WHERE NEW CONSTRUCTION IS TO ABUT EXISTING PAVEMENT, THE EXISTING PAVEMENT SHALL BE REMOVED TO A NEAT VERTICAL LINE TO CREATE A CLEAN CONSTRUCTION JOINT.

3. WHEN AN EXISTING ASPHALT STREET IS CUT, THE STREET MUST BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN ITS ORIGINAL CONDITION. THE EXISTING STREET CONDITION SHALL BE DOCUMENTED BEFORE ANY CUTS ARE MADE. PATCHING SHALL BE DONE IN CONFORMANCE WITH THE PROJECT STANDARDS. THE FINISHED PATCH SHALL BLEND SMOOTHLY INTO THE EXISTING SURFACE. ALL LARGE PATCHES SHALL BE PAVED WITH AN ASPHALT LAY-DOWN MACHINE.

EARTHWORK AND EXCAVATIONS

1. THE CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE AND TOES OF SLOPE AS SHOWN ON THE PLANS. ANY DISTURBANCE BEYOND THESE LIMITS SHALL BE RESTORED TO ORIGINAL CONDITIONS AT THE EXPENSE OF THE CONTRACTOR.

2. WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. COST FOR DUST PALLIATIVE SHALL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE WORK.

3. MOISTURE DENSITY CONTROL SHALL BE APPLIED FULL DEPTH FOR ALL FILL.

4. DURING EACH PHASE OF CONSTRUCTION, THE CONTRACTOR SHALL SHAPE TO DRAIN AND COMPACT THE WORK AREA TO A UNIFORM CROSS-SECTION. ELIMINATE ALL RUTS AND LOW SPOTS THAT COULD HOLD WATER. AREAS AND FACILITIES SUBJECTED TO FLOODING, REGARDLESS OF THE SOURCE OF WATER, SHALL BE PROMPTLY DEWATERED AND RESTORED AT NO ADDITIONAL COST TO THE CITY.

5. WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL IS TO BE PLACED ON THE UPHILL SIDE OF TRENCHES.

6. CONTRACTOR TO REVIEW AND COMPLY WITH RECOMMENDATIONS OF THE "FINAL REPORT, GEOTECHNICAL INVESTIGATION, RFTA WEST GLENWOOD SPRINGS PARK N RIDE, PAVEMENT AND RETAINING WALL RECOMMENDATIONS, GLENWOOD SPRINGS, COLORADO" JULY 30, 2015 PREPARED BY YEH AND ASSOCIATES.

7. EXISTING ONSITE SOIL MATERIALS MAY BE REUSED AS FILL UNDER PAVING AFTER SCREENING AND RECOMPACTION OF MATERIAL TO RECOMMENDATIONS IN PROJECT GEOTECHNICAL STUDY. MATERIALS BENEATH FOUNDATIONS SHALL BE STRUCTURAL FILL.

CONCRETE

1. IF CONCRETE REPLACEMENT IS NECESSARY, THE ENTIRE AFFECTED SLAB OR PANEL MUST REPLACED.

2. SIDEWALK SHALL BE CLASS P CONCRETE. THE USE OF 3/4 INCH (#67) TOP SIZE AGGREGATE IS ALLOWED.

3. BENDER BOARDS (TWO INCH MINIMUM THICKNESS) SHALL BE USED ON ALL CURVES OF LESS THAN 75 FOOT RADIUS.

4. THE CONTRACTOR SHALL INSTALL ½ IN EXPANSION JOINT MATERIAL BETWEEN THE CURB, CURB AND GUTTER AND THE SIDEWALK, AND AROUND INLET STRUCTURES OR BLOCKOUTS OR AS DIRECTED BY THE PROJECT MANAGER.

5. CURB RAMPS SHALL BE CONSTRUCTED USING TRUNCATED DOMES AS SHOWN IN THE CITY STANDARD DETAILS. TRUNCATED DOMES AND GROOVES SHALL NOT BE PAID SEPARATELY, BUT INCLUDED IN THE COST OF THE CONCRETE CURB RAMP.

TRAFFIC

1. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE TRAFFIC CONTROL THROUGHOUT THE PROJECT, INCLUDING PROPER TRAFFIC CONTROL DEVICES AND PERSONNEL.

2. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY PERMITS REQUIRED FOR WORK IN CDOT RIGHT-OF-WAY.

DRAINAGE

1. ALL SEWER PIPES SHALL BE INSTALLED WITH CLASS B BEDDING AS A MINIMUM.

2. SANITARY SEWER PIPES SHALL BE SDR 26 PVC AND CONFORM TO ASTMD3034.

3. THE CONTRACTOR PERFORMING WORK ON ANY PUBLIC OR PRIVATE STORM SEWER FACILITY OR APPURTENANCE MUST BE PROPERLY TRADE LICENSED AS A COMPANY AND HAVE A LICENSED PLUMBER OR CERTIFIED JOURNEYMAN DRAINLAYER ON SITE DURING THE WORK.

4. ACCESS MUST BE MAINTAINED FOR ALL SEWER MANHOLES DURING CONSTRUCTION. MINIMUM ACCESS TO EACH MANHOLE IS A 20 FOOT WIDE LANE FROM THE NEAREST PUBLIC RIGHT OF WAY, CENTERED AT THE MANHOLE INCLUDING A 10 FOOT RADIUS AROUND THE MANHOLE AND 22.0 FEET OF VERTICAL CLEARANCE.

EROSION CONTROL

1. THE CONTRACTOR MUST IMPLEMENT AND COMPLY WITH THE APPROVED EROSION CONTROL PLAN AND ASSOCIATED DOCUMENTS FOR THIS PROJECT.

2. THE CONTRACTOR SHALL PREVENT SEDIMENT, DEBRIS AND ALL OTHER POLLUTANTS FROM ENTERING THE STORM SEWER SYSTEM DURING ALL DEMOLITION, EXCAVATION, TRENCHING, BORING, GRADING, OR OTHER CONSTRUCTION OPERATIONS THAT ARE PART OF THIS PROJECT. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR REMEDIATION OF ANY ADVERSE IMPACTS TO THE MUNICIPAL SEPARATE STORM SEWER SYSTEM, RECEIVING WATERS, WATERWAYS, WETLANDS, AND OR OTHER PUBLIC OR PRIVATE PROPERTIES, RESULTING FROM WORK DONE AS PART OF THIS PROJECT.

3. THE CONTRACTOR SHALL REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO OR, ACCUMULATE IN, THE FLOWLINES, STORM DRAINAGE APPURTENANCES, AND PUBLIC RIGHTS OF WAYS OF THE CITY AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SAID REMOVAL SHALL BE CONDUCTED IN A TIMELY MANNER.

4. SOIL STABILIZATION MEASURES SHALL BE IMPLEMENTED WITHIN FOURTEEN (14) DAYS FOLLOWING COMPLETION OF GRADING ACTIVITIES. STABILIZATION OF DISTURBED AREAS ADJACENT TO RECEIVING WATERS OR WITH SLOPES 3 TO 1 OR GREATER SHALL BE COMPLETED WITHIN SEVEN (7) DAYS FOLLOWING COMPLETION OF GRADING ACTIVITIES. NOTE: FEDERAL AND STATE REGULATIONS MAY SOON REQUIRE STABILIZATION WITHIN SEVEN (7) DAYS OF COMPLETION OF GRADING ACTIVITIES.

5. THE DEVELOPER, GENERAL CONTRACTOR, GRADING CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL INSURE THAT ALL LOADS OF CUT AND FILL MATERIAL IMPORTED TO OR EXPORTED FROM THIS SITE SHALL BE PROPERLY COVERED TO PREVENT LOSS OF THE MATERIAL DURING TRANSPORT ON PUBLIC RIGHTS OF WAY.

6. THE USE OF REBAR TO ANCHOR BEST MANAGEMENT PRACTICES IS PROHIBITED.

7. SOILS THAT WILL BE STOCKPILED FOR MORE THAN THIRTY (30) DAYS SHALL BE PROTECTED FROM WIND AND WATER EROSION WITHIN FOURTEEN (14) DAYS OF STOCKPILE CONSTRUCTION. STABILIZATION OF STOCKPILES LOCATED WITHIN 100 FEET OF RECEIVING WATERS, OR WITH SLOPES 3 TO 1 OR GREATER SHALL BE COMPLETED WITHIN SEVEN (7) DAYS FOLLOWING STOCKPILE CONSTRUCTION. STABILIZATION AND PROTECTION OF THE STOCKPILE MAY BE ACCOMPLISHED BY ANY OF THE FOLLOWING: MULCHING, TEMPORARY/PERMANENT REVEGETATION OPERATIONS, OR EROSION CONTROL MATTING/GEOTEXTILES. IF STOCKPILES ARE LOCATED WITHIN 100 FEET OF RECEIVING WATERS, A DRAINAGEWAY OR THE SITE PERIMETER, ADDITIONAL SEDIMENT CONTROLS SUCH SHALL BE REQUIRED.

EROSION CONTROL

8. APPROVED EROSION AND SEDIMENT CONTROL 'BEST MANAGEMENT PRACTICES' SHALL BE MAINTAINED AND KEPT IN GOOD REPAIR FOR THE DURATION OF THIS PROJECT. AT A MINIMUM, THE PERMITTEE OR CONTRACTOR SHALL PRODUCE AND RETAIN WEEKLY WRITTEN INSPECTION RECORDS FOR ALL BMPS AND AFTER SIGNIFICANT PRECIPITATION EVENTS. ALL NECESSARY MAINTENANCE AND REPAIR SHALL BE COMPLETED IMMEDIATELY. ADDITIONALLY, STREET SWEEPING IS TO BE COMPLETED BY THE CLOSE OF THE BUSINESS DAY OR (AND) ON AN AS NEEDED BASIS THROUGHOUT THE DAY.

9. WATER USED IN THE CLEANING OF CEMENT TRUCK DELIVERY CHUTES SHALL BE DISCHARGED INTO A PREDEFINED, CONCRETE WASHOUT AREA ON THE JOB SITE. BERMED CONTAINMENT OR COMMERCIALLY AVAILABLE CONCRETE WASHOUT DEVICES THAT FULLY CONTAIN ALL WASH WATER ARE ACCEPTABLE. WASH WATER DISCHARGED INTO THE CONTAINMENT AREA OR DEVICE SHALL BE ALLOWED TO INFILTRATE, EVAPORATE, AND OR BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS. DRIED CEMENT WASTE IS TO BE REMOVED FROM THE CONTAINMENT AREA AND PROPERLY DISPOSED.

10. THE CONTRACTOR SHALL PROTECT ALL STORM SEWER FACILITIES ADJACENT TO ANY LOCATION WHERE PAVEMENT CUTTING OPERATIONS INVOLVING WHEEL CUTTING, SAW CUTTING, OR ABRASIVE WATER JET CUTTING ARE TO TAKE PLACE. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL WASTE PRODUCTS GENERATED BY SAID CUTTING OPERATIONS ON A DAILY BASIS OR AS NEEDED THROUGHOUT THE WORK DAY. THE DISCHARGE OF ANY WATER CONTAMINATED BY WASTE PRODUCTS FROM CUTTING OPERATIONS TO THE STORM SEWER SYSTEM IS PROHIBITED.

11. PAVED AND IMPERVIOUS SURFACES WHICH ARE ADJACENT TO CONSTRUCTION SITES MUST BE SWEPT ON A DAILY BASIS AND AS NEEDED DURING THE DAY WHEN SEDIMENT AND OTHER MATERIALS ARE TRACKED OR DISCHARGED ONTO THEM. EITHER SWEEPING BY HAND OR USE OF STREET SWEEPERS IS ACCEPTABLE. STREET SWEEPERS USING WATER WHILE SWEEPING IS PREFERRED IN ORDER TO MINIMIZE DUST. FLUSHING OFF PAVED SURFACES WITH WATER IS PROHIBITED.

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51 SERVICE CENTER DRIVE
ASPEN, COLORADO 81611

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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

PHASE 6B CIVIL NOTES

C021

LEGEND

- ROW LINE
- LOT LINE
- EASEMENT LINE
- EXISTING CONTOUR (4000)
- PROPOSED CONTOUR (4000)
- EXISTING FENCE
- EXISTING UNDERGROUND COMMUNICATIONS LINE (TV-BUR)
- EXISTING UNDERGROUND TELEPHONE LINE (T-BUR)
- EXISTING GAS LINE (G)
- EXISTING OVERHEAD POWER LINE (P-OH)
- EXISTING UNDERGROUND POWER LINE (P-BUR)
- EXISTING FIBER OPTIC LINE (FO)
- EXISTING STORM LINE (>>)
- EXISTING FOUNDATION DRAIN
- EXISTING WATER MAIN (W)
- EXISTING SANITARY LINE (S)
- EXISTING SANITARY FORCE MAIN (FM)
- EXISTING IRRIGATION LINE (IRR)
- EXISTING IRRIGATION CONTROL BOX
- EXISTING ELECTRIC VAULT
- EXISTING ELECTRIC METER
- EXISTING ELECTRIC PEDESTAL
- EXISTING ELECTRIC TRANSFORMER
- EXISTING ELECTRIC MANHOLE
- EXISTING FIBER OPTIC VAULT
- EXISTING COMMUNICATIONS PEDESTAL
- EXISTING POWER POLE
- EXISTING WATER SHUTOFF
- EXISTING IRRIGATION CONTROL VALVE
- EXISTING TREE
- EXISTING LANDSCAPING ROCK
- EXISTING SANITARY CLEANOUT
- EXISTING WATER MANHOLE
- EXISTING WATER VALVE
- PROPOSED WATER VALVE
- PROPOSED WATER THRUST BLOCK
- EXISTING SANITARY MANHOLE
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- EXISTING TRAFFIC SIGN
- PROPOSED TRAFFIC SIGN
- EXISTING STORM MANHOLE
- PROPOSED STORM MANHOLE
- EXISTING STORM INLET
- PROPOSED STORM INLET
- PROPOSED FLARED END SECTION

- PROPOSED WATER MAIN (W)
- PROPOSED SANITARY LINE (S)
- PROPOSED STORM PIPE
- PROPOSED PLANTER AND TREE GRATE STORM PIPE
- PROPOSED GAS PIPE (G)
- PROPOSED BURIED TELEPHONE/FIBER (FO)
- EXISTING GUARDRAIL
- PROPOSED GUARDRAIL
- PROPOSED RETAINING WALL
- PROPOSED CONCRETE PAVEMENT
- PROPOSED ASPHALT PAVEMENT
- PROPOSED SNOW STORAGE AREA
- EXISTING RIPRAP
- PROPOSED RIPRAP
- PROPOSED BUS CHARGING
- PROPOSED OVERHEAD LIGHTING

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PHASE 6B CIVIL NOTES

C022

N

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scale 10 feet

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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

PHASE 6B DEMOLITION PLAN

C121

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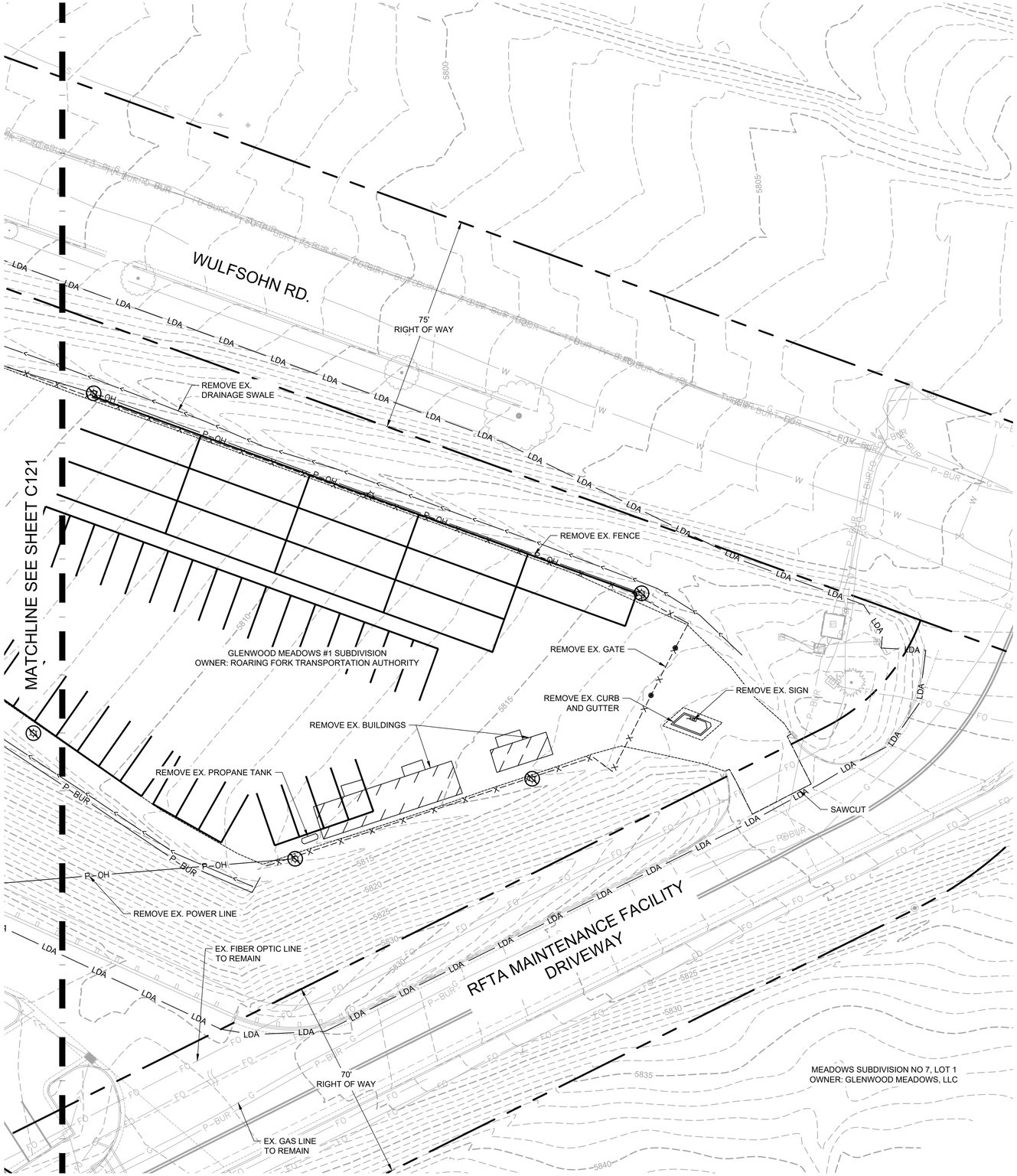

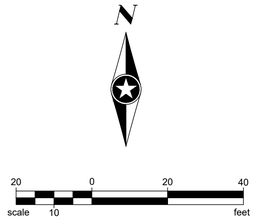

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PHASE 6B DEMOLITION PLAN

C122

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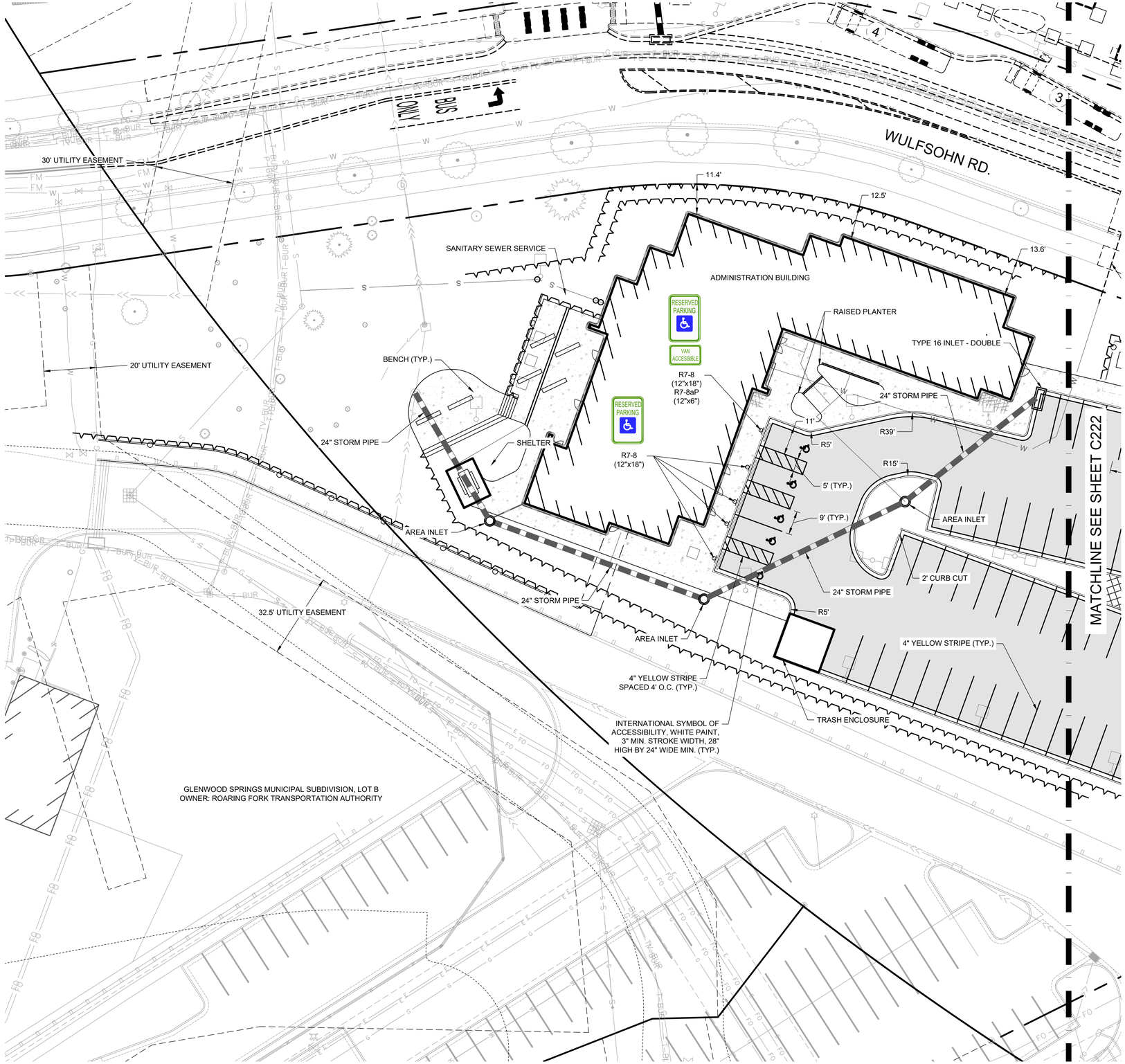

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scale 10 feet

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PHASE 6B SITE PLAN

C221

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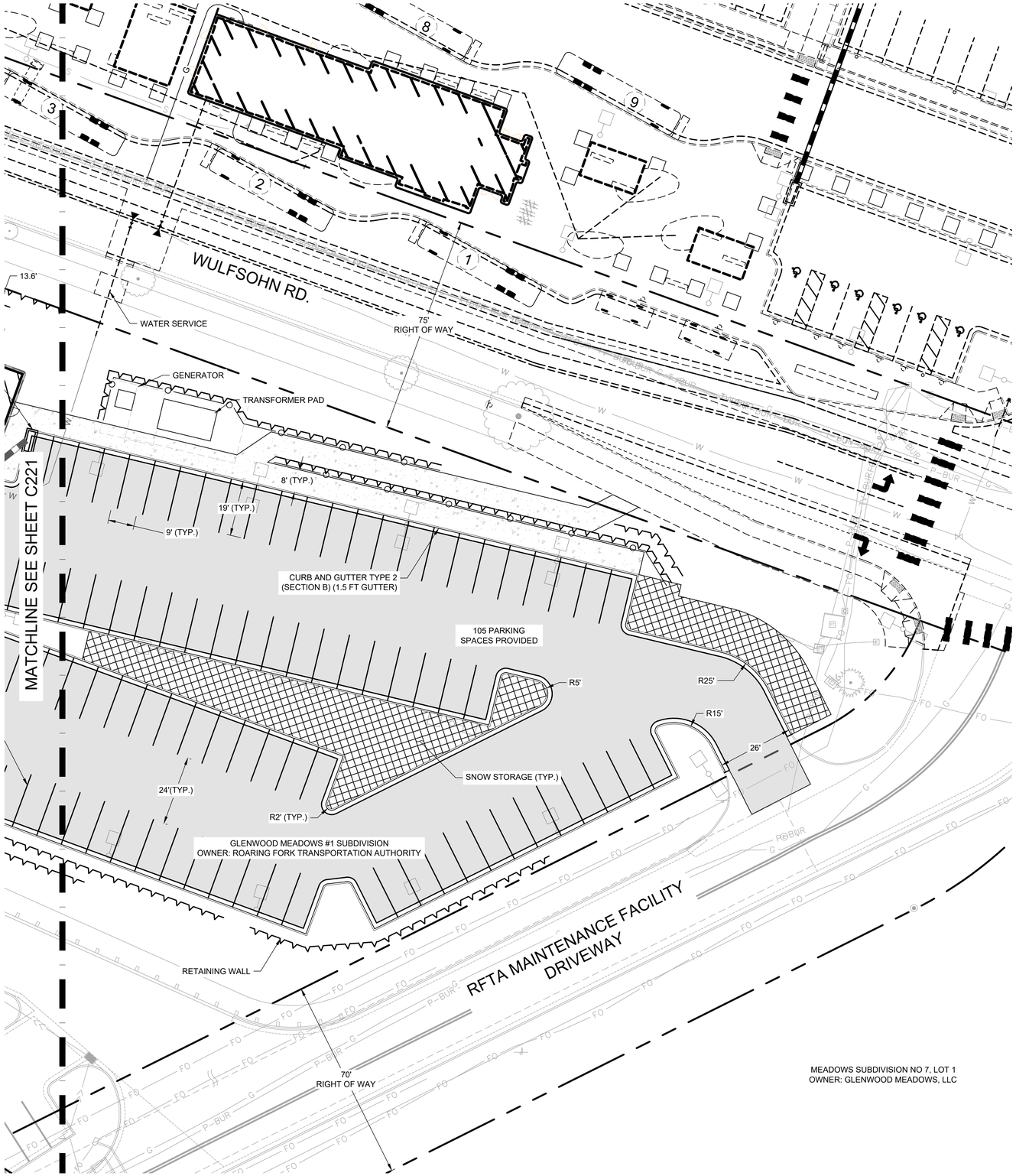

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scale 10 feet

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PHASE 6B SITE PLAN

C222

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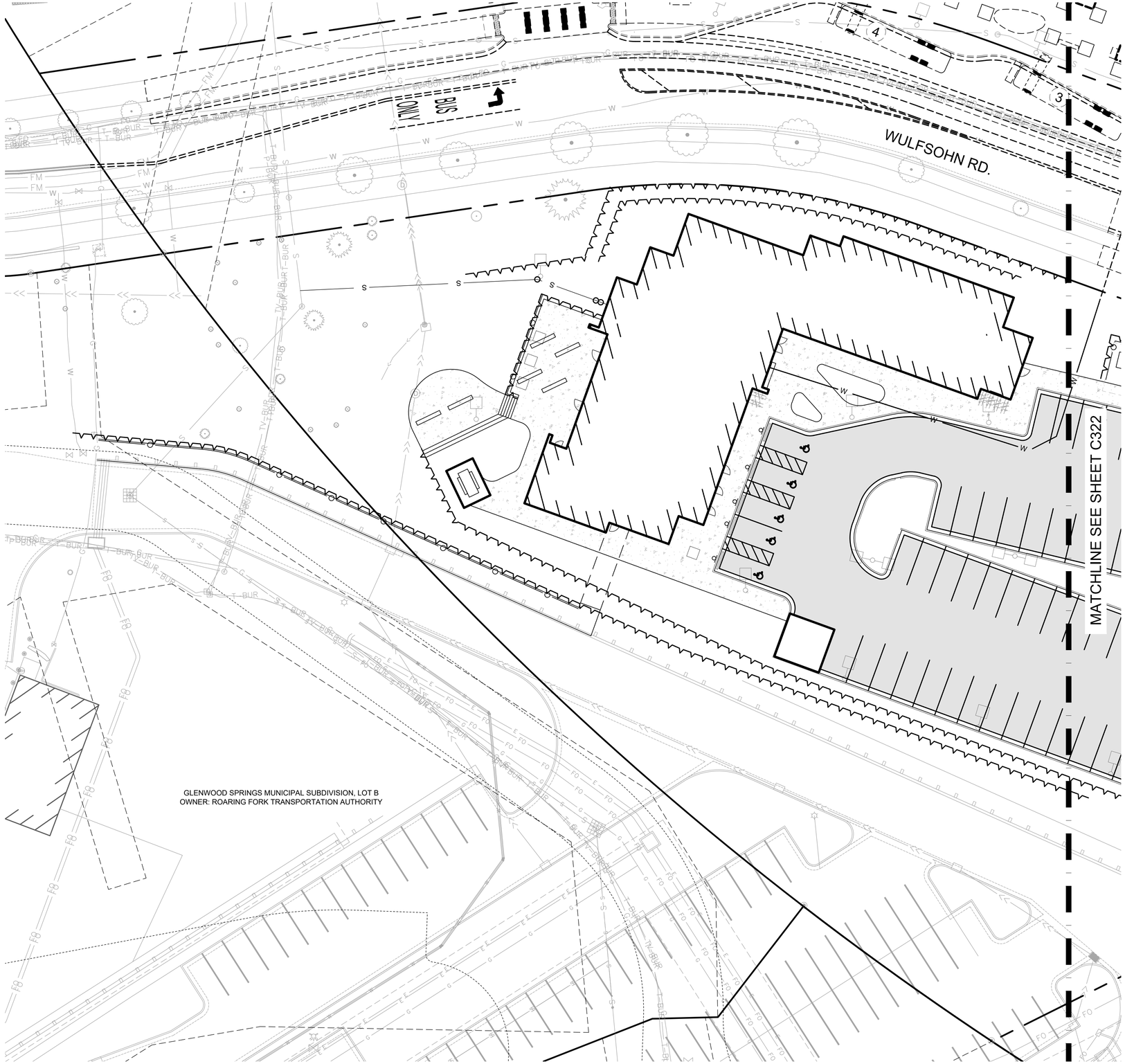

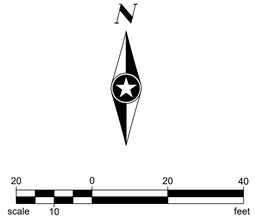

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PHASE 6B HORIZONTAL CONTROL PLAN

C321

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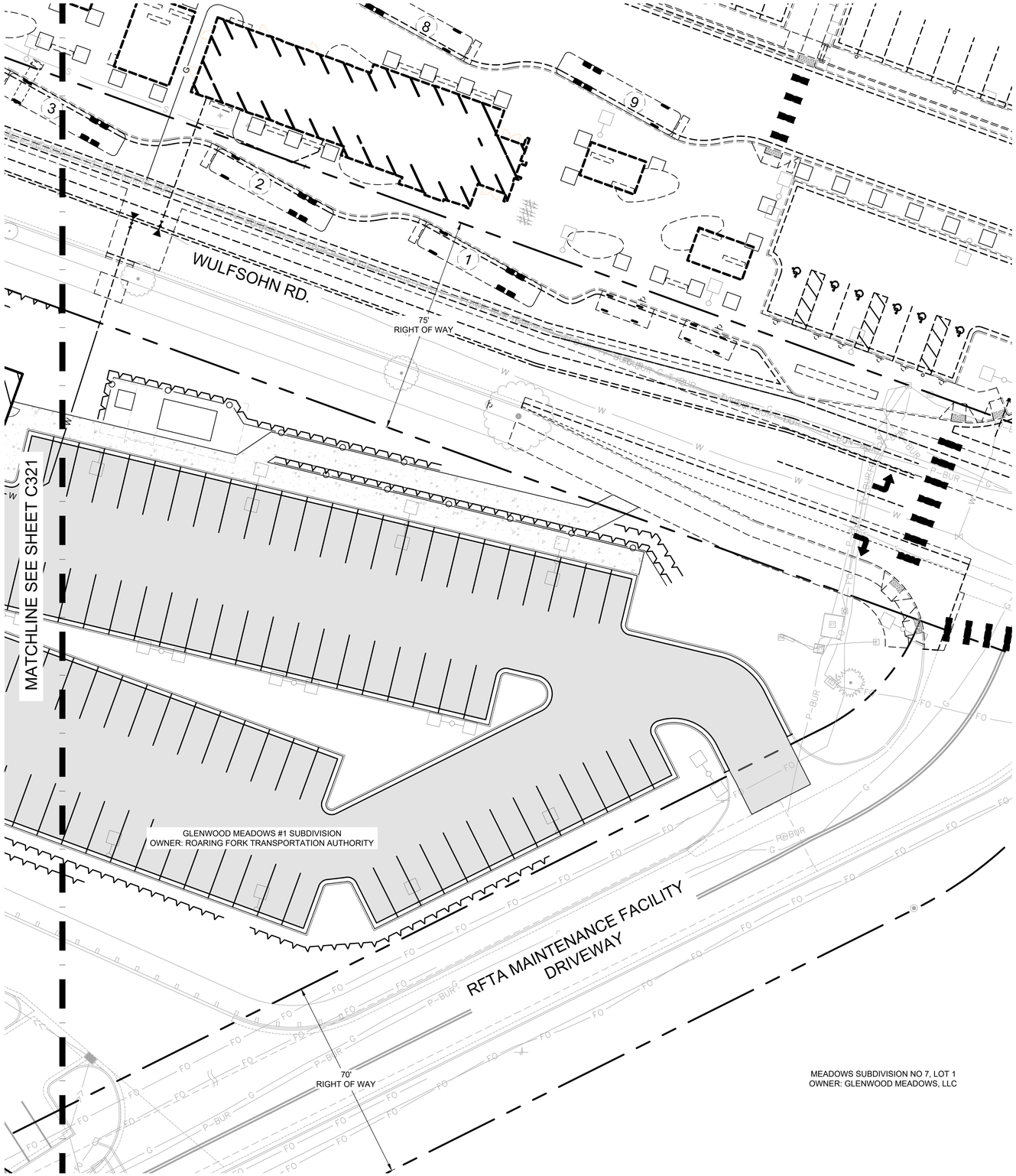

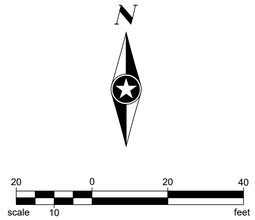

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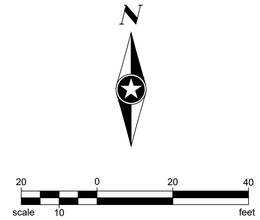
PHASE 6B HORIZONTAL CONTROL PLAN

C322



LEGEND

FFE = FINISHED FLOOR ELEVATION
LDA = LIMITS OF DISTURBED AREA

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PHASE 6B GRADING PLAN

C421

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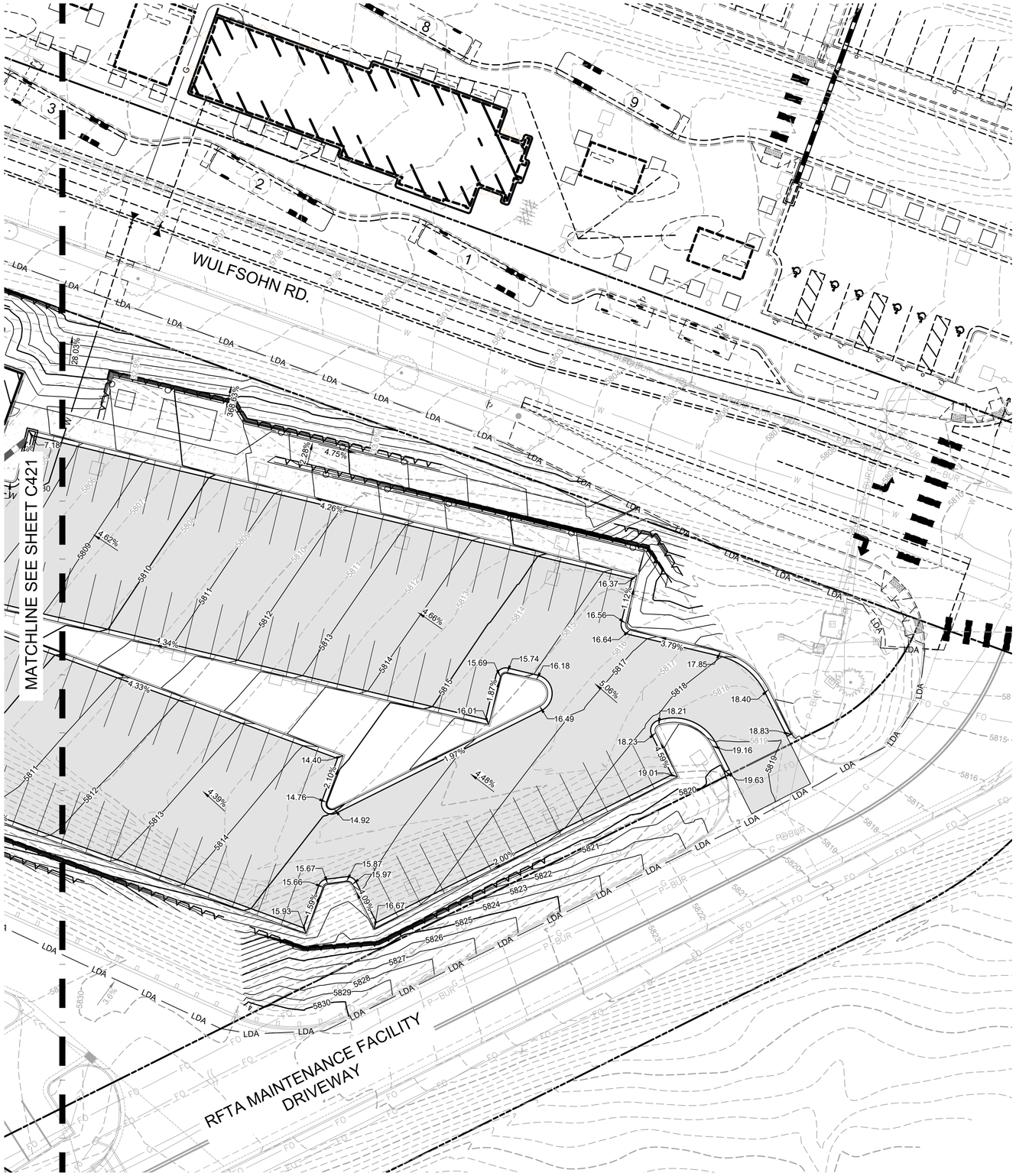

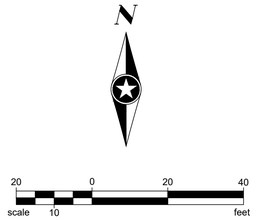

LEGEND

FFE = FINISHED FLOOR ELEVATION
LDA = LIMITS OF DISTURBED AREA

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PHASE 6B GRADING PLAN

C422

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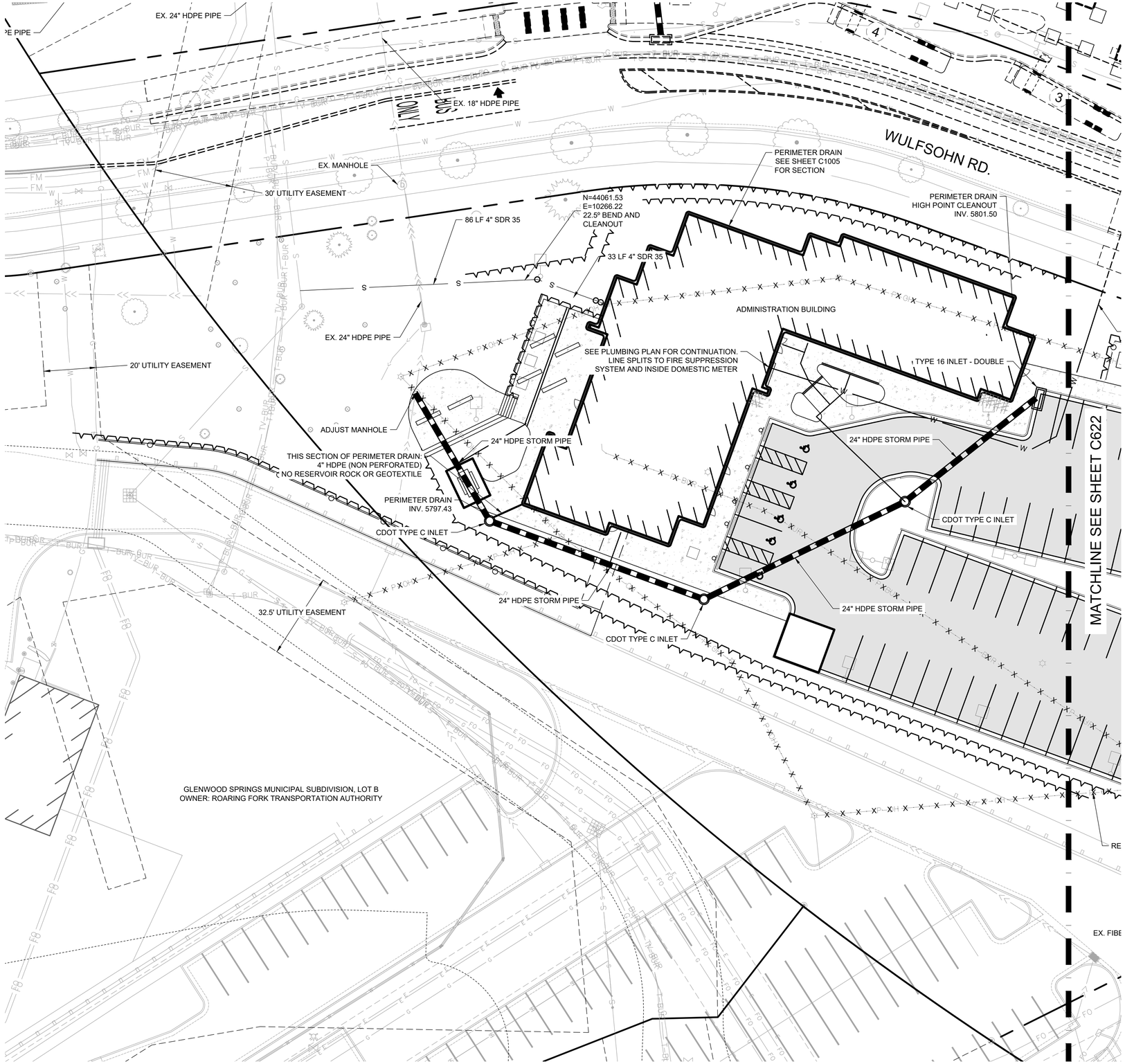

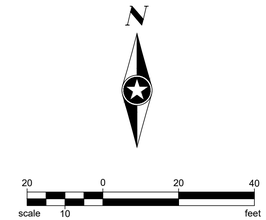

NOTES:

UTILITIES SHALL COMPLY WITH THE CITY OF GLENWOOD SPRINGS STANDARDS AND RESPECTIVE UTILITY PROVIDER STANDARDS.

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PHASE 6B UTILITY PLAN

C621

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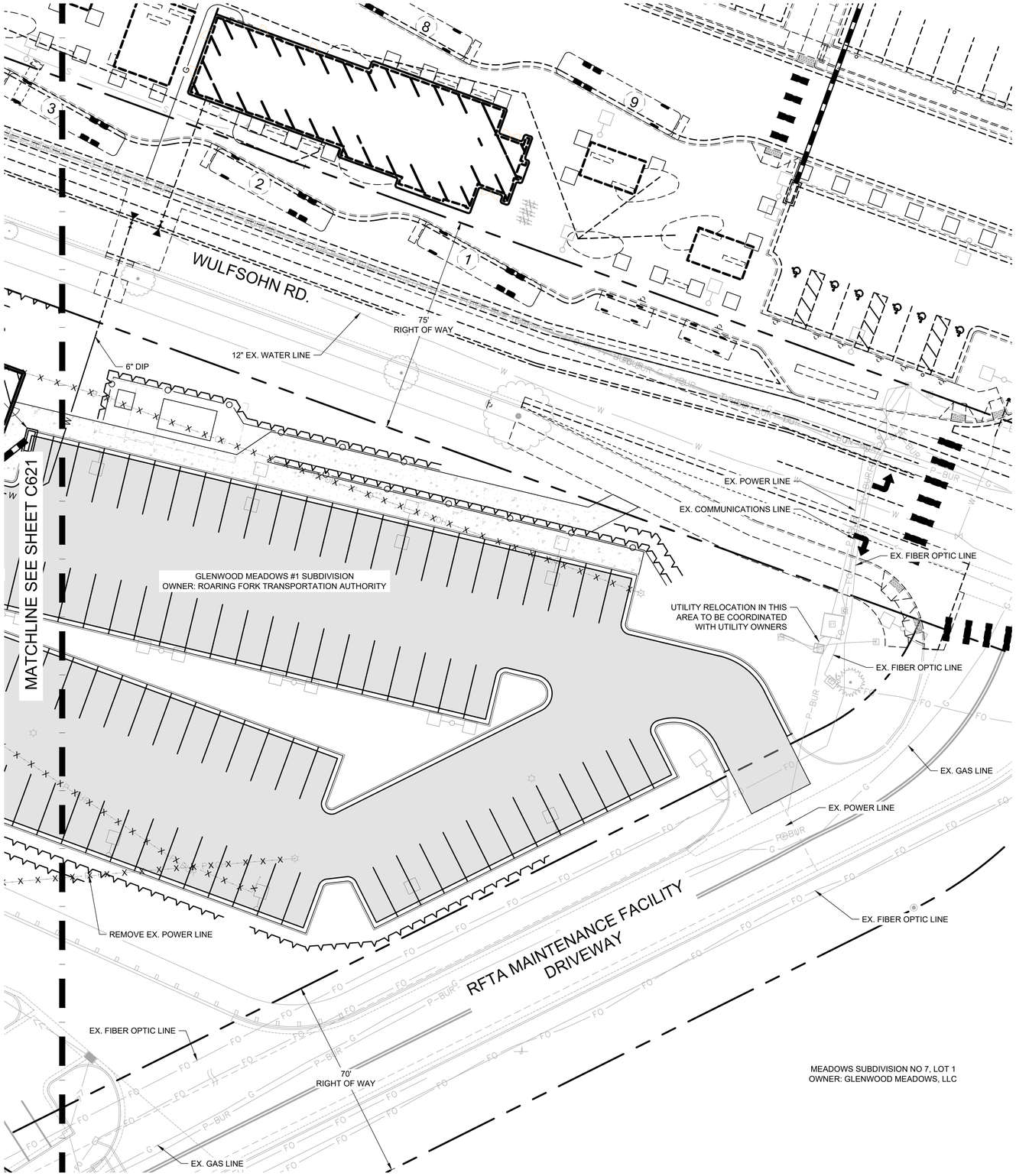

N

20 0 20 40
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NOTES:

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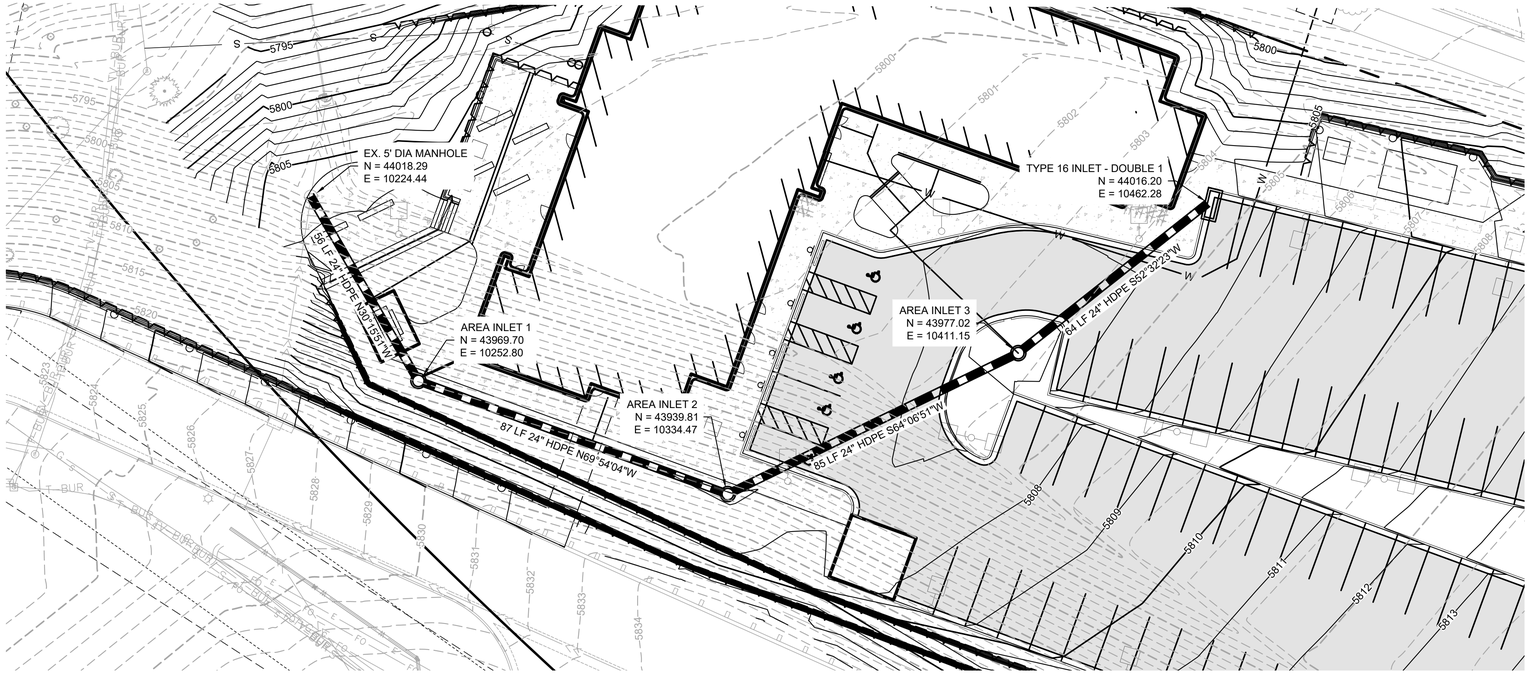
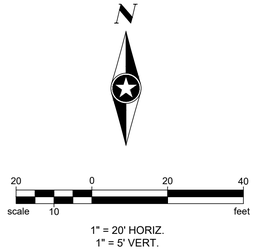
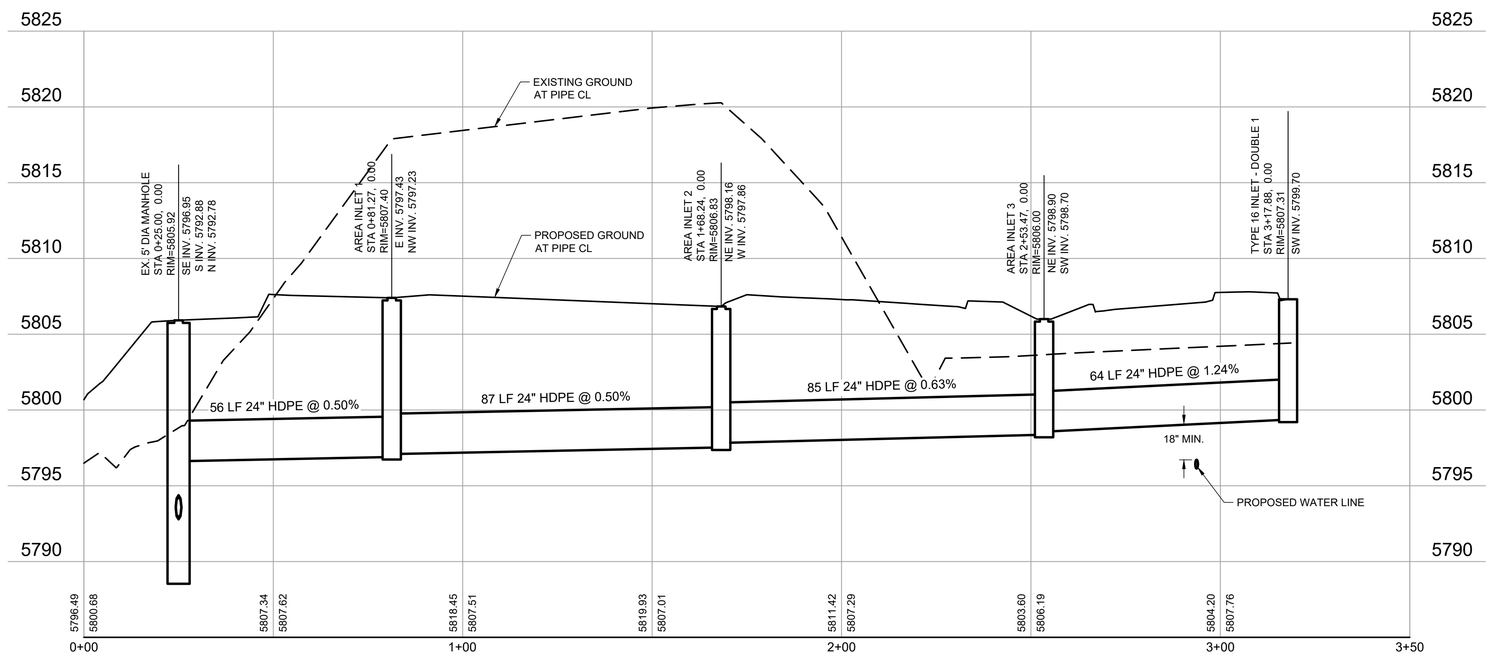
PHASE 6B UTILITY PLAN

C622







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TRANSPORTATION AUTHORITY
51 SERVICE CENTER DRIVE
ASPEN, COLORADO 81611

ROARING FORK TRANSPORTATION AUTHORITY
WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES
2307 WULFSOHN ROAD
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Project Status	**Issue Date**
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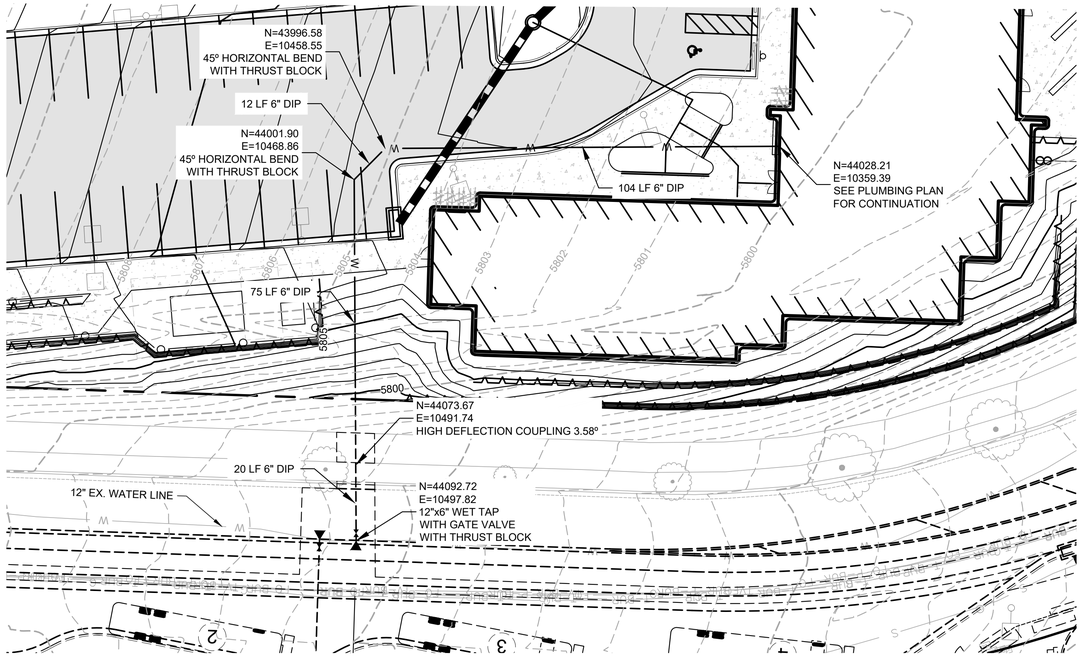
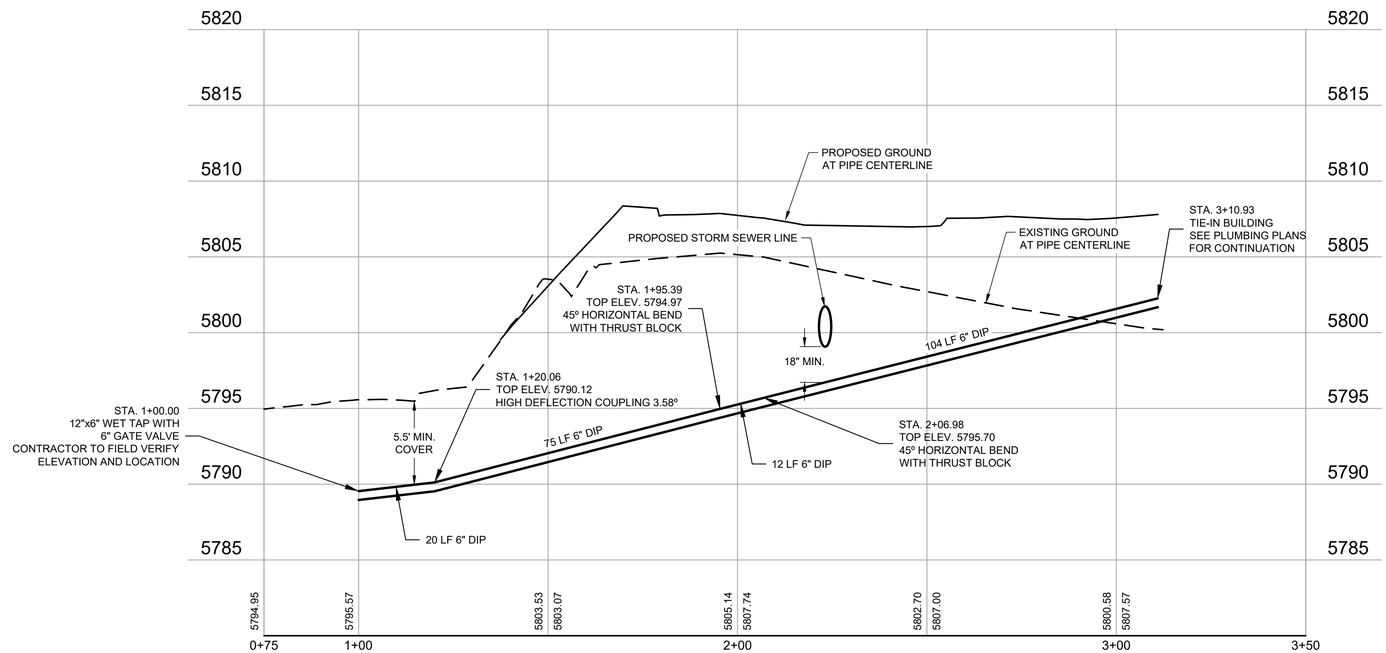
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

PHASE 6B STORM PLAN AND PROFILE

C721





1" = 20' HORIZ.
1" = 5' VERT.

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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

PHASE 6B WATER PLAN AND PROFILE

C722

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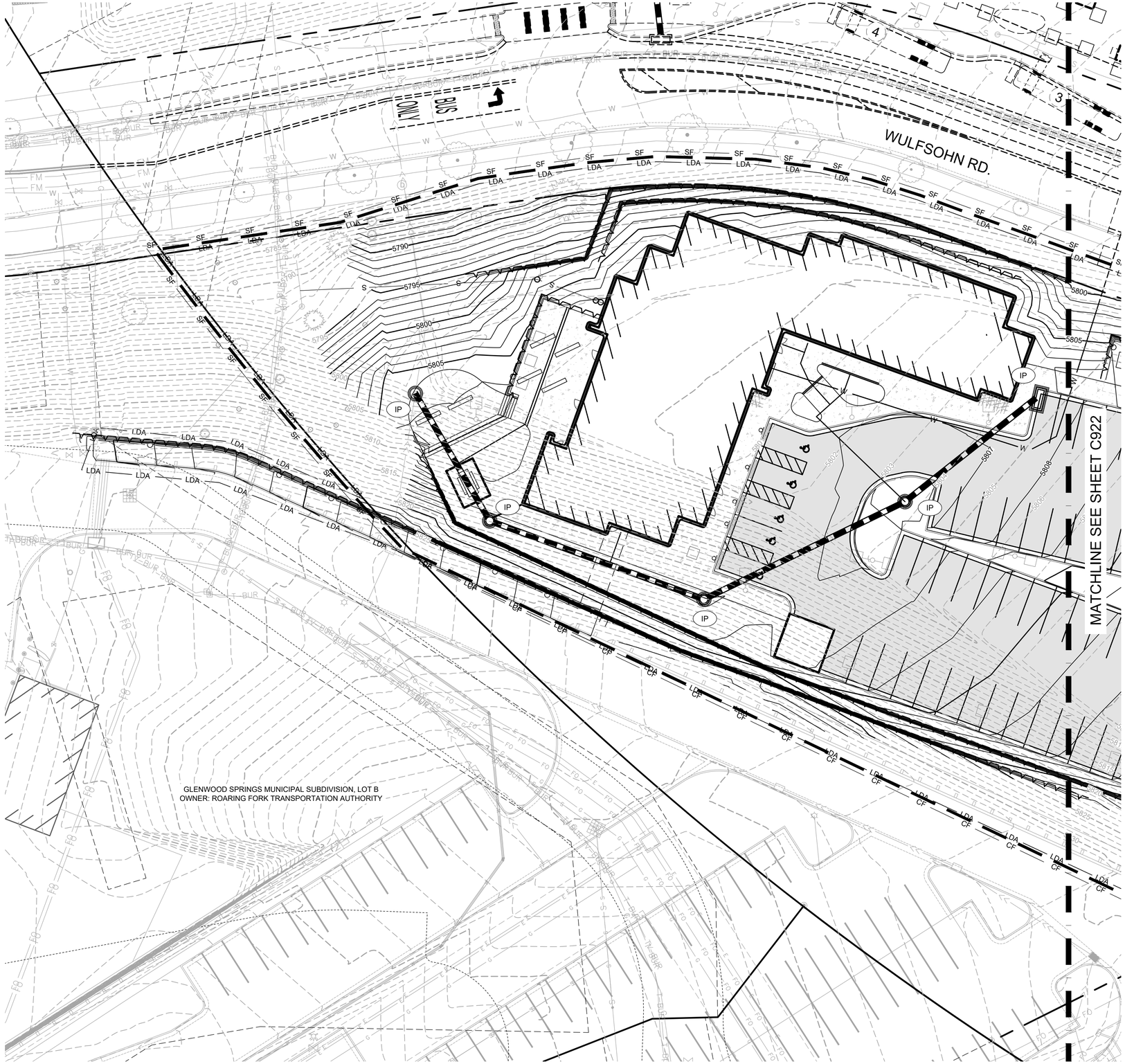

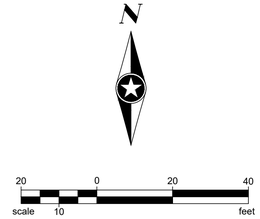

BMP LEGEND

CD	CHECK DAM
CB	COMPOST BLANKET
CFB	COMPOST FILTER BERM
CWA	CONCRETE WASHOUT AREA
CF	CONSTRUCTION FENCE
CM	CONSTRUCTION MARKER
DW	DEWATERING
DD	DIVERSION DITCH
ECB	EROSION CONTROL BLANKET
IP	INLET PROTECTION
RCD	REINFORCED CHECK DAM
RRB	REINFORCED ROCK BERM
RRC	RRB FOR CULVERT PROTECTION
SB	SEDIMENT BASIN
SCL	SEDIMENT CONTROL LOG
ST	SEDIMENT TRAP
SM	SEEDING AND MULCHING
SF	SILT FENCE
SSA	STABILIZED STAGING AREA
SR	SURFACE ROUGHENING
TSD	TEMPORARY SLOPE DRAIN
TSC	TEMPORARY STREAM CROSSING
TER	TERRACING
VTC	VEHICLE TRACKING CONTROL
WW	VTC WITH WHEEL WASH
	ROCK AND RIPRAP GRADATIONS
LOC	LIMITS OF CONSTRUCTION
	LIMITS OF DISTURBED AREA

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ASPEN, COLORADO 81611

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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

PHASE 6B EROSION CONTROL PLAN

C921

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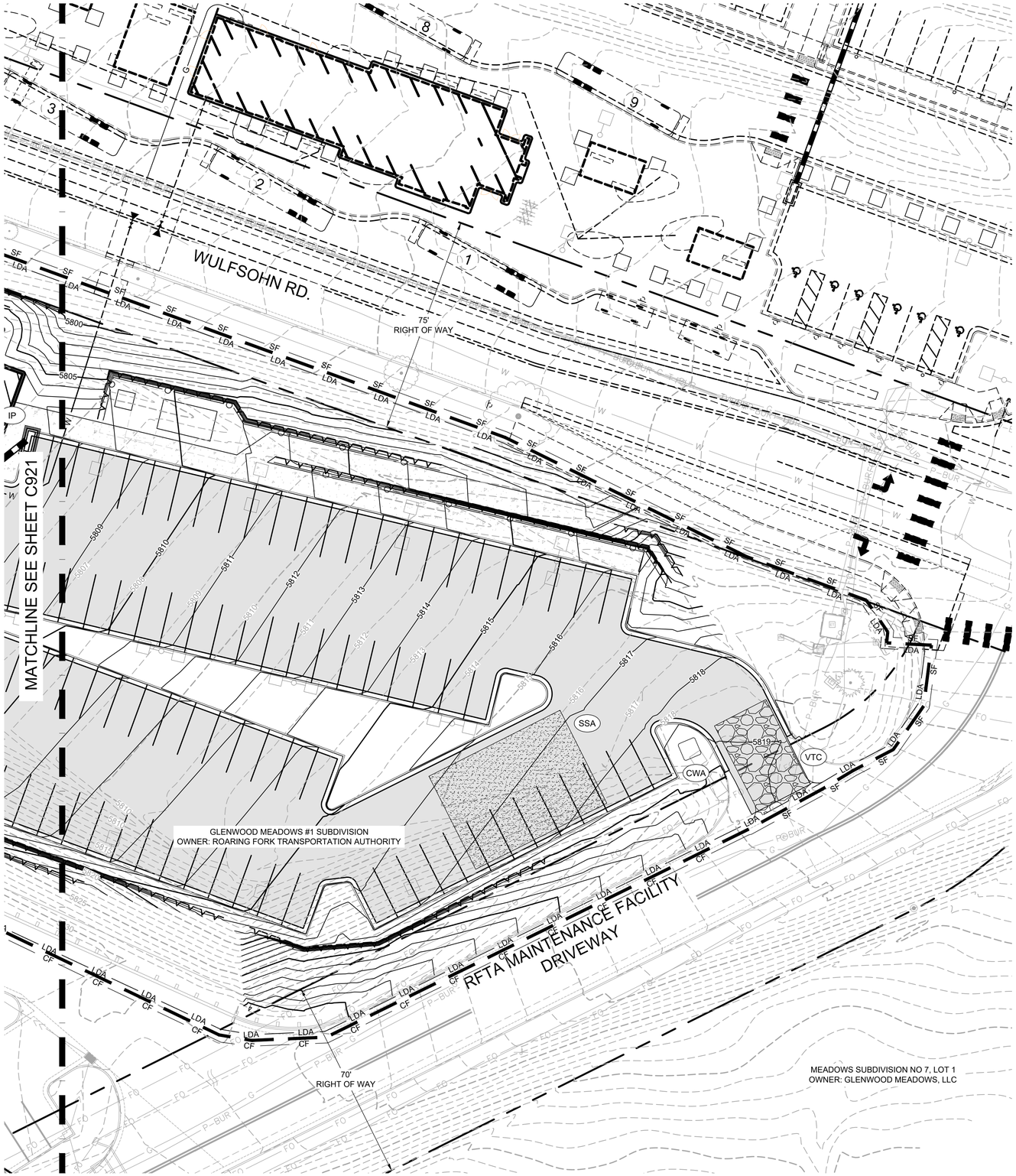

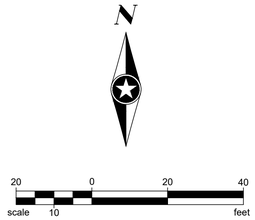

BMP LEGEND

	CD	CHECK DAM
	CB	COMPOST BLANKET
	CFB	COMPOST FILTER BERM
	CWA	CONCRETE WASHOUT AREA
CF	CF	CONSTRUCTION FENCE
	CM	CONSTRUCTION MARKER
	DW	DEWATERING
	DD	DIVERSION DITCH
	ECB	EROSION CONTROL BLANKET
	IP	INLET PROTECTION
	RCD	REINFORCED CHECK DAM
	RRB	REINFORCED ROCK BERM
	RRC	RRB FOR CULVERT PROTECTION
	SB	SEDIMENT BASIN
	SCL	SEDIMENT CONTROL LOG
	ST	SEDIMENT TRAP
	SM	SEEDING AND MULCHING
SF	SF	SILT FENCE
	SSA	STABILIZED STAGING AREA
	SR	SURFACE ROUGHENING
	TSD	TEMPORARY SLOPE DRAIN
	TSC	TEMPORARY STREAM CROSSING
	TER	TERRACING
	VTC	VEHICLE TRACKING CONTROL
	WW	VTC WITH WHEEL WASH
		ROCK AND RIPRAP GRADATIONS
	LOC	LIMITS OF CONSTRUCTION
LDA		LIMITS OF DISTURBED AREA

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ASPEN, COLORADO 81611

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REVISION SCHEDULE

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PHASE 6B EROSION CONTROL PLAN

C922

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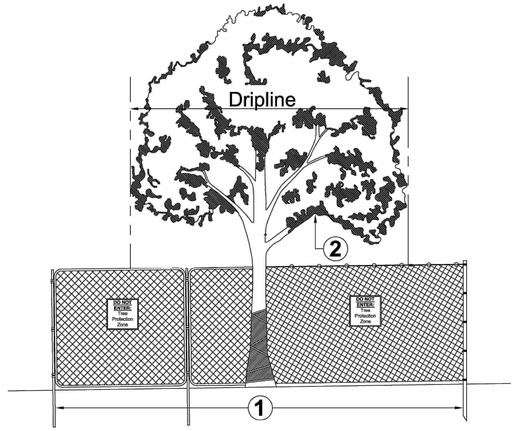


Any work in these areas must have written approval of* City. *Contact* City *for instruction.

Area 1: Tree Protection Zone and Critical Root Zone Protection
The Tree Protection Zone (TPZ) shall be equal to dripline or 1.5 feet radially from the tree for every one inch of trunk diameter at breast height (DBH = 4.5' above soil line), whichever is greater.

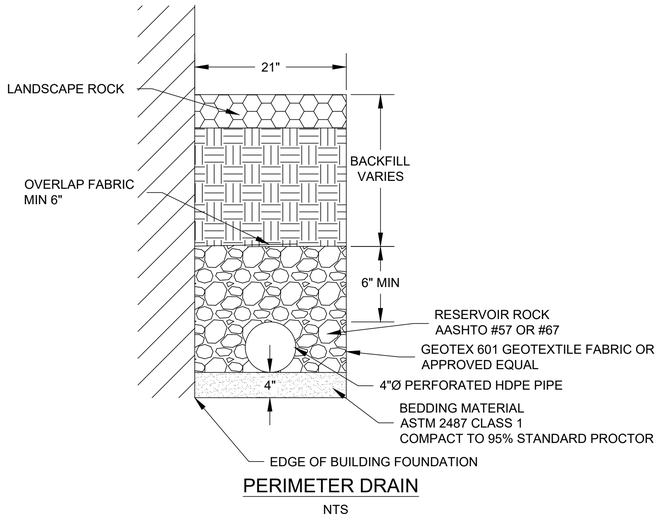
A. Min 6' in height steel chain link fence is required unless otherwise approved by the City. Steel chain link fence panels or rolls are acceptable.
   1. When chain link rolls are installed, it shall be fastened to heavy duty steel posts with safety caps at minimum five (5) attachment points with 12-gauge wire, including points at top and bottom. Weave wire through top of roll to eliminate sag.
   2. Posts shall be driven 2' to 3' below grade and spaced at max. five to ten foot (5' - 10') o.c. intervals. Fencing must be kept taut at all times.
   3. "Tree Protection Zone" signs shall be placed one (1) per each tree protection zone minimum or more per direction of City; maintain in the location and condition in which approved.
   4. TPZ, including signage, shall be maintained in the location and condition in which approved.

The Critical Root Zone (CRZ) shall be equal to one foot radially from the tree for every one inch of trunk diameter at breast height.

Area 2: Canopy Protection
Contact City if potential for damage exists and/or if pruning is needed for any clearance issues prior to performing work.

Notes
1. City Tree Retention and Protection Specifications shall be followed throughout duration of work.
2. After TPZ is approved;
   A. TPZ shall not be resized, modified, removed, or altered in any manner without prior written approval. TPZ shall be maintained in place as approved until removal is authorized by City.
   B. Entrance/access to the TPZ is not permitted without prior written approval from the City.
   C. No materials, debris, equipment, or site amenities shall be stored within the TPZ without prior written approval from the City.
3. While TPZ fencing is in place, trees shall be deep-root watered at an interval of once every two weeks when temperatures are at or above 40 degrees F. Trees shall be watered at the rate of twenty-five (25) gallons per inch DBH. City may ask for proof of watering.
4. Violation of TPZ or damage to protected trees is subject to penalty per City Ordinance.

		Tree Protection Zone Fencing Detail	

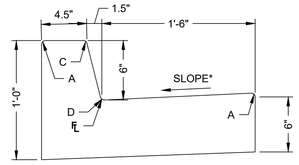


PERIMETER DRAIN
NTS

GENERAL NOTES

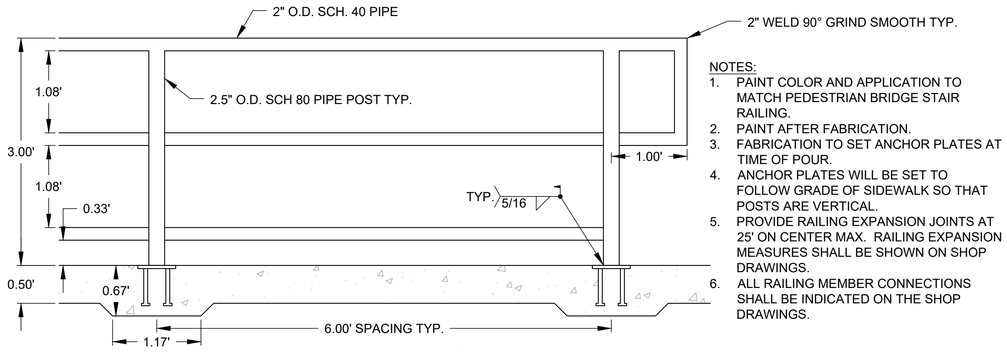
1. CONCRETE SHALL BE CLASS B.
2. PROFILE GRADE OF CURBS AND GUTTERS SHALL BE LOCATED AT THE FLOW LINE.
3. GUTTER CROSS SLOPES MAY BE ADJUSTED TO FACILITATE DRAINAGE FOR PROFILE GRADES AS SHOWN ON THE PLANS.
4. THICKNESS OF CURB AND GUTTER SECTION SHALL MATCH CONCRETE PAVEMENT THICKNESS IF SHOWN ON THE PLANS. CURB AND GUTTER SHALL BE CLASS P CONCRETE IF PLACED MONOLITHICALLY WITH CONCRETE PAVEMENT.
5. INCREASE SIDEWALK THICKNESS TO 6 IN. AT LOCATIONS SHOWN ON THE PLANS.
6. WHEN TIE BARS ARE REQUIRED, THE GUTTER THICKNESS SHALL BE INCREASED TO THE PAVEMENT THICKNESS (T). BARS SHALL BE EPOXY-COATED #4 CONFORMING TO AASHTO M 284 AND SPACED AT 3 FT. INTERVALS. THEY SHALL BE INSERTED T/2 AND 1#2 LENGTH INTO THE GUTTER .

LEGEND FOR RADII
A = $\frac{1}{8}$" TO $\frac{1}{4}$"
B = 1"
C = 1 $\frac{1}{2}$"
D = 1 $\frac{1}{2}$" TO 2"



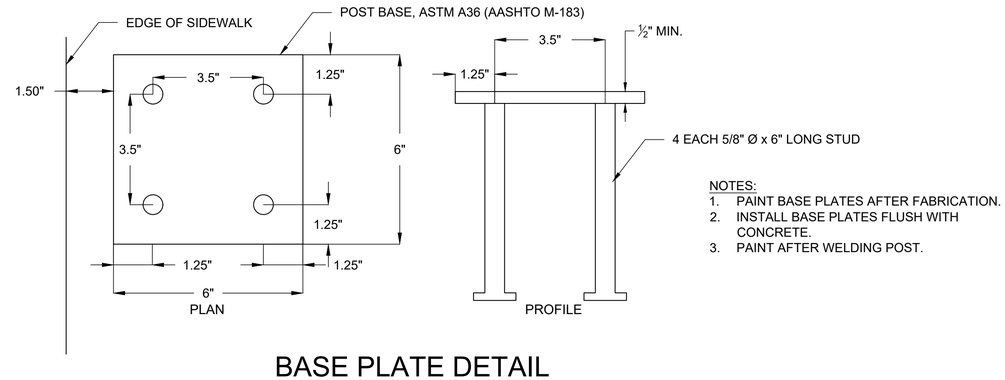
*GUTTER SLOPE EQUALS 1"/FT. WHEN ADJACENT TO ASPHALT PAVEMENT. GUTTER SLOPE TO MATCH ADJACENT CONCRETE SLOPE WHEN ADJACENT TO CONCRETE PAVEMENT.

CURB AND GUTTER TYPE 2 (SECTION B) (1.5' GUTTER)
NTS



NOTES:
1. PAINT COLOR AND APPLICATION TO MATCH PEDESTRIAN BRIDGE STAIR RAILING.
2. PAINT AFTER FABRICATION.
3. FABRICATION TO SET ANCHOR PLATES AT TIME OF POUR.
4. ANCHOR PLATES WILL BE SET TO FOLLOW GRADE OF SIDEWALK SO THAT POSTS ARE VERTICAL.
5. PROVIDE RAILING EXPANSION JOINTS AT 25' ON CENTER MAX. RAILING EXPANSION MEASURES SHALL BE SHOWN ON SHOP DRAWINGS.
6. ALL RAILING MEMBER CONNECTIONS SHALL BE INDICATED ON THE SHOP DRAWINGS.

RAILING DETAIL



NOTES:
1. PAINT BASE PLATES AFTER FABRICATION.
2. INSTALL BASE PLATES FLUSH WITH CONCRETE.
3. PAINT AFTER WELDING POST.

BASE PLATE DETAIL

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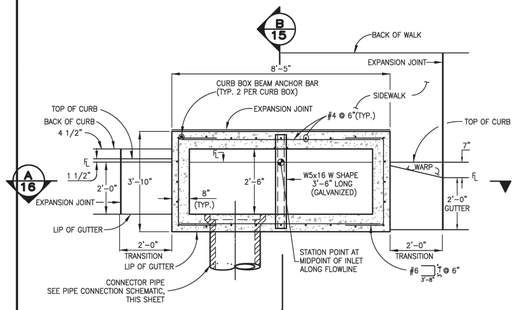
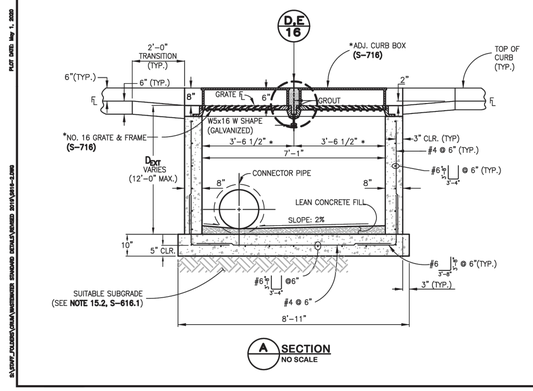
PHASE 6B CIVIL DETAILS

C1021



6" VERTICAL CURB AND GUTTER | **COMBINATION CURB GUTTER AND SIDEWALK**

PLAN
NO SCALE



SECTION
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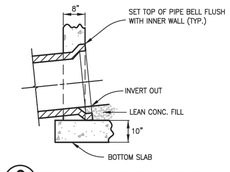
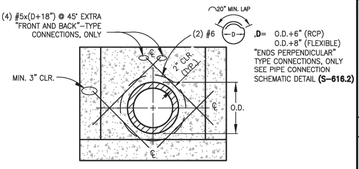
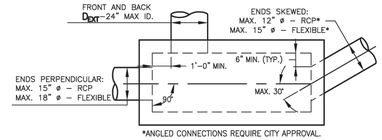


C DETAIL - CONNECTOR OUTLET
NO SCALE

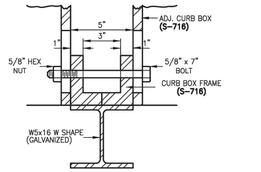


DETAIL - REBAR PLACEMENT AROUND CONNECTOR PIPE
NO SCALE

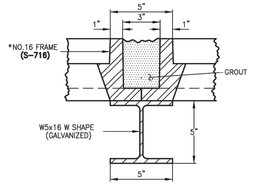


*ANGLED CONNECTIONS REQUIRE CITY APPROVAL.

PIPE CONNECTION SCHEMATIC (NO. 16 INLET)
THIS DIAGRAM IS PROVIDED FOR GENERAL GUIDANCE ONLY. THE DESIGNER IS RESPONSIBLE FOR VERIFYING PROJECT SPECIFIC GEOMETRY.



D DETAIL - PLACEMENT OF ADJ. CURB BOX ON SUPPORT RAIL (TYP.)
NO SCALE



E DETAIL - FRAME PLACEMENT ON SUPPORT RAIL (TYP.)
NO SCALE

DOUBLE NUMBER 16 INLET NOTES:

16.1 SEE DETAIL SPECIFICATIONS SECTION 11.05 STORM INLETS FOR MORE INFORMATION. USE OF THIS DETAIL WITHOUT SPECIFICATIONS SHALL BE CONSIDERED NON-COMPLIANT.

16.2 SEE GENERAL NOTES ON **S-616.1.**

16.3 EXPANSION JOINT MATERIAL SHALL BE PLACED FULL DEPTH OF THE CURB AND GUTTER, SIDEWALK, CONCRETE PAVEMENT, AS APPLICABLE. THE TOP PORTION OF THE JOINT SHALL BE SEALED WITH SILICONE SEALANT.

16.4 SEE **S-616.1** FOR REBAR PLACEMENT AT WALL PENETRATION DETAIL.

* STANDARD DETAIL **S-716** APPLIES TO ALL OF THE GRATE & FRAME GEOMETRIC DIMENSIONS FOR THE DOUBLE NUMBER 16 INLET EXCEPT FOR THE FRAME LENGTH. FRAME LENGTH SHOULD BE MANUFACTURED FOR THE DIMENSIONS CALLED OUT ON THIS SHEET.

NO.	DESCRIPTION OF REVISIONS	DATE	BY

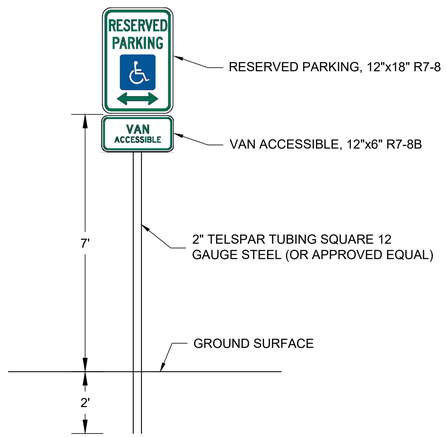
DENVER
THE MILE HIGH CITY

CITY AND COUNTY OF DENVER
2000 W. 3RD AVE. DENVER, CO 80223
www.denvergov.org

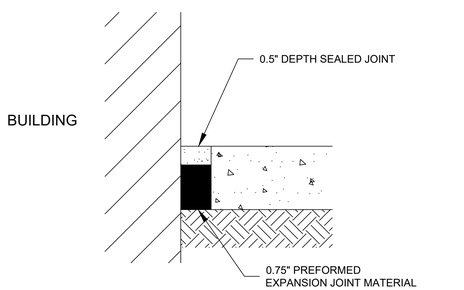
STANDARD DETAILS
DOUBLE NUMBER 16 INLET
S-616.2

DRAWN BY: ----
DESIGNED BY: ASP/JDMT
APPROVED BY: ----
DRAWING NAME: ----
DATE: JUNE 2020
SHEET NO.: 16

PLOT DATE: May 1, 2020
M:\DWG_PLANS\DWG\DRAWINGS\ STANDARD DETAILS\DENVER 2019\S616-2.DWG



RESERVED PARKING DETAIL
NTS



SIDEWALK EXPANSION JOINT AT BUILDINGS
N.T.S.

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Drawn By	BR

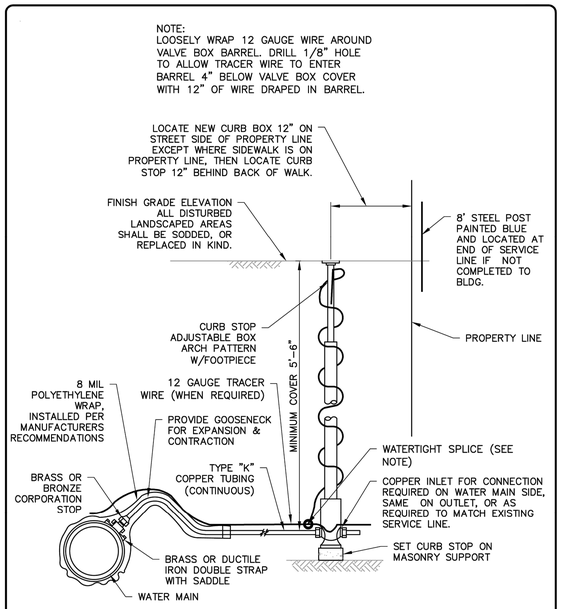
Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/2024

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

PHASE 6B CIVIL DETAILS

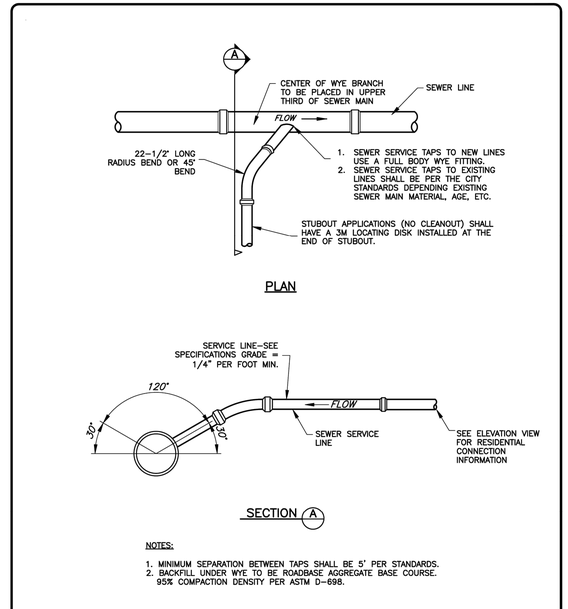
C1022



WATER SERVICE CONNECTION DETAIL

N.T.S.

City of Glenwood Springs 101 West 8th Street Glenwood Springs, CO 81601 970.384.6435 www.ci.glenwood-springs.co.us	Water Service Connection Detail	Approved: XX Date: 2/23/16 Modified: 2/23/16 File: WaterServiceDetail	Drawing # W08
	Division: Water Standard Details		



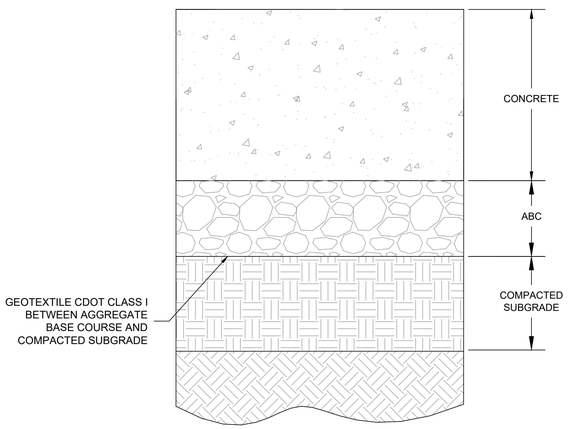
NOTES:

1. MINIMUM SEPARATION BETWEEN TAPS SHALL BE 5' PER STANDARDS.
2. BACKFILL UNDER WYE TO BE ROADBASE AGGREGATE BASE COURSE. 95% COMPACTION DENSITY PER ASTM D-698.

SEWER SERVICE CONNECTION

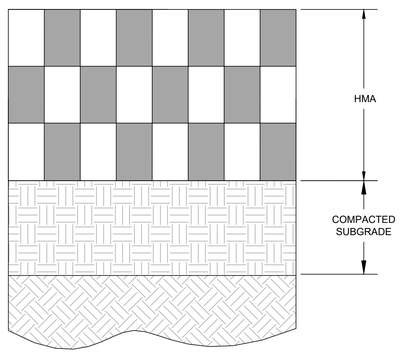
N.T.S.

City of Glenwood Springs 101 West 8th Street Glenwood Springs, CO 81601 970.384.6435 www.ci.glenwood-springs.co.us	Sewer Service Connection Detail	Approved: XX Date: 3/22/16 Modified: 3/22/16 File: SewerServiceDetail	Drawing # S06
	Division: Sewer Standard Details		



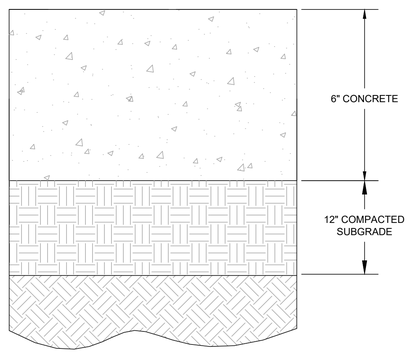
CONCRETE PAVEMENT SECTION

NTS



ASPHALT PAVEMENT SECTION

NTS



CONCRETE SIDEWALK SECTION

NTS

PAVEMENT NOTES:

ABC: CDOT CLASS 6 AGGREGATE BASE COURSE

PAVEMENT COMPACTED SUBGRADE: THE COLLAPSING SOILS HAVE TO BE ADDRESSED BEFORE ANY PAVEMENT OR STRUCTURE IS CONSTRUCTED AT THIS SITE BY SUBEXCAVATING THE TOP 5 FEET OF THE EXISTING SOIL AND RECOMPACTING IT AT OPTIMUM OR ABOVE OPTIMUM MOISTURE CONTENT, REMOVING AND REPLACING THE EXISTING COLLAPSING SOIL AND PLACING SELECT MATERIAL AT A DEPTH SUFFICIENT TO MINIMIZE COLLAPSING OR SETTLEMENT OR IMPORTING ADDITIONAL FILL AND ALLOWING IT TO SETTLE BEFORE CONSTRUCTION.

SIDEWALK COMPACTED SUBGRADE: SUBEXCAVATION OF 12 INCHES BELOW GRADE FOR PROPOSED SIDEWALK CONSTRUCTION. NATURAL LOOSE SAND AND GRAVEL SOILS BELOW THE SUBGRADE SHALL BE REMOVED AND REPLACED AS RECOMMENDED ABOVE. GREATER DEPTHS OF MOISTURE-DENSITY CONDITIONING OF THE SUBGRADE SOILS MAY BE NEEDED LOCALLY, DEPENDING ON THE CONDITIONS EXPOSED.

PAVEMENT PROOFROLLING: THE PAVEMENT SUBGRADE SHOULD BE PROOF ROLLED WITH A HEAVILY LOADED PNEUMATIC-TIRE VEHICLE. AREAS THAT DEFORM MORE THAN ½-INCH UNDER HEAVY WHEEL LOADS SHOULD BE REMOVED, REPLACED IF NECESSARY, AND REWORKED TO ACHIEVE A STABLE SUBGRADE PRIOR TO PAVING. WE RECOMMEND THAT PROOF ROLLING AND COMPACTION TESTS BE OBSERVED AND DOCUMENTED BY A REPRESENTATIVE OF A REGISTERED PROFESSIONAL ENGINEER.

SIDEWALK PROOFROLLING: PRIOR TO PLACEMENT OF FILL, A PROOF ROLL SHOULD BE PERFORMED TO IDENTIFY AREAS THAT EXHIBIT INSTABILITY AND DEFLECTION. THE DELETERIOUS SOILS IN THESE AREAS SHOULD BE REMOVED AND REPLACED WITH PROPERLY COMPACTED FILL AS MENTIONED ABOVE. PROOFROLL TESTS ARE IN ADDITION TO THE REQUIREMENT TO PLACING AND COMPACTING OF SUBGRADE FILL SOILS WITHIN THE RECOMMENDED RANGES OF MOISTURE CONTENT AND RELATIVE COMPACTION PRESENTED IN THIS REPORT.

THE SIDEWALK CONSTRUCTION SHOULD CONSIST OF CONTROL JOINTS EXTENDING TO AN EFFECTIVE DEPTH IF NECESSARY AND SPACED NO MORE THAN 10 FEET APART.

CONTRACTOR TO PREPARE A JOINTING PLAN FOR ENGINEER REVIEW AND APPROVAL MINIMUM 7 DAYS PRIOR TO PLACING ANY CONCRETE PAVEMENT.

THE GEOTECH REPORT ASSOCIATED WITH PHASE 6B HAS PAVEMENT DESIGNED FOR BUS LOADINGS. IT RECOMMENDS A MINIMUM OF 6" ASPHALT OVER 8" BASE COURSE FOR 1.8 MILLION BUS TRIPS. THERE ARE ALSO THICKER OPTIONS FOR MORE BUS TRIPS. PLEASE LET US KNOW WHAT ASPHALT SECTION IS DESIRED FOR THIS PHASE.

SEH

NOT FOR CONSTRUCTION

PROJECT OWNER
ROARING FORK
TRANSPORTATION AUTHORITY
51 SERVICE CENTER DRIVE
ASPEN, COLORADO 81611

ROARING FORK TRANSPORTATION AUTHORITY
WEST GLENWOOD TRANSIT CENTER
AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

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SEH Project	173800
Checked By	TN
Drawn By	BR

Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/2024

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

PHASE 6B CIVIL DETAILS

C1023

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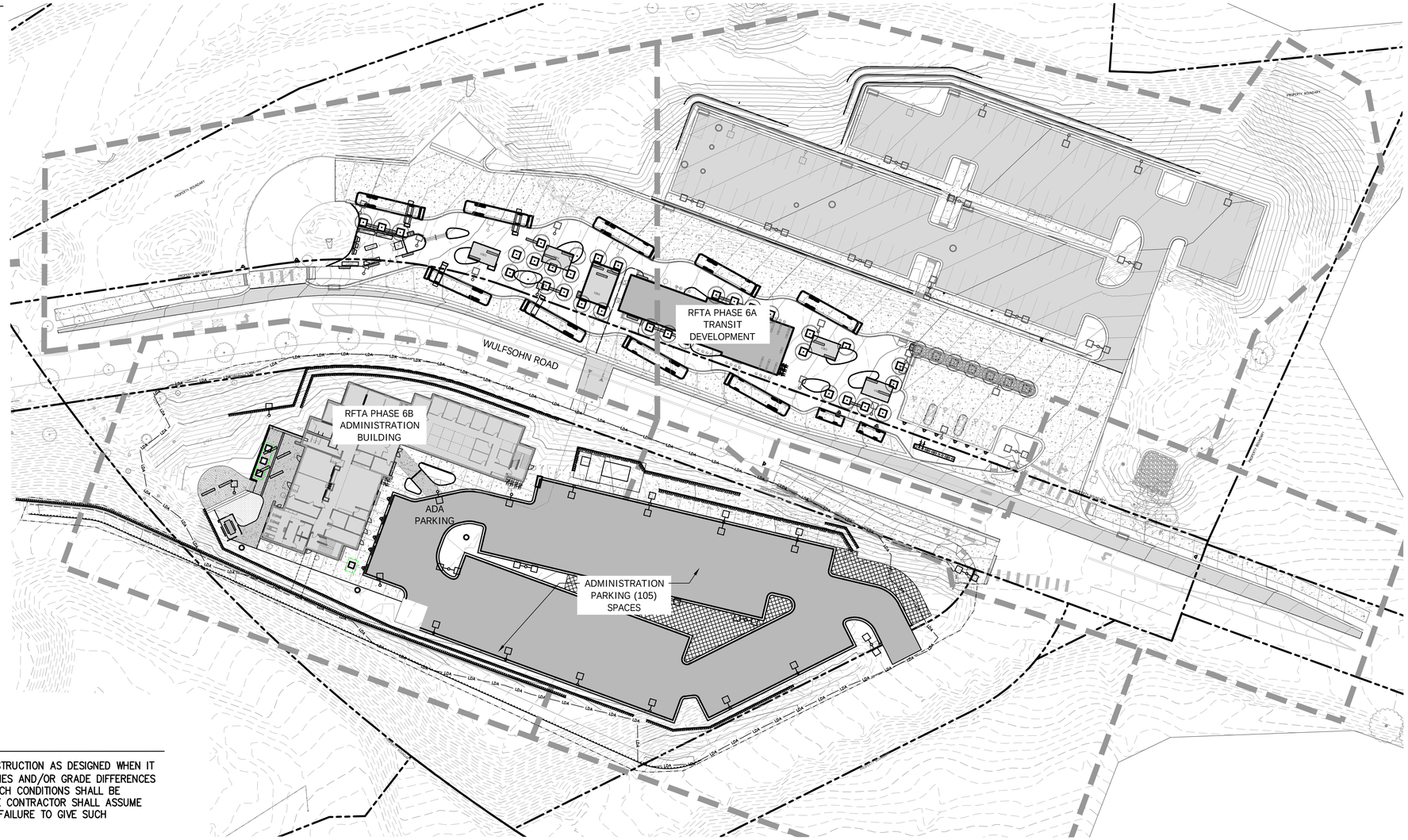
LEGEND

- PROPERTY BOUNDARY
- SHEET MATCHLINE
- EXISTING CONTOURS
- EXISTING TREES TO REMAIN
- PROPOSED SITE WALLS (SEE CIVIL & STRUCTURAL DWGS.
- PROPOSED BACKLESS BENCH
- PROPOSED TREE GRATE W/ TREE PROTECTION & STRUCTURAL SOIL
- PROPOSED BUS CHARGING STATION (SEE MEP)
- PROPOSED SCREENING FENCE
- PROPOSED SHADE STRUCTURE
- PROPOSED RAISED PLANTER
- PROPOSED SITE LIGHTING (SEE LIGHTING PLANS)
- PROPOSED BEAR–PROOF TRASH AND RECYCLING RECEPTACLE
- PROPOSED BIKE SHARE STATION (SEE CIVIL AND WECYCLE)
- PROPOSED BIKE RACK
- PROPOSED ASPHALT PAVING; SEE CIVIL
- PROPOSED CONCRETE VEHICULAR PAVING; SEE CIVIL
- PROPOSED CONCRETE PEDESTRIAN PAVING; SEE CIVIL

NOTE: SEE INDIVIDUAL PLAN ENLARGEMENTS FOR MATERIAL & FURNISHINGS CALL–OUTS, AND DETAIL REFERENCES.



0' 20' 40' 80'
Scale: 1" = 40'-0"
WHEN PRINTED AT 22"x34"

GENERAL NOTES

1. CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS, AREA DISCREPANCIES AND/OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATIONS.

2. EXISTING UTILITY ALIGNMENTS AND GRADES SHOWN ON THE DRAWINGS ARE BASED ON A FIELD SURVEY. THE CONTRACTOR SHALL STILL BE RESPONSIBLE FOR VERIFYING AND DETERMINING EXACT LOCATIONS, DIMENSIONS, DEPTHS, AND MATERIALS AT TIME OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES FAR ENOUGH IN ADVANCE OF NEW CONSTRUCTION TO ALLOW FOR POSSIBLE GRADE, DEPTH, ALIGNMENT, OR MATERIAL CHANGES. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES DURING ALL DEMOLITION AND CONSTRUCTION OPERATIONS. CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR COSTS INCURRED DUE TO DAMAGE AND REPLACEMENT OF SAID UTILITIES.

3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH ALL CONSTRUCTION OPERATIONS. ALL PIPING, CONDUIT, SLEEVES, ETC., SHALL BE SET IN PLACE PRIOR TO INSTALLATION OF CONSTRUCTION ITEMS.

4. ALL EXISTING IMPROVEMENTS TO REMAIN SHALL BE PROPERLY AND ADEQUATELY PROTECTED FROM DAMAGE DURING CONSTRUCTION AND DEMOLITION OPERATIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESTORE TO THE ORIGINAL CONDITION ANY EXISTING ITEMS THAT ARE DAMAGED OR DISTURBED IN ANY WAY. ALL MATERIALS TO BE REUSED OR SALVAGED SHALL BE STORED IN AN AREA DESIGNATED BY THE OWNER FOR THAT PURPOSE. ALL SALVAGED MATERIALS SHALL REMAIN THE PROPERTY OF THE OWNER.

5. ALL MATERIALS SPECIFIED TO BE REMOVED SHALL BE DISPOSED OF OFF–SITE PER LOCAL CODES AND REGULATIONS.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS TO SATISFY ALL PERTINENT LOCAL AND REGIONAL CODES AND REGULATIONS PRIOR TO THE START OF WORK.

7. THE CONTRACTOR SHALL OBTAIN A TRAFFIC CONTROL PERMIT FROM THE CITY PRIOR TO COMMENCING WORK WITHIN.

8. REFER TO SOILS REPORTS FOR FOOTING, FOUNDATION, AND COMPACTION RECOMMENDATIONS.

9. PRESERVE AND PROTECT ALL EXISTING TREES ON SITE, UNLESS NOTED AS A REMOVAL.

10. ALL DEMOLITION MUST BE COORDINATED WITH THE OWNER, THE CIVIL ENGINEER, AND BE FIELD VERIFIED.

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

SEH

NOT FOR CONSTRUCTION

PROJECT OWNER
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY
W. G. ADMINISTRATION BUILDING
(PHASE 6B)

2307 WULFSOHN RD.
GLENWOOD SPRINGS,
COLORDO 81601

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SEH Project	173800
Checked By	L.W.
Drawn By	S.H.

Project Status	Issue Date
50% CONSRUCTION DOCUMENTS	09/17/2024

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

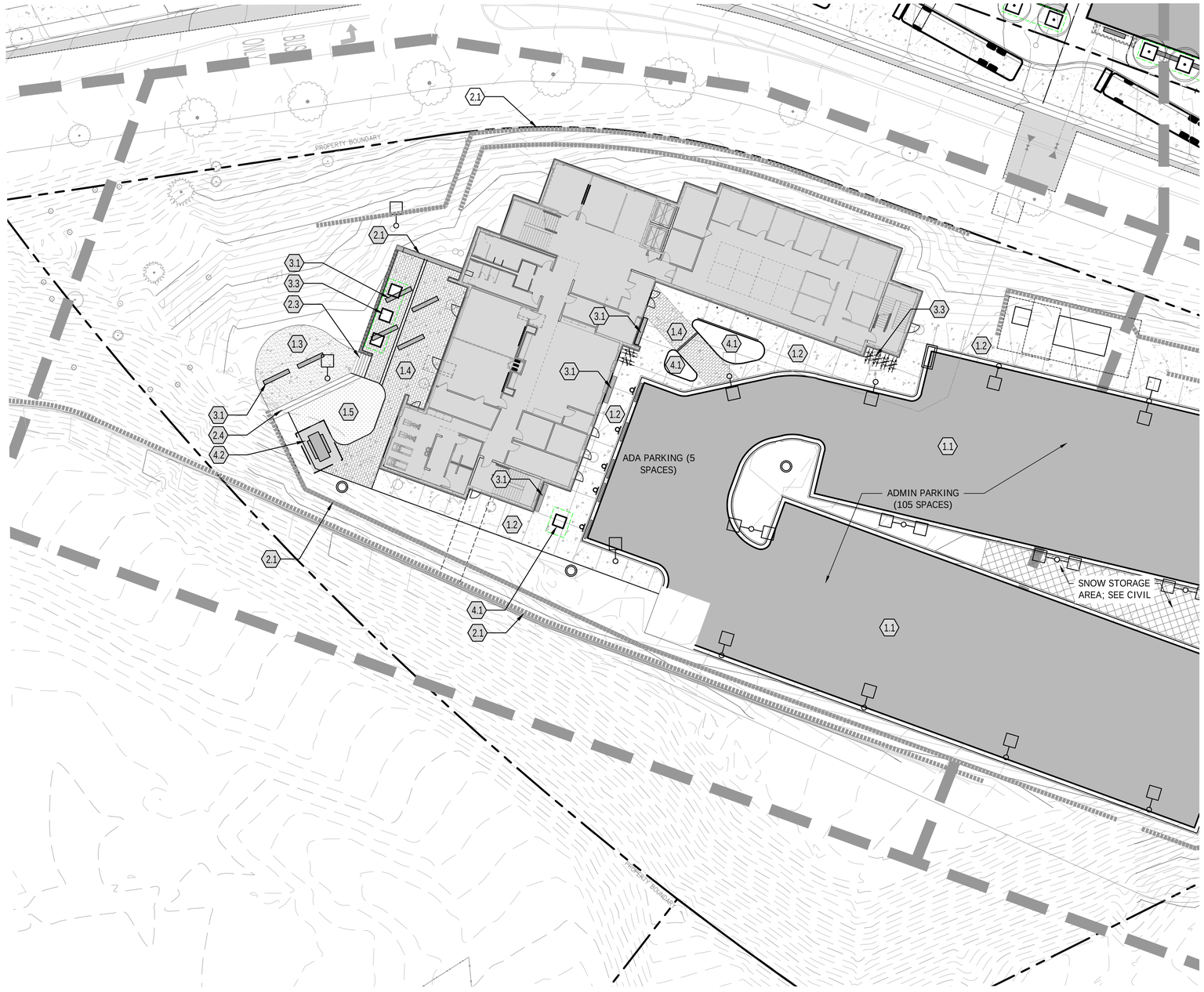
SITE PLAN 6B

L100

LEGEND

- PROPERTY BOUNDARY
- SHEET MATCHLINE
- EXISTING CONTOURS
- EXISTING TREES TO REMAIN
- PROPOSED SITE WALLS (SEE CIVIL & STRUCTURAL DWGS.
- PROPOSED BACKLESS BENCH
- PROPOSED TREE GRATE W/ TREE PROTECTION & STRUCTURAL SOIL
- PROPOSED SHADE STRUCTURE
- PROPOSED RAISED PLANTER
- PROPOSED SITE LIGHTING (SEE LIGHTING PLANS)
- PROPOSED BEAR-PROOF TRASH AND RECYCLING RECEPTACLE
- PROPOSED BIKE RACK
- PROPOSED ASPHALT PAVING; SEE CIVIL
- PROPOSED CONCRETE PEDESTRIAN PAVING; SEE CIVIL
- STRUCTURAL SOIL EXTENTS (SEE PLANTING PLANS & NOTES)

NOTES:
1.SEE CIVIL PLANS FOR ALL GRADING & DRAINAGE.
2.PAVEMENT MARKINGS & ADA CURB RAMPS PER CIVIL.



0' 20' 40' 80'
Scale: 1" = 40'-0"
WHEN PRINTED AT 22"x34"

MATERIALS SCHEDULE

##.#					
1.0	PAVEMENTS				
	CALLOUT	ITEM	DETAIL / SHEET	PRODUCT	
	1.1	TYPE 1 - VEHICULAR PAVING	PER CIVIL		
	1.2	TYPE 2 - PED. PAVING CONCRETE(SNOW-MELT)	PER CIVIL		
	1.3	TYPE 3 - PED. CRUSHER-FINES PATH	2/L303		
	1.4	TYPE 4 - PED. PAVER	1/L303		
	1.5	TYPE 5 - ARTIFICIAL TURF LAWN	3/L303		
2.0	WALLS & STAIRS				
	2.1	TYPE 1 - CONCRETE RETAINING WALL	PER CIVIL		
	2.2				
	2.3	TYPE 1 - CONCRETE STAIR W/ HANDRAIL	PER CIVIL		
	2.4	TYPE 2 - AMPHITHEATER SEATING STAIRS	PER CIVIL		
3.0	SITE ELEMENTS		DETAIL / SHEET		
	3.1	BACKLESS BENCH	1/L304	Landscape Forms- Socrates	
	3.2	TREE GRATE W/ TREE PROTECTION & STRUCTURAL SOIL	2/L304	Urbain Accessories- Jameson	
	3.3	BIKE RACK	3/L304	Landscape Forms- Key	
	3.4	BEAR PROOF TRASH RECEPTACLE	5/L304	BearSaver- HA Series Double Trash Recycle	
	3.5	SCREENING FENCE	4/L304	BOK Modern- TBD Perforated Metal	
4.0	PLANTERS & SHELTERS				
	4.1	RAISED STEEL PLANTER	1-5/L302 & 1-5/L303	ORE Planters- Custom Powdercoated	
	4.2	CUSTOM SHADE SHELTER	PER ARCH.		

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

SEH

NOT FOR CONSTRUCTION

PROJECT OWNER
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY
W. G. ADMINISTRATION BUILDING (PHASE 6B)
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601

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Drawn By	S.H.

Project Status	Issue Date
50% CONSRUCTION DOCUMENTS	09/17/2024

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

SITE MATERIALS PLAN 6B WEST

L101

LEGEND

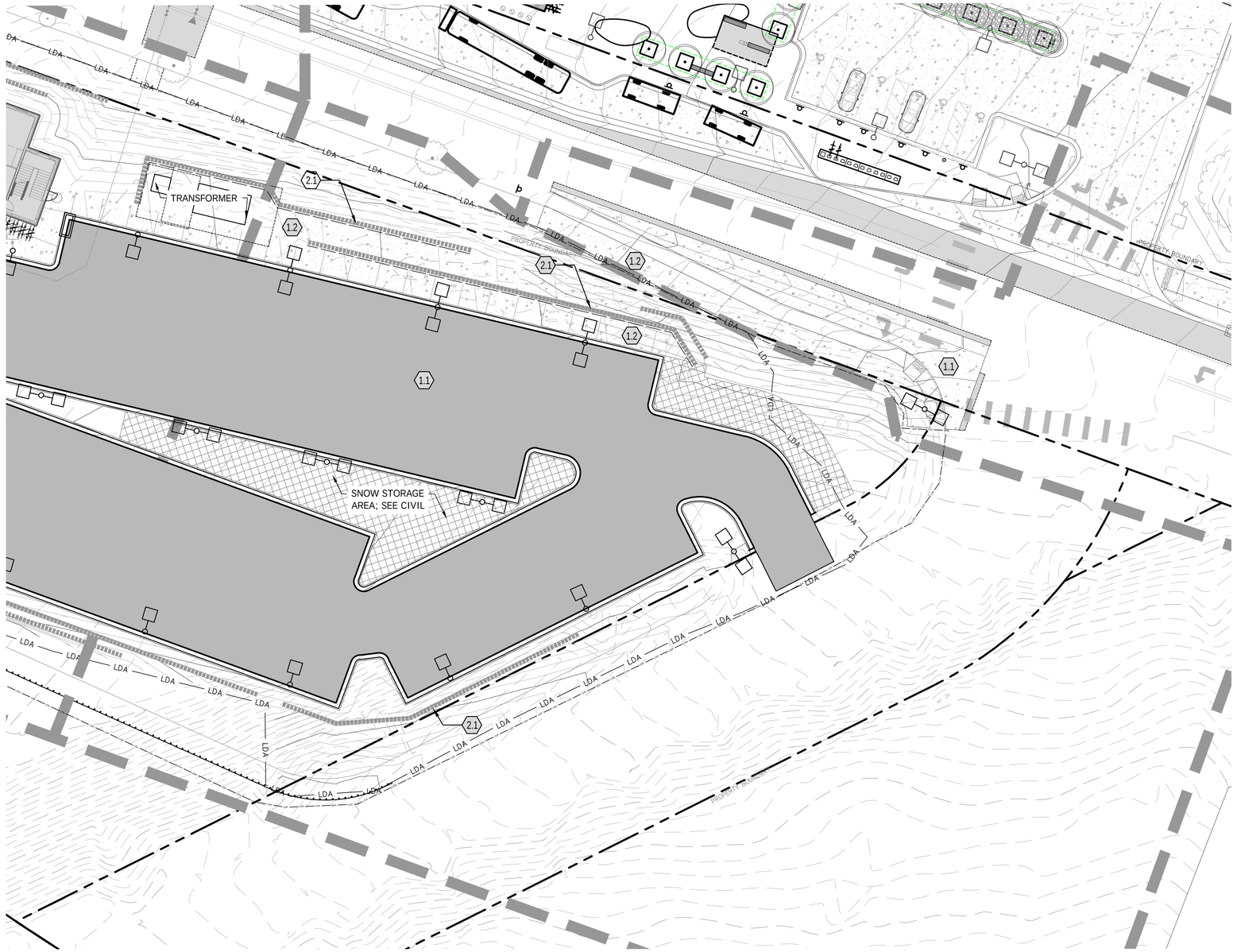
- PROPERTY BOUNDARY
- SHEET MATCHLINE
- EXISTING CONTOURS
- EXISTING TREES TO REMAIN
- PROPOSED SITE WALLS (SEE CIVIL & STRUCTURAL DWGS.
- PROPOSED BACKLESS BENCH
- PROPOSED TREE GRATE W/ TREE PROTECTION & STRUCTURAL SOIL
- PROPOSED SCREENING FENCE
- PROPOSED SHADE STRUCTURE
- PROPOSED RAISED PLANTER
- PROPOSED SITE LIGHTING (SEE LIGHTING PLANS)
- PROPOSED BEAR–PROOF TRASH AND RECYCLING RECEPTACLE
- PROPOSED BIKE RACK
- PROPOSED ASPHALT PAVING; SEE CIVIL
- PROPOSED CONCRETE PEDESTRIAN PAVING; SEE CIVIL
- STRUCTURAL SOIL EXTENTS (SEE PLANTING PLANS & NOTES)

NOTES:
1.SEE CIVIL PLANS FOR ALL GRADING & DRAINAGE.
2.PAVEMENT MARKINGS & ADA CURB RAMPS PER CIVIL.

MATERIALS SCHEDULE

1.0	PAVEMENTS			
	CALLOUT	ITEM	DETAIL / SHEET	PRODUCT
	1.1	TYPE 1 - VEHICULAR PAVING	PER CIVIL	
	1.2	TYPE 2 - PED. PAVING CONCRETE(SNOW-MELT)	PER CIVIL	
	1.3	TYPE 3 - PED. CRUSHER-FINES PATH	2/L303	
	1.4	TYPE 4 - PED. PAVER	1/L303	
	1.5	TYPE 5 - ARTIFICIAL TURF LAWN	3/L303	
2.0	WALLS & STAIRS			
	2.1	TYPE 1 - CONCRETE RETAINING WALL	PER CIVIL	
	2.2			
	2.3	TYPE 1 - CONCRETE STAIR W/ HANDRAIL	PER CIVIL	
	2.4	TYPE 2 - AMPHITHEATER SEATING STAIRS	PER CIVIL	
3.0	SITE ELEMENTS		DETAIL / SHEET	
	3.1	BACKLESS BENCH	1/L304	Landscape Forms- Socrates
	3.2	TREE GRATE W/ TREE PROTECTION & STRUCTURAL SOIL	2/L304	Urban Accessories- Jameson
	3.3	BIKE RACK	3/L304	Landscape Forms- Key
	3.4	BEAR PROOF TRASH RECEPTACLE	5/L304	BearSaver- HA Series Double Trash Recycle
	3.5	SCREENING FENCE	4/L304	BOK Modern- TBD Perforated Metal
4.0	PLANTERS & SHELTERS			
	4.1	RAISED STEEL PLANTER	1-5/L302 & 1-5/L303	ORE Planters- Custom Powdercoated
	4.2	CUSTOM SHADE SHELTER	PER ARCH.	

(#)



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PROJECT OWNER
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY

W. G. ADMINISTRATION BUILDING (PHASE 6B)

2307 WULFSOHN RD.
GLENWOOD SPRINGS,
COLORDO 81601

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Checked By	L.W.
Drawn By	S.H.

Project Status	Issue Date
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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

SITE MATERIALS PLAN 6B EAST

L103

PLANTING NOTES

1. CONTRACTOR TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO BEFORE DIGGING, INCLUDING BUT NOT LIMITED TO, TRENCHING AND SHRUB AND TREE PLANTING PITS. IF UTILITIES OCCUR AT LOCATIONS OF PROPOSED SHRUBS, OR WITHIN EIGHT (8) FEET OF PROPOSED TREES, THE CONTRACTOR SHALL REPORT SUCH CONDITIONS TO THE OWNER'S REPRESENTATIVE. DAMAGE TO EXISTING UTILITIES BY THE LANDSCAPE CONTRACTOR IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.

2. THE LANDSCAPE PLAN AND DETAILS ARE TO BE USED IN CONJUNCTION WITH THE CIVIL AND ARCHITECTURAL PLANS TO FORM COMPLETE INFORMATION REGARDING SITE WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH ALL CONSTRUCTION OPERATIONS. ALL PIPING, CONDUIT, SLEEVES, ETC., SHALL BE SET IN PLACE PRIOR TO INSTALLATION OF CONSTRUCTION ITEMS.

3. ALL EXISTING IMPROVEMENTS TO REMAIN, INCLUDING BUT NOT LIMITED TO UTILITIES, CURB AND GUTTER, WALKWAYS, EXISTING IRRIGATION , AND EXISTING STRUCTURES, SHALL BE PROPERLY AND ADEQUATELY PROTECTED FROM DAMAGE DURING CONSTRUCTION OPERATIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESTORE TO THE ORIGINAL CONDITION ANY EXISTING ITEMS THAT ARE DAMAGED OR DISTURBED IN ANY WAY, AND AT NO ADDITIONAL COST TO THE OWNER.

4. TO THE MAXIMUM EXTENT POSSIBLE, TOPSOIL THAT IS REMOVED DURING CONSTRUCTION ACTIVITY SHALL BE STOCKPILED ON-SITE FOR LATER USE ON AREAS REQUIRING REVEGETATION AND LANDSCAPING.

6. DURING ROUGH CLEARING AND GRUBBING, AND ESTABLISHMENT OF ROUGH GRADE, EARTHMOVING CONTRACTOR TO REMOVE ROOTS, STUMPS, LARGE BOULDERS, ORGANIC MATERIAL, AND OTHER DELETERIOUS MATERIAL PER THE CIVIL REQUIREMENTS FOR MASS EXCAVATION AND ROUGH GRADING.

7. PRIOR TO PLACING OF TOPSOIL OR SOIL AMENDMENTS, CONTRACTOR TO REMOVE SURFACE STONES AND PREPARE SUBGRADE AS FOLLOWS:
   a. NATIVE SEED AREAS: BOULDERS AND ROCKS RETAINED BY A 4" SCREEN
   b. IN-GROUND PLANTING BED AREAS: SCARIFY NATIVE SOIL TO A DEPTH OF 18" BELOW FINISHED GRADE; REMOVE STONES LARGER THAN 6" (IN ANY DIMENSION); ADDITIONALLY REMOVE A VOLUME OF NATIVE SOIL SUFFICIENT TO ALLOW FOR ADDITION OF COMPOST AMENDMENT AS DESCRIBED BELOW. REMOVE ROCKS LARGER THAN 1" FROM THE TOP 6" OF NATIVE SOIL PRIOR TO AMENDING WITH COMPOST.
   c. ALL PLANTED AREAS IMPACTED BY UTILITY INSTALLATION, PAVING SUBGRADE, OR VEHICLE TRACKING: REMOVE GRAVELS AND SCARIFY SOILS TO CREATE A PLANTING LENS OF SOIL NO LESS THAN 6". SCARIFICATION AND PLANTING SOIL MAY BE DEEPER FOR SPECIFIC AREAS AS IDENTIFIED ON THE LANDSCAPE PLANS.
   d. TREE PLANTING TRENCH AT STRUCTURAL SOILS: EXCAVATE AND REMOVE NATIVE SOILS TO THE DEPTHS INDICATED IN THE PLANS AND DETAILS TO ALLOW FOR THE SPECIFIED VOLUMES OF STRUCTURAL SOIL AND PLANTING SOIL.
   d. IN NO CIRCUMSTANCE SHALL CONTRACTOR EXCAVATE SUBSOILS IN A MANNER THAT WILL UNDERMINE STRUCTURAL SUBGRADE, FOOTINGS, PAVING, UTILITIES, OR VIOLATE SPECIFICATIONS FOR RETAINING WALLS OR THE RECOMMENDATIONS OF THE GEOTECHNICAL SOILS STUDY.

8. CONTRACTOR SHALL FOLLOW THE LANDSCAPE PLAN. ANY DISCREPANCIES BETWEEN THE PLAN AND FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER'S AUTHORIZED REPRESENTATIVE BEFORE PROCEEDING WITH WORK.

9. CONTRACTOR SHALL USE LOCAL BEST MANAGEMENT PRACTICES FOR OBTAINING AND INSTALLING LANDSCAPE MATERIALS. COMPLETE THE WORK USING SKILLED PERSONNEL, PROFICIENT IN THE TRADES REQUIRED & IN A NEAT , ORDERLY AND RESPONSIBLE MANNER & WITH RECOGNIZED STANDARDS OF WORKMANSHIP.

10. ALL PLANTS TO BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. NOTIFY OWNER FOR INSPECTION AND APPROVAL OF PLANT MATERIAL AT TIME OF DELIVERY. TREES ARE TO BE TAGGED AT THE NURSERY BY OWNER'S REPRESENTATIVE. ANY PLANT NOT MEETING OWNER'S APPROVAL MAY BE REJECTED AT ANY TIME PRIOR TO FINAL ACCEPTANCE.

11. PLANT MATERIAL MUST MEET CURRENT LANDSCAPE NURSERY STANDARDS &/OR ANSI Z60.1.

12. IF PLANTS ARE NOT AVAILABLE, NOTIFY OWNER FOR APPROVAL OF CHANGE BEFORE MAKING SUBSTITUTIONS, INCLUDING SUB-SPECIES OR VARIETIES OF SPECIFIED PLANT.

13. THE OWNER'S AUTHORIZED REPRESENTATIVE MUST APPROVE ALL PLANTING LAYOUTS PRIOR TO PLANTING. ALL ADJUSTMENTS SHALL BE MADE BY THE CONTRACTOR PRIOR TO INSTALLING PLANTS. THE CONTRACTOR SHALL NOT DIG PLANT PITS UNTIL LOCATIONS ARE APPROVED.

14. MINOR FIELD ADJUSTMENTS TO THE PLANTING PLANS MAY BE NECESSARY BASED ON THE ACTUAL LOCATION OF LIGHTS, TRANSFORMERS, GROUND-MOUNTED CABINETS, UTILITY PEDESTALS, AND SIMILAR FEATURES. CONTRACTOR MUST OBTAIN APPROVAL FROM THE OWNER PRIOR TO ADJUSTING THE DESIGN.

15. IF THERE IS A DISCREPANCY BETWEEN THE PLANT COUNTS ON THE CALL-OUTS ON THE PLANS & THE ACTUAL NUMBER OF PLANT SYMBOLS DEPICTED ON THE PLANS, THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING THE ACTUAL NUMBER OF PLANTS AS SYMBOLICALLY DEPICTED ON THE PLANS.

16. ALL SHRUB BEDS AND SOD AREAS, IF ANY, SHALL BE CONTAINED BY A STEEL EDGER, OR A CONCRETE CURB, WALK, OR OTHER SHRUB BED DEFINING ELEMENT - AS PER PLANS AND SPECIFICATIONS.

17. SOD AREAS SHALL RECEIVE A MINIMUM OF 5 CU. YDS PER 1000 S.F. OF A-1 ORGANIC'S BIOCOMP, OR A WELL DECOMPOSED COMPOST APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. SHRUB BEDS SHALL RECEIVE A MINIMUM OF 4 CU. YDS. PER 1000 S.F. OF ONE OF THE ABOVE MATERIALS. ALL AMENDMENTS SHALL BE THOROUGHLY TILLED A MIN. OF 6" INTO THE SOIL.

18. SEEDED AREAS ARE TO RECEIVE AN AMENDMENT OF TRITON RICHLAWN OR APPROVED EQUAL. SOIL AMENDMENTS ARE TO BE APPLIED AT MANUFACTURER'S RECOMMENDED RATES AND IN THE SEQUENCE IDENTIFIED IN THESE NOTES.

19. IN-GROUND SHRUB BEDS ARE TO RECEIVE A MINIMUM OF 4 CUBIC YARDS OF COMPOST PER 1,000 SQUARE FEET OF BED AREA, TILLED INTO THE TOP 6" OF NATIVE SOILS FOLLOWING SUBSOIL PREPARATION AS IDENTIFIED ABOVE.

20. PLANTING BEDS, SHRUB PITS, TREE PITS ARE TO BE EXCAVATED PER THE PLANTING DETAILS. PLANTING PIT BACKFILL (AKA PLANTER MIX, AKA PLANTING SOIL) IS TO BE: 1 PART COMPOST TO 3 PARTS TOPSOIL PROVIDED BY A LOCAL TOPSOIL PROCESSING FACILITY. CONTRACTOR TO PROVIDE NUTRIENT ANALYSIS FOR PLANTING PIT BACKFILL FOR APPROVAL.

21. ALL LANDSCAPE AREAS WILL BE IRRIGATED WITH A FULLY AUTOMATIC UNDERGROUND IRRIGATION SYSTEM.

22. IRRIGATION SLEEVING SHALL BE INSTALLED PRIOR TO INSTALLING CONCRETE FLATWORK

23. MULCH - ALL PLANTING BEDS SHALL BE COVERED BY SOIL PEP MULCH (OR ACCEPTED SUBSTITUTION) AS APPROVED BY OWNER. ALSO REFER TO SPECIFICATIONS AND DETAILS.
   23.1. ALL SHRUB BEDS SHALL RECEIVE A MINIMUM OF 4" OF MULCH
      23.1.1. EXCEPT GROUNDCOVERS SHALL RECEIVE 3" OF MULCH.
      23.1.2. DO NOT BURY PERENNIALS OR ORNAMENTAL GRASSES WITH MULCH.
      23.1.3. MULCH RINGS AROUND SHRUBS IN NATIVE AREAS SHALL BE A MINIMUM OF 2' .
      23.1.4. MULCH RINGS AT TREES SHALL BE 4" DEEP IN NON-TURF AREAS & 2" DEEP IN TURF AREAS.
      23.1.1. PULL MULCH BACK 4-6" FROM TRUNK OF TREES AS PER DETAILS.
      23.1.2. DO NOT PROVIDE A WATER BASIN FOR TREES IN LAWN AREAS

24. SPACING / LAYOUT
   24.1. TREES TO BE CENTERED IN LANDSCAPE STRIPS OR TREE LAWNS UNLESS OTHERWISE NOTED. ALL OTHER TREES TO BE A MINIMUM OF 6' FROM HARDSCAPE.
   24.2. TREES TO BE A MINIMUM OF 8' FROM CENTER LINE OF UNDERGROUND UTILITIES SUCH AS STORM SEWERS, WATER MAINS, ETC.
   24.3. ALL EVERGREEN TREES SHALL BE A MINIMUM OF 12' FROM TRAILS, OR WALKS. EDGING SHALL BE MINIMUM OF 8' FROM EVERGREEN TREES.
   24.4. LARGE SHRUBS (THOSE OVER 6' SPACING AS SHOWN IN THE PLANT SCHEDULE) SHALL BE PLANTED A MINIMUM OF 5' FROM EDGER OR WALKS.
   24.5. SMALLER SHRUBS (THOSE LESS THAN 6' SPACING AS SHOWN IN THE PLANT SCHEDULE) SHALL BE PLANTED A MINIMUM OF 3' FROM EDGER OR WALKS.

25. ALL LANDSCAPE EDGING SHALL BE INSTALLED CAREFULLY SO AS TO NOT IMPACT THE ROOTS OF EXISTING TREES.

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

SEEDING NOTES:

BROADCAST SEEDING

1. SITE PREPARATION
   1.1. PREPARE AND PLAN - LIMIT SITE PREPARATION TO THOSE AREAS THAT WILL BE PLANTED WITHIN 24-48 HOURS AND WILL NOT BE ADVERSELY EFFECTED BY PREDICTED WEATHER PATTERNS. SEED IMMEDIATELY AFTER PREPARATION OF SOILS BETWEEN THE APPROVED SEEDING TIMES.
   1.2. SEED DURING OPTIMAL GERMINATION TIMES - SEEDING EFFORTS SHOULD OCCUR WHEN SOIL MOISTURE AND TEMPERATURE ARE OPTIMUM FOR GERMINATION:
   1.3. SPRING – APPLY SEED FOLLOWING THE SPRING SNOW MELT FROM LATE APRIL TO THE BEGINNING OF MAY.
   1.4. LATE FALL – DORMANT SEEDING PRIOR TO THE FIRST PERENNIAL SNOW FALL, FROM MID-OCTOBER TO EARLY NOVEMBER.
   1.5. REMOVE DEBRIS AND VEGETATION - STONES LARGER THAN 5-INCHES IN SIZE, TRASH, DEBRIS, TWIGS, STEMS, ROOT MAT, AND OTHER MATTER DETRIMENTAL TO VEGETATION GROWTH SHALL BE REMOVED
   1.6. LOOSEN AND TEXTURIZE TOPSOIL - THE SITE SHOULD BE PREPARED BY LOOSENING THE TOPSOIL TO A MINIMUM DEPTH OF TWO (2) INCHES, THE SOIL SHOULD BE TEXTURIZED PARALLEL TO THE CONTOUR OF THE PLANTING BED TO CREATE A ROUGHENED SURFACE. THIS CAN BE ACCOMPLISHED BY DISKING, CHAIN DRAGGING, TRACKED IMPLEMENTS OR USE OF HAND RAKES. FOR SMALLER, PATCHWORK AREAS THAT ARE TO BE BROADCAST SEEDED, HAND RAKES ARE RECOMMENDED. IT IS CRITICAL THAT THE SEEDBED BE LOOSENED TO A POINT THAT THERE ARE SPACES FOR SEED TO FILTER INTO CRACKS AND CREVICES AND DOES NOT JUST SIT ON THE SURFACE OF THE SOIL.
2. SEED INSTALLATON
   2.1. USE SEED THAT IS IN GOOD CONDITION - DO NOT USE WET SEED OR SEED THAT IS MOLDY OR OTHERWISE DAMAGED IN TRANSIT OR STORAGE. DELIVER SEED TO JOB SITE IN THE ORIGINAL UNOPENED CONTAINERS.
   2.2. SEED DURING OPTIMAL CONDITIONS - SEEDING OPERATIONS SHOULD BE PERFORMED ONLY DURING PERIODS WHEN BENEFICIAL RESULTS CAN BE OBTAINED. DO NOT SEED DURING HIGH WINDS OR WHEN THE GROUND IS FROZEN OR OTHERWISE UNABLE TO BE WORKED. AVOID SEEDING DURING TIMES OF DROUGHT OR EXCESSIVE MOISTURE EVENTS.
   2.3. CHECK THE SEEDING RATE - BROADCAST SEEDING RATES SHOULD BE DOUBLE THE SEEDING RATE FOR DRILL SEEDING.
   2.4. EVENLY APPLY SEED – SOW SEED IN AN EVEN AND MEASURED WAY SO THAT APPLICATION ACROSS THE SITE IS UNIFORM AND EVEN.
   2.5. APPLY TWICE - THE SEEDING SHALL BE DONE IN TWO (2) SEPARATE APPLICATIONS CROSSING THE AREA AT RIGHT ANGLES TO ONE ANOTHER TO GUARANTEE EVEN COVERAGE.
   2.6. RAKE - BROADCAST SEEDING SHALL BE RAKED INTO THE SOIL TO A DEPTH OF APPROXIMATELY ONE-QUARTER INCH (1/4") TO ONE-HALF INCH (1/2").
3. MULCHING
   3.1. ONLY SEED AS MUCH AS YOU CAN MULCH – DO NOT SEED MORE IN ONE DAY THAN YOU CAN MULCH IN THAT SAME DAY. SEEDED AREAS SHOULD NOT BE LEFT EXPOSED OVERNIGHT.
   3.2. APPLY MULCH AND TACKIFIER - CERTIFIED WEED FREE STRAW AND TACKIFIER TO BE APPLIED IMMEDIATELY FOLLOWING SEEDING APPLICATION. ALTERNATIVELY, HYDROSTRAW (800) 545-1755 MAY BE APPLIED AT A RATE OF 2,500 LBS/ACRE. HYDROSTRAW MAY NOT BE SPREAD IN A SINGLE APPLICATION.
   3.3. INSTALL CERTIFIED WEED FREE STRAW COMPLETELY AND THOROUGHLY OVER ALL SEEDING AREAS IMMEDIATELY AFTER SEEDING. ADEQUATE MULCH DEPTH IS ACHIEVED WHEN STRAW MULCH COVERS SEEDING AREA WITHOUT MAJOR GAPS.
   3.4. APPLY TACKIFIER ON TOP OF WEED FREE STRAW MULCH IMMEDIATELY AFTER INSTALLING CERTIFIED WEED FREE MULCH. TACKIFIER SHOULD COMPLETELY COVER MULCH. USE APPROVED SPRAYING MACHINES.
   3.5. USE OF ORGANIC TACKIFIER: PLANTAGO OR GUAR BASE TACKIFIER APPLIED AT (150 LB/ACRE). STRICTLY COMPLY WITH EQUIPMENT MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS.
   3.6. SPREAD UNIFORMLY AT A MINIMUM RATE OF 2 TONS PER ACRE (45 KG PER 100 SQ. M) TO FORM A CONTINUOUS BLANKET 1- ½-INCHES LOOSE DEPTH OVER SEEDED AREAS. SPREAD BY HAND, BLOWER OR OTHER SUITABLE EQUIPMENT.
   3.7. WATCH OUT FOR EROSION - PROTECT SEEDED SLOPES EXCEEDING 3:1 AGAINST EROSION WITH EROSION-CONTROL BLANKETS INSTALLED ON TOP OF SEED, MUCH AND TACKIFIER, AND STAPLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
   3.8. PROTECTION OF SEEDED AREAS - PROVIDE BARRIERS AS REQUIRED TO PREVENT PEDESTRIAN TRAFFIC OVER NEWLY SEEDED AREAS UNTIL COMPLETION AND ESTABLISHMENT OF DESIRED VEGETATION.

NATIVE SEED MAINTENANCE

1. ESTABLISHMENT GOALS: TYPICALLY, SUCCESSFULLY ESTABLISHING NATIVE SEED REQUIRES MULTIPLE YEARS OF REGULAR MAINTENANCE. MAINTENANCE INCLUDES MECHANICAL AND CHEMICAL REMOVALS OF WEEDS, MANAGING FOR DISTURBANCE, AND IRRIGATION. ESTABLISHMENT TIMELINE BELOW. UNTIL NATIVE SEED IS ESTABLISHED, IT REQUIRES MAINTENANCE. ONCE IT IS ESTABLISHED, IT WILL REQUIRE MINIMAL MAINTENANCE.
   1.1. ESTABLISHMENT TIMELINE:
      1 YEAR: 50% TOTAL VEGETATION COVER, WITH 80% NATIVE AND 20% NOXIOUS VEGETATION COVER.
      2 YEAR: 70% TOTAL VEGETATION COVER, WITH 90% NATIVE AND 10% NOXIOUS VEGETATION COVER.
      5 YEAR: 85% TOTAL VEGETATION COVER, WITH 90% NATIVE AND 10% NOXIOUS VEGETATION COVER.
      10 YEAR: 85% TOTAL VEGETATION COVER, WITH 95% NATIVE AND 5% NOXIOUS VEGETATION COVER.
   1.2. ESTIMATES FOR SUCCESS BASED UPON PERCENT COVER.
   1.3. ANY AREA GREATER THAN 500 SQ. FT THAT HAS LESS THAN DESIRED TOTAL VEGETATION COVERAGE, WILL NEED TO BE RESEEDED. IF NOXIOUS VEGETATION EXCEEDS DESIRED PERCENTAGE, INCREASE/ALTER MANAGEMENT EFFORTS
2. IN WILDFLOWER AREAS, ADDITIONAL WILDFLOWERS CAN BE ADDED THROUGH INNER SEEDING TO ACHIEVE THE DESIRED EFFECT. MOW DOWN ESTABLISHED NATIVE SEED PRIOR TO INNER SEEDING.
3. ONCE THE LANDSCAPE DESIGN IS FINALIZED, DHM WILL PUT TOGETHER AN ADAPTIVE MANAGEMENT PLAN. THIS WILL INCLUDE HOW TO CONTROL FOR VARIOUS SPECIES OF NOXIOUS VEGETATION TYPICAL TO PITKIN COUNTY.

STRUCTURAL SOILS CHART

TREE SIZE	CROWN PROJECTION (SQ. FT.)	AVAILABLE WATER 8% (CU-Soil)	AVAILABLE WATER 15% (LOAM)
SMALL-MEDIUM TREE, CROWN DIAMETER 20'	*314 square feet under dripline*	*440 cubic feet (16.3 cu. yards) CU-Soil with 100 cubic feet (3.5 yds) loam in tree pit opening*	*330 cubic feet (12 cu. yards)*
MEDIUM-LARGE TREE, CROWN DIAMETER 30'	*706.5 square feet under the dripline*	*1225 cubic feet (45 cu. yards) CU-Soil with 100 cubic feet (3.5 yds) loam in tree pit opening*	*753 cubic feet (28 cu. yards)*

Cornell Urban Horticulture Institute Structural Soil website:
http://www.hort.cornell.edu/uhi/outreach/index.htm#soil

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PROJECT OWNER
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY
W. G. ADMINISTRATION BUILDING (PHASE 6B)
2307 WULFSOHN RD.
GLENWOOD SPRINGS,
COLORDO 81601

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SEH Project	173800
Checked By	L.W.
Drawn By	S.H.

Project Status	**Issue Date**
50% CONSRUCTION DOCUMENTS	09/17/2024

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

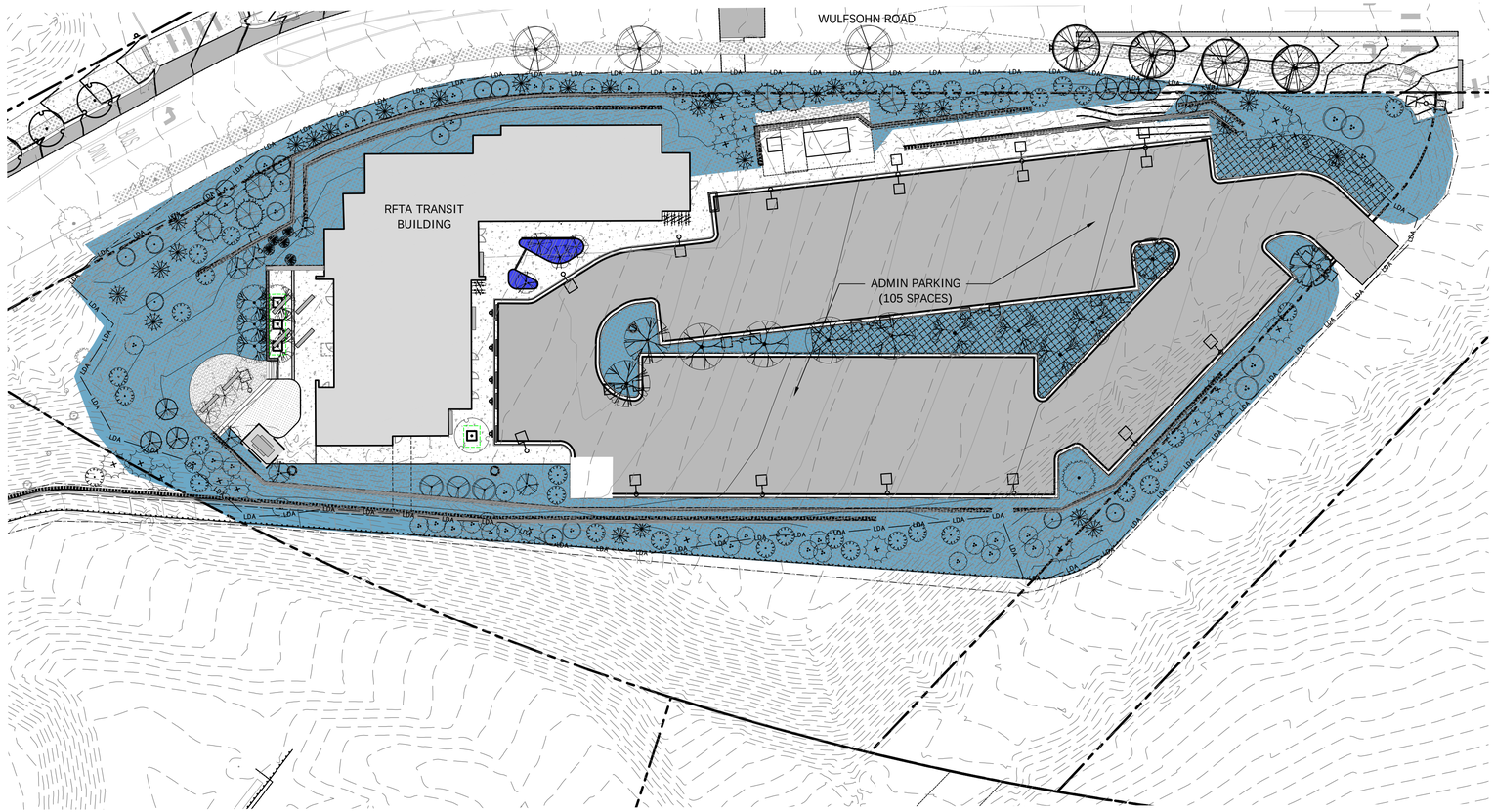
PLANTING NOTES

L200

LEGEND

- PROPERTY BOUNDARY
- EXISTING CONTOURS
- EXISTING TREES TO REMAIN
- NATIVE SEEDING REVEGETATION; SEE MASTER PLAN LIST SCHEDULE
- SHRUB AREAS
- PROPOSED PERMANENT DRIP IRRIGATION
- PROPOSED TEMPORARY SPRAY IRRIGATION

NOTE: ALL B&B MATERIAL TO RECEIVE PERMANENT BUBBLER/DRIP RING IRRIGATION.



ADMINISTRATION BUILDING SITE LANDSCAPE DATA CHART

LOT SIZE INFORMATION	ACRES	SQUARE FEET
	2.48 ACRES	*108,029 SF.*
LOT AREA TO BE DISTURBED	*2.35 ACRES*	*102,450 SF.*
TOTAL LANDSCAPED AREA		PROPOSED (SQ.FT. + % OF DISTURBED AREA)
	15,368 SF (15%)	*46,230 SF. (45%)*

ADMINISTRATION BUILDING LANDSCAPE PLANTING DATA CHART

	REQUIRED		PROPOSED
OPEN SPACE (TREES)	15,368 SF	1/400SF	68
		39	
OPEN SPACE (SHRUBS)	15,368 SF	1/100SF	154 MIN.
		154	
WULFSOHN RD. (TREES)	140 LF (NEW CONSTRUCTION)- 580 LF TOTAL EXISTING	1/50 LF	PROPOSED- 8
		3	
			EXISTING- 7
PARKING AREA (TREES)	105 SPACES	1/8 SPACES	15
		13	
PARKING AREA INTERIOR LANDSCAPE	105 SPACES	10 SF PER SPACE	3875 SF
		1050	

HYDROZONE NOTES

1) THIS PLAN IS FOR IRRIGATION DESIGN PURPOSES ONLY. IRRIGATION DESIGNER SHALL SUBMIT AN IRRIGATION DESIGN TO LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
2) SOURCE OF WATER: TBD. GLENWOOD MEADOWS RAW WATER SYSTEM PREFERRED SOURCE.
3) FOR DESIGN PURPOSES, ASSUME STATIC PRESSURE OF 75 PSI. MAXIMUM FLOW PER ZONE IS 25 GPM.
4) ALL VALVES SHALL BE SCRUBBER-TYPE SUITABLE FOR USE WITH RAW/DIRTY WATER SYSTEMS.
5) MAINLINE SHALL BE SCHEDULE 40 PVC.
6) SLEEVING IS REQUIRED FOR MAINLINE AND ALL LATERALS LOCATED UNDER HARDSCAPE, SEE PLAN FOR LOCATIONS. (1) 3" PVC PIPE FOR IRRIGATION SLEEVING AND (1) 1 ½" PVC PIPE FOR ELECTRICAL SLEEVING SHALL BE PROVIDED IN EACH LOCATION.
7) THE HYDROZONES INDICATED MAY BE SEPARATED INTO ADDITIONAL ZONES, BUT NO ZONES SHALL BE JOINED TOGETHER.
8) PLANTING BEDS SHALL BE SPRAY IRRIGATED WITH POP-UPS WHERE FEASIBLE; FOR SMALL AREAS OR AREAS WITH RESTRICTIVE GEOMETRY, DRIP CAN BE USED. DO NOT COMBINE DRIP AND SPRAY IRRIGATION ON THE SAME VALVE.
9) ALL TREES OUTSIDE PLANTING BEDS SHALL BE DRIP/BUBBLER IRRIGATED.
10) REVEGETATION AREAS SHALL BE TEMPORARILY IRRIGATED WITH ROTOR SPRAY. TEMPORARY IRRIGATION SHALL BE BURIED AS TYPICAL, BUT ABANDONED UPON ESTABLISHMENT OF LIVE COVER.
11) DO NOT COMBINE DIFFERENT IRRIGATION TYPES ON ONE ZONE.
12) NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES BETWEEN PLANS AND/OR BID AND CONSTRUCTION DOCUMENTS

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ROARING FORK TRANSPORTATION AUTHORITY

W. G. ADMINISTRATION BUILDING (PHASE 6B)

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SEH Project	173800
Checked By	L.W.
Drawn By	S.H.

Project Status	Issue Date
50% CONSRUCTION DOCUMENTS	09/17/2024

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

6B HYDROZONE & LANDSCAPE DATA

L201

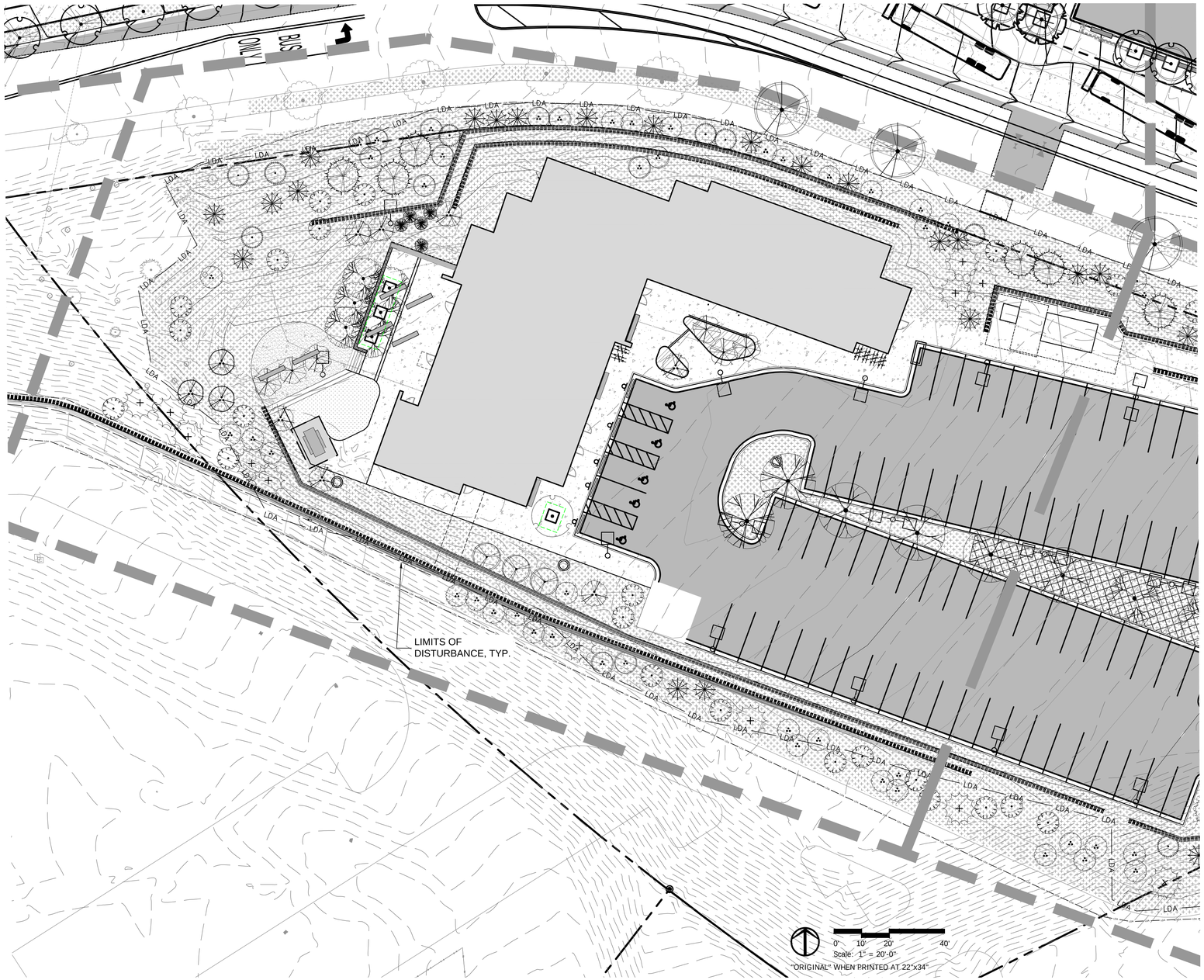
LEGEND

PROPERTY BOUNDARY

SHEET MATCHLINE

EXISTING CONTOURS

EXISTING TREES TO REMAIN



PLANT SCHEDULE ADMINISTRATION PLANTING

SYMBOL	CODE	BOTANICAL / COMMON NAME
TREES		
	ACE GLA	Acer glabrum / Rocky Mountain Maple
	AR	Acer platanoides 'Royal Red' / Royal Red Norway M
	AT	Acer tataricum 'Hot Wings' / 'Hot Wings' Tatarian M
	CC	Celtis occidentalis 'Chicagoland' / Chicagoland Hac
	CA	Crataegus ambigua / Russian Hawthorn
	CH	Cratae us crus- alli 'Cru am' / Crusader Coc spu
	GI	Gleditsia triacanthos inermis 'Imperial' / Imperial Hc
	JM	Juniperus monosperma / Oneseed Juniper
	JS2	Juniperus monosperma / Oneseed Juniper
	JO	Juniperus osteosperma / Utah Juniper
	MS	Malus x 'Spring Snow' / Spring Snow Crabapple
	PB	Picea glauca densata / Black Hills Spruce
	PC	Picea pungens / Colorado Spruce
	PP	Pinus edulis / Pinion Pine
	PIN PON	Pinus ponderosa / Ponderosa Pine
	PH	Pinus sylvestris 'Hillside Creeper' / Hillside Creeper
	POP ACU	Populus x acuminata / Lanceleaf Cottonwood
	QUE GAM	Quercus gambelii / Gambel Oak
	SI	Syringa reticulata 'Ivory Silk' / Ivory Silk Japanese T
	TC	Tilia cordata / Littleleaf Linden
	UI	ulmus davidiana japonica / prospector

SYMBOL	CODE	BOTANICAL / COMMON NAME
SHRUB AREAS		
		ADMIN SHRUB AREAS
SEEDED AREAS		SEE SHEET L204 FOR SEED MIXES
		NATIVE SEED

NOTE: DETAILED SHRUB AND PERENNIAL LAYOUT TO BE PROVIDED AT 100 PERCENT CD SET

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

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SEH Project	173800
Checked By	L.W.
Drawn By	S.H.

Project Status	Issue Date
50% CONSRUCTION DOCUMENTS	09/17/2024

REVISION SCHEDULE

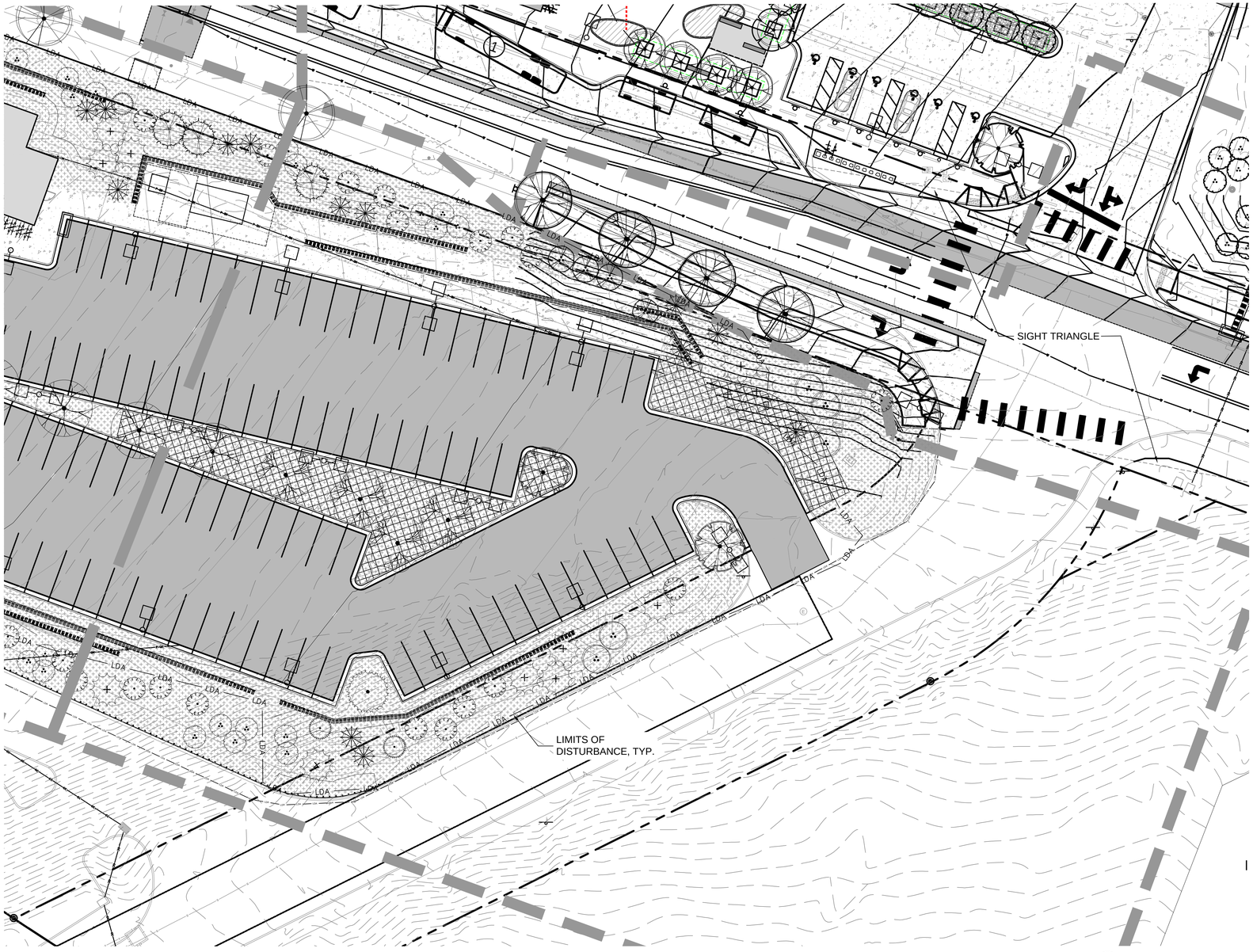
REV. #	DESCRIPTION	DATE

PLANTING PLAN 6B WEST

L202

LEGEND

- PROPERTY BOUNDARY
- SHEET MATCHLINE
- EXISTING CONTOURS
- EXISTING TREES TO REMAIN



"ORIGINAL" WHEN PRINTED AT 22"x34"

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PLANT SCHEDULE ADMINISTRATION PLANTING

SYMBOL	CODE	BOTANICAL / COMMON NAME
TREES		
	ACE GLA	Acer glabrum / Rocky Mountain Maple
	AR	Acer platanoides 'Royal Red' / Royal Red Norway M
	AT	Acer tataricum 'Hot Wings' / 'Hot Wings' Tatarian M
	CC	Celtis occidentalis 'Chicagoland' / Chicagoland Hac
	CA	Crataegus ambigua / Russian Hawthorn
	CH	Cratae us crus- alli 'Cru am' / Crusader Coc spu
	GI	Gleditsia triacanthos inermis 'Imperial' / Imperial Ho
	JM	Juniperus monosperma / Oneseed Juniper
	JS2	Juniperus monosperma / Oneseed Juniper
	JO	Juniperus osteosperma / Utah Juniper
	MS	Malus x 'Spring Snow' / Spring Snow Crabapple
	PB	Picea glauca densata / Black Hills Spruce
	PC	Picea pungens / Colorado Spruce
	PP	Pinus edulis / Pinion Pine
	PIN PON	Pinus ponderosa / Ponderosa Pine
	PH	Pinus sylvestris 'Hillside Creeper' / Hillside Creeper
	POP ACU	Populus x acuminata / Lanceleaf Cottonwood
	QUE GAM	Quercus gambelii / Gambel Oak
	SI	Syringa reticulata 'Ivory Silk' / Ivory Silk Japanese T
	TC	Tilia cordata / Littleleaf Linden
	UI	ulmus davidiana japonica / prospector

SYMBOL	CODE	BOTANICAL / COMMON NAME
SHRUB AREAS		
		ADMIN SHRUB AREAS
SEEDED AREAS		SEE SHEET L204 FOR SEED MIXES
		NATIVE SEED

NOTE: DETAILED SHRUB AND PERRENIAL LAYOUT TO BE PROVIDED AT 100% CD SET

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W. G. ADMINISTRATION BUILDING (PHASE 6B)

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SEH Project	173800
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Drawn By	S.H.

Project Status	Issue Date
50% CONSRUCTION DOCUMENTS	09/17/2024

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

PLANTING PLAN 6B EAST

L203

PLANT SCHEDULE ADMINISTRATION PLANTING

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	CAL	SIZE	QTY
TREES						
	ACE GLA	Acer glabrum / Rocky Mountain Maple	CLUMP		5`	17
	AR	Acer platanoides 'Royal Red' / Royal Red Norway Maple	2.5" CAL.			7
	AT	Acer tataricum 'Hot Wings' / 'Hot Wings' Tatarian Maple	CLUMP		5`	7
	CC	Celtis occidentalis 'Chicagoland' / Chicagoland Hackberry	2.5" CAL.			2
	CA	Crataegus ambigua / Russian Hawthorn	CLUMP		7`-8`	7
	CH	Crataegus crus-galli 'Cruzam' / Crusader® Cockspur Hawthorn	2.5" CAL.			3
	GI	Gleditsia triacanthos inermis 'Imperial' / Imperial Honey Locust	2.5" CAL.			6
	JM	Juniperus monosperma / Oneseed Juniper	B & B		5`	27
	JS2	Juniperus monosperma / Oneseed Juniper	B & B		5`	1
	JO	Juniperus osteosperma / Utah Juniper	B & B		5`	9
	MS	Malus x 'Spring Snow' / Spring Snow Crabapple	2.5" CAL.			1
	PB	Picea glauca densata / Black Hills Spruce	B & B		8-10`	6
	PC	Picea pungens / Colorado Spruce	B & B		8-10`	1
	PP	Pinus edulis / Pinion Pine	B & B		7`-8`	34
	PIN PON	Pinus ponderosa / Ponderosa Pine	B & B		8-10`	19
	PH	Pinus sylvestris 'Hillside Creeper' / Hillside Creeper Scotch Pine	15 GAL			5
	POP ACU	Populus x acuminata / Lanceleaf Cottonwood	B & B	2"		4
	QUE GAM	Quercus gambelii / Gambel Oak	B & B		5`	41
	SI	Syringa reticulata 'Ivory Silk' / Ivory Silk Japanese Tree Lilac	2" Cal.			6
	TC	Tilia cordata / Littleleaf Linden	2.5" CAL.			4
	UI	ulmus davidiana japonica / prospector	2.5" CAL.			2

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	SPACING	QTY
SHRUB AREAS					
		ADMIN SHRUB AREAS			285 sf
SEEDED AREAS		SEE SHEET L204 FOR SEED MIXES			
		NATIVE SEED			40,836 sf

NOTE: DETAILED SHRUB AND PERRENIAL LAYOUT TO BE PROVIDED AT 100% CD SET

SEED MIXES

SEED MIX FOR AREAS WITHIN 15' OF BUILDING FOUNDATION:

Seeding Rate: 5lbs/1,000 Square Feet

LATIN NAME	COMMON NAME	% of MIX
Festuca idahoensis	Idaho Fescue	25
Poa secunda	Sandberg Bluegrass	25
Festuca saximontana	Rocky Mountain Fescue	25
Poa secunda spp canbyi	Canby Bluegrass	25

Source: Pawnee Buttes Seed 1-800-782-5947

SEED MIX FOR SITE REVEGETATION:

Indian Rice Grass 'Nez Par' – Achnatherum hymenoides 'Nez Par' 3.0 lbs/acre
Sideoats Grama – Bouteloua curtipedula 'Pierre' 4.0 lbs/acre
Sandberg Bluegrass – Poa secunda 'Sherman' 0.5 lbs/acre
Thickspike Wheat Grass – Elymus lanceolatus 2 lbs/acre
'San Luis' Slender Wheatgrass – Elymus trachycalulus 3lbs/acre
'Garnet' Mountain Brome – Bromus marginatus 'Garnet' 3 lbs/acre
Arizona Fescue – Festuca ovina 'Arriba' 2.5 lbs/acre
'Arriba' Western Wheatgrass – Pascopyrum smithii 'Arriba' 2.5 lbs/acre
Mountain Sage – Artemesia tridentate vaseyana 0.25 lbs/acre
Rubber Rabbit Brush – Chrysothamnus nauseosus 2 lbs/acre
Prairie Sage – Artemesia ludviciana 0.25 lbs/acre
Fringed Sage – Artemesia frigida 0.25 lbs/acre
Hairy Golden Aster – Chrysopsis villosa 0.25 lbs/acre
Silver Lupine – Lupinus argenteus 1.0 lb/acre
Blue Flax – Linum lewisii 1.0 lb/acre
Rocky Mountain Penstemon Penstemon strictus 2.0 lbs/acre
Arrowleaf Balsam Root Balsamorhiza sagittata 0.5 lbs/acre

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

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970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY

W. G. ADMINISTRATION BUILDING (PHASE 6B)

2307 WULFSOHN RD.
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SEH Project	173800
Checked By	L.W.
Drawn By	S.H.

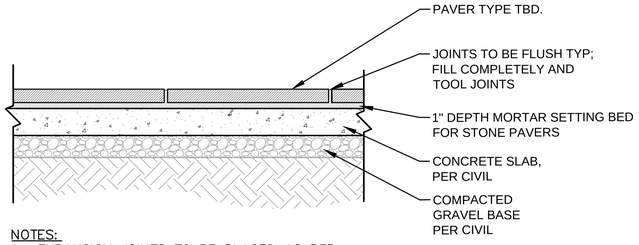
Project Status	**Issue Date**
50% CONSRUCTION DOCUMENTS	09/17/2024

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

PLANTING SCHEDULE

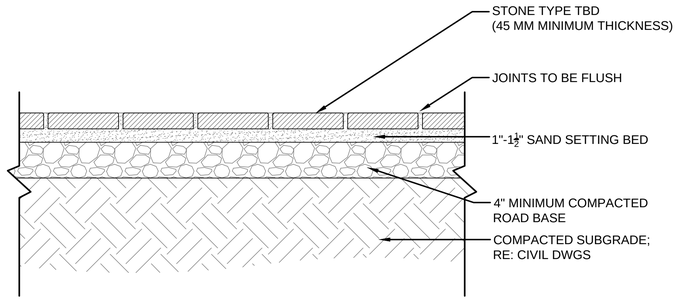
L204



NOTES:
1. EXPANSION JOINTS TO BE PLACED AS PER CIVIL SPECIFICATIONS.

1 L-3.0 MORTAR SET PAVERS

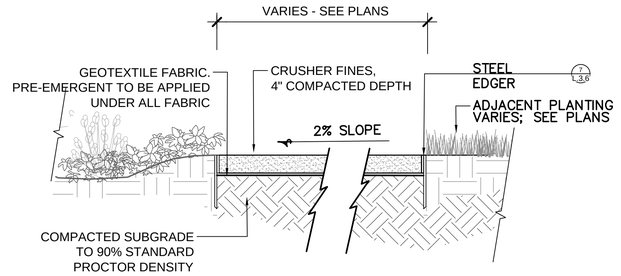
SCALE: 3/4" = 1' - 0"



NOTES:
1. EXPANSION JOINTS TO BE PLACED PER CIVIL RECOMMENDATIONS, TO BE APPROVED BY LANDSCAPE ARCHITECT.
2. FINAL PAVING CROSS SECTION AND SPECIFICATIONS PER CIVIL.
3. FINAL STONE PATTERN, TYPE AND SIZE TBD.

1.1 L-3.0 SAND SET PAVERS

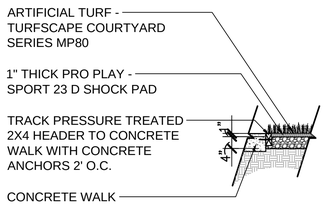
SCALE: 1 1/2" = 1' - 0"



NOTES
1. CRUSHER FINES MATERIAL SHALL MEET THE FOLLOWING SPECIFICATIONS: CLEAN, HARD, DURABLE PARTICLES OR FRAGMENTS OF ⅜" MINUS SELECT GREY CRUSHED GRANITE, RIVER ROCK OR BASALT. FINES SHALL BE EVENLY MIXED THROUGHOUT THE AGGREGATE. FINES SHALL BE ANGULAR AND MINIMUM OF 90% SHALL HAVE AT LEAST ONE FRACTURED FACE.
2. TRAIL SUB BASE SHALL BE ROLLED AND COMPACTED WITH NO LESS THAN 10 PASSES OF THE ROLLER. CRUSHER FINE APPLICATION SHALL BE WATERED, ROLLED AND COMPACTED WITH NO LESS THAN 5 PASSES EACH OF THE ROLLER. NO TRAIL COMPACTION TESTING WILL BE REQUIRED
3. PROVIDE A FABRIC UNDER THE ENTIRE EXTENT OF THE CRUSHER FINES TRAIL. TYPE #3401 THERMALLY POLYPROPYLENE, NON-WOVEN, THIN WEED CONTROL FABRIC 4.0 OZ/LINEAL YARD WEIGHT OR APPROVED SUBSTITUTION.

2 L-3.0 CRUSHER FINES PEDESTRIAN PATH

SCALE: 3/4" = 1' - 0"



3 L-3.0 ARTIFICIAL TURF LAWN

SCALE: 1/2" = 1' - 0"

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ROARING FORK TRANSPORTATION AUTHORITY

W. G. ADMINISTRATION BUILDING (PHASE 6B)

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SEH Project	173800
Checked By	L.W.
Drawn By	S.H.

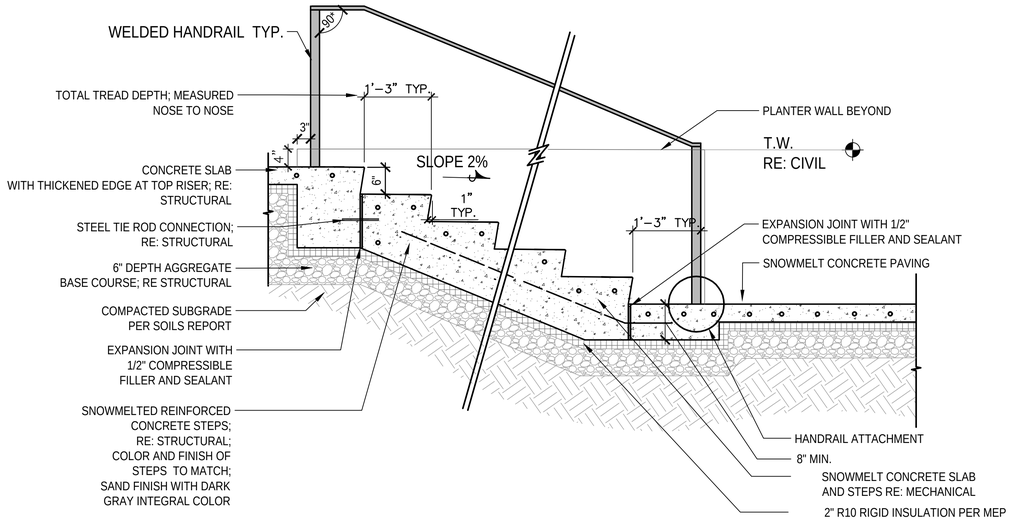
Project Status	Issue Date
50% CONSRUCTION DOCUMENTS	09/17/2024

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

SITE DETAILS

L301



1 / L-3.1 CONCRETE STAIR WITH RAILING (FOR COORDINATION)

SCALE: 3/4" = 1' - 0"

2 / L-3.1 AMPHITHEATER SEATING/STAIR (FOR COORDINATION)

SCALE:NTS

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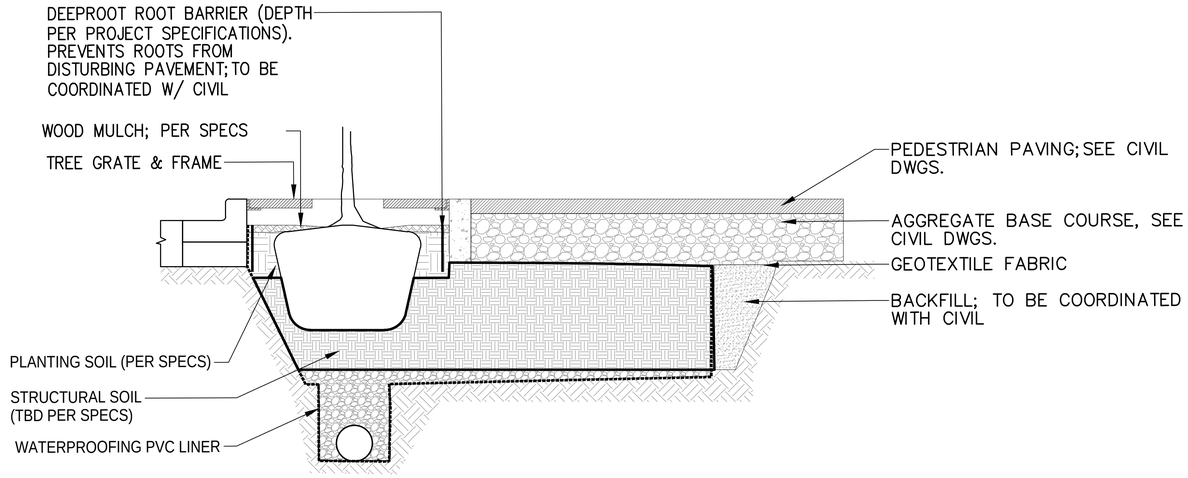
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

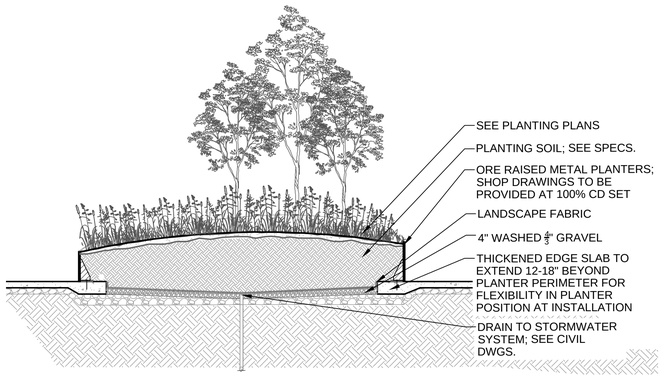
SITE DETAILS

L302



1 / L301 STRUCTURAL SOIL @ TREE GRATES

SCALE: 1" = 1' - 0"



2 / L301 RAISED METAL PLANTER (FOR COORDINATION)

SCALE: NTS

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Project Status	Issue Date
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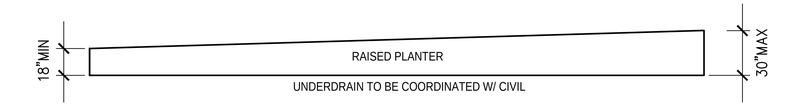
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

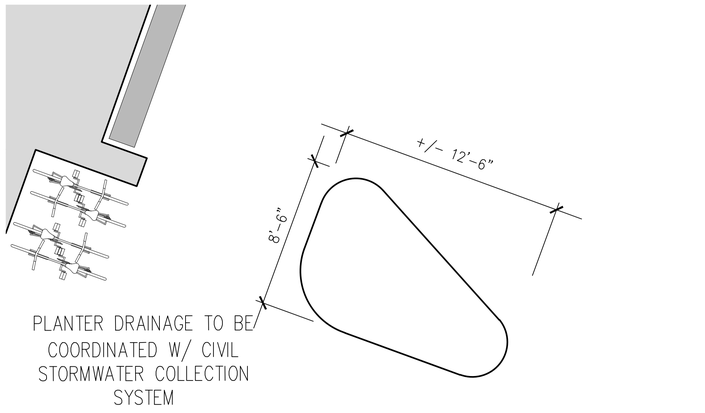
SITE DETAILS

L303



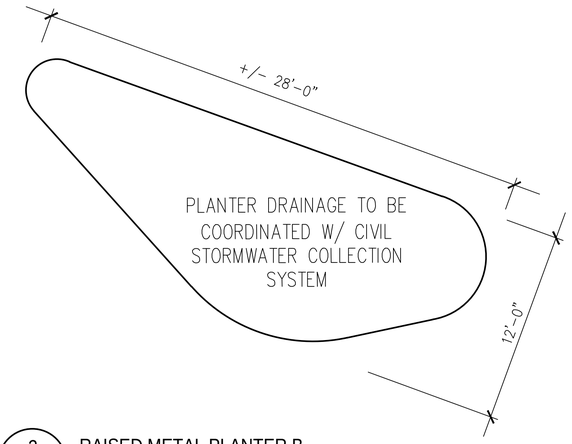
9 L-3.3 RAISED METAL PLANTER TYPICAL VERTICAL DIMENSIONS

SCALE: 1" = 4' - 0"



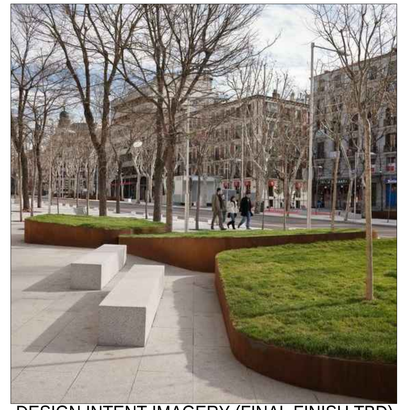
1 L-3.3 RAISED METAL PLANTER A

SCALE: 1" = 4' - 0"



2 L-3.3 RAISED METAL PLANTER B

SCALE: 1" = 4' - 0"



DESIGN INTENT IMAGERY (FINAL FINISH TBD)

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W. G. ADMINISTRATION BUILDING
(PHASE 6B)
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Drawn By	S.H.

Project Status	Issue Date
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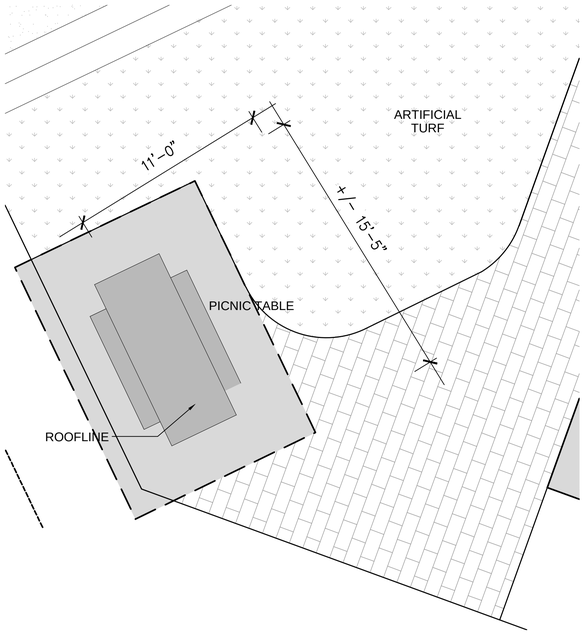
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

SITE DETAILS

L304



1 / L-3.4 CUSTOM SHADE PAVILION C

SCALE: 1" = 4' - 0"

DESIGN IMAGERY (To match design intent of existing RFTA Shade Structures)

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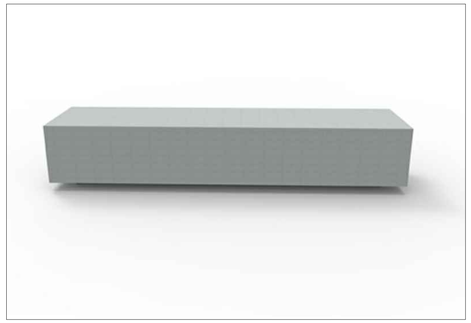
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

SITE DETAILS

L305



1 L-3.5 BENCH TYPE A

SCALE: NTS

2 L-3.5 BENCH TYPE B

SCALE: NTS

3 L-3.5 TREE GRATE W/ TREE PROTECTION

SCALE: NTS

4 L-3.5 BIKE RACK

SCALE: NTS

5 L-3.5 BEAR PROOF TRASH & RECYCLING

SCALE: NTS

6 L-3.5 ADMINISTRATION PICNIC TABLE

SCALE: NTS

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Project Status	Issue Date
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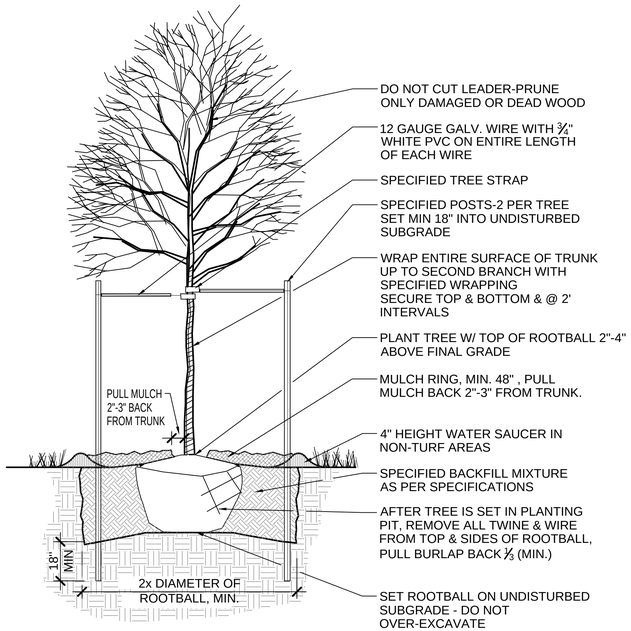
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

SITE DETAILS

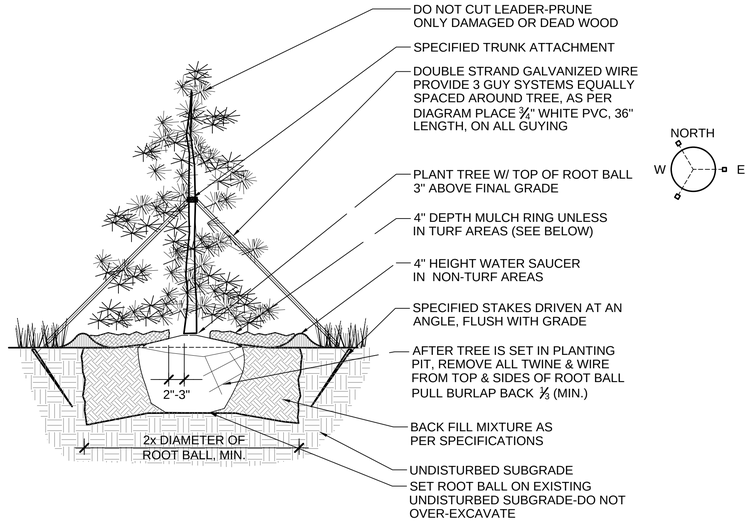
L306



NOTE: MULCH SHOULD BE 4" DEEP IN NON-TURF AREAS, MULCH SHOULD BE 2" DEEP IN TURF AREAS.

1 L.3.6 DECIDUOUS TREE PLANTING

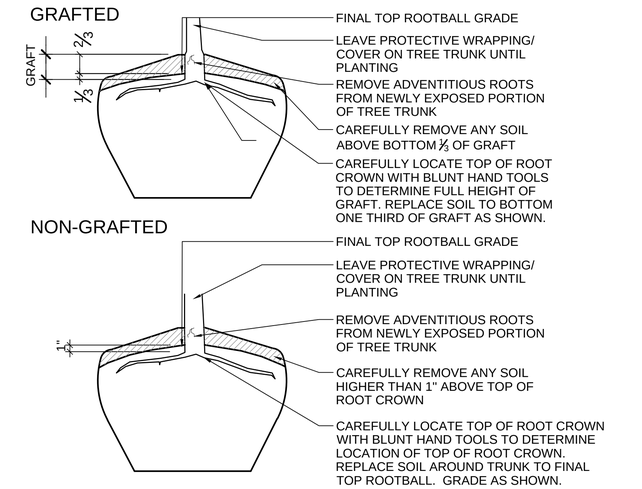
NOT TO SCALE



NOTES:
1. PULL MULCH BACK 2" TO 3" FROM TRUNK OF TREE
2. INSTALL SPECIFIED MULCH TO DRIP LINE OF TREE WHERE PLANTED IN LAWN AREAS. MULCH TO BE 2" DEEP IN LAWN AREAS.
3. DO NOT PROVIDE WATER BASIN IN IRRIGATED LAWN AREAS.

2 L.3.6 EVERGREEN TREE PLANTING

NOT TO SCALE

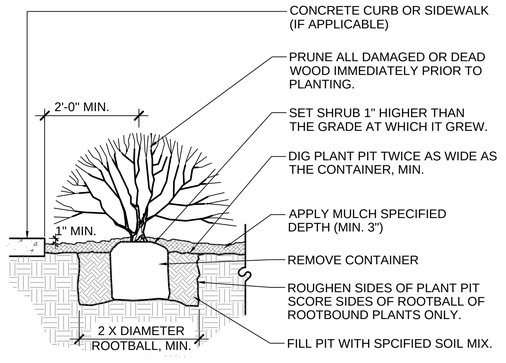


NOTES:
1. ALL WORK TO BE DONE AT TIME OF PLANTING
2. PEEL BACK ONLY TOP OF BURLAP REQUIRED TO PERFORM WORK. REPLACE BURLAP BEFORE MOVING TREE INTO PLANTING PIT. DO NOT REMOVE WIRE BASKET UNTIL INSIDE PLANTING PIT.
3. MEASURE NEW HEIGHT OF ROOTBALL AND DIG PLANTING PIT SO FINAL TOP ROOTBALL GRADE IS 3" ABOVE FINAL GRADE SURROUNDING BALL.

3 L.3.6 FINAL TOP ROOTBALL GRADE

NOT TO SCALE

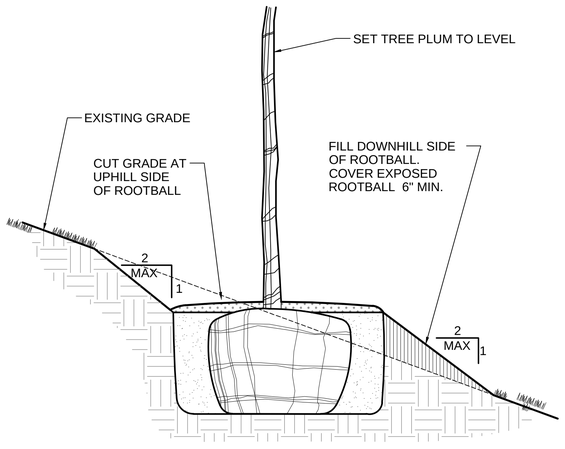
PLANT SPACING	A	B	C	D
6"	6"	6"	5"	6"
8"	8"	6"	7"	8"
12"	12"	8"	10"	12"
18"	18"	9"	15½"	18"
24"	24"	18"	21"	24"
30"	30"	15"	26"	30"
36"	36"	30"	31"	36"
48"	48"	30"	42"	48"
60"	60"	36"	52"	60"



NOTES:
1. ANY BROKEN OR CRUMBLING ROOTBALLS WILL BE REJECTED.
2. REMOVING THE CONTAINERS WILL NOT BE AN EXCUSE FOR DAMAGED ROOTBALLS.
3. HOLD GRADE 1" BELOW EDGE OF WALK OR CURB

4 L.3.6 SHRUB PLANTING

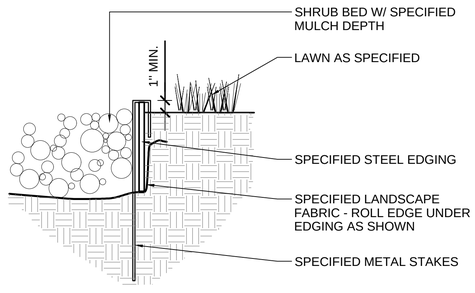
NOT TO SCALE



NOTES:
1. REFER TO VARIOUS SPECIFIC TREE INSTALLATION DETAILS FOR STAKING, GUYING, MULCHING, ETC.
2. THIS INSTALLATION SHALL APPLY TO ALL TREE TYPES AND SIZES PLANTED ON SLOPES LESS THAN 2:1.

5 L.3.6 TREE PLANTING ON SLOPE

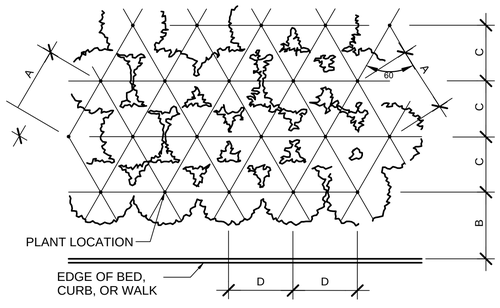
NOT TO SCALE



NOTES:
1. SET ALL EDGING 1" ABOVE FINISH GRADE AS SHOWN.
2. EDGING SHALL ABUT ALL CONCRETE CURBS AND WALKS PERPENDICULAR, AND FLUSH W/ GRADES OF CONCRETE.
3. ALL JOINTS TO BE SECURELY STAKED.

7 L.3.6 STEEL EDGER

NOT TO SCALE



NOTE: ALIGN FRONT ROW PARALLEL TO BED LINE

8 L.3.6 SHRUB / FLOWERS / GROUNDCOVERS TRIANGULAR SPACING FOR PLANTING LAYOUT

NOT TO SCALE

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(PHASE 6B)

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SEH Project 173800
Checked By L.W.
Drawn By S.H.

Project Status: 50% CONSRUCTION DOCUMENTS
Issue Date: 09/17/2024

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

SITE DETAILS

L307

IRRIGATION CONSTRUCTION NOTES

1. DRAWINGS AND BASE INFORMATION - ALL BASE AND PLANTING INFORMATION HAVE BEEN PROVIDED BY DHM DESIGN. THE CONTRACTOR IS RESPONSIBLE TO NOTIFY HYDROSYSTEMS*KDI OF ANY DISCREPANCIES BETWEEN THE UTILITY OR PLANTING PLANS AND THE IRRIGATION PLAN. IF CONTRACTOR FAILS TO NOTIFY HYDROSYSTEMS*KDI AND MAKES CHANGES TO THE IRRIGATION SYSTEM DESIGN, THEY ASSUME ALL COSTS AND LIABILITIES ASSOCIATED WITH THOSE FIELD CHANGES. REFER TO SPECIFICATIONS FOR ADDITIONAL PROJECT REQUIREMENTS. CONTACT IRRIGATION CONSULTANT FOR CURRENT SPECIFICATIONS IF NOT PROVIDED.

2. SYSTEM PRESSURE - HYDROSYSTEMS*KDI HAS CONTACTED THE LOCAL WATER DISTRICT THAT SERVES THIS SITE AND THEY HAVE BEEN TOLD THAT THE STATIC WATER PRESSURE IN THIS AREA SHOULD BE 70-74 PSI. THE CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY PRESSURE PRIOR TO COMMENCING ANY CONSTRUCTION AND NOTIFY HYDROSYSTEMS*KDI OF ANY VARIANCE FROM THE STATED PRESSURE IMMEDIATELY. WRITTEN DOCUMENTATION OF PRESSURE TEST AND RESULTS SHALL BE PROVIDED TO HYDROSYSTEMS*KDI AT CONSTRUCTION ONSET. IF CONTRACTOR FAILS TO FIELD VERIFY PRESSURE AND/OR NOTIFY HYDROSYSTEMS*KDI OR ANY VARIATIONS FROM THIS PRESSURE, THEN THEY ASSUME ALL CONSTRUCTION AND ENGINEERING COSTS ASSOCIATED WITH SYSTEM MODIFICATIONS REQUIRED TO ACCOMMODATE ACTUAL SITE PRESSURE. THIS SYSTEM HAS BEEN DESIGNED FOR A REQUIRED STATIC PRESSURE OF 70-74 PSI MINIMUM (AS NOTED AT EACH LOCATION).

3. IRRIGATION SYSTEM OPERATION INTENT - THIS IRRIGATION SYSTEM HAS BEEN DESIGNED TO IRRIGATE THE ESTABLISHED LANDSCAPE WITHIN A SIX NIGHT PER WEEK, EIGHT HOUR PER NIGHT WATERING WINDOW. ESTABLISHMENT WATERING WILL REQUIRE UP TO TWICE AS MUCH IRRIGATION FOR A FOUR TO SIX WEEK PERIOD. THE DESIGN IS BASED ON THE FOLLOWING PROJECTED WEEKLY APPLICATION RATES AFTER ESTABLISHMENT. THESE FIGURES ARE BASED ON A 30-YEAR AVERAGE WEATHER DATA AND WILL NEED TO BE ADJUSTED DUE TO SEASONAL CHANGES AND WEATHER CONDITIONS ABOVE AND BELOW THE AVERAGE VALUES UTILIZED.
   - BLUEGRASS TURF 1.50" PER WEEK PEAK SEASON
   - ORNAMENTAL PLANTINGS 0.89" PER WEEK PEAK SEASON
   - NATIVE SEED MIXES 0.74" PER WEEK PEAK SEASON (TWO SEASONS)

   NOTE: IT IS THE INTENT OF THIS DESIGN THAT NATIVE AREAS WOULD ONLY BE IRRIGATED FOR ESTABLISHMENT. SYSTEM WILL REMAIN FOR USE DURING YEARS WITH LESS THAN NORMAL RAINFALL.

4. EQUIPMENT INSTALLATION - IT IS THE INTENT OF THIS DESIGN THAT ALL IRRIGATION EQUIPMENT BE INSTALLED WITHIN PROPERTY LIMITS AND WITHIN LANDSCAPED AREAS. INSTALLATION SHALL BE COORDINATED WITH OTHER UTILITY WORK, ALL OTHER UTILITIES SHALL TAKE PRECEDENCE OVER IRRIGATION LOCATION. ANY EQUIPMENT OTHER THAN VALVE BOXES OR SLEEVING THAT CONTAINS PIPE OR WIRES SHOWN OUTSIDE OF THESE LIMITS IS SHOWN IN THAT LOCATION FOR GRAPHICAL CLARITY ONLY. ALL VALVE BOXES SHALL BE INSTALLED A MINIMUM OF 2'-0" FROM EDGE OF ANY PAVED SURFACES UNLESS SPECIFICALLY INDICATED ON PLANS. BOXES INSTALLED IN OPEN TURF AREAS SHALL BE KEPT TO EDGES AND STAKED FOR REVIEW IF ALONG HIGH TRAFFIC AREAS. ALL VALVE BOXES SHALL BE PLACED A MINIMUM OF 3'-0" FROM THE CENTERLINE OF ANY DRAINAGE SWALE. ALL VALVE BOXES WITHIN PAVEMENT SHALL BE TIER 15 RATED BOXES FOR HEAVY DUTY NON-DELIBERATE TRAFFIC. BOX LID COLOR SHALL MATCH ADJACENT MATERIALS, I.E. GREEN IN TURF, TAN IN WOOD MULCH, GRAY IN STONE MULCH, PURPLE FOR RECLAIMED WATER SYSTEMS (IF REQUIRED). REFER TO LANDSCAPE PLANS FOR MATERIAL COLORS AND TYPES. ALL BOXES SHALL BE INSTALLED TO BE FLUSH WITH GRADE AND IN AN ORDERLY MANNER. WHERE MORTAR PAVING LIDS ARE INSTALLED ABOVE BOXES, IRRIGATION BOX WITH LID SHALL BE LOWERED TO ACCOMMODATE PAVING LID. REFER TO LANDSCAPE FOR ADDITIONAL INFORMATION, TO BE INSTALLED PER MANUFACTURE RECOMMENDATIONS.

5. PIPING INSTALLATION - IRRIGATION PIPING SHALL MAINTAIN A MINIMUM DISTANCE FROM BUILDING FOUNDATIONS OF 5 FEET OR AS DESCRIBED IN SOILS REPORT, WHICHEVER IS GREATER. NO SPRAY IRRIGATION SHALL OCCUR WITHIN 10 FEET OF THE FOUNDATION. NO DRIP IRRIGATION SHALL OCCUR WITHIN 5 FEET OF THE FOUNDATION UNLESS SOIL MOISTURE SENSORS ARE INSTALLED ON VALVES SERVICING THESE AREAS. ALL IRRIGATION PIPING AND EMISSION DEVICES LOCATED ON TOP OF OR WITHIN BUILDING STRUCTURE SHALL CONFORM TO WATERPROOFING CONSULTANT REQUIREMENTS. PIPE ROUTING MAY BE SHOWN WITHIN THESE DISTANCES FOR GRAPHICAL CLARITY ONLY.

6. MANUAL DRAIN VALVES - CONTRACTOR TO INSTALL ONE MANUAL DRAIN VALVE AT ALL LOW POINTS AND DEAD ENDS OF PRESSURE SUPPLY PIPING TO ENSURE COMPLETE DRAINAGE OF SYSTEM. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THESE LOCATIONS IN-FIELD AND INSTALLATION LOCATIONS SHALL BE NOTED ON AS-BUILTS.

7. POP-UP SPRAY NOZZLES - CONTRACTOR TO INSTALL PLASTIC NOZZLES ON ALL POP-UP SPRAY HEADS. INSTALL 15 SERIES NOZZLES ON ALL HEADS SPACED AT 12' TO 14'. INSTALL 12 SERIES NOZZLES ON ALL HEADS SPACED 10' TO 11'. INSTALL 10 SERIES NOZZLES ON ALL HEADS SPACED AT 8' TO 9'. INSTALL 8 SERIES NOZZLES ON ALL HEADS SPACED AT 6' TO 7'. INSTALL 5' NOZZLES ON ALL HEADS SPACED AT 5'. INSTALL SIDE STRIP NOZZLES ON ALL HEADS WITH AN "S" DESIGNATION AND RIGHT AND LEFT CORNER STRIP NOZZLES ON ALL HEADS WITH AN "L" OR "R" DESIGNATION. VARIABLE ARC NOZZLES SHOULD BE UTILIZED ADJACENT TO CURVILINEAR SHRUB BEDS OR FOR ANY ANGLES THAT ARE NOT A STANDARD NOZZLE ANGLE.

8. UNLABELED PIPING - ALL UNLABELED LATERAL PIPING SHALL BE 1" MINIMUM UNLESS OTHERWISE NOTED.

9. SLEEVING - ALL SLEEVING UNDER PAVED SURFACES SHOWN ON PLANS IS BY CONTRACTOR UNLESS OTHERWISE NOTED. SLEEVING SHALL BE INSTALLED IN THE SIZES AND QUANTITIES SHOWN ON PLANS OR BASED ON THE SCHEDULE BELOW. WHERE SLEEVES ARE SHOWN, BUT NOT LABELED, FOLLOW THE SCHEDULE BELOW. ALL MAINLINE, CONTROL WIRES AND DRIP LINES UNDER PAVED SURFACES ARE TO BE INSTALLED IN SLEEVING. ALL MAINLINE SLEEVE LOCATIONS TO INCLUDE A SEPARATE WIRE SLEEVE.

SLEEVED PIPE SIZE/WIRE QUANTITY	REQUIRED SLEEVE SIZE & (QUANTITY)
¾" - 1¼" PIPING	2" PVC (1)
1½" - 2" PIPING	4" PVC (1)
2½" - 3" PIPING	6" PVC (1)
2-WIRE CABLE	2" PVC (1)

10. 2-WIRE SYSTEM NOTES - CONTRACTOR SHALL INSTALL ALL TWO-WIRE COMPONENTS PER MANUFACTURER'S RECOMMENDATIONS AND STANDARDS.
    - 10.1. CONTRACTOR SHALL USE ONLY MANUFACTURED 2-WIRE DECODER CABLE (SEE SCHEDULE FOR SPECIFIC 2-WIRE CABLE).
    - 10.2. ONLY USE SINGLE STATION DECODERS (SEE SCHEDULE FOR SPECIFIC MODEL).
    - 10.3. LOOP 5' OF 2-WIRE DECODER CABLE INTO ALL VALVE BOXES (WITH DECODERS AND SPLICES) FOR MAINTENANCE.
    - 10.4. LOOP 2' OF 2-WIRE DECODER CABLE AS AN EXPANSION LOOP AT ALL CHANGES OF DIRECTION.
    - 10.5. USE ONLY 3M DBR-6 WATERPROOF CONNECTORS ON ALL WIRE SPLICES AND ALL WIRE SPLICES ARE TO BE MADE WITHIN A VALVE BOX WITH CONTROL VALVES OR A SEPARATE 10" ROUND VALVE BOX FOR WIRE SPLICES.
    - 10.6. INSTALL SURGE PROTECTOR RODS OR PLATES 8 LF. PERPENDICULARLY FROM VALVES, DECODERS, AND COMMUNICATION WIRE. WHERE 8 LF IS NOT AVAILABLE, REFER TO ASIC GUIDELINES FOR PLATE LAYOUT.
    - 10.7. GROUNDING SHALL BE IN AN IRRIGATED AREA.
    - 10.8. GROUND ALL DECODERS AND DECODER WIRE A MINIMUM OF EVERY 600' AND AT ALL ENDS OF 2-WIRE DECODER CABLE RUN.

11. ADJUSTMENT - CONTRACTOR SHALL FINE TUNE/ADJUST THE IRRIGATION SYSTEM TO REDUCE/AVOID OVERSPRAY ONTO HARD SURFACES BY ADJUSTING NOZZLE DIRECTION AND NOZZLE RADIUS.

12. PLANS AND SPECIFICATIONS - CONTRACTOR RESPONSIBLE TO ENSURE WORK CONFORMS TO PLANS AND SPECIFICATIONS. AT ONSET OF CONSTRUCTION, VERIFY PLANS ARE CURRENT. DO NOT CONSTRUCT ANY PORTIONS OF THE IRRIGATION OFF OF PLANS MARKED NOT FOR CONSTRUCTION OR FOR REVIEW ONLY. FAILURE TO VERIFY CURRENT PLANS MAY RESULT IN RECONSTRUCTION AT CONTRACTOR'S EXPENSE. WHERE REQUIRED BY CITY OR TOWN, CONTRACTOR SHALL CONSTRUCT ONLY OFF CITY OR TOWN STAMPED PLANS. REVISIONS TO CITY OR TOWN STAMPED PLANS SHALL CONFORM TO CITY OR TOWN FIELD CHANGE PROCEDURES AND DOCUMENTATION.

13. EXISTING IRRIGATION DAMAGE - CONTRACTOR SHALL REPAIR OR REPLACE ANY EXISTING IRRIGATION SYSTEMS DAMAGED DURING NEW INSTALLATION. REPAIR OR REPLACEMENT SHALL BE DETERMINED BY OWNER OR OWNER'S REPRESENTATIVE AND PAID FOR BY THE LANDSCAPE CONTRACTOR.

14. EXISTING IRRIGATION COORDINATION - EXISTING IRRIGATION SYSTEM SHALL NOT BE TURNED OFF FOR MORE THAN 24 HOURS MAXIMUM. CONTRACTOR SHALL COORDINATE TURN OFF OF SYSTEM WITH OWNER OR MAINTENANCE STAFF 72 HOURS PRIOR TO ANY NEW CONSTRUCTION.

15. SIMULTANEOUS ZONE OPERATION - THIS IRRIGATION SYSTEM HAS BEEN DESIGNED TO OPERATE MULTIPLE ZONES SIMULTANEOUSLY BASED ON INDIVIDUAL ZONE FLOW. THE DESIGN IS INTENDED TO OPERATE MULTIPLE VALVES, UP TO THE MAXIMUM FLOW IN THE POINT OF CONNECTION NOTE. REFER TO CONTROLLER SPECIFICATION FOR MAXIMUM SIMULTANEOUS VALVE COUNT.

16. WATER BUDGETS AND PROJECTIONS - HYDROSYSTEMS-KDI HAS BASED THE IRRIGATION DESIGN AND THE ASSOCIATED PROJECTED WATER USE UPON SUCH FACTORS AS CITY OR WATER DISTRICT IMPOSED REQUIREMENTS, PUBLISHED PLANT SPECIES WATER NEEDS, SELECTED IRRIGATION METHOD EFFICIENCIES AS REPORTED BY INDEPENDENT TESTING FACILITIES, HISTORICAL WEATHER DATA FOR THE PROJECT LOCATION, AND PROPER MAINTENANCE PROCEDURES. HYDROSYSTEMS*KDI IS NOT RESPONSIBLE, AND ACCEPTS NO RESPONSIBILITY, FOR THE ACTUAL WATER USAGE VARIATION THAT IS A RESULT OF FIELD MODIFICATIONS TO THE SYSTEM NOT MATCHING CONSTRUCTION DOCUMENTS, IMPROPER MAINTENANCE, WASTE DUE TO SYSTEM DAMAGE OR VANDALISM, OR WEATHER CONDITIONS THAT DEVIATE FROM PUBLISHED 30 YEAR HISTORICAL AVERAGES.

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER	MODEL NO.	DESCRIPTION	DETAIL NO.
	RAIN BIRD	RD-06-S-P30 WITH "MPR" FIXED SPRAY NOZZLES (OR APPROVED EQUAL)	POPUP SPRAY HEAD	9
	RAIN BIRD	RD-12-S-P30 WITH "MPR" FIXED SPRAY NOZZLES (OR APPROVED EQUAL)	HI-POP SPRAY HEAD	10
#1.5 #2 #2 #2	RAIN BIRD	5006-PL-PC-SAM-R-NP WITH #NOZZLE (6" USE PC AS REVERSING PC)	GEAR DRIVEN ROTOR	11
#4 #10 #10 #10	RAIN BIRD	5012-PL-PC-SAM-R-NP WITH #NOZZLE (12" USE PC AS REVERSING PC)	HI-POP GEAR DRIVEN ROTOR	12
	RAIN BIRD	1402	BUBBLER	13
	RAIN BIRD	PEB SERIES (OR APPROVED EQUAL)	ELECTRIC CONTROL VALVE	8
	RAIN BIRD	44-LRC (OR APPROVED EQUAL)	QUICK COUPLING VALVE	5
N/S	OLDCASTLE / CARSON	REFER TO SPECIFICATIONS AND DETAILS (OR APPROVED EQUAL)	VALVE BOXES	VARIOUS
N/S	AY MACDONALD	76001 - 1/4 TURN - 1" (OR APPROVED EQUAL)	MANUAL DRAIN VALVE	6
		LINE SIZE - 2½" AND SMALLER	GATE VALVE	7
	RAIN BIRD	PEB (1.5") (OR APPROVED EQUAL)	MASTER CONTROL VALVE	3
FS	BASELINE	BL-PFS100 (1.5") (OR APPROVED EQUAL)	FLOW SENSOR	4
		CLASS 200 BE - 2½" & SMALLER	PVC MAINLINE	1
		CLASS 200 BE	PVC LATERAL	1
		CLASS 200	PVC SLEEVING	2
WS			WIRE SPLICES	17
	RAIN BIRD	XCZ-100-PRB-COM	DRIP VALVE ASSEMBLY	14
	TORO	BLUE STRIPE	POLY DRIP TUBING -¾" MIN. WIDTH	15
N/S	RAIN BIRD	XBCV - XERI-BUG WITH CHECK VALVE	DRIP EMITTERS	15
	HUNTER / NIBCO	ECO-ID-12-R WITH NIBCO BALL VALVE	DRIP LINE BLOW-OUT STUB AND INDICATOR HEAD	16
A		(TO BE REUSED)	EXISTING CONTROLLER	N/S
		(TO BE REUSED)	EXISTING BACKFLOW DEVICE	N/S
M			EXISTING METER	N/S

CONTROLLER & STATION NO. / CONTROL VALVE SIZE

A (controller) — NUMBER OF SPARE WIRES - 2 CONTROL AND 1 SPARE WIRES TO WHICH CONTROLLER - SEE CONSTRUCTION NOTES

IRRIGATION DEVELOPMENT DESIGN NOTES

1. THE IRRIGATION SYSTEM SHALL BE DESIGNED TO PROVIDE PEAK SEASON IRRIGATION WITHIN AN SIX NIGHT, SIX HOUR PER NIGHT WATERING PERIOD. IRRIGATION SHALL OCCUR BETWEEN THE HOURS OF 10:00 PM AND 4:00 AM.
2. THE MAINLINE SYSTEM WILL BE DESIGNED SUCH THAT VELOCITIES WITHIN THE MAINLINE PIPING DO NOT EXCEED FIVE FEET PER SECOND.
3. THE MAXIMUM FLOW RATE REQUIRED FOR THE SITE IS (TBD) GPM. THE STATIC PRESSURE AVAILABLE AT THE SITE IS (TBC) PSI
4. THE IRRIGATION INFORMATION SHOWN ON THESE PLANS IS CONCEPTUAL.
5. IRRIGATION DESIGN APPROACH
   - 5.1. NATIVE AREAS
     - 5.1.1. SMALL AREAS (25 FEET WIDE OR LESS) SHALL BE IRRIGATED WITH FIXED NOZZLE POP-UP SPRAY HEADS (12" HEIGHT) WITH MATCHED PRECIPITATION NOZZLES. NOZZLES SHALL BE SIZES TO PROVIDE HEAD TO HEAD COVERAGE.
     - 5.1.2. LARGE TURF AREAS (WIDER THAN 25 FEET) SHALL BE IRRIGATED WITH GEAR DRIVEN ROTOR HEADS (12" HEIGHT) WITH A MINIMUM PRECIPITATION RATE OF .45" PER HOUR FOR A FULL CIRCLE HEAD.
   - 5.2. SHRUB BED AREAS - BED AREAS WITH PLANT MATERIAL ONE GALLON IN SIZE OR LARGER SHALL BE DRIP IRRIGATED.
   - 5.3. TREES (IN NATIVE AREAS) - SHALL BE SPRAY IRRIGATED WITH 12" POP-UP SPRAY HEADS WITH A BUBBLER NOZZLE (2 PER TREE).
6. IRRIGATION SYSTEM SHALL BE FULLY AUTOMATIC AND INCLUDE A WEATHER SENSING DEVICE.

IRRIGATION DESIGN STRATEGY

HATCH	DESCRIPTION	AREAS < 6'	AREAS 6'-25'	AREAS > 25'
	NATIVE GRASS	N/A	12" POPUP SPRAY	12" ROTOR
	TREES & SHRUBS	POINT SOURCE DRIP	POINT SOURCE DRIP	POINT SOURCE DRIP
	TREES (IN NATIVE)	BUBBLER	N/A	N/A

*SELECTION OF POINT SOURCE DRIP OR INLINE SUBSURFACE DRIP MAY BE DETERMINED BY PLANT DENSITY, GROWTH HABIT OR LOCATION RATHER THAN AREA DIMENSIONS.

DIRECTORY

IRRIGATION NOTES & SCHEDULE	IR.1
IIRRIGATION PLANS	IR.2 - IR.5
IRRIGATION DETAILS	IR.6 - IR.8
IRRIGATION CHARTS	IR.8 - IR.10

811 Know what's below. Call before you dig.
CALL 3 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

HydroSystems KDI
Irrigation Consulting & Water Management
13949 W. Colfax Ave, Suite 260 Lakewood, Colorado 80401
o: 303.980.5327 www.hydrosystemskdi.com

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Sheet Revisions

Rev.	Date	Comments	Init.

ROARING FORK TRANSPORTATION AUTHORITY
WEST GLENWOOD TRANSIT CENTER
2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans	
No Revisions:	
Revised:	
Void:	

IRRIGATION NOTES & SCHEDULE

Designer:	KJD	Structure Numbers	
Detailer:	JSB		
Sheet Subset:	IR400	Subset Sheets:	of

Project No./Code
TRG M535-014
25924
Sheet Number

IRRIGATION DESIGN STRATEGY

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	TREES & SHRUBS	POINT SOURCE DRIP	POINT SOURCE DRIP	POINT SOURCE DRIP
	TREES (IN NATIVE)	BUBBLER	N/A	N/A

*SELECTION OF POINT SOURCE DRIP OR INLINE SUBSURFACE DRIP MAY BE DETERMINED BY PLANT DENSITY, GROWTH HABIT OR LOCATION RATHER THAN AREA DIMENSIONS.

DESIGN INTENT

1. IRRIGATION DESIGN APPROACH
   - 1.1. NATIVE AREAS
     - 1.1.1. SMALL AREAS (25 FEET WIDE OR LESS) SHALL BE IRRIGATED WITH FIXED NOZZLE POP-UP SPRAY HEADS (12" HEIGHT) WITH MATCHED PRECIPITATION NOZZLES. NOZZLES SHALL BE SIZES TO PROVIDE HEAD TO HEAD COVERAGE.
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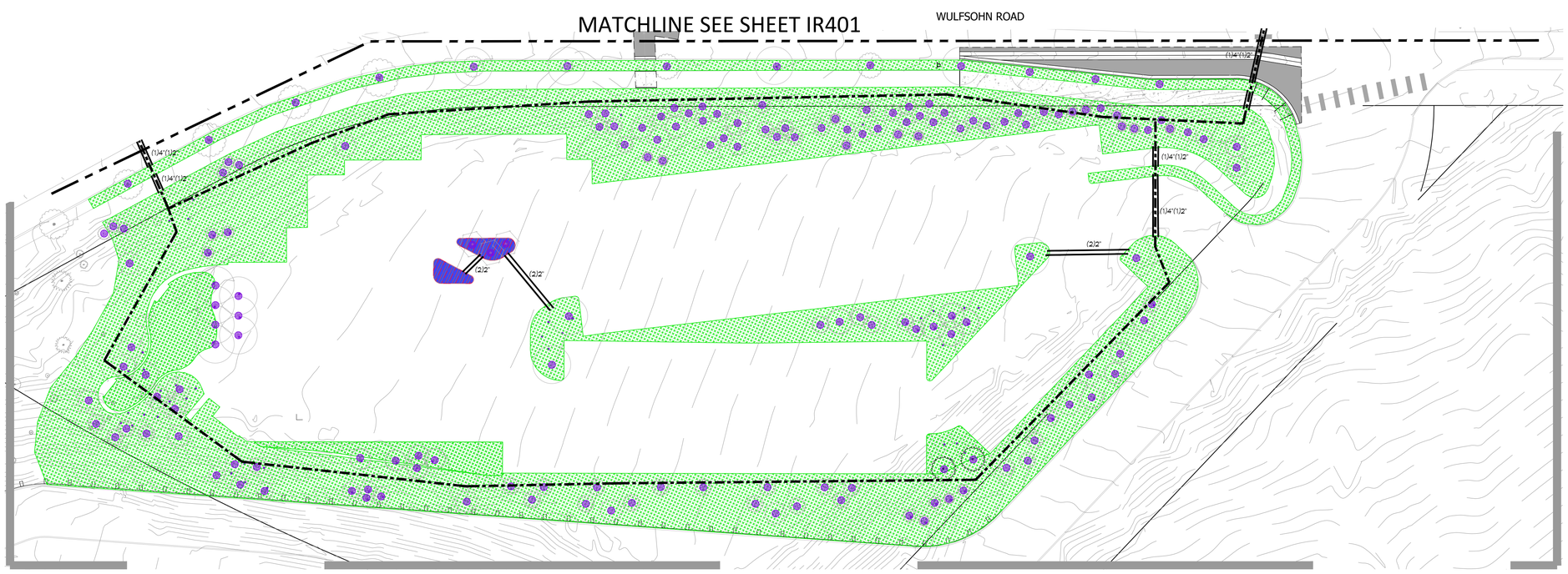

DIRECTORY

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Sheet Revisions

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WEST GLENWOOD TRANSIT CENTER
2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans
No Revisions:
Revised:
Void:

IRRIGATION PLAN

Designer: KJD
Detailer: JSB
Sheet Subset: **IR402**
Structure Numbers:
Subset Sheets: of

Project No./Code
TRG M535-014
25924
Sheet Number

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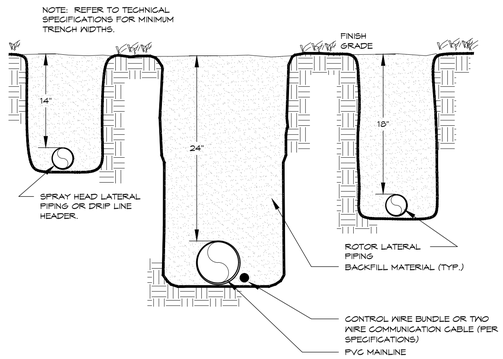
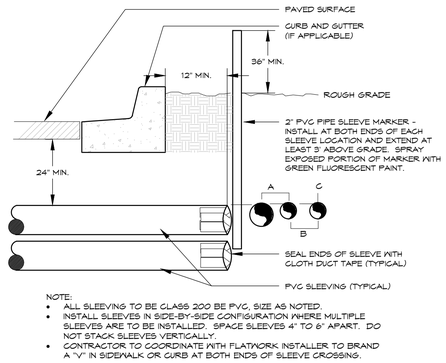
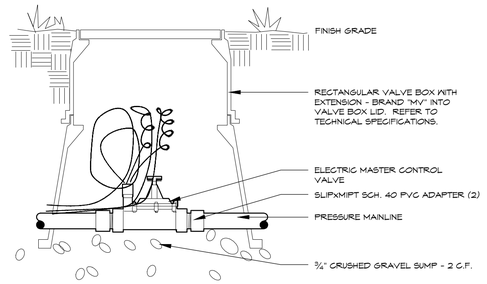


TRENCH 1



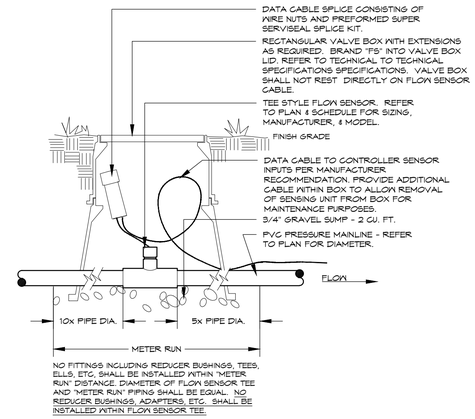
NOTE:
- ALL SLEEVING TO BE CLASS 200 BE PVC, SIZE AS NOTED.
- INSTALL SLEEVES IN SIDE-BY-SIDE CONFIGURATION WHERE MULTIPLE SLEEVES ARE TO BE INSTALLED. SPACE SLEEVES 4" TO 6" APART. DO NOT STACK SLEEVES VERTICALLY.
- CONTRACTOR TO COORDINATE WITH FLATWORK INSTALLER TO BRAND A "V" IN SIDEWALK OR CURB AT BOTH ENDS OF SLEEVE CROSSING.

IRRIGATION SLEEVING 2



MASTER VALVE 3

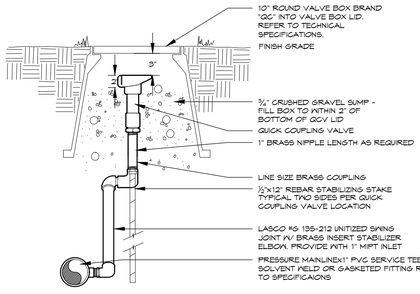
24V - Small - Typical



NO FITTINGS INCLUDING REDUCER BUSHINGS, TEES, ELLS, ETC, SHALL BE INSTALLED WITHIN "METER RUN" DISTANCE. DIAMETER OF FLOW SENSOR TEE AND "METER RUN" PIPING SHALL BE EQUAL. NO REDUCER BUSHINGS, ADAPTERS, ETC. SHALL BE INSTALLED WITHIN FLOW SENSOR TEE.

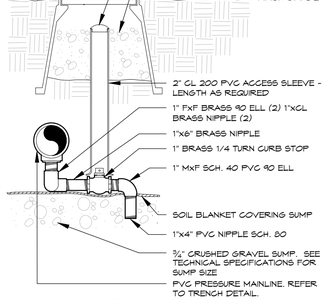
FLOW SENSOR 4

VIA DATA CABLE - TEE STYLE



APPLY TEFLON TAPE TO ALL THREADED NIPPLES

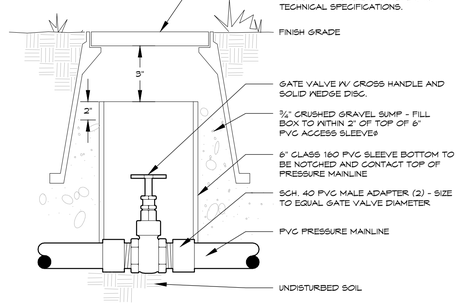
QUICK COUPLING VALVE 5



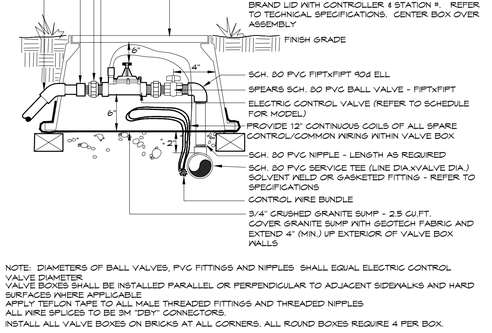
APPLY TEFLON TAPE TO ALL MALE THREADED PVC FITTINGS AND ALL NIPPLES

MANUAL DRAIN VALVE 6

TYPICAL



GATE VALVE 7



NOTE: DIAMETERS OF BALL VALVES, PVC FITTINGS AND NIPPLES SHALL EQUAL ELECTRIC CONTROL VALVE DIAMETER.
VALVE BOXES SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO ADJACENT SIDEWALKS AND HARD SURFACES WHERE APPLICABLE
APPLY TEFLON TAPE TO ALL MALE THREADED FITTINGS AND THREADED NIPPLES
ALL WIRE SPLICES TO BE 3M "DBY" CONNECTORS.
INSTALL ALL VALVE BOXES ON BRICKS AT ALL CORNERS. ALL ROUND BOXES REQUIRE 4 PER BOX.

ELECTRIC CONTROL VALVE 8

DIRECTORY

IRRIGATION NOTES & SCHEDULE	IR.1
IIRRIGATION PLANS	IR.2 - IR.5
IRRIGATION DETAILS	IR.6 - IR.8
IRRIGATION CHARTS	IR.8 - IR.10

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Sheet Revisions

Rev.	Date	Comments	Init.

ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER

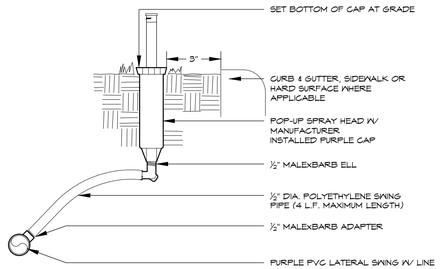
2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans
No Revisions:
Revised:
Void:

IRRIGATION DETAILS

Designer:	KJD	Structure Numbers	
Detailer:	JSB		
Sheet Subset:	**IR403**	Subset Sheets:	of

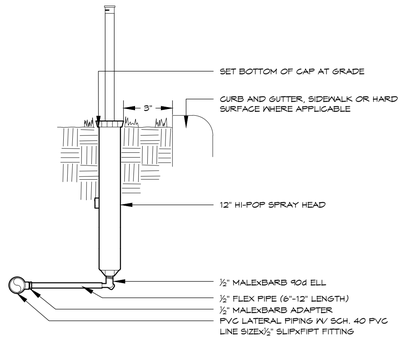
Project No./Code
TRG M535-014
25924
Sheet Number



NOTE:
- SET HEAD PERPENDICULAR TO FINISH GRADE.
- APPLY TEFLON TAPE TO MALE PVC THREADED FITTINGS.
- DOUBLE CLAMP ½" & 2" DIAMETER FITTINGS.

POP-UP SPRAY HEAD

9

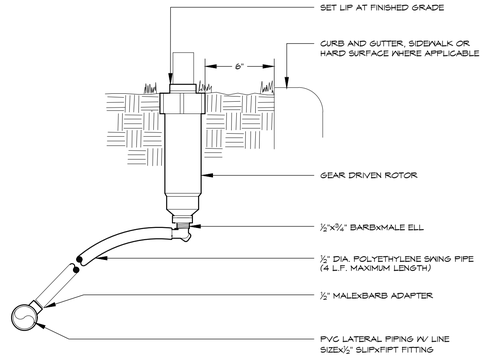


NOTE:
- SET HEAD PERPENDICULAR TO FINISH GRADE SWING.
- FLEX PIPE SHALL BE ATTACHED TO BOTTOM SPRAY HEAD INLET ONLY.
- APPLY TEFLON TAPE TO ALL MALE PVC THREADED FITTINGS AND NIPPLES.

HI-POP SPRAY HEAD

SWING PIPE - PVC

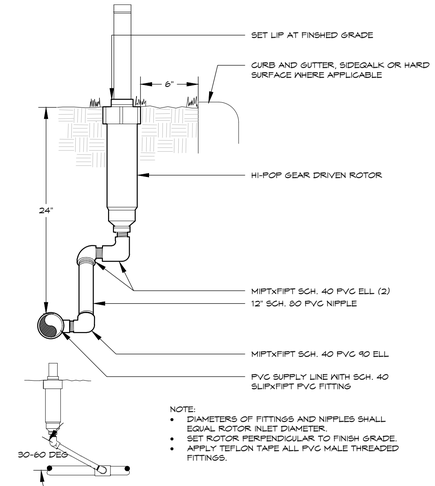
10



SET HEAD PERPENDICULAR TO FINISH GRADE

GEAR DRIVEN ROTOR

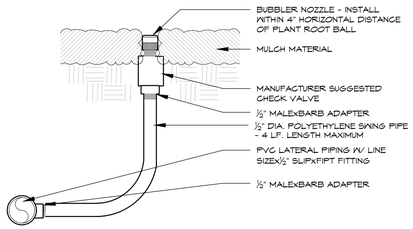
11



NOTE:
- DIAMETERS OF FITTINGS AND NIPPLES SHALL EQUAL ROTOR INLET DIAMETER.
- SET ROTOR PERPENDICULAR TO FINISH GRADE.
- APPLY TEFLON TAPE ALL PVC MALE THREADED FITTINGS.

HI-POP GEAR DRIVEN ROTOR

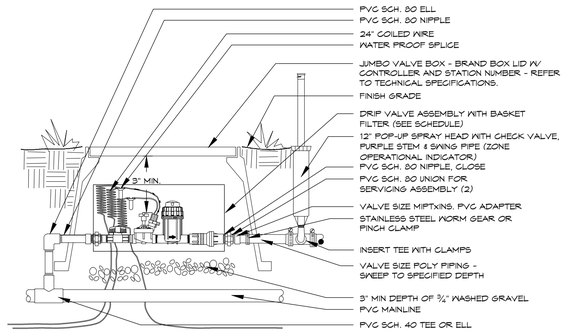
12



NOTE:
- SET BUBBLER(S) ON UPHILL SIDE OF ROOT BALL WHERE TREES PLANTED ON SLOPES EQUAL TO OR GREATER THAN 4 TO 1.
- APPLY TEFLON TAPE TO ALL MIPT FITTINGS

BUBBLER

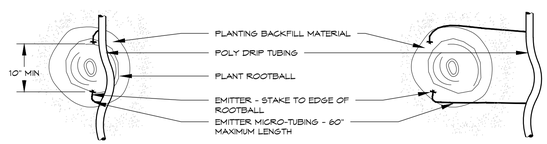
13

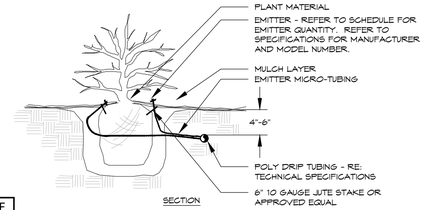


NOTE:
INSTALL ASSEMBLY TO REST ON GRAVEL SUMP. CONTAIN ENTIRE ASSEMBLY WITHIN BOX. NO VALVE BOX EXTENSIONS WILL BE ACCEPTED. PROVIDE 3"-4" CLEARANCE BETWEEN TOP OF CONTROL VALVE SOLENOID AND BOTTOM OF VALVE BOX LID. TOP OF VALVE BOX TO BE FLUSH WITH FINISH GRADE. VALVE BOX SHALL NOT REST ON DRIP TUBING.

DRIP VALVE

14





PLANT SIZE	EMITTER FLOW RATE	EMITTER QTY. AT MULCHED BED LOCATIONS	EMITTER QTY. AT NATIVE SEED LOCATIONS
1 - 2 GALLON MATERIAL	0.5 GPH	ONE EACH	ONE EACH
5 GALLON MATERIAL	0.5 GPH	TWO EACH	TWO EACH
1½" CALIPER TREE	1.0 GPH	THREE EACH	FOUR EACH
2" CALIPER TREE	1.0 GPH	FOUR EACH	SIX EACH
2½" CALIPER TREE	1.0 GPH	SIX EACH	EIGHT EACH
3" CALIPER TREE	1.0 GPH	EIGHT EACH	TEN EACH
3½" CALIPER TREE	1.0 GPH	NINE EACH	ELEVEN EACH
4" CALIPER TREE	1.0 GPH	TEN EACH	TWELVE EACH
6 FT. CONIFEROUS TREE	1.0 GPH	FOUR EACH	SIX EACH
8 FT. CONIFEROUS TREE	1.0 GPH	SIX EACH	NINE EACH
10 FT. CONIFEROUS TREE	1.0 GPH	EIGHT EACH	TWELVE EACH
12 FT. CONIFEROUS TREE	1.0 GPH	TEN EACH	FOURTEEN EACH

NOTES:
- INSTALL EMITTERS ON OPPOSING SIDES OF ROOTBALL. THREE OR MORE EMITTERS SHALL BE EQUALLY SPACED AROUND ROOT BALL.
- EMITTERS ARE TO BE INSTALLED TO CLEAR SURFACE BY A MINIMUM OF 1" AND A MAXIMUM OF 2".
- FLUSH ALL LINES THOROUGHLY, INCLUDING EMITTER MICRO-TUBING PRIOR TO EMITTER INSTALLATION.
- IF PLANTING ON A 4:1 SLOPE OR STEEPER, INSTALL BOTH EMITTERS ON UPHILL SIDE OF ROOT BALL.
- EMITTERS SHALL BE SELF-FLUSHING, PRESSURE COMPENSATING-TYPE UNLESS NOTED OTHERWISE WITHIN TECHNICAL SPECIFICATIONS.
- DRIP VALVE ZONES ARE DESIGNED TO ACCOUNT FOR DIFFERENCES IN PLANT REQUIREMENTS (HYDROZONES) AND SUN EXPOSURE.
- CONTRACTOR SHALL ENSURE HYDROZONES ARE VALVED SEPARATELY AS SHOWN ON PLAN.
- SITE CONDITIONS MAY DICTATE THAT MULTIPLE SUN EXPOSURES ARE VALVED TOGETHER DURING THE DESIGN PROCESS. CONTRACTOR SHALL ADJUST EMITTER SCHEDULE AS FOLLOWS:
  - EMITTER QUANTITIES SHALL REMAIN THE SAME BUT EMITTER GALLONAGES SHALL BE DOUBLED FOR PLANTS WITH SOUTH AND WEST EXPOSURES.
  - EMITTER QUANTITIES AND GALLONAGE SHALL BE AS SHOWN IN SCHEDULE FOR PLANTS WITH NORTH AND EAST EXPOSURES.
  - PLANTINGS WITH NORTH AND EAST EXPOSURE SHALL DICTATE VALVE RUN-TIMES AND CONTRACTOR SHALL ADJUST SCHEDULING ACCORDINGLY.

DRIP EMITTER

BELOW GRADE

15

DIRECTORY

IRRIGATION NOTES & SCHEDULE	IR.1
IIRRIGATION PLANS	IR.2 - IR.5
IRRIGATION DETAILS	IR.6 - IR.8
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GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

Revised:

Void:

IRRIGATION DETAILS

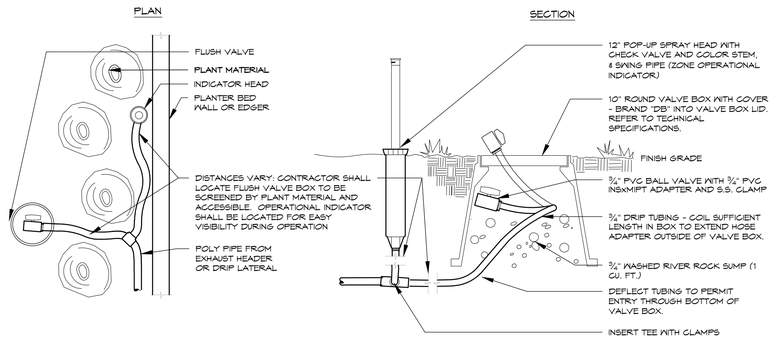
Designer:	KJD	Structure Numbers	
Detailer:	JSB		
Sheet Subset:	**IR404**	Subset Sheets:	of

Project No./Code

TRG M535-014

25924

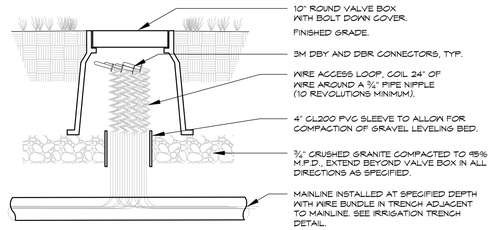
Sheet Number



DRIP FLUSH VALVE

WITH OPERATIONAL INDICATOR

16



NOTE:
1. SET TOP OF BOX LEVEL WITH FINISHED GRADE IN TURF AREAS AND LEVEL WITH TOP OF MULCH IN SHRUB BEDS.
2. USE STANDARD RECTANGULAR VALVE BOX WITH BOLT DOWN LID FOR SPLICES OF MORE THAN TWENTY (20) WIRES.

WIRE SPLICE BOX

24V WIRING SYSTEM

17

DIRECTORY

IRRIGATION NOTES & SCHEDULE	IR.1
IIRRIGATION PLANS	IR.2 - IR.5
IRRIGATION DETAILS	IR.6 - IR.8
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IRRIGATION DETAILS

Designer: KJD
Detailer: JSB
Sheet Subset: **IR405**
Structure Numbers:
Subset Sheets: of

Project No./Code
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25924
Sheet Number

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1 (PH 6B) - ADMINISTRATION PLAN - LEVEL 1 CODE PLAN
3/32" = 1'-0"

TRUE NORTH

PROJECT NORTH

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

OCCUPANCY SCHEDULE - GROSS 1ST FLOOR

NO.	ROOM NAME	NET AREA	GROSS AREA	OCCUPANCY	GROSS FACTOR	OCC. LOAD	NOTES
101	VESTIBULE	133 SF	190.0 SF	BUSINESS	150	1.3	
102	WATER ENTRY	128 SF	94.0 SF	BUSINESS	150	0.6	
103	LOBBY	751 SF					
104	HOUSEKEEPING	125 SF	94.0 SF	BUSINESS	150	0.6	
105	WOMEN	191 SF	243.0 SF	BUSINESS	150	1.6	
106	MEN	194 SF	251.0 SF	BUSINESS	150	1.7	
107	OPEN STAIR	250 SF					
108A	SM MEETING	227 SF					
108B	SM MEETING	232 SF					
109	ELEV LOBBY	176 SF					
110	CORRIDOR	Not Placed		BUSINESS			
110	CORRIDOR	604 SF					
111	MULTI-PURPOSE PRE-FUNCTION	809 SF		ASSEMBLY			
112	MECH	62 SF	215.0 SF	BUSINESS	150	1.4	
113	SECURE SAFE	136 SF	114.0 SF	BUSINESS	150	0.8	
114	MRKT STORAGE	126 SF	164.0 SF	BUSINESS	150	1.1	
115	FACILITES STORAGE	223 SF	230.0 SF	BUSINESS	150	1.5	
116	STAIR #2	251 SF	295.0 SF	BUSINESS	150	2.0	
117	FITNESS	456 SF					
118	LOCKER ROOM	120 SF					
119	TOILET/ SHOWER	76 SF	102.0 SF	BUSINESS	150	0.7	
120	TOILET/ SHOWER	82 SF	115.0 SF	BUSINESS	150	0.8	
121	OPERATIONS TRAINING/ MULTI-PURPOSE	871 SF	984.0 SF	ASSEMBLY	15	65.6	ACCESSORY TO 'BUSINESS
121B	PATIO	330 SF					
122	STOREROOM/MEDIA	185 SF					
123	WORKSPACE	Not Placed		BUSINESS			
123	WORKSPACE	950 SF					
123A	FUTURE / VISIT	60 SF	60.0 SF	BUSINESS	150	0.4	WS
123B	FARE CLERKS	60 SF	60.0 SF	BUSINESS	150	0.4	WS
123C	FUTURE BUSINESS SPECIALIST	60 SF	60.0 SF	BUSINESS	150	0.4	WS
123D	FARE CLERKS	60 SF	60.0 SF	BUSINESS	150	0.4	WS
123E	FINANCE STAFF	60 SF	60.0 SF	BUSINESS	150	0.4	WS
123F	FINANCE STAFF	60 SF	60.0 SF	BUSINESS	150	0.4	WS
123G	FINANCE STAFF	60 SF	60.0 SF	BUSINESS	150	0.4	WS
123H	FINANCE STAFF	60 SF	60.0 SF	BUSINESS	150	0.4	WS
124	IDF	136 SF					
125	MAIN ELEC	180 SF					
126	FINANCE DIRECTOR	140 SF					
127	ACCOUNTING MGR	130 SF	360.0 SF	BUSINESS	150	2.4	
128	BUDGET MGR	127 SF					
129	PAYROLL SPECIALIST	128 SF	140.0 SF	BUSINESS	150	0.9	
130	FUTURE OFFICE	131 SF	140.0 SF	BUSINESS	150	0.9	
131	BULLPEN	162 SF	153.0 SF	BUSINESS	150	1.0	
132	COFEE	15 SF		BUSINESS			
133	FUTURE OFFICE	107 SF		BUSINESS			
134	COPY/WORK	23 SF	57.0 SF	BUSINESS	150	0.4	
135	FINANCE STAFF	93 SF	60.0 SF	BUSINESS	150	0.4	
136	FINANCE STAFF	97 SF	60.0 SF	BUSINESS	150	0.4	
137	STAIR #3	259 SF	320.0 SF	BUSINESS	150	2.1	
TOTAL			4861.0 SF			91.4	

CODE ANALYSIS
APPLICABLE CODES
2021 INTERNATIONAL BUILDING CODE (IBC)
INCLUDING GLENWOOD SPRINGS AMENDMENTS TO THE IBC
2021 INTERNATIONAL PLUMBING CODE (IPC)
2021 INTERNATIONAL MECHANICAL CODE (IMC)
2021 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
2021 INTERNATIONAL FIRE CODE (IFC)
2021 INTERNATIONAL FUEL GAS CODE (IFGC)
2020 NATIONAL ELECTRIC CODE (NEC)

IBC CHAPTER 3 USE AND OCCUPANCY

USE: BUSINESS / ASSEMBLY
OCCUPANCY: B / A

303.1.2 SMALL ASSEMBLY SPACES. THE FOLLOWING ROOMS AND SPACES SHALL NOT BE CLASSIFIED AS ASSEMBLY OCCUPANCIES:
1. A ROOM OR SPACE USED FOR ASSEMBLY PURPOSES WITH AN OCCUPANT LOAD OF LESS THAN 50 PERSONS AND ACCESSORY TO ANOTHER OCCUPANCY SHALL BE CLASSIFIED AS A GROUP B OCCUPANCY OR AS PART OF THAT OCCUPANCY.
2. A ROOM OR SPACE USED FOR ASSEMBLY PURPOSES THAT IS LESS THAN 750 SQUARE FEET (70 M 2) IN AREA AND ACCESSORY TO ANOTHER OCCUPANCY SHALL BE CLASSIFIED AS A GROUP B OCCUPANCY OR AS PART OF THAT OCCUPANCY.

311.1.1 ACCESSORY STORAGE SPACES. A ROOM OR SPACE USED FOR STORAGE PURPOSES THAT IS ACCESSORY TO ANOTHER OCCUPANCY SHALL BE CLASSIFIED AS PART OF THAT OCCUPANCY.

IBC CHAPTER 5 BUILDING HEIGHTS AND AREAS (TYPE II-B / S)

TABLE 504.3 BUILDING HEIGHT: ALLOWED = 75'; ACTUAL = 43' - 11" TOTAL
TABLE 504.4 NUMBER OF STORIES: ALLOWED = 4 STORIES; ACTUAL = 3 STORY
TABLE 506.2 BUILDING AREA: ALLOWED = 92,000 SF; ACTUAL = 10,475 SF FIRST FLOOR; 10,171 SF SECOND FLOOR; 10,171 SF THIRD FLOOR; 30,817 SF TOTAL

IBC CHAPTER 6 TYPES OF CONSTRUCTION

CONSTRUCTION: TYPE II-B

TABLE 601 FIRE-RESISTANCE RATING REQUIREMENTS

- PRIMARY STRUCTURAL FRAME = 0 HOUR
- BEARING WALLS EXTERIOR = 0 HOUR
- BEARING WALLS INTERIOR = 0 HOUR
- NONBEARING WALLS AND PARTITIONS - EXTERIOR = 0 HOUR
- NONBEARING WALLS AND PARTITIONS - INTERIOR = 0 HOUR
- FLOOR CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS = 0 HOUR
- ROOF CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS = 0 HOUR

IBC CHAPTER 7 FIRE AND SMOKE PROTECTION FEATURES

SECTION 713 SHAFT ENCLOSURES

713.4 FIRE RESISTANCE RATING - NOT LESS THAN 1 HOUR WHERE CONNECTING LESS THAN FOUR STORIES.

- EXIT ACCESS STAIR PROTECTION BY A DRAFT CURTAIN AND CLOSELY SPACED SPRINKLERS IN ACCORDANCE WITH NFPA 13. (SEE 1019.3 - EXCEPTION 4)

IBC CHAPTER 8 INTERIOR FINISHES

TABLE 803.13 INTERIOR WALL AND CEILING FINISH REQ'S

- INTERIOR EXIT STAIRWAYS AND RAMPS AND EXIT PASSAGEWAYS = B
- ATRIUM = B
- CORRIDORS AND ENCLOSURE FOR EXIT ACCESS STAIRWAYS AND RAMPS = C
- ROOMS AND ENCLOSED SPACES = C

IBC CHAPTER 9 FIRE PROTECTION SYSTEMS

FIRE SPRINKLER = YES - NFPA13
PORTABLE FIRE EXTINGUISHERS = YES
FIRE ALARM AND SMOKE DETECTION SYSTEMS = YES, MANUAL

IBC CHAPTER 10 MEANS OF EGRESS

1004 OCCUPANT LOAD = 124 OCCUPANTS FIRST FLOOR; 68 OCCUPANTS FIRST FLOOR; 66 OCCUPANTS FIRST FLOOR; 258 OCCUPANTS TOTAL

1005 EGRESS WIDTH AT DOORS (0.20)
1005 EGRESS WIDTH AT CORRIDORS (0.30)

TABLE 1006.2.1 COMMON PATH OF TRAVEL = 100 FT MAX

1006.3.3 MINIMUM NUMBER OF EXITS OR ACCESS TO EXITS PER STORY OCCUPANT LOAD 1-500 = 2 EXITS

1007 EXIT AND EXIT ACCESS DOORWAY CONFIGURATION

EXCEPTION 2. WHERE A BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1 OR 903.3.1.2, THE SEPARATION DISTANCE SHALL BE NOT LESS THAN ONE-THIRD OF THE LENGTH OF THE MAXIMUM OVERALL DIAGONAL DIMENSION OF THE AREA SERVED.

1008 MEANS OF EGRESS ILLUMINATION = YES
1010.1.1 SIZE OF DOORS = 32" MIN CLEAR
1010.1.10 PANIC HARDWARE = YES AT EXIT DOORS

TABLE 1017.2 EXIT ACCESS TRAVEL DISTANCE = B= 300 FT MAX

1019 EXIT ACCESS STAIRWAYS AND RAMPS (REQUIRED SHAFT ENCLOSURE)

1019.3 EXCEPTION (4) EXIT ACCESS STAIRWAYS IN BUILDINGS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1, WHERE THE VERTICAL OPENING BETWEEN STORIES DOES NOT EXCEED TWICE THE HORIZONTAL PROJECTED AREA OF THE STAIRWAY AND THE OPENING IS PROTECTED BY A DRAFT CURTAIN AND CLOSELY SPACED SPRINKLERS IN ACCORDANCE WITH NFPA 13.

1020.1 CORRIDOR FIRE RESISTANCE = 0 HOUR
1020.5 DEAD ENDS = 50 FT

INTERNATIONAL PLUMBING CODE - 2021

CHAPTER 4: FIXTURES, FAUCETS AND FIXTURE FITTINGS

SECTION 403 MINIMUM PLUMBING FACILITIES
(TABLE 403.1) MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES:

Occupancy	Load	Male WC	Female WC	Male Lav.	Female Lav.	Drinking Fnt.
A-3 Assembly Required	66	1/125 0.26	1/65 0.51	1/200 0.17	1/200 0.17	1/500 0.13
B Business Required	192	1/25 first 50 1/50 Remain. 2.92	1/25 first 50 1/50 Remain. 2.92	1/40 first 80 1/80 Remain. 2.20	1/40 first 80 1/80 Remain. 2.20	1/100 1.92
Total Required		4	4	3	3	3
Total Provided		10	10	7	7	6

1 service sink required - 3 provided

SECTION 424 URINALS
(424.2) In each bathroom or toilet room, urinals shall not be substituted for more than 67 percent of the required water closets in Assembly occupancies and not more than 50 percent in Business occupancies.

NOT FOR CONSTRUCTION

PROJECT OWNER
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY
W.G. ADMINISTRATION BUILDING (PHASE 6B)
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORADO 81601

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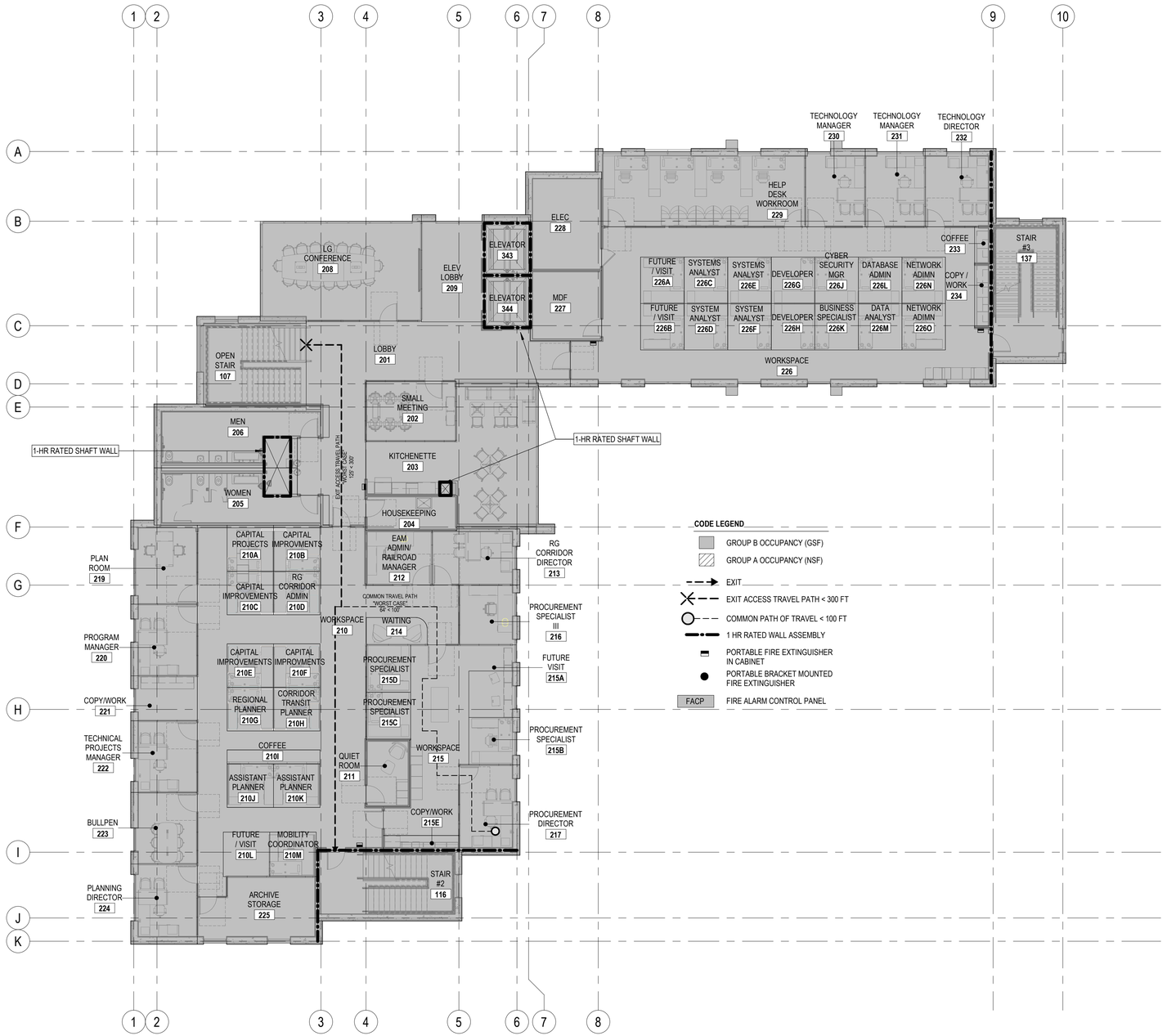
SEH Project	173800
Checked By	A. JAUCH
Drawn By	SEH
Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/24

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

CODE INFORMATION - LEVEL 1

A005



1 (PH 6B) - ADMINISTRATION PLAN - LEVEL 2 CODE PLAN
3/32" = 1'-0"

TRUE NORTH

PROJECT NORTH

OCCUPANCY SCHEDULE - GROSS 2ND FLOOR

NO.	SPACE CODE	ROOM NAME	NET AREA	GROSS AREA	OCCUPANCY	GROSS FACTOR	OCC. LOAD	NOTES
201	-	LOBBY	667.6 SF	675.8 SF	BUSINESS	150	4.5	
202	AD211C	SMALL MEETING	165.4 SF	160.6 SF	BUSINESS	150	1.1	
203	AD226	KITCHENETTE	460.7 SF	509.0 SF	BUSINESS	150	3.4	
204	FM524	HOUSEKEEPING	85.6 SF	95.0 SF	BUSINESS	150	0.6	
205	-	WOMEN	192.9 SF	271.3 SF	BUSINESS	150	1.8	
206	-	MEN	193.2 SF	298.0 SF	BUSINESS	150	2.0	
208	AD217A	LG CONFERENCE	463.9 SF	477.0 SF	BUSINESS	150	3.2	
209	-	ELEV LOBBY	176.7 SF	188.5 SF	BUSINESS	150	1.3	
210	-	WORKSPACE	1102.9 SF	1107.1 SF	BUSINESS	150	7.4	
210I	-	COFFEE	38.7 SF	38.7 SF	BUSINESS	150	0.3	
211	FM512	QUIET ROOM	78.8 SF	86.4 SF	BUSINESS	150	0.6	
212		EAM ADMIN/ RAILROAD MANAGER	99.2 SF	106.7 SF	BUSINESS	150	0.7	
213	FM103	RG CORRIDOR DIRECTOR	123.0 SF	141.9 SF	BUSINESS	150	0.9	
214	-	WAITING	46.8 SF	48.6 SF	BUSINESS	150	0.3	
215	-	WORKSPACE	330.8 SF					
215A	-	FUTURE VISIT	92.5 SF	67.8 SF	BUSINESS	150	0.5	WS
215B	AD154	PROCUREMENT SPECIALIST	60.0 SF	69.2 SF	BUSINESS	150	0.5	WS
215C	AD155	PROCUREMENT SPECIALIST	60.0 SF	80.0 SF	BUSINESS	150	0.5	WS
215D	AD156	PROCUREMENT SPECIALIST	60.0 SF	80.0 SF	BUSINESS	150	0.5	WS
215E	AD203B	COPY/WORK	27.2 SF	46.0 SF	BUSINESS	150	0.3	
216	AD153	PROCUREMENT SPECIALIST III	90.1 SF	104.9 SF	BUSINESS	150	0.7	
217	AD151	PROCUREMENT DIRECTOR	126.8 SF	159.6 SF	BUSINESS	150	1.1	
219	-	PLAN ROOM	133.0 SF	151.1 SF	BUSINESS	150	1.0	
220	AD111	PROGRAM MANAGER	120.0 SF	138.5 SF	BUSINESS	150	0.9	
221	AD203C	COPY/WORK	76.6 SF	86.0 SF	BUSINESS	150	0.6	
222	-	TECHNICAL PROJECTS MANAGER	120.0 SF	138.5 SF	BUSINESS	150	0.9	
223	AD161	BULLPEN	120.0 SF	138.5 SF	BUSINESS	150	0.9	
224	AD161	PLANNING DIRECTOR	123.3 SF	152.4 SF	BUSINESS	150	1.0	
225	AD231	ARCHIVE STORAGE	191.5 SF	225.0 SF	BUSINESS	150	1.5	
226	-	WORKSPACE	887.7 SF	993.4 SF	BUSINESS	150	6.6	
227	FM542	MDF	135.9 SF	147.7 SF	BUSINESS	150	1.0	
228	-	ELEC	183.0 SF	215.6 SF	BUSINESS	150	1.4	
229	FM171	HELP DESK WORKROOM	416.0 SF	471.3 SF	BUSINESS	150	3.1	
230	FM153	TECHNOLOGY MANAGER	120.0 SF	140.0 SF	BUSINESS	150	0.9	
231	FM152	TECHNOLOGY MANAGER	120.0 SF	135.0 SF	BUSINESS	150	0.9	
232	FM151	TECHNOLOGY DIRECTOR	129.0 SF	161.8 SF	BUSINESS	150	1.1	
233	-	COFFEE	14.6 SF	18.4 SF	BUSINESS	150	0.1	
234	AD203D	COPY / WORK	25.4 SF	31.4 SF	BUSINESS	150	0.2	
TOTAL			7658.8 SF	8156.4 SF			54.4	

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PROJECT OWNER
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY
W.G. ADMINISTRATION BUILDING (PHASE 6B)

2307 WULFSOHN RD.
GLENWOOD SPRINGS,
COLORADO 81601

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SEH Project	173800
Checked By	A. JAUCH
Drawn By	SEH

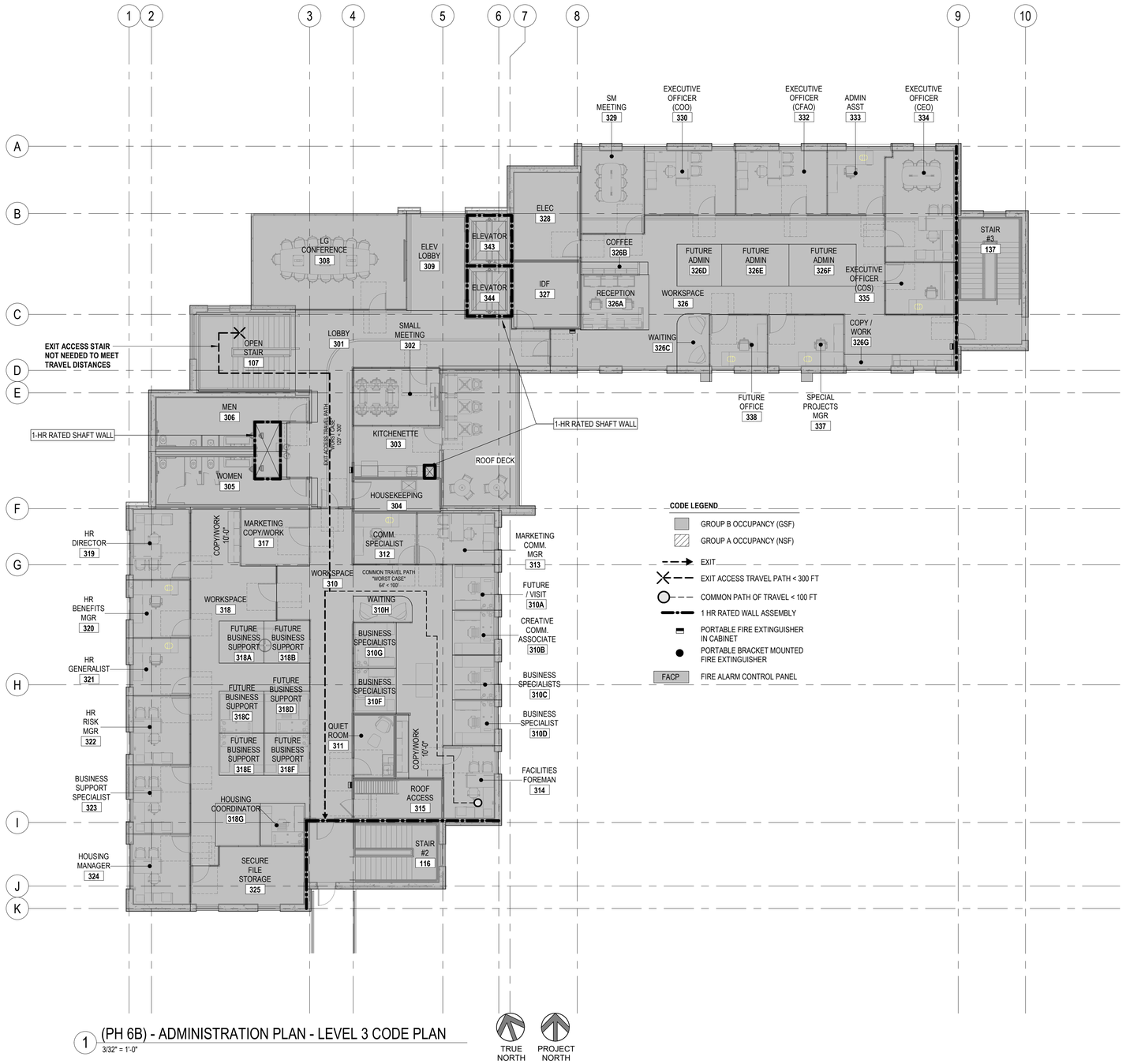
Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/24

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

CODE INFORMATION - LEVEL 2

A006



1 (PH 6B) - ADMINISTRATION PLAN - LEVEL 3 CODE PLAN
3/32" = 1'-0"

OCCUPANCY SCHEDULE - GROSS 3RD FLOOR

NO.	SPACE CODE	ROOM NAME	NET AREA	GROSS AREA	OCCUPANCY	GROSS FACTOR	OCC. LOAD	NOTES
301	-	LOBBY	667.4 SF	540.0 SF	BUSINESS	150	3.6	
302	AD211D	SMALL MEETING	165.6 SF	154.0 SF	BUSINESS	150	1.0	
303	AD227	KITCHENETTE	133.3 SF	137.0 SF	BUSINESS	150	0.9	
304	FM525	HOUSEKEEPING	83.2 SF	94.0 SF	BUSINESS	150	0.6	
305	-	WOMEN	193.0 SF	243.0 SF	BUSINESS	150	1.6	
306	-	MEN	193.3 SF	251.0 SF	BUSINESS	150	1.7	
308	AD217B	LG CONFERENCE	468.5 SF					
309	-	ELEV LOBBY	176.7 SF					
310	-	WORKSPACE	851.0 SF	621.0 SF	BUSINESS	150	4.1	
310A	-	FUTURE / VISIT	60.0 SF	60.0 SF	BUSINESS	150	0.4	
310B	AD175	CREATIVE COMM. ASSOCIATE	60.0 SF	60.0 SF	BUSINESS	150	0.4	
310C	FM106	BUSINESS SPECIALISTS	60.0 SF	60.0 SF	BUSINESS	150	0.4	WS
310D	FM105	BUSINESS SPECIALIST	60.1 SF	60.0 SF	BUSINESS	150	0.4	WS
310E	AD203C	COPY/WORK	27.8 SF					
310F	FM107	BUSINESS SPECIALISTS	60.0 SF	60.0 SF	BUSINESS	150	0.4	WS
310G	FM108	BUSINESS SPECIALISTS	60.0 SF	60.0 SF	BUSINESS	150	0.4	WS
310H	-	WAITING	51.1 SF					
311	FM513	QUIET ROOM	78.8 SF					
312	AD174	COMM. SPECIALIST	102.2 SF	142.0 SF	BUSINESS	150	0.9	
313	AD171	MARKETING COMM. MGR	126.0 SF	142.0 SF	BUSINESS	150	0.9	
314	FM102	FACILITIES FOREMAN	114.8 SF	142.0 SF	BUSINESS	150	0.9	
315	-	ROOF ACCESS	106.4 SF	88.0 SF	BUSINESS	150	0.6	
317	AD202	MARKETING COPY/WORK	117.2 SF	158.0 SF	BUSINESS	150	1.1	
318	-	WORKSPACE	617.5 SF	621.0 SF	BUSINESS	150	4.1	
318A	FM107	FUTURE BUSINESS SUPPORT	60.0 SF	60.0 SF	BUSINESS	150	0.4	WS
318B	FM107	FUTURE BUSINESS SUPPORT	59.1 SF	60.0 SF	BUSINESS	150	0.4	WS
318C	FM107	FUTURE BUSINESS SUPPORT	60.0 SF	60.0 SF	BUSINESS	150	0.4	WS
318D		FUTURE BUSINESS SUPPORT	60.6 SF	16.0 SF	BUSINESS	150	0.1	
318E	FM105	FUTURE BUSINESS SUPPORT	60.0 SF	60.0 SF	BUSINESS	150	0.4	WS
318F	AD130	FUTURE BUSINESS SUPPORT	60.0 SF	60.0 SF	BUSINESS	150	0.4	WS
318G	-	HOUSING COORDINATOR	59.1 SF	142.0 SF	BUSINESS	150	0.9	
318H	-	FUTURE/VISIT	60.0 SF	142.0 SF	BUSINESS	150	0.9	
318I	AD203C	COPY/WORK	24.7 SF					
319	AD121	HR DIRECTOR	124.1 SF	152.0 SF	BUSINESS	150	1.0	
320	AD122	HR BENEFITS MGR	100.0 SF					
321	AD124	HR GENERALIST	100.0 SF					
322	AD123	HR RISK MGR	120.0 SF	76.0 SF	BUSINESS	150	0.5	
323	AD126	BUSINESS SUPPORT SPECIALIST	120.0 SF					
324	-	HOUSING MANAGER	123.3 SF	142.0 SF	BUSINESS	150	0.9	
325	AD206	SECURE FILE STORAGE	191.9 SF					
326	-	WORKSPACE	1005.2 SF					
326B	-	COFFEE	24.2 SF	57.0 SF	BUSINESS	150	0.4	
326C	-	WAITING	55.1 SF		BUSINESS			
326D	-	FUTURE ADMIN	60.0 SF	90.0 SF	BUSINESS	150	0.6	
326E	-	FUTURE ADMIN	90.0 SF	90.0 SF	BUSINESS	150	0.6	
326F	-	FUTURE ADMIN	90.0 SF	90.0 SF	BUSINESS	150	0.6	
326G	AD203G	COPY / WORK	41.1 SF	57.0 SF	BUSINESS	150	0.4	
327	FM543	IDF	135.9 SF					
328	-	ELEC	183.0 SF					
329	-	SM MEETING	161.3 SF	197.0 SF	BUSINESS	150	1.3	
330	AD102	EXECUTIVE OFFICER (COO)	181.3 SF	253.0 SF	BUSINESS	150	1.7	
332	AD103	EXECUTIVE OFFICER (CFAO)	181.3 SF	197.0 SF	BUSINESS	150	1.3	
333	AD105	ADMIN ASST	118.4 SF	90.0 SF	BUSINESS	150	0.6	
334	AD101	EXECUTIVE OFFICER (CEO)	236.9 SF		BUSINESS			
335	-	EXECUTIVE OFFICER (COS)	112.9 SF	197.0 SF	BUSINESS	150	1.3	
337	AD111	SPECIAL PROJECTS MGR	120.0 SF	156.0 SF	BUSINESS	150	1.0	
338	-	FUTURE OFFICE	90.0 SF	156.0 SF	BUSINESS	150	1.0	
343	-	ELEVATOR	65.5 SF	78.0 SF	BUSINESS	150	0.5	
344	-	ELEVATOR	61.1 SF	72.0 SF	BUSINESS	150	0.5	
TOTAL				6443.0 SF			43.0	

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970.925.8484

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W.G. ADMINISTRATION BUILDING (PHASE 6B)
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SEH Project	173800
Checked By	A. JAUCH
Drawn By	SEH

Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/24

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

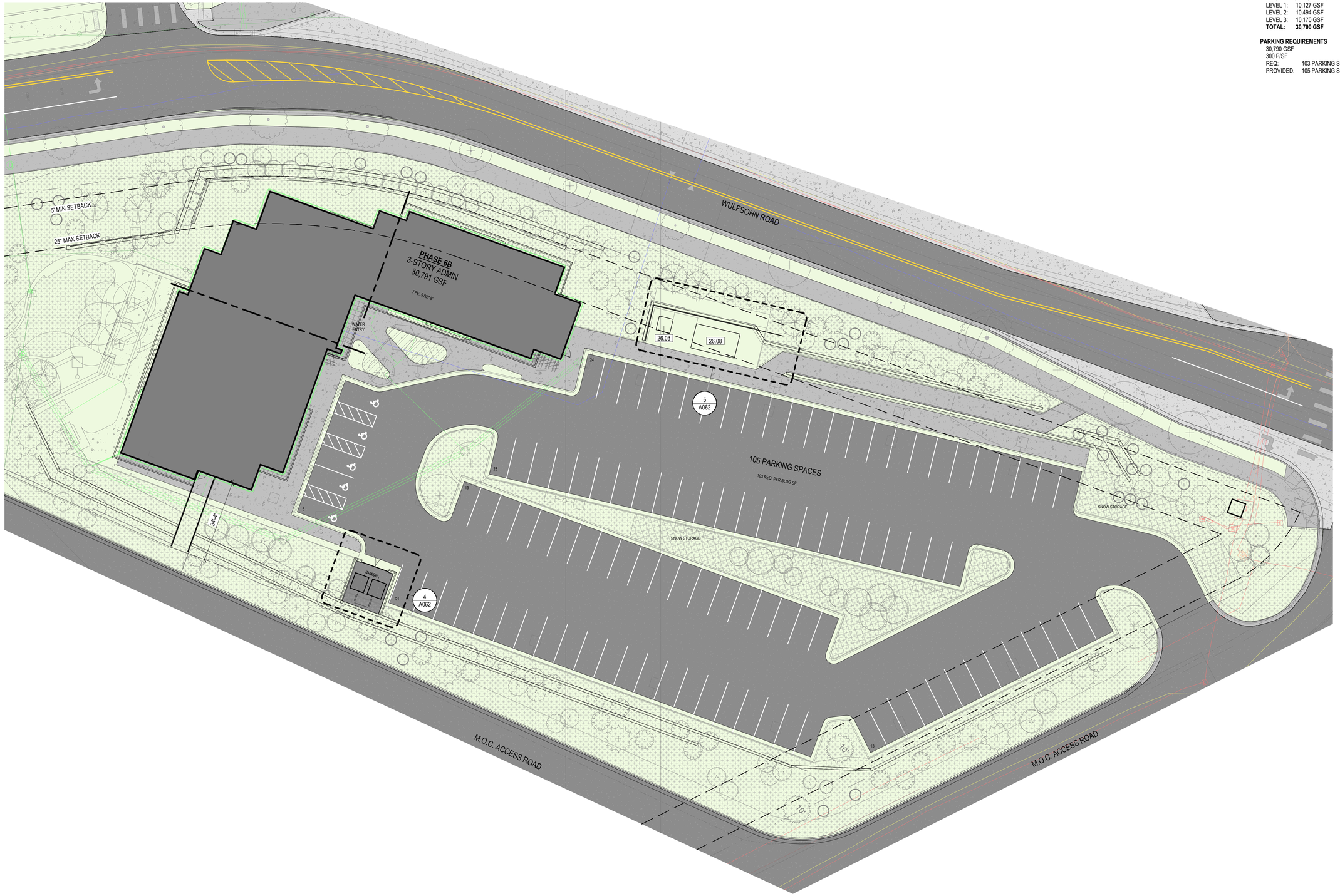
CODE INFORMATION - LEVEL 3

A007

PROJECT DATA

AMINISTRATION BUILDING
LEVEL 1: 10,127 GSF
LEVEL 2: 10,494 GSF
LEVEL 3: 10,170 GSF
TOTAL: 30,790 GSF

PARKING REQUIREMENTS
30,790 GSF
300 P/SF
REQ: 103 PARKING SPACES
PROVIDED: 105 PARKING SPACES



TRUE NORTH

1 (PH 6B) - ARCHITECTURAL SITE PLAN
1" = 20'-0"

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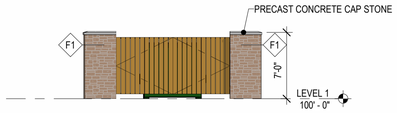
REVISION SCHEDULE

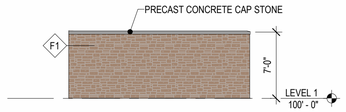
REV. #	DESCRIPTION	DATE

ARCHITECTURAL SITE PLAN

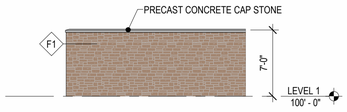
A061



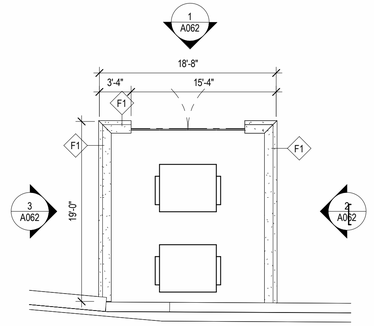
1 (PH 6B) DUMPSTER STORAGE ELEVATION - NORTH
1/8" = 1'-0"



2 (PH 6B) DUMPSTER STORAGE ELEVATION - EAST
1/8" = 1'-0"

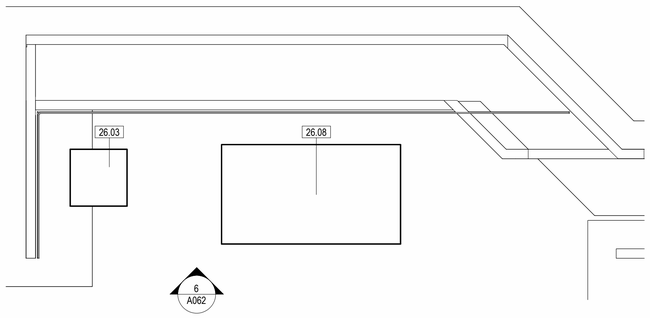


3 (PH 6B) DUMPSTER STORAGE ELEVATION - WEST
1/8" = 1'-0"



4 (PH 6B) - DUMPSTER STORAGE PLAN
1/8" = 1'-0"

6 (PH 6B) - GENERATOR ELEVATION
1/8" = 1'-0"



5 (PH 6B) - GENERATOR PLAN
1/8" = 1'-0"

KEYNOTE LEGEND

04.08	PRECAST CONCRETE CAP STONE
26.03	ELECTRICAL TRANSFORMER, RE: ELECTRICAL
26.08	EMERGENCY GENERATOR, RE: ELECTRICAL

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W.G. ADMINISTRATION BUILDING (PHASE 6B)
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SEH Project	173800
Checked By	A. JAUCH
Drawn By	SEH

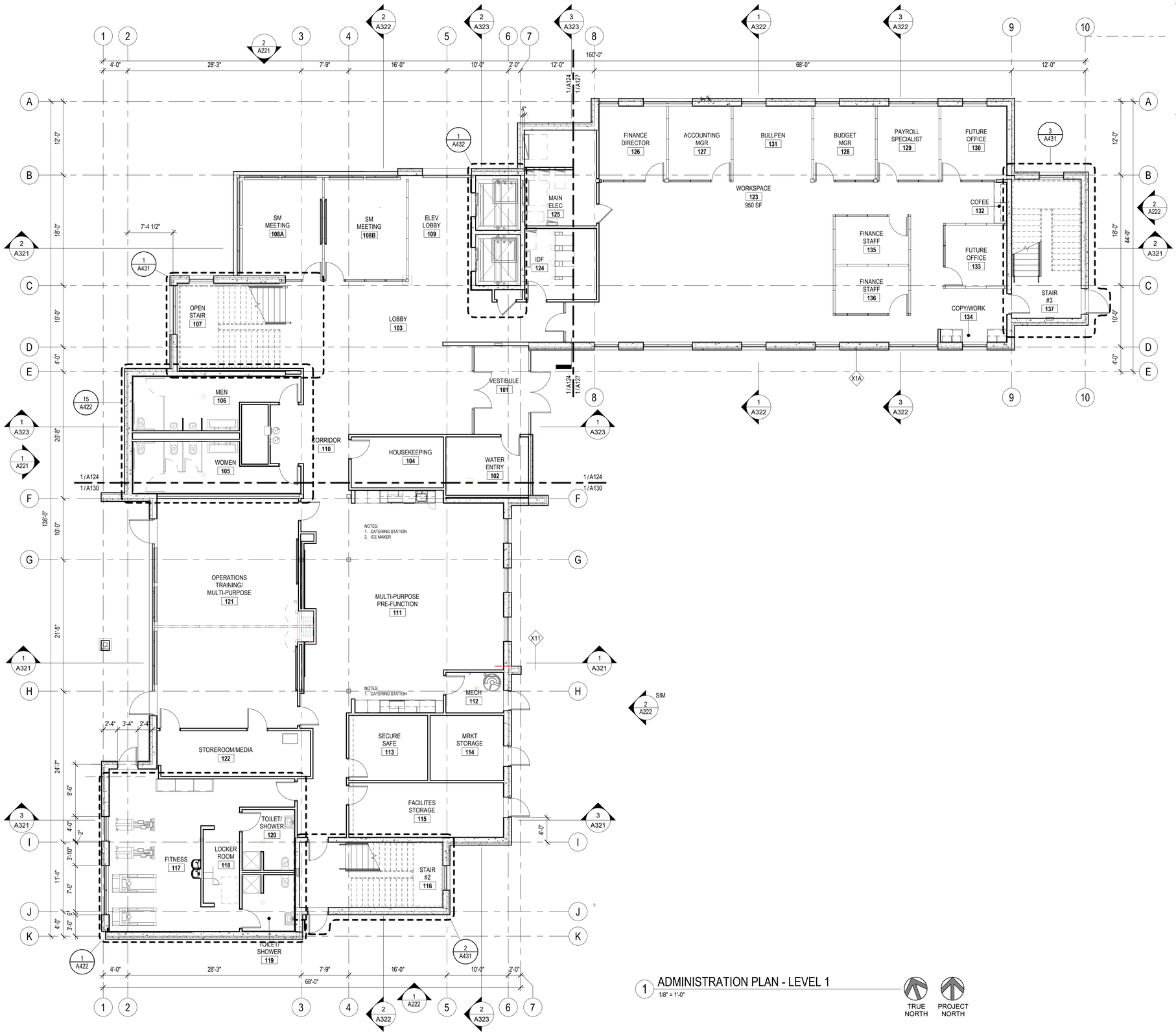
Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/24

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

SITE DETAILS & ELEVATIONS

A062



1 ADMINISTRATION PLAN - LEVEL 1
1/8" = 1'-0"

TRUE NORTH

PROJECT NORTH

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GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
2. ALL DIMENSIONS TO FACE OF STEEL STUD, CMU OR PRECAST UNLESS NOTED OTHERWISE.
3. ALL WALLS TO BE TYPE A1 UNLESS OTHERWISE NOTED

KEYNOTE LEGEND

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970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY

W.G. ADMINISTRATION BUILDING (PHASE 6B)

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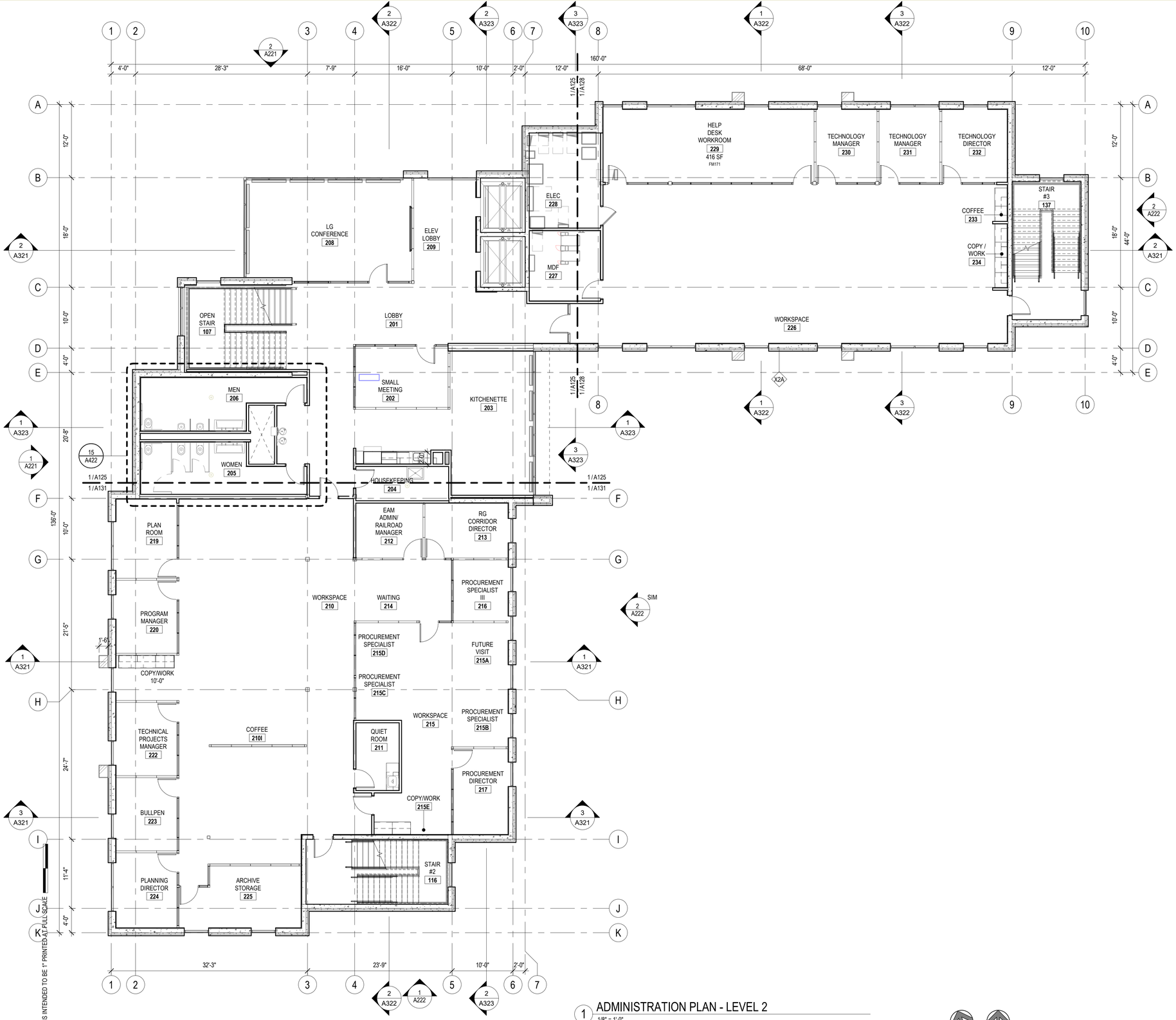
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

ADMINISTRATION OVERALL PLAN - LEVEL 1

A121



1 ADMINISTRATION PLAN - LEVEL 2
1/8" = 1'-0"

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TRUE NORTH

PROJECT NORTH

GENERAL NOTES

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2. ALL DIMENSIONS TO FACE OF STEEL STUD, CMU OR PRECAST UNLESS NOTED OTHERWISE.
3. ALL WALLS TO BE TYPE A1 UNLESS OTHERWISE NOTED

KEYNOTE LEGEND

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ROARING FORK TRANSPORTATION AUTHORITY
W.G. ADMINISTRATION BUILDING (PHASE 6B)

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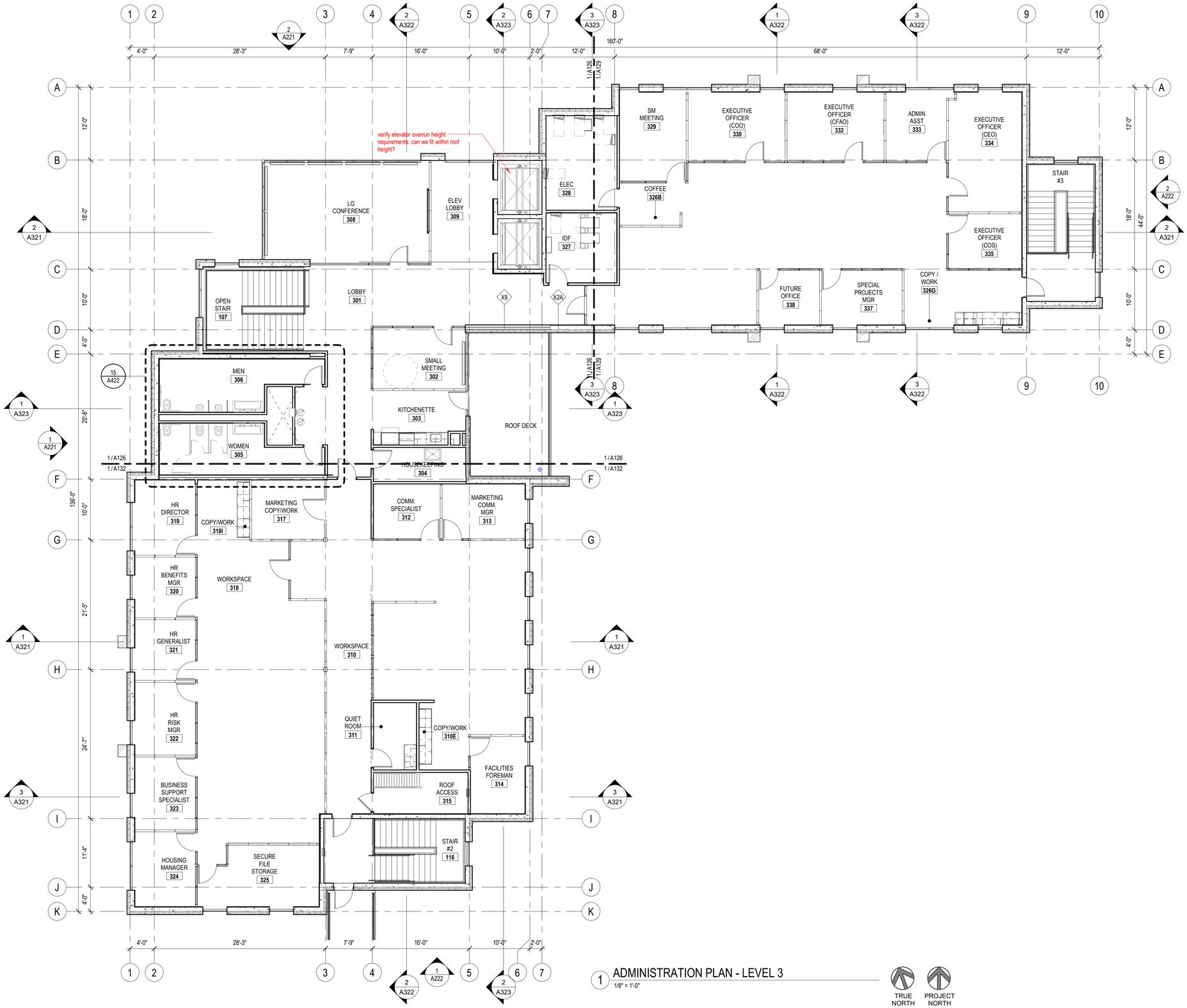
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

ADMINISTRATION OVERALL PLAN - LEVEL 2

A122



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1 ADMINISTRATION PLAN - LEVEL 3
1/8" = 1'-0"

TRUE NORTH

PROJECT NORTH

GENERAL NOTES

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2. ALL DIMENSIONS TO FACE OF STEEL STUD, CMU OR PRECAST UNLESS NOTED OTHERWISE.
3. ALL WALLS TO BE TYPE A1 UNLESS OTHERWISE NOTED

KEYNOTE LEGEND

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2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY
W.G. ADMINISTRATION BUILDING (PHASE 6B)
2307 WULFSOHN RD.
GLENWOOD SPRINGS,
COLORADO 81601

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Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/24

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

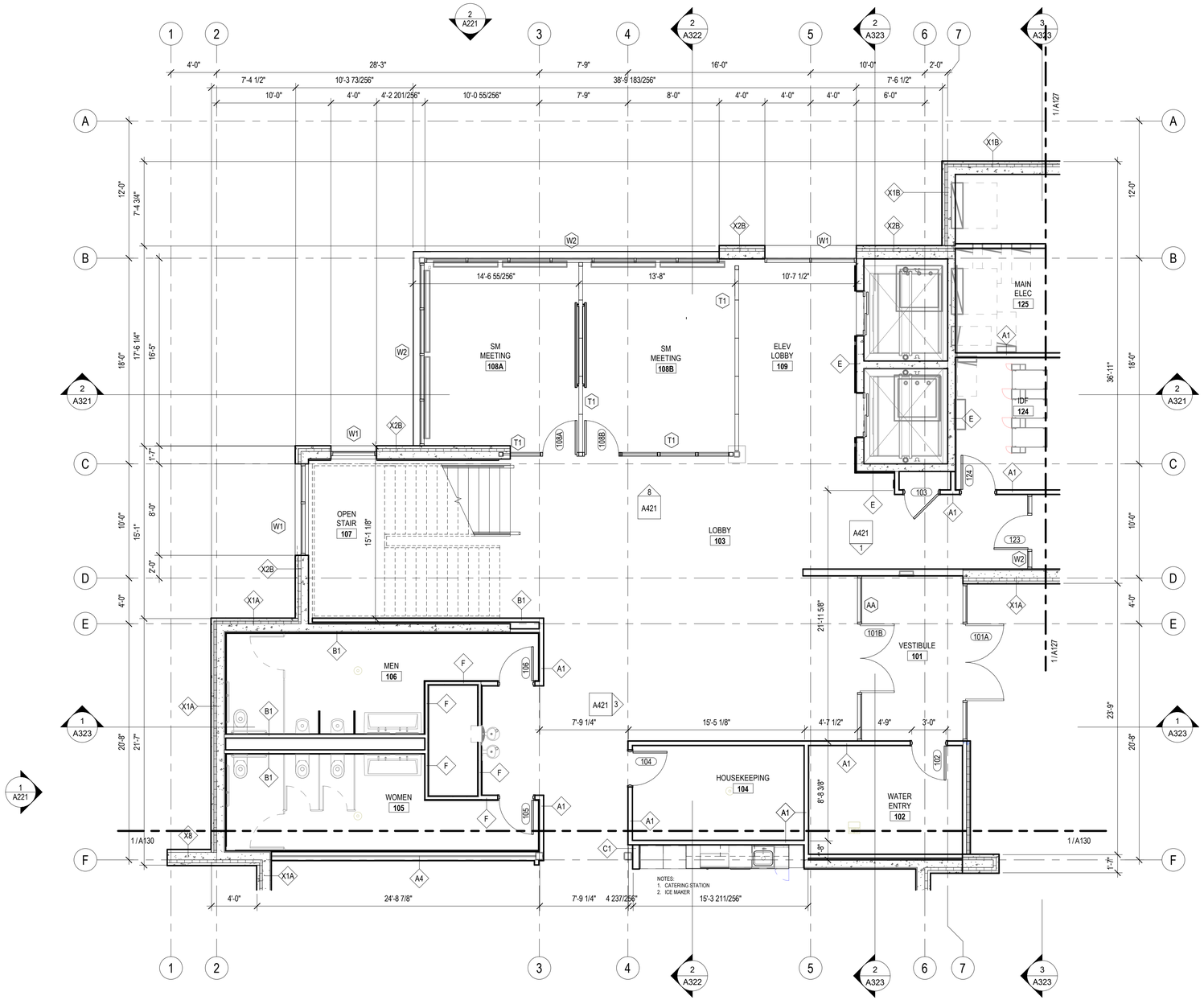
ADMINISTRATION OVERALL PLAN - LEVEL 3

A123

GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
2. ALL DIMENSIONS TO FACE OF STEEL STUD, CMU OR PRECAST UNLESS NOTED OTHERWISE.
3. ALL WALLS TO BE TYPE A1 UNLESS OTHERWISE NOTED

KEYNOTE LEGEND



1 A062 CENTRAL CORE PLAN - LEVEL 1
3/16" = 1'-0"

TRUE NORTH

PROJECT NORTH

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W.G. ADMINISTRATION BUILDING (PHASE 6B)

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SEH Project	173800
Checked By	A. JAUCH
Drawn By	SEH

Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/24

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

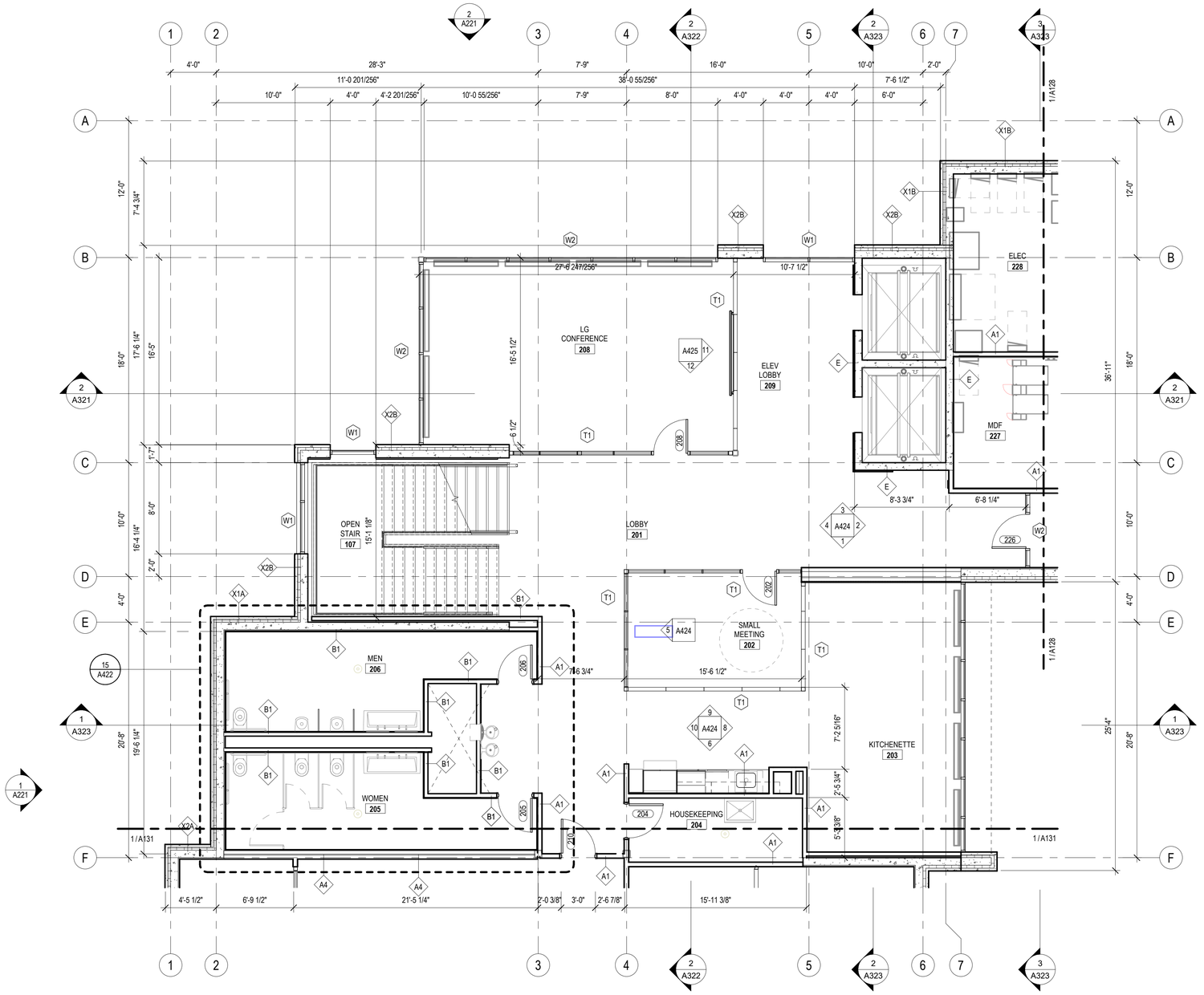
CENTRAL CORE FLOOR PLAN - LEVEL 1

A124

GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
2. ALL DIMENSIONS TO FACE OF STEEL STUD, CMU OR PRECAST UNLESS NOTED OTHERWISE.
3. ALL WALLS TO BE TYPE A1 UNLESS OTHERWISE NOTED

KEYNOTE LEGEND



1 A221 CENTRAL CORE PLAN - LEVEL 2
3/16" = 1'-0"

TRUE NORTH

PROJECT NORTH

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

SEH

NOT FOR CONSTRUCTION

PROJECT OWNER
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY

W.G. ADMINISTRATION BUILDING (PHASE 6B)

2307 WULFSOHN RD.
GLENWOOD SPRINGS,
COLORADO 81601

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Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/24

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

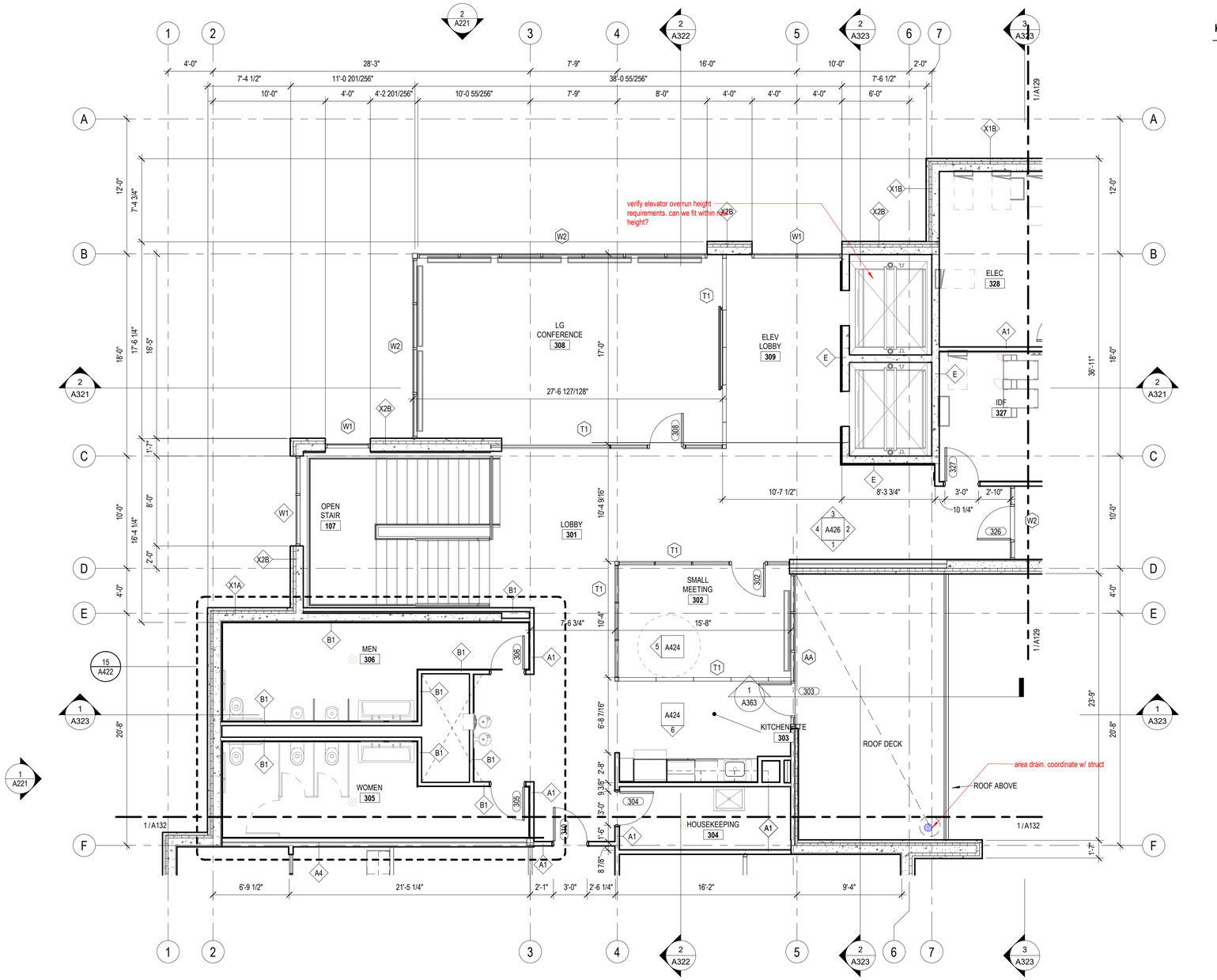
CENTRAL CORE FLOOR PLAN - LEVEL 2

A125

GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
2. ALL DIMENSIONS TO FACE OF STEEL STUD, CMU OR PRECAST UNLESS NOTED OTHERWISE.
3. ALL WALLS TO BE TYPE A1 UNLESS OTHERWISE NOTED

KEYNOTE LEGEND



1 / A221 CENTRAL CORE PLAN - LEVEL 3
3/16" = 1'-0"

TRUE NORTH

PROJECT NORTH

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

SEH

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GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY

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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

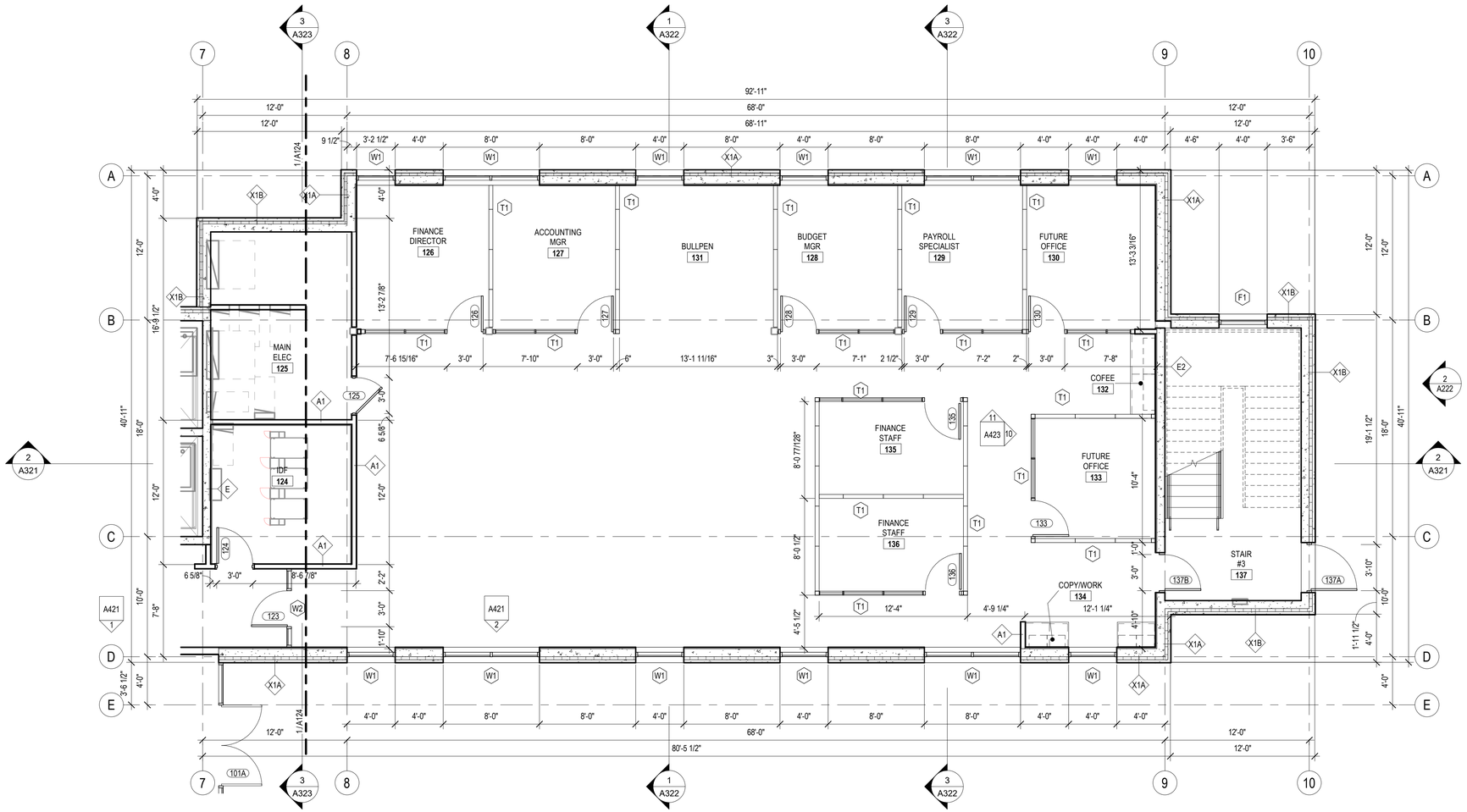
CENTRAL CORE FLOOR PLAN - LEVEL 3

A126

GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
2. ALL DIMENSIONS TO FACE OF STEEL STUD, CMU OR PRECAST UNLESS NOTED OTHERWISE.
3. ALL WALLS TO BE TYPE A1 UNLESS OTHERWISE NOTED

KEYNOTE LEGEND



1 A062 EAST WING PLAN - LEVEL 1

3/16" = 1'-0"

TRUE NORTH

PROJECT NORTH

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REV. #	DESCRIPTION	DATE

EAST WING FLOOR PLAN - LEVEL 1

A127

GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
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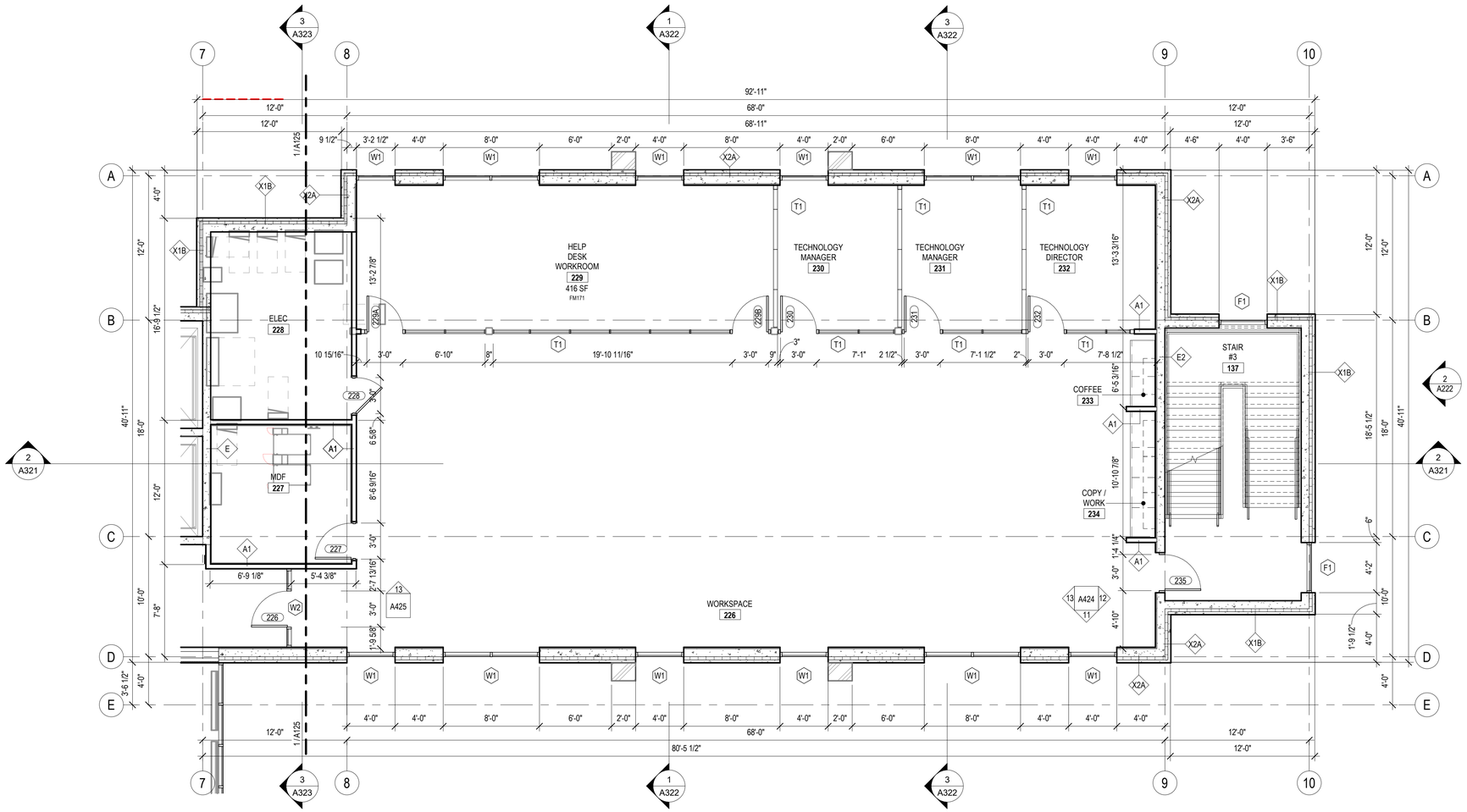
3. ALL WALLS TO BE TYPE A1 UNLESS OTHERWISE NOTED

KEYNOTE LEGEND



1 A221 EAST WING PLAN - LEVEL 2
3/16" = 1'-0"

TRUE NORTH PROJECT NORTH

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

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970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY
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EAST WING FLOOR PLAN - LEVEL 2

A128

GENERAL NOTES

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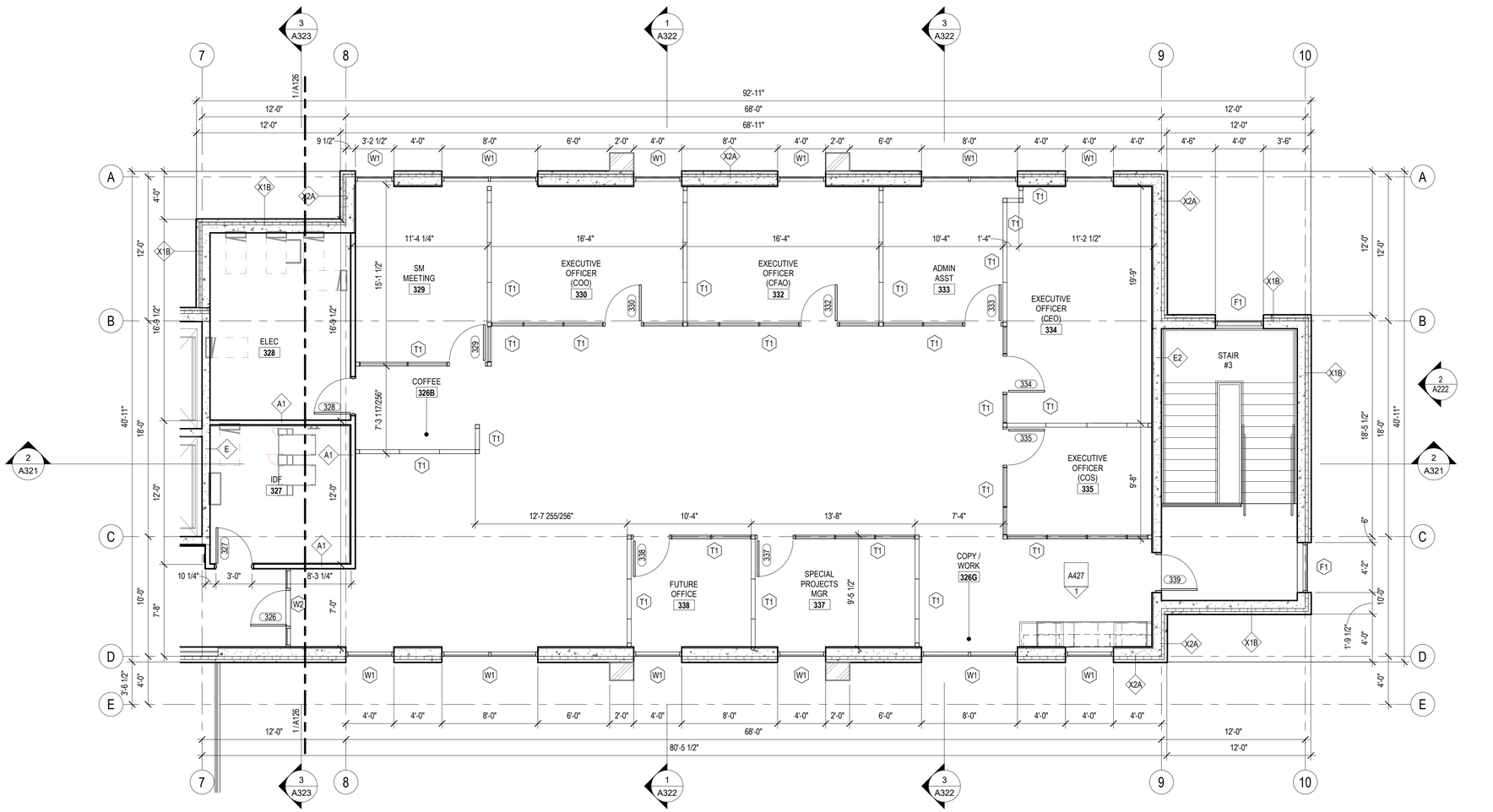
KEYNOTE LEGEND



1 A221 EAST WING PLAN - LEVEL 3

3/16" = 1'-0"

TRUE NORTH

PROJECT NORTH

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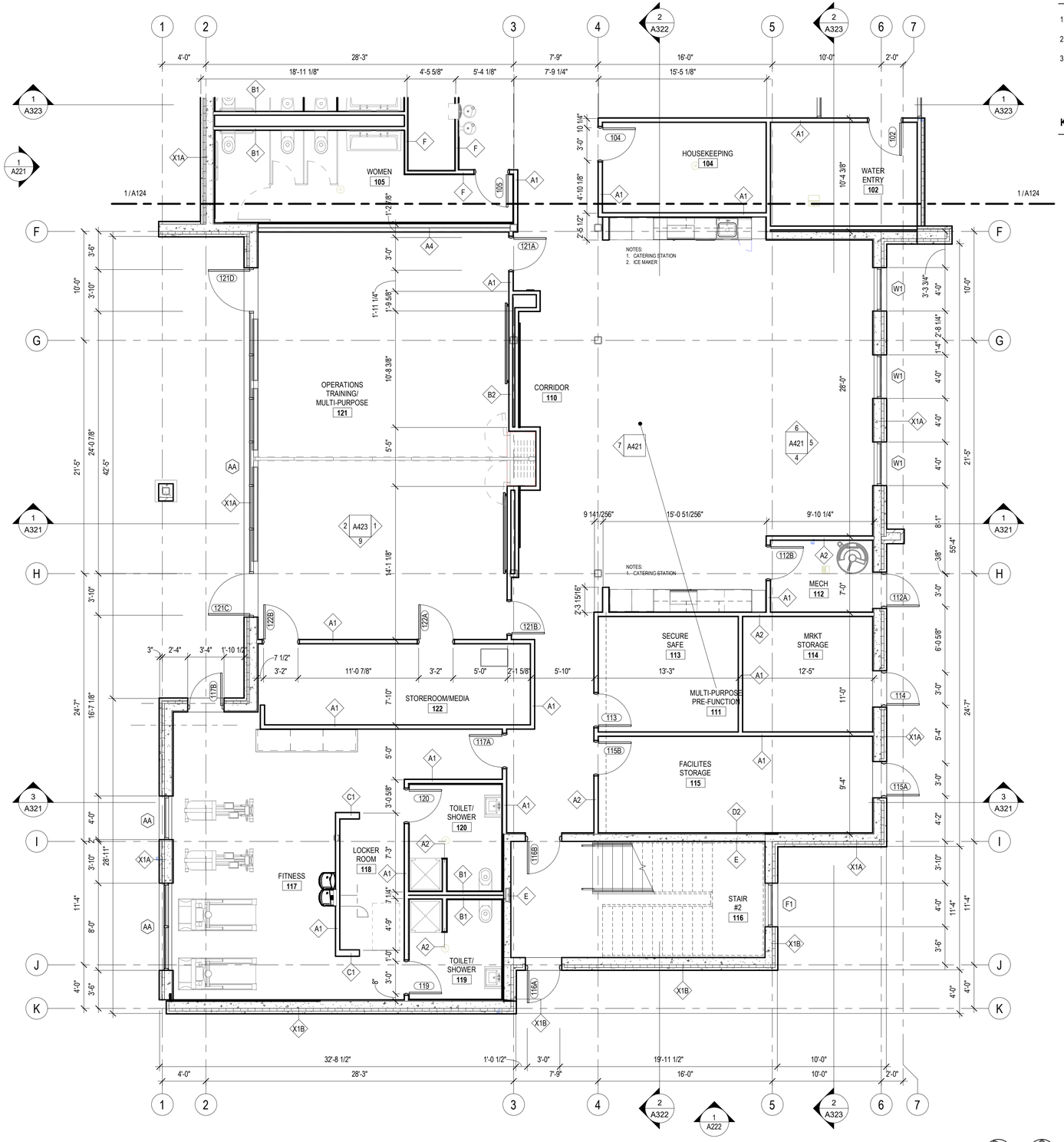
REV. #	DESCRIPTION	DATE

EAST WING FLOOR PLAN - LEVEL 3

A129



1 A062 SOUTH WING PLAN - LEVEL 1
3/16" = 1'-0"

TRUE NORTH

PROJECT NORTH

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GENERAL NOTES

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KEYNOTE LEGEND

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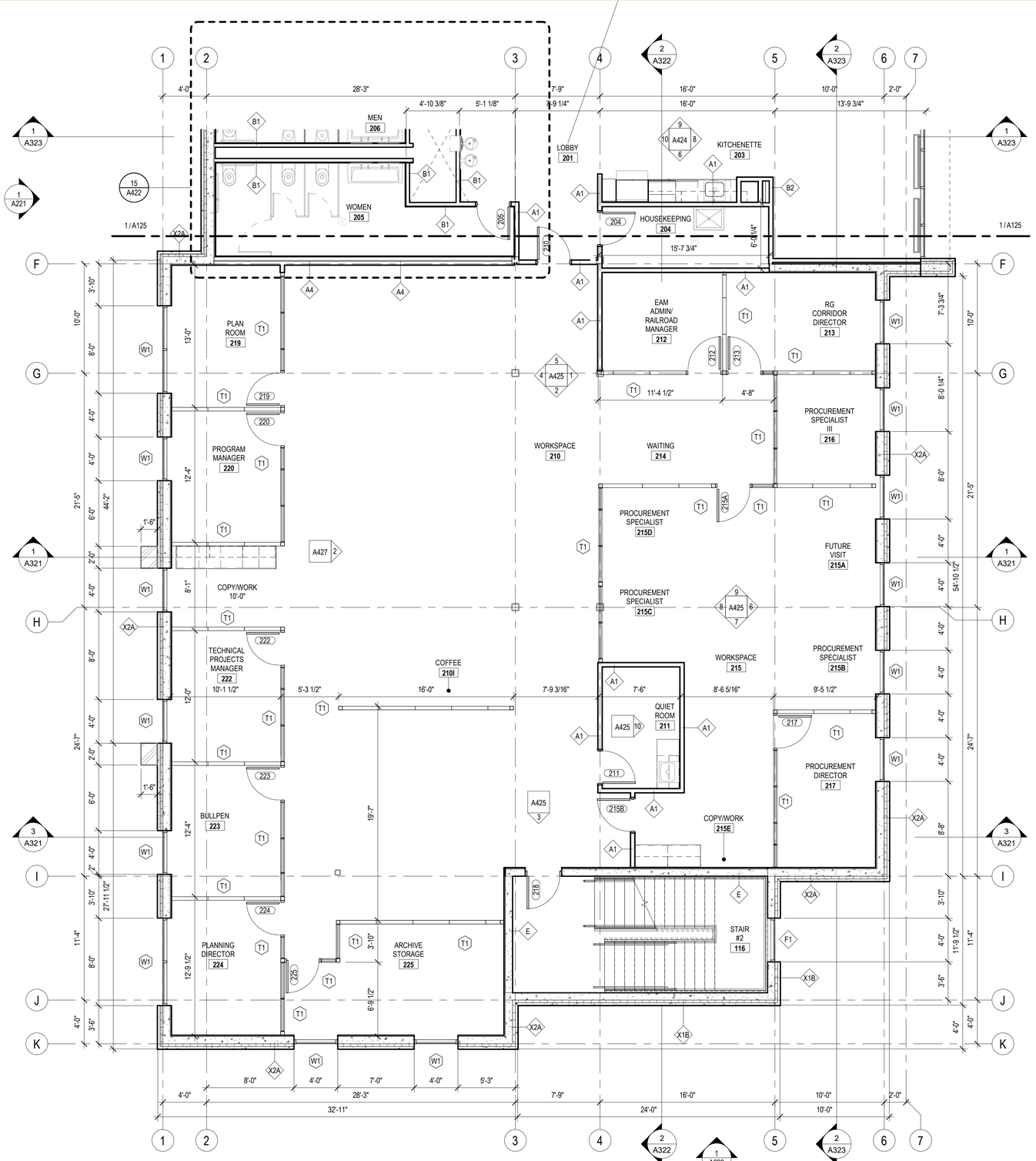
REV. #	DESCRIPTION	DATE

SOUTH WING FLOOR PLAN - LEVEL 1

A130



1 A221 SOUTH WING PLAN - LEVEL 2
3/16" = 1'-0"

TRUE NORTH

PROJECT NORTH

GENERAL NOTES

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KEYNOTE LEGEND

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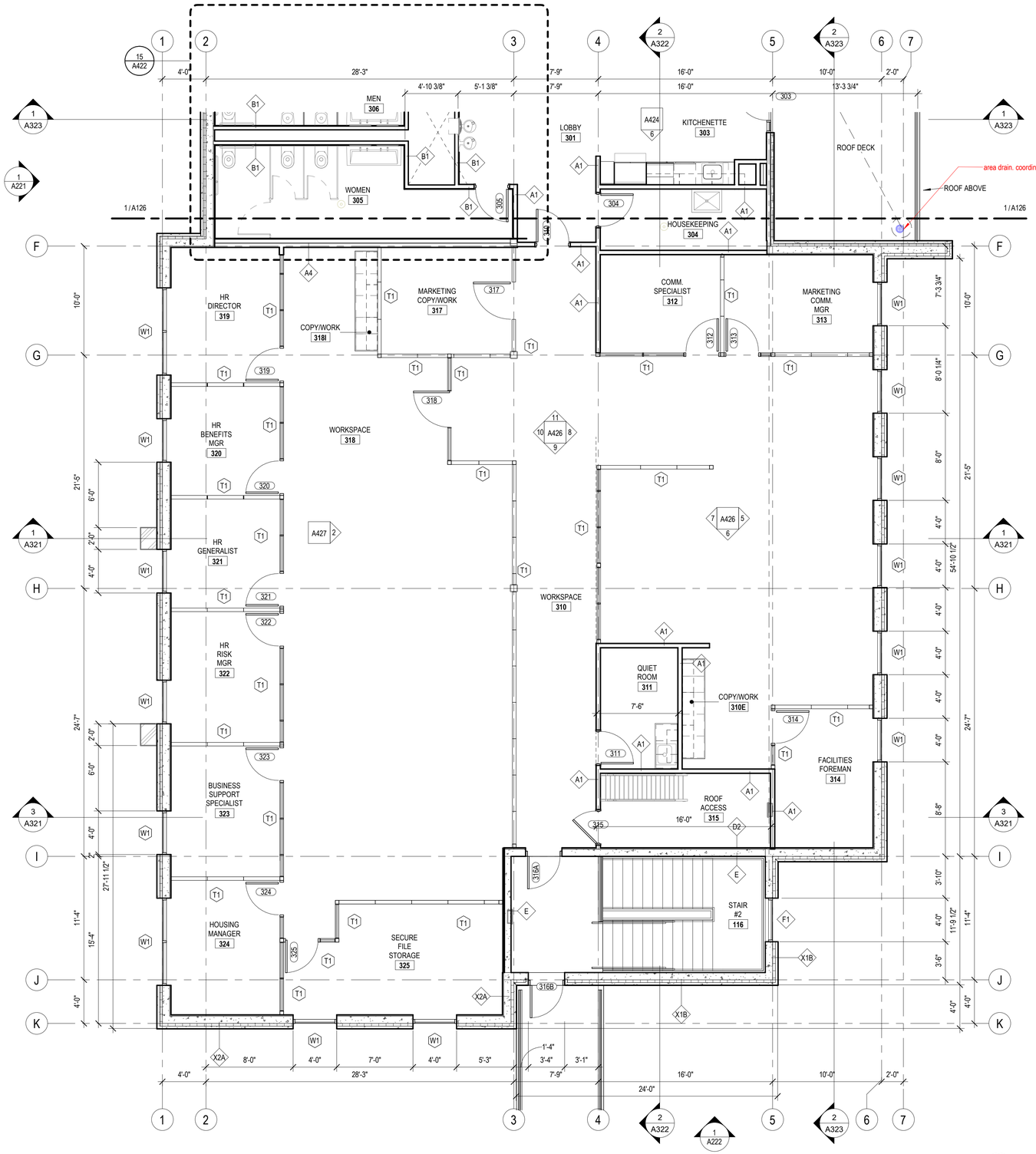
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

SOUTH WING FLOOR PLAN - LEVEL 2

A131



1 A221 SOUTH WING PLAN - LEVEL 3
3/16" = 1'-0"

TRUE NORTH

PROJECT NORTH

GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
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KEYNOTE LEGEND

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970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY

W.G. ADMINISTRATION BUILDING (PHASE 6B)

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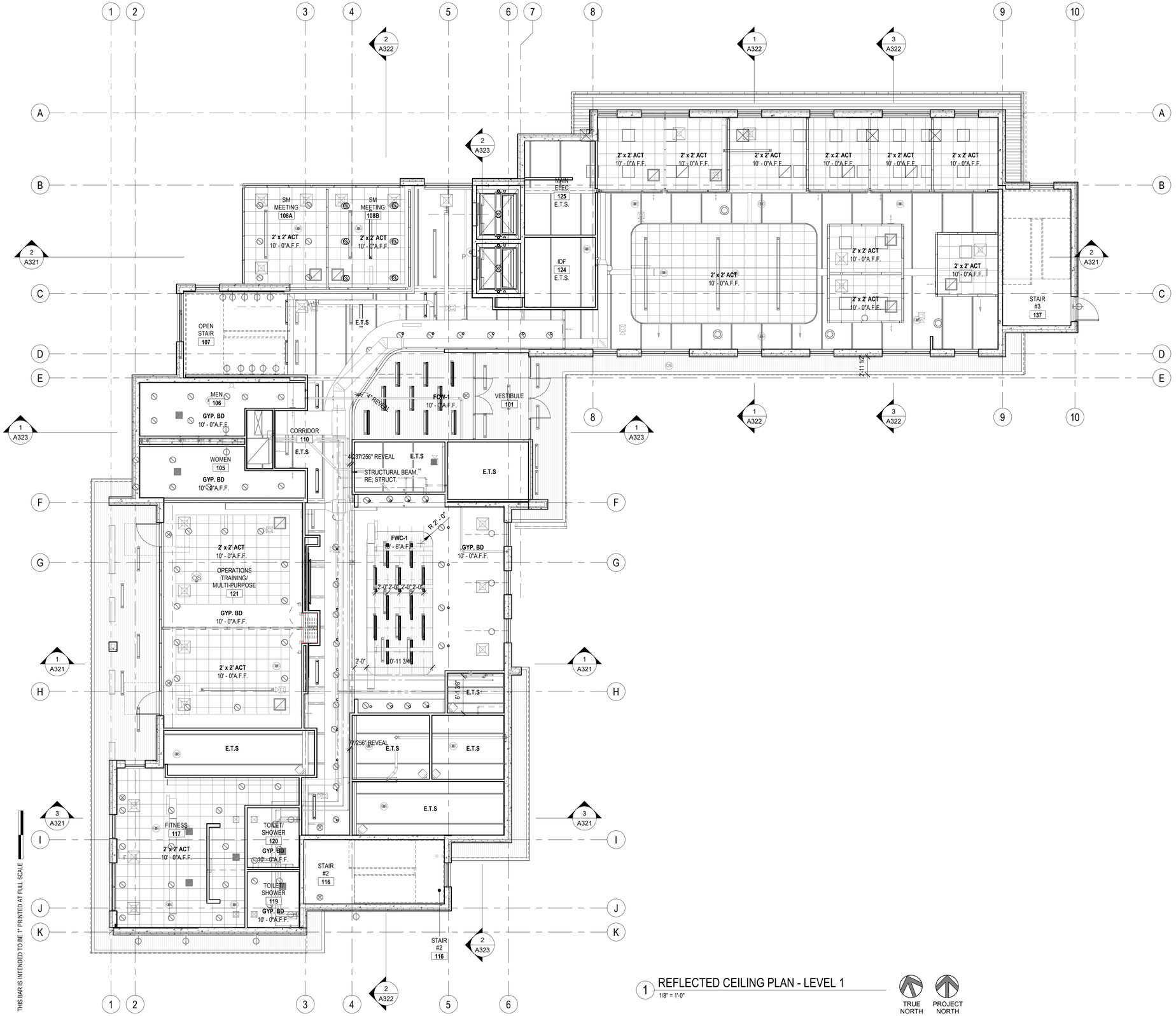
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

SOUTH WING FLOOR PLAN - LEVEL 3

A132

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE



THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

GENERAL NOTES

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3. ALL WALLS TO BE TYPE A1 UNLESS OTHERWISE NOTED

KEYNOTE LEGEND

REFLECTED CEILING LEGEND

- GYPSUM BOARD
- 2' x 2' SUSPENDED ACOUSTICAL PANELS
- CONCRETE
- E.T.S — EXPOSED TO STRUCTURE
- 1' X 4' CABLE HUNG LIGHT FIXTURE
- EXIT SIGN
- 2' x 2' RECESSED LIGHTING TROFFER
- 10' x 5" CEILING SUSPENDED LIGHT FIXTURE
- PENDANT LIGHT FIXTURE
- 1' X 4' CABLE HUNG LIGHT FIXTURE
- RECESSED CAN LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE

1 REFLECTED CEILING PLAN - LEVEL 1
1/8" = 1'-0"

TRUE NORTH | PROJECT NORTH

SEH

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2307 WULFSOHN RD.
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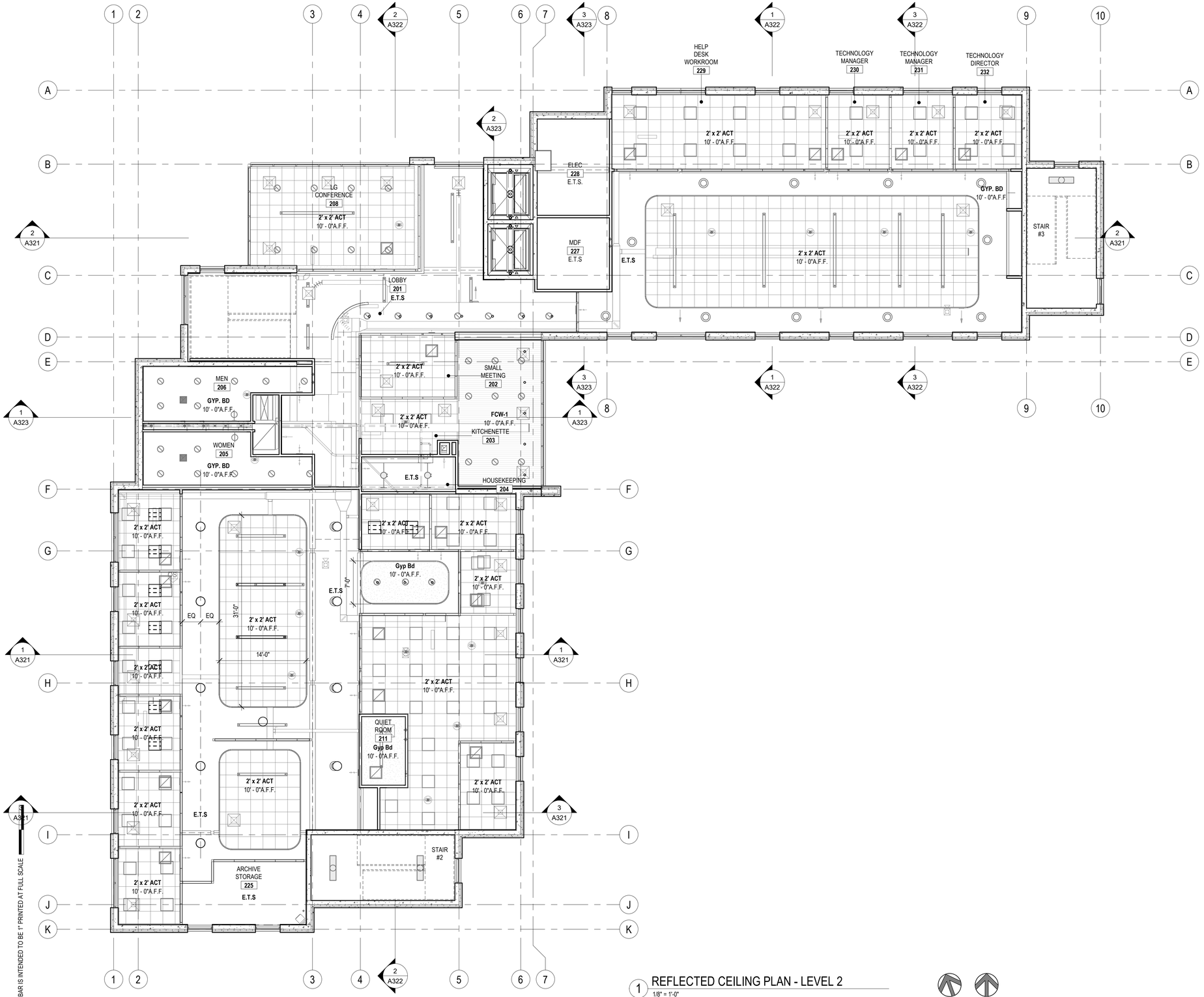
REV. #	DESCRIPTION	DATE

REFLECTED CEILING PLAN - LEVEL 1

A133



1 REFLECTED CEILING PLAN - LEVEL 2
1/8" = 1'-0"

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

TRUE NORTH

PROJECT NORTH

GENERAL NOTES

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KEYNOTE LEGEND

REFLECTED CEILING LEGEND

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- RECESSED CAN LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE

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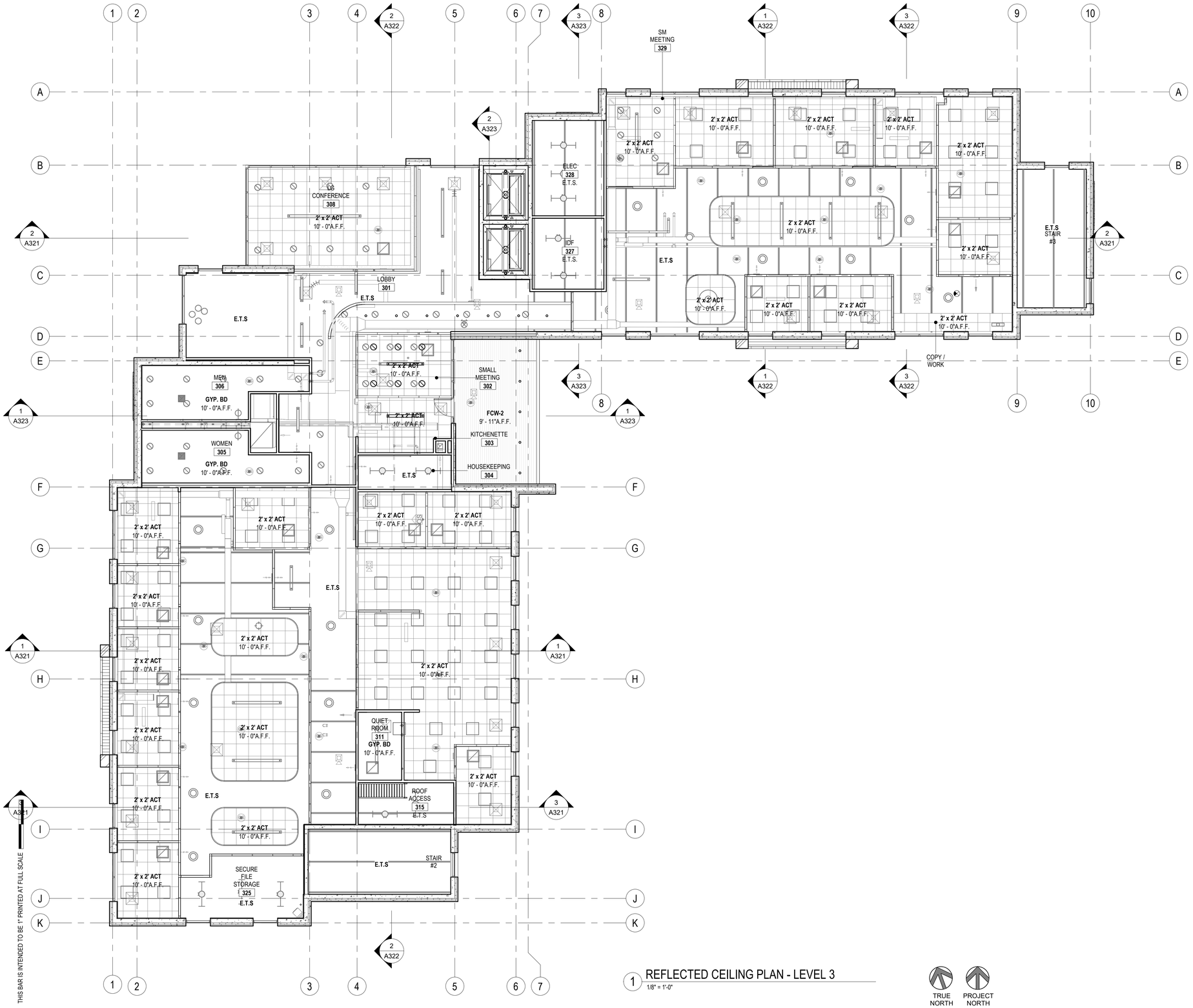
REFLECTED CEILING PLAN - LEVEL 2

A134



1 REFLECTED CEILING PLAN - LEVEL 3
1/8" = 1'-0"

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

TRUE NORTH

PROJECT NORTH

GENERAL NOTES

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KEYNOTE LEGEND

REFLECTED CEILING LEGEND

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- 2' x 2' SUSPENDED ACOUSTICAL PANELS
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- PENDANT LIGHT FIXTURE
- 1' X 4' CABLE HUNG LIGHT FIXTURE
- RECESSED CAN LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE

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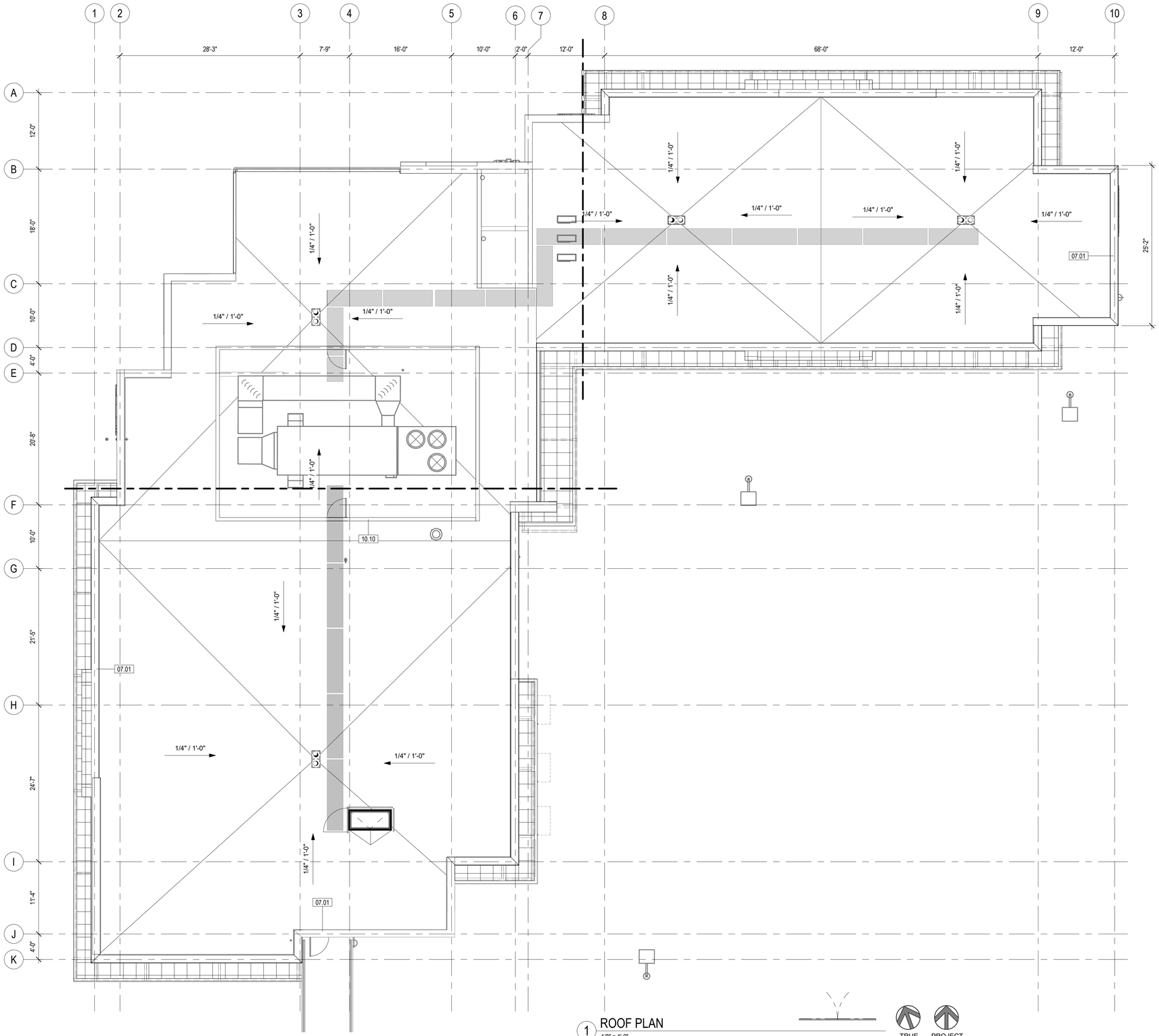
REFLECTED CEILING PLAN - LEVEL 3

A135



1 ROOF PLAN
1/8" = 1'-0"

TRUE NORTH

PROJECT NORTH

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GENERAL NOTES

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KEYNOTE LEGEND

07.01 PRE-FINISHED METAL PARAPET CAP
10.10 RIB PANEL EQUIPMENT SCREEN

SEH

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ADMINISTRATION OVERALL ROOF PLAN

A136

2 (PH 6B) EXTERIOR ELEVATION - NORTH
1/8" = 1'-0"

1 (PH 6B) EXTERIOR ELEVATION - WEST
1/8" = 1'-0"

EXTERIOR FINISH LEGEND

- STONE VENEER, COLOR 1: CORONADO , VENETIAN VILLA, PALAZZO WITH ½" SHALLOW BRUSHED GROUT JOINT. COLOR: MADISON COUNTY.
- BRICK VENEER, COLOR 1: METROBRICK , 107 GRAPHITE WITH 3/8" GROUT JOINT. COLOR: LIGHT GREY
- HORIZONTAL FIBER CEMENT SIDING: NICHIHA VINTAGWOOD. COLOR: BARK
- FAUX WOOD SOFFIT CEILING: RULON, ENDURE LINEAR 800/810 8X0 (3-1/4" WIDTH), WITH 3/4" SPACERS. COLOR: MEDIUM WALNUT
- PRE-FINISHED METAL PANEL: DRI-DESIGN, EN-V A80 SERIES 36"X36" COLOR: DARK BRONZE EN-V-007

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

SEH

NOT FOR CONSTRUCTION

PROJECT OWNER
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY

W.G. ADMINISTRATION BUILDING (PHASE 6B)

2307 WULFSCHN RD.
GLENWOOD SPRINGS,
COLORADO 81601

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SEH Project	173800
Checked By	A. JAUCH
Drawn By	SEH
Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/24

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

EXTERIOR ELEVATIONS

A221

2 (PH 6B) EXTERIOR ELEVATION - EAST
1/8" = 1'-0"

1 EXTERIOR ELEVATION - SOUTH
1/8" = 1'-0"

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EXTERIOR FINISH LEGEND

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- FAUX WOOD SOFFIT CEILING: RULON, ENDURE LINEAR 800/810 8X0 (3-1/4" WIDTH), WITH 3/4" SPACERS. COLOR: MEDIUM WALNUT
- PRE-FINISHED METAL PANEL: DRI-DESIGN, EN-V A80 SERIES 36"X36" COLOR: DARK BRONZE EN-V-007

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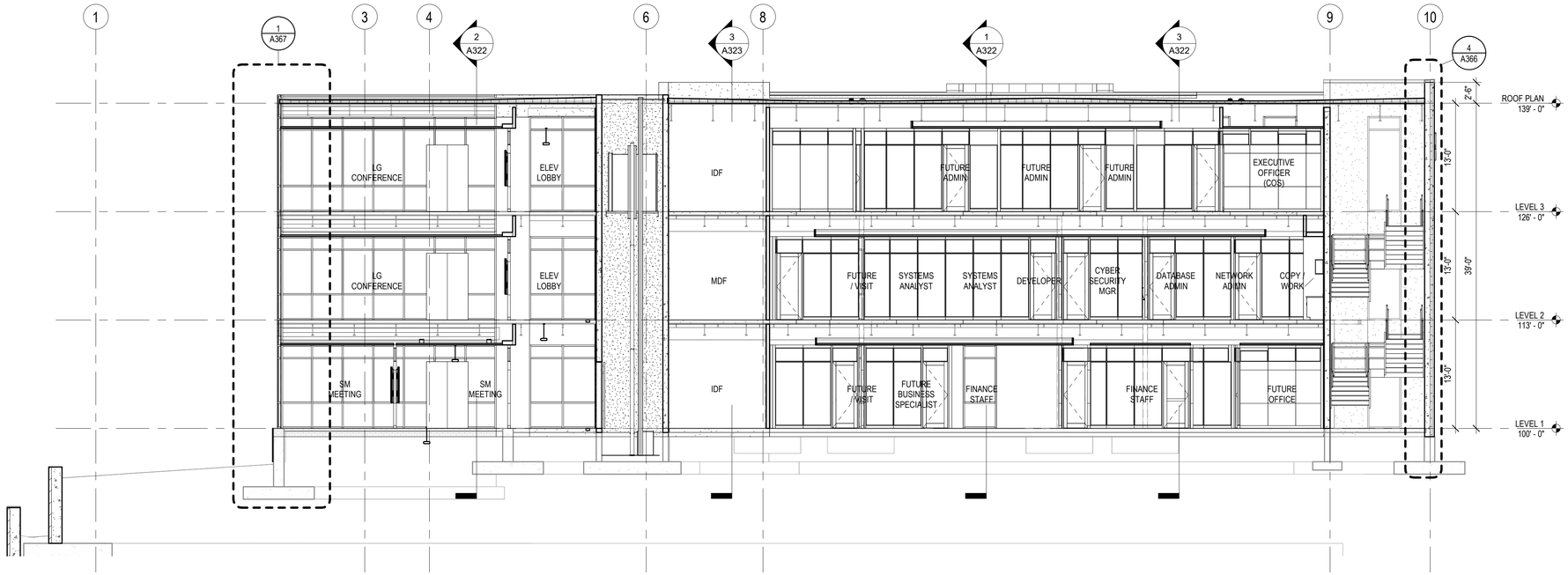
REVISION SCHEDULE

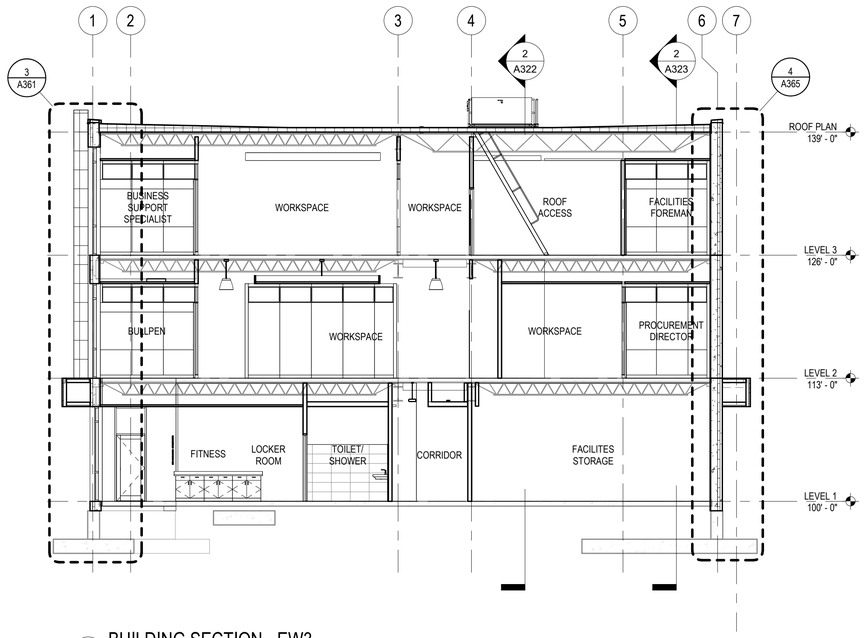
REV. #	DESCRIPTION	DATE

EXTERIOR ELEVATIONS

A222



2 BUILDING SECTION - EW2
1/8" = 1'-0"



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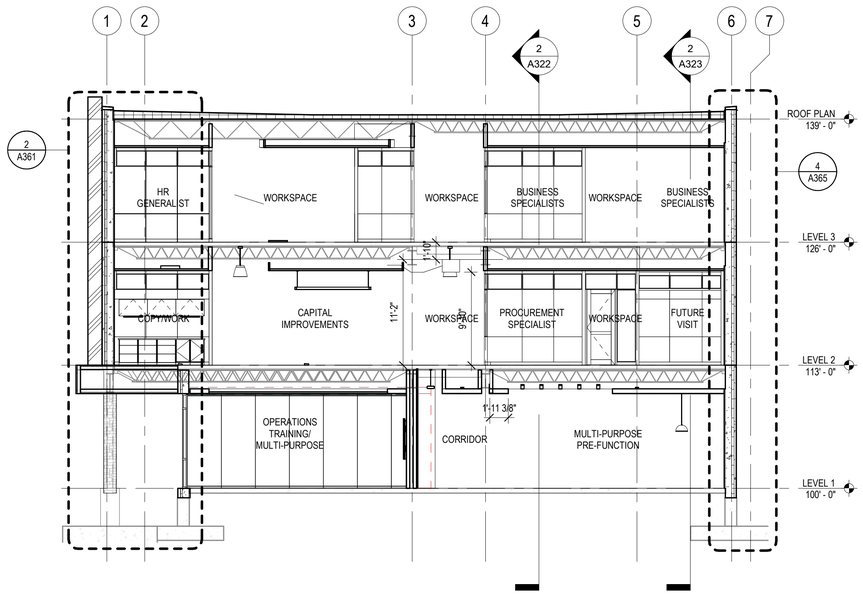
1/8" = 1'-0"



1 BUILDING SECTION - EW1
1/8" = 1'-0"

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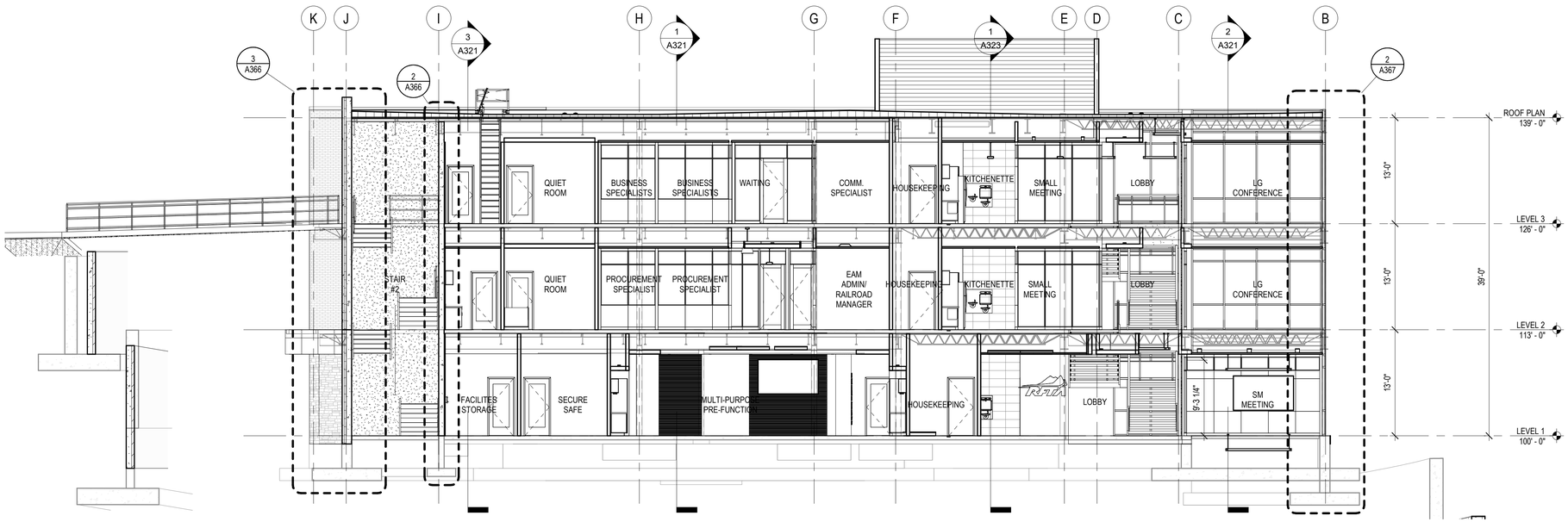
REVISION SCHEDULE

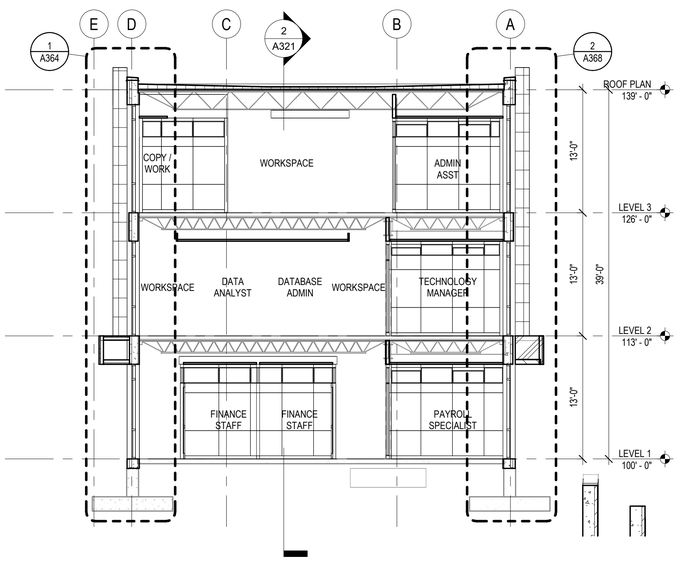
REV. #	DESCRIPTION	DATE

BUILDING SECTIONS

A321



2 BUILDING SECTION - NS2
1/8" = 1'-0"



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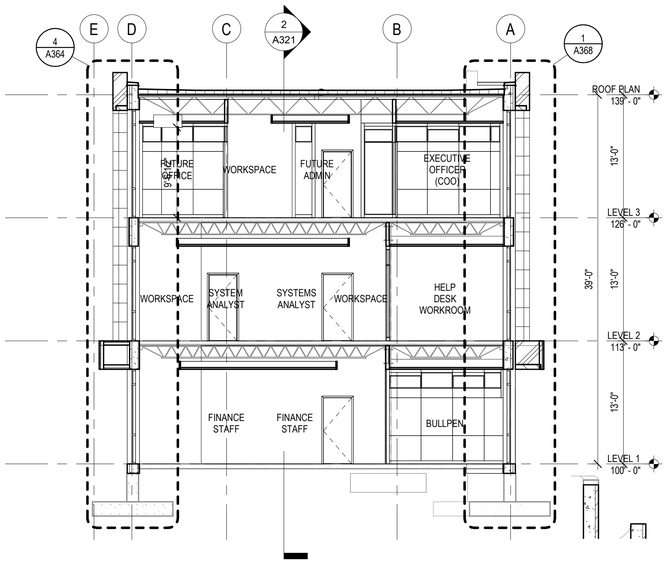

1 BUILDING SECTION - NS1
1/8" = 1'-0"

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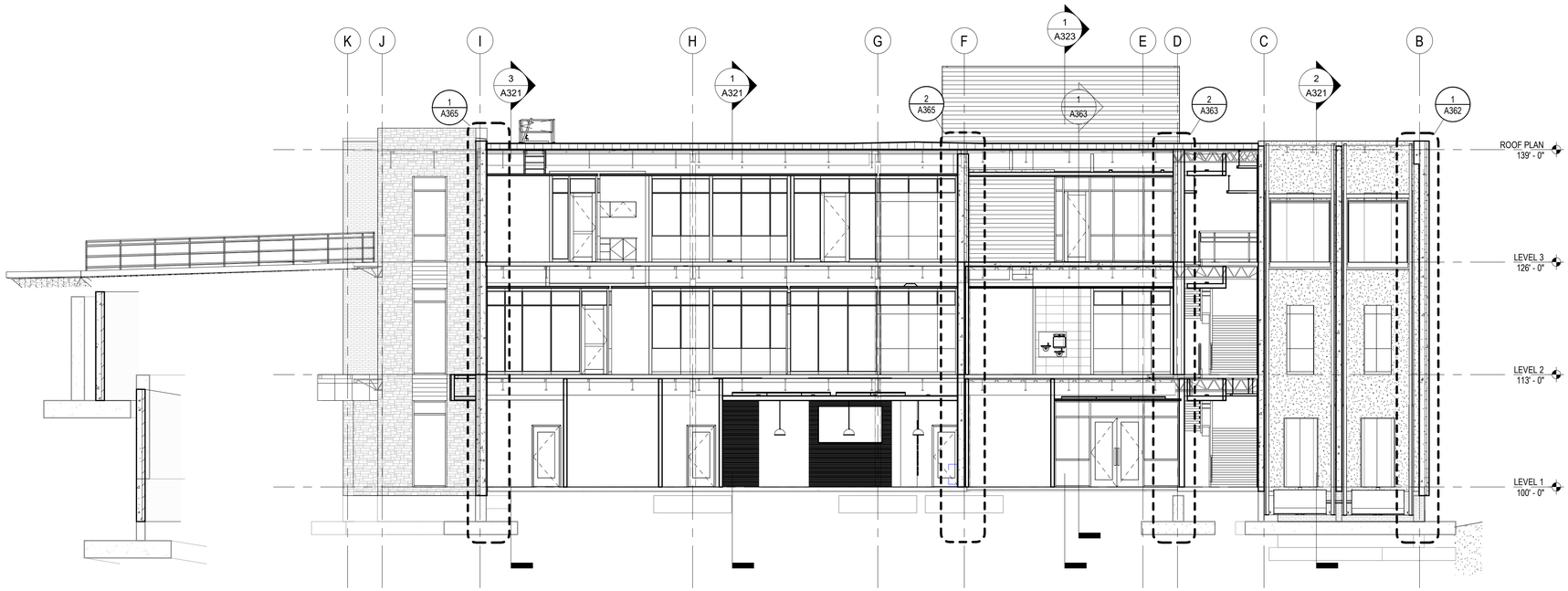
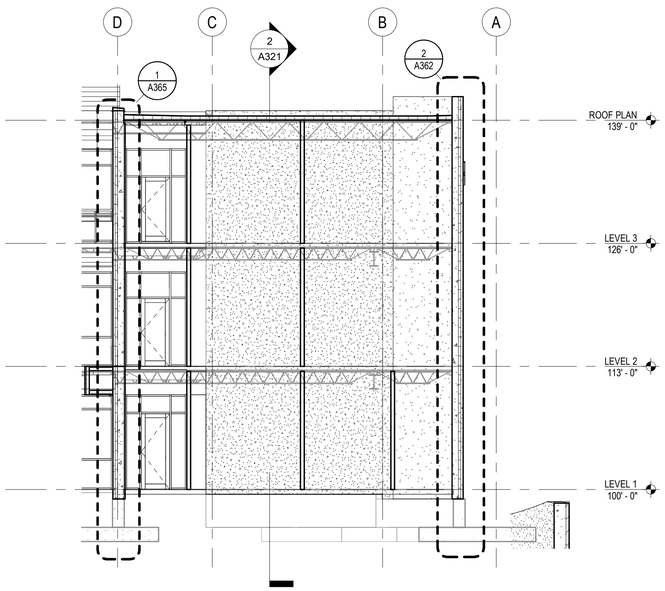
BUILDING SECTIONS

A322



2 A121 BUILDING SECTION - NS4
1/8" = 1'-0"



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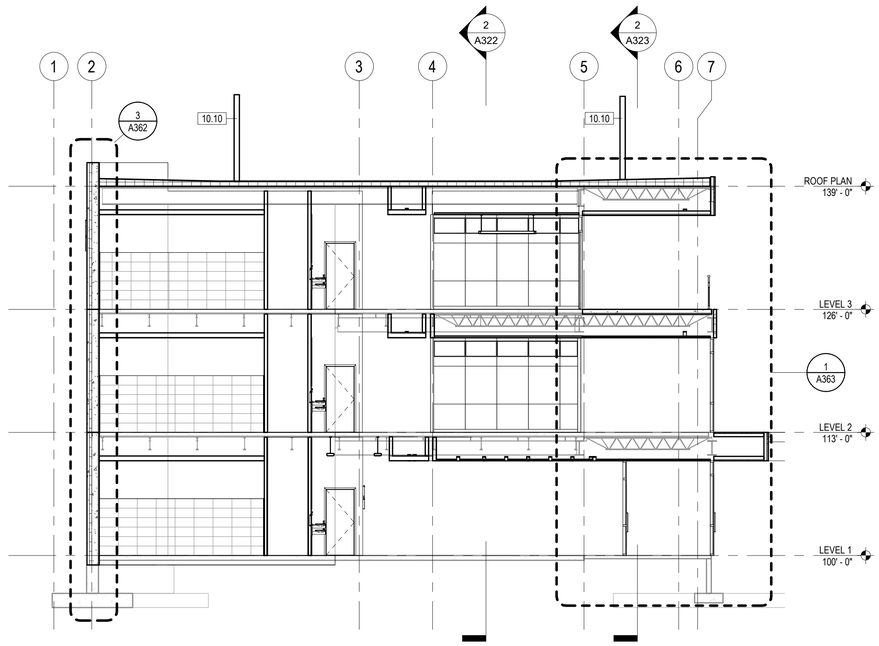
1/8" = 1'-0"



1 A121 BUILDING SECTION - EW4
1/8" = 1'-0"

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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

BUILDING SECTIONS

A323

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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

PERSPECTIVES (PH-6B)

A971

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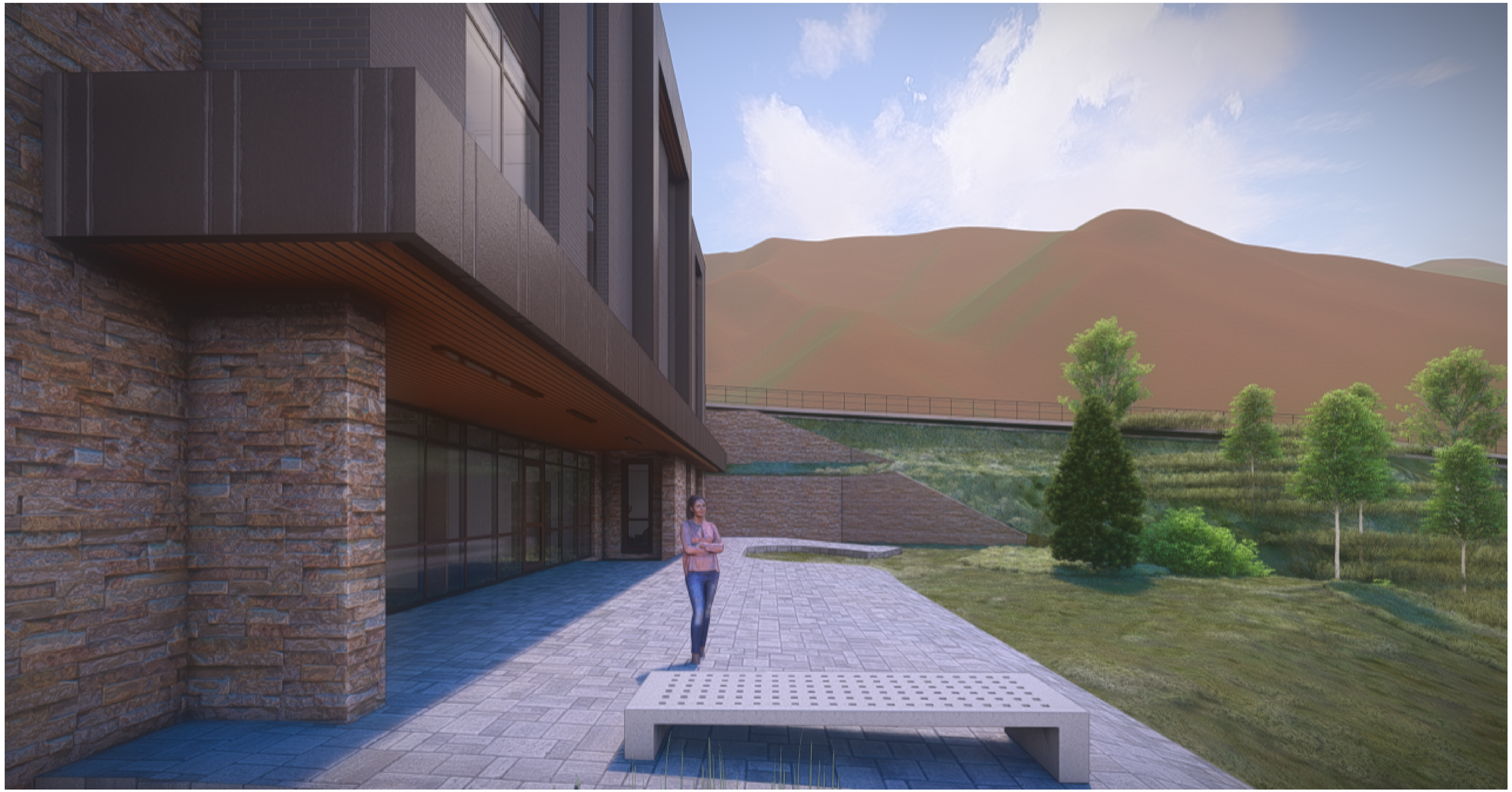
PERSPECTIVES (PH-6B)

A972



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PERSPECTIVES (PH-6B)

A973

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PERSPECTIVES (PH-6B)

A974

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PERSPECTIVES (PH-6B)

A975

ABBREVIATIONS

(E)	EXISTING
(N)	NEW
(D)	DEMOLISH
(R)	RELOCATE
A	AMPERES
AC	MOUNTED WITH BOTTOM OF DEVICE 2" ABOVE COUNTER OR 1" ABOVE COUNTER BACKSPLASH
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
ATS	AUTOMATIC TRANSFER SWITCH
BAS	BUILDING AUTOMATION SYSTEM
BFG	BELOW FINISHED GRADE
C	CONDUIT
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CU	COPPER
DM	DIGITAL METER
EM	EMERGENCY
EP	EXPLOSION PROOF
EPO	EMERGENCY POWER OFF
EWC	ELECTRIC WATER COOLER
FA	FIRE ALARM
FLA	FULL LOAD AMPS
G	GROUND
GFI	GROUND FAULT INTERRUPTER
HP	HORSEPOWER
KW	KILOWATT
LRA	LOCKED ROTOR AMPS
MCB	MAIN CIRCUIT BREAKER
MDC	MAIN DISTRIBUTION CENTER
MH	MOUNTING HEIGHT
MLO	MAIN LUG ONLY
MTS	MANUAL TRANSFER SWITCH
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NL	NIGHT LIGHT
NTS	NOT TO SCALE
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
PB	PULL BOX
TP	TAMPER RESISTANT
TVSS	TRANSIENT VOLTAGE SURGE SUPRESSION
TYP	TYPICAL
UF	UNDER FLOOR
UG	UNDER GROUND
UON	UNLESS OTHERWISE NOTED
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHERPROOF
XFMR	TRANSFORMER

FIRE ALARM DEVICES

- FIRE ALARM SYSTEM PANEL
- FACP — MAIN FIRE ALARM CONTROL PANEL
- ANNI — ANNUNCIATOR PANEL
- GZM — GRAPHIC ZONE MAP
- H R — HEAT DETECTOR - F=FIXED; R=RATE OF RISE
- DUCT SMOKE DETECTOR - S=SUPPLY; R=RETURN
- P — SMOKE DETECTOR - P=PHOTOELECTRIC; I=IONIZATION
- 15cd — FIRE ALARM STROBE (cd=CANDELLA RATING)
- AUDIBLE/VISUAL SIGNALING DEVICE (H/S=HORN STROBE; S/S=SPEAKER STROBE; C/S=CHIME STROBE)
- AUDIBLE DEVICE (H=HORE, S=SPEAKER; C=CHIME)
- M — MANUAL PULL STATION
- ACM — ADDRESSABLE CONTROL MODULE
- AMM — ADDRESSABLE MONITOR MODULE
- MAGNETIC DOOR HOLD/RELEASE DEVICE
- TAMPER SWITCH
- FLOW DETECTOR SWITCH
- REMOTE INDICATOR LIGHT
- DUCT DETECTOR REMOTE LIGHT INDICATOR ALARM AND TEST
- EMERGENCY FIRE FIGHTER PHONE JACK
- FSD — INDICATES A FIRE ALARM DEVICE CONTROLLING A FIRE SMOKE DAMPER

POWER

- DUPLEX RECEPTACLE — AC DENOTES ABOVE COUNTER
- DUPLEX RECEPTACLE, EMERGENCY
- DUPLEX RECEPTACLE SWITCHED
- QUADRUPLEX RECEPTACLE
- CLG — CEILING MOUNTED RECETPACLE
- SIMPLEX RECEPTACLE
- SPECIAL PURPOSE RECEPTACLE
- P — POWER POLE
- FLOOR RECEPTACLE
- DISCONNECT SWITCH (NON FUSED)
- M — MOTOR
- FUSED DISCONNECT (30A/3P U.O.N.)
- R — RELAY
- T — THERMOSTAT
- ATS — AUTOMATIC TRANSFER SWITCH
- J J — JUNCTION BOX
- BUS PLUG

PANELS: CONDUIT

- PANEL, POWER
- PANEL, DISTRIBUTION
- CONDUIT, CONCEALED BELOW
- CONDUIT, CONCEALED ABOVE OR IN WALL
- CONDUIT EXPOSED
- CONDUIT UP
- CONDUIT DOWN
- HOMERUN (DESIGNATION INDICATED PANELBOARD-CIRCUIT #)

LIGHT FIXTURE

- A — RECESSED LENSED GRID TROFFER
- A — RECESSED ARCHITECTURAL GRID TROFFER
- A — SUSPENDED PENDANT LUMINAIRE
- A — SURFACE MOUNTED TROFFER
- A — SURFACE MOUNTED TROFFER
- A — SURFACE MOUNTED STRIP
- A — FLANGED TROFFER
- A — RECESSED DOWNLIGHT
- A — RECESSED WALL WASHER
- A — WALL MTD.
- A — SURFACE MOUNT LUMINAIRE
- A — PENDANT MOUNTED LUMINAIRE
- A — RECESSED WALL MOUNTED LIGHT
- A A A — LIGHT TRACK W/NUM. OF HEADS IND.
- A — UNDER CABINET LIGHT
- A — POLE MOUNTED LUMINAIRE
- A — LIGHTED BOLLARD
- A — SPOT OR FLOOD LIGHT
- X — EXIT SIGN - ARROWS AS INDICATED ON DRAWINGS; FACES AS INDICATED BY SHADING

LETTER REFERS TO FIXTURE TYPE - SEE LIGHTING FIXTURE SCHEDULE
SHADING INDICATES FIXTURE FED FROM EMERGENCY SYSTEM OR BATTERY BACKED

SWITCHING

3 4	SINGLE POLE, 3-WAY, 4-WAY SWITCH
2	TWO POLE SWITCH
D D3	DIMMER SWITCH - SINGLE POLE, 3-WAY
a b c	SWITCH OPERATING FIXTURES WITH INDICATING CONTROL LETTER (a, b, c, etc.)
T	WALL BOX TIMER SWITCH
P	SWITCH WITH PILOT LIGHT
OC	WALL BOX OCCUPANCY SENSOR/SWITCH
K	KEY OPERATED SWITCH
DS	DOOR JAMB SWITCH
WP	WEATHERPROOF SWITCH
M	MOTOR RATED SWITCH
MC	MOMENTARY CONTROL SWITCH
XP	EXPLOSIONPROOF SWITCH
OC	VACANCY SENSOR - WALL
OC	VACANCY SENSOR - CEILING
PC	PHOTOCELL

ONE DIAGRAMS

- LSIG — CIRCUIT BREAKER (L=ADJUSTABLE LONG TIME PICKUP; S=ADJUSTABLE SHORT TIME PICK UP; I=ADJUSTABLE INSTANEOUS TRIP; G=ADJUSTABLE GROUND FAULT TRIP.
- LOW VOLTAGE DRAWOUT CIRCUIT BREAKER
- OVERLOADS
- FUSE
- LOAD BREAK SWITCH
- FUSE LOAD BREAK SWITCH
- SAFETY SWITCH W/AUX. CONTACT (30/3 U.O.N.)
- CURRENT TRANSFORMER
- CONTROL POWER TRANSFORMER (CPT) POTENTIAL TRANSFORMER (PTs)
- POWER TRANSFORMER
- ISOLATION POWER TRANSFORMER
- COMBINATION CONTACTOR WITH THERMAL MAGNETIC CIRCUIT BREAKER
- COMBINATION CONTACTOR WITH FUSED SWITCH
- CONTACTOR
- LIGHTNING ARRESTOR
- EL — ELECTRIC INTERLOCK
- BD — BUS DUCT
- PANELBOARD
- N · E · L · — AUTOMATIC TRANSFER SWITCH
- A — AMMMETER
- AS — AMMETER SELECTOR
- R — RELAY
- V — VOLT METER
- VS — VOLT METER SELECTOR
- WM — WATT METER
- M — UTILITY METER

GENERAL NOTES

1. WORK INCLUDED IN THE CONTRACT IS DENOTED IN BOLD. EXISTING CONDITIONS TO REMAIN ARE DENOTED LIGHTLY.
2. ALL ELECTRICAL WORK PERFORMED UNDER THIS CONTRACT SHALL CONFORM WITH THE 2018 INTERNATIONAL BUILDING CODES, 2018 INTERNATIONAL ENERGY CONSERVATION CODE, 2018 INTERNATIONAL FIRE CODE AND, LOCAL BUILDING AND FIRE DEPARTMENT REQUIREMENTS AND THE 2020 NATIONAL ELECTRICAL CODE (NEC).
3. ELECTRICAL CONTRACTOR SHALL FULLY COORDINATE WITH OWNER REPRESENTATIVES. PERFORM WORK IN ACCORDANCE WITH REQUIREMENTS OF OWNER REPRESENTATIVES. ELECTRICAL CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER OF ANY CHANGES REQUIRED BY THE BUILDING MANAGEMENT AND TENANT REPRESENTATIVES.
4. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF ELECTRICAL WORK. LOCATIONS ARE APPROXIMATE AND SHALL BE SUBJECT TO MINOR MODIFICATIONS AS DIRECTED BY THE GENERAL CONTRACTOR AND OWNER REPRESENTATIVES. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE EXACT FITTING OF ALL MATERIALS, EQUIPMENT, ETC., IN THE BUILDING AND TENANT SPACE. ALL DIMENSIONS SHALL BE VERIFIED ON THE JOB. ELECTRICAL CONTRACTOR SHALL CUT, CHANNEL, CHASE, AND/OR DRILL FLOORS, WALLS, PARTITIONS, CEILINGS, OR OTHER SURFACES AS REQUIRED FOR INSTALLATION, UPPORT, ANCHORAGE, ETC., OF WORK. PROVIDE X-RAY OF FLOOR PRIOR TO CORE DRILLS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SUBSEQUENT PATCHING WORK.
5. A DETAILED WRITTEN METHOD OF PROCEDURE IS REQUIRED WHEN A CONSTRUCTION ACTIVITY OR AN OUTAGE AFFECTS THE SAFETY OF OCCUPANTS, TELEPHONE/DATA/FIRE ALARM EQUIPMENT OR COMPONENTS OF ANY SYSTEM WHICH SUPPORTS THIS EQUIPMENT OR ESSENTIALLY AFFECTS THE BUILDING MANAGEMENT, OPERATIONS OR SECURITY. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
6. PRIOR TO SUBMITTING BIDS, THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE TO VERIFY EXISTING ELECTRICAL EQUIPMENT CONDITIONS AND DIFFICULTIES THAT WILL AFFECT EXECUTION OF THE WORK. FIELD VERIFY QUANTITIES OF EXISTING LIGHT FIXTURES, ELECTRICAL DEVICES, COMMUNICATION DEVICES, FIRE ALARM DEVICES, AND ELECTRICAL EQUIPMENT. NOTIFY THE ARCHITECT AND ENGINEER OF ANY EXISTING CONDITIONS, WHICH MODIFY THE SCOPE OF WORK AS SHOWN ON THE CONSTRUCTION DOCUMENTS. SUBMISSION OF A BID PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS FOR MOBILIZATION, LABOR, EQUIPMENT, AND/OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WILL NOT BE RECOGNIZED.
7. PROTECT STRUCTURE AND OWNER EQUIPMENT FROM DAMAGE. IMMEDIATELY REPLACE OR REPAIR, TO ORIGINAL CONDITION, DAMAGE CAUSED BY THE CONTRACTOR WHETHER EQUIPMENT APPEARS TO BE CURRENTLY IN USE OR NOT, UNLESS WRITTEN AUTHORIZATION FROM THE OWNER INDICATED OTHERWISE. PREPARE LISTING OF ALL EXISTING DAMAGED ITEMS AND SUBMIT TO OWNER PRIOR TO BEGINNING WORK.
8. EXISTING INFORMATION SHOWN ON THE DRAWINGS HAS BEEN TAKEN FROM OWNER FURNISHED DRAWINGS AND/OR LIMITED FIELD OBSERVATIONS. CMO CONSULTING ENGINEERS, LLC IS NOT RESPONSIBLE FOR THE ACCURACY OF ANY INFORMATION OR THE ADEQUACY, SAFETY AND CONFORMANCE TO CURRENT PREVAILING CODES OF ANY WORK SHOWN AS EXISTING ON THESE DRAWINGS.
9. FIELD LOCATE EXISTING UNDERGROUND PUBLIC AND OWNER UTILITIES OF ALL TRADES AND BUILDING GROUNDING/LIGHTNING PROTECTION SYSTEMS PRIOR TO ANY EXCAVATION. REPLACE OR REPAIR DAMAGED UTILITIES AND GROUNDING/LIGHTNING PROTECTION SYSTEMS TO ORIGINAL CONDITION.
10. INSTALL CONDUIT CONCEALED IN FINISHED AREAS UNLESS OTHERWISE NOTED.
11. DO NOT ROUTE CONDUIT WITHIN STRUCTURAL OR TOPPING SLABS OF FLOORS UNLESS SPECIFICALLY NOTED OTHERWISE AND WRITTEN APPROVAL IS OBTAINED FROM THE STRUCTURAL ENGINEER.
12. FIRE SEAL ALL FIRE RATED WALL AND FLOOR PENETRATIONS. VERIFY RATED WALL LOCATIONS ON ARCHITECTURAL DRAWINGS.
13. PROVIDE SEPARATE INSULATED GROUNDING CONDUCTOR IN ALL FEEDER, HOMERUN AND BRANCH CIRCUITS.
14. REFER TO ARCHITECTURAL AND MECHANICAL EQUIPMENT DRAWINGS FOR EXACT LOCATIONS OF ELECTRICAL DEVICES AND LIGHT FIXTURES. DO NOT SCALE FROM THE ELECTRICAL PLANS. ADDITIONAL ELECTRICAL REQUIREMENTS ON ARCHITECTURAL PLANS, KITCHEN EQUIPMENT PLANS, AND MECHANICAL PLANS SHALL BE INCLUDED IN THE ELECTRICAL CONTRACTOR'S BID.
15. DEMOLITION OF ANY ELECTRICAL, LOW VOLTAGE, AND COMMUNICATIONS CONDUIT, WIRING, CABLING, OR DEVICE MEANS TO REMOVE IN ITS ENTIRETY. REMOVE UNUSED CONDUITS FROM CEILING SPACES IN AREAS OF WORK. RETURN UNUSED ELECTRICAL EQUIPMENT AND LIGHT FIXTURES TO BUILDING MANAGEMENT FOR STORAGE AND/OR REMOVAL FROM SITE AS DIRECTED BY OWNERS.
16. WHERE REMODELING INTERFERES WITH EXISTING CIRCUITS AND EQUIPMENT WHICH ARE NOT TO BE REMOVED OR ARE OUTSIDE OF THE PROJECT AREA, SUCH CIRCUITS AND EQUIPMENT SHALL BE REWORKED AND RELOCATED AS REQUIRED TO COMPLETE THE PROJECT.
17. MINIMUM WORKING CLEARANCES PER THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE SHALL BE PROVIDED AROUND AND IN FRONT OF ALL ELECTRICAL EQUIPMENT.
18. ELECTRICAL CONTRACTOR SHALL MAINTAIN ON THE JOB AN UP TO DATE SET OF WORKING DRAWINGS, MARKED UP TO SHOW ELECTRICAL SYSTEMS AS INSTALLED. PROVIDE TENANT REPRESENTATIVES WITH ONE SET OF REPRODUCIBLES WITH "AS BUILT" PROJECT RECORD INFORMATION CLEARLY INDICATED. ELECTRICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LOCAL FEES, PERMITS, AND SERVICES OF INSPECTION AUTHORITIES REQUIRED BY ELECTRICAL WORK FOR THIS ELECTRICAL CONSTRUCTION
19. PROVIDE TYPED, UPDATED, COMPLETE AND ACCURATE PANELBOARD CIRCUIT DIRECTORIES AT THE COMPLETION OF WORK. CLEAN EXPOSED PANELBOARD SURFACES AND CHECK TIGHTNESS OF ELECTRICAL CONNECTIONS. REPLACE DAMAGED CIRCUIT BREAKERS AS REQUIRED AND ROVIDE FILLER PLATES FOR VACANT SPACES.
20. PROVIDE UPDATED LABELING OF ALL NEW AND RELOCATED ELECTRICAL EQUIPMENT IN SCOPE OF WORK INCLUDING, BUT NOT LIMITED TO, ENGINE GENERATOR SYSTEMS, TRANSFER SWITCHES, TRANSFORMERS, SWITCHGEAR, SWITCHBOARDS, PANELBOARDS, MOTOR CONTROL CENTERS, AND DISCONNECTS TO INDICATE THE AMPERE RATING, VOLTAGE RATING, PHASE, CONDUCTOR COLOR CODING WITHIN THE EQUIPMENT AND APPLICABLE AIC RATING.
21. ALL NEW AND MODIFIED ELECTRICAL EQUIPMENT, SUCH AS SWITCHBOARDS, PANELBOARDS, INDUSTRIAL CONTROL PANELS, METER SOCKET ENCLOSURES, AND MOTOR CONTROL CENTERS, THAT ARE LIKELY TO REQUIRE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE WHILE ENERGIZED SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. THE MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT PER NEC ARTICLE 110.16.

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PROJECT OWNER
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY
W.G. ADMINISTRATION BUILDING (PHASE 6B)
2307 WULFSOHN RD.
GLENWOOD SPRINGS,
COLORADO 81601

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SEH Project	173800
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REV. #	DESCRIPTION	DATE

ELECTRICAL LEGEND AND NOTES

E001

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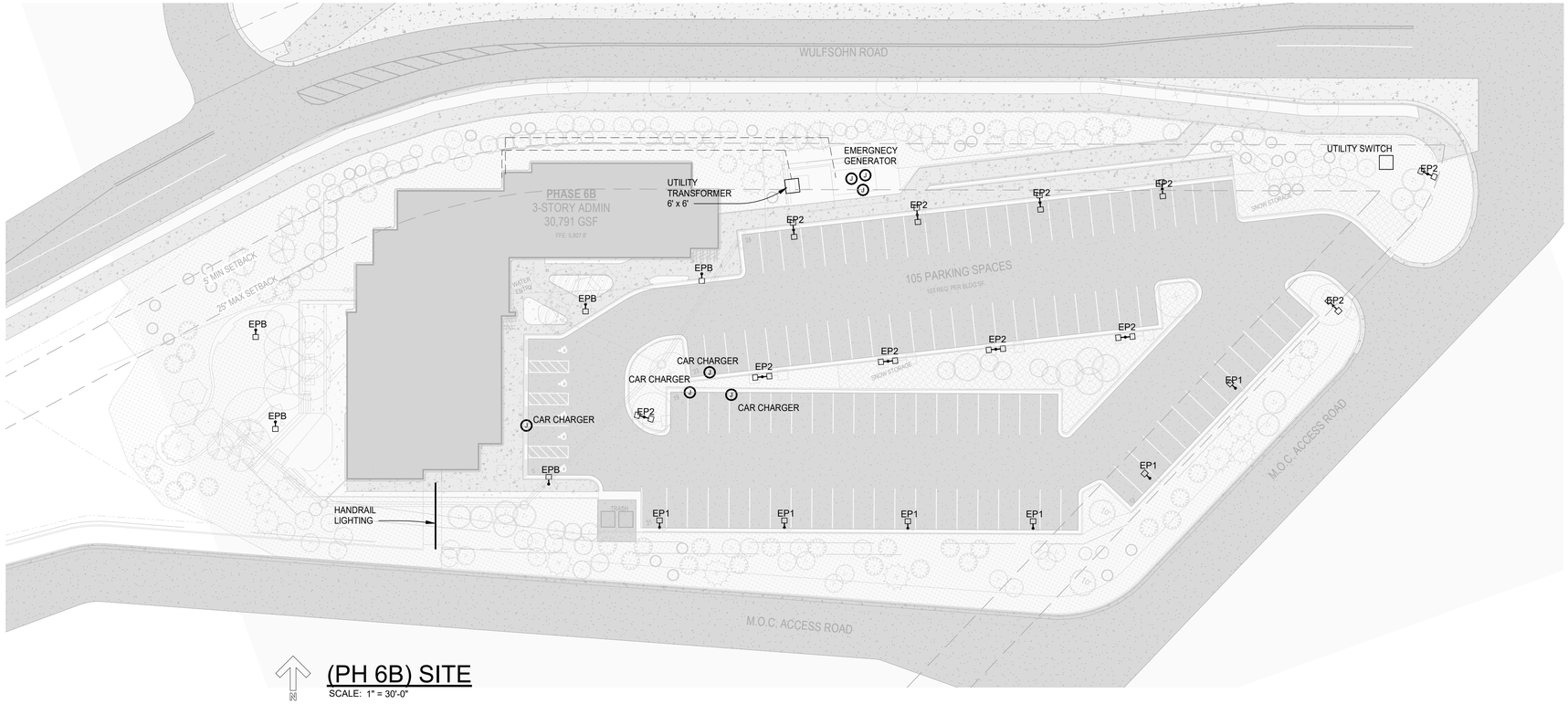

(PH 6B) SITE

SCALE: 1" = 30'-0"

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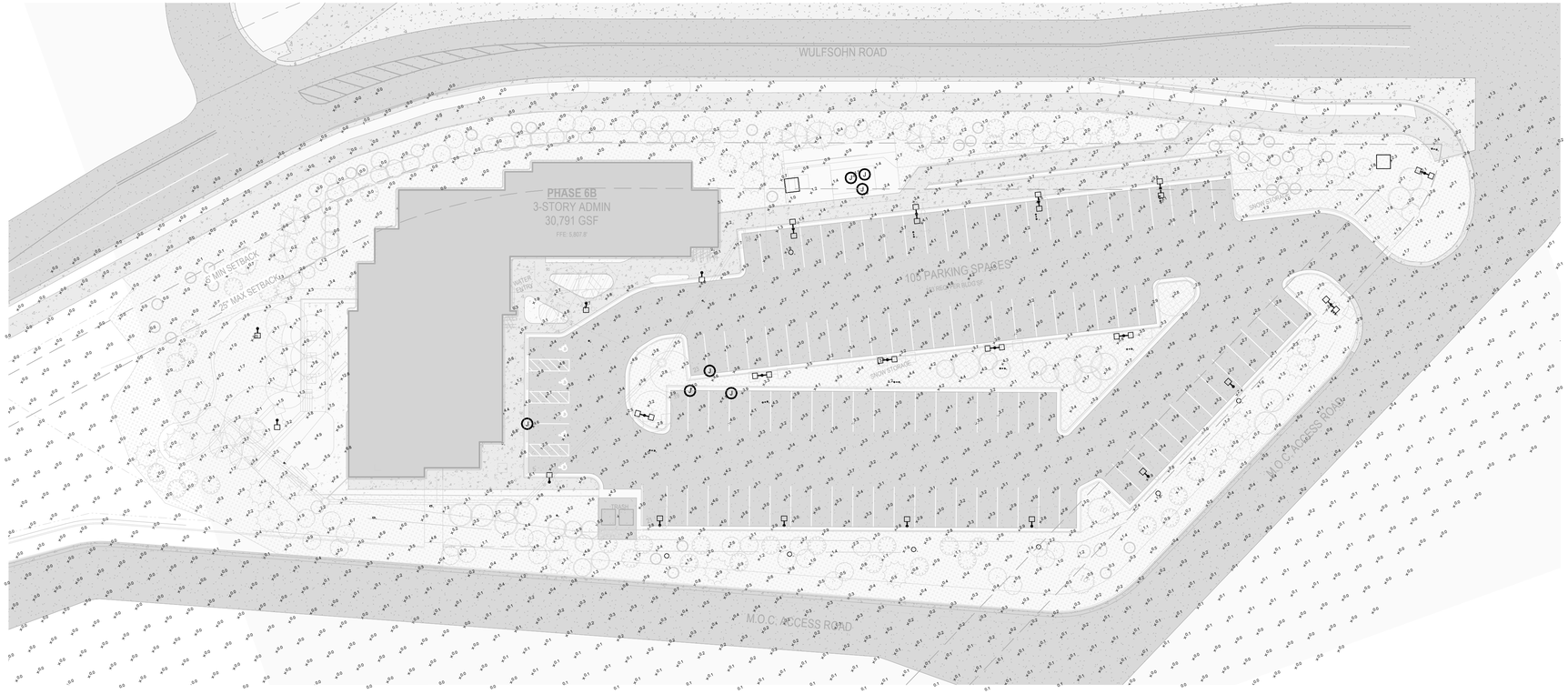
REV. #	DESCRIPTION	DATE

ELECTRICAL SITE PLAN

E100



(PH 6B) SITE PHOTOMETRICS

SCALE: 1" = 30'-0"

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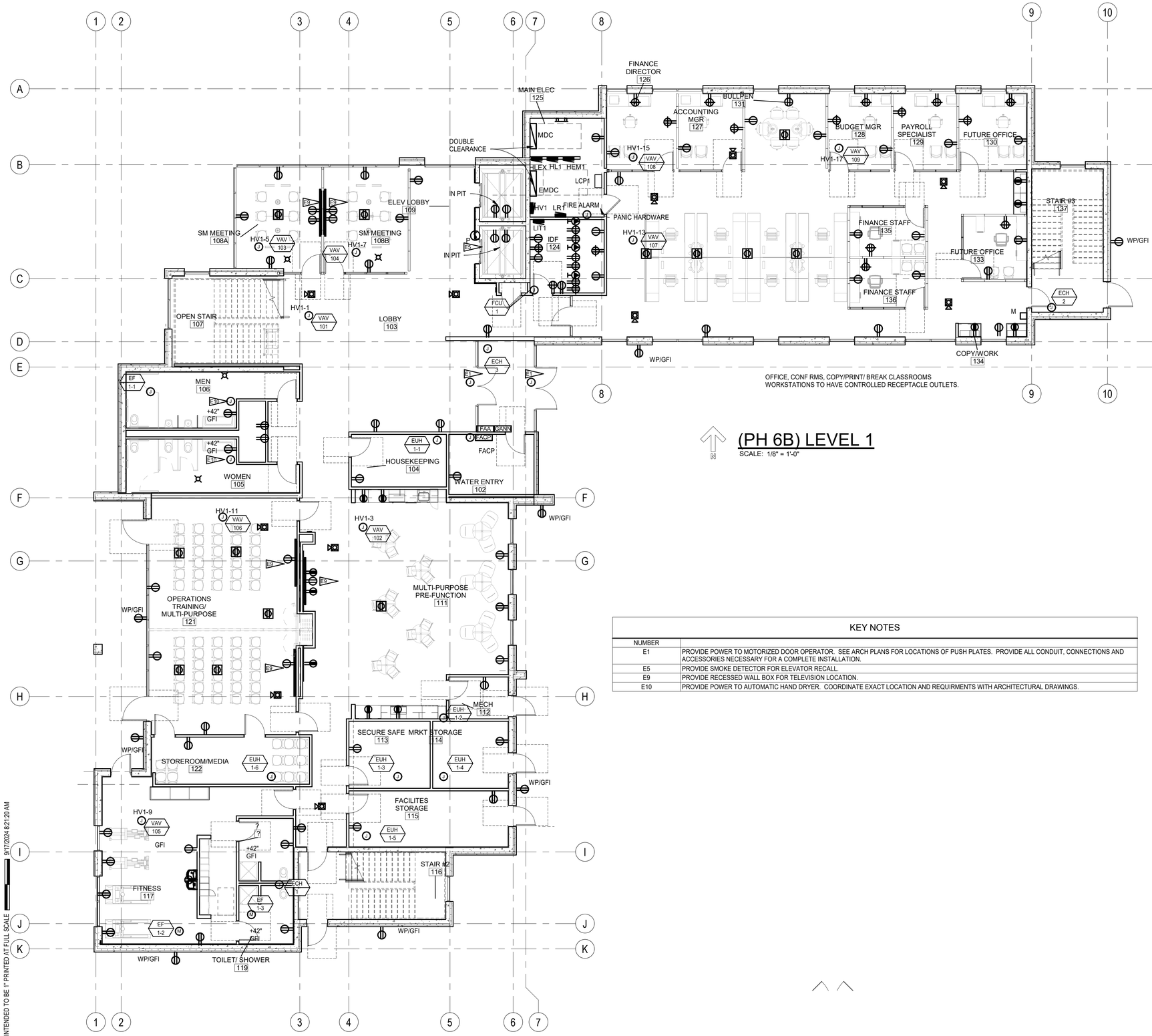
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

ELECTRICAL SITE PHOTOMETRICS

E101



(PH 6B) LEVEL 1

SCALE: 1/8" = 1'-0"

POWER NOTES:

1. NEW WORK IS TO BE PERFORMED IN EXISTING SHELL SPACE. REMOVE ELECTRICAL DEVICES IN SHELL SPACE AS NEEDED FOR NEW CONSTRUCTION. CONTRACTOR SHALL VISIT SITE TO DETERMINE AND COORDINATE THE EXACT EXTENT OF DEMOLITION TO FACILITATE ALL WORK INDICATED BY THE CONTRACT DOCUMENTS PRIOR TO QUOTATION. NO EXTRAS WILL BE ALLOWED FOR WORK REQUIRED TO ACHIEVE THE END RESULT AS INDICATED BY THE CONTRACT DOCUMENTS. REWORK EXISTING TERMINATIONS, CONNECTIONS, CONDUIT, WIRING, ETC. TO ACCEPT NEW WORK. MAINTAIN CIRCUIT CONTINUITY TO EXISTING CIRCUITS AND DEVICES TO REMAIN OR BE RELOCATED. PRIOR TO COMMENCEMENT OF ANY DEMO WORK, CONFIRM EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES FOR RESOLUTION.
2. ALL ITEMS IDENTIFIED TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY INCLUDING ALL WIRING AND EXPOSED CONDUIT AND CONDUIT SUPPORTS BACK TO POINT OF ORIGIN OR NEXT DEVICE TO REMAIN. REMOVED ITEMS SHALL BE TURNED OVER TO THE OWNER, UNLESS NOTED OTHERWISE, AND STORED IN THE AREA DESIGNATED BY THE OWNER. REMOVE FROM SITE AND LEGALLY DISPOSE OF ALL ITEMS THE OWNER CHOOSES NOT TO ACCEPT.
3. MAKE ALL FINAL ELECTRICAL CONNECTIONS TO EQUIPMENT REQUIRING ELECTRICAL CONNECTION. THIS SHALL INCLUDE BUT NOT BE LIMITED TO ALL MECHANICAL AND OTHER EQUIPMENT INCLUDED IN THIS PROJECT.
4. PROVIDE FUSES SIZED PER EQUIPMENT MANUFACTURER'S REQUIREMENTS.
5. DISCONNECT SWITCH LOCATIONS ARE SHOWN DIAGRAMMATICALLY AND SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS TO SUIT EQUIPMENT AND SPACE. DISCONNECT SWITCHES SHALL BE WITHIN SIGHT OF THE EQUIPMENT THEY SERVE AND MOUNTED AT 6'-3", MAXIMUM, TO TOP OF CABINET. MAINTAIN NEC WORK SPACE REQUIREMENTS.
6. RECEPTACLES INDICATED TO BE MOUNTED ABOVE COUNTER ARE TO BE MOUNTED HORIZONTALLY 6" ABOVE COUNTER WITH NEUTRAL UP.
7. COORDINATE AND VERIFY EXACT MOUNTING LOCATIONS OF WALL AND FLOOR DEVICES WITH ARCHITECTURAL ELEVATIONS, AND ANY FURNITURE OR SPECIALTY EQUIPMENT SUPPLIER DRAWINGS PRIOR TO ROUGH-IN.
8. COORDINATE EXACT REQUIREMENTS AND LOCATIONS OF MECHANICAL EQUIPMENT WITH MECHANICAL DRAWINGS AND MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
9. ALL RECEPTACLES, SWITCHES AND OTHER DEVICES FED FROM AN EMERGENCY CIRCUIT SHALL BE RED.
10. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH 120V AND 277V SINGLE PHASE CIRCUIT.
11. ALL RECEPTACLE OUTLETS LOCATED IN TOILET ROOMS, SHOWER ROOMS, ROOFTOPS, OUTDOOR LOCATIONS, MECHANICAL ROOMS, WITHIN 6 FEET OF A SINK, OR OTHER WET LOCATIONS SHALL BE PROVIDED WITH GFCI PROTECTION PER NEC ARTICLE 210.
12. PROVIDE HOSPITAL GRADE RECEPTACLES IN PATIENT CARE AREAS AS DEFINED IN NEC 517-3, INCLUDING ALL PATIENT EXAM, SLEEPING, PROCEDURE, DIAGNOSTIC AND TREATMENT ROOMS.
13. PROVIDE TAMPER RESISTIVE RECEPTACLES IN ALL HALLWAYS, CORRIDORS, WAITING AREAS, OFFICES, TOILET ROOMS AND EXAM ROOMS.
14. WHERE RECEPTACLES ARE DESIGNATED AS 'USB', PROVIDE DUPLEX RECEPTACLE WITH USB AND USB-C CONNECTIONS.

KEY NOTES

NUMBER	
E1	PROVIDE POWER TO MOTORIZED DOOR OPERATOR. SEE ARCH PLANS FOR LOCATIONS OF PUSH PLATES. PROVIDE ALL CONDUIT, CONNECTIONS AND ACCESSORIES NECESSARY FOR A COMPLETE INSTALLATION.
E5	PROVIDE SMOKE DETECTOR FOR ELEVATOR RECALL.
E9	PROVIDE RECESSED WALL BOX FOR TELEVISION LOCATION.
E10	PROVIDE POWER TO AUTOMATIC HAND DRYER. COORDINATE EXACT LOCATION AND REQUIRMENTS WITH ARCHITECTURAL DRAWINGS.

FIRE ALARM NOTES:

1. FIRE ALARM DEVICE LOCATIONS ON THE DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY INDICATE EVERY REQUIRED PIECE OF EQUIPMENT AND DEVICE. LOCATE FIRE ALARM DEVICES PER NFPA 72 AND MANUFACTURERS REQUIREMENTS. PROVIDE ALL ITEMS INCLUDING THOSE NOT SPECIFICALLY NOTED ON THE DRAWINGS, BUT WHICH ARE NECESSARY TO MAKE A COMPLETE WORKING INSTALLATION IN ACCORDANCE WITH CODE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING A SYSTEM THAT MEETS ALL NATIONAL AND LOCAL CODES. ALL FIRE ALARM SYSTEM MODIFICATIONS AND WIRING TO BE PERFORMED BY TENANT AND/OR BUILDING MANAGEMENT SHALL BE APPROVED FIRE ALARM CONTRACTOR. CONNECT DEVICES TO FIRE ALARM ZONES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PROVIDE 120 VOLT CIRCUIT FOR ADDITIONAL FIRE ALARM BOOSTER PANELS IF REQUIRED FOR NEW FIRE ALARM DEVICES. PROVIDE SPOT SMOKE DETECTOR ABOVE ADDITIONAL FIRE ALARM BOOSTER PANELS. AFTER THE INSTALLATION IS COMPLETE, TENANT'S FIRE ALARM SYSTEM REPRESENTATIVE SHALL TEST THE ENTIRE FIRE ALARM SYSTEM FOR SYSTEM INTEGRITY AND OPERATION.
2. THE ELECTRICAL CONTRACTOR SHALL PROVIDE FULLY ENGINEERED FIRE ALARM SHOP DRAWINGS FOR REVIEW BY THE LOCAL BUILDING AND FIRE DEPARTMENT. THE FIRE ALARM SHOP DRAWINGS SHALL BE SIGNED ANDSEALED BY A REGISTERED PROFESSIONAL ENGINEER IN THE PROJECT'S STATE AND SHALL MEET ALL REQUIRMENTS OF IFC AND NFPA 72.

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970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY

W.G. ADMINISTRATION BUILDING (PHASE 6B)

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Project Status	**Issue Date**
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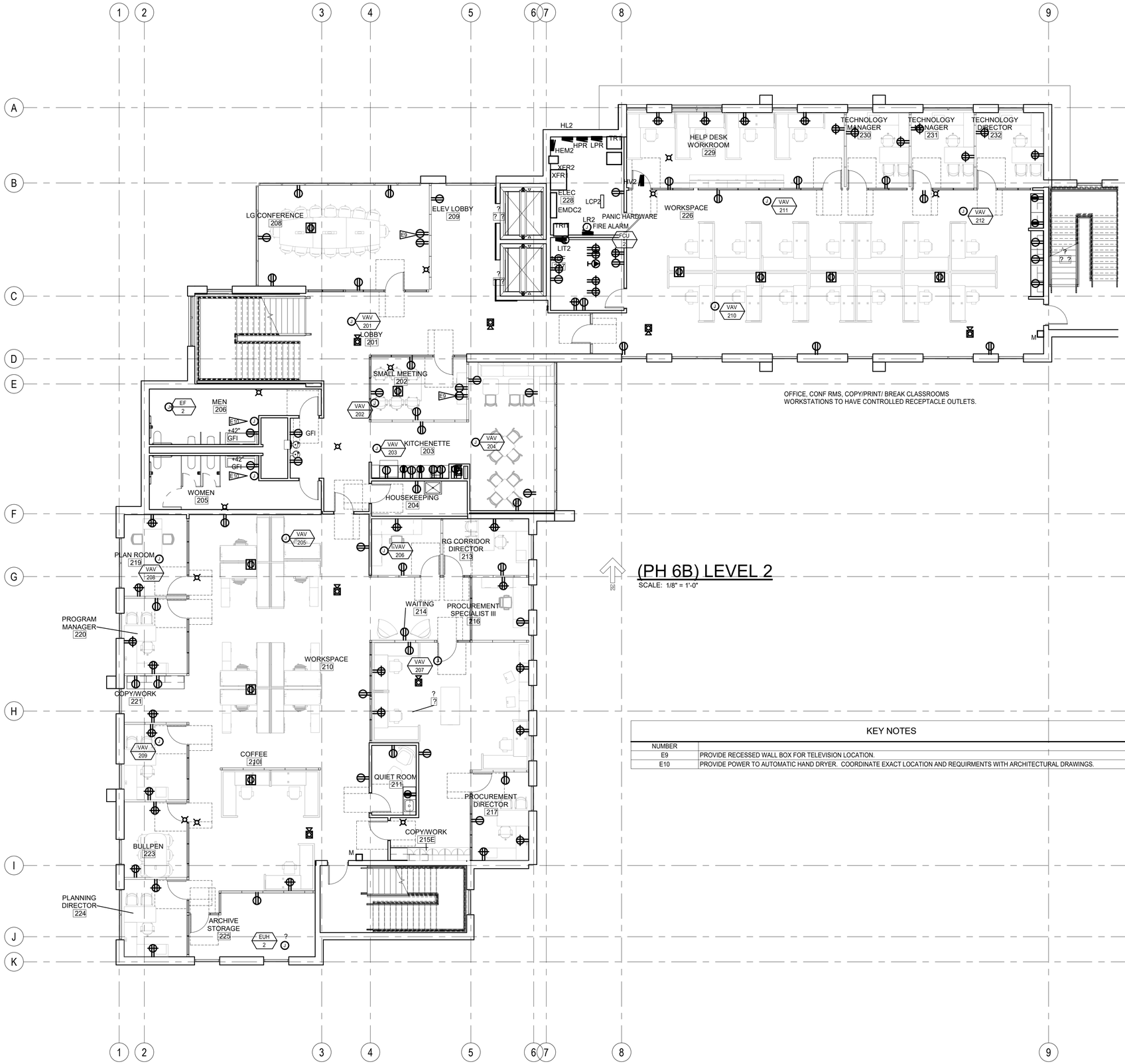
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

ADMINISTRATION POWER AND SYSTEMS PLAN - LEVEL 1 (PH-6B)

E121



(PH 6B) LEVEL 2

SCALE: 1/8" = 1'-0"

KEY NOTES

NUMBER	
E9	PROVIDE RECESSED WALL BOX FOR TELEVISION LOCATION.
E10	PROVIDE POWER TO AUTOMATIC HAND DRYER. COORDINATE EXACT LOCATION AND REQUIRMENTS WITH ARCHITECTURAL DRAWINGS.

POWER NOTES:

1. NEW WORK IS TO BE PERFORMED IN EXISTING SHELL SPACE. REMOVE ELECTRICAL DEVICES IN SHELL SPACE AS NEEDED FOR NEW CONSTRUCTION. CONTRACTOR SHALL VISIT SITE TO DETERMINE AND COORDINATE THE EXACT EXTENT OF DEMOLITION TO FACILITATE ALL WORK INDICATED BY THE CONTRACT DOCUMENTS PRIOR TO QUOTATION. NO EXTRAS WILL BE ALLOWED FOR WORK REQUIRED TO ACHIEVE THE END RESULT AS INDICATED BY THE CONTRACT DOCUMENTS. REWORK EXISTING TERMINATIONS, CONNECTIONS, CONDUIT, WIRING, ETC. TO ACCEPT NEW WORK. MAINTAIN CIRCUIT CONTINUITY TO EXISTING CIRCUITS AND DEVICES TO REMAIN OR BE RELOCATED. PRIOR TO COMMENCEMENT OF ANY DEMO WORK, CONFIRM EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES FOR RESOLUTION.
2. ALL ITEMS IDENTIFIED TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY INCLUDING ALL WIRING AND EXPOSED CONDUIT AND CONDUIT SUPPORTS BACK TO POINT OF ORIGIN OR NEXT DEVICE TO REMAIN. REMOVED ITEMS SHALL BE TURNED OVER TO THE OWNER, UNLESS NOTED OTHERWISE, AND STORED IN THE AREA DESIGNATED BY THE OWNER. REMOVE FROM SITE AND LEGALLY DISPOSE OF ALL ITEMS THE OWNER CHOOSES NOT TO ACCEPT.
3. MAKE ALL FINAL ELECTRICAL CONNECTIONS TO EQUIPMENT REQUIRING ELECTRICAL CONNECTION. THIS SHALL INCLUDE BUT NOT BE LIMITED TO ALL MECHANICAL AND OTHER EQUIPMENT INCLUDED IN THIS PROJECT.
4. PROVIDE FUSES SIZED PER EQUIPMENT MANUFACTURER'S REQUIREMENTS.
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6. RECEPTACLES INDICATED TO BE MOUNTED ABOVE COUNTER ARE TO BE MOUNTED HORIZONTALLY 6" ABOVE COUNTER WITH NEUTRAL UP.
7. COORDINATE AND VERIFY EXACT MOUNTING LOCATIONS OF WALL AND FLOOR DEVICES WITH ARCHITECTURAL ELEVATIONS, AND ANY FURNITURE OR SPECIALTY EQUIPMENT SUPPLIER DRAWINGS PRIOR TO ROUGH-IN.
8. COORDINATE EXACT REQUIREMENTS AND LOCATIONS OF MECHANICAL EQUIPMENT WITH MECHANICAL DRAWINGS AND MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
9. ALL RECEPTACLES, SWITCHES AND OTHER DEVICES FED FROM AN EMERGENCY CIRCUIT SHALL BE RED.
10. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH 120V AND 277V SINGLE PHASE CIRCUIT.
11. ALL RECEPTACLE OUTLETS LOCATED IN TOILET ROOMS, SHOWER ROOMS, ROOFTOPS, OUTDOOR LOCATIONS, MECHANICAL ROOMS, WITHIN 6 FEET OF A SINK, OR OTHER WET LOCATIONS SHALL BE PROVIDED WITH GFCI PROTECTION PER NEC ARTICLE 210.
12. PROVIDE HOSPITAL GRADE RECEPTACLES IN PATIENT CARE AREAS AS DEFINED IN NEC 517-3, INCLUDING ALL PATIENT EXAM, SLEEPING, PROCEDURE, DIAGNOSTIC AND TREATMENT ROOMS.
13. PROVIDE TAMPER RESISTIVE RECEPTACLES IN ALL HALLWAYS, CORRIDORS, WAITING AREAS, OFFICES, TOILET ROOMS AND EXAM ROOMS.
14. WHERE RECEPTACLES ARE DESIGNATED AS 'USB', PROVIDE DUPLEX RECEPTACLE WITH USB AND USB-C CONNECTIONS.

FIRE ALARM NOTES:

1. FIRE ALARM DEVICE LOCATIONS ON THE DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY INDICATE EVERY REQUIRED PIECE OF EQUIPMENT AND DEVICE. LOCATE FIRE ALARM DEVICES PER NFPA 72 AND MANUFACTURERS REQUIREMENTS. PROVIDE ALL ITEMS INCLUDING THOSE NOT SPECIFICALLY NOTED ON THE DRAWINGS, BUT WHICH ARE NECESSARY TO MAKE A COMPLETE WORKING INSTALLATION IN ACCORDANCE WITH CODE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING A SYSTEM THAT MEETS ALL NATIONAL AND LOCAL CODES. ALL FIRE ALARM SYSTEM MODIFICATIONS AND WIRING TO BE PERFORMED BY TENANT AND/OR BUILDING MANAGEMENT SHALL BE APPROVED FIRE ALARM CONTRACTOR. CONNECT DEVICES TO FIRE ALARM ZONES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PROVIDE 120 VOLT CIRCUIT FOR ADDITIONAL FIRE ALARM BOOSTER PANELS IF REQUIRED FOR NEW FIRE ALARM DEVICES. PROVIDE SPOT SMOKE DETECTOR ABOVE ADDITIONAL FIRE ALARM BOOSTER PANELS. AFTER THE INSTALLATION IS COMPLETE, TENANT'S FIRE ALARM SYSTEM REPRESENTATIVE SHALL TEST THE ENTIRE FIRE ALARM SYSTEM FOR SYSTEM INTEGRITY AND OPERATION.
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2307 WULFSOHN RD.
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970.925.8484

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2307 WULFSOHN RD.
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Project Status	**Issue Date**
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REVISION SCHEDULE

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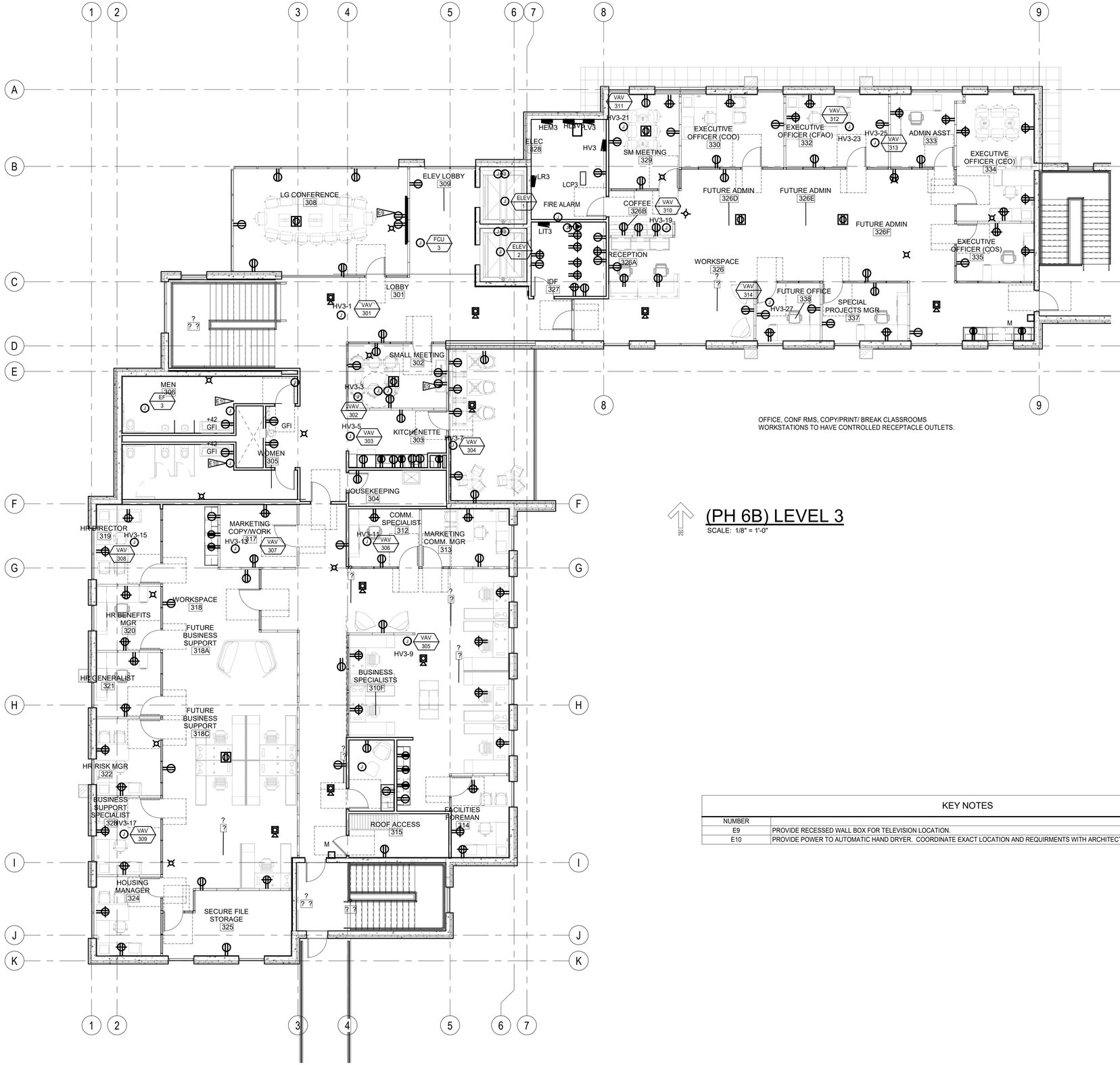
ADMINISRATION POWER AND SYSTEMS PLAN - LEVEL 2 (PH-6B)

E122



OFFICE, CONF RMS, COPY/PRINT/ BREAK CLASSROOMS
WORKSTATIONS TO HAVE CONTROLLED RECEPTACLE OUTLETS.

(PH 6B) LEVEL 3

SCALE: 1/8" = 1'-0"

POWER NOTES:

1. NEW WORK IS TO BE PERFORMED IN EXISTING SHELL SPACE. REMOVE ELECTRICAL DEVICES IN SHELL SPACE AS NEEDED FOR NEW CONSTRUCTION. CONTRACTOR SHALL VISIT SITE TO DETERMINE AND COORDINATE THE EXACT EXTENT OF DEMOLITION TO FACILITATE ALL WORK INDICATED BY THE CONTRACT DOCUMENTS PRIOR TO QUOTATION. NO EXTRAS WILL BE ALLOWED FOR WORK REQUIRED TO ACHIEVE THE END RESULT AS INDICATED BY THE CONTRACT DOCUMENTS. REWORK EXISTING TERMINATIONS, CONNECTIONS, CONDUIT, WIRING, ETC., TO ACCEPT NEW WORK. MAINTAIN CIRCUIT CONTINUITY TO EXISTING CIRCUITS AND DEVICES TO REMAIN OR BE RELOCATED. PRIOR TO COMMENCEMENT OF ANY DEMO WORK, CONFIRM EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES FOR RESOLUTION.
2. ALL ITEMS IDENTIFIED TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY INCLUDING ALL WIRING AND EXPOSED CONDUIT AND CONDUIT SUPPORTS BACK TO POINT OF ORIGIN OR NEXT DEVICE TO REMAIN. REMOVED ITEMS SHALL BE TURNED OVER TO THE OWNER, UNLESS NOTED OTHERWISE, AND STORED IN THE AREA DESIGNATED BY THE OWNER. REMOVE FROM SITE AND LEGALLY DISPOSE OF ALL ITEMS THE OWNER CHOOSES NOT TO ACCEPT.
3. MAKE ALL FINAL ELECTRICAL CONNECTIONS TO EQUIPMENT REQUIRING ELECTRICAL CONNECTION. THIS SHALL INCLUDE BUT NOT BE LIMITED TO ALL MECHANICAL AND OTHER EQUIPMENT INCLUDED IN THIS PROJECT.
4. PROVIDE FUSES SIZED PER EQUIPMENT MANUFACTURER'S REQUIREMENTS.
5. DISCONNECT SWITCH LOCATIONS ARE SHOWN DIAGRAMMATICALLY AND SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS TO SUIT EQUIPMENT AND SPACE. DISCONNECT SWITCHES SHALL BE WITHIN SIGHT OF THE EQUIPMENT THEY SERVE AND MOUNTED AT 6'-3", MAXIMUM, TO TOP OF CABINET. MAINTAIN NEC WORK SPACE REQUIREMENTS.
6. RECEPTACLES INDICATED TO BE MOUNTED ABOVE COUNTER ARE TO BE MOUNTED HORIZONTALLY 6" ABOVE COUNTER WITH NEUTRAL UP.
7. COORDINATE AND VERIFY EXACT MOUNTING LOCATIONS OF WALL AND FLOOR DEVICES WITH ARCHITECTURAL ELEVATIONS, AND ANY FURNITURE OR SPECIALTY EQUIPMENT SUPPLIER DRAWINGS PRIOR TO ROUGH-IN.
8. COORDINATE EXACT REQUIREMENTS AND LOCATIONS OF MECHANICAL EQUIPMENT WITH MECHANICAL DRAWINGS AND MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
9. ALL RECEPTACLES, SWITCHES AND OTHER DEVICES FED FROM AN EMERGENCY CIRCUIT SHALL BE RED.
10. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH 120V AND 277V SINGLE PHASE CIRCUIT.
11. ALL RECEPTACLE OUTLETS LOCATED IN TOILET ROOMS, SHOWER ROOMS, ROOFTOPS, OUTDOOR LOCATIONS, MECHANICAL ROOMS, WITHIN 6 FEET OF A SINK, OR OTHER WET LOCATIONS SHALL BE PROVIDED WITH GFCI PROTECTION PER NEC ARTICLE 210.
12. PROVIDE HOSPITAL GRADE RECEPTACLES IN PATIENT CARE AREAS AS DEFINED IN NEC 517-3, INCLUDING ALL PATIENT EXAM, SLEEPING, PROCEDURE, DIAGNOSTIC AND TREATMENT ROOMS.
13. PROVIDE TAMPER RESISTIVE RECEPTACLES IN ALL HALLWAYS, CORRIDORS, WAITING AREAS, OFFICES, TOILET ROOMS AND EXAM ROOMS.
14. WHERE RECEPTACLES ARE DESIGNATED AS 'USB', PROVIDE DUPLEX RECEPTACLE WITH USB AND USB-C CONNECTIONS.

FIRE ALARM NOTES:

1. FIRE ALARM DEVICE LOCATIONS ON THE DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY INDICATE EVERY REQUIRED PIECE OF EQUIPMENT AND DEVICE. LOCATE FIRE ALARM DEVICES PER NFPA 72 AND MANUFACTURERS REQUIREMENTS. PROVIDE ALL ITEMS INCLUDING THOSE NOT SPECIFICALLY NOTED ON THE DRAWINGS, BUT WHICH ARE NECESSARY TO MAKE A COMPLETE WORKING INSTALLATION IN ACCORDANCE WITH CODE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING A SYSTEM THAT MEETS ALL NATIONAL AND LOCAL CODES. ALL FIRE ALARM SYSTEM MODIFICATIONS AND WIRING TO BE PERFORMED BY TENANT AND/OR BUILDING MANAGEMENT SHALL BE APPROVED FIRE ALARM CONTRACTOR. CONNECT DEVICES TO FIRE ALARM ZONES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PROVIDE 120 VOLT CIRCUIT FOR ADDITIONAL FIRE ALARM BOOSTER PANELS IF REQUIRED FOR NEW FIRE ALARM DEVICES. PROVIDE SPOT SMOKE DETECTOR ABOVE ADDITIONAL FIRE ALARM BOOSTER PANELS. AFTER THE INSTALLATION IS COMPLETE, TENANT'S FIRE ALARM SYSTEM REPRESENTATIVE SHALL TEST THE ENTIRE FIRE ALARM SYSTEM FOR SYSTEM INTEGRITY AND OPERATION.
2. THE ELECTRICAL CONTRACTOR SHALL PROVIDE FULLY ENGINEERED FIRE ALARM SHOP DRAWINGS FOR REVIEW BY THE LOCAL BUILDING AND FIRE DEPARTMENT. THE FIRE ALARM SHOP DRAWINGS SHALL BE SIGNED ANDSEALED BY A REGISTERED PROFESSIONAL ENGINEER IN THE PROJECT'S STATE AND SHALL MEET ALL REQUIRMENTS OF IFC AND NFPA 72.

KEY NOTES

NUMBER	
E9	PROVIDE RECESSED WALL BOX FOR TELEVISION LOCATION.
E10	PROVIDE POWER TO AUTOMATIC HAND DRYER. COORDINATE EXACT LOCATION AND REQUIRMENTS WITH ARCHITECTURAL DRAWINGS.

SEH

NOT FOR CONSTRUCTION

PROJECT OWNER
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY

W.G. ADMINISTRATION BUILDING (PHASE 6B)

2307 WULFSOHN RD.
GLENWOOD SPRINGS,
COLORADO 81601

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SEH Project	173800
Checked By	CAB
Drawn By	CAB

Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/2024

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

ADMINISTRATION POWER AND SYSTEMS PLAN - LEVEL 3 (PH-6B)

E123

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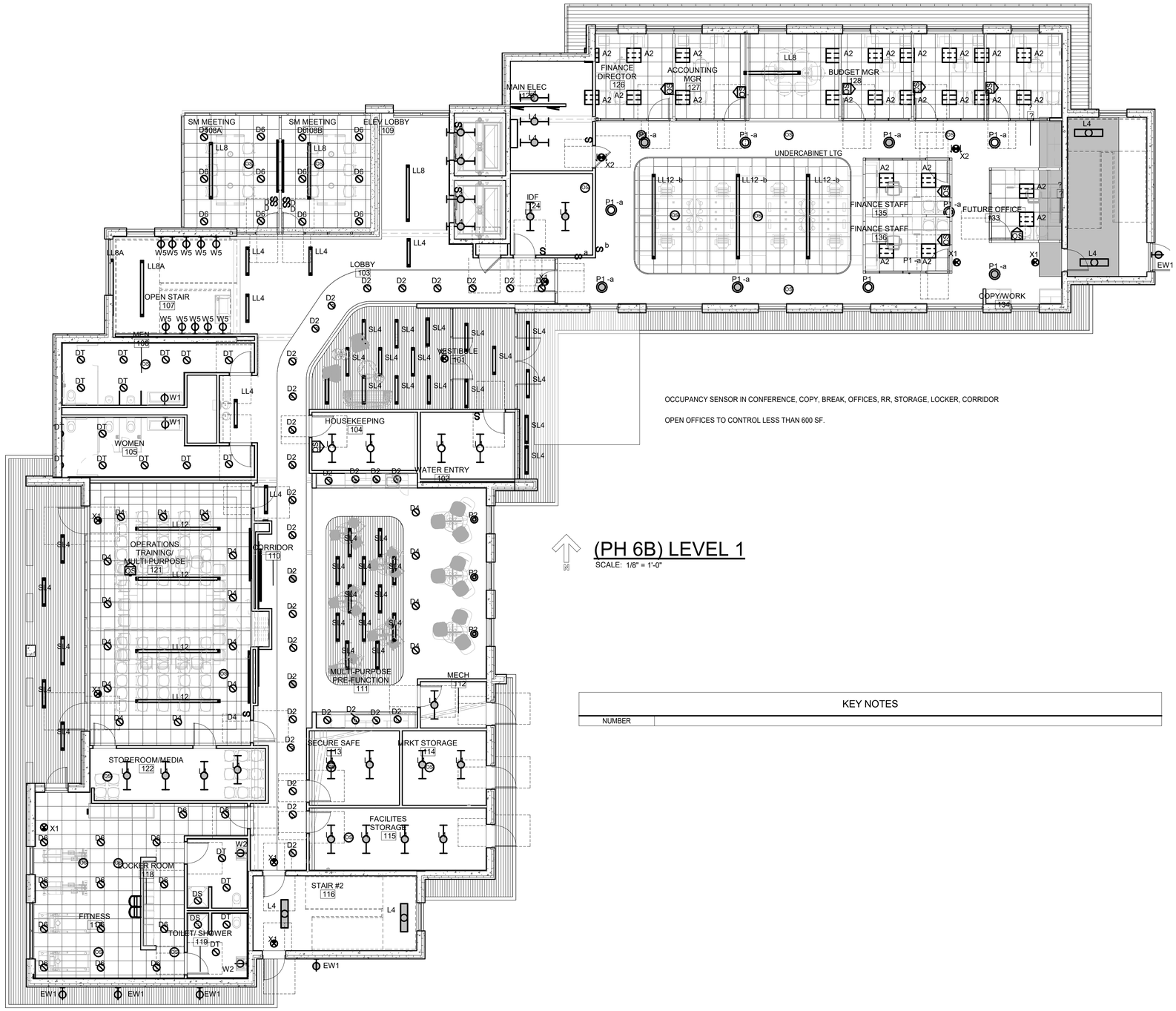

OCCUPANCY SENSOR IN CONFERENCE, COPY, BREAK, OFFICES, RR, STORAGE, LOCKER, CORRIDOR

OPEN OFFICES TO CONTROL LESS THAN 600 SF.

(PH 6B) LEVEL 1

SCALE: 1/8" = 1'-0"

KEY NOTES	
NUMBER	

LIGHTING NOTES:

1. NEW WORK IS TO BE PERFORMED IN EXISTING SHELL SPACE. REMOVE ELECTRICAL DEVICES IN SHELL SPACE AS NEEDED FOR NEW CONSTRUCTION. CONTRACTOR SHALL VISIT SITE TO DETERMINE AND COORDINATE THE EXACT EXTENT OF DEMOLITION TO FACILITATE ALL WORK INDICATED BY THE CONTRACT DOCUMENTS PRIOR TO QUOTATION. NO EXTRAS WILL BE ALLOWED FOR WORK REQUIRED TO ACHIEVE THE END RESULT AS INDICATED BY THE CONTRACT DOCUMENTS. REWORK EXISTING TERMINATIONS, CONNECTIONS, CONDUIT, WIRING, ETC. TO ACCEPT NEW WORK. MAINTAIN CIRCUIT CONTINUITY TO EXISTING CIRCUITS AND DEVICES TO REMAIN OR BE RELOCATED. PRIOR TO COMMENCEMENT OF ANY DEMO WORK, CONFIRM EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES FOR RESOLUTION.
2. REFER TO ARCHITECTURAL ELEVATIONS AND REFLECTED CEILING PLANS FOR EXACT MOUNTING LOCATIONS AND MOUNTING HEIGHTS OF DEVICES AND LUMINAIRES. MOUNTING HEIGHTS ON ARCHITECTURAL PLANS TAKE PRECEDENCE OVER ELECTRICAL DRAWINGS.
3. COORDINATE LUMINAIRE LOCATIONS WITH MECHANICAL PIPING, DUCTWORK, ETC., TO AVOID CONFLICTS. SEE SPECIFICATIONS FOR COORDINATION REQUIREMENTS.
4. FIELD COORDINATE EXACT LOCATION OF CEILING MOUNTED OCCUPANCY/VACANCY SENSORS PER MANUFACTURER'S INSTRUCTIONS. THE LOCATIONS OF THE OCCUPANCY/VACANCY SENSORS ON THE DRAWINGS ARE DIAGRAMMATIC.
5. EXIT AND EGRESS LIGHTING ARE TO REMAIM UNSWITCHED.
6. COORDINATE DIMMING VACANCY SENSOR TYPE WITH LUMINAIRE.
7. AIM DIRECTIONAL LIGHTING AS DIRECTED BY OWNER.
8. PROVIDE LIGHTING CONTROL PANEL FOR FOUR SWITCHES WITH OCCUPANCY SENSOR AND PHOTOSENSOR INPUTS AND TIMER CONTROL.

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W.G. ADMINISTRATION BUILDING (PHASE 6B)

2307 WULFSOHN RD.
GLENWOOD SPRINGS,
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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

ADMINISTRATION LIGHTING PLAN - LEVEL 1 (PH-6B)

E131

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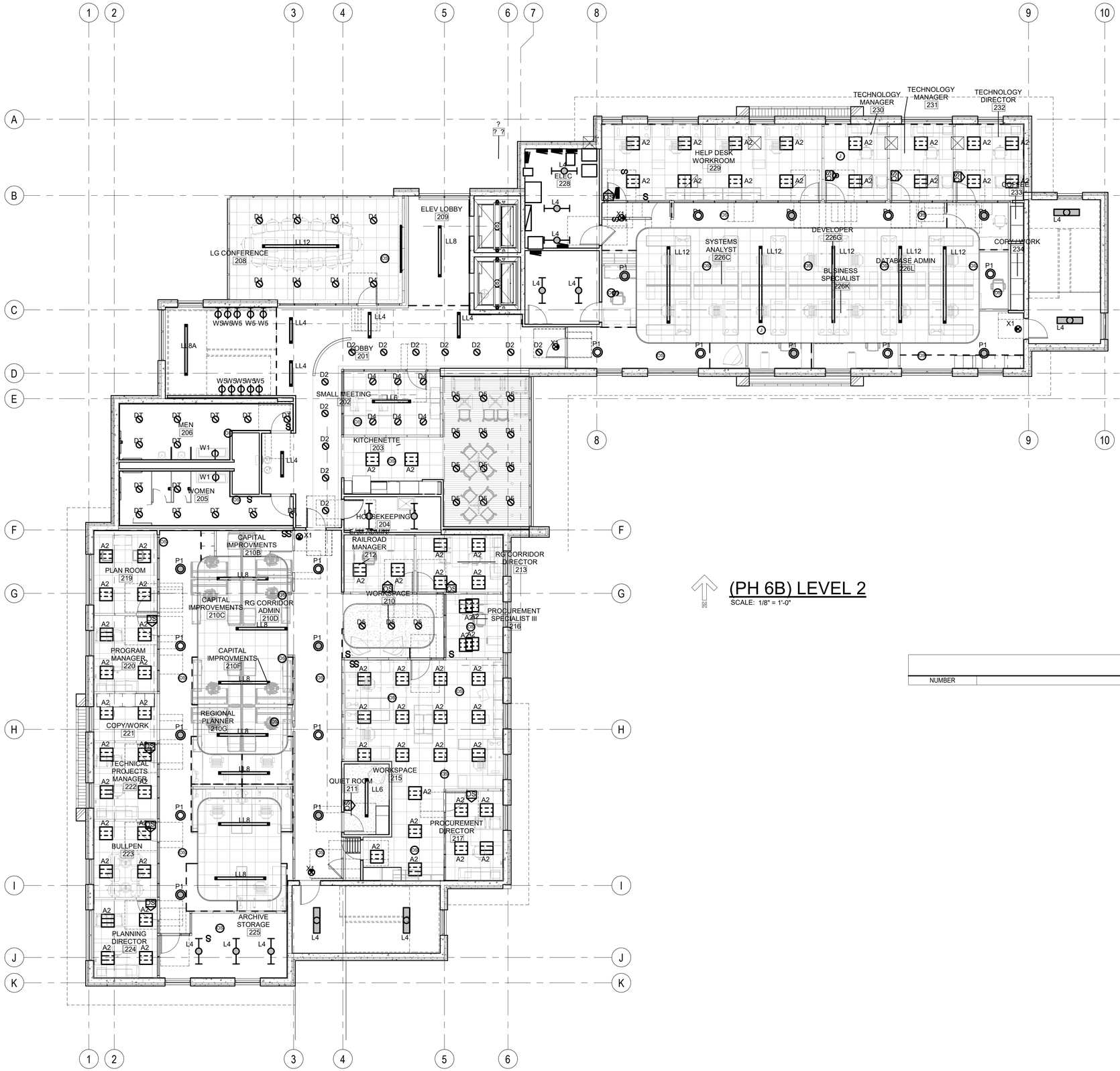

(PH 6B) LEVEL 2

SCALE: 1/8" = 1'-0"

KEY NOTES	
NUMBER	

LIGHTING NOTES:

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7. AIM DIRECTIONAL LIGHTING AS DIRECTED BY OWNER.
8. PROVIDE LIGHTING CONTROL PANEL FOR FOUR SWITCHES WITH OCCUPANCY SENSOR AND PHOTOSENSOR INPUTS AND TIMER CONTROL.

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W.G. ADMINISTRATION BUILDING (PHASE 6B)

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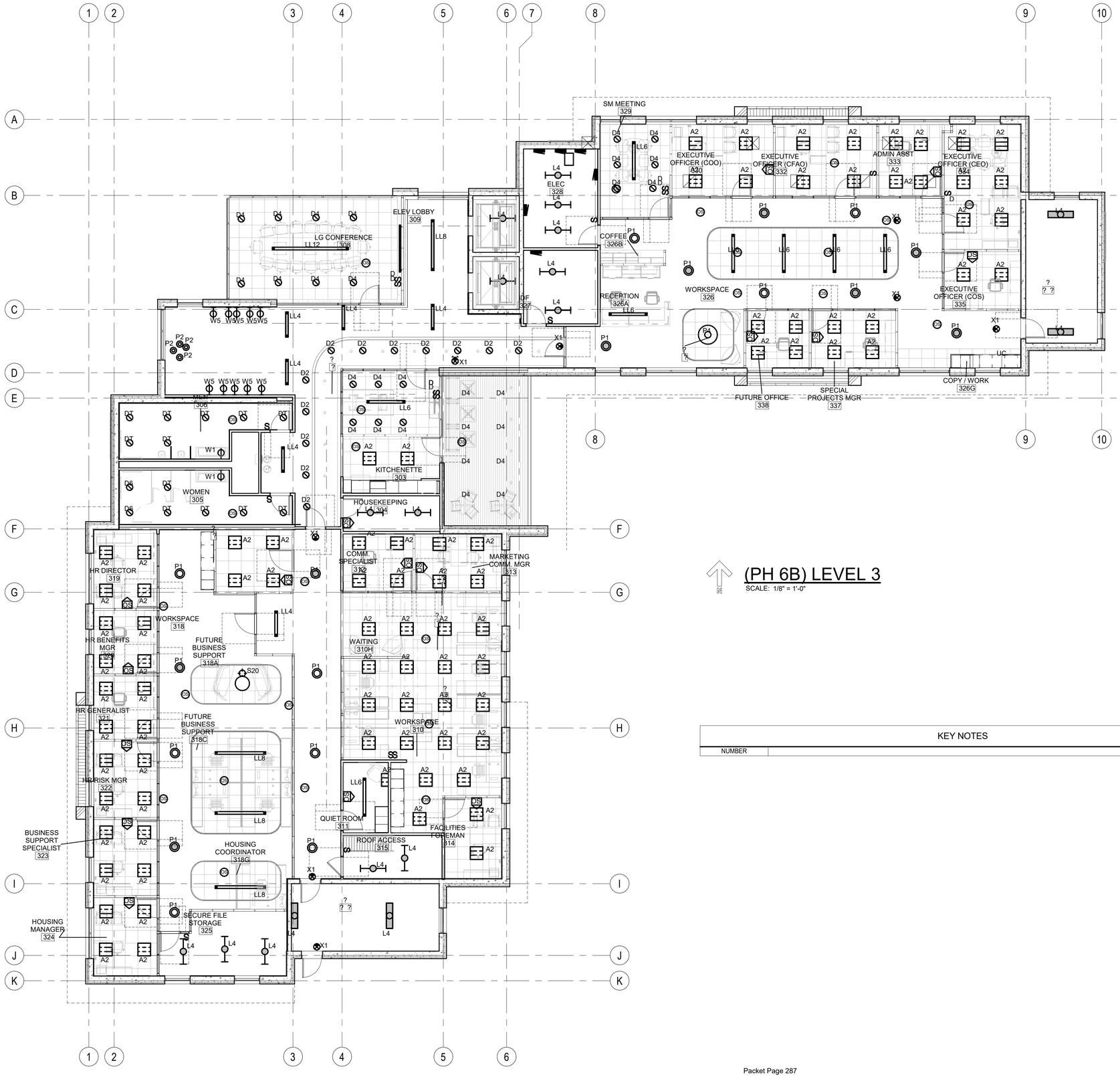
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

ADMINISTRATION LIGHTING PLAN - LEVEL 2 (PH-6B)

E132



LIGHTING NOTES:

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8. PROVIDE LIGHTING CONTROL PANEL FOR FOUR SWITCHES WITH OCCUPANCY SENSOR AND PHOTOSENSOR INPUTS AND TIMER CONTROL.

(PH 6B) LEVEL 3

SCALE: 1/8" = 1'-0"

KEY NOTES	
NUMBER	

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W.G. ADMINISTRATION BUILDING (PHASE 6B)

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REVISION SCHEDULE

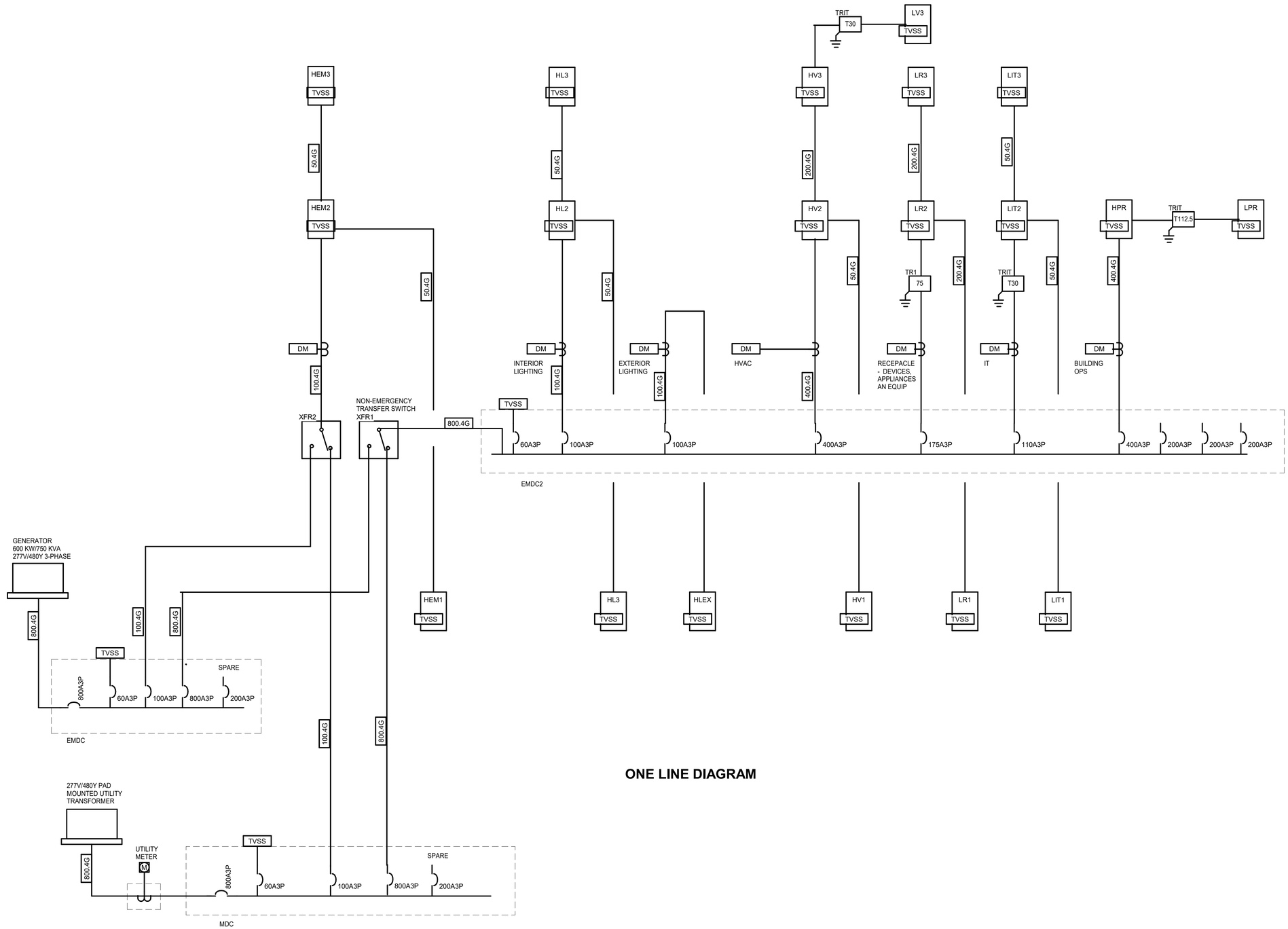
REV. #	DESCRIPTION	DATE

ADMINISTRATION LIGHTING PLAN - LEVEL 3 (PH-6B)

E133

T45

RTU



ONE LINE DIAGRAM

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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

ONE LINE DIAGRAM

E150

Luminaire Schedule

Type	Description	Lamp	Apparent Load	Manufacturer	Catalog #	Voltage	Finish	Mounting	Depth
A2	2'x2' RECESSED ARCHITECTURAL LED TROFFER	LED	38 VA	LITHONIA	2 BLT2 40L ADPT 120 LP835	277.0 V		RECESS	0' - 6"
D2	3" RECESSED DOWNLIGHT	LED	18 VA	FOCAL POINT	FLC3D	277.0 V	CLEAR DIFFUSE	RECESSED	
D4	4" RECESSED DOWNLIGHT	LED	13 VA	FOCAL POINT	FLC3D RO 1100L 120	277.0 V	CLEAR DIFFUSE	RECESSED	
D5	6" RECESSED DOWNLIGHT	LED	26 VA	FOCALPOINT	FLC6D RO 2000L 120	277.0 V	CLEAR DIFFUSE	RECESSED	
D6	6" RECESSED DOWNLIGHT	LED	26 VA	FOCALPOINT	FLC6D RO 2000L 120	277.0 V	WHITE	RECESSED	
DS	4" RECESSED DOWNLIGHT - WET LOCATION	LED	13 VA	FOCAL POINT	FLC3D RO 1100L 120	277.0 V	CLEAR DIFFUSE	RECESSED	
DT	6" RECESSED DOWNLIGHT - TOILET ROOMS	LED	26 VA	FOCALPOINT	FLC6D RO 2000L 120	277.0 V	WHITE	RECESSED	
EP1	DECORATIVE POLE LIGHT. SUITABLE FOR LOW TEMPERATURES AND WET LOCATION LABELED.	LED	100 VA	AAL	UCM2-ANG-36L-615-35K 4W	480.0 V		POLE	0' - 0"
EP2	EXTERIOR AREA LIGHT. TWIN POLE LIGHT - 18' SSS POLE WITH 2' BASE. TYPE 3 DISTRIBUTION. SUITABLE FOR LOW TEMPERATURES AND WET LOCATION LABELED.	LED	534 VA	AAL	UCM2-ANG-36L-615-35K 4W	480.0 V		POLE	0' - 0"
EPB	DECORATIVE POLE LIGHT. SUITABLE FOR LOW TEMPERATURES AND WET LOCATION LABELED.	LED	100 VA	AAL	PROV2-36L-510-5K7-SQ-CL	480.0 V		POLE	0' - 0"
EW1	EXTERIOR LED WALL LIGHT. SUITABLE FOR LOW TEMPERATURES AND WET LOCATION LABELED.	LED	40 VA	LITHONIA	DSX2-LED	277.0 V		SURFACE WALL	
L4	4' LED LENSED STRIP	LED	48 VA	LITHONIA	LPT-ML	277.0 V		SURFACE	
L4	1'x4' SURFACE MOUNTED LINEAR	LED	20 VA	FOCAL POINT	FSM1S BW 500LF 935 UNV LD1 C24 4'	277.0 V		SURFACE	
LL4	4' PENDANT LINEAR PENDANT. DIMMING. ADJUSTABLE CABLE. MATTE WHITE	LED	30 VA	FOCAL POINT	FSM1S BW 500LF 935 UNV LD1 C24 4'	277.0 V		PENDANT	0' - 0"
LL6	6' LONG RECESSED LINEAR SLOT. FLUSH LENS. COORDINATE DIMMER WITH FIXTURE DRIVER. COORDINATE TRIM WITH CEILING TYPE. DIMMING.	LED	48 VA	FOCAL POINT	FSM1S BW 500LF 935 UNV LD1 C24 6'	277.0 V		PENDANT	0' - 0"
LL8	8' PENDANT LINEAR PENDANT WITH UP. DIMMING WITH DAYLIGHT AND OCCUPANCY SENSORS. ADJUSTABLE CABLE	LED	56 VA	FOCAL POINT	FSM1S BW 500LF 935 UNV LD1 C24 8'	277.0 V		PENDANT	0' - 0"
LL8A	8' PENDANT LINEAR SURFACE. DIMMING WITH DAYLIGHT AND OCCUPANCY SENSORS.	LED	56 VA	FOCAL POINT	FSM1S BW 500LF 935 UNV LD1 C24 8'	277.0 V		SURFACE	0' - 0"
LL12	8' PENDANT LINEAR PENDANT WITH UP/DOWNLIGHT. DIMMING WITH DAYLIGHT AND OCCUPANCY SENSORS. ADJUSTABLE CABLE	LED	92 VA	FOCAL POINT	FSM1S BW 500LF 935 UNV LD1 C24 12'	277.0 V		PENDANT	0' - 0"
P1	DECORATIVE PENDANT	LED	14 VA	MOD LIGHTING	AVERY	277.0 V		PENDANT	
P2	DECORATIVE PENDANT	LED	29 VA	MOD LIGHTING	KASPER	277.0 V		PENDANT	
P4	DECORATIVE PENDANT	LED	14 VA	DEL RAY	CYLINDRO 670	277.0 V		PENDANT	
S20	FLOOR LAMP	LED	60 VA	TBD	TBD	277.0 V		FLOOR	
SL4	4' PENDANT LINEAR PENDANT. DIMMING. ADJUSTABLE CABLE. MATTE WHITE	LED	30 VA	MARK LIGHTING	ACC990741	277.0 V		PENDANT	0' - 0"
UC	2' UNDERCABINET FIXTURE	LED	18 VA	LITHONIA	RAZ 24 35K	277.0 V		SURFACE	
W1	WALL LIGHT	LED	17 VA	LITHONIA	OLWX1 40W 40K MVOLT	277.0 V		SURFACE WALL	
W2	LED SCONCE	LED	38 VA	OXYGEN	3-537-	277.0 V		SURFACE WALL	
W5	WALL LIGHT	LED	50 VA	BEGA	12 278	277.0 V		SURFACE WALL	
X1	LED EDGELIT EXIT SIGNAGE WITH SINGLE FACE, BATTERY BACK WITH SELF DISGNOSTICS, GREEN LETTERS ON WHITE	LED	3 VA	LITHONIA, DUALLITE	LRP	277.0 V		UNIVERSAL	
X2	LED EDGELIT EXIT SIGNAGE WITH DOUBLE FACE, GREEN LETTERS ON WHITE, BATTERY BACKUP	LED	5 VA	LITHONIA, DUALLITE	LRP	277.0 V		SURFACE	

Mechanical Equipment Schedule

Key	#	Item	HP	FLA	Load	Eq Load (VA)	Voltage	Feeders			Protection			Notes
								Wire	Ground	Conduit	Breaker	Disconnect	Fuse	
ACCU	1	AIR COND	0	0 A	0 VA	0 VA	480v 3p	3#12	#12G	3/4"	15 A	30 A		
ACCU	1	AIR COND	0	0 A	0 VA	0 VA	480v 3p	3#12	#12G	3/4"	15 A	30 A		
ACCU	1	AIR COND	0	0 A	0 VA	0 VA	480v 3p	3#12	#12G	3/4"	15 A	30 A		
ECH	1	CABINET HEATER	0	3 A	0 VA	372 VA	120V 1ph	2#12	#12G	3/4"	20 A	S		
ECH	2	CABINET HEATER	0	3 A	0 VA	372 VA	120V 1ph	2#12	#12G	3/4"	20 A	S		
ECH	3	CABINET HEATER	0	3 A	0 VA	372 VA	120V 1ph	2#12	#12G	3/4"	20 A	S		
EF	1-1	EXHAUST FAN	0	0 A	43 VA	43 VA	120V 1ph	2#12	#12G	3/4"	20 A	S		
EF	1-2	EXHAUST FAN	0	0 A	49 VA	49 VA	120V 1ph	2#12	#12G	3/4"	20 A	20 A		
EF	1-3	ELECTRIC UNIT HEATER	0	0 A	77 VA	77 VA	120V 1ph	2#12	#12G	3/4"	20 A	20 A		
EF	2	EXHAUST FAN	0	0 A	77 VA	77 VA	120V 1ph	2#12	#12G	3/4"	20 A	S		
EF	3	EXHAUST FAN	0	0 A	77 VA	77 VA	120V 1ph	2#12	#12G	3/4"	20 A	S		
ELEV	1	FAN COIL UNIT	0	0 A	0 VA	0 VA	480v 3p	3#12	#12G	3/4"	15 A	30 A		
ELEV	2	FAN COIL UNIT	0	0 A	0 VA	0 VA	480v 3p	3#12	#12G	3/4"	15 A	30 A		
EUH	1-1	ELECTRIC UNIT HEATER	0	0 A	5000 VA	5000 VA	277V 1P	2#10	#10G	3/4"	25 A	30 A		
EUH	1-2	ELECTRIC UNIT HEATER	0	0 A	5000 VA	5000 VA	277V 1P	2#10	#10G	3/4"	25 A	30 A		
EUH	1-3	ELECTRIC UNIT HEATER	0	0 A	5000 VA	5000 VA	277V 1P	2#10	#10G	3/4"	25 A	30 A		
EUH	1-4	ELECTRIC UNIT HEATER	0	0 A	5000 VA	5000 VA	277V 1P	2#10	#10G	3/4"	25 A	30 A		
EUH	1-5	ELECTRIC UNIT HEATER	0	0 A	5000 VA	5000 VA	277V 1P	2#10	#10G	3/4"	25 A	30 A		
EUH	1-6	ELECTRIC UNIT HEATER	0	0 A	5000 VA	5000 VA	277V 1P	2#10	#10G	3/4"	25 A	30 A		
EUH	2	VAV WITH ELEC REHEAT	0	0 A	5000 VA	5000 VA	120V 1ph	2#6	#10G	1"	60 A	60 A		
FCU	1	FAN COIL UNIT	0	0 A	5000 VA	5000 VA	277V 1P	2#10	#10G	3/4"	25 A	30 A		
FCU	2	FAN COIL UNIT	0	0 A	0 VA	0 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
FCU	3	FAN COIL UNIT	0	0 A	0 VA	0 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
REF	1	EXHAUST FAN	0.17	0 A	0 VA	876 VA	480v 3p	3#12	#12G	3/4"	15 A	30 A	3 A	
RTU	1	ROOF TOP UNIT	0	0 A	15000 VA	15000 VA	480v 3p	3#10	#10G	3/4"	25 A	30 A	25 A	
RTU-PE	1	ROOF TOP UNIT	0	0 A	28300 VA	28300 VA	480v 3p	3#6	#10G	1"	45 A	60 A	45 A	
VAV	101	VAV WITH ELEC REHEAT	0	0 A	2800 VA	2800 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	102	VAV WITH ELEC REHEAT	0	0 A	5100 VA	5100 VA	277V 1P	2#10	#10G	3/4"	25 A	30 A		
VAV	103	VAV WITH ELEC REHEAT	0	0 A	1800 VA	1800 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	104	VAV WITH ELEC REHEAT	0	0 A	1500 VA	1500 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	105	VAV WITH ELEC REHEAT	0	0 A	3600 VA	3600 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	106	VAV WITH ELEC REHEAT	0	0 A	2400 VA	2400 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	107	VAV WITH ELEC REHEAT	0	0 A	4600 VA	4600 VA	277V 1P	2#10	#10G	3/4"	25 A	30 A		
VAV	107	VAV WITH ELEC REHEAT	0	0 A	1000 VA	1000 VA	120V 1ph	2#12	#12G	3/4"	20 A	S		
VAV	108	VAV WITH ELEC REHEAT	0	0 A	1100 VA	1100 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	109	VAV WITH ELEC REHEAT	0	0 A	2600 VA	2600 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	201	VAV WITH ELEC REHEAT	0	0 A	2600 VA	2600 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	202	VAV WITH ELEC REHEAT	0	0 A	1000 VA	1000 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	203	VAV WITH ELEC REHEAT	0	0 A	6200 VA	6200 VA	277V 1P	2#10	#10G	3/4"	30 A	30 A		
VAV	204	VAV WITH ELEC REHEAT	0	0 A	2700 VA	2700 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	205	VAV WITH ELEC REHEAT	0	0 A	2700 VA	2700 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	206	VAV WITH ELEC REHEAT	0	0 A	1000 VA	1000 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	207	VAV WITH ELEC REHEAT	0	0 A	2400 VA	2400 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	208	VAV WITH ELEC REHEAT	0	0 A	1000 VA	1000 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	209	VAV WITH ELEC REHEAT	0	0 A	1400 VA	1400 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	210	VAV WITH ELEC REHEAT	0	0 A	3700 VA	3700 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	211	VAV WITH ELEC REHEAT	0	0 A	1000 VA	1000 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	212	VAV WITH ELEC REHEAT	0	0 A	1100 VA	1100 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	301	VAV WITH ELEC REHEAT	0	0 A	3000 VA	3000 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	302	VAV WITH ELEC REHEAT	0	0 A	1000 VA	1000 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	303	VAV WITH ELEC REHEAT	0	0 A	4000 VA	4000 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	304	VAV WITH ELEC REHEAT	0	0 A	2700 VA	2700 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	305	VAV WITH ELEC REHEAT	0	0 A	3200 VA	3200 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	306	VAV WITH ELEC REHEAT	0	0 A	1000 VA	1000 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	307	VAV WITH ELEC REHEAT	0	0 A	2100 VA	2100 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	308	VAV WITH ELEC REHEAT	0	0 A	1200 VA	1200 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	309	VAV WITH ELEC REHEAT	0	0 A	1500 VA	1500 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	310	VAV WITH ELEC REHEAT	0	0 A	2800 VA	2800 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	311	VAV WITH ELEC REHEAT	0	0 A	1000 VA	1000 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	312	VAV WITH ELEC REHEAT	0	0 A	1000 VA	1000 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	313	VAV WITH ELEC REHEAT	0	0 A	1200 VA	1200 VA	277V 1P	2#12	#12G	3/4"	20 A	S		
VAV	314	VAV WITH ELEC REHEAT	0	0 A	1000 VA	1000 VA	277V 1P	2#12	#12G	3/4"	20 A	S		

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2307 WULFSOHN RD.
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970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY
W.G. ADMINISTRATION BUILDING (PHASE 6B)
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SEH Project	173800
Checked By	CAB
Drawn By	CAB

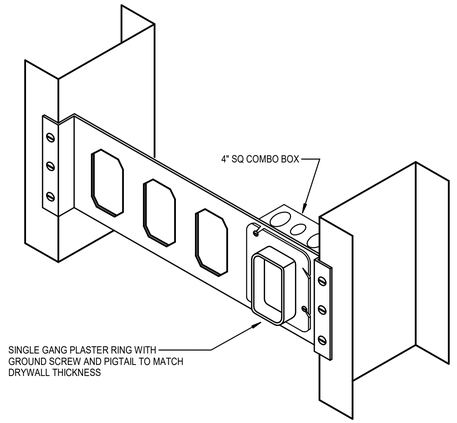
Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/2024

REVISION SCHEDULE

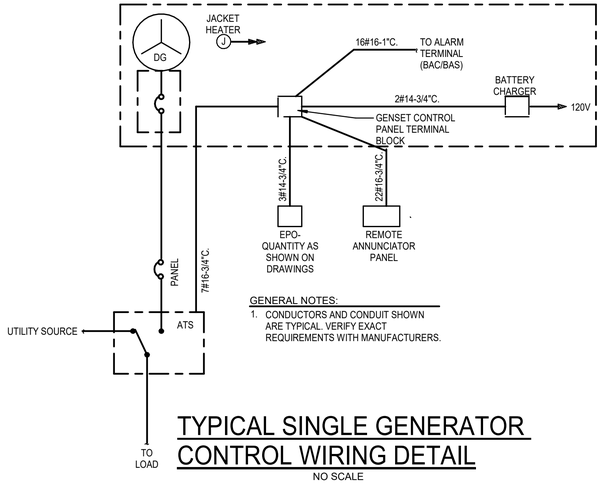
REV. #	DESCRIPTION	DATE

SCHEDULES

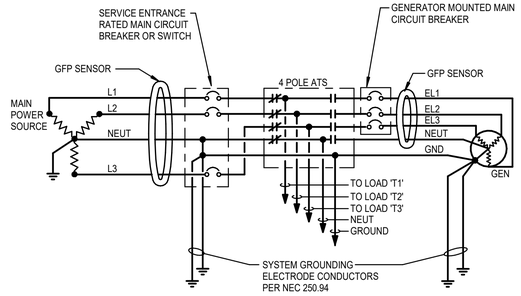
E151



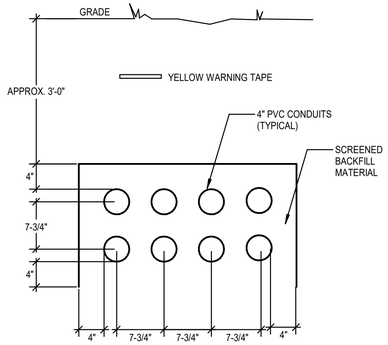
RECEPTACLE BOX SUPPORT DETAIL
NO SCALE



TYPICAL SINGLE GENERATOR CONTROL WIRING DETAIL
NO SCALE



GENERATOR GROUNDING DETAIL 4 POLE TRANSFER SWITCH
NO SCALE



DUCT BANK DETAIL
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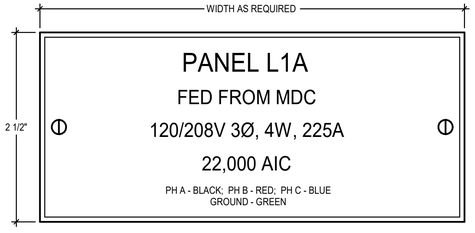
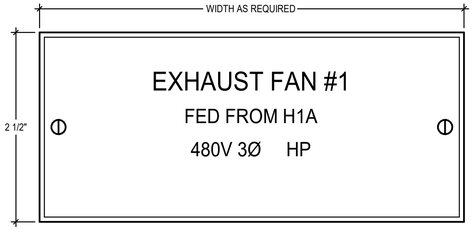


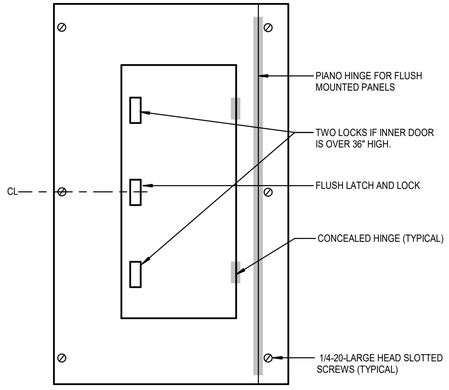
TRANSFORMER AND BRANCH PANELBOARD NAMEPLATE DETAIL
SCALE: FULL

NOTES:
REWORD NAMEPLATE FOR FIELD CONDITIONS.



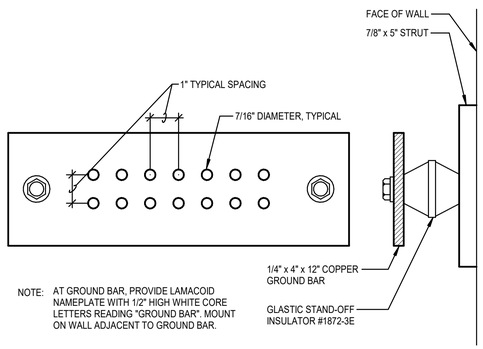
UTILIZATION EQUIPMENT NAMEPLATE DETAIL
SCALE: FULL

NOTES:
1. SEE SPECIFICATIONS FOR ADDITIONAL NAMEPLATE INFORMATION.
2. REWORD NAMEPLATE FOR FIELD CONDITIONS.
3. HP SHALL INDICATE HORSEPOWER.

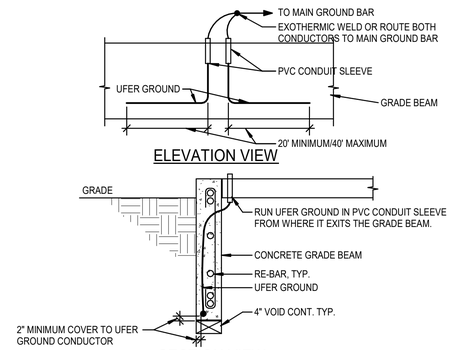


HINGED TRIM TO BOX PANEL FRONT
NO SCALE

NOTES:
1. ALL BOLTS SHALL HAVE LARGE (3/8") ROUND HEAD. NO WASHERS ALLOWED
2. TYPICAL FOR ALL 120/208V BRANCH PANELBOARDS.

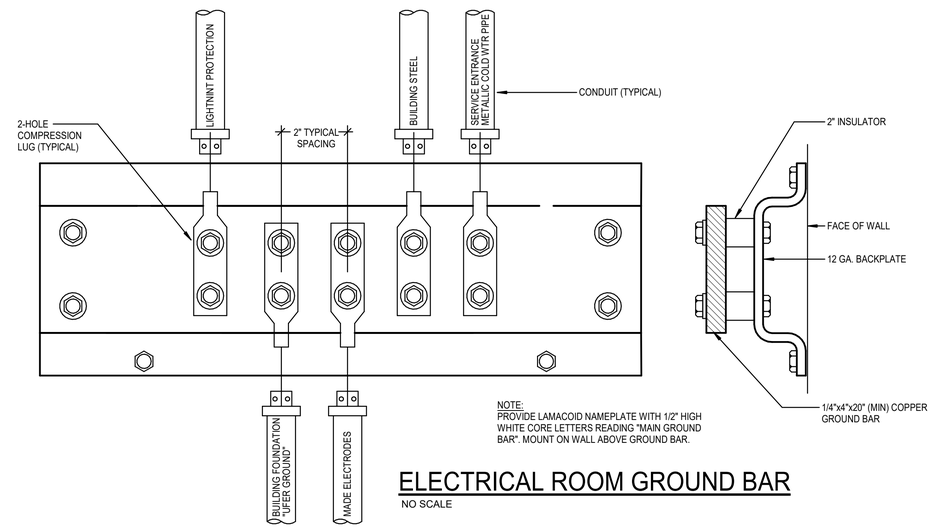


GROUND BAR DETAIL
NO SCALE



NOTES:
1. INSTALL 20' MINIMUM/40' MAXIMUM UFER GROUND CONDUCTOR IN EACH DIRECTION. PROVIDE BARE COPPER CONDUCTOR #4 AWG.
   ROUTE UFER GROUND CONDUCTOR, THROUGH PVC CONDUIT SLEEVE.
2. AVOID CONTACT WITH RE-BAR IN CONCRETE. DO NOT TIE DIRECTLY TO RE-BAR, USE SEPARATOR APPROVED BY STRUCTURAL.
4. COORDINATE ACTUAL UFER GROUND CONDUCTOR INSTALLATION WITH STRUCTURAL.

UFER GROUND DETAIL
NO SCALE



NOTE:
PROVIDE LAMACOID NAMEPLATE WITH 1/2" HIGH WHITE CORE LETTERS READING "MAIN GROUND BAR". MOUNT ON WALL ABOVE GROUND BAR.

ELECTRICAL ROOM GROUND BAR
NO SCALE

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PROJECT OWNER
2307 WULFSOHN RD.
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970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY
W.G. ADMINISTRATION BUILDING (PHASE 6B)
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORADO 81601

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SEH Project	173800
Checked By	CAB
Drawn By	CAB

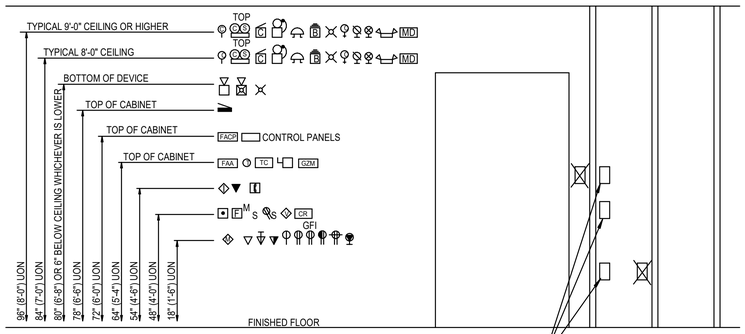
Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/2024

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

DETAILS

E401



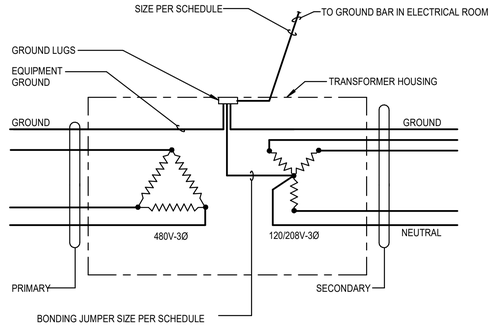
NOTE: ALL DEVICES INDICATED TO BE INSTALLED AT DIFFERENT MOUNTING HEIGHTS AND LOCATED WITHIN ONE STUD SPACE FROM EACH OTHER SHALL ALIGN VERTICALLY, ON THE SAME SIDE OF THE STUD. WHERE WALL MOUNTED TELEPHONES OCCUR OVER LIGHT SWITCHES, VOLUME CONTROLS, ETC. OFFSET ONE STUD SPACE.

TYPICAL DEVICE MOUNTING HEIGHTS

NO SCALE

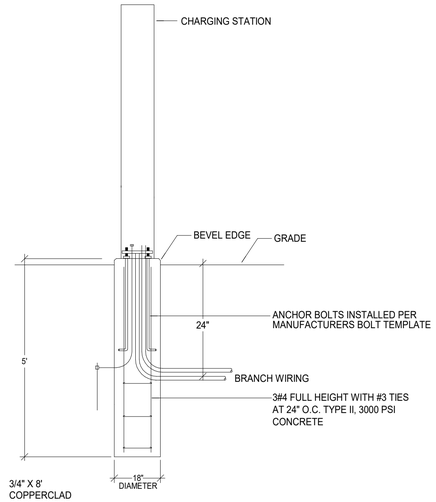
NOTES:

1. HEIGHTS SHOWN ARE TYPICAL TO CENTERLINE OF BOX UNLESS NOTED OTHERWISE.
2. WHERE EVER DEVICES ARE INDICATED TO BE ABOVE DOORS, DEVICE SHALL BE CENTERED BETWEEN TOP OF DOOR TRIM AND CEILING LINE.
3. MOUNTING HEIGHTS SHOWN ON ARCHITECTURAL ELEVATIONS SHALL GOVERN OVER THOSE SHOWN ABOVE.



TRANSFORMER GROUNDING DETAIL

NO SCALE



BASE DETAIL

NO SCALE

CAR CHARGER DETAIL

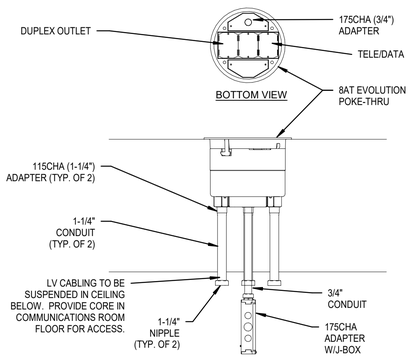
NO SCALE

POLE BASE DETAIL - RAISED

NO SCALE

POLE BASE DETAIL - FLUSH

NO SCALE



POKE-THRU DETAIL

NO SCALE

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ROARING FORK TRANSPORTATION AUTHORITY

W.G. ADMINISTRATION BUILDING (PHASE 6B)

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Project Status	**Issue Date**
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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

DETAILS

E402

ROARING FORK TRANSPORTATION AUTHORITY

W.G. STORAGE A BUILDING (PHASE 8)

2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORADO 81601

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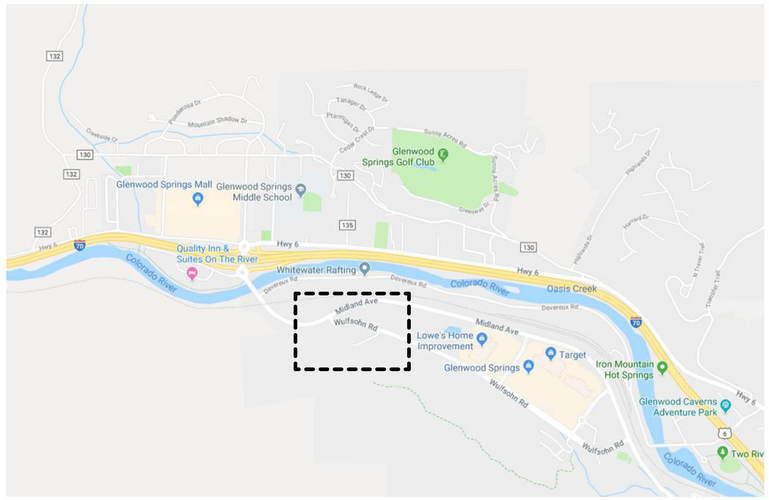
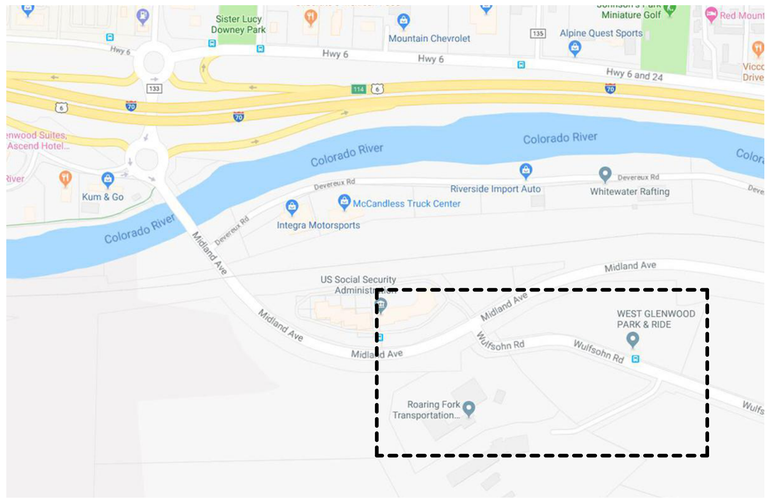
VICINITY MAP



LOCATION MAP



PROJECT DIRECTORY

PROJECT OWNER

ROARING FORK TRANSPORTATION AUTHORITY
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601

ARCHITECT / CIVIL / STRUCTURAL

SHORT ELLIOTT HENDRICKSON, INC.
2000 SOUTH COLORADO BOULEVARD
TOWER ONE, SUITE 6000
DENVER, COLORADO 80222

LANDSCAPE

DHM DESIGN CORPORATION
225 MAIN STREET SUITE 201
CARBONDALE, COLORADO 81623

MECHANICAL / PLUMBING

SHORT ELLIOTT HENDRICKSON, INC.
2000 SOUTH COLORADO BOULEVARD
TOWER ONE, SUITE 6000
DENVER, COLORADO 80222

ELECTRICAL

CMO CONSULTING ENGINEERS, LLC
11646 SUN BEAR TRL
GOLDEN, COLORADO 80403

TECHNOLOGY / ACOUSTICS

K2 - SALAS O'BRIEN COMPANY
4900 NAUTILUS CT N SUITE 200
BOULDER, CO 80301

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W.G. STORAGE A BUILDING (PHASE 8)
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Checked By	A. JAUCH
Drawn By	SEH

Project Status	**Issue Date**
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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

COVER SHEET

G007

GENERAL

G007 COVER SHEET
G008A SHEET INDEX
G009 OVERALL PROJECT PHASING PLAN

CIVIL

C041 PHASE 8 CIVIL NOTES
C042 PHASE 8 CIVIL NOTES
C141 PHASE 8 DEMOLITION PLAN
C241 PHASE 8 SITE PLAN
C341 PHASE 8 HORIZONTAL CONTRON PLAN
C441 PHASE 8 GRADING PLAN
C641 PHASE 8 UTILITY PLAN
C941 PHASE 8 EROSION CONTROL PLAN
C1041 PHASE 8 CIVIL DETAILS

LANDSCAPE

L100 SITE MATERIALS KEYPLAN PHASE 8
L101 PLANTING PLAN PHASE 8
L301 SITE DETAILS

ARCHITECTURAL

A008 CODE INFORMATION
A071 ARCHITECTURAL SITE PLAN
A141 STORAGE A FLOOR PLAN
A142 STORAGE A REFLECTED CEILING PLAN
A143 STORAGE A ROOF PLAN
A241 EXTERIOR ELEVATIONS
A242 EXTERIOR ELEVATIONS
A341 BUILDING SECTIONS
A342 BUILDING SECTIONS

ELECTRICAL

E101 ELECTRICAL LEGEND AND NOTES
E201 ONE LINE DIAGRAM
E401 ELECTRICAL FLOOR PLANS
E501 DETAILS

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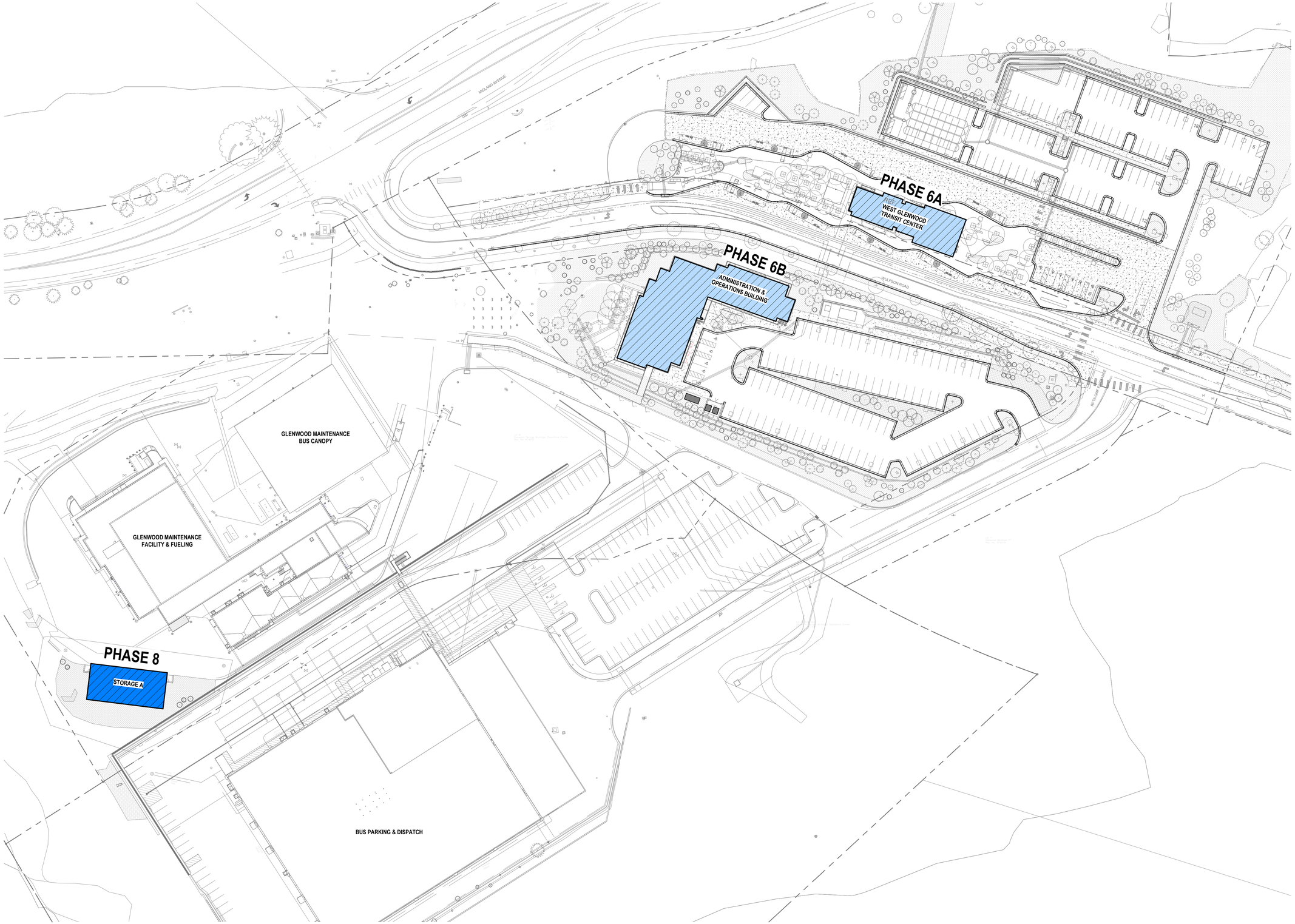
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

SHEET INDEX

G008A

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE



1 G009 OVERALL PROJECT PHASING PLAN (PH 8)
1" = 50'-0"

TRUE NORTH

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

SEH

NOT FOR CONSTRUCTION

PROJECT OWNER
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
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ROARING FORK TRANSPORTATION AUTHORITY

W.G. TRANSIT CENTER (PHASE 8)

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SEH Project	173800
Checked By	A. JAUCH
Drawn By	C. RODRIGUEZ

Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/24

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

OVERALL PROJECT PHASING PLAN (PH-8)

G009

SURVEYING

1. PRIOR TO BEGINNING WORK ON THE PROJECT, THE CONTRACTOR'S SURVEYOR SHALL PERFORM A SURVEY TO VERIFY ALL SURVEY CONTROL POINTS, SECTION CORNERS, AND BENCHMARKS AS SHOWN ON THE HORIZONTAL CONTROL PLAN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL LAND SURVEY MONUMENTS DISRUPTED BY CONSTRUCTION ACTIVITIES OR BY NEGLIGENCE ON THE PART OF THE CONTRACTOR. THE CONTRACTOR IS REQUIRED TO FOLLOW COLORADO STATE LAW REGARDING SURVEY MONUMENTS. THE CONTRACTOR SHALL RETAIN A COLORADO LICENSED PROFESSIONAL LAND SURVEYOR TO RESET ANY AFFECTED SURVEY MONUMENTS. THIS WILL NOT BE PAID SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.

2. PROPOSED FINISHED GROUND ELEVATIONS FOR ITEMS TO BE ADJUSTED, RESET OR MODIFIED SHALL BE FIELD VERIFIED BY THE CONTRACTOR. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IF DISCREPANCIES ARE NOTED.

GENERAL

1. THE CONTRACTOR SHALL PREPARE A TRAFFIC CONTROL PLAN AND OBTAIN CITY APPROVAL PRIOR TO ANY WORK WITHIN PUBLIC RIGHT-OF-WAY. THE CLOSURE AND DETOUR DURATION SHOULD BE LIMITED AS MUCH AS POSSIBLE.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY.

3. THE CONTRACTOR SHOULD REMOVE MATERIALS AND EQUIPMENT FROM THE ROADWAY ROW AT THE CLOSE OF DAILY OPERATIONS. THE CONTRACTOR SHALL NOT STOCKPILE MATERIAL IN THE CLEAR ZONE OF THE TRAVELED WAY.

4. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PROJECT PERMITS ASSOCIATED WITH CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR BEING AWARE OF, NOTIFYING, COORDINATING AND SCHEDULING ALL INSPECTIONS REQUIRED FOR FINAL APPROVALS AND PROJECT ACCEPTANCE. ALL WORK, INCLUDING CORRECTION WORK, IS SUBJECT TO NOTIFICATION AND INSPECTION REQUIREMENTS.

5. IF ANY OF THE CONTRACTOR'S OPERATIONS DESTROY OR DAMAGE ANY PROPERTY, PUBLIC OR PRIVATE, THE CONTRACTOR SHALL PROMPTLY REPAIR OR REPLACE SUCH PROPERTY, TO THE SATISFACTION OF THE PROJECT MANAGER, BEFORE THE CITY WILL ACCEPT OR PAY FOR THE WORK PERFORMED UNDER THE CONTRACT. IF THE CONTRACTOR FAILS TO REPAIR OR REPLACE SUCH PROPERTY, THE CITY, AT THE SOLE DISCRETION OF THE MANAGER, MAY UNDERTAKE SUCH REPAIR OR REPLACEMENT AND DEDUCT THE COST OF THE SAME FROM AMOUNTS PAYABLE TO THE CONTRACTOR UNDER THE CONTRACT.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE, AND AVAILABLE TO THE CITY INSPECTOR AT ALL TIMES. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL SUBMIT RECORD DRAWINGS, IN AN AUTOCAD COMPATIBLE FORMAT, TO THE CITY. THE PRODUCTION OF THESE DOCUMENTS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE WORK.

7. PRIOR TO FINAL ACCEPTANCE, ALL DISTURBED PORTIONS OF ROADWAY ROW SHALL BE CLEANED UP AND RESTORED TO THEIR ORIGINAL CONDITION, SUBJECT TO CITY APPROVAL.

8. NO WORK SHALL BE PERMITTED ON WEEKENDS OR HOLIDAYS WITHOUT PRIOR AUTHORIZATION OR UNLESS OTHERWISE SPECIFIED. THE CITY MAY RESTRICT WORK IN THE ROW DURING ADVERSE WEATHER CONDITIONS OR DURING PERIODS OF HIGH TRAFFIC VOLUME.

9. NO CLEATED OR TRACKED EQUIPMENT MAY WORK IN OR MOVE OVER PAVED SURFACES WITHOUT MATS.

10. IF UNKNOWN/UNIDENTIFIED UNDERGROUND STORAGE TANKS, DRUMS, ODOROUS SOIL, STAINED SOIL, ASBESTOS-CEMENT PIPE, TRANSITE, BUILDING DEBRIS OR WASTE MATERIALS ARE ENCOUNTERED DURING THE PROJECT, CONTRACTOR SHALL IMMEDIATELY STOP WORK IN THE AREA AND INFORM THE OWNER.

11. CONTRACTOR SHALL TAKE REASONABLE MEASURES TO PREVENT PARTICULATE MATTER FROM BECOMING AIRBORNE AND TO PREVENT THE VISIBLE DISCHARGE OF FUGITIVE PARTICULATE EMISSIONS BEYOND THE PROPERTY ON WHICH THE EMISSIONS ORIGINATE. THE MEASURES TAKEN MUST BE EFFECTIVE IN THE CONTROL OF FUGITIVE PARTICULATE EMISSIONS AT ALL TIMES ON THE SITE, INCLUDING PERIODS OF INACTIVITY SUCH AS EVENINGS, WEEKENDS, AND HOLIDAYS AS WELL AS ANY OTHER PERIOD OF INACTIVITY.

12. THE CONTRACTOR SHALL PROPERLY DISPOSE OF ALL WASTE FROM PROJECT IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.

13. A STATE CONSTRUCTION STORMWATER DISCHARGE PERMIT IS REQUIRED AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE PERMIT. 'FOR REFERENCE' EROSION CONTROL PLAN DRAWINGS ARE PROVIDED FOR INFORMATION PURPOSES ONLY.

PROJECT PLANS, SPECIFICATIONS, PERMITS

1. ALL MATERIAL, EQUIPMENT, INSTALLATION AND CONSTRUCTION WITHIN THE ROW SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING STANDARD REFERENCES AS APPLICABLE:
   - 1.1. CITY OF GLENWOOD SPRINGS ENGINEERING STANDARDS
   - 1.2. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STANDARD PLANS, (M&S STANDARDS)
   - 1.3. FEDERAL HIGHWAY ADMINISTRATION (FHWA), MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS AND THE COLORADO SUPPLEMENT THERETO
   - 1.4. AMERICAN ASSOCIATION OF STATE AND HIGHWAY TRANSPORTATION OFFICIALS (AASHTO) ROADSIDE DESIGN GUIDE

2. THE OWNER RESERVES THE RIGHT TO ACCEPT OR REJECT ANY MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO THE LATEST EDITION OF THE APPLICABLE STANDARDS SPECIFICATIONS, OR HALT CONSTRUCTION UNTIL THE CONFLICT IS RESOLVED.

3. THE CONTRACTOR SHALL HAVE ONSITE AT ALL TIMES, ONE COPY OF THE APPROVED PLANS, ONE COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND COPIES OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB.

4. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED ON THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE OWNER IMMEDIATELY.

UTILITIES

1. THE TYPE, SIZE, LOCATION AND NUMBER OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THE DRAWINGS, UNLESS OTHERWISE NOTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK BEFORE COMMENCING NEW CONSTRUCTION. THE CONTRACTOR SHALL COOPERATE WITH COMPANIES TRYING TO COORDINATE THE RELOCATION EFFORT. LINES NOT RELOCATED SHALL BE PROTECTED BY THE CONTRACTOR IN PLACE. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 811, AT LEAST 2 WORKING DAYS PRIOR TO BEGINNING EXCAVATION OR GRADING.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITIES DURING CONSTRUCTION AND SHALL HOLD THE CITY AND ITS ENGINEERS HARMLESS FOR DAMAGES ARISING FROM THE CONTRACTOR'S FAILURE TO ADEQUATELY PROTECT EXISTING UTILITIES. DAMAGED UTILITIES SHALL BE REPAIRED BY AND AT THE EXPENSE OF THE CONTRACTOR.

3. THE CONTRACTOR IS REQUIRED TO RESET, ADJUST OR REPLACE ANY UTILITIES THAT ARE IMPACTED BY CONSTRUCTION AND ARE INTENDED TO REMAIN WITHIN THE PROJECT LIMITS.

4. FIRE HYDRANT ASSEMBLY INCLUDES INSTALLATION OF ALL MATERIALS SHOWN ON WATER STANDARD DETAIL W03 (FIRE HYDRANT ASSEMBLY DETAIL)

5. CITY INSPECTIONS ARE REQUIRED FOR THE ENTIRE LENGTH OF BOTH WATER AND SEWER SERVICE LINES. PROVIDE CITY 2 BUSINESS DAYS' NOTICE.

6. PER SB18-167, ALL NEW UNDERGROUND FACILITIES INSTALLED ON OR AFTER JANUARY 1, 2020, MUST BE ELECTRONICALLY LOCATABLE WHEN INSTALLED.

WATER

1. WATER SERVICE LINES ARE TO BE K COPPER OR PLASTIC POLY ETHYLENE (PE) ONLY, NO COPPER PIPE LARGER THAN 1" IN DIAMETER IS PERMITTED. USE PE OR DUCTILE IRON PIPE (DIP) ABOVE 1" DIAMETER. ONLY NSF61 MATERIALS ARE TO BE USED. GALVANIZED AND BLACK IRON PIPING AND FITTINGS ARE NOT ALLOWED ON THE DOMESTIC LINE AND ARE ONLY PERMITTED AFTER THE BF ON FIRE LINES.

2. SERVICE LINES ARE TO BE ALL NEW MATERIAL WITHOUT ANY UV FADING, KINKS, OR ANY DAMAGE.

3. NO SERVICES SHALL HAVE IN-LINE COUPLINGS UNLESS APPROVED IN ADVANCE BY INSPECTOR.

4. ONLY COMPRESSION TYPE CORPORATION AND CURB-STOP VALVES AND FITTINGS ARE PERMITTED UNDERGROUND, NO SOLDER OR GLUE JOINTS ARE PERMITTED ON UNDERGROUND WATER PIPES.

5. SERVICE VALVE MUST HAVE A MCDONALD TYPE CURB BOX WITH STEM. THE CAP MUST BE PROTECTED AND BE AT OR ABOVE FINISHED GRADE, PROVIDE FLAT 12" STONE OR CONCRETE PAD UNDER VALVE, LOCATED WITHIN 1' PROPERTY LINE.

6. ANY EXTENSION COUPLINGS TO CURB BOX MUST BE WELDED. CAP IS TO BE "HAND TIGHT".

7. 6" MINIMUM BEDDING UNDER PIPE, 12" OVER TOP - ¾" MINUS SCREENED AGGREGATE, BACK FILL WITH 6" MINUS STRUCTURAL FILL OR 6" MINUS PIT RUN.

8. THE MINIMUM EARTH COVER OVER WATER TRANSMISSION AND DISTRIBUTION LINES SHALL BE 5.5 FEET. A GREATER DEPTH SHALL BE PROVIDED TO AVOID EXCESSIVE HIGH POINTS IN THE MAIN OR WHERE IT IS NECESSARY TO CLEAR EXISTING STRUCTURES OR OBSTRUCTIONS. WATER SERVICE LINES SHALL HAVE THE SAME MINIMUM COVER.

9. CONNECTIONS TO CITY WATER MAINS MUST BE PERFORMED WITH CITY INSPECTOR ON SITE.

10. CONTRACTOR MUST PROVIDE AS-BUILT DRAWING OF ALL NEW PRIVATE LINES.

SANITARY SEWER

1. SDR-35 PUSH-ON GASKET JOINT, PVC PIPE ONLY – 90 DEGREE GASKET SDR-35 WYE FOR CLEANOUT REQUIRED.

2. NO GLUE TOGETHER PIPE JOINTS UNDERGROUND OUTSIDE FOUNDATION.

3. 6" MINIMUM BEDDING UNDER PIPE, 12" OVER TOP - ¾" MINUS SCREENED AGGREGATE, BACK FILL WITH 6" MINUS STRUCTURAL FILL OR 6" MINUS PIT RUN.

4. BELL ENDS MUST FACE UP-HILL, ALL JOINTS FULLY INSERTED.

5. USE FOOD GRADE LUBRICANT "DUCK BUTTER" AT ALL SLIP JOINTS.

6. SEWER LINES MUST BE AT LEAST 10' FROM WATER LINES.

7. IF CROSSING WATER LINES, CENTER A 20' STICK OF C-905 OR SDR-35 OF SEWER SERVICE PIPE AT THE CROSSING.

8. SLOPE MUST BE GREATER THAN 2%.

9. NO 90 DEGREE FITTINGS.

10. CLEAN OUT WITH "Y" EVERY 150' OF PIPE RUN OR EVERY 180 DEGREES OF BENDS.

11. CLEAN OUT WITH DOUBLE "Y" WITHIN 5' OF OUTSIDE BUILDING FOUNDATION WALL, A SINGLE "Y" CLEANOUT IS ALLOWED IF A CO IS ACCESSIBLE INSIDE BUILDING.

12. ACCESS TO CLEAN OUT WILL BE AT 4" (+/-1") ABOVE FINISH GRADE, WATERTIGHT CAPPED AND MARKED WITH REBAR OR IRON POST. ACCESS WITHIN PAVED AREAS WILL REQ. STREET BOX.

13. CONTRACTOR WILL PROVIDE AS-BUILT DRAWING OF ALL NEW PRIVATE SERVICE LINES.

REMOVALS, EXISTING ITEMS, SAW CUTTING

1. ALL ITEMS TO BE REMOVED AND NOT RESET SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.

2. WHERE IT IS REQUIRED TO REMOVE EXISTING CONCRETE OR ASPHALT, CUTTING SHALL BE DONE TO A NEAT WORK LINE TO FULL DEPTH USING A SAW, CUTTING WHEEL, OR OTHER METHOD APPROVED BY THE PROJECT MANAGER. THIS WILL NOT BE PAID SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.

3. REMOVAL OF EXISTING CURB AND GUTTER, SIDEWALK, DRIVEWAYS, CURB CUTS, AND OTHER CONCRETE ITEMS THAT ARE ATTACHED OR ADJACENT TO OTHER CONCRETE ITEMS SHALL BE REMOVED TO THE NEAREST JOINT, AS NEEDED TO AVOID DAMAGING THE REMAINING CONCRETE ITEMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ADJACENT SIDEWALK DURING CURB AND GUTTER REMOVAL AND SHALL REPLACE DAMAGED SECTIONS AT NO ADDITIONAL COST TO THE PROJECT.

4. THE CONTRACTOR IS REQUIRED TO RESET, ADJUST, OR REPLACE ANY UTILITIES, LANDSCAPING, SPRINKLER SYSTEMS, SIGNS, SIDEWALKS, ETC. THAT ARE IMPACTED BY CONSTRUCTION AND ARE NOT DESIGNATED TO BE REMOVED.

PAVEMENT

1. A TACK COAT IS REQUIRED PRIOR TO THE PLACEMENT OF SUBSEQUENT LIFTS OF HMA.

2. WHERE NEW CONSTRUCTION IS TO ABUT EXISTING PAVEMENT, THE EXISTING PAVEMENT SHALL BE REMOVED TO A NEAT VERTICAL LINE TO CREATE A CLEAN CONSTRUCTION JOINT.

3. WHEN AN EXISTING ASPHALT STREET IS CUT, THE STREET MUST BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN ITS ORIGINAL CONDITION. THE EXISTING STREET CONDITION SHALL BE DOCUMENTED BEFORE ANY CUTS ARE MADE. PATCHING SHALL BE DONE IN CONFORMANCE WITH THE PROJECT STANDARDS. THE FINISHED PATCH SHALL BLEND SMOOTHLY INTO THE EXISTING SURFACE. ALL LARGE PATCHES SHALL BE PAVED WITH AN ASPHALT LAY-DOWN MACHINE.

EARTHWORK AND EXCAVATIONS

1. THE CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE AND TOES OF SLOPE AS SHOWN ON THE PLANS. ANY DISTURBANCE BEYOND THESE LIMITS SHALL BE RESTORED TO ORIGINAL CONDITIONS AT THE EXPENSE OF THE CONTRACTOR.

2. WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. COST FOR DUST PALLIATIVE SHALL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE WORK.

3. MOISTURE DENSITY CONTROL SHALL BE APPLIED FULL DEPTH FOR ALL FILL.

4. DURING EACH PHASE OF CONSTRUCTION, THE CONTRACTOR SHALL SHAPE TO DRAIN AND COMPACT THE WORK AREA TO A UNIFORM CROSS-SECTION. ELIMINATE ALL RUTS AND LOW SPOTS THAT COULD HOLD WATER. AREAS AND FACILITIES SUBJECTED TO FLOODING, REGARDLESS OF THE SOURCE OF WATER, SHALL BE PROMPTLY DEWATERED AND RESTORED AT NO ADDITIONAL COST TO THE CITY.

5. WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL IS TO BE PLACED ON THE UPHILL SIDE OF TRENCHES.

6. CONTRACTOR TO REVIEW AND COMPLY WITH RECOMMENDATIONS OF THE "FINAL REPORT, GEOTECHNICAL INVESTIGATION, RFTA WEST GLENWOOD SPRINGS PARK N RIDE, PAVEMENT AND RETAINING WALL RECOMMENDATIONS, GLENWOOD SPRINGS, COLORADO" JULY 30, 2015 PREPARED BY YEH AND ASSOCIATES.

7. EXISTING ONSITE SOIL MATERIALS MAY BE REUSED AS FILL UNDER PAVING AFTER SCREENING AND RECOMPACTION OF MATERIAL TO RECOMMENDATIONS IN PROJECT GEOTECHNICAL STUDY. MATERIALS BENEATH FOUNDATIONS SHALL BE STRUCTURAL FILL.

CONCRETE

1. IF CONCRETE REPLACEMENT IS NECESSARY, THE ENTIRE AFFECTED SLAB OR PANEL MUST REPLACED.

2. SIDEWALK SHALL BE CLASS P CONCRETE. THE USE OF 3/4 INCH (#67) TOP SIZE AGGREGATE IS ALLOWED.

3. BENDER BOARDS (TWO INCH MINIMUM THICKNESS) SHALL BE USED ON ALL CURVES OF LESS THAN 75 FOOT RADIUS.

4. THE CONTRACTOR SHALL INSTALL ½ IN EXPANSION JOINT MATERIAL BETWEEN THE CURB, CURB AND GUTTER AND THE SIDEWALK, AND AROUND INLET STRUCTURES OR BLOCKOUTS OR AS DIRECTED BY THE PROJECT MANAGER.

5. CURB RAMPS SHALL BE CONSTRUCTED USING TRUNCATED DOMES AS SHOWN IN THE CITY STANDARD DETAILS. TRUNCATED DOMES AND GROOVES SHALL NOT BE PAID SEPARATELY, BUT INCLUDED IN THE COST OF THE CONCRETE CURB RAMP.

TRAFFIC

1. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE TRAFFIC CONTROL THROUGHOUT THE PROJECT, INCLUDING PROPER TRAFFIC CONTROL DEVICES AND PERSONNEL.

2. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY PERMITS REQUIRED FOR WORK IN CDOT RIGHT-OF-WAY.

DRAINAGE

1. ALL SEWER PIPES SHALL BE INSTALLED WITH CLASS B BEDDING AS A MINIMUM.

2. SANITARY SEWER PIPES SHALL BE SDR 26 PVC AND CONFORM TO ASTMD3034.

3. THE CONTRACTOR PERFORMING WORK ON ANY PUBLIC OR PRIVATE STORM SEWER FACILITY OR APPURTENANCE MUST BE PROPERLY TRADE LICENSED AS A COMPANY AND HAVE A LICENSED PLUMBER OR CERTIFIED JOURNEYMAN DRAINLAYER ON SITE DURING THE WORK.

4. ACCESS MUST BE MAINTAINED FOR ALL SEWER MANHOLES DURING CONSTRUCTION. MINIMUM ACCESS TO EACH MANHOLE IS A 20 FOOT WIDE LANE FROM THE NEAREST PUBLIC RIGHT OF WAY, CENTERED AT THE MANHOLE INCLUDING A 10 FOOT RADIUS AROUND THE MANHOLE AND 22.0 FEET OF VERTICAL CLEARANCE.

EROSION CONTROL

1. THE CONTRACTOR MUST IMPLEMENT AND COMPLY WITH THE APPROVED EROSION CONTROL PLAN AND ASSOCIATED DOCUMENTS FOR THIS PROJECT.

2. THE CONTRACTOR SHALL PREVENT SEDIMENT, DEBRIS AND ALL OTHER POLLUTANTS FROM ENTERING THE STORM SEWER SYSTEM DURING ALL DEMOLITION, EXCAVATION, TRENCHING, BORING, GRADING, OR OTHER CONSTRUCTION OPERATIONS THAT ARE PART OF THIS PROJECT. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR REMEDIATION OF ANY ADVERSE IMPACTS TO THE MUNICIPAL SEPARATE STORM SEWER SYSTEM, RECEIVING WATERS, WATERWAYS, WETLANDS, AND OR OTHER PUBLIC OR PRIVATE PROPERTIES, RESULTING FROM WORK DONE AS PART OF THIS PROJECT.

3. THE CONTRACTOR SHALL REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO OR, ACCUMULATE IN, THE FLOWLINES, STORM DRAINAGE APPURTENANCES, AND PUBLIC RIGHTS OF WAYS OF THE CITY AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SAID REMOVAL SHALL BE CONDUCTED IN A TIMELY MANNER.

4. SOIL STABILIZATION MEASURES SHALL BE IMPLEMENTED WITHIN FOURTEEN (14) DAYS FOLLOWING COMPLETION OF GRADING ACTIVITIES. STABILIZATION OF DISTURBED AREAS ADJACENT TO RECEIVING WATERS OR WITH SLOPES 3 TO 1 OR GREATER SHALL BE COMPLETED WITHIN SEVEN (7) DAYS FOLLOWING COMPLETION OF GRADING ACTIVITIES. NOTE: FEDERAL AND STATE REGULATIONS MAY SOON REQUIRE STABILIZATION WITHIN SEVEN (7) DAYS OF COMPLETION OF GRADING ACTIVITIES.

5. THE DEVELOPER, GENERAL CONTRACTOR, GRADING CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL INSURE THAT ALL LOADS OF CUT AND FILL MATERIAL IMPORTED TO OR EXPORTED FROM THIS SITE SHALL BE PROPERLY COVERED TO PREVENT LOSS OF THE MATERIAL DURING TRANSPORT ON PUBLIC RIGHTS OF WAY.

6. THE USE OF REBAR TO ANCHOR BEST MANAGEMENT PRACTICES IS PROHIBITED.

7. SOILS THAT WILL BE STOCKPILED FOR MORE THAN THIRTY (30) DAYS SHALL BE PROTECTED FROM WIND AND WATER EROSION WITHIN FOURTEEN (14) DAYS OF STOCKPILE CONSTRUCTION. STABILIZATION OF STOCKPILES LOCATED WITHIN 100 FEET OF RECEIVING WATERS, OR WITH SLOPES 3 TO 1 OR GREATER SHALL BE COMPLETED WITHIN SEVEN (7) DAYS FOLLOWING STOCKPILE CONSTRUCTION. STABILIZATION AND PROTECTION OF THE STOCKPILE MAY BE ACCOMPLISHED BY ANY OF THE FOLLOWING: MULCHING, TEMPORARY/PERMANENT REVEGETATION OPERATIONS, OR EROSION CONTROL MATTING/GEOTEXTILES. IF STOCKPILES ARE LOCATED WITHIN 100 FEET OF RECEIVING WATERS, A DRAINAGEWAY OR THE SITE PERIMETER, ADDITIONAL SEDIMENT CONTROLS SUCH SHALL BE REQUIRED.

EROSION CONTROL

8. APPROVED EROSION AND SEDIMENT CONTROL 'BEST MANAGEMENT PRACTICES' SHALL BE MAINTAINED AND KEPT IN GOOD REPAIR FOR THE DURATION OF THIS PROJECT. AT A MINIMUM, THE PERMITTEE OR CONTRACTOR SHALL PRODUCE AND RETAIN WEEKLY WRITTEN INSPECTION RECORDS FOR ALL BMPS AND AFTER SIGNIFICANT PRECIPITATION EVENTS. ALL NECESSARY MAINTENANCE AND REPAIR SHALL BE COMPLETED IMMEDIATELY. ADDITIONALLY, STREET SWEEPING IS TO BE COMPLETED BY THE CLOSE OF THE BUSINESS DAY OR (AND) ON AN AS NEEDED BASIS THROUGHOUT THE DAY.

9. WATER USED IN THE CLEANING OF CEMENT TRUCK DELIVERY CHUTES SHALL BE DISCHARGED INTO A PREDEFINED, CONCRETE WASHOUT AREA ON THE JOB SITE. BERMED CONTAINMENT OR COMMERCIALLY AVAILABLE CONCRETE WASHOUT DEVICES THAT FULLY CONTAIN ALL WASH WATER ARE ACCEPTABLE. WASH WATER DISCHARGED INTO THE CONTAINMENT AREA OR DEVICE SHALL BE ALLOWED TO INFILTRATE, EVAPORATE, AND OR BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS. DRIED CEMENT WASTE IS TO BE REMOVED FROM THE CONTAINMENT AREA AND PROPERLY DISPOSED.

10. THE CONTRACTOR SHALL PROTECT ALL STORM SEWER FACILITIES ADJACENT TO ANY LOCATION WHERE PAVEMENT CUTTING OPERATIONS INVOLVING WHEEL CUTTING, SAW CUTTING, OR ABRASIVE WATER JET CUTTING ARE TO TAKE PLACE. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL WASTE PRODUCTS GENERATED BY SAID CUTTING OPERATIONS ON A DAILY BASIS OR AS NEEDED THROUGHOUT THE WORK DAY. THE DISCHARGE OF ANY WATER CONTAMINATED BY WASTE PRODUCTS FROM CUTTING OPERATIONS TO THE STORM SEWER SYSTEM IS PROHIBITED.

11. PAVED AND IMPERVIOUS SURFACES WHICH ARE ADJACENT TO CONSTRUCTION SITES MUST BE SWEPT ON A DAILY BASIS AND AS NEEDED DURING THE DAY WHEN SEDIMENT AND OTHER MATERIALS ARE TRACKED OR DISCHARGED ONTO THEM. EITHER SWEEPING BY HAND OR USE OF STREET SWEEPERS IS ACCEPTABLE. STREET SWEEPERS USING WATER WHILE SWEEPING IS PREFERRED IN ORDER TO MINIMIZE DUST. FLUSHING OFF PAVED SURFACES WITH WATER IS PROHIBITED.

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SEH

NOT FOR CONSTRUCTION

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SEH Project	173900
Checked By	TN
Drawn By	BR

Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/2024

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

PHASE 8 CIVIL NOTES

C041

LEGEND

- ROW LINE
- LOT LINE
- EASEMENT LINE
- EXISTING CONTOUR (4000)
- PROPOSED CONTOUR (4000)
- EXISTING FENCE
- EXISTING UNDERGROUND COMMUNICATIONS LINE (TV-BUR)
- EXISTING UNDERGROUND TELEPHONE LINE (T-BUR)
- EXISTING GAS LINE (G)
- EXISTING OVERHEAD POWER LINE (P-OH)
- EXISTING UNDERGROUND POWER LINE (P-BUR)
- EXISTING FIBER OPTIC LINE (FO)
- EXISTING STORM LINE (>>)
- EXISTING FOUNDATION DRAIN
- EXISTING WATER MAIN (W)
- EXISTING SANITARY LINE (S)
- EXISTING SANITARY FORCE MAIN (FM)
- EXISTING IRRIGATION LINE (IRR)
- EXISTING IRRIGATION CONTROL BOX
- EXISTING ELECTRIC VAULT
- EXISTING ELECTRIC METER
- EXISTING ELECTRIC PEDESTAL
- EXISTING ELECTRIC TRANSFORMER
- EXISTING ELECTRIC MANHOLE
- EXISTING FIBER OPTIC VAULT
- EXISTING COMMUNICATIONS PEDESTAL
- EXISTING POWER POLE
- EXISTING WATER SHUTOFF
- EXISTING IRRIGATION CONTROL VALVE
- EXISTING TREE
- EXISTING LANDSCAPING ROCK
- EXISTING SANITARY CLEANOUT
- EXISTING WATER MANHOLE
- EXISTING WATER VALVE
- PROPOSED WATER VALVE
- PROPOSED WATER THRUST BLOCK
- EXISTING SANITARY MANHOLE
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- EXISTING TRAFFIC SIGN
- PROPOSED TRAFFIC SIGN
- EXISTING STORM MANHOLE
- PROPOSED STORM MANHOLE
- EXISTING STORM INLET
- PROPOSED STORM INLET
- PROPOSED FLARED END SECTION

- PROPOSED WATER MAIN (W)
- PROPOSED SANITARY LINE (S)
- PROPOSED STORM PIPE
- PROPOSED PLANTER AND TREE GRATE STORM PIPE
- PROPOSED GAS PIPE (G)
- PROPOSED BURIED TELEPHONE/FIBER (FO)
- EXISTING GUARDRAIL
- PROPOSED GUARDRAIL
- PROPOSED RETAINING WALL
- PROPOSED CONCRETE PAVEMENT
- PROPOSED ASPHALT PAVEMENT
- PROPOSED SNOW STORAGE AREA
- EXISTING RIPRAP
- PROPOSED RIPRAP
- PROPOSED BUS CHARGING
- PROPOSED OVERHEAD LIGHTING

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NOT FOR CONSTRUCTION

PROJECT OWNER
ROARING FORK
TRANSPORTATION AUTHORITY
51 SERVICE CENTER DRIVE
ASPEN, COLORADO 81611

ROARING FORK TRANSPORTATION AUTHORITY
WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES
2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

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SEH Project	173800
Checked By	TN
Drawn By	BR

Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/2024

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

PHASE 8 CIVIL NOTES

C042

GLENWOOD SPRINGS MUNICIPAL SUBDIVISION, LOT B
OWNER: ROARING FORK TRANSPORTATION AUTHORITY

EX. INTERCEPTOR DRAIN
(ASSUMED BURY DEPTH
GREATER THAN 7')

EX. CONCRETE TO REMAIN

EX. 18" HDPE PIPE

EX. 18" HDPE PIPE

SAWCUT AND REMOVE EX.
CONCRETE TO NEAREST JOINT
BEYOND THIS LINE

SAWCUT ASPHALT

REMOVE EX. CURB AND GUTTER

REMOVE EX. CONCRETE PAVEMENT

REMOVE EX. ASPHALT PAVEMENT

EX. 12" HDPE PIPE

EX. ASPHALT TO REMAIN

EX. 12" HDPE PIPE

EX. RIPRAP CHECK DAM

EX. RETAINING WALL
PROTECT IN PLACE

GLENWOOD SPRINGS MUNICIPAL SUBDIVISION, LOT A
OWNER: ROARING FORK TRANSPORTATION AUTHORITY

5815
5820
5825
5830

LDA

N

10 0 10 20
scale 5 feet

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51 SERVICE CENTER DRIVE
ASPEN, COLORADO 81611

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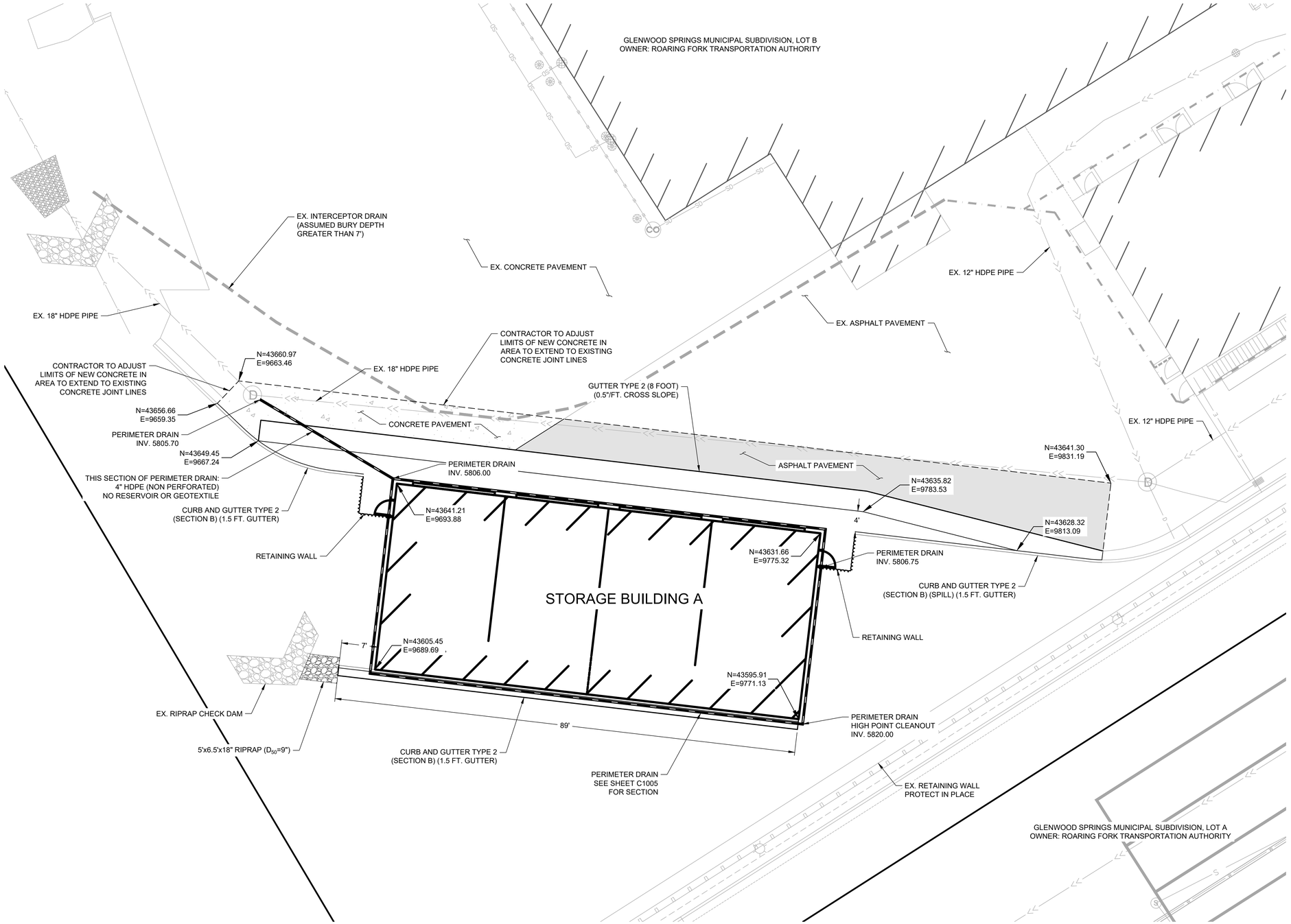
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

PHASE 8 DEMOLITION PLAN

C141



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TRANSPORTATION AUTHORITY
51 SERVICE CENTER DRIVE
ASPEN, COLORADO 81611

ROARING FORK TRANSPORTATION AUTHORITY
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GLENWOOD SPRINGS, CO 81601

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REVISION SCHEDULE

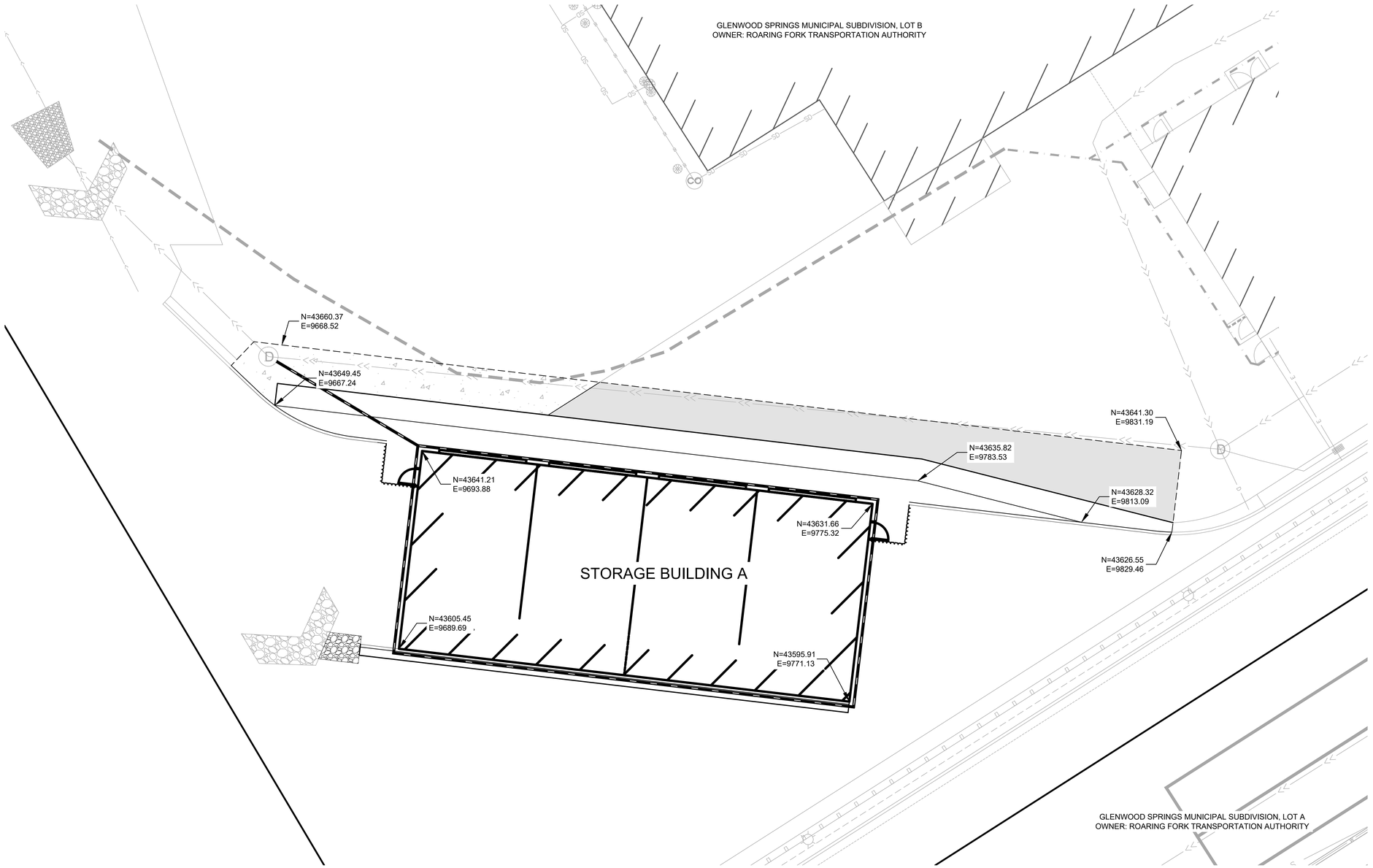
REV. #	DESCRIPTION	DATE

PHASE 8 SITE PLAN

C241

LINE TABLE						
LINE #	LENGTH	BEARING	START NORTHING	START EASTING	END NORTHING	END EASTING

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH



NOT FOR CONSTRUCTION

PROJECT OWNER
ROARING FORK
TRANSPORTATION AUTHORITY
51 SERVICE CENTER DRIVE
ASPEN, COLORADO 81611

ROARING FORK TRANSPORTATION AUTHORITY
WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES
2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

PHASE 8 HORIZONTAL CONTROL PLAN

C341

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GLENWOOD SPRINGS MUNICIPAL SUBDIVISION, LOT B
OWNER: ROARING FORK TRANSPORTATION AUTHORITY

STORAGE BUILDING A

GLENWOOD SPRINGS MUNICIPAL SUBDIVISION, LOT A
OWNER: ROARING FORK TRANSPORTATION AUTHORITY

N

10 0 10 20
scale 5 feet

5810.72
± MATCH EXISTING

5810.28
± MATCH EXISTING

N=43647.15
E=9686.86
5810.84

5810.99
T/W = 5811.21
B/W = 5811.01

B/W = 5811.12
T/W = 5816.00

B/W = 5811.23
T/W = 5816.50

N=43626.47
E=9691.89
5818.00

5819.33

5815.42

EX. RIPRAP CHECK DAM

DOOR 5811.18
DOOR 5811.18
DOOR 5811.40
DOOR 5811.40
DOOR 5811.62
DOOR 5811.62
DOOR 5811.88
DOOR 5811.88

5811.83

N=43638.91
E=9757.12
5811.63

N=43635.82
E=9783.53
5811.79

5812.72
± MATCH EXISTING

5811.94
± MATCH EXISTING

T/W = 5812.03
B/W = 5811.83

N=43625.67
E=9787.29
5813.00

B/W = 5811.88
T/W = 5814.88

B/W = 5811.87
T/W = 5813.87

N=43621.70
E=9786.83
5814.00

N=43618.07
E=9786.40
5816.09

GRADE BREAK
5825.75

5825.14

EX. RETAINING WALL
PROTECT IN PLACE

LDA

2.84% 7.53% 3.01% 1.12% 3.00% 2.73% 0.59% 2.72% 0.50% 4.38% 0.39% 0.35% 2.84% 23.78% 21.84% 5.87% 6.54% 39.40% 56.25% 47.69% 20.68% 18.36% 51.32% 47.74%

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51 SERVICE CENTER DRIVE
ASPEN, COLORADO 81611

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REVISION SCHEDULE

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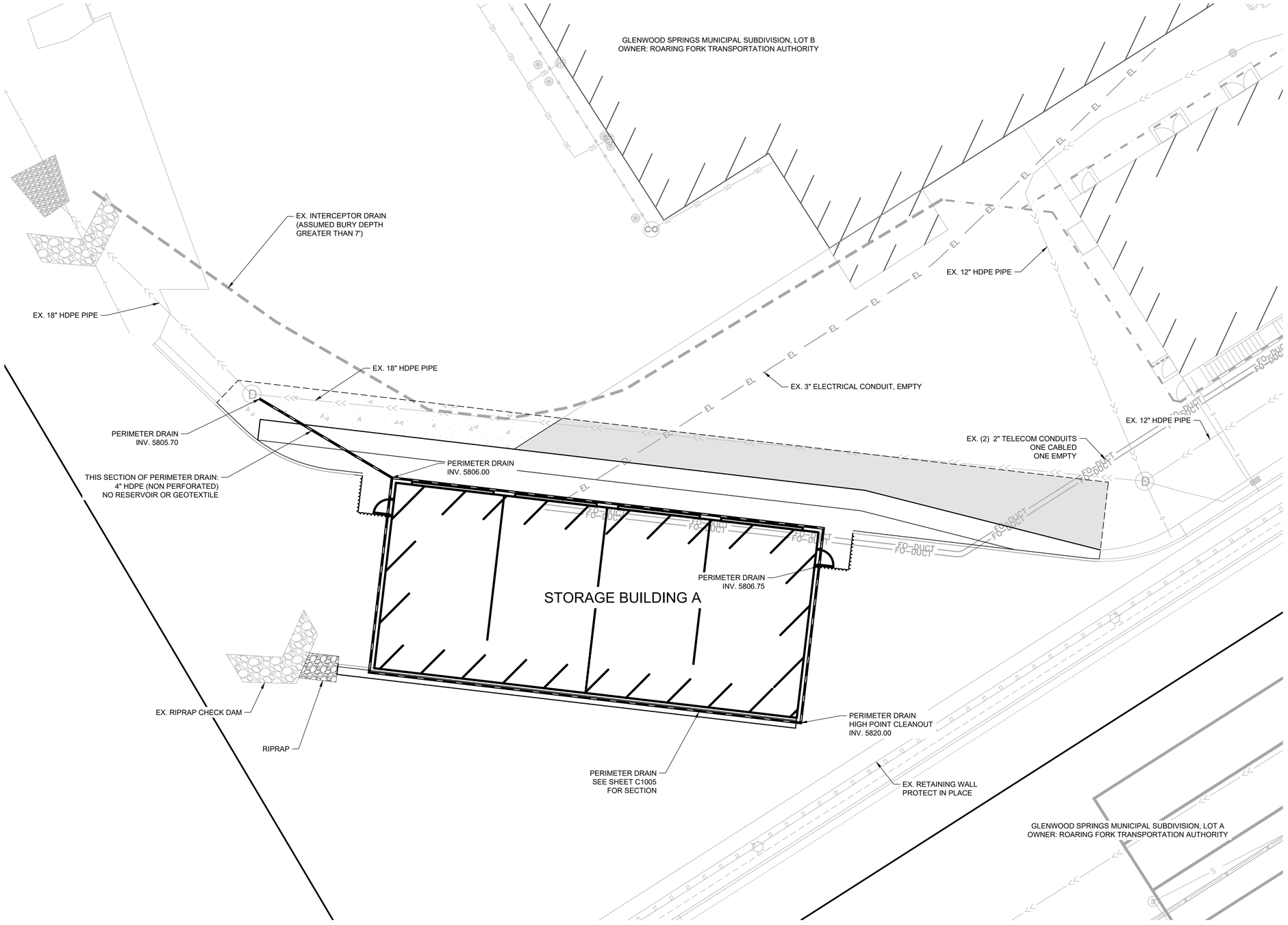
PHASE 8 GRADING PLAN

C441



\\sehinc.com\panzura\pzprojects\PT\RROFTA\173800\99 Civil\5-final-dsgn\51-drawings\Plansheets\CDs\PH 8 - Utility Plan.dwg 9/27/2024 3:53 PM

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51 SERVICE CENTER DRIVE
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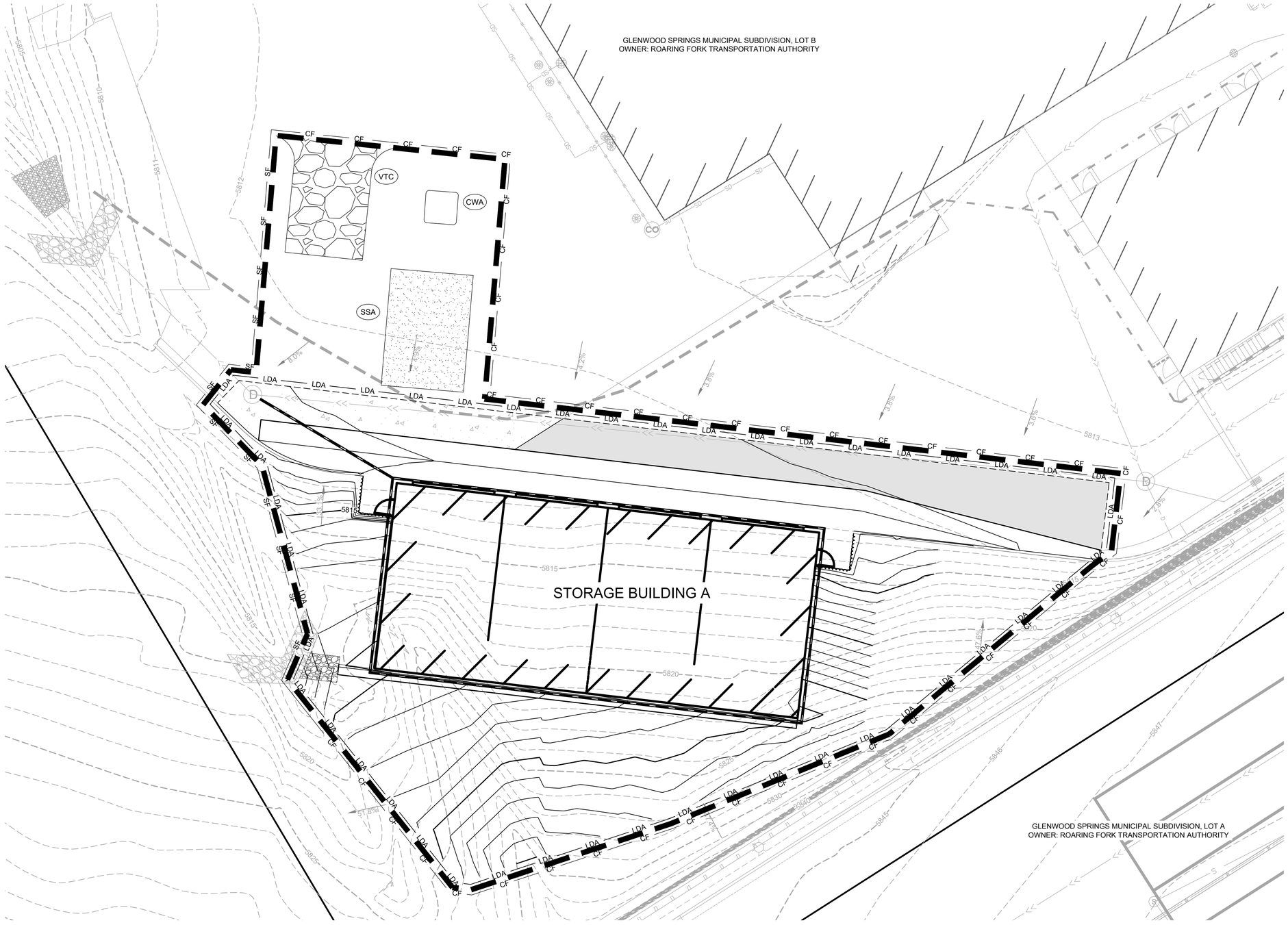
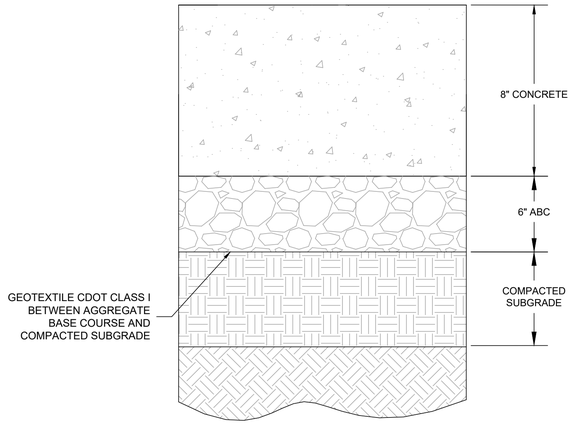
PHASE 8 UTILITY PLAN

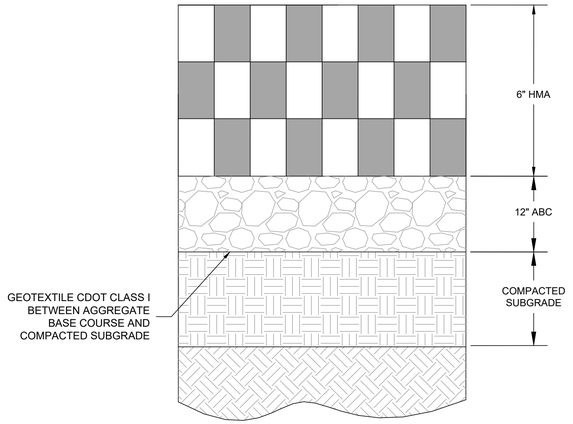
C641


GLENWOOD SPRINGS MUNICIPAL SUBDIVISION, LOT B
OWNER: ROARING FORK TRANSPORTATION AUTHORITY
VTC
CWA
SSA
STORAGE BUILDING A
GLENWOOD SPRINGS MUNICIPAL SUBDIVISION, LOT A
OWNER: ROARING FORK TRANSPORTATION AUTHORITY
CF
SF
LDA
8.0%
4.2%
3.8%
3.8%
3.8%
5.7%
5.7%
5.8%
5.8%
5.8



CONCRETE PAVEMENT SECTION

NTS



ASPHALT PAVEMENT SECTION

NTS

PAVEMENT NOTES:

ABC: CDOT CLASS 6 AGGREGATE BASE COURSE

PAVEMENT COMPACTED SUBGRADE: THE COLLAPSING SOILS HAVE TO BE ADDRESSED BEFORE ANY PAVEMENT OR STRUCTURE IS CONSTRUCTED AT THIS SITE BY SUBEXCAVATING THE TOP 5 FEET OF THE EXISTING SOIL AND RECOMPACTING IT AT OPTIMUM OR ABOVE OPTIMUM MOISTURE CONTENT, REMOVING AND REPLACING THE EXISTING COLLAPSING SOIL AND PLACING SELECT MATERIAL AT A DEPTH SUFFICIENT TO MINIMIZE COLLAPSING OR SETTLEMENT OR IMPORTING ADDITIONAL FILL AND ALLOWING IT TO SETTLE BEFORE CONSTRUCTION.

PAVEMENT PROOFROLLING: THE PAVEMENT SUBGRADE SHOULD BE PROOF ROLLED WITH A HEAVILY LOADED PNEUMATIC-TIRE VEHICLE. AREAS THAT DEFORM MORE THAN ½-INCH UNDER HEAVY WHEEL LOADS SHOULD BE REMOVED, REPLACED IF NECESSARY, AND REWORKED TO ACHIEVE A STABLE SUBGRADE PRIOR TO PAVING. WE RECOMMEND THAT PROOF ROLLING AND COMPACTION TESTS BE OBSERVED AND DOCUMENTED BY A REPRESENTATIVE OF A REGISTERED PROFESSIONAL ENGINEER.

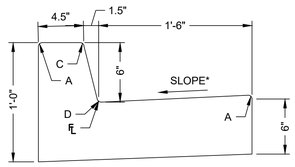
PHASE 8 PAVEMENT DESIGN PER RFTA GMF PHASES 3, 4, 5 & 7 PAVING & SIGNAGE DETAILS DRAWING NO. C-159 BY STANTEC/SAUNDERS/SGM DATED 5/16/2023.

CONTRACTOR TO PREPARE A JOINTING PLAN FOR ENGINEER REVIEW AND APPROVAL MINIMUM 7 DAYS PRIOR TO PLACING ANY CONCRETE PAVEMENT.

GENERAL NOTES

1. CONCRETE SHALL BE CLASS B.
2. PROFILE GRADE OF CURBS AND GUTTERS SHALL BE LOCATED AT THE FLOW LINE.
3. GUTTER CROSS SLOPES MAY BE ADJUSTED TO FACILITATE DRAINAGE FOR PROFILE GRADES AS SHOWN ON THE PLANS.
4. THICKNESS OF CURB AND GUTTER SECTION SHALL MATCH CONCRETE PAVEMENT THICKNESS IF SHOWN ON THE PLANS. CURB AND GUTTER SHALL BE CLASS P CONCRETE IF PLACED MONOLITHICALLY WITH CONCRETE PAVEMENT.
5. INCREASE SIDEWALK THICKNESS TO 6 IN. AT LOCATIONS SHOWN ON THE PLANS.
6. WHEN TIE BARS ARE REQUIRED, THE GUTTER THICKNESS SHALL BE INCREASED TO THE PAVEMENT THICKNESS (T). BARS SHALL BE EPOXY-COATED #4 CONFORMING TO AASHTO M 284 AND SPACED AT 3 FT. INTERVALS. THEY SHALL BE INSERTED T/2 AND 1#2 LENGTH INTO THE GUTTER .

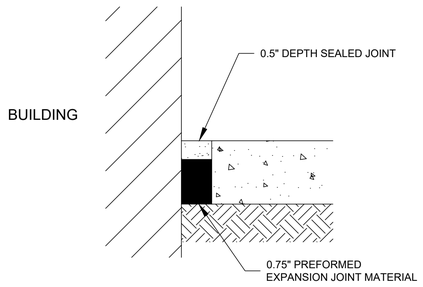
LEGEND FOR RADII
A = $\frac{3}{8}$" TO $\frac{1}{4}$"
B = 1"
C = 1 $\frac{1}{2}$"
D = 1 $\frac{1}{2}$" TO 2"



*GUTTER SLOPE EQUALS 1"/FT. WHEN ADJACENT TO ASPHALT PAVEMENT. GUTTER SLOPE TO MATCH ADJACENT CONCRETE SLOPE WHEN ADJACENT TO CONCRETE PAVEMENT.

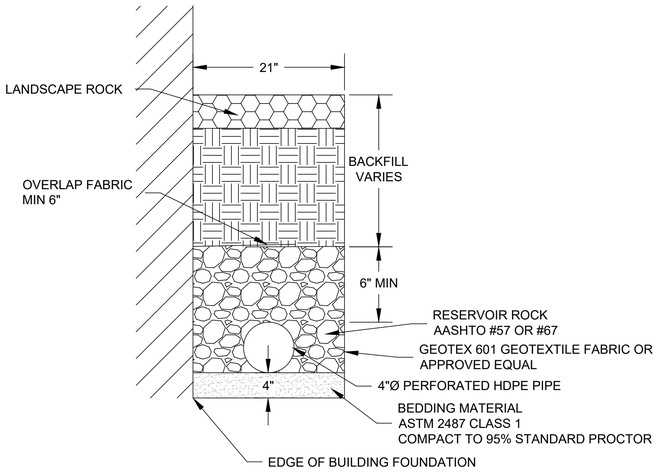
CURB AND GUTTER TYPE 2 (SECTION B) (1.5' GUTTER)

NTS



SIDEWALK EXPANSION JOINT AT BUILDINGS

N.T.S.



PERIMETER DRAIN

NTS

SEH

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ROARING FORK
TRANSPORTATION AUTHORITY
51 SERVICE CENTER DRIVE
ASPEN, COLORADO 81611

ROARING FORK TRANSPORTATION AUTHORITY
WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES
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Drawn By	BR

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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

PHASE 8 CIVIL DETAILS

C1041

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LEGEND

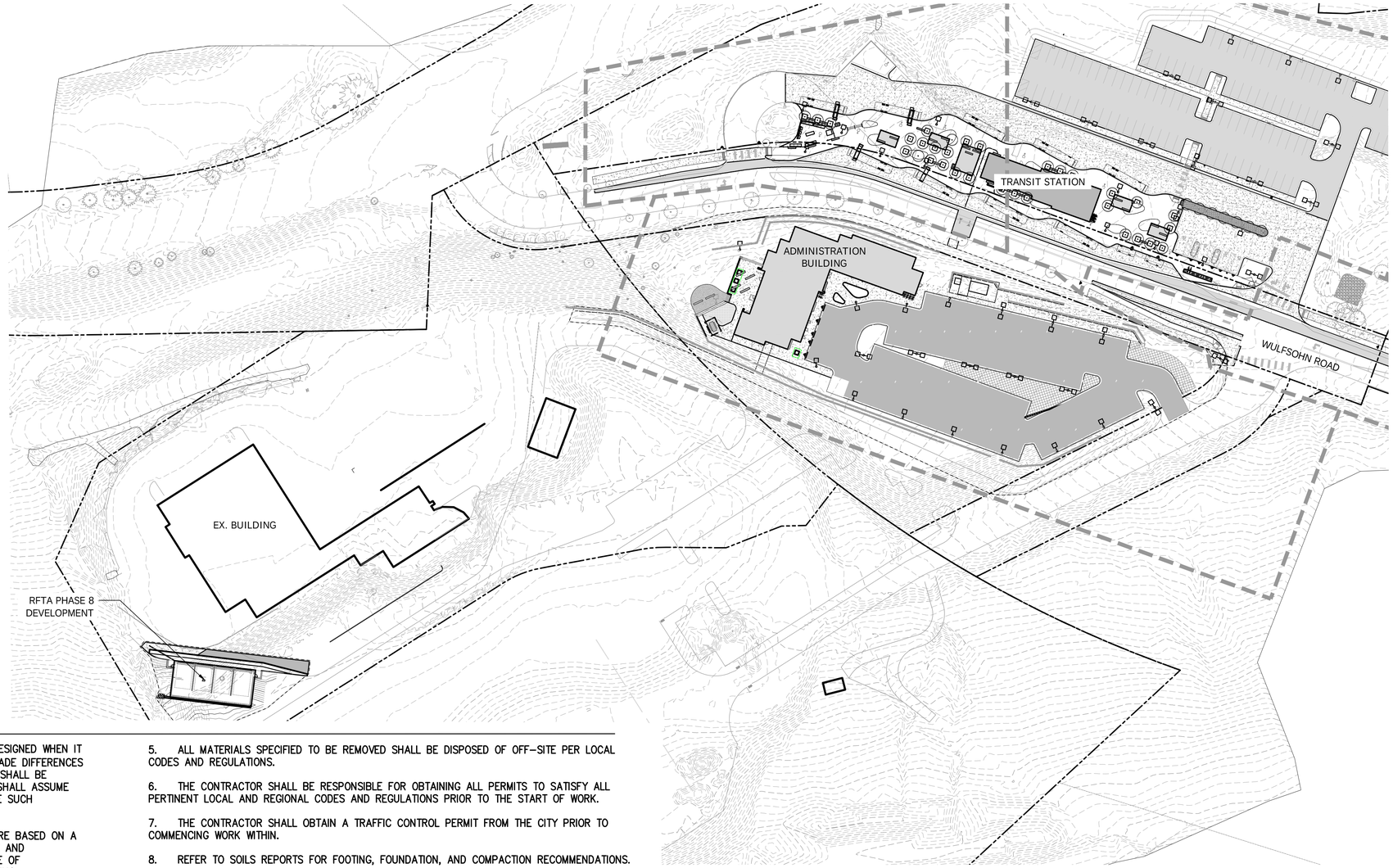
PROPERTY BOUNDARY

EXISTING CONTOURS

EXISTING TREES TO REMAIN

PROPOSED SITE WALLS (SEE CIVIL & STRUCTURAL DWGS.

NOTE: SEE INDIVIDUAL PLAN ENLARGEMENTS FOR MATERIAL & FURNISHINGS CALL–OUTS, AND DETAIL REFERENCES.



0' 30' 60' 120'
Scale: 1" = 60'-0"
WHEN PRINTED AT 22"x34"

GENERAL NOTES

1. CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS, AREA DISCREPANCIES AND/OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATIONS.

2. EXISTING UTILITY ALIGNMENTS AND GRADES SHOWN ON THE DRAWINGS ARE BASED ON A FIELD SURVEY. THE CONTRACTOR SHALL STILL BE RESPONSIBLE FOR VERIFYING AND DETERMINING EXACT LOCATIONS, DIMENSIONS, DEPTHS, AND MATERIALS AT TIME OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES FAR ENOUGH IN ADVANCE OF NEW CONSTRUCTION TO ALLOW FOR POSSIBLE GRADE, DEPTH, ALIGNMENT, OR MATERIAL CHANGES. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES DURING ALL DEMOLITION AND CONSTRUCTION OPERATIONS. CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR COSTS INCURRED DUE TO DAMAGE AND REPLACEMENT OF SAID UTILITIES.

3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH ALL CONSTRUCTION OPERATIONS. ALL PIPING, CONDUIT, SLEEVES, ETC., SHALL BE SET IN PLACE PRIOR TO INSTALLATION OF CONSTRUCTION ITEMS.

4. ALL EXISTING IMPROVEMENTS TO REMAIN SHALL BE PROPERLY AND ADEQUATELY PROTECTED FROM DAMAGE DURING CONSTRUCTION AND DEMOLITION OPERATIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESTORE TO THE ORIGINAL CONDITION ANY EXISTING ITEMS THAT ARE DAMAGED OR DISTURBED IN ANY WAY. ALL MATERIALS TO BE REUSED OR SALVAGED SHALL BE STORED IN AN AREA DESIGNATED BY THE OWNER FOR THAT PURPOSE. ALL SALVAGED MATERIALS SHALL REMAIN THE PROPERTY OF THE OWNER.

5. ALL MATERIALS SPECIFIED TO BE REMOVED SHALL BE DISPOSED OF OFF–SITE PER LOCAL CODES AND REGULATIONS.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS TO SATISFY ALL PERTINENT LOCAL AND REGIONAL CODES AND REGULATIONS PRIOR TO THE START OF WORK.

7. THE CONTRACTOR SHALL OBTAIN A TRAFFIC CONTROL PERMIT FROM THE CITY PRIOR TO COMMENCING WORK WITHIN.

8. REFER TO SOILS REPORTS FOR FOOTING, FOUNDATION, AND COMPACTION RECOMMENDATIONS.

9. PRESERVE AND PROTECT ALL EXISTING TREES ON SITE, UNLESS NOTED AS A REMOVAL.

10. ALL DEMOLITION MUST BE COORDINATED WITH THE OWNER, THE CIVIL ENGINEER, AND BE FIELD VERIFIED.

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

SEH

NOT FOR CONSTRUCTION

PROJECT OWNER
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY

W. G. STORAGE BUILDING (PHASE 8)

2307 WULFSOHN RD.
GLENWOOD SPRINGS,
COLORDO 81601

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Drawn By	S.H.

Project Status	Issue Date
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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

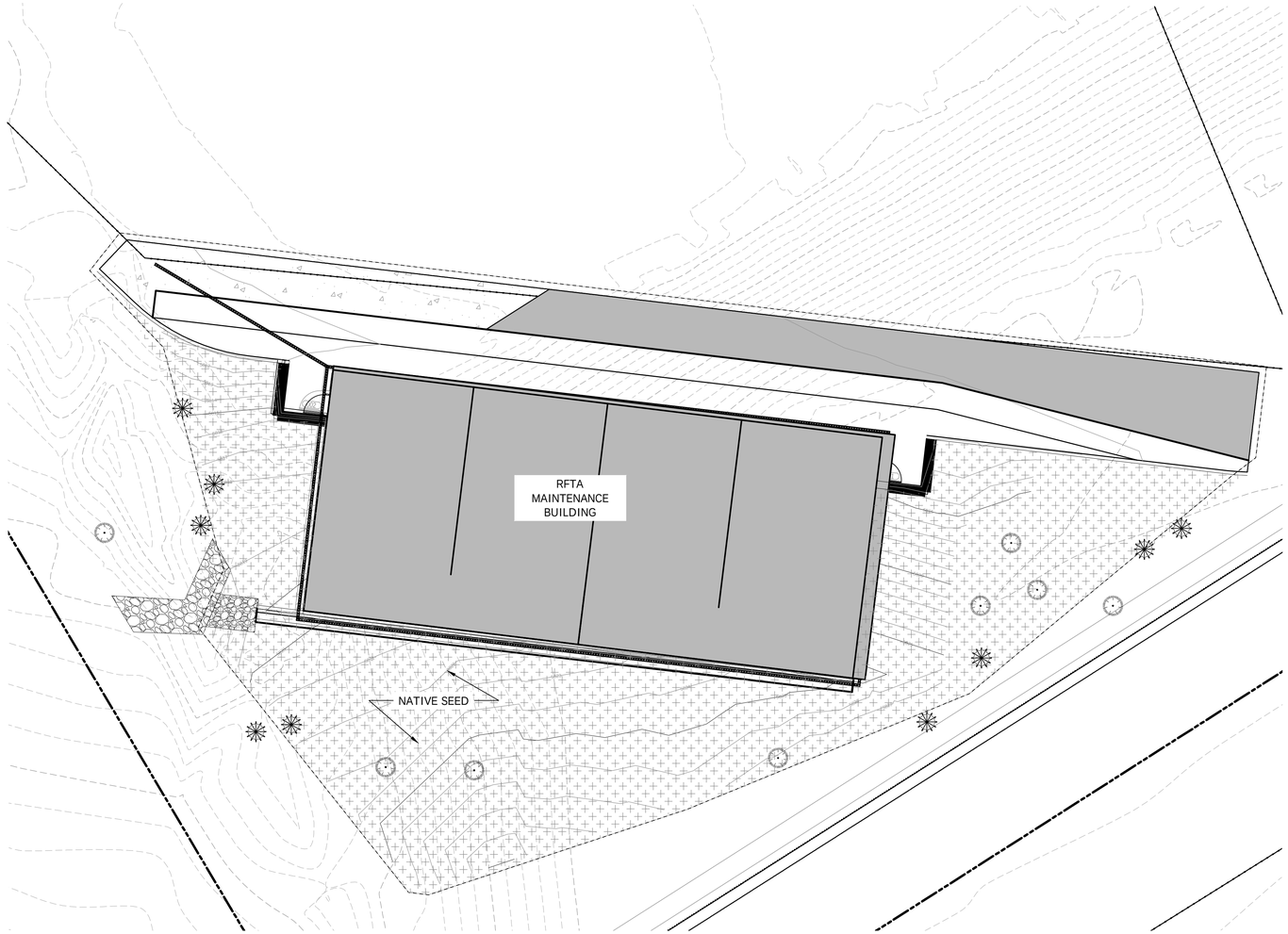
SITE MATERIALS KEYPLAN PHASE 8

L100

LEGEND

- PROPERTY BOUNDARY
- SHEET MATCHLINE
- EXISTING CONTOURS
- EXISTING TREES TO REMAIN

NOTES:
1.SEE CIVIL PLANS FOR ALL GRADING & DRAINAGE.
2.PAVEMENT MARKINGS & ADA CURB RAMPS PER CIVIL.



0' 5' 10' 20'
Scale: 1" = 10'-0"
WHEN PRINTED AT 22"x34"

PLANT SCHEDULE PHASE 8

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	SPACING	QTY
TREES					
	JM-1	Juniperus monosperma / Oneseed Juniper	1 GAL		9
	JO2	Juniperus osteosperma / Utah Juniper	1 GAL		8
SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	SPACING	QTY
GROUND COVERS					
		NATIVE SEED			5,776 sf

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

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PROJECT OWNER
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY
W. G. STORAGE BUILDING (PHASE 8)
2307 WULFSOHN RD.
GLENWOOD SPRINGS,
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Project Status	Issue Date
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REVISION SCHEDULE

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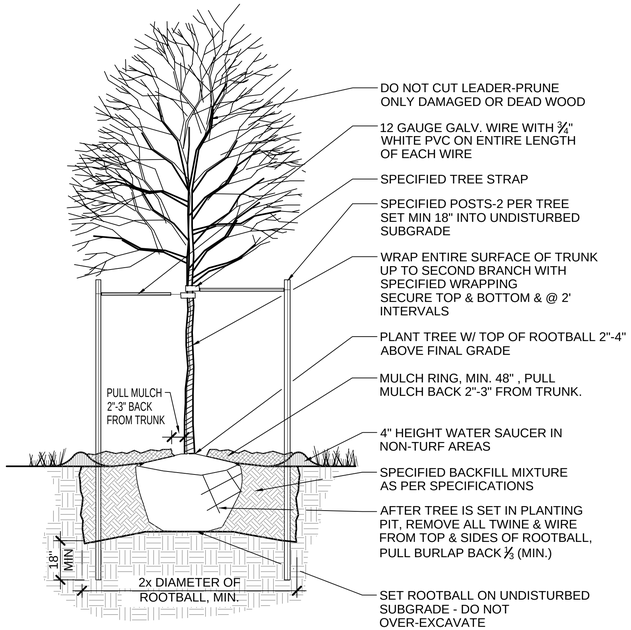
PLANTING PLAN PHASE 8

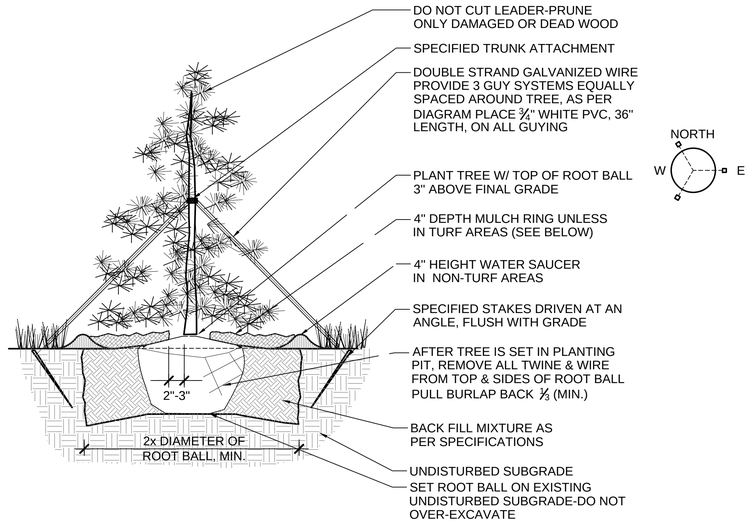
L101



NOTE: MULCH SHOULD BE 4" DEEP IN NON-TURF AREAS, MULCH SHOULD BE 2" DEEP IN TURF AREAS.

1 L.3.6 DECIDUOUS TREE PLANTING

NOT TO SCALE

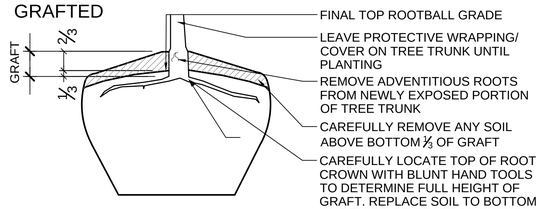


NOTES:
1. PULL MULCH BACK 2" TO 3" FROM TRUNK OF TREE
2. INSTALL SPECIFIED MULCH TO DRIP LINE OF TREE WHERE PLANTED IN LAWN AREAS. MULCH TO BE 2" DEEP IN LAWN AREAS.
3. DO NOT PROVIDE WATER BASIN IN IRRIGATED LAWN AREAS.

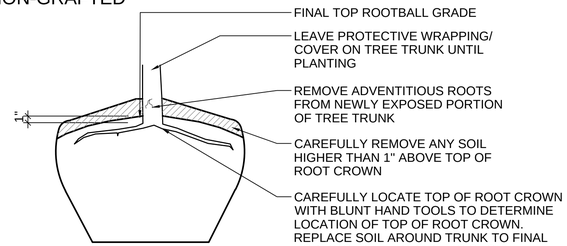
2 L.3.6 EVERGREEN TREE PLANTING

NOT TO SCALE

GRAFTED



NON-GRAFTED

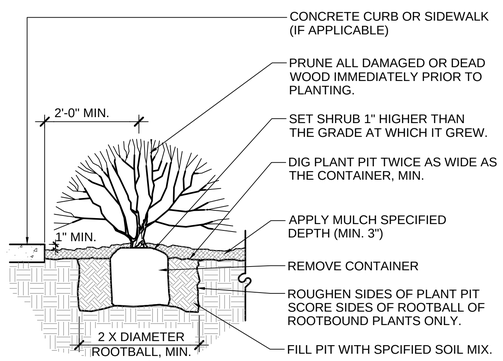


NOTES:
1. ALL WORK TO BE DONE AT TIME OF PLANTING
2. PEEL BACK ONLY TOP OF BURLAP REQUIRED TO PERFORM WORK. REPLACE BURLAP BEFORE MOVING TREE INTO PLANTING PIT. DO NOT REMOVE WIRE BASKET UNTIL INSIDE PLANTING PIT.
3. MEASURE NEW HEIGHT OF ROOTBALL AND DIG PLANTING PIT SO FINAL TOP ROOTBALL GRADE IS 3" ABOVE FINAL GRADE SURROUNDING BALL.

3 L.3.6 FINAL TOP ROOTBALL GRADE

NOT TO SCALE

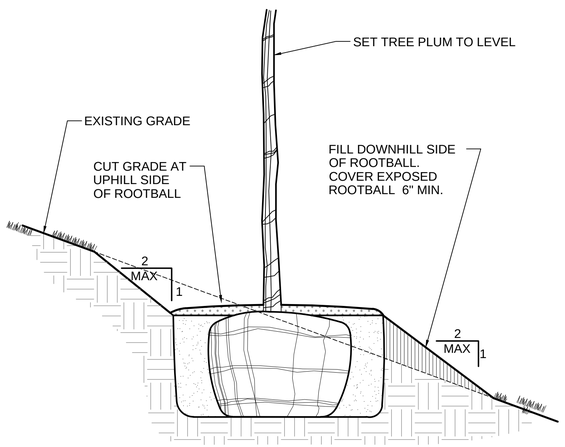
PLANT SPACING	A	B	C	D
6"	6"	6"	5"	6"
8"	8"	6"	7"	8"
12"	12"	8"	10"	12"
18"	18"	9"	15½"	18"
24"	24"	18"	21"	24"
30"	30"	15"	26"	30"
36"	36"	30"	31"	36"
48"	48"	30"	42"	48"
60"	60"	36"	52"	60"



NOTES:
1. ANY BROKEN OR CRUMBLING ROOTBALLS WILL BE REJECTED.
2. REMOVING THE CONTAINERS WILL NOT BE AN EXCUSE FOR DAMAGED ROOTBALLS.
3. HOLD GRADE 1" BELOW EDGE OF WALK OR CURB

4 L.3.6 SHRUB PLANTING

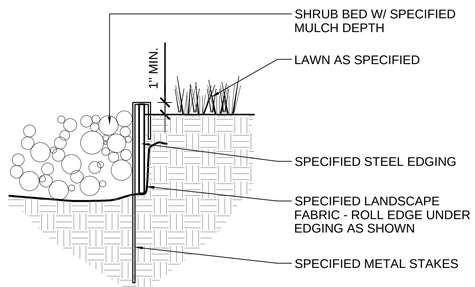
NOT TO SCALE



NOTES:
1. REFER TO VARIOUS SPECIFIC TREE INSTALLATION DETAILS FOR STAKING, GUYING, MULCHING, ETC.
2. THIS INSTALLATION SHALL APPLY TO ALL TREE TYPES AND SIZES PLANTED ON SLOPES LESS THAN 2:1.

5 L.3.6 TREE PLANTING ON SLOPE

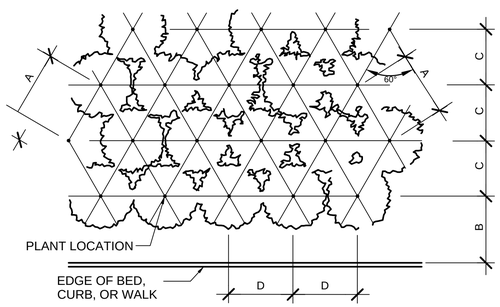
NOT TO SCALE



NOTES:
1. SET ALL EDGING 1" ABOVE FINISH GRADE AS SHOWN.
2. EDGING SHALL ABUT ALL CONCRETE CURBS AND WALKS PERPENDICULAR, AND FLUSH W/ GRADES OF CONCRETE.
3. ALL JOINTS TO BE SECURELY STAKED.

7 L.3.6 STEEL EDGER

NOT TO SCALE



NOTE: ALIGN FRONT ROW PARALLEL TO BED LINE

8 L.3.6 SHRUB / FLOWERS / GROUNDCOVERS TRIANGULAR SPACING FOR PLANTING LAYOUT

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W. G. STORAGE BUILDING (PHASE 8)

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REVISION SCHEDULE

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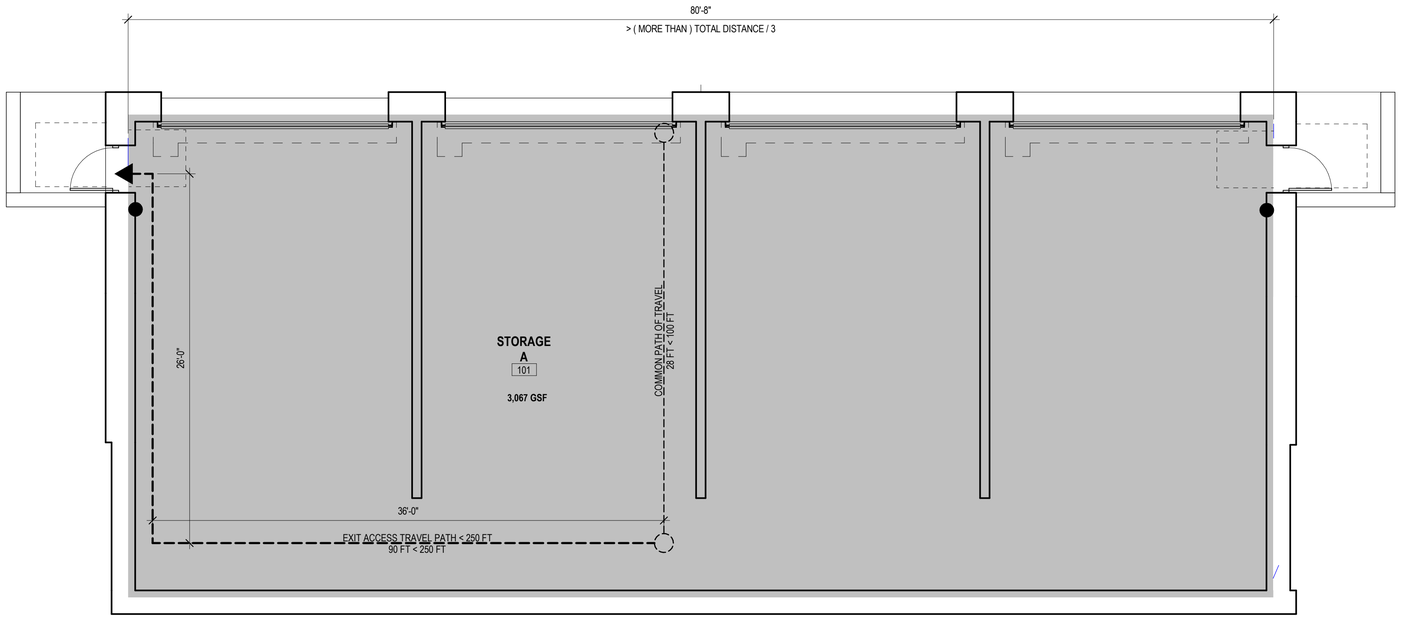
SITE DETAILS

L301



1 (PH 8) - CODE PLAN - STORAGE A
3/16" = 1'-0"

TRUE NORTH

OCCUPANCY SCHEDULE - GROSS

NO.	ROOM NAME	AREA	OCCUPANCY	GROSS FACTOR	OCC. LOAD	NOTES
101	STORAGE A	3043.0 SF	STORAGE	200	15	
TOTAL					15	

CODE LEGEND

- GROUP S-1 OCCUPANCY
- EXIT
- EXIT ACCESS TRAVEL PATH < 250 FT
- COMMON PATH OF TRAVEL < 100 FT
- PORTABLE BRACKET MOUNTED FIRE EXTINGUISHER

CODE ANALYSIS
APPLICABLE CODES
2021 INTERNATIONAL BUILDING CODE (IBC)
INCLUDING GLENWOOD SPRINGS AMENDMENTS TO THE IBC
2021 INTERNATIONAL PLUMBING CODE (IPC)
2021 INTERNATIONAL MECHANICAL CODE (IMC)
2021 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
2021 INTERNATIONAL FIRE CODE (IFC)
2021 INTERNATIONAL FUEL GAS CODE (IFGC)
2020 NATIONAL ELECTRIC CODE (NEC)

IBC CHAPTER 3 USE AND OCCUPANCY

USE: MODERATE-HAZARD STORAGE
OCCUPANCY: S-1

HAZARDOUS MATERIALS MAY BE LOCATED IN GROUP S OCCUPANCY BUILDINGS, PROVIDED THE AMOUNT OF MATERIALS DOES NOT EXCEED THE MAQ SPECIFIED IN TABLES 307.1(1) AND 307.1(2).

IBC CHAPTER 5 BUILDING HEIGHTS AND AREAS (TYPE II-B / S)

TABLE 504.3	BUILDING HEIGHT:	ALLOWED =	75 FT
		ACTUAL =	20 FT
TABLE 504.4	NUMBER OF STORIES:	ALLOWED =	4 STORIES
		ACTUAL =	1 STORY
TABLE 506.2	BUILDING AREA:	ALLOWED =	92,000 SF
		ACTUAL =	3084 SF

IBC CHAPTER 6 TYPES OF CONSTRUCTION

CONSTRUCTION: TYPE II-B

TABLE 601 FIRE-RESISTANCE RATING REQUIREMENTS

- PRIMARY STRUCTURAL FRAME = 0 HOUR
- BEARING WALLS EXTERIOR = 0 HOUR
- BEARING WALLS INTERIOR = 0 HOUR
- NONBEARING WALLS AND PARTITIONS - EXTERIOR = 0 HOUR
- NONBEARING WALLS AND PARTITIONS - INTERIOR = 0 HOUR
- FLOOR CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS = 0 HOUR
- ROOF CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS = 0 HOUR

IBC CHAPTER 7 FIRE AND SMOKE PROTECTION FEATURES

- N/A

IBC CHAPTER 8 INTERIOR FINISHES

TABLE 803.13 INTERIOR WALL AND CEILING FINISH REQ'S

- INTERIOR EXIT STAIRWAYS AND RAMPS AND EXIT PASSAGEWAYS = C
- CORRIDORS AND ENCLOSURE FOR EXIT ACCESS STAIRWAYS AND RAMPS = C
- ROOMS AND ENCLOSED SPACES = C

IBC CHAPTER 9 FIRE PROTECTION SYSTEMS

FIRE SPRINKLER = OPTION - NFPA13
(NOT REQUIRED 903.2.9.1)

FIRE ALARM AND SMOKE DETECTION SYSTEMS = OPTION
(NOT REQUIRED 907.2.10)

PORTABLE FIRE EXTINGUISHERS = YES

IBC CHAPTER 10 MEANS OF EGRESS

1004 OCCUPANT LOAD = 15 OCCUPANTS TOTAL

1005 EGRESS WIDTH AT DOORS (0.20) = 3" MIN 34" ACTUAL

TABLE 1006.2.1	COMMON PATH OF TRAVEL =	100 FT MAX
1006	MINIMUM NUMBER OF EXITS =	1 EXIT
1007	EXIT AND EXIT ACCESS DOORWAY CONFIGURATION	

EXCEPTION 2. WHERE A BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1 OR 903.3.1.2, THE SEPARATION DISTANCE SHALL BE NOT LESS THAN ONE-THIRD OF THE LENGTH OF THE MAXIMUM OVERALL DIAGONAL DIMENSION OF THE AREA SERVED.

1008	MEANS OF EGRESS ILLUMINATION =	YES
1010.1.10	PANIC HARDWARE =	YES AT EXIT DOORS
TABLE 1017.2	EXIT ACCESS TRAVEL DISTANCE =	S-1= 250 FT MAX
1020.1	CORRIDOR FIRE RESISTANCE =	0 HOUR
1020.5	DEAD ENDS =	50 FT

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CODE INFORMATION

A008

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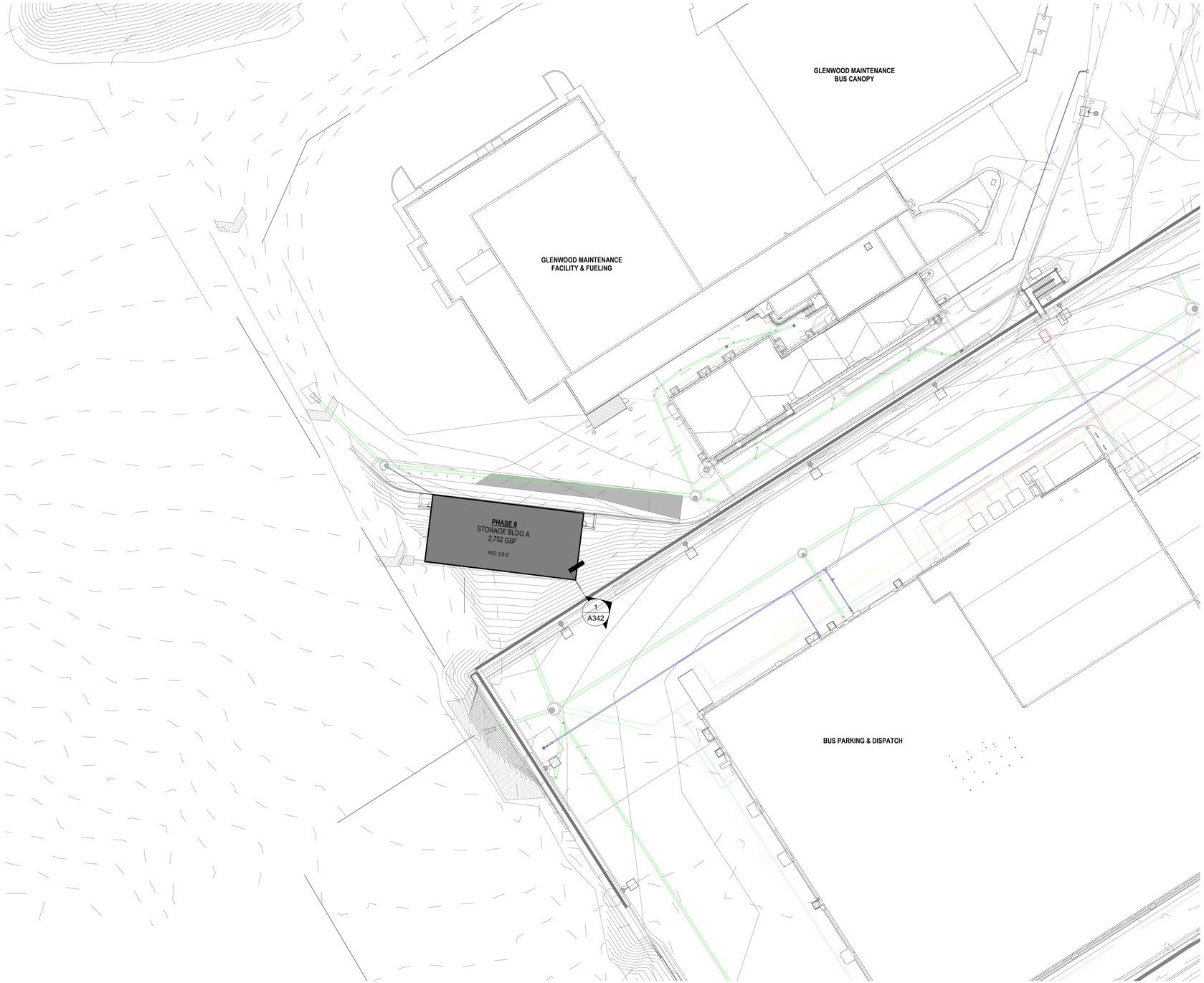

1 A241 (PH 8) - ARCHITECTURAL SITE PLAN
1" = 30'-0"

TRUE NORTH

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ARCHITECTURAL SITE PLAN

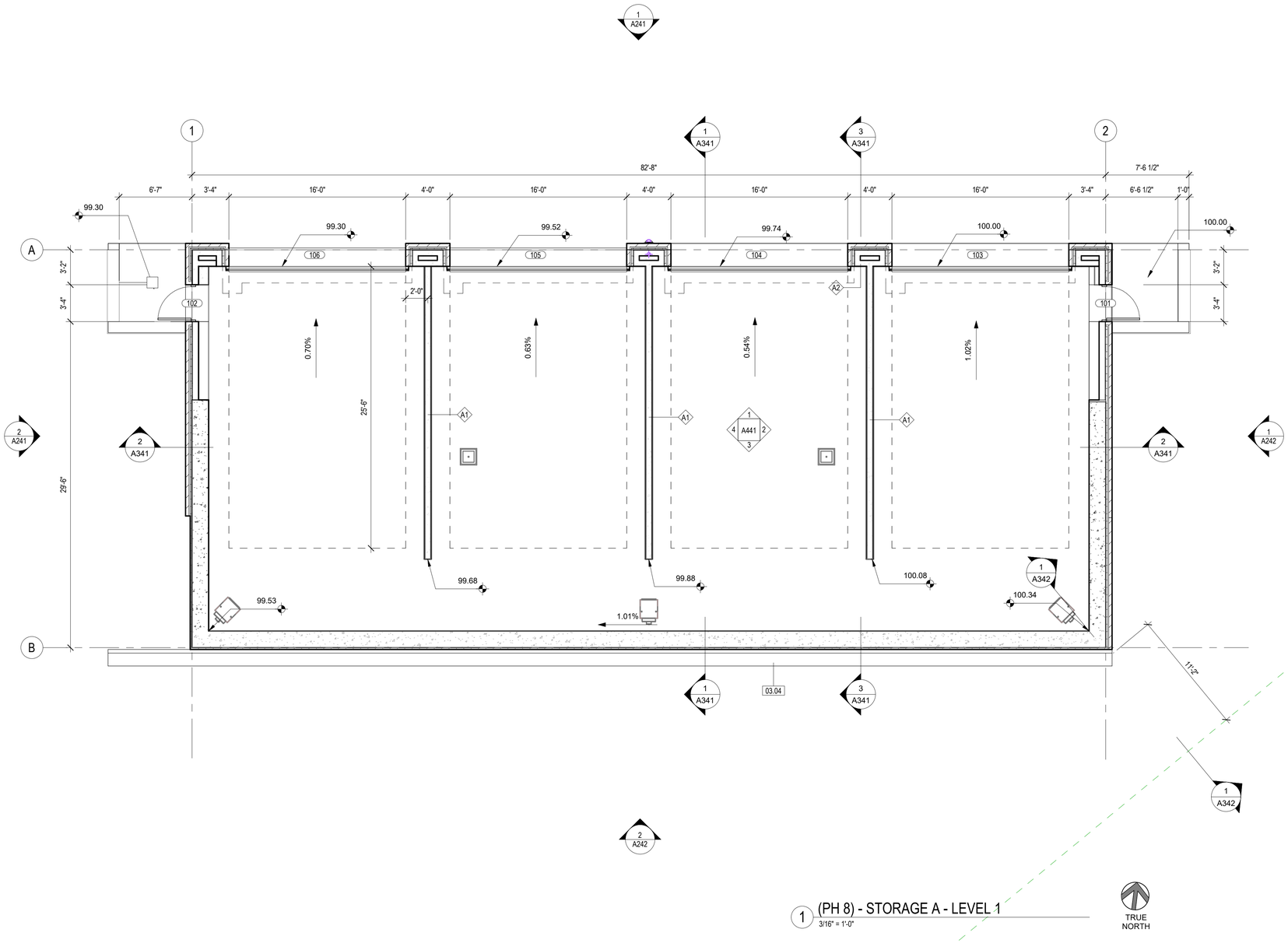
A071

GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
2. ALL DIMENSIONS TO FACE OF STEEL STUD OR EXISTING FINISH UNLESS NOTED OTHERWISE.

KEYNOTE LEGEND

03.04 CONCRETE SURFACE DRAIN, RE: CIVIL



1 (PH 8) - STORAGE A - LEVEL 1
3/16" = 1'-0"

TRUE NORTH

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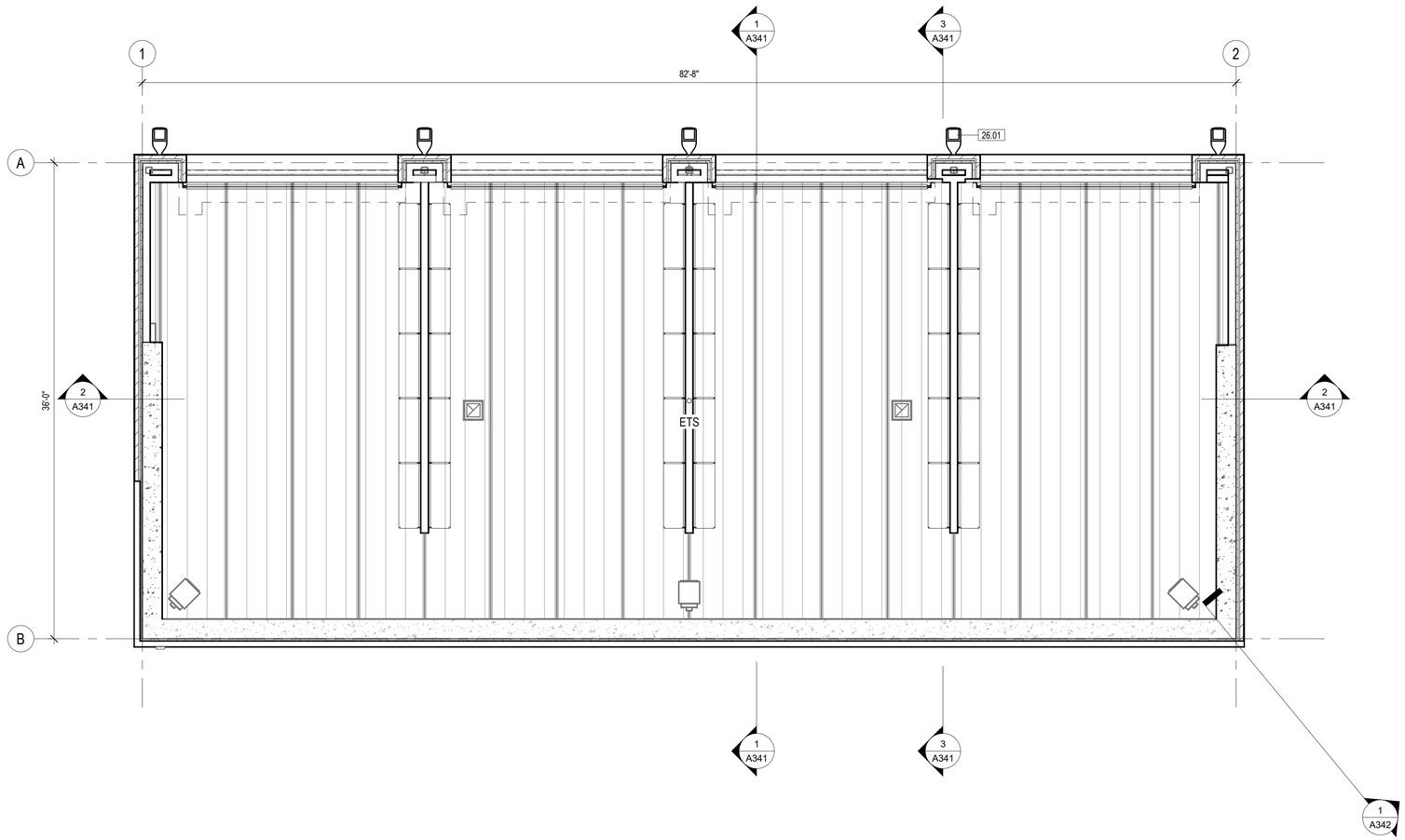
STORAGE A FLOOR PLAN

A141



1 (PH 8) REFLECTED CEILING PLAN - LEVEL 1
3/16" = 1'-0"

TRUE NORTH

GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
2. ALL DIMENSIONS TO FACE OF STEEL STUD OR EXISTING FINISH UNLESS NOTED OTHERWISE.

KEYNOTE LEGEND

26.01 LIGHT FIXTURE, RE: ELECTRICAL

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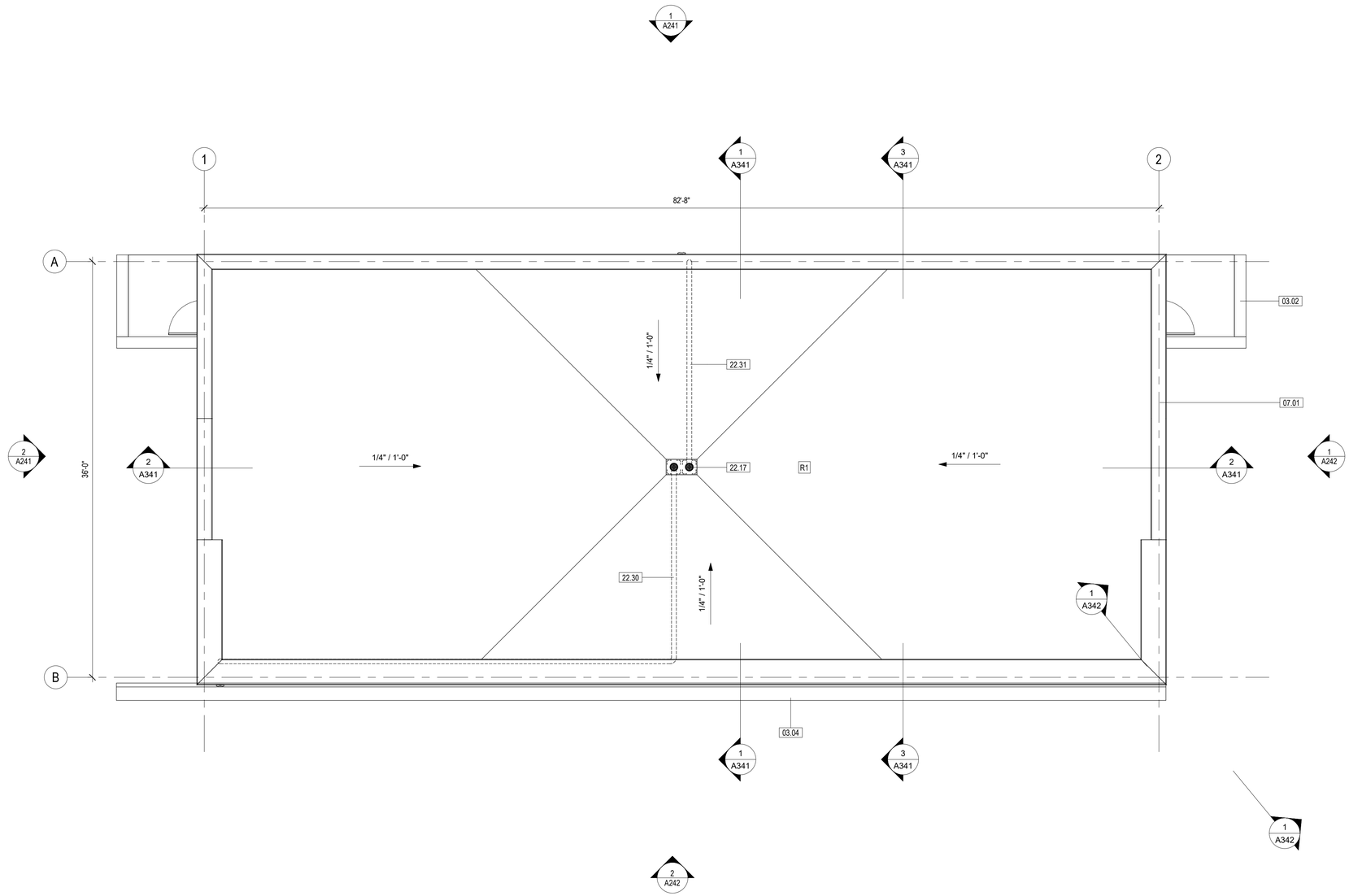
STORAGE A REFLECTED CEILING PLAN

A142



1 (PH 8) - STORAGE A - ROOF PLAN
3/16" = 1'-0"

TRUE NORTH

GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
2. ALL DIMENSIONS TO FACE OF STEEL STUD OR EXISTING FINISH UNLESS NOTED OTHERWISE.

KEYNOTE LEGEND

03.02	CONCRETE RETAINING WALL, RE: STRUCTURAL
03.04	CONCRETE SURFACE DRAIN, RE: CIVIL
07.01	PRE-FINISHED METAL PARAPET CAP
22.17	ROOF DRAIN WITH OVERFLOW, RE: PLUMBING
22.30	PRIMARY DRAIN PIPE, RE: PLUMBING
22.31	OVERFLOW DRAIN PIPE, RE: PLUMBING

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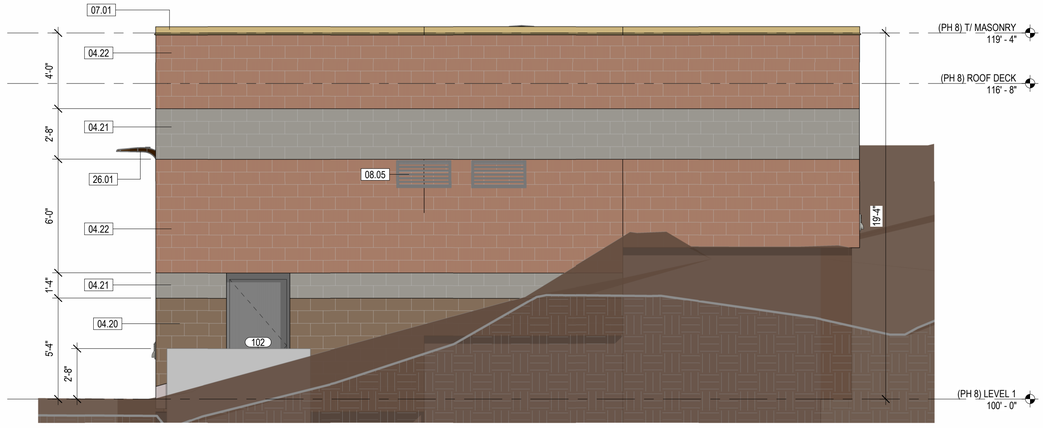
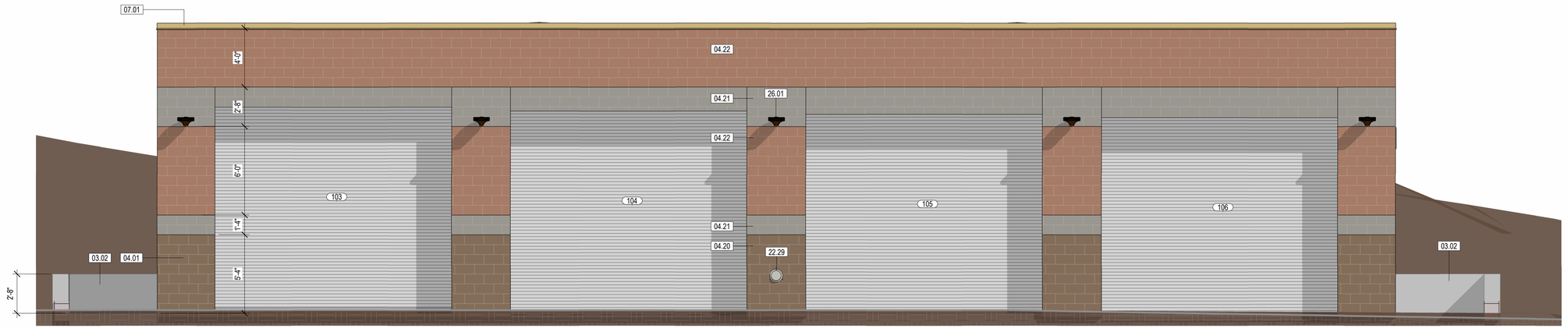
STORAGE A ROOF PLAN

A143



2 A141 (PH 8) EXTERIOR ELEVATION - WEST
1/4" = 1'-0"



1 A141 (PH 8) EXTERIOR ELEVATION - NORTH
1/4" = 1'-0"

GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
2. ALL DIMENSIONS TO FACE OF STEEL STUD OR EXISTING FINISH UNLESS NOTED OTHERWISE.

KEYNOTE LEGEND

03.02	CONCRETE RETAINING WALL, RE: STRUCTURAL
04.01	ARCHITECTURAL WALL PANEL, COLOR 1
04.20	CMU VENEER, COLOR 1
04.21	CMU VENEER, COLOR 2
04.22	CMU VENEER, COLOR 3
07.01	PRE-FINISHED METAL PARAPET CAP
08.05	RAIN RESISTANT, EXTRUDED ALUMINUM LOUVER
22.29	DOWNSPOUT NOZZLE, RE: PLUMBING
26.01	LIGHT FIXTURE, RE: ELECTRICAL

EXTERIOR FINISH LEGEND

- CMU - COLOR 3 - RED
- CMU - COLOR 2 - GREY
- CMU - COLOR 1 - BROWN

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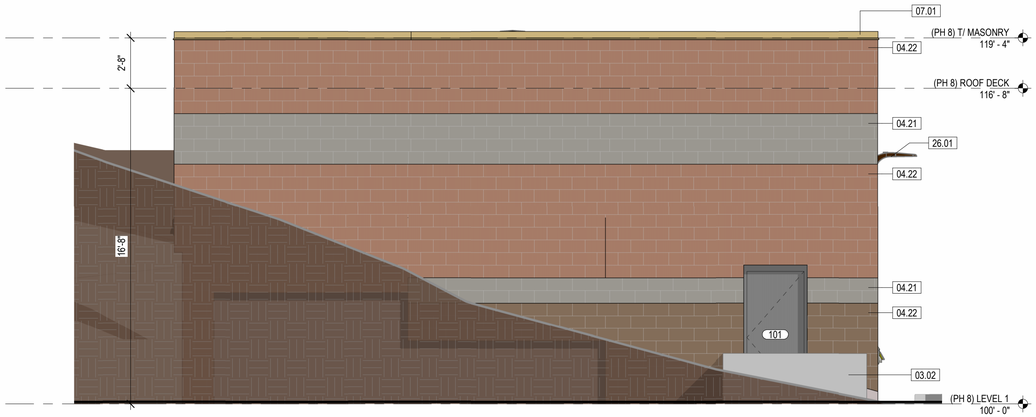
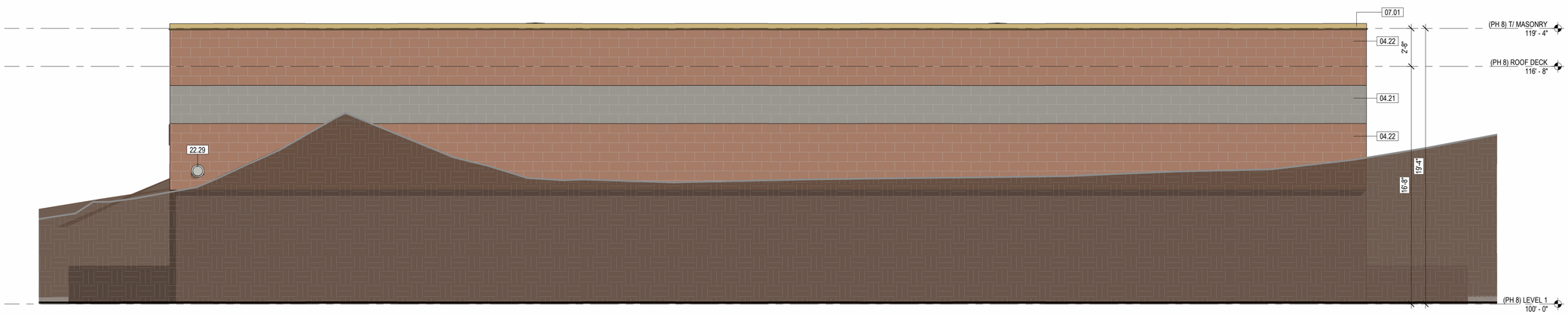
EXTERIOR ELEVATIONS

A241



1 A141 (PH 8) EXTERIOR ELEVATION - EAST
1/4" = 1'-0"



2 A141 (PH 8) EXTERIOR ELEVATION - SOUTH
1/4" = 1'-0"

GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
2. ALL DIMENSIONS TO FACE OF STEEL STUD OR EXISTING FINISH UNLESS NOTED OTHERWISE.

KEYNOTE LEGEND

03.02	CONCRETE RETAINING WALL, RE: STRUCTURAL
04.21	CMU VENEER, COLOR 2
04.22	CMU VENEER, COLOR 3
07.01	PRE-FINISHED METAL PARAPET CAP
22.29	DOWNSPOUT NOZZLE, RE: PLUMBING
26.01	LIGHT FIXTURE, RE: ELECTRICAL

EXTERIOR FINISH LEGEND

- CMU - COLOR 3 - RED
- CMU - COLOR 2 - GREY
- CMU - COLOR 1 - BROWN

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2307 WULFSOHN RD.
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970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY
W.G. STORAGE A BUILDING (PHASE 8)
2307 WULFSCHN RD.
GLENWOOD SPRINGS,
COLORADO 81601

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SEH Project	173800
Checked By	A. JAUCH
Drawn By	SEH

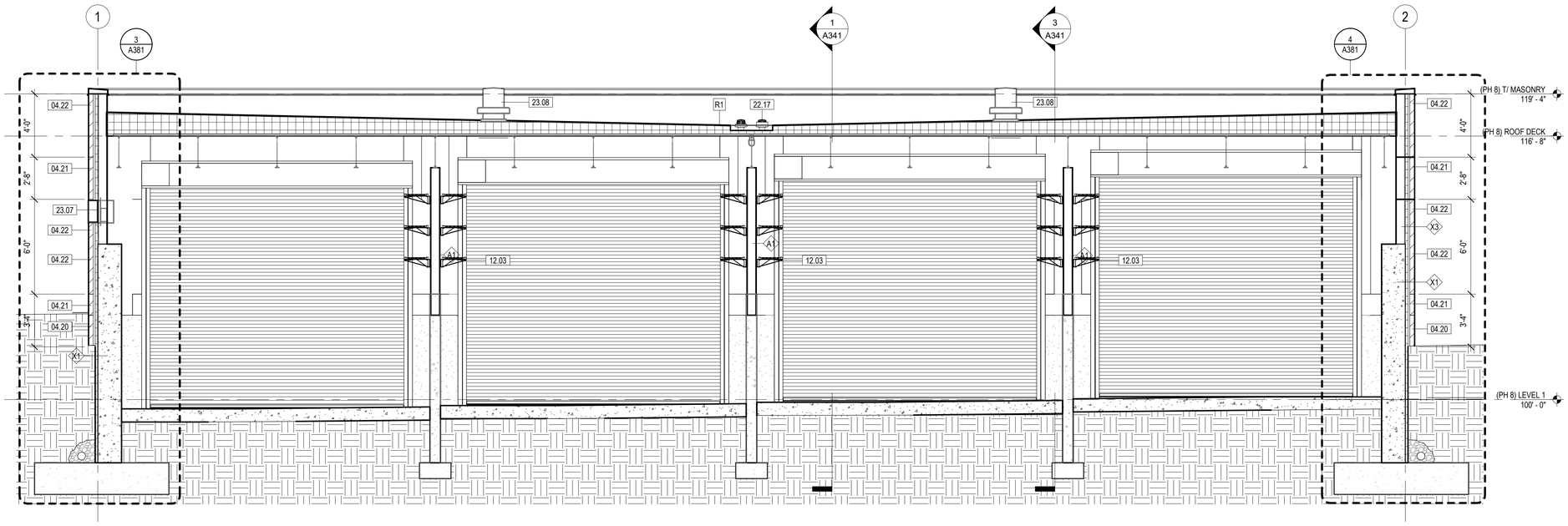
Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/24

REVISION SCHEDULE

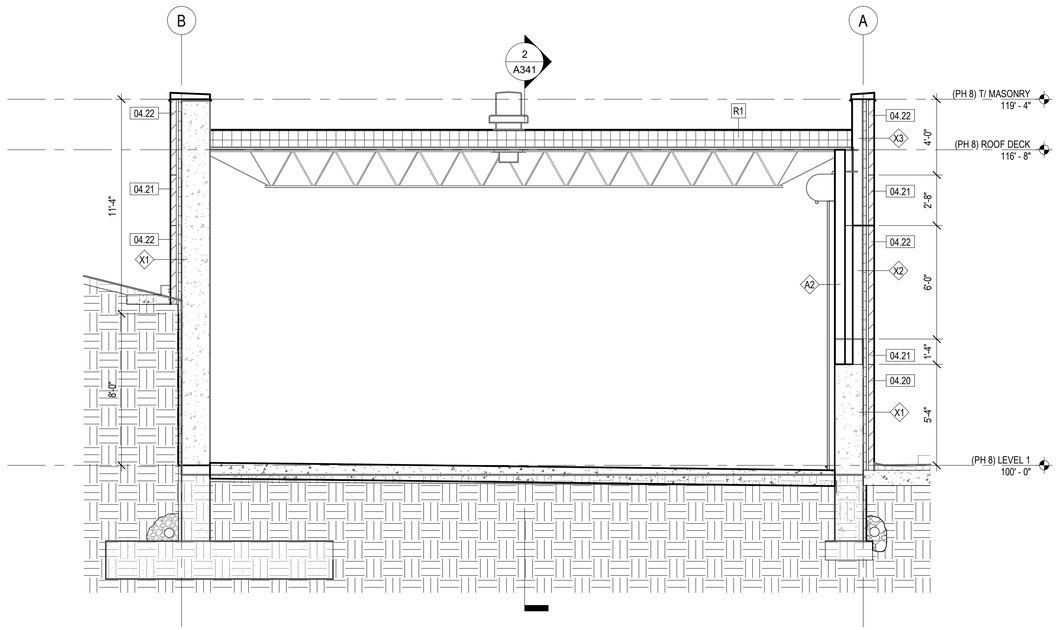
REV. #	DESCRIPTION	DATE

EXTERIOR ELEVATIONS

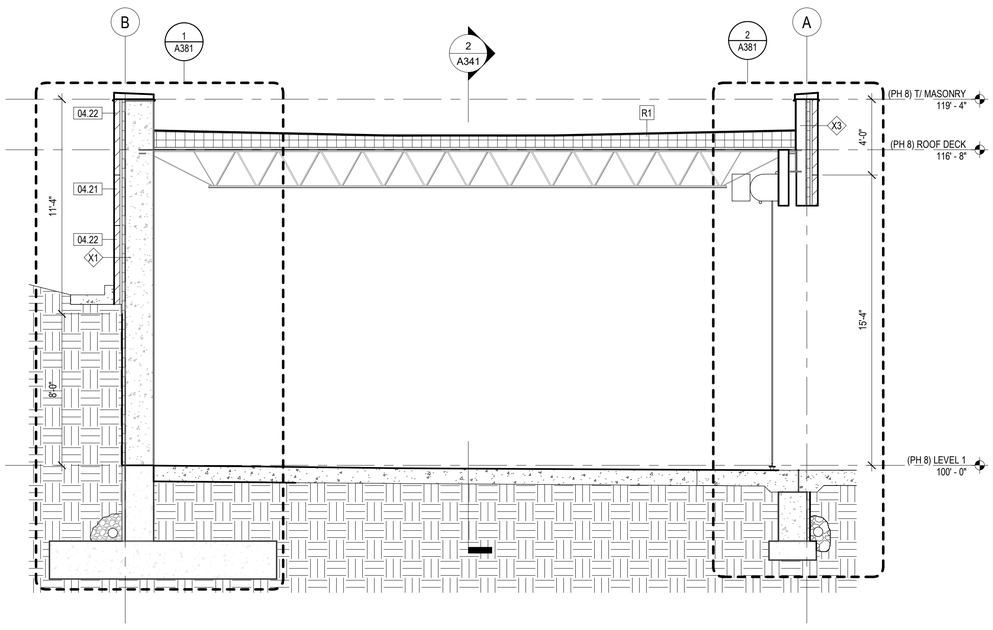
A242



2 A141 (PH 8) BUILDING SECTION - EW
1/4" = 1'-0"



3 A141 (PH 8) BUILDING SECTION - NS4
1/4" = 1'-0"



1 A141 (PH 8) BUILDING SECTION - NS
1/4" = 1'-0"

GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
2. ALL DIMENSIONS TO FACE OF STEEL STUD OR EXISTING FINISH UNLESS NOTED OTHERWISE.

KEYNOTE LEGEND

04.20	CMU VENEER, COLOR 1
04.21	CMU VENEER, COLOR 2
04.22	CMU VENEER, COLOR 3
12.03	18" DEEP INDUSTRIAL METAL SHELVING SYSTEM
22.17	ROOF DRAIN WITH OVERFLOW, RE: PLUMBING
23.07	HVAC GRILLE, PREFINISHED
23.08	EXHAUST FAN, RE MECHANICAL

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

SEH

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GLENWOOD SPRINGS, COLORDO 81601
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ROARING FORK TRANSPORTATION AUTHORITY

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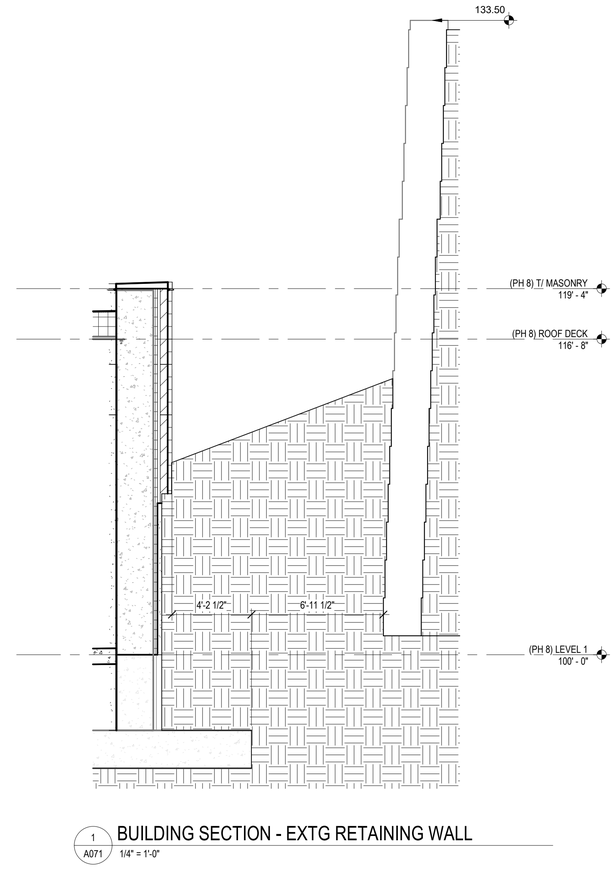
BUILDING SECTIONS

A341

GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT IF DIMENSIONS VARY SIGNIFICANTLY.
2. ALL DIMENSIONS TO FACE OF STEEL STUD OR EXISTING FINISH UNLESS NOTED OTHERWISE.

KEYNOTE LEGEND



1 / A071 BUILDING SECTION - EXTG RETAINING WALL
1/4" = 1'-0"

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE

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REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

BUILDING SECTIONS

A342

ABBREVIATIONS

(E)	EXISTING
(N)	NEW
(D)	DEMOLISH
(R)	RELOCATE
A	AMPERES
AC	MOUNTED WITH BOTTOM OF DEVICE 2" ABOVE COUNTER OR 1" ABOVE COUNTER BACKSPLASH
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
ATS	AUTOMATIC TRANSFER SWITCH
BAS	BUILDING AUTOMATION SYSTEM
BFG	BELOW FINISHED GRADE
C	CONDUIT
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CU	COPPER
DM	DIGITAL METER
EM	EMERGENCY
EP	EXPLOSION PROOF
EPO	EMERGENCY POWER OFF
EWC	ELECTRIC WATER COOLER
FA	FIRE ALARM
FLA	FULL LOAD AMPS
G	GROUND
GFI	GROUND FAULT INTERRUPTER
HP	HORSEPOWER
KW	KILOWATT
LRA	LOCKED ROTOR AMPS
MCB	MAIN CIRCUIT BREAKER
MDC	MAIN DISTRIBUTION CENTER
MH	MOUNTING HEIGHT
MLO	MAIN LUG ONLY
MTS	MANUAL TRANSFER SWITCH
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NL	NIGHT LIGHT
NTS	NOT TO SCALE
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
PB	PULL BOX
TP	TAMPER RESISTANT
TVSS	TRANSIENT VOLTAGE SURGE SUPRESSION
TYP	TYPICAL
UF	UNDER FLOOR
UG	UNDER GROUND
UON	UNLESS OTHERWISE NOTED
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHERPROOF
XFMR	TRANSFORMER

FIRE ALARM DEVICES

- FIRE ALARM SYSTEM PANEL
- FACP MAIN FIRE ALARM CONTROL PANEL; ANN ANNUNCIATOR PANEL; GZM GRAPHIC ZONE MAP
- H R — HEAT DETECTOR - F=FIXED; R=RATE OF RISE
- DUCT SMOKE DETECTOR - S=SUPPLY; R=RETURN
- P — SMOKE DETECTOR - P=PHOTOELECTRIC; I=IONIZATION
- 15cd — FIRE ALARM STROBE (cd=CANDELLA RATING)
- AUDIBLE/VISUAL SIGNALING DEVICE (H/S=HORN STROBE; S/S=SPEAKER STROBE; C/S=CHIME STROBE)
- AUDIBLE DEVICE (H=HORE, S=SPEAKER; C=CHIME)
- M — MANUAL PULL STATION
- ACM — ADDRESSABLE CONTROL MODULE
- AMM — ADDRESSABLE MONITOR MODULE
- MAGNETIC DOOR HOLD/RELEASE DEVICE
- TAMPER SWITCH
- FLOW DETECTOR SWITCH
- REMOTE INDICATOR LIGHT
- DUCT DETECTOR REMOTE LIGHT INDICATOR ALARM AND TEST
- EMERGENCY FIRE FIGHTER PHONE JACK
- FSD — INDICATES A FIRE ALARM DEVICE CONTROLLING A FIRE SMOKE DAMPER

POWER

- DUPLEX RECEPTACLE; AC DENOTES ABOVE COUNTER
- DUPLEX RECEPTACLE, EMERGENCY
- DUPLEX RECEPTACLE SWITCHED
- QUADRUPLEX RECEPTACLE
- CLG — CEILING MOUNTED RECETPACLE
- SIMPLEX RECEPTACLE
- SPECIAL PURPOSE RECEPTACLE
- P — POWER POLE
- FLOOR RECEPTACLE
- J — DISCONNECT SWITCH (NON FUSED)
- M — MOTOR
- J — FUSED DISCONNECT (30A/3P U.O.N.)
- R — RELAY
- T — THERMOSTAT
- ATS — AUTOMATIC TRANSFER SWITCH
- J J — JUNCTION BOX
- J — BUS PLUG

PANELS: CONDUIT

- PANEL, POWER
- PANEL, DISTRIBUTION
- CONDUIT, CONCEALED BELOW
- CONDUIT, CONCEALED ABOVE OR IN WALL
- CONDUIT EXPOSED
- CONDUIT UP
- CONDUIT DOWN
- HOMERUN (DESIGNATION INDICATED PANELBOARD-CIRCUIT #)

LIGHT FIXTURE

- A — RECESSED LENSED GRID TROFFER
- A — RECESSED ARCHITECTURAL GRID TROFFER
- A — SUSPENDED PENDANT LUMINAIRE
- A — SURFACE MOUNTED TROFFER
- A — SURFACE MOUNTED TROFFER
- A — SURFACE MOUNTED STRIP
- A — FLANGED TROFFER
- A — RECESSED DOWNLIGHT
- A — RECESSED WALL WASHER
- A — WALL MTD.
- A — SURFACE MOUNT LUMINAIRE
- A — PENDANT MOUNTED LUMINAIRE
- A — RECESSED WALL MOUNTED LIGHT
- A A A — LIGHT TRACK W/NUM. OF HEADS IND.
- A — UNDER CABINET LIGHT
- A — POLE MOUNTED LUMINAIRE
- A — LIGHTED BOLLARD
- A — SPOT OR FLOOD LIGHT
- X — EXIT SIGN - ARROWS AS INDICATED ON DRAWINGS; FACES AS INDICATED BY SHADING

LETTER REFERS TO FIXTURE TYPE - SEE LIGHTING FIXTURE SCHEDULE
SHADING INDICATES FIXTURE CONTAINS BATTERY BACKEUP

SWITCHING

3 4	SINGLE POLE, 3-WAY, 4-WAY SWITCH
2	TWO POLE SWITCH
D D3	DIMMER SWITCH - SINGLE POLE, 3-WAY
a b c	SWITCH OPERATING FIXTURES WITH INDICATING CONTROL LETTER (a, b, c, etc.)
T	WALL BOX TIMER SWITCH
P	SWITCH WITH PILOT LIGHT
OC	WALL BOX OCCUPANCY SENSOR/SWITCH
K	KEY OPERATED SWITCH
DS	DOOR JAMB SWITCH
WP	WEATHERPROOF SWITCH
M	MOTOR RATED SWITCH
MC	MOMENTARY CONTROL SWITCH
XP	EXPLOSIONPROOF SWITCH
OC	VACANCY SENSOR - WALL
OC	VACANCY SENSOR - CEILING
PC	PHOTOCELL

ONE DIAGRAMS

- LSIG — CIRCUIT BREAKER (L=ADJUSTABLE LONG TIME PICKUP; S=ADJUSTABLE SHORT TIME PICK UP; I=ADJUSTABLE INSTANEOUS TRIP; G=ADJUSTABLE GROUND FAULT TRIP.
- LOW VOLTAGE DRAWOUT CIRCUIT BREAKER
- OVERLOADS
- FUSE
- LOAD BREAK SWITCH
- FUSE LOAD BREAK SWITCH
- SAFETY SWITCH W/AUX. CONTACT (30/3 U.O.N.)
- CURRENT TRANSFORMER
- CONTROL POWER TRANSFORMER (CPT) POTENTIAL TRANSFORMER (PTs)
- POWER TRANSFORMER
- ISOLATION POWER TRANSFORMER
- COMBINATION CONTACTOR WITH THERMAL MAGNETIC CIRCUIT BREAKER
- COMBINATION CONTACTOR WITH FUSED SWITCH
- CONTACTOR
- LIGHTNING ARRESTOR
- EL — ELECTRIC INTERLOCK
- BD — BUS DUCT
- PANELBOARD
- N E L — AUTOMATIC TRANSFER SWITCH
- A — AMMMETER
- AS — AMMETER SELECTOR
- R — RELAY
- V — VOLT METER
- VS — VOLT METER SELECTOR
- WM — WATT METER
- M — UTILITY METER

GENERAL NOTES

1. WORK INCLUDED IN THE CONTRACT IS DENOTED IN BOLD. EXISTING CONDITIONS TO REMAIN ARE DENOTED LIGHTLY.
2. ALL ELECTRICAL WORK PERFORMED UNDER THIS CONTRACT SHALL CONFORM WITH THE 2021 INTERNATIONAL BUILDING CODES, 2021 INTERNATIONAL ENERGY CONSERVATION CODE, 2018 INTERNATIONAL FIRE CODE AND, LOCAL BUILDING AND FIRE DEPARTMENT REQUIREMENTS AND THE 2023 NATIONAL ELECTRICAL CODE (NEC).
3. ELECTRICAL CONTRACTOR SHALL FULLY COORDINATE WITH OWNER REPRESENTATIVES. PERFORM WORK IN ACCORDANCE WITH REQUIREMENTS OF OWNER REPRESENTATIVES. ELECTRICAL CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER OF ANY CHANGES REQUIRED BY THE BUILDING MANAGEMENT AND TENANT REPRESENTATIVES.
4. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF ELECTRICAL WORK. LOCATIONS ARE APPROXIMATE AND SHALL BE SUBJECT TO MINOR MODIFICATIONS AS DIRECTED BY THE GENERAL CONTRACTOR AND OWNER REPRESENTATIVES. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE EXACT FITTING OF ALL MATERIALS, EQUIPMENT, ETC., IN THE BUILDING AND TENANT SPACE. ALL DIMENSIONS SHALL BE VERIFIED ON THE JOB. ELECTRICAL CONTRACTOR SHALL CUT, CHANNEL, CHASE, AND/OR DRILL FLOORS, WALLS, PARTITIONS, CEILINGS, OR OTHER SURFACES AS REQUIRED FOR INSTALLATION, UPPORT, ANCHORAGE, ETC., OF WORK. PROVIDE X-RAY OF FLOOR PRIOR TO CORE DRILLS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SUBSEQUENT PATCHING WORK.
5. A DETAILED WRITTEN METHOD OF PROCEDURE IS REQUIRED WHEN A CONSTRUCTION ACTIVITY OR AN OUTAGE AFFECTS THE SAFETY OF OCCUPANTS, TELEPHONE/DATA/FIRE ALARM EQUIPMENT OR COMPONENTS OF ANY SYSTEM WHICH SUPPORTS THIS EQUIPMENT OR ESSENTIALLY AFFECTS THE BUILDING MANAGEMENT, OPERATIONS OR SECURITY. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
6. PRIOR TO SUBMITTING BIDS, THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE TO VERIFY EXISTING ELECTRICAL EQUIPMENT CONDITIONS AND DIFFICULTIES THAT WILL AFFECT EXECUTION OF THE WORK. FIELD VERIFY QUANTITIES OF EXISTING LIGHT FIXTURES, ELECTRICAL DEVICES, COMMUNICATION DEVICES, FIRE ALARM DEVICES, AND ELECTRICAL EQUIPMENT. NOTIFY THE ARCHITECT AND ENGINEER OF ANY EXISTING CONDITIONS, WHICH MODIFY THE SCOPE OF WORK AS SHOWN ON THE CONSTRUCTION DOCUMENTS. SUBMISSION OF A BID PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS FOR MOBILIZATION, LABOR, EQUIPMENT, AND/OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WILL NOT BE RECOGNIZED.
7. PROTECT STRUCTURE AND OWNER EQUIPMENT FROM DAMAGE. IMMEDIATELY REPLACE OR REPAIR, TO ORIGINAL CONDITION, DAMAGE CAUSED BY THE CONTRACTOR WHETHER EQUIPMENT APPEARS TO BE CURRENTLY IN USE OR NOT, UNLESS WRITTEN AUTHORIZATION FROM THE OWNER INDICATED OTHERWISE. PREPARE LISTING OF ALL EXISTING DAMAGED ITEMS AND SUBMIT TO OWNER PRIOR TO BEGINNING WORK.
8. EXISTING INFORMATION SHOWN ON THE DRAWINGS HAS BEEN TAKEN FROM OWNER FURNISHED DRAWINGS AND/OR LIMITED FIELD OBSERVATIONS. CMO CONSULTING ENGINEERS, LLC IS NOT RESPONSIBLE FOR THE ACCURACY OF ANY INFORMATION OR THE ADEQUACY, SAFETY AND CONFORMANCE TO CURRENT PREVAILING CODES OF ANY WORK SHOWN AS EXISTING ON THESE DRAWINGS.
9. FIELD LOCATE EXISTING UNDERGROUND PUBLIC AND OWNER UTILITIES OF ALL TRADES AND BUILDING GROUNDING/LIGHTNING PROTECTION SYSTEMS PRIOR TO ANY EXCAVATION. REPLACE OR REPAIR DAMAGED UTILITIES AND GROUNDING/LIGHTNING PROTECTION SYSTEMS TO ORIGINAL CONDITION.
10. INSTALL CONDUIT CONCEALED IN FINISHED AREAS UNLESS OTHERWISE NOTED.
11. DO NOT ROUTE CONDUIT WITHIN STRUCTURAL OR TOPPING SLABS OF FLOORS UNLESS SPECIFICALLY NOTED OTHERWISE AND WRITTEN APPROVAL IS OBTAINED FROM THE STRUCTURAL ENGINEER.
12. FIRE SEAL ALL FIRE RATED WALL AND FLOOR PENETRATIONS. VERIFY RATED WALL LOCATIONS ON ARCHITECTURAL DRAWINGS.
13. PROVIDE SEPARATE INSULATED GROUNDING CONDUCTOR IN ALL FEEDER, HOMERUN AND BRANCH CIRCUITS.
14. REFER TO ARCHITECTURAL AND MECHANICAL EQUIPMENT DRAWINGS FOR EXACT LOCATIONS OF ELECTRICAL DEVICES AND LIGHT FIXTURES. DO NOT SCALE FROM THE ELECTRICAL PLANS. ADDITIONAL ELECTRICAL REQUIREMENTS ON ARCHITECTURAL PLANS, KITCHEN EQUIPMENT PLANS, AND MECHANICAL PLANS SHALL BE INCLUDED IN THE ELECTRICAL CONTRACTOR'S BID.
15. DEMOLITION OF ANY ELECTRICAL, LOW VOLTAGE, AND COMMUNICATIONS CONDUIT, WIRING, CABLING, OR DEVICE MEANS TO REMOVE IN ITS ENTIRETY. REMOVE UNUSED CONDUITS FROM CEILING SPACES IN AREAS OF WORK. RETURN UNUSED ELECTRICAL EQUIPMENT AND LIGHT FIXTURES TO BUILDING MANAGEMENT FOR STORAGE AND/OR REMOVAL FROM SITE AS DIRECTED BY OWNERS.
16. WHERE REMODELING INTERFERES WITH EXISTING CIRCUITS AND EQUIPMENT WHICH ARE NOT TO BE REMOVED OR ARE OUTSIDE OF THE PROJECT AREA, SUCH CIRCUITS AND EQUIPMENT SHALL BE REWORKED AND RELOCATED AS REQUIRED TO COMPLETE THE PROJECT.
17. MINIMUM WORKING CLEARANCES PER THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE SHALL BE PROVIDED AROUND AND IN FRONT OF ALL ELECTRICAL EQUIPMENT.
18. ELECTRICAL CONTRACTOR SHALL MAINTAIN ON THE JOB AN UP TO DATE SET OF WORKING DRAWINGS, MARKED UP TO SHOW ELECTRICAL SYSTEMS AS INSTALLED. PROVIDE TENANT REPRESENTATIVES WITH ONE SET OF REPRODUCIBLES WITH "AS BUILT" PROJECT RECORD INFORMATION CLEARLY INDICATED. ELECTRICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LOCAL FEES, PERMITS, AND SERVICES OF INSPECTION AUTHORITIES REQUIRED BY ELECTRICAL WORK FOR THIS ELECTRICAL CONSTRUCTION
19. PROVIDE TYPED, UPDATED, COMPLETE AND ACCURATE PANELBOARD CIRCUIT DIRECTORIES AT THE COMPLETION OF WORK. CLEAN EXPOSED PANELBOARD SURFACES AND CHECK TIGHTNESS OF ELECTRICAL CONNECTIONS. REPLACE DAMAGED CIRCUIT BREAKERS AS REQUIRED AND ROVIDE FILLER PLATES FOR VACANT SPACES.
20. PROVIDE UPDATED LABELING OF ALL NEW AND RELOCATED ELECTRICAL EQUIPMENT IN SCOPE OF WORK INCLUDING, BUT NOT LIMITED TO, ENGINE GENERATOR SYSTEMS, TRANSFER SWITCHES, TRANSFORMERS, SWITCHGEAR, SWITCHBOARDS, PANELBOARDS, MOTOR CONTROL CENTERS, AND DISCONNECTS TO INDICATE THE AMPERE RATING, VOLTAGE RATING, PHASE, CONDUCTOR COLOR CODING WITHIN THE EQUIPMENT AND APPLICABLE AIC RATING.
21. ALL NEW AND MODIFIED ELECTRICAL EQUIPMENT, SUCH AS SWITCHBOARDS, PANELBOARDS, INDUSTRIAL CONTROL PANELS, METER SOCKET ENCLOSURES, AND MOTOR CONTROL CENTERS, THAT ARE LIKELY TO REQUIRE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE WHILE ENERGIZED SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. THE MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT PER NEC ARTICLE 110.16.

SEH

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PROJECT OWNER
2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY

W.G. TRANSIT STORAGE A BUILDING (PHASE 8)

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SEH Project	173800
Checked By	CAB
Drawn By	CAB

Project Status	Issue Date
50% CONSTRUCTION DOCUMENTS	09/17/2024

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

ELECTRICAL LEGEND AND NOTES

E101

THIS BAR IS INTENDED TO BE 1" PRINTED AT FULL SCALE 9/17/2024 12:49:48 AM

Panel HP8

Location: STORAGE A 101 | **Supply From:** | **Mounting:** Surface | **Enclosure:** Type 1
Voltage: 480/277 Wye | **Phase:** 3 | **Wire:** 4 | **Feed:**
A.I.C. Rating: | **Mains Type:** MCB | **Bus Rating:** 250 A | **MCB Rating:** 250 A

Circuit Notes:

Note	Circ...	Load	Type	Trip	Po...	A		B		C		Po...	Trip	Type	Load	Circ...	Note
	1	EUH-1	G	40 A	3	8333...	0 VA					3	110 A	Power	75 KVA XFMR	2	
--	3	--	--	--	--			8333...	0 VA			--	--	--	--	4	--
--	5	--	--	--	--					8333...	0 VA	--	--	--	--	6	--
	7	EUH-2	G	40 A	3	8333...										8	
--	9	--	--	--	--			8333...								10	
--	11	--	--	--	--					8333...						12	
	13	EUH-3	G	40 A	3	8333...										14	
--	15	--	--	--	--			8333...								16	
--	17	--	--	--	--					8333...						18	
	19															20	
	21															22	
	23															24	
	25															26	
	27															28	
	29															30	
	31						0 VA					3	20 A	--	FUTURE SOLAR	32	
	33								0 VA			--	--	--	--	34	--
	35										0 VA	--	--	--	--	36	--
	37						0 VA					3	60 A	--	TVSS	38	
	39								0 VA			--	--	--	--	40	--
	41										0 VA	--	--	--	--	42	--
			Total Load:			25000 VA		25000 VA		25000 VA							
			Phase Balance:			0 % A-B		0 % B-C		0 % C-A							

Load Type		Connected...	Demand Factor	Demand Load	Panel Totals	
L	Lighting	0 VA	0.00%	0 VA	**Power Factor:**	0.8
R	Receptacle	0 VA	0.00%	0 VA		
M	Motor	0 VA	0.00%	0 VA	**Total Connected Load:**	75000 VA
C	Continuous	0 VA	0.00%	0 VA	**Total Connected Current:**	90 A
G	General	75000 VA	100.00%	75000 VA		
K	Kitchen	0 VA	0.00%	0 VA	**Total Demand Load:**	75000 VA
E	Existing	0 VA	0.00%	0 VA	**Total Demand Current:**	90 A
O	Other	0 VA	0.00%	0 VA		

General Notes:

Breaker Accessories
* = GFI
** = Shunt Trip

Panel LP8

Location: STORAGE A 101 | **Supply From:** | **Mounting:** Surface | **Enclosure:** Type 1
Voltage: 120/208 Wye | **Phase:** 3 | **Wire:** 4 | **Feed:**
A.I.C. Rating: 10K | **Mains Type:** MCB | **Bus Rating:** 250 A | **MCB Rating:** 250 A

Circuit Notes:

Note	Circ...	Load	Type	Trip	Po...	A		B		C		Po...	Trip	Type	Load	Circ...	Note
	1															2	
	3															4	
	5															6	
	7															8	
	9															10	
	11															12	
	13															14	
	15															16	
	17															18	
	19															20	
	21															22	
	23															24	
	25															26	
	27															28	
	29															30	
	31															32	
	33															34	
	35															36	
	37															38	
	39															40	
	41															42	
			Total Load:			0 VA		0 VA		0 VA							
			Phase Balance:			% A-B		% B-C		% C-A							

Load Type		Connected...	Demand Factor	Demand Load	Panel Totals	
L	Lighting	0 VA	0.00%	0 VA	**Power Factor:**	
R	Receptacle	0 VA	0.00%	0 VA		
M	Motor	0 VA	0.00%	0 VA	**Total Connected Load:**	0 VA
C	Continuous	0 VA	0.00%	0 VA	**Total Connected Current:**	0 A
G	General	0 VA	0.00%	0 VA		
K	Kitchen	0 VA	0.00%	0 VA	**Total Demand Load:**	0 VA
E	Existing	0 VA	0.00%	0 VA	**Total Demand Current:**	0 A
O	Other	0 VA	0.00%	0 VA		

General Notes:

Breaker Accessories
* = GFI
** = Shunt Trip

ONE LINE DIAGRAM - PHASE 8

Luminaire Schedule

Type	Description	Lamp	Apparent Load	Manufacturer	Catalog #	Voltage	Finish	Mounting	Depth	Control
EW1	EXTERIOR LED WALL LIGHT. SUITABLE FOR LOW TEMPERATURES AND WET LOCATION LABELED.	LED	47 VA	LITHONIA	WPX2 LED 30K MVOLT DDBZD	120.0 V		SURFACE WALL		
EW2	EXTERIOR LED WALL LIGHT. SUITABLE FOR LOW TEMPERATURES AND WET LOCATION LABELED.	LED	11 VA	LITHONIA	ARC1LED P1 30K MVOLT E4MH PE DDBXD	120.0 V		SURFACE WALL		
L4	4' LED LENSED STRIP. UPLIGHT. CHAIN MOUNT. REFLECTOR.	LED	26 VA	LITHONIA	CLX L48 4000LM SEF WDL 35K 80CRI	120.0 V		SURFACE		
X1	LED EDGELIT EXIT SIGNAGE WITH SINGLE FACE, BATTERY BACK WITH SELF DISGNOSTICS, GREEN LETTERS ON WHITE	LED	3 VA	LITHONIA, DUALLITE	LRP	120.0 V		UNIVERSAL		

Mechanical Equipment Schedule

Key	#	Item	HP	FLA	Load	Eq Load (VA)	Voltage	Feeders			Protection			Notes
								Wire	Ground	Conduit	Breaker	Disconnect	Fuse	
EF	1	EXHAUST FAN	0.25	0 A	0 VA	667 VA	120V 1ph	2#12	#12G	3/4"	20 A	20 A		
EF	2	EXHAUST FAN	0.25	0 A	0 VA	667 VA	120V 1ph	2#12	#12G	3/4"	20 A	20 A		
EUH	1	UNIT HEATER	0	0 A	25000 VA	25000 VA	480v 3p	3#8	#10G	3/4"	40 A	60 A	40 A	
EUH	2	UNIT HEATER	0	0 A	25000 VA	25000 VA	480v 3p	3#8	#10G	3/4"	40 A	60 A	40 A	
EUH	3	UNIT HEATER	0	0 A	25000 VA	25000 VA	480v 3p	3#8	#10G	3/4"	40 A	60 A	40 A	

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2307 WULFSOHN RD.
GLENWOOD SPRINGS, COLORDO 81601
970.925.8484

ROARING FORK TRANSPORTATION AUTHORITY
W.G. TRANSIT STORAGE A BUILDING (PHASE 8)
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SEH Project	173800
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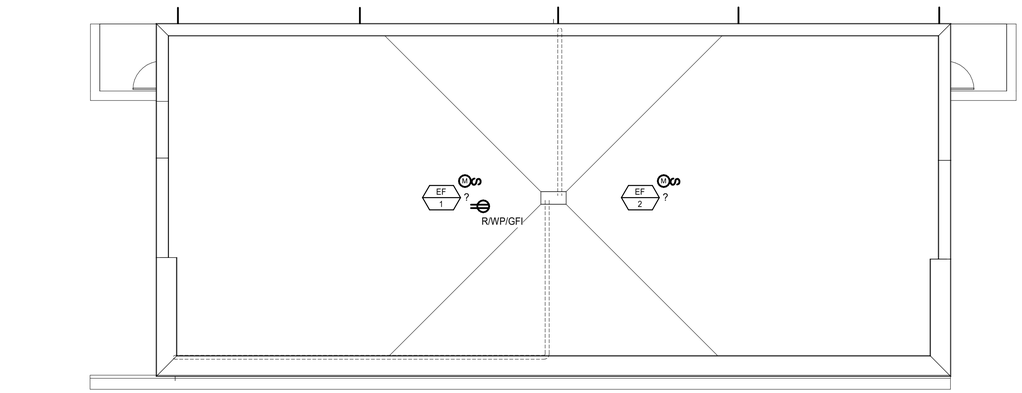
Project Status	Issue Date
50% CONSTRUCTION DOCUMENTS	09/17/2024

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

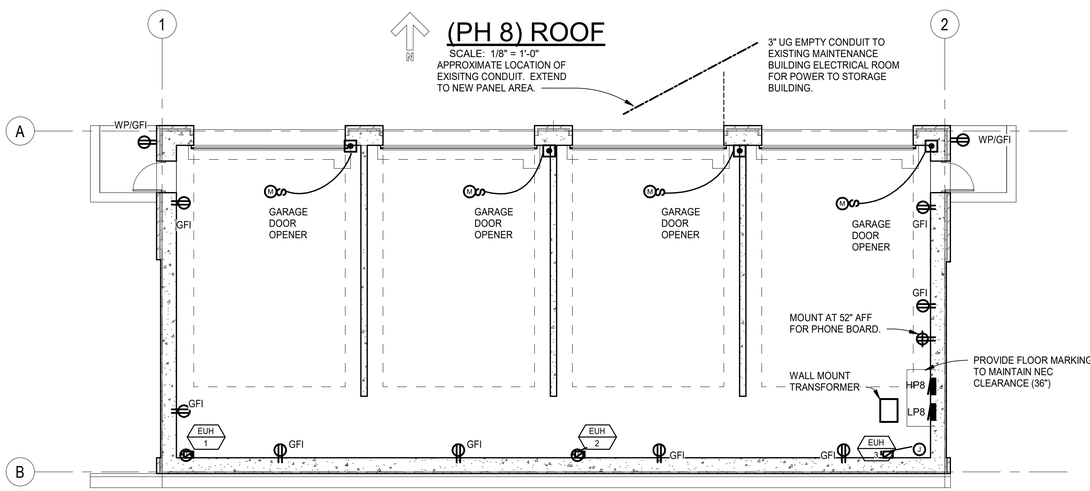
ONE LINE DIAGRAM

E201



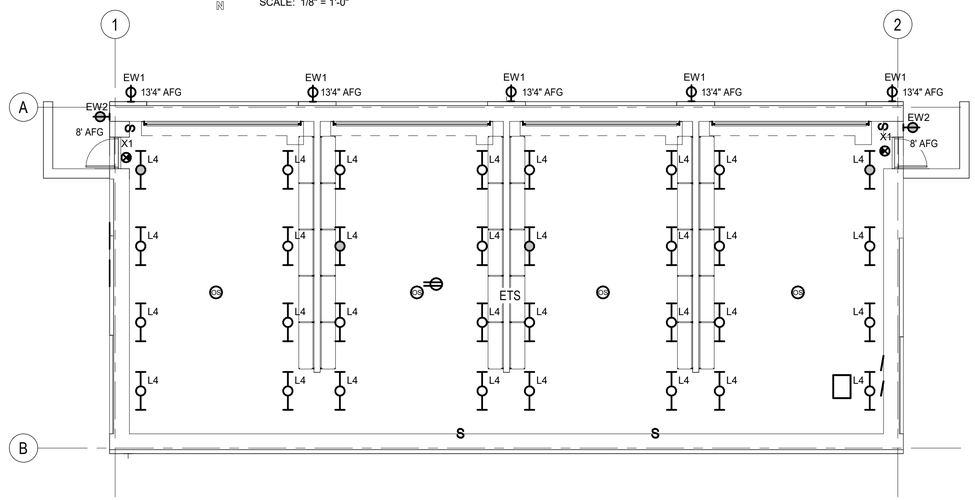
(PH 8) ROOF

SCALE: 1/8" = 1'-0"



(PH 8) LEVEL 1 POWER AND SYSTEMS

SCALE: 1/8" = 1'-0"



(PH 6A) LEVEL 1 LIGHTING

SCALE: 1/8" = 1'-0"

POWER NOTES:

1. MAKE ALL FINAL ELECTRICAL CONNECTIONS TO EQUIPMENT REQUIRING ELECTRICAL CONNECTION. THIS SHALL INCLUDE BUT NOT BE LIMITED TO ALL MECHANICAL AND OTHER EQUIPMENT INCLUDED IN THIS PROJECT.
2. PROVIDE FUSES SIZED PER EQUIPMENT MANUFACTURER'S REQUIREMENTS.
3. DISCONNECT SWITCH LOCATIONS ARE SHOWN DIAGRAMMATICALLY AND SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS TO SUIT EQUIPMENT AND SPACE. DISCONNECT SWITCHES SHALL BE WITHIN SIGHT OF THE EQUIPMENT THEY SERVE AND MOUNTED AT 6'-3", MAXIMUM, TO TOP OF CABINET. MAINTAIN NEC WORK SPACE REQUIREMENTS.
4. COORDINATE AND VERIFY EXACT MOUNTING LOCATIONS OF WALL AND FLOOR DEVICES WITH ARCHITECTURAL ELEVATIONS, AND ANY FURNITURE OR SPECIALTY EQUIPMENT SUPPLIER DRAWINGS PRIOR TO ROUGH-IN.
5. COORDINATE EXACT REQUIREMENTS AND LOCATIONS OF MECHANICAL EQUIPMENT WITH MECHANICAL DRAWINGS AND MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
6. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH 120V SINGLE PHASE CIRCUIT.
7. ALL RECEPTACLE OUTLETS LOCATED IN TOILET ROOMS, SHOWER ROOMS, ROOFTOPS, OUTDOOR LOCATIONS, MECHANICAL ROOMS, WITHIN 6 FEET OF A SINK, OR OTHER WET LOCATIONS SHALL BE PROVIDED WITH GFCI PROTECTION PER NEC ARTICLE 210.

LIGHTING NOTES:

1. REFER TO ARCHITECTURAL ELEVATIONS AND REFLECTED CEILING PLANS FOR EXACT MOUNTING LOCATIONS AND MOUNTING HEIGHTS OF DEVICES AND LUMINAIRES. MOUNTING HEIGHTS ON ARCHITECTURAL PLANS TAKE PRECEDENCE OVER ELECTRICAL DRAWINGS.
2. COORDINATE LUMINAIRE LOCATIONS WITH MECHANICAL PIPING, DUCTWORK, ETC., TO AVOID CONFLICTS. SEE SPECIFICATIONS FOR COORDINATION REQUIREMENTS.
3. FIELD COORDINATE EXACT LOCATION OF CEILING MOUNTED OCCUPANCY/VACANCY SENSORS PER MANUFACTURER'S INSTRUCTIONS. THE LOCATIONS OF THE OCCUPANCY/VACANCY SENSORS ON THE DRAWINGS ARE DIAGRAMMATIC.
4. EXIT AND EGRESS LIGHTING ARE TO REMAIM UNSWITCHED.

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W.G. TRANSIT STORAGE A BUILDING (PHASE 8)

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SEH Project	173800
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Project Status	**Issue Date**
50% CONSTRUCTION DOCUMENTS	09/17/2024

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

ELECTRICAL FLOOR PLANS

E401

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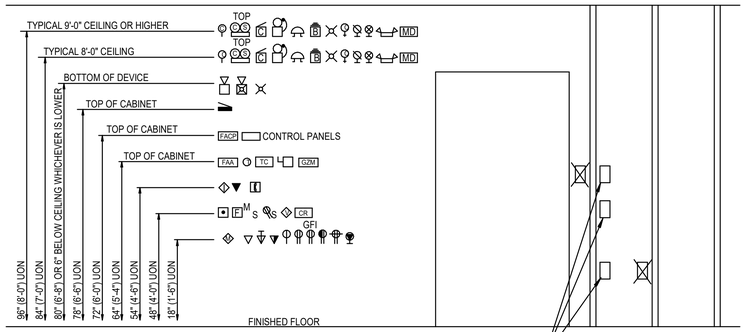


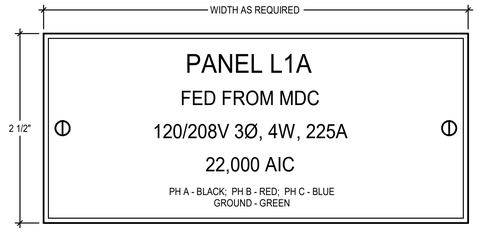
TYPICAL DEVICE MOUNTING HEIGHTS

NO SCALE

NOTES:

1. HEIGHTS SHOWN ARE TYPICAL TO CENTERLINE OF BOX UNLESS NOTED OTHERWISE.
2. WHERE EVER DEVICES ARE INDICATED TO BE ABOVE DOORS, DEVICE SHALL BE CENTERED BETWEEN TOP OF DOOR TRIM AND CEILING LINE.
3. MOUNTING HEIGHTS SHOWN ON ARCHITECTURAL ELEVATIONS SHALL GOVERN OVER THOSE SHOWN ABOVE.

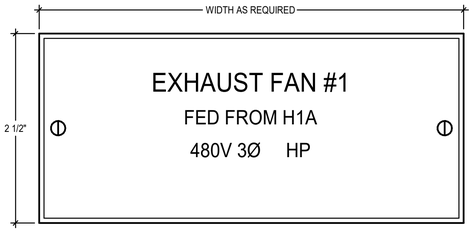
NOTE: ALL DEVICES INDICATED TO BE INSTALLED AT DIFFERENT MOUNTING HEIGHTS AND LOCATED WITHIN ONE STUD SPACE FROM EACH OTHER SHALL ALIGN VERTICALLY, ON THE SAME SIDE OF THE STUD. WHERE WALL MOUNTED TELEPHONES OCCUR OVER LIGHT SWITCHES, VOLUME CONTROLS, ETC. OFFSET ONE STUD SPACE.



TRANSFORMER AND BRANCH PANELBOARD NAMEPLATE DETAIL

SCALE: FULL

NOTES:
REWORD NAMEPLATE FOR FIELD CONDITIONS.

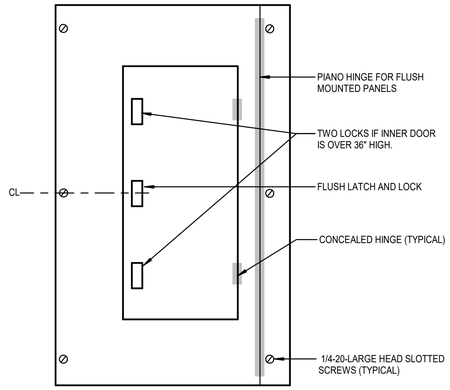


UTILIZATION EQUIPMENT NAMEPLATE DETAIL

SCALE: FULL

NOTES:

1. SEE SPECIFICATIONS FOR ADDITIONAL NAMEPLATE INFORMATION.
2. REWORD NAMEPLATE FOR FIELD CONDITIONS.
3. HP SHALL INDICATE HORSEPOWER.

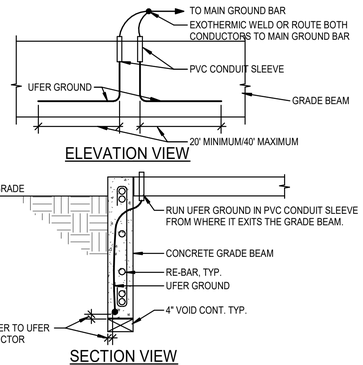


HINGED TRIM TO BOX PANEL FRONT

NO SCALE

NOTES:

1. ALL BOLTS SHALL HAVE LARGE (3/8") ROUND HEAD. NO WASHERS ALLOWED
2. TYPICAL FOR ALL 120/208V BRANCH PANELBOARDS.



NOTES:

1. INSTALL 20' MINIMUM/40' MAXIMUM UFER GROUND CONDUCTOR IN EACH DIRECTION. PROVIDE BARE COPPER CONDUCTOR #4 AWG.
2. ROUTE UFER GROUND CONDUCTOR, THROUGH PVC CONDUIT SLEEVE.
3. AVOID CONTACT WITH RE-BAR IN CONCRETE. DO NOT TIE DIRECTLY TO RE-BAR, USE SEPARATOR APPROVED BY STRUCTURAL.
4. COORDINATE ACTUAL UFER GROUND CONDUCTOR INSTALLATION WITH STRUCTURAL.

UFER GROUND DETAIL

NO SCALE

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SEH Project	173800
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50% CONSTRUCTION DOCUMENTS	09/17/2024

REVISION SCHEDULE

REV. #	DESCRIPTION	DATE

DETAILS

E501

City of Glenwood Springs
Engineering
101 West 8th Street
Glenwood Springs, CO 81601
Phone: (970) 384-6448
lee.barger@cogs.us
www.cogs.us/Engineering

Traffic Impact Study Comments

The City generally agrees with the methodology and findings in the Traffic Impact Study. A roundabout intersection for Wulfsohn and Midland was evaluated by SGM in a separate task, and the laneage for this intersection improvement has been optimized through an iterative process with an additional roundabout design consultant. The City has finalized the design concept to determine its footprint and any future right-of-way needs for this ultimate improvement. The ultimate design includes two-lane approaches on Midland Avenue in both directions and one-lane approaches on the Wulfsohn and Midland Center approaches.

The ultimate design operates at Level of Service B or better during the peak periods instead of the LOS F that the existing intersection would operate at post build-out. Turn lane extensions recommended by the consultant would not be necessary if the roundabout can be constructed for the opening of the site. The city will expect a contribution from RFTA for the ultimate improvements at this intersection to be commensurate with their share of traffic that is added to this intersection.

The TIS concludes: “The Midland and Wulfsohn intersection will need improvement to accommodate the combination of 2023 existing, future background, and Glenwood Meadows/RFTA traffic volumes. In terms of percentages, the RFTA share of the volume at Midland and Wulfsohn intersection is as follows: 42% of 2023 Baseline Design Hourly Volumes (DHV) and decreases to 20% of the 2043 total GM-RFTA (DHV).”

We agree with this first statement but want to confirm these percentages are accurate. To confirm the accuracy of the percentages of RFTA share of the traffic volume at Midland and Wulfsohn, as well as to look at other intersections that may be affected by the development, the City requests the following changes to the Traffic Impact Study:

1. Provide updated land use estimates consistent with the current plans, future plans and constructed existing conditions.
2. Provide analysis at intersections 1, 2, and 3 as a part of this analysis.
3. Bus and Truck percentages collected in the traffic counts (Appendix D) do not appear consistent with the Synchro inputs shown in the printouts (Appendix C). Please be sure these existing (and future) heavy vehicle

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percentages are accurate by lane movement in the Synchro analysis and provide updated results.

4. The intersection of 9th/Grand is shown to operate at LOS F in the PM peak under baseline conditions, and then get successively worse in the 2043 Background and 2043 Background + RFTA scenarios. Similarly, the Midland/Wulfsohn intersection operates at LOS E in the 2043 Background and LOS F in the 2043 Background + RFTA scenarios. Improvement recommendations at both intersections should be included in the proposed mitigation measures. The City has confirmed a two-lane roundabout is the preferred upgrade to the Midland/Wulfsohn intersection, as was analyzed in the GMMTS and other associated analyses.

5. Provide a figure showing the Assignment of Site Traffic Volumes; including the volume of passenger vehicles and the volume of buses added to the corresponding movements of each study intersection. This figure assists in developing the permit calculations.

6. Appendix F is not clear how the permit calculations are made. Provide calculations of RFTA's percentage impact to the traffic volumes at the Midland/Wulfsohn intersection and the 9th/Grand intersection for three scenarios: (1) RFTA generation / 2023 baseline traffic, (2) RFTA generation at proposed full GM-RFTA Buildout/2023 Background Traffic, and (3) 2043 background traffic and Total GM-RFTA Buildout to determine the range of RFTA's potential impacts to this intersection from opening day until 20-year buildout.

CITY OF GLENWOOD SPRINGS

Engineering Department

Engineering / Comm Dev Department

Derek Wheatley Development Engineer

Date: 11/25/24

Re: Department Review – RFTA 1041 & L&E Drainage & Soils

All references to "City of Glenwood Springs Engineering Specifications"

Drainage Report:

1. Detention calculations should use the 2-year, 1-hour, and 25-year, 24-hour storms.
    a. Whichever has greater change in runoff shall be used to determine total detention volumes.
    b. WQCV and detention volume may occupy the same space.
2. Phase 6B will require detention to the undeveloped rate due to its existing imperviousness exceeding 50%.
3. Phase 6A and 8 will require detention to the changed rate due to disturbed area exceeding 1,000 sq. ft.
4. All phases will be required to achieve WQCV for the entire property.
5. Required conveyance for flows extending to the river for all phases.
6. We will require a stamped letter from the EoR stating that the project was built to design, or, if field conditions affect constructability, achieved design goals with no negative impact.

Soils:

7. An external testing/monitoring representative shall be on site during earthwork activities to ensure recommendations given in the soils report are followed. We will require a stamped letter from this representative, stating that all recommendations were followed, before a CO is issued.
8. Structural sheets need to match all recommendations made in the soils report.

Derek Wheatley
derek.wheatley@cogs.us
970-384-6351

Phase 6a:

- There is now going to be two sided bus circulation around the transit center 'island'. It seems fairly obvious where the busses turn in on the west side – what seems to be a little confusing is the entry for the park and ride and the ADA spots adjacent to the center. They show one no-entry sign but this intersection could be made clearer and easier for drivers to follow. They mentioned the 4 spots on the north end of the upper section to be for day-workers: even though its within the bus section, some non-public parking signs?
- Can more information be supplied on the overhead rapid chargers for the buses? Where will shut-offs be located and do the bases of the structure need impact protection?
- What are the operating hours of the transit center?

Phase 6b:

- I do not see a fire hydrant location adjacent to the building. I see a mark where they indicate domestic and fire water coming into the building. There should be one located on an island.
- Is there any outdoor grilling or gas fired devices planned?
- There is a bridge shown connecting the building to the upper road. Is there any outdoor staircase planned for access to the parking lot?

Phase8:

- Will this building have fire sprinkler?

For the campus style fire alarm: we currently have the ops and maintenance/wash+fuel buildings tied to each other. I would like to see all buildings on this RFTA campus to be able to talk to each other and send information. This might need fiber run between buildings depending on design.

How does RFTA plan on naming/numbering buildings and will the transit remain its own numeric?

Matthew Langhorst DPW
(970) 384-6438 (o)

CITY OF GLENWOOD SPRINGS PUBLIC WORKS

101 West 8th Street
Glenwood Springs, CO 81601

Planning Item: **Phase 6A, 6B, and 8**
Applicant: **RFTA**
Owner: **RFTA**
Location: **2301 Wulfsohn Road**
Parcel:
Date of Comments: **11-20-2024**

The following are W/WW, Electric and Public Works Department comments based on the 1041 application package.

The following are Public Works Department comments:

PW Department Comments

- Cover G001 for 6A needs to have a summary list of all drawing sheets that follow so that the plan set is easier to review and for a contractor to use.
- Cover sheet G001 needs to have a vicinity map for only 6A, not to include the other phases as this makes the plan packet confusing for which phase is being included and what is being reviewed and approved.
- The cover sheet G001 should have some form of property description on it for which portion of the overall project we are reviewing.
- Cover sheet G001 needs to have a site benchmark noted on it along with parcel information.
- Sheet G003 should only include Phase 6A information, the other phases need to be within their packets to not confuse what is being reviewed. Blow up the area around 6A so we can see it better.
- Sheet G003 should have information for Phase 6A, how it is going to be phased for construction since the construction includes changes to city facilities.
- The General Notes sheet should have a sheet number. We will call it GN1 for comments.
- GN1, General note #5, the city will not be paying for any work in the ROW for this project, please remove that information.
- GN1, General note #5, please have any reference to city paying for anything removed, this note is inaccurate in many ways.
- GN1, General note #5, if the city must complete any work within the ROW due to contractor failure to do so, the city will triple the cost of the work completed by city crews or subcontractors.
- GN1, general note #6, please note that all underground utilities, drainage and irrigation must be survey grade as built during his process, please see city requirements for as built drawings.
- GN1, General note #13, if any uncontrolled stormwater discharge makes its way to the City ROW, the city will hold the contractor responsible for all cleanup of that discharge, not limited too, but may include vactruck work, jetting of storm pipes, sweeping, hand cleanup,

etc. of the City ROW until the city is satisfied with the work performed. If work performed is not satisfactory, the city will red tag the project until work is completed.

- GN1, General note #11, the city will be granted permission to red tag and stop work at the project any time dust or particulate matter issues arise.
- GN1, PP, S and Permits #2, the city will also reserve the right to reject any materials or workmanship within the city ROW or any materials that will be hooked to a city utility system, even if that material is to be placed onsite.
- GN1, Utilities, if any utilities are to be installed in the ROW that meet the requirements of a SUE plan, please provide one.
- GN1, Utilities, note #2, damaged utilities will be repaired immediately.
- GN1, Utilities, note #5, Provide city with 72 hours' notice of inspection needs, and daily updates of utility progress once installation starts, inspection needs and contractor to make sure survey is onsite to collect all underground as built needs at survey grade level.
- GN1, Water note #1, please define BF as back flow device.
- GN1, Water note #2, add that city may reject any pipe materials onsite if they are unacceptable in quality or material condition.
- GN1, Water notes in general, there should be a note that all onsite water installations and materials must meet City of Glenwood Springs Engineering Standards.
- GN1, Water, corp stops must have stainless steel straps and bolts.
- GN1, SS, note #6, this should be a note that reference CDPHE requirements, since 10' is only one of those requirements.
- GN1, SS, note #7 is too general a note. If the waterline is 18" above the sewer then this is not a pertinent note. Rethink note and correct it for the situations that it may pertain too.
- GN1, SS note #8, this is not a correct note either, it depends on the size of the pipe and should be to city and plumbing code standards.
- GN1, SS note #9, this is not a correct note either, it depends on the size of the pipe and should be to city and plumbing code standards.
- GN1, SS notes should include the requirement of backflow preventors at all building connections per city code.
- GN1, Removals note #1, there may be items that the city owns within the ROW that they want to keep, please add to this note that the city may elect to keep items that belong to them or reject them at no cost to the city.
- GN1, Pavement note #1, tack coat note should also include the need for this material at T-patch locations.
- GN1, Pavement note #2, this is not an acceptable asphalt construction joint in city ROW.
- GN1, Pavement note #3, contractor will be responsible to document via photo or video all street, curb and gutter, and sidewalk conditions in the City ROW prior to construction start and will provide that documentation to city engineering staff.
- GN1, earthwork note, #2. The city will red tag the contractor and stop work if dust mitigation is not up to city standards.
- GN1, earthwork, note #4. Why is the city referenced in the last section of this note? This is not a city job; all notes need to be reread and city references that appear to define the city as the client need to be removed.

- GN1, erosion control, note #3. Washing the materials down the curb and gutter to a city vegetated swale will not be considered removal of the material.
- GN1, erosion control, note #5. Contractor will be responsible to control truck load weights so as to not have trucks entering or leaving the site that are over legal weight limits. City may hire an outside contractor to stop and review truck weights.
- GN1, why are their two erosion control headers when the number does not restart from 7 to 8?
- GN1, erosion control, note #8. The city will inspect daily street sweeping as necessary and may ask for additional sweeping as they see fit.
- GN1, erosion Control, note #10. I have never been at a site that this happened, the city will keep this note in mind during construction for inspection purposes.
- Sheet C002. What is the difference between the hatch for proposed and existing rip rap? Not well defined, is hard to read on plans, please revise.
- Sheet C002. Why are there no existing concrete and asphalt hatches shown?
- Sheet C002. All existing utilities should have an Ex in the line type, AKA, Ex-G, Ex-W, etc.
- Sheet C002. Line type for proposed fiber and telephone should be labeled FO or T.
- Sheet C101. Update all base file line types and add shading as noted above.
- Sheet C101. There seems to be N&E for removals on one end of the removal, but in most cases not the other end. Add appropriate N&E for removals and bold up the removal sections, they are very hard to distinguish from the sections staying.
- Sheet C101. How is the existing sanitary sewer cleanout for the in road bus drop location being removed? In full, concrete caps, etc? Please describe in more detail.
- Sheet C101. All existing water and sewer services that are to be removed need to be removed to city standards back to the main. Please add this note and be more specific on which ones will require this to happen.
- Sheet C101. Limits of disturbance will be expanding on this sheet, see following site plan notes.
- Sheet C101. Please shade what concrete and asphalt is staying or going, the sheet is very hard to read and understand what is staying and going. You may need to add another sheet just for this to be legible.
- Sheet C101 or notes sheet. Please note that all work will need to meet city design standards and all work within the ROW will require a ROW permit.
- Sheet C101. What methodology will the contractor be using to remove existing striping from the roadway? Some methods damage the road, and the city will not allow. Please add a note.
- Sheet C101. There are sections of wall that appear to be coming out, but they are not noted. Please make sure all removals are noted correctly.
- Sheet C101. There should be a note added that all concrete removals within the City ROW are to be removed at an existing joint, no partial panels or curb and gutter sections will need to be removed in full.
- Sheet C102. A majority of the notes from Sheet C101 transfer to C102 also.
- Sheet C102. The valley pans at the entrance to the bus barns and the BRT station will need to be reviewed onsite with city staff. City staff may require damaged concrete to be replaced in full with this project for proper drainage in the city ROW.

- Sheet C201. The lower parking lot shows a 24" HDPE pipe being daylighted into an existing city roadside swale. Please note in the drainage report if this ditch and downstream facilities can carry the designed flow from this new storm outlet.
- Sheet C704 shows the storm pipe noted above in profile view. How is an 18% pipe not going to cause major erosion to the city ditch section, directly above the two 16" force mains with the velocity the water will be leaving the pipe end at, even with rip rap. Why are the two 16" force mains that are at the bottom of the ponding area not shown on this plan and profile view? This design is not acceptable.
- Sheet C201. Any location that a bus will be slowing, braking or turning on city asphalt within the ROW will be required to be concrete. This may include all of Wulfsohn Road adjacent to the proposed station and at the entrance to Phases 6B and 8. This needs to be discussed in person with RFTA and their engineers.
- Sheet C201. Depending on the discussion of the note above, at minimum the minor saw cutting and asphalt repairs being shown within the Wulfsohn ROW, heading west toward Midland will need to be upgraded. This full lane will need to be removed and replaced to the city standard design for Wulfsohn Road, which is a 34" design section with 8" of scarification included.
- Sheet C201. It should be noted that all infrastructure being constructed within the City ROW specifically for this project will be the responsibility of RFTA to maintain over its life, including valley pans, bus pull out locations, bus pull out C&G, sidewalks designed for movement within the station, storm sewer passing into and through the property, etc.
- Sheet C201. Items called out as existing power poles that are existing light poles should be noted correctly.
- General note: All onsite storm facilities will require a maintenance agreement through the city.
- Sheets C201 and C202. There is a very small amount of snow storage called out for this large area, does RFTA intend to remove snow during a heavy year or continue to push it into landscape areas?
- Sheets C201 and C202. There are several inlets that are directly behind a significant wall section, how are these walls being constructed without the inlet interfering with the walls rear retaining structure being compromised? Please detail these situations within the wall drawings.
- Sheets C201 and C202. What type of walls are being constructed? If they match the existing MSE block walls, the tie backs will cause issues with guardrail installation, pipe installation, inlet installation, light pole bases and so on and so on.
- Sheet C202. Is the plan to install a bike rack within the walking area of the station and within city ROW? Seems to be a poor location for this item, does that rack require power if it is to hold electric bikes? Please add to the electric plans if so.
- Sheets C301 and C302 Horizontal Control plans are basically missing 95% of the notes that they should have. The notes are very sporadic and include almost no onsite data.
- Sheet C303 is embarrassingly incomplete, hopefully this is due to it being a 50% set of plans.
- Sheets C401 and C402 LDAs do not consider any constructability of the project. They basically follow the grading lines and do not account for how the grading is going to be accomplished or how the walls will be constructed. Please review and correct so your contractor has something to work with.

- Sheet C401, blow up of the 24" HDPE pipe leaving the site, see note above.
- Sheet C401. Why does this sheet, nor any following sheets with storm line data include any plan and profile for how the Stormtech system is to be integrated into the storm system? Generic data is provided on sheet C1004, which is not enough to review this against the drainage report.
- Sheet C402, blown up grading area show the LDA and grading leaving the property boundary, please keep new disturbance areas to the property.
- Sheets C401 and C402, please make sure that the +/- 3:1 slopes above the bike path have proper erosion control blankets on the Erosion Plans and seeding mix per the city of Glenwood Springs parks and rec department requirements called out and noted. Hydro mulch above city owned facilities will not be acceptable.
- Sheet C403. Why are there two different types of ADA ramps across from each other at the entrance to the BRT station? Truncated domes should be directed from one location to the next in the same manner each side of the street. I am sure that ARC would be willing to help with ADA compliancy for this site.
- Sheet C404. These domes are placed more appropriately, but the east one could use a slight rotation.
- Sheets 501 – 507 do not include any real wall design details, block stacking information or any kind of design or coloring for the city to review or approve. Please add details and information to the plan set on wall design, height from bottom of gravel footer or concrete footer, block type and color and such for a full review.
- Sheet 601, please note that all water services will need to be abandoned per city standards.
- Sheet 601 and 602, why are all of the storm sewer systems labeled on this page? They have their own drawings and complicate this page, including removal of perimeter drains. Please remove from the set.
- Sheet 602, Remove and replace fire hydrant at the entrance to the facility. We generally do not let existing hydrants just be reset.
- Sheets 601 and 602, should show a basic layout for the upgraded electrical system, the electrical drawings are not descript and lack conduit runs.
- Sheet C704, as noted before, this high velocity storm drainage cannot be discharged directly over top of the twin 16" city owned force mains. Please add force main information to the sheets so you will see the issue.
- Sheets 801 and 802, there is an odd solid line show between the lane shift double yellow and the new bus pull out area. What is this line depicting?
- Sheets 801 and 802, the crosswalk line detail the city utilizes now is 2' x 8' stripes with a 2' separation between the striping. This is a 2' stripe, 2' open area, 2' stripe and so forth.
- Sheets 801 and 802, Arrows, stop bars, walk way lines, etc. must all be thermal plastic and micro milled into the surface of the asphalt or concrete within the city ROW.
- Sheets 901 and 902, show a LDA this is not realistic for construction and constructability of the walls and drainage systems, please update the LDA to where it will actually be placed in the field.
- Sheet C1002, any details for inlets within the City ROW should be CDOT details, not Denver details.

- Sheet C1003, Asphalt pavement section within the City ROW must match the new pavement section being utilized in all of the city owned Glenwood Meadows area ROW. 6 inches of HBP PG58-28 SX 75 or better, over 10" of Class 6 ABC, over 10" of Class 2 ABC over a Tensar geogrid approved material. Subgrade below this section will be scarified and recompacted to a depth of 8".
- Sheet C1003, the city does not recommend any asphalt or concrete pavements, sidewalks, curb and gutter, valley pans, etc. be poured directly onto of the existing red soils in the area. A minimum of 4" of Class 6 road base is recommended in our experience. See concrete sidewalk and asphalt pavement sections.
- Sheet C1003, the Pavement Compacted Subgrade note is confusing. Is the entire site with flatwork to be removed up to 5 feet and recompacted? Is this a muck ex section note? What does this note pertain to more specifically?
- Sheet C1004 show the use of chambers for water volume capture and infiltration under a parking area. Does the geotech recommend this type of system be installed in such hydro-compactive soils? Will this not cause long term damage, as we have seen in the past, by adding water underground? These chambers are also adjacent to and above structural walls, near light post foundations, and adjacent to drainage inlets and piping.
- Sheet C1005, the perimeter drain detail has a standard 4" perforated HPDE pipe, should this pipe be called out with a sock system around it even with the wrapped rock?
- Sheet L100, note #4, if the owner of the materials being removed is the city, the city reserves the right to obtain the material or have the contractor disposed of the materials in question at no cost to the city.
- Sheet L100, note #7 is an incomplete thought, please revise. Also, there is not such thing as a traffic control permit through the city. We have ROW permits and Grading permits within the engineering department.
- Sheet L200, note #10, all plants must meet the city's approved planting list.
- Sheet L200, note #17, please note that blue grass sod is not allowed in the City of Glenwood Springs through the approved planting list. Please review the Comm Dev list of approved plantings.
- Sheets IR400- IR405, note that any secondary irrigation lines that are privately owned and within the City ROW will require an Encroachment license to be installed.
- Sheet IR401 appears to show irrigation main lines crossing Wulfsohn Road, this will not be allowed. Any irrigation within the City ROW will be held to a drip system, secondary lines, and no additional spray heads will be allowed.
- IR Sheets should consider the city's standards and details for the irrigation riser/dog house system required.
- General comment on Electric Sheets, a load calculation form for proposed and future expansions of the center needs to be submitted for internal review.
- Sheet CE201, the one-line diagram shows a 1500 kVA transformer, the city does not allow a single transformer of this size. As we have discussed with RFTA previously, a 1000 kVA transformer is the maximum size. The system improvement fee and electrical equipment proposal for this transformer and any new transformers or concrete/conduit/equipment will be collected prior to ordering of the equipment. Equipment of this size can take 6 months plus to acquire.
- Sheet CE202 shows a transformer being set for the transit center but does not call out a size.

- Sheet CE300, there is an odd 3 row item shown at the top of the page but is not labelled, what is this and why is it highlighted on the electrical plans?
- Sheet CE301, the utility transformer for the transit building is shown in a location that does not appear to meet access guidelines for a transformer; too far off the roadway, adjacent to a tree, etc. Please detail out all transformer locations so access can be determined.
- Sheet CE301 shows four car charging stations being installed in two different locations, why is there not a one-line showing the power source and routing for these stations? They do not appear on any panel schedule either. Are these level 1, 2 or 3 stations? Please add more detail for city review and make sure they are on a load calculation form.
- Sheet CE301 needs to have the bus charging location on the west side of the property detailed out so it can be reviewed for access and spacing requirements. This sheet does not have near enough detail for the city electrical department to review for compliancy.
- Sheet CE301 shows new lighting for the project within the property and within the ROW. The city will not be taking any of the lighting for this project under our operations and maintenance no matter its location. As planned at this time, please expect the residents across the valley to call and complain about the light levels being proposed.
- Sheet CE501 once again shows a car charging station detail that is not backed up with any power requirements or panel information.

- Geotech Report Comments:
    - Why was there only one bore hole completed on the 6A property, BH4, which is not adjacent to or within proximity of the items that required structural design, aka buildings and walls?
    - Underground storage of water seems like a bad idea according to page 6 of the soils report. "Ponding of water, shallow unpaved gradients, poorly designed or constructed foundation drainage systems, and other potential sources of wetting should be avoided or mitigated."
    - I am not sure what berms or ditches the report is calling out, but the main one protecting this property is owned by RFTA, not the city. "There are several drainage basins up gradient of the RFTA facility that have the potential for generating debris flows. For the most part, these have been mitigated by berms or ditches. We understand that they have generally performed well, and the COGS cleans them periodically after flow events. One basin just east of the site produced a series of debris flows during the time the geotechnical investigation was being conducted. These flows were significant enough to cover the road and require substantial maintenance efforts to clear. But they do not threaten the proposed facilities for this project."
    - Pavement Recommendations on page 15. "We understand that as part of this project there will be paved roads and turn-arounds for buses. WSP has provided both flexible and rigid pavement sections, however, no traffic loading has been provided for the site. So, we have back calculated the ESAL values for several different pavement sections. Shrewsberry and RFTA will need to determine if these values are sufficient. We assume that all pavement mixes and placement procedures will follow relevant CDOT standards." Has anyone gone back to make sure the assumptions in this report for loading and trip loadings are correct? That should be added as an additional report update.
    - The concrete pavement thicknesses show in the Geotech report do not appear to match the drawing set, page 16 of report.

- Matters of State Interest Report Comments:
    - (n) on page 25 is not actually true. This will have a significant impact on the local electrical system at full buildout with all of the proposed demands that are proposed and future. Also, Lee Barger, the City's Transportation Engineer, noted the large impact on local roads with increased traffic. This section glosses over all of that.
    - Geothermal was called out as being added to the 6A project location, that does not show up in the plan set that I am aware of, it needs to be added. Is this going to be a horizontal loop field or will this be a vertical shaft system? The area in general has highly sensitive hot spring artesian well aquifers that will need to be discussed and reviewed if these are vertical shafts and at any great depth.
    - Why are 6B and 8 called out at all in the Matters of State Interest document? They are not part of the 1041 right, or should they be part of the 1041 review since they are being called out so often?
    - Within the report it states "Based on Geotechnical Report provided by WSP on August 25, 2023, the design team is following WSP's Compaction Grouting Ground Improvement with spread footings for building components to help combat poor existing soil conditions". I did not see this called out at all within the design plans nor is it noted on the details for the large bus overhead charging station details.
    - Why are there no structural plans for the 6A building in the plan set?

- General comment: Public Works will not be reviewing Phase 6B or 8 plan sets. The plan set for 6A has a significant amount of missing information and incorrect information, both 6B and 8 need to be reviewed by RFTA and RFTAs engineering's and comments from this comment list and those plans need to be corrected. The city is not quality control for proposed projects and staff time is valuable.
- The traffic report has been reviewed and the city is working toward a roundabout design in 2025 and potential construction in 2026-2027 at the west Wulfsohn Road connection to Midland Avenue, adjacent to this project. The city will be reviewing the plans and costs for the roundabout and neighboring properties that are being developed will be required to input construction money to that project as this is a dangerous and failing intersection as it exists today. See attached roundabout traffic letter.
- As an operational comment, RFTA needs to figure out how to keep their "Out of Service" buses off of Wulfsohn Road or any bus that is not stopping at the internal Glenwood Meadows bus stops. The added traffic from the buses is not wanted on this roadway from the community center intersection through the RFTA bus barn entrance. This has been discussed with operations before, but the buses still come through. Some form of penalty may need to be reviewed, and camera systems put up to record the issue.

Public Works Contact Information:

- Matthew Langhorst – 384-6438 (PW Director)

The following are Water and Sewer Department comments:

W/WW Department Comments

- All water and wastewater utilities proposed for this project outside of the ROW will be considered private and not maintained by the city. All water valves and sewer wyes at the connection to the main lines will be the for public private. Please label these locations as the delineation point on the plans.
- The water, sewer and electric details need to follow city standards details at the City of Glenwood Springs Engineering Department website, Engineering Standards.
- All Fire hydrants must have a 15' easement centered on the hydrant if they are outside of the ROW. Access to the hydrant will also need to have an easement for maintenance. The city will own and maintain all fire hydrants, leads and valves directly associated with the hydrant.
- All services that are to be used for Fire sprinkler water must be designed and constructed to NFPA24 requirements and will be considered private. Items needing to be shown in detail…thrust block calculations, restraints, etc.
    - A plan and profile view of the piping alignments extending from the tap location to the building interior penetration.
    - Materials for construction.
    - Thrust restraint locations and specifications.
    - A comment indicating that the design conforms to all NFPA 24 requirements.
    - A note indicating that the service line must be pressure- and flow-tested in accordance with NFPA 24.
    - The stamp and signature of the Professional Engineer (PE) certifying the design.
- Staff will need to see a detail for the fire riser room that shows fire/domestic services, meter and backflow installation.
- A utility report that shows water and wastewater system demands based on EQRs for the property should be included in the Engineering Report.
- No full MEP plans were provided.
- All onsite wet utilities will be required to be gasket locking pipe.
- All future water billing will be based on meter sizing, mechanical engineer and owners may want to consider what size meter they need and keep it to the minimum required.

W/WW Department Contact Information:

- Jeremy Everding – 384-6343 (W/WW Field Superintendent)
- Utility Billing – 384-6400 (Account setup; Water Meter Purchase)
- Community Development Department – 384-6411 (Improvements Fees)

The following are Electric Department comments:

Electric Department Comments

- Owner will be responsible for cost associated with line extensions and or relocation through the ROW/property and all infrastructure for the new development.
- Final service layout, transformer locations and site planning will need to be coordinated with the City of Glenwood Springs Electric Department and final layout shown on final plans.
- Owners GC/excavation company will be responsible for all trenching, including the line extension trenches to new transformer locations, electric primary and secondary conduit installation, electric pull vaults and transformer vaults.
- The City of Glenwood Springs Electric Department Costing Proposal and System Improvement Fees will be paid in full prior to any work or equipment ordering will commence. Any additions to the proposal will be due at time of completion of work or any saving will be refunded at time of completion of work.
- Developer needs to be aware of long lead times on material. Long lead times can be between 6 months to a year depending on material. As noted above, material will not be ordered until proposals have been paid.
- The CBN fiber will also need to be relocated with the electric. The relocation of fiber will follow the proposed electric but will be a separate cost estimate.
- How is the lighting of this parcel going to affect the homes across the river? We have had lighting discussions with the railroad, I image this will be the same discussion.

Electric Department Contact Information:

- Doug Hazzard – 384-6353 (Electric Superintendent)
- Utility Billing – 384-6400 (Account setup)

APPENDIX

RFTA West Glenwood Transit Center & Administration Building

(Phase 6A, Phase 6B, and Phase 8)

Glenwood Springs, CO

September 2024

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Appendix A: Proof of Ownership

Land Title Guarantee Company

CUSTOMER DISTRIBUTION

Date: 07-07-2004

Our Order Number: GW243987-3

Property Address:

If you have any inquiries or require further assistance, please contact one of the numbers below:

For Title Assistance:
Glenwood Springs "GW" Unit

1317 GRAND AVE #200
GLENWOOD SPRINGS, CO 81601
Phone: 970-945-2610
Fax: 970-945-4784

For Closing Assistance:
Ellen Lipscomb
1317 GRAND AVE #200
GLENWOOD SPRINGS, CO 81601
Phone: 970-945-2610
Fax: 970-945-4784
EMail: elipscomb@ltgc.com

GLENWOOD MEADOWS, LLC
1315 SAGE COURT
ASPEN, CO 81611
Copies: 1
Sent Via US Postal Service

ROARING FORK TRANSPORTATION AUTHORITY
051 SERVICE CENTER DR
ASPEN CO 81611
Attn: DAN BLANKENSHIP
Copies: 1
Sent Via US Postal Service

BALCOMB & GREEN
PO DRAWER 790
818 COLORADO AVE
GLENWOOD SPRINGS, CO 81602
Attn: THOMAS J. HARTERT
Phone: 970-945-6546
Fax: 970-945-9769
Copies: 1
Sent Via US Postal Service

06.18.04

Land Title Guarantee Company

Land Title
GUARANTEE COMPANY

Date: 07-07-2004

Our Order Number: GW243987-3

Property Address:

Buyer/Borrower:
ROARING FORK TRANSPORTATION AUTHORITY

Seller/Owner:
GLENWOOD MEADOWS, LLC, A COLORADO LIMITED LIABILITY COMPANY

Need a map or directions for your upcoming closing? Check out Land Title's web site at www.ltgc.com for directions to any of our 54 office locations.

ESTIMATE OF TITLE FEES	
Alta Owners Policy 10-17-92	$846.00
Deletion of Standard Exception(s) (Owner)	$20.00

If Land Title Guarantee Company will be closing this transaction, above fees will be collected at that time.

TOTAL	$866.00

Form CONTACT 06/04

THANK YOU FOR YOUR ORDER!

Old Republic National Title Insurance Company

ALTA COMMITMENT

Our Order No. GW243987-3

Schedule A **Cust. Ref.:**

Property Address:

1. **Effective Date:** June 18, 2004 at 5:00 P.M.

2. **Policy to be Issued, and Proposed Insured:**

"ALTA" Owner's Policy 10-17-92 $750,000.00

Proposed Insured:
ROARING FORK TRANSPORTATION AUTHORITY

3. **The estate or interest in the land described or referred to in this Commitment and covered herein is:**

A Fee Simple

4. **Title to the estate or interest covered herein is at the effective date hereof vested in:**

GLENWOOD MEADOWS, LLC, A COLORADO LIMITED LIABILITY COMPANY

5. **The land referred to in this Commitment is described as follows:**

SEE ATTACHED PAGE(S) FOR LEGAL DESCRIPTION

LEGAL DESCRIPTION

PARCEL A
GLENWOOD MEADOWS NO. 1
ACCORDING TO THE PLAT THEREOF RECORDED _ _ _ _ _ _ UNDER RECEPTION NO. _ _ _ _

_ _

AKA

A PARCEL OF LAND SITUATED IN THE SW1/4 OF SECTION 5, TOWNSHIP 6 SOUTH, RANGE 89 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF GARFIELD, STATE OF COLORADO; SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 5; THENCE N 66 DEGREES 32' 58" E 1563.49 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY OF WULFSHON ROAD, THE POINT OF BEGINNING; THENCE N 70 DEGREES 03' 24" W ALONG SAID NORTHERLY RIGHT OF WAY A DISTANCE OF 522.96 FEET; THENCE CONTINUING ALONG SAID RIGHT OF WAY ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 337.50 FEET AND A CENTRAL ANGLE OF 28 DEGREES 23' 29", A DISTANCE OF 167.24 FEET (CHORD BEARS N 84 DEGREES 15' 08" W A DISTANCE OF 615.53 FEET); THENCE CONTINUING ALONG SAID RIGHT OF WAY S 81 DEGREES 33' 08" W A DISTANCE OF 198.68 FEET; THENCE CONTINUING ALONG SAID RIGHT OF WAY ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 1,260.00 FEET AND A CENTRAL ANGLE OF 01 DEGREES 42' 55", A DISTANCE OF 37.71 FEET (CHORD BEARS N 31 DEGREES 49' 35" W, A DISTANCE OF 37.72 FEET) TO A POINT ON THE SOUTHERLY RIGHT OF WAY OF MIDLAND AVENUE; THENCE LEAVING THE NORTHERLY RIGHT OF WAY OF WULFSHON ROAD N 62 DEGREES 28' 35" E ALONG THE SOUTHERLY RIGHT OF WAY OF MIDLAND AVENUE A DISTANCE OF 262.30 FEET; THENCE CONTINUING ALONG SAID SOUTHERLY RIGHT OF WAY N 70 DEGREES 48' 52" E A DISTANCE OF 233.79 FEET; THENCE CONTINUING ALONG SAID SOUTHERLY RIGHT OF WAY ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 400.00 FEET AND A CENTRAL ANGLE OF 19 DEGREES 48' 21", A DISTANCE OF 138.27 FEET (CHORD BEARS N 80 DEGREES 43' 03" E, A DISTANCE OF 137.58 FEET); THENCE CONTINUING ALONG SAID SOUTHERLY RIGHT OF WAY S 89 DEGREES 22' 47" E A DISTANCE OF 220.22 FEET; THENCE CONTINUING ALONG SAID SOUTHERLY RIGHT OF WAY S 04 DEGREES 05' 51" W A DISTANCE OF 84.94 FEET; THENCE CONTINUING ALONG SAID SOUTHERLY RIGHT OF WAY S 88 DEGREES 21'25" E A DISTANCE OF 29.12 FEET; THENCE CONTINUING ALONG SAID SOUTHERLY RIGHT OF WAY N 84 DEGREES 12' 24" E A DISTANCE OF 200.33 FEET; THENCE LEAVING SAID SOUTHERLY RIGHT OF WAY S 24 DEGREES 24' 59" W A DISTANCE OF 384.73 FEET TO THE POINT OF BEGINNING.

COUNTY OF GARFIELD
STATE OF COLORADO

ALTA COMMITMENT

Schedule B-1

(Requirements) **Our Order No.** GW243987-3

The following are the requirements to be complied with:

Payment to or for the account of the grantors or mortgagors of the full consideration for the estate or interest to be insured.

Proper instrument(s) creating the estate or interest to be insured must be executed and duly filed for record, to-wit:

1. RELEASE OF DEED OF TRUST DATED SEPTEMBER 06, 1996, FROM GLENWOOD MEADOWS, LLC TO THE PUBLIC TRUSTEE OF GARFIELD COUNTY FOR THE USE OF LAWRENCE MARX AND ROBERT APPEL TO SECURE THE SUM OF $2,000,000.00 RECORDED SEPTEMBER 06, 1996, IN BOOK 991 AT PAGE 438.

   AFFIDAVIT OF PRINCIPAL BALANCE OWING AGREEMENT IN CONNECTION WITH SAID DEED OF TRUST WAS RECORDED MAY 19, 2004 IN BOOK 1589 AT PAGE 194.

   SUBORDINATION AGREEMENT IN CONNECTION WITH SAID DEED OF TRUST WAS RECORDED MAY 19, 2004 IN BOOK 1589 AT PAGE 201.

2. RELEASE OF DEED OF TRUST DATED OCTOBER 16, 1998, FROM GLENWOOD MEADOWS, LLC, A COLORADO LIMITED LIABILITY COMPANY TO THE PUBLIC TRUSTEE OF GARFIELD COUNTY FOR THE USE OF GLENWOOD LAND COMPANY, LLC TO SECURE THE SUM OF $2,586,940.00 RECORDED NOVEMBER 23, 1998, IN BOOK 1099 AT PAGE 608.

   SUBORDINATION AGREEMENT IN CONNECTION WITH SAID DEED OF TRUST WAS RECORDED FEBRUARY 02, 2004 IN BOOK 1558 AT PAGE 562.

   SUBORDINATION AGREEMENT IN CONNECTION WITH SAID DEED OF TRUST WAS RECORDED MAY 19, 2004 IN BOOK 1589 AT PAGE 195.

3. RECORDATION OF THE PLAT CREATING THE LEGAL DESCRIPTION TO BE INSURED HEREIN.

4. SPECIAL WARRANTY DEED FROM GLENWOOD MEADOWS, LLC, A COLORADO LIMITED LIABILITY COMPANY TO ROARING FORK TRANSPORTATION AUTHORITY CONVEYING SUBJECT PROPERTY.

   NOTE: ITEMS 1-3 OF THE STANDARD EXCEPTIONS ARE HEREBY DELETED.

ALTA COMMITMENT

Schedule B-1

(Requirements) **Our Order No.** GW243987-3

Continued:

UPON THE APPROVAL OF THE COMPANY AND THE RECEIPT OF A NOTARIZED FINAL LIEN AFFIDAVIT, ITEM NO. 4 OF THE STANDARD EXCEPTIONS WILL BE AMENDED AS FOLLOWS:

ITEM NO. 4 OF THE STANDARD EXCEPTIONS IS DELETED AS TO ANY LIENS OR FUTURE LIENS RESULTING FROM WORK OR MATERIAL FURNISHED AT THE REQUEST OF GLENWOOD MEADOWS, LLC, A COLORADO LIMITED LIABILITY COMPANY.
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY SHALL HAVE NO LIABILITY FOR ANY LIENS ARISING FROM WORK OR MATERIAL FURNISHED AT THE REQUEST OF ROARING FORK TRANSPORTATION AUTHORITY.

NOTE: ITEM 5 OF THE STANDARD EXCEPTIONS WILL BE DELETED IF LAND TITLE GUARANTEE COMPANY CONDUCTS THE CLOSING OF THE CONTEMPLATED TRANSACTION(S) AND RECORDS THE DOCUMENTS IN CONNECTION THEREWITH.

NOTE: UPON PROOF OF PAYMENT OF 2003 TAXES, ITEM 7 UNDER SCHEDULE B-2 WILL BE DELETED AND ITEM 6 WILL BE AMENDED TO READ:

TAXES AND ASSESSMENTS FOR THE YEAR 2004 AND SUBSEQUENT YEARS.

ITEM 8 UNDER SCHEDULE B-2 WILL BE DELETED UPON PROOF THAT THE WATER AND SEWER CHARGES ARE PAID UP TO DATE.

ALTA COMMITMENT

Schedule B-2

(Exceptions) **Our Order No.** GW243987-3

The policy or policies to be issued will contain exceptions to the following unless the same are disposed of to the satisfaction of the Company:

1. Rights or claims of parties in possession not shown by the public records.

2. Easements, or claims of easements, not shown by the public records.

3. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, and any facts which a correct survey and inspection of the premises would disclose and which are not shown by the public records.

4. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

5. Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the public records or attaching subsequent to the effective date hereof but prior to the date the proposed insured acquires of record for value the estate or interest or mortgage thereon covered by this Commitment.

6. Taxes and assessments not yet due or payable and special assessments not yet certified to the Treasurer's office.

7. Any unpaid taxes or assessments against said land.

8. Liens for unpaid water and sewer charges, if any.

9. RIGHT OF PROPRIETOR OF A VEIN OR LODE TO EXTRACT AND REMOVE HIS ORE THEREFROM SHOULD THE SAME BE FOUND TO PENETRATE OR INTERSECT THE PREMISES AS RESERVED IN UNITED STATES PATENT RECORDED SEPTEMBER 30, 1949, IN BOOK 245 AT PAGE 270.

10. EASEMENT AS GRANTED TO ROCKY MOUNTAIN NATURAL GAS COMPANY, INC. IN INSTRUMENT RECORDED JANUARY 31, 1962 IN BOOK 339 AT PAGE 88.

11. TERMS, CONDITIONS AND PROVISIONS OF RIGHT OF WAY ACQUISTION AGREEMENT RECORDED SEPTEMBER 16, 1994 IN BOOK 916 AT PAGE 864.

12. UTILITY EASEMENT AS GRANTED TO CITY OF GLENWOOD SPRINGS, COLORADO IN INSTRUMENT RECORDED FEBRUARY 01, 2000 IN BOOK 1171 AT PAGE 191.

13. TERMS, CONDITIONS AND PROVISIONS OF ANNEXATION & DEVELOPMENT AGREEMENT (PRIVATE), GLENWOOD MEADOWS, LLC ANNEXATION RECORDED DECEMBER 06, 2002 IN BOOK 1414 AT PAGE 526.

14. TERMS, CONDITIONS AND PROVISIONS OF AMENDMENT TO ANNEXATION RECORDED MAY

ALTA COMMITMENT

Schedule B-2

(Exceptions) **Our Order No.** GW243987-3

The policy or policies to be issued will contain exceptions to the following unless the same are disposed of to the satisfaction of the Company:

06, 2004 IN BOOK 1585 AT PAGE 438.

15. EASEMENTS, RIGHTS OF WAY AND ALL MATTERS SHOWN ON THE PLAT RECORDED _____ UNDER RECEPTION NO. _____.

LAND TITLE GUARANTEE COMPANY

DISCLOSURE STATEMENTS

Note: Pursuant to CRS 10-11-122, notice is hereby given that:

A) The subject real property may be located in a special taxing district.

B) A Certificate of Taxes Due listing each taxing jurisdiction may be obtained from the County Treasurer's authorized agent.

C) The information regarding special districts and the boundaries of such districts may be obtained from the Board of County Commissioners, the County Clerk and Recorder, or the County Assessor.

Note: Effective September 1, 1997, CRS 30-10-406 requires that all documents received for recording or filing in the clerk and recorder's office shall contain a top margin of at least one inch and a left, right and bottom margin of at least one half of an inch. The clerk and recorder may refuse to record or file any document that does not conform, except that, the requirement for the top margin shall not apply to documents using forms on which space is provided for recording or filing information at the top margin of the document.

Note: Colorado Division of Insurance Regulations 3-5-1, Paragraph C of Article VII requires that "Every title entity shall be responsible for all matters which appear of record prior to the time of recording whenever the title entity conducts the closing and is responsible for recording or filing of legal documents resulting from the transaction which was closed". Provided that Land Title Guarantee Company conducts the closing of the insured transaction and is responsible for recording the legal documents from the transaction, exception number 5 will not appear on the Owner's Title Policy and the Lenders Policy when issued.

Note: Affirmative mechanic's lien protection for the Owner may be available (typically by deletion of Exception no. 4 of Schedule B, Section 2 of the Commitment from the Owner's Policy to be issued) upon compliance with the following conditions:

A) The land described in Schedule A of this commitment must be a single family residence which includes a condominium or townhouse unit.

B) No labor or materials have been furnished by mechanics or material-men for purposes of construction on the land described in Schedule A of this Commitment within the past 6 months.

C) The Company must receive an appropriate affidavit indemnifying the Company against un-filed mechanic's and material-men's liens.

D) The Company must receive payment of the appropriate premium.

E) If there has been construction, improvements or major repairs undertaken on the property to be purchased within six months prior to the Date of the Commitment, the requirements to obtain coverage for unrecorded liens will include: disclosure of certain construction information; financial information as to the seller, the builder and or the contractor; payment of the appropriate premium fully executed Indemnity Agreements satisfactory to the company, and, any additional requirements as may be necessary after an examination of the aforesaid information by the Company.

No coverage will be given under any circumstances for labor or material for which the insured has contracted for or agreed to pay.

Note: Pursuant to CRS 10-11-123, notice is hereby given:
This notice applies to owner's policy commitments containing a mineral severance instrument exception, or exceptions, in Schedule B, Section 2.

A) That there is recorded evidence that a mineral estate has been severed, leased, or otherwise conveyed from the surface estate and that there is a substantial likelihood that a third party holds some or all interest in oil, gas, other minerals, or geothermal energy in the property; and

B) That such mineral estate may include the right to enter and use the property without the surface owner's permission.

Nothing herein contained will be deemed to obligate the company to provide any of the coverages referred to herein unless the above conditions are fully satisfied.

JOINT NOTICE OF PRIVACY POLICY

OF

LAND TITLE GUARANTEE COMPANY AND LAND TITLE INSURANCE CORPORATION AND OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

Title V of the Gramm-Leach-Bliley Act (GLBA) generally prohibits any financial institution, directly or through its affiliates, from sharing nonpublic personal information about you with a nonaffiliated third party unless the institution provides you with a notice of its privacy policies and practices, such as the type of information that it collects about you and the categories of persons or entities to whom it may be disclosed. In compliance with the GLBA, we are providing you with this document, which notifies you of the privacy policies and practices of Land Title Guarantee Company and Land Title Insurance Corporation and Old Republic National Title Insurance Company.

We may collect nonpublic personal information about you from the following sources:

Information we receive from you such as on applications or other forms.
Information about your transactions we secure from our files, or from our affiliates or others.
Information we receive from a consumer reporting agency.
Information that we receive from others involved in your transaction, such as the real estate agent or lender.

Unless it is specifically stated otherwise in an amended Privacy Policy Notice, no additional nonpublic personal information will be collected about you.

We may disclose any of the above information that we collect about our customers or former customers to our affiliates or to nonaffiliated third parties as permitted by law.

We also may disclose this information about our customers or former customers to the following types of nonaffiliated companies that perform marketing services on our behalf or with whom we have joint marketing agreements:

* Financial service providers such as companies engaged in banking, consumer finance, securities and insurance.
* Non-financial companies such as envelope stuffers and other fulfillment service providers.

WE DO NOT DISCLOSE ANY NONPUBLIC PERSONAL INFORMATION ABOUT YOU WITH ANYONE FOR ANY PURPOSE THAT IS NOT SPECIFICALLY PERMITTED BY LAW.

We restrict access to nonpublic personal information about you to those employees who need to know that information in order to provide products or services to you. We maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Land Title Guarantee Company

CUSTOMER DISTRIBUTION

Land Title
GUARANTEE COMPANY

Date: 05-21-2004

Our Order Number: GW243987

Property Address:

If you have any inquiries or require further assistance, please contact one of the numbers below:

For Title Assistance:
Glenwood Springs "GW" Unit

1317 GRAND AVE #200
GLENWOOD SPRINGS, CO 81601
Phone: 970-945-2610
Fax: 970-945-4784

For Closing Assistance:
Ellen Lipscomb
1317 GRAND AVE #200
GLENWOOD SPRINGS, CO 81601
Phone: 970-945-2610
Fax: 970-945-4784
EMail: elipscomb@ltgc.com

GLENWOOD MEADOWS, LLC
1315 SAGE COURT
ASPEN, CO 81611
Copies: 1
Sent Via US Postal Service

ROARING FORK TRANSPORTATION AUTHORITY
051 SERVICE CENTER DR
ASPEN CO 81611
Attn: DAN BLANKENSHIP
Copies: 1
Sent Via US Postal Service

BALCOMB & GREEN
PO DRAWER 790
818 COLORADO AVE
GLENWOOD SPRINGS, CO 81602
Attn: THOMAS J. HARTERT
Phone: 970-945-6546
Fax: 970-945-9769
Copies: 1
Sent Via US Postal Service

Land Title Guarantee Company

Land Title
GUARANTEE COMPANY

Date: 05-21-2004

Our Order Number: GW243987

Property Address:

Buyer/Borrower:
ROARING FORK TRANSPORTATION AUTHORITY

Seller/Owner:
GLENWOOD MEADOWS, LLC, A COLORADO LIMITED LIABILITY COMPANY

Need a map or directions for your upcoming closing? Check out Land Title's web site at www.ltgc.com for directions to any of our 54 office locations.

ESTIMATE OF TITLE FEES	
Alta Owners Policy 10-17-92	$846.00
Deletion of Standard Exception(s) (Owner)	$20.00
TOTAL	$866.00

Form CONTACT (8/2003)

THANK YOU FOR YOUR ORDER!

Commitment to Insure

ALTA Commitment - 1970 Rev.

OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, a Minnesota corporation, herein called the Company, for a valuable consideration, hereby commits to issue its policy or policies of title insurance, as identified in Schedule A, in favor of the proposed Insured named in Schedule A, as owner or mortgagee of the estate or interest covered hereby in the land described or referred to in Schedule A, upon payment of the premiums and charges therefor; all subject to the provisions of Schedule A and B and to the Conditions and Stipulations hereof.

This Commitment shall be effective only when the indentity of the proposed Insured and the amount of the policy or policies committed for have been inserted in Schedule A hereof by the Company, either at the time of the issuance of this Commitment or by subsequent endorsement.

This Commitment is preliminary to the issuance of such policy or policies of title insurance and all liability and obligations hereunder shall cease and terminate six months after the effective date hereof or when the policy or policies committed for shall issue, whichever first occurs, provided that the failure to issue such policy or policies is not the fault of the Company.

CONDITIONS AND STIPULATIONS

1. The term "mortgage", when used herein, shall include deed of trust, trust deed, or other security instrument.

2. If the proposed Insured has or acquires actual knowledge of any defect, lien, encumbrance, adverse claim or other matter affecting the estate or interest or mortgage thereon covered by this Commitment other than those shown in Schedule B hereof, and shall fail to disclose such knowledge to the Company in writing, the Company shall be relieved from liability for any loss or damage resulting from any act of reliance hereon to the extent the Company is prejudiced by failure of the proposed Insured to so disclose such knowledge. If the proposed Insured shall disclose such knowledge to the Company, or if the Company otherwise acquires actual knowledge of any such defect, lien, encumbrance, adverse claim or other matter, the Company at its option may amend Schedule B of this Commitment accordingly, but such amendment shall not relieve the Company from liability previously incurred pursuant to paragraph 3 of these Conditions and Stipulations.

3. Liability of the company under this Commitment shall be only to the named proposed Insured and such parties included under the definition of Insured in the form of policy or policies committed for and only for actual loss incurred in reliance hereon in undertaking in good faith (a) to comply with the requirements hereof or (b) to eliminate exceptions shown in Schedule B, or (c) to acquire or create the estate or interest or mortgage thereon covered by this Commitment. In no event shall such liability exceed the amount stated in Schedule A for the policy or policies committed for and such liability is subject to the insuring provisions and the Conditions and Stipulations and the Exclusions from Coverage of the form of policy or policies committed, for in favor of the proposed Insured which are hereby incorporated by reference and made a part of this Commitment except as expressly modified herein.

4. Any action or actions or rights of action that the proposed Insured may have or may bring against the Company arising out of the status of the title to the estate or interest or the status of the mortgage thereon covered by this Commitment must be based on and are subject to the provisions of this Commitment.

STANDARD EXCEPTIONS

In addition to the matters contained in the Conditions and Stipulations and Exclusions from Coverage above referred to, this Commitment is also subject to the following:

1. Rights or claims of parties in possession not shown by the public records.

2. Easements, or claims of easements, not shown by the public records.

3. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, and any facts which a correct survey and inspection of the premises would disclose and which are not shown by the public records.

4. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

5. Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the public records or attaching subsequent to the effective date hereof but prior to the date the proposed insured acquires of record for value the estate or interest or mortgage thereon covered by this Commitment.

IN WITNESS WHEREOF, Old Republic National Title Insurance Company has caused its corporate name and seal to be hereunto affixed by its duly authorized officers on the date shown in Schedule A, to be valid when countersigned by a validating officer or other authorized signatory.

OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY
A Stock Company
400 Second Avenue South
Minneapolis, Minnesota 55401
(612) 371-1111

Sharon M Erickson

Authorized Signature

CC.ORT

Old Republic National Title Insurance Company

ALTA COMMITMENT

Our Order No. GW243987

Schedule A **Cust. Ref.:**

Property Address:

1. **Effective Date:** May 07, 2004 at 5:00 P.M.

2. **Policy to be Issued, and Proposed Insured:**

   "ALTA" Owner's Policy 10-17-92 $750,000.00

   Proposed Insured:
   ROARING FORK TRANSPORTATION AUTHORITY

3. **The estate or interest in the land described or referred to in this Commitment and covered herein is:**

   A Fee Simple

4. **Title to the estate or interest covered herein is at the effective date hereof vested in:**

   GLENWOOD MEADOWS, LLC, A COLORADO LIMITED LIABILITY COMPANY

5. **The land referred to in this Commitment is described as follows:**

   SEE ATTACHED PAGE(S) FOR LEGAL DESCRIPTION

Our Order No. GW243987

LEGAL DESCRIPTION

A PORTION OF

A PARCEL OF LAND SITUATED IN THE S1/2S1/2 OF SECTION 5, THE SE1/4SE1/4 OF SECTION 6, THE NE1/4NE1/4 OF SECTION 7, THE N1/2 OF SECTION 8 AND THE NW1/4NW1/4 OF SECTION 9, TOWNSHIP 6 SOUTH, RANGE 89 WEST OF THE SIXTH PRINCIPAL MERIDIAN; SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 5, THE POINT OF BEGINNING; THENCE S 75 DEGREES 55' 37" W A DISTANCE OF 1316.16 FEET; THENCE N 01 DEGREES 07' 55" E A DISTANCE OF 582.46 FEET; THENCE N 90 DEGREES 00' 00" E A DISTANCE OF 1265.15 FEET; THENCE S 30 DEGREES 38' 55" E A DISTANCE OF 522.34 FEET THENCE S 19 DEGREES 31' 13" E A DISTANCE OF 160.53 FEET; THENCE S 12 DEGREES 53' 54" E A DISTANCE OF 181.17 FEET; THENCE N 47 DEGREES 17' 45" E A DISTANCE OF 1171.28 FEET; THENCE ALONG THE ARC OF A NON-TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 1260.00 FEET AND A CENTRAL ANGLE OF 10 DEGREES 27' 43", A DISTANCE OF 230.07 FEET (CHORD BEARS N 65 DEGREES 22' 14"W 229.75 FEET); THENCE N 63 DEGREES 26' 47" E A DISTANCE OF 283.45 FEET; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 137.50 FEET AND A CENTRAL ANGLE OF 24 DEGREES 20' 19", A DISTANCE OF 58.41 FEET (CHORD BEARS N 51 DEGREES 16' 35"E 57.97 FEET); THENCE N 63 DEGREES 30' 55" E A DISTANCE OF 61.83 FEET; THENCE S 70 DEGREES 03' 24" E A DISTANCE OF 42.54 FEET; THENCE N 19 DEGREES 56' 36" E A DISTANCE OF 75.00 FEET; THENCE N 70 DEGREES 03' 24" W A DISTANCE OF 522.96 FEET; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 337.50 FEET AND A CENTRAL ANGLE OF 28 DEGREES 23' 27", A DISTANCE OF 167.24 FEET (CHORD BEARS N 84 DEGREES 15' 08" W 165.53 FEET); THENCE SOUTH 81 DEGREES 33' 05" W A DISTANCE OF 198.69 FEET; THENCE ALONG THE ARC OF A NON-TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 1260.00 FEET AND A CENTRAL ANGLE OF 01 DEGREES 42' 55", A DISTANCE OF 37.72 FEET (CHORD BEARS N 31 DEGREES 49' 38" W 37.72 FEET); TO A POINT ON THE SOUTHERLY RIGHT-OF-WAY OF MIDLAND AVENUE; THENCE N 62 DEGREES 28' 35" E ALONG SAID RIGHT-OF-WAY A DISTANCE OF 262.30 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY N 70 DEGREES 48' 52" E A DISTANCE OF 233.79 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF WAY ALONG A CURVE TO THE RIGHT HAVING A RADIUS OF 400.00 FEET AND A CENTRAL ANGLE OF 19 DEGREES 48' 21", A DISTANCE OF 138.27 FEET (CHORD BEARS N 80 DEGREES 43' 04" E 137.58 FEET); THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S 89 DEGREES 22' 47" E A DISTANCE OF 220.22 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S 04 DEGREES 05' 51" W A DISTANCE OF 89.94 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S 88 DEGREES 21' 25" E A DISTANCE OF 29.12 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY N 84 DEGREES 12' 24" E A DISTANCE OF 200.33 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY N 13 DEGREES 23' 18" E A DISTANCE OF 18.04 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S 79 DEGREES 22' 12" W A DISTANCE OF 693.85 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S 15 DEGREES 25' 14" W A DISTANCE OF 81.35 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY 72 DEGREES 50' 58" E A DISTANCE OF 30.90 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S 87 DEGREES 49' 17" E A DISTANCE OF 164.69 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY N 47 DEGREES 19' 34" E A DISTANCE OF 37.65 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S 74 DEGREES 59' 10" E A DISTANCE OF 294.83 FEET THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S 08 DEGREES 06' 53" E A DISTANCE OF 62.58 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S

LEGAL DESCRIPTION

77 DEGREES 46' 27" E A DISTANCE OF 150.75 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY N 14 DEGREES 20' 16" E A DISTANCE OF 62.19 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S 79 DEGREES 08' 31" E A DISTANCE OF 369.05 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAYS 18 DEGREES 40' 13" E A DISTANCE OF 29.17 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S 66 DEGREES 03' 20" A DISTANCE OF 143.01 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY N 25 DEGREES 40' 28" E A DISTANCE OF 42.89 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S 74 DEGREES 19 '33" A DISTANCE OF 339.00 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S 76 DEGREES 23'22"E A DISTANCE OF 559.87 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 1190.00 FEET AND A CENTRAL ANGLE OF 53 DEGREES 10' 47", A DISTANCE OF 1104.51 FEET (CHORD BEARS S 48 DEGREES 18' 54" 1065.29 FEET); THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S 21 DEGREES 43' 32" E A DISTANCE OF 179.06 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S 68 DEGREES 16' 28" W A DISTANCE OF 31.36 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S 23 DEGREES 26' 58" E A DISTANCE OF 78.05 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY N 68 DEGREES 16' 28 E A DISTANCE OF 29.01 FEET, THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S 21 DEGREES 43' 32" E A DISTANCE OF 613.97 FEET; THENCE LEAVING SAID RIGHT-OF-WAY S 62 DEGREES 49' 19" W 292.63 FEET; THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAING A RADIUS OF 760.00 FEET AND A CENTRAL ANGLE OF 24 DEGREES 24' 13", A DISTANCE OF 323.70 FEET (CHORD BEARS S 75 DEGREES 01' 26"W 321.26 FEET); THENCE S 27 DEGREES 10' 41" E 147.90 FEET; THENCE S 62 DEGREES 49' 19" W A DISTANCE OF 281.27 FEET; THENCE S 16 DEGREES 27' 24" E A DISTANCE OF 1206.11 FEET; THENCE N 89 DEGREES 15' 16" W A DISTANCE OF 3719.58 FEET; THENCE N 01 DEGREES 13' 52" E A DISTANCE OF 1360.08 FEET; THENCE N 88 DEGREES 45' 05" W A DISTANCE OF 1367.66 FEET; THENCE N 01 DEGREES 04' 56" E A DISTANCE OF 1369.90 FEET;TO THE POINT OF BEGINNING.

COUNTY OF GARFIELD
STATE OF COLORADO

ALTA COMMITMENT

Schedule B-1

(Requirements) **Our Order No.** GW243987

The following are the requirements to be complied with:

Payment to or for the account of the grantors or mortgagors of the full consideration for the estate or interest to be insured.

Proper instrument(s) creating the estate or interest to be insured must be executed and duly filed for record, to-wit:

1. A BOUNDARY SURVEY CONTAINING AN ADEQUATE LEGAL DESCRIPTION OF THE PROPERTY TO BE CONVEYED MUST BE RECEIVED BY LAND TITLE GUARANTEE COMPANY.

2. RELEASE OF DEED OF TRUST DATED JANUARY 30, 2004, FROM GLENWOOD MEADOWS, LLC, A COLORADO LIMITED LIABILITY COMPANY TO THE PUBLIC TRUSTEE OF GARFIELD COUNTY FOR THE USE OF ALPINE BANK TO SECURE THE SUM OF $250,000.00 RECORDED FEBRUARY 02, 2004, IN BOOK 1558 AT PAGE 566, UNDER RECEPTION NO. 645916.

3. PARTIAL RELEASE OF DEED OF TRUST DATED SEPTEMBER 06, 1996, FROM GLENWOOD LAND COMPANY, LLC TO THE PUBLIC TRUSTEE OF GARFIELD COUNTY FOR THE USE OF LAWRENCE MARX AND ROBERT APPEL TO SECURE THE SUM OF $2,000,000.00 RECORDED SEPTEMBER 06, 1996, IN BOOK 991 AT PAGE 438.

   AFFIDAVIT OF PRINCIPAL BALANCE OWING AGREEMENT IN CONNECTION WITH SAID DEED OF TRUST WAS RECORDED MAY 19, 2004 IN BOOK 1589 AT PAGE 194.

   SUBORDINATION AGREEMENT IN CONNECTION WITH SAID DEED OF TRUST WAS RECORDED MAY 19, 2004 IN BOOK 1589 AT PAGE 201.

4. PARTIAL RELEASE OF DEED OF TRUST DATED MAY 07, 2004, FROM GLENWOOD MEADOWS, LLC, A COLORADO LIMITED LIABILITY COMPANY TO THE PUBLIC TRUSTEE OF GARFIELD COUNTY FOR THE USE OF ALPINE BANK TO SECURE THE SUM OF $2,000,000.00 RECORDED MAY 19, 2004, IN BOOK 1589 AT PAGE 207.

5. PARTIAL RELEASE OF DEED OF TRUST DATED OCTOBER 16, 1998, FROM GLENWOOD MEADOWS, LLC, A COLORADO LIMITED LIABILITY COMPANY TO THE PUBLIC TRUSTEE OF GARFIELD COUNTY FOR THE USE OF GLENWOOD LAND COMPANY, LLC TO SECURE THE SUM OF $2,586,940.00 RECORDED NOVEMBER 23, 1998, IN BOOK 1099 AT PAGE 608.

   SUBORDINATION AGREEMENT IN CONNECTION WITH SAID DEED OF TRUST WAS RECORDED

Continued:

FEBRUARY 02, 2004 IN BOOK 1558 AT PAGE 562.

SUBORDINATION AGREEMENT IN CONNECTION WITH SAID DEED OF TRUST WAS RECORDED MAY 19, 2004 IN BOOK 1589 AT PAGE 195.

6. WARRANTY DEED FROM GLENWOOD MEADOWS, LLC, A COLORADO LIMITED LIABILITY COMPANY TO ROARING FORK TRANSPORTATION AUTHORITY CONVEYING SUBJECT PROPERTY.

NOTE: ITEMS 1-3 OF THE STANDARD EXCEPTIONS WILL BE DELETED UPON RECEIPT OF AN APPROVED SURVEY. MATTERS DISCLOSED BY SAID SURVEY MAY BE ADDED TO SCHEDULE B-2 HEREOF.

UPON THE APPROVAL OF THE COMPANY AND THE RECEIPT OF A NOTARIZED FINAL LIEN AFFIDAVIT, ITEM NO. 4 OF THE STANDARD EXCEPTIONS WILL BE AMENDED AS FOLLOWS:

ITEM NO. 4 OF THE STANDARD EXCEPTIONS IS DELETED AS TO ANY LIENS OR FUTURE LIENS RESULTING FROM WORK OR MATERIAL FURNISHED AT THE REQUEST OF GLENWOOD MEADOWS, LLC, A COLORADO LIMITED LIABILITY COMPANY.
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY SHALL HAVE NO LIABILITY FOR ANY LIENS ARISING FROM WORK OR MATERIAL FURNISHED AT THE REQUEST OF ROARING FORK TRANSPORTATION AUTHORITY.

NOTE: ITEM 5 OF THE STANDARD EXCEPTIONS WILL BE DELETED IF LAND TITLE GUARANTEE COMPANY CONDUCTS THE CLOSING OF THE CONTEMPLATED TRANSACTION(S) AND RECORDS THE DOCUMENTS IN CONNECTION THEREWITH.

NOTE: UPON PROOF OF PAYMENT OF 2003 TAXES, ITEM 7 UNDER SCHEDULE B-2 WILL BE DELETED AND ITEM 6 WILL BE AMENDED TO READ:

TAXES AND ASSESSMENTS FOR THE YEAR 2004 AND SUBSEQUENT YEARS.

ITEM 8 UNDER SCHEDULE B-2 WILL BE DELETED UPON PROOF THAT THE WATER AND SEWER CHARGES ARE PAID UP TO DATE.

ALTA COMMITMENT

Schedule B-2

(Exceptions) **Our Order No.** GW243987

The policy or policies to be issued will contain exceptions to the following unless the same are disposed of to the satisfaction of the Company:

1. Rights or claims of parties in possession not shown by the public records.

2. Easements, or claims of easements, not shown by the public records.

3. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, and any facts which a correct survey and inspection of the premises would disclose and which are not shown by the public records.

4. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

5. Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the public records or attaching subsequent to the effective date hereof but prior to the date the proposed insured acquires of record for value the estate or interest or mortgage thereon covered by this Commitment.

6. Taxes and assessments not yet due or payable and special assessments not yet certified to the Treasurer's office.

7. Any unpaid taxes or assessments against said land.

8. Liens for unpaid water and sewer charges, if any.

9. RIGHT OF PROPRIETOR OF A VEIN OR LODE TO EXTRACT AND REMOVE HIS ORE THEREFROM SHOULD THE SAME BE FOUND TO PENETRATE OR INTERSECT THE PREMISES AS RESERVED IN UNITED STATES PATENT RECORDED FEBRUARY 09, 1892, IN BOOK 12 AT PAGE 106.

10. RIGHT OF PROPRIETOR OF A VEIN OR LODE TO EXTRACT AND REMOVE HIS ORE THEREFROM SHOULD THE SAME BE FOUND TO PENETRATE OR INTERSECT THE PREMISES AS RESERVED IN UNITED STATES PATENT RECORDED JUNE 04, 1895, IN BOOK 12 AT PAGE 367.

11. RIGHT OF PROPRIETOR OF A VEIN OR LODE TO EXTRACT AND REMOVE HIS ORE THEREFROM SHOULD THE SAME BE FOUND TO PENETRATE OR INTERSECT THE PREMISES AS RESERVED IN UNITED STATES PATENT RECORDED OCTOBER 26, 1896, IN BOOK 12 AT PAGE 440.

12. RIGHT OF PROPRIETOR OF A VEIN OR LODE TO EXTRACT AND REMOVE HIS ORE THEREFROM SHOULD THE SAME BE FOUND TO PENETRATE OR INTERSECT THE PREMISES AS RESERVED IN UNITED STATES PATENT RECORDED SEPTEMBER 30, 1949, IN BOOK 245 AT PAGE 268.

ALTA COMMITMENT

Schedule B-2

(Exceptions) **Our Order No.** GW243987

The policy or policies to be issued will contain exceptions to the following unless the same are disposed of to the satisfaction of the Company:

13. RIGHT OF PROPRIETOR OF A VEIN OR LODE TO EXTRACT AND REMOVE HIS ORE THEREFROM SHOULD THE SAME BE FOUND TO PENETRATE OR INTERSECT THE PREMISES AS RESERVED IN UNITED STATES PATENT RECORDED SEPTEMBER 30, 1949, IN BOOK 245 AT PAGE 269.

14. RIGHT OF PROPRIETOR OF A VEIN OR LODE TO EXTRACT AND REMOVE HIS ORE THEREFROM SHOULD THE SAME BE FOUND TO PENETRATE OR INTERSECT THE PREMISES AS RESERVED IN UNITED STATES PATENT RECORDED SEPTEMBER 30, 1949, IN BOOK 245 AT PAGE 270.

15. RIGHT OF WAY FOR DITCHES OR CANALS CONSTRUCTED BY THE AUTHORITY OF THE UNITED STATES AS RESERVED IN UNITED STATES PATENT RECORDED JUNE 04, 1895, IN BOOK 12 AT PAGE 367.

16. RIGHT OF WAY FOR DITCHES OR CANALS CONSTRUCTED BY THE AUTHORITY OF THE UNITED STATES AS RESERVED IN UNITED STATES PATENT RECORDED OCTOBER 26, 1896, IN BOOK 12 AT PAGE 440.

17. EASEMENTS AND RIGHTS OF WAY FOR ROADS, STREETS, HIGHWAYS, DITCHES, CANALS, PIPLINES AND UTILITY LINES, INCLUDING, BUT NOT LIMITED TO:

    A. DITCH RIGHT OF WAY AS DESCRIBED IN INSTRUMENT RECORDED DECEMBER 20, 1884 IN BOOK 10 AT PAGE 2.

    B. RIGHT TO USE ROAD AS GRANTED TO MARY P.G. DEVEREUX IN INSTRUMENT RECORDED SEPTEMBER 16, 1905 IN BOOK 62 AT PAGE 103.

    C. MAP AND STATMENT OF THE WULFSOHN ENLARGEMENT OF THE F.A. ATKINSON DITCH RECORDED SEPTEMBER 2, 1909 AS RECEPTION NO. 37700.

    D. FOURTH ENLARGEMENT & EXTENSION OF THE ATKINSON CANAL RECORDED DECEMBER 8, 1950 AS RECEPTION NO. 174372.

    E. EASEMENTS AND RIGHTS OF WAY AS GRANTED TO THE MOUNTAIN STATES TELEPHONE AND TELEGRAPH COMPANY IN INSTRUMENTS RECORDED JUNE 25, 1936 IN BOOK 183 AT PAGE 430.

    F. PIPELINE RIGHT OF WAY AGREEMENT RECORDED AUGUST 3, 1951 IN BOOK 259 AT PAGE 413.

    G. EASEMENTS AND RIGHT OF WAY FOR RED ACRES DITCH.

ALTA COMMITMENT

Schedule B-2

(Exceptions) **Our Order No.** GW243987

The policy or policies to be issued will contain exceptions to the following unless the same are disposed of to the satisfaction of the Company:

H. EASEMENT AS GRANTED TO ROCKY MOUNTAIN NATURAL GAS COMPANY, INC., IN INSTRUMENT RECORDED JANUARY 31, 1962 IN BOOK 339 AT PAGE 88.

I. EASEMENTS AS GRANTED TO PUBLIC SERVICE COMPANY OF COLORADO IN INSTRUMENTS RECORDED OCTOBER 17, 1966 IN BOOK 379 AT PAGE 400 AND RECORDED FEBRUARY 13, 1967 IN BOOK 382 AT PAGE 181.

J. PERMANENT EASEMENT AS GRANTED TO THE DEPARTMENT OF HIGHWAYS, STATE OF COLORADO IN INSTRUMENT RECORDED SEPTEMBER 22, 1967 IN BOOK 388 AT PAGE 101.

18. TERMS, CONDITIONS AND PROVISIONS OF CITY OF GLENWOOD SPRINGS ORDINANCE NO. 47 RECORDED JANUARY 03, 1996 IN BOOK 963 AT PAGE 131.

19. TERMS, CONDITIONS AND PROVISIONS OF CITY OF GLENWOOD SPRINGS ORDINANCE RECORDED JANUARY 03, 1996 IN BOOK 963 AT PAGE 135.

20. TERMS, CONDITIONS AND PROVISIONS OF RIGHT OF WAY ACQUISITION AGREEMENT RECORDED SEPTEMBER 26, 1994 IN BOOK 916 AT PAGE 864.

21. EASEMENTS, RIGHTS OF WAY AND OTHER MATTERS AS SHOWN ON BOUNDARY SURVEY PREPARED BY CONSTRUCTION SURVEYS, INC., DATED JUNE 28, 1996.

22. TERMS, CONDITIONS AND PROVISIONS OF STANDSTILL AGREEMENTS RECORDED SEPTEMBER 06, 1996 IN BOOK 991 AT PAGE 472 AND AT PAGE 478

23. UTILITY EASEMENT AS GRANTED TO CITY OF GLENWOOD SPRINGS, COLORADO IN INSTRUMENT RECORDED FEBRUARY 01, 2000, IN BOOK 1171 AT PAGE 191.

24. UTILITY EASEMENT AS GRANTED TO CITY OF GLENWOOD SPRINGS, COLORADO IN INSTRUMENT RECORDED AUGUST 15, 2000, IN BOOK 1201 AT PAGE 977.

25. TERMS, CONDITIONS AND PROVISIONS OF AN ORDINANCE OF THE CITY OF GLENWOOD SPRINGS, COLORADO, PROVIDING FOR THE ANNEXATION TO THE CITY A PARCEL OF LAND LOCATED IN GARFIELD COUNTY, COLORADO, ALONG MIDLAND AVENUE AND KNOWN AS WULFSOHN RANCH (GLENWOOD MEADOWS) RECORDED DECEMBER 06, 2002 IN BOOK

ALTA COMMITMENT

Schedule B-2

(Exceptions) **Our Order No.** GW243987

The policy or policies to be issued will contain exceptions to the following unless the same are disposed of to the satisfaction of the Company:

1414 AT PAGE 522.

26. TERMS, CONDITIONS AND PROVISIONS OF ANNEXATION & DEVELOPMENT AGREEMENT (PRIVATE), GLENWOOD MEADOWS, LLC ANNEXATION RECORDED DECEMBER 06, 2002 IN BOOK 1414 AT PAGE 526.

27. TERMS, CONDITIONS AND PROVISIONS OF AMENDMENT TO ANNEXATION RECORDED MAY 06, 2004 IN BOOK 1585 AT PAGE 438.

LAND TITLE GUARANTEE COMPANY

DISCLOSURE STATEMENTS

Note: Pursuant to CRS 10-11-122, notice is hereby given that:

A) The subject real property may be located in a special taxing district.

B) A Certificate of Taxes Due listing each taxing jurisdiction may be obtained from the County Treasurer's authorized agent.

C) The information regarding special districts and the boundaries of such districts may be obtained from the Board of County Commissioners, the County Clerk and Recorder, or the County Assessor.

Note: Effective September 1, 1997, CRS 30-10-406 requires that all documents received for recording or filing in the clerk and recorder's office shall contain a top margin of at least one inch and a left, right and bottom margin of at least one half of an inch. The clerk and recorder may refuse to record or file any document that does not conform, except that, the requirement for the top margin shall not apply to documents using forms on which space is provided for recording or filing information at the top margin of the document.

Note: Colorado Division of Insurance Regulations 3-5-1, Paragraph C of Article VII requires that "Every title entity shall be responsible for all matters which appear of record prior to the time of recording whenever the title entity conducts the closing and is responsible for recording or filing of legal documents resulting from the transaction which was closed". Provided that Land Title Guarantee Company conducts the closing of the insured transaction and is responsible for recording the legal documents from the transaction, exception number 5 will not appear on the Owner's Title Policy and the Lenders Policy when issued.

Note: Affirmative mechanic's lien protection for the Owner may be available (typically by deletion of Exception no. 4 of Schedule B, Section 2 of the Commitment from the Owner's Policy to be issued) upon compliance with the following conditions:

A) The land described in Schedule A of this commitment must be a single family residence which includes a condominium or townhouse unit.

B) No labor or materials have been furnished by mechanics or material-men for purposes of construction on the land described in Schedule A of this Commitment within the past 6 months.

C) The Company must receive an appropriate affidavit indemnifying the Company against un-filed mechanic's and material-men's liens.

D) The Company must receive payment of the appropriate premium.

E) If there has been construction, improvements or major repairs undertaken on the property to be purchased within six months prior to the Date of the Commitment, the requirements to obtain coverage for unrecorded liens will include: disclosure of certain construction information; financial information as to the seller, the builder and or the contractor; payment of the appropriate premium fully executed Indemnity Agreements satisfactory to the company, and, any additional requirements as may be necessary after an examination of the aforesaid information by the Company.

No coverage will be given under any circumstances for labor or material for which the insured has contracted for or agreed to pay.

Note: Pursuant to CRS 10-11-123, notice is hereby given:
This notice applies to owner's policy commitments containing a mineral severance instrument exception, or exceptions, in Schedule B, Section 2.

A) That there is recorded evidence that a mineral estate has been severed, leased, or otherwise conveyed from the surface estate and that there is a substantial likelihood that a third party holds some or all interest in oil, gas, other minerals, or geothermal energy in the property; and

B) That such mineral estate may include the right to enter and use the property without the surface owner's permission.

Nothing herein contained will be deemed to obligate the company to provide any of the coverages referred to herein unless the above conditions are fully satisfied.

JOINT NOTICE OF PRIVACY POLICY

OF

LAND TITLE GUARANTEE COMPANY AND LAND TITLE INSURANCE CORPORATION AND OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

Title V of the Gramm-Leach-Bliley Act (GLBA) generally prohibits any financial institution, directly or through its affiliates, from sharing nonpublic personal information about you with a nonaffiliated third party unless the institution provides you with a notice of its privacy policies and practices, such as the type of information that it collects about you and the categories of persons or entities to whom it may be disclosed. In compliance with the GLBA, we are providing you with this document, which notifies you of the privacy policies and practices of Land Title Guarantee Company and Land Title Insurance Corporation and Old Republic National Title Insurance Company.

We may collect nonpublic personal information about you from the following sources:

Information we receive from you such as on applications or other forms.
Information about your transactions we secure from our files, or from our affiliates or others.
Information we receive from a consumer reporting agency.
Information that we receive from others involved in your transaction, such as the real estate agent or lender.

Unless it is specifically stated otherwise in an amended Privacy Policy Notice, no additional nonpublic personal information will be collected about you.

We may disclose any of the above information that we collect about our customers or former customers to our affiliates or to nonaffiliated third parties as permitted by law.

We also may disclose this information about our customers or former customers to the following types of nonaffiliated companies that perform marketing services on our behalf or with whom we have joint marketing agreements:

* Financial service providers such as companies engaged in banking, consumer finance, securities and insurance.
* Non-financial companies such as envelope stuffers and other fulfillment service providers.

WE DO NOT DISCLOSE ANY NONPUBLIC PERSONAL INFORMATION ABOUT YOU WITH ANYONE FOR ANY PURPOSE THAT IS NOT SPECIFICALLY PERMITTED BY LAW.

We restrict access to nonpublic personal information about you to those employees who need to know that information in order to provide products or services to you. We maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

135 B.N.

135
Recorded Sept 30, 1949 at 1:50 P.M.
Reception No. 169931 Chas. B. Keegan, Recorder
Book 245
Page 269

850

THE UNITED STATES OF AMERICA.

To all to whom these Presents shall come, Greeting:

Mt Scott
CERTIFICATE
No. 169

Whereas Edward E. Pray, of Garfield County, Colorado

has deposited in the General Land Office of the United States a Certificate of the Register of the Land Office at Glenwood Springs, Colorado, whereby it appears that full payment has been made by the said

Edward E. Pray

according to the provisions of the Act of Congress of the 24th of April, 1820, entitled "An Act making further provision for the sale of the Public Lands," and the acts supplemental thereto, for the South East quarter of the South East quarter of Section Five and the East half of the North East quarter and the South West quarter of the North East quarter and the South West quarter of the North East quarter of Section eight in Township Five South of Range ninety nine West of the Sixth Principal Meridian in Colorado containing One Hundred and Sixty acres.

according to the Official Plat of the Survey of the said Lands returned to the General Land Office by the Surveyor General, which said Tract has been purchased by the said Edward E. Pray.

Now know ye, That the United States of America, in consideration of the premises and in conformity with the several Acts of Congress in such case made and provided, have given and granted, and by these presents do give and grant unto the said Edward E. Pray

and to heirs the said Tract above described: To have and to hold the same, together with all the rights, privileges, immunities, and appurtenances, of whatsoever nature, thereunto belonging, unto the said

Edward E. Pray and to heirs and assigns forever; subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights, as may be recognized and acknowledged by the local customs, laws, and decisions of courts; and also subject to the right of the proprietor of a vein or lode to extract and remove his ore therefrom, should the same be found to penetrate or intersect the premises hereby granted, as provided by law.

In testimony whereof, I, Benjamin Harrison,
President of the United States of America, have caused these letters to be made Patent, and

106 25534 PRE-EMPTION AND CASH ENTRY PATENT—1107—[illegible]

THE UNITED STATES OF AMERICA,

12/106

Ute Series

Certificate No. 938

To all to Whom these Presents shall come, GREETING:

Whereas, Maurice E Moran and Cora Meadows of Garfield County, Colorado have deposited in the General Land Office of the United States a Certificate of the Register of the Land Office at Glenwood Springs Colorado whereby it appears that full payment has been made by the said Maurice E Moran and Cora Meadows according to the provisions of the Act of Congress of the 24th of April, 1820, entitled "An Act making further provision for the sale of the Public Lands," and the acts supplemental thereto, for the North East quarter of the North West quarter of Section Nine in Township Six South of Range eighty nine West of the Sixth Principal Meridian in Colorado containing forty acres

according to the Official Plat of the Survey of the said Lands, returned to the General Land Office by the Surveyor General, which said Tract has been purchased by the said Maurice E Moran and Cora Meadows

Now Know Ye, That the United States of America, in consideration of the premises, and in conformity with the several Acts of Congress in such case made and provided, have given and granted, and by these presents do give and grant unto the said Maurice E Moran and Cora Meadows and to their heirs, the said Tract above described: To Have and to Hold the same, together with all the rights, privileges, immunities and appurtenances, of whatsoever nature, thereunto belonging, unto the said Maurice E Moran and Cora Meadows and to their heirs and assigns forever; subject to any vested and accrued water rights for mining, agricultural, manufacturing or other purposes, and rights to ditches and reservoirs used in connection with such water rights as may be recognized and acknowledged by the local customs, laws and decisions of Courts, and also subject to the right of the proprietor of a vein or lode to extract and remove his ore therefrom, should the same be found to penetrate or intersect the premises hereby granted, as provided by law.

In Testimony Whereof, I, Benjamin Harrison President of the United States of America, have caused these letters to be made patent, and the Seal of the General Land Office to be hereunto affixed.

Given under my hand, at the City of Washington, the Fifteenth day of December, in the year of our Lord one thousand eight hundred and Ninety one, and of the Independence of the United States the one hundred and Sixteenth.

U.S. GENERAL LAND OFFICE [SEAL]

BY THE PRESIDENT: Benjamin Harrison

By J.M. McKean Secretary.

J.G. Roberts Recorder of the General Land Office.

Recorded, Vol. 44 Page 1

Filed for Record the 13th day of February A. D. 1892, at 11:05 o'clock A. M.

Paul Bloom Clerk and Recorder

By ... Deputy.

12/367

THE UNITED STATES OF AMERICA,

Ute Series

Certificate No. 936

To all to Whom these Presents shall come, GREETING:

Whereas, Maurice E. Morrow of Garfield County Colorado

has deposited in the General Land Office of the United States a Certificate of the Register of the Land Office at Glenwood Springs, Colorado whereby it appears that full payment has been made by the said Maurice E. Morrow

according to the provisions of the Act of Congress of the 24th of April, 1820, entitled "An Act making further provision for the sale of the Public Lands," and the acts supplemental thereto, for the South West quarter of the North West quarter of section nine in Township six South of Range eighty nine West of the Sixth Principal Meridian in Colorado, containing forty acres

according to the Official Plat of the Survey of the said Lands, returned to the General Land Office by the Surveyor General, which said Tract has been purchased by the said Maurice E. Morrow

Now Know Ye, That the United States of America, in consideration of the premises, and in conformity with the several Acts of Congress in such case made and provided, have given and granted, and by these presents do give and grant unto the said Maurice E. Morrow and to his heirs, the said Tract above described: To Have and to Hold the same, together with all the rights, privileges, immunities and appurtenances, of whatsoever nature, thereunto belonging, unto the said Maurice E. Morrow and to his heirs and assigns forever; subject to any vested and accrued water rights for mining, agricultural, manufacturing or other purposes, and rights to ditches and reservoirs used in connection with such water rights as may be recognized and acknowledged by the local customs, laws and decisions of Courts, and also subject to the right of the proprietor of a vein or lode to extract and remove his ore therefrom, should the same be found to penetrate or intersect the premises hereby granted, as provided by law; and there is reserved from the lands hereby granted, a right of way thereon for ditches or canals constructed by the authority of the United States

In Testimony Whereof, I, Grover Cleveland President of the United States of America, have caused these letters to be made patent, and the Seal of the General Land Office to be hereunto affixed.

Given under my hand, at the City of Washington, the Thirty first day of May, in the year of our Lord one thousand eight hundred and ninety four, and of the Independence of the United States the one hundred and eighteenth

U.S. GENERAL [SEAL] LAND OFFICE

BY THE PRESIDENT: Grover Cleveland

By M. McKean Secretary.

L. T. C. Lamar Recorder of the General Land Office.

Recorded, Vol. 5A Page 85

Filed for Record the 5 day of June A. D. 1895, at 9 o'clock A. M.

Paul Blount

Recorder

By A. J. Dickson Deputy.

440 19668 PRE-EMPTION AND CASH ENTRY PATENT—1107—John Morris Company, Printers and Manufacturing Stationers, Chicago. 7440

THE UNITED STATES OF AMERICA,

Ulla Series

Certificate No. 1426

To all to Whom these Presents shall come, GREETING:

Whereas, Fred. A. Atkinson of Garfield County Colorado

has deposited in the General Land Office of the United States a Certificate of the Register of the Land Office at Glenwood Springs Colorado whereby it appears that full payment has been made by the said Fred. A. Atkinson

according to the provisions of the Act of Congress of the 24th of April, 1820, entitled "An Act making further provision for the sale of the Public Lands," and the acts supplemental thereto, for the South East quarter of the South East quarter of Section Six in Township Six South of Range eighty nine West of the Sixth Principal Meridian in Colorado containing thirty eight acres and sixty hundredths of an acre

according to the Official Plat of the Survey of the said Lands, returned to the General Land Office by the Surveyor General, which said Tract has been purchased by the said Fred. A. Atkinson

Now Know Ye, That the United States of America, in consideration of the premises, and in conformity with the several Acts of Congress in such case made and provided, have given and granted, and by these presents do give and grant unto the said Fred. A. Atkinson and to his heirs, the said Tract above described: To Have and to Hold the same, together with all the rights, privileges, immunities and appurtenances, of whatsoever nature, thereunto belonging, unto the said Fred. A. Atkinson and to his heirs and assigns forever; subject to any vested and accrued water rights for mining, agricultural, manufacturing or other purposes, and rights to ditches and reservoirs used in connection with such water rights as may be recognized and acknowledged by the local customs, laws and decisions of Courts, and also subject to the right of the proprietor of a vein or lode to extract and remove his ore therefrom, should the same be found to penetrate or intersect the premises hereby granted, as provided by law, and there is reserved from the lands hereby granted a right of way thereon for ditches or canals constructed by the authority of the United States.

In Testimony Whereof, I, Grover Cleveland President of the United States of America, have caused these letters to be made patent, and the Seal of the General Land Office to be hereunto affixed.

Given under my hand, at the City of Washington, the Seventh day of October, in the year of our Lord one thousand eight hundred and Ninety Six, and of the Independence of the United States the one hundred and twenty first

U.S. GENERAL [SEAL] LAND OFFICE

BY THE PRESIDENT: Grover Cleveland

By M. McKean Secretary.

L. Q. C. Lamar Recorder of the General Land Office.

Recorded, Vol. 5a Page 436

Filed for Record the 27th day of October A. D. 1896, at 1:20 o'clock P. M.

J. Frank Tougher Sampler

Recorder

By ..... Deputy.

1:37 P.M.

Book 245 Page 268 — Recorded Sept 30, 1949 at 1:37 P.M. Reception No. 169932 Chas. S. Keegan, Recorder

THE UNITED STATES OF AMERICA

To all to whom these presents shall come, Greeting:

Whereas, Isaiah R. Perley of Garfield County, Colorado

has deposited in the General Land Office of the United States a Certificate of the Register of the Land Office at Glenwood Springs, Colorado, whereby it appears that full payment has been made by the said

Isaiah R. Perley according to the provisions of the Act of Congress of the 24th of April 1820, entitled "An Act making further provision for the sale of the Public Lands," and the acts supplemental thereto, for the North West quarter of the North East quarter and the East half of the North West quarter of Section eight in Township six South of Range eighty-nine West of the Sixth Principal Meridian in Colorado containing one hundred and twenty acres.

according to the Official Plat of the Survey of the said Lands, returned to the General Land Office by the Surveyor General, which said Tract has been purchased by the said Isaiah R. Perley.

Now know ye, That the United States of America, in consideration of the premises, and in conformity with the several Acts of Congress in such case made and provided, have given and granted, and by these presents do give and grant unto the said Isaiah R. Perley

and to his heirs, the said Tract above described: To have and to hold the same, together with all the rights, privileges, immunities, and appurtenances, of whatsoever nature, thereunto belonging, unto the said Isaiah R. Perley and to his heirs and assigns forever; subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights as may be recognized and acknowledged by the local customs, laws, and decisions of courts, and also subject to the right of the proprietor of a vein or lode to extract and remove his ore therefrom, should the same be found to penetrate or intersect the premises hereby granted, as provided by law.

In testimony whereof, I, Benjamin Harrison President of the United States of America, have caused these letters to be made Patent, and the seal of the General Land Office to be hereunto affixed.

Given under my hand, at the City of Washington, the twenty-second day of November, in the year of our Lord one thousand eight hundred and ninety, and of the Independence of the United States the one hundred and fifteenth.

L.S.

By the President: Benjamin Harrison

By Ellen Macfarland, Asst. Secretary.

J. M. Townsend, Recorder of the General Land Office.

7655

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

WASHINGTON, D. C. SEP. 26, 1949

I hereby certify that this photograph is a true copy of the patent record, which is in my custody in this office.

Jas. F. Homer
Chief, Patents Section.

N2-169933

Book 245 Recorded Sept 30 1949 at 1:40 P.M.
Page 270 Reception No. 169933 Chas. S. Keegan, Recorder

152

THE UNITED STATES OF AMERICA.

(To all to whom these Presents shall come, Greeting:)

CERTIFICATE No. 23

Whereas Magnus A. Peterson of Glenwood Springs Colorado

has deposited in the General Land Office of the United States a Certificate of the Register of the Land Office at Glenwood Springs, Colorado whereby it appears that full payment has been made by the said Magnus A. Peterson according to the provisions of the Act of Congress of the 24th of April, 1820, entitled "An Act making further provision for the sale of the Public Lands," and the acts supplemental thereto, for the South West quarter of the South East quarter and the South East quarter of the South West quarter of Section Five and the North West quarter of the South West quarter of Section eight in Township Six South of Range eighty nine West of the Sixth Principal Meridian in Colorado, containing one hundred and sixty acres

according to the Official Plat of the Survey of the said Lands, returned to the General Land Office by the Surveyor General, which said Tract has been purchased by the said Magnus A. Peterson

Now know ye, That the United States of America, in consideration of the premises, and in conformity with the several Acts of Congress in such case made and provided, have given and granted, and by these presents do give and grant unto the said Magnus A. Peterson

and to his heirs, the said Tract above described: To have and to hold the same, together with all the rights, privileges, immunities, and appurtenances, of whatsoever nature, thereunto belonging, unto the said Magnus A. Peterson

and to his heirs and assigns forever; subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights as may be recognized and acknowledged by the local customs, laws, and decisions of courts, and also subject to the right of the proprietor of a vein or lode to extract and remove his ore therefrom, should the same be found to penetrate or intersect the premises hereby granted, as provided by law.

In testimony whereof I, Benjamin Harrison President of the United States of America, have caused these letters to be made Patent, and the seal of the General Land Office to be hereunto affixed.

Given under my hand, at the City of Washington, the Second day of April, in the year of our Lord one thousand eight hundred and ninety one, and of the Independence of the United States the one hundred and fifteenth

L.S.

By the President: Benjamin Harrison

By Ellen McFarland Asst. Secretary

J.M. Townsend, Recorder of the General Land Office.

5327

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

WASHINGTON, D. C. SEP. 26, 1949

I hereby certify that this photograph is a true copy of the patent records which is in my custody in this

1280

10/2

DECLARATION OF OCCUPANCY.—(C. 1140.)—Colver, Page, Hoover & Co., Baltimore, 119 and 120 Monroe Street, Chicago

To all whom these Presents may Concern:

KNOW YE, that Hr. C. F. Guyer, M. C. Morrow and Albert Morrow

of the County of Garfield and State of Colorado, do hereby declare and publish as a Legal Notice to all the world, that I have a valid right to the occupation, possession and enjoyment of all and singular that Ditch and water right ~~tract or parcel of land~~, ~~not exceeding one hundred and sixty acres~~, situate, lying and being in the County of Garfield and State of Colorado, bounded and described as follows:

Beginning at a point on West or South bank of Roaring Fork River about three miles from the mouth of said River and running thence 3 miles and a half or four miles in a Northerly direction.

We claim right of way for ditch two feet wide 11 inches deep and sufficient water from said Roaring Fork River to fill said ditch

together with all and singular the hereditaments and appurtenances thereto belonging or in anywise appertaining.

Witness my hand and seal this 26th day of December

one thousand eight hundred and eighty-four

[signature] SEAL

SEAL

STATE OF COLORADO, } ss.
COUNTY OF

I,

in and for the said County, in the State aforesaid, do hereby certify that

who personally known to me to be the person whose name subscribed to the annexed declaration of occupancy, appeared before me this day in person and acknowledged that executed the same as free and voluntary act and deed for the uses and purposes therein set forth.

Witness my hand and seal at

on this day of A. D. 18

Filed for Record the 26th day of December A. D. 1884 at 4 o'clock, P. M.

[signature] Recorder.

By Deputy.

67/103

This Deed, Made this 20th day of July in the year of our Lord one thousand nine hundred and ..... between Fred A. Atkinson

of the County of Garfield and State of Colorado, of the first part, and Mary P. G. Devereux

of the County of Garfield and State of Colorado, of the second part,

WITNESSETH, That the said party of the first part, for and in consideration of the sum of One Dollar, and other valuable considerations ~~DOLLARS~~, to the said party of the first part in hand paid by the said party of the second part, the receipt whereof is hereby confessed and acknowledged, has remised, released, sold, conveyed and QUIT-CLAIMED, and by these presents does remise, release, sell, convey and QUIT-CLAIM unto the said party of the second part her heirs and assigns forever, all the right, title, interest, claim and demand which the said party of the first part has in and to the following described real estate situate, lying and being in the County of Garfield and State of Colorado, to-wit:

Beginning at the Southeast corner of Sec. 5 Township 6, S.R. 89 West of the 6th P.M., thence North on the East line of the said Section 5, 322 feet to a point, thence South 62 degrees West 335 feet to a point; thence South 28 degrees E., to the South line of said Sec. 5; thence East on said South line to the place of beginning. Said tract of land so conveyed hereby adjoining the Locke 2.74 acre tract on the Northerly side of the track so conveyed hereby. Also beginning at a point on the East line of said Sec. 5, 650.4 feet north of the SE. corner of said section 5; thence South 62 degrees West 339.2 feet to a point; thence North on a line parallel with the East line of said Sec. 5, to the center of the channel of the Grand River; thence Southeasterly along said center of channel to said East line of Section 5; thence South on said East line to the place of beginning. Said tract of land so conveyed, adjoining the Locke 2.74 acre tract on the Southeasterly side of said tract so conveyed hereby. Also conveys a private right of way to be used in common with the owners or owner of the lands formerly owned by Maurice E. Marrow and other adjoining lands formerly owned by Amor. F. Eno, such private way consisting of a road way as now laid out and used, and extending from the south line of said Section 5 Southerly and near the east line of the NE¼ of the NE¼ of Sec. 8, and a portion of the SE¼ of the NE¼ of said Sec. 8, and thence Southeasterly across the SW¼ NW¼ of Sec. 9, following the right of way of the Colorado Midland Railway in part and extending to the East line of said SW¼ NW¼, all in T. 6, S.R. 89 West of the 6th P.M., the said roadway being now fenced on both sides through out. It being understood and agreed that in case said roadway or any part thereof becomes hereafter abandoned, all rights conveyed hereby shall revert back to and become the sole and separate property of first party, herein his heirs and assigns. First party also grants a right to use said roadway as it extends from the east line of said SW¼ NW¼ Sec. 9 across said Railroad right-of-way and to County bridge across the Roaring Fork river, or to the

TO HAVE AND TO HOLD THE SAME, Together with all and singular the appurtenances and privileges thereunto belonging or in anywise thereunto appertaining, and all the estate, right, title, interest and claim whatsoever of the said party of the first part, either in law or equity, to the only proper use, benefit and behoof of the said party of the second part, her heirs and assigns forever.

IN WITNESS WHEREOF, The said party of the first part has hereunto set his hand and seal the day and year first above written.

Signed, Sealed and Delivered in Presence of

Fred A. Atkinson (SEAL)

(SEAL)

(SEAL)

(SEAL)

STATE OF COLORADO, County of Garfield } ss.

I, C. W. Darrow, a Notary Public in and for said County, in the State aforesaid, do hereby certify that Fred A. Atkinson who is personally known to me to be the person whose name is subscribed to the foregoing Deed, appeared before me this day in person and acknowledged that he signed, sealed and delivered the said instrument of writing as his free and voluntary act, for the uses and purposes therein set forth.

Given under my hand and Notarial seal, this 20th day of July 1905.

C. W. Darrow
Notary Public

My commission expires Jan. 27th 1908.

Notarial Seal

Filed for Record the 16th day of September A. D. 1905 at 4 24 o'clock P. M.

Wm. Cardwell Recorder.

By Emily C. Ewing Deputy.

#37700

#0445

Map and Statement of the Wulfsohn enlargement of the F.A. Atkinson Ditch in Irrigation Division 5 Water district 38 Garfield County Colorado
Headgate is located at a point on the South bank of the Roaring Fork River whence the SE Cor Sec 21 bears South 2035' 37" W. Mag Dec 15° E. The owner of this enlargement is Julius Wulfsohn of Glenwood Springs Colo
Enlargement is for irrigating about 350 acres of land in Sec 6 and 9 in Top 6 S Range 89 W 6 P M. to generate power for pumping, for running Dynamos, and for general manufacturing purposes.
Depth of Ditch as enlarged is 6' Width on the bottom is 8' on top is 16' Length is 16150' grade is 5' to one mile carrying capacity is 216 cb ft per sec estimated on a mean velocity of 3 ft per sec
Cost of this enlargement is $5850.00 Work was commenced on the 12th day of April A.D. 1909 Capacity of original ditch was 6 cb ft per sec

Owner

State of Colorado } SS
County of Garfield

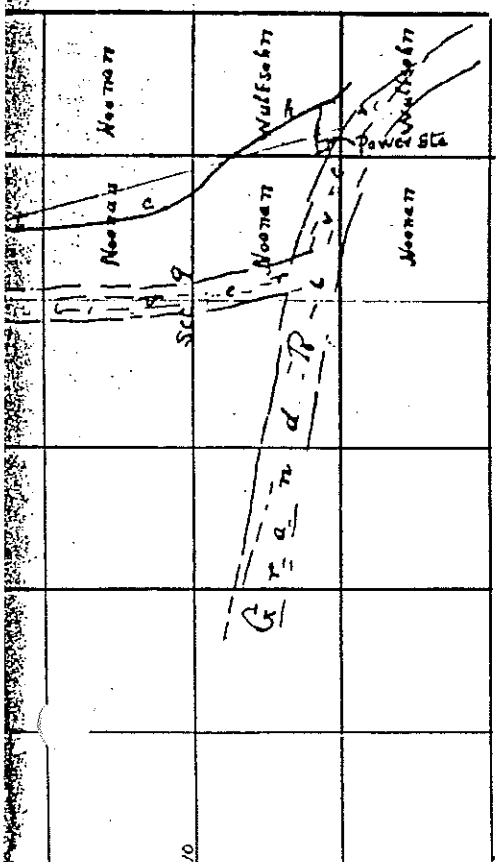
C. G. Harris being duly sworn on his oath deposes and says that he is the surveyor above ditch that the survey of the same and the map thereof was made by him and that such survey is accurately represented upon this map. That he has read the statements thereon and that the matters therein set forth are true of his own knowledge.

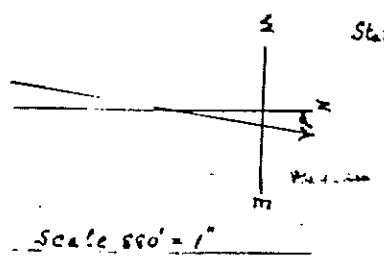
C. G. Harris
Surveyor

Subscribed and sworn to before me this 18th day of June A.D. 1909

F. J. Smith County Judge
Notary Public

My commission expires





State Engineers Office
Denver, Colorado

I hereby certify that this map and statement has been examined and approved by me and is a duplicate of the one filed in the office of the State Engineer on the 21st day of June

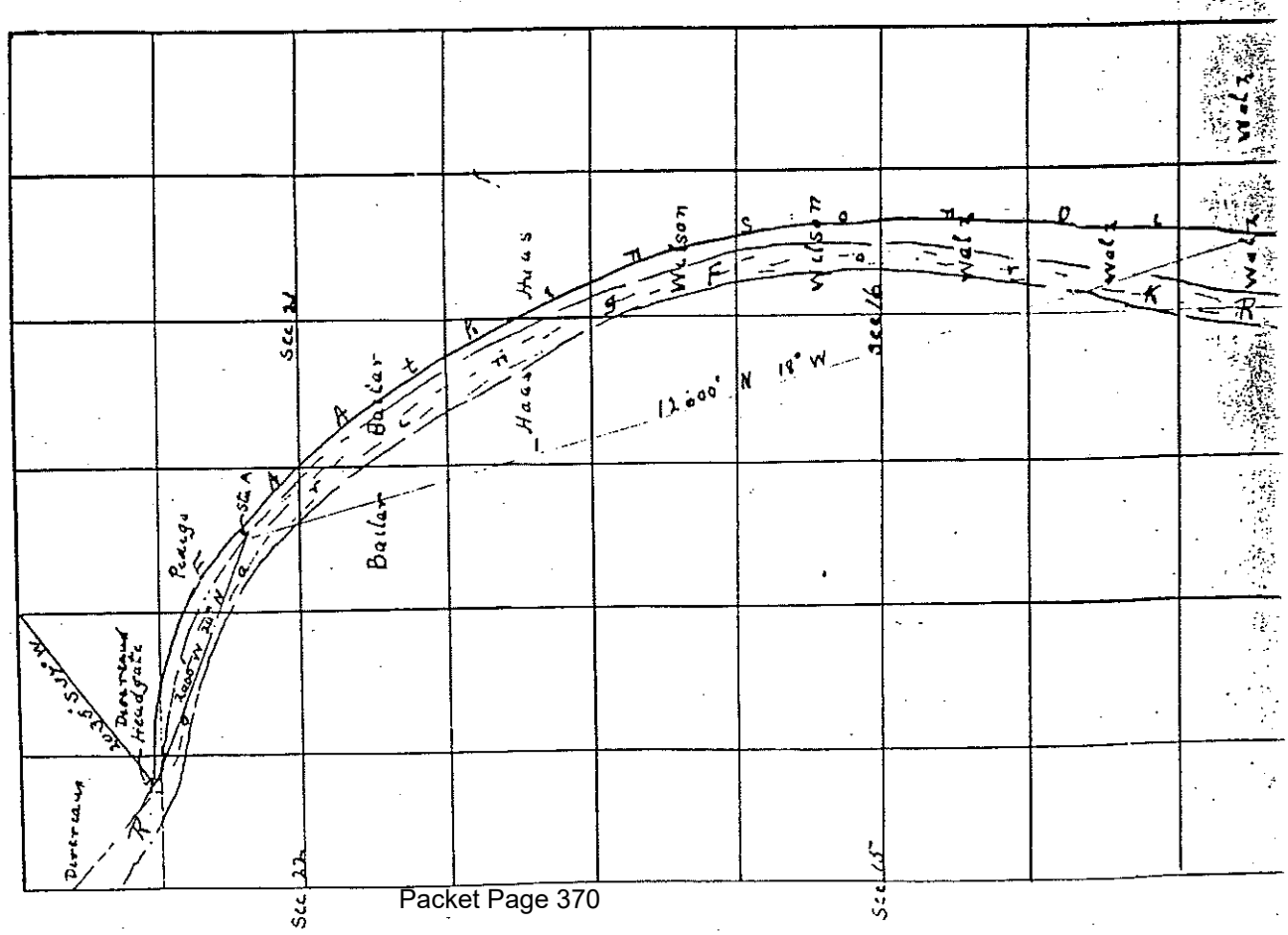
State Engineer

Compared
NR

By

Deputy

(149)



Sec 21
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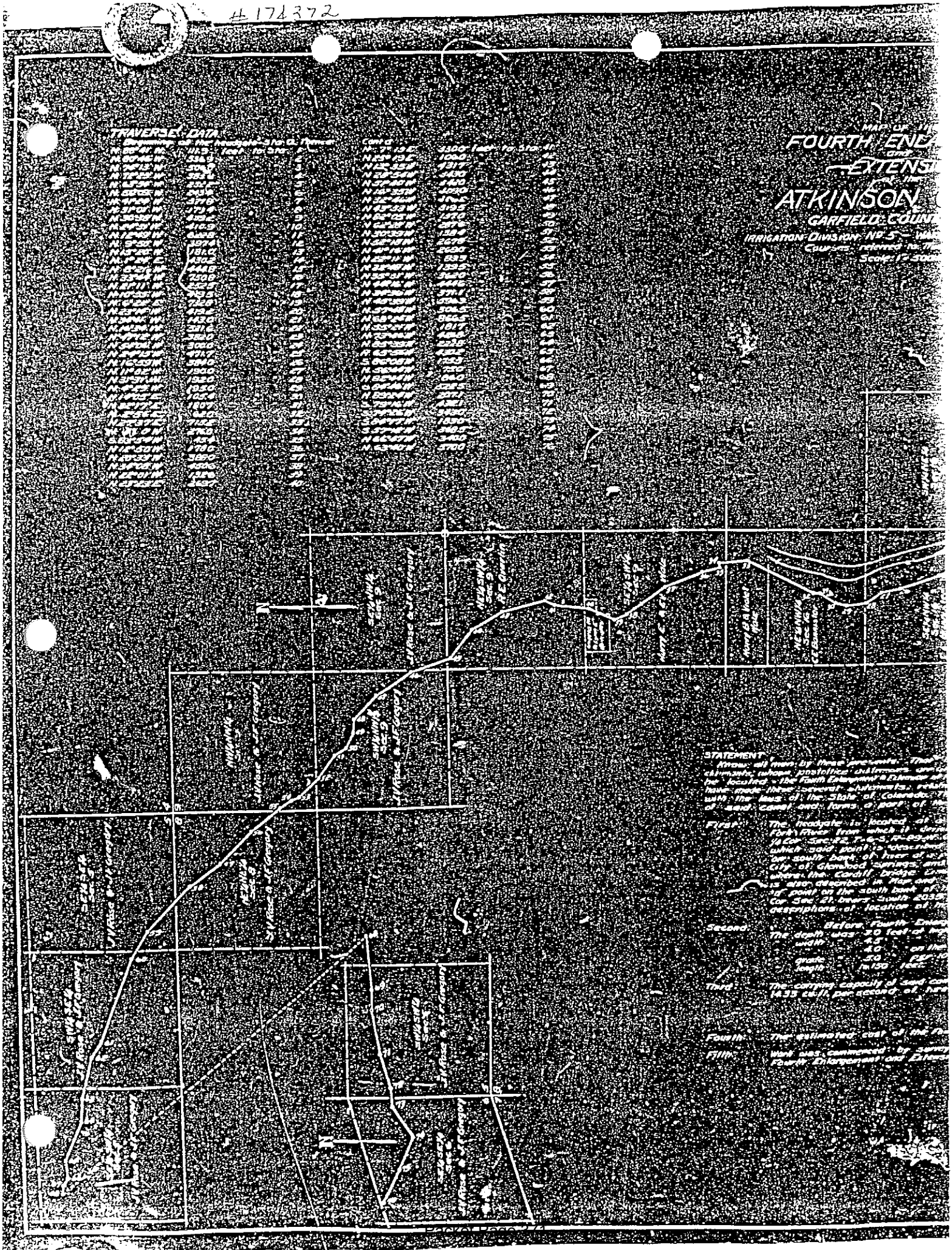
TRAVERSE DATA
MAP OF
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STATEMENT
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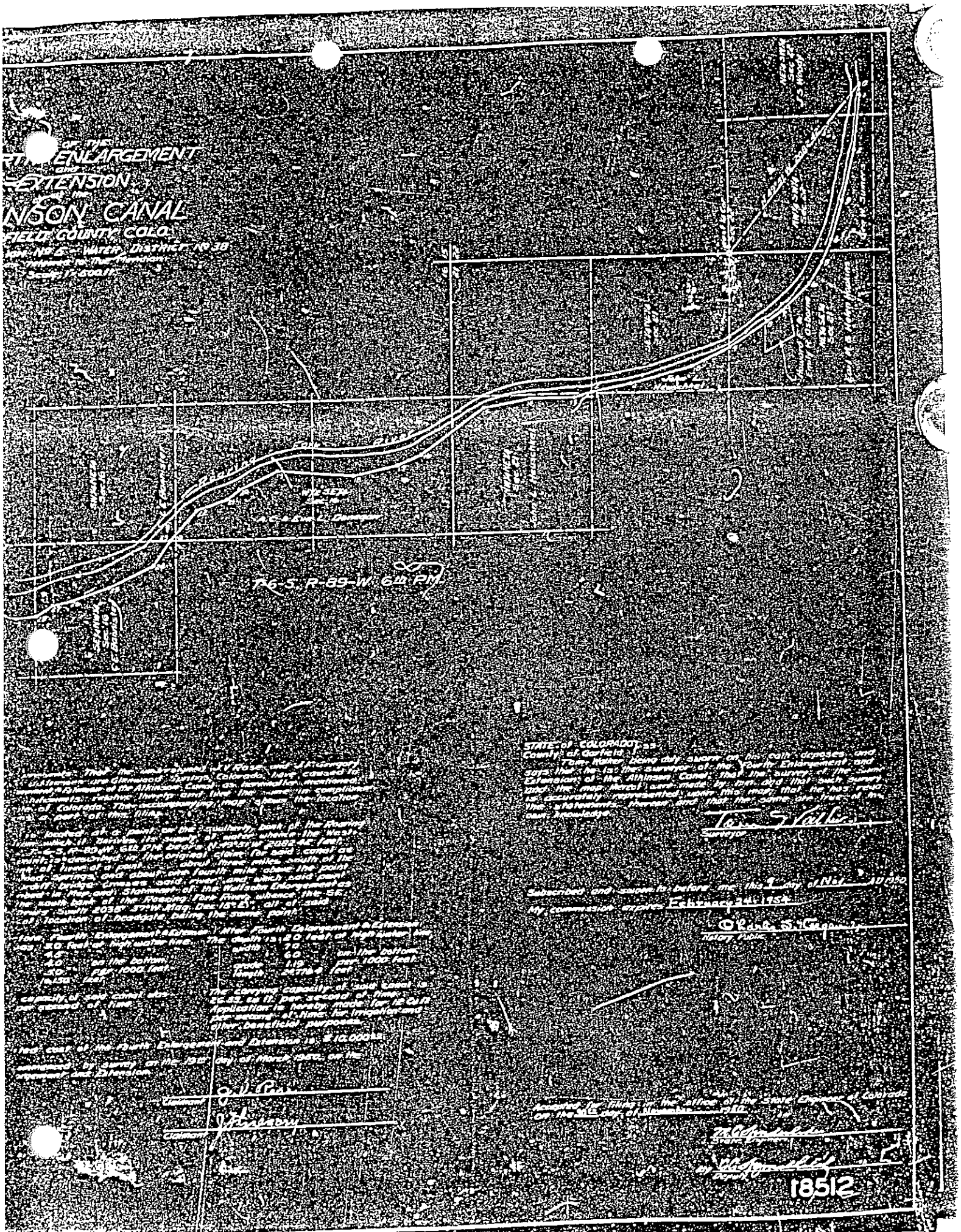
ENLARGEMENT
EXTENSION
NSON CANAL
FIELD COUNTY, COLO.
Scale 1" = 500 ft.
T-6-S, R-89-W, 6th P.M.
STATE OF COLORADO
County of Garfield
Surveyor
Subscribed and sworn to before me, this 9 day of Nov 1950
My Commission expires February 24, 1954
Notary Public
18512

#124351

RIGHT OF WAY

173/430

Correct: Approved: Approved:

Wm. Bell
R.O.W. Agent.

B. F. Curtis
State Const. Engineer

A. W. Young
State Plant Superintendent.

$25.00 RECEIVED OF THE MOUNTAIN STATES TELEPHONE AND TELEGRAPH CO. Twenty Five & No/100 Dollars, in consideration of which I hereby grant unto said Company, its successors and assigns, the right, privilege and authority to construct, operate and maintain its lines of Telephone and Telegraph, including the necessary underground conduit, poles, cables, wires and fixtures upon, over and across the property which I own, or in which I have any interest, in the South half of the North West Quarter and the North half of the South West Quarter of Section No. Sixteen (16) Township No. Six (6) South, Range Eighty-Seven (87) West of the sixth (6th) Principal Meridian

County of Garfield and State of Colorado and upon and along the roads, streets or highways adjoining the said property, with the right to permit the attachment of the wires of any other company, and the right to trim and remove any trees along said lines so as to keep the wires cleared at least forty-eight inches, to erect and set the necessary guy and brace poles and anchors and to attach thereto the necessary guy wires.....

Said sum being received in full payment therefor.

Witness my hand and seal this 22 day of May A. D. 1936 at Carbondale, Colo.

Witnesses: Wm. Bell

C. W. Miller (SEAL)
Land Owner

No officer or employee of this Company is authorized to procure a receipt to a voucher except upon payment of its amount, and the COMPANY hereby gives notice, that if this voucher is signed without payment being made, it is done at the SIGNER'S OWN RISK.

The Denver-Grand Junction-Salt Lake Line.

Filed for record Jun 25, 1936 at 8:42 o'clock A. M. Walter J. Frost, Recorder

By Chas. S. Keegan, Deputy

#124352

RIGHT OF WAY

Correct: Approved: Approved:

Wm. Bell
R.O. W. Agent.

B. F. Curtis State Plant Engineer
State Const. Engineer

A. W. Young
State Plant Superintendent

$10.00 RECEIVED OF THE MOUNTAIN STATES TELEPHONE AND TELEGRAPH CO Ten and No/100 Dollars and other good & valuable considerations in consideration of which We hereby grant unto said Company, its successors and assigns, the right, privilege and authority to construct, operate and maintain its lines of Telephone and Telegraph, including the necessary underground conduit, poles, cables, wires and fixtures upon, over and across the property which We own, or in which We have any interest, in the South East Quarter of the South West Quarter and the South West Quarter of the South East Quarter of Section Five (5), The North Half of the North West Quarter of Section Eight (8) and the South West Quarter of the North West Quarter of Section Nine (9) All in Township No. Six (6) South Range Eighty Nine (89) West of Sixth (6th) Principal Meridian County of Garfield and State of Colorado and upon and along the roads, streets or highways adjoining the said property, with the right to permit the attachment of the wires of any other company, and the right to trim and remove any trees along said lines so as to keep the wires cleared at least forty-eight inches, to erect and set the necessary guy and brace poles and anchors and to attach thereto the necessary guy wires. Provided said Telephone and Telegraph line be located, established and maintained above fence which lies west of present cultivated land except poles numbered 7241,7254 to

Witness hand and seal this 25 day of May A. D. 1936, at Glenwood Spgs Colo.

Witnesses: Wm. Bell

The Wulfsohn Merc. Co.
By J. Wulfshon (SEAL)
Sec, & Treas.
Land owner.

No officer or employee of this Company is authorized to procure a receipt to a voucher, except upon payment of its amount, and the COMPANY hereby gives notice, that if this voucher is signed witout payment being made, it is done at the SIGNER'S OWN RISK.

The Denver Grand Junction Salt Lake Toll Line

Filed for Record Jun 25, 1936, at 8:44 o'clock A. M. Walter J. Frost, Recorder.
By Chas. S. Keegan, Deputy.

#124351

RIGHT OF WAY

Correct: Approved: Approved:

Wm. Bell
R.O.W. Agent.

B. F. Curtis
State Const. Engineer

A. W. Young
State Plant Superinten...

$25.00 RECEIVED OF THE MOUNTAIN STATES TELEPHONE AND TELEGRAPH CO. Twenty Fiv... Dollars, in consideration of which I hereby grant unto said Company, its succes... and assigns, the right, privilege and authority to construct, operate and maint... lines of Telephone and Telegraph, including the necessary underground conduit, ... cables, wires and fixtures upon, over and across the property which I own, or in ... have any interest, in the South half of the North West Quarter and the North ... the South West Quarter of Section No. Sixteen (16) Township No. Six (6) South, ... Eighty-Seven (87) West of the sixth (6th) Principal Meridian

183-430

County of Garfield and State of Colorado and upon and along the roads, streets ... adjoining the said property, with the right to permit the attachment of the wir... other company, and the right to trim and remove any trees along said lines so a... the wires cleared at least forty-eight inches, to erect and set the necessary guy ... brace poles and anchors and to attach thereto the necessary guy wires.....

Said sum being received in full payment therefor.

Witness my hand and seal this 22 day of May A. D. 1936 at Carbondale, Colo.

Witnesses: Wm. Bell

C. W. Miller (SEAL)
Land Owner

No officer or employee of this Company is authorized to procure a receipt to a ... except upon payment of its amount, and the COMPANY hereby gives notice, that if ... voucher is signed without payment being made, it is done at the SIGNER'S OWN R...

The Denver-Grand Junction-Salt Lake Line.

Filed for record Jun 25, 1936, at 8:42 o'clock A. M. Walter J. Frost, Rec...

By Chas. J. Keegan, ...

#124352

RIGHT OF WAY

Correct: Approved: Approved:

Wm. Bell
R.O. W. Agent.

B. F. Curtis State Plant Engineer
State Const. Engineer

A. W. Young
State Plant ...

$10.00 RECEIVED OF THE MOUNTAIN STATES TELEPHONE AND TELEGRAPH CO Ten and No/100 ... and other good & valuable considerations in consideration of which We hereby grant ... Company, its successors and assigns, the right, privilege and authority to construct ... operate and maintain its lines of Telephone and Telegraph, including the necessary ... conduit, poles, cables, wires and fixtures upon, over and across the property which ... own, or in which We have any interest, in the South East Quarter of the South West ... and the South West Quarter of the South East Quarter of Section Five (5), The North ... Quarter of Section Eight (8) and the South West Quarter of the North West Quarter of ... Section Nine (9) All in Township No. Six (6) South Range Eighty Nine (89) West of ... (6th) Principal Meridian County of Garfield and State of Colorado and upon and along ... roads, streets or highways adjoining the said property, with the right to permit the ... ment of the wires of any other company, and the right to trim and remove any trees ... said lines so as to keep the wires cleared at least forty-eight inches, to erect ... the necessary guy and brace poles and anchors and to attach thereto the necessary guy ... Provided said Telephone and Telegraph line be located, established and maintained ... fence which lies west of present cultivated land except poles numbered 7241,7254 to ...

Witness hand and seal this 25 day of May A. D. 1936, at Glenwood Spgs Colo.

Witnesses: Wm. Bell

The Wulfsohn Merc. Co.
By J. Wulfshon (SEAL)
Sec, & Treas.

Book 259
Page 418

Recorded Aug 3, 1951 at 10:19 A. M.
Reception No. 176814 Chas. S. Keegan, Recorder

PIPELINE AGREEMENT

THIS INDENTURE, Made and entered into this 14 day of July, A. D. 1951, by and between D. E. DUNSDON, of the County of Garfield, State of Colorado, party of the first part, and C. B. BELL, of the County and State aforesaid, party of the second part, WITNESSETH:

WHEREAS, the party of the first part is the owner of a certain tract of land situate in the NE¼SW¼, Section 5, Township 6, South Range 89 West of the 6th P. M. in the County of Garfield and State of Colorado, which tract of land will for brevity be referred to hereinafter as "said premises"; and

WHEREAS, the party of the second part is desirous of securing an easement or right of way for a water pipeline for the use and benefit of certain land lying northerly of said premises;

NOW, THEREFORE, for and in consideration of the sum of One Dollar and other valuable considerations paid by said party of the second part to said party of the first part, the receipt whereof is hereby confessed and acknowledged, and of the covenants of the party of the second part hereinafter contained, party of the first part hereby grants and conveys to the party of the second part, his heirs, executors, administrators and assigns forever and in perpetuity a right of way or easement through, under, and across the said premises for the purpose of installing, maintaining and repairing a pipe line four inches in diameter, which right of way or easement is described as follows, to-wit:

A right-of-way for a water pipeline situate in the NE¼SW¼, Section 5, Township 6 South Range 89 West of the 6th Principal Meridian, the center line of which right-of-way is described as follows: Beginning at a point on the North line of the property of the party of the first part whence the South Quarter corner of Section 35, Township 5 South Range 89 West of the 6th Principal Meridian bears

N. 37°51' E. 1260.74 feet; thence S. 2°08' W. 846.82 feet to the North right-of-way line of U. S. Highway No. 24, with sufficient width for the necessary and proper installation, repair and maintenance of such water pipeline, but not exceeding, in any event, a width of ten (10) feet.

There is also hereby conveyed the right of ingress and egress to and from said premises for the purpose of installing, maintaining and repairing said pipeline.

In consideration of this grant the said party of the second part agrees to furnish the said party of the first part water through one three-quarters (3/4) inch pipe to be connected on said pipeline at a point to be designated by the party of the first part upon the same terms and conditions and at the same rate that water is furnished to other users on said pipeline.

Each and all the terms, conditions, covenants and agreements herein contained shall extend to and become binding upon the heirs, executors, administrators and assigns of the respective parties hereto.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals on the day and year first above written.

D. E. Dunsdon
Party of the First Part

C. B. Bell
Party of the Second Part

STATE OF COLORADO,)
)ss.
COUNTY OF GARFIELD.)

The foregoing instrument was acknowledged before me this 14th day of July, A. D. 1951, by D. E. DUNSDON and C. B. BELL.

Witness my hand and official seal.

My Commission Expires: 10/15/53

Notary Public

Book 339 Recorded Jan 31, 1962 at 9:10 A. M.
Page 88 Reception No. 216409 Chas. S. Keegan, Recorder

RIGHT OF WAY

THIS AGREEMENT dated the 29th day of December, 19 61, by and between UNION OIL COMPANY OF CALIFORNIA, a corporation, hereinafter termed Grantor, and ROCKY MOUNTAIN NATURAL GAS COMPANY, INC., hereinafter termed Grantee.

WITNESSETH:

Grantor, for and in consideration of the full and prompt performance of the acts to be performed by Grantee as herein set forth, hereby grants to Grantee, subject to termination as herein provided and under the terms, conditions and provisions hereof, the right and privilege to lay, erect, construct, maintain, operate, repair, renew, and remove, inspect and protect:

One (1) pipeline not to exceed 5" in diameter for the transportation of fuel gas and necessary valves and valve boxes over and above the course hereafter described in the premises situated in the County of Garfield, State of Colorado towit:

Township 6 South, Range 89 West of the 6th P.M.

Section 5: S½ of S½
Section 8: NE¼ NE¼
Section 9: W½ NW¼

The pipeline shall follow a course described as follows: Beginning at a point on the East line of the SW¼ NW¼ of Section 9, Twp. 6 S., Rge. 89 W., 6th P. M., which point is North 289.90' from the Southeast Corner of said SW¼ NW¼; thence N. 41°19' W. 245.6'; thence N. 43°34' W. 500.1'; thence N. 42°14' W. 1168.7'; thence N. 33°27' W. 61.7'; thence N. 25°42' W. 146.0'; thence N. 32°56' W. 266.7'; thence N. 42°19' W. 324.1'; thence N. 34°39' W. 443.7'; thence N. 40°32' W. 430.7'; thence N. 58°13' W. 615.1'; thence N. 65°17' W. 163.7'; thence N. 75°12' W. 191.7'; thence N. 79°59' W. 210.8'; thence N. 64° 08' W. 717.8'; thence N. 67°31' W. 858.5'; thence N. 2°32' E. 179.2', to a point on the North line of the SE¼ SW¼ of Section 5, Twp. 6 S., Rge. 89 W., being a distance of 389.34 rods.

Consideration to Grantor for this agreement shall be the sum of Ten and more Dollars ($10.00), receipt of which is hereby acknowledged.

Grantee shall not interfere with or obstruct the use of said premises by Grantor, or injure or interfere with any person or property on or about said premises.

[illegible]

In the event that the facility constructed hereunder is a pipe line, Grantee shall bury the same so that it will pass beneath previously laid pipe lines which it may cross and so that it will be at all points at least 24 inches below the surface of the ground and shall promptly and properly backfill all excavations make by or for Grantee on the premises.

Whenever, in the opinion of Grantor, the facility constructed hereunder, interferes with Grantor's use of or operations upon the premises, Grantee shall, at its own expense and risk, within sixty (60) days after written request therefor by Grantor, raise, lower or relocate and reconstruct said facility in the manner and at the place within the boundaries of said premises specified by Grantor in such request, and shall restore said premises as nearly as possible to the same state and condition as that in which they were prior to such rearrangement, relocation or reconstruction, as the case may be.

Row #314

Grantee and its employees and agents, at any and all times when necessary, shall have free access to the facility constructed hereunder, over such reasonable route as Grantor may designate or approve, for the purpose of exercising the rights hereby granted.

The rights and privileges hereby conveyed are personal to Grantee and shall not be assigned by Grantee, in whole or in part, without the written consent of Grantor first being had. No written consent by Grantor hereunder shall be deemed a waiver by Grantor of any of the provisions hereof, except to the extent of such consent.

It is further understood and agreed that this agreement and the rights and privileges herein given Grantee shall terminate in the event that Grantee shall fail for a period of one year to maintain and operate the facility constructed hereunder.

[illegible]

In the event of the termination of this agreement, Grantee shall thereupon, at its own expense and risk, remove all property placed by it or for it upon said land, and restore said premises as nearly as possible to the same state and condition they were in prior to any construction hereunder; but, if it should fail so to do within sixty (60) days after such termination, Grantor may remove it at the risk of Grantee, and all cost and expense of such removal and the restoration of said premises as aforesaid, together with interest thereon at the rate of ten per cent per annum, shall be paid by Grantee upon demand; and in case of a suit to enforce or collect the same, Grantee agrees to pay Grantor in addition a reasonable attorney's fee to be fixed and allowed by the court.

Upon the termination of the rights hereby granted, Grantee shall execute and deliver to Grantor, within thirty (30) days after service of a written demand therefor, a good and sufficient quitclaim deed to the rights hereby granted. Should Grantee fail or refuse to deliver to Grantor a quitclaim deed as aforesaid, a written notice by Grantor reciting the failure or refusal of Grantee to execute and deliver said quitclaim deed, as herein provided, and terminating said grant, shall, after ten (10) days from the date of recordation of said notice, be conclusive evidence against Grantee and all persons claiming under Grantee of the termination of said grant.

Grantee shall and will pay, before the same become delinquent, all charges, taxes, rates and assessments upon or against said facility and any other property or improvements placed by or for Grantee upon said premises, but Grantor may, at all times after any delinquency, pay and discharge all of such delinquent charges, taxes, rates and assessments, after reasonable verification thereof; and all such payments so made by Grantor, with interest thereon at the rate of ten per cent per annum from date of payment, will be paid by Grantee upon demand. The amount of such payments and interest shall be a charge and lien against all property placed by or for Grantee on said premises, and in case of a suit after such demand, to enforce or collect the same, Grantee agrees to pay Grantor in addition thereto a reasonable attorney's fee to be fixed and allowed by the court.

Grantee hereby releases and discharges Grantor from all claims and demands by Grantee for loss of or damage to Grantee's property and agrees to indemnify Grantor against and save Grantor harmless from all costs and expenses, including attorney's fees and all liability and claims and demands of others for loss of or damage to property or injury to or death of persons, which may result directly or indirectly from the granting, use or termination of, or operations under, this agreement. Grantee agrees to pay Grantor in full and promptly upon demand, for any and all loss of or damage to Grantor's property caused by Grantee or growing out of any operations of Grantee hereunder or in connection herewith.

Any notice provided herein to be given by either party hereto to the other may be served by depositing in the United States Post Office, postage prepaid, a sealed envelope containing a copy of such notice and addressed to said other party at its principal place of business, and the same shall be sufficient service of such notice.

Grantee hereby recognizes Grantor's title and interest in and to the land over which the aforesaid right of way is granted and agrees never to assail or resist Grantor's title or interest therein.

Except as otherwise provided herein, the terms and conditions of this agreement shall inure to the benefit of and be binding upon the successors and assigns of the parties hereto.

It is understood and agreed that the privileges herein given are subordinate to and subject to all valid and existing licenses, leases, grants, exceptions and reservations affecting said premises.

IN WITNESS WHEREOF, the said parties hereto have caused this agreement to be executed in duplicate by their proper officers, who are thereunto duly authorized.

UNION OIL COMPANY OF CALIFORNIA

By _____ (C.C.)
Vice President

By _____
Assistant Secretary

ROCKY MOUNTAIN NATURAL GAS COMPANY, INC.

By _____

By _____

STATE OF CALIFORNIA)
) ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me this 1 day of _____, 1961, by H.J.SAUNDERS, Vice President, and E.W.CAIRNS, Assistant Secretary of UNION OIL COMPANY OF CALIFORNIA, a California Corporation, who are known to me to be such officers, and who acknowledged to me that they executed said instrument by the authority of said Corporation, and as the act and deed of said Corporation.

My Commission expires 1-11-63

HELEN R. MILLER

WITNESS MY HAND AND OFFICIAL SEAL

Notary Public

NOTARY PUBLIC

In and for the County of Los Angeles, State of California

Book 579 Page 400 Recorded at 3:56 P.M. October 17, 1966
Reception No. 236184 Chas. S. Keegan Recorder
638/4

EASEMENT

THIS INDENTURE, Made this 12th day of October in the year of our Lord one thousand nine hundred and sixty-six between

UNION OIL COMPANY OF CALIFORNIA, a California corporation

of the County of Los Angeles and State of California grantor, and PUBLIC SERVICE COMPANY OF COLORADO, a corporation duly organized and existing under and by virtue of the laws of the State of Colorado, grantee,

WITNESSETH, That the said grantor, for and in consideration of the sum of

Ten Dollars ($ 10.00) and other valuable consideration

to the said grantor in hand paid by the said grantee, the receipt whereof is hereby confessed and acknowledged, has granted, bargained, sold and conveyed, and by these presents does grant, bargain, sell, convey and confirm unto Public Service Company of Colorado, its successors and assigns forever, an easement for the construction, reconstruction, operation and maintenance of conductors and conduits for the transmission of electricity; together with the necessary footings, cross arms, cables, wires, guys, supports, and other fixtures and devices used or useful in the operation of electric transmission lines, through, on, over and across the following described tract of land, to-wit:

A parcel of land in the S½ of Section 5 and the SE¼ SE¼ of Section 6, all in Township 6 South, Range 89 West, of the 6th Principal Meridian, County of Garfield, State of Colorado, said parcel being more particularly described as follows: Beginning at a point in the east line of the SE¼ of the SE¼ of said Section 6 distant N. 2°47'30" E. along said line 1050.6 feet from the southeast corner of said Section 6; thence N.83°39' E., 529.2 feet to a point; thence N.86°30' E., 200.3 feet to a point; thence N.83°39' E., 236.8 feet to a point; thence N.84°33'30" E., 195.3 feet to a point thence N.88°11'30" E., 155.3 feet to a point; thence S.81°15' E., 190.6 feet to a point; thence S.80°55' E., 290.4 feet to a point; thence S.78°25' E., 194.8 feet to a point; thence S.15°26' W., 30.0 feet to a point; thence N.80°18'10" W., 672.2 feet to a point; thence S.84°26'10" W., 1779.3 feet to a point; thence S.85°32'40" W., 818.4 feet to a point; thence N.2°07'30" E., 30.0 feet to a point; thence N.86°21' E., 36.1 feet to a point; thence N.83°39' E., 677.1 feet to a point; thence S.82°19' E., 103.1 feet to a point; thence N.83°39' E., 470.8 feet, more or less, to the point of beginning.

It is understood and agreed by and between the parties hereto that all poles to be installed and constructed on said easement by the grantee shall be located at a distance of not to exceed 7.5 feet Southerly of the Southerly right-of-way line of the D. & R.G.W.R.R. across said premises.

Together with the right of ingress and egress over said premises and to remove objects or structures therefrom and also to survey, construct, reconstruct, maintain, operate, control and use said lines and facilities.

The grantor reserves the right to cultivate and use said premises for any purpose consistent with the rights and privileges above granted and which will not interfere with or endanger the grantee's facilities thereon or the use thereof or of any of their rights herein granted. Such reservation by the grantor shall not include the right to erect or place any structures or objects including signs, or drill or operate any wells on, upon, above or over the easement hereby granted. Upon the permanent abandonment of said easement, all right, privilege and interest herein granted shall cease and determine.

The work of installing, maintaining and reconstructing its facilities shall be done with care and all damage to the premises caused thereby shall be paid for or repaired at the expense of the grantee.

The provisions of this easement shall be binding upon and shall inure to the benefit of the heirs, executors, administrators, successors and assigns of the parties hereto.

Signed and delivered this 12th day of October A.D. 1966

In the Presence of

ATTEST: UNION OIL COMPANY OF CALIFORNIA

Assistant Secretary By Vice President (SEAL)

STATE OF COLORADO }
County of } ss.

The foregoing instrument was acknowledged before me this day of A.D.

By

Witness my hand and official seal.

My commission expires

Notary Public

Book 378
Page 461

STATE OF COLORADO

STATE OF CALIFORNIA

COUNTY OF LOS ANGELES

ON [illegible] 19 66

before me, the undersigned, a Notary Public in and for said State, personally appeared [illegible] known to me to be the Vice President and [illegible] known to me to be the Assistant Secretary of Union Oil Company of California, the Corporation that executed the within instrument known to me to be the persons who executed the within instrument on behalf of the Corporation herein named, and acknowledged to me that such Corporation executed the within instrument pursuant to its by-laws or a resolution of its board of directors.

WITNESS my hand and official seal.

HELEN R. MILLER
NOTARY PUBLIC - CALIFORNIA
PRINCIPAL OFFICE IN
LOS ANGELES COUNTY

My Commission Expires September 16, 1967

[illegible signature]

NAME (TYPED OR PRINTED)
Notary Public in and for said State

ACKNOWLEDGMENT—Corp., Pres. & Sec., Wolcotts Form 223—Rev. 3-64

My commission expires _____

_____
Notary Public

STATE OF COLORADO
_____ County of _____ } ss.

The foregoing instrument was acknowledged before me this _____ day of _____

19__ by _____ as _____ President and

_____ as _____ Secretary of

_____ a corporation.

Witness my hand and official seal.

My commission expires _____

_____
Notary Public

Recorded Feb. 13, 1967 at 10:30 A. M. Book 382 Page 181

Reception No. 237098 Chas. S. Keegan, Recorder

Correct: [signature] R. O. W. Agent | Approved: [signature] Supt. Elec. Dept. | Document No. 14010

RECEIVED OF PUBLIC SERVICE COMPANY OF COLORADO [signature]

Dollars in consideration of which [illegible] Company [illegible] and authority to construct, operate and maintain its electric transmission and/or distribution line with all poles, cross arms, cables, wires, guys, supports, fixtures and devices, used or useful in the operation of said line, through and along a course as said line may be hereafter constructed in, through, over and across the Lot 5 of Section 14 Township 6 South Range 93 West of the 6 Principal Meridian in the County of Garfield State of Colorado, the approximate center line of which right of way is more particularly described as follows:

Beginning at a point on the Western boundary of said Lot 5 about 962 ft. North of its Southern boundary. Thence N 65 deg. 59' E 80 ft. Thence South 89 deg. 42' E 1180 ft to the Eastern boundary of said Lot 5.

Together with the right to enter upon said premises, survey, construct, maintain, operate, control and use said transmission line and to remove objects interfering therewith, and the right to permit the attachment of wires of any other Company. The grantor reserves the right to cultivate, use and occupy said premises for any purpose consistent with the rights and privileges above granted and which will not interfere with or endanger any of the grantee's poles, therein or use thereof. In case of the permanent abandonment of said right of way, all right, title and interest herein granted shall end, cease and determine.

The work of installing said electric power transmission or distribution line shall be done with care and all damage to the premises caused thereby shall be repaired at the expense of the Company.

This grant is subject to existing mineral leases covering any part of the above described land.

Witness [signature] hand and seal this 1st day of July A. D. 1966 at [signature] (Postoffice Address)

WITNESSES: [signature] [signature] (SEAL)

(SEAL)

[signature] (SEAL) (Land Owner)

Recorded Feb. 13, 1967 at 10:30 A. M. Book 382 Page 181

Form 160-2 Elect. 00 1M-5-65 Chas. S. Keegan, Recorder

Reception No. 237099

Correct: [signature] R. O. W. Agent | Approved: [signature] Supt. Elec. Dept. | Document No. 14008

RECEIVED OF PUBLIC SERVICE COMPANY OF COLORADO [signature]

Dollars, in consideration of which [illegible] hereby grant unto said Company, its successors and assigns, the right, privilege and authority to construct, operate and maintain its electric transmission and/or distribution line with all poles, cross arms, cables, wires, guys, supports, fixtures and devices, used or useful in the operation of said line, through and along a course as said line may be hereafter constructed in, through, over and across the Lot 5 of Section 14 Township 6 South Range 93 West of the 6 Principal Meridian in the County of Garfield State of Colorado, the approximate center line of which right of way is more particularly described as follows:

Beginning at a point on the Western boundary of said Lot 5 about 962 ft. North of its Southern boundary. Thence N 65 deg. 59' E 80 ft. Thence South 89 deg. 42' E 1180 ft to the Eastern boundary of said Lot 5.

Together with the right to enter upon said premises, survey, construct, maintain, operate, control and use said transmission line and to remove objects interfering therewith, and the right to permit the attachment of wires of any other Company. The grantor reserves the right to cultivate, use and occupy said premises for any purpose consistent with the rights and privileges above granted and which will not interfere with or endanger any of the grantee's poles, therein or use thereof. In case of the permanent abandonment of said right of way, all right, title and interest herein granted shall end, cease and determine.

The work of installing said electric power transmission or distribution line shall be done with care and all damage to the premises caused thereby shall be repaired at the expense of the Company.

This grant is subject to existing mineral leases covering any part of the above described land.

Witness [signature] hand and seal this 1st day of July A. D. 1966 at [signature] (Postoffice Address)

WITNESSES: [signature] [signature] (SEAL)

(SEAL)

(SEAL)

Rifle Transmission 144,000 Volts

Packet Page 381

Book 388
Recorded at 10:06 A.M. Sept. 22, 1967 Page 101
Reception No. 239010 Chas.S.Keegan,
Recorder. 63812.1 3

PROJECT NO. I 70-1(8)113 Section 1
Glenwood Springs-West
Parcel No.'s E-29A, E-29B, E-29C
and E-29D

PERMANENT EASEMENT

KNOW ALL MEN BY THESE PRESENTS, that UNION OIL COMPANY OF CALIFORNIA, a California Corporation, of the County of Los Angeles and State of California, hereinafter called the "grantor", for and in consideration of the sum of ONE DOLLAR ($1.00), and other valuable consideration in hand paid by the DEPARTMENT OF HIGHWAYS, STATE OF COLORADO, hereinafter called the "Department", receipt of which is hereby acknowledged, has given and granted and by these presents does hereby give and grant unto the said Department, a PERPETUAL EASEMENT on, along, over and across the following described premises, to-wit:

A tract or parcel of land No. E-29A of the Department of Highways, State of Colorado, Project No. I 70-1(8)113 Section 1 containing 1.338 acres, more or less, in the W½ of the NW¼ of Section 9 and NE¼ of the NE¼ of Section 8, Township 6 South, Range 89 West, of the Sixth Principal Meridian, in Garfield County, Colorado, said tract or parcel being more particularly described as follows:

Beginning at a point on the west line of Section 9, T. 6 S., R. 89 W., from which the NW corner of Section 9 bears N.1°34'30" E., a distance of 636.6 feet;

1. Thence S. 1° 34' 30" W., along the west line of Section 9 a distance of 95.9 feet;
2. Thence S. 19° 50' E., a distance of 185.7 feet;
3. Thence S. 21° 31' 30" E., a distance of 75.0 feet;
4. Thence S. 68° 28' 30" W., a distance of 50.0 feet;
5. Thence S. 21° 31' 30" E., a distance of 50.0 feet;
6. Thence N. 68° 28' 30" E., a distance of 50.0 feet;
7. Thence S. 21° 31' 30" E., a distance of 115.0 feet;
8. Thence along the arc of a curve to the left having a radius of 1,542.4 feet, a distance of 869.0 feet (the chord of this arc bears S. 40° 38' 30" E., a distance of 857.6 feet);
9. Thence S. 56° 57' 30" E., a distance of 129.1 feet;
10. Thence N. 28° 26' E., a distance of 40.0 feet;
11. Thence along the arc of a curve to the right having a radius of 1,507.4 feet, a distance of 975.2 feet (the chord of this arc bears N. 43° 02' W., a distance of 958.3 feet);
12. Thence N. 21° 31' W., a distance of 237.0 feet;
13. Thence N. 19° 50' W., a distance of 275.0 feet, more or less, to the point of beginning.

The above described portion of Parcel No. E-29A contains 1.232 acres, more or less.

ALSO

Beginning at a point on the east line of Section 8, T. 6 S., R. 89 W., from which the NE corner of Section 8 bears N. 1° 34' 30" E., a distance of 636.6 feet;

- Continued -

Book 388
Page 102

PROJECT NO. I 70-1(8)113 Section 1
Glenwood Springs-West
Parcel No.'s E-29A, E-29B, E-29C
and E-29D
PAGE TWO - Permanent Easement

Parcel No. E-29A (Continued)

1. Thence N. 19° 30' W., a distance of 86.9 feet;
2. Thence S. 78° 10' W., a distance of 35.0 feet;
3. Thence S. 19° 30' E., a distance of 176.2 feet to the east line of Section 8;
4. Thence N. 1° 34' 30" E. along the east line of Section 8 a distance of 93.9 feet, more or less, to the point of beginning.

The above described portion of Parcel No. E-29A contains 0.106 acres, more or less.

The above described parcel contains a total of 1.338 acres, more or less.

ALSO

A tract or parcel of land No. E-29B of the Department of Highways, State of Colorado, Project No. I 70-1(8)113 Section 1 containing 0.069 acres, more or less, in the NW¼ of the NW¼ of Section 9, Township 6 South, Range 89 West of the Sixth Principal Meridian, in Garfield County, Colorado, said tract or parcel being more particularly described as follows:

Beginning at a point from which the NW corner of Section 9, T.6 S., R. 89 W., bears N. 33° 32' W., a distance of 391.6 feet;

1. Thence N. 70° 10' E., a distance of 60.0 feet;
2. Thence N. 19° 50' W., a distance of 50.0 feet;
3. Thence S. 70° 10' W., a distance of 60.0 feet;
4. Thence S. 19° 50' E., a distance of 50.0 feet, more or less, to the point of beginning.

The above described parcel contains 0.069 acres, more or less.

ALSO

A tract or parcel of land No. E-29C of the Department of Highways, State of Colorado, Project No. I 70-1(8)113 Section 1 containing 4.190 acres, more or less, in the SE¼ of the SW¼ of Section 5, Township 6 South, Range 89 West, of the Sixth Principal Meridian, in Garfield County, Colorado, said tract or parcel being more particularly described as follows:

Beginning at a point from which the SE corner of Section 5, T.6 S., R. 89 W., bears S. 69° 46' E., a distance of 3,231.9 feet;

1. Thence S. 19° 26' W., a distance of 365.0 feet;
2. Thence S. 74° 34' E., a distance of 500.0 feet;
3. Thence N. 15° 26' E., a distance of 349.0 feet;
4. Thence N. 74° 34' W., a distance of 500.0 feet, more or less, to the point of beginning.

The above described parcel contains 4.190 acres, more or less.

- Continued -

PROJECT NO. I 70-1(8)113 Section 1
Glenwood Springs-West
Parcel No.'s E-29A, E-29B, E-29C
and E-29D
PAGE THREE - Permanent Easement

ALSO

A tract or parcel of land No. E-29D of the Department of Highways, State of Colorado, Project No. I 70-1(8)113 Section 1 containing 0.117 acres, more or less, in the SE¼ of the SW¼ of Section 5 Township 6 South, Range 89 West, of the Sixth Principal Meridian, in Garfield County, Colorado, said tract or parcel being more particularly described as follows:

Beginning at a point from which the SE corner of Section 5, T.6 S., R. 89 W., bears S. 66° 05' E., a distance of 3,280.2 feet;

1. Thence S. 74° 34' E., a distance of 30.0 feet;
2. Thence N. 15° 26' E., a distance of 108.4 feet, to the north line of the SE¼ of the SW¼ of Section 5;
3. Thence N. 88° 24' 30" W., along the north line of the SE¼ of the SW¼ a distance of 51.5 feet;
4. Thence S. 15° 26' W., a distance of 96.1 feet, more or less, to the point of beginning.

The above described parcel contains 0.117 acres, more or less.

for the purpose of

Subject to the following terms and conditions:

And the Grantor hereby covenants and agrees with the Department that it has good title to the aforedescribed premises; that it has good and lawful right to grant this easement; that it will warrant and defend the title and quiet possession thereof against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, Grantor/ has hereunto set its hand and seal this 9th day of March A.D., 1967.

WHEN RECORDED RETURN TO: UNION OIL COMPANY OF CALIFORNIA, a California
Corporation, County of Los Angeles
State of California

AFTER RECORDING PLEASE MAIL TO:
The Department of Highways of the State of Colorado
Highway Office Building
4201 East Arkansas Avenue
Denver 22, Colorado
ATTENTION: Right of Way Section

By _____ President

By _____ Assistant Secretary

STATE OF California, ss.
COUNTY OF Los Angeles

The foregoing instrument was acknowledged before me this 9th day of March A.D., 1967 by UNION OIL COMPANY OF CALIFORNIA, a California Corporation of the County of Los Angeles, State of California, by K. C. Vaughan Vice Pres. & E. W. Cairns Asst. Secy.

Witness my hand and official seal.
My commission expires 9-16-67

Helen R. Miller
Notary Public

HELEN R. MILLER
NOTARY PUBLIC
LOS ANGELES COUNTY, CALIF.

487228 B-963 P-131 01/03/96 03:46P PG 1 OF 4 REC DOC NFEE
MILDRED ALSDORF GARFIELD COUNTY CLERK AND RECORDER 21.00

ORDINANCE NO. 47

Series of 1995

AN ORDINANCE OF THE CITY OF GLENWOOD SPRINGS, COLORADO, PROVIDING FOR THE ANNEXATION TO THE CITY OF GLENWOOD SPRINGS, COLORADO, OF THAT TERRITORY DESCRIBED IN THIS ORDINANCE, LYING OUTSIDE OF BUT ADJACENT TO THE CITY OF GLENWOOD SPRINGS AND IN THE COUNTY OF GARFIELD, COLORADO. (WULFSOHN WEST PARCEL).

WHEREAS, on or before August 18, 1995, one hundred percent (100%) of the landowners of the territory included in the area described in Exhibit "A" attached hereto and made a part hereof, exclusive of public streets and alleys, filed a Petition with the Clerk of the City of Glenwood Springs, Colorado, requesting that the City Council of the City of Glenwood Springs, Colorado, commence proceedings to annex to the City of Glenwood Springs, Colorado, the territory described in Exhibit "A" hereof; and

WHEREAS, the City Council of the City of Glenwood Springs, Colorado, commenced proceedings to annex the territory described in Exhibit "A" hereof to the City of Glenwood Springs, Colorado, and held a public hearing thereon on October 19, 1995, for the purpose of determining whether the territory described in Exhibit "A" met the applicable requirements of the Colorado Municipal Annexation Act of 1965 and was eligible for annexation; and

WHEREAS, the City Council, by Resolution No. 95-21, found and concluded, based upon the findings and conclusions more particularly set forth in said Resolution, that the territory described in Exhibit "A" hereof met the applicable requirements of the Colorado Municipal Annexation Act of 1965 and resolved to annex said territory to the said City of Glenwood springs, Colorado, by ordinance.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF GLENWOOD SPRINGS, COLORADO ORDAINS:

Section 1.

The territory described in Exhibit A hereby is annexed to and made a part of the City of Glenwood Springs, Colorado

Section 2.

In accordance with C.R.S. 31-12-113, the City Clerk is hereby directed to:

A File one (1) copy of the annexation map with the original of the annexation ordinance in her office

City of Glenwood Springs.
806 Cooper Ave
Glenwood Springs, CO 81601

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B. File for recording two (2) certified copies of the annexation ordinance and map of the area annexed containing a legal description of such area with the Garfield County Clerk and Recorder.

INTRODUCED, READ ON FIRST READING, PASSED AND ORDERED PUBLISHED IN FULL THIS 16th DAY OF November, 1995.

CITY OF GLENWOOD SPRINGS, COLORADO

Marc Adler, Mayor

ATTEST

Robin S. Clemons, City Clerk

INTRODUCED, READ ON SECOND READING, ORDERED PUBLISHED BY TITLE ONLY TO BE EFFECTIVE TEN DAYS FOLLOWING THE DATE OF SECOND PUBLICATION THIS 2nd DAY OF December, 1995.

CITY OF GLENWOOD SPRINGS, COLORADO

Marc Adler, Mayor

ATTEST

Robin S. Clemons, City Clerk

MULLSOHN WEST LEGAL DESCRIPTION

A parcel of land situated in Sections 5 and 6, Township 6 South, Range 89 West of the 6th Principal Meridian, County of Garfield, State of Colorado, said parcel being more particularly described as follows:

Beginning at a concrete Right-of-Way monument found on the Southerly Right-of-Way of the Denver and Rio Grande Western Railroad whence the Stone found in place and properly marked for the Southwest corner of said Section 5 bears S 23°29'57" W 1196.71 feet;

Thence along said Southerly Right-of-Way the following (3) courses: thence S 83°38'11" W 901.40 feet; thence N 82°19'49" W 103.10 feet; thence S 83°38'11" W 7.05 feet leaving said Southerly Right-of-Way; thence along the Northerly Right-of-Way of the Midland Ave. Right-of-Way Acquisition the following (8) courses: thence S 42°36'53" E 17.15 feet; thence along a curve to the left having a radius of 710.00 feet and an arc length of 677.30 feet, the chord of which bears S 69°56'35" E 651.91 feet. thence N 82°43'44" E 80.93 feet; thence along the arc of a curve to the left having a radius of 500.00 feet and an arc length of 194.98 feet, the chord of which bears N 71°33'27" E 193.75 feet; thence N 60°23'10" E 185.42 feet; thence N 56°38'55" E 230.74 feet; thence N 75°17'22" E 201.74 feet; thence N 06°21'46" W 19.87 feet leaving said Northerly Right-of-Way; thence along said Southerly Right-of-Way the following (3) courses: thence S 83°38'11" W 132.79 feet; thence S 86°30'11" W 200.30 feet; thence S 83°38'11" W 98.60 feet to the point of beginning, containing 5.75 acres more or less.

EXHIBIT A

487229 B-963 P-135 01/03/96 03:47P PG 1 OF 4 REC DOC NFEE
MILDRED ALSDORF GARFIELD COUNTY CLERK AND RECORDER 21.00

ORDINANCE NO. 52

Series of 1995

AN ORDINANCE OF THE CITY OF GLENWOOD SPRINGS, COLORADO, ZONING LAND RECENTLY ANNEXED TO THE CITY OF GLENWOOD SPRINGS (WULFSOHN ANNEXATION).

WHEREAS, by Ordinance No. 47, Series of 1995, the City Council annexed to the City of Glenwood Springs, Colorado, the land described in Exhibit "A" attached hereto and incorporated herein by this reference; and

WHEREAS, after a public hearing on September 27, 1995, the Planning and Zoning Commission recommended that the subject property be zoned in the C/1 District; and

WHEREAS, after a second public hearing conducted by the City Council on October 19, 1995, the City Council affirmed the recommendation of the Planning and Zoning Commission and approved C/1 zoning for the subject property; and

WHEREAS, the City Council makes the following express findings:

A Zoning of the subject property in the C/1 District is consistent with City Goals, policies and plans and is compatible with adjacent zoning designations and uses; and

B The C/1 District is consistent with annexation policy.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF GLENWOOD SPRINGS, COLORADO, ORDAINS:

Section 1.

The property described in Exhibit "A", attached hereto and incorporated herein by this reference, is hereby zoned and included in the C/1 District. The official zoning map of the City is hereby amended to reflect the inclusion of the subject property in said District.

Section 2.

Any and all subdivision and development approvals heretofore granted by the City Council affecting the subject property are hereby ratified as being consistent with the zoning approval granted by the City Council on October 19, 1995. The execution of necessary agreements and permits consistent with any such approvals is hereby authorized. Nothing contained herein shall supersede Municipal Code requirements for issuing or exercising any Development Permit heretofore approved.

City of Glenwood Springs
806 Cooper Ave., 65 CO81601

21

Section 3.

The City Clerk is hereby directed to file a certified copy of this Ordinance for recordation with the Garfield County Clerk and Recorder.

INTRODUCED, READ ON FIRST READING, PASSED AND ORDERED PUBLISHED IN FULL THIS 16th DAY OF NOVEMBER, 1995.

CITY OF GLENWOOD SPRINGS, COLORADO

Marc Adler, Mayor

ATTEST:

Robin S. Clemons, City Clerk

INTRODUCED, READ ON SECOND READING, ORDERED PUBLISHED BY TITLE ONLY TO BE EFFECTIVE TEN DAYS FOLLOWING THE DATE OF SECOND PUBLICATION THIS 7th DAY OF DECEMBER, 1995.

CITY OF GLENWOOD SPRINGS, COLORADO

Marc Adler, Mayor

ATTEST:

Robin S. Clemons, City Clerk

WULFSOHN WEST LEGAL DESCRIPTION

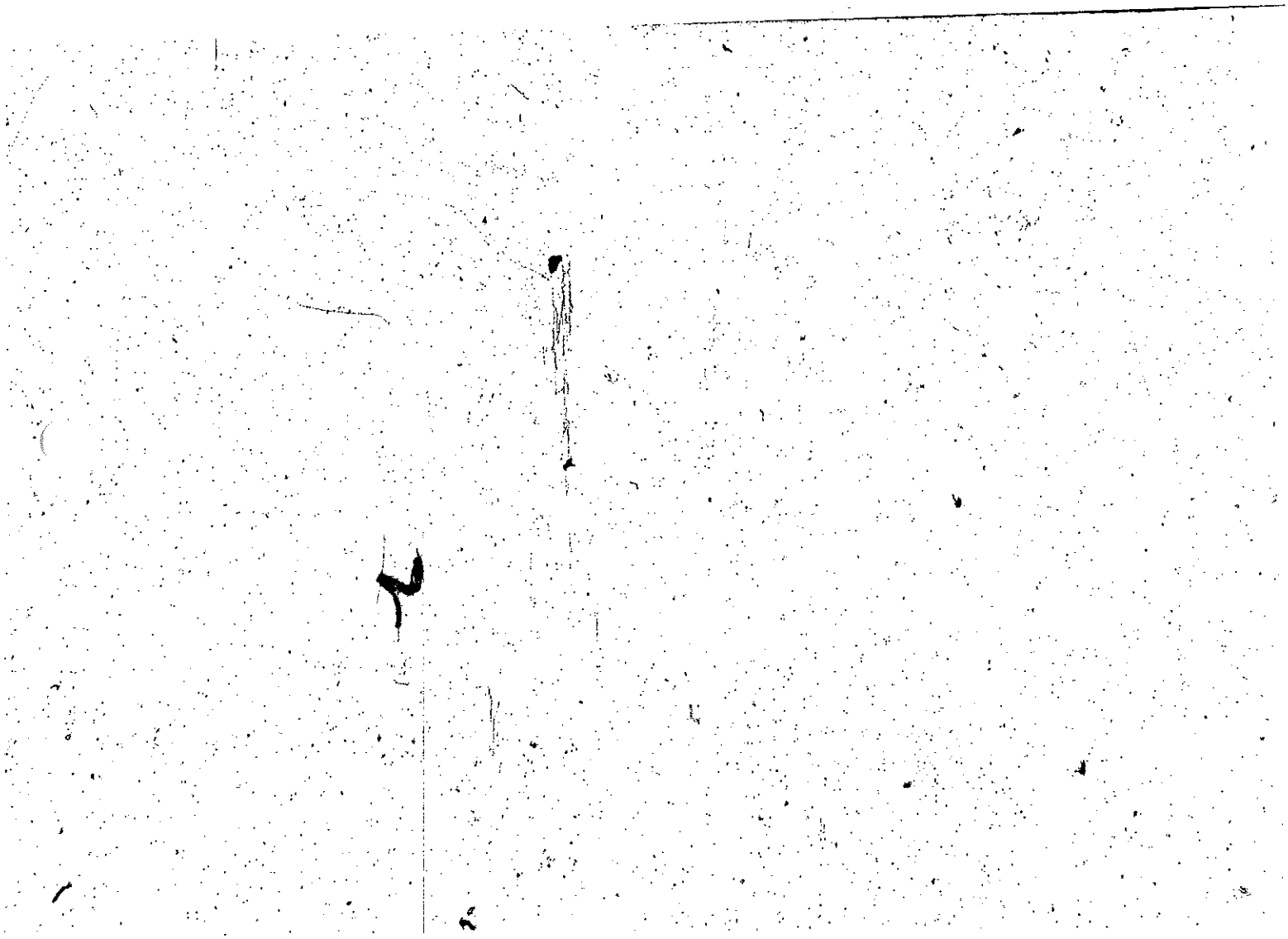
A parcel of land situated in Sections 5 and 6, Township 6 South, Range 89 West of the 6th Principal Meridian, County of Garfield, State of Colorado, said parcel being more particularly described as follows:

Beginning at a concrete Right-of-Way monument found on the Southerly Right-of-Way of the Denver and Rio Grande Western Railroad whence the Stone found in place and properly marked for the Southwest corner of said Section 5 bears S 23°29'57" W 1196.71 feet;

Thence along said Southerly Right-of-Way the following (3) courses: thence S 83°38'11" W 901.40 feet; thence N 82°19'49" W 103.10 feet; thence S 83°38'11" W 7.05 feet leaving said Southerly Right-of-Way; thence along the Northerly Right-of-Way of the Midland Ave. Right-of-Way Acquisition the following (8) courses: thence S 42°36'53" E 17.15 feet; thence along a curve to the left having a radius of 710.00 feet and an arc length of 677.30 feet, the chord of which bears S 69°56'35" E 651.91 feet. thence N 82°43'44" E 80.93 feet; thence along the arc of a curve to the left having a radius of 500.00 feet and an arc length of 194.98 feet, the chord of which bears N 71°33'27" E 193.75 feet; thence N 60°23'10" E 185.42 feet; thence N 56°38'55" E 230.74 feet; thence N 75°17'22" E 201.74 feet; thence N 06°21'46" W 19.87 feet leaving said Northerly Right-of-Way; thence along said Southerly Right-of-Way the following (3) courses: thence S 83°38'11" W 132.79 feet; thence S 86°30'11" W 200.30 feet; thence S 83°38'11" W 98.60 feet to the point of beginning, containing 5.75 acres more or less.

EXHIBIT A

Page 4 is unreadable!



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SEP 28 1994 MILDRED ALT [illegible]

MIDLAND AVENUE RIGHT-OF-WAY ACQUISITION AGREEMENT

THIS AGREEMENT is made and entered into as of September __, 1994, by and between UNION OIL COMPANY OF CALIFORNIA, a California corporation (hereinafter "Unocal"), and the CITY OF GLENWOOD SPRINGS, a Colorado home-rule municipality (hereinafter "City");

WITNESSETH:

WHEREAS, Unocal is the owner of certain real property located in Garfield County, Colorado, commonly known as the Wulfsohn Ranch (hereinafter "Wulfsohn Ranch"); and

WHEREAS, Unocal is the owner of various water rights decreed to the Atkinson Canal, the headgate for which is generally located as described in the decree entered September 7, 1976, in Case No. W-2910 (Water Division No. 5); and

WHEREAS, the Atkinson Canal begins at a point south of the 27th Street bridge in the City of Glenwood Springs, extends northwesterly and generally parallel to the Roaring Fork River and Midland Avenue, then crosses the Wulfsohn Ranch; and

WHEREAS, the Atkinson Canal is used to provide irrigation water to irrigated portions of the Wulfsohn Ranch; and

WHEREAS, the City desires and intends to extend the existing Midland Avenue within the City of Glenwood Springs to the northwest from its current terminus, located south of the Wulfsohn Ranch, across the Wulfsohn Ranch, to a new bridge to be constructed across the Colorado River near the existing Interstate 70 exit for West Glenwood Springs (hereinafter the "Midland Extension Project"); and

WHEREAS, on January 13, 1994, and again on July 19, 1994, the City pursuant to C.R.S. §38-1-121 provided Unocal with formal notice of the City's intent to acquire that portion of the Wulfsohn Ranch which is needed to construct the Midland Extension Project; and

WHEREAS, as permitted under C.R.S. § 38-1-121, the City and Unocal have prepared appraisals and engaged in negotiations concerning the City's intended condemnation of a portion of the Wulfsohn Ranch; and

WHEREAS, Unocal has, under threat of condemnation by the City, agreed to convey to the City title to that portion of the Wulfsohn Ranch described in this Agreement, subject to the terms and conditions of this Agreement; and

WHEREAS, the parties desire to set forth herein their agreement concerning the conveyance from Unocal to the City of that portion of the Wulfsohn Ranch required for the Midland Extension Project, the compensation for such taking, and related matters.

F:\FILES\UNOCALC.IAG
August 31, 1994

City Clerk
506 Laurel Lane
81601

NOW, THEREFORE, for and in consideration of the above recitals, the mutual covenants and agreements contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Unocal and the City agree as follows:

1. Taking, Conveyance of Midland Extension Right-of-Way. Under threat of condemnation, and in order to allow for the completion of the Midland Extension Project, Unocal shall, at closing, convey by warranty deed to the City that portion of the Wulfsohn Ranch described on Exhibit A, attached hereto and incorporated herein by this reference. The deed form shall be a Bradford Form No. 40B (Rev. 5-84), warranty deed from a corporation. Unocal shall reserve from this conveyance an easement thirty feet (30') in width for maintenance, operation, repair, and replacement of the Atkinson Canal, with such easement lying fifteen feet (15') on either side of centerline of the Atkinson Canal. Such conveyance shall be subject to easements, reservations, restrictions, and rights-of-way of record, existing and in place. The property conveyed shall hereinafter be referred to as the "Midland Extension Right-of-Way Parcel." The City shall obtain at its sole expense a title insurance commitment and title insurance policy for the Midland Extension Right-of-Way Parcel. Unocal shall be under no obligation whatsoever to cure or otherwise address any title exception or other adverse condition of title. The City agrees and acknowledges that Unocal's warranty of title shall be limited solely to those matters insured under the title insurance policy obtained by the City, and that the amount recoverable for any claim or matter arising with regard to said warranty shall be limited to insured amount as stated on the title insurance policy. Until the construction of the boundary line fence as provided in Paragraph 11, below, the City hereby licenses Unocal to use, at Unocal's sole risk, the Midland Extension Right-of-Way Parcel.

2. Compensation. At closing, the City shall pay to Unocal the following amounts as just compensation for the Midland Extension Right-of-Way Parcel, damages to the remainder of the Wulfsohn Ranch, and damages to Unocal's water rights historically used to irrigate portions of the Wulfsohn Ranch:

	Item of Taking or Damage	Compensation
A.	Midland Extension Right-of-Way Parcel	$40,330.00
B.	Damage to remainder (2-acre parcel)	2,500.00
C.	Damage to remainder (water rights)	34,000.00
D.	Temporary Construction Easement	250.00
	TOTAL	$77,080.00

3. Closing. Closing of the above-referenced transaction shall occur within ten (10) days of the execution of this Agreement. The City shall pay all costs of closing, except that real property taxes shall be prorated to the day of closing based upon the most recent mill levy and

meet recent assessment and shall be determined by the ratio the Midland Extension Right-of-Way Parcel bears to the Wulfsohn Ranch.

4. Water Rights. Nothing in this Agreement shall require or be construed as a conveyance by Unocal of any water rights decreed to the Atkinson Canal or otherwise appurtenant to the Wulfsohn Ranch. The City expressly acknowledges that Unocal shall retain title to any and all water rights appurtenant to the Midland Extension Right-of-Way Parcel conveyed to the City. In any water court proceeding Unocal undertakes involving the water rights appurtenant to the Midland Extension Right-of-Way Parcel, the City shall not file a statement of opposition alleging that Unocal has abandoned such water rights, nor shall the City intervene or otherwise participate in the case upon such basis.

5. Midland Extension Plans and Specifications. If and when the City proceeds to construct the Midland Extension Project, the City shall, at its sole expense and at no expense to Unocal except as expressly provided for herein, undertake and complete all road installation, road surfacing, grading, drainage improvements, fencing, culverting, and other work for the Midland Extension Project in accordance with: (A) the plans entitled "City of Glenwood Springs, Alternate Route," prepared by Schmueser Gordon Meyer, Inc., bearing Job No. 92029, consisting of 12 sheets, and dated January 1, 1993 (Sheets 1-3), October 12, 1992 (Sheets 4-9 and 12) and December 4, 1992 (Sheets 10-12) (hereinafter "Midland Extension Project Plans"); (B) the April 1994 technical specifications prepared by Schmueser Gordon Meyer, Inc. for materials for canal culverting previously approved by Unocal in that certain agreement between the parties dated April 19, 1994, (hereinafter "Midland Extension Project Specifications"), and (C) the Engineering Standards attached hereto as Exhibit B and incorporated herein by this reference (hereinafter "Engineering Standards"). The Midland Extension Project Plans, the Midland Extension Project Specifications, and the Engineering Standards are hereinafter referred to individually, or collectively as the Midland Extension Project Plans and Specifications. Unocal hereby approves the Midland Extension Project Plans and Specifications, subject to the provisions of Paragraph 10, below.

6. Purpose. One of the purposes of this Agreement is to ensure that Unocal's interests, including specifically Unocal's ownership and use of the Atkinson Canal and Unocal's ownership of the remaining portions of the Wulfsohn Ranch, are not adversely affected by the City's Midland Extension Project. For purposes of this Agreement, all references to "Midland Extension Project" refers solely and specifically to those components of the City's project, as shown on the Midland Project Plans and Specifications, which affect the Atkinson Canal structure or easement, or drainage which affects the Atkinson Canal structure or easement, or any interest in the Wulfsohn Ranch retained by Unocal.

7. Project Control. The City shall be solely responsible for the construction, installation, and completion of the Midland Extension Project and appurtenant facilities and, except as expressly provided for herein to the contrary, all costs associated therewith. The City is authorized to commence the Midland Extension Project, as contemplated in the Midland Extension Project Plans and Specifications, upon execution of this Agreement by all parties

hereto; provided, however, no construction shall interfere with Unocal's ability to use the Atkinson Canal for irrigation purposes during the irrigation season, or otherwise interfere with Unocal's activities upon or operation of that portion of the Wulfsohn Ranch retained by Unocal.

8. Access to Wulfsohn Ranch. The City shall instruct its agents, contractors, subcontractors, material suppliers and employees to keep gates closed and take all steps consistent with sound construction site management to prevent third parties from accessing the Wulfsohn Ranch, and shall cooperate with Unocal to prevent third parties from accessing the Wulfsohn Ranch. Except for the temporary construction easement referred to in Paragraph 19, below, the City shall not without Unocal's prior written consent, enter upon or allow its agents, contractors, subcontractors, material suppliers or employees to enter upon those portions of the Wulfsohn Ranch owned by Unocal.

9. Non-Interference with Agricultural Operations. The City agrees, for itself and its agents, employees, contractors, subcontractors and material suppliers, to (A) keep construction activity for the Midland Extension Project within the Midland Extension Right-of-Way Parcel and the temporary construction easement referred to in Paragraph 19, below; (B) ensure that Unocal, its tenants and lessees will have access to the Wulfsohn Ranch during work on the Midland Extension Project, and (C) ensure that the Atkinson Canal will carry irrigation water and will be operational for use by Unocal, its tenants and lessees for irrigation and other purposes during the irrigation season (April 15-October 31) and, for that purpose, the City shall not undertake canal culverting or other work on the Atkinson Canal during the irrigation season.

10. Modifications of Midland Extension Project Plans and Specifications. In the event the City desires to subsequently modify the Midland Extension Project, as defined in Paragraph 6, above, from the Midland Extension Project Plans and Specifications, the City shall forward the proposed modifications to Unocal, which shall approve or disapprove the proposed modifications, and Unocal's approval shall not be unreasonably withheld. In the event Unocal disapproves the proposed modifications, the City Engineer (and/or consulting engineers) shall meet with Unocal representatives and Unocal's engineer to formulate alternatives necessary to implement this Agreement and complete the Midland Extension Project. The parties agree that time is of the essence to secure agreement upon any modifications to the Midland Extension Project Plans and Specifications. Notwithstanding the foregoing, in the event the City and Unocal cannot agree, the City shall construct the Midland Extension Project pursuant to the original Midland Extension Project Plans and Specifications.

11. Fencing. Prior to commencement of any work on the Midland Extension Project, but in no event later than April 15, 1995, the City shall at its expense install fencing along the Midland Extension Right-of-Way Parcel boundary as provided in this Paragraph. In those areas not subject to the temporary construction easement as provided in Paragraph 19, below, the City shall install permanent fencing, which shall be four-strand barbed wire. In those areas subject to temporary easements as provided in Paragraph 19, below, the City shall install temporary fencing which shall be replaced with permanent fencing (four-strand barbed wire) at the time the project is completed or at the time the temporary easement is no longer required, whichever first

occurs. After completion of the Midland Extension Project, the City at its expense shall maintain, repair and replace all fencing along the Midland Extension Right-of-Way Parcel, unless damage is caused by ranching operations on the Wulfsohn Ranch.

12. Inspections. Unocal shall have the right to undertake such inspections of the Midland Extension Project as Unocal deems appropriate at any time prior to, during, or after completion of the same; provided, however, that such inspections shall be limited to Unocal's interest in the Midland Extension Project as set forth in Paragraph 6, above. Further, the City agrees to provide Unocal's engineer seven (7) days' written notice prior to the commencement of any work on or within the Atkinson Canal easement reserved by Unocal. The City shall not cover or bury any portion of culvert installed for the Atkinson Canal until it has provided Unocal and Unocal's engineer forty-eight (48) hours' notice and the opportunity to inspect and approve the facilities, and until it has received notice from Unocal that the City may proceed to cover or bury the facilities. If Unocal fails to respond within 48 hours to a notice the City provides prior to burying or covering facilities, the City shall be entitled to treat such non-response as approval and proceed to cover or bury the culverts or facilities.

13. Nonconforming Work. In the event the City completes or constructs the Midland Extension Project, as defined in Paragraph 6, above, contrary in a material manner to the Midland Extension Project Plans and Specifications and any modifications approved pursuant to Paragraph 10, above, or fails to complete the Midland Extension Project, which installation or failure adversely affects Unocal's interest as determined by Unocal in its reasonable discretion, the City, at its sole expense, shall upon demand by Unocal undertake all work required to bring the Midland Extension Project into conformance with the Midland Extension Project Plans and Specifications. Unocal shall be entitled to enforce this right by an action at law or equity, including an action for specific performance.

14. Midland Extension Access Points.

A. Farm Access. The City shall provide to Unocal three access points for use by Unocal in connection with its farming and ranching operations on the Wulfsohn Ranch. For this purpose, the City shall install two farm access points on the south boundary and one farm access point on the north boundary (which shall provide for access to the approximately 5-acre outparcel created by the conveyance of the Midland Extension Right-of-Way Parcel and located north of such right-of-way in the westerly end of the Wulfsohn Ranch). Such farm access points shall be gates located in the fence constructed pursuant to Paragraph 11, above, which gates shall be a minimum of 16 feet in width. The City hereby grants Unocal the right to utilize such access points pending development of the Wulfsohn Ranch property and the conversion of or replacement of such access points to or with the development access points as provided for in subparagraph B, below. Prior to closing, Unocal shall specify the location of the access points, which locations shall be mutually agreed upon by the parties, and which agreement shall not be unreasonably withheld. The gates shall have or be of

equal or better specifications than those for the existing 16-foot (16') gate at the entrance to the Wulfsohn Ranch.

B. Development Access Points. The City agrees to provide to Unocal three access points from the Midland Extension Right-of-Way Parcel onto the Wulfsohn Ranch property at such time as Unocal desires to develop the Wulfsohn Ranch property. One access point shall be for the north outparcel created on the west end of the Wulfsohn Ranch as a result of the Midland Extension Project. Two access points shall be for the developable portions of the Wulfsohn Ranch property located south of the Midland Extension Right-of-Way Parcel. The actual location and design of such access points shall be subject to engineering considerations and approval by the City, which approval shall not be unreasonably withheld. Such accesses shall be constructed to agreed upon specifications at Unocal's sole expense; provided, however, the City shall not, as a condition of granting such accesses, require Unocal to pay the City any consideration whatsoever.

C. Existing Access to 2-Acre Outparcel. Unocal shall be entitled to maintain its existing farm access to the 2-acre outparcel created by conveyance of the Midland Extension Right-of-Way Parcel and located in the southeastern portion of the Wulfsohn Ranch; provided, however, that such access point may be relocated as or converted to a development access by mutual consent of Unocal and the City, and consistent with sound engineering practices.

15. Farm Access Road and Pump Relocation. As a result of the City's acquisition of the Midland Extension Right-of-Way Parcel and the construction of the Midland Extension Project, a new farm access road will be required from the existing Midland Avenue on the south end of the Wulfsohn Ranch. In addition, Unocal will be required to relocate its existing pump station in the Atkinson Canal, also located generally in the southeastern portion of the Wulfsohn Ranch. Unocal shall undertake the construction of a new farm access road and the relocation of the pump station. The City agrees to pay Unocal the sum of $12,000.00 at closing as total compensation for such costs. The City also agrees to extend electrical service to the relocated pump station at the City's sole cost. Unocal agrees to convey to the City a non-exclusive easement, not to exceed fifteen feet (15') in width, for installation, maintenance, operation, repair and replacement of the electric facilities. The easement shall be adjacent to the new farm access road or in location mutually agreed upon by the parties.

16. Atkinson Canal Crossings; Utility Sleeves. The City shall as part of the Midland Extension Project, and at its expense, install those crossing and culverts for the Wulfsohn Ranch portion of Atkinson Canal as shown on the Midland Extension Project Plans and Specifications. Unocal shall have the right to purchase sleeves for utility installation and other utility purposes. The City shall install the utility sleeves at Unocal's expense as part of the Midland Extension Project. The location of and specifications for any utility sleeves shall be mutually agreed upon by Unocal and the City, and the City's approval shall not be unreasonably withheld. The City further agrees that, subject to engineering considerations to ensure that the use of the Midland

Extension Right-of-Way is not interfered with for road and access purposes. Unocal shall be entitled to install underground utilities within the Midland Extension Right-of-Way, subject to the City's line extension policy in effect at the time of installation.

17. Completion; Conveyance of Unocal Facilities. Upon completion of the Midland Extension Project, the City Engineer shall furnish Unocal with a reproducible copy of the as-built drawings for all portions of the Midland Extension Project, together with written certification that the Atkinson Canal crossings, culverts and appurtenant facilities, and utility sleeves, were completed in substantial conformance with the Midland Extension Project Plans and Specifications, and any approved modifications and change orders. Upon such receipt, Unocal shall then provide the City written notification of its acceptance of the Atkinson Canal crossings, culverts, and appurtenant facilities, which date shall be known as the Acceptance Date. Within thirty (30) days of the Acceptance Date, the City shall execute a bill of sale conveying to Unocal, free and clear of all liens and encumbrances, the Atkinson Canal culverts and other facilities which the parties mutually agree shall be conveyed to Unocal. The City shall also provide Unocal with lien waivers for all property conveyed from all contractors, subcontractors, and material suppliers. Once conveyed to Unocal, subject to the warranty provisions of Paragraph 18, below, Unocal shall be solely responsible for operation, maintenance, repair, and replacement of Atkinson Canal culverts and appurtenant facilities.

18. Warranty. The City shall warrant all facilities which are conveyed to Unocal pursuant to this Agreement for a period of one (1) year from the Acceptance date. Specifically, but not by way of limitation, the City shall warrant that any and all facilities conveyed to Unocal shall be free of any defects in materials or workmanship for a period of one (1) year.

19. Temporary Construction Easement. Unocal hereby grants to the City a temporary construction easement (shoofly construction easement), more particularly described on Exhibit C, attached hereto and incorporated herein by this reference, not to exceed a total 0.1 acres, upon the Wulfsohn Ranch for the sole purpose of the Midland Extension Project. The City shall use these temporary easements only as necessary, as determined pursuant to the engineering and construction requirements for the Midland Extension and installation of appurtenant facilities. All temporary construction easements shall terminate upon completion of the Midland Extension or on December 31, 1996, whichever first occurs.

20. Drainage and Tailwater. Unocal shall have the right to continue irrigation of the retained portions of the Wulfsohn Ranch. The Midland Extension Project shall include adequate facilities and/or provisions for disposal of tailwater. To the extent the Midland Extension Project creates any alteration of historical drainage patterns which result in disputes with or claims by downgradient drainage recipients, the City hereby acknowledges that it shall at its expense be solely responsible for resolving such disputes or claims, and that it shall indemnify Unocal as provided in Paragraph 23, below.

21. Gas Line Relocation. In the event Rocky Mountain Natural Gas undertakes to relocate its existing natural gas line located on the Wulfsohn Ranch, the City agrees to allow

Rocky Mountain Natural Gas to relocate such gas line within the Midland Extension Right-of-Way, provided such line does not interfere with the Midland Extension Right-of-Way.

22. Scope. This Agreement applies only to the City's Midland Avenue Extension Project upon Unocal's Wulfsohn Ranch. The terms hereof shall not extend to, nor shall they be construed in any manner to extend to or be a precedential effect, with regard to any other improvements to any other portion of the Atkinson Canal or other property interests of Unocal. The parties expressly agree the compensation paid pursuant to this Agreement shall be of no precedential or evidentiary value in any future eminent domain proceeding between the parties.

23. Indemnity. To the extent permitted by law, the City shall indemnify and hold Unocal, its parent, subsidiary, and/or affiliate companies and the respective directors, officers, agents, and employees thereof, free and harmless from and against any and all liabilities, suits, claims, actions, proceedings, judgments, decrees, settlements, demands, and causes of action of all kinds, including but not limited to claims of damages to or losses of property of Unocal or others, injury, illness, or death, attorneys' fees and costs which arise from or in any manner relate to:

A. Work performed, facilities installed, or materials provided by the City, its contractors, subcontractors, materialmen, or others in connection with the City's work on or installation of the Midland Extension Project and appurtenant facilities.

B. Damages of any type claimed by any landowner, tenant, or other person located downstream or downgradient of the Wulfsohn Ranch or Atkinson Canal which arise from or relate to the City's work on or installation of the Midland Extension and appurtenant facilities.

C. Damages of any type claimed by any landowner, tenant, or other person located downstream of the Atkinson Canal or otherwise which are caused by the City's work on or installation of the Midland Extension Project.

D. The City's use of the Wulfsohn Ranch or any activity done or permitted by the City.

E. Any breach by the City of its obligations under this Agreement.

F. Any act or omission of the City, its agents, contractors, employees, or invitees taken pursuant to this Agreement or upon the Wulfsohn Ranch

The City shall be solely responsible to defend any such action, proceeding, or claim for which Unocal may be entitled to indemnification, and Unocal hereby agrees to fully cooperate with the City in the defense or settlement, as the case may be, of such action, proceeding, or claim, but Unocal reserves the right to participate in the defense of any such action, proceeding,

or claim at its own expense. The City shall give written notice to Unocal within ten (10) days after the City's actual knowledge of any matter giving rise to the obligation contained in this Paragraph. No insurance requirements shall be construed to limit this indemnity, which shall be effective to the maximum extent permitted by applicable law. As between Unocal and the City, the City hereby expressly waives any defenses of governmental immunity as provided in C.R.S. §24-10-101 et seq., as necessary to effectuate this indemnity; except, however, that the City expressly reserves all rights to assert governmental immunity with regard to any claims of third parties against the City.

24. Attorneys' Fees. The City shall pay Unocal its reasonable attorneys' fees incurred in the negotiation, execution, and implementation of this Agreement in the amount of approximately $11,000. Otherwise, each party shall bear its own attorneys' fees. However, in the event litigation is necessary to enforce the rights of the parties to this Agreement, as between themselves, the prevailing party in such litigation shall be entitled to reasonable attorneys' fees and costs of suit actually incurred.

25. Engineering and Consulting Fees. The City shall pay directly all of Unocal's engineering, consulting, surveying, and inspection costs and fees for the negotiation, execution, and implementation of this Agreement ("Engineering and Consulting Fees"). These Engineering and Consulting Fees shall specifically include, but not be limited to, costs and fees for review of plans, change orders, and contract documents; field work, inspections, and drafting. The parties agree that Unocal's Engineering and Consulting Fees incurred to date are approximately $2,750. The Engineering and Consulting Fees Unocal anticipates incurring in the future are approximately $3,000 and shall not, so long as the City complies with the terms of this Agreement, exceed $5,000. Unocal shall submit to the City for its review, prior to payment, copies of all bills for Engineering and Consulting Fees.

26. Complete Agreement; Amendment. This Agreement constitutes the entire and complete agreement between the parties, and any modification or amendment hereto shall be evidenced by a writing signed by the parties.

27. Binding Effect; Survival. This Agreement shall be binding upon and inure to the benefit of the parties, their successors, grantees, and assigns. Each term and condition of this Agreement shall survive the closing on the Midland Extension Right-of-Way Parcel.

28. Authority. Each person executing this Agreement represents and warrants that he has been duly authorized by the party which he purports to represent to execute this Agreement, and has authority to bind said party to the terms and conditions of this Agreement.

29. Governing Law. This Agreement shall be construed under the laws of the State of Colorado.

30. No Waiver. No provision of this Agreement may be waived except by an agreement in writing signed by the waiving party. A waiver of any term or provision shall not

be construed as a waiver of any other term or provision.

31. Headings. The paragraph headings in this Agreement shall not be used in the construction or interpretation hereof, as they have no substantive effect and are for convenience only.

32. Severability. If any part or section of this Agreement shall be found void or invalid by a court of competent jurisdiction, such finding shall not affect any remaining part or section, and said remaining parts or sections shall continue in full force and effect. The parties shall renegotiate in good faith any matter addressed by a part or section that is found void or invalid.

33. Notice. All notices required under this Agreement shall be in writing and shall be hand delivered or sent by registered or certified mail, return receipt requested, postage prepaid, to the addresses of the parties herein set forth. All notices so given shall be considered effective seventy-two (72) hours after deposit postage paid in the United States Mail with the proper address as set forth below. Either party by notice so given may change the address to which future notices shall be sent.

Notice to: Unocal Real Estate Division
c/o Gary Parks
4289 County Road 215
Parachute, CO 81635

With copy to: Union Oil Company of California
1201 West Fifth Street
P. O. Box 7600
Los Angeles, CA 90051

With copy to: Loyal E. Leavenworth, Esq.
Leavenworth & Caloia, P.C.
P. O. Drawer 2030
Glenwood Springs, CO 81602

Notice to: City of Glenwood Springs
attn: City Manager
attn: City Attorney
806 Cooper Avenue
Glenwood Springs, CO 81601

34. Signatures; Counterparts. Unocal and the City agree that signatures obtained by facsimile transmission shall be sufficient and binding for purposes of this Agreement, and that original signatures shall be forwarded to each party. This Agreement may be executed in multiple original counterparts, each of which shall constitute an original but all of which shall

constitute one and the same document.

IN WITNESS WHEREOF, the parties have executed this Midland Avenue Extension Agreement in duplicate originals on the day and year first written above.

UNION OIL COMPANY OF CALIFORNIA

By _____

Name: R. K. JENNISON, GENERAL MANAGER
Title: REAL ESTATE DEVELOPMENT

R&M DEPT.

ATTEST:

_____

J. A. NEAL, ASSISTANT SECRETARY

CITY OF GLENWOOD SPRINGS

By _____

Robert J. Zanella, Mayor

ATTEST:

_____

City Clerk

Legal Description:

A parcel of land situated in Sections 5,6,8, and 9, Township 6 South, Range 89 West of the Sixth Principal Meridian, County of Garfield, State of Colorado, said parcel being more particularly described as follows:

Beginning at a point on the Southerly Right-of-Way of the Denver and Rio Grande Western Railroad whence the Southwest corner of said Section 5 bears South 35 degrees 52 minutes 14 seconds East (S 35°52'14" E), a distance of 1220.84 feet; hence

North 83 degrees 39 minutes 00 seconds East (N 83°39'00" E), along said Right-of-Way a distance of 189.97 feet; thence leaving said Right-of-Way
South 42 degrees 36 minutes 07 seconds East (S 42°36'07" E), a distance of 17.15 feet; thence
along a curve to the left having a radius of 710.00 feet, arc length of 677.30 feet, delta angle of 54 degrees 39 minutes 24 seconds (54°39'24"), a chord bearing of South 69 degrees 55 minutes 49 seconds East (S 69°55'49" E), and a chord length of 651.91 feet; thence
North 82 degrees 44 minutes 30 seconds East (N 82°44'30" E), a distance of 80.93 feet; thence
along a curve to the left having a radius of 500.00 feet, arc length of 194.98 feet, delta angle of 22 degrees 20 minutes 35 seconds (22°20'35"), a chord bearing of North 71 degrees 34 minutes 13 seconds East (N 71°34'13" E), and a chord length of 193.75 feet; thence
North 60 degrees 23 minutes 56 seconds East (N 60°23'56" E), a distance of 185.42 feet; thence
North 56 degrees 39 minutes 41 seconds East (N 56°39'41" E), a distance of 230.74 feet; thence
North 75 degrees 18 minutes 08 seconds East (N 75°18'08" E), a distance of 201.74 feet; thence
North 06 degrees 21 minutes 00 seconds West (N 06°21'00" W), a distance of 20.00 feet to a point on said Southerly Right-of-Way of said Denver and Rio Grande Western Railroad; thence along said Right-of-Way the following eighteen (18) courses:

North 83 degrees 39 minutes 00 seconds East (N 83°39'00" E), a distance of 103.88 feet; thence
North 84 degrees 33 minutes 30 seconds East (N 84°33'30" E), a distance of 195.3 feet; thence
along a curve to the right having a radius of 2181.8 feet, arc length of 155.4 feet, delta angle of 04 degrees 04 minutes 45 seconds (04°04'45"), a chord bearing of North 88 degrees 11 minutes 30 seconds East (N 88°11'30" E), and a chord length of 155.3 feet; thence
South 81 degrees 15 minutes 00 seconds East (S 81°15'00" E), a distance of 190.6 feet; thence
along a curve to the right having a radius of 2161.8 feet, arc length of 290.6 feet, delta angle of 07 degrees 42 minutes 09 seconds (07°42'09"), a chord bearing of

South 80 degrees 55 minutes 00 seconds East (S 80°55'00" E), and a chord length of 290.4 feet; thence

South 78 degrees 25 minutes 00 seconds East (S 78°25'00" E), a distance of 194.2 feet; thence

South 77 degrees 33 minutes 00 seconds East (S 77°33'00" E), a distance of 192.2 feet; thence

South 74 degrees 34 minutes 00 seconds East (S 74°34'00" E) , a distance of 900.0 feet; thence

South 77 degrees 25 minutes 30 seconds East (S 77°25'30" E), a distance of 200.3 feet; thence

South 74 degrees 34 minutes 00 seconds East (S 74°34'00" E), a distance of 977.1 feet; thence

South 75 degrees 29 minutes 00 seconds East (S 75°29'00" E), a distance of 223.6 feet; thence

along a curve to the right having a radius of 1342.4 feet, arc length of 1063.7 feet, delta angle of 45 degrees 24 minutes 00 seconds (45°24'00"), a chord bearing of South 47 degrees 11 minutes 47 seconds East (S 47°11'47" E), and a chord length of 1036.1 feet; thence

South 21 degrees 28 minutes 30 seconds East (S 21°28'30" E), a distance of 223.7 feet; thence

South 19 degrees 50 minutes 00 seconds East (S 19°50'00" E), a distance of 125.9 feet; thence

South 28 degrees 22 minutes 00 seconds East (S 28°22'00" E), a distance of 101.1 feet; thence

South 19 degrees 50 minutes 00 seconds East (S 19°50'00" E), a distance of 361.9 feet; thence

South 21 degrees 31 minutes 00 seconds East (S 21°31'00" E), a distance of 237.0 feet; thence

along a curve to the left having a radius of 1507.4 feet, arc length of 526.55 feet, delta angle of 20 degrees 00 minutes 50 seconds (20°00'50"), a chord bearing of South 34 degrees 30 minutes 23 seconds East (S 34°30'23" E), and a chord length of 523.87 feet; thence leaving said Southerly Right-of-Way

South 54 degrees 54 minutes 14 seconds West (S 54°54'14" W), a distance of 20.00 feet; thence

South 35 degrees 05 minutes 46 seconds East (S 35°05'46" E), a distance of 163.12 feet; thence

along a curve to the left having a radius of 950.00 feet, arc length of 250.62 feet, delta angle of 15 degrees 06 minutes 54 seconds (15°06'54"), a chord bearing of South 42 degrees 39 minutes 13 seconds East (S 42°39'13" E), and a chord length of 249.89 feet; thence

South 50 degrees 12 minutes 40 seconds East (S 50°12'40" E), a distance of 91.26 feet; thence

South 39 degrees 47 minutes 20 seconds West (S 39°47'20" W), a distance of 10.00 feet; thence

South 50 degrees 12 minutes 40 seconds East (S 50°12'40" E), a distance of 18.03 feet; thence

North 39 degrees 47 minutes 20 seconds East (N 39°47'20" E), a distance of 10.00 feet; thence

South 50 degrees 12 minutes 40 seconds East (S 50°12'40" E), a distance of 259.08 feet; thence

along a curve to the right having a radius of 1050.00 feet, arc length of 133.74 feet, delta angle of 07 degrees 17 minutes 53 seconds (07°17'53"), a chord bearing of South 46 degrees 33 minutes 43 seconds East (S 46°33'43" E), and a chord length of 133.65 feet; thence

South 42 degrees 54 minutes 47 seconds East (S 42°54'47" E), a distance of 112.05 feet; thence

along a curve to the left having a radius of 715.00 feet, arc length of 198.66 feet, delta angle of 15 degrees 55 minutes 11 seconds (15°55'11"), a chord bearing of South 50 degrees 52 minutes 22 seconds East (S 50°52'22" E), and a chord length of 198.03 feet to a point on the East line of the SW1/4NW1/4 said Section 9; thence along said East line,

South 00 degrees 39 minutes 40 seconds West (S 00°39'40" W), a distance of 50.40 feet to a point on the Southerly ROW of Midland Avenue; thence along said southerly ROW

South 44 degrees 34 minutes 25 seconds East (S 44°34'25" E), a distance of 112.84 feet to a point on the Northerly ROW of Red Mountain Drive; thence along said Northerly ROW

along a curve to the left having a radius of 124.00 feet, arc length of 73.43 feet, delta angle of 33 degrees 55 minutes 44 seconds (33°55'44"), a chord bearing of South 58 degrees 09 minutes 53 seconds West (S 58°09'53" W), and a chord length of 72.36 feet; thence

North 54 degrees 37 minutes 50 seconds West (N 54°37'50" W), a distance of 373.48 feet;

North 43 degrees 25 minutes 51 seconds West (N 43°25'51" W), a distance of 220.96 feet; thence

North 50 degrees 12 minutes 40 seconds West (N 50°12'40" W), a distance of 131.37 feet; thence

along a non-tangent curve to the left having a radius of 200.00 feet, arc length of 42.95 feet, delta angle of 12 degrees 18 minutes 18 seconds (12°18'18"), a chord bearing of North 72 degrees 17 minutes 46 seconds West (N 72°17'46" W), and a chord length of 42.87 feet; thence

North 78 degrees 26 minutes 55 seconds West (N 78°26'55" W), a distance of 27.55 feet; thence

along a curve to the right having a radius of 100.00 feet, arc length of 95.96 feet, delta angle of 54 degrees 58 minutes 54 seconds (54°58'54"), a chord bearing of North 50 degrees 57 minutes 28 seconds West (N 50°57'28" W), and a chord length of 92.32 feet; thence

North 23 degrees 28 minutes 01 seconds West (N 23°28'01" W), a distance of 143.44 feet; thence

North 41 degrees 03 minutes 52 seconds West (N 41°03'52" W), a distance of 291.31 feet; thence

North 30 degrees 38 minutes 03 seconds West (N 30°38'03" W), a distance of 271.57 feet; thence

South 54 degrees 53 minutes 57 seconds West (S 54°53'57" W), a distance of 17.75 feet; thence

North 41 degrees 39 minutes 20 seconds West (N 41°39'20" W), a distance of 43.30 feet; thence

North 54 degrees 53 minutes 57 seconds East (N 54°53'57" E), a distance of 22.69 feet; thence

North 35 degrees 06 minutes 03 seconds West (N 35°06'03" W), a distance of 21.42 feet; thence

along a curve to the right having a radius of 1165.00 feet, arc length of 272.23 feet, delta angle of 13 degrees 23 minutes 18 seconds (13°23'18"), a chord bearing of North 28 degrees 24 minutes 24 seconds West (N 28°24'24" W), and a chord length of 271.61 feet; thence

North 21 degrees 42 minutes 46 seconds West (N 21°42'46" W), a distance of 764.09 feet; thence

South 68 degrees 17 minutes 14 seconds West (S 68°17'14" W), a distance of 29.01 feet; thence

North 23 degrees 26 minutes 12 seconds West (N 23°26'12" W), a distance of 78.05 feet; thence

North 68 degrees 17 minutes 14 seconds East (N 68°17'14" E), a distance of 31.36 feet; thence

North 21 degrees 42 minutes 46 seconds West (N 21°42'46" W), a distance of 179.06 feet; thence

along a curve to the left having a radius of 1190.00 feet, arc length of 1104.51 feet, delta angle of 53 degrees 10 minutes 46 seconds (53°10'46"), a chord bearing of North 48 degrees 18 minutes 08 seconds West (N 48°18'08" W), and a chord length of 1065.29 feet; thence

North 76 degrees 22 minutes 36 seconds West (N 76°22'36" W), a distance of 559.87 feet; thence

North 74 degrees 18 minutes 47 seconds West (N 74°18'47" W), a distance of 339.00 feet; thence

South 25 degrees 41 minutes 14 seconds West (S 25°41'14" W), a distance of 42.89 feet; thence

North 66 degrees 02 minutes 34 seconds West (N 66°02'34" W), a distance of 143.01 feet; thence

North 18 degrees 39 minutes 45 seconds West (N 18°39'45" W), a distance of 29.17 feet; thence

North 79 degrees 07 minutes 45 seconds West (N 79°07'45" W), a distance of 369.05 feet; thence

South 14 degrees 21 minutes 02 seconds West (S 14°21'02" W), a distance of 62.19 feet; thence

North 77 degrees 45 minutes 41 seconds West (N 77°45'41" W), a distance of 150.75 feet; thence

North 08 degrees 06 minutes 07 seconds West (N 08°06'07" W), a distance of 62.58 feet; thence

North 74 degrees 58 minutes 24 seconds West (N 74°58'24" W), a distance of 294.83 feet; thence

South 47 degrees 20 minutes 20 seconds West (S 47°20'20" W), a distance of 37.65 feet; thence

North 87 degrees 48 minutes 31 seconds West (N 87°48'31" W), a distance of 164.69 feet; thence

North 72 degrees 50 minutes 12 seconds West (N 72°50'12" W), a distance of 30.90 feet; thence

North 15 degrees 26 minutes 00 seconds East (N 15°26'00" E), a distance of 81.35 feet; thence

North 79 degrees 21 minutes 26 seconds West (N 79°21'26" W), a distance of 693.85 feet; thence

South 13 degrees 24 minutes 04 seconds West (S 13°24'04" W), a distance of 18.04 feet; thence

South 84 degrees 13 minutes 10 seconds West (S 84°13'10" W), a distance of 200.33 feet; thence

North 88 degrees 20 minutes 39 seconds West (N 88°20'39" W), a distance of 29.12 feet; thence

North 04 degrees 06 minutes 37 seconds East (N 04°06'37" E), a distance of 84.94 feet; thence

North 89 degrees 22 minutes 01 seconds West (N 89°22'01" W), a distance of 220.22 feet; thence

along a curve to the left having a radius of 400.00 feet, arc length of 138.27 feet, delta angle of 19 degrees 48 minutes 21 seconds (19°48'21"), a chord bearing of South 80 degrees 43 minutes 49 seconds West (S 80°43'49" W), and a chord length of 137.58 feet; thence

South 70 degrees 49 minutes 38 seconds West (S 70°49'38" W), a distance of 233.79 feet; thence

South 62 degrees 29 minutes 21 seconds West (S 62°29'21" W), a distance of 379.58 feet; thence

South 02 degrees 31 minutes 55 seconds West (S 02°31'55" W), a distance of 137.01 feet; thence

South 89 degrees 05 minutes 38 seconds West (S 89°05'38" W), a distance of 386.55 feet; thence

along a curve to the right having a radius of 880.00 feet, arc length of 580.98 feet, delta angle of 37 degrees 49 minutes 37 seconds (37°49'37"), a chord bearing of North 71 degrees 59 minutes 34 seconds West (N 71°59'34" W), and a chord length of 570.49 feet; thence

North 53 degrees 04 minutes 45 seconds West (N 53°04'45" W), a distance of 232.27 feet; thence

North 44 degrees 34 minutes 50 seconds West (N 44°34'50" W), a distance of 72.53 feet to the point of beginning. Said parcel contains 27.13 acres more or less.

Subject to easements, reservations, restrictions and rights-of-way of record, existing and in place.

EXHIBIT B

Items to be included in the Final City of Glenwood Springs Alternate Route Plans that are not included in plans of the same name enumerated as follows:

Sheet No.	Midland Ave STA	Dated
1	310+75.25 to 318+95.76	01/18/93
2	318+95.76 to 328+15.83	01/18/93
3	328+15.83 to 337+52.93	01/18/93
4	337+56.25 to 346+75.64	10/12/92
5	346+75.64 to 355+94.52	10/12/92
6	355+94.52 to 365+39.15	10/12/92
7	365+39.15 to 374+84.39	10/12/92
8	374+84.39 to 384+02.69	10/12/92
9	384+02.69 to 393+15.73	10/12/92
10	393+32.92 to 402+21.25	12/04/92
11	402+21.25 to 405+90.80	12/04/92

1) **Conveyance of Roadway Drainage away from Atkinson Canal**

Between STA. 314+00 and STA. 323+50 the Midland Extension across Wulfsohn Ranch is located immediately above the Atkinson Canal. No roadway drainage from either side of the road shall be allowed to discharge into the Atkinson Canal. This shall be accomplished at the City's discretion, by construction of either curb and gutter or drainage swales adjacent to the paved surface. Drainage swales or curb and gutter shall start at, and discharge into the 24" diameter CMP culvert identified on the plans at STA 313+25.60. The drainage swales or curb and gutter shall extend to and discharge into the 48" diameter CMP culvert identified on the plans at STA 324+95.11.

2) **Access to 2± Acre Ou. Parcel Located Northerly and Easterly of Proposed Midland Extension Between STA. 314+00 and STA 329+00.**

Historically, access to the Wulfsohn Ranch has been from the north terminus of Midland Avenue. Access along the historic route shall be maintained by construction of a new "farm access" driveway located at approximately STA 313+50. The exact location shall be at the discretion of the City but shall be located between STA 313+00 and STA 314+00. The farm access driveway shall tie into the existing access road and shall be constructed at a grade of 8% or less.

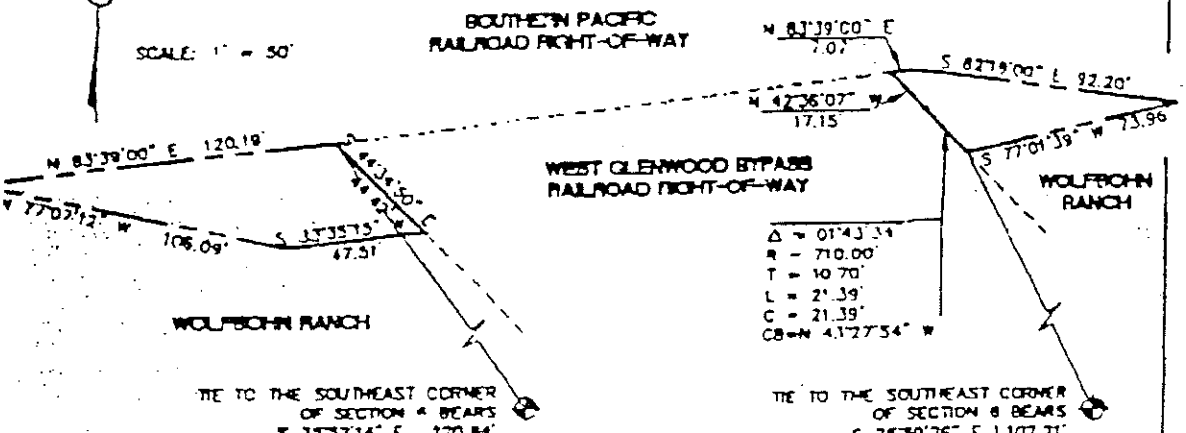
3) **Location of Storm Drainage and Irrigation Tail water Ditches STA. 324 + 95.11 to STA 405 + 90.80.**

All ditches constructed for the purposes of collecting storm water or irrigation runoff water shall be constructed within the Midland Extension Right-of-Way Parcel owned by the City. All such ditches shall discharge to culverts that will convey storm water and irrigation tail water across the Midland Extension. Where storm drainage and tail water ditches are located below historic irrigated land of the Wulfsohn Ranch such ditches shall be capable of conveying, at times, all water rights appurtenant to the Atkinson Canal totalling approximately 24 cfs.

LEGAL DESCRIPTION OF TEMPORARY CONSTRUCTION EASEMENT PROPERTY

EXHIBIT MAP

SHOOFLY CONSTRUCTION EASEMENT LYING WESTERLY AND EASTERLY OF THE WEST GLENWOOD BYPASS RIGHT-OF-WAY



EASEMENT DESCRIPTION

SHOOFLY CONSTRUCTION EASEMENT
LYING WESTERLY OF THE WEST GLENWOOD BYPASS RIGHT-OF-WAY

A PARCEL OF LAND SITUATED IN THE SE1/4 OF SECTION 6, TOWNSHIP 6 SOUTH, RANGE 89 WEST OF THE SIXTH PRINCIPAL MERIDIAN, SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 6, A STONE IN PLACE; THENCE N 35°52'14" W 1220.84 TO A POINT ON THE SOUTHERLY RIGHT-OF-WAY OF THE SOUTHERN PACIFIC RAILROAD, SAID POINT ALSO BEING ON THE WESTERLY RIGHT-OF-WAY OF THE WEST GLENWOOD BYPASS; THENCE LEAVING SAID RAILROAD RIGHT-OF-WAY S 44°34'50" E ALONG THE WESTERLY RIGHT-OF-WAY OF SAID WEST GLENWOOD RIGHT-OF-WAY 44.42 FEET; THENCE LEAVING SAID WESTERLY RIGHT-OF-WAY S 83°35'13" W 47.51 FEET; THENCE N 77°07'12" W 108.09 FEET TO A POINT ON THE SOUTHERLY RIGHT-OF-WAY OF THE SOUTHERN PACIFIC RAILROAD; THENCE N 83°39'00" E ALONG SAID SOUTHERLY RIGHT-OF-WAY 120.19 FEET TO THE TRUE POINT OF BEGINNING; SAID PARCEL CONTAINING 2,929 SQUARE FEET, MORE OR LESS.

SHOOFLY CONSTRUCTION EASEMENT
LYING EASTERLY OF THE WEST GLENWOOD BYPASS RIGHT OF-WAY

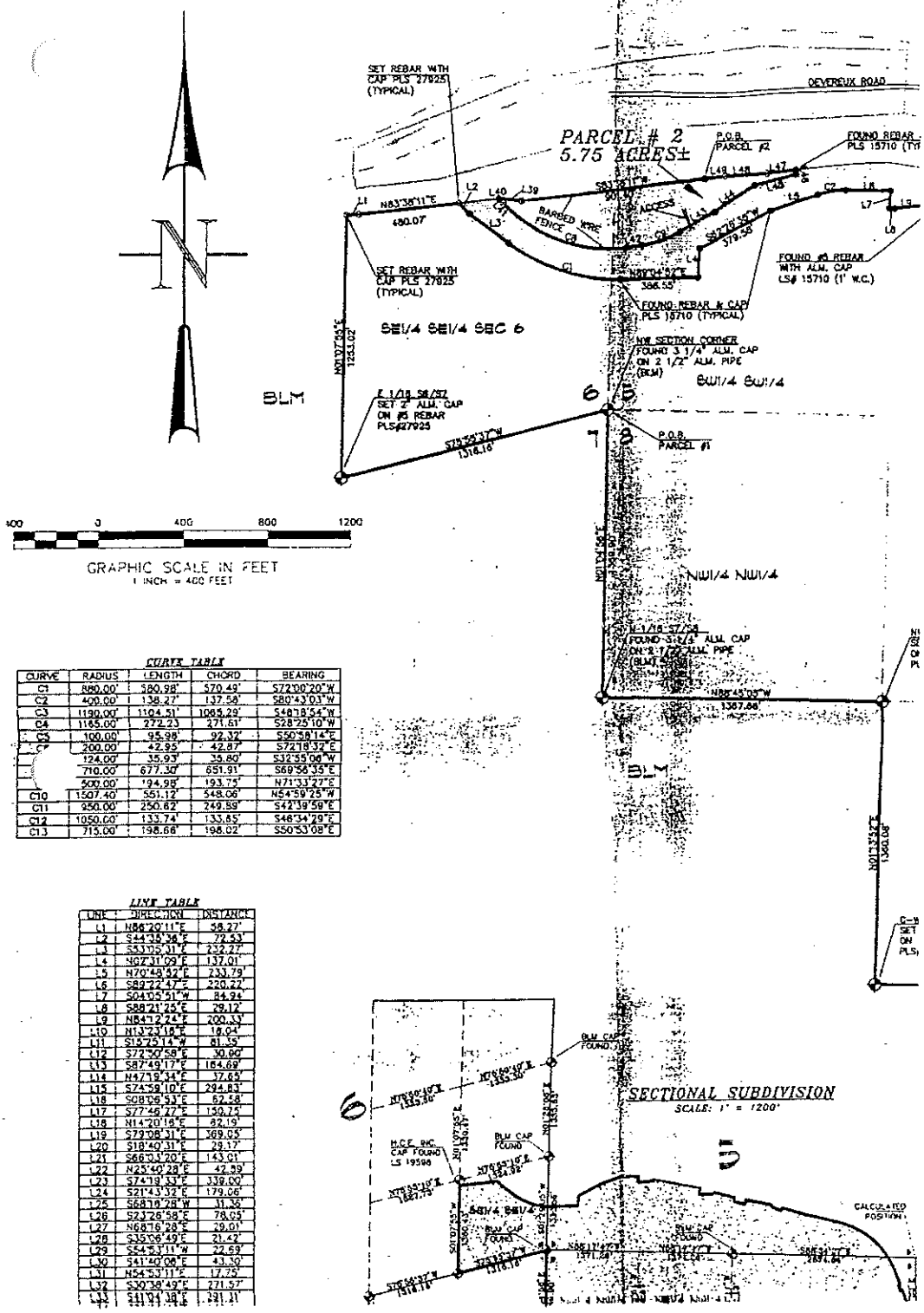
A PARCEL OF LAND SITUATED IN THE SE1/4 OF SECTION 6, TOWNSHIP 6 SOUTH, RANGE 89 WEST OF THE SIXTH PRINCIPAL MERIDIAN, SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 6, A STONE IN PLACE; THENCE N 26°59'26" W 1102.21 TO A POINT ON THE EASTERLY RIGHT-OF-WAY OF THE WEST GLENWOOD BYPASS; THENCE ALONG SAID EASTERLY RIGHT-OF-WAY ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 710.00 FEET AND A CENTRAL ANGLE OF 01°43'34", A DISTANCE OF 21.39 FEET (CHORD BEARS N 43°27'54" W 21.38 FEET); THENCE CONTINUING ALONG SAID EASTERLY RIGHT-OF-WAY N 42°36'07" W 17.15 FEET TO A POINT ON THE SOUTHERLY RIGHT-OF-WAY OF THE SOUTHERN PACIFIC RAILROAD; THENCE LEAVING SAID EASTERLY RIGHT-OF-WAY N 83°39'00" E ALONG SAID SOUTHERLY RIGHT-OF-WAY 7.07 FEET; THENCE LEAVING SAID SOUTHERLY RIGHT-OF-WAY S 82°19'00" E 82.20 FEET; THENCE S 77°01'39" W 73.96 FEET TO THE TRUE POINT OF BEGINNING; SAID PARCEL CONTAINING 1,316 SQUARE FEET, MORE OR LESS.

Boundary Survey
6-28-96

WULF

SITI



CURVE TABLE

CURVE	RADIUS	LENGTH	CHORD	BEARING
C1	880.00'	580.98'	570.49'	S72°00'20"W
C2	400.00'	138.27'	137.58'	S80°43'03"W
C3	1130.00'	1104.51'	1068.29'	S48°38'54"W
C4	1165.00'	272.23'	271.61'	S28°25'10"W
C5	100.00'	95.98'	92.32'	S50°58'14"E
	200.00'	42.85'	42.87'	S72°18'32"E
	124.00'	35.93'	35.80'	S32°59'08"W
	710.00'	677.30'	651.91'	S69°56'35"E
	500.00'	194.98'	193.75'	N71°33'27"E
C10	1507.40'	561.12'	548.06'	N54°59'25"W
C11	950.00'	250.62'	249.89'	S42°39'59"E
C12	1050.00'	133.74'	133.65'	S46°34'29"E
C13	715.00'	198.66'	198.02'	S50°53'08"E

LINE TABLE

LINE	DIRECTION	DISTANCE
L1	N86°20'11"E	58.27'
L2	S44°35'36"E	72.53'
L3	S53°05'31"E	232.27'
L4	N02°31'09"E	137.01'
L5	N70°48'52"E	233.79'
L6	S89°22'47"E	220.22'
L7	S04°05'51"W	84.94'
L8	S88°21'25"E	29.12'
L9	N84°12'24"E	200.33'
L10	N13°23'16"E	18.04'
L11	S19°25'14"W	81.35'
L12	S72°50'58"E	30.00'
L13	S87°49'17"E	164.69'
L14	N47°19'34"E	37.65'
L15	S74°58'10"E	294.83'
L16	S08°09'53"E	82.58'
L17	S77°46'27"E	150.75'
L18	N14°20'16"E	82.19'
L19	S79°08'31"E	369.05'
L20	S18°40'31"E	29.17'
L21	S66°31'20"E	143.01'
L22	N25°40'28"E	42.59'
L23	S74°19'33"E	339.00'
L24	S21°43'32"E	179.06'
L25	S68°16'28"W	31.36'
L26	S23°26'58"E	78.05'
L27	N68°16'28"E	29.01'
L28	S35°06'49"E	21.42'
L29	S54°53'11"W	22.59'
L30	S41°40'06"E	43.30'
L31	N54°53'11"E	17.75'
L32	S30°38'49"E	271.57'
L33	S11°01'38"E	191.31'

C3	1130.00'	1104.51'	1065.49'	S48°18'54"W
C4	1165.00'	272.23'	271.61'	S28°25'10"W
C5	100.00'	93.96'	92.32'	S50°58'14"E
C6	200.00'	42.95'	42.87'	S72°18'32"E
C7	124.00'	35.93'	35.80'	S32°55'08"W
C8	710.00'	677.30'	651.91'	S69°56'35"E
C9	500.00'	194.28'	193.75'	N71°33'27"E
C10	1507.40'	551.12'	548.06'	N54°59'25"W
C11	950.00'	250.62'	249.89'	S42°39'59"E
C12	1050.00'	133.74'	133.65'	S48°34'29"E
C13	715.00'	198.66'	198.02'	S50°53'08"E

LINE TABLE

LINE	DIRECTION	DISTANCE
L1	N86°20'11"E	58.27'
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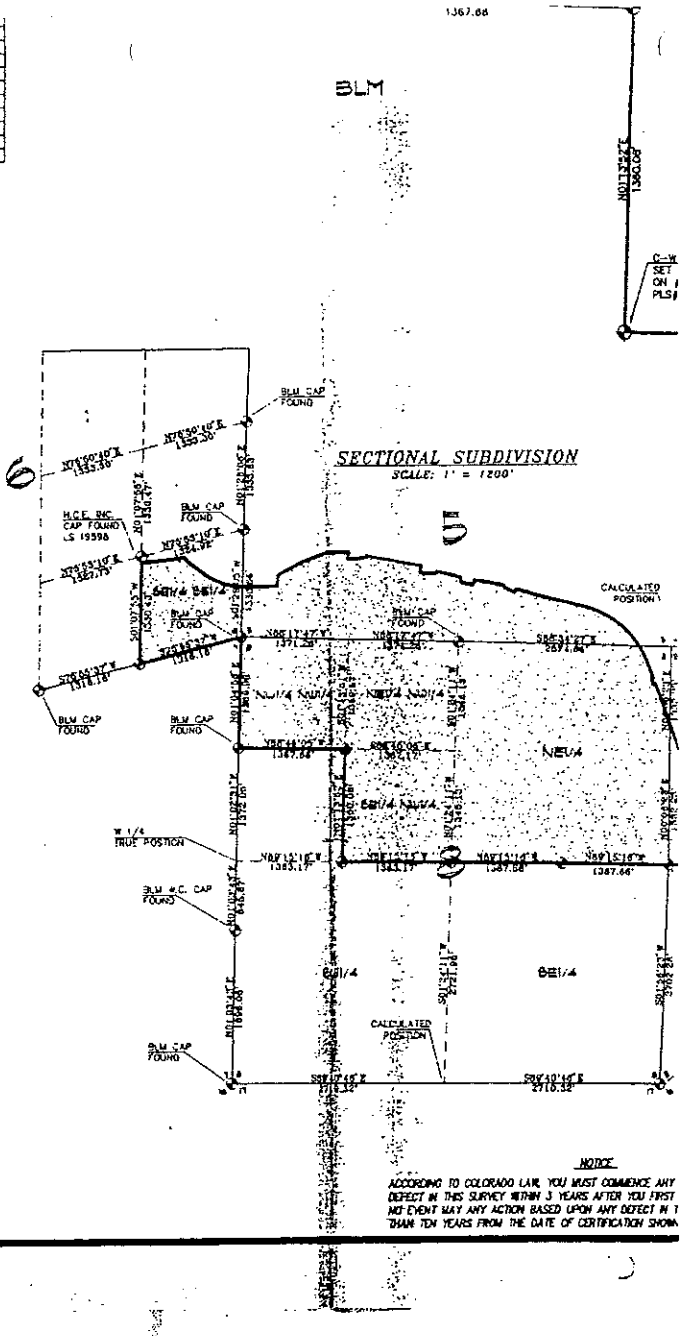
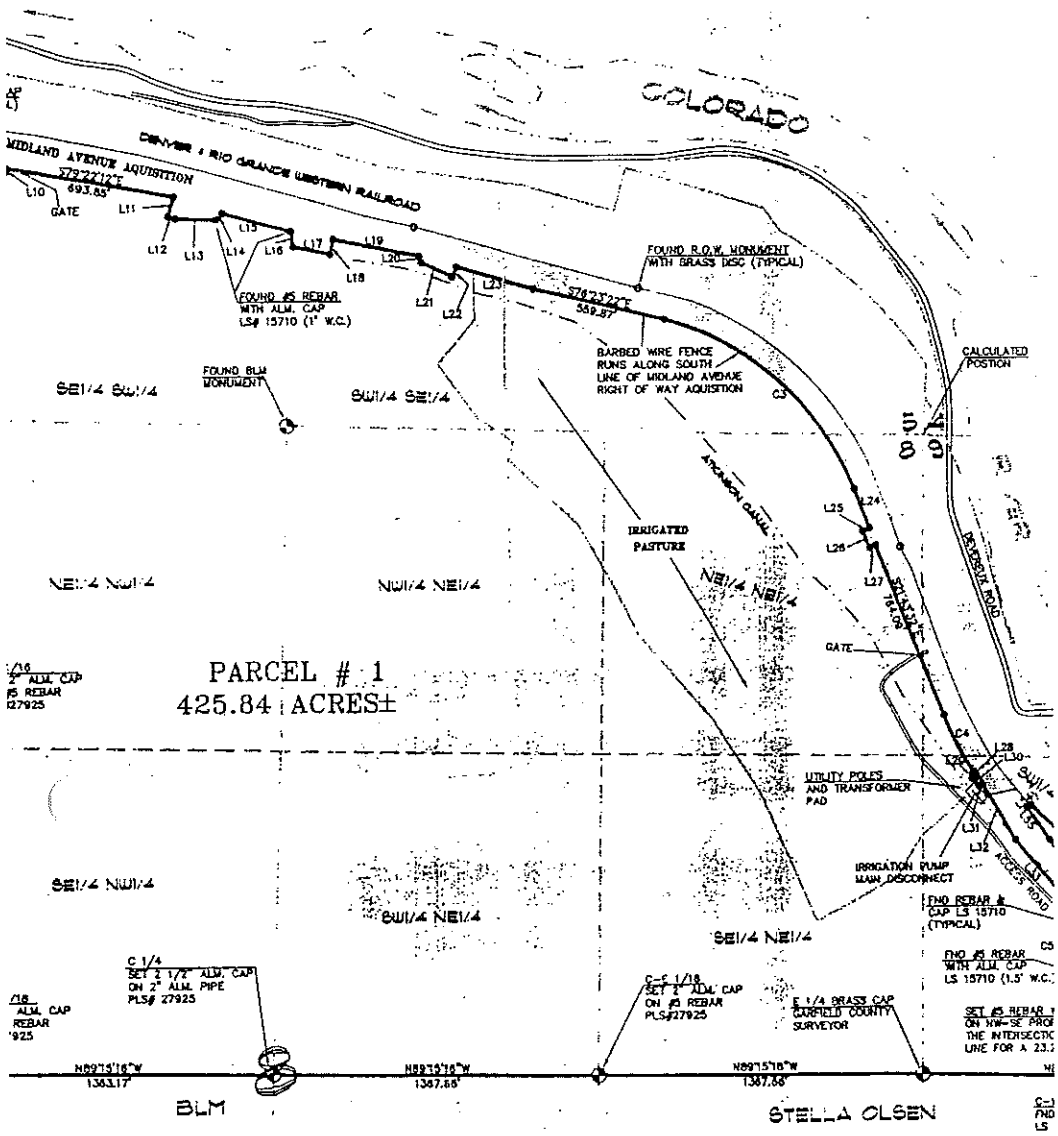
L7	S04°05'51"W	84.94'
L8	S88°21'25"E	29.12'
L9	N84°12'24"E	200.33'
L10	N13°23'19"E	16.04'
L11	S15°25'14"W	91.35'
L12	S72°50'58"E	30.90'
L13	S87°49'17"E	164.69'
L14	N47°19'34"E	32.55'
L15	S74°59'10"E	294.83'
L16	S08°06'53"E	82.58'
L17	S27°46'27"E	150.75'
L18	N14°20'16"E	62.19'
L19	S79°08'31"E	369.05'
L20	S18°40'31"E	29.17'
L21	S68°03'20"E	143.01'
L22	N25°40'28"E	42.89'
L23	S74°19'33"E	338.00'
L24	S21°43'32"E	179.06'
L25	S68°18'28"W	31.36'
L26	S23°26'56"E	78.05'
L27	N68°18'28"E	29.01'
L28	S35°06'49"E	21.42'
L29	S84°57'11"W	22.69'
L30	S41°40'09"E	43.30'
L31	N84°53'11"E	17.75'
L32	S30°38'49"E	271.57'
L33	S41°04'38"E	291.31'
L34	S23°28'47"E	143.44'
L35	S78°27'41"E	27.55'
L36	S59°13'28"E	131.27'
L37	S43°26'37"E	220.95'
L38	S00°39'40"W	82.52'
L39	N82°19'49"W	103.10'
L40	S83°38'11"W	7.65'
L41	S42°06'53"E	17.15'
L42	N82°43'44"E	80.93'
L43	N60°23'10"E	185.42'
L44	N58°38'55"E	230.74'
L45	N75°17'22"E	201.74'
L46	N06°21'46"W	19.87'
L47	S83°38'11"W	132.79'
L48	S86°20'11"W	200.30'
L49	S83°38'11"W	98.60'
L51	N70°07'49"W	195.45'
L52	N68°27'19"W	235.00'
L53	S24°32'11"W	25.00'
L54	S54°50'12"W	20.12'
L55	S35°06'32"E	163.12'
L56	S50°13'28"E	91.26'
L57	S39°46'34"W	10.00'
L58	S50°13'28"E	18.00'
L59	N39°46'34"E	10.00'
L60	S50°13'28"E	259.08'
L61	S42°55'33"E	112.05'



OHN RANCH BOUNDARY S

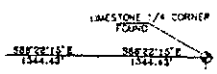
ATED IN SECTIONS 5, 6, 8 & 9 T.6.S. R.89.W. 6th
COUNTY OF GARFIELD, STATE OF COLORADO



PARCEL # 2 LEGAL DESCRIPTION

A parcel of land situated in Sections 5 and 6, Township 6 South, Range 89 West of the 6th Principal Meridian, County of Garfield, State of Colorado, said parcel being more particularly described as follows:

Beginning at a concrete Right-of-Way monument found on the Southerly Right-of-Way of the Denver and Rio Grande Western Railroad whence the BLM alum. cap in place and properly marked for the Southwest corner of said Section 5 bears S 23°29'57" W 1198.71 feet;
Thence along said Southerly Right-of-Way the following (3) courses: thence S 83°38'11" W 901.40 feet; thence N 82°19'49" W 103.10 feet; thence S 83°38'11" W 7.05 feet leaving said Southerly Right-of-Way; thence along the Northerly Right-of-Way of the Midland Ave. Right-of-Way Acquisition the following (8) courses: thence S 42°36'55" E 17.15 feet; thence along a curve to the left having a radius of 710.00 feet and an arc length of 677.30 feet, the chord of which bears S 69°56'35" E 651.91 feet; thence N 82°43'44" E 80.93 feet; thence along the arc of a curve to the left having a radius of 500.00 feet and an arc length of 194.98 feet, the chord of which bears N 71°33'27" E 193.75 feet; thence N 60°23'10" E 185.42 feet; thence N 56°38'55" E 230.74 feet; thence N 75°17'22" E 201.74 feet; thence N 08°21'46" W 19.87 feet leaving said Northerly Right-of-



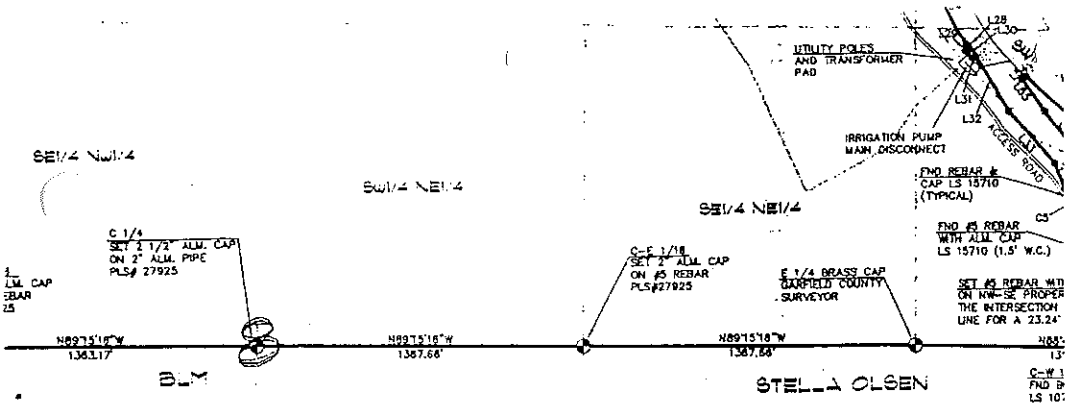
NOTES:

1) Bearings shown hereon ar between found survey m at the centerline intersec and 8th Street & Blak

2) Various apparent utilitie thru Parcels #1, #2 and in the Title Commitment not graphically shown o

3) The Southerly Right of W Aquisition encroaches on certain locations.

4) Plan & Deed refers



PARCEL # 2 LEGAL DESCRIPTION

A parcel of land situated in Sections 5 and 8, Township 6 South, Range 89 West of the 6th Principal Meridian, County of Garfield, State of Colorado, said parcel being more particularly described as follows:

Beginning at a concrete Right-of-Way monument found on the Southerly Right-of-Way of the Denver and Rio Grande Western Railroad whence the BLM alum. cap in place and properly marked for the Southwest corner of said Section 5 bears S 23°25'57" W 1196.71 feet;
Thence along said Southerly Right-of-Way the following (3) courses: thence S 83°38'11" W 901.40 feet; thence N 82°19'49" W 103.10 feet; thence S 83°38'11" W 7.05 feet leaving said Southerly Right-of-Way of the Midland Ave. Right-of-Way Acquisition the Northerly Right-of-Way of the Midland Ave. Right-of-Way Acquisition the following (8) courses: thence S 42°36'55" E 17.15 feet; thence along a curve to the left having a radius of 710.00 feet and an arc length of 677.30 feet, the chord of which bears S 69°56'35" E 651.91 feet, thence N 82°43'44" E 80.93 feet; thence along the arc of a curve to the left having a radius of 500.00 feet and an arc length of 194.98 feet, the chord of which bears N 71°33'27" E 193.75 feet; thence N 60°23'10" E 185.42 feet; thence N 56°38'55" E 230.74 feet; thence N 75°17'22" E 301.74 feet; thence N 06°21'46" W 19.87 feet leaving said Northerly Right-of-Way; thence along said Southerly Right-of-Way the following (3) courses: thence S 83°38'11" W 138.79 feet; thence S 86°30'11" W 200.30 feet; thence S 83°38'11" W 38.60 feet to the point of beginning, containing 5.75 acres more or less.

PARCEL # 3 LEGAL DESCRIPTION

A parcel of land situated Southerly of the Denver & Rio Grande Western Railroad (D&RGW) right of way, and Northerly of the Midland Avenue Acquisition right of way (Midland ROW), located in the SW1/4 NW1/4 of Section 9, Township 6 South Range 89 West of the 6th Principal Meridian, County of Garfield, State of Colorado, the parcel being more particularly described as follows:

Beginning at the Southeast corner of said parcel whence the brass cap found at the Center West 1/16 corner of Section 9 bears S 00°39'40" W 281.52 feet; thence N 00°39'40" E 418.89 feet along the Easterly boundary of said parcel also being the Easterly line of the SW1/4 NW1/4 of said Section 9 to the Southerly line of said D&RGW right of way; thence Northwesterly along the said right of way the following (4) courses: N 70°07'49" W 195.45 feet; thence N 68°27'19" W 235.00 feet; thence S 24°32'11" W 25.00 feet; thence along a curve to the right having a radius of 1507.40 feet and an arc distance of 561.12 feet, the chord of which bears N 54°59'25" W 548.08 feet; thence S 54°50'12" W 20.12 feet along the Westerly boundary of said parcel also being the Northerly boundary of the Midland ROW; thence Southeasterly along said Northerly boundary the following (10) courses: S 35°05'32" E 163.12 feet; thence along a curve to the left having a radius of 950.00 feet and an arc distance of 250.62 feet, the chord of which bears S 42°39'55" E 249.89 feet; thence S 50°13'26" E 91.26 feet; thence S 39°46'34" W 10.00 feet; thence S 50°13'26" E 18.06 feet; thence N 39°46'34" E 10.00 feet; thence S 50°13'26" E 259.98 feet, thence along a curve to the right having a radius of 1050.00 feet and an arc distance of 133.74 feet, the chord of which bears S 46°34'25" E 133.65 feet; thence S 42°54'35" E 112.05 feet; thence along a curve to the left having a radius of 715.00 feet and an arc distance of 198.66 feet, the chord of which bears S 50°53'08" E 198.02 feet to the point of beginning, containing 4.20 acres more or less.

NOTES:

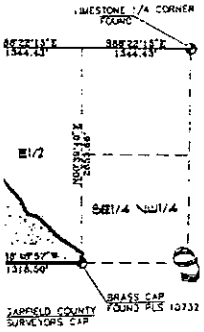
1) Bearings shown hereon are between found survey mon at the centerline intersecti and 8th Street & Blake Av
2) Various apparent utilities thru Parcels #1, #2 and #3 in the Title Commitment, not graphically shown at
3) The Southerly Right of Way Aquisition encroaches on th certain locations.
4) Plan & Deed references inc following:
   a) Roaring Fork Subdivisio
   b) Mountain View Subdivisi
   c) Colorado Department of reception numbers 2390
   d) Quit Claim Deed dated
   e) Warranty Deed dated 8/
   f) G.L.O. Survey Plats date
   g) Chatfield Ranch Bounda High Country Engineeri
   h) ALTA commitment comp dated 5/9/96, Order #

DEPOSITED THIS ____ DAY OF
GARFIELD COUNTY INDEX FOR
RECEPTION NO.____

BY:____
GARFIELD COUNTY SURVEYO

DATE, ____

FILING INFORMATION: SECTION

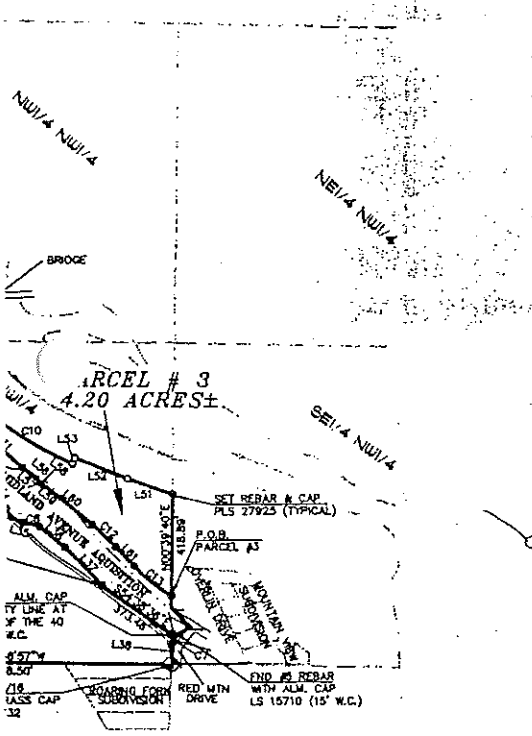


R. MOORE
AP FOUND
S 10845

4. ACTION BASED UPON ANY
OVER SUCH DEFECT. IN
SURVEY BE COMMENCED MORE
RIOD.

URVEY

P.M.



ased on a bearing of N88°28'W
iments situated in Range boxes located
ns of 8th Street & Midland Avenue
nue, in the City of Glenwood Springs.

rist both above and below ground
The easements of record are stated
ote (4)(h) shown below. Said utilities were
e clients request.

fence of the Midland Avenue
eal property up to three feet in

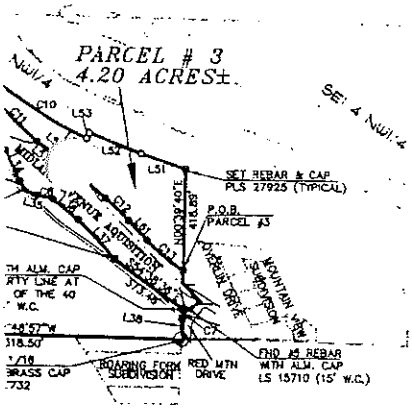
PARCEL # 1 LEGAL DESCRIPTION

All that property located in the NW1/4 NW1/4 and E1/2 NW1/4 of Section 8; that portion of the NE1/4 of said Section 8 located south of the Southerly Right of Way line of the Midland Avenue Right of Way Aquisition; that portion of the W1/2 NW1/4 of Section 9 located south of the Southerly Right of Way line of said Midland Avenue Right of Way Aquisition; that portion of the SE1/4 of the NW1/4 of said Section 9 being triangular in shape bounded on the west by the Westerly line of the SE1/4 NW1/4 of said Section 9, on the north by the Southerly line of said Midland Avenue Right of Way Aquisition and on the south by the West line of the Red Mountain Drive Right of Way; that portion of the S1/2 S1/2 of Section 5 located south of the Southerly Right of Way line of said Midland Avenue Right of Way Aquisition; that portion of the SE1/4 SE1/4 of Section 6 located south of the Southerly Right of Way line of said Midland Avenue Right of Way Aquisition and the Denver & Rio Grande Western Railroad Right of Way; All located in Township 6 South, Range 89 West of the 6th Principal Meridian. The property as mentioned above being more particularly described by Metes and Bounds for acreage as follows:

Beginning at the South East corner of said Section 6; thence S75°55'37" W, a distance of 1316.18 feet along the Southerly line of said Section 6 to the East 1/16 corner common to said Sections 6 and 7; thence N0°07'55"E, a distance of 1253.02 feet along the West line of the SE1/4 SE1/4 of said Section 6 to the Southerly Right of Way line of said Denver Rio Grande Western Railroad Right of Way; thence along said Right of Way the following (2) courses: thence N86°20'11"E, a distance of 58.27 feet; thence N88°38'11"E, a distance of 480.07 feet to the Southerly Right of Way line of said Midland Avenue Right of Way Aquisition; thence along said Right of Way the following (47) courses, thence S44°35'36"E, a distance of 72.53 feet; thence S55°05'31"E, a distance of 232.27 feet; thence along the arc of a curve to the left a distance of 580.98 feet, having a radius of 880.00 feet, the chord of which bears S72°00'20"E, a distance of 570.49 feet; thence N89°04'52"E, a distance of 388.55 feet; thence N02°31'09"E, a distance of 137.01 feet; thence N62°28'35"E, a distance of 379.58 feet; thence N70°48'52"E, a distance of 293.79 feet; thence along the arc of a curve to the right a distance of 138.27 feet, having a radius of 400.00 feet, the chord of which bears N80°43'09"E, a distance of 137.58 feet; thence S89°22'47"E, a distance of 220.22 feet; thence S04°06'51"W, a distance of 84.94 feet; thence S86°21'25"E, a distance of 29.12 feet; thence N84°12'24"E, a distance of 200.33 feet; thence N13°23'18"E, a distance of 18.04 feet; thence S79°22'12"E, a distance of 693.85 feet; thence S16°25'14"W, a distance of 81.35 feet; thence S72°50'58"E, a distance of 30.90 feet; thence S87°49'17"E, a distance of 184.69 feet; thence N47°19'34"E, a distance of 97.65 feet; thence S79°59'10"E, a distance of 294.83 feet; thence S08°06'53"E, a distance of 62.58 feet; thence S77°46'27"E, a distance of 150.75 feet; thence N14°20'16"E, a distance of 62.19 feet; thence S79°08'31"E, a distance of 369.05 feet; thence S18°40'31"E, a distance of 29.17 feet; thence S66°09'20"E, a distance of 143.01 feet; thence N25°40'25"E, a distance of 42.89 feet; thence S74°19'35"E, a distance of 329.00 feet; thence S76°23'22"E, a distance of 559.87 feet; thence along the arc of a curve to the right a distance of 1104.51 feet, having a radius of 1190.00 feet, the chord of which bears S48°18'54"E, a distance of 1065.29 feet; thence S21°43'32"E, a distance of 179.08 feet; thence S68°16'28"W, a distance of 31.38 feet; thence S23°28'58"E, a distance of 78.06 feet; thence N68°16'28"E, a distance of 29.01 feet; thence S21°43'32"E, a distance of 764.09 feet; thence along the arc of a curve to the left a distance of 272.23 feet, having a radius of 1165.00 feet, the chord of which bears S28°55'10"E, a distance of 271.61 feet; thence S36°06'49"E, a distance of 21.42 feet; thence S54°53'11"W, a distance of 22.69 feet; thence S41°49'05"E, a distance of 43.30 feet; thence N54°53'11"E, a distance of 17.75 feet; thence S30°38'49"E, a distance of 271.57 feet; thence S41°04'38"E, a distance of 291.31 feet; thence S23°28'47"E, a distance of 143.44 feet; thence along the arc of a curve to the left a distance of 95.98 feet, having a radius of 100.00 feet, the chord of which bears S50°58'14"E, a distance of 92.32 feet; thence S78°27'41"E, a distance of 27.55 feet; thence along the arc of a curve to the right a distance of 42.95 feet, having a radius of 200.00 feet, the chord of which bears S72°18'22"E, a distance of 42.87 feet; thence S50°13'26"E, a distance of 131.37 feet; thence S43°26'37"E, a distance of 220.95 feet; thence S54°03'25"E, a distance of 373.46 feet to the Westerly Right of Way line of said Red Mountain Drive Right of Way; thence along said Right of Way the following (2) courses: thence along the arc of a curve to the left a distance of 35.93 feet, having a radius of 124.00 feet, the chord of which bears S32°55'08"W, a distance of 35.80 feet to the East line of the SW1/4 NW1/4 of said Section 9; thence along said East line S00°39'40"W, a distance of 82.52 feet to the Center West 1/16 corner of said Section 9; thence leaving said Right of Way and along the East West center line of said Section 9 N88°48'57"W, a distance of 1318.50 feet to the East 1/4 corner of said Section 8; thence along the East West center line of said Section 8 N89°15'16"W, a distance of 2735.32 feet to the Center 1/4 corner of said Section 8; thence continuing along the East West center line of said Section 8 N89°15'16"W, a distance of 1363.17 feet to the Center West 1/16 corner of said Section 8; thence along the West line of the SE1/4 NW1/4 of said Section 8 N0°13'52"E, a distance of 1360.08 feet to the NW1/16 corner of said Section 8; thence along the South line of the NW1/4 NW1/4 of said Section 8 N88°45'05"W, a distance of 1387.68 feet to the W1/16 corner common to said Sections 7 and 8; thence along the West line to the NW corner of said Section 8 N0°04'58"E, a distance of 1389.90 feet, to the Point of Beginning containing 425.84 acres more or less.

SURVEYOR'S CERTIFICATE

THIS IS TO CERTIFY THAT THE SURVEY SHOWN ON THIS PLAT WAS MADE BY CONSTRUCTION SURVEYS, INC. UNDER MY DIRECT SUPERVISION, RESPONSIBILITY AND CHECKING AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF



based on a bearing of N88°28'W
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on dated 10/13/79
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/71, recorded at Book 421, Page 587
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W220842.

_____ 1996, AT ___ M., IN THE
FORMATIONAL LAND SURVEY PLATS UNDER

_ TOWNSHIP ____, RANGE _____, 6th P.M.

[illegible] feet; thence S21°43'32"E, a distance of 764.09 feet; thence along the arc of a curve to the left a distance of 272.23 feet, having a radius of 1145.00 feet, the chord of which bears S28°25'10"E, a distance of 271.61 feet; thence S16°06'49"E, a distance of 21.42 feet; thence S54°53'11"W, a distance of 22.69 feet; thence S41°40'06"E, a distance of 43.30 feet; thence N54°53'11"E, a distance of 17.75 feet; thence S30°38'49"E, a distance of 271.57 feet; thence S41°04'38"E, a distance of 291.31 feet; thence S25°28'47"E, a distance of 143.44 feet; thence along the arc of a curve to the left a distance of 95.98 feet, having a radius of 100.00 feet, the chord of which bears S50°58'14"E, a distance of 92.32 feet; thence S78°27'41"E, a distance of 27.55 feet; thence along the arc of a curve to the right a distance of 42.95 feet, having a radius of 200.00 feet, the chord of which bears S72°18'32"E, a distance of 42.87 feet; thence S50°13'26"E, a distance of 131.37 feet; thence S43°28'37"E, a distance of 220.95 feet; thence S54°38'38"E, a distance of 373.46 feet to the Westerly Right of Way line of said Red Mountain Drive Right of Way; thence along said Right of Way the following (2) courses: thence along the arc of a curve to the left a distance of 35.93 feet, having a radius of 124.00 feet, the chord of which bears S32°55'06"W, a distance of 35.80 feet to the East line of the SW1/4 NW1/4 of said Section 9; thence along said East line S00°39'40"W, a distance of 82.52 feet to the Center West 1/16 corner of said Section 9; thence leaving said Right of Way and along the East West center line of said Section 9 N88°48'57"W, a distance of 1318.50 feet to the East 1/4 corner of said Section 8; thence along the East West center line of said Section 8 N89°15'18"W, a distance of 2735.32 feet to the Center 1/4 corner of said Section 8; thence continuing along the East West center line of said Section 8 N89°15'18"W, a distance of 1363.17 feet to the Center West 1/16 corner of said Section 8; thence along the West line of the SE1/4 NW1/4 of said Section 8 N01°13'52"E, a distance of 1360.08 feet to the NW1/16 corner of said Section 8; thence along the South line of the NW1/4 NW1/4 of said Section 8 N88°45'05"W, a distance of 1367.88 feet to the N1/16 corner common to said Sections 7 and 8; thence along the West line to the NW corner of said Section 8 N01°04'58"E, a distance of 1369.90 feet, to the Point of Beginning containing 425.84 acres more or less.

SURVEYOR'S CERTIFICATE

THIS IS TO CERTIFY THAT THE SURVEY SHOWN ON THIS PLAT WAS MADE BY CONSTRUCTION SURVEYS, INC. UNDER MY DIRECT SUPERVISION, RESPONSIBILITY AND CHECKING AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: _____
GEORGE R. BAUER, P.L.S.

COLORADO REGISTERED PROFESSIONAL LAND SURVEYOR
GEORGE R. BAUER
7/12/96
27925

CONSTRUCTION SURVEYS INC.
0012 SUNRISE BLVD.
SILT, CO 81652
970-876-5753

PREPARED FOR:
UNOCAL CORPORATION
COUNTY ROAD 215
PARACHUTE, COLORADO
81635

union

CONSTRUCTION SURVEYS
SILT COLO.

DRAWN BY: BJH	CHECKED BY: GRB
DATE: 6/28/96	DWG: UNOCAL\WULFSOHN

REVISION: 7/11/96 Amend Parcel #1 legal desc. & plat

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1 of 14 R 71.00 D 0.00 GARFIELD COUNTY CO

ACQUISITION AND EXCHANGE AGREEMENT

THIS AGREEMENT is made and entered into as of March 16, 1999, by and between GLENWOOD MEADOWS, LLC, a Colorado limited liability company (hereinafter "GM"), and the CITY OF GLENWOOD SPRINGS, a Colorado home-rule municipality (hereinafter "City"):

WHEREAS, the City is the owner of certain real property located within the municipal limits of the City, Garfield County, Colorado, commonly known as the Salt Plant Property (hereinafter the "Salt Plant Property") as described by Exhibit A attached hereto and by this reference incorporated herein; and

WHEREAS, GM is the owner of certain property located in Garfield County, Colorado, commonly known as the Wulfsohn Ranch (hereinafter "Wulfsohn Ranch"); and

WHEREAS, GM is the owner of various water rights decreed to the Atkinson Canal, the headgate for which is generally located as described in the decree entered September 7, 1976, in Case No. W-2910 (Water Division No. 5), which water rights, Atkinson Canal and existing lateral ditches are used to provide irrigation water to irrigated portions of the Wulfsohn Ranch ("Irrigated Acres"); and

WHEREAS, the City desires and intends to acquire approximately ten (10) to twelve (12) acres of presently Irrigated Acres and approximately twenty-five (25) acres of non-irrigated lands all on the Wulfsohn Ranch from GM (hereafter, the "Community Center Property") as described by Exhibit B attached hereto and by this reference incorporated herein, in exchange for approximately 8.856 acres, being all of the Salt Plant Property land situated in and around the City at the intersection of Devereux Road and Highway 6 & 24; and

WHEREAS, the City has provided GM with notice of the City's intent to exchange the Salt Plant Property for that portion of the Wulfsohn Ranch, identified as the Community Center Property, which is needed to construct the "City Community Center Project"; and

WHEREAS, the City and GM have (i) prepared and delivered appraisals, (ii) exchanged title insurance commitments, environmental and soils analysis and (iii) engaged in negotiations concerning the City's intended acquisition of the Community Center Property on the Wulfsohn Ranch and GM's intended acquisition of the Salt Plant Property; and

WHEREAS, GM has agreed to convey to the City title to that portion of the Wulfsohn Ranch described as the Community Center Property in this Agreement, subject to the terms and conditions of this Agreement; and

WHEREAS, the City has agreed to convey to GM title to the Salt Plant Property as described in this Agreement, subject to the terms and conditions of this Agreement; and

WHEREAS, the City has not used the Salt Plant Property, or any portion or part thereof, for any "municipal purpose" as that phrase is set forth and used in the City Charter or the City Municipal Code; and

LAND TITLE GW 22934

Return to: City of Glenwood Springs
Attn Teresa Williams
806 Cooper Ave
Glenwood Springs, CO 81601

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WHEREAS, GM has commenced the process of annexing the Wulfsohn Ranch, including that portion identified herein as the Community Center Property; and

WHEREAS, the City agrees to cooperate with and join in said petition for annexation with respect to said Community Center Property; and

WHEREAS, the parties desire to set forth herein their agreement concerning the exchange and conveyance (i) from GM to the City of that portion of the Wulfsohn Ranch required for the Community Center Project, (ii) from the City to GM of the Salt Plant Property, and (iii) related matters.

NOW, THEREFORE, for and in consideration of the above recitals, the mutual covenants and agreements contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, GM and the City agree as follows:

1. Exchange and Conveyance of Community Center Property and The Salt Plant Property. Upon closing of these premises at a mutually agreeable date and time between the date hereof and March 30, 1999, at the offices of Land Title Guarantee Company located at 817 Colorado Avenue, Glenwood Springs, Colorado, the following shall occur:

A. GM shall convey by Special Warranty Deed to the City that portion of the Wulfsohn Ranch described upon Exhibit A as annexed hereto. Said conveyance shall be subject to all matters of public record affecting the subject property as well as the following additional matters:

(i) GM shall reserve from the conveyance to the City a perpetual easement of thirty (30) feet in width for the maintenance, operation, repair and replacement of the Atkinson Canal, such easement lying fifteen (15) feet on either side of the centerline of any portion of the Atkinson Canal or lateral ditch structure presently situate on the lands to be conveyed to the City for so long as the Atkinson Canal shall be necessary to GM for the delivery of irrigation water to the remainder of the Wulfsohn Ranch; and

(ii) GM shall reserve from the conveyance to the City a five (5) year easement for the continued operation of the Pump Station presently situate on the real property to be conveyed to the City, together with an easement adequate to access said Pump Station for the purposes of maintenance, operation, repair and replacement.

(iii) GM shall reserve from the conveyance to the City a debris flow drainage easement situate between the Irrigated Acres and the remainder of the Community Center Property for the sole and exclusive purpose of directing and mitigating debris flows from other portions of the Wulfsohn Ranch; the precise location and dimensions of which debris flow drainage easement to be determined at a later date and subject to the approval of the City, which approval shall not be unreasonably withheld.

B. The City shall convey by General Warranty Deed to GM the three (3) lots which comprise the Salt Plant Property as described upon Exhibit B as annexed hereto,

together with all improvements thereon, geothermal water sources and rights historically used thereon or associated therewith and all other hereditaments appertaining thereto. Said conveyance shall be subject to all matters of public record affecting the subject property. The City shall also execute and deliver (i) a bill of sale transferring to GM all right, title and interest of the City in and to any personal property, easements, rights-of-way and other assets situate upon or historically associated with the Salt Plant Property and (ii) an Assignment and Assumption Agreement assigning to GM all right, title and interest of the City to any leases or other agreements affecting the Salt Plant Property.

C. Each party shall pay an equal amount of any closing costs associated with the transactions contemplated hereby.

D. Each party hereto shall pay all costs of recording such instruments received by that party, including any deeds, and each party hereto shall pay an equal amount of the costs of recording other closing documents required by this Agreement, including any covenants, and shall undertake all other reasonable steps necessary to effectuate the intent of this Agreement, specifically including, but without limitation whatsoever, (i) the recordation of any plats required to satisfy C.R.S 30-28-101 et. seq. with respect to the statutory exception from the definition of "subdivision" and the subdivision regulations of Garfield County, Colorado, and (ii) the filing of appropriate maps and other documents with the Garfield County Assessor's office.

E. With respect to the lands conveyed by each party hereto, the conveying party hereto shall pay the premium for and deliver to the other party, within a reasonable time after closing, an ALTA Form of title insurance policy based upon previously issued title insurance commitments. The amount of title insurance shall be equal to the valuation of the subject property by the appraisals previously issued.

Real property taxes shall be prorated to the day of closing based upon the most recent mill levy and most recent assessment and shall be determined by the ratio the Community Center Property bears to the Wulfsohn Ranch as a whole. The parties acknowledge and agree that under this Agreement, GM has not agreed to and does not intend to convey any of its water rights or any interest in and to the Atkinson Canal and its lateral ditches or GM's right to continue to utilize said water rights and said Atkinson Canal and lateral ditches for the irrigation of the Irrigated Acres and any additional lands which will be irrigated in replacement of the Irrigated Acres to be conveyed to the City.

2. Salt Plant Property Land Use Designations. The City hereby agrees and acknowledges that (i) the Salt Plant Property is comprised of three (3) separate and individual lots, each of which may be conveyed distinct from the others without the necessity of a subdivision process and the lot lines of which may be adjusted in accordance with the procedures set forth in the Glenwood Springs Land Use Code. The City further acknowledges and agrees that the zoning of the entire Salt Plant Property shall be or is within the C-1 Commercial zone district, has municipal utility service on site or within reasonable proximity thereto and has two (2) existing and legal access points to and from public roads and/or rights-of-way.

3. Community Center Project. If and when the City proceeds to construct the Community Center Project, the City shall, at its sole expense and at no expense to GM except as expressly provided for herein, undertake and complete all road installation, road surfacing, grading, drainage improvements, utility extensions, fencing, culverting, and other work for the Community Center Project in accordance with (A)

plans reviewed by GM (hereinafter "Community Center Project Plans") and accepted by GM with respect to such plans' impacts on GM's ongoing interests in (i) the Atkinson Canal and lateral ditches and (ii) the Pump Station, which review shall be timely and which acceptance shall not be unreasonably withheld; (B) technical specifications prepared for materials for canal culverting previously approved by GM (hereinafter " Community Center Project Specifications") which approval by GM shall not be unreasonably withheld, and (C) the Engineering Standards generally accepted in the industry (hereinafter "Engineering Standards"). The Community Center Project Plans, the Community Center Project Specifications and the Engineering Standards are hereinafter referred to individually, or collectively as the Community Center Project Plans and Specifications.

4. Purpose. One of the purposes of this Agreement is to ensure that GM's interests, including specifically GM's controlling ownership and use of the Atkinson Canal and the Atkinson Ditch Company, Inc. and GM's ownership of the remaining portions of the Wulfsohn Ranch, are not adversely affected by the City's Community Center Project. For purposes of this Agreement, all references to "Community Center Project" refer solely and specifically to those components of the City's project which affect (i) the Pump Station situated on the Community Center Property, (ii) the Atkinson Canal structures or easements, or (iii) drainage which affects the Atkinson Canal structure or easement.

5. Project Control. The City shall be solely responsible for the construction, installation, and completion of the Community Center Project and appurtenant facilities and, except as expressly provided for herein to the contrary, all costs associated therewith. Upon GM's opportunity to review and approve, which approval shall not be unreasonably withheld, the Community Center Project Plans and Specifications, the City shall be authorized to commence the Community Center Project, as contemplated in the Community Center Project Plans and Specifications; provided, however, no construction shall interfere with GM's ability to use the Atkinson Canal structures and the water carried thereby for irrigation purposes during the irrigation season.

6. Non-Interference with Agricultural Operations. The City agrees, for itself and its agents, employees, contractors, subcontractors and material suppliers, to (A) keep construction activity for the Community Center Project within the Community Center Property; (B) ensure that GM, its tenants and lessees will have access to the Wulfsohn Ranch during work on the Community Center Project, and (C) ensure that the Atkinson Canal will carry irrigation water and the Pump Station will direct such water and both will be operational for use by GM, its tenants and lessees for irrigation and other purposes during the irrigation season (April 15 - October 31) and, for that purpose, the City shall not undertake canal culverting or other work on the Atkinson Canal or similar work on the Pump Station during the irrigation season without the written consent of GM, which consent shall not be unreasonably withheld.

7. Fencing. To the extent possible, the parties hereto agree to maintain such existing fencing between the Community Center Property and the remainder of the Wulfsohn Ranch. Prior to commencement of any work on the Community Center Project, the City shall take all steps reasonably necessary to secure the Community Center Property from either (i) the agricultural activities of the adjacent remainder of the Wulfsohn Ranch and/or (ii) GM's development activities on the remainder of the Wulfsohn Ranch. After completion of the Community Center Project, the City at its expense shall maintain, repair and replace all fencing along the boundary between the Community Center Property and the Wulfsohn Ranch, unless damage is caused by ranching operations of GM, its tenants or lessees on the Wulfsohn Ranch.

8. Modifications of Community Center Project Plans and Specifications. In the event the City desires to subsequently modify the Community Center Project Plans and Specifications, as defined and limited in Paragraphs 3, 4 and 5 above, from the Community Center Project Plans and Specifications, the City shall forward the proposed modifications to GM, which shall approve or disapprove the proposed modifications, and GM's approval shall not be unreasonably withheld. In the event GM disapproves the proposed modifications, the City Engineer (and/or consulting engineers) shall meet with GM representatives and GM's engineer to formulate alternatives necessary to implement this Agreement and complete the Community Center Project. The parties agree that time is of the essence to secure agreement upon any modifications to the Community Center Project Plans and Specifications. Notwithstanding the foregoing, in the event the City and GM cannot agree, the City shall construct the Community Center Project pursuant to the original Community Center Project Plans and Specifications.

9. Inspections. GM shall have the right to undertake such inspections of the Community Center Project as GM deems appropriate at any time prior to, during, or after completion of the same; provided, however, that such inspections shall be limited to GM's interest in the Community Center Project as set forth in Paragraphs 3, 4 and 5, above. Further, the City agrees to provide GM's planners and engineers seven (7) days' written notice prior to the commencement of any work on or within the Atkinson Canal easement and Pump Station easement reserved by GM. The City shall not cover or bury any portion of culvert installed for the Atkinson Canal until it has provided GM and GM's planners and engineers forty-eight (48) hours' notice and the opportunity to inspect and approve the facilities. If GM fails to respond within 48 hours notice the City provides prior to burying or covering facilities, the City shall be entitled to treat such non-response as approval and proceed to cover or bury the culverts or facilities.

10. Nonconforming Work. In the event the City completes or constructs the Community Center Project, as defined in Paragraph 6, above, contrary in a material manner to the Community Center Project Plans and Specifications and any modifications approved pursuant to Paragraph 8, above, or fails to complete the Community Center Project, which installation or failure adversely affects GM's interest as determined by GM in its reasonable discretion, the City, at its sole expense, shall upon demand by GM undertake all work required to bring the Community Center Project into conformance with the Community Center Project Plans and Specifications. GM shall be entitled to enforce this right by an action at law or equity, including an action for specific performance.

11. Midland Extension Access Points.

A. Farm Access. The City has provided to GM (through that certain Midland Avenue Right of Way Extension Acquisition Agreement dated September 20, 1994) three access points for use by GM in connection with its farming and ranching and future development operations on the Wulfsohn Ranch. The City agrees that none of these three access points is to be considered as used for access to the Community Center Property. For these purposes, the City shall install one (1) new access point within the boundary of the Community Center Property (located east of the existing farm access point). The City hereby grants GM the right to utilize such access point for the stated purposes of using, maintaining,

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repairing, replacing and operating the Atkinson Canal, the GM Water Rights and the Pump Station; provided, however, in the event of any such use by GM, GM shall be responsible for cleaning and removing any debris, mud or other substance arising from GM's use, maintenance, repair, replacement or operation of the Atkinson Canal, Water Rights or Pump Station. Any debris or trash removed from the Atkinson Canal or Pump Station by GM shall not be placed adjacent to the Atkinson Canal or elsewhere on the Community Center Property, but shall be, at GM's sole cost, immediately removed and properly disposed of. GM shall give the City at least 48 hours prior notice of GM's intent to access any part of the Community Center Property for the purposes set forth herein

B. Development Access Points. The City agrees to continue to provide to GM three access points from the Midland Extension Right-of-Way onto the Wulfsohn Ranch property at such time as GM desires to develop the Wulfsohn Ranch property. One access point shall be for the north outparcel created on the west end of the Wulfsohn Ranch as a result of the Midland Extension Project. Two access points shall be for the developable portions of the Wulfsohn Ranch property located south of the Midland Extension Right-of-Way Parcel and West and South of the Community Center Property. The actual location and design of such access points shall be subject to engineering considerations and approval of the City, which approval shall not be unreasonably withheld. Such accesses shall be constructed to agreed upon specifications at GM's sole expense; provided, however, the City shall not, as a condition of granting such accesses, require GM to pay the City any consideration whatsoever. This Agreement is not intended to alter or otherwise affect the existing agreements between the parties hereto with respect to these matters.

C. Community Center Access Point and Road. The City agrees that GM shall have the right to utilize the Road to be developed as part of the Community Center Project and that GM may incorporate such Road in its development plans for the remainder of the Wulfsohn Ranch.

12. Pump Station Relocation. As a result of the City's acquisition of the Community Center Property and the construction of the Community Center Project, GM will be required to relocate its existing pump station serving the Atkinson Canal and situated on the Community Center Property, located generally in the south-eastern portion of the Wulfsohn Ranch. In the event that after said five (5) year period, said Pump Station is still reasonably necessary for the irrigation of the remainder of the Wulfsohn Ranch or for the raw water irrigation of any development approved by the City, GM shall undertake the relocation of the Pump Station no later than five (5) years after the date of this Agreement. The City agrees to reimburse GM the reasonable costs of such relocation, which costs shall in no event exceed $20,000.00. The City also agrees to extend electrical service to the relocated Pump Station at the City's sole cost at the time relocation is undertaken. GM agrees to convey to the City a non-exclusive easement, not to exceed fifteen feet (15') in width, for installation, maintenance, operation, repair and replacement of the electric facilities. The easement shall be in a location mutually agreed upon by the parties. Until such time as GM

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shall re-locate its Pump Station, it shall have the easement rights described hereinabove from the City reasonably necessary to maintain and use the Pump Station as it is presently situated.

13. Atkinson Canal Crossings. The City shall as part of the Community Center Project, and at its expense, install those crossings and culverts for the portion of Atkinson Canal and its lateral ditches affected by the Community Center Project development and in accordance with the Community Center Project Plans and Specifications.

14. Completion; Conveyance of GM Facilities. Upon completion of the Community Center Project, the City Engineer shall furnish GM with written certification that the Atkinson Canal crossings, culverts and appurtenant facilities, Pump Station, access road, and utility sleeves were completed in substantial conformance with the Community Center Project Plans and Specifications, and any approved modifications and change orders. Upon such receipt, GM shall then provide the City written notification of its acceptance of the Atkinson Canal crossings, culverts, Pump Station, and appurtenant facilities, which date shall be known as the Acceptance Date. Within thirty (30) days of the Acceptance Date, the City shall execute a bill of sale conveying to GM, free and clear of all liens and encumbrances, the Atkinson Canal culverts and other facilities which the parties mutually agree shall be conveyed to GM. The City shall also provide GM with lien waivers for all property conveyed from all contractors, subcontractors, and material suppliers. Once conveyed to GM, subject to the warranty provisions of Paragraph 15, below, GM shall be solely responsible for operation, maintenance, repair, and replacement of Atkinson Canal culverts and appurtenant facilities.

15. Warranty. The City shall warrant all facilities which are conveyed to GM pursuant to this Agreement for a period of one (1) year from the Acceptance Date. Specifically, but not by way of limitation, the City shall warrant that any and all facilities conveyed to GM shall be free of any defects in materials or workmanship for a period of one (1) year.

16. Drainage and Tailwater. GM shall have the right to continue irrigation of the retained portions of the Wulfsohn Ranch. The Community Center Project shall include adequate facilities and/or provisions for disposal of tailwater and water seepage from the Atkinson Canal, the Pump Station and any lateral ditch structures. To the extent the Community Center Project creates any alteration of historical drainage patterns which result in disputes with or claims by down-gradient drainage recipients, the City hereby acknowledges that it shall at its expense be solely responsible for resolving such disputes or claims, and that it shall indemnify GM as provided in Paragraph 18, below.

17. Scope. This Agreement applies only to GM's acquisition of the Salt Plant Property and the City's acquisition and development of the Community Center Property and the Community Center Project upon GM's Wulfsohn Ranch. The terms hereof shall not extend to, nor shall they be construed in any manner to extend to or be a precedential effect, with regard to any other improvements to any other portion of the Atkinson Canal or other property interests of GM. The parties expressly agree that any compensation paid or consideration given pursuant to this Agreement shall be of no precedential or evidentiary value in any future proceedings between the parties hereto, specifically including any eminent domain proceeding between the parties.

18. Indemnity. To the extent permitted by law, and limited in duration to applicable statutes of limitation, the City shall indemnify and hold GM, its parent, subsidiary, and/or affiliate

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companies and the respective directors, officers, agents, and employees thereof, free and harmless from and against any and all liabilities, suits, claims, actions, proceedings, judgments, decrees, settlements, demands, and causes of action of all kinds, including but not limited to claims of damages to or losses of property of GM or others, injury, illness, or death, attorneys' fees and costs which arise from or in any manner relate to:

A. The City's ownership of the Salt Plant;

B. Work performed, facilities installed, or materials provided by the City, its contractors, subcontractors, materialmen, or others in connection with the City's prior ownership of the Salt Plant Property or the City's future work on or development of the Community Center Project and appurtenant facilities.

C. Damages of any type claimed by any landowner, tenant, or other person located downstream or downgradient of the Wulfsohn Ranch or Atkinson Canal which arise from or relate to the City's work on or development of the Community Center Project and appurtenant facilities.

D. Damages of any type claimed by any landowner, tenant, or other person located downstream of the Atkinson Canal or otherwise which are caused by the City's work on or installation of the Community Center Project.

E. The City's use of any part of the Wulfsohn Ranch or any activity done or permitted by the City.

E. Any breach by the City of its obligations under this Agreement.

F. Any act or omission of the City, its agents, contractors, employees, or invitees taken pursuant to this Agreement or upon the Wulfsohn Ranch.

The City shall be solely responsible to defend any such action, proceeding, or claim for which GM may be entitled to indemnification, and GM hereby agrees to fully cooperate with the City in the defense or settlement, as the case may be, of such action, proceeding, or claim, but GM reserves the right to participate in the defense or any such action, proceeding, or claim at its own expense. The City shall give written notice to GM within ten (10) days after the City's actual knowledge of any matter giving rise to the obligation contained in this Paragraph. No insurance requirements shall be construed to limit this indemnity, which shall be effective to the maximum extent permitted by applicable law. As between GM and the City, the City hereby expressly waives any defenses of governmental immunity as provided in C.R.S. section 24-10-101 et seq., as necessary to effectuate this indemnity; except, however, that the City expressly reserves all rights to assert governmental immunity with regard to any claims of third parties against the City.

19. Amendment. Any modification or amendment hereto shall be evidenced by a writing

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signed by the parties.

20. Binding Effect; Survival. This Agreement shall be binding upon and inure to the benefit of the parties, their successors, grantees, and assigns. Each term and condition of this Agreement shall survive the closing on the Community Center Property and the Salt Plant Property.

21. Authority. Each person executing this Agreement represents and warrants that he has been duly authorized by the party that he purports to represent to execute this Agreement, and has authority to bind said party to the terms and conditions of this Agreement.

22. Governing Law. This Agreement shall be construed under the laws of the State of Colorado.

23. No Waiver. No provision of this Agreement may be waived except by an agreement in writing signed by the waiving party. A waiver of any term or provision shall not be construed as a waiver of any other term or provision.

24. Headings. The paragraph headings in this Agreement shall not be used in the construction or interpretation hereof, as they have no substantive effect and are for convenience only.

25. Severability. If any part or section of this Agreement shall be found void or invalid by court of competent jurisdiction, such finding shall not affect any remaining part or section, and said remaining parts or sections shall continue in full force and effect. The parties shall renegotiate in good faith any matter addressed by a part or section that is found void or invalid.

26. Notice. All notices required under this Agreement shall be in writing and shall be hand delivered , sent by facsimile or sent by registered or certified mail, return receipt requested, postage prepaid, to the addresses of the parties herein set forth. All notices so given shall be considered effective seventy-two (72) hours after deposit postage paid in the United States Mail with the proper address as set forth below. Either party by notice so given may change the address to which future notices shall be sent.

Notice to:
Glenwood Meadows, LLC
c/o Robert Macgregor
525 East Cooper Avenue
Aspen, CO 81611
(970) 925-9046 Telephone
(970) 925-9076 Facsimile

With copy to:
Thomas J. Hartert
802 Grand Avenue, Suite 303
Glenwood Springs, CO 81601
(970) 928-7803 Telephone
(970) 928-7805 Facsimile

[redacted]
of 14 R 71.00 D 0.00 GARFIELD COUNTY CO

Notice to: City of Glenwood Springs
attn: City Manager
attn: City Attorney
806 Cooper Avenue
Glenwood Springs, CO 81601
(970) 945-2575 Telephone
(970) 945-2597 Facsimile

27. Signatures; Counterparts. GM and the City agree that signatures obtained by facsimile transmission shall be sufficient and binding for purposes of this Agreement, and that original signatures shall be forwarded to each party. This Agreement may be executed in multiple original counterparts, each of which shall constitute an original but all of which shall constitute one and the same document.

IN WITNESS WHEREOF, the parties have executed this Acquisition and Exchange Agreement in duplicate originals on the day and year first written above.

CITY OF GLENWOOD SPRINGS

By: _____
Name: Sam Skramstead, Mayor

GLENWOOD MEADOWS, LLC,
a Colorado Limited Liability Company
By: Dunrene Management, Inc., its Manager

By: _____
Name: Robert Duncan Macgregor
Title: President of Dunrene Management, Inc.

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4 of 5 R 26.00 D 0.00 GARFIELD COUNTY CO

UNION PACIFIC RAILROAD COMPANY
Glenwood Springs, Garfield County, Colorado

EXHIBIT "A"

A parcel of land situated in Section 9, Township 6 South, Range 89 West of the Sixth Principal Meridian, City of Glenwood Springs, County of Garfield, State of Colorado, said parcel being more particularly described as follows:

BEGINNING at a point on the southerly right of way line of Colorado State Highway 6 & 24, being also a point on the Denver and Rio Grande Western Railroad, predecessor to Union Pacific Railroad Company right of way, Whence the North 1/4 corner of said Section 9, a BLM 3" diameter Aluminum Cap dated 1995 bears N 89° 24' 43" E a distance of 1341.69 feet;

Thence along said Northerly right of way line of said railroad the following three (3) courses: S 02° 32' 04" W a distance of 219.71 feet; Thence S 43° 27' 33" E a distance of 478.33 feet; Thence 264.08 feet along the arc of a non-tangent curve to the left having a central angle of 19° 34' 36", a radius of 772.90 feet, and a chord that bears S 80°14'57" E a distance of 262.80 feet to a point on the Westerly line of Access Road M (CDOT Project I 70-(8) 113 Sec. 2); Thence along the Westerly right of way of said Access Road M the following two (2) courses; 61.44 feet along the arc of a curve to the left having a central angle of 04° 32' 08", a radius of 776.20 feet, and a chord that bears S 48° 53' 05" W a distance of 61.43 feet; Thence S 46° 37' 00" W a distance of 148.59 feet to a point on the Northerly right of way of Interstate 70; Thence along said Northerly right of way the following two (2) courses; N 43° 23' 00" W a distance of 623.75 feet; Thence 726.10 feet along the arc of a curve to the right having a central angle of 07° 23' 24", a radius of 5629.60 feet and a chord that bears N 39° 41' 18" W a distance of 725.60 feet to a point on the southerly right of way of Colorado State Highway 6 & 24; Thence along said Southerly highway right of way the following four (4) courses: 192.79 feet along a non-tangent curve to the left having a central angle of 18° 19' 07", a radius of 603.00 feet, a chord that bears S 51° 11' 28" E a distance of 191.97 feet; Thence S 60° 21' 00" E a distance of 42.30 feet; Thence 241.17 feet along the arc of a curve to the left having a central angle of 11° 45' 00", a radius of 1176.00 feet, and a chord that bears S 66° 13' 30" E a distance of 240.75 feet; Thence S 72°.06' 00" E a distance of 64.22 feet to the Point of Beginning.

Containing 2.56 acres more or less

Office of Real Estate
Omaha, Nebraska
July 9, 1998

Written by: JCO
167367.leg

EXHIBIT A

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SCHEDULE A

PROPERTY DESCRIPTION

ORDER NO: 95024044

PARCEL A

A tract of land in Lot 6 of Section 9, Township 6 South, Range 89 West, 6th P M., consisting of those parts of said Lot 6 described in a Document recorded in the office of the Clerk and Recorder of said County in Book 356 at Page 401 thereof, excepting that parcel of said Lot 6 described in a Document recorded in said office in Book 381 at Page 42 thereof, said tract of land being more particularly described as follows:

Beginning at a point, which is the point of intersection of the Southerly right-of-way line of U.S. Highway 6 & 24 and the Westerly right-of-way line of Devereux Road in Glenwood Springs Colorado, thence the North Quarter Corner of said Section 9 bears N. 46 degrees 05'57" E. 622.73 feet;
thence along said Southerly right-of-way of U.S. Highway 6 & 24 N. 64 degrees 58'30" W. 229.60 feet;
thence along the arc of a curve to the right having a radius of 985.00 feet and a central angle of 06 degrees 28'59" for a distance of 111.45 feet, the chord of said curve bears N. 61 degrees 44'00" W. 111.39 feet;
thence leaving said highway right-of-way S. 00 degrees 38'47" W. 335.51 feet to a point on the Westerly right-of-way line of said Devereux Road;
thence along said Westerly right-of-way line N. 50 degrees 47'52" E. 2.31 feet;
thence along the arc of a curve to the right having a radius of 776.20 feet and a central angle of 14 degrees 56'45" for a distance of 202.47 feet, the chord of said curve bears N. 59 degrees 22'37" E. 201.90 feet;
thence N. 66 degrees 51'00" E. 100.60 feet;
thence along the arc of a curve to the left having a radius of 79.70 feet and a central angle of 41 degrees 49'40" for a distance of 58.18 feet, the chord of said curve bears N. 45 degrees 56'10" E. 56.90 feet;
thence N. 25 degrees 01'20" E. 2.41 feet more or less to the Point of Beginning.

COUNTY OF GARFIELD
STATE OF COLORADO

PARCEL B

All of the Northerly portion of the W1/2 of Lot 6, Section 9, Township 6 South, Range 89 West of the Sixth Principal Meridian, situate between the Southerly right of way line of the State Highway and the Northerly right of way line of the Denver and Rio Grande Western Railroad Co., and Northerly of the Northerly right of way line of I-70, EXCEPT that portion thereof described in Book 61 at Page 49 thereof, as Document No. 27620; and EXCEPT that portion thereof described in Book 61 at Page 534 thereof, as Document No. 29570, in the County of Garfield, State of Colorado.

COUNTY OF GARFIELD
STATE OF COLORADO

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EXHIBIT "A"

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Any and all water and water rights, ditches and ditch rights, well and well rights, appurtenant to or historically used upon or in connection with that the real property described in Exhibit A-1 including but not limited to .3 cfs from the Oasis Ditch.

(Conveyed to Glenwood Springs Salt Company, L.P. by Donald Negaard and Lila M. Negaard by Quit Claim Deed dated February 5, 1990, Recorded February 5, 1990 in Book 772 at Page 323, Reception No. 409685.)

All of Grantor's interest, if any, in and to ditch, ditch rights, water and water rights used upon or in connection with the real property described as:

All of the Northerly portion of the W½ of Lot 6, Section 9, Township 6 South, Range 89 West of the Sixth Principal Meridian, situate between the Southerly right of way line of the State Highway and the Northerly right of way line of the Denver and Rio Grande Western Railroad Co., and Northerly of the Northerly right of way line of I-70, EXCEPT that portion thereof described in Book 61 at Page 49 thereof, as Document No. 27620; and except that portion thereof described in Book 61 at Page 534 thereof, as Document No. 29570, in the County of Garfield, State of Colorado.

SUBJECT TO a thirty (30) foot wide easement and right of way for ingress and egress, utilities and drainage, as described hereinbelow:

An Ingress and Egress easement situate in Lot 6, Section 9, Township 6 South, Range 89 West of the 6th P.M. being 30 feet in width and lying 15 feet on each side of the following described centerline:

Beginning at a point on the southerly right-of-way line of U.S. Highway 6 & 24 whence the N¼ corner of said section 9 bears
N74° 28' 45"E 862.79 feet, thence
N78° 20' 15"W 204.92 feet, thence
N66° 02' 57"W 342.34 feet more or less to the easterly line of lands owned by the Denver and Rio Grande Western R. R., the point of ending, whence said N ¼ corner bears N87° 51'03"E 1345.83 feet.

COUNTY OF GARFIELD
STATE OF COLORADO

(As conveyed to Glenwood Springs Salt Company, L.P. by Ray Fender by Warranty Deed dated March 1, 1990, recorded March 1, 1990 in Book 773, at Page 714, Reception No. 410323)

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EXHIBIT "B"

DESCRIPTION—EXEMPTION PARCEL

A tract of land situate in the NE 1/4 of Section 8 and the NW1/4 of Section 9, all in Township 6 South, Range 89 West of the 6th Principal Meridian being more particularly described as follows:

Beginning at a point whence the southeast corner of the SW1/4 of the NW 1/4 of said Section 9 bears S 59°45'07" E 2360.09 feet; thence N 62°49'19" E 880.27 feet to the westerly right of way line of Midland Avenue; thence along the westerly right of way line of Midland Avenue the following courses: S 21°43'32 "E 69.75 feet; thence 272.23 feet along the arc of a curve to the left, having a radius of 1165.00 feet, a central angle of 13°23'19", and subtending a chord bearing S 28°25'10" E 271.61 feet; thence S 35°06'49" E 21.42 feet; thence S 54°53'11' W 22.69 feet; thence S 41°40'06" E 43.30 feet; thence N 54°53'11" E 17.75 feet; thence S 30°38'49" E 271.57 feet; thence S 41°04'38" E 291.31 feet; thence S 23°28'47" E 143.44 feet; thence 95.89 feet along the arc of a curve to the left, having a radius of 100.00 feet, a central angle of 54°56'35", and subtending a chord bearing S 50°57'06" E 92.26 feet; thence S 17°34'08" W 81.64 feet; thence S 12°15'32" E 109.78 feet; thence S 19°54'08" E 208.92 feet; thence S 50°07'49" E 109.72 feet; thence S 33°57'41" E 159.48 feet to the south line of the NW 1/4 of said Section 9 whence the southeast corner of the SW1/4 of the NW 1/4 of said Section 9 bears S 88°48'57" E 361.88 feet; thence N 88°48'57" W 956.62 feet along the south line of said SW1/4 of the NW 1/4 of Section 9; thence N 89°15'16" W 378.91 feet along the south line of the SE 1/4 of the NE 1/4 of said Section 8; thence N 16°27'24" W 1206.11 feet to the point of beginning, containing 36.013 acres more or less.

The name and address of the person who created the above legal description is Kenneth R. Wilson, PLS 15710, Schmueser Gordon Meyer, Inc., 118 West 6th Street, Suite 200, Glenwood Springs, Colorado 81601.

KENNETH R. WILSON 15710 REGISTERED LAND SURVEYOR STATE OF COLORADO

Kenneth R. Wilson, PLS 15710 — Date

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WEST GLENWOOD SPRINGS SANITATION DISTRICT
SPECIAL FEE AND COST REIMBURSEMENT AGREEMENT

This Special Fee and Cost Reimbursement Agreement is entered into by and between the WEST GLENWOOD SPRINGS SANITATION DISTRICT, whose address is P. O. Box 866, Glenwood Springs, Colorado 81602 (hereinafter "District") and GLENWOOD MEADOWS, LLC, a Colorado limited liability company, whose address is 525 East Cooper Avenue, Aspen, Colorado 81611 (hereinafter "Glenwood Meadows" or "Applicant");

W I T N E S S E T H:

WHEREAS, the District is a Colorado special district and quasi-municipal corporation formed and functioning under the authority of C.R.S. §32-1-101, *et seq.* and §31-35-401, *et seq.*, providing sanitary sewer service to the area around West Glenwood Springs, Colorado; and

WHEREAS, Glenwood Meadows is the owner of that certain real property described in Exhibit A, attached hereto and incorporated herein by this reference (the "Property"), and desires to undertake the projects or activities described in Paragraph 1, below; and

WHEREAS, the above activity or project will require the District to provide the special services and incur the costs set forth in Paragraph 2, below; and

WHEREAS, pursuant to C.R.S. §§32-1-1001(1)(d), (j-m) and §31-35-402(1)(f), the District has the authority to require reimbursement of its out-of-pocket costs in providing services to District customers, including but not limited to sewer connections, inclusions and exclusions from the District, and planning and review of line extensions and connections; and

WHEREAS, Sections 5.01, 7.04, and 8.01 of the Rules and Regulations of the District provide that the District may charge legal, engineering, publication, recording, inspection, and other fees of customers desiring services from the District; and

WHEREAS, the special fees paid and collected by virtue of this Agreement shall be used solely to pay for the cost of planning, engineering review and inspection, legal review, administrative review, and actual out-of-pocket costs incurred by the District in relation to the anticipated project; and

WHEREAS, the Board of Directors of the District and Glenwood Meadows desire to set forth their agreements and understandings concerning this matter.

NOW, THEREFORE, in consideration of the mutual covenants and promises of the parties, and for other good and valuable consideration, the adequacy and sufficiency of which is hereby acknowledged, the parties agree as follows:

LEAVENWORTH & TESTER, P.C.
1011 Grand Avenue
P.O. Drawer 2030
Glenwood Springs, CO 81602

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1. Glenwood Meadows desires to undertake the following projects or activities involving the District or its sewer systems:

_____	Inclusion into the District
_____	Exclusion from the District
X	Sewer line connection
_____	Other (describe) Special Tap Fee Agreement

2. The activity or project being undertaken by Glenwood Meadows will require the District to provide the following special services or incur the following costs:

X	Engineering review and advice
X	Legal review and advice
X	Preparation of plats or plans
X	Inspections
X	Recording fees
X	Filing fees
_____	Other (describe):

3. Glenwood Meadows agrees to pay the District in full for all special services provided or actual costs incurred by the District in relation to the project or activity described above on receipt of an itemized billing for those services from the District. All such amounts are due within thirty (30) days of the date of the bill, with interest on any overdue amounts to be assessed at one percent (1%) per month. In the event that such amounts remain unpaid thirty (30) days after the date they are billed, the District reserves the right to cease supplying any and all sewer services being provided, review and processing of applications for service, inclusion, exclusion, and line extension. In the event the District is forced to pursue collection of any amounts due and unpaid under this provision, it shall be entitled to collect attorneys fees, filing, and recording fees incurred in such collection efforts in addition to the unpaid amounts due, plus interest.

4. Glenwood Meadows agrees to provide a deposit to the District in the amount of One Thousand Dollars ($1,000) at the time of signing this Agreement. The District shall not commence to provide any of the services desired by the Applicant, or advance any further costs, until this deposit is received by the District. Further, in the event it is deemed necessary to purchase an easement or condemn an easement, Glenwood Meadows shall supplement the initial deposit in an amount to be determined by the District to pay in advance the expected amounts for such service prior to the District undertaking such services. Any amount by which the Applicant's deposit exceeds the cost assessed under this section shall be refunded to the Applicant within a reasonable time after final action has been taken on the project or applied toward the tap fees to be due under a Tap Fee Agreement to be executed by the parties. Any amount by which the deposit is less than the total costs due to the District under this Agreement shall be due and payable subject to the provisions of Paragraph 2, above.

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5. The District specifically does not agree to act favorably on any application to the District made by Glenwood Meadows in exchange for payment of the special fees set forth above.

6. This Agreement constitutes the entire and complete agreement of the parties on the subject matter herein. No promise or undertaking has been made by any party, and no understanding exists with respect to the transaction contemplated, except as expressly set forth herein. All prior and contemporaneous negotiations and understandings between the parties are embodied and merged into this Agreement.

7. This Agreement may be amended from time to time by amendments made by the parties in written form and executed in the same manner as this Agreement.

8. This Agreement shall be binding upon and inure to the benefit of the parties and their assigns and successors in interest.

9. The undersigned by their signatures hereto warrant that they are fully authorized to execute this Agreement in the name of the entity for which each of them sign.

10. If any covenant, term, condition, or provision under this Agreement shall for any reason be held to be invalid or unenforceable, the invalidity or unenforceability of such covenant, term, condition, or provision shall not affect any other provision contained herein.

11. The parties agree and intend that this Agreement shall run with the land described in Exhibit A, attached hereto, and be a burden upon that property until final payment has been made to the District of all fees due and payable under this Agreement, or until the earlier termination of this Agreement.

IN WITNESS WHEREOF, the parties have executed this SPECIAL FEE AND COST REIMBURSEMENT AGREEMENT on the day and year adjacent to their respective signatures.

WEST GLENWOOD SPRINGS
SANITATION DISTRICT

Date: 13 APRIL 99 By _____
Chairman

ATTEST

John Norman 4/13/99
Secretary Date

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GLENWOOD MEADOWS, LLC

By Dunrene Management Inc., Manager

Date: _____

By _____
Robert Duncan Macgregor, President

STATE OF COLORADO)
) ss.
COUNTY OF Garfield)

Acknowledged, subscribed, and sworn to before me this 13th day of ~~March~~ April, 1999, by Lee Enewold, as Chairman, and by John Gorman, as Secretary, on behalf of the West Glenwood Springs Sanitation District.

WITNESS my hand and official seal.

My Commission expires: 6-28-99.

NOTARY PUBLIC LORRA NICHOLS STATE OF COLORADO

_____
Notary Public

STATE OF COLORADO)
) ss.
COUNTY OF Garfield)

Acknowledged, subscribed, and sworn to before me this 31st day of March, 1999, by Robert Duncan Macgregor, as President of Dunrene Management, Inc., on behalf of Glenwood Meadows, LLC.

WITNESS my hand and official seal.

My Commission expires: 10/23/2002.

MARGARET R. JOY
NOTARY PUBLIC
STATE OF COLORADO

_____
Notary Public

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EXHIBIT A

Glenwood Land Company Property:

A PARCEL OF LAND SITUATED IN SECTIONS 5 AND 6, TOWNSHIP 6 SOUTH, RANGE 89 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF GARFIELD, STATE OF COLORADO, SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A CONCRETE RIGHT-OF-WAY MONUMENT FOUND ON THE SOUTHERLY RIGHT-OF-WAY OF THE DENVER AND RIO GRANDE WESTERN RAILROAD WHENCE THE BLM ALUM. CAP IN PLACE AND PROPERLY MARKED FOR THE SOUTHWEST CORNER OF SAID SECTION 5 BEARS SOUTH 23°29'57" WEST 1196.71 FEET;
THENCE ALONG SAID SOUTHERLY RIGHT-OF-WAY THE FOLLOWING (3) COURSES:
THENCE SOUTH 83°38'11" WEST 901.40 FEET;
THENCE NORTH 82°19'49" WEST 103.10 FEET;
THENCE SOUTH 83°37'11" WEST 7.05 FEET LEAVING SAID SOUTHERLY RIGHT-OF-WAY;
THENCE ALONG THE NORTHERLY RIGHT-OF-WAY OF THE MIDLAND AVE. RIGHT-OF-WAY ACQUISITION THE FOLLOWING (8) COURSES:
THENCE SOUTH 42°36'53" EAST 17.15 FEET;
THENCE ALONG A CURVE TO THE LEFT HAVING A RADIUS OF 710.00 FEET AND AN ARC LENGTH OF 677.30 FEET, THE CHORD OF WHICH BEARS SOUTH 69°56'35" EAST 651.91 FEET;
THENCE NORTH 82°43'44" EAST 80.93 FEET;
THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 500.00 FEET AND AN ARC LENGTH OF 194.98 FEET, THE CHORD OF WHICH BEARS NORTH 71°33'27" EAST 193.75 FEET;
THENCE NORTH 60°23'10" EAST 185.42 FEET;
THENCE NORTH 56°38'55" EAST 230.74 FEET;
THENCE NORTH 75°17'22" EAST 201.74 FEET;
THENCE NORTH 06°21'46" WEST 19.87 FEET LEAVING SAID NORTHERLY RIGHT-OF-WAY;
THENCE ALONG SAID SOUTHERLY RIGHT-OF-WAY THE FOLLOWING (3) COURSES:
THENCE SOUTH 83°38'11" WEST 132.79 FEET;
THENCE SOUTH 86°30'11" WEST 200.30 FEET;
THENCE SOUTH 83°38'11" WEST 98.60 FEET TO THE POINT OF BEGINNING.

546012 05/24/1999 11:52A B1131 P233 M ALSDORF
1 of 10 R 51.00 D 0.00 GARFIELD COUNTY CO

LINE CONNECTION AGREEMENT

THIS LINE CONNECTION AGREEMENT is made and entered into this 31 day of March, 1999, by and between the WEST GLENWOOD SPRINGS SANITATION DISTRICT, a Colorado special district (hereinafter "District") and GLENWOOD MEADOWS, LLC, a Colorado limited liability company whose address is 525 East Cooper Avenue, Aspen, Colorado 81611 (hereinafter "Glenwood Meadows");

W I T N E S S E T H:

WHEREAS, the District provides sanitary sewer service to the area around West Glenwood Springs, Colorado; and

WHEREAS, Glenwood Meadows is the owner of that certain real property described in Exhibit A, attached hereto and incorporated herein by this reference (hereinafter "Property."); and

WHEREAS, the Property is proposed to be subdivided into two (2) parcels, and such proposal is currently under review by the City of Glenwood Springs, Colorado; and

WHEREAS, the District met and discussed the provision of District services to the Property, and said provision was conceptually approved by the Board of Directors for the District, subject to the terms and conditions of a Line Connection Agreement to be entered into between the parties; and

WHEREAS, Glenwood Meadows desires the District to provide sanitary sewer service to the Property, and Glenwood Meadows plans to do the excavations, constructions, installations, connections, and other work necessary to extend the sewer main lines to the Property in order to facilitate the provision of such service; and

WHEREAS, the District is willing to provide sanitary sewer service to the Property upon the terms and conditions set forth herein.

NOW, THEREFORE, for and in consideration of the mutual covenants and agreements of the parties, and other good and valuable consideration, the adequacy and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. Rules and Regulations. The Rules and Regulations of the District in effect on the date of execution of this Agreement (hereinafter the "Rules and Regulations") are hereby incorporated into this Agreement by reference. In particular, Articles VII and VIII of the Rules and Regulations apply to line extensions and line connections. The provisions of this Agreement are intended to comply with the Rules and Regulations, and to the extent that any provision or provisions do not comply, they shall be interpreted in a manner that brings them into compliance

LEAVENWORTH & TESTER, P.C.
1011 Grand Avenue
P.O. Drawer 2030
Glenwood Springs, CO 81602

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with the Rules and Regulations in effect at the time this Agreement was executed. All capitalized terms used herein shall have the meanings defined for each term in the District's Rules and Regulations in effect on the date of execution hereof, unless otherwise specifically defined herein.

2. Ratification of Prior Agreements. The parties hereto have previously entered into the following agreements:

a. West Glenwood Springs Sanitation District Pre-Inclusion Agreement, which Agreement is recorded in the office of the Clerk and Recorder of Garfield County in Book 1009 at Page 139 as Reception No. 504575 (hereinafter "Pre-Inclusion Agreement").

b. West Glenwood Springs Sanitation District Special Fee and Cost Reimbursement Agreement dated ~~March~~ April 13, 1999, which Agreement is recorded in the office of the Clerk and Recorder of Garfield County in Book 1131 at Page 228 as Reception No. 546011 (hereinafter "Special Fee Agreement").

The parties hereto ratify and affirm the foregoing agreements.

3. Facility to be Installed by Glenwood Meadows. Glenwood Meadows has submitted for District review a written application for sewer line connection to the Property, engineering designs, and preliminary cost estimates. Pursuant to the Rules and Regulations of the District, the District Engineer must approve the plans for the line connection in writing before work commences. All construction and installations pursuant to the plan submitted shall comply with the Rules and Regulations of the District, including the Technical Specifications and Procedures, and the written approval, including any conditions contained therein, the District Engineer, and any applicable federal, state, county, or local laws. Upon review and approval of the plans by the District, Glenwood Meadows shall commence construction of the sewer line connection, including installation of all internal sewer lines. While it is the policy of the District to extend all internal sewer lines to the end of the lot line, the parties agree to temporarily relieve Glenwood Meadows of this requirement because it is the owner of the lands to the east and south that would be served by such an extension. Glenwood Meadows agrees that at the time sewer service is requested either for the east parcel created by the currently-proposed subdivision or for any other application for service in which service to the end of such east parcel is required, which ever comes first, Glenwood Meadows, or its successor in interest in any parcel of land in which service to the end of the east parcel shall be required, shall be obligated, at its sole cost, to extend the line to the south and/or east end of the parcel, as necessary, to provide service to such other lands, utilizing the easements to be included on the final plat as more fully outlined in Paragraph 6, below.

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The parties agree that Glenwood Meadows shall construct a sewer line from the northwest corner of the Property along the northern property line, terminating at the property line contiguous to the two (2) subdivided parcels. Upon request by the District, Glenwood Meadows, or its successor in interest in any parcel of land in which service to the end of the east parcel shall be required, shall be required to extend the sewer line, at its sole cost, to the edge of the property line along one of the easements described in Paragraph 6, below. Said line connection shall be constructed and installed according to the final plans as approved in writing by the District Engineer, and any changes in or deviations from the final plans shall be separately approved in writing by the District Engineer.

4. Connection of District Sewer Service to the Property. Glenwood Meadows agrees that at the time the District's sewer services are extended to the Property, Glenwood Meadows shall connect all improvements to the District's sewer system and pay all fees due for such connections. Pursuant to the District's Rules and Regulations, no District service shall be provided and no connection shall be made to the District sewer systems until an application for service has been made, the applicable tap fee has been paid, and a tap permit has been issued.

5. Observation of Construction. All construction and installation of facilities by Glenwood Meadows shall be subject to the District's right to observation, at Glenwood Meadows' sole expense, by the District Engineer or such other authorized representative of the District as the District Board shall designate. Such observation may occur at any point during or upon completion of construction and may occur at any time after facilities are operational at reasonable intervals as the District may request. Glenwood Meadows shall ensure that the construction and installation of facilities is in accordance with the Rules and Regulations of the District and all applicable federal, state, county, and local laws. The District Engineer may direct Glenwood Meadows, on behalf of the District, to correct any deficiencies in the construction and installation of facilities that are not constructed or installed in conformance with the plans as approved. Glenwood Meadows shall coordinate with the District Engineer the timing of the construction and installation of facilities to facilitate compliance observations by the District Engineer. Observation, acquiescence, and/or approval by any engineering inspector of the construction of physical facilities, at any particular time, shall not constitute the approval by the District of any phase of the construction of such improvements. Such approvals shall be made by the District only after completion of construction and in the manner hereinafter set forth.

6. Easements. The final plat for subdivision of the Property shall dedicate utility easements as hereafter approved by the District across the Property, which shall be particularly described on the final utility plan and/or final plat. In connection herewith, Glenwood Meadows agrees to dedicate said easements to the District on the final plat, free and clear of all liens and encumbrances which would interfere, as determined by the District, with the District's use of the easements. All easements to be dedicated shall be general utility easements of a width determined by the District. Further, Glenwood Meadows agrees to dedicate all other easements, as necessary, for access or completion of work on the Property and for future expansion of District services to properties located south of Midland Avenue. Easements twenty-five feet

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(25') in width shall run from the existing sewer line on the northwest corner of the Property, along the northern edge of the Property to the easternmost point on the Property. Additionally, an easement shall run from the northern point of the Property along the property line contiguous to the two (2) subdivided parcels to the southern point of the Property.

7. Acceptance of Facilities By District; Warranty. Upon completion of construction, installation, and connection of all sewer line facilities by Glenwood Meadows on the Property, the District Engineer shall certify to the District Board that such facilities have been constructed and installed in accordance with the provisions of the Rules and Regulations and in accordance with the applicable provisions of federal, state, county, and local laws. Thereupon, Glenwood Meadows shall request the District to accept said facilities and shall provide the District with the following information:

a. A written summary of the actual costs of all facilities to be dedicated to the District. In addition, a certification that all such costs of construction have been fully paid, and written waivers of the right to claim mechanic's liens by all contractors performing work on the Property;

b. A deed, bill of sale, and/or such other evidence as is satisfactory to the District, granting the District an easement or fee ownership of all property required by the plans as approved to be dedicated to the District in conjunction with the line connection project, free and clear of all liens and encumbrances, in a format acceptable to the District;

c. Glenwood Meadows shall submit to the District a video tape of the interiors of the extended sewer lines;

d. As-built drawings for the project which have been prepared by a registered land surveyor at Glenwood Meadows' expense and which satisfy the requirements of the Rules and Regulations and Technical Specifications and Procedures of the District. The drawings shall consist of one set of reproducible mylars and an auto-cad disk. The District's written acceptance of the as-built drawings and video tape shall complete Glenwood Meadows' dedication to the District of the facilities required by the plans;

e. A two-year warranty guaranteeing to the District that the facilities have been constructed in a good and workmanlike manner for a period of two (2) years from the date of acceptance of the facility by the District. Ninety (90) days prior to the expiration of said warranty, Glenwood Meadows shall submit to the District a current videotape of the interiors of the extended sewer lines and, at the sole discretion of the District Engineer, shall repair any deficiencies. The guarantee shall be in a format acceptable to the District and shall be secured, if required by the District, in a form of security acceptable to the District; and

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f. Compliance with all other provisions and requirements of this Agreement.

Upon satisfactory completion of the above requirements, the District shall formally accept the line connection project by a motion entered in the minutes of the Board of Directors and refund to Glenwood Meadows all deposits made pursuant to this Agreement and not already released. Such acceptance, if given, shall constitute dedication by Glenwood Meadows of such facilities to the District. The parties agree that the District is under no obligation to provide sewer service to Glenwood Meadows until acceptance and dedication.

8. Breach by Glenwood Meadows; District's Remedies. In the event of a breach of any of the terms and conditions of this Agreement by Glenwood Meadows, the District Board of Directors (hereinafter the "Board") shall be notified immediately, and the District may take such action as the District deems necessary to protect the public health, safety, and welfare; to protect lot buyers and builders; and to protect the users of District facilities from hardship. In addition to all other remedies available at law, the District may:

a. Refuse to approve Glenwood Meadows' plans and specifications for, or construction or installation of, sewer facilities; provided, however, that this remedy shall not be available to the District until after the affidavit described in (b), below, has been recorded;

b. Record with the County Clerk and Recorder an affidavit, approved in writing by the Board and signed by the Chairman of the Board or any Board member, stating that the terms and conditions of this Agreement have been breached by Glenwood Meadows. At the next regularly scheduled Board meeting, the Board shall either approve the filing of said affidavit or direct a District representative to file an affidavit stating that the default has been cured. Upon the recording of such an affidavit, no further District services or assistance will be provided in connection with the Property until the default has been cured; an affidavit signed by the Chairman of the Board or any Board member and approved by the Board stating that the default has been cured shall remove this restriction;

c. Demand that the security given for the completion of the improvements, if any, be paid or honored; and/or

d. Refuse to provide services to the Property.

Unless necessary to protect the immediate health, safety, and welfare of the District users, the District shall provide Glenwood Meadows ten (10) days' written notice of its intent to take any action under this paragraph during which ten-day period Glenwood Meadows may cure the breach described in said notice and prevent further action by the District. Furthermore, unless an affidavit as described in (b), above, has been recorded with the Garfield County Clerk and Recorder, any person dealing with Glenwood Meadows shall be entitled to assume that no default by Glenwood Meadows has occurred hereunder unless a notice of default has been served

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upon Glenwood Meadows as described above, in which event Glenwood Meadows shall be expressly responsible for informing any such third party of the District's claim of default.

9. Fees and Charges. Glenwood Meadows shall pay in full to the District all fees incurred by the District relating to the Glenwood Meadows' construction, installation, and connection of sewer lines on the Property, including engineering, surveying, legal, inspection, filing, or recording fees and related expenses.

10. Deposit. Because Glenwood Meadows has not received final plat approval, Glenwood Meadows has not posted or provided to the City of Glenwood Springs any performance guarantee for the completion of public improvements, and the parties acknowledge that Glenwood Meadows is proceeding at its own risk regarding the installation of the sewer utilities contemplated under this Agreement. In order to ensure that satisfactory as-built drawings for the project are submitted to the District as required by Section 7.05 of the Rules and Regulations, Glenwood Meadows shall deposit with the District One Thousand Dollars ($1,000.00) in cash upon execution of this Agreement. Said deposit shall not be released back to Glenwood Meadows until satisfactory as-built drawings are submitted by Glenwood Meadows and approved in writing by the District Engineer.

11. Assignment. This Agreement may not be assigned by Glenwood Meadows without the prior written consent of the District, which consent shall not be unreasonably withheld. In the event Glenwood Meadows desires to assign its rights and obligations herein, it shall so notify the District in writing together with the proposed assignee's written agreement to be bound by the terms and conditions contained herein.

12. Indemnification. Glenwood Meadows agrees to indemnify and hold the District harmless from any and all claims or losses of any nature whatsoever resulting from Glenwood Meadows' construction and/or installation of improvements on the Property, for the dedication of easements to the District, and for any reimbursement agreements as stated or referred to herein. This indemnification shall include actual attorneys' fees incurred in the event that any party brings an action against the District for any of the approvals or dedications described herein. The parties hereto intend not to duplicate any legal services or other costs associated with the defense of any claims against either party described in this section. Thus, the parties hereto agree to cooperate in full to prevent duplicative expenses incurred as a result of the indemnification herein described.

13. Notice. This Agreement shall constitute actual notice of the terms and conditions herein to any and all future users of District services on the Property and all owners, tenants, or other persons who occupy units or reside upon the Property.

14. Covenants in This Agreement. The parties agree and intend that this Agreement shall run with the property described in Exhibit A, attached hereto, and be a burden and covenant on that property.

15. Recordation. Upon execution of this Agreement, the District shall record the Agreement in the Office of the Clerk and Recorder, Garfield County, Colorado.

16. Waiver of Defects. In executing this Agreement, Glenwood Meadows waives all objections it may have concerning defects, if any, in the formalities whereby the Agreement is executed, concerning the power of the District to impose conditions on Glenwood Meadows as set forth herein, and concerning the procedure, substance, and form of the ordinances or resolutions adopting this Agreement.

17. Release of Liability. It is expressly understood that the District cannot be legally bound by the representations of any of its officers or agents or their designees except in accordance with the Rules and Regulations and local, state, and federal laws, and that when dealing with the District, Glenwood Meadows acts at its own risk as to any representation or undertaking by District officers or agents or their designees which is subsequently held unlawful by a court of law.

18. Captions. The captions in this Agreement are inserted only for the purpose of convenient reference and in no way define, limit, or prescribe the scope or intent of this Agreement or any part thereof.

19. Invalid Provisions. If any provision of this Agreement shall be determined to be void by any court of competent jurisdiction, then such determination shall not affect any other provision hereof, all of which other provisions shall remain in full force and effect, and such void provision shall be replaced with a valid provision which most closely sets forth the intentions of the parties. It is the intention of the parties that, if any provision of this Agreement is capable of two constructions, one of which would render the provision void and the other of which would render the provision valid, then the provision shall have the meaning which renders it valid.

20. Governing Law. The laws of the State of Colorado shall govern the validity, performance, and enforcement of this Agreement. Should either party institute legal suit or action for enforcement of any obligation contained herein, it is agreed that the venue of such suit or action shall be in Garfield County.

21. Complete Agreement. This Agreement constitutes the entire and complete agreement of the parties on the installation by Glenwood Meadows of all internal sewer lines on the Property. No promise or undertaking has been made by any party, and no understanding exists with respect to the transaction herein contemplated, except as expressly set forth herein. All prior and contemporaneous negotiations and understandings between the parties are embodied and merged into this Agreement. Any modification or amendment must be in a written form and executed in the same manner as this Agreement.

22. Attorney Fees, Costs. In the event that either party deems it necessary to pursue litigation to enforce any provision of this Agreement, the prevailing party shall be entitled to

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reasonable attorney fees and costs of suit actually incurred in such litigation.

23. Binding. This Agreement shall be binding upon and inure to the benefit of the parties and their assigns and successors in interest.

24. Counterparts. This Line Connection Agreement may be executed in duplicate original counterparts, each of which shall constitute an original, but all of which shall constitute one and the same document.

25. Notices. All notices, requests, demands, consents, and other communications pertaining to this Agreement shall be transmitted in writing and shall be deemed duly given when received by the parties at their addresses below or any subsequent addresses provided to the other party in writing.

Notice to Glenwood Land:	Robert Duncan Macgregor Glenwood Meadows, LLC. 535 East Cooper Avenue Aspen, Colorado 81611
With copy to:	Thomas J. Hartert 802 Grand Avenue, Suite #303 Glenwood Springs, CO 81601
Notice to District:	West Glenwood Springs Sanitation District P.O. Box 866 Glenwood Springs, Colorado 81602
With copy to:	Leavenworth & Tester, P.C. P. O. Drawer 2030 Glenwood Springs, Colorado 81602

IN WITNESS WHEREOF, the District and Glenwood Land have caused this Line Connection Agreement to be executed on the day and year first above written.

WEST GLENWOOD SPRINGS
SANITATION DISTRICT

By _____
Chairman

ATTEST:

_____
Secretary

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GLENWOOD MEADOWS, LLC

By Dunrene Management Inc., a Colorado corp., Manager

By _____
Robert Duncan Macgregor, President

STATE OF COLORADO)
) ss.
COUNTY OF Garfield)

Acknowledged, subscribed, and sworn to before me this 31st day of March, 1999, by Lee Enewold, as Chairman, and by John Gorman, as Secretary, on behalf of the West Glenwood Sanitation District.

WITNESS my hand and official seal.

My Commission expires: 6-28-99.

NOTARY PUBLIC LORRA NICHOLS STATE OF COLORADO

_____
Notary Public

STATE OF COLORADO)
) ss.
COUNTY OF Garfield)

Acknowledged, subscribed, and sworn to before me this 31st day of March, 1999, by Robert Duncan Macgregor, as President of Dunrene Management Inc., on behalf of Glenwood Meadows, LLC.

WITNESS my hand and official seal.

My Commission expires: 10/2[illegible]

MARGARET R. JOY
NOTARY PUBLIC
STATE OF COLORADO
My Commission Expires [illegible]

_____
Notary Public

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EXHIBIT A

Glenwood Land Company Property:

A PARCEL OF LAND SITUATED IN SECTIONS 5 AND 6, TOWNSHIP 6 SOUTH, RANGE 89 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF GARFIELD, STATE OF COLORADO, SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A CONCRETE RIGHT-OF-WAY MONUMENT FOUND ON THE SOUTHERLY RIGHT-OF-WAY OF THE DENVER AND RIO GRANDE WESTERN RAILROAD WHENCE THE BLM ALUM. CAP IN PLACE AND PROPERLY MARKED FOR THE SOUTHWEST CORNER OF SAID SECTION 5 BEARS SOUTH 23°29'57" WEST 1196.71 FEET;
THENCE ALONG SAID SOUTHERLY RIGHT-OF-WAY THE FOLLOWING (3) COURSES:
THENCE SOUTH 83°38'11" WEST 901.40 FEET;
THENCE NORTH 82°19'49" WEST 103.10 FEET;
THENCE SOUTH 83°37'11" WEST 7.05 FEET LEAVING SAID SOUTHERLY RIGHT-OF-WAY;
THENCE ALONG THE NORTHERLY RIGHT-OF-WAY OF THE MIDLAND AVE. RIGHT-OF-WAY ACQUISITION THE FOLLOWING (8) COURSES:
THENCE SOUTH 42°36'53" EAST 17.15 FEET;
THENCE ALONG A CURVE TO THE LEFT HAVING A RADIUS OF 710.00 FEET AND AN ARC LENGTH OF 677.30 FEET, THE CHORD OF WHICH BEARS SOUTH 69°56'35" EAST 651.91 FEET;
THENCE NORTH 82°43'44" EAST 80.93 FEET;
THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 500.00 FEET AND AN ARC LENGTH OF 194.98 FEET, THE CHORD OF WHICH BEARS NORTH 71°33'27" EAST 193.75 FEET;
THENCE NORTH 60°23'10" EAST 185.42 FEET;
THENCE NORTH 56°38'55" EAST 230.74 FEET;
THENCE NORTH 75°17'22" EAST 201.74 FEET;
THENCE NORTH 06°21'46" WEST 19.87 FEET LEAVING SAID NORTHERLY RIGHT-OF-WAY;
THENCE ALONG SAID SOUTHERLY RIGHT-OF-WAY THE FOLLOWING (3) COURSES:
THENCE SOUTH 83°38'11" WEST 132.79 FEET;
THENCE SOUTH 86°30'11" WEST 200.30 FEET;
THENCE SOUTH 83°38'11" WEST 98.60 FEET TO THE POINT OF BEGINNING.

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EASEMENT

THIS EASEMENT, granted this 17 day of January, 2000, between GLENWOOD MEADOWS, LLC, a Colorado limited liability company whose legal address is 525 East Cooper, Aspen, County of Pitkin, State of Colorado 81611, the Grantor, and the CITY OF GLENWOOD SPRINGS, COLORADO, a Colorado home-rule municipality whose legal address is 806 Cooper Avenue, Glenwood Springs, County of Garfield, State of Colorado 81601, the Grantee.

WITNESSETH, that the Grantor, for and in consideration of the sum of Ten and No/100 U.S. Dollars ($10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, does grant, bargain, sell, and convey, without warranty soever, to the Grantee a non-exclusive easement for the following purposes:

(i) below ground utility installation, repair, replacement and maintenance of Grantee-owned services; specifically including the right to install line extensions of the Grantee's sewer and water systems as may be reasonably necessary to service the needs of the real property owned by both Grantor and Grantee and described hereinbelow;

(ii) below ground utility installation, repair, replacement and maintenance of standard utilities reasonably necessary to service the needs of the real property owned by both Grantor and Grantee and described hereinbelow; specifically including the right to install natural gas, telephone, CATV, electric, fiberoptic and similar distribution, transmission and service lines;

(iii) above ground debris flow mitigation and surface water drainage systems; and

(iv) other reasonable utility purposes as may be agreed in writing by the parties hereto,

over and across the following described parcel of real property, owned as of the date hereof by Grantor, situate in the County of Garfield and State of Colorado to wit:

SEE EXHIBIT A, ATTACHED HERETO AND BY THIS REFERENCE, INCORPORATED HEREIN.

Provided, however, that the easement granted hereby may be relocated to other, contiguous real property owned by the Grantor upon the prior written agreement of the parties hereto. Upon such relocation, each party agrees to execute such instruments as shall be necessary to effect the release of the property described upon Exhibit A hereto from the tenure and encumbrance of the within easement.

This Easement is for the benefit of and appurtenant to that land, or any part thereof, situate in the County of Garfield and State of Colorado, and commonly known as the Wulfsohn Parcel as described by that certain Special warranty Deed conveying the same to Grantor dated September 6, 1996 and recorded in the Garfield County land records in Book ___ at Page ___. Grantee hereby covenants that it shall maintain the lands affected by Grantee's exercise of the easement rights granted hereunder, including any and all costs of mitigation, remediation, revegetation and landscaping. Grantee agrees to repair and maintain the easement granted herein at the cost and expense of the Grantee, and that said Grantee will in no way hinder or prevent the proper and reasonable use and enjoyment of Grantor's real property through which the easement is granted or contiguous thereto, including Grantor's unencumbered rights to ingress and egress.

This Easement is intended to be perpetual. In the exercise of the easement rights herein granted, Grantee may, at its own expense and with reasonable prior notice to Grantor, relocate existing fences and other removable above-ground fixtures which interfere with the efficient use of the easement.

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GRANTOR:

GLENWOOD MEADOWS, LLC, a Colorado limited liability company

By: _____
Name: Robert Duncan Macgregor
Title: President of Dunrene Management, Inc., the Manager of Glenwood Meadows, LLC

STATE OF COLORADO)
) ss.
COUNTY OF GARFIELD)

The foregoing instrument was acknowledged before me this 17th day of January, 2000, by Robert Duncan Macgregor, as the President of Dunrene Management, Inc., the Manager of Glenwood Meadows, LLC, a Colorado limited liability company.

Witness my hand and official seal.

_____
Notary Public

My commission expires: 1/23/2000

MARGARET R. JOY
NOTARY PUBLIC
STATE OF COLORADO

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EXHIBIT A

A strip of land not to exceed thirty (30) feet in width, generally situate southerly of and contiguous to the Midland Avenue Alternate Route Right of Way as surveyed and in place. Said strip of land shall commence at the western boundary of that parcel of real property conveyed by Grantor to Grantee under that certain Correction Special Warranty Deed dated January 28, 2000, commonly known and referred to as the City of Glenwood Springs Community Center Site. Said strip of land shall then extend west to the eastern boundary of that parcel of real property conveyed by Grantor to Grantee under that certain Special Warranty Deed dated January 28, 2000, commonly known and referred to as the City of Glenwood Springs Municipal Operations Center Site. Intervening alterations, enlargements or deviations of the aforementioned Midland Avenue Alternate Route Right of Way which may exist between the point of beginning and the terminus of the strip of land described herein shall not have the corresponding effect of extending the easement granted herein further to the south of the general alignment of said Midland Avenue Alternate Route Right of Way.

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PUBLIC UTILITY EASEMENT

KNOW ALL MEN BY THESE PRESENTS, that the undersigned, ***GLENWOOD MEADOWS, LLC*** (hereinafter called the "Grantor"), of the County of Garfield, State of Colorado, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, does hereby grant, bargain, and convey to the ***CITY OF GLENWOOD SPRINGS, COLORADO,*** a Municipal Corporation, whose address is 806 Cooper Avenue, Glenwood Springs, Colorado, 81601 (hereinafter called the "Grantee"), and its successors and assigns a non-exclusive public utility easement upon the lands of Grantor, situated in the County of Garfield, State of Colorado, said easement being more particularly described as follows:

A utility easement situated in Section 9, Township 6 South, Range 89 West of the 6th Principal Meridian, County of Garfield, State of Colorado, being 30 feet in width and lying 15 feet on each side of the following described centerline:

> Beginning at a point whence the center west 1/16 corner of said Section 9 bears S 37°32'19" E, a distance of 1415.44 feet; thence S 51°26'25" E, a distance of 292.00 feet; thence S 52°58'53" E, a distance of 94.67 feet; thence 68.94 feet along the arc of a 419.58 feet radius curve to the right, having a central angle of 9°24'52" and subtending a chord bearing S 48°16'27" E, a distance of 68.86 feet; thence S 43°34'01" E, a distance of 500.94 feet; thence S 41°19'02" E, a distance of 250.17 feet to the point of ending; whence said center west 1/16 corner bears S 00°39'40" W, a distance of 286.68 feet.
>
> Together with a temporary construction easement being 50 feet in width and lying 25 feet on each side of the above described easement centerline, said temporary easement will expire 1 Jan. 2002.

To construct, install, reconstruct, replace, repair, and maintain public utilities within the above described lands.

Together with the right to remove any and all fences and other structures, trees, bushes, vegetation within said easement when such is reasonably necessary for the exercise of the rights herein granted. After the exercise by Grantee of any of its rights hereunder, Grantee shall promptly restore the surface of the ground to its former condition as nearly as is practicable, at the sole expense of Grantee.

Neither the extent nor use of the easement granted herein shall be expanded or enlarged from its initial use without a specific written grant from Grantor for such expansion or enlargement.

Grantor agrees that all facilities installed by the Grantee within the easement shall remain the property of the Grantee and shall be removable at the option of the Grantee. In the event that the extent and use of this easement is abandoned or no longer used for the purpose described herein at any time hereafter for a period of one (1) year or more, the grant herein shall revert to the Grantor, its heirs, successors and assigns.

Except for the rights and privileges granted to the Grantee by this Agreement, the Grantor reserves the full, complete and uninterrupted right to use, possess and occupy all portions of the property encumbered by the easement granted herein, so long as such use, possession and occupancy does not unreasonably interfere with the purposes for which the easement is hereby granted.

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TO HAVE AND TO HOLD, said permanent easement, unto Grantee, its successors and assigns, forever.

WITNESS the due execution hereof on Aug 8, 2000.

Grantor: ***GLENWOOD MEADOWS, LLC*** By [signature] PRESIDENT AUNRENE MANAGEMENT INC., MANAGER.

STATE OF COLORADO)
)ss.
COUNTY OF GARFIELD)

The foregoing Easement Deed was acknowledged before me this 8 day of August, 2000, by _____ as _____ of ***GLENWOOD MEADOWS, LLC.***

Witness my hand and official seal.

My commission expires: 5-12-02

[signature]
Notary Public
Address: 548 1/2 Spruce Aspen Co 81611

NOTARY PUBLIC JOHN R. LEWIN STATE OF COLORADO

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ANNEXATION AND DEVELOPMENT AGREEMENT{PRIVATE} GLENWOOD MEADOWS, LLC ANNEXATION

THIS ANNEXATION AND DEVELOPMENT AGREEMENT ("Agreement") is made and entered into this 18 day of September, 2002, by and between the CITY OF GLENWOOD SPRINGS, COLORADO, a Colorado municipal corporation (hereinafter "City"), and GLENWOOD MEADOWS, LLC, a Colorado limited liability company, its successors, assigns, and its legal or other representatives (hereinafter collectively "Owner");

WITNESSETH:

WHEREAS, Owner owns approximately three hundred forty-five (345) acres of real property currently located in unincorporated Garfield County, Colorado, and more particularly described on Exhibit A, attached hereto and incorporated herein by this reference (hereinafter "Property"), which Property shall be known as "Glenwood Meadows"; and

WHEREAS, Owner and City entered into that certain Pre-Annexation Agreement concerning the Property dated August 20, 1999 and subsequently amended by instrument dated January 12, 2000 (as amended, the "PAA"); and

WHEREAS, in February, 2000, Owner filed with the City Clerk a petition and request for annexation of the Property into the City; and

WHEREAS, a duly noticed public hearing was held on March 2, 2000, whereat the City adopted a Resolution finding said petition and request to be in substantial compliance with the statutory requirements for annexation of the Property to the City; and

WHEREAS, Owner applied to the City for approval of certain Planned Unit Development zoning for the Property in March, 2000 (Zoning Application #42-99), which zoning application was subsequently withdrawn by Owner at a public hearing before the City Council on November 15, 2000; and

WHEREAS, upon the request of the City, approximately 4.63 acres of the Property was approved for annexation and zoning as C-1 Limited Commercial (the "MOC Entrance Parcel") and is subject a separate Annexation Agreement between the Owner and City; and

WHEREAS, on September 19, 2001 (Zoning Application #59-01) Owner submitted an application to the City for approval of a zoning plan for the Property which included C-1 Limited Commercial, C-2 Core Commercial, C-4 Resort Commercial and R-3 Residential zoning districts for the portions of the Property not intended for public dedication (any portion of the Property intended for public dedication pursuant to this Agreement and the instruments incorporated herein may be zoned under the same application and review process as HP Hillside Preservation) as more fully described upon Exhibit B attached hereto and by this reference incorporated herein (the "Zoning Map"); and

WHEREAS, on March 21, 2002, the Owner did amend its original February, 2000 Annexation Petition to reflect the distinct characteristics of the Property subject to this Agreement and the MOC Entrance Parcel; and

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WHEREAS, on March 21, 2002 a Public Hearing was held pursuant to C.R.S. Section 31-12-109, as amended, at which public hearing it was determined that the annexation petition had satisfied all requirements of C.R.S. Section 31-12-101 et. Seq.; and

WHEREAS, on July 18, 2002 the City Council of the City of Glenwood Springs ("Council") did adopt Ordinance No. , Series of 2002, and Ordinance No. , Series of 2002, which respectively approved the Owner's petition and request for annexation of the Property and approved the Owner's application for municipal zoning of the Property; and

WHEREAS, during the public review of the annexation and zoning processes, the parties hereto have agreed to amend and eliminate the provisions of the prior PAA and to set forth and memorialize all agreements regarding the annexation, zoning and development of the Property in the instant Agreement; and

WHEREAS, the City and Owner desire to enter into this Agreement to set forth their agreements in writing concerning the terms and conditions of annexation of the Property to the City, the zoning of the Property under the City's Municipal Code and the adopted Zoning and Development Plan (Exhibit C attached hereto and by this reference incorporated herein), as well as the other conditions of the development of the Property as hereinafter described; and

WHEREAS, Owner intends to submit its development proposal to the City for subdivision review and approval and to construct the development in phases which correspond to the Zoning Plan parcels, it being understood that nothing herein shall confer upon Owner any other or further rights not expressly contained herein or by instruments incorporated herein.

NOW, THEREFORE, for and in consideration of the mutual promises and covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the City and Owner agree as follows:

1. Purpose. The purpose of this Agreement is to set forth the terms and conditions of the annexation of the Property to the City, and the zoning and development of the Property in the City. Except as expressly provided for herein to the contrary, all conditions herein are in addition to any and all requirements concerning annexation and development contained in the Municipal Code of the City of Glenwood Springs, Colorado (hereinafter "Municipal Code"), the Municipal Annexation Act of 1965, as amended at C.R.S. §31-12-101 et seq., and other applicable laws.

Except as expressly provided herein to the contrary, the complete execution, delivery and recording of this Agreement shall render null and void the PAA between these same parties. Furthermore, and except as expressly stated otherwise herein, all terms and conditions of the following agreements, contracts and documents shall remain in full force and effect:

(i) Midland Avenue Right Of Way Extension Agreement, dated September 20, 1994;

(ii) Community Center Acquisition and Exchange Agreement, dated March 16, 1999;

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(iii) Municipal Operations Facility Site Acquisition Agreement, dated December 27, 1999

(iv) MOC Water and Sewer Fee Credits Assignment and Bill of Sale, dated January 17, 2000;

(v) MOC Entrance Parcel Annexation and Development Agreement.

2. Zoning Characteristics/Constraints/Requirements. The Zoning and Development Plan attached hereto as Exhibit C (the "Plan") shall govern the development of the Property. Any and all future site planning, whether in the form of an application for planned unit development, major or minor subdivision, major or minor development permit approval or any other form requiring the review and approval of the City, shall, as an element of its application for approval and review, evidence, to the satisfaction of the applicable City department, commission and/or City Council, compliance with the criteria and conditions of the Plan, as said Plan relates to such development application and the underlying Municipal Code requirements. All zoning and development hereunder is deemed to require the application of the more stringent of either (i) the Municipal Code or (ii) the Plan. An applicant may seek relief from specific elements of the Plan and/or the Municipal Code only through appropriate variance processes outlined in the City of Glenwood Springs Municipal Code.

Owner shall, within ninety (90) days after the mutual execution of this Agreement, submit a surveyed zoning map to the City. Such surveyed zoning map shall include legal descriptions for each of the twelve (12) zoning parcels (Parcels A through L, inclusive) identified by Exhibits B and C attached hereto. The City's Community Development Director and the City Attorney shall review such descriptions and, if generally consistent with the representations and approvals of the annexation and zoning public processes, shall approve the same. The City shall incorporate the surveyed zoning map into the Citywide zone district designation mapping and maintain an accurate and current copy thereof in accordance with State and local laws.

Prior to or contemporaneous with the first subdivision and/or development application for the Property, the Owner shall submit an overall geologic hazards map and mitigation plan of the Property to the City Engineer for his review and approval, which approval shall not be unreasonably withheld. The City shall incorporate the approved overall geologic hazards map and mitigation plan into the Citywide mapping and maintain an accurate and current copy thereof in accordance with applicable laws.

Prior to the first subdivision and/or development application for the Property, the Owner shall submit a Master Grading Plan and Master Drainage Plan for the development areas of the Property to the City Engineer. Said plans shall be consistent with the requirements of the Colorado Geologic Survey's letter dated October 23, 2001 and maintained on file with the City. Upon approval of said plans, Owner may apply for a grading permit to commence the preparation of all or part of the Property scheduled for development under the Plan. Based upon the detailed requirements and master planning of the Property as set forth herein and upon the Zoning and Development Plan attached hereto, such grading permit request may be granted by the City in advance of site specific development plans for an individual Parcel of the Property and may include certain off-site earth work, including, without limitation, (i) the "rough grading" of certain areas, as directed by the City, of Parcel L for said area's future use as active park facilities, and (ii) the

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construction of debris mitigation structures within Parcel L as more fully described in Section 14 hereinbelow. All Master Grading Plans, Master Drainage Plans and grading permit requests shall include revegetation plans acceptable to the City Engineer and City Planning Department. At a minimum said revegetation plans shall incorporate grass, forb and shrub species into any debris flow mitigation structure development in a manner beneficial to wildlife for forage and cover and shall adequately address erosion control.

Prior to the first subdivision and/or development application for the Property, the Owner shall submit a Master Utility Plan for the development areas of the Property to the City Engineer. The City shall incorporate the Master Utility Plan into the Citywide mapping and maintain an accurate and current copy thereof in accordance with State and local laws and with City policy.

3. Non-Specific Assessments/Credits/Fees-in-Lieu of School Land Dedication

a. Non-Specific Assessments/Credit. Any future impact fees, surcharges, special permit fees, special taxes or assessments, development fees or tap fees, and other items not addressed by this Agreement shall be exacted uniformly and non-discriminatorily on the Property and as exacted throughout the City. Notwithstanding the foregoing, nothing herein affects or shall affect the City's ability to exact impact fees for different facilities from certain residents or as to certain geographical areas. Owner shall receive full credit against any such future imposition for the full costs of all improvements, dedications, or payments made with respect to the matters to which such imposition relates. For example, in the event of a City's imposition of a fee for pedestrian trail facilities, Owner would be entitled to credit for the costs of all such trail improvements (as properly evidenced by invoices for design and construction) and dedications of land for trails (the value of which shall be established by the same appraisal mechanism described in Section 13.c. below) Owner had made up to that point in time on or concerning the Property.

Owner's credit for such costs shall include all costs incurred with respect to the applicable on-site or off-site improvements or dedications, including without limitation, all land costs (based upon the value of such land as vacant land, agricultural land or land for commercial or residential development, whichever is applicable, at the time the final plat for such land is approved), construction and construction management costs (excluding Owner's profit), and design, legal, consulting, and financing costs for the land so dedicated or on which the applicable improvements are constructed.

Notwithstanding the foregoing, Owner shall not receive credit as against such costs for the value of water rights dedicated or otherwise transferred to the City or the ownership shares of the attendant Atkinson ditch structure, both as more fully described by Section 11 hereinbelow. Further, in the case of an imposition of general applicability to provide general fund revenues, Owner shall not be entitled to credit against any impact fees or general assessments.

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Except with respect to Parcel I as identified on Exhibits B and C hereof, Glenwood Meadows, its successors and assigns, shall not be required to pay any future Traffic/Transportation Impact Fee established by the City subsequent to the execution and recordation of this Agreement. The City and Glenwood Meadows have established the full and complete obligations of Glenwood Meadows with respect to on-site and off-site traffic/transportation improvements and financial contributions as set forth by Section 12 hereinbelow.

Owner does own, and the City acknowledges and ratifies such ownership herein, certain water and sewer system "Fee Credits" (specifically, 135 sewer system improvement fee credits and 135 water system improvement fee credits) arising from Owner's prior transfer to the City of certain lands for development of the Municipal Operations Center (see instruments dated December 27, 1999 "Municipal Operations Facility Site Acquisition Agreement" and January 17, 2000 "Assignment and Bill of Sale"). Owner and City shall maintain accurate records regarding Owner's use of such Fee Credits as the Property is developed.

b. Fee-in-Lieu of School Land Dedication. Owner shall pay and the City shall accept fees in lieu of land dedication for the benefit of schools in the RE-1 School District (the "District") pursuant to Ordinance No. 34 Series of 1999 and Municipal Code Section 070.030.150. D.; or any amended version thereof in force and effect at the time of the final development permit approval of a given portion of the Property by the City. Such fees shall be applicable to the number of units proposed for all residential phases scheduled for development and shall be payable upon the issuance of a building permit for a residential dwelling unit. Owner shall have the right to seek relief from the obligation to pay such school impact fees for any "affordable housing dwelling units" or "employee housing dwelling units" provided by Owner or its assignees within the Property.

c. Credit to Owner for Actual Development of Public Facilities. Owner is specifically entitled to a credit against any City parkland improvement fee or similar fees if eventually implemented and which would be otherwise applicable to development on the Property as follows:

(i) the value of land dedicated to public use and the costs of construction of pedestrian and bicycle trails within the Property as more fully described by Section 13(a) and 13 (b) below;

(ii) the value of land dedicated to public use and the costs of construction or Owner's contributions to the costs of construction of pedestrian and bicycle trails outside the boundaries of the Property as more fully described by Section 13(c) below;

(iii) the value of any "rough grading" performed by Owner, its successors and assigns, as requested by the City pursuant to the provisions of Section 15 below; and

(iv) the value of land, if any, dedicated by the Owner to the City for public use and enjoyment as open space, active parklands and passive parklands in

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Parcel L, which lands represent a dedication in excess of the quantity of such lands otherwise required to be dedicated in support of the development on the Property.

Owner shall not be entitled to any credit against such fees for the development of commonly owned open spaces and recreation facilities within the development of Parcels A through K.

4. Conditions Precedent.

a. The provisions of this Annexation Agreement shall not be effective until the following conditions have been satisfied in full:

(1) Final approval has occurred as follows:

(a) For the purposes of this Agreement, final approval occurs on the thirtieth (30th) day following the effective date of the latest of the motion, ordinance and/or resolution by which the City Council (hereinafter "Council") approves:

(i) This Agreement;

(ii) The formal annexation of the Property to the City;

(iii) The zoning for the Property as C-1 Limited Commercial, C-2 Core Commercial, C-4 Resort Commercial, R-3 Residential and HP Hillside Preservation; and

(2) Owner and City have mutually executed and delivered this Agreement for recordation with the Garfield County Clerk and Recorder.

b. If any legal proceedings, referenda, or elections are commenced regarding any of the items specified in Section 4(a) hereinabove, and in accordance with the City's Municipal Charter, but are not favorably concluded within fifteen (15) months thereafter (subject to each party's obligations pursuant to Section 5 below), this Agreement may be terminated by either party upon written notice to the other.

c. If none of the actions addressed in Section 4(b) above is taken or commenced within such thirty (30) days, or if an election is called pursuant to said Section 4(b) and ratification thereafter made by the voters of the City, then Final Approval shall occur upon conclusion of the election.

5. Cooperation in Defending Legal Challenges. If any legal or equitable action or other proceeding is commenced by a third party: (a) within one (1) year after the Final Approval, challenging the validity of the annexation of the Property into the City or the City's zoning of the Property or the City's execution and delivery of this Agreement, Owner and the City shall defend

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such action or proceeding; or (b) subsequent to such one-year period, challenging the validity of any provision of this Agreement (other than as set forth in clause (a) above), Owner and the City agree to cooperate in defending such action or proceeding, and in connection with any such action or proceeding, the City shall bear its own expenses and Owner shall bear Owner's expenses. Unless the City and Owner otherwise agree, each party shall select its own legal counsel to represent it in connection with any such action or proceeding.

6. Interim Use of Available Raw Water During Site Development. The parties agree that the developer of the Property may utilize the Atkinson Canal and associated water rights being dedicated to the City for dust mitigation and site preparation during the grading and construction activities on the Property. If the developer elects to so utilize the water structures and water rights, all cost, including but not limited to construction, maintenance and legal fees associated with such use shall be borne exclusively by said developer.

7. Deannexation. The provisions of this Agreement, as well as acceptable City zoning of the Property, are material considerations of Owner's agreement to annex the Property to the City. Therefore, in the event (a) the City fails to perform under the terms of this Agreement, or (b) Owner is unable to obtain, either before or after annexation proceedings are complete, C-1 Limited Commercial, C-2 Core Commercial, C-4 Resort Commercial and R-3 Residential zoning and/or subdivision and/or development approval (subject to limitations herein set forth) which it in its sole discretion finds acceptable, Owner and the City stipulate and agree, pursuant to C.R.S. §31-12-501, that it shall be in the best interest of the City that the Property be de-annexed from the City. In such event, the City agrees that it shall initiate de-annexation proceedings, and to take all steps necessary to effect the de-annexation. The City further acknowledges and agrees that de-annexation is not prohibited by the City Charter or Municipal Code and ordinances, and that the City will not amend its ordinances to preclude a de-annexation permitted hereunder. The parties' right to de-annex shall be in addition to those rights set forth in Section 4, above. Upon the de-annexation of the Property from the municipal boundaries and specific jurisdiction of the City, the City agrees that it shall convey, assign, transfer and quitclaim to Owner, its successors and assigns, any and all land and water rights (the public dedication of which is more fully described by Section 11 hereof) previously dedicated by Owner hereunder to the City for the public use and benefit.

8. Owner Representations. All representations of Owner set forth in its annexation petition, annexation plat, public hearings on the application for C-1 Limited Commercial, C-2 Core Commercial, C-4 Resort Commercial and R-3 Residential zone district classification, the Zoning and Development Plan and mapping and related documents shall, if accepted by the City, be considered incorporated into this Agreement as if set forth in full herein. Notwithstanding their incorporation by reference, the City makes no representations about the accuracy of such documents.

9. Site Planning/Density Limits/Plats/Subdivision Improvements Agreements. The City and Owner agree to the following terms and conditions regarding site planning, vested rights, subdivision improvements agreements (hereinafter "SIAs") or development permit agreements (hereinafter, "Development Permits") and plat recordation:

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a. Site Planning. Unless otherwise mutually agreed upon by the parties, Owner shall develop the property in eleven (11) distinct phases; each of which shall correspond, according to the surveyed zoning map described by Section 2 hereinabove, to one of the zoning parcels (A through K) generally set forth by Exhibit B and Exhibit C (hereinafter, a "Parcel" or the "Parcels"). One or more zone parcels may be commenced as a single phase of site specific planning and development, provided the developer thereof complies with all obligations of each parcel's development; to wit, the timing and amount of applicable Off-Site Transportation Improvements (Section 12 hereof), the Geotechnical Mitigation requirements (including debris flow detention facility extensions) (Section 14 hereof) and all other applicable fees and conditions of development associated with each zoning parcel. During any planned unit development ("PUD") review process, subdivision process, development permit process or other development process, Owner shall submit to the City a final plat for each encompassed Parcel, which plat shall correspond to and indicate the proposed plan of development in each Parcel of the Property (the "final plat"), which shall include, at a minimum, the intended locations and densities of such development. The parties agree that the final plat shall be recorded promptly following approval.

The City and Owner agree that, together with the application for the first subdivision and/or development on the Property, except the subdivision and or development of Parcel I, and otherwise regardless of which zoning parcel or phase is involved, an element of the approval of the final plat thereof shall be the public dedication to the City, either by such plat or by separate conveyance instrument, of the HP Hillside Preservation (Parcel L) lands. It is further agreed that such conveyance shall and does provide part of the consideration herein agreed to and accepted by the parties as support for Owner's enforceable vested rights as further described and defined in Section 10 hereinbelow. It is also agreed that the dedication and conveyance of other, future public lands and facilities (such as publicly dedicated streets and utility easements) will occur in conjunction with future subdivision and/or development application approvals.

b. Infrastructure Easements. Regardless of Owner's schedule, Owner agrees to provide infrastructure for roads, water and sewer facilities, electrical and natural gas service, and other facilities and services as mutually agreed upon by Owner and the City Engineer to serve the Property adequately during the period(s) between development of parcels. Such infrastructure shall be provided at Owner's expense, and shall be reviewed and subject to approval by the City. Owner will loop water or sewer lines or provide other stand-alone features of such infrastructure, all as approved by the City engineer, to accomplish this goal. The City shall accept easements for such public facilities pending the actual and final public dedication of the same upon the final platting of the affected Parcel(s).

c. Density Cap. Notwithstanding the zoning designation of the Property as: (i) a C-1 Limited Commercial zoning district (Parcels A, C, D and H on the Plan) or C-2 Core Commercial zoning district (Parcels E, F and G on the Plan), Owner agrees that it shall not plan, develop, construct or sell more than 490,000 total square feet of

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commercial space (exclusive of any development which may occur within that area of the C-4 Resort Commercial zone district identified as "Hospitality" [Parcel I on the Plan], the density maximums of which are separately limited by the City's Municipal Code) within the Property; and (ii) an R-3 Residential zoning district (Parcels B, J and K of the Plan), Owner agrees not to plan, develop, construct or sell more than 475 residential dwelling units (subject to the provisions of Section 9(c)(i) below) within Parcels B, J and K.

(i) *Specific Housing Agreements between Owner and City.* The Owner and its successors-in-interest shall comply with the City's community housing requirements contained in Ordinance #24, Series of 2001, Inclusionary Residential Requirements for Affordable Housing and the applicable Guidelines, as contained in Resolution #2001-16. Glenwood Meadows further agrees that a minimum of twenty (20) dwelling units shall be developed on the Property and shall be located within the mixed-use Parcels E, F and G. Finally, the City and Owner agree that no more than three hundred (300) of the total residential dwelling units permitted hereunder shall be commercial apartment rentals as "apartments" are now or may hereafter be defined in the City's Municipal Code.

(ii) *Limitation.* The foregoing density limits shall not apply to portions of the Property conveyed to or developed as (i) governmental services facilities (including a public school district facility) or (ii) non-governmental, non-profit health and human services facilities. Except as expressly provided herein to the contrary, proposed land uses which exceed the maximum density limits established hereby and reiterated by the incorporated Zoning and Development Plan shall require the written mutual execution of a specific amendment to this Agreement. No such amendment shall be valid unless approved at a duly and properly noticed, public hearing before both the City's Planning & Zoning Commission and the Glenwood Springs City Council on the question.

d. SIAs/Development Permits and Plat Recordation. The City and Owner shall, following Council approval of the final plat of one or more of the Parcels of the Property's development, but before the final plat is recorded, negotiate acceptable terms of a separate subdivision improvements agreement ("SIA") for the Parcel(s) scheduled to proceed to development. The City shall authorize the Mayor to execute the SIA for the Parcel(s) following final plat approval. The City shall further authorize the Mayor to execute the SIAs for subsequent Parcel(s), subject to the foregoing:

i. No SIA for any Parcel shall be recorded until all necessary documents in support of that Parcel, including a financial guarantee acceptable to the City, updated cost estimates for public improvements, and an updated title commitment, all pursuant to the Municipal Code (the "Financial Items") have been provided to the City and approved by City staff. For purposes of this Agreement, both (i) Off-Site Transportation Improvements in

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accordance with the provisions of Section 12 hereinbelow and the Glenwood Meadows' Transportation Improvements Plan and (ii) Geotechnical mitigation requirements applicable to a given phase of development (including debris flow detention structure extensions) in accordance with the provisions of Section 14.a. hereinbelow, shall be deemed included within the definition of "Financial Items" requiring review and approval of the City's Community Development Director prior to recordation of the final plat of a given approved phase of development. Upon the City's receipt of the Financial Items, no public hearing shall be necessary if all City review departments approve the Financial Items without imposing conditions thereon and without recommending or requesting a public hearing. Nevertheless, the SIA for each phase of the Property's development shall be subject to Council review and approval at a regular Council meeting. Promptly following final approval and execution, the City shall record the SIA for the Parcel(s), which will thereafter proceed to be developed.

ii. The parties agree that any filing or other numbers which appear on the final plat for the various phases of development of the Property are for reference and identification purposes only and have no bearing on the sequence in which the Property may be developed.

iii. Owner may only sell lots on the Property located within a Parcel:

A. which includes within its final plat and design an identification of the lot(s) to be sold;

B. for which an SIA designating said lots has been executed and recorded; and

C. for which acceptable financial guarantees have been posted to secure construction of improvements.

In the absence of a specific "subdivision" request, the Financial Items and other obligations required hereunder may be enforced by the City through conditions of Major Development Permitting or other similar and enforceable mechanics.

e. Compliance With Agreement and Subsequent Obligations. Owner's compliance with all requirements of this Agreement, the Plan, the Municipal Code and other governing documents incorporated herein or as part of the zoning approval process, including future SIA/Development Permit instruments, is a condition of subdivision and/or major development permit approval. Notwithstanding the foregoing or Section 10 hereinbelow, nothing herein shall constitute a guarantee, covenant or agreement that the City shall approve such application(s) in the event of non-compliance.

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10. Vested Rights. In order to allow Owner a reasonable opportunity to develop the Property in accordance with this Agreement, the Zoning and Development Plan, the Final Approval and in consideration of the substantial public dedications of land as described herein and upon the attachments hereto, the development rights and uses approved thereby shall, to the extent allowed by law, constitute a "site specific development plan" under C.R.S. §§24-68-101 et seq., as amended. Subject to Owner's satisfactory completion of Parcel phases of development pursuant to this Agreement, the site specific development plan shall be vested in Owner under the following conditions:

a. The site specific development plan shall be vested for a period of ten (10) years, beginning on the date the final plat of the first phase of development on the Property is recorded (the "Vested Period"). The Property as to which rights have been vested shall be immune from changes in the City's land use regulations for the duration of the Vested Period, subject to the below provisions.

b. After the Vested Period expires, this Agreement shall be deemed terminated and of no further force or effect as to such phase; provided, however, that such termination shall not affect (a) annexation to and zone district designations of the Property in the City; (b) any common-law vested rights obtained prior to such termination; (c) any right arising from City permits, approvals or other entitlements for the Property which were granted or approved prior to, concurrently with, or subsequently to the approval of this Agreement; (d) any continuing obligations of Owner regarding providing services or facilities to such phase, performing covenants implied within this Agreement, or other Owner responsibilities under this Agreement, which shall survive termination; or (e) any rights of the City relating in any way to Owner's performance or nonperformance hereunder.

c. Notwithstanding the foregoing, if Owner does not complete the items listed and intended for each phase within the time period allotted for construction of such phase pursuant to an applicable SIA, the Vested Period as to all uncompleted work on the Property in connection with the subject phase(s) shall expire, vested rights as to such uncompleted work shall be extinguished, and this Agreement shall terminate in favor of the provisions of the applicable SIA. "Completion" for the purpose of this paragraph shall mean that all work for such phase shall have been performed, submitted to the City for approval, and finally approved pursuant to applicable City subdivision and platting requirements, and that Owner properly posted financial guarantees acceptable to the City to assure completion of that phase's improvements within the time period allotted by the subject SIA.

d. Except in instances of force majure, the requirements of federal or state law, cases of preemption or other superior jurisdictional mandate, the City shall not initiate any zoning or land use action which would alter, impair, prevent, diminish, impose a moratorium on development, or otherwise unreasonably delay any of Owner's rights set forth in this Agreement or Owner's plans for development or zoning, as approved by the City.

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e. Notwithstanding the foregoing, the establishment of vested property rights under this Agreement shall not prevent the City from enacting and enforcing regulations of general applicability (including, but not limited to, building, fire, plumbing, electrical and mechanical codes, including the preliminary plat and final plat subdivision requirements under the Municipal Code and other City ordinances), except where the approved plans for development of the Property or state or federal regulations provide otherwise, as all of such regulations exist on the date of this Agreement or may be enacted or amended after the date of this Agreement.

11. Water Rights Dedication and Ditch Structure Conveyance. At or before the time the recordation of the final plat for the first phase of subdivision and/or development (whereupon the land zoned as HP Hillside Preservation shall be dedicated to the City for public use and enjoyment as open space, active park lands and passive park lands), but in no event later than six (6) months after the mutual execution of this Agreement, Owner shall convey by special warranty deed to the City, free and clear of all liens and encumbrances (but subject to the provisions of Section 6 hereinabove), water rights acceptable to the City, as determined by mutual agreement to be satisfactory to provide a secure, legal water supply for appropriate useful application within the proposed development contemplated by this Agreement and the Plan; provided, however, Owner's obligations in this regard shall be limited to the historic water rights owned by Owner and used on the Property. Prior to dedication, the Owner and City shall agree to the maximum needs of the contemplated uses. The water rights dedicated shall be those historically associated with the subject Property and more specifically known as priorities 105A, 107A, 228 and 594 as decreed in Case Nos. 1056, 1225, 1338 and 4033 respectively. The Owner may retain water rights which exceed the needs described above, provided that the water rights retained are junior in priority to those dedicated and that any change in the point of diversions downstream of the point of diversion utilized to service the annexed Property. In addition, the Owner hereby agrees not to oppose any application by the City for an alternate point of diversion for the dedicated water rights in order to better serve the Property and the City's needs. Owner shall be entitled to sever and maintain ownership of those water rights not necessary for the City to offset the future use on the Property. Owner shall be solely responsible for the costs associated with any legal proceedings, including those related to approval of an augmentation plan or request for change in use, arising from the retention by Owner of any portion of its present water rights. By this conveyance, Owner shall fully satisfy any and all water rights dedication requirements of the City for annexation and development of the Property as set forth in the Municipal Charter and Municipal Code and as approved by the City Council.

As an element of the consideration hereunder, Owner agrees to assign one hundred percent (100%) of its ownership interest in and to the Atkinson Canal Company to the City contemporaneous with the dedication of water rights described by this Section 11. Such assignment shall include, without limitation, all right, title and interest of the Atkinson Canal Company in any agreements, contracts, easements, rights-of-way and other appurtenant benefits.

Owner, as an element of its Master Drainage Plan and its Master Utility Plan, shall at Owner's sole cost, design a raw water irrigation system, acceptable to the City Engineer, serving the Property and adjacent City-owned lands (i.e. Community Center, MOC Site and the Parcel L property). The City shall be the owner of any such raw water irrigation system and shall pay for the

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costs associated with construction of the same. Upon the City's development of a raw water irrigation system, all development within the Property shall be required to purchase such taps and pay such other fees as are generally applied to the system's use.

12. Off-Site Traffic Improvements Obligations. As an element of the City's approval of (i) Owner's Petition for Annexation, (ii) Owner's Application for Zoning and (iii) acceptance of this Agreement, the Owner has agreed to make certain improvements to the surrounding transportation system and to cooperate financially with the City on specified future transportation system improvements as described herein:

(a) As a specific requirement of any application for a Parcel's subdivision and/or development, the Owner shall calculate the estimated number of daily trips attributable to the site specific development's intended uses and provide the City with a complete copy of said calculations for the City's records.

(b) Owner shall cooperate with the City to obtain a CDOT Access Permit on behalf of, and in the name of the City. The City shall be provided a copy of any Access Permit granted hereunder. Said Access Permit shall describe the nature and impacts of construction and improvements affecting the Interstate 70/Midland Avenue right-of-way areas. Owner shall pay the costs of the Access Permitting process and shall comply with the terms associated therewith.

(c) Owner shall be responsible for the design and, upon approval of the City Engineer, the construction of improvements at the intersection of Midland Avenue and Eighth Street. Said improvements shall accommodate existing and anticipated traffic as described by the Owner's Transportation Improvements Plan through intersection modification, grade modification and/or signalization. Owner and or its assigns shall be responsible for all costs of administration, design and actual construction of the approved improvements; the City shall be responsible for all necessary costs of right-of-way acquisition for the approved improvements. The improvements contemplated hereby shall be completed prior to or contemporaneous with the issuance of a final and permanent certificate of occupancy by the City's Building Department for any structure within the first Parcel of commercial and/or residential development (exclusive of any proposed subdivision and development on Parcel I). Provided, however, Owner may apply for and obtain subdivision and/or development permit approval for development on the Property in advance of the actual construction of the improvements herein described; provided however that (i) the obligation to complete the improvement is included in the Financial Items of the respective SIA(s) (see Section 9(d) above) and thereby, the performance secured, and (ii) no permanent certificate of occupancy for any structure on Parcels A, B, C, D, E, F, G, H, J or K shall be issued until the completion of said improvements; provided, however, in the event circumstances warrant, the Owner may apply for relief from the constraints of this Section 12(c) by application to the City Council. Any such relief shall be within the sole and exclusive discretion of the

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City Council and may be subjected to such other conditions, as determined by the City Council at that time.

(d) Owner shall be responsible for the design and, upon approval of the Colorado Department of Transportation ("CDOT") and the City Engineer, the construction of two (2) roundabouts or other acceptable and approved improvements at the Interstate 70 and Midland Alternate Route highway interchange at Exit 114. Said improvements shall accommodate a potential full interchange at the North and at the South sides of said Exit 114. Owner and or its assigns shall be responsible for all costs of administration, design and actual construction of the approved improvements; the City shall be responsible for all necessary costs of right-of-way acquisition for the approved improvements. The improvements contemplated hereby shall be completed prior to or contemporaneous with the issuance of a final and permanent certificate of occupancy by the City's Building Department for any structure within the first Parcel of commercial and/or residential development (exclusive of any proposed subdivision and development on Parcel I). Provided, however, Owner may apply for and obtain subdivision and/or development permit approval for development on the Property in advance of the actual construction of the improvements herein described; provided however that (i) the obligation to complete the improvement is included in the Financial Items of the respective SIA(s) (see Section 9(d) above) and thereby, the performance secured, and (ii) no permanent certificate of occupancy for any structure on Parcels A, B, C, D, E, F, G, H, J or K shall be issued until the completion of said improvements; provided, however, in the event circumstances warrant, the Owner may apply for relief from the constraints of this Section 12(d) by application to the City Council. Any such relief shall be within the sole and exclusive discretion of the City Council and may be subjected to such other conditions, as determined by the City Council at that time.

The Owner and the City have agreed to jointly pursue the recovery of any funds which may be available from CDOT or other sources to reimburse the parties for the capital costs associated with the improvements contemplated by this Section 12(d). In the event the Owner and City are able to recapture any such funds within ten (10) years of the anniversary of this Agreement, Owner or its successors and assigns shall be entitled to recover therefrom only the amount of the actual costs of design, engineering and construction for the subject off-site transportation improvement project. All other recaptured funds, regardless of their source, shall be paid to the City and applied to other City transportation improvements.

(e) Owner shall, at the earlier of either (i) the completion of seventy-five percent (75%) of the total commercial square footage approved hereunder, or (ii) upon the request of the City Engineer following the commencement of actual construction and development on the Property (such request being evidenced by

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documentation of escalating traffic counts along the Midland Avenue corridor which the City Engineer has then determined warrants the improvement of the width of the Midland Avenue Alternate Route), pay all costs of administration, design and construction for the four-laning of the section of the Midland Avenue Alternate route from the present Community Center access point at Wulfsohn Road westerly to the present MOC access point at Wulfsohn Road, inclusive. Owner's responsibility for the four-laning of said section of the Midland Avenue Alternate Route is contingent upon the City's assumption of the obligation to simultaneously pay all of the costs for the administration and design of four lanes on two (2) other sections of the Midland Avenue corridor, to wit: (i) the section form the Colorado River to Wulfsohn Road at the present MOC access point and (ii) the section from Wulfsohn Road at the present Community Center access point to the Eighth Street and Midland intersection. Owner shall contribute to City twenty-five percent (25%) of the actual construction costs for these improvements. The City shall not attribute any financial responsibility for right-of-way acquisition for the improvements hereunder to the Owner. In the event the City Engineer has not required the four-laning of these sections of the Midland Avenue corridor prior to the Owner's commencement of any part of the final twenty-five (25%) of the total approved commercial square footage on the Property, the Owner may estimate, subject to the reasonable approval of the City Engineer, the costs of all improvements contemplated hereby and pay to the City as full and final discharge of Owner's obligations under this Section 12(e) its proportionate share of the estimated costs (i.e. 100% of the costs of the four-lane construction of Midland Avenue Alternate Route adjacent and contiguous to the Property and 25% of the costs of the four-lane construction of Midland Avenue Alternate Route at the two (2) non-adjacent, non-contiguous sections as described herein).

(f) Owner shall be responsible for one hundred percent (100%) of the costs associated with the design and construction of one new access point from the Property to Midland Avenue. The design of any such access point and roadway intersection shall require the prior approval of the City Engineer. Owner shall be responsible for one hundred percent (100%) of the costs associated with the design and construction of a new limited purpose (i.e. an unsignalized right-turn-in/right-turn-out only) access point from the Property to Midland Avenue. The design of any such secondary access point and roadway intersection shall require the prior approval of the City Engineer. Any new access points contemplated by this Section 12 (f) shall, as an element of their design and construction, incorporate a pedestrian grade separation, the design for which shall be subject to the review and approval of the City Engineer. The City may, upon the request of Owner, waive this pedestrian grade-separation obligation if the City has determined that a westward extension of the City-wide or regional trail system is not anticipated.

The City and Owner hereby agree that in the event a city-wide off-site transportation improvement fee program of general applicability within the City's municipal limits shall be hereafter duly

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adopted by the City, said program of general applicability shall apply only to the development of Parcel I on the Plan.

Owner's contribution to the construction and land dedication for on-site pedestrian and bicycle trail connections, including the costs incurred in developing grade-separated crossings, shall be credited to Owner, its successors and assigns, against any other applicable fee(s) now in the Municipal Code or hereafter adopted by the City for the express purpose of improving trails and similar parkland facilities. The Owner shall be responsible for providing to the City copies of all applicable cost records for such expenditures.

13. On-Site Pedestrian/Off-Site Pedestrian Commitments, Transportation Demand Management Commitment; and Transit Commitments. The following commitments regarding pedestrian and bicycle trails development are intended to be exclusive of obligations by the Owner or a future developer with respect to sidewalks and other connections which are distinctly required by the Zoning Plan, the City Code or other applicable requirements.

a. On-Site Hard Trail. The City and Owner have agreed that the City Rivertrail system shall be continued across the Property. Owner has agreed to design and build such a Rivertrail extension as set forth hereby in phases which correspond to the sections of such trail affected by the site specific development of the Parcels of the Property. Upon completion of any phase or section of the Rivertrail, the Owner or its successor-in interest shall dedicate a permanent easement for the Rivertrail's public use, benefit and maintenance using specific, as-built legal descriptions for such transfer of interest. Therefore, within any Parcel of the Property burdened by the existing thirty foot (30') wide underground Public Utility Easement granted by Owner to the City by that certain instrument dated August 8, 2000 (being, specifically, Parcels A, C, D, E, H and I), which Parcel is the subject of application for site specific development, the design and construction of the Rivertrail extension shall be included within such application and planning in a manner substantially in compliance with the City adopted Rivertrail Standards and at a minimum shall be designed in a quality similar to comparable existing Rivertrail improvements in the City. The estimated costs therefor shall be included in the Financial Items accompanying any approval of the Parcel's development. In the event the City desires to proceed with the design and construction of the Rivertrail extension on Parcels of the Property in advance of Owner's application for development on such Parcel(s), then at the time Owner or its successors do develop such Parcel(s), it shall be required, as a Financial Item of approval, to reimburse the City for its actual design and construction costs associated with said Rivertrail extension as determined on a per linear foot basis.

b. On-Site Soft Trail. The City and Owner have agreed that, in conjunction with Owner's development of any section of the debris flow mitigation structures as described in Section 14 hereinbelow, and whether the actual approved location of said debris flow mitigation structure is within the Parcel L lands or within portions of the Parcels B, J or K lands, that Owner or its successors-in-interest shall design

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and construct a "Soft Trail" (i.e. no asphalt or concrete) within, on or near the subject debris flow mitigation structure. The design characteristics of the Soft Trail shall, at a minimum, conform to the design characteristics of other City-owned soft trail systems within the City. In the event the City, at the time of the application for development requiring the construction of a section of the debris flow mitigation structures, determines that such a Soft Trail is, at that time, inconsistent with the City's goals, policies and plans for the public use and benefit of the Parcel L lands, then it may direct the Owner to eliminate the Soft Trail development from said application for development.

c. Off-Site Rivertrail Contribution. The City and Owner have agreed that Owner shall be responsible for contributing fifty percent (50%) of the actual costs of constructing the section of the City Rivertrail system, or other City-adopted pedestrian connection, from the existing Community Center access point at Wulfsohn Road (commencing at Owner's eastern boundary of Parcel I) to the intersection of Eighth Street and Midland Avenue. In no event shall Owner's obligation hereunder exceed the lesser amount of either (i) fifty percent (50%) of the actual construction costs of such off-site trail project as are presently set forth by that certain Pedestrian Feasibility Study dated March 6, 2002 and conducted by OTAK on behalf of the City (the "Study"), which Study estimates a total cost for the City-adopted Alternate B solution at $1,055,000.00 or (ii) fifty percent (50%) of the actual construction costs of such off-site trail project as determined upon completion of said project, regardless of the estimates set forth in the Study (each of the two foregoing limitations upon Owner's financial obligations are further subject to any credits for land dedication as set forth hereafter). Owner owns a 100% undivided interest in certain, presently unincorporated land situate on the northeastern boundary of the Midland Avenue Right-of-Way (commonly known and referred to as the "Wulfsohn East" parcel). Owner has agreed to grant the City an above ground permanent easement for the use of a part of the Wulfsohn East parcel for purposes of providing a safe and beneficial connection from the area of the Community Center to existing City pedestrian corridors. The value of the land dedicated to the City on the Wulfsohn East parcel, by easement or otherwise as hereafter agreed by the parties, shall be deducted from Owner's financial contribution obligations pursuant to this Section 13(c). The "value" shall include any diminution of the value of Owner's other land within the Wulfsohn East parcel, if any. In the event the parties are unable to agree as to the value of Owner's land contribution hereunder, each party shall engage a qualified, licensed appraiser to research and analyze such value. The value shall then be permanently established by the average of the two (2) appraisals. The City agrees that it shall be solely and exclusively responsible for the design and construction of the pedestrian improvements contemplated hereby and shall use all reasonable means to construct the same prior to the commencement of development on the Property; provided, however, that the City further agrees that it shall not unreasonably withhold any subsequent Permits or other development approvals based upon the City's inability to timely complete such trail/pedestrian path construction.

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d. West Property Park and Ride Land Reservation. Owner has agreed to reserve from development, for a period not to exceed five (5) years after the mutual execution of this Agreement, a section of land, not to exceed two and one-half (2.5) acres in size at the west end of Parcel A on the Property (hereafter, the West Park and Ride Site"), for the possible acquisition by the City or other appropriate governmental entity through purchase, exchange or other mutually agreeable mechanism of transfer, for the express use of such West Park and Ride Site as a public park-and-ride/transit facility. In the event the City, or other appropriate governmental authority as assignee of the City's rights hereunder, does not notify Owner or its successors and assigns in writing, on or before the established deadline described immediately above, of its intention to exercise the acquisition of the West Park and Ride Site, Owner shall be relieved from any obligation hereunder to further reserve the Site. In determining the price of the West Park and Ride Site, the parties shall either (i) agree to a price, or (ii) each party shall retain the services of a qualified, licensed Colorado real estate appraiser to appraise the value of the land as such land was zoned immediately prior to the annexation of the Property (Garfield County zone district A/R/R/D), with such value escalated for the passage of time during the reservation period at a rate equal to the published Denver/Boulder Consumer Price Index established as of the date of final annexation and adjusted annually on each anniversary thereof; the average of the appraised value by each appraiser shall be deemed the purchase price for the governmental acquisition of the West Park and Ride Site.

e. East Property Transit Center. This Agreement shall obligate the Owner and/or eventual developer of the land within Parcel I of the Property to negotiate in good faith, at the time of site specific development application, for the dedication to the City of an adequate land area, not to exceed one (1) acre, and location therefor for the City or its agent's development of a transit center facility and attendant parking area. In the event the City and Owner are unable to reach agreement as to the location, size and dedication of such a transit facility and parking area within the proposed development of Parcel I, then, upon the approval of a site specific development proposal for Parcel I, the Owner or is successors and assigns shall make a mandatory contribution to the City in an amount equal to the value of one (1) acre of land within said Parcel I as determined by mutual agreement or as determined by the average of two appraisals; one such appraisal shall be commissioned by the City and one such appraisal shall be commissioned by the Owner, its successors and assigns. In the event the parties do agree on a mutually acceptable size and location for the transit center and parking area, the City shall accept transfer of the site following the issuance of appropriate development approvals and the City shall accept sole and exclusive responsibility for the costs of designing and constructing the facility. The City agrees that any such development of a public transit center and parking area shall comply with all applicable underlying design criteria established by this Agreements and the exhibits hereto in addition to any applicable Municipal Code requirements.

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14. Public Improvements/Geotechnical Mitigation Improvements and Maintenance Obligations. All public improvements required by the Plan, including the development of internal public streets and public utility line extensions, shall be included and subject to performance and financial guarantee requirements referenced in the respective SIA(s)/Development Permit(s). Additionally, at the time a final plat is recorded, Owner shall commit to the dedication, conveyance and assignment to the City all public improvements within the subject phase, together with any land, by deed or easement instrument acceptable to the City, necessary to accommodate such public improvements, and shall, upon completion and acceptance by the City of said public improvements, so dedicate, convey and assign the same in perpetuity. Finally, Owner shall dedicate or convey such public improvements by bill of sale or special warranty deed, free and clear of any liens or encumbrances which would prevent the City from using said public improvements or associated land for their intended purposes.

a. Specific Geotechnical Mitigation Improvements Obligations. All land use and development undertaken on the Property shall comply with the recommendations and requirements of both the Geotechnical Analysis Summary prepared by High Country Engineering, dated September 17, 2001, as amended, and the Drainage Summary prepared by High Country Engineering, dated September 17, 2001, as amended; both of which were reviewed by the office of the Colorado Geological Survey and were incorporated into the City's approval of the Plan. Copies of each report are maintained in the records of the City. More specifically, any application for development of any phase of development on the Property shall, at a minimum, comply with the following conditions and recite the same as a plat note on the recorded plat instrument:

"Foundation/Grading Requirements. Preliminary soils investigations encountered low density and compressible silty sand and gravel debris fan deposits. These soils are hydro-compressive and tend to settle under load when wetted. Subsurface wetting is likely to occur as the result of surface runoff, irrigation and leaky utilities, therefore measures to mitigate settlement shall be required as a part of the site development. Foundation and grading requirements are as follows:

a. Foundations for the site may include driven or drilled pile, reinforced mat, spread footings placed on either pre-wetted soils or structural backfill.
b. Site Grading shall be performed prior to building pad and foundation construction. Site grading and building pad construction should be performed as early as possible to allow for settlement.
c. The ground surface should be sloped at a minimum of 5% for the first ten feet away from foundations in all directions in unpaved areas and 2.5% in paved areas.
d. The Owner shall be responsible for submitting an engineer certified soils report that includes a section on paving requirements. The soils report should include moisture and compaction requirements, excavation and backfill requirements, evaluation of swell and consolidation potential, slope stability and foundation recommendations for structures. The pavement section of the report should include traffic loadings, sub-grade preparation and pavement recommendations. This report must be submitted

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and approved prior to beginning either foundation construction or roadway/parking lot construction.

Surface/Subsurface Drainage Requirements.

Downspouts and drains should discharge outside the limits of the backfill.
Landscape requiring irrigation should be placed a minimum of ten feet from foundation walls.
An under-drain system will be required for all below-grade construction.

Utility Construction

a. Wet utilities will be required to utilize restrained joints throughout the project limits.

Debris Flow Mitigation

a. It is anticipated that the project area will be developed in phases. Each individual phase will be required to construct debris flow mitigation measures in accordance with the Debris Flow Mitigation Plan prepared for the entire development and as approved by the City Engineer. In the event the City desires to proceed with the design and construction of a portion or all of the structures required by the Debris Flow Mitigation Plan, as may be amended from time to time with the approval of the City, upon the lands identified as Parcel L of the Property in advance of Owner's application for development, then at the time Owner or its successors do develop such any Parcel(s) which would have required, as an element of development the construction of such debris flow mitigation structures, such Owner or its successor shall be required, as a Financial Item of approval, to reimburse the City for its actual construction costs associated with said debris flow mitigation structure(s), together with interest on such costs, from the time expended by the City to the time of such reimbursement, at a rate equal to the local construction price index.

b. Debris flow mitigation measures for the project include diversion ditches, berms and debris detention basins located along the southwest perimeter of the property.

c. The Owner's Association or a special district will be responsible for maintenance of the debris flow mitigation measures. Maintenance should include removal of debris following an event and routine mowing.

d. The Owner's Association or a special district will be responsible for irrigation of the slopes until permanent vegetation has been established.

Rockfall

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a. Rockfall hazards are limited to those areas identified in the Geologic and Preliminary Geotechnical Investigation Glenwood Meadows Glenwood Springs, Colorado prepared by CTL Thompson dated February 1, 2000. There is not a potential rockfall hazard associated with the development of this Property. The only rockfall hazard identified for the area is to the west of the land zoned for future development near the existing City Municipal Operations Center site."

Additionally, as an element of Owner's obligation to submit a Master Drainage Plan and a Master Debris Flow Mitigation Plan as set forth under Section 2 hereinabove, such plans submitted to the City shall specifically include (i) an analysis of acceptable outfall corridors from the low points in all identified detention basins, (ii) an analysis of the preferred routes for such flows from the basins to be conveyed through the Property to existing or improved drainage facilities along the north boundary of the Property, and (iii) an analysis of the capacity of the aforementioned existing or improved drainage facilities and related conveyance structures which are intended to deliver excess moisture to the Colorado River. All of the foregoing data shall be reviewed and approved by the City Engineer prior to the issuance of any building permit on the Property.

15. Open Space and Park Land Dedication. In full and complete compliance with relevant park land public dedication and open space public dedication requirements referenced in the Municipal Code, Owner will dedicate the area zoned as HP Hillside Preservation, shown on the Plan as Parcel L, to the City at final plat recordation for the first phase of land use on the Property. Neither the Owner nor its successors-in-interest shall be required by the City to develop any portion of the publicly dedicated lands for active recreation purposes, except as may be otherwise hereafter agreed as an element of the development of Parcel K of the Property's development (Owner or its assigns shall "rough grade" the area of Parcel L, adjacent to said Parcel K and the City's Community Center, for no more than two (2) baseball/softball fields, upon the direction of the City if such direction is provided to Owner prior to commencement of Owner's initial grading for the development of Parcel K of the Property). In partial consideration of the dedication of the Parcel L lands, the City has agreed to plan and develop a permanent water source retention structure for the benefit of indigenous wildlife; such structure shall be developed by the City, subject to the necessary appropriation of funding, following the dedication of the Parcel L land by Owner. The City agrees that its acceptance of the dedication of such lands shall be deemed a "governmental use" (as defined by the Glenwood Springs' Municipal Charter) of the same and thereby prohibits the City from conveying any of the publicly dedicated property to a third party without first submitting the matter to an election of the City's voters. Nothing contained herein is intended to limit or prevent the City from developing some or all of the public dedication lands for the use and benefit of the public as the City may deem appropriate and advisable in the future.

The City shall convey to the Owner or its successors-in-interest in providing, at the time of actual dedication of the HP zoned lands, a mutually acceptable, non-specific, easement for the development within the publicly dedicated land of (i) the geotechnical mitigation structures to be constructed and maintained by the Owner, or a special district established by Owner and assigned such responsibility, pursuant to the general description of such structures set forth by the Zoning and

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Development Plan application materials provided by High Country Engineering, and maintained in the records of the City, (ii) any reasonable and necessary street and utility easements (i.e. for the connection of Wulfsohn Road between Parcels A and C as set forth by the Plan) and (iii) any reasonable and necessary street or public utility easements connecting Wulfsohn Road to Parcel K of the Property, which streets and/or utility easements shall require the review and approval of the City Council. The actual location of such geotechnical mitigation structures shall require the prior approval of the City, which approval shall not be unreasonably withheld. After completion of the actual construction of such geotechnical mitigation structures and any features attendant thereto (i.e. a Soft Trail), an amended permanent easement, complete with as-built legal descriptions, shall be excecuted by the parties and recorded in the Garfield County Clerk and Recorder's Office.

All "commonly-owned" parklands and open space within the Parcels A through K, shall be owned and maintained by the Owner and/or the developer thereof, its successors, an association or a special district.

16. Establishment of Special District(s) and Owners' Association/Downtown Development Authority Incorporation Petition.

(a) Owner agrees that it shall undertake the establishment of a drainage and erosion control special district for the purposes of managing and maintaining in perpetuity all Property drainage and debris flow mitigation functions. The City agrees to join such district to the extent of the City's proportional ownership of land and improvements on the Property which benefit from the geotechnical protections of said structures.

(b) Owner agrees to form, or have formed, a property owners' association as soon as practicable and agrees to include the City, upon the City's written request, as a third party beneficiary with respect to the association's enforcement of Covenants, Conditions, Restrictions, Declarations or other regulations governing the property owners or common areas within the Property, including but not limited to the ability to impose assessments or penalties for noncompliance therewith. At a minimum, the formed association shall include within in its adopted Covenants, Conditions and Restrictions, the recommendations of the Colorado Division of Wildlife ("CDOW") as set forth by letter dated October 1, 2001 and maintained on file with the City; provided, however, neither the Owner nor any association hereafter formed, shall be responsible for any land dedications or indemnification as referenced in said CDOW letter. In the absence of the prior formation of a special district responsible for the maintenance of debris flow mitigation structures within the Property, either (i) the Owner or (ii) such a property association shall be formed with the specific responsibility for such maintenance obligations.

(c) Owner agrees that within one (1) year after the effective date of annexation of the Property to the City as described by Section 4 hereof, but in no event later than the filing of the first application for subdivision and/or development, Owner or its successor-in-interest shall petition for inclusion within the boundaries of the Glenwood

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Springs Downtown Development Authority (hereafter, the "DDA"). The DDA shall, at its discretion, forward such petition to the City Council for approval or disapproval, in whole or in part, of the request for inclusion. This provision in no way obligates the City to include any or all of the Property in the boundaries of the DDA. Should the City choose not to include all or any part of the Property in the boundaries of the DDA at the time of initial petition by Owner for inclusion, the City shall not be precluded from consideration of the same matter at some point in the future.

17. Provisions Exclusive. The City and Owner acknowledge and agree that this Agreement contains all basic requirements of Owner concerning the provision of water and sewer service to the property, potential joint development of a raw water irrigation system, public open space dedication, and public park land dedication, utilities, infrastructure, water rights dedications and other matters expressly addressed under this Agreement. Additional reasonable specifications and regulations may be imposed by the City upon Owner during the subdivision or development approval processes with regard to these enumerated items as well as other items, as appropriate.

18. Breach by Owner; City's Remedies. In the event of any default or breach by Owner of any term, condition, covenant or obligation under this Agreement, the Owner shall be notified immediately in writing. The City may take such action as it deems necessary to protect the public health, safety, and welfare; to protect lot buyers and builders, and to protect the citizens of the City from any and all damages and/or injury to persons and/or property. The City's remedies include:

a. The refusal to issue to Owner any building permit or certificate of occupancy; provided, however, that this remedy shall not be available to the City until after the affidavit described in subparagraph b. below has been recorded. This remedy shall not affect sales to bona fide purchasers nor be applied to bona fide purchasers;

b. The recording with the Garfield County Clerk and Recorder of an affidavit, approved in writing by the City Attorney and signed by the City Manager or his designee, stating that the terms and conditions of this Agreement have been breached by Owner. At the next scheduled Council meeting, the Council shall either approve the filing of said affidavit or direct the City Manager to file an affidavit stating that the breach, or default, has been cured. Upon the recording of such an affidavit, no further lots or parcels may be sold within the Property until the default has been cured. The execution and filing of an affidavit by the City Manager or his designee and approved by the Council stating that the default has been cured shall remove this restriction;

c. A demand that the security given for the completion of the public improvements be paid or honored;

d. The refusal to consider further development plans within the Property; and/or

e. Any other remedy available at law or in equity.

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Unless necessary to protect the immediate health, safety, and welfare of the City or City residents, the City shall provide Owner thirty (30) days' written notice of its intent to take any action under this paragraph during which thirty-day period Owner may cure the breach described in said notice and prevent further action by the City. Furthermore, unless an affidavit as described in this paragraph has been recorded with the Garfield County Clerk and Recorder, any person dealing with Owner shall be entitled to assume that no default by Owner has occurred hereunder unless a notice of breach has been served upon Owner as described above, in which event Owner shall be expressly responsible for informing any such third party of the claimed default by the City.

19. Breach By City; Owner's Remedies.

a. A "breach" or "default" by the City under this Agreement shall be defined as:

i. any zoning or land use action by the City which would alter, impair, prevent, diminish, impose a moratorium on development, or unreasonably delay the development or use of the Property as set forth in the Zoning and Development Plan, and specifically excluding any non-discriminatory regulatory actions, inaction, or circumstances beyond the reasonable control of the City; or

ii. the City's failure to fulfill or perform any material obligation of the City contained in this Agreement.

b. If any default by the City under this Agreement is not cured as described herein, Owner shall have the right to pursue the defaulting party's remedies allowable by Colorado law, subject to the limitations herein. Although C.R.S. Sections 24-68-101 et seq. allow for certain monetary damages in the event of City breach or default, Owner's sole remedies hereunder shall be to enforce the City's obligations under this Agreement by an action for any available equitable remedy, including, without limitation, specific performance or mandatory or prohibitory injunction. Each remedy provided for in this Agreement is cumulative and is in addition to every other remedy provided for in this Agreement.

20. Miscellaneous.

a. Expenses. The costs and expenses associated with the recordation of this Agreement shall be paid by Owner.

b. Waiver of Defects. By executing this Agreement, Owner waives all objections it may have concerning defects, if any, in the formalities whereby it is executed, or concerning the power of the City to impose conditions on Owner as set forth herein, and concerning the procedure, substance, and form of the ordinances or resolutions adopting this Agreement.

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c. Final Agreement. This Agreement supersedes and controls all prior written and oral agreements and representations of the parties regarding annexation and zoning of the Property and is the total integrated agreement between the City and Owner as to those limited matters.

d. Modifications. This Agreement shall not be amended, except by subsequent written agreement of the City and Owner.

e. Captions. The captions in this Agreement are inserted only for convenience and in no way define, limit, or prescribe the scope or intent of this Agreement or any part thereof.

f. Binding Effect. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, successors, and assigns. Further, the terms and conditions of this Agreement shall constitute a covenant running with the land.

g. Invalid Provision. If any provisions of this Agreement shall be determined to be void by any court of competent jurisdiction, then such determination shall not affect any other provision hereof, all of which other provisions shall remain in full force and effect. It is the intention of the parties hereto that, if any provision of this Agreement is capable of two constructions, one of which would render the provision void, and the other of which would render the provision valid, then the provision shall have the meaning which renders it valid.

h. Governing Law. The laws of the State of Colorado shall govern the validity, performance, and enforcement of this Agreement. Should either party institute legal suit or action for enforcement of any obligation contained herein, it is agreed that the venue of such suit or action shall be in Garfield County, Colorado.

i. Attorneys' Fees; Survival. Should this Agreement become the subject of litigation between the City and Owner, the prevailing party shall be entitled to attorneys' fees and costs of suit actually incurred, including expert witness fees. All rights concerning remedies and/or attorneys' fees shall survive any termination of this Agreement.

j. Authority. Each person signing this Agreement represents and warrants that he, she or they is/are fully authorized to enter into and execute this Agreement, and to bind the party represented to the terms and conditions hereof.

k. Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed an original, and all of which, when taken together, shall be deemed one and the same instrument.

l. Notice. All notices required under this Agreement shall be in writing and shall be hand-delivered or sent by facsimile transmission or registered or certified mail, return receipt requested, postage prepaid, to the addresses of the parties herein set forth. All notices by hand delivery shall be effective upon receipt. All facsimile transmissions shall be effective upon transmission receipt. All notices by mail shall be considered effective seventy-two (72) hours after deposit in the United States mail with the proper address as set forth below. Either party by notice so given may change the address to which future notices shall be sent.

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Notice to City:

City of Glenwood Springs
Michael Copp, City Manager
806 Cooper Avenue
Glenwood Springs, CO 81601

With copy to:

Teresa Williams, Esq.
City Attorney
806 Cooper Avenue
Glenwood Springs, CO 81601

Notice to Owner:

Glenwood Meadows, L.L.C.
Attn: Robert Macgregor
525 East Cooper
Aspen, CO 81611

With copy to:

Thomas J. Hartert, Esq.
802 Grand Avenue, Suite 303
Glenwood Springs, CO 81601

m. Nothing contained herein, or in any Exhibit hereto, shall affect or impair the City's powers of eminent domain or other similar authority.

n. Gender. Whenever the context shall require, the singular number shall include the plural, the plural the singular, and the use of any gender shall be applicable to all genders.

WHEREFORE, the parties hereto have executed duplicate originals of this Agreement on the day and year first written above.

CITY OF GLENWOOD SPRINGS, COLORADO

By _____
DONALD L. VANDERHOOF, Mayor

ATTEST:

_____
Robin Clemons, City Clerk

COLORADO

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GLENWOOD MEADOWS, L.L.C., a Colorado limited liability company

By _____
Robert Duncan Macgregor as President of Dunrene Management, Inc., the Manager

STATE OF COLORADO)
) ss.
COUNTY OF GARFIELD)

Acknowledged, subscribed, and sworn to before me this 23rd day of August, 2002, by Donald Vanderhoof, as Mayor, and by Robin S. Clemens, as Clerk, on behalf of the City of Glenwood Springs, Colorado.

WITNESS my hand and official seal.

My Commission expires: MY COMMISSION EXPIRES 11/28/2005

Notary Public
Laura Gately

LAURA M. GATELY NOTARY PUBLIC STATE OF COLORADO

STATE OF COLORADO)
) ss.
COUNTY OF GARFIELD)

Acknowledged, subscribed, and sworn to before me this 18th day of September 2002, by Robert Duncan Macgregor as President of Dunrene Management, Inc., the Manager of Glenwood Meadows, L.L.C.

WITNESS my hand and official seal.

My Commission expires: 10/26/2005.

Notary Public
Barbara P. Kozelka

NOTARY PUBLIC BARBARA P. KOZELKA STATE OF COLORADO

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LIST OF EXHIBITS

Exhibit A	Property Description (from Annexation Plat – 345 acres)
Exhibit B	Zoning Map
Exhibit C	Zoning and Development Plan

EXHIBIT "A"

ANNEXATION DESCRIPTION

A PARCEL OF LAND SITUATED IN THE S1/2S1/2 OF SECTION 5, THE SE1/4SE1/4 OF SECTION 6, THE NE1/4NE1/4 OF SECTION 7, THE N1/2 OF SECTION 8 AND THE NW1/4NW1/4 OF SECTION 9, TOWNSHIP 6 SOUTH, RANGE 89 WEST OF THE SIXTH PRINCIPAL MERIDIAN; SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 5, THE POINT OF BEGINNING; THENCE S75°55'37"W A DISTANCE OF 1316.16 FEET; THENCE N01°07'55"E A DISTANCE OF 582.46 FEET; THENCE N90°00'00"E A DISTANCE OF 1265.15 FEET; THENCE S30°38'55"E A DISTANCE OF 522.34 FEET; THENCE S19°31'13"E A DISTANCE OF 160.53 FEET; THENCE S12°53'54"E A DISTANCE OF 181.17 FEET; THENCE N47°17'45"E A DISTANCE OF 1171.28 FEET; THENCE ALONG THE ARC OF A NON-TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 1260.00 FEET AND A CENTRAL ANGLE OF 10°27'43", A DISTANCE OF 230.07 FEET (CHORD BEARS N65°22'14"W 229.75 FEET); THENCE N63°26'47"E A DISTANCE OF 283.45 FEET; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 137.50 FEET AND A CENTRAL ANGLE OF 24°20'19", A DISTANCE OF 58.41 FEET (CHORD BEARS N51°16'35"E 57.97 FEET); THENCE N63°30'55"E A DISTANCE OF 61.83 FEET; THENCE S70°03'24"E A DISTANCE OF 42.54 FEET; THENCE N19°56'36"E A DISTANCE OF 75.00 FEET; THENCE N70°03'24"W A DISTANCE OF 522.96 FEET; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 337.50 FEET AND A CENTRAL ANGLE OF 28°23'27", A DISTANCE OF 167.24 FEET (CHORD BEARS N84°15'08"W 165.53 FEET); THENCE S81°33'05"W A DISTANCE OF 198.69 FEET; THENCE ALONG THE ARC OF A NON-TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 1260.00 FEET AND A CENTRAL ANGLE OF 01°42'55", A DISTANCE OF 37.72 FEET (CHORD BEARS N31°49'38"W 37.72 FEET); TO A POINT ON THE SOUTHERLY RIGHT-OF-WAY OF MIDLAND AVENUE; THENCE N62°28'35"E ALONG SAID RIGHT-OF-WAY A DISTANCE OF 262.30 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY N70°48'52"E A DISTANCE OF 233.79 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 400.00 FEET AND A CENTRAL ANGLE OF 19°48'21", A DISTANCE OF 138.27 FEET (CHORD BEARS N80°43'04"E 137.58 FEET); THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S89°22'47"E A DISTANCE OF 220.22 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S04°05'51"W A DISTANCE OF 84.94 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S88°21'25"E A DISTANCE OF 29.12 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY N84°12'24"E A DISTANCE OF 200.33 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY N13°23'18"E A DISTANCE OF 18.04 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S79°22'12"E A DISTANCE OF 693.85 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S15°25'14"W A DISTANCE OF 81.35 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S72°50'58"E A DISTANCE OF 30.90 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S87°49'17"E A DISTANCE OF 164.69 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY N47°19'34"E A DISTANCE OF 37.65 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S74°59'10"E A DISTANCE OF 294.83 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S08°06'53"E A DISTANCE OF 62.58 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S77°46'27"E A DISTANCE OF 150.75 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY N14°20'16"E A DISTANCE OF 62.19 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S79°08'31"E A DISTANCE OF 369.05 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S18°40'31"E A DISTANCE OF 29.17 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S66°03'20"E A DISTANCE OF 143.01 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY N25°40'28"E A DISTANCE OF 42.89 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S74°19'33"E A DISTANCE OF 339.00 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S76°23'22"E A DISTANCE OF 559.87 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 1190.00 FEET AND A CENTRAL ANGLE OF 53°10'47", A DISTANCE OF 1104.51 FEET (CHORD BEARS S48°18'54"E 1065.29 FEET); THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S21°43'32"E A DISTANCE OF 179.06 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S68°16'28"W A DISTANCE OF 31.36 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S23°26'58"E A DISTANCE OF 78.05 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY N68°16'28"E A DISTANCE OF 29.01 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY S21°43'32"E A DISTANCE OF 613.97 FEET; THENCE LEAVING SAID RIGHT-OF-WAY S62°49'19"W 292.63 FEET; THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 760.00 FEET AND A CENTRAL ANGLE OF 24°24'13", A DISTANCE OF 323.70 FEET (CHORD BEARS S75°01'26"W 321.26 FEET); THENCE S27°10'41"E 147.90 FEET; THENCE S62°49'19"W A DISTANCE OF 281.27 FEET; THENCE S16°27'24"E A DISTANCE OF 1206.11 FEET; THENCE N89°15'16"W A DISTANCE OF 3719.58 FEET; THENCE N01°13'52"E A DISTANCE OF 1360.08 FEET; THENCE N88°45'05"W A DISTANCE OF 1367.66 FEET; THENCE N01°04'58"E A DISTANCE OF 1369.90 FEET; TO THE POINT OF BEGINNING; SAID PARCEL CONTAINING 344.473 ACRES, MORE OR LESS.

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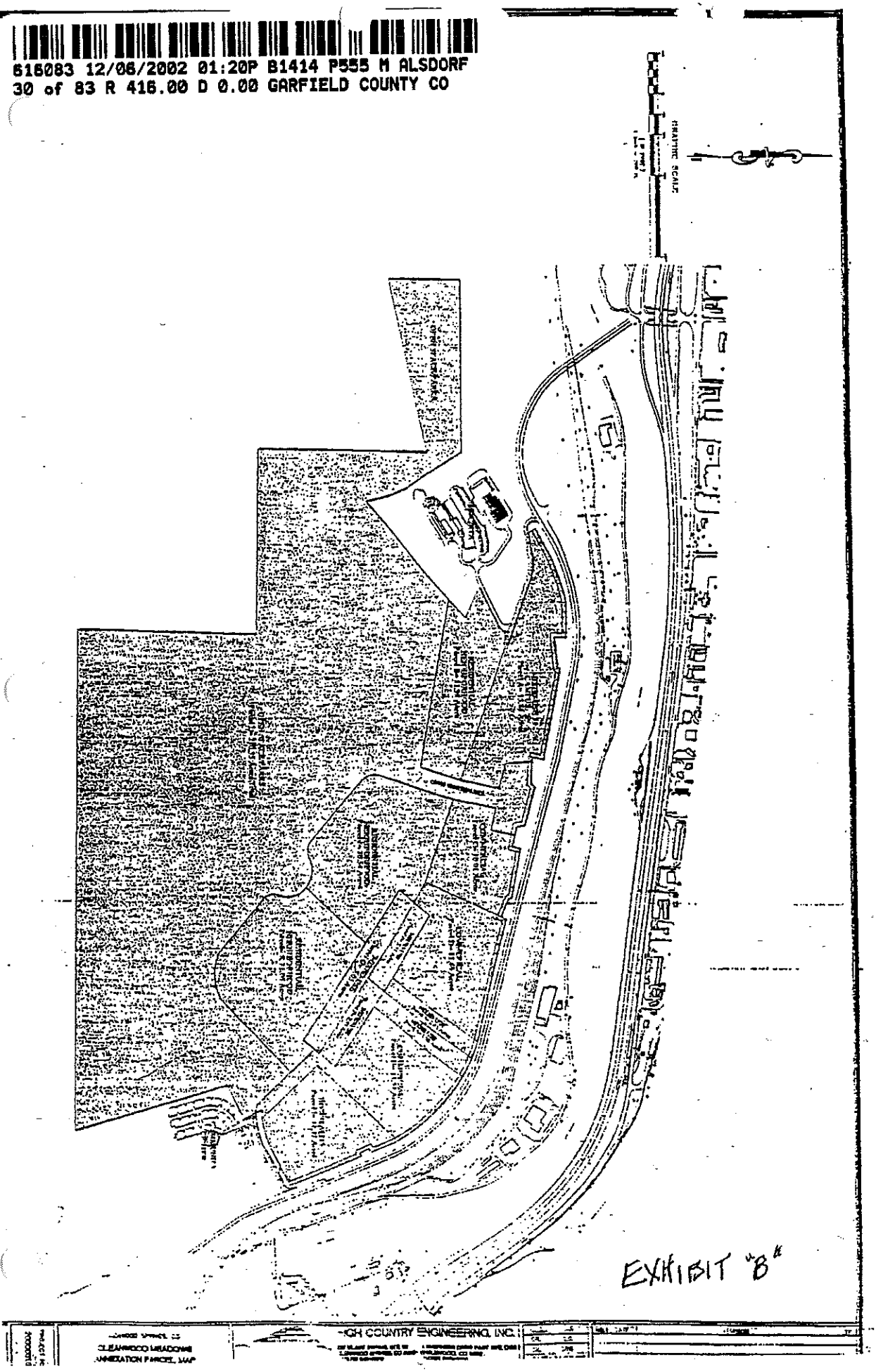

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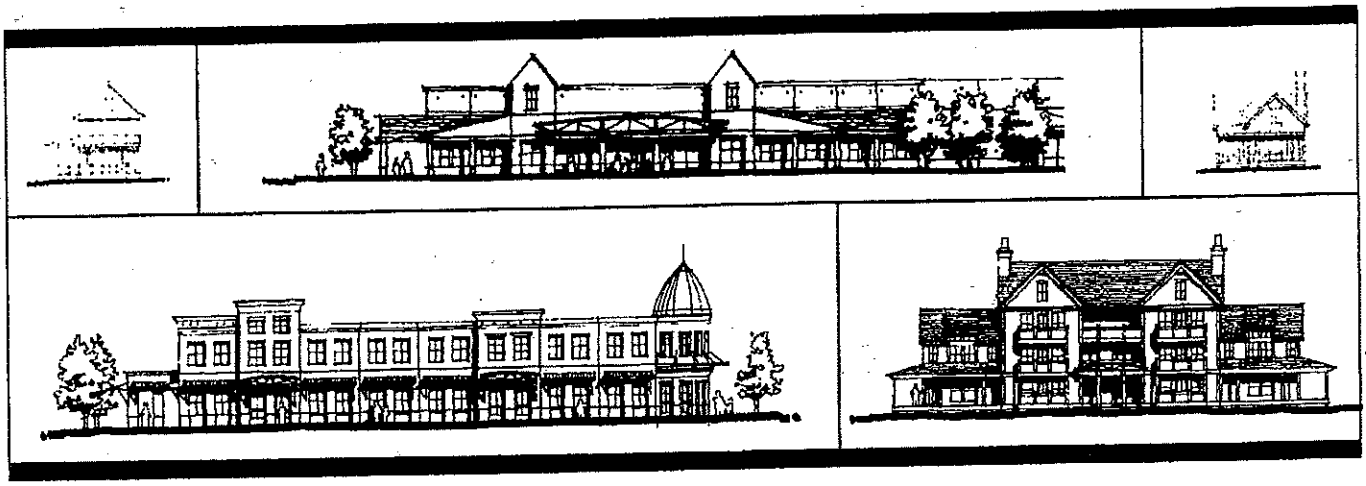
ZONING AND DEVELOPMENT PLAN

GLENWOOD MEADOWS



Glenwood Meadows, LLC

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I. Introduction

A. PROJECT BACKGROUND

Glenwood Meadows is an approximately 345-acre parcel of unincorporated land surrounded on three sides by the municipal limits of Glenwood Springs, Colorado ("City"). The Midland Alternate Route, a 100 foot wide public right-of-way, serves as the northern border to the site and two new City facilities are under construction on the east and west ends; a new community center to the east of Glenwood Meadows and a municipal operations facility to the west of the site. While Red Mountain serves as a backdrop to the site on the south, it is not owned by or a part of the Glenwood Meadows' zoning application and development plan. The subject property, which is owned by Glenwood Meadows, L.L.C. was historically referred to as the "Wulfsohn" property.

Glenwood Meadows is situated west of the core of Downtown Glenwood Springs and directly across the Colorado River from the significant neighborhoods and commercial operations of West Glenwood. Glenwood Meadows and the City's Community Center are highly visible from Interstate 70, the primary entry point to the City from both the east and the west. Despite its juxtaposition with the City, Exit 114 to Interstate 70, the Midland Alternate Route and the two City facilities mentioned, Glenwood Meadows currently resides in the jurisdiction of Garfield County, Colorado. Prior to the completion of the Midland Alternate Route and the City's adoption of its Land Use Plan, annexation of the land was not feasible.

When the oil shale industry collapsed in the early 1980's, the then owner of the site, Union Oil Company, considered various development options. In the mid-1980s, Union Oil Company and the City of Glenwood embarked on negotiations for the joint development of the site as a municipal golf course, residential and commercial venture. The efforts failed, as did two subsequent attempts to pass open space and recreation tax measures aimed at the City's ability to purchase portions of the site.

In 1996, Glenwood Land Company, LLC purchased the property from the Union Oil Company. Approximately two years later Glenwood Meadows, LLC, the current owner of the property, acquired the land. Shortly thereafter, Glenwood Meadows undertook a land exchange with the City of Glenwood Springs, which provided the city with 37.24 acres for use as a Community Center. The city subsequently annexed the Community Center site and has provided a public access point to the property, which is currently under construction. This access point will be shared when the remaining property is developed. In early 2000, the City of Glenwood Springs and Glenwood Meadows undertook another land transaction by which the city acquired an additional 35.57 acres for development of a Municipal Operations Center (MOC). The MOC site was thereafter annexed and the City created a second public access point to Glenwood Meadows, which is also under construction. In addition to the City development of the MOC facility, the site west of Glenwood Meadows is also planned to provide the base operational facility for the newly organized Rural Transportation Authority ("RTA").

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Regardless of how Glenwood Meadows is developed (i.e. for residential, commercial, mixed-use purposes, through the jurisdiction of either Garfield County or the City), Glenwood Meadows is entitled to use both City developed access points as well as two other access points along the Midland Route. Further, Glenwood Meadows has legal rights to utilize the City's municipal sewer and potable water systems.

For the past two years the City and Glenwood Meadows have mutually expressed their desire to annex the land to the City and to subject the property to stringent criteria which would result in the highest quality of future development specifically planned to address the present and future needs of the community as a whole. Through extensive discussions with City staff, it was determined that seeking "enhanced" traditional zoning for the property (traditional zoning with additional development standards and more restrictive uses) would be a more effective tool than the P.U.D. process to achieve the highest quality of future development. This decision was based on the fact that through the traditional zoning process; additional development standards and use restrictions could be applied to traditional zone districts in order to achieve a high level of development quality without the unnecessary analytical and administrative confusion of a cumbersome P.U.D. process. This Zoning Plan, together with the associated Annexation and Development Agreement and the additional information provided represents the culmination of these efforts.

B. STATEMENT OF PURPOSE AND INTENT

This Zoning Plan is intended to serve as a supporting document for the accompanying Annexation Agreement in order to establish appropriate zoning for the 12 individual development parcels within the overall site. In addition, the Zoning Plan establishes standards for the property to ensure that future planning and construction quality remains high, regardless of the phasing of development on different parcels. The following goals serve as the basis for this Zoning Plan and development standards. The goals were identified during an unprecedented and invaluable public hearing process, through community meetings dating back to the original adoption of the City's Comprehensive and Land Use Plans, during work sessions with City staff, citizen committees, the Planning Commission, and City Council members as items to be addressed by this Zoning Plan.

Land Use

- *Promote Glenwood Springs as the governmental hub and the local/tourism service center of the Roaring Fork and Colorado River Valleys.*
- *Establish Glenwood Meadows not as a development, but as a new Glenwood Springs neighborhood with housing opportunities, jobs, shopping, hospitality, and recreation.*
- *Enhance the City's Community Center project through placement of adjacent zoning for uses that include active and passive open areas as well as for tourism and hospitality.*

Development Quality

- *Preserve, maintain, and enhance the visual qualities of the west entrance to Glenwood Springs.*
- *Focus neighborhood retail around pedestrian-oriented streets to break up larger commercial uses.*
- *Provide development standards that supplement from the City's standard development regulations, encouraging creative, quality design.*

Housing

- *Provide a mix of housing types and densities within the Glenwood Meadows neighborhood.*

Open Space and Natural Amenities

- *Balance the quantity of development on the site with the natural characteristics of the site.*
- *Maximize dedicated open space and integrate open space corridors throughout the Glenwood Meadows neighborhood, minimizing impacts to existing site vegetation.*

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Transportation

- *Encourage the allocation of future traffic west of the core Downtown and provide a West Glenwood mass transit option.*
- *Promote directed investment, through any development, aimed at the restoration and enhancement of the City's transportation infrastructure through adoption of an Off-Site Transportation Improvements Fee Program.*

C. RELATIONSHIP TO GLENWOOD SPRINGS COMPREHENSIVE PLAN

Vision

The Glenwood Springs Comprehensive Plan provides the community with a tool for managing its long-term growth and character. Ensuring that the goals and ideals of the Comprehensive Plan were addressed was a critical component of this zoning plan. The following excerpt from the City's Vision Statement outlined in the Comprehensive Plan echoes the overall development vision for Glenwood Meadows.

> *"The City of Glenwood Springs desires to maintain its small town character and preserve its cultural and natural resources...to achieve directed and balanced development, social and economic diversity and address its transportation needs."*

Maintaining Small Town Character

Today, the City consists of a series of individual neighborhoods. While these neighborhoods vary in their size, appearance, and mix of uses, they all function as part of the greater community; each providing different types of housing, shops, employment, and recreational opportunities. This proposed zoning plan focuses on establishing Glenwood Meadows as a new and independent neighborhood that contributes to the small-town character of Glenwood Springs and community need for housing and commercial services. Keeping this appealing character and scale in mind, the plan is focused around a central retail core designed to invoke an intimate, pedestrian-oriented feeling enhanced by plazas, seating areas, and public art. These smaller retail uses will flank the center's two regional commercial anchors along Market Street and Wulfsohn Road, helping to create a more inviting and active space. Other spaces along Wulfsohn will provide offices and additional neighborhood-type retail to serve the adjacent neighborhoods, which will provide a variety of housing types and prices, ranging from apartments to town homes, duplexes, and single-family homes. The plan has been designed so that none of the residences are located farther than ¼ mile away from the retail core, which will give the neighborhood a friendly, walk able scale similar to that found in many of Glenwood's existing neighborhoods. A small employment campus will also contribute to the "small town" feeling of the neighborhood, providing the opportunity for individuals to live near their jobs, reducing commute time and local traffic. Hospitality uses are located across from the new Community Center where both will be easily accessed by adjoining neighborhoods and downtown. Each of the uses identified in the proposed zoning plan has been specified within the Land Use Plan as an appropriate "Regional Use", as designated for the Glenwood Meadows site.

Preserving Natural Resources

Another core community value that has been integrated into the development plan is the careful treatment of the site's natural resources. In fact, approximately 215 acres, or +/- 62 percent of the site will be dedicated as open space and parkland, providing recreational opportunities, such as hiking trails or a public golf venue. The public dedication of this significant parcel of land is specifically designed to provide direct public access to the area through sections of major contiguity with existing publicly owned property at the Community Center and MOC sites. The dedication land

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also specifically provides direct connection to the surrounding BLM land adjacent to it in compliance with the direction of the Glenwood Springs Comprehensive Plan.

The site's topography and dramatic Red Mountain backdrop make it highly visible from major roadways, such as I-70, State Highway 6&24 and the Midland Alternate Route as each enters Glenwood Springs from the east and west. Glenwood Meadows is also visible from other areas of Glenwood Springs where a higher elevation provides a birds-eye vantage of the site. A thick Gambel Oak stand, which blankets the upper 2/3's of the site providing scenic value and wildlife habitat, is another of the site's significant natural features. Each of these factors was given strong consideration in the development of the proposed zoning plan. As a result, the residential neighborhoods at the southern edge of the site have been focused below the 6000-foot Urban Development Boundary contour. Not only does this protect the scenic quality of the site, but also leaves much of the Gambel Oak stand intact.

Addressing Transportation Needs

Transportation is another component of the Land Use Plan that was an important consideration during the development of the zoning plan. The plan strives to provide a mix of uses within a walk able proximity of one another to minimize short automobile trips. However, it is acknowledged that some uses, such as the retail and employment components will draw from a more regional customer base, generating additional trips along the Midland Alternate Route. Perhaps more significant, though, is that the location of the site on the western fringe of Glenwood Springs will be serving a market that currently must travel through downtown along the often congested Grand Avenue to reach similar uses on the south side of town, or even further south in neighboring communities, potentially minimizing the need for many of these cross-town trips. The project will provide funding for several necessary road improvements along the Midland Alternate Route that will result in improved future traffic conditions. The specifics of this are addressed in the Annexation Agreement. With these proposed road improvements, an efficient traffic flow would be maintained. In addition, the compact form of the development plan was conceived with the intention of being able to efficiently incorporate future bus service and future regional rail connections into the community. The plan provides the flexibility, not to exceed 2.5 acres, at the west end of Parcel A for the construction of a park and ride/transit facility. The park and ride would be complemented by the site's retail uses and the potential for limited shared parking where appropriate.

II. Authority

These standards shall apply to all property contained within the approved Glenwood Meadows Annexation Plat and the Annexation Agreement. The regulations and requirements shall become the governing standards for review, approval, and modification of all development activities occurring on the Glenwood Meadows site. Provisions of this guide shall prevail and govern the development of Glenwood Meadows superseding existing zoning ordinances. The proposed zoning regulations and design standards are intended to be more restrictive than the underlying Municipal Code standards. The Glenwood Springs zoning ordinance shall apply where the provisions of this guide do not address a specific subject.

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III. Zoning Map

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IV. Zoning Districts

There are 12 distinct parcels within Glenwood Meadows. Each of these parcels falls within one of 5 zoning categories according to the City of Glenwood's Zoning Ordinance: Multi-family Residential District (R-3), Limited Commercial District (C-1), Core Commercial District (C-2), Resort District (C-4), and Hillside Preservation (HP). The actual boundaries of the parcels may be modified during the preliminary and final design of each area, prior to approval by the City. A table of prohibited uses for each zone district is provided in the Appendix of this document.

The following table provides a brief summary of each zoning category as it applies to individual parcels identified on the zoning map on the following page:

Parcel	Zoning	Acreage	Percentage
A (Mixed-Use Campus)	C-1	20	6%
B (Residential Neighborhood)	R-3	11	3.25%
C (Commercial)	C-1	11	3.25%
D (Commercial)	C-1	12	3%
E (Mixed-Use)	C-2	7.5	2%
F (Mixed-Use)	C-2	7	2%
G (Mixed-Use)	C-2	5	1.5%
H (Commercial)	C-1	13	4%
I (Hospitality)	C-4	10	3%
J (Residential Neighborhood)	R-3	17	5%
K (Residential Neighborhood)	R-3	17	5%
L (Open Space)	HP	214	62%
TOTAL:		345	

Residential Total: 475 units
Commercial Total: 490,000 square feet

*Acreages are subject to change upon completion of final legal descriptions.

*Parcels include all road-rights-of way and open space setbacks from Midland Avenue.

V. General Development Standards

A. GENERAL INTENT

The intent of these General Development Standards is to establish an indigenous style and high level of development quality for Glenwood Meadows that is derived from and builds upon established neighborhoods in Glenwood Springs. These standards set the framework for a new, mixed-use neighborhood that strives to incorporate the most desirable features of Glenwood's most appreciated areas, such as the downtown core and it's attractive, pedestrian-friendly residential neighborhoods. In order to identify these desirable features, existing neighborhoods and developments throughout Glenwood Springs and the Western Slope were evaluated and "dissected" for successful site and building design elements. The result of this evaluation are these standards for character defining features such as appropriate building mass, scale, and materials based on lessons learned, both positive and negative. The standards also establish a cohesive pedestrian and vehicular circulation network within and between neighborhoods, a unified landscape theme for streetscapes and common open space areas, and general standards for parking, and signage. These standards have been developed to provide an additional level of quality to Glenwood Meadows, not required within the City Code, and will be applied *in addition to* those existing standards.

B. APPLICABILITY

These General Development Standards shall apply to *all* development within Glenwood Meadows, including C-1 (Commercial), C-2 (Mixed Use), C-4 (Hospitality), and R-3 (Mixed-Use Campus and Residential Neighborhoods). *These standards shall be applied in addition to standards outlined in the City of Glenwood Springs Municipal Code.*

C. SITE LAYOUT AND DEVELOPMENT PATTERN

1. Intent

The intent of these standards is to ensure that all non-residential and residential development on the site works creatively within the site's natural constraints, such as slope, geologic hazards, and significant vegetation.

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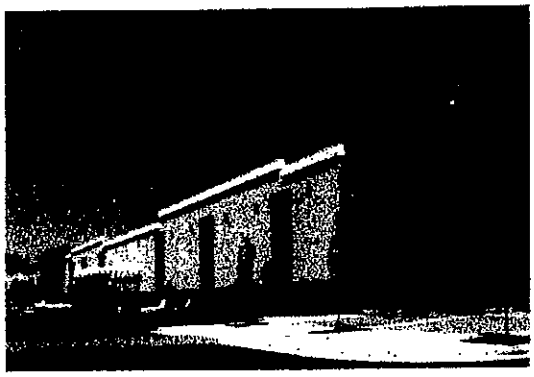
2. General

a) The siting of all buildings shall respond to existing site features to minimize the need for retaining walls, excavation, and other unnecessary site disturbances. Non-residential zones are purposefully located near primary roads on land with lesser degrees of slope.



D. BUILDING DESIGN

1. Intent

These standards are intended to encourage creative, quality commercial and residential building design that utilizes a variety of design techniques to break up larger building masses and emphasizes a pedestrian orientation at the street level.

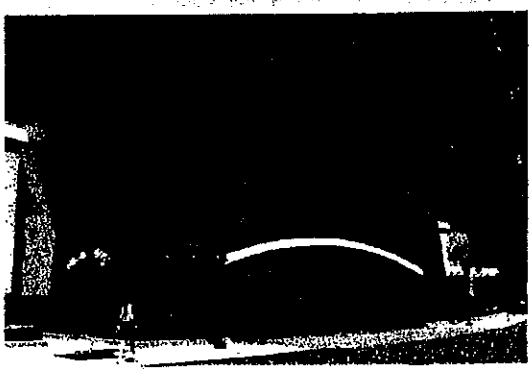
2. Non-Residential

a) No single-user building footprint shall exceed a maximum of 130,000 square feet of enclosed floor area, nor shall the total useable area of any one user exceed 130,000 square feet.

b) Buildings shall have recessed, highly visible customer entrances that feature no less than 2 of the following:

(1) Canopies or porticos;
(2) Overhangs, recesses/projections;
(3) Arcades;
(4) Distinctive roof forms;
(5) Arches;
(6) Outdoor patios;
(7) Display windows;
(8) Planters or wing walls that incorporate landscaped areas and/or places for sitting.

c) For buildings less than 60,000 square feet, two or more of the following design elements shall be incorporated for each 30 horizontal feet of a building façade or wall. For buildings equal to and greater than 60,000 square feet, two or more of the following elements shall be incorporated for each 50 horizontal feet of a building façade or wall:



(1) Changes in color, texture, or materials;
(2) Projections, recesses, and reveals, expressing structural bays, entrances, or other aspects of the architecture with a minimum change of plane of 4-6 inches;
(3) Arcades or pergolas providing pedestrian interest;
(4) Trellises with vines, or
(5) An equivalent element that subdivides the wall into human scale proportions.

d) Building facades or walls that face public

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streets, adjacent developments, or connecting pedestrian frontage shall be subdivided and proportioned along 60% of their horizontal length using features such as:

(1) Windows;
(2) Entrances;
(3) Arcades;
(4) Awnings; or
(5) Other such features.

e) Parapet walls shall be incorporated when a flat roofline is required. The design or height of the parapet shall include a minimum of one change in setback or height along each 60 lineal feet of façade.

f) Sloping roofs shall have a minimum of one of following elements incorporated into their design for each 60 lineal feet of roof:

(1) Projecting gables;
(2) Hips;
(3) Horizontal/vertical breaks; or
(4) Other similar techniques.

g) Sloping roofs shall be integrated into the building architecture and shall be consistent with the characterized architectural style.

h) Sloping roofs shall be used at entries and other prominent features to add prominence. Other features intended to accent entries may be considered.

i) Intense, bright, or fluorescent colors shall not be used on any roof area visible from a public or private right-of-way or open space.

3. Residential

a) A building's special architectural features and treatments shall not be restricted to a single façade. All sides of a multi-family building open to view by the public, whether viewed from public or private property, shall display a similar level of quality and architectural interest.

b) All multi-family buildings shall be designed to provide complex massing configurations with a variety of different wall planes and roof planes. Plain, monolithic structures with long, monotonous, unbroken wall and roof plane surfaces are prohibited. At least every 50 linear feet, wall planes shall contain offsets or setbacks with a differential in horizontal plane of at least 5 feet.

c) The maximum length of a multi-family building shall be 125 feet.

d) All elevations on multi-family buildings shall contain windows.

An eave or overhang of at least 12-inches shall be provided on the perimeter of all residential buildings, except gable roof ends, where an 8-inch overhang shall be required.

For additional specificity, see Section X.

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E. BUILDING MATERIALS

1. Intent

The intent of these standards is to establish a palette of high-quality building materials to be used to add texture, color, and visual interest to the overall development.

2. Non-Residential

a) One or more of the following building materials shall be incorporated into a structure's design:

(1) Stucco;
(2) EIFS (Exterior Insulation and Finish Systems);
(3) Brick;
(4) Stone (cultured and natural);
(5) Tinted, textured and integral color masonry block.

b) Exterior building materials shall not include the following:

(1) Smooth-faced gray concrete block, painted concrete block, tilt-up concrete panels;
(2) Field-painted or pre-finished standard corrugated metal siding; or
(3) Standard single or double tee concrete systems.

c) Ribbed metal siding is prohibited as a primary exterior surface material. It may be used as trim material covering no more than 10% of the façade.

d) Exterior building material shall be continued down to within 9 inches of finished grade on any elevation.

e) High-intensity primary, metallic, or fluorescent colors are prohibited on any roof area visible from any public or private property.

f) All sloping roof areas with a pitch of 3:12 or greater, and visible from any public or private right-of-way, shall be surfaced with attractive and durable materials such as:

(1) Concrete, clay, or slate tiles; or
(2) Seamed architectural metals such as tin or copper; or
(3) Asphalt shingles.

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3. Residential

a) One or more of the following building materials shall be incorporated into a structure's design:

(1) Split shakes;
(2) Rough-sawn wood; or
(3) Board and batten wood.

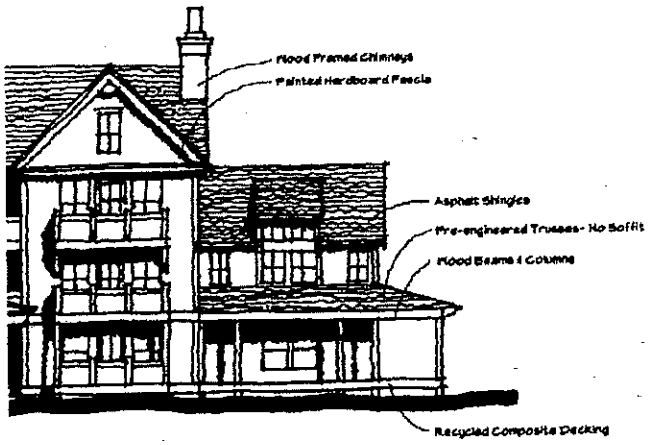
b) Exterior building materials shall not include the following:

(1) Concrete block (including split face and ground face block), or

c) High-intensity primary, metallic, or fluorescent colors are prohibited on any roof area visible from any public or private property.

d) All sloped roofs visible from the ground or from a surrounding property shall be clad with one of the following:

(1) High profile composition shingles; or
(2) Seamed architectural metals.



F. VEHICULAR AND PEDESTRIAN CIRCULATION AND ACCESS

1. Intent

The intent of these standards is to create a hierarchy of streets within Glenwood Meadows that efficiently facilitate traffic flow, yet are designed to discourage speeds and volumes that impede pedestrian activity.

2. Vehicle Access and Circulation

a) Traffic calming devices, such as bulb-outs or curb extensions, traffic calming circles, and narrower street widths shall be used in residential neighborhoods to discourage through traffic and excessive speeds.

b) To the maximum extent feasible, common or shared service and delivery access shall be provided between adjacent parcels and/or buildings.

c) Internal vehicle circulation patterns shall provide a clear and direct path to the principal entrance of the primary building, to outlying pad sites where applicable, and to each parking area.

d) Internal vehicle circulation patterns shall provide the most direct vehicular route(s) between the development site's main entrance and the primary building's main customer entrance.

e) Main drive aisles shall be continuous and connect to the main entrance to the development site.

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f) Internal intersections shall have adequate sight lines, design geometrics, and/or traffic controls to minimize accident potential.

3. Pedestrian Access and Circulation

a) Continuous sidewalks or trails shall provide connections to and between:
   (1) The primary entrance or entrances to each building, including pad site buildings;
   (2) All parking lots or parking structures that serve such buildings;
   (3) Any sidewalks or walkways on adjacent properties that extend to the boundaries shared with the development;
   (4) Any public sidewalk system along the perimeter streets adjacent to the development;
   (5) Adjoining land uses;
   (6) Any greenway on or adjacent to the property; and
   (7) Other community amenities or gathering spaces.

b) Covered shelters shall be provided at transit shuttle sites in locations as determined by the landowner and the City.

G. PARKING

1. Intent

The intent of these standards is to minimize the visual impacts of large blocks of parking, both from within the development and from other areas of Glenwood Springs that, because of their higher elevation, view Glenwood Meadows from above, by breaking it into a series of smaller "rooms". These rooms may be defined by landscaped medians, pedestrian walkways, or tree plantings.

2. General

a) Parking quantities shall be no less than current city requirements, unless specifically noted otherwise.

b) Structured parking is strongly encouraged. Incentives shall be provided to the maximum extent feasible.

c) To the maximum extent feasible, parking shall be distributed between the front, sides, and rear of a building to further break up large parking areas.

d) In addition to the above standard, the visual appearance of parking blocks shall be further mitigated through the establishment of a shady canopy created by orchard plantings or regularly spaced tree diamonds within each parking block.

e) The use of terracing to further break up parking areas is strongly encouraged where grade changes allow. Where terracing is utilized, the standards for retaining walls and

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terracing outlined in Section V.H.6, shall be applied.

f) The above standards shall be applied in addition to the standards outlined in Section V.H. Landscaping and Screening.

H. LANDSCAPING AND SCREENING

1. Intent

The intent of these standards is to provide a high quality appearance for building sites, rights-of-way, parks, and open spaces within Glenwood Meadows. These standards exceed City of Glenwood requirements in some cases in order to enhance the appearance and pedestrian-oriented feeling of all development in Glenwood Meadows. For instance, additional landscape coverage is required for parking areas in order to ensure that the visual impacts of parking on this highly visible site are adequately mitigated by generally improving the appearance of these areas from both within the site and from surrounding neighborhoods with a birds-eye view of Glenwood Meadows. In addition, the spacing of required street tree plantings are significantly smaller that those required in the City Code. This again, is in intended to further enhance the appearance of the overall project and to create an inviting environment for pedestrians.

2. General

a) All landscape areas shall comply with City of Glenwood Springs Municipal Code in addition to these regulations.

b) Landscape architectural design elements shall relate to the physical site and built structures. A combination of evergreen plantings and other landscape elements, as defined in Table 1-Landscape Requirements, shall be used to screen and buffer service areas, mechanical features and break up large lengths of building walls.

c) Unless prohibited by a particular site's geologic mitigation requirements, building foundations shall be planted with ornamental plant material, such as ornamental trees, flowering shrubs and perennials, and ground covers and shall include a variety of plant materials to provide year round interest.

d) Development entryways shall be planted with ornamental plant material, such as ornamental trees, flowering shrubs and perennials, and ground covers.

e) Planting shall be massed and scaled as appropriate for the entryway size and space.

f) Landscaping shall break down in scale and increase in detail, color, and variety to mark entryways into developments.

g) All turf areas within individual sites shall be established by sodding. Un-manicured natural areas may be seeded when adjacent to open space as a transition to turf areas.

h) Due to the site's soil conditions and the arid nature of the Glenwood climate, xeric or low-water plant materials shall be required.

i) The use of the following xeriscape principles shall be required:

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(1) Grouping plants with similar water requirements together;
(2) Utilizing mulch and soil amendment to reduce irrigation requirements;
(3) Utilizing drip irrigation where possible to minimize run-off from sprinklers; and
(4) Restricting the amount of water comsumptive sod.

i) Irrigation systems shall be professionally designed to limit water consumption. The use of moisture sensors to reduce water consumption shall be encouraged.

k) Each owner or owner's association shall be responsible for the maintenance and repair of all site landscaping, including common open space areas.

l) Landscaping and maintenance shall comply with the Glenwood Meadows Geotechnical Mitigation Requirement.

3. Streetscape Improvements

a) Landscaping, decorative paving, and/or other site amenities shall be required to promote and enhance a comfortable pedestrian scale and orientation of the property.

b) The property between curb and the adjacent property line shall be landscaped according to Table 1-Landscape Requirements or paved with decorative paving in heavily used pedestrian areas, such as Market Street and Wulfsohn Road, or be treated with some combination of the two alternatives. Approval of all paving materials shall be subject to review by the Architectural Review Committee.

c) Streetscape shall be developed in a consistent manner and be reviewed as part of the overall development permit, if areas within the pod are developed separately, the design shall be consistent with that previously approved.

d) Trees selected from the plant list in this document shall be required within the back of curb landscaping strip. Such trees shall be planted every 40 feet maximum on center or depending on species at some other distance to ensure their proper spacing so as to develop a continuous canopy when mature.

e) Streetscape plantings shall be provided according to Table 1-Landscape Requirements. Variations in the tree species used from street to street are encouraged to avoid creating monocultures of trees. Landscape in the right-of-way and on individual sites is subject to review by the City of Glenwood Springs and any Design Review Committee of an owner's association.

4. Site Furnishings

a) Site furnishings, including, but not limited to: benches, seating, trash receptacles, bike racks, lighting fixtures and tree grates shall be incorporated with the theme of the building's architecture. All materials shall be considered and approved by any Design Review Committee of an owner's association and be in conformance with the City of Glenwood Springs Standards and these regulations.

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5. Parking Lot Landscaping

a) For lots with less than 20 spaces, a minimum of 10 percent of the total uncovered parking area, including access ways, shall be devoted exclusively to landscaping. For lots with twenty or greater spaces, a minimum of 20 percent of the total uncovered parking area, including access ways, shall be devoted exclusively to landscaping.

b) Required parking area interior landscaping shall be distributed in such a configuration so as to divide groups of parking spaces. No grouping of parking spaces shall exceed 8 in a row.

c) Parking lot edges shall be screened from public streets and sidewalks, public open space, and adjacent properties.

d) Landscaped islands shall be planted with ground cover or sod and a minimum of 2 deciduous trees (minimum caliper of 3 inches) per 200 square feet of landscaped island area.

e) Where a landscaped setback of at least 25 feet is not present, the perimeter of all parking lots shall be screened from adjacent streets, public sidewalks, and adjacent uses, with the exception of the area reserved as a site triangle at intersections, by either of the following methods:

(1) A berm 3 feet high with a maximum slope of 2:1 in combination with coniferous and deciduous trees and shrubs, as specified in table V.H.9.a, or

(2) A low continuous landscaped hedge at least 3 feet high consisting of a double row of shrubs planted 3 feet on center in a triangular pattern; or

(3) A low decorative masonry wall at least 3 feet high in combination with landscaping; or

(4) A combination of any of these methods.

f) Non-living ground cover, such as wood, bark, and rock mulches, decorative stone, brick or concrete paving, shall not exceed 20 percent of the required landscaped area.

6. Retaining Walls

a) Use of designed retaining walls shall be encouraged to reduce the slope and to provide planting pockets or terraces for revegetation and landscaping.

b) Retaining walls may be permitted to support slopes but shall not exceed 10 feet in height in commercial areas or 6 feet in height in residential areas from the finished grade without stepping back a minimum of 3 feet between walls to create a terraced effect.

c) No more than three tiers of retaining walls, as described above, shall be permitted to create terracing on a slope. Terraces created between retaining walls shall be permanently landscaped or revegetated and shall not exceed a 2:1 slope.

d) Retaining walls shall be constructed of or faced with stone or earth-colored materials, or a material compatible with the primary building materials. Railroad ties, timber, and gabion-type retaining walls are prohibited. Retaining walls shall not exceed 50 feet in length without providing an offset at least 12 inches.

e) All exposed retaining walls shall be textured or colored.

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7. Detention/Retention Ponds/Debris Channels

a) Detention/retention ponds and debris channels shall be visually integrated into the surrounding landscape.

b) Embankment slopes shall not exceed a 2:1 ratio.

8. Plant Materials

a) To meet the above standards, Plant Materials shall be chosen from the Plant List provided in the Appendix of this document. Xeric or low-water plant materials shall be utilized to the maximum extent feasible.

9. Landscape Requirements

a) For the purposes of meeting the requirements in the table below, appropriate screening shall mean plant material, a low wall, or combination to provide an opaque barrier between the street and the adjoining use to be screened.

Use	Residential Neighborhood	Mixed-Use	Commercial	Hospitality	Mixed-Use Campus
Required Open Space	40%	15%	15%	30%	30%
Open Space Planting	▪ 1 tree/1200 s.f. ▪ 4-shrubs/1200 s.f.	▪ 1 tree/500 s.f. ▪ 4-shrubs/500 s.f.	▪ 1 tree/1000 s.f. ▪ 4-shrubs/1000 s.f.	▪ 1 tree/1000 s.f. ▪ 4-shrubs/1000 s.f.	▪ 1 tree/1000 s.f. ▪ 4-shrubs/1000 s.f.
Setbacks Buffers Screens	▪ 1 tree/25 l.f. ▪ 1/3 deciduous 2/3 evergreen ▪ 10 shrubs/25 l.f	▪ 1 tree/25 l.f. ▪ 1/3 deciduous 2/3 evergreen ▪ 10 shrubs/25 l.f	▪ 1 tree/25 l.f. ▪ 1/3 deciduous 2/3 evergreen ▪ 10 shrubs/25 l.f	▪ 1 tree/25 l.f. ▪ 1/3 deciduous 2/3 evergreen ▪ 10 shrubs/25 l.f	▪ 1 tree/25 l.f. ▪ 1/3 deciduous 2/3 evergreen ▪ 10 shrubs/25 l.f
Midland Avenue ROW	N/A	▪ 1tree/40 l.f. ▪ Irregular spacing	▪ 1tree/40 l.f. ▪ Irregular spacing	▪ 1tree/40 l.f. ▪ Irregular spacing	▪ 1tree/40 l.f. ▪ Irregular spacing
Wulfson Road ROW	▪ 1tree/35 l.f. ▪ Irregular spacing	▪ 1tree/35 l.f. ▪ Regular spacing	▪ 1tree/35 l.f. ▪ Irregular spacing	▪ 1tree/35 l.f. ▪ Irregular spacing	▪ 1tree/35 l.f. ▪ Irregular spacing
Internal Neighborhood Streets	1 deciduous tree/35 l.f. Evenly spaced	▪ 1 deciduous tree/40 l.f. Evenly spaced	▪ 1 deciduous tree/35 l.f.	▪ 1 deciduous tree/35 l.f.	▪ 1 deciduous tree/35 l.f.

Table 1—Landscape Requirements

I. SERVICE AREA AND MECHANICAL/UTILITY EQUIPMENT SCREENING

1. Intent

The intent of these standards is to minimize the visual and noise impacts created by service areas and mechanical equipment on surrounding uses and neighborhoods from public rights-of-way, surrounding high elevation neighborhoods, and adjacent uses within Glenwood Meadows.

2. Service Areas

a) No areas for outdoor storage, trash collection or compaction, loading, or other such uses shall be located within 20 feet of any public street, public sidewalk, or internal pedestrian

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walkway.

b) Loading docks, truck parking, outdoor storage, trash collection, trash compaction, and other service functions shall be incorporated into the overall design of the building and landscaping so that the visual and acoustic impacts of these functions are fully contained and out of view from adjacent properties and public streets.

c) Screening materials shall be the same as, or of equal quality to, the materials used for the primary building and landscaping.

3. Mechanical/Utility Equipment

a) Mechanical/utility screening shall be an integral part of the building structure and architecture and not give the appearance of being "tacked on" to the exterior surfaces.

b) All mechanical, electrical, and communications equipment, including but not limited to air-conditioning, heating and soft water tanks, television antennas, satellite dishes, security apparatus, transformers, electric and gas meters, shall be integrated into the building design, screened from public view, or when appropriate, enclosed in a suitable structure.

c) Roof-mounted equipment shall be contained within a completely enclosed structure. Such structure shall be an integral part of the building's architectural design and shall use materials compatible with those used on the façade of the building. However, if it can be demonstrated that the roof mounted equipment shall be screened or shall be placed such that the equipment can not be viewed or silhouetted in profile from public vantage points and neighboring properties, this may be considered as an alternative by the City.

d) Roof mounted equipment shall be clustered to the maximum extent feasible.

e) Roof mounted equipment shall utilize neutral colors and/ or materials that are compatible with adjacent natural or constructed colors.

f) A decorative wall constructed of materials compatible with the overall architectural design of the development and softened with landscaping shall screen ground-mounted equipment.

J. OPEN SPACE AND PARKS

1. Intent

The intent of these standards is to provide an interconnected network of open spaces and parks within non-residential and residential areas of Glenwood Meadows as well as to provide a high level of visual interest and a variety of recreational and leisure opportunities within a short walk of each residence in Glenwood Meadows.

2. General

a) Open spaces and parks within Glenwood Meadows shall include traditional, urban gathering spaces such as a village green, plaza, or town square in addition to a network of pathways and informal trails that help integrate the built environment of the neighborhood with adjacent open space and the natural environment. Appropriate locations for the above amenities shall be determined in part by the type of use they are integrated with.

b) Existing trees and vegetation shall be preserved whenever possible to act as buffers between adjoining developments and as site amenities within the neighborhood.

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3. Non-Residential

a) Outdoor Spaces

(1) Pedestrian-oriented outdoor spaces shall be placed near activity generating uses, such as street corners, shops, stores, offices, day care, and dwellings.

(2) To the maximum extent feasible, outdoor spaces shall be linked and visible from streets and sidewalks.

(3) Sculpture, fountains, kiosks, or shelters shall be prominently placed in outdoor spaces.

(4) In developments with multiple buildings, outdoor spaces and landscaped areas shall be integrated into an overall open space system in conjunction with streets and connections and not merely assembled from residual land remaining after buildings and parking lots have been sited.

b) Community Amenities

(1) A minimum of 1,000 s.f. of community amenities, open areas, and public gathering places per 50,000 s.f. of Commercial building area or a percentage thereof. This shall be considered a component of the landscape requirements as referenced in Section H.9.Community amenities may consist of any of the following:

(a) Patio or plaza with seating area;
(b) Mini-parks, squares, or village greens;
(c) Water feature,
(d) Clock tower;
(e) Public art;
(f) Any other, similar deliberately shaped area and/or focal feature that, in the City's judgment, adequately enhances such community and serves as a gathering place.

(2) All community amenities within a commercial development shall be an integral part of the overall design and within easy walking distance of major buildings, major tenants, and any transit stops.

4. Residential

a) Common Open Space

(1) Common open space shall be organized to create integrated systems of open space that connect with the following types of lands located within or adjacent to the development:

(a) Dedicated public park or greenway lands;
(b) Other dedicated open spaces;
(c) Common open space located within or adjacent to the development;
(d) Portions of the trail and open space system;
(e) Neighborhood retail and commercial centers; and
(f) Adjacent employment centers.

Common open space with pedestrian access shall be reasonably accessible to all of the residents of the Glenwood Meadows:

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(2) Where provided, access to common open space shall be a minimum of six feet wide and shall be located where such access is visible to dwelling units and shall not be isolated by walls, screening, landscaping, or any other kind of barrier that would prevent resident surveillance of the open space.

(3) If an applicant constructs recreational facilities in the common open space as a community amenity, such recreational facilities shall be constructed in accordance with applicable city standards regarding, but not limited to, size, siting, use, materials, and similar matters.

(4) Where common open space is bordered by private rear or side yards, opaque fences and walls shall not be erected in such yards bordering the open space. Open style fences, with a maximum 50% opacity (e.g., post and rail), shall be allowed on the perimeter of open space.

b) Parks

(1) One neighborhood park shall be provided within each residentially zoned parcel or "neighborhood". Each park shall be at least 1 acre in size.

(2) Each neighborhood park shall be located where the network of local streets provides access and where direct pedestrian and bicycle access are provided from adjacent uses.

(3) Neighborhood parks shall be located in a visible, secure setting that is easily observed from streets. Rear facades of multi-family dwellings that do not contain building entrances shall not abut more than two sides of the park's perimeter.

(4) Each neighborhood park shall contain one or more of the following features:

(a) Multi-use areas;
(b) Community gardens;
(c) Walking paths;
(d) Plazas;
(e) Pavilions;
(f) Picnic tables;
(g) Benches; or
(h) Other similar features for various age groups to enjoy.

K. SIGNAGE

1. Intent

The intent of these standards is to provide consistent, high quality signage for Glenwood Meadows. All signage must be reviewed and approved by the Architectural Review Committee prior to permit application and must conform to all City of Glenwood Springs standards.

2. General

a) Each building group, user, or tenant shall be allowed at least one sign on the primary storefront elevation, providing such signage meets these standards and does not exceed the ordinance and requirements of the City of Glenwood Springs.

b) Signage placed at locations other than site locations and/or storefront elevation (such as rear and side wall locations) shall be considered provided that the total square footage allowance of all signage does not exceed the total aggregate area allowed by requirements of the City of Glenwood Springs Code.

c) All attachment devices, wiring, clips, transformers, lamps, tubes, and other mechanisms for signs shall be concealed.

d) Permanent signage may be illuminated providing it is designed so the source is not visible.

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Individual internally lit channel letter signs or accent lighting, which is incorporated to enhance the signage, is acceptable. All signage lighting shall conform to lighting standards provided by the City of Glenwood Springs.

e) Each tenant shall provide signage at its expense and shall apply for and obtain their individual signage permits and approvals from the City of Glenwood Springs.

3. Freestanding Signs

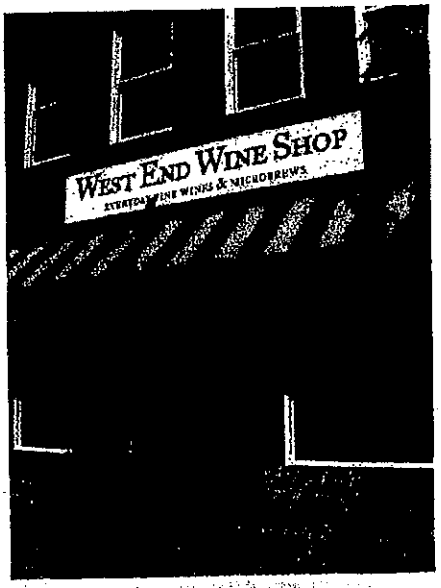
a) No individual sign shall exceed 200 square feet in area nor shall the total sign area of any tenant exceed 600 square feet.

b) The placement of all signs shall be based on visibility and legibility. All freestanding identification signs shall be integrated into the surrounding landscape with good visibility to approaching vehicular traffic.

c) All freestanding signs shall be set back a minimum of 10 feet from the edge of curb and/or property line and six feet from all sidewalks.

d) Freestanding signs shall not be placed within the site triangle of an intersection as defined in the City of Glenwood Springs Code.

e) The information contained on freestanding identification signs shall be limited to company and corporate logos, and may include building names and addresses.



4. Regulatory Signs

a) The basic design and mounting heights of regulatory signs shall follow Federal Highway Administration standards.

5. Building Mounted Signage

a) Building mounted signage shall be allowed only for commercial developments for the specific purpose to provide identification to the tenant.

b) Signage style shall be as approved by the Architectural Review Committee.

6. Colors and Materials

a) The Architectural Review Committee shall consider all colors for approval.

7. Informational/Directional

a) Informational/directional signs shall be designed to conform to the proportions shown in these guidelines and shall not have a sign face which exceeds 20 square feet.

b) The number of informational/directional signs may vary by site, but shall be sufficient to accommodate both vehicular and pedestrian traffic.

c) Informational/directional signs for motorists shall be located between 100 and 200 feet from intersections.

d) Signs for pedestrians shall be placed at decision points in parking lots, in plazas, and where highly traveled walkways intersect.

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L. LIGHTING

1. Intent

The intent of these standards is to ensure that building, site, street, and signage lighting is sensitive to adjoining uses and is compatible with the overall development character in terms of scale and design.

2. General

a) All development shall by in compliance with the City of Glenwood Spring's Lighting Standards or comparable document as provided by the City.

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VI. Development Standards: Parcel "A", Mixed-Use Campus (C-1)

A. GENERAL INTENT

The intent of these standards, when combined with the General Development Standards, is to provide a framework for the development of a quality office and business park for Glenwood Springs. The Campus is envisioned to accommodate a variety of office, research and development activities in addition to complementary secondary uses such as restaurants, convenience shopping, childcare and housing. Additionally, the Campus is intended to function as an integral part of the overall Glenwood Meadows development, providing a range of employment opportunities for nearby residents.

B. APPLICABILITY

These standards shall apply to all development within Parcel "A", Mixed-Use Campus as defined on the accompanying Zoning Map. These standards shall be applied in addition to standards outlined in Section V., General Development Standards and in the City of Glenwood Springs Municipal Code.

C. SITE LAYOUT AND DEVELOPMENT PATTERN

1. Intent

The intent of these standards is to encourage the creation of a park-like campus environment within the mixed-use campus zone and to ensure that non-residential uses within the mixed-use campus environment provide appropriate height and scale transitions to adjacent or adjoining residential uses.

2. General

a) All uses shall be carried out within completely enclosed buildings or structures, except for off-street parking and loading areas.

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3. Landscaping

a) All open space areas shall be landscaped according to Table 1-Landscape Requirements.

D. BUILDING DESIGN

1. Intent

The intent of these standards is to create a cohesive, office park environment through the use of common materials, architectural features, and colors.

2. General

a) See Section V. General Development Standards.

3. Orientation

a) Buildings shall be oriented towards the adjacent street or towards the center of a campus or park-like development block with an internal framework of outdoor spaces or connecting walkway.

4. Transition

a) Buildings abutting a residential area shall provide a gradual transition in height and scale to minimize conflicts between uses.

E. MIX OF USES

1. Intent

The intent of these standards is to provide general standards for appropriate percentages and locations of supporting uses within the mixed-use campus environment. Secondary uses are envisioned to include restaurants, convenience shopping, childcare, housing, or similar uses to complement primary office and research and development activities.

2. General

a) All supporting uses shall be visually and functionally integrated into an overall plan that emphasizes the primary uses of office and employment uses.

b) Retail uses shall not occupy more than 25 percent of the total gross area of the zone district.

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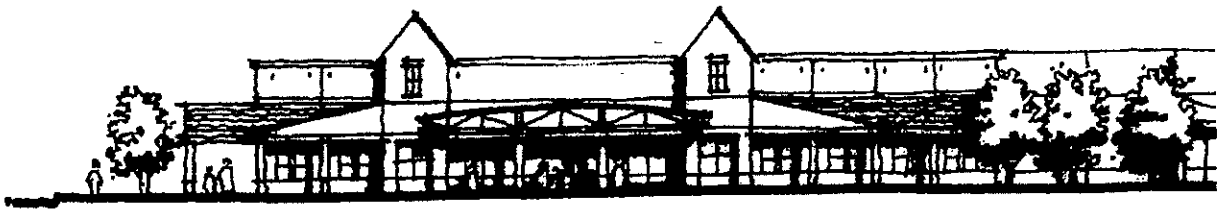
VII. Development Standards: Parcels "C", "D", and "H"-Commercial (C-2)



A. GENERAL INTENT

The intent of these standards is to achieve a high quality, pedestrian-friendly commercial core within Glenwood Meadows. This core will be anchored by large format retail anchors such as a grocery store and/or discount store and will be supplemented with a variety of smaller retail businesses. The purpose of this zone district is to serve both the needs of regional consumers for goods and services and the day-to-day needs of the surrounding residential neighborhoods in a functional and inviting environment that strays from the typical auto-oriented designs found in many commercial centers. The district is intended to function as an integrated center of activity within the overall Glenwood Meadows development through the establishment of clear pedestrian and vehicular circulation patterns and through transitions in the scale and character of development where they abut adjacent uses.

B. APPLICABILITY

These standards shall apply to all development within Parcels "C", "D", and "H", Commercial as defined on the accompanying Zoning Map. *These standards shall be applied in addition to standards outlined in Section V., General Development Standards and in the City of Glenwood Springs Municipal Code.*

C. SITE LAYOUT AND DEVELOPMENT PATTERN

1. Intent

The intent of these standards is to ensure that primary and secondary retail uses utilize careful building placement and orientation to create and enhance an active, attractive, pedestrian environment within the commercial core of Glenwood Meadows. Primary Commercial Buildings will serve as "anchors" for the commercial and mixed-use zones. These larger uses will be flanked by a variety of supporting, pedestrian-oriented retail storefronts and secondary commercial uses located on pad sites. The siting and design of smaller retail stores, or "pads," can create a more inviting appearance along Midland Ave and with in the neighborhood by visibly reducing the project's scale and by expanding the range of activities and businesses found within the neighborhood. The location, orientation of the entry, and architecture of pad site buildings also provide opportunities to frame the entry into the neighborhood and contribute to the development's visual interest by placing storefront spaces closer to the street and creating a street scene. Accordingly, pad site structures shall be compatible with the main buildings on a commercial site. The layout of pad site buildings shall relate coherently to the public streets and surroundings (outward) as well as to the main center (inward), and specific siting decisions shall further the general intent of creating a "sense of place," focal points,

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community amenities, and arrival into the commercial center.

2. General

a) See Section V. General Development Standards.

b) Pad Sites The primary façade of a building located on a pad site, typically the façade containing the primary customer entrance, may be oriented in a variety of ways, including:

(1) Toward the primary access street;
(2) Toward an internal "main street";
(3) Framing a primary entrance to the development or center;
(4) Toward the side (especially when that side faces another pad site building); or
(5) Toward the interior of the center.

c) Regardless of primary orientation, all sides of a pad site building that directly face and have access to a public street shall contain a customer entrance.

d) Pad sites shall be clustered together to define street edges and entry points or to enclose and create community amenities and visual interest between buildings.

e) Wherever practicable, spaces between adjacent pad site buildings shall be improved to provide small pockets (preferably heavily landscaped) of customer parking, pedestrian connections, small-scale project amenities, or focal points. Examples include, without limitation:

(1) A landscaped pedestrian way linking customer entrances between two or more pad site buildings;
(2) A public seating or outdoor eating area;
(3) An area landscaped with living materials emphasizing 4-season colors, textures, and varieties; or
(4) Sculptures or fountains.

D. BUILDING DESIGN

1. Intent

The intent of these standards is to ensure that the design of buildings located in parcels "C", "D", and "H", present a cohesive appearance through the use of common materials, architectural features, and colors.

2. General

a) See Section V. General Development Standards.

b) Pad site buildings and other accessory uses shall incorporate a similar façade and building design as those on the primary commercial building(s) in the zone district, including:

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(1) Exterior building materials;
(2) Roofline or roof materials;
(3) Façade colors;
(4) Pedestrian entry locations and entryway architecture/design;
(5) Amounts of glazing on facades visible from public streets; and
(6) Other distinctive architectural features.

c) Pad site buildings and other accessory uses shall select their exterior building materials from the material palette used on the primary commercial building(s).

3. Large Format Commercial

a) Large format commercial buildings of 60,000 square feet or greater shall have a minimum of one side of the building "wrapped" with independent retail storefronts. Uses adjoining Market Street shall "wrap" the edge closest to the street to help establish a pedestrian-oriented environment and create a transition to the mixed-use zone along Market Street, as discussed in Section VIII.

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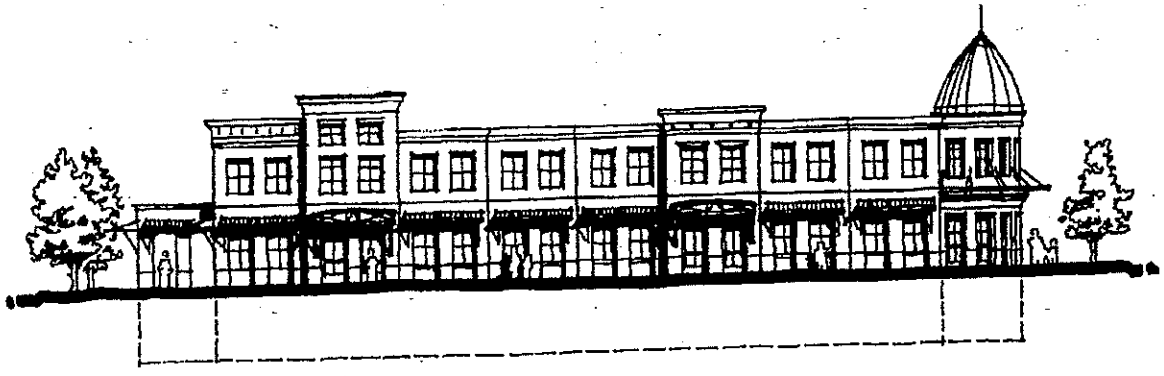
VIII. Development Standards: Parcel "E", "F", "G"-Mixed-Use (C-2)

A. GENERAL INTENT

The intent of these standards is to create the framework for a pedestrian-oriented neighborhood retail street that will serve as the focal point for Glenwood Meadows. Oriented along a key connection between Midland Avenue and Wulfsohn Road, Market Street will be defined by a variety of smaller-scale retail shops and restaurants and will be designed with the pedestrian in mind. Storefronts will frame the broad sidewalk, while outdoor seating, landscaping, fountains, and other amenities will combine to create an inviting destination for nearby residents and retail customers alike. Diagonal parking will line either edge of the street, further enhancing the comfortable, pedestrian-oriented feeling by creating a buffer between outdoor activity and through traffic.

Market Street

Along the north side of Wulfsohn Road, bi-level structures will be used to help accommodate a transition in grade between larger commercial uses below and uses at grade with Wulfsohn Road. A variety of retail, offices and flex spaces, and upper-story residential will complement uses along Market Street and on the south side of Wulfsohn Road. Upper stories also help screen views from residential neighborhoods stepping up the hillside over large format uses below. Lower level uses will be oriented towards adjacent commercial and retail while primary uses located on the upper level along Wulfsohn Road will be oriented towards the street and the adjoining neighborhood. Buildings will be pulled up to the sidewalk to create a defined edge along the broad sidewalk. Off-street parking will be focused behind buildings to the extent feasible to enhance the pedestrian nature of the street and diagonal or parallel parking will be provided along Wulfsohn Road. Wulfsohn Road shall be designed to accommodate on-street bicycle circulation.



Wulfsohn Road

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On the south side of Wulfsohn Road, the zone takes on a more neighborhood-oriented character; with small-scale first floor retail uses lining the street and the opportunity for upper-story residences. The addition of residential uses within the zone would provide a transition between commercial uses to the north and residential neighborhoods to the south and provide attainable options within an already varied mix of housing products. This also provides opportunities for live/work units if desired and creates more of an active street environment. The pedestrian nature of the street along Wulfsohn Road provides opportunities for pedestrian-oriented uses such as sidewalk cafes.

B. APPLICABILITY

These standards shall apply to all development within Parcels "E", "F", and "G", Mixed-Use as defined on the accompanying Zoning Map. *These standards shall be applied in addition to standards outlined in Section V., General Development Standards and in the City of Glenwood Springs Municipal Code.*

C. SITE LAYOUT AND DEVELOPMENT PATTERN

1. Intent

The intent of these standards is to ensure that building placement, setbacks, and orientation support the creation of a pedestrian scaled neighborhood retail street to serve as the retail core of the larger commercial development and Glenwood Meadows as a whole.

2. General

a) Compatible uses (i.e., office building and a movie theatre) shall explore opportunities for shared-use parking to minimize overall space requirements for parking.

3. Mix of Uses

a) Each pod of development within the zone shall contain at least 2 of the following uses:

(1) Residential;
(2) Retail; or
(3) Office.

b) A minimum of 20 residential units shall be provided within the E, F and G mixed use parcels.

4. Location of Parking along Market Street and Wulfsohn Road

a) Parking shall be angled or parallel on-street parking.

b) Off-street parking shall not be permitted between buildings and either Market or Wulfsohn.

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5. Building Setback from Market Street and Wulfsohn Road

a) There shall be no minimum front, rear, and side yard setbacks required to promote a more urban, pedestrian-oriented environment along the street, provided local building code requirements are met.

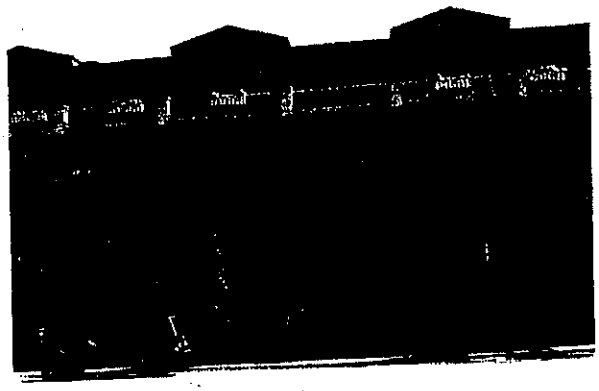
b) Should retail be constructed in phases, the front setback of later structures shall be built to equal the average setback of those structures already in place.

c) Buildings at the corners of Market Street and Wulfsohn Road shall be anchored, or brought up to meet the sidewalk edge and shall utilize a similar scale and massing as other buildings along the street edge.

6. Building Orientation

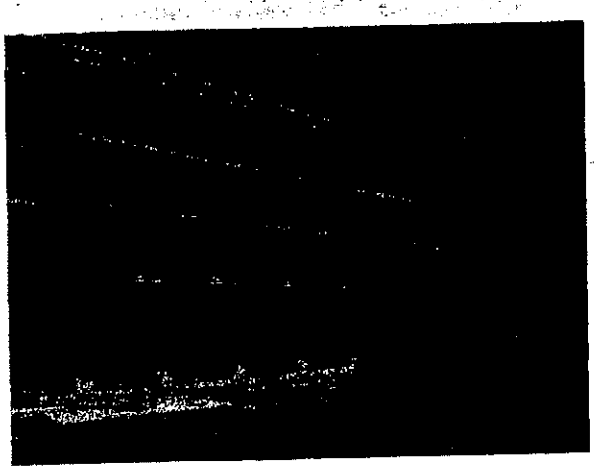
a) All buildings and building entries shall be oriented towards the primary street.

b) New buildings shall be aligned with existing buildings located across the intersecting streets to "complete" the space around the corner and create visual continuity.



7. Sidewalk Width

a) Sidewalk widths shall be a minimum of 10 feet along Market Street and Wulfsohn Road in order to provide ample space for outdoor seating and smooth pedestrian movement.



D. BUILDING DESIGN

1. Intent

The intent of these standards is to create a pedestrian-oriented feeling for the facades of retail establishments along Market Street and along Wulfsohn Road.

2. General

a) See Section V. General Development Standards.

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3. Building Height

a) Buildings shall be a minimum of 2 stories in height along the street edge. However, in order to create an active street environment along Market Street, especially at the intersection of Market St. and Midland Ave., portions of building or key buildings may be less than 2 stories if it can be demonstrated that the establishments add to the vitality of the street environment.

b) Along the north edge of Wulfsohn Road, buildings may need to be 3 stories in height to accommodate changes in grade and meet the above requirement.

4. Façade Articulation

a) One or more of the following design elements shall be incorporated for each 25 horizontal feet of a building façade or wall:

(1) Changes in color, texture, or materials;

(2) Projections, recesses, and reveals, expressing structural bays, entrances, or other aspects of the architecture with a minimum change of plane of 4-6 inches;

(3) Arcades or pergolas providing pedestrian interest.

b) Retail storefronts shall consist of predominantly transparent display windows on the first floor sidewalk edge.

c) Darkly tinted glass or other opaque materials shall not be used in display windows.

d) Traditionally, windows in multi-story commercial buildings have a width to height ratio of one to two. Second story or upper story windows should generally be smaller than the storefront windows at ground level and shall be evenly spaced across all facades adjacent to the street.

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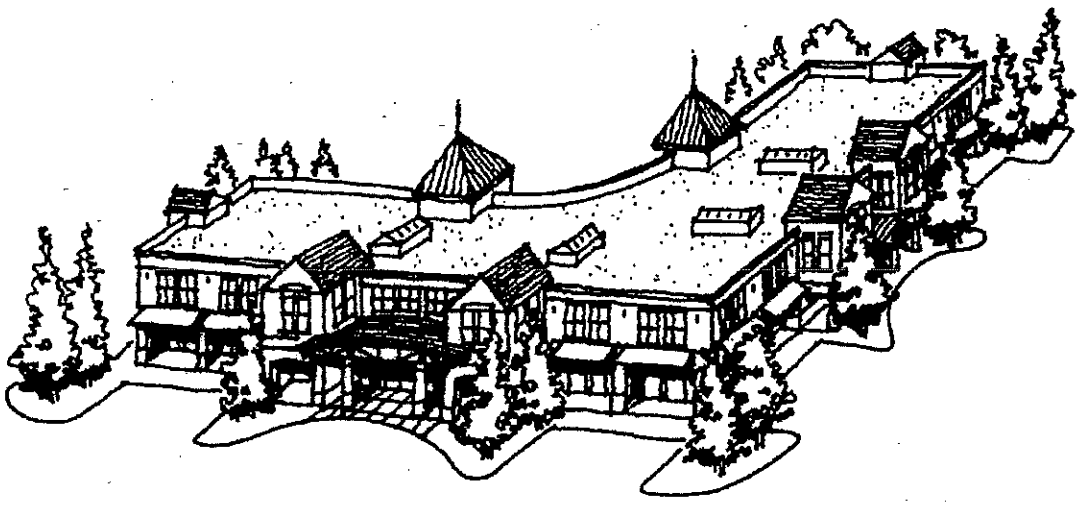
IX. Development Standards: Parcel "I", Hospitality (C-4)



A. GENERAL INTENT

The general intent of these standards is to create a full service hospitality site within Glenwood Meadows that accommodates a hotel with conference space or meeting rooms, a multi-screen movie theatre or other entertainment venue, such as a performing arts facility or outdoor amphitheater, visitor center, and/or a limited assortment of supporting retail uses such as restaurants or small stores, outdoor recreational opportunities, and the potential integration of a future park and ride and transit stop. The hospitality site is intended to function as more of a "campus" type environment, with more flexibility regarding the placement and relationship of uses as compared to the site's adjacent commercial areas based on the "campus" concept, meeting rooms or a separate dedicated facility on the site could serve as an extended learning facility or a business education and training facility. In addition to the adjacent commercial uses, all uses found on this site are also intended to complement the adjacent Community Center.

B. APPLICABILITY

These standards shall apply to all development within Parcel "I", Hospitality as defined on the accompanying Zoning Map. These standards shall be applied in addition to standards outlined in Section V., General Development Standards and in the City of Glenwood Springs Municipal Code.

C. SITE LAYOUT AND DEVELOPMENT PATTERN

1. Intent

The intent of these standards are to ensure that the design of hospitality uses are compatible in terms of scale and mass with adjacent residential and commercial development and with the

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Community Center.

2. General

a) Compatible uses (i.e., office building and a movie theatre) shall explore opportunities for shared-use parking to minimize overall space requirements for parking.

3. Setbacks

a) Minimum front yard setbacks shall be as follows:

(1) From Midland Avenue and Wulfsohn Road: 25 ft.

(2) From uses in ajacent commercial parcel: 20 ft.

b) There shall be no minimum side or rear yard setback to promote a more urban, pedestrian-oriented environment within the Hospitality zone district.

c) At the time of the development permit application, a build to line shall be established to create a strong relationship to Wulfsohn Road, the Community Center, and adjacent mixed-use structures. The location of this line may vary depending on the site layout concept.

4. Landscaping

a) All open space areas shall be landscaped according to Table 1-Landscape Requirements.

5. Mix of Uses

a) Retail uses shall be limited to 25% of the total square footage permitted within the zone district. For the purposes of this standard, a theater shall not be defined as a retail use.

6. Relationship to Community Center

a) All uses with frontage along Wulfsohn Road shall provide an entrance along that frontage.

7. Parking

a) Large areas of parking shall be distributed between at least two sides of the primary structure, with not more than 35% of the parking for the entire Hospitality parcel remaining between the principal building and Wulfsohn Road.

D. BUILDING DESIGN

1. Intent

The intent of these standards are to ensure that the design of full service hospitality uses are compatible in terms of scale and mass with adjacent residential and commercial development and with the Community Center.

2. General

a) See Section V. General Development Standards.

b) When public or semi-public spaces such as the hotel/motel lobby, restaurants, meeting rooms, and banquet-facilities are sited at ground level adjacent to a connecting pedestrian walkway, these spaces shall be accented with the use of glass and transparent materials between the height of 3 feet and 8 feet above the walkway or street grade.

3. Building Height

a) The maximum height of buildings shall not exceed 45 feet.

b) A variety of heights within the zone are encouraged. In addition, the use of height to create a focal point or prominent structure within the zone is also encouraged.

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X. Development Standards: Parcels "B", "F", and "G", Residential Neighborhoods (R-3)

A. GENERAL INTENT

The intent of these standards is to establish general criteria for the development of a series of compact residential neighborhoods that provide a range of housing types within a short walk of community amenities, such as parks and open space, retail and commercial services, and employment.

B. APPLICABILITY

These standards shall apply to all development within Parcels "B", "F", and "G", Residential Neighborhoods as defined on the accompanying Zoning Map. *These standards shall be applied in addition to standards outlined in Section V., General Development Standards and in the City of Glenwood Springs Municipal Code.*

C. SITE LAYOUT AND DEVELOPMENT PATTERN

1. Intent

The intent of these standards is to ensure that residential neighborhoods within Glenwood Meadows provide a variety of housing types in a cohesive, pedestrian-oriented environment and provide appropriate transitions to adjacent non-residential uses and open space, and work with the more pronounced topographical features of the site.

2. Mix of Housing Types

a) A range of housing types is strongly encouraged to promote a diverse community of mixed ages, family-types and incomes. Out of the 475 approved residential units, a maximum of 300 apartments shall be provided.

3. Block Layout

a) Residential neighborhoods shall be designed in a pattern of blocks and interconnecting streets and/ or alleys, defined by buildings, streetscape, sidewalks, and trails.

b) The maximum block length for a block shall be 500 feet. Where mid-block pedestrian walkways are provided, blocks may be up to 800 feet.

4. Lot Sizes

a) Lot sizes shall be a minimum of 3000 square feet where permitted by Glenwood Springs Municipal Code.

5. Setbacks

a) Homes shall be setback a minimum of 20 feet from the front property line.

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6. Site Grading

a) The use of extensive grading or unusual site improvements to force a preconceived design onto a particular piece of property is strongly discouraged. Modifying the design of a multifamily development to fit the site generally results in a reduced potential for environmental problems and an improved level of visual interest and variety.

b) To the maximum extent feasible, the layout of residential developments shall follow and respect the natural topography of the site.

c) Berms, channels, swales, and similar man-made changes to the landscape shall be designed and graded to be an integral part of the natural landscape and to provide a smooth transition in changes of slope.

7. Site Layout

a) Each of the three residential parcels within the Glenwood Meadows shall be considered an individual "neighborhood". A mix of housing types is encouraged within each neighborhood.

b) Multifamily buildings shall be separated by common open space, public open space (e.g., a greenway), natural features located on the site (e.g., a stream corridor), or community amenities such as swimming pools or other recreational facilities.

c) To the maximum extent practicable, multi-family buildings shall be oriented or arranged in a manner to enclose common open spaces required above (*Common Open Space*). Such common open spaces should include gardens, courtyards, recreation, or play areas and shall contain at least 3 of the following features:

(1) Seasonal planting areas;
(2) Large, flowering trees;
(3) Seating;
(4) Pedestrian-scaled lighting;
(5) Gazebos or other decorative shelters;
(6) Play structures for children; or
(7) Natural features or areas.

8. Development Transition

a) When any portion of a building or structure within a multifamily development is located adjacent to property used or zoned for lower-density residential, the following standards shall apply to ensure the privacy of nearby residents:

(1) The developer shall site multifamily structures with either fewer units or structures with two-story "end" units adjacent to property zoned or used for single-family residential.

b) Accessory structures, including garages and recreational facilities, shall be set back at least

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5 feet from the adjacent residential property line or zoning district boundary, and the developer shall provide a buffer between the structure and adjacent property. The buffer may be a fence, wall, heavy landscaping, or combination thereof. Fences and walls used for buffer purposes shall be a maximum of 6 feet in height, with finished side facing out.

c) Residential neighborhoods adjacent to open space shall incorporate one or more of the following techniques to create a visual transition between development and surrounding open space:

(1) Staggering building setbacks to create a softer development edge.
(2) Establishing a landscape buffer along the rear or visible edge(s) of the property to create a soft visual edge to the development.
(3) Locating structures near or behind existing stands of significant trees or vegetation so that the cluster of vegetation provides a buffer between the development and the adjoining open space. When siting structures in such a manner, care should be taken to not disturb existing vegetation either during or following construction.
(4) Utilizing a variety of native plant species and planting forms similar to those found on the adjoing open space, to create the appearance of a natural transition in the landscape.

9. Community Amenities

a) All residential projects with more than 10 dwelling units shall reserve and develop internal open space/outdoor leisure space, at a minimum ratio of 200 s.f. per unit. These open spaces/outdoor leisure areas shall be improved with a variety of community amenities, including, but not limited to the following:

(1) Community Garden;
(2) Grove of trees;
(3) Village green;
(4) Pocket park;
(5) Swimming pool;
(6) Resident clubhouse;
(7) Tot lots;
(8) Basketball, volleyball, or other sport court; or
(9) Picnic areas.

b) To the maximum extent feasible, internal open spaces/outdoor leisure spaces as required above shall be consolidated to create larger common spaces for residents.

10. Fencing

a) Perimeter fencing shall be of an open style, such as 2, 3, or 4 rail, split rail, wood post, or other similar style characteristic of the area's rural heritage.

b) Consistent styles of fencing shall be used throughout the neighborhood in order to achieve a cohesive appearance.

11. Storage of Personal Property

a) Dedicated storage for Recreational Vehicles (RV's), snowmobiles, trailers, and other personal property, not including personal automobiles, shall be provided off-street. Such property shall not be stored within the public right-of-way.

b) Storage areas, as outlined above, shall be screened to minimize visibility from adjacent streets and property lines as follows:

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(1) One continuous row of evergreen trees (minimum of 6 feet tall) shall be planted with a minimum spacing of 10 feet on center; or

(2) One continuous row of evergreen shrubs (minimum of 5gallon in size) planted at a minimum spacing of 3 feet on center, and deciduous trees planted at an average of one tree every 15 linear feet.

D. PARKING

1. Intent

The intent of these standards is to ensure that garages and parking areas within Glenwood Meadow's residential neighborhoods are appropriately scaled and sited to minimize their visual impact upon the street.

2. Location and Layout

a) To the maximum extent feasible within slope constraints, garage entries, carports, parking areas, and parking structures shall be internalized in building groupings or oriented away from street frontage.

b) Parking areas and freestanding parking structures (detached garages or carports) shall not occupy more than 50% of each perimeter street frontage.

c) To the maximum extent practicable, freestanding parking structures (detached garages or carports) that are visible from perimeter public streets shall be sited perpendicular to the perimeter street in order to reduce visual impacts on the streetscape.

d) Carports shall be limited to 72 feet in length, with a maximum of 8 parking spaces per carport structure.

e) If a carport backs to the street, a landscape buffer shall be provided according to the requirements contained in Table 1-Landscape Requirements., within Section V.

f) A detached garage structure shall contain parking for no more than 8 cars.

g) No more than 2 detached garage structures or 2 carport structures shall be located adjacent to each other end to end.

h) The minimum separation between adjacent detached parking structures (detached garages or carports) shall be 10 feet, and such separation area shall be landscaped with at least 1 deciduous tree and ground cover or sod. A pedestrian access way may be included within the separation area.

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E. BUILDING DESIGN

1. Intent

These standards are intended to encourage a variety of residential building character within Glenwood Meadow's neighborhoods by encouraging the use of identifiable design features and detailing to emphasize the façade at the street and create visual interest.

2. General

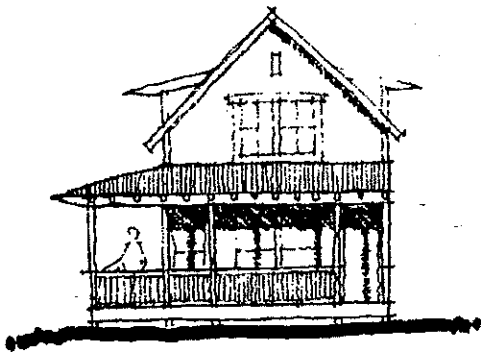
a) See Section V. General Development Standards.

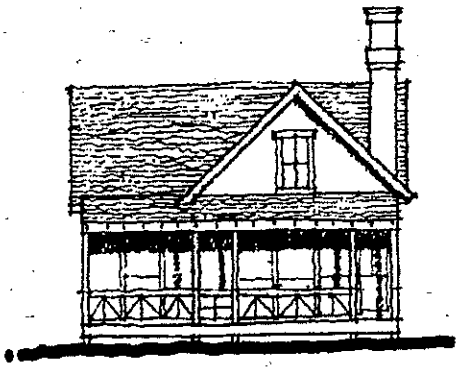
3. Architectural Detail

a) The incorporation of porches, balconies, and patios shall be strongly encouraged for all residential types.

b) Building entries shall be called out as a prominent streetscape feature for all residential types by extending the front of the main façade and emphasizing with materials and detailing.

c) Garages shall not be the prominent streetscape element. They shall be recessed and/or oriented towards the side or rear of the lot.





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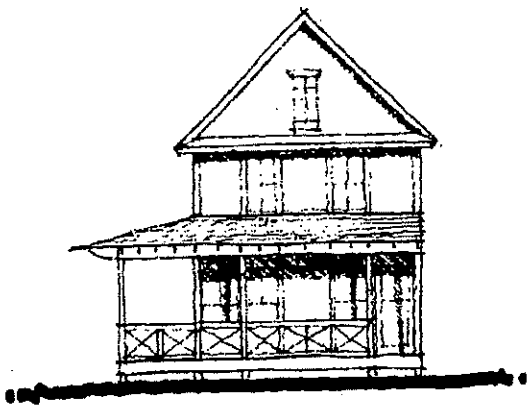
d) The facades of single-family attached town homes shall be articulated to differentiate individual units.

e) All sides of a multi-family building shall display a similar level of quality and architectural interest. The majority of a building's architectural features and treatments shall not be restricted to a single façade.

f) Fronts of buildings shall be articulated through the use of bays, insets, balconies, porches, or stoops related to entrances and windows.

g) No more than 5 town home dwelling units shall be attached in any single row.



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XI. Parcel L: Open Space and Parks (HP)

A. GENERAL INTENT

The intent of these standards is to provide guidance for the range of appropriate uses that could occur within this portion of the Glenwood Meadow's site. The site is characterized by its dramatic views of Red Mountain, which frames the site on the south side, by its varied and sometimes dramatic topography, and by its lush stand of Gambel oaks. The site encompasses over 62% of the total area of Glenwood Meadows presents an opportunity to establish public open space for the neighborhood and for the larger Glenwood Spring's community that accommodates year-round active and passive recreational uses.

Many of the sites potential uses will vary from season to season, providing a range of activities for the community. For example, the north aspect of Red Mountain's slopes retain snow cover, creating a haven in its shadows for winter sports such as snow shoeing or cross-country skiing, while lower slopes with more solar exposure provide more opportunities for year-round activities such as hiking, biking, and possibly a golf course.

B. APPLICABILITY

These standards shall apply to all development within Parcels "L", Open Space and Parks as defined on the accompanying Zoning Map. *These standards shall be applied in addition to standards outlined in Section V., General Development Standards and in the City of Glenwood Springs Municipal Code.*

C. ACTIVE RECREATION

1. Intent

The intent of these standards is to suggest a range of appropriate active recreational uses for particular areas of the site, based on its varying landscape characteristics, such as slope,

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vegetative cover, and proximity to the residential neighborhoods of Glenwood Meadows. As a general rule, more land intensive, active uses, such as a golf course or a community park shall be located adjacent to or be partially integrated with nearby residential neighborhoods. By locating active uses near developed areas, where slopes are typically between 10 and 20 percent, pedestrian access to the sites would be more easily facilitated and a wider range of uses could be accommodated. Steeper slopes located towards the base of Red Mountain can be utilized to accommodate multi-use trails with little disturbance to existing landforms or views of the site. All development on the site, regardless of its intensity or location, shall work with existing site features to minimize overall disturbance and visual impacts.

2. General

a) Appropriate uses shall include, but not be limited to the following:

(1) Hiking trails;
(2) Golf courses;
(3) Mountain bike trails;
(4) Cross-country skiing trails;
(5) Equestrian trails;
(6) Snow shoeing trails; or
(7) Neighborhood parks.

b) Any of the above uses, as well as any additional non-prohibited uses as identified in the Appendix-Prohibited Uses for Parcel L, shall be required to undergo a special use review prior to approval. Soft surfaced trails and debris flow mitigation structures shall be allowed uses, the design and location of which shall be approved by City staff.

c) The use of motorized recreational vehicles such as snowmobiles, motorcycles, or similar vehicles shall not be permitted.

d) All uses shall use all practical means of preserving natural grade, drainage patterns, soil cover, and vegetation.

e) All uses shall be designed to minimize visual disturbances and scarring to the site, as viewed from within the site, from surrounding developments, and from Interstate-70.

f) All uses shall preserve and integrate outstanding natural physical features such as hill and ridge crests, natural rock outcroppings, major tree belts, watercourses, and other physical features.

g) Public access points shall be provided from residential neighborhoods to adjoining open space. To the maximum extent feasible, access points shall be provided a minimum of every 500 feet.

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XII. Appendix

A. PLANT LIST

1. Large Deciduous Trees

a) Narrow leaf Cottonwood-Populus angustifolia
b) Cottonwood 'Siouxland'-Populus deltoides 'Siouxland'
c) Lanceleaf Cottonwood-Populus x acuminata
d) Norway Maple-Acer plantanoides
e) Red Maple-Acer rubrum
f) Northern Catalpa-Catalpa speciosa
g) Common Hackberry-Celtis occidentalis (spring planting)
h) American Ash-Fraxinus americana 'Autumn Purple'
i) Green Ash-Fraxinus pennsylvanica
j) Thornless Honeylocust 'Shademaster'-Gleditsia triacanthos inermis
k) Bur Oak- Quercus macrocarpa
l) English Oak-Quercus robur
m) American Linden-Tilia americana
n) Littleleaf Linden-Tilia cordata 'Greenspire'
o) Redmond Linden-Tilia x euchlora 'Redmond'
p) American Elm-Ulmus Americana

2. Ornamental Trees

a) Amur Maple-Acer ginnala
b) Thinleaf Alder-Alnus tenuifolia
c) Shadblow Serviceberry-Amelanchier canadensis
d) Rocky Mountain or water birch-Betula occidentalis
e) Cockspur Hawthorn-Crataegus crus-galli
f) Washington Hawthorn-Crataegus phaenophyrum
g) Quaking Aspen-populus tremuloidies
h) Newport Plum-Prunus cerasifera 'Newport'
i) Canadian Red Cherry-Prunus virginiana 'Shubert'
j) Callery Pear-Pyrus calleryana
k) Gambel Oak-Quercus gambelii

3. Evergreen Trees

a) Subalpine or Rocky Mountain Fir-Abies lasiocarpa

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b) Douglas Fir-Pseudotsuga menziesii glauca
c) Rocky Mountain Juniper-Juniperus scopulorum
d) Bristlecone Pine-Pinus aristata
e) Lodgepole Pine-Pinus contorta latifolia
f) Pinyon Pine-pinus edulis
g) Limber Pine-Pinus flexilis
h) Southwestern White Pine-Pinus flexilis reflexa
i) Austrian Pine-Pinus nigra
j) Ponderosa Pine-Pinus ponderosa
k) Scotch Pine-Pinus sylvestris
l) Engelmann Spruce-Picea engelmannii
m) Black Hills Spruce-Picea glauca densta
n) Colorado Spruce-Picea pungens
o) Colorado Blue Spruce-Picea pungens glauca

4. Semi-Evergreen and Broadleaf Evergreen Shrubs

a) Kinnikinnick-Arctostaphylos uva-ursi
b) Euonymus-Euonymus fortunei
c) Manhattan Euonymus-Euonymus kiautschovicus 'Manhattan'
d) Oregon Grape Holly-Mahonia aquifolium
e) Compact Oregon Grape Holly-Mahonia aquifolium 'Compacta'
f) Creeping Oregon Grape Holly-Mahonia repens
g) Soapweed Yucca-Yucca glauca

5. Evergreen Shrubs

a) Armstrong Juniper-Juniper chinensis 'Armstrong'
b) Blue Rug Juniper-Juniperous horizontalis 'Wiltonii'
c) Sea Green Juniper-Juniperous media 'Sea Green'
d) Green Mound Juniper-Juniperous procumbens 'Green Mound'
e) Tammy Juniper-Juniperus sabina 'Tamariscifolia'
f) Table Top Juniper-Juniperus scopulorum 'Table Top'
g) Blue Star Juniper-Junperus squamata 'Blue Star'
h) Wichita Blue Juniper-Juniperus scopulorum 'Wichita Blue'
i) Hillspire Juniper-Juniperus virginiana 'Cupress'
j) Mugo Pine-Pinus mugo

6. Deciduous Shrubs

a) Serviceberry-Amelanchier spp.
b) Barberry-Berberis thunbergii atropurpurea

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c) Butterfly Bush-Buddleia davidii
d) Siberean Peashrub-Caragana arborescens
e) Flowering Quince-Chaenomeles speciosa
f) Blue Mist Spirea-Caryopteris spp.
g) Dogwood-Cornus sericea
h) Smoketree-Cotinus coggygria
i) Peking Cotoneaster-Cotoneaster acutifolia
j) Cranberry Cotoneaster-Cotoneaster apiculatus
k) Burning Bush-Euonymus alatus
l) Forsythia-Ligustrum vugare
m) Honeysuckle- Lonicera spp.
n) Russian Sage-Periovskia atriplicifolia
o) Common Ninebark-Physocarpus opulifolius
p) Potentilla (Shrubby Cinquefoil)-Potentilla fruiticosa
q) Plum-Prunus spp.

7. Perennials

a) Yarrow-Achilles filipendula
b) Columbine-Aquilegia (hybrids)
c) Hollyhock-Althaea rosea
d) Pearly Everlasting-Anaphalis spp.
e) Clustered Bellflower-Campanula glomerata
f) Canterbury Bells-Campanula medium
g) Cup-n-Saucer-Campanula medium calycanterma
h) Shasta Daisy-Chrysanthemum maximum
i) Delphinium-Delphinium elatum
j) Cottage Pink-Dianthus pulmarius
k) Bleeding Heart-Dicentra spectabillis
l) Foxglove-Digitalis purpurea
m) Blanket Flower-Gaillardia aristata
n) Bearded Iris-Iris germanica
o) Perennial Sweet Pea-Lathyrus latifolius
p) Blue Flax-Linum perenne
q) Lupine-Lupinus polyphyllus
r) Daffodil-Narcissus spp.
s) Perennial Phlox-Phlox paniculata
t) Buttercup-Ranunculus asiaticus
u) Johnny Jump-up-Viola kitaibeliana

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B. USE TABLE

In the event a use is permitted in the Glenwood Meadows standards but is not permitted in the underlying zone districts, the stricter obligations of the Code shall prevail.

Prohibited Use

Special Use

Use	A-Mixed-Use Campus (C-1)	C, D, and H-Commercial (C-1)	E, F, and G-Mixed-Use (C-2)	I-Hospitality (C-1)	B, J, and K-Residential Neighborhood (R-3)	L-Parks and Open Space (HP)
Accessory Uses						
Apartments						
Auto Rental						
Auto Repair						
Auto Parking						
Auto Sales						
Auto Service						
Auto Washing and/or Polishing Facility						
Banks with Drive Thru/ Accessory ATM Facilities						
Bed & Breakfast						
Child Care Home						
Commercial Indoor Cinema						
Daycare Facilities						
Sanitariums, Rest Homes, Homes for the Aged, Nursing or Convalescent Homes						
Emergency Services Facilities						
Golf Course						
Gas Sales						
Governmental Facilities and Non-Governmental Health and Human Services Facilities						
Government or Public Utility Service						
Commercial Health and Fitness Centers						
Home Improvement and Garden Supply						
Hospitals and their Related Facilities						
Hotels						

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Use	A-Mixed-Use Complex (C-1)	C, D, and H-Commercial (C-1)	E, F, and G-Mixed-Use (C-2)	I-Hospitality (C-2)	B, J, and K-Institutional Neighborhood (R-3)	L- Parks and Open Space (RP)
Indoor Commercial Recreational Facilities						
Light Assembly						
Major Home Occupation						
Membership Warehouse						
Minor Home Occupation						
Mobile Home Manufacturing						
Mobile Home Park						
Mobile Home Sales						
Mortuary						
Multi-family Dwellings						
Museum						
Non-Bank Drive-Through Facilities						
Office Uses						
Office-Showroom						
Outdoor Display						
Outdoor Recreational Facilities						
Outdoor Storage						
Clinical and their Related Facilities						
Pedestrian-oriented Accessory Uses and Outdoor Seating for Restaurants						
Public Park						
Radio Transmission Facilities						
Recreation Vehicle Parking						
Religious Institutions						
Restaurants						
Retail						
Road, Driveway, Bikeway, Parking						
Schools						
Schools: Colleges or Universities						
Self-Storage Facilities						
Service and Repair of Appliances & Building Components						
Personal Service such as Photo Shop, Tailor, Dry Cleaning, Barber						
Single Family Detached Dwellings						
Single-Family Attached Housing e.g. Townhouses and						

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Use	A-Mixed-Use Campus (C-1)	C, D, and H-Commercial (C-1)	E, F, and G-Mixed-Use (C-2)	I-Hospitality (C-4)	B, J, and K-Residential Neighborhood (R-8)	L-Parks and Open Space (NP)
Roughhouses						
Skating Rinks, Public Recreational and Sports Facilities						
Small Animal Hospitals and Clinics						
Transient Housing/Boarding Houses						
Transit Park and Ride/ Bus Station						
Utility Substations						

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XIII. Definitions

Accessory Use—A use incidental and subordinate to the principal use of the lot.
Apartment- A type of multi-family dwelling unit, typically renter-rather than owner-occupied. See definition for multi-family dwellings below.
Auto Parking—Shall mean an off-street parking area or vehicular use area, an off-street parking area within a building or parking structure, or on street parallel or diagonal parking.
Day Care—A child care facility or day nursery, which is maintained for the whole or part of a day for the care of 7 or more children unrelated to the owner on a full time basis and/or requiring a day care nursery or a center license in accordance with the regulations of the State of Colorado Department of Social Services, whether such facility is operated with or without compensation for such care and with or without stated educational purposes.
Indoor Recreation—A commercial recreational land use conducted entirely within a building, including: an arcade, arena, art gallery and studio, art center, assembly hall, athletic and health clubs, auditorium, bowling alley, club or lounge, community center, conference center, exhibit hall, gymnasium, library, movie theater, museum, performance theater, pool or billiard hall, skating rink, swimming pool, or tennis court.
Multi-family dwellings—A building containing 3 or more dwelling units, not including hotels, motels, and similar group accommodations.
Non-banking Drive Thru—An establishment which by design, physical facilities, services, or packaging procedures encourages or permits customers to receive services, obtain goods, or be entertained while remaining in their motor vehicles.
Open Space—That portion of a building lot which is open to the sky, except as provided in the definition of lot coverage.
Outdoor Recreation—A commercial recreational land use conducted outside of a building, characterized by a minimal impact on traffic, the natural environment, or the surrounding neighborhood, including: an arboretum, botanical garden, bridle or hiking trails, country club, golf course, or historic site.
Pedestrian-oriented Development—Development that is designed with a primary emphasis on the street sidewalk and/or connecting walkway access to the site and building rather than on auto access and parking lots. This type of development typically warrants buildings being placed relatively close to the street with the main entrance oriented towards the street sidewalk or a walkway. Parking areas are provided but are not emphasized in the design of the site.
Transit-oriented Development—A development pattern characterized by mixed-use development at transit corridors, a high level of activities and extensive facilities for transit users, pedestrians, and bicyclists to provide easy movement between living and working environments.

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FIRST AMENDMENT TO ANNEXATION AND DEVELOPMENT AGREEMENT GLENWOOD MEADOWS, LLC ANNEXATION

THIS FIRST AMENDMENT TO ANNEXATION AND DEVELOPMENT AGREEMENT ("Agreement") is made and entered into this 5th day of May, 2004, by and between the CITY OF GLENWOOD SPRINGS, COLORADO, a Colorado municipal corporation (hereinafter "City"), and GLENWOOD MEADOWS, LLC, a Colorado limited liability company, its successors, assigns, and its legal or other representatives (hereinafter collectively "Owner").

W I T N E S S E T H:

WHEREAS, Owner owns approximately three hundred forty-five (345) acres of real property currently located in unincorporated Garfield County, Colorado, and more particularly described on Exhibit A, attached hereto and incorporated herein by this reference (hereinafter "Property"), which Property shall be known as "Glenwood Meadows"; and

WHEREAS, on July 18, 2002, the City Council of the City of Glenwood Springs ("Council") did adopt Ordinance No. 17, Series of 2002, and Ordinance No. 18, Series of 2002, which respectively approved the Owner's petition and request for annexation of the Property and approved the Owner's application for municipal zoning of the Property; and

WHEREAS, the City and Owner entered into this an Annexation and Development Agreement to set forth their agreements in writing concerning the terms and conditions of annexation of the Property to the City, the zoning of the Property under the City's Municipal Code and the adopted Zoning and Development Plan, as well as the other conditions of the development of the Property; and

WHEREAS, certain conditions have changed necessitating the amendment of the Annexation and Development Agreement recorded December 6, 2002 at Reception No. #616083.

NOW THEREFORE, the Annexation and Development Agreement entered into by and between the parties is amended as follows(deletions are shown by ~~strike-through~~ additions are underlined):

Section 12 Off-Site Traffic Improvements Obligations.

*

*

*

f. The third sentence shall be amended to read as follows "Owner shall be responsible for one hundred percent (100%) of the cost of construction of a new limited purpose ~~(i.e. an unsignalized right-turn in/right-turn out only)~~ access point from the Property to Midland Avenue."

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Section 13. On-Site Pedestrian/Off-Site Pedestrian Commitments, Transportation Demand Management Commitment; and Transit Commitments.

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*

d. An additional sentence shall be added to the end of this subsection to read as follows "The subdivision, conveyance and development of a park and ride of any acreage as contemplated herein shall not obligate the Owner to perform any obligation set forth in this Agreement which would otherwise be required as the result of subdivision, conveyance or development of any of the Property."

Section 20. Miscellaneous. Section 20, Subsection l. Notice, is amended as follows:

l. Notice.

:

Notice to City:	City of Glenwood Springs ~~Mike Copp~~, City Manager ~~806 Cooper Avenue~~ 101 West 8th Street City of Glenwood Springs, CO 81601
With copy to:	~~Teresa Williams~~ City Attorney ~~806 Cooper Avenue~~ 101 West 8th Street Glenwood Springs, CO 81601
Notice to Owner:	Glenwood Meadows, L.L.C. Attn: Robert Macgregor ~~525 East Cooper~~ 1315 Sage Court Aspen, CO 81611
With copy to:	Thomas J. Hartert, Esq. ~~802 Grand Avenue, Suite~~ 818 Colorado Avenue P.O. Drawer 790 Glenwood Springs, CO 81602

Except as expressly amended hereby, all other terms, conditions and provisions of the Annexation and Development Agreement – Glenwood Meadows, LLC Annexation dated September 18, 2002 shall remain in full force and effect.

WHEREFORE, the parties hereto have executed duplicate originals of this Agreement on the day and year first written above.

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CITY OF GLENWOOD SPRINGS, COLORADO

By _____
LARRY EMERY, Mayor

ATTEST:

_____
Robin Clemons, City Clerk

GLENWOOD MEADOWS, LLC, a Colorado limited liability company

By _____
Robert Duncan Macgregor as President of Dunrene Management, Inc., the Manager

STATE OF COLORADO)
) ss.
COUNTY OF GARFIELD)

Acknowledged, subscribed and sworn to before me this 27th day of April, 2004, by Larry Emery as Mayor, and by Robin Clemons, as Clerk, on behalf of the City of Glenwood Springs.

WITNESS my hand and official seal.

My Commission expires: MY COMMISSION EXPIRES 11/28/2005

_____
Notary Public

STATE OF COLORADO)
) ss.
COUNTY OF ~~GARFIELD~~ Mesa)

Acknowledged, subscribed and sworn to before me this 3rd day of May, 2004, by Robert Duncan Macgregor as President of Dunrene Management, Inc., the Manager of Glenwood Meadows, L.L.C.

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WITNESS my hand and official seal.

My Commission expires: 11/2/05.

Notary Public

SUSAN J. OTTMAN
NOTARY PUBLIC
STATE OF COLORADO
My Commission Expires 11/02/2005
County of Mesa

LAND TITLE GUARANTEE COMPANY
901 GRAND AVENUE #202
GLENWOOD SPRINGS, CO 81601
Phone: (970) 930-9815
Fax: (800) 318-8206

"PURCHASERS" STATEMENT OF SETTLEMENT

PROPERTY ADDRESS: **2301 WULFSOHN ROAD, GLENWOOD SPRINGS, CO 81601**

SELLER(S): **CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY**

BUYER(S): **ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY**

SETTLEMENT DATE: **July 08, 2020** DATE OF PRORATION: **July 08, 2020**

DESCRIPTION	DEBIT	CREDIT
Sales Price & Earnest Money		
Sales Price	1,260,000.00	
Title Fees - Land Title Guarantee Company		
Tax Certificate	26.00	
Closing Fees - Land Title Guarantee Company		
Closing Fee to Land Title Guarantee Company	275.00	
Recording Fees - Land Title Guarantee Company		
Record Warranty Deed to Land Title Guarantee Company	23.00	
Documentary Fee to Land Title Guarantee Company	126.00	
Water & Sewer Charges - CITY OF GLENWOOD SPRINGS		
TRANSFER FEE to CITY OF GLENWOOD SPRINGS	15.00	
SubTotals	1,260,465.00	0.00
Due from Buyer/Borrower		**1,260,465.00**
Totals	1,260,465.00	1,260,465.00

The above figures do not include sales or use taxes on property

APPROVED AND ACCEPTED

PURCHASER(S)

ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY

By: Dan Blankenship
DAN BLANKENSHIP, CEO

LAND TITLE CLOSING AGENT:

Jessica Reed
Jessica Reed

LAND TITLE GUARANTEE COMPANY
901 GRAND AVENUE #202
GLENWOOD SPRINGS, CO 81601
Phone: (970) 930-9815
Fax: (800) 318-8206

"SELLERS" STATEMENT OF SETTLEMENT

PROPERTY ADDRESS: **2301 WULFSOHN ROAD, GLENWOOD SPRINGS, CO 81601**

SELLER(S): **CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY**

BUYER(S): **ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY**

SETTLEMENT DATE: **July 08, 2020** DATE OF PRORATION: **July 08, 2020**

DESCRIPTION	DEBIT	CREDIT
Sales Price & Earnest Money		
Sales Price		1,260,000.00
Title Fees - Land Title Guarantee Company		
Title Insurance ALTA Owner's Policy	2,862.00	
Closing Fees - Land Title Guarantee Company		
Closing Fee to Land Title Guarantee Company	275.00	
Escrow Set Up Fee to Land Title Guarantee Company	50.00	
Miscellaneous Charges		
ESCROW FOR REMEDIATE RECOGNIZED ENVIRONMENTAL CONDITIONS	50,000.00	
SubTotals	53,187.00	1,260,000.00
Due to Seller/Owner	**1,206,813.00**	
Totals	1,260,000.00	1,260,000.00

The above figures do not include sales or use taxes on property

APPROVED AND ACCEPTED

SELLER(S)

CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY

By: Jonathan Godes

Jonathan Godes, Mayor Signed 07/07/20 at 02:26PM

LAND TITLE CLOSING AGENT:

Jessica Reed

Jessica Reed

COMMERCIAL CLOSING INSTRUCTIONS

TO:Land Title Guarantee Company

RE:**2301 WULFSOHN ROAD, GLENWOOD SPRINGS, CO 81601**

1. The Seller(s) and Buyer(s) listed below employ Land Title Guarantee Company (hereinafter referred to as Closing Agent) to act as closing and settlement agent in connection with the real property identified in title commitment No. **63014212**.
2. Closing Agent is authorized to prepare, obtain, deliver and record all documents (including if applicable the Warranty Deed), excluding preparation of legal documents, necessary to carry out the terms and conditions of the Contract by and between the undersigned with amendments and counter proposals attached. Closing Agent is authorized to act as Loan Closing Agent and, if required, as custodian for any lender selected under the terms of the contract.
3. Closing Agent is authorized to receive funds; and to disburse funds under the following conditions:
   a. All funds received are either available for immediate withdrawal as a matter of right from the financial institution in which funds have been deposited; or are available for immediate withdrawal as a consequence of an agreement of a financial institution in which the funds are to be deposited or a financial institution upon which the funds are to be drawn.
4. Seller(s) and Buyer(s) will furnish any additional information and documents required by Closing Agent which will be necessary to complete this transaction, and to comply with the provision of the Contract.
5. Closing Agent will prepare and deliver an accurate and detailed Closing Statement to Seller(s) and Buyer(s) at time of closing.
6. Nothing contained herein shall be construed to alter or supersede the Contract.
7. Should a default occur by either Seller(s) or Buyer(s), Closing Agent is authorized to return all documents, monies, and things of value to the depositing party and Closing Agent will be relieved from any further duty, responsibility or liability in connection with these instructions.
8. In the event of any conflicting demands made on the Closing Agent concerning these instructions, in the sole judgment of the Closing Agent, and at the election of the Closing Agent, Closing Agent may hold any monies, documents, and things of value until Closing Agent received mutual written instructions from Seller(s) and Buyer(s) or until a civil action shall have been finally concluded in a court of competent jurisdiction, determining the rights of all parties. In the alternative, Closing Agent may, at its discretion, at any time, commence a civil action to interplead any conflicting demands to a court of competent jurisdiction. Deposit with the court by the Closing Agent of all monies, documents, and other things of value concerning this transaction, shall relieve Closing Agent of all further liability and responsibility.
9. These closing instructions may be amended or terminated by written instructions from the Seller(s) and Buyer(s) to the Closing Agent.

ADDITIONAL PROVISIONS. (The following provisions have not been approved by the Colorado Real Estate Commission)

Seller and Borrower agree that the documents necessary for closing that require a notarization or acknowledgment may be notarized by a notary located outside of the State of Colorado through a process called "Remote Online Notarization ("RON"). The RON process utilizes an electronic online platform in which a notary will use real time audio/visual equipment to witness a party's electronic signature, and notarize it electronically from a remote location. If the parties elect to utilize RON to notarize closing documents, the role of the notary in the closing process will be limited to notarizing specific closing documents. If RON is utilized in this closing, the parties hereby authorize Closing Company to upload closing documents to the RON platform that is selected by the Closing Company, which documents could include personal private information; these documents could include but are not limited to deeds, deeds of trust, and affidavits. Once the closing documents are uploaded onto the RON platform, Closing Company is not responsible for the security or privacy of those uploaded documents.

APPROVED AND ACCEPTED: July 08, 2020

SELLER(S)

CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY

By: _____
Jonathan Godes, Mayor

BUYER(S)

ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY

By: Dan Blankenship
DAN BLANKENSHIP, CEO

Land Title Guarantee Company

Jessica Reed
Jessica Reed

COMMERCIAL CLOSING INSTRUCTIONS

TO:Land Title Guarantee Company

RE:**2301 WULFSOHN ROAD, GLENWOOD SPRINGS, CO 81601**

1. The Seller(s) and Buyer(s) listed below employ Land Title Guarantee Company (hereinafter referred to as Closing Agent) to act as closing and settlement agent in connection with the real property identified in title commitment No. **63014212**.
2. Closing Agent is authorized to prepare, obtain, deliver and record all documents (including if applicable the Warranty Deed), excluding preparation of legal documents, necessary to carry out the terms and conditions of the Contract by and between the undersigned with amendments and counter proposals attached. Closing Agent is authorized to act as Loan Closing Agent and, if required, as custodian for any lender selected under the terms of the contract.
3. Closing Agent is authorized to receive funds; and to disburse funds under the following conditions:
    a. All funds received are either available for immediate withdrawal as a matter of right from the financial institution in which funds have been deposited; or are available for immediate withdrawal as a consequence of an agreement of a financial institution in which the funds are to be deposited or a financial institution upon which the funds are to be drawn.
4. Seller(s) and Buyer(s) will furnish any additional information and documents required by Closing Agent which will be necessary to complete this transaction, and to comply with the provision of the Contract.
5. Closing Agent will prepare and deliver an accurate and detailed Closing Statement to Seller(s) and Buyer(s) at time of closing.
6. Nothing contained herein shall be construed to alter or supersede the Contract.
7. Should a default occur by either Seller(s) or Buyer(s), Closing Agent is authorized to return all documents, monies, and things of value to the depositing party and Closing Agent will be relieved from any further duty, responsibility or liability in connection with these instructions.
8. In the event of any conflicting demands made on the Closing Agent concerning these instructions, in the sole judgment of the Closing Agent, and at the election of the Closing Agent, Closing Agent may hold any monies, documents, and things of value until Closing Agent received mutual written instructions from Seller(s) and Buyer(s) or until a civil action shall have been finally concluded in a court of competent jurisdiction, determining the rights of all parties. In the alternative, Closing Agent may, at its discretion, at any time, commence a civil action to interplead any conflicting demands to a court of competent jurisdiction. Deposit with the court by the Closing Agent of all monies, documents, and other things of value concerning this transaction, shall relieve Closing Agent of all further liability and responsibility.
9. These closing instructions may be amended or terminated by written instructions from the Seller(s) and Buyer(s) to the Closing Agent.

ADDITIONAL PROVISIONS. (The following provisions have not been approved by the Colorado Real Estate Commission)

Seller and Borrower agree that the documents necessary for closing that require a notarization or acknowledgment may be notarized by a notary located outside of the State of Colorado through a process called "Remote Online Notarization ("RON"). The RON process utilizes an electronic online platform in which a notary will use real time audio/visual equipment to witness a party's electronic signature, and notarize it electronically from a remote location. If the parties elect to utilize RON to notarize closing documents, the role of the notary in the closing process will be limited to notarizing specific closing documents. If RON is utilized in this closing, the parties hereby authorize Closing Company to upload closing documents to the RON platform that is selected by the Closing Company, which documents could include personal private information; these documents could include but are not limited to deeds, deeds of trust, and affidavits. Once the closing documents are uploaded onto the RON platform, Closing Company is not responsible for the security or privacy of those uploaded documents.

APPROVED AND ACCEPTED: July 08, 2020

SELLER(S)

CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY

Jonathan Godes

By: _____

Jonathan Godes, Mayor Signed 07/07/20 at 02:26PM

BUYER(S)

ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY

By: _____

DAN BLANKENSHIP, CEO

Land Title Guarantee Company

Jessica Reed

_____

Jessica Reed

FOREIGN INVESTMENT IN REAL PROPERTY TAX ACT OF 1980
(26 U.S.C. 1445)("FIRPTA")

CERTIFICATION BY TRANSFEROR (ENTITY)
(Pursuant to Regulation C.F.R.1.1445-2(b)(2)(i))

To: **ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY** , (hereinafter referred to as the "Transferee",)

Section 1445 of the Internal Revenue Code provides that a transferee of a U. S. real property interest must withhold tax if the transferor is a foreign person. For U.S. tax purposes (including section 1445), the owner of a disregarded entity (which is legal title to a U.S. real property interest under local law) will be the transferor of the property and not the disregarded entity.

To inform the transferee that withholding of tax is not required upon the disposition of a U. S. real property interest, by **CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY**, hereinafter referred to as the transferor, the undersigned hereby certifies the following on behalf of the transferor:

1. The transferor is not a foreign corporation, foreign partnership, foreign trust, or foreign estate (as those items are defined in the Internal Revenue Code and Income Tax Regulation);
2. The transferor is not a disregarded entity as defined in section 1.1445-2(b)(iii);
3. The transferor's U.S. employer identification number is [redacted]; and
4. The tranferor's office address is:
   [redacted]
5. The transferor understands that this certification will be disclosed to the Internal Revenue Service by the transferee and that any false statement contained therein could be punished by fine, imprisonment, or both.
6. Under penalties of perjury I declare that I have examined this certification and to the best of my knowledge and belief it is true, correct and complete, and I further declare that I have authority to sign this document on behalf of the transferor (i.e. a responsible officer if a corporation, by a general partner if a partnership, and by a trustee or equivalent fiduciary of the case of a trust or estate).

All information required to be obtained in connection with document has been obtained from information supplied by the transferor to Land Title Guarantee Company. For privacy and security reasons, Land Title will retain this information. In the event you are contacted by the Internal Revenue Service concerning FIRPTA, please contact the Company immediately for a copy of this Affidavit which discloses the transferor's Tax Indentification Number.

Date: **07/08/2020**

CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY

By: Jonathan Godes

Jonathan Godes, Mayor Signed 07/07/20 at 02:26PM

Note:

1. If you have any questions or concerns arising from your obligation as transferor in regard to this tax, it is suggested that you immediately contact your local Internal Revenue Service office, attorney or accountant if you do not fully understand these regulations. More information, including the regulations promulgated under FIRPTA, is available at the website for the Internal Revenue Service, https://www.irs.gov/
2. The transferee is required to retain this certification until the end of the fifth taxable year following the taxable year in which the transfer takes place. The transferee must make this certification available to the Internal Revenue Service when requested in accordance with the requirements of 26 U.S.C 6001 and regulations thereunder.

Agreement for Taxes

It is hereby understood and agreed between the Buyer(s) and Seller(s) of the property known as: **2301 WULFSOHN ROAD, GLENWOOD SPRINGS, CO 81601**

☐ Other:

This adjustment shall be:

☒ A final settlement.

☐ Re-adjusted between the Buyer(s) and Seller(s) as soon as the taxes have been billed by the County Treasurer. If a re-adjustment is necessary, Land Title Guarantee Company will not make or be responsible for this re-adjustment.

It is further understood and agreed between the Buyer(s) and Seller(s) that:

☐ No governmental body taxing authority has certified an assessment lien to the County Treasurer for special improvements installed prior to the date of the Buyer's execution of the Agreement for Purchase.

☐ Special Taxing District Assessments being paid in annual installments are to be assumed by the Buyer(s), with current annual assessments in the amount of **$0.00**, with the total payoff amount of this assessment being **$0.00**. This assessment will be fully paid on _____.

Note: Land Title Guarantee Company and/or its underwriter assumes no responsibility or any liability for the adjustment of special taxes on assessments unless they are shown on the County Treasurer's Certificate of Taxes Due. Any adjustment shall be made between the Buyer's and Seller(s), if necessary, and Land Title Guarantee Company, or its underwriter will not make or be responsible for the re-adjustment or liability in connection therewith.

This Agreement made and executed this day of **July 8th, 2020**

Seller(s)

CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY

By: _____
Jonathan Godes, Mayor

Buyer(s)

ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY

By: Dan Blankenship
DAN BLANKENSHIP, CEO

Agreement for Taxes

It is hereby understood and agreed between the Buyer(s) and Seller(s) of the property known as: **2301 WULFSOHN ROAD, GLENWOOD SPRINGS, CO 81601**

☐ Other:

This adjustment shall be:

☒ A final settlement.

☐ Re-adjusted between the Buyer(s) and Seller(s) as soon as the taxes have been billed by the County Treasurer. If a re-adjustment is necessary, Land Title Guarantee Company will not make or be responsible for this re-adjustment.

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Seller(s)

CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY

By: Jonathan Godes
Jonathan Godes, Mayor Signed 07/07/20 at 02:26PM

Buyer(s)

ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY

By: _____
DAN BLANKENSHIP, CEO

Utility Agreement

Water and Sewer Escrow

At the closing of **2301 WULFSOHN ROAD, GLENWOOD SPRINGS, CO 81601** (Property Address) on **July 8th, 2020** (Date), by Land Title Guarantee Company, both the Buyer(s) and Seller(s) fully understand that Land Title Guarantee Company DOES NOT notify the telephone company, the electric and/or gas company(s), the cable company or the Seller's present insurance company to cancel or transfer to the new owners, any of the above.

IT IS THE SELLER(S) RESPONSIBILITY to call the gas and/or electric company for a final reading and to give them your forwarding address for the final bill. It is also the Seller(s) responsibility to notify your telephone company, cable company, trash company and your present insurance agent.

IT IS THE BUYER(S) RESPONSIBILITY to call the gas and/or electric company, giving them the personal information they may require for their records, the telephone company, the trash company and the cable company to put service into your name(s) with the correct mailing address, if different than the property just purchased.

The final reading of the metered water/sewer account or the proration of the standard bill is to be handled on **July 08, 2020.**

LAND TITLE GUARANTEE COMPANY is escrowing _____ 0 _____ from the Seller(s) and/or $ ___ 0 ___ from the Buyer(s).

The Parties hereto further agree to the following:

The undersigned Buyer(s) and Seller(s) of the property referenced above understand that Land Title Guarantee Company is escrowing for the final water and sewer charges. Upon receipt of the final bill for water and sewer, Land Title Guarantee Company will pay and refund any monies in excess of the final bill to the applicable party. Land Title Guarantee Company is hereby instructed to order the meter reading to be done on the day of closing unless specifically instructed to do otherwise by the undersigned parties. In the event the water and sewer charges exceed the escrowed amount, any additional charges are the responsibility of the Seller(s) and/or Buyer(s). Land Title Guarantee Company or its underwriter shall not make or be responsible for the additional charges. The Buyer(s) and Seller(s) further understand that the water/sewer billing was based on a verbal quote and/or written status letter from the sewer company. Land Title Guarantee Company or its underwriter assumes no responsibility or any liability in the event the figures were misquoted by the clerk at the water/sewer company or any mistakes made on the written status letter. Any adjustment shall be made between the Buyer(s) and Seller(s), if necessary, and Land Title Guarantee Company or its underwriter, will not make or be responsible for this re-adjustment or any liability in connection therewith.

FURTHER, Seller acknowledges that there [____] is [**X**] is not currently a formal or informal homeowners/landowners association and/or sub-association which may require periodic assessments and other fees as a result of this transaction. If there is an association and/or sub-association heretofore not known to the settlement agent and/or seller's agent, Land Title Guarantee Company shall escrow funds from seller pending receipt of a written status letter from the association. Land Title Guarantee Company is hereby instructed to pay the amount stated on said status letter.

In the event the homeowners'/landowners' association dues, assessments or fees exceed the escrowed amount, the additional charges are the responsibility of the Seller(s). Land Title Guarantee Company or its underwriter shall not make or be responsible for the additional charges.

If there is a formal or informal homeowners'/landowners' association involved and if that association has requested copies of the Buyer and Seller Settlement Statements as a requirement to transfer their records to the new owners, the undersigned hereby authorize Land Title Guarantee Company to deliver a copy of said statements to that association. Land Title Guarantee Company is hereby released of any liability in connection with same.

This Agreement was made and executed this day of **July 8th, 2020**

Seller:

CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY

By: _____

Jonathan Godes, Mayor

Buyer:

ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY

By: Dan Blankenship

DAN BLANKENSHIP, CEO

Utility Agreement

Water and Sewer Escrow

At the closing of **2301 WULFSOHN ROAD, GLENWOOD SPRINGS, CO 81601** (Property Address) on **July 8th, 2020** (Date), by Land Title Guarantee Company, both the Buyer(s) and Seller(s) fully understand that Land Title Guarantee Company DOES NOT notify the telephone company, the electric and/or gas company(s), the cable company or the Seller's present insurance company to cancel or transfer to the new owners, any of the above.

IT IS THE SELLER(S) RESPONSIBILITY to call the gas and/or electric company for a final reading and to give them your forwarding address for the final bill. It is also the Seller(s) responsibility to notify your telephone company, cable company, trash company and your present insurance agent.

IT IS THE BUYER(S) RESPONSIBILITY to call the gas and/or electric company, giving them the personal information they may require for their records, the telephone company, the trash company and the cable company to put service into your name(s) with the correct mailing address, if different than the property just purchased.

The final reading of the metered water/sewer account or the proration of the standard bill is to be handled on **July 08, 2020**.

LAND TITLE GUARANTEE COMPANY is escrowing _____ from the Seller(s) and/or $ _____ from the Buyer(s).

The Parties hereto further agree to the following:

The undersigned Buyer(s) and Seller(s) of the property referenced above understand that Land Title Guarantee Company is escrowing for the final water and sewer charges. Upon receipt of the final bill for water and sewer, Land Title Guarantee Company will pay and refund any monies in excess of the final bill to the applicable party. Land Title Guarantee Company is hereby instructed to order the meter reading to be done on the day of closing unless specifically instructed to do otherwise by the undersigned parties. In the event the water and sewer charges exceed the escrowed amount, any additional charges are the responsibility of the Seller(s) and/or Buyer(s). Land Title Guarantee Company or its underwriter shall not make or be responsible for the additional charges. The Buyer(s) and Seller(s) further understand that the water/sewer billing was based on a verbal quote and/or written status letter from the sewer company. Land Title Guarantee Company or its underwriter assumes no responsibility or any liability in the event the figures were misquoted by the clerk at the water/sewer company or any mistakes made on the written status letter. Any adjustment shall be made between the Buyer(s) and Seller(s), if necessary, and Land Title Guarantee Company or its underwriter, will not make or be responsible for this re-adjustment or any liability in connection therewith.

FURTHER, Seller acknowledges that there [____] is [**X**] is not currently a formal or informal homeowners/landowners association and/or sub-association which may require periodic assessments and other fees as a result of this transaction. If there is an association and/or sub-association heretofore not known to the settlement agent and/or seller's agent, Land Title Guarantee Company shall escrow funds from seller pending receipt of a written status letter from the association. Land Title Guarantee Company is hereby instructed to pay the amount stated on said status letter.

In the event the homeowners'/landowners' association dues, assessments or fees exceed the escrowed amount, the additional charges are the responsibility of the Seller(s). Land Title Guarantee Company or its underwriter shall not make or be responsible for the additional charges.

If there is a formal or informal homeowners'/landowners' association involved and if that association has requested copies of the Buyer and Seller Settlement Statements as a requirement to transfer their records to the new owners, the undersigned hereby authorize Land Title Guarantee Company to deliver a copy of said statements to that association. Land Title Guarantee Company is hereby released of any liability in connection with same.

This Agreement was made and executed this day of **July 8th, 2020**

Seller:

CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY

Jonathan Godes

By: _____

Jonathan Godes, Mayor Signed 07/07/20 at 02:26PM

Buyer:

ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY

By: _____

DAN BLANKENSHIP, CEO

DISCLOSURES

The undersigned hereby acknowledge that they understand and agree to the following provisions:

Laws Relating to Unclaimed Funds

All parties are hereby advised that checks issued by Land Title Guarantee Company ("Land Title") and not cashed by the payee are subject to laws of escheat and/or unclaimed property. Should Land Title transfer such funds to a state office, pursuant to such laws, Land Title shall be released from all further responsibility under this agreement and shall not be liable to any Party.

FDIC Limit Notice

The insurance coverage provided by the Federal Deposit Insurance Corporation protects a depositor up to cumulative maximum deposit of $250,000.00 for each insured financial institution. Ownership is determined by the deposit records of the financial institution and/or the records of the named custodian of any escrow accounts. Land Title and its underwriter assume no responsibility for nor will the undersigned hold same liable for any loss which arises from the fact that the amount of the above deposit may cause the aggregate amount of any individual depositor's accounts to exceed $250,000.00.

Funds Held by Land Title

Land Title shall deposit all funds received pursuant to any closing and settlement services separate and apart from the assets of the company, in an account designated as an escrow account or custodial account and so recognized by the depository institution in the name of Land Title as Escrow Agent (Escrow Account). Similar deposits from other customers conducting other real estate transactions are included in this Escrow Account. The majority of these funds are received at closing and on completion of the transaction, are disbursed for the benefit of the seller, buyer or in the case of a refinance, for the benefit of the owner.

Land Title will pay any and all costs associated with the use of the Escrow Account, but in order to help keep settlement costs and fees down, Land Title may arrange for the bank to provide it with a number of services at a reduced rate, or at no charge, or may earn interest on the Escrow Account balance. Interest earned, if any, shall be paid to Land Title. In no event will any such arrangement restrict or limit in any way the disbursement of the funds you deposit in accordance with the instructions given by you and the Statement of Settlement relating to your transaction.

The party for whose benefit the funds are disbursed (most often the seller or owner, in the case of a refinance) may elect to have a portion of the interest earned on the fiduciary funds in the Escrow Account paid to that party. If the seller or owner makes this election, please (i) inform Land Title immediately, (ii) check the box provided below on this form and (iii) complete an IRS Form W-9 (which will be provided by Land Title). It is important to know that the fiduciary funds cannot be placed in a separate interest bearing account for that party's benefit until Land Title is in receipt of all required forms. A non-refundable administrative fee of $50.00 will be collected by Land Title as compensation for processing the documentation, set up and transfer of funds to the separate account, maintaining of audit and reconcilliation records and coordinating the tax documentation.

Authorized and accepted this day of **July 8th, 2020**.

Seller(s):

CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY

By: _____

Jonathan Godes, Mayor

Buyer(s):

ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY

By: Dan Blankenship

DAN BLANKENSHIP, CEO

If the election is made to have a portion of the interest earned on the fiduciary funds in the Escrow Account paid to you, please check the appropriate box below.

- ☐ Seller hereby elects to have Seller's fiduciary funds invested and agrees to the administrative fee of $50.00.
- ☐ Buyer hereby elects to have Buyer's fiduciary funds invested and agrees to the administrative fee of $50.00.
- ☐ Owner (Refinance) hereby elects to have Owner's fiduciary funds invested and agrees to the administrative fee of $50.00.

DISCLOSURES

The undersigned hereby acknowledge that they understand and agree to the following provisions:

Laws Relating to Unclaimed Funds

All parties are hereby advised that checks issued by Land Title Guarantee Company ("Land Title") and not cashed by the payee are subject to laws of escheat and/or unclaimed property. Should Land Title transfer such funds to a state office, pursuant to such laws, Land Title shall be released from all further responsibility under this agreement and shall not be liable to any Party.

FDIC Limit Notice

The insurance coverage provided by the Federal Deposit Insurance Corporation protects a depositor up to cumulative maximum deposit of $250,000.00 for each insured financial institution. Ownership is determined by the deposit records of the financial institution and/or the records of the named custodian of any escrow accounts. Land Title and its underwriter assume no responsibility for nor will the undersigned hold same liable for any loss which arises from the fact that the amount of the above deposit may cause the aggregate amount of any individual depositor's accounts to exceed $250,000.00.

Funds Held by Land Title

Land Title shall deposit all funds received pursuant to any closing and settlement services separate and apart from the assets of the company, in an account designated as an escrow account or custodial account and so recognized by the depository institution in the name of Land Title as Escrow Agent (Escrow Account). Similar deposits from other customers conducting other real estate transactions are included in this Escrow Account. The majority of these funds are received at closing and on completion of the transaction, are disbursed for the benefit of the seller, buyer or in the case of a refinance, for the benefit of the owner.

Land Title will pay any and all costs associated with the use of the Escrow Account, but in order to help keep settlement costs and fees down, Land Title may arrange for the bank to provide it with a number of services at a reduced rate, or at no charge, or may earn interest on the Escrow Account balance. Interest earned, if any, shall be paid to Land Title. In no event will any such arrangement restrict or limit in any way the disbursement of the funds you deposit in accordance with the instructions given by you and the Statement of Settlement relating to your transaction.

The party for whose benefit the funds are disbursed (most often the seller or owner, in the case of a refinance) may elect to have a portion of the interest earned on the fiduciary funds in the Escrow Account paid to that party. If the seller or owner makes this election, please (i) inform Land Title immediately, (ii) check the box provided below on this form and (iii) complete an IRS Form W-9 (which will be provided by Land Title). It is important to know that the fiduciary funds cannot be placed in a separate interest bearing account for that party's benefit until Land Title is in receipt of all required forms. A non-refundable administrative fee of $50.00 will be collected by Land Title as compensation for processing the documentation, set up and transfer of funds to the separate account, maintaining of audit and reconcilliation records and coordinating the tax documentation.

Authorized and accepted this day of **July 8th, 2020**.

Seller(s):

CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY

Jonathan Godes

By: _____

Jonathan Godes, Mayor Signed 07/07/20 at 02:26PM

Buyer(s):

ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY

By: _____

DAN BLANKENSHIP, CEO

If the election is made to have a portion of the interest earned on the fiduciary funds in the Escrow Account paid to you, please check the appropriate box below.

- ☐ Seller hereby elects to have Seller's fiduciary funds invested and agrees to the administrative fee of $50.00.
- ☐ Buyer hereby elects to have Buyer's fiduciary funds invested and agrees to the administrative fee of $50.00.
- ☐ Owner (Refinance) hereby elects to have Owner's fiduciary funds invested and agrees to the administrative fee of $50.00.

Approval of Deed, Bill of Sale and Tenancy

The undersigned **ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY** Buyer(s) hereby acknowledge that they intend to take title to the following described property:

PARCEL A:

LOT A (AMENDED), FIRST AMENDED MINOR SUBDIVISION PLAT OF GLENWOOD SPRINGS MUNICIPAL OPERATIONS CENTER, IN THE CITY OF GLENWOOD SPRINGS, COUNTY OF GARFIELD, STATE OF COLORADO.

PARCEL B:

THE ENTIRE PARCEL IDENTIFIED AS "MOC DRIVEWAY" IN THE SUBDIVISION PLAT OF GLENWOOD MEADOWS NO. 1, RECORDED AUGUST 9, 2004 AT RECEPTION NO. 657438 IN THE GARFIELD COUNTY CLERK AND RECORDERS OFFICE, ALSO LYING IN THE SW1/4 SECTION 5, TOWNSHIP 6 SOUTH, RANGE 89 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF GARFIELD, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT AN ANGLE POINT ON SAID "MOC DRIVEWAY", BEING A FOUND 5/8 REBAR AND 1.25" YELLOW PLASTIC CAP MARKED LS 38145 "V3", WHENCE THE COMMON SECTION CORNER FOR SECTIONS 5, 6, 7, AND 8 OF TOWNSHIP 6 SOUTH, RANGE 89 WEST, BEING A FOUND 2.5" ALUMINUM PIPE AND 3.25" ALUMINUM DOI/USBLM CAP PROPERLY MARKED AND DATED 1995 BEARS S69° 40' 34"W A DISTANCE OF 1079.31', ALSO BEING THE BASIS OF BEARINGS;

THENCE ALONG THE BOUNDARY LINE OF SAID "MOC DRIVEWAY" THE FOLLOWING SEVEN (7) COURSES;

1. 82.30 FEET ALONG THE ARC OF NON-TANGENT CURVE TO THE RIGHT, HAVING A RADIUS OF 1260.00 FEET, A CENTRAL ANGLE OF 3°44'33", THE CHORD OF WHICH BEARS N58°16'03"E A DISTANCE OF 82.29 FEET TO A FOUND 5/8" REBAR AND 1.5" ALUMINUM CAP MARKED LS 36580;
2. N63°26'47"E A DISTANCE OF 326.70 FEET;
3. 50.91 FEET ALONG THE ARC OF A CURVE TO THE LEFT, HAVING A RADIUS OF 67.50 FEET, A CENTRAL ANGLE OF 43°12'59", THE CHORD OF WHICH BEARS N41°50'17"E A DISTANCE OF 49.71 FEET;
4. S70°03'24"E A DISTANCE OF 70.00 FEET;
5. 45.65 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE RIGHT, HAVING A RADIUS OF 137.47 FEET, A CENTRAL ANGLE OF 19°01'29", THE CHORD OF WHICH BEARS S29°35'29"W A DISTANCE OF 45.44 FEET;
6. 58.42' FEET ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 137.47 FEET, A CENTRAL ANGLE OF 24°20'50", THE CHORD OF WHICH BEARS S51°16'38"W A DISTANCE OF 57.98 FEET;
7. S63°26'47"W A DISTANCE OF 283.44 FEET TO THE POINT OF BEGINNING.

LEGAL DESCRIPTION CREATED BY:
JOSHUA L. WILSON
COLORADO PLS NO. 38417
FOR, AND ON BEHALF OF SGM INC.

As ☐ **Joint Tenants** ☐ **Tenants in Common** ☒ **Other ENTITY**

Whose mailing address is:**2307 WULFSHON ROAD, Glenwood Springs, CO 81601**

They have reviewed the **GENERAL WARRANTY DEED** and **Bill of Sale** dated **July 8th, 2020** from **CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY** to **ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY** and by their signature hereto approve the deed and confirm that it correctly reflects the choice of tenancy, if applicable.

Date: **July 08, 2020**

ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY

By: Dan Blankenship
DAN BLANKENSHIP, CEO

Purchaser's Final Affidavit and Agreement

File No: **63014212**

RE: Real property and improvements located at: **2301 WULFSOHN ROAD, GLENWOOD SPRINGS, CO 81601**, in the County of **Garfield** State of Colorado, and more particularly described in the Commitment issued under the above Commitment No. **63014212** (the "Property").

See attached "Exhibit A"

The Purchaser (the "Purchaser") of the Property, hereby makes the following representations to Land Title Guarantee Company, and any title insurance company for which the Company is agent (collectively the "Company"), with full knowledge and intent that the Company shall rely thereon:

1. The Purchaser has not contracted with, or hired, any person or contractor to furnish services, labor or materials, including any person to furnish architectural or surveying work, for the construction, remodeling, renovations, repair or other maintenance, of improvements on the Property, within the last 120 days.
2. If any person or contractor, within the last 120 days, has furnished services, labor or materials, including any person who has furnished architectural or surveying work, for the construction, remodeling, renovations, repair or other maintenance of improvements on the Property, at the request or on behalf, of the Purchaser, such person or contractor has been paid in full. A complete description of such work or service with all payment information is attached.
3. The Purchaser has not entered into any contract or other agreement creating any right, interest or lien on the Property, or whereby the Property or any portion thereof has been leased. (If all or a portion of the Property is in possession of tenants, or under lease, attach a detailed rent roll with copies of the lease agreement(s)).
4. The Purchaser has taken, or will take, possession of the premises on **07/08/2020**.
5. The full purchase price has been paid by the Purchaser to Seller.

In light of the foregoing facts and representations, the Purchaser, in consideration of the issuance by the Company of a policy of Title Insurance covering Property, in the form set out in the Commitment, hereby promises, covenants and agrees to hold harmless, protect and indemnify the Company, from and against those liabilities, losses, damages, expenses and charges, including but not limited to reasonable attorneys' fees (including attorney's fees in the enforcement of this agreement) and expenses of litigation which the Company may incur, arising out of any inaccuracies in the above representations.

ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY

By: Dan Blankenship

DAN BLANKENSHIP, CEO

Exhibit A

PARCEL A:

LOT A (AMENDED), FIRST AMENDED MINOR SUBDIVISION PLAT OF GLENWOOD SPRINGS MUNICIPAL OPERATIONS CENTER, IN THE CITY OF GLENWOOD SPRINGS, COUNTY OF GARFIELD, STATE OF COLORADO.

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BEGINNING AT AN ANGLE POINT ON SAID "MOC DRIVEWAY", BEING A FOUND 5/8 REBAR AND 1.25" YELLOW PLASTIC CAP MARKED LS 38145 "V3", WHENCE THE COMMON SECTION CORNER FOR SECTIONS 5, 6, 7, AND 8 OF TOWNSHIP 6 SOUTH, RANGE 89 WEST, BEING A FOUND 2.5" ALUMINUM PIPE AND 3.25" ALUMINUM DOI/USBLM CAP PROPERLY MARKED AND DATED 1995 BEARS S69° 40' 34"W A DISTANCE OF 1079.31', ALSO BEING THE BASIS OF BEARINGS;

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LEGAL DESCRIPTION CREATED BY:
JOSHUA L. WILSON
COLORADO PLS NO. 38417
FOR, AND ON BEHALF OF SGM INC.

Owner's Final Affidavit and Agreement
(Sale and Refinance)

Commitment No: **63014212** Escrow No. **63014212**

RE: Real property and improvements located at: **2301 WULFSOHN ROAD, GLENWOOD SPRINGS, CO 81601**, in the County of **Garfield**, State of Colorado, more particularly described in the Commitment (the "Property")

See attached "Exhibit B"

The Owner, as Seller/Owner/Borrower (the "Owner") of the Property, hereby makes the representations set out in the attached Exhibit A to Land Title Guarantee Company, and any title insurance company for which the Company is agent for such title insurance company (collectively the "Company"), with full knowledge and intent that the Company shall rely thereon.

In light of the facts and representations made, the owner, in consideration of the issuance by the Company of a policy of Title Insurance covering the Property in the manner set out in the Commitment, hereby promises, covenants and agrees to hold harmless, protect and indemnify the Company, from and against those liabilities, losses, damages, expenses and charges, including but not limited to reasonable attorneys' fees (including attorney's fees in the enforcement of this agreement) and expenses of litigation which the Company may incur, arising out of any inaccuracies in the above representations.

CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY

By: Jonathan Godes

Jonathan Godes, Mayor Signed 07/07/20 at 02:26PM

Exhibit A to Owner's Affidavit and Agreement

(A) **General Representations of Owner as to liens, encumbrances, assessments, leases and tenancies**

1. There has been no work of any kind, including architectural services, contracted for or otherwise ordered by the Owner, within the last 120 days, paid or unpaid, which could establish a priority for any future mechanics' lien claimant.
2. If any work has been done, those certain persons, firms and corporations, including the General Contractors, and all subcontractors hired by or under contract with the Owner who have furnished services, labor or materials, according to plans and specifications or otherwise, used in connection with the construction of improvements on the Property, have been paid in full. The Owner is required to attach a description of the work done with the corresponding payment information.
3. All improvements constructed on the Property were completed on or before **July 8th, 2020**.
4. No claims have been made against the Owner, nor is any suit now pending against the Owner, on behalf of any contractor, subcontractor; laborer or material man, nor any other suit of any kind, and that no chattel mortgage, conditional bills of sale, security agreements or financing statements have been made by the Owner.
5. Except as shown in the Commitment, there are no liens or encumbrances of any kind, recorded or unrecorded, affecting the Property.
6. All fees, assessments and charges of the homeowners association having jurisdiction over the Property, if applicable, are current at this time.
7. There are no existing leases, tenancies or possessory rights affecting the Property. (if all or a portion of the Property is in possession of tenants, or under lease, attach a detailed rent roll with copies of the lease agreement(s) or other documents evidencing the leases, tenancies or possessory rights).
8. If there are existing leases, tenancies or possessory rights, as listed in A7 above, none of the leases, tenancies or possessory rights contain an option to purchase, or a right of first refusal or similar type rights (if there are such rights, itemize each specific right and the document creating such rights at the end of this Exhibit A).
9. To the best of Owner's knowledge and belief, the Owner confirms that there have been no violations of any covenants, conditions or restrictions contained in any document shown in the Commitment, including but not limited to covenants, conditions or restrictions which may give rise to (i) a private charge or assessment; (ii) an option to purchase; (iii) a right of first refusal; (iv) a right of prior approval of a future purchaser or occupant, or (iv) any obligations of any type to perform maintenance, repair, or remediation on the Land.

(B) **Representations as to payoff of existing loans**

1. To complete the transaction, certain loans, which have been made to the Owner and secured by promissory notes and deeds of trust against the Property (collectively the "Loans"), must be paid off and the Property released from the Loans.
2. The Company has obtained payoff amounts from the holders of the Loans (the "Payoff Amounts") and has relied on such Payoff Amounts to prepare the Owner's Statement of Settlement (the "Statement of Settlement").
3. The Owner represents to the Company that in the event the Payoff Amounts relied on by the Company were inaccurate or incorrect the Owner shall immediately undertake to repay the Company any and all overages the Owner received as result of such inaccuracy or error. The Owner hereby promises, covenants and agrees to hold harmless protect and indemnify the Company from and against those liabilities losses damages expenses and charges including but not limited to reasonable attorneys' fees incurred in the enforcement of this agreement and the expenses of litigation that the Company may incur arising out of any errors or inaccuracies in the Statement of Settlement.
4. The holders of the Loans have advised the Company that the Payoff Amounts are subject to final audit and that the payoff Amounts may change, with the result that additional funds may be demanded to ensure a final payoff and to secure the release of the Property from the Loans (the "Additional Funds").
5. Should any one or more of the holders of the Loans demand Additional Funds, the Owner, on request by the Company, undertakes to make immediate payment to the company of the Additional Funds.
6. In addition, if any one or more of the Loans provides for an open line of credit or a revolving line of credit, the Owner affirms that:
    (a) The Owner has not drawn additional funds from the line of credit since the date of the payoff statement from the lender to the Company.
    (b) If the Owner has made additional draws of the line of credit, the draws were made on _____ in the amount of $_____.
    (c) The Owner undertakes not to make any further draws on the open line of credit or a revolving line of credit after the date of this Payoff Indemnity and Agreement.
    (d) The Owner has requested that the holders of the Loans close the open line of credit or revolving line of credit accounts.
7. The Owner has not taken out any loans against the Property other than those shown in the Commitment.

INITIALS: Seller(s): JG _____ _____

Exhibit B

PARCEL A:

LOT A (AMENDED), FIRST AMENDED MINOR SUBDIVISION PLAT OF GLENWOOD SPRINGS MUNICIPAL OPERATIONS CENTER, IN THE CITY OF GLENWOOD SPRINGS, COUNTY OF GARFIELD, STATE OF COLORADO.

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LEGAL DESCRIPTION CREATED BY:
JOSHUA L. WILSON
COLORADO PLS NO. 38417
FOR, AND ON BEHALF OF SGM INC.

938100 07/09/2020 09:12:45 AM Page 1 of 4
Jean Alberico, Garfield County, Colorado
Rec Fee: $28.00 Doc Fee: $126.00 eRecorded

DF $126-

GENERAL WARRANTY DEED

THIS DEED is dated July 8, 2020 and is made between CITY OF GLENWOOD SPRINGS, a Colorado Home-Rule Municipality, the "Grantor," and ROARING FORK TRANSPORTATION AUTHORITY, a Colorado Regional Transportation Authority a regional transportation authority and a political subdivision of the State of Colorado the "Grantee," whose legal address is 2307 Wulfsohn Road, Glenwood Springs, CO, 81601 County of Garfield and State of Colorado.

WITNESS, that the Grantor, for and in consideration of the sum of One Million Two Hundred Sixty Thousand and 00/100 DOLLARS, ($1,260,000.00), the receipt and sufficiency of which is hereby acknowledged, hereby grants, bargains, sells, conveys and confirms unto the Grantee and the Grantee's heirs and assigns forever, all the real property, together with any improvements thereon, located in the County of Garfield and State of Colorado, described on **Exhibit A** attached hereto and incorporated herein by this reference.

also known by street address as: 2301 WULFSOHN ROAD, GLENWOOD SPRINGS, CO 81601
and assessor's schedule or parcel number:

TOGETHER with all and singular the hereditaments and appurtenances thereunto belonging, or in anywise appertaining, the reversions, remainders, rents, issues and profits thereof, and all the estate, right, title, interest, claim and demand whatsoever of the Grantor, either in law or equity, of, in and to the above bargained premises, with the hereditaments and appurtenances;

TO HAVE AND TO HOLD the said premises above bargained and described, with the appurtenances, unto the Grantee and the Grantee's heirs and assigns forever.

The Grantor, for itself and its successors and assigns, does covenant, grant, bargain, and agree to and with the Grantee, and the Grantee's heirs and assigns: that at the time of the ensealing and delivery of these presents, the Grantor is well seized of the premises above described; has good, sure, perfect, absolute and indefeasible estate of inheritance, in law and in fee simple; and has good right, full power and lawful authority to grant, bargain, sell and convey the same in manner and form as aforesaid; and that the same are free and clear from all former and other grants, bargains, sales, liens, taxes, assessments, encumbrances and restrictions of whatever kind or nature soever, except and subject to the following matters:

1. Permitted Exceptions as set forth on **Exhibit B** attached hereto and incorporated herein by this reference.
2. The easement reserved herein.

The Grantor hereby reserves a permanent, non-exclusive easement over, under, on, upon, through and across the property described as "Parcel B" in **Exhibit A** for purposes of ingress and egress to City of Glenwood Springs Waste Water Treatment Plant; above ground debris flow mitigation and surface water drainage systems; and the installation, repair, replacement and maintenance of underground utilities located in the easement as of the date of this reservation and utilities serving City-owned facilities. Grantor shall provide not less than thirty (30) days' notice to Grantee of any proposed construction activity within the

easement unless the construction activity is in response to an emergency and 30 days' notice is not possible. In that case, notice will be provided to the Grantee as soon as practicable. Grantor's use of the easement shall in no way hinder or prevent Grantee's proper and reasonable use and enjoyment of Parcel B, including Grantee's unencumbered rights to ingress and egress. Grantor hereby covenants to maintain the property affected by Grantor's exercise of the easement rights reserved herein, including the costs of mitigation, remediation, revegetation, and landscaping. In the exercise of easement rights hereby reserved, Grantor may, at its own expense and with reasonable prior notice to Grantee, relocate existing fences and other removable above-ground fixtures which interfere with the efficient use of the easement.

And the Grantor shall and will WARRANT THE TITLE AND DEFEND the above described premises, *but not any adjoining vacated street or alley, or other right-of-way that adjoins the real property*, if any, in the quiet and peaceable possession of the Grantee and the heirs and assigns of the Grantee, against all and every person or persons claiming the whole or any part thereof.

IN WITNESS WHEREOF, the Grantor has caused its corporate name to be hereunto subscribed by its president, vice-president, or other head officer, and its corporate seal to be affixed, attested by its secretary or other appropriate officer, on the date set forth above.

Signed this 8th day of July 2020.

CITY OF GLENWOOD SPRINGS,
a Colorado Home-Rule Municipality

By: _____
Jonathan Godes, Mayor

STATE OF COLORADO)
) ss.
County of Garfield)

The foregoing instrument was acknowledged before me this 8th day of July 2020, by Jonathan Godes as Mayor of the City of Glenwood Springs, Grantor.

Witness my hand and official seal.
My commission expires: 9/6/2020

_____
Notary Public

JESSICA REED
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID #19994021384
My Commission Expires September 8, 2020

EXHIBIT A
LEGAL DESCRIPTION

PARCEL A:

LOT A (AMENDED), FIRST AMENDED MINOR SUBDIVISION PLAT OF GLENWOOD SPRINGS MUNICIPAL OPERATIONS CENTER, IN THE CITY OF GLENWOOD SPRINGS, COUNTY OF GARFIELD, STATE OF COLORADO.

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3. 50.91 FEET ALONG THE ARC OF A CURVE TO THE LEFT, HAVING A RADIUS OF 67.50 FEET, A CENTRAL ANGLE OF 43°12'59", THE CHORD OF WHICH BEARS N41°50'17"E A DISTANCE OF 49.71 FEET;

4. S70°03'24"E A DISTANCE OF 70.00 FEET;

5. 45.65 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE RIGHT, HAVING A RADIUS OF 137.47 FEET, A CENTRAL ANGLE OF 19°01'29", THE CHORD OF WHICH BEARS S29°35'29"W A DISTANCE OF 45.44 FEET;

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7. S63°26'47"W A DISTANCE OF 283.44 FEET TO THE POINT OF BEGINNING.

LEGAL DESCRIPTION CREATED BY:
JOSHUA L. WILSON
COLORADO PLS NO. 38417
FOR, AND ON BEHALF OF SGM INC

EXHIBIT B
PERMITTED EXCEPTIONS

1. EXISTING LEASES AND TENANCIES, IF ANY.

2. RIGHT OF PROPRIETOR OF A VEIN OR LODE TO EXTRACT AND REMOVE HIS ORE THEREFROM SHOULD THE SAME BE FOUND TO PENETRATE OR INTERSECT THE PREMISES AS RESERVED IN UNITED STATES PATENT RECORDED OCTOBER 26, 1896, IN BOOK 12 AT PAGE 440.

3. RIGHT OF WAY FOR DITCHES OR CANALS CONSTRUCTED BY THE AUTHORITY OF THE UNITED STATES AS RESERVED IN UNITED STATES PATENT RECORDED OCTOBER 26, 1896, IN BOOK 12 AT PAGE 440.

4. RIGHT OF PROPRIETOR OF A VEIN OR LODE TO EXTRACT AND REMOVE HIS ORE THEREFROM SHOULD THE SAME BE FOUND TO PENETRATE OR INTERSECT THE PREMISES AS RESERVED IN UNITED STATES PATENT RECORDED SEPTEMBER 30, 1949, IN BOOK 245 AT PAGE 270.

5. EASEMENTS AS GRANTED TO PUBLIC SERVICE COMPANY OF COLORADO IN INSTRUMENTS RECORDED OCTOBER 17, 1966 IN BOOK 379 AT PAGE 400 AND RECORDED FEBRUARY 13, 1967 IN BOOK 382 AT PAGE 181.

6. TERMS, CONDITIONS AND PROVISIONS OF THAT CERTAIN MUNICIPAL OPERATIONS FACILITY SITE ACQUISITION AGREEMENT, DATED DECEMBER 27, 1999 AND RECORDED July 8, 2020 AT RECEPTION NO. 938095 AND AS EVIDENCED BY DEED RECORDED FEBRUARY 01, 2000 IN BOOK 1171 AT PAGE 187.

7. TERMS, CONDITIONS AND PROVISIONS OF EASEMENT RECORDED FEBRUARY 01, 2000 IN BOOK 1171 AT PAGE 191.

8. ORDINANCE NO. 5, SERIES OF 2000, PROVIDING FOR ANNEXATION RECORDED MARCH 21, 2000 UNDER RECEPTION NO. 560886 AND CORRECTED BY INSTRUMENT RECORDED MAY 23, 2001 UNDER RECEPTION NO. 581407.

9. EASEMENTS ON THE PLAT OF GLENWOOD SPRINGS MUNICIPAL OPERATIONS CENTER MINOR SUBDIVISION RECORDED NOVEMBER 07, 2002 UNDER RECEPTION NO. 614253.

10. EASEMENTS, CONDITIONS, COVENANTS, RESTRICTIONS, RESERVATIONS AND NOTES ON THE PLAT OF MINOR SUBDIVISION PLAT OF GLENWOOD MEADOWS NO. 1 RECORDED AUGUST 09, 2004 UNDER RECEPTION NO. 657438.

11. EASEMENTS, CONDITIONS, COVENANTS, RESTRICTIONS, RESERVATIONS AND NOTES ON THE PLAT OF FIRST AMENDED MINOR SUBDIVISION PLAT OF GLENNWOOD SPRINGS MUNICIPAL OPERATIONS CENTER RECORDED JUNE 25, 2020 UNDER RECEPTION NO. 937346.\

938095 07/08/2020 04:23:07 PM Page 1 of 8
Jean Alberico, Garfield County, Colorado
Rec Fee: $48.00 Doc Fee: $0.00 eRecorded

MUNICIPAL OPERATIONS FACILITY
SITE ACQUISITION AGREEMENT

THIS AGREEMENT is made and entered into as of December 17, 1999, by and between GLENWOOD MEADOWS, LLC, a Colorado limited liability company (hereinafter "GM"), and the CITY OF GLENWOOD SPRINGS, a Colorado home-rule municipality (hereinafter "City");

WHEREAS, GM is the owner of certain property located in Garfield County, Colorado, commonly known as the Wulfsohn Ranch (hereinafter "Wulfsohn Ranch" or "Wulfsohn property"); and

WHEREAS, GM is the owner of various water rights decreed to the Atkinson Canal, the headgate for which is generally located as described in the decree entered September 7, 1976, in Case No. W-2910 (Water Division No. 5), which water rights, Atkinson Canal and existing lateral ditches are used to provide irrigation water to irrigated portions of the Wulfsohn Ranch ("Irrigated Acres"); and

WHEREAS, Prior hereto, GM conveyed certain lands generally located on the eastern portion of the Wulfsohn Ranch to the City for the City's development of a Community Center site (hereafter, the "Community Center Site") situate on both Irrigated Acres and certain non-Irrigated Acres; and

WHEREAS, the City now desires and intends to acquire approximately (but no less than) twenty-five (25) acres of non-Irrigated Lands located in the western portion of the Wulfsohn Ranch from GM for the purpose of developing a site which will satisfy the City's need to re-locate its existing municipal operations center (hereafter, the "MOC Site") in a configuration and generally as described by Exhibit A attached hereto and by this reference incorporated herein; and

WHEREAS, the City and GM have agreed that GM shall accept, as consideration for conveyance of the MOC Site to the City, a credit against future water and sewer system improvement fees (hereafter, the "Fee Credits"); and

WHEREAS, the City and GM have (i) agreed upon the values to be attributed to the land comprising the MOC Site and the Fee Credits, and (ii) engaged in negotiations concerning the City's intended acquisition, location and future uses of the MOC Site land on the Wulfsohn; and

WHEREAS, GM has agreed, as additional consideration for the Fee Credits and other benefits provided to GM hereunder, to convey to the City, by boundary adjustment or other legal process acceptable to both parties hereto, approximately one (1) acre of land contiguous to and directly west of the western boundary of the Community Center property for the purpose of the City's construction of an access road to and from the Midland Avenue Alternate Route and said Community Center; the precise dimensions of which conveyance shall be established by survey acceptable to both parties within thirty (30) days of the date hereof; and

WHEREAS, on December 2, 1999 the City Council of the City of Glenwood Springs, Colorado did determine that the City shall enter into this Agreement for the purposes of acquiring the MOC Site; and

WHEREAS, the City and GM agree to cooperate with and join in the subdivision, surveying, utility extension and other efforts with respect to said property comprising the MOC Site; and

WHEREAS, the parties desire to set forth herein their agreement concerning the conveyance (i) from GM to the City of that portion of the Wulfsohn Ranch required for the MOC Site, (ii) from the City to GM of the Fee Credits, and (iii) related matters.

NOW, THEREFORE, for and in consideration of the above recitals, the mutual covenants and agreements contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, GM and the City agree as follows:

1. Conveyance of MOC Site Property. Upon closing of these premises at a mutually agreeable date and time between the date hereof and March 1, 2000 (subject to the provisions of Article 5 hereinbelow), at the offices of Land Title Guarantee Company located at 817 Colorado Avenue, Glenwood Springs, Colorado, the following shall occur:

A. GM shall convey by Special Warranty Deed to the City with a surveyed legal description reflecting that portion of the Wulfsohn Ranch described upon Exhibit A as annexed hereto. Said conveyance does not include any water or water rights which are presently owned by GM. Said conveyance shall be subject to all matters of public record affecting the subject property as well as the following additional matters:

(i) GM shall reserve from the conveyance to the City a debris flow drainage easement, for the benefit of GM and the City, for the sole and exclusive purpose of directing and mitigating debris flows from other portions of the Wulfsohn Ranch; the precise location and dimensions of which debris flow drainage easement to be determined at a later date and subject to the approval of the City, which approval shall not be unreasonably withheld.

2. Transfer of Fee Credits. The City shall convey by Bill of Sale or other appropriate instrument, acceptable to GM, the Fee Credits. The parties hereby agree that such Fee Credits do not include the costs of water and sewer line extension to GM's property or in any manner affect GM's obligations to pay a prorated share of the line extension costs incurred by the City under applicable cost recovery programs. The Fee Credit transfer shall consist of One hundred thirty-five (135) City water system improvement fee credits and One hundred thirty-five City sewer system improvement fee credits (the total value of the 135 water and sewer system improvement fee credits is deemed to represent $723,651.00 based upon the City's anticipated Year 2000 charges – See attached Schedule of Fees set forth on Exhibit B hereto). The conveyance of the Fee Credits shall inherently permit GM to access the City's sewer and water systems, regardless of the status of annexation of the remainder of the Wulfsohn property. In no event shall GM be permitted to exercise any of the rights represented by the Fee Credits to serve development of property with an elevation in excess of 6,000 feet. GM may, upon reasonable prior written notice to City, exercise its right to access the City's sewer and water system for purposes of utilizing the Fee Credits at any time following the closing of the conveyance of the MOC Site to the City; provided, however, that in the event the City has not, prior to receipt of GM's written notice of intent to exercise, extended the existing water and sewer service lines to serve the needs of the MOC

Site, the City shall not be obligated to extend the existing water and sewer service lines upon receipt of such written notice from GM. Any extension of the City's water and sewer service lines required by GM to exercise the Fee Credits described hereunder shall be at the sole cost and expense of GM, whereupon GM shall be entitled to proportionate cost recovery and recapture rights from the City or future third party developers who may access the extended service lines.

3. Utility Easement. Upon the closing of the transactions set forth herein, GM shall deliver to the City a fully executed non-exclusive easement across GM's property for the purposes of permitting the City to extend its water, sewer, electric, gas, telephone and any other applicable utility lines from the existing terminus of said lines at or near the Community Center Property to the City's MOC Site. Said easement shall be adjacent to the City's Midland Avenue Alternate Route right-of-way. The easement shall be thirty (30) feet in width. GM and the City agree that the City shall not utilize the easement for permanent above-ground utilities, except that the City may, with the approval of GM, which approval shall not be unreasonably withheld, locate such above ground structures which are a necessary adjunct to the utility services within the easement (such as transformer stations and lift or pump stations). GM shall reserve from the easement right to use such easement for legal and physical access of vehicles, pedestrians and utilities to and from its Wulfsohn property and the Midland Avenue Alternate Route. GM shall also have the right to create multiple surface uses within said utility easement, including detention structures, signage and landscaping in a manner which does not unreasonably interfere with the City's utility uses. In consideration for the granting of the utility easement by GM, the City hereby agrees that if and when service lines are developed, such lines shall be sufficient to satisfy future development needs of the Wulfsohn property under current Master Land Use Plan designated uses.

4. Costs. Each party shall pay an equal amount of (i) the costs of obtaining a survey of the MOC Site and (ii) any closing costs associated with the transactions contemplated hereby.

Each party hereto shall pay all costs of recording such instruments received by that party, including any deeds or grants of easement, and each party hereto shall pay an equal amount of the costs of recording other closing documents required by this Agreement, including any covenants, and shall undertake all other reasonable steps necessary to effectuate the intent of this Agreement, specifically including, but without limitation whatsoever, (i) the recordation of any plats required as a result of the subdivision of the MOC Site from the remainder of the Wulfsohn ranch as may be required by subdivision regulations of Garfield County, Colorado, and (ii) the filing of appropriate maps and other documents with the Garfield County Assessor's office.

With respect to the lands conveyed by GM to the City, GM shall pay the premium for and deliver to the City, within ten (10) days of the execution hereof, a commitment for title insurance and copies of any instruments listed as exceptions to tile insurance coverage. Within a reasonable time after closing, GM shall pay the costs of and deliver to the City an ALTA Form of title insurance policy based upon the aforementioned previously issued title insurance commitment. The amount of title insurance shall be in an amount equal to the valuation of the Fee Credits set forth by Article 2, hereinabove.

Real property taxes shall be prorated to the day of closing based upon the most recent

mill levy and most recent assessment and shall be determined by the ratio the MOC Site property bears to the Wulfsohn Ranch as a whole (not including the property comprising the Community Center site).

5. Land Use Contingency. This Agreement is expressly contingent upon the legal subdivision of the MOC Site from the remainder of the Wulfsohn Ranch owned by GM. The City hereby agrees to undertake the application and prosecution of such process as shall be necessary to effectuate the legal subdivision of the MOC Site through Garfield County, Colorado. GM agrees that it shall fully cooperate with the City in the necessary execution of applications and related matters with regard to such subdivision. In the event the City is unable to secure a subdivision of the MOC Site from the remainder of the Wulfsohn property on or before March 1, 2000, the parties shall either (i) extend the closing date for these transaction for a reasonable time not to exceed three months in order that the City may continue its prosecution of the subject application, and/or (ii) enter negotiations regarding the size and configuration of the MOC Site in an effort to permit the legal conveyance of the same to the City.

6. Non-Interference with Agricultural Operations. The City agrees, for itself and its agents, employees, contractors, subcontractors and material suppliers, to (A) keep construction activity for the MOC Site project within the MOC Site and utility easement; and (B) ensure that GM, its tenants and lessees will have access to the Wulfsohn Ranch during work on the MOC Site.

7. Fencing. To the extent possible, the parties hereto agree to maintain such existing fencing between the MOC Site, the utility easement and the remainder of the Wulfsohn Ranch. Prior to commencement of any work on the MOC Site, the City shall take all steps reasonably necessary to secure the MOC Site property from either (i) the agricultural activities of the adjacent remainder of the Wulfsohn Ranch and/or (ii) GM's development activities on the remainder of the Wulfsohn Ranch. After completion of the MOC Site, the City at its expense shall maintain, repair and replace all fencing along the boundary between the Community Center Property and the Wulfsohn Ranch, unless damage is caused by ranching operations of GM, its tenants or lessees on the Wulfsohn Ranch.

8. Midland Extension Access Points.

A. Existing GM Access Rights. The City has provided to GM (through that certain Midland Avenue Right of Way Extension Acquisition Agreement dated September 20, 1994) three access points for use by GM in connection with its farming and ranching and future development operations on the Wulfsohn Ranch. The City has also granted GM the right to use the Community Center access point in the event of future development of GM's property. The City agrees that none of GM's present access point rights are to be considered as used for the City's access to the MOC Site. For these purposes, the City shall install one (1) new access point within the boundary of the MOC Site.

B. Development Access Points. The City agrees to continue to provide to GM three future access points (and the right to use the

Community Center access point) from the Midland Extension Right-of-Way onto the Wulfsohn Ranch property at such time as GM desires to develop the Wulfsohn Ranch property. One access point shall be for the north outparcel created on the west end of the Wulfsohn Ranch as a result of the Midland Extension Project. Two access points shall be for the developable portions of the Wulfsohn Ranch property located south of the Midland Extension Right-of-Way Parcel and East of the MOC Site. The actual location and design of such access points shall be subject to engineering considerations and approval of the City, which approval shall not be unreasonably withheld. Such accesses shall be constructed to agreed upon specifications at GM's sole expense; provided, however, the City shall not, as a condition of granting such accesses, require GM to pay the City any consideration whatsoever. This Agreement is not intended to alter or otherwise affect the existing agreements between the parties hereto with respect to these matters.

C. MOC Site Access Point and Road. The City agrees that GM shall have the right to utilize the road to be developed as part of the MOC Site development project and that GM may incorporate such road in its development plans for the remainder of the Wulfsohn Ranch; provided, however, that in the event of such use by GM, GM shall be obligated to reimburse the City for the initial road costs based upon the then estimated proportionate use of such road by GM or its assigns.

9. Indemnity. To the extent permitted by law, and limited in duration to applicable statutes of limitation, the parties shall indemnify and hold each other free and harmless from and against any and all liabilities, suits, claims, actions, proceedings, judgments, decrees, settlements, demands, and causes of action of all kinds, including but not limited to claims of damages to or losses of property of the City, GM or others for injury, illness, or death, attorneys' fees and costs which arise from or in any manner relate to:

A. GM's prior ownership of the MOC Site or the City's present ownership of the MOC Site;
B. Work performed, facilities installed, or materials provided by either party, their contractors, subcontractors, materialmen, or others in connection with past or future work on or development of the MOC Site, the Wulfsohn property and the respective appurtenant facilities of each.
C. Damages of any type claimed by any landowner, tenant, or other person located downstream or downgradient of the MOC Site or the remainder of the Wulfsohn property which arise from or relate to work on or development of the same

10. Amendment. Any modification or amendment hereto shall be evidenced by a

writing signed by the parties.

11. Binding Effect; Survival. This Agreement shall be binding upon and inure to the benefit of the parties, their successors, grantees, and assigns. Each term and condition of this Agreement shall survive the closing on the MOC Site property.

12. Authority. Each person executing this Agreement represents and warrants that he has been duly authorized by the party that he purports to represent to execute this Agreement, and has authority to bind said party to the terms and conditions of this Agreement.

13. Governing Law. This Agreement shall be construed under the laws of the State of Colorado.

14. No Waiver. No provision of this Agreement may be waived except by an agreement in writing signed by the waiving party. A waiver of any term or provision shall not be construed as a waiver of any other term or provision.

15. Headings. The paragraph headings in this Agreement shall not be used in the construction or interpretation hereof, as they have no substantive effect and are for convenience only.

16. Severability. If any part or section of this Agreement shall be found void or invalid by court of competent jurisdiction, such finding shall not affect any remaining part or section, and said remaining parts or sections shall continue in full force and effect. The parties shall renegotiate in good faith any matter addressed by a part or section that is found void or invalid.

17. Notice. All notices required under this Agreement shall be in writing and shall be hand delivered , sent by facsimile or sent by registered or certified mail, return receipt requested, postage prepaid, to the addresses of the parties herein set forth. All notices so given shall be considered effective seventy-two (72) hours after deposit postage paid in the United States Mail with the proper address as set forth below. Either party by notice so given may change the address to which future notices shall be sent.

Notice to:
Glenwood Meadows, LLC
c/o Robert Macgregor
525 East Cooper Avenue
Aspen, CO 81611
(970) 925-9046 Telephone
(970) 925-9076 Facsimile

With copy to:
Thomas J. Hartert
802 Grand Avenue, Suite 303
Glenwood Springs, CO 81601
(970) 928-7803 Telephone
(970) 928-7805 Facsimile

Notice to: City of Glenwood Springs
attn: City Manager
attn: City Attorney
806 Cooper Avenue
Glenwood Springs, CO 81601
(970) 945-2575 Telephone
(970) 945-2597 Facsimile

18. Signatures; Counterparts. GM and the City agree that signatures obtained by facsimile transmission shall be sufficient and binding for purposes of this Agreement, and that original signatures shall be forwarded to each party. This Agreement may be executed in multiple original counterparts, each of which shall constitute an original but all of which shall constitute one and the same document.

IN WITNESS WHEREOF, the parties have executed this Agreement in duplicate originals on the day and year first written above.

CITY OF GLENWOOD SPRINGS

By: _____
Name: Sam Skramstead, Mayor

GLENWOOD MEADOWS, LLC,
a Colorado Limited Liability Company
By: Dunrene Management, Inc., its Manager

By: _____
Name: Robert Duncan Macgregor
Title: President of Dunrene

(970) 945-1004
FAX (970) 945-5948

ENGINEERS SURVEYORS
SGM
SCHMUESER GORDON MEYER

118 West 6th. Suite 200
Glenwood Springs, CO 81601

December 30, 1999
Job # 97097 B

LEGAL DESCRIPTION – EXEMPTION PARCEL

A tract of land situate in the NE 1/4 of Section 8 and the NW1/4 of Section 9, all in Township 6 South, Range 89 West of the 6th Principal Meridian being more particularly described as follows:

Beginning at a point whence the southeast corner of the SW1/4 of the NW 1/4 of said Section 9 bears S 59°45'07" E 2360.09 feet; thence N 62°49'19" E 281.27 feet;
thence N 27°10'41" W 147.90 feet; thence 323.70 feet on the arc of a curve to the left, having a radius of 760.00 feet, a central angle of 24°24'13", and subtending a chord bearing N 75°01'26" E 321.26 feet; thence N 62°49'19" E 292.63 feet to the westerly right of way line of Midland Avenue; thence along the westerly right of way line of Midland Avenue the following courses:

1) S 21°43'32 "E 150.12 feet; thence
2) 272.23 feet along the arc of a curve to the left, having a radius of 1165.00 feet, a central angle of 13°23'19", and subtending a chord bearing S 28°25'10" E 271.61 feet; thence
3) S 35°06'49" E 21.42 feet; thence
4) S 54°53'11" W 22.69 feet; thence
5) S 41°40'06" E 43.30 feet; thence
6) N 54°53'11" E 17.75 feet; thence
7) S 30°38'49" E 271.57 feet; thence
8) S 41°04'38" E 291.31 feet; thence
9) S 23°28'47" E 143.44 feet; thence
10) 95.89 feet along the arc of a curve to the left, having a radius of 100.00 feet, a central angle of 54°56'35", and subtending a chord bearing S 50°57'06" E 92.26 feet;

thence leaving said right-of-way line on a course bearing S 17°34'08" W 81.64 feet; thence S 12°15'32" E 109.78 feet; thence S 19°54'08" E 208.92 feet; thence S 50°07'49" E 109.72 feet; thence S 33°57'41" E 159.48 feet to the south line of the NW 1/4 of said Section 9 whence the southeast corner of the SW1/4 of the NW 1/4 of said Section 9 bears
S 88°48'57" E 361.88 feet; thence N 88°48'57" W 956.62 feet along the south line of said SW1/4 of the NW 1/4 of Section 9; thence N 89°15'16" W 378.91 feet along the south line of the SE 1/4 of the NE 1/4 of said Section 8; thence N 16°27'24" W 1206.11 feet to the point of beginning, containing 37.281 acres more or less.

LEGAL DESCRIPTION - UTILITY EASEMENT

A utility easement situate in the NW1/4 of Section 9, Township 6 South, Range 89 West of the 6th Principal Meridian being more particularly described as follows:

Beginning at a point whence the southeast corner of the SW1/4 of the NW 1/4 of said Section 9 bears S 43°00'33" E 1567.73 feet; thence N 48°52'27" W 89.30 feet; thence
N 49°57'33" E 51.61 feet; thence S 49°31'10" E 24.96 feet; thence S 40°10'58" E 55.42 feet; thence S 38°56'33" W 42.93 feet to the point of beginning, said parcel contains 4093 square feet more or less.

3 Jan 2000
Date

KENNETH R. WILSON REGISTERED 15710 LAND SURVEYOR STATE OF COLORADO

Professional Land Surveyor #15710

(TD-1000)
Confidential Document

This form provides essential market information to the county assessor to ensure accurate, fair and uniform assessments for all property. This document is not recorded, is kept confidential, and is not available for public inspection.

This declaration must be completed and signed by either the grantor (seller) or grantee (buyer). Questions 1, 2, 3, and 4 may be completed (prefilled) by a third party, such as a title company or closing agent, familiar with details of the transaction. The signatory should confirm accuracy before signing.

This form is required when conveyance documents are presented for recording. If this form is not completed and submitted, the county assessor may send notice. If the completed and signed form is not returned to the assessor within 30 days of notice, the assessor may impose a penalty of $25.00 or 0.025% (0.00025) of the sale price, whichever is greater.

Additional information as to the purpose, requirements, and level of confidentiality regarding this form are outlined in Colorado Revised Statutes, sections 39-14-102, 39-5-121.5, and 39-13-102.

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1. Address and/or legal description of the real property sold: Please do not use P.O. Box numbers
   2301 WULFSOHN ROAD, GLENWOOD SPRINGS, CO 81601
2. Type of Property purchased: ☐ Single Family Residential ☐ Townhome ☐ Condominium ☐ Multi-Unit Res ☒ Commercial ☐ Industrial ☐ Agricultural ☐ Mixed Use ☐ Vacant Land ☐ Other _____
3. Date of Closing: **July 08, 2020**

   Date of Contract if different than date of closing: **February 01, 2020**
4. Total sale price: Including all real and personal property. **$1,260,000.00**
   Contracted price (if different from final sale price) **$1,260,000.00**
5. List any personal property included in the transaction that materially impacts the total sale price. Personal property may include, but is not limited to: machinery or equipment, vehicles, exceptional appliances, electronic devices, furniture, or anything that would not typically transfer with the real property (attach additional pages if necessary).

Description	Approximate Value
None	$
	$
	$
Personal Property Total:	$

   If no personal property is listed, the entire purchase price will be assumed to be for the real property.
6. Did the total sales price include a trade or exchange of additional real or personal property? ☐ Yes ☒ No
   If yes, give the approximate value of the goods or services as of the date of closing. $ _____
   If yes, does this transaction involve a trade under IRS Code Section 1031? ☐ Yes ☒ No
7. Was 100% interest in the real property purchased? Mark "no" if only a partial interest is being purchased.
   ☒ Yes ☐ No If no, interest purchased: _____ %
8. Is this a transaction between related parties or acquaintances? This includes persons connected by blood or marriage, or business affiliates, or those acquainted prior to the transaction. ☐ Yes ☒ No
9. Please mark type of sale: ☐ Builder (new construction) ☐ Public (MLS or Broker Representation) ☒ Private (For Sale By Owner) ☐ Other (describe) _____
10. Check any of the following that apply to the condition of the improvements at the time of purchase:
    ☐ New ☐ Excellent ☐ Good ☐ Average ☐ Fair ☐ Poor ☒ Salvage

If the property is financed, please complete the following:

11. Type of financing: (Check all that apply)
    - [X] None (all cash or cash equivalent)
    - [ ] New/Mortgage Lender (government-backed or conventional bank loan)
    - [ ] New/Private Third Party (nonconventional lender, e.g., relative, friend, or acquantaince)
    - [ ] Seller (buyer obtained a mortgage directly from the seller)
    - [ ] Assumed (buyer assumed an existing mortgage)
    - [ ] Combination or Other: Please explain _____
12. Total amount financed: _____
13. Terms:
    Variable Starting interest rate **%** _____
    [ ] Fixed Interest rate **%** _____
    Length of time **years** _____
    Balloon Payment [ ] Yes [ ] No If yes, amount **$0.00** Due Date _____
14. Mark any that apply:
    - [ ] Seller assisted down payment
    - [ ] Seller concessions
    - [ ] Special terms of financing

    If marked, please specify: _____
15. Was an independent appraisal obtained in conjunction with this transaction? [ ] Yes [X] No

For properties other than residential (Residential is defined as: single family detached, townhomes, apartments, and condominiums) please complete questions 16-18 if applicable. Otherwise, skip to #19 to complete.

16. Did the purchase price include a franchise or license fee? [ ] Yes [ ] No
    If yes, franchise or license fee value? _____
17. Did the purchase price involve an installment land contract? [ ] Yes [ ] No
    If yes, date of contract: _____
18. If this was a vacant land sale, was an on-site inspection of the property conducted by the buyer prior to the closing? [ ] Yes [ ] No

    Remarks: Please include any additional information concerning the sale you may feel is important.

    _____

    _____
19. Signed on this day of
    July 08, 2020
    Have at least one of the parties to the transaction sign the document, and include an address and a daytime phone number.
    Signature of [X] Grantee(Buyer) [ ] or Grantor(Seller)

    ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY

    By: Dan Blankenship

    DAN BLANKENSHIP, CEO

20. All future correspondence (tax bills, property valuations, etc.) regarding this property should be mailed to:
    ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY
    2307 WULFSHON ROAD, Glenwood Springs, CO 81601
    Phone: **Email:**

Contact information is kept confidential, for County Assessor and Treasurer use only, to contact buyer with questions regarding this form, property valuation, or property tax information.

Escrow Agreement

Date: **July 08, 2020** Escrow Number: **63014212** Closer: **Jessica Reed**

The undersigned deposit with Land Title Guarantee Company, a Colorado Corporation, as Escrow Holder (the "Escrow Holder"), the items set forth in Schedule A, to be held by Escrow Holder subject to the terms of this Escrow Agreement, the General Provisions to the Escrow Agreement and the Special Instructions in Schedule B (collectively, the "Escrow Agreement").

"Schedule A"
(Deposits)

50,000.00 From CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY

"Schedule B"
(Special Instructions)

- [x] Special Instruction No. 1 (Repairs) Attached
- [ ] Special Instruction No. 1A (Completion) Attached
- [ ] Special Instruction No. 2 (Lender Completion Instructions) Attached
- [ ] Special Instruction No. 3 (Indemnity Agreement – Cash Deposit) Attached
- [ ] Special Instruction No. 4 (Depository Instructions) Attached
- [ ] Special Instruction No. 5 (F.I.R.P.T.A)
- [ ] Special Instruction No. 6A (Resolution of Miscellaneous Issues)
- [ ] Special Instruction No. 6B (Dissolution of Marriage)
- [ ] Special Instruction No. 6C (Post-Closing Occupancy Agreement)
- [ ] Special Instruction No. 6D (Pending Court Action)
- [ ] All others (See attached Exhibit "A")

The parties to the Escrow Agreement, by their signature below, acknowledge and agree that they have read, and will be bound by the Escrow Agreement, including the General Provisions to the Escrow Agreement, and the Special Instructions in Schedule B.

Seller(s)
(if applicable)

CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY

By: _____
Jonathan Godes, Mayor

Buyer/Borrower(s)
(if applicable)

ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY

By: _____
DAN BLANKENSHIP, CEO

Address: **101 W. 8TH STREET**
Glenwood Springs, CO 81601
Phone #: **(970) 945-2261**
Fax #:
Email: **asi@mountainlawfirm.com**
Contact: **ANNA ITENBERG**

Lender: N/A
(If applicable)

By:
Address: **N/A**
N/A
Phone #: **N/A**
Contact: N/A

Any correspondence regarding this escrow shall be addressed to:
Land Title Guarantee Company
5975 Greenwood Plaza Blvd.
Greenwood Village, Colorado 80111
Attn: Escrow Coordinator
Phone: 303-321-1880
Fax: 303-399-8193
Email: disb@ltgc.com

Address: **2307 WULFSHON ROAD**
Glenwood Springs, CO 81601
Phone #: **(970) 925-9190**
Fax #:
Email: **taddune@compuserve.com**
Contact: **PAUL TADDUNE**

Escrow Fees to be as Follows:

(a) Set up Fee: **50.00**
(b) Miscellaneous: **0.00**
N/A

Note: After the issuance of four (4) checks, a fee of $10.00 per check will be made for each additional check.

Receipt of the Escrow Deposit and acceptance of the Escrow Agreement hereby acknowledged by:
Land Title Guarantee Company - Escrow Holder

Jessica Reed
Jessica Reed

Land Title Guarantee Company
General Provisions to the Escrow Agreement

1. **Notices.**
   Any notices required or permitted to be given under the Escrow Agreement shall have been deemed to have been served:
   i. one business day after the notice is hand delivered with proof of receipt by the addressee, or
   ii. one business day after transmission by facsimile evidencing confirmation of receipt by the receiving facsimile machine, or
   iii. one business day after transmission by email evidencing confirmation of receipt by the receiving email address, or
   iv. if reputable overnight courier (such as United Parcel Service or Federal Express) is used, on the immediately following business day after notice is sent for overnight delivery, or
   v. if the United States Mail is used, on the third business day after the notice is deposited in the United States Mail, postage prepaid;

   Provided in each case such notice is addressed to the parties at the addresses given on the first page of this Escrow Agreement.

2. **Reliance on Notice.**
   Escrow Holder may act in reliance upon any writing or instrument or signature which Escrow Holder, in good faith, believes to be genuine, and may assume the validity and accuracy of any statement or assertion contained in such a writing or instrument, and may assume that any person purporting to give any writing, notice, advice or instruction in connection with the provisions hereof has been duly authorized so to do.

3. **Laws Relating to Unclaimed Funds.**
   Seller and Buyer are hereby advised that unclaimed funds may be payable to the State at some future date pursuant to unclaimed property laws, and should Escrow Holder pay any such funds held in the Escrow Deposit, Escrow Holder shall be released from all further responsibility under the Escrow Agreement and shall not be liable to any Party so long as such payment was made pursuant to applicable law.

4. **Escrow Deposit and Interest Earned on Escrow Deposit.**
   a. Upon receipt of written direction of the parties along with a completed W-9 any money comprising the Escrow Deposit will be invested in an interest bearing account.
   b. Deposits of $100,000.00 or more may be directed by the parties hereto to other types of investments, or the Escrow Holder may invest the Escrow Deposit in Repurchase Agreements for U.S. Treasury obligations or other Federal agency issued securities.
   c. Escrow Holder shall not be responsible for maximizing the yield on the Escrow Deposit. Under no circumstances shall Escrow Holder be liable for loss of funds due to bank or other Institution failure, including employees or agents thereof, suspension or cessation of business, or any action or inaction on the part of the bank or other institution, or any delivery service transporting funds to and from the institution.
   d. All parties hereto shall execute and deliver to Escrow Holder all forms required by federal, state or other governmental agencies relative to taxation matters and Escrow Holder will file appropriate 1099 or other required forms.

5. **Fees and Expenses of Escrow Holder.**
   a. The Escrow Holder shall be entitled to reimbursement in full, or may demand payment in advance, for all costs, expenses, charges, fees or other payments made or to be made by Escrow Holder in the performance of Escrow Holder's duties and obligations under the Escrow Agreement.
   b. The parties to the Escrow Agreement are jointly and severally liable for the payment to Escrow Holder of all fees and expenses. Escrow Holder is hereby authorized and directed to reimburse to itself in payment of fees or expenses from any funds in the Escrow Deposit, whether from principal or interest or both, at any time, and from time to time, as the same may be due and owing.
   c. Escrow Holder is hereby authorized to withhold any fees or expenses from any disbursement or distribution of Escrow Deposit to any Party hereto or to the Clerk of the Court upon interpleader.
   d. In the event that the Escrow Deposit shall consist of documents only and not funds, Escrow Holder may refuse to distribute any such documents or to otherwise act under this Agreement until all accrued but unpaid fees and expenses have been paid in full.

6. **Non-liability of Escrow Holder.**
    a. Escrow Holder shall not be liable for any mistakes of fact, or errors of judgment or for any acts or omissions of any kind unless caused by the willful misconduct or gross negligence of Escrow Holder.
    b. Escrow Holder shall not be liable for any taxes, assessments or other governmental charges which may be levied or assessed upon the Escrow Deposit or any part thereof, or upon the income therefrom.
    c. Escrow Holder may rely upon the advice of counsel and upon statements of accountants, brokers or other persons reasonably believed by it in good faith to be expert in the matters upon which they are consulted, and for any reasonable action taken or suffered in good faith based upon such advice or statements.
7. **Indemnity of Escrow Holder.**
   The Seller and Buyer jointly and severally, agree to:
    i. indemnify Escrow Holder for, and hold it harmless against any and all liability incurred by the Escrow Holder by reason of this Escrow Agreement, or in connection with Escrow Agent's performance of its duties hereunder, except for Escrow Holder's own willful misconduct or gross negligence, and
    ii. reimburse Escrow Holder for all its expenses, including, but not necessarily limited to, attorneys' fees and court costs incurred pursuant to this Escrow Agreement.
8. **Request for Written Instructions.**
    a. Escrow Holder may at any time, and from time to time, request the Seller and Buyer to provide written instructions concerning the propriety of a proposed payment of the Escrow Deposit, distribution of documents, or other action or refusal to act by Escrow Holder.
    b. Should the Seller and Buyer fail to provide such written instructions within a reasonable time, Escrow Holder may take such action, or refuse to act, as it may deem appropriate and shall not be liable to anyone for such action or refusal to act.
    c. Notwithstanding the foregoing, should the terms of the Escrow Agreement be complied with, in the judgment of Escrow Holder, then the Escrow Holder may disburse any funds, distribute documents, or take such action without specific further written instructions from any Party.
9. **Disputes and Interpleader.**
    a. In the event of any dispute between the Parties as to either law or fact, or in the event any of the parties hereto fail, for any reason, to fully receipt and acquit the Escrow Holder in writing, Escrow Holder may refuse, in its discretion, to carry out said escrow instructions or to deliver any funds, documents, or property in its hand to anyone and in so doing shall not become liable to demand.
    b. Escrow Holder shall be entitled to continue, without liability, to refrain and refuse to act:
        i. until all the rights of the adverse claimants have been finally adjudicated by a court having jurisdiction over the Parties and the items affected hereby, after which time the Escrow Holder shall be entitled to act in conformity with such adjudication; or
        ii. until all differences shall have been adjusted by agreement and Escrow Holder shall have been notified thereof and shall have been directed in writing signed jointly or in counterpart by the parties and all persons making adverse claims or demand, at which time Escrow Holder shall be protected in acting in compliance therewith.
    c. Escrow Holder also has the right to interplead into a court of competent jurisdiction at the expense of the Parties.
10. **Resignation of Escrow Holder.**
    a. Escrow Holder may resign under this Agreement by giving written notice to all of the parties hereto, effective 30 days after the date of said notice.
    b. Upon the appointment by the parties of a new escrow holder or custodian, or upon written instructions to Escrow Holder for other disposition of the Escrow Deposit, Escrow Holder shall, after retention of its accrued escrow fees and expenses, if any, shall deliver the Escrow Deposit within a reasonable period of time as so directed, and shall be relieved of any and all liability hereunder arising thereafter.
11. **Applicable Law.**
    This Agreement shall be governed by the laws of the State of Colorado.
12. **Counterparts/Third Party Beneficiaries.**
    This Escrow Agreement may be executed in any number of counterparts, each of which when so executed shall constitute the entire agreement between the Seller and Buyer. The Seller and Buyer acknowledge and agree that there are not intended or unintended third party beneficiaries who may rely upon or benefit from the provisions of this agreement.
13. **Electronic Signatures and Notices.**
    The execution of this Escrow Agreement, and any other notice required or permitted under this Escrow Agreement, may be given and transmitted by electronic means (including email, facsimile, or similar transmission) and shall be deemed effective for all purposes. Documents with original signatures are not required. If original signatures are required by any party, this request must be made prior to execution of this Escrow Agreement or any other notice, to ensure compliance with the request.

Escrow Agreement

Date: **July 08, 2020** Escrow Number: **63014212** Closer: **Jessica Reed**

The undersigned deposit with Land Title Guarantee Company, a Colorado Corporation, as Escrow Holder (the "Escrow Holder"), the items set forth in Schedule A, to be held by Escrow Holder subject to the terms of this Escrow Agreement, the General Provisions to the Escrow Agreement and the Special Instructions in Schedule B (collectively, the "Escrow Agreement").

"Schedule A"
(Deposits)

50,000.00 From CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY

"Schedule B"
(Special Instructions)

- [x] Special Instruction No. 1 (Repairs) Attached
- [ ] Special Instruction No. 1A (Completion) Attached
- [ ] Special Instruction No. 2 (Lender Completion Instructions) Attached
- [ ] Special Instruction No. 3 (Indemnity Agreement – Cash Deposit) Attached
- [ ] Special Instruction No. 4 (Depository Instructions) Attached
- [ ] Special Instruction No. 5 (F.I.R.P.T.A)
- [ ] Special Instruction No. 6A (Resolution of Miscellaneous Issues)
- [ ] Special Instruction No. 6B (Dissolution of Marriage)
- [ ] Special Instruction No. 6C (Post-Closing Occupancy Agreement)
- [ ] Special Instruction No. 6D (Pending Court Action)
- [ ] All others (See attached Exhibit "A")

The parties to the Escrow Agreement, by their signature below, acknowledge and agree that they have read, and will be bound by the Escrow Agreement, including the General Provisions to the Escrow Agreement, and the Special Instructions in Schedule B.

Seller(s)
(if applicable)

CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY

Jonathan Godes

By: _____
Jonathan Godes, Mayor Signed 07/07/20 at 02:26PM

Buyer/Borrower(s)
(if applicable)

ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY

By: _____
DAN BLANKENSHIP, CEO

Address: **101 W. 8TH STREET**
Glenwood Springs, CO 81601
Phone #: **(970) 945-2261**
Fax #:
Email: **asi@mountainlawfirm.com**
Contact: **ANNA ITENBERG**

Lender: N/A
(If applicable)

By:
Address: **N/A**
N/A
Phone #: **N/A**
Contact: N/A

Any correspondence regarding this escrow shall be addressed to:
Land Title Guarantee Company
5975 Greenwood Plaza Blvd.
Greenwood Village, Colorado 80111
Attn: Escrow Coordinator
Phone: 303-321-1880
Fax: 303-399-8193
Email: disb@ltgc.com

Address: **2307 WULFSHON ROAD**
Glenwood Springs, CO 81601
Phone #: **(970) 925-9190**
Fax #:
Email: **taddune@compuserve.com**
Contact: **PAUL TADDUNE**

Escrow Fees to be as Follows:

(a) Set up Fee: **50.00**
(b) Miscellaneous: **0.00**
N/A

Note: After the issuance of four (4) checks, a fee of $10.00 per check will be made for each additional check.

Receipt of the Escrow Deposit and acceptance of the Escrow Agreement hereby acknowledged by:
Land Title Guarantee Company - Escrow Holder

Jessica Reed

Land Title Guarantee Company
General Provisions to the Escrow Agreement

1. **Notices.**
   Any notices required or permitted to be given under the Escrow Agreement shall have been deemed to have been served:
   i. one business day after the notice is hand delivered with proof of receipt by the addressee, or
   ii. one business day after transmission by facsimile evidencing confirmation of receipt by the receiving facsimile machine, or
   iii. one business day after transmission by email evidencing confirmation of receipt by the receiving email address, or
   iv. if reputable overnight courier (such as United Parcel Service or Federal Express) is used, on the immediately following business day after notice is sent for overnight delivery, or
   v. if the United States Mail is used, on the third business day after the notice is deposited in the United States Mail, postage prepaid;

   Provided in each case such notice is addressed to the parties at the addresses given on the first page of this Escrow Agreement.
2. **Reliance on Notice.**
   Escrow Holder may act in reliance upon any writing or instrument or signature which Escrow Holder, in good faith, believes to be genuine, and may assume the validity and accuracy of any statement or assertion contained in such a writing or instrument, and may assume that any person purporting to give any writing, notice, advice or instruction in connection with the provisions hereof has been duly authorized so to do.
3. **Laws Relating to Unclaimed Funds.**
   Seller and Buyer are hereby advised that unclaimed funds may be payable to the State at some future date pursuant to unclaimed property laws, and should Escrow Holder pay any such funds held in the Escrow Deposit, Escrow Holder shall be released from all further responsibility under the Escrow Agreement and shall not be liable to any Party so long as such payment was made pursuant to applicable law.
4. **Escrow Deposit and Interest Earned on Escrow Deposit.**
   a. Upon receipt of written direction of the parties along with a completed W-9 any money comprising the Escrow Deposit will be invested in an interest bearing account.
   b. Deposits of $100,000.00 or more may be directed by the parties hereto to other types of investments, or the Escrow Holder may invest the Escrow Deposit in Repurchase Agreements for U.S. Treasury obligations or other Federal agency issued securities.
   c. Escrow Holder shall not be responsible for maximizing the yield on the Escrow Deposit. Under no circumstances shall Escrow Holder be liable for loss of funds due to bank or other Institution failure, including employees or agents thereof, suspension or cessation of business, or any action or inaction on the part of the bank or other institution, or any delivery service transporting funds to and from the institution.
   d. All parties hereto shall execute and deliver to Escrow Holder all forms required by federal, state or other governmental agencies relative to taxation matters and Escrow Holder will file appropriate 1099 or other required forms.
5. **Fees and Expenses of Escrow Holder.**
   a. The Escrow Holder shall be entitled to reimbursement in full, or may demand payment in advance, for all costs, expenses, charges, fees or other payments made or to be made by Escrow Holder in the performance of Escrow Holder's duties and obligations under the Escrow Agreement.
   b. The parties to the Escrow Agreement are jointly and severally liable for the payment to Escrow Holder of all fees and expenses. Escrow Holder is hereby authorized and directed to reimburse to itself in payment of fees or expenses from any funds in the Escrow Deposit, whether from principal or interest or both, at any time, and from time to time, as the same may be due and owing.
   c. Escrow Holder is hereby authorized to withhold any fees or expenses from any disbursement or distribution of Escrow Deposit to any Party hereto or to the Clerk of the Court upon interpleader.
   d. In the event that the Escrow Deposit shall consist of documents only and not funds, Escrow Holder may refuse to distribute any such documents or to otherwise act under this Agreement until all accrued but unpaid fees and expenses have been paid in full.

6. **Non-liability of Escrow Holder.**
    a. Escrow Holder shall not be liable for any mistakes of fact, or errors of judgment or for any acts or omissions of any kind unless caused by the willful misconduct or gross negligence of Escrow Holder.
    b. Escrow Holder shall not be liable for any taxes, assessments or other governmental charges which may be levied or assessed upon the Escrow Deposit or any part thereof, or upon the income therefrom.
    c. Escrow Holder may rely upon the advice of counsel and upon statements of accountants, brokers or other persons reasonably believed by it in good faith to be expert in the matters upon which they are consulted, and for any reasonable action taken or suffered in good faith based upon such advice or statements.
7. **Indemnity of Escrow Holder.**
   The Seller and Buyer jointly and severally, agree to:
    i. indemnify Escrow Holder for, and hold it harmless against any and all liability incurred by the Escrow Holder by reason of this Escrow Agreement, or in connection with Escrow Agent's performance of its duties hereunder, except for Escrow Holder's own willful misconduct or gross negligence, and
    ii. reimburse Escrow Holder for all its expenses, including, but not necessarily limited to, attorneys' fees and court costs incurred pursuant to this Escrow Agreement.
8. **Request for Written Instructions.**
    a. Escrow Holder may at any time, and from time to time, request the Seller and Buyer to provide written instructions concerning the propriety of a proposed payment of the Escrow Deposit, distribution of documents, or other action or refusal to act by Escrow Holder.
    b. Should the Seller and Buyer fail to provide such written instructions within a reasonable time, Escrow Holder may take such action, or refuse to act, as it may deem appropriate and shall not be liable to anyone for such action or refusal to act.
    c. Notwithstanding the foregoing, should the terms of the Escrow Agreement be complied with, in the judgment of Escrow Holder, then the Escrow Holder may disburse any funds, distribute documents, or take such action without specific further written instructions from any Party.
9. **Disputes and Interpleader.**
    a. In the event of any dispute between the Parties as to either law or fact, or in the event any of the parties hereto fail, for any reason, to fully receipt and acquit the Escrow Holder in writing, Escrow Holder may refuse, in its discretion, to carry out said escrow instructions or to deliver any funds, documents, or property in its hand to anyone and in so doing shall not become liable to demand.
    b. Escrow Holder shall be entitled to continue, without liability, to refrain and refuse to act:
        i. until all the rights of the adverse claimants have been finally adjudicated by a court having jurisdiction over the Parties and the items affected hereby, after which time the Escrow Holder shall be entitled to act in conformity with such adjudication; or
        ii. until all differences shall have been adjusted by agreement and Escrow Holder shall have been notified thereof and shall have been directed in writing signed jointly or in counterpart by the parties and all persons making adverse claims or demand, at which time Escrow Holder shall be protected in acting in compliance therewith.
    c. Escrow Holder also has the right to interplead into a court of competent jurisdiction at the expense of the Parties.
10. **Resignation of Escrow Holder.**
    a. Escrow Holder may resign under this Agreement by giving written notice to all of the parties hereto, effective 30 days after the date of said notice.
    b. Upon the appointment by the parties of a new escrow holder or custodian, or upon written instructions to Escrow Holder for other disposition of the Escrow Deposit, Escrow Holder shall, after retention of its accrued escrow fees and expenses, if any, shall deliver the Escrow Deposit within a reasonable period of time as so directed, and shall be relieved of any and all liability hereunder arising thereafter.
11. **Applicable Law.**
    This Agreement shall be governed by the laws of the State of Colorado.
12. **Counterparts/Third Party Beneficiaries.**
    This Escrow Agreement may be executed in any number of counterparts, each of which when so executed shall constitute the entire agreement between the Seller and Buyer. The Seller and Buyer acknowledge and agree that there are not intended or unintended third party beneficiaries who may rely upon or benefit from the provisions of this agreement.
13. **Electronic Signatures and Notices.**
    The execution of this Escrow Agreement, and any other notice required or permitted under this Escrow Agreement, may be given and transmitted by electronic means (including email, facsimile, or similar transmission) and shall be deemed effective for all purposes. Documents with original signatures are not required. If original signatures are required by any party, this request must be made prior to execution of this Escrow Agreement or any other notice, to ensure compliance with the request.

Schedule B to the Escrow Agreement
Special Instructions Number 1
(Repairs)

1. The Escrow Deposit shall be held by Escrow Holder for the completion of the following repairs or incomplete work (the "Work") (List in detail the Work required): **SEE ATTACHED INSTRUCTIONS**
2. The Work is to be initiated by:

   ☐ Seller ☒ Buyer
3. The Work is to be carried out on the property located at: **2301 WULFSOHN ROAD, GLENWOOD SPRINGS, CO 81601**

   Described As:

   See attached "Exhibit A"

4. Upon receipt of Notice from all parties stating that the Work has been completed, Escrow Holder shall release and disburse the Escrow Deposit to:

   ☒ Seller ☐ Buyer **After payment of all invoices for the work to be completed.**
5. In the event that Escrow Holder has not received Notice that the Work has been completed within one year from the date of this agreement **July 8th, 2020** then Escrow Holder is authorized, without notice to the parties, immediately thereafter to release and disburse the Escrow Deposit to **CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY**

   (Seller) ___ **Initial** ___ **Initial** (Buyer) ___ **Initial** ___ **Initial**
6. Escrow Holder shall have no independent duty to determine if the Work has been completed and may conclusively rely upon such Notice and may disregard any warnings or notice given it to the contrary.
7. Any and all warranty issues concerning the Work will be dealt with directly between the Purchaser, the Seller and their contractor/supplier.
8. In the event that the Work may give rise to a mechanic's or materialman's lien, which may affect the coverage provided to the parties insured under a policy of title insurance issued by Escrow Holder, as agent for its underwriter, Escrow Holder shall be entitled, in its sole discretion, to use the Escrow Deposit, or portion thereof, to pay, or to reimburse itself for the payment of, any sums of money to such mechanic's or materialman lien claimants for the protection of itself, and its insureds, under the policy of title insurance.
9. On release and disbursement of the Escrow Deposit, the Escrow Holder shall be relieved of any and all further liability in connection with the Escrow Deposit and the Escrow Agreement

SELLER(S):

CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY

By: Jon Godes
Jonathan Godes, Mayor

BUYER(S):

ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY

By: Dan Blankenship
DAN BLANKENSHIP, CEO

Exhibit A

PARCEL A:

LOT A (AMENDED), FIRST AMENDED MINOR SUBDIVISION PLAT OF GLENWOOD SPRINGS MUNICIPAL OPERATIONS CENTER, IN THE CITY OF GLENWOOD SPRINGS, COUNTY OF GARFIELD, STATE OF COLORADO.

PARCEL B:

THE ENTIRE PARCEL IDENTIFIED AS "MOC DRIVEWAY" IN THE SUBDIVISION PLAT OF GLENWOOD MEADOWS NO. 1, RECORDED AUGUST 9, 2004 AT RECEPTION NO. 657438 IN THE GARFIELD COUNTY CLERK AND RECORDERS OFFICE, ALSO LYING IN THE SW1/4 SECTION 5, TOWNSHIP 6 SOUTH, RANGE 89 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF GARFIELD, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT AN ANGLE POINT ON SAID "MOC DRIVEWAY", BEING A FOUND 5/8 REBAR AND 1.25" YELLOW PLASTIC CAP MARKED LS 38145 "V3", WHENCE THE COMMON SECTION CORNER FOR SECTIONS 5, 6, 7, AND 8 OF TOWNSHIP 6 SOUTH, RANGE 89 WEST, BEING A FOUND 2.5" ALUMINUM PIPE AND 3.25" ALUMINUM DOI/USBLM CAP PROPERLY MARKED AND DATED 1995 BEARS S69° 40' 34"W A DISTANCE OF 1079.31', ALSO BEING THE BASIS OF BEARINGS;

THENCE ALONG THE BOUNDARY LINE OF SAID "MOC DRIVEWAY" THE FOLLOWING SEVEN (7) COURSES;

1. 82.30 FEET ALONG THE ARC OF NON-TANGENT CURVE TO THE RIGHT, HAVING A RADIUS OF 1260.00 FEET, A CENTRAL ANGLE OF 3°44'33", THE CHORD OF WHICH BEARS N58°16'03"E A DISTANCE OF 82.29 FEET TO A FOUND 5/8" REBAR AND 1.5" ALUMINUM CAP MARKED LS 36580;
2. N63°26'47"E A DISTANCE OF 326.70 FEET;
3. 50.91 FEET ALONG THE ARC OF A CURVE TO THE LEFT, HAVING A RADIUS OF 67.50 FEET, A CENTRAL ANGLE OF 43°12'59", THE CHORD OF WHICH BEARS N41°50'17"E A DISTANCE OF 49.71 FEET;
4. S70°03'24"E A DISTANCE OF 70.00 FEET;
5. 45.65 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE RIGHT, HAVING A RADIUS OF 137.47 FEET, A CENTRAL ANGLE OF 19°01'29", THE CHORD OF WHICH BEARS S29°35'29"W A DISTANCE OF 45.44 FEET;
6. 58.42' FEET ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 137.47 FEET, A CENTRAL ANGLE OF 24°20'50", THE CHORD OF WHICH BEARS S51°16'38"W A DISTANCE OF 57.98 FEET;
7. S63°26'47"W A DISTANCE OF 283.44 FEET TO THE POINT OF BEGINNING.

LEGAL DESCRIPTION CREATED BY:
JOSHUA L. WILSON
COLORADO PLS NO. 38417
FOR, AND ON BEHALF OF SGM INC.

ESCROW INSTRUCTIONS

In connection with the purchase and sale of the Glenwood Springs Maintenance and Operations Center ("GMOC"), the sum of Fifty Thousand ($50,000.00) Dollars out of the proceeds due to the City of Glenwood Springs as Seller (the "City") shall be deposited with Land Title Company, as Escrow Agent, pursuant to the Escrow Agreement, to secure City's payment and reimbursement of one half (1/2) of environmental hazard remediation costs for the GMOC, up to One Hundred Thousand ($100,000.00) Dollars, incurred by the Roaring Fork Transportation Authority ("RFTA") as Buyer, (i.e. City has agreed to pay for ½ of total remediation costs or $50,000, whichever is less). Escrow Agent shall deposit the funds in an escrow account with FirstBank (the Escrow Account), in accordance with the following instructions.

1. The Escrow Agent shall promptly pay to vendors (or reimburse to RFTA) amounts submitted by RFTA's written request to Escrow Agent with supporting documentation. A copy of such request and documentation shall be simultaneously submitted to the City via e-mail or fax addressed to the City Manager, City Chief Operating Officer and the City Attorney. Escrow Agent shall make such payment as requested unless the City objects to such request within seven (7) business days of the receipt of such request. The City may provide notice of its objection via e-mail to the Escrow Agent and RFTA. If the City timely objects to any payment request, the amount shall not be paid to RFTA by the Escrow Agent until such time as the matter is resolved either by mutual agreement or litigation in the state courts of Garfield County or such other dispute resolution procedures as the parties may agree upon in writing.

2. Any amounts not paid out of the Escrow Account and all accrued interest remaining in the Escrow Account, if any, shall be returned to the City within thirty (30) days after City and Escrow Agent each receive a written notice from RFTA that all obligations for remediation have been completed to the satisfaction of RFTA, which remediation is anticipated by RFTA to be complete no later than October 1, 2020. Notice to the City shall be sent to the City Manager, Chief Operating Officer and the City Attorney. Notice to RFTA shall be sent to the CEO and legal counsel.

3. If RFTA objects to the reimbursement of the remaining amounts in the Escrow Account to the City after seven (7) business days of notice of intent to pay provided by Escrow Agent to RFTA and City, such amount shall not be paid by the Escrow Agent until such time as the matter is resolved either by mutual agreement or litigation in the state courts of Garfield County or such other dispute resolution procedures as the parties may agree upon in writing.

4. The prevailing party in any litigation or dispute resolution procedure shall be entitled to an award of its reasonable attorneys' fees, costs and expenses incurred in connection therewith.

SELLER:

THE CITY OF GLENWOOD SPRINGS

By: _____

Jonathan Godes, Mayor

BUYER:
THE ROARING FORK TRANSPORTATION AUTHORITY

By: Dan Blankenship
Dan Blankenship, CEO

ESCROW AGENT:
LAND TITLE

By: Jennia Reed

Schedule B to the Escrow Agreement
Special Instructions Number 1
(Repairs)

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2. The Work is to be initiated by:

   ☐ Seller ☒ Buyer
3. The Work is to be carried out on the property located at: **2301 WULFSOHN ROAD, GLENWOOD SPRINGS, CO 81601**

   Described As:

   See attached "Exhibit A"

4. Upon receipt of Notice from all parties stating that the Work has been completed, Escrow Holder shall release and disburse the Escrow Deposit to:

   ☒ Seller ☐ Buyer **After payment of all invoices for the work to be completed.**
5. In the event that Escrow Holder has not received Notice that the Work has been completed within one year from the date of this agreement **July 8th, 2020** then Escrow Holder is authorized, without notice to the parties, immediately thereafter to release and disburse the Escrow Deposit to **CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY**

   (Seller)____**Initial** ____ **Initial** (Buyer)____ **Initial** ____ **Initial**
6. Escrow Holder shall have no independent duty to determine if the Work has been completed and may conclusively rely upon such Notice and may disregard any warnings or notice given it to the contrary.
7. Any and all warranty issues concerning the Work will be dealt with directly between the Purchaser, the Seller and their contractor/supplier.
8. In the event that the Work may give rise to a mechanic's or materialman's lien, which may affect the coverage provided to the parties insured under a policy of title insurance issued by Escrow Holder, as agent for its underwriter, Escrow Holder shall be entitled, in its sole discretion, to use the Escrow Deposit, or portion thereof, to pay, or to reimburse itself for the payment of, any sums of money to such mechanic's or materialman lien claimants for the protection of itself, and its insureds, under the policy of title insurance.
9. On release and disbursement of the Escrow Deposit, the Escrow Holder shall be relieved of any and all further liability in connection with the Escrow Deposit and the Escrow Agreement

SELLER(S):

CITY OF GLENWOOD SPRINGS, A COLORADO HOME-RULE MUNICIPALITY

By: Jonathan Godes

Jonathan Godes, Mayor Signed 07/07/20 at 02:26PM

BUYER(S):

ROARING FORK TRANSPORTATION AUTHORITY, A COLORADO REGIONAL TRANSPORTATION AUTHORITY

By: _____

DAN BLANKENSHIP, CEO

Exhibit A

PARCEL A:

LOT A (AMENDED), FIRST AMENDED MINOR SUBDIVISION PLAT OF GLENWOOD SPRINGS MUNICIPAL OPERATIONS CENTER, IN THE CITY OF GLENWOOD SPRINGS, COUNTY OF GARFIELD, STATE OF COLORADO.

PARCEL B:

THE ENTIRE PARCEL IDENTIFIED AS "MOC DRIVEWAY" IN THE SUBDIVISION PLAT OF GLENWOOD MEADOWS NO. 1, RECORDED AUGUST 9, 2004 AT RECEPTION NO. 657438 IN THE GARFIELD COUNTY CLERK AND RECORDERS OFFICE, ALSO LYING IN THE SW1/4 SECTION 5, TOWNSHIP 6 SOUTH, RANGE 89 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF GARFIELD, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT AN ANGLE POINT ON SAID "MOC DRIVEWAY", BEING A FOUND 5/8 REBAR AND 1.25" YELLOW PLASTIC CAP MARKED LS 38145 "V3", WHENCE THE COMMON SECTION CORNER FOR SECTIONS 5, 6, 7, AND 8 OF TOWNSHIP 6 SOUTH, RANGE 89 WEST, BEING A FOUND 2.5" ALUMINUM PIPE AND 3.25" ALUMINUM DOI/USBLM CAP PROPERLY MARKED AND DATED 1995 BEARS S69° 40' 34"W A DISTANCE OF 1079.31', ALSO BEING THE BASIS OF BEARINGS;

THENCE ALONG THE BOUNDARY LINE OF SAID "MOC DRIVEWAY" THE FOLLOWING SEVEN (7) COURSES;

1. 82.30 FEET ALONG THE ARC OF NON-TANGENT CURVE TO THE RIGHT, HAVING A RADIUS OF 1260.00 FEET, A CENTRAL ANGLE OF 3°44'33", THE CHORD OF WHICH BEARS N58°16'03"E A DISTANCE OF 82.29 FEET TO A FOUND 5/8" REBAR AND 1.5" ALUMINUM CAP MARKED LS 36580;
2. N63°26'47"E A DISTANCE OF 326.70 FEET;
3. 50.91 FEET ALONG THE ARC OF A CURVE TO THE LEFT, HAVING A RADIUS OF 67.50 FEET, A CENTRAL ANGLE OF 43°12'59", THE CHORD OF WHICH BEARS N41°50'17"E A DISTANCE OF 49.71 FEET;
4. S70°03'24"E A DISTANCE OF 70.00 FEET;
5. 45.65 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE RIGHT, HAVING A RADIUS OF 137.47 FEET, A CENTRAL ANGLE OF 19°01'29", THE CHORD OF WHICH BEARS S29°35'29"W A DISTANCE OF 45.44 FEET;
6. 58.42' FEET ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 137.47 FEET, A CENTRAL ANGLE OF 24°20'50", THE CHORD OF WHICH BEARS S51°16'38"W A DISTANCE OF 57.98 FEET;
7. S63°26'47"W A DISTANCE OF 283.44 FEET TO THE POINT OF BEGINNING.

LEGAL DESCRIPTION CREATED BY:
JOSHUA L. WILSON
COLORADO PLS NO. 38417
FOR, AND ON BEHALF OF SGM INC.

GARFIELD COUNTY TREASURER

Certificate of Taxes Due

Account Number R009166	Certificate Number 2019-01975
Parcel 218506436001	Acres 29.974
	Order Number 63014212
Assessed To	Vendor ID 4
GLENWOOD SPRINGS, CITY OF 2307 WULFSOHN GLENWOOD SPRINGS, CO 81601	Land Title 1317 Grand Ave #200 Glenwood Springs, CO 81601

Legal Description **Situs Address**

Section: 6 Township: 6 Range: 89 Subdivision: GLENWOOD SPRINGS MUNICIPAL Lot: A OPERATION CENTER

Year	Tax	Interest	Fees	Payments	Balance
Grand Total Due as of 09/19/2019					**$0.00**

Tax Billed at 2018 Rates for Tax Area 054 - 1G-1DF - 054

Authority	Mill Levy	Amount
GARFIELD COUNTY	13.6550000	$0.00
CITY OF GLENWOOD SPGS	8.6150000	$0.00
COLO RIVER WATER CONS	0.2560000	$0.00
WEST DIVIDE WATER CON	0.0370000*	$0.00
SCHOOL DISTRICT RE-1	44.0410000	$0.00
COLORADO MTN COLLEGE	3.9970000	$0.00
GARFIELD COUNTY PUBLIC LIBR	1.0720000	$0.00
RFTA	2.2490000*	$0.00
Taxes Billed 2018	73.9220000	$0.00

* Credit Levy

Values	Actual	Assessed
EXEMPT-POLITICAL SD-LAND	$855,470	$248,090
EXEMPT-POLITICAL SD-IMPS.	$3,791,080	$1,099,410
Total	$4,646,550	$1,347,500

All Tax Lien Sale amounts are subject to change due to endorsement of current taxes by the lienholder or to advertising and distraint warrant fees. Changes may occur and the Treasurer's Office will need to be contacted prior to remittance after September 1, 2019. TAX LIEN SALE REDEMPTION AMOUNTS MUST BE PAID BY CASH OR CASHIER'S CHECK.

Special taxing districts and the boundaries of such districts may be on file with the Board of County Commissioners, the County Clerk, or the County Assessor.

This certificate does not include land or improvements assessed under a separate account number, personal property taxes, transfer tax or misc. tax collected on behalf of other entities, special or local improvement district assessments or mobile homes, unless specifically mentioned.

I, the undersigned, do hereby certify that the entire amount of taxes due upon the above described parcels of real property and all outstanding sales for unpaid taxes as shown by the records in my office from which the same may still be redeemed with the amount required for redemption are as noted herein. In witness whereof, I have hereunto set my hand and seal.

GARFIELD COUNTY TREASURER

Certificate of Taxes Due

Karla J. Bagley
Treasurer, Garfield County

109 8th Street, Suite 204
Glenwood Springs, CO 81601

Appendix B: Traffic Impact Study

TRAFFIC IMPACT STUDY

RFTA GMF
ULTIMATE BUILDOUT

Prepared by

SGM

DAN COKLEY, PE, PTOE
LICENSE NO. 29799
9/19/2023

COLORADO LICENSED
DANIEL J. COKLEY
29799
9.20.23
PROFESSIONAL ENGINEER

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1.0 Introduction

This traffic impact study is prepared using the guidelines of a Colorado Department of Transportation (CDOT) Level Three Traffic Impact Study (TIS) and will satisfy City of Glenwood Springs Engineering Standards Chapter 5.11 Traffic Impact Analysis Standards. This TIS provides an estimate for design hour traffic generation for the RFTA Glenwood Maintenance Facility (GMF) and adjacent Park and Ride lot proposed expansion which is planned to occur in several phases over several years.

The City has provided the Glenwood Meadows Master Traffic Study (GMMTS) prepared by Kimley-Horn (K-H) and dated January 2023. The GMMTS provides a comprehensive overview of the entire Meadows area, from the I-70 #114 interchange on the northwest to Midland Ave. and 8th Street and downtown to Grand Ave. and reviews 2022, 2030, and 2040 scenarios that include the overall Glenwood Meadows projected development and consideration of increased background traffic. The GMMTS included the development of the RFTA GMF and Park and Ride (Zone 5) in those scenarios based on RFTA programming obtained from the RFTA Regional Transit Center (RTC) Traffic Analysis prepared by Shrewsberry for RFTA dated March 2018. This TIS provides updated projections for the RFTA ultimate buildout scenario and substitutes the “Zone 5” 2018 RFTA traffic projections in the GMMT for the RFTA ultimate buildout traffic projections developed in this study.

The purpose of this study is to simulate the 2023 Baseline operational conditions from the GMMTS and provide the trip generation, distribution, and traffic assignment for the RFTA ultimate buildout programming. It will provide an analysis of the study intersections for safety and operational impacts.

The roadway network and study area is depicted in Figure 1. The existing RFTA parcel(s) straddle Wulfsohn Road on the west end near Midland Ave. The existing GMF is on the south side and Park and Ride (P&R) lot on the north side of Wulfsohn.

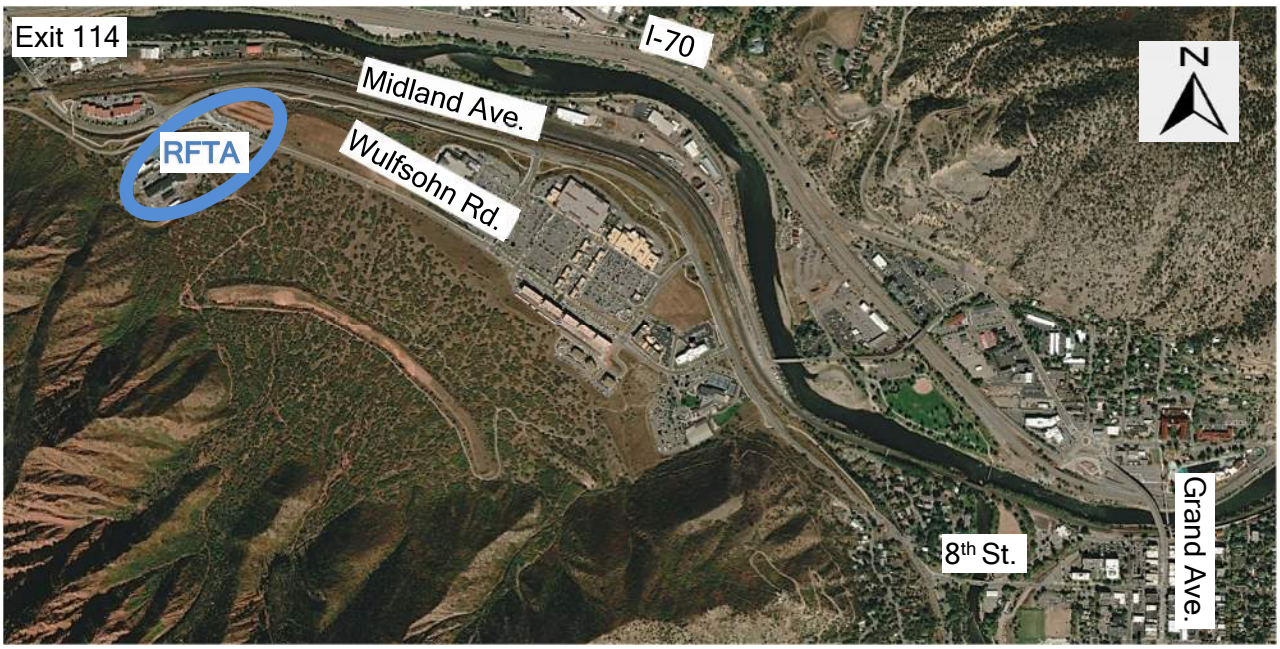

FIGURE 1 - STUDY AREA

The study intersections are as follows.

- Midland Ave. and West Wulfsohn Rd. (#4)
- Wulfsohn Rd. and RFTA GMF / P&R (#20)
- 8th and Colorado (#13)
- 9th and Colorado (#15)
- 9th and Grand (#16)

The study intersections are shown in Figure 2.

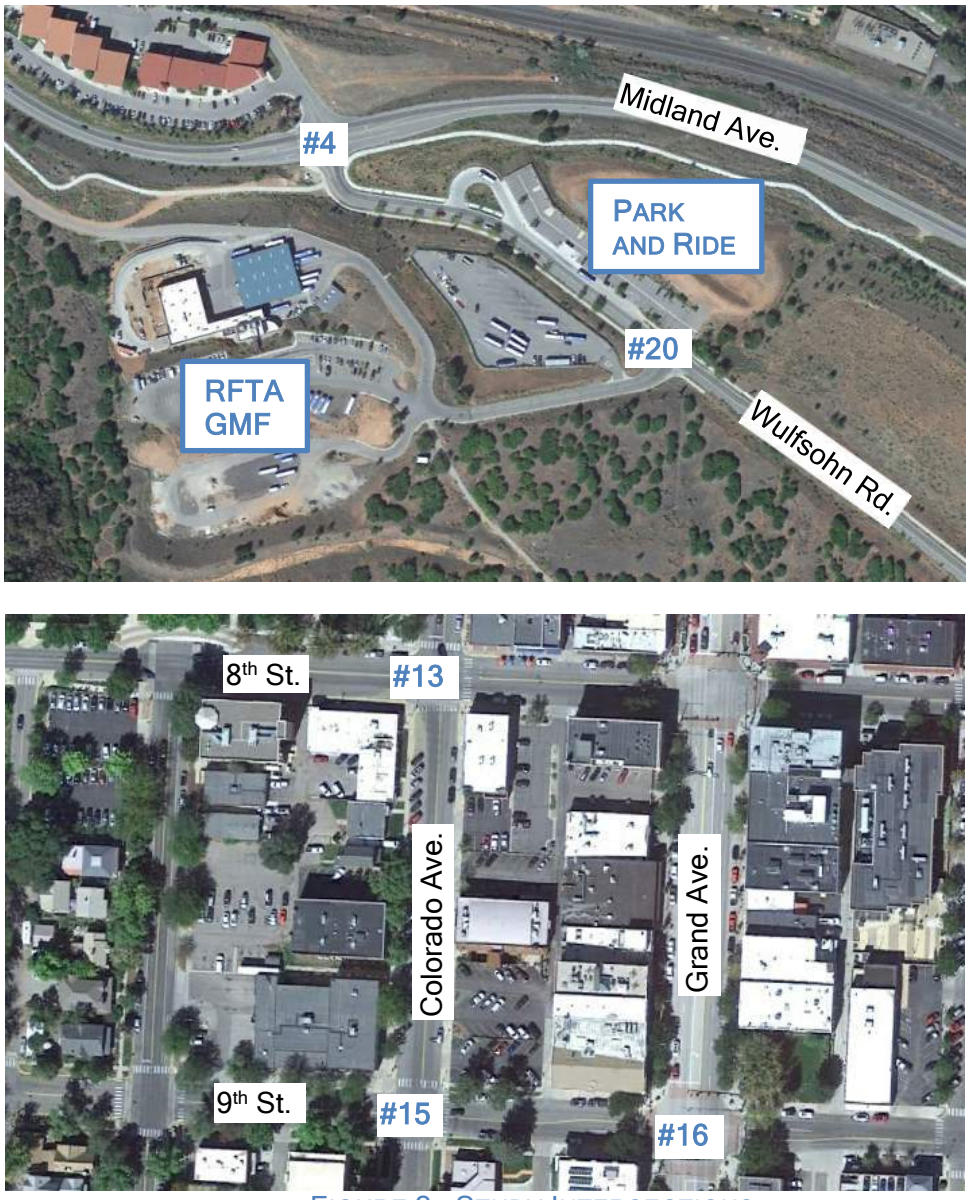

FIGURE 2 - STUDY INTERSECTIONS

1.1 Project Description

The RFTA GMF is located on the west end of Wulfsohn Road in Glenwood Springs, Colorado. The ultimate development of the site and phasing will be analyzed in this TIS. A

summary of the future development phases are outlined below and buildout is depicted in Figure 3.

- **Phase 3/4/5/7** – An increase from current operation to a 60-bus option is outlined in this study. 13,100sf of new operations center.
- **Phase 6** – 19,237 sf Administration building.
- **Phase 8** – 9,600 sf Warehouse storage.
- **Phase 9** – 74 employee housing units and additional 45-space Park and Ride expansion (total 130-space).

FIGURE 3 – OVERALL SITE PLAN (ULTIMATE BUILDOUT)

2.0 Methodology and Assumptions

This traffic impact study has been prepared in accordance with section 2.3(5) of the State Highway Access Code (SHAC) and the methodology and assumptions are provided in this section. The assumptions will provide a conservative analysis for the purposes of assessing operational and safety traffic impacts resulting from the proposed phased development.

This analysis uses HCM 6th Edition methodology and was performed using the Synchro 11 analysis package to estimate the capacity of the intersections. The MOE's that are compared for this study include LOS, delay and 95th percentile queue length. The MOE's will be reported for each analysis scenario to determine if the current intersections operate adequately. The 95th percentile queue length reported is based upon the average of ten 60-minute Simtraffic modeling runs.

Previous Study Background - We used the GMMTS for future Glenwood Meadows (GM) developed traffic (less RFTA Zone 5 traffic), distribution and assignment of future traffic, and growth factor beyond the GM developed traffic as presented in the GMMTS. The city has shared the GMMTS Synchro model to provide consistency with the previous modeling. Only the study intersection traffic volumes have been updated in the model. GM developed traffic volumes have been adjusted by subtracting the RFTA (Zone 5) volumes generated by the

GMMTS. Updated RFTA ultimate buildout traffic volumes are generated in this study based on the development outlined in section 1.1 above.

Baseline Traffic - The City provided the 2023 GMMTS containing 2022 adjusted traffic volumes. New traffic counts performed by SGM on 4/25-26/2023 were completed for the following intersections:

- Midland and West Wulfsohn (7-9a; 4-6:30p)
- Wulfsohn and RFTA GMF / P&R (7-9a; 4-6:30p)
- 8th and Colorado (11a-1:30p; 4-6:30p)
- 9th and Colorado (11a-1:30p; 4-6:30p)
- 9th and Grand (11a-1:30p; 4-6:30p)

Baseline traffic counts were not adjusted using a seasonal factor based on CDOT count station on SH 82 in South Glenwood.

The GMMTS 2022 adjusted volumes, collected on a Thursday, were consistently greater than the Tuesday/Wednesday volumes collected by SGM. To normalize the 2023 SGM traffic volumes, a factor was established for each intersection to match the total intersection volume at each intersection counted by SGM as compared to the GMMTS 2022 adjusted volumes. The 2023 peak hour traffic volumes at the Wulfsohn / RFTA intersection were factored using the Midland / West Wulfsohn intersection.

Analysis Years

Operational analysis of Baseline traffic (2023), 20-year Background traffic (2043) and 20-year Total traffic (2043) will be completed. Total traffic (2043) is split into two scenarios – one including the RFTA ultimate buildout traffic and another also including the GM developed traffic. Each scenario is explained in detail below.

- Baseline Traffic (2023) – Volumes based on adjusted traffic counts performed by SGM, as outlined above.
- Background Traffic (2043) – The volumes for this scenario were calculated by applying an annual growth rate of 0.5% to the Baseline volumes outside the immediate Glenwood Meadows travelshed – i.e., through traffic on Midland Ave. and any downtown intersections.
- Total RFTA traffic (2043) – RFTA ultimate buildout traffic volumes generated by SGM were added to the 2043 Background traffic scenario above. Comparing the results of this scenario to the 2043 Background scenario will determine the extent of traffic impacts due to RFTA development.
- Total GM + RFTA traffic (2043) – The adjusted GM developed traffic volumes are added to the Total RFTA traffic (2043) scenario above. The Total GM + RFTA traffic scenario provides a comparison of the extent of traffic impacts due to GM development.

The GMMTS provides a comprehensive overview of the entire Meadows area, and provides analysis for the 2022, 2030, and 2040 scenarios that include projected development and consideration of increased background traffic.

Trip Generation Rates

The proposed trip generation for the development is described by phase and land use type below. Land use rates were developed from the ITE Trip Generation Manual, 11th Edition, unless noted otherwise.

- **Phase 3/4/5/7** – An increase from current operation to a 60-bus option is outlined in this study. This includes an increased bus schedule and associated staffing. Trip generation and volumes from RFTA developed 60-bus program (provided in Appendix F). 13,100sf of new operations center (office) Use General Office Building (Code 710) land use from ITE.
- **Phase 6** – 19,237 sf Administration building. Use General Office Building (Code 710) land use from ITE.
- **Phase 8** – 9,600 sf Warehouse storage. No additional staffing, no additional trips.
- **Phase 9** – 74 employee housing units and additional 45-space Park and Ride expansion (total 130-space). Use Park and Ride (Code 090) and Multi-Family Housing, Mid-rise (Code 221) land uses from ITE.

TABLE 1 - TRIP GENERATION RATES

				Design Hour Rates					
Land Use	Number of Units	ITE Code	Weekday Rate	AM Rate	AM Entering	AM Exiting	PM Rate	PM Entering	PM Exiting
Ph9-Park and Ride	45	90	4.76	0.73	0.59	0.15	0.58	0.14	0.43
Ph8-Warehousing	9.6	150	1.71	0.17	0.13	0.04	0.18	0.05	0.13
Ph9-Multi-Family (Mid-rise)	74	221	4.15	0.28	0.07	0.21	0.39	0.24	0.15
Ph3-General Office Building (ksf)	13.1	710	15.11	2.23	1.96	0.27	2.37	0.40	1.96
Ph6-General Office Building (ksf)	19.2	710	14.40	2.11	1.86	0.25	2.18	0.37	1.81
Ph3/4/5/7 - 60 Bus expansion		*	* based on RFTA 60-bus projections (by RFTA 6/2023)						

TABLE 2 - TRIP DISTRIBUTION

				Weekday Design Hour Distribution			
	ITE Code	Basis of Rate	Time Period Used Above	AM IN	AM OUT	PM IN	PM OUT
Ph9-Park and Ride	90	Fitted Curve	Peak Hour adjacent Street	80%	20%	25%	75%
Ph8-Warehousing	150	Ave Rate	Peak Hour adjacent Street	77%	23%	28%	72%
Ph9-Multi-Family (Mid-rise)	221	Fitted Curve	Peak Hour adjacent Street	26%	74%	61%	39%
General Office Building (ksf)	710	Fitted Curve	Peak Hour adjacent Street	88%	12%	17%	83%

Design Hour Volume

The design hour volumes calculated in this study are based upon the peak hour of the adjacent street traffic for the proposed development land use types. The design hour volume used in this study is estimated to be the 30th highest hourly volume of the design year.

Trip Reductions

Multi-modal trips could consist of walking, biking, car-pooling and transit options. The proximity of the RFTA GMF to the Park and Ride lot and as the hub of the Colorado River and Roaring Fork valleys transit network that makes the location convenient for all transportation modes.

Glenwood Springs is an area known for hiking and biking, along with that comes increased percentages of valley residents who use those modes of transportation for commuting and other trips that typically would have been taken with vehicles. The typical US average walking and biking distance for a commute or other trip is 0.25 miles and 3 miles, respectively. With more prevalent use of alternative transportation in the region, it would be reasonable to assume those distances are increased in the area. The Glenwood Meadows mixed use area is within walking and biking distance from the site.

Given the multi-modal opportunities, a 10% reduction in trips associated with potential future employees (Operations and Administration buildings) and potential future residents (multi-Family housing) is conservatively applied and summarized below.

- Phase 3/4/5/7 – 10% transit reduction applied to office
- Phase 6 – 10% transit reduction applied to office
- Phase 8 – No additional trips.
- Phase 9 – 10% transit reduction applied to housing

Project Traffic Distribution

RFTA trip distribution is based on 2023 traffic distribution at project intersection for each leg with consideration given to GMMTS assumptions (90% oriented westerly / 10% oriented easterly). The Bus distribution is based on future RFTA programing.

2.1 Intersection Capacity Analysis

AM and PM level of service estimates were prepared in accordance with the Highway Capacity Manual 6th Edition (Transportation Research Board, 2016). For signalized intersections, the HCM measures level of service in terms of seconds of delay per vehicle. This is also a measure of driver discomfort, fuel consumption, and lost travel time. The table below relates the LOS to seconds of delay per vehicle at a signalized intersection.

TABLE 3 - LEVEL OF SERVICE (LOS) CRITERIA SIGNALIZED INTERSECTIONS

Level of Service	Delay (seconds)
A	< 10.0
B	10.1 to 20
C	20.1 to 35
D	35.1 to 55
E	55.1 to 80
F	> 80.0

Source: *Highway Capacity Manual*, 2016

For unsignalized intersections, the Highway Capacity Manual defines level of service and delay in terms of seconds of stopped delay per vehicle, which is based on the number of acceptable gaps in the conflicting traffic stream. In general, the traffic movements analyzed are those controlled by stop signs or yield signs, and the left turn movements from the uncontrolled major street. The following table represents the level of service criteria for unsignalized intersections:

TABLE 4 - LEVEL OF SERVICE (LOS) CRITERIA UNSIGNALIZED INTERSECTIONS

Level of Service	Delay (seconds)
A	< 10.0
B	10.1 to 15
C	15.1 to 25
D	25.1 to 35
E	35.1 to 50
F	> 50.0

Source: *Highway Capacity Manual*, 2016

The “overall” intersection level of service at a signalized or an unsignalized intersection corresponds with the average delay experienced on the minor street approaches and the uncontrolled major street movements. The unconflicted major street through movements are considered to have no delay. Because most of the intersection movements are major street

movements with no delay, the overall intersection results in a LOS with less delay than the minor street approaches and conflicting major street movements (left turns) experience.

In general, CDOT and the City consider the overall intersection operation of LOS "D" or better acceptable during the peak hours. The goal is to also provide a similar LOS for each controlled intersection movement and/or approach.

This study will assess the operational measures of effectiveness (MOE's) including Level of Service (LOS), Delay, and 95th percentile queue. The MOE analysis by movement provides an overview of all intersection approach and conflicting movements and provides a more realistic picture of operations by controlled movement or approach as experienced and perceived by users. The MOE's also provide a valuable reference point for comparison of LOS, Delay and Queue between scenarios.

3.0 Baseline Traffic Conditions (2023)

3.1 Existing Roadways and Intersections

Roadway and intersection descriptions are provided in the GMMTS are accurate at the time of this study and are provided in the Appendix. The GMMTS Synchro model is the basis for this study and serves to replicate the 2022 results from the GMMTS to provide a comparative baseline to understand potential impacts with the addition of the Background, RFTA, and GM traffic volumes.

3.2 Baseline Intersection Capacity Analysis

Using the Baseline traffic volumes provided in Appendix A the capacity analysis was modeled in Synchro to estimate level of service and delay for each intersection.

Table 5 shows the overall results of the capacity analysis for the intersections in the study area. The study intersections operate at an acceptable overall LOS C or better under baseline conditions.

The MOE's; LOS, delay (seconds) and 95th percentile queue lengths (feet) by approach movement are also presented in Table 5 and provide a reference point of 2023 Baseline traffic conditions to understand the effect of growth unrelated to the proposed development provided in the 2043 Background traffic volumes. All but Grand Ave side street approach movements operate at an acceptable LOS D or better under baseline conditions. 9th Street approach movements operate at LOS E or worse during the AM and PM peak hour.

Queuing is reported for each approach movement at the study intersections to provide another indication of intersection performance. A queue length of 20 ft represents a single vehicle. Highlighted queue lengths indicate that the queue length exceeds the link or storage bay distance and is depicted in the following MOE tables as shown below.

*95th percentile queue exceeds link distance

*95th percentile queue exceeds storage bay distance

**Modeled link distance differs from actual link distance

The Baseline scenario shows results with 95th percentile queue lengths well below or near existing storage bay or link lengths.

TABLE 5 - BASELINE - OVERALL LOS AND MOE BY MOVEMENT SUMMARY

Intersection	Approach Movement		Link/Storage Bay Distance (L_T_R)	2023 Baseline				
				Overall LOS	Overall Delay	LOS	Delay	95th % Q (L_T_R)
#20 Wulfsohn Rd. and RFTA / PnR	EB L	AM	825	A	2.2	A	7.5	8
		PM		A	2.7	A	7.3	7
	WB L	AM	1500**			A	7.3	7
		PM				A	7.4	6
	NB R	AM	334**			A	8.5	20
		PM				A	8.7	23
	NB T/L	AM	334**			B	10.1	42
		PM				A	9.8	41
	SB	AM	254**			A	9.9	33
		PM				A	9.3	35
#4 - Midland Avenue and Wulfsohn Road	EB L	AM	95_776_25	A	1.4	A	8.3	29_0_27
		PM		A	2.4	A	9.8	31_0_28
	WB L	AM	95_1350			B	10.6	6_2
		PM				A	8.5	6_2
	NB	AM	825			D	27.9	57
		PM				D	32.1	66
	SB T/L	AM	327			C	24.6	35
		PM				C	21.8	32
	SB R	AM	75			B	10.6	27
		PM				C	16.9	26
#13 8th St. and Colorado Ave.	EB	AM	218	B	11	B	10.3	87
		PM		B	10.2	B	10.7	97
	WB	AM	226			B	12.1	137
		PM				B	10.2	146
	NB	AM	404			B	10.3	50
		PM				A	9.2	53
	SB	AM	398			A	9.1	49
		PM				A	9.2	55
#15 9th St. and Colorado Ave.	EB	AM	501	A	8.8	A	8.1	51
		PM		A	8	A	7.9	54
	WB	AM	211			A	8	62
		PM				A	7.8	63
	NB	AM	418			A	7.9	15
		PM				--	--	--
	SB	AM	404			A	9.3	78
		PM				A	8.2	79
#16 9th St. and Grand Ave.	EB L	AM	75	A	9.8	D	42	59
		PM		C	20.5	E	76.2	72
	EB T/R	AM	211			D	45.4	75
		PM				E	79.9	83
	WB L	AM	75			D	43.5	62
		PM				E	71.8	58
	WB T/R	AM	277			D	45.3	70
		PM				F	91.4	70
	NB L	AM	150			A	6.9	116
		PM				A	7.4	147
	NB TT/R	AM	433_433			B	11.4	266_227
		PM				B	16.9	306_261
	SB L	AM	125			A	8.2	49
		PM				B	13.3	59
	SB TT/R	AM	412_412			A	1.2	164_173
		PM				B	10.7	218_213

1 – Delay expressed as average delay per vehicle in seconds/vehicle

4.0 Background Traffic (2043)

The Baseline 2023 traffic volumes were used as a basis to develop the 20-year) Background (2043) traffic volumes. The Midland Ave through movements and the intersections in the downtown area were adjusted using a 20-year growth factor of 1.105. No growth factor was applied to the project intersection on Wulfsohn Rd.

4.1 Background Intersection Capacity Analysis

Using the 2043 Background traffic volumes, the capacity analysis was modeled in Synchro to determine level of service and delay for the access. The 2043 Background traffic volumes are provided in Appendix A.

Table 6 shows the overall results of the capacity analysis for the study intersections. The study intersections operate at an overall LOS C or better.

MOE analysis is also presented in Table 6 and provides an overview of intersection approach movements for 2043 Background traffic conditions for comparison to 2023 Baseline traffic conditions to understand the effect of background traffic volumes. Similar to the 2023 Baseline scenario, the Grand Ave side street approach movements operate at LOS E or worse during the AM and PM peak hour. The NB Wulfsohn Rd approach to Midland also degrades to LOS E during the PM design hour due to the increased background Midland through traffic.

Overall, the approach movement queue lengths increase slightly from Baseline to Background volumes, near the rate of the 20-year growth factor applied to the model. The NB PM design hour SH 82 through movement queue length exceeds the existing storage between the 9th and 10th Street intersections. 9th Street side street storage bay lengths are also slightly exceeded by the modeled queues.

TABLE 6 - BACKGROUND - OVERALL LOS AND MOE BY MOVEMENT SUMMARY

Intersection	Approach Movement		Link/Storage Bay Distance (L_T_R)	2023 Baseline					2043 Background				
				Overall LOS	Overall Delay	LOS	Delay	95th % Q (L_T_R)	Overall LOS	Overall Delay	LOS	Delay	95th % Q (L_T_R)
#20 Wulfsohn Rd. and RFTA / PnR	EB L	AM	825	A	2.2	A	7.5	8	A	2.2	A	7.5	7
		PM		A	2.7	A	7.3	7	A	2.7	A	7.3	4
	WB L	AM	1500**			A	7.3	7			A	7.3	6
		PM				A	7.4	6			A	7.3	2
	NB R	AM	334**			A	8.5	20			A	8.5	23
		PM				A	8.7	23			A	8.7	22
	NB T/L	AM	334**			B	10.1	42			B	10.1	41
		PM				A	9.8	41			A	9.8	40
	SB	AM	254**			A	9.9	33			A	9.9	35
		PM				A	9.3	35			A	9.3	43
#4 - Midland Avenue and Wulfsohn Road	EB L	AM	95_776_25	A	1.4	A	8.3	29_0_27	A	1.4	A	8.4	31_0_28
		PM		A	2.4	A	9.8	31_0_28	A	2.6	B	10.3	14_8_31
	WB L	AM	95_1350			B	10.6	6_2			B	11.1	6_2
		PM				A	8.5	6_2			A	8.6	20_17
	NB	AM	825			D	27.9	57			D	32.8	66
		PM				D	32.1	66			E	39.4	82
	SB T/L	AM	327			C	24.6	35			D	27.6	32
		PM				C	21.8	32			C	24.3	40
	SB R	AM	75			B	10.6	27			B	10.9	26
		PM				C	16.9	26			C	18.7	53
#13 8th St. and Colorado Ave.	EB	AM	218	B	11	B	10.3	87	B	12.1	B	11.1	97
		PM		B	10.2	B	10.7	97	B	10.8	B	11.5	166
	WB	AM	226			B	12.1	137			B	13.7	146
		PM				B	10.2	146			B	10.9	105
	NB	AM	404			B	10.3	50			A	9.8	53
		PM				A	9.2	53			A	9.5	72
	SB	AM	398			A	9.1	49			A	9.5	55
		PM				A	9.2	55			A	9.5	60
#15 9th St. and Colorado Ave.	EB	AM	501	A	8.8	A	8.1	51	A	9.1	A	8.3	54
		PM		A	8	A	7.9	54	A	8.1	A	8	53
	WB	AM	211			A	8	62			A	8.2	63
		PM				A	7.8	63			A	7.9	60
	NB	AM	418			A	7.9	15			A	8	16
		PM				--	--	--			--	--	--
	SB	AM	404			A	9.3	78			A	9.7	79
		PM				A	8.2	79			A	8.4	52
#16 9th St. and Grand Ave.	EB L	AM	75	A	9.8	D	42	59	B	10.5	D	41.7	72
		PM		C	20.5	E	76.2	72	C	23.2	E	76.1	95
	EB T/R	AM	211			D	45.4	75			D	45.4	83
		PM				E	79.9	83			F	80.3	120
	WB L	AM	75			D	43.5	62			D	43.3	58
		PM				E	71.8	58			E	71.5	104
	WB T/R	AM	277			D	45.3	70			D	45.2	70
		PM				F	91.4	70			F	97.3	222
	NB L	AM	150			A	6.9	116			A	7.3	147
		PM				A	7.4	147			A	8.1	144
	NB TT/R	AM	433_433			B	11.4	266_227			B	12.7	306_261
		PM				B	16.9	306_261			C	20.4	553_556
	SB L	AM	125			A	8.2	49			A	8.9	59
		PM				B	13.3	59			B	17.8	73
	SB TT/R	AM	412_412			A	1.2	164_173			A	1.5	218_213
		PM				B	10.7	218_213			B	11.7	264_251

1 – Delay expressed as average delay per vehicle in seconds/vehicle

5.0 Total RFTA Traffic (2043) - Background plus RFTA Ultimate

5.1 Project Intersection

The RFTA GMF, P&R, and the project intersection (#20) are shown in Figure 4 below.

FIGURE 4 – RFTA GMF / PARK AND RIDE INTERSECTION WITH WULFSOHN ROAD

5.2 Project Access Trip Generation and Assignment

Using the trip generation rate and distribution assumptions provided in 2.0 Methodology the resulting trip generation by land use is provided in Table 7, trip generation by phase is provided in Table 8. Table 7 also applies the 10% trip reduction factor and present the reduced traffic volumes.

TABLE 7 -- ACCESS DESIGN HOURLY VOLUME BY LAND USE

Land Use	Number of Units	Weekday Traffic	Weekday Design Hour Traffic AM IN	AM OUT	PM IN	PM OUT
Ph9-Park and Ride	45	214	26	7	7	20
Ph8-Warehousing	9.6	16	1	0	0	1
Ph9-Multi-Family (Mid-rise)	74	307	5	16	18	11
Ph3-General Office Building (ksf)	13.1	198	26	3	5	26
Ph6-General Office Building (ksf)	19.2	277	36	5	7	35
Ph3/4/5/7 - 60 Bus expansion			3	14	4	8
Total Traffic		**1,012**	**97**	**45**	**41**	**101**
Total DHV			**142**		**142**	
***Ph9** HOUSING 10% Transit Reduction*		*276*	*5*	*14*	*16*	*10*
***Ph3** OFFICE 10% Transit Reduction*		*178*	*23*	*3*	*5*	*23*
***Ph6** OFFICE 10% Transit Reduction*		*249*	*32*	*5*	*6*	*32*
Total Traffic (reduced)		**934**	**90**	**43**	**38**	**94**
Total DHV (reduced)			**133**		**132**	

TABLE 8 -- ACCESS DESIGN HOURLY VOLUME BY PHASE

Phase	Weekday Design Hour Traffic AM IN	AM OUT	PM IN	PM OUT
Phase 3/4/5/7	26	17	9	31
Phase 6	32	5	6	32
Phase 8	1	0	0	1
Phase 9	31	21	23	30

The trip distribution and assignment at the RFTA / P&R and Wulfsohn Road intersection is provided in Appendix F.

5.3 Total RFTA Traffic Intersection Capacity Analysis

The Total RFTA traffic volumes are shown in Appendix A. Table 9 shows the overall LOS results of the capacity analysis for the study intersections for the 2043 Total RFTA Ultimate traffic scenario. The study intersections operate at an overall LOS C or better.

MOE analysis is also presented in Table 9 and provides an overview of intersection approach movements to understand the effect of RFTA Ultimate traffic volumes in addition to the 2043 Background traffic. All intersection approach movements operate at LOS C or better except for those highlighted in the table, further summary is provided below.

Wulfsohn Rd. and RFTA / P&R (#20)

The project intersection operates at overall LOS A and all approach movements operate at LOS B or better in both scenarios. Expected 95th percentile queue lengths are within existing storage lengths.

Midland Ave. and Wulfsohn Rd. (#4)

The NB approach operates at LOS D (E) in the 2043 Background scenario, the RFTA ultimate buildout traffic degrades the operation to LOS (E) F. The 95th percentile queue analysis shows a length of 66 (82) ft in the 2043 Background scenario and increases to 134 (239) ft queue length with the RFTA ultimate buildout traffic.

TABLE 9 - TOTAL RFTA - OVERALL LOS AND MOE BY MOVEMENT SUMMARY

Intersection	Approach Movement		Link/Storage Bay Distance (L_T_R)	2043 Background					2043 Background + RFTA				
				Overall LOS	Overall Delay	LOS	Delay	95th % Q (L_T_R)	Overall LOS	Overall Delay	LOS	Delay	95th % Q (L_T_R)
#20 Wulfsohn Rd. and RFTA / PnR	EB L	AM	825	A	2.2	A	7.5	7	A	3.6	A	7.6	19
		PM		A	2.7	A	7.3	4	A	4.9	A	7.4	14
	WB L	AM	1500**			A	7.3	6			A	7.5	15
		PM				A	7.3	2			A	7.4	7
	NB R	AM	334**			A	8.5	23			A	8.7	35
		PM				A	8.7	22			A	8.8	42
	NB T/L	AM	334**			B	10.1	41			B	12	50
		PM				A	9.8	40			B	11.1	55
	SB	AM	254**			A	9.9	35			B	10.8	45
		PM				A	9.3	43			B	10	56
#4 - Midland Avenue and Wulfsohn Road	EB L	AM	95_776_25	A	1.4	A	8.4	31_0_28	A	2.6	A	8.4	32_16_38
		PM		A	2.6	B	10.3	14_8_31	A	8.6	B	10.3	17_10_35
	WB L	AM	95_1350			B	11.1	6_2			B	11.4	24_9
		PM				A	8.6	20_17			A	8.7	20_24
	NB	AM	825			D	32.8	66			E	43.5	134
		PM				E	39.4	82			F	88	239
	SB T/L	AM	327			D	27.6	32			D	29.2	32
		PM				C	24.3	40			C	24.8	41
	SB R	AM	75			B	10.9	26			B	11	24
		PM				C	18.7	53			C	18.7	56
#13 8th St. and Colorado Ave.	EB	AM	218	B	12.1	B	11.1	97	C	15.9	B	13.5	191
		PM		B	10.8	B	11.5	166	B	12.1	B	13.4	186
	WB	AM	226			B	13.7	146			C	19.6	157
		PM				B	10.9	105			B	11.8	106
	NB	AM	404			A	9.8	53			B	10.8	61
		PM				A	9.5	72			B	10.2	79
	SB	AM	398			A	9.5	55			B	10.3	63
		PM				A	9.5	60			A	9.9	71
#15 9th St. and Colorado Ave.	EB	AM	501	A	9.1	A	8.3	54	A	9.6	A	8.5	57
		PM		A	8.1	A	8	53	A	8.2	A	8.1	56
	WB	AM	211			A	8.2	63			A	8.5	62
		PM				A	7.9	60			A	8	60
	NB	AM	418			A	8	16			A	8.1	21
		PM				--	--	--			--	--	--
	SB	AM	404			A	9.7	79			B	10.4	79
		PM				A	8.4	52			A	8.6	51
#16 9th St. and Grand Ave.	EB L	AM	75	B	10.5	D	41.7	72	B	17.4	E	72.7	85
		PM		C	23.2	E	76.1	95	C	23.9	E	75	98
	EB T/R	AM	211			D	45.4	83			F	88.7	127
		PM				F	80.3	120			F	81.3	138
	WB L	AM	75			D	43.3	58			E	75.8	74
		PM				E	71.5	104			E	71.3	91
	WB T/R	AM	277			D	45.2	70			E	79.4	88
		PM				F	97.3	222			F	97.3	200
	NB L	AM	150			A	7.3	147			A	8.1	137
		PM				A	8.1	144			A	8.5	151
	NB TT/R	AM	433_433			B	12.7	306_261			B	11.2	331_270
		PM				C	20.4	553_556			C	21.1	548_554
	SB L	AM	125			A	8.9	59			A	8	62
		PM				B	17.8	73			B	18.4	81
	SB TT/R	AM	412_412			A	1.5	218_213			B	11.4	290_272
		PM				B	11.7	264_251			B	12.2	263_247

1 – Delay expressed as average delay per vehicle in seconds/vehicle

9th St. and Grand Ave. (#16):
In the 2043 Background scenario, the EB and WB approach movements operate at LOS D or worse. The addition of the RFTA ultimate buildout traffic degrades the operation to LOS E or worse. The intersection still maintains an acceptable overall LOS B (C). The 95th percentile queue analysis indicates that the WB and EB left turns exceed the existing storage lengths in both the 2043 Background and 2043 RFTA ultimate buildout scenario.

5.4 Total RFTA Traffic Auxiliary Turn Lane Analysis

Auxiliary turn lane requirements for access to Colorado State Highways and many local roadways are determined using the State Highway Access Code (SHAC) and based on the projected DHVs, the speed limit and geometry of the highway adjacent to the access, and the classification of the highway. The City uses the SHAC as the standard for determining the need for auxiliary lanes.

5.4.1 Wulfsohn Rd. and RFTA GMF/Park and Ride (#20)

For design purposes, the speed limit of Wulfsohn Rd. adjacent to the project is 25 mph in both directions.

Based on the SHAC 3.12 for a Category NR-C – Non-Rural Arterial, auxiliary turn lanes shall be installed according to the criteria below:

a. A left turn lane with taper and storage length is required for any access with a projected peak hour left ingress turning volume greater than 25 vph. No deceleration length is required.
    - *WB left volume 41 vph – Lane warranted*
    - *EB left volume 21 vph – Lane not warranted*
    - Storage Length = 50 ft; For reference; using a passenger vehicle length of 20 ft (A bus equals two passenger vehicles, a semi-trailer equals 3 passenger vehicles). The 50 ft length has the following capacity: 2 passenger vehicles, or 1 bus.
b. A right turn deceleration lane and taper length is required for any access with a projected peak hour right ingress turning volume greater than 50 vph. No deceleration length is required.
    - *WB right volume: 39 vph – Lane not warranted*
    - *EB right volume: 33 vph – Lane not warranted*

TABLE 10 – WULFSOHN / RFTA INTERSECTION AUXILIARY LANE REQUIREMENTS

Auxiliary Lane (11 ft width)	Standard Code Design Length + Storage (taper) (ft)	DHV (vph)	Posted Speed (mph)	Storage (ft)	95th % Q (ft)
EB Left Turn	--	21	25	--	19
WB Left Turn	0 + 50 (90)	41	25	50	31

The SHAC provides the following design parameters for redirect tapers:

a. The WB redirect taper is located within a 25-mph speed zone and should have a taper rate of 15:1.

5.4.2 Midland Ave. and Wulfsohn Rd. (#4)

For design purposes, the speed limit of Midland Ave. at the intersection with Wulfsohn Rd. is 25 mph in both directions.

Based on the SHAC for a Category NR-C – Non-Rural Arterial, auxiliary turn lanes shall be installed according to the criteria below:

a. A left turn lane with taper and storage length is required for any access with a projected peak hour left ingress turning volume greater than 25 vph. No deceleration length is required.
   - *WB left volume 7 vph – Lane not warranted*
   - *EB left volume 31 vph – Lane warranted*
   - Storage Length = 40 ft; A 40 ft length has the following capacity: 2 passenger vehicles, or 1 bus.

b. A right turn deceleration lane and taper length is required for any access with a projected peak hour right ingress turning volume greater than 50 vph. No deceleration length is required.
   - *WB right volume: 19 vph – Lane not warranted*
   - *EB right volume: 133 vph – Lane warranted*
   - Storage Length = 150 ft; A 150 ft. length has the following capacity: 7 passenger vehicles, 1 bus and 5 passenger vehicles, or 1 semi-truck and 4 passenger vehicles.

TABLE 11 – MIDLAND / WULFSOHN INTERSECTION AUXILIARY LANE REQUIREMENTS

Auxiliary Lane (12 ft width)	Existing Condition Storage (taper) (ft)	Standard Code Design Storage (taper) (ft)	DHV (vph)	Posted Speed (mph)	Storage required (ft)	95th % Q (ft)
EB Left Turn	95 + (70)	40 + (90)	31	25	--	19
EB Right Turn	25 + (75)	150 + (90)	133	25	**125**	47
WB Left Turn	95 + (70)	--	7	25	--	24

The State Access Code gives the following design parameters for redirect tapers:

a. Both redirect tapers are located within a 25-mph speed zone and should have a taper rate of 15:1

The existing EB Left Turn storage bay distance of 95 ft. is sufficient. The existing EB Right Turn storage bay has a length of 25 ft and requires an additional 125 ft. to meet the SHAC Auxiliary Lane Requirements.

5.5 Wulfsohn Rd. and RFTA GMF/Park and Ride – Access Assessment

The existing project intersection is a two-way stop-controlled intersection with Wulfsohn Road uncontrolled and stop signs on the north and south approaches. This access lies within a tangent section of Wulfsohn Road. Both the NB and SB approaches are able to provide adequate entering sight distance for a Multi-Unit Truck and Bus, with available sight distance of 425 ft based on the 25-mph posted speed. Consideration needs to be given to the street trees on the south side of Wulfsohn to maintain vision for NB traffic through the required sight triangle. The 85th percentile speed on west Wulfsohn as reported in the GMMTS is approximately 35 mph and would require an entering sight distance of 595 ft. The SB approach provides this additional sight distance. The NB approach can provide a maximum distance of 475 ft with attention to tree trimming within the sight triangle of the street trees on the south side of Wulfsohn Road, sight distance beyond that is limited by the horizontal and vertical roadway geometry. Photographs of the existing access conditions are provided below.

FIGURE 5 – RFTA GMF NB APPROACH AT WULFSOHN ROAD (W / E)

FIGURE 6 – RFTA P&R SB APPROACH AT WULFSOHN ROAD (E / W)

The buildout of the RFTA GMF will result in an increase in both vehicular and pedestrian volumes at the Wulfsohn Road project intersection. The CDOT Pedestrian Crossing Guidelines provide guidance for the installation of crosswalks and appropriate treatments based on location, volumes, and roadway type.

Based on the future vehicular traffic on Wulfsohn Road, up to 5000 ADT, and increased pedestrian volumes with the addition of the administration building, employee housing, and park and ride expansion, the installation of a pedestrian crosswalk is recommended. The painted crosswalk should be located on the west side of the Wulfsohn Road intersection as shown in Figure 7. The crosswalk should be installed with warning signage per the MUTCD consisting of a W11-2 pedestrian crossing sign with a W16-7p plaque mounted on the side of the roadway at the crosswalk location and a W11-2 advanced pedestrian warning sign. Guidelines and calculations are provided in the Appendix.

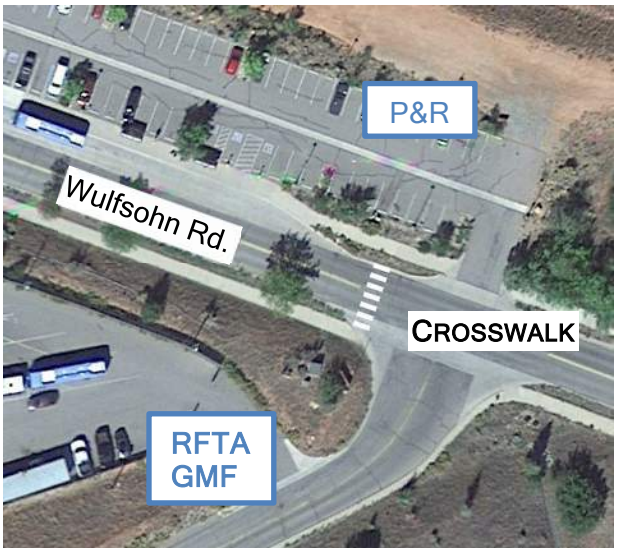

FIGURE 7 – RFTA P&R / GMF AT WULFSOHN ROAD – PEDESTRIAN CROSSING

5.6 State Highway Access Permit Evaluation

Based on the SHAC, an access permit is required when a change of greater than 20% occurs when accessing a state highway. Because there is not an existing permit for I-70 Exit #114, CDOT has directed to use the 2022 Existing Adjusted traffic volumes from the K-H GMMTS as the permit threshold, those volumes are calculated in Appendix F shown in Table 12. The table also presents the percentage of DHV added to the Exit #114 Interchange by the RFTA ultimate buildout scenario. The RFTA total traffic falls below the 20% threshold that requires a CDOT Access Permit.

TABLE 12 – RFTA DHV AND 2022 I-70 DHV %

RFTA	HOUR	DHV	% 2023 DHV
TOTAL ULTIMATE BUILDOUT	AM	82	6.0%
	PM	94	6.3%
	2023 DHV		
	AM	1,359	
	PM	1,493	

5.7 Total RFTA Traffic – Summary of Conclusions

The analysis of the combined 2043 Background traffic and the RFTA ultimate buildout traffic presented above results in the following conclusions.

- The degradation of LOS at the Midland and Wulfsohn intersection is partially the result of the RFTA ultimate buildout traffic. In terms of percentages, the RFTA share of the volume is as follows.
  - 42% of 2023 Baseline DHV
  - 20% of 2043 Total GM-RFTA DHV

- Improvement of the Midland and Wulfsohn intersection is needed prior to RFTA ultimate buildout or the NB approach LOS will degrade to LOS E/F with up to 250 ft 95th percentile queue lengths.
- Depending on timing of potential Midland and Wulfsohn intersection improvements being implemented, consideration should be given to extending the existing EB right turn lane an additional 125 ft, for a total of 150 ft.
- The RFTA ultimate buildout volumes warrant a WB left turn lane from Wulfsohn to the RFTA GMF access driveway. Consideration should be given to providing the corresponding EB left turn lane to the RFTA Park and ride lot which is just under the warrant volume (21 v 25 vph)
- The future development of the residential units and/or additional park and ride spaces should include a consideration for a two-lane SB approach to Wulfsohn Road to help alleviate potential SB queuing issues across the existing park and ride lot access aisle.
- At the NB approach to Wulfsohn, RFTA should work with the City to trim and/or remove trees to provide the maximum sight distance possible with existing geometric limitations (~475 ft).
- At the west side of the Wulfsohn Road project intersection, a painted crosswalk should be installed with warning signage per the MUTCD consisting of a W11-2 pedestrian crossing sign with a W16-7p plaque mounted on the side of the roadway at the crosswalk location and a W11-2 advanced pedestrian warning sign.
- The RFTA ultimate buildout traffic does not trigger a CDOT Access Permit at Exit 114

6.0 Total GM+RFTA Traffic (2043) - Background plus GM Developed plus RFTA

6.1 Glenwood Meadows Trip Generation and Assignment

The RFTA (Zone 5) traffic was calculated based on the volume and distribution in the GMMTS. Subtracting the Zone 5 trip assignment volumes from the fully developed GMMTS assignment (GMMTS Figure 11) results in the Glenwood Meadows traffic distribution less RFTA (Zone 5) traffic. Adding this to the previous 2043 Background plus RFTA ultimate buildout scenario results in the 2043 Total Traffic, which includes background traffic and fully developed RFTA and Glenwood Meadows Traffic. The Total GM+RFTA traffic volumes are shown in Appendix A.

6.2 Total GM + RFTA Traffic Intersection Capacity Analysis

Table 13 shows the overall LOS results of the capacity analysis for the study intersections for the Total GM+RFTA traffic scenario. The Midland and Wulfsohn and 8th Street and Colorado Ave intersections overall LOS degrade to LOS E(F) and LOS D(D) respectively when the GM 2040 traffic is added to the 2043 Background plus RFTA ultimate buildout scenario. The remaining study intersections continue to operate at overall LOS C or better.

MOE analysis is also presented in Table 13 and provides an overview of intersection approach movements for Total GM+RFTA scenario to understand the effect of Glenwood Meadows traffic volumes in addition to the Total RFTA traffic. All intersection approach movements operate at LOS C or better except for those highlighted in the table and summarized below.

Wulfsohn Rd. and RFTA / P&R (#20)

The project intersection operates at overall LOS A and all approach movements operate at LOS C or better in both scenarios. The 95th percentile queue lengths are affected by the queuing that occurs at the Wulfsohn NB approach to Midland, which queues through this intersection and results in side street queuing. A solution to the future capacity issues at the Midland and Wulfsohn intersection will result in acceptable operation and queuing at this location.

Midland Ave. and Wulfsohn Rd. (#4)

The NB approach operates at LOS F during both design hours in the Total GM + RFTA scenario. The 95th percentile queue analysis results in approximately 1000 ft of queuing that extends through the Wulfsohn Road project intersection. The capacity issue can be resolved with the implementation of either a traffic signal or roundabout at this location. The GMMTS recommended implementing signal control, or alternatively a two-lane roundabout, at this intersection to alleviate the LOS and queueing issues with 2030 traffic volume projections.

The GMMTS traffic signal analysis maintained the same intersection geometry with permissive-only left turn phasing on all four approaches and a cycle length of 90 seconds, which improved the AM and PM overall LOS to B and C, respectively. The 95th queue lengths were reported on the order of 300-400 ft, at least 400 ft clear of (and west of) the project intersection.

A two-lane roundabout was initially discarded as a feasible alternative in the GMMTS, but further preliminary analysis by SGM found that the 2040 Traffic volumes may be acceptable for a roundabout that could fit the topography of the site. (See SGM Memorandum dated 4/27/2023).

TABLE 13 - TOTAL GM+RFTA - OVERALL LOS AND MOE BY MOVEMENT SUMMARY

Intersection	Approach Movement		Link/Storage Bay Distance (L_T_R)	2043 Background + RFTA					2043 Background + GM + RFTA				
				Overall LOS	Overall Delay	LOS	Delay	95th % Q (L_T_R)	Overall LOS	Overall Delay	LOS	Delay	95th % Q (L_T_R)
#20 Wulfsohn Rd. and RFTA / PnR	EB L	AM	825	A	3.6	A	7.6	19	A	2.7	A	8	16
		PM		A	4.9	A	7.4	14	A	3.4	A	7.7	15
	WB L	AM	1500**			A	7.5	15			A	7.7	2015
		PM				A	7.4	7			A	7.8	1493
	NB R	AM	334**			A	8.7	35			A	9.2	134
		PM				A	8.8	42			A	9.8	275
	NB T/L	AM	334**			B	12	50			C	15.9	329
		PM				B	11.1	55			C	15.9	438
	SB	AM	254**			B	10.8	45			B	13.3	230
		PM				B	10	56			B	12.6	329
#4 - Midland Avenue and Wulfsohn Road	EB L	AM	95_776_25	A	2.6	A	8.4	32_16_38	E	47.1	A	8.5	35_17_47
		PM		A	8.6	B	10.3	17_10_35	F	97.8	B	10.9	44_16_46
	WB L	AM	95_1350			B	11.4	24_9			B	11.9	27_6
		PM				A	8.7	20_24			A	9.1	24_20
	NB	AM	825			E	43.5	134			F	367.2	953
		PM				F	88	239			F	718.9	976
	SB T/L	AM	327			D	29.2	32			D	34.3	41
		PM				C	24.8	41			E	35.9	72
	SB R	AM	75			B	11	24			B	11.3	34
		PM				C	18.7	56			C	21.9	73
#13 8th St. and Colorado Ave.	EB	AM	218	C	15.9	B	13.5	191	D	31.7	D	37.2	240
		PM		B	12.1	B	13.4	186	D	27.7	D	31.7	228
	WB	AM	226			C	19.6	157			E	37.2	188
		PM				B	11.8	106			D	29.7	169
	NB	AM	404			B	10.8	61			B	12.2	64
		PM				B	10.2	79			B	12.3	76
	SB	AM	398			B	10.3	63			B	11.6	63
		PM				A	9.9	71			B	11.8	69
#15 9th St. and Colorado Ave.	EB	AM	501	A	9.6	A	8.5	57	A	9.6	A	8.5	52
		PM		A	8.2	A	8.1	56	A	8.2	A	8.1	52
	WB	AM	211			A	8.5	62			A	8.5	66
		PM				A	8	60			A	8	58
	NB	AM	418			A	8.1	21			A	8.1	20
		PM				--	--	--			--	--	--
	SB	AM	404			B	10.4	79			B	10.4	78
		PM				A	8.6	51			A	8.6	54
#16 9th St. and Grand Ave.	EB L	AM	75	B	17.4	E	72.7	85	B	17.4	E	72.7	86
		PM		C	23.9	E	75	98	C	24.8	E	75.3	102
	EB T/R	AM	211			F	88.7	127			F	88.7	138
		PM				F	81.3	138			F	81.3	133
	WB L	AM	75			E	75.8	74			E	75.8	76
		PM				E	71.3	91			E	71.3	102
	WB T/R	AM	277			E	79.4	88			E	79.4	91
		PM				F	97.3	200			F	97.3	238
	NB L	AM	150			A	8.1	137			A	8.5	132
		PM				A	8.5	151			A	8.8	153
	NB TT/R	AM	433_433			B	11.2	331_270			B	11.4	341_279
		PM				C	21.1	548_554			C	22.9	523_543
	SB L	AM	125			A	8	62			A	8.1	57
		PM				B	18.4	81			C	21	90
	SB TT/R	AM	412_412			B	11.4	290_272			B	11.8	306_287
		PM				B	12.2	263_247			B	12.5	289_274

1 – Delay expressed as average delay per vehicle in seconds/vehicle

8th St. and Colorado Ave. (#13):
The addition of the 2040 Glenwood Meadows traffic degrades LOS from B (C) to LOS D (D), still an acceptable LOS for the City. The 95th percentile queue analysis results in a 20–25% increase in lengths for the EB / WB movements heading to and from Grand Ave.

6.3 Total GM+RFTA Traffic – Summary of Conclusions

The analysis of the combined 2043 Background traffic and the GM developed plus RFTA ultimate buildout traffic presented above results in the following conclusions.

- The degradation of LOS at the Midland and Wulfsohn intersection is worsened by the addition of the 2040 GM traffic volumes.
- Recommendations in the GMMTS should be used for the downtown intersections.

7.0 Transportation Demand Management Strategies

Transportation demand management (TDM) is a set of strategies designed at maximizing traveler choices. *Managing demand is about providing travelers, regardless of whether they drive alone, with travel choices, such as work location, route, time of travel and mode. In the broadest sense, demand management is defined as providing travelers with effective choices to improve travel reliability.*[1]

RFTA is in the TDM business. The expansion of the GMF is a primary strategy to help provide future travelers more choices with expanded schedule, reduced travel times, and reliability. The approach to add office space, employee housing, and additional park and ride spaces at this transit hub is an effective land-use strategy. The planned development will serve to provide additional choices for live / work location for management, maintenance, and driver employees; while also serving to reduce vehicle miles traveled and trips. Both have benefits of reducing overall pollutants caused by vehicle emissions.

[1]FHWA, Mitigating Traffic Congestion-The Role of Demand-Side Strategies, prepared by ACT, Report No. FHWA-HOP-05-001, October 2004.

8.0 Conclusions and Proposed Mitigation Measures

8.1 Summary of Conclusions

- The Midland and Wulfsohn intersection will need improvement to accommodate the combination of 2023 existing, future background, and Glenwood Meadows / RFTA traffic volumes. In terms of percentages, the RFTA share of the volume at Midland and Wulfsohn intersection is as follows.
  - 42% of 2023 Baseline DHV
  - 20% of 2043 Total GM-RFTA DHV
- The RFTA ultimate buildout traffic does not trigger a CDOT Access Permit at Exit 114
- Except for the Midland and Wulfsohn and project access intersection, the remaining study intersections will operate acceptably in their existing configurations considering the Total RFTA ultimate buildout traffic.

8.2 Proposed Mitigation Measures

- Depending on timing of potential Midland and Wulfsohn intersection improvements being implemented, consideration should be given to extending the existing EB right turn lane and additional 125 ft, for a total of 150 ft.
- The RFTA ultimate buildout volumes warrant a WB left turn lane from Wulfsohn to the RFTA GMF access driveway. Consideration should be given to providing the corresponding EB left turn lane which is just under the warrant volume (21 v 25 vph)
- The future development of the residential units and/or additional park and ride spaces should include a consideration for a two-lane SB approach to Wulfsohn Road to help alleviate potential SB queuing issues across the existing park and ride lot access aisle.
- At the NB approach to Wulfsohn, RFTA should work with the City to trim and/or remove trees to provide the maximum sight distance possible with existing geometric limitations (~475 ft).
- At the west side of the Wulfsohn Road project intersection, a painted crosswalk should be installed with warning signage per the MUTCD consisting of a W11-2 pedestrian crossing sign with a W16-7p plaque mounted on the side of the roadway at the crosswalk location and a W11-2 advanced pedestrian warning sign.

Appendix A - Traffic Volume Figures

Figure 5 – 2023 AM Adjusted Existing Peak Volumes (E)

Figure 6 – 2023 AM Adjusted Existing Peak Volumes (W)

Figure 7 – 2023 PM Adjusted Existing Peak Volumes (E)

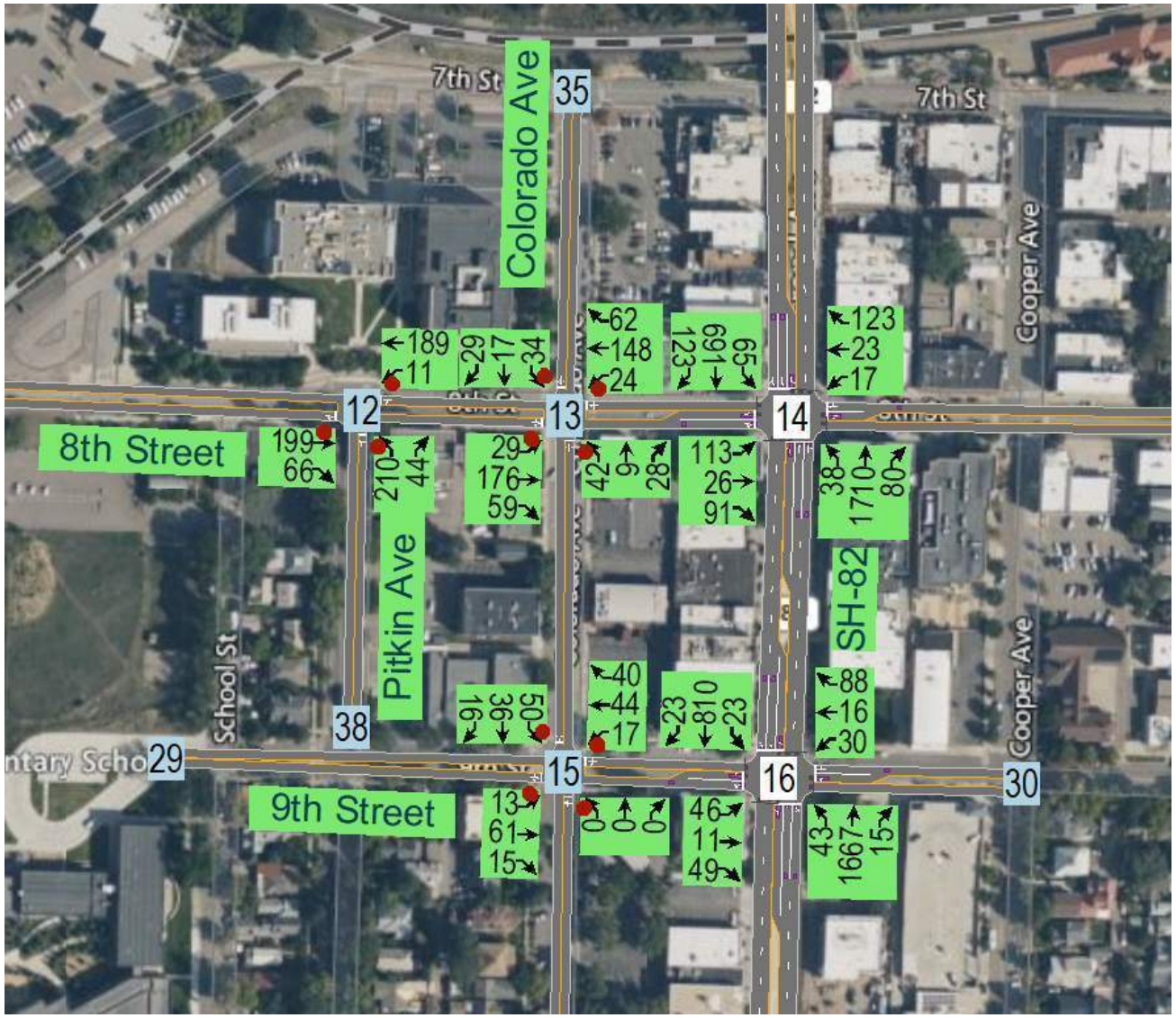

Figure 8 – 2023 PM Adjusted Existing Peak Volumes (W)

Figure 9 – 2043 AM Background Peak Volumes (E)

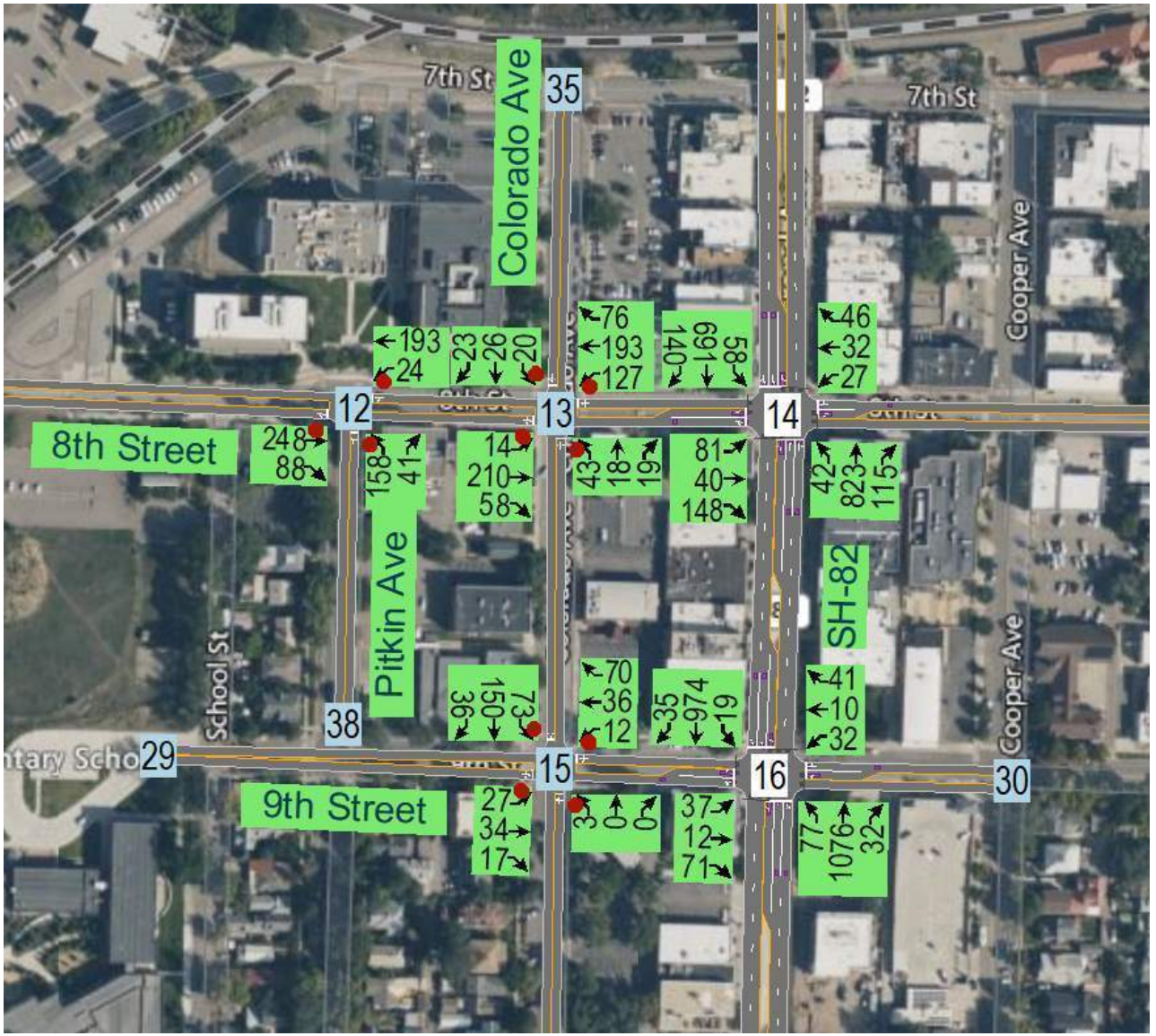

Figure 10 – 2043 AM Background Peak Volumes (W)

Figure 11 – 2043 PM Background Peak Volumes (E)

Figure 12 – 2043 PM Background Peak Volumes (W)

Figure 14 – 2043 AM Background plus RFTA Peak Volumes (E)

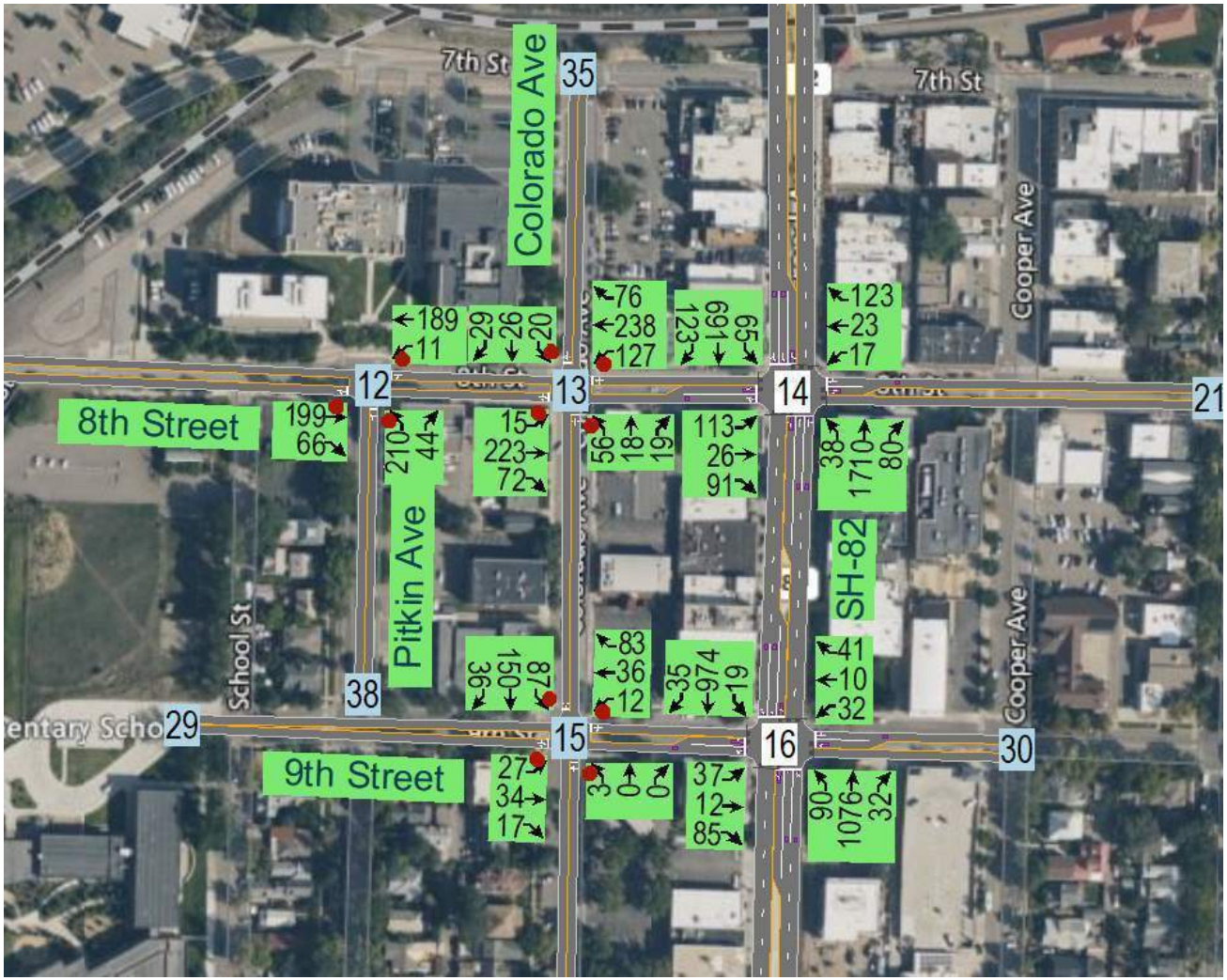

Figure 15 – 2043 AM Background plus RFTA Peak Volumes (W)

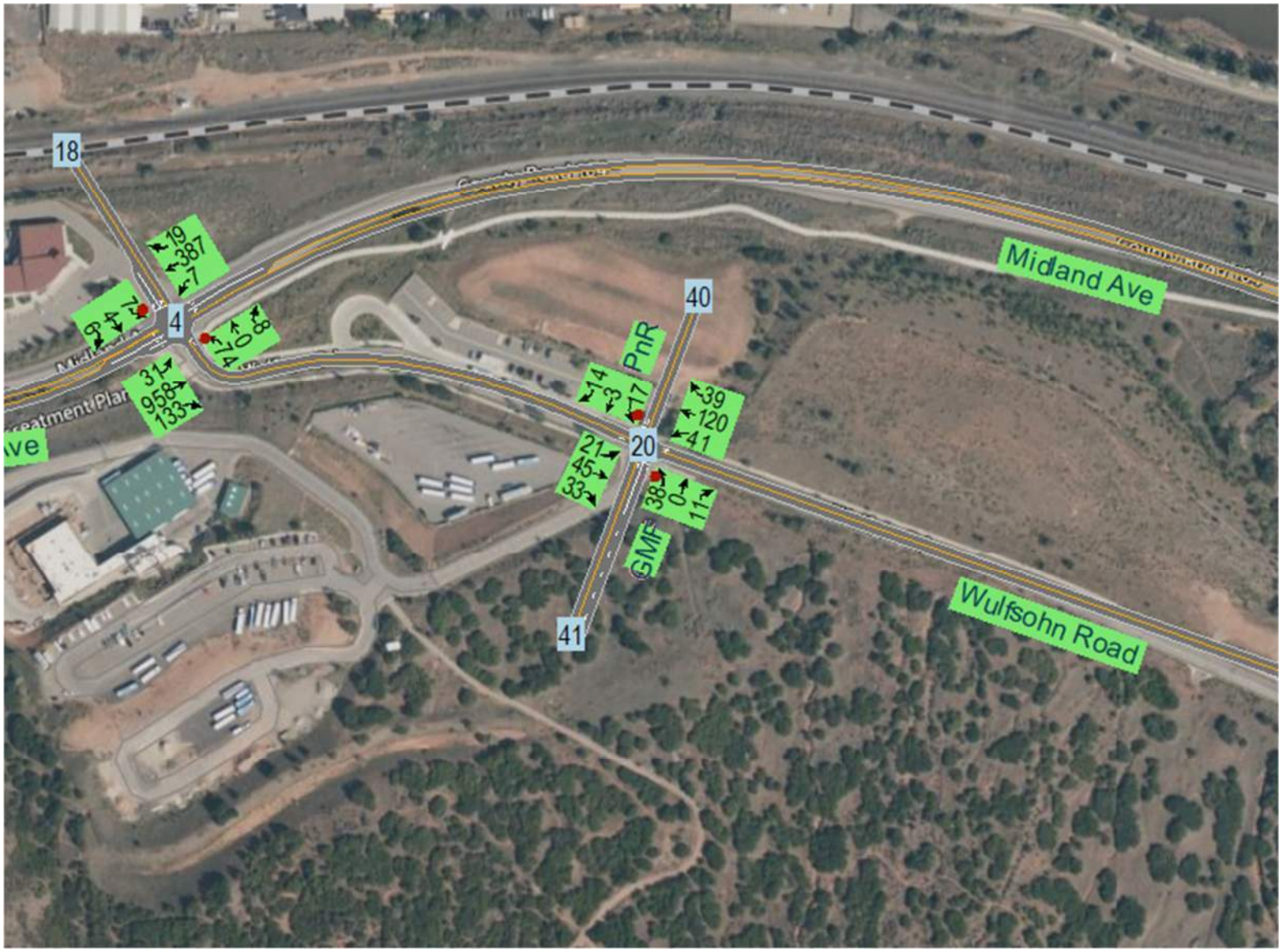

Figure 16 – 2043 PM Background plus RFTA Peak Volumes (E)

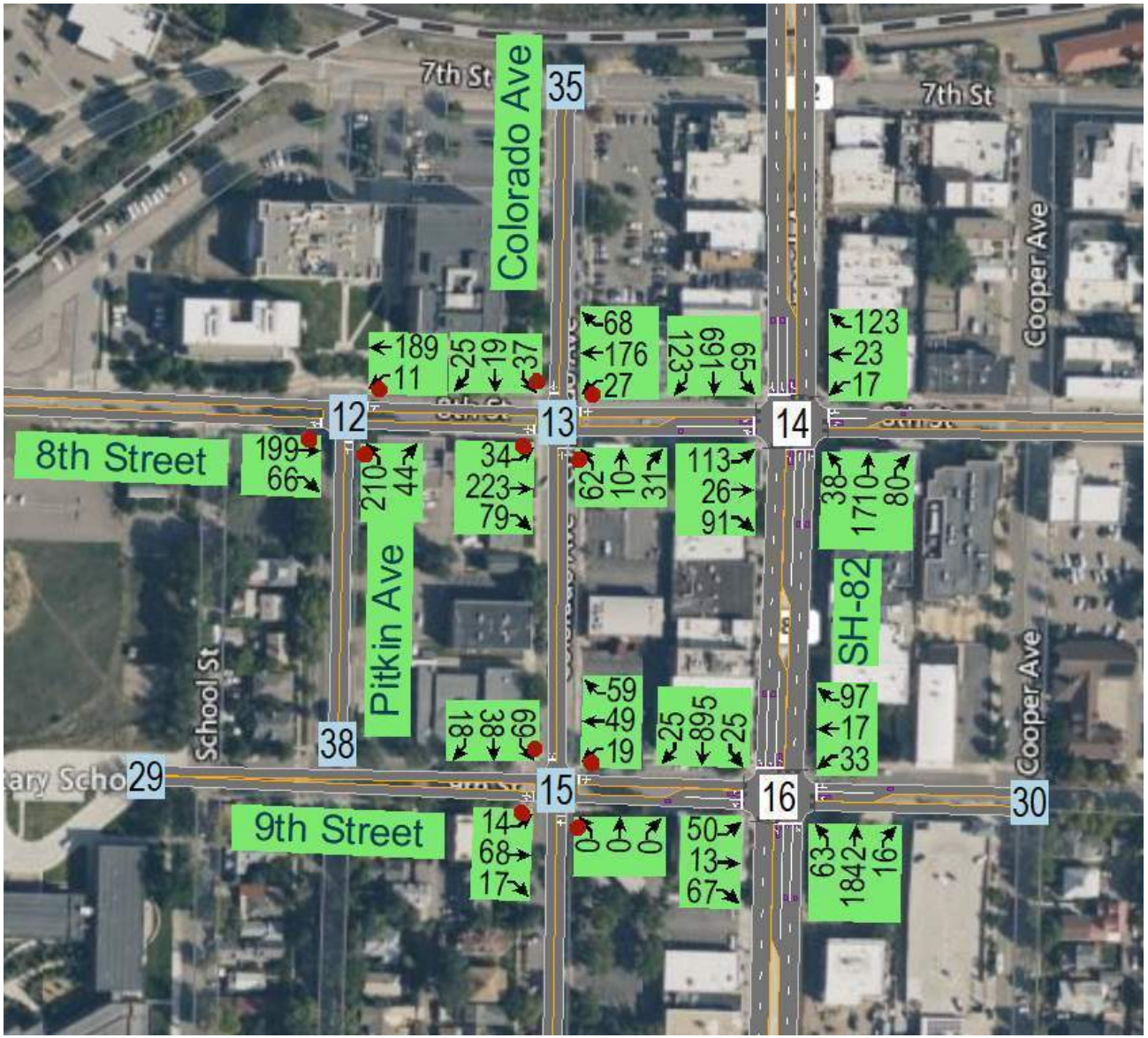

Figure 17 – 2043 PM Background plus RFTA Peak Volumes (W)

Figure 18 – 2043 AM Background plus RFTA plus GM Peak Volumes (E)

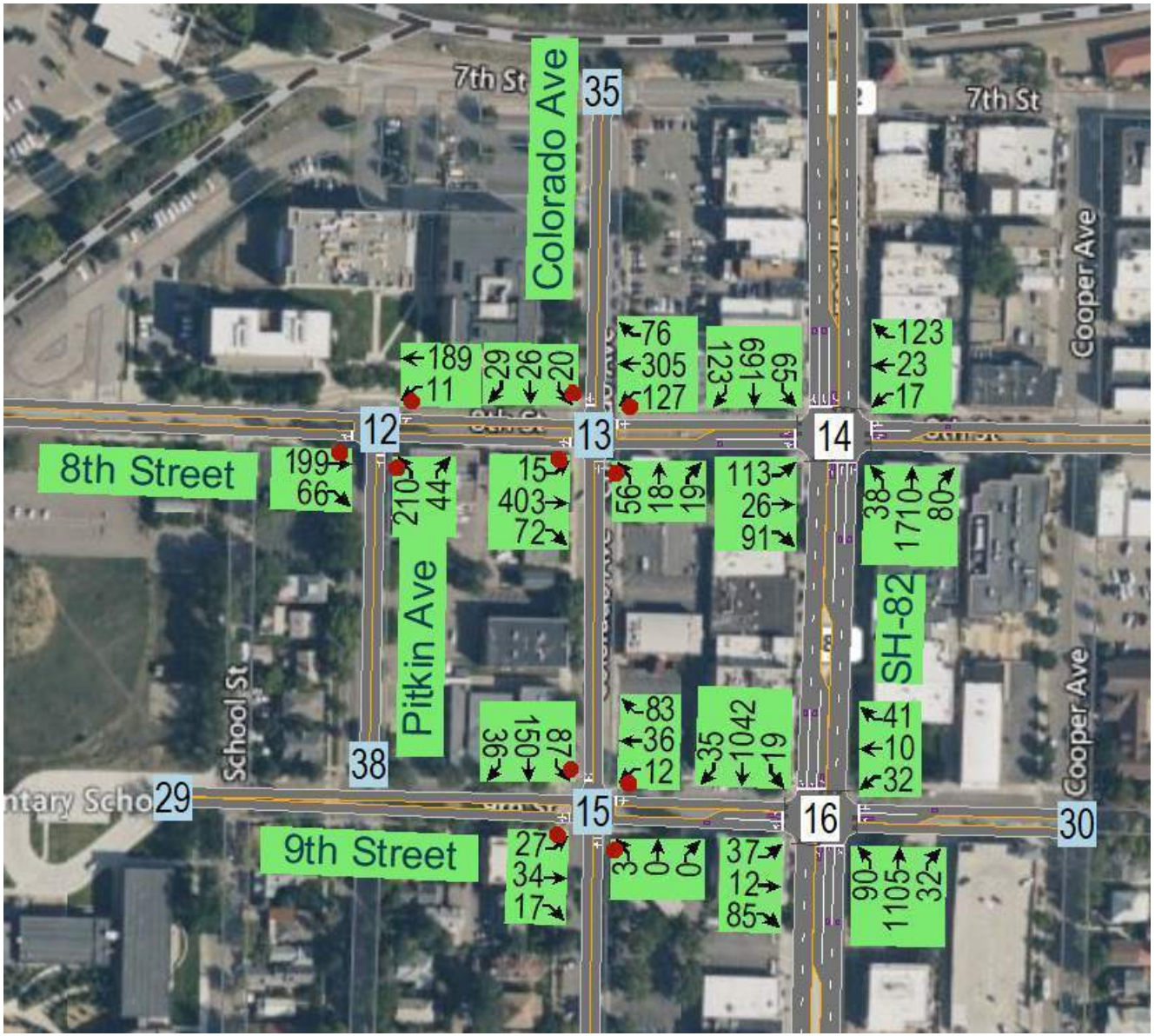

Figure 19 – 2043 AM Background plus RFTA plus GM Peak Volumes (W)

Figure 20 – 2043 PM Background plus RFTA plus GM Peak Volumes (E)

Figure 21 – 2043 PM Background plus RFTA plus GM Peak Volumes (W)

Appendix B - Methodology / Assumptions (Correspondence with CoGS)

MEMORANDUM

DATE: *Revised February 20, 2023*

TO: Terri Partch, City Engineer, City of Glenwood Springs

Jessica Bowser. Asst. City Engineer, City of Glenwood Springs

FROM: Dan Cokley, PE, PTOE

RE: RFTA GMF Level Three Traffic Analysis Methodology Proposal

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A traffic impact study will be prepared using the guidelines of a Colorado Department of Transportation (CDOT) Level Three Traffic Impact Study (TIS) and will satisfy City of Glenwood Springs Engineering Standards Chapter 5.11 Traffic Impact Analysis Standards. The TIS will provide estimates for design hour traffic generation for the RFTA Glenwood Maintenance Facility (GMF) and adjacent Park and Ride lot proposed expansion which is planned to occur in several phases over several years.

This memo documents the methodology and assumptions that SGM intends to use for the RFTA GMF located on the west of Wulfsohn Road in Glenwood Springs, Colorado. The full development of the site and all phasing will be analyzed in this TIS. A summary (to be verified by RFTA prior to TIS) of the future development is provided below.

- Phase 3/4/5/7 – An increase from current operation to a 60-bus option is outlined in this study. 13,100sf of new operations center.
- Phase 6 – 14,400 sf Administration building.
- Phase 8 – 9,600sf Warehouse storage.
- Phase 9 – 74 employee housing units and additional 45-space Park and Ride expansion (total 130-space).

The goal of this memo is to gain the City's acceptance of the data intended for use in the analysis, assumptions proposed for the analysis (directional distribution, trip reduction factors, etc.) and to define the final scope and the overall approach to the TIS.

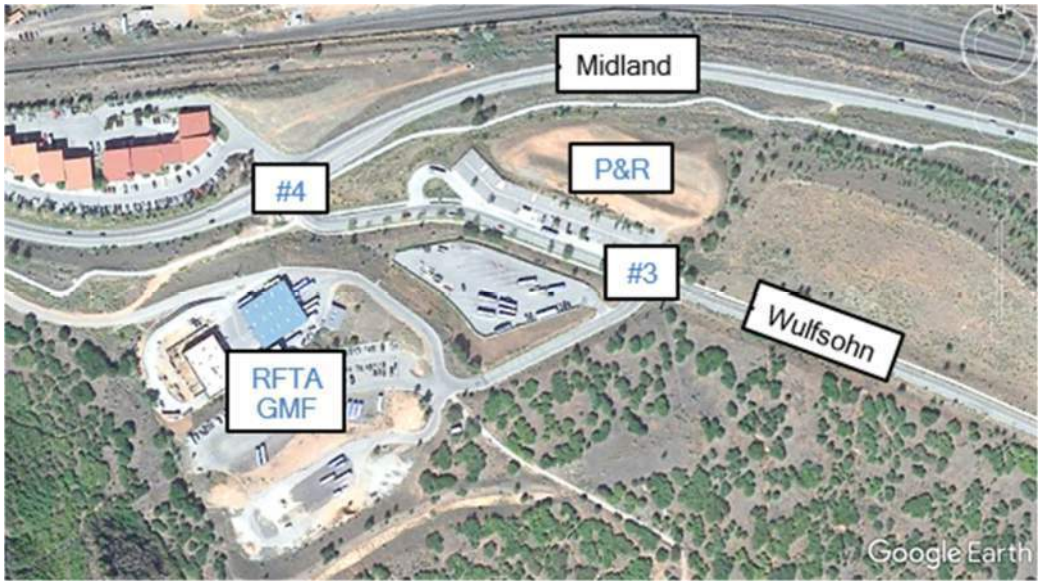


Figure 1 – RFTA GMF / Park and Ride Site Map

ADD FIGURE 2 – Overall Site Plan (Ultimate Buildout)

Background - We intend to generally use the Glenwood Meadows Master Traffic Study by K-H (GMTS) for future development traffic, distribution and assignment of future traffic, and growth factor beyond the development traffic presented in the GMTS.

Baseline Traffic - *The City has had K-H update traffic counts which will be used for this study.*

New traffic counts will be provided for the following intersections:

4. *Midland and West Wulfsohn*
12. *8th and Colorado*
13. *RFTA access and Wulfsohn*
14. *9th and Colorado*
15. *9th and Grand*

Baseline traffic counts will *NOT* be adjusted using a seasonal factor based on CDOT count station on SH 82 in South Glenwood.

Figure 3 – RFTA GMF Scoping Map

Analysis Years - Operational analysis of Baseline traffic (2023), 20-year background traffic (2043) and 20-year total traffic (2043) will be completed. Significant and impactive phasing may also warrant additional analysis prior to the 20-year timeframe.

Development and Growth – The TIS will input the future development considered in the GMTS for the Glenwood Meadows area, less RFTA (Zone 5) which will be developed in this TIS. This traffic will be distributed and assigned per the GMTS Figure 12. The TIS will use an annual growth rate

of 0.5% applied to volumes outside the immediate Glenwood Meadows travelshed (Intersections a. through e. above and through traffic on Midland Ave).

RFTA Land Use Rates – Trip generation rates from the ITE Trip Generation Manual, 11th Edition will be used

- Phase 3/4/5/7 – An increase from current operation to a 60-bus option, 13,100sf of new operations center (office). Use RFTA data for increased buses. General Office Building (Code 710).
- Phase 6 – 14,400 sf Administration building. Use General Office Building (Code 710)
- Phase 8 – 9,600sf Warehouse storage. No additional staffing, no additional trips.
- Phase 9 – 74 employee housing units and additional 45-space Park and Ride expansion (total 130-space). Use Park and Ride (Code 090) and Multi-Family Housing, Mid-rise (Code 221).

RFTA Traffic Distribution - The directional distribution for *RFTA staff and PnR* traffic will match existing travel patterns defined by counts at the RFTA accesses and Wulfsohn Road intersection and downstream intersection distributions. *Existing bus routes at time of GMTS / SGM counts vs future expansion of routes will be analyzed and implemented.*

Access Permits – Evaluation of the need for an Access Permit at Exit #114 and *9th / Grand* by phase, using GMTS traffic counts.

Operational Analysis – Analysis of the will include intersections 4. – 13. outlined above. LOS, Delay, 95th Percentile Queue to be reported for each analysis scenario.

Auxiliary Lane Assessment – The need for auxiliary lanes at the project access intersection will be evaluated per the State Highway Access Code. Wulfsohn is assumed to be a Category NR-C (Non-Rural Arterial). The speed limit in the vicinity of the site is posted at 40 mph.

Multi-modal trip reduction - The location is adjacent to the existing Park and Ride. Given the multi-modal opportunities, a 10% reduction in trips associated with potential future employees (Operations and Administration buildings) and potential future residents (multi-Family housing) is conservatively applied and summarized below.

- Phase 3/4/5/7 – 10% transit reduction applied to office
- Phase 6 – 10% transit reduction applied to office
- Phase 8 – No additional trips.
- Phase 9 – 10% transit reduction applied to housing

10% reduction will be applied a single time by land use.

Transportation Demand Strategies – *Review opportunities for management staff, bus drivers, off peak hours.*

Appendix C - SYNCHRO OUTPUT

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	867	86	1	348	19	42	0	4	7	4	6
Future Vol, veh/h	31	867	86	1	348	19	42	0	4	7	4	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	25	150	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	985	98	1	395	22	48	0	5	8	5	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	417	0	0	1083	0	0	1469	1474	985	1515	1561	406
Stage 1	-	-	-	-	-	-	1055	1055	-	408	408	-
Stage 2	-	-	-	-	-	-	414	419	-	1107	1153	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1142	-	-	644	-	-	106	127	301	98	112	645
Stage 1	-	-	-	-	-	-	273	302	-	620	597	-
Stage 2	-	-	-	-	-	-	616	590	-	255	272	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1142	-	-	644	-	-	101	123	301	94	108	645
Mov Cap-2 Maneuver	-	-	-	-	-	-	203	224	-	190	206	-
Stage 1	-	-	-	-	-	-	265	293	-	601	596	-
Stage 2	-	-	-	-	-	-	604	589	-	243	264	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	27.9	19.7
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	209	1142	-	-	644	-	-	196	645
HCM Lane V/C Ratio	0.25	0.031	-	-	0.002	-	-	0.064	0.011
HCM Control Delay (s)	27.9	8.3	-	-	10.6	-	-	24.6	10.6
HCM Lane LOS	D	A	-	-	B	-	-	C	B
HCM 95th %tile Q(veh)	1	0.1	-	-	0	-	-	0.2	0

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	190	52	115	174	69	39	16	17	18	24	21
Future Vol, veh/h	12	190	52	115	174	69	39	16	17	18	24	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	207	57	125	189	75	42	17	18	20	26	23
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.3	12.1	9.4	9.1
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	54%	5%	32%	29%
Vol Thru, %	22%	75%	49%	38%
Vol Right, %	24%	20%	19%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	72	254	358	63
LT Vol	39	12	115	18
Through Vol	16	190	174	24
RT Vol	17	52	69	21
Lane Flow Rate	78	276	389	68
Geometry Grp	1	1	1	1
Degree of Util (X)	0.12	0.357	0.496	0.103
Departure Headway (Hd)	5.5	4.654	4.59	5.409
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	645	768	782	655
Service Time	3.592	2.716	2.647	3.504
HCM Lane V/C Ratio	0.121	0.359	0.497	0.104
HCM Control Delay	9.4	10.3	12.1	9.1
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.4	1.6	2.8	0.3

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	31	15	11	33	64	2	0	0	66	136	33
Future Vol, veh/h	25	31	15	11	33	64	2	0	0	66	136	33
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	33	16	12	35	69	2	0	0	71	146	35
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	8	7.9	9.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	35%	10%	28%
Vol Thru, %	0%	44%	31%	58%
Vol Right, %	0%	21%	59%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	71	108	235
LT Vol	2	25	11	66
Through Vol	0	31	33	136
RT Vol	0	15	64	33
Lane Flow Rate	2	76	116	253
Geometry Grp	1	1	1	1
Degree of Util (X)	0.003	0.097	0.138	0.305
Departure Headway (Hd)	4.85	4.592	4.275	4.343
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	738	781	840	829
Service Time	2.876	2.614	2.294	2.36
HCM Lane V/C Ratio	0.003	0.097	0.138	0.305
HCM Control Delay	7.9	8.1	8	9.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.3	0.5	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	11	64	29	9	37	69	974	29	17	881	31
Future Volume (veh/h)	34	11	64	29	9	37	69	974	29	17	881	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.93	1.00		0.92	0.99		0.95	1.00		0.95
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	11	65	30	9	38	70	994	30	17	899	32
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	176	22	128	147	24	102	501	2178	66	363	2080	74
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Prop Arrive On Green	0.10	0.10	0.10	0.08	0.08	0.08	0.04	0.62	0.62	0.04	1.00	1.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	42.0	0.0	45.4	43.5	0.0	45.3	6.9	11.4	11.4	8.2	1.2	1.1
Ln Grp LOS	D	A	D	D	A	D	A	B	B	A	A	A
Approach Vol, veh/h		111			77			1094			948	
Approach Delay, s/veh		44.3			44.6			11.1			1.3	
Approach LOS		D			D			B			A	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	8	4	5	6		
Case No	1.1	4.0	10.0	10.0	1.1	4.0		
Phs Duration (G+Y+Rc), s	6.4	66.5	12.8	14.4	8.8	64.1		
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		
Max Green (Gmax), s	5.1	40.3	18.1	18.5	8.9	36.5		
Max Allow Headway (MAH), s	3.8	5.3	5.0	5.1	3.8	5.3		
Max Q Clear (g_c+I1), s	2.4	17.0	4.9	6.7	3.5	2.0		
Green Ext Time (g_e), s	0.0	7.3	0.2	0.3	0.1	7.1		
Prob of Phs Call (p_c)	0.38	1.00	0.91	0.97	0.86	1.00		
Prob of Max Out (p_x)	1.00	0.00	0.00	0.01	0.14	0.00		

Left-Turn Movement Data								
Assigned Mvmt	1		3	7	5			
Mvmt Sat Flow, veh/h	1781		1781	1781	1781			

Through Movement Data								
Assigned Mvmt		2	8	4		6		
Mvmt Sat Flow, veh/h		3515	291	220		3492		

Right-Turn Movement Data								
Assigned Mvmt		12	18	14		16		
Mvmt Sat Flow, veh/h		106	1227	1301		124		

Left Lane Group Data								
Assigned Mvmt	1	0	3	7	5	0	0	0
Lane Assignment	L (Pr/Pm)		L	LL (Pr/Pm)				

Lanes in Grp	1	0	1	1	1	0	0	0
Grp Vol (v), veh/h	17	0	30	35	70	0	0	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	1781	1781	0	0	0
Q Serve Time (g_s), s	0.4	0.0	1.6	1.8	1.5	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.4	0.0	1.6	1.8	1.5	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	549	0	1781	1781	592	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	59.6	0.0	0.0	0.0	59.6	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	47.0	0.0	0.0	0.0	59.6	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	363	0	147	176	501	0	0	0
V/C Ratio (X)	0.05	0.00	0.20	0.20	0.14	0.00	0.00	0.00
Avail Cap (c_a), veh/h	421	0	322	330	583	0	0	0
Upstream Filter (I)	0.92	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	8.2	0.0	42.8	41.4	6.8	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.7	0.5	0.1	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	8.2	0.0	43.5	42.0	6.9	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.1	0.0	0.7	0.8	0.5	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.1	0.0	0.7	0.8	0.5	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.03	0.00	0.24	0.28	0.09	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	8	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	502	0	0	0	457	0	0
Grp Sat Flow (s), veh/h/ln	0	1777	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	1101	0	0	0	1058	0	0
V/C Ratio (X)	0.00	0.46	0.00	0.00	0.00	0.43	0.00	0.00
Avail Cap (c_a), veh/h	0	1101	0	0	0	1058	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	0.92	0.00	0.00
Uniform Delay (d1), s/veh	0.0	10.1	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.4	0.0	0.0	0.0	1.2	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	11.4	0.0	0.0	0.0	1.2	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	5.4	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.4	0.0	0.0	0.0	0.3	0.0	0.0

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	5.8	0.0	0.0	0.0	0.3	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.34	0.00	0.00	0.00	0.02	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	18	14	0	16	0	0
Lane Assignment		T+R	T+R	T+R		T+R		
Lanes in Grp	0	1	1	1	0	1	0	0
Grp Vol (v), veh/h	0	522	47	76	0	474	0	0
Grp Sat Flow (s), veh/h/ln	0	1844	1518	1521	0	1840	0	0
Q Serve Time (g_s), s	0.0	15.0	2.9	4.7	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	15.0	2.9	4.7	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.06	0.81	0.86	0.00	0.07	0.00	0.00
Lane Grp Cap (c), veh/h	0	1143	126	150	0	1096	0	0
V/C Ratio (X)	0.00	0.46	0.37	0.51	0.00	0.43	0.00	0.00
Avail Cap (c_a), veh/h	0	1143	275	281	0	1096	0	0
Upstream Filter (I)	0.00	1.00	1.00	1.00	0.00	0.92	0.00	0.00
Uniform Delay (d1), s/veh	0.0	10.1	43.4	42.7	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.3	1.8	2.6	0.0	1.1	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	11.4	45.3	45.4	0.0	1.1	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	5.6	1.1	1.8	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.4	0.1	0.1	0.0	0.3	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	6.0	1.2	1.9	0.0	0.3	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.35	0.11	0.23	0.00	0.02	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	9.8
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↱		↕	
Traffic Vol, veh/h	6	37	4	10	110	23	23	0	4	6	3	3
Future Vol, veh/h	6	37	4	10	110	23	23	0	4	6	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	40	4	11	120	25	25	0	4	7	3	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	145	0	0	44	0	0	214	223	42	213	213	133
Stage 1	-	-	-	-	-	-	56	56	-	155	155	-
Stage 2	-	-	-	-	-	-	158	167	-	58	58	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1437	-	-	1564	-	-	743	676	1029	744	684	916
Stage 1	-	-	-	-	-	-	956	848	-	847	769	-
Stage 2	-	-	-	-	-	-	844	760	-	954	847	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1437	-	-	1564	-	-	730	667	1029	734	675	916
Mov Cap-2 Maneuver	-	-	-	-	-	-	730	667	-	734	675	-
Stage 1	-	-	-	-	-	-	951	844	-	843	763	-
Stage 2	-	-	-	-	-	-	831	754	-	945	843	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.5	9.9	9.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	730	1029	1437	-	-	1564	-	-	755
HCM Lane V/C Ratio	0.034	0.004	0.005	-	-	0.007	-	-	0.017
HCM Control Delay (s)	10.1	8.5	7.5	0	-	7.3	0	-	9.9
HCM Lane LOS	B	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	0.1

Intersection: 4: Wulfsohn Road & Midland Ave

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	R	L	TR	LTR	LT	R
Maximum Queue (ft)	33	37	6	2	72	42	31
Average Queue (ft)	8	6	0	0	26	10	6
95th Queue (ft)	29	27	6	2	57	35	27
Link Distance (ft)				3357	825	327	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100	25	150				75
Storage Blk Time (%)		0				0	
Queuing Penalty (veh)		1				0	

Intersection: 13: Colorado Ave & 8th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	106	153	57	55
Average Queue (ft)	51	83	31	29
95th Queue (ft)	87	137	50	49
Link Distance (ft)	218	226	404	398
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 15: 9th Street & Colorado Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	61	73	28	102
Average Queue (ft)	31	38	2	47
95th Queue (ft)	51	62	15	78
Link Distance (ft)	501	211	418	404
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: 9th Street & SH-82

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	72	103	71	92	167	298	244	82	210	207
Average Queue (ft)	25	38	25	31	47	148	115	13	85	88
95th Queue (ft)	59	75	62	70	116	266	227	49	164	173
Link Distance (ft)		211		277		433	433		412	412
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	75		75		150			125		
Storage Blk Time (%)	1	2	1	1	0	7			2	
Queuing Penalty (veh)	1	1	1	0	0	5			0	

Intersection: 20: GMF/PnR & Wulfsohn Road

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	17	16	43	30	33
Average Queue (ft)	1	1	16	4	10
95th Queue (ft)	8	7	42	20	33
Link Distance (ft)	825	1500	334	334	254
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	387	82	6	798	11	72	1	1	15	2	30
Future Vol, veh/h	5	387	82	6	798	11	72	1	1	15	2	30
Conflicting Peds, #/hr	0	0	2	2	0	0	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	25	150	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	435	92	7	897	12	81	1	1	17	2	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	909	0	0	529	0	0	1385	1372	437	1411	1458	904
Stage 1	-	-	-	-	-	-	449	449	-	917	917	-
Stage 2	-	-	-	-	-	-	936	923	-	494	541	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	749	-	-	1038	-	-	121	146	620	116	129	335
Stage 1	-	-	-	-	-	-	589	572	-	326	351	-
Stage 2	-	-	-	-	-	-	318	349	-	557	521	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	749	-	-	1036	-	-	107	144	619	114	127	335
Mov Cap-2 Maneuver	-	-	-	-	-	-	212	254	-	232	244	-
Stage 1	-	-	-	-	-	-	583	566	-	323	349	-
Stage 2	-	-	-	-	-	-	282	347	-	550	516	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	32.1	18.7
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	214	749	-	-	1036	-	-	233	335
HCM Lane V/C Ratio	0.389	0.008	-	-	0.007	-	-	0.082	0.101
HCM Control Delay (s)	32.1	9.8	-	-	8.5	-	-	21.8	16.9
HCM Lane LOS	D	A	-	-	A	-	-	C	C
HCM 95th %tile Q(veh)	1.7	0	-	-	0	-	-	0.3	0.3

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	176	59	24	148	62	42	9	28	34	17	29
Future Vol, veh/h	29	176	59	24	148	62	42	9	28	34	17	29
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	205	69	28	172	72	49	10	33	40	20	34
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.7	10.2	9.2	9.2
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	53%	11%	10%	42%
Vol Thru, %	11%	67%	63%	21%
Vol Right, %	35%	22%	26%	36%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	79	264	234	80
LT Vol	42	29	24	34
Through Vol	9	176	148	17
RT Vol	28	59	62	29
Lane Flow Rate	92	307	272	93
Geometry Grp	1	1	1	1
Degree of Util (X)	0.135	0.394	0.35	0.136
Departure Headway (Hd)	5.275	4.616	4.63	5.248
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	672	774	770	676
Service Time	3.365	2.679	2.695	3.337
HCM Lane V/C Ratio	0.137	0.397	0.353	0.138
HCM Control Delay	9.2	10.7	10.2	9.2
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.5	1.9	1.6	0.5

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	61	15	17	44	40	0	0	0	50	36	16
Future Vol, veh/h	13	61	15	17	44	40	0	0	0	50	36	16
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	71	17	20	51	47	0	0	0	58	42	19
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.9	7.8	0	8.2
HCM LOS	A	A	-	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	15%	17%	49%
Vol Thru, %	100%	69%	44%	35%
Vol Right, %	0%	17%	40%	16%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	89	101	102
LT Vol	0	13	17	50
Through Vol	0	61	44	36
RT Vol	0	15	40	16
Lane Flow Rate	0	103	117	119
Geometry Grp	1	1	1	1
Degree of Util (X)	0	0.123	0.135	0.146
Departure Headway (Hd)	4.551	4.267	4.125	4.418
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	844	874	815
Service Time	2.569	2.271	2.127	2.431
HCM Lane V/C Ratio	0	0.122	0.134	0.146
HCM Control Delay	7.6	7.9	7.8	8.2
HCM Lane LOS	N	A	A	A
HCM 95th-tile Q	0	0.4	0.5	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	11	49	30	16	88	43	1667	15	23	810	23
Future Volume (veh/h)	46	11	49	30	16	88	43	1667	15	23	810	23
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.91	1.00		0.93	1.00		0.97	1.00		0.97
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	11	51	31	16	91	44	1719	15	24	835	24
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	134	20	93	164	21	119	479	2550	22	200	2470	71
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.08	0.08	0.08	0.09	0.09	0.09	0.03	0.71	0.71	0.02	0.70	0.70
Unsig. Movement Delay												
Ln Grp Delay, s/veh	76.2	0.0	79.9	71.8	0.0	91.4	7.4	16.9	16.8	13.3	10.7	10.6
Ln Grp LOS	E	A	E	E	A	F	A	B	B	B	B	B
Approach Vol, veh/h		109			138			1778			883	
Approach Delay, s/veh		78.3			87.0			16.6			10.7	
Approach LOS		E			F			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	8	4	5	6		
Case No	1.1	4.0	10.0	10.0	1.1	4.0		
Phs Duration (G+Y+Rc), s	7.9	124.6	20.2	17.3	8.9	123.6		
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		
Max Green (Gmax), s	6.5	108.3	18.7	18.5	5.7	109.1		
Max Allow Headway (MAH), s	3.8	5.2	5.3	4.9	3.8	5.3		
Max Q Clear (g_c+I1), s	2.6	47.5	13.7	8.8	3.2	17.8		
Green Ext Time (g_e), s	0.0	23.5	0.2	0.3	0.0	6.7		
Prob of Phs Call (p_c)	0.68	1.00	1.00	1.00	0.87	1.00		
Prob of Max Out (p_x)	0.93	0.00	1.00	0.03	1.00	0.00		

Left-Turn Movement Data								
Assigned Mvmt	1		3	7	5			
Mvmt Sat Flow, veh/h	1781		1781	1781	1781			

Through Movement Data								
Assigned Mvmt		2	8	4		6		
Mvmt Sat Flow, veh/h		3609	227	266		3524		

Right-Turn Movement Data								
Assigned Mvmt		12	18	14		16		
Mvmt Sat Flow, veh/h		31	1289	1235		101		

Left Lane Group Data								
Assigned Mvmt	1	0	3	7	5	0	0	0
Lane Assignment	L (Pr/Pm)		L	LL (Pr/Pm)				

Lanes in Grp	1	0	1	1	1	0	0	0
Grp Vol (v), veh/h	24	0	31	47	44	0	0	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	1781	1781	0	0	0
Q Serve Time (g_s), s	0.6	0.0	2.7	4.3	1.2	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.6	0.0	2.7	4.3	1.2	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	279	0	1781	1781	643	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	119.1	0.0	0.0	0.0	119.1	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	74.7	0.0	0.0	0.0	103.3	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	4.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	200	0	164	134	479	0	0	0
V/C Ratio (X)	0.12	0.00	0.19	0.35	0.09	0.00	0.00	0.00
Avail Cap (c_a), veh/h	233	0	196	194	493	0	0	0
Upstream Filter (I)	0.95	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	13.1	0.0	71.3	74.6	7.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.6	1.6	0.1	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	13.3	0.0	71.8	76.2	7.4	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.3	0.0	1.3	2.0	0.5	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.3	0.0	1.3	2.0	0.5	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.05	0.00	0.44	0.69	0.08	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	8	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	845	0	0	0	421	0	0
Grp Sat Flow (s), veh/h/ln	0	1777	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	45.3	0.0	0.0	0.0	15.8	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	45.3	0.0	0.0	0.0	15.8	0.0	0.0
Lane Grp Cap (c), veh/h	0	1255	0	0	0	1245	0	0
V/C Ratio (X)	0.00	0.67	0.00	0.00	0.00	0.34	0.00	0.00
Avail Cap (c_a), veh/h	0	1255	0	0	0	1245	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	0.95	0.00	0.00
Uniform Delay (d1), s/veh	0.0	14.0	0.0	0.0	0.0	10.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.9	0.0	0.0	0.0	0.7	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	16.9	0.0	0.0	0.0	10.7	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	17.7	0.0	0.0	0.0	6.2	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	1.0	0.0	0.0	0.0	0.2	0.0	0.0

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	18.7	0.0	0.0	0.0	6.4	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	1.10	0.00	0.00	0.00	0.40	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	18	14	0	16	0	0
Lane Assignment		T+R	T+R	T+R		T+R		
Lanes in Grp	0	1	1	1	0	1	0	0
Grp Vol (v), veh/h	0	889	107	62	0	438	0	0
Grp Sat Flow (s), veh/h/ln	0	1864	1515	1501	0	1849	0	0
Q Serve Time (g_s), s	0.0	45.5	11.7	6.8	0.0	15.8	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	45.5	11.7	6.8	0.0	15.8	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.02	0.85	0.82	0.00	0.05	0.00	0.00
Lane Grp Cap (c), veh/h	0	1317	140	113	0	1296	0	0
V/C Ratio (X)	0.00	0.67	0.77	0.55	0.00	0.34	0.00	0.00
Avail Cap (c_a), veh/h	0	1317	167	163	0	1296	0	0
Upstream Filter (I)	0.00	1.00	1.00	1.00	0.00	0.95	0.00	0.00
Uniform Delay (d1), s/veh	0.0	14.0	75.4	75.8	0.0	10.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.8	16.0	4.1	0.0	0.7	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	16.8	91.4	79.9	0.0	10.6	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	18.6	4.6	2.6	0.0	6.4	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	1.0	0.6	0.1	0.0	0.2	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	19.6	5.2	2.8	0.0	6.7	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	1.15	0.48	0.33	0.00	0.41	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	20.5
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↱		↕	
Traffic Vol, veh/h	4	75	6	1	55	0	18	3	4	13	2	13
Future Vol, veh/h	4	75	6	1	55	0	18	3	4	13	2	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	82	7	1	60	0	20	3	4	14	2	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	60	0	0	89	0	0	164	156	86	159	159	60
Stage 1	-	-	-	-	-	-	94	94	-	62	62	-
Stage 2	-	-	-	-	-	-	70	62	-	97	97	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1544	-	-	1506	-	-	801	736	973	807	733	1005
Stage 1	-	-	-	-	-	-	913	817	-	949	843	-
Stage 2	-	-	-	-	-	-	940	843	-	910	815	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1544	-	-	1506	-	-	786	733	973	798	730	1005
Mov Cap-2 Maneuver	-	-	-	-	-	-	786	733	-	798	730	-
Stage 1	-	-	-	-	-	-	910	815	-	946	842	-
Stage 2	-	-	-	-	-	-	923	842	-	900	813	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	9.6	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	778	973	1544	-	-	1506	-	-	876
HCM Lane V/C Ratio	0.029	0.004	0.003	-	-	0.001	-	-	0.035
HCM Control Delay (s)	9.8	8.7	7.3	0	-	7.4	0	-	9.3
HCM Lane LOS	A	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	0.1

Intersection: 4: Wulfsohn Road & Midland Ave

Movement	EB	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	T	R	L	TR	LTR	LT	R
Maximum Queue (ft)	26	4	37	24	22	97	39	70
Average Queue (ft)	2	0	5	2	1	33	13	23
95th Queue (ft)	13	3	25	15	14	71	39	54
Link Distance (ft)		776			3357	825	327	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		25	150				75
Storage Blk Time (%)		0	0					0
Queuing Penalty (veh)		0	0					0

Intersection: 13: Colorado Ave & 8th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	180	142	68	80
Average Queue (ft)	77	56	32	35
95th Queue (ft)	170	102	57	61
Link Distance (ft)	218	226	404	398
Upstream Blk Time (%)	3	0		
Queuing Penalty (veh)	8	0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 15: 9th Street & Colorado Ave

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	65	67	70
Average Queue (ft)	33	35	34
95th Queue (ft)	53	56	55
Link Distance (ft)	501	211	404
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: 9th Street & SH-82

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	97	148	100	229	174	461	459	149	299	296
Average Queue (ft)	46	47	37	94	41	341	288	26	108	104
95th Queue (ft)	90	108	92	190	133	538	503	85	237	229
Link Distance (ft)		211		277		433	433		412	412
Upstream Blk Time (%)		0		0		11	7			
Queuing Penalty (veh)		0		0		0	0			
Storage Bay Dist (ft)	75		75		150			125		
Storage Blk Time (%)	12	5	4	27		27		0	6	
Queuing Penalty (veh)	7	2	4	8		12		0	1	

Intersection: 20: GMF/PnR & Wulfsohn Road

Movement	WB	NB	NB	SB
Directions Served	LTR	LT	R	LTR
Maximum Queue (ft)	2	34	31	36
Average Queue (ft)	0	15	5	19
95th Queue (ft)	2	40	24	43
Link Distance (ft)	1500	334	334	254
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	958	86	1	384	19	42	0	4	7	4	6
Future Vol, veh/h	31	958	86	1	384	19	42	0	4	7	4	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	25	150	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	1089	98	1	436	22	48	0	5	8	5	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	458	0	0	1187	0	0	1614	1619	1089	1660	1706	447
Stage 1	-	-	-	-	-	-	1159	1159	-	449	449	-
Stage 2	-	-	-	-	-	-	455	460	-	1211	1257	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1103	-	-	588	-	-	84	103	262	78	91	612
Stage 1	-	-	-	-	-	-	238	270	-	589	572	-
Stage 2	-	-	-	-	-	-	585	566	-	223	243	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1103	-	-	588	-	-	79	99	262	75	88	612
Mov Cap-2 Maneuver	-	-	-	-	-	-	176	198	-	166	183	-
Stage 1	-	-	-	-	-	-	230	261	-	570	571	-
Stage 2	-	-	-	-	-	-	573	565	-	212	235	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	32.8	21.7
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	181	1103	-	-	588	-	-	172	612
HCM Lane V/C Ratio	0.289	0.032	-	-	0.002	-	-	0.073	0.011
HCM Control Delay (s)	32.8	8.4	-	-	11.1	-	-	27.6	10.9
HCM Lane LOS	D	A	-	-	B	-	-	D	B
HCM 95th %tile Q(veh)	1.1	0.1	-	-	0	-	-	0.2	0

Intersection	
Intersection Delay, s/veh	12.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	210	58	127	193	76	43	18	19	20	26	23
Future Vol, veh/h	14	210	58	127	193	76	43	18	19	20	26	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	228	63	138	210	83	47	20	21	22	28	25
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.1	13.7	9.8	9.5
HCM LOS	B	B	A	A

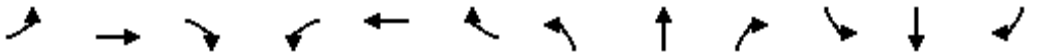
Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	54%	5%	32%	29%
Vol Thru, %	23%	74%	49%	38%
Vol Right, %	24%	21%	19%	33%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	282	396	69
LT Vol	43	14	127	20
Through Vol	18	210	193	26
RT Vol	19	58	76	23
Lane Flow Rate	87	307	430	75
Geometry Grp	1	1	1	1
Degree of Util (X)	0.14	0.405	0.56	0.119
Departure Headway (Hd)	5.806	4.762	4.684	5.726
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	621	745	762	629
Service Time	3.809	2.854	2.768	3.731
HCM Lane V/C Ratio	0.14	0.412	0.564	0.119
HCM Control Delay	9.8	11.1	13.7	9.5
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.5	2	3.5	0.4

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	34	17	12	36	70	3	0	0	73	150	36
Future Vol, veh/h	27	34	17	12	36	70	3	0	0	73	150	36
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	37	18	13	39	75	3	0	0	78	161	39
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.3	8.2	8	9.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	35%	10%	28%
Vol Thru, %	0%	44%	31%	58%
Vol Right, %	0%	22%	59%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	3	78	118	259
LT Vol	3	27	12	73
Through Vol	0	34	36	150
RT Vol	0	17	70	36
Lane Flow Rate	3	84	127	278
Geometry Grp	1	1	1	1
Degree of Util (X)	0.004	0.109	0.153	0.34
Departure Headway (Hd)	4.933	4.67	4.352	4.392
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	725	768	825	819
Service Time	2.965	2.696	2.377	2.413
HCM Lane V/C Ratio	0.004	0.109	0.154	0.339
HCM Control Delay	8	8.3	8.2	9.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.4	0.5	1.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	12	71	32	10	41	77	1076	32	19	974	35
Future Volume (veh/h)	37	12	71	32	10	41	77	1076	32	19	974	35
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.93	1.00		0.92	0.99		0.95	1.00		0.94
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	38	12	72	33	10	42	79	1098	33	19	994	36
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	184	22	135	153	25	105	468	2147	65	324	2047	74
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Prop Arrive On Green	0.10	0.10	0.10	0.09	0.09	0.09	0.04	0.61	0.61	0.04	1.00	1.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	41.7	0.0	45.4	43.3	0.0	45.2	7.3	12.7	12.7	8.9	1.5	1.4
Ln Grp LOS	D	A	D	D	A	D	A	B	B	A	A	A
Approach Vol, veh/h		122			85			1210			1049	
Approach Delay, s/veh		44.2			44.5			12.4			1.6	
Approach LOS		D			D			B			A	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	8	4	5	6		
Case No	1.1	4.0	10.0	10.0	1.1	4.0		
Phs Duration (G+Y+Rc), s	6.6	65.6	13.1	14.8	8.9	63.2		
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		
Max Green (Gmax), s	5.1	40.3	18.1	18.5	8.9	36.5		
Max Allow Headway (MAH), s	3.8	5.3	5.0	5.1	3.8	5.3		
Max Q Clear (g_c+I1), s	2.4	19.7	5.2	7.2	3.7	2.0		
Green Ext Time (g_e), s	0.0	7.9	0.2	0.4	0.1	8.2		
Prob of Phs Call (p_c)	0.41	1.00	0.93	0.98	0.89	1.00		
Prob of Max Out (p_x)	1.00	0.00	0.00	0.02	0.20	0.00		

Left-Turn Movement Data								
Assigned Mvmt	1		3	7	5			
Mvmt Sat Flow, veh/h	1781		1781	1781	1781			

Through Movement Data								
Assigned Mvmt		2	8	4		6		
Mvmt Sat Flow, veh/h		3516	293	218		3489		

Right-Turn Movement Data								
Assigned Mvmt		12	18	14		16		
Mvmt Sat Flow, veh/h		106	1229	1307		126		

Left Lane Group Data								
Assigned Mvmt	1	0	3	7	5	0	0	0
Lane Assignment	L (Pr/Pm)		L	LL (Pr/Pm)				

Lanes in Grp	1	0	1	1	1	0	0	0
Grp Vol (v), veh/h	19	0	33	38	79	0	0	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	1781	1781	0	0	0
Q Serve Time (g_s), s	0.4	0.0	1.7	2.0	1.7	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.4	0.0	1.7	2.0	1.7	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	497	0	1781	1781	540	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	58.7	0.0	0.0	0.0	58.7	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	43.4	0.0	0.0	0.0	58.7	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	324	0	153	184	468	0	0	0
V/C Ratio (X)	0.06	0.00	0.22	0.21	0.17	0.00	0.00	0.00
Avail Cap (c_a), veh/h	378	0	322	330	548	0	0	0
Upstream Filter (I)	0.92	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	8.8	0.0	42.6	41.1	7.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.7	0.6	0.2	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	8.9	0.0	43.3	41.7	7.3	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.2	0.0	0.8	0.9	0.6	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.2	0.0	0.8	0.9	0.6	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.03	0.00	0.27	0.30	0.11	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	8	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	555	0	0	0	506	0	0
Grp Sat Flow (s), veh/h/ln	0	1777	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	17.7	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	17.7	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	1085	0	0	0	1043	0	0
V/C Ratio (X)	0.00	0.51	0.00	0.00	0.00	0.49	0.00	0.00
Avail Cap (c_a), veh/h	0	1085	0	0	0	1043	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	0.92	0.00	0.00
Uniform Delay (d1), s/veh	0.0	11.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.7	0.0	0.0	0.0	1.5	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	12.7	0.0	0.0	0.0	1.5	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	6.4	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.5	0.0	0.0	0.0	0.4	0.0	0.0

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	6.9	0.0	0.0	0.0	0.4	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.41	0.00	0.00	0.00	0.03	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	18	14	0	16	0	0
Lane Assignment		T+R	T+R	T+R		T+R		
Lanes in Grp	0	1	1	1	0	1	0	0
Grp Vol (v), veh/h	0	576	52	84	0	524	0	0
Grp Sat Flow (s), veh/h/ln	0	1844	1522	1524	0	1839	0	0
Q Serve Time (g_s), s	0.0	17.7	3.2	5.2	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	17.7	3.2	5.2	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.06	0.81	0.86	0.00	0.07	0.00	0.00
Lane Grp Cap (c), veh/h	0	1126	131	157	0	1079	0	0
V/C Ratio (X)	0.00	0.51	0.40	0.53	0.00	0.49	0.00	0.00
Avail Cap (c_a), veh/h	0	1126	276	282	0	1079	0	0
Upstream Filter (I)	0.00	1.00	1.00	1.00	0.00	0.92	0.00	0.00
Uniform Delay (d1), s/veh	0.0	11.0	43.3	42.6	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.7	2.0	2.8	0.0	1.4	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	12.7	45.2	45.4	0.0	1.4	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	6.6	1.2	2.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.5	0.1	0.1	0.0	0.4	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	7.2	1.3	2.1	0.0	0.4	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.42	0.12	0.25	0.00	0.03	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↱		↕	
Traffic Vol, veh/h	6	37	4	10	110	23	23	0	4	6	3	3
Future Vol, veh/h	6	37	4	10	110	23	23	0	4	6	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	40	4	11	120	25	25	0	4	7	3	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	145	0	0	44	0	0	214	223	42	213	213	133
Stage 1	-	-	-	-	-	-	56	56	-	155	155	-
Stage 2	-	-	-	-	-	-	158	167	-	58	58	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1437	-	-	1564	-	-	743	676	1029	744	684	916
Stage 1	-	-	-	-	-	-	956	848	-	847	769	-
Stage 2	-	-	-	-	-	-	844	760	-	954	847	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1437	-	-	1564	-	-	730	667	1029	734	675	916
Mov Cap-2 Maneuver	-	-	-	-	-	-	730	667	-	734	675	-
Stage 1	-	-	-	-	-	-	951	844	-	843	763	-
Stage 2	-	-	-	-	-	-	831	754	-	945	843	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.5	9.9	9.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	730	1029	1437	-	-	1564	-	-	755
HCM Lane V/C Ratio	0.034	0.004	0.005	-	-	0.007	-	-	0.017
HCM Control Delay (s)	10.1	8.5	7.5	0	-	7.3	0	-	9.9
HCM Lane LOS	B	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	0.1

Intersection: 4: Wulfsohn Road & Midland Ave

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	R	L	TR	LTR	LT	R
Maximum Queue (ft)	38	38	9	2	85	37	31
Average Queue (ft)	9	7	0	0	28	9	6
95th Queue (ft)	31	28	6	2	66	32	26
Link Distance (ft)				3357	825	327	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100	25	150				75
Storage Blk Time (%)		0					
Queuing Penalty (veh)		1					

Intersection: 13: Colorado Ave & 8th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	119	166	64	64
Average Queue (ft)	58	94	33	32
95th Queue (ft)	97	146	53	55
Link Distance (ft)	218	226	404	398
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 15: 9th Street & Colorado Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	66	70	31	100
Average Queue (ft)	31	40	2	49
95th Queue (ft)	54	63	16	79
Link Distance (ft)	501	211	418	404
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: 9th Street & SH-82

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	84	109	76	97	174	337	292	96	257	247
Average Queue (ft)	32	42	22	33	61	171	135	18	114	109
95th Queue (ft)	72	83	58	70	147	306	261	59	218	213
Link Distance (ft)		211		277		433	433		412	412
Upstream Blk Time (%)						0				
Queuing Penalty (veh)						0				
Storage Bay Dist (ft)	75		75		150			125		
Storage Blk Time (%)	2	3	1	1	0	10			5	
Queuing Penalty (veh)	2	1	0	0	0	8			1	

Intersection: 20: GMF/PnR & Wulfsohn Road

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	12	11	36	31	31
Average Queue (ft)	1	0	16	5	11
95th Queue (ft)	7	6	41	23	35
Link Distance (ft)	825	1500	334	334	254
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	428	82	6	882	11	72	1	1	15	2	30
Future Vol, veh/h	5	428	82	6	882	11	72	1	1	15	2	30
Conflicting Peds, #/hr	0	0	2	2	0	0	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	25	150	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	481	92	7	991	12	81	1	1	17	2	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1003	0	0	575	0	0	1525	1512	483	1551	1598	998
Stage 1	-	-	-	-	-	-	495	495	-	1011	1011	-
Stage 2	-	-	-	-	-	-	1030	1017	-	540	587	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	690	-	-	998	-	-	96	120	584	92	106	296
Stage 1	-	-	-	-	-	-	556	546	-	289	317	-
Stage 2	-	-	-	-	-	-	282	315	-	526	497	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	690	-	-	996	-	-	83	118	583	90	104	296
Mov Cap-2 Maneuver	-	-	-	-	-	-	183	227	-	204	219	-
Stage 1	-	-	-	-	-	-	550	540	-	286	315	-
Stage 2	-	-	-	-	-	-	246	313	-	519	492	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	39.4	20.7
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	185	690	-	-	996	-	-	206	296
HCM Lane V/C Ratio	0.449	0.008	-	-	0.007	-	-	0.093	0.114
HCM Control Delay (s)	39.4	10.3	-	-	8.6	-	-	24.3	18.7
HCM Lane LOS	E	B	-	-	A	-	-	C	C
HCM 95th %tile Q(veh)	2.1	0	-	-	0	-	-	0.3	0.4

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	194	66	27	164	68	46	10	31	37	19	22
Future Vol, veh/h	32	194	66	27	164	68	46	10	31	37	19	22
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	226	77	31	191	79	53	12	36	43	22	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.5	10.9	9.5	9.5
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	53%	11%	10%	47%
Vol Thru, %	11%	66%	63%	24%
Vol Right, %	36%	23%	26%	28%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	87	292	259	78
LT Vol	46	32	27	37
Through Vol	10	194	164	19
RT Vol	31	66	68	22
Lane Flow Rate	101	340	301	91
Geometry Grp	1	1	1	1
Degree of Util (X)	0.155	0.442	0.394	0.141
Departure Headway (Hd)	5.531	4.686	4.708	5.585
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	651	761	756	646
Service Time	3.536	2.772	2.796	3.589
HCM Lane V/C Ratio	0.155	0.447	0.398	0.141
HCM Control Delay	9.5	11.5	10.9	9.5
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.5	2.3	1.9	0.5

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	68	17	19	49	44	0	0	0	56	38	18
Future Vol, veh/h	14	68	17	19	49	44	0	0	0	56	38	18
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	79	20	22	57	51	0	0	0	65	44	21
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	7.9	0	8.4
HCM LOS	A	A	-	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	14%	17%	50%
Vol Thru, %	100%	69%	44%	34%
Vol Right, %	0%	17%	39%	16%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	99	112	112
LT Vol	0	14	19	56
Through Vol	0	68	49	38
RT Vol	0	17	44	18
Lane Flow Rate	0	115	130	130
Geometry Grp	1	1	1	1
Degree of Util (X)	0	0.138	0.151	0.162
Departure Headway (Hd)	4.625	4.303	4.164	4.473
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	836	865	804
Service Time	2.645	2.315	2.175	2.488
HCM Lane V/C Ratio	0	0.138	0.15	0.162
HCM Control Delay	7.6	8	7.9	8.4
HCM Lane LOS	N	A	A	A
HCM 95th-tile Q	0	0.5	0.5	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	13	54	35	17	97	47	1842	16	25	895	25
Future Volume (veh/h)	50	13	54	35	17	97	47	1842	16	25	895	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.91	1.00		0.93	1.00		0.97	1.00		0.97
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	52	13	56	36	18	100	48	1899	16	26	923	26
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	139	22	96	171	22	124	435	2524	21	165	2446	69
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.08	0.08	0.08	0.10	0.10	0.10	0.03	0.70	0.70	0.02	0.69	0.69
Unsig. Movement Delay												
Ln Grp Delay, s/veh	76.1	0.0	80.3	71.5	0.0	97.3	8.1	20.4	20.3	17.8	11.7	11.6
Ln Grp LOS	E	A	F	E	A	F	A	C	C	B	B	B
Approach Vol, veh/h		121			154			1963			975	
Approach Delay, s/veh		78.5			91.2			20.1			11.8	
Approach LOS		E			F			C			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	8	4	5	6		
Case No	1.1	4.0	10.0	10.0	1.1	4.0		
Phs Duration (G+Y+Rc), s	8.0	123.3	20.9	17.8	9.0	122.4		
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		
Max Green (Gmax), s	6.5	108.3	18.7	18.5	5.7	109.1		
Max Allow Headway (MAH), s	3.8	5.2	5.2	4.9	3.8	5.3		
Max Q Clear (g_c+I1), s	2.7	59.0	14.9	9.5	3.3	20.5		
Green Ext Time (g_e), s	0.0	26.5	0.2	0.3	0.0	7.8		
Prob of Phs Call (p_c)	0.71	1.00	1.00	1.00	0.90	1.00		
Prob of Max Out (p_x)	1.00	0.00	1.00	0.05	1.00	0.00		

Left-Turn Movement Data												
Assigned Mvmt		1		3	7	5						
Mvmt Sat Flow, veh/h		1781		1781	1781	1781						

Through Movement Data												
Assigned Mvmt			2	8	4		6					
Mvmt Sat Flow, veh/h			3610	232	284		3527					

Right-Turn Movement Data												
Assigned Mvmt			12	18	14		16					
Mvmt Sat Flow, veh/h			30	1289	1225		99					

Left Lane Group Data												
Assigned Mvmt		1	0	3	7	5	0	0	0			
Lane Assignment		L (Pr/Pm)		L	LL (Pr/Pm)							

Lanes in Grp	1	0	1	1	1	0	0	0
Grp Vol (v), veh/h	26	0	36	52	48	0	0	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	1781	1781	0	0	0
Q Serve Time (g_s), s	0.7	0.0	3.2	4.7	1.3	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.7	0.0	3.2	4.7	1.3	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	234	0	1781	1781	591	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	117.9	0.0	0.0	0.0	117.9	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	61.9	0.0	0.0	0.0	99.4	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	7.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	165	0	171	139	435	0	0	0
V/C Ratio (X)	0.16	0.00	0.21	0.37	0.11	0.00	0.00	0.00
Avail Cap (c_a), veh/h	196	0	196	194	448	0	0	0
Upstream Filter (I)	0.95	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	17.4	0.0	70.9	74.4	7.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.6	1.7	0.1	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	17.8	0.0	71.5	76.1	8.1	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.4	0.0	1.5	2.2	0.5	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.4	0.0	1.5	2.2	0.5	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.08	0.00	0.50	0.76	0.09	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	8	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	933	0	0	0	465	0	0
Grp Sat Flow (s), veh/h/ln	0	1777	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	56.6	0.0	0.0	0.0	18.5	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	56.6	0.0	0.0	0.0	18.5	0.0	0.0
Lane Grp Cap (c), veh/h	0	1242	0	0	0	1232	0	0
V/C Ratio (X)	0.00	0.75	0.00	0.00	0.00	0.38	0.00	0.00
Avail Cap (c_a), veh/h	0	1242	0	0	0	1232	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	0.95	0.00	0.00
Uniform Delay (d1), s/veh	0.0	16.2	0.0	0.0	0.0	10.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	4.2	0.0	0.0	0.0	0.8	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	20.4	0.0	0.0	0.0	11.7	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	22.3	0.0	0.0	0.0	7.3	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	1.5	0.0	0.0	0.0	0.3	0.0	0.0

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	23.7	0.0	0.0	0.0	7.6	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	1.39	0.00	0.00	0.00	0.47	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	18	14	0	16	0	0
Lane Assignment		T+R	T+R	T+R		T+R		
Lanes in Grp	0	1	1	1	0	1	0	0
Grp Vol (v), veh/h	0	982	118	69	0	484	0	0
Grp Sat Flow (s), veh/h/ln	0	1864	1521	1510	0	1849	0	0
Q Serve Time (g_s), s	0.0	57.0	12.9	7.5	0.0	18.5	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	57.0	12.9	7.5	0.0	18.5	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.02	0.85	0.81	0.00	0.05	0.00	0.00
Lane Grp Cap (c), veh/h	0	1303	146	118	0	1282	0	0
V/C Ratio (X)	0.00	0.75	0.81	0.59	0.00	0.38	0.00	0.00
Avail Cap (c_a), veh/h	0	1303	167	164	0	1282	0	0
Upstream Filter (I)	0.00	1.00	1.00	1.00	0.00	0.95	0.00	0.00
Uniform Delay (d1), s/veh	0.0	16.3	75.3	75.7	0.0	10.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	4.1	22.0	4.6	0.0	0.8	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	20.3	97.3	80.3	0.0	11.6	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	23.5	5.1	2.9	0.0	7.6	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	1.5	0.9	0.1	0.0	0.3	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	25.0	6.0	3.1	0.0	7.9	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	1.47	0.55	0.37	0.00	0.49	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	23.2
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↱		↕	
Traffic Vol, veh/h	4	75	6	1	55	0	18	3	4	13	2	13
Future Vol, veh/h	4	75	6	1	55	0	18	3	4	13	2	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	82	7	1	60	0	20	3	4	14	2	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	60	0	0	89	0	0	164	156	86	159	159	60
Stage 1	-	-	-	-	-	-	94	94	-	62	62	-
Stage 2	-	-	-	-	-	-	70	62	-	97	97	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1544	-	-	1506	-	-	801	736	973	807	733	1005
Stage 1	-	-	-	-	-	-	913	817	-	949	843	-
Stage 2	-	-	-	-	-	-	940	843	-	910	815	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1544	-	-	1506	-	-	786	733	973	798	730	1005
Mov Cap-2 Maneuver	-	-	-	-	-	-	786	733	-	798	730	-
Stage 1	-	-	-	-	-	-	910	815	-	946	842	-
Stage 2	-	-	-	-	-	-	923	842	-	900	813	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	9.6	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	778	973	1544	-	-	1506	-	-	876
HCM Lane V/C Ratio	0.029	0.004	0.003	-	-	0.001	-	-	0.035
HCM Control Delay (s)	9.8	8.7	7.3	0	-	7.4	0	-	9.3
HCM Lane LOS	A	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	0.1

Intersection: 4: Wulfsohn Road & Midland Ave

Movement	EB	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	T	R	L	TR	LTR	LT	R
Maximum Queue (ft)	24	14	39	31	27	111	46	61
Average Queue (ft)	2	0	8	4	1	39	14	23
95th Queue (ft)	14	8	31	20	17	82	40	53
Link Distance (ft)		776			3357	825	327	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		25	150				75
Storage Blk Time (%)		0	0		0		0	0
Queuing Penalty (veh)		0	1		0		0	0

Intersection: 13: Colorado Ave & 8th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	187	134	95	71
Average Queue (ft)	81	62	39	34
95th Queue (ft)	166	105	72	60
Link Distance (ft)	218	226	404	398
Upstream Blk Time (%)	2			
Queuing Penalty (veh)	4			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 15: 9th Street & Colorado Ave

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	65	74	69
Average Queue (ft)	34	36	33
95th Queue (ft)	53	60	52
Link Distance (ft)	501	211	404
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: 9th Street & SH-82

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	95	164	100	257	174	477	473	121	332	318
Average Queue (ft)	49	52	46	114	47	405	376	23	127	114
95th Queue (ft)	95	120	104	222	144	553	556	73	264	251
Link Distance (ft)		211		277		433	433		412	412
Upstream Blk Time (%)		0		1		26	23			
Queuing Penalty (veh)		1		0		0	0			
Storage Bay Dist (ft)	75		75		150			125		
Storage Blk Time (%)	12	6	6	38	0	36		0	7	
Queuing Penalty (veh)	8	3	7	13	0	17		0	2	

Intersection: 20: GMF/PnR & Wulfsohn Road

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	6	2	38	31	38
Average Queue (ft)	0	0	14	4	18
95th Queue (ft)	4	2	40	22	43
Link Distance (ft)	825	1500	334	334	254
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	958	133	7	387	19	74	0	8	7	4	6
Future Vol, veh/h	31	958	133	7	387	19	74	0	8	7	4	6
Conflicting Peds, #/hr	0	0	2	2	0	0	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	25	150	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	1076	149	8	435	21	83	0	9	8	4	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	456	0	0	1227	0	0	1616	1620	1078	1687	1759	447
Stage 1	-	-	-	-	-	-	1148	1148	-	462	462	-
Stage 2	-	-	-	-	-	-	468	472	-	1225	1297	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1105	-	-	568	-	-	~ 83	103	266	74	85	612
Stage 1	-	-	-	-	-	-	242	273	-	580	565	-
Stage 2	-	-	-	-	-	-	575	559	-	219	232	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1105	-	-	567	-	-	~ 77	98	265	69	81	611
Mov Cap-2 Maneuver	-	-	-	-	-	-	176	198	-	156	170	-
Stage 1	-	-	-	-	-	-	234	264	-	561	557	-
Stage 2	-	-	-	-	-	-	556	551	-	205	224	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	43.5	22.8
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	182	1105	-	-	567	-	-	161	611
HCM Lane V/C Ratio	0.506	0.032	-	-	0.014	-	-	0.077	0.011
HCM Control Delay (s)	43.5	8.4	-	-	11.4	-	-	29.2	11
HCM Lane LOS	E	A	-	-	B	-	-	D	B
HCM 95th %tile Q(veh)	2.5	0.1	-	-	0	-	-	0.2	0

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	15.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	223	72	127	238	76	56	18	19	20	26	29
Future Vol, veh/h	15	223	72	127	238	76	56	18	19	20	26	29
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	259	84	148	277	88	65	21	22	23	30	34
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.5	19.6	10.8	10.3
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	60%	5%	29%	27%
Vol Thru, %	19%	72%	54%	35%
Vol Right, %	20%	23%	17%	39%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	93	310	441	75
LT Vol	56	15	127	20
Through Vol	18	223	238	26
RT Vol	19	72	76	29
Lane Flow Rate	108	360	513	87
Geometry Grp	1	1	1	1
Degree of Util (X)	0.189	0.513	0.714	0.149
Departure Headway (Hd)	6.283	5.125	5.013	6.167
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	570	703	723	579
Service Time	4.341	3.165	3.048	4.229
HCM Lane V/C Ratio	0.189	0.512	0.71	0.15
HCM Control Delay	10.8	13.5	19.6	10.3
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	0.7	3	6.1	0.5

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	34	17	12	36	83	3	0	0	87	150	36
Future Vol, veh/h	27	34	17	12	36	83	3	0	0	87	150	36
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	40	20	14	42	97	3	0	0	101	174	42
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.5	8.5	8.1	10.4
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	35%	9%	32%
Vol Thru, %	0%	44%	27%	55%
Vol Right, %	0%	22%	63%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	3	78	131	273
LT Vol	3	27	12	87
Through Vol	0	34	36	150
RT Vol	0	17	83	36
Lane Flow Rate	3	91	152	317
Geometry Grp	1	1	1	1
Degree of Util (X)	0.005	0.121	0.188	0.395
Departure Headway (Hd)	5.071	4.808	4.442	4.484
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	704	745	807	803
Service Time	3.117	2.845	2.474	2.514
HCM Lane V/C Ratio	0.004	0.122	0.188	0.395
HCM Control Delay	8.1	8.5	8.5	10.4
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	0	0.4	0.7	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	12	85	32	10	41	90	1076	32	19	974	35
Future Volume (veh/h)	37	12	85	32	10	41	90	1076	32	19	974	35
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.92	1.00		0.90	1.00		0.97	1.00		0.97
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	38	12	88	33	10	42	93	1109	33	20	1004	36
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	160	16	119	127	21	86	411	2517	75	362	2461	88
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.09	0.09	0.09	0.07	0.07	0.07	0.03	0.72	0.72	0.02	0.70	0.70
Unsig. Movement Delay												
Ln Grp Delay, s/veh	72.7	0.0	88.7	75.8	0.0	79.4	8.1	11.2	11.1	8.0	11.4	11.4
Ln Grp LOS	E	A	F	E	A	E	A	B	B	A	B	B
Approach Vol, veh/h		138			85			1235			1060	
Approach Delay, s/veh		84.3			78.0			10.9			11.3	
Approach LOS		F			E			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	8	4	5	6		
Case No	1.1	4.0	10.0	10.0	1.1	4.0		
Phs Duration (G+Y+Rc), s	7.6	126.1	16.6	19.8	9.4	124.2		
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		
Max Green (Gmax), s	6.5	108.3	18.7	18.5	5.7	109.1		
Max Allow Headway (MAH), s	3.8	5.3	5.0	5.2	3.8	5.3		
Max Q Clear (g_c+I1), s	2.5	24.3	7.7	13.0	4.5	22.3		
Green Ext Time (g_e), s	0.0	10.5	0.2	0.3	0.0	9.0		
Prob of Phs Call (p_c)	0.61	1.00	0.99	1.00	0.99	1.00		
Prob of Max Out (p_x)	0.76	0.00	0.01	0.84	1.00	0.00		

Left-Turn Movement Data								
Assigned Mvmt	1		3	7	5			
Mvmt Sat Flow, veh/h	1781		1781	1781	1781			

Through Movement Data								
Assigned Mvmt		2	8	4		6		
Mvmt Sat Flow, veh/h		3520	288	180		3495		

Right-Turn Movement Data								
Assigned Mvmt		12	18	14		16		
Mvmt Sat Flow, veh/h		105	1211	1322		125		

Left Lane Group Data								
Assigned Mvmt	1	0	3	7	5	0	0	0
Lane Assignment	L (Pr/Pm)		L	LL (Pr/Pm)				

Lanes in Grp	1	0	1	1	1	0	0	0
Grp Vol (v), veh/h	20	0	33	38	93	0	0	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	1781	1781	0	0	0
Q Serve Time (g_s), s	0.5	0.0	3.0	3.4	2.5	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.5	0.0	3.0	3.4	2.5	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	493	0	1781	1781	542	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	119.7	0.0	0.0	0.0	119.7	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	99.3	0.0	0.0	0.0	99.4	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.9	0.0	0.0	0.0	4.2	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	362	0	127	160	411	0	0	0
V/C Ratio (X)	0.06	0.00	0.26	0.24	0.23	0.00	0.00	0.00
Avail Cap (c_a), veh/h	398	0	196	194	419	0	0	0
Upstream Filter (I)	0.95	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	7.9	0.0	74.7	71.9	7.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	1.1	0.8	0.3	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	8.0	0.0	75.8	72.7	8.1	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.2	0.0	1.4	1.6	1.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.2	0.0	1.4	1.6	1.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.04	0.00	0.48	0.54	0.17	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	8	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	560	0	0	0	510	0	0
Grp Sat Flow (s), veh/h/ln	0	1777	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	22.3	0.0	0.0	0.0	20.3	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	22.3	0.0	0.0	0.0	20.3	0.0	0.0
Lane Grp Cap (c), veh/h	0	1271	0	0	0	1251	0	0
V/C Ratio (X)	0.00	0.44	0.00	0.00	0.00	0.41	0.00	0.00
Avail Cap (c_a), veh/h	0	1271	0	0	0	1251	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	0.95	0.00	0.00
Uniform Delay (d1), s/veh	0.0	10.1	0.0	0.0	0.0	10.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	0.0	0.0	0.0	0.9	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	11.2	0.0	0.0	0.0	11.4	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	8.6	0.0	0.0	0.0	8.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.4	0.0	0.0	0.0	0.3	0.0	0.0

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	9.0	0.0	0.0	0.0	8.3	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.53	0.00	0.00	0.00	0.51	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	18	14	0	16	0	0
Lane Assignment		T+R	T+R	T+R		T+R		
Lanes in Grp	0	1	1	1	0	1	0	0
Grp Vol (v), veh/h	0	582	52	100	0	530	0	0
Grp Sat Flow (s), veh/h/ln	0	1848	1499	1503	0	1844	0	0
Q Serve Time (g_s), s	0.0	22.3	5.7	11.0	0.0	20.3	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	22.3	5.7	11.0	0.0	20.3	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.06	0.81	0.88	0.00	0.07	0.00	0.00
Lane Grp Cap (c), veh/h	0	1322	107	135	0	1298	0	0
V/C Ratio (X)	0.00	0.44	0.49	0.74	0.00	0.41	0.00	0.00
Avail Cap (c_a), veh/h	0	1322	165	164	0	1298	0	0
Upstream Filter (I)	0.00	1.00	1.00	1.00	0.00	0.95	0.00	0.00
Uniform Delay (d1), s/veh	0.0	10.1	76.0	75.4	0.0	10.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	3.4	13.3	0.0	0.9	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	11.1	79.4	88.7	0.0	11.4	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	9.0	2.2	4.3	0.0	8.3	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.4	0.1	0.5	0.0	0.3	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	9.4	2.3	4.8	0.0	8.6	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.55	0.21	0.58	0.00	0.53	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	17.4
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↱		↕	
Traffic Vol, veh/h	21	45	33	41	120	39	38	0	11	17	3	14
Future Vol, veh/h	21	45	33	41	120	39	38	0	11	17	3	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	49	36	45	130	42	41	0	12	18	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	172	0	0	85	0	0	363	375	67	360	372	151
Stage 1	-	-	-	-	-	-	113	113	-	241	241	-
Stage 2	-	-	-	-	-	-	250	262	-	119	131	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1405	-	-	1512	-	-	593	556	997	596	558	895
Stage 1	-	-	-	-	-	-	892	802	-	762	706	-
Stage 2	-	-	-	-	-	-	754	691	-	885	788	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1405	-	-	1512	-	-	558	529	997	567	531	895
Mov Cap-2 Maneuver	-	-	-	-	-	-	558	529	-	567	531	-
Stage 1	-	-	-	-	-	-	877	788	-	749	683	-
Stage 2	-	-	-	-	-	-	713	668	-	860	775	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	1.5	11.3	10.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	558	997	1405	-	-	1512	-	-	663
HCM Lane V/C Ratio	0.074	0.012	0.016	-	-	0.029	-	-	0.056
HCM Control Delay (s)	12	8.7	7.6	0	-	7.5	0	-	10.8
HCM Lane LOS	B	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	0.1	-	-	0.1	-	-	0.2

Intersection: 4: Wulfsohn Road & Midland Ave

Movement	EB	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	T	R	L	TR	LTR	LT	R
Maximum Queue (ft)	44	25	43	34	18	169	39	31
Average Queue (ft)	9	1	12	5	1	63	9	5
95th Queue (ft)	32	16	38	24	9	134	32	24
Link Distance (ft)		776			3357	825	327	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		25	150				75
Storage Blk Time (%)		0	0					
Queuing Penalty (veh)		0	2					

Intersection: 13: Colorado Ave & 8th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	215	162	72	79
Average Queue (ft)	95	104	36	36
95th Queue (ft)	191	157	61	63
Link Distance (ft)	218	226	404	398
Upstream Blk Time (%)	3			
Queuing Penalty (veh)	7			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 15: 9th Street & Colorado Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	64	71	31	100
Average Queue (ft)	32	39	4	49
95th Queue (ft)	57	62	21	79
Link Distance (ft)	501	211	418	404
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: 9th Street & SH-82

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	98	164	82	127	174	364	314	116	346	321
Average Queue (ft)	38	59	32	39	58	177	128	16	147	133
95th Queue (ft)	85	127	74	88	137	331	270	62	290	272
Link Distance (ft)		211		277		433	433		412	412
Upstream Blk Time (%)		0				0			0	
Queuing Penalty (veh)		0				0			0	
Storage Bay Dist (ft)	75		75		150			125		
Storage Blk Time (%)	7	9	6	3		10			10	
Queuing Penalty (veh)	6	3	3	1		9			2	

Intersection: 20: GMF/PnR & Wulfsohn Road

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	31	27	57	34	40
Average Queue (ft)	3	2	23	11	21
95th Queue (ft)	19	15	50	35	45
Link Distance (ft)	825	1500	334	334	254
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	428	109	9	882	11	139	1	8	15	2	30
Future Vol, veh/h	5	428	109	9	882	11	139	1	8	15	2	30
Conflicting Peds, #/hr	0	0	2	2	0	0	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	25	150	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	481	122	10	991	12	156	1	9	17	2	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1003	0	0	605	0	0	1531	1518	483	1576	1634	998
Stage 1	-	-	-	-	-	-	495	495	-	1017	1017	-
Stage 2	-	-	-	-	-	-	1036	1023	-	559	617	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	690	-	-	973	-	-	~ 96	119	584	89	101	296
Stage 1	-	-	-	-	-	-	556	546	-	287	315	-
Stage 2	-	-	-	-	-	-	280	313	-	513	481	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	690	-	-	971	-	-	~ 83	117	583	86	99	296
Mov Cap-2 Maneuver	-	-	-	-	-	-	182	225	-	200	213	-
Stage 1	-	-	-	-	-	-	550	540	-	284	312	-
Stage 2	-	-	-	-	-	-	244	310	-	500	476	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	88	20.9
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	189	690	-	-	971	-	-	201	296
HCM Lane V/C Ratio	0.88	0.008	-	-	0.01	-	-	0.095	0.114
HCM Control Delay (s)	88	10.3	-	-	8.7	-	-	24.8	18.7
HCM Lane LOS	F	B	-	-	A	-	-	C	C
HCM 95th %tile Q(veh)	6.6	0	-	-	0	-	-	0.3	0.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	12.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	223	79	27	176	68	62	10	31	37	19	25
Future Vol, veh/h	34	223	79	27	176	68	62	10	31	37	19	25
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	259	92	31	205	79	72	12	36	43	22	29
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.4	11.8	10.2	9.9
HCM LOS	B	B	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	60%	10%	10%	46%
Vol Thru, %	10%	66%	65%	23%
Vol Right, %	30%	24%	25%	31%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	103	336	271	81
LT Vol	62	34	27	37
Through Vol	10	223	176	19
RT Vol	31	79	68	25
Lane Flow Rate	120	391	315	94
Geometry Grp	1	1	1	1
Degree of Util (X)	0.193	0.533	0.435	0.152
Departure Headway (Hd)	5.787	4.908	4.964	5.811
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	619	738	725	616
Service Time	3.835	2.908	2.997	3.861
HCM Lane V/C Ratio	0.194	0.53	0.434	0.153
HCM Control Delay	10.2	13.4	11.8	9.9
HCM Lane LOS	B	B	B	A
HCM 95th-tile Q	0.7	3.2	2.2	0.5

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	68	17	19	49	59	0	0	0	69	38	18
Future Vol, veh/h	14	68	17	19	49	59	0	0	0	69	38	18
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	79	20	22	57	69	0	0	0	80	44	21
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	8	0	8.6
HCM LOS	A	A	-	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	14%	15%	55%
Vol Thru, %	100%	69%	39%	30%
Vol Right, %	0%	17%	46%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	99	127	125
LT Vol	0	14	19	69
Through Vol	0	68	49	38
RT Vol	0	17	59	18
Lane Flow Rate	0	115	148	145
Geometry Grp	1	1	1	1
Degree of Util (X)	0	0.139	0.171	0.183
Departure Headway (Hd)	4.682	4.36	4.158	4.529
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	824	865	794
Service Time	2.707	2.376	2.172	2.548
HCM Lane V/C Ratio	0	0.14	0.171	0.183
HCM Control Delay	7.7	8.1	8	8.6
HCM Lane LOS	N	A	A	A
HCM 95th-tile Q	0	0.5	0.6	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	13	67	33	17	97	63	1842	16	25	895	25
Future Volume (veh/h)	50	13	67	33	17	97	63	1842	16	25	895	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.92	1.00		0.93	1.00		0.97	1.00		0.97
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	52	13	69	34	18	100	65	1899	16	26	923	26
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	148	20	105	171	22	124	433	2506	21	162	2422	68
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.08	0.08	0.08	0.10	0.10	0.10	0.03	0.69	0.69	0.02	0.69	0.69
Unsig. Movement Delay												
Ln Grp Delay, s/veh	75.0	0.0	81.3	71.3	0.0	97.3	8.5	21.1	21.0	18.4	12.2	12.1
Ln Grp LOS	E	A	F	E	A	F	A	C	C	B	B	B
Approach Vol, veh/h		134			152			1980			975	
Approach Delay, s/veh		78.9			91.5			20.7			12.3	
Approach LOS		E			F			C			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	8	4	5	6		
Case No	1.1	4.0	10.0	10.0	1.1	4.0		
Phs Duration (G+Y+Rc), s	8.0	122.5	20.9	18.6	9.3	121.3		
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		
Max Green (Gmax), s	6.5	108.3	18.7	18.5	5.7	109.1		
Max Allow Headway (MAH), s	3.8	5.2	5.3	5.0	3.8	5.3		
Max Q Clear (g_c+I1), s	2.7	59.9	14.9	11.0	3.8	20.9		
Green Ext Time (g_e), s	0.0	26.3	0.2	0.3	0.0	7.8		
Prob of Phs Call (p_c)	0.71	1.00	1.00	1.00	0.95	1.00		
Prob of Max Out (p_x)	1.00	0.00	1.00	0.18	1.00	0.00		

Left-Turn Movement Data												
Assigned Mvmt		1		3	7	5						
Mvmt Sat Flow, veh/h		1781		1781	1781	1781						

Through Movement Data												
Assigned Mvmt			2	8	4		6					
Mvmt Sat Flow, veh/h			3610	232	239		3527					

Right-Turn Movement Data												
Assigned Mvmt			12	18	14		16					
Mvmt Sat Flow, veh/h			30	1289	1268		99					

Left Lane Group Data												
Assigned Mvmt		1	0	3	7	5	0	0	0			
Lane Assignment	L (Pr/Pm)			L	LL (Pr/Pm)							

Lanes in Grp	1	0	1	1	1	0	0	0
Grp Vol (v), veh/h	26	0	34	52	65	0	0	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	1781	1781	0	0	0
Q Serve Time (g_s), s	0.7	0.0	3.0	4.7	1.8	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.7	0.0	3.0	4.7	1.8	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	234	0	1781	1781	591	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	116.8	0.0	0.0	0.0	116.8	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	60.1	0.0	0.0	0.0	97.9	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	7.1	0.0	0.0	0.0	2.3	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	162	0	171	148	433	0	0	0
V/C Ratio (X)	0.16	0.00	0.20	0.35	0.15	0.00	0.00	0.00
Avail Cap (c_a), veh/h	193	0	196	194	442	0	0	0
Upstream Filter (I)	0.95	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	18.0	0.0	70.8	73.6	8.4	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.6	1.4	0.2	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	18.4	0.0	71.3	75.0	8.5	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.4	0.0	1.4	2.2	0.7	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.4	0.0	1.4	2.2	0.7	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.08	0.00	0.48	0.75	0.12	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	8	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	933	0	0	0	465	0	0
Grp Sat Flow (s), veh/h/ln	0	1777	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	57.5	0.0	0.0	0.0	18.9	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	57.5	0.0	0.0	0.0	18.9	0.0	0.0
Lane Grp Cap (c), veh/h	0	1233	0	0	0	1220	0	0
V/C Ratio (X)	0.00	0.76	0.00	0.00	0.00	0.38	0.00	0.00
Avail Cap (c_a), veh/h	0	1233	0	0	0	1220	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	0.95	0.00	0.00
Uniform Delay (d1), s/veh	0.0	16.8	0.0	0.0	0.0	11.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	4.4	0.0	0.0	0.0	0.9	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	21.1	0.0	0.0	0.0	12.2	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	22.8	0.0	0.0	0.0	7.5	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	1.5	0.0	0.0	0.0	0.3	0.0	0.0

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	24.3	0.0	0.0	0.0	7.8	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	1.42	0.00	0.00	0.00	0.48	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	18	14	0	16	0	0
Lane Assignment		T+R	T+R	T+R		T+R		
Lanes in Grp	0	1	1	1	0	1	0	0
Grp Vol (v), veh/h	0	982	118	82	0	484	0	0
Grp Sat Flow (s), veh/h/ln	0	1864	1521	1507	0	1849	0	0
Q Serve Time (g_s), s	0.0	57.9	12.9	9.0	0.0	18.9	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	57.9	12.9	9.0	0.0	18.9	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.02	0.85	0.84	0.00	0.05	0.00	0.00
Lane Grp Cap (c), veh/h	0	1294	146	125	0	1270	0	0
V/C Ratio (X)	0.00	0.76	0.81	0.66	0.00	0.38	0.00	0.00
Avail Cap (c_a), veh/h	0	1294	167	164	0	1270	0	0
Upstream Filter (I)	0.00	1.00	1.00	1.00	0.00	0.95	0.00	0.00
Uniform Delay (d1), s/veh	0.0	16.8	75.3	75.6	0.0	11.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	4.2	22.0	5.7	0.0	0.8	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	21.0	97.3	81.3	0.0	12.1	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	24.0	5.1	3.5	0.0	7.8	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	1.5	0.9	0.2	0.0	0.3	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	25.5	6.0	3.7	0.0	8.1	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	1.50	0.55	0.45	0.00	0.50	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	23.9
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↱		↕	
Traffic Vol, veh/h	18	83	15	7	67	10	67	3	20	27	4	27
Future Vol, veh/h	18	83	15	7	67	10	67	3	20	27	4	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	90	16	8	73	11	73	3	22	29	4	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	84	0	0	106	0	0	249	238	98	246	241	79
Stage 1	-	-	-	-	-	-	138	138	-	95	95	-
Stage 2	-	-	-	-	-	-	111	100	-	151	146	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1513	-	-	1485	-	-	705	663	958	708	660	981
Stage 1	-	-	-	-	-	-	865	782	-	912	816	-
Stage 2	-	-	-	-	-	-	894	812	-	851	776	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1513	-	-	1485	-	-	670	650	958	679	647	981
Mov Cap-2 Maneuver	-	-	-	-	-	-	670	650	-	679	647	-
Stage 1	-	-	-	-	-	-	853	771	-	899	811	-
Stage 2	-	-	-	-	-	-	857	807	-	817	765	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0.6	10.6	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	669	958	1513	-	-	1485	-	-	789
HCM Lane V/C Ratio	0.114	0.023	0.013	-	-	0.005	-	-	0.08
HCM Control Delay (s)	11.1	8.8	7.4	0	-	7.4	0	-	10
HCM Lane LOS	B	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0.1	0	-	-	0	-	-	0.3

Intersection: 4: Wulfsohn Road & Midland Ave

Movement	EB	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	T	R	L	TR	LTR	LT	R
Maximum Queue (ft)	28	13	43	28	47	258	45	70
Average Queue (ft)	3	1	9	4	2	110	14	25
95th Queue (ft)	17	10	35	20	24	239	41	56
Link Distance (ft)		776			3357	825	327	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		25	150				75
Storage Blk Time (%)		0	0		0		0	1
Queuing Penalty (veh)		0	1		0		0	0

Intersection: 13: Colorado Ave & 8th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	200	125	100	95
Average Queue (ft)	96	65	42	37
95th Queue (ft)	186	106	79	71
Link Distance (ft)	218	226	404	398
Upstream Blk Time (%)	2			
Queuing Penalty (veh)	5			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 15: 9th Street & Colorado Ave

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	63	70	64
Average Queue (ft)	35	38	34
95th Queue (ft)	56	60	51
Link Distance (ft)	501	211	404
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: 9th Street & SH-82

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	97	167	100	219	174	469	469	132	320	303
Average Queue (ft)	52	60	37	108	54	403	376	27	134	123
95th Queue (ft)	98	138	91	200	151	548	554	81	263	247
Link Distance (ft)		211		277		433	433		412	412
Upstream Blk Time (%)		1		0		25	21			
Queuing Penalty (veh)		1		0		0	0			
Storage Bay Dist (ft)	75		75		150			125		
Storage Blk Time (%)	13	9	4	34	0	35			8	
Queuing Penalty (veh)	11	4	4	11	0	22			2	

Intersection: 20: GMF/PnR & Wulfsohn Road

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	23	9	65	40	62
Average Queue (ft)	2	1	31	16	29
95th Queue (ft)	14	7	55	42	56
Link Distance (ft)	825	1500	334	334	254
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection	
Int Delay, s/veh	47.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	969	195	7	414	28	236	0	8	13	4	12
Future Vol, veh/h	40	969	195	7	414	28	236	0	8	13	4	12
Conflicting Peds, #/hr	0	0	2	2	0	0	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	25	150	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	1089	219	8	465	31	265	0	9	15	4	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	496	0	0	1310	0	0	1687	1693	1091	1790	1897	482
Stage 1	-	-	-	-	-	-	1181	1181	-	497	497	-
Stage 2	-	-	-	-	-	-	506	512	-	1293	1400	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1068	-	-	528	-	-	~ 74	93	261	63	69	584
Stage 1	-	-	-	-	-	-	~ 232	264	-	555	545	-
Stage 2	-	-	-	-	-	-	549	536	-	200	207	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1068	-	-	527	-	-	~ 67	88	261	58	65	583
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 164	186	-	140	150	-
Stage 1	-	-	-	-	-	-	~ 222	252	-	532	537	-
Stage 2	-	-	-	-	-	-	523	528	-	185	198	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	$ 367.2	24.8
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	166	1068	-	-	527	-	-	142	583
HCM Lane V/C Ratio	1.652	0.042	-	-	0.015	-	-	0.135	0.023
HCM Control Delay (s)	$ 367.2	8.5	-	-	11.9	-	-	34.3	11.3
HCM Lane LOS	F	A	-	-	B	-	-	D	B
HCM 95th %tile Q(veh)	18.9	0.1	-	-	0	-	-	0.5	0.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	31.7
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	403	72	127	305	76	56	18	19	20	26	29
Future Vol, veh/h	15	403	72	127	305	76	56	18	19	20	26	29
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	469	84	148	355	88	65	21	22	23	30	34
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	32.7	37.2	12.2	11.6
HCM LOS	D	E	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	60%	3%	25%	27%
Vol Thru, %	19%	82%	60%	35%
Vol Right, %	20%	15%	15%	39%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	93	490	508	75
LT Vol	56	15	127	20
Through Vol	18	403	305	26
RT Vol	19	72	76	29
Lane Flow Rate	108	570	591	87
Geometry Grp	1	1	1	1
Degree of Util (X)	0.217	0.858	0.892	0.173
Departure Headway (Hd)	7.231	5.424	5.435	7.151
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	499	661	662	504
Service Time	5.238	3.516	3.524	5.158
HCM Lane V/C Ratio	0.216	0.862	0.893	0.173
HCM Control Delay	12.2	32.7	37.2	11.6
HCM Lane LOS	B	D	E	B
HCM 95th-tile Q	0.8	9.8	11	0.6

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	34	17	12	36	83	3	0	0	87	150	36
Future Vol, veh/h	27	34	17	12	36	83	3	0	0	87	150	36
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	40	20	14	42	97	3	0	0	101	174	42
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.5	8.5	8.1	10.4
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	35%	9%	32%
Vol Thru, %	0%	44%	27%	55%
Vol Right, %	0%	22%	63%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	3	78	131	273
LT Vol	3	27	12	87
Through Vol	0	34	36	150
RT Vol	0	17	83	36
Lane Flow Rate	3	91	152	317
Geometry Grp	1	1	1	1
Degree of Util (X)	0.005	0.121	0.188	0.395
Departure Headway (Hd)	5.071	4.808	4.442	4.484
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	704	745	807	803
Service Time	3.117	2.845	2.474	2.514
HCM Lane V/C Ratio	0.004	0.122	0.188	0.395
HCM Control Delay	8.1	8.5	8.5	10.4
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	0	0.4	0.7	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	12	85	32	10	41	90	1105	32	19	1042	35
Future Volume (veh/h)	37	12	85	32	10	41	90	1105	32	19	1042	35
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.92	1.00		0.90	1.00		0.97	1.00		0.97
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	38	12	88	33	10	42	93	1139	33	20	1074	36
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	160	16	119	127	21	86	385	2520	73	352	2467	83
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.09	0.09	0.09	0.07	0.07	0.07	0.03	0.72	0.72	0.02	0.70	0.70
Unsig. Movement Delay												
Ln Grp Delay, s/veh	72.7	0.0	88.7	75.8	0.0	79.4	8.5	11.4	11.3	8.1	11.8	11.8
Ln Grp LOS	E	A	F	E	A	E	A	B	B	A	B	B
Approach Vol, veh/h		138			85			1265			1130	
Approach Delay, s/veh		84.3			78.0			11.1			11.7	
Approach LOS		F			E			B			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	8	4	5	6		
Case No	1.1	4.0	10.0	10.0	1.1	4.0		
Phs Duration (G+Y+Rc), s	7.6	126.1	16.6	19.8	9.4	124.2		
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		
Max Green (Gmax), s	6.5	108.3	18.7	18.5	5.7	109.1		
Max Allow Headway (MAH), s	3.8	5.3	5.0	5.2	3.8	5.3		
Max Q Clear (g_c+I1), s	2.5	25.1	7.7	13.0	4.5	24.2		
Green Ext Time (g_e), s	0.0	11.0	0.2	0.3	0.0	10.0		
Prob of Phs Call (p_c)	0.61	1.00	0.99	1.00	0.99	1.00		
Prob of Max Out (p_x)	0.76	0.00	0.01	0.84	1.00	0.00		

Left-Turn Movement Data												
Assigned Mvmt		1		3	7	5						
Mvmt Sat Flow, veh/h		1781		1781	1781	1781						

Through Movement Data												
Assigned Mvmt			2	8	4		6					
Mvmt Sat Flow, veh/h			3524	288	180		3505					

Right-Turn Movement Data												
Assigned Mvmt			12	18	14		16					
Mvmt Sat Flow, veh/h			102	1211	1322		117					

Left Lane Group Data												
Assigned Mvmt		1	0	3	7	5	0	0	0			
Lane Assignment	L (Pr/Pm)			L	LL (Pr/Pm)							

Lanes in Grp	1	0	1	1	1	0	0	0
Grp Vol (v), veh/h	20	0	33	38	93	0	0	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	1781	1781	0	0	0
Q Serve Time (g_s), s	0.5	0.0	3.0	3.4	2.5	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.5	0.0	3.0	3.4	2.5	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	479	0	1781	1781	508	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	119.7	0.0	0.0	0.0	119.7	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	98.4	0.0	0.0	0.0	97.4	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.9	0.0	0.0	0.0	5.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	352	0	127	160	385	0	0	0
V/C Ratio (X)	0.06	0.00	0.26	0.24	0.24	0.00	0.00	0.00
Avail Cap (c_a), veh/h	388	0	196	194	393	0	0	0
Upstream Filter (I)	0.95	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	8.0	0.0	74.7	71.9	8.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	1.1	0.8	0.3	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	8.1	0.0	75.8	72.7	8.5	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.2	0.0	1.4	1.6	1.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.2	0.0	1.4	1.6	1.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.04	0.00	0.48	0.54	0.17	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	8	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	574	0	0	0	544	0	0
Grp Sat Flow (s), veh/h/ln	0	1777	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	23.1	0.0	0.0	0.0	22.2	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	23.1	0.0	0.0	0.0	22.2	0.0	0.0
Lane Grp Cap (c), veh/h	0	1271	0	0	0	1251	0	0
V/C Ratio (X)	0.00	0.45	0.00	0.00	0.00	0.44	0.00	0.00
Avail Cap (c_a), veh/h	0	1271	0	0	0	1251	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	0.95	0.00	0.00
Uniform Delay (d1), s/veh	0.0	10.2	0.0	0.0	0.0	10.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.2	0.0	0.0	0.0	1.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	11.4	0.0	0.0	0.0	11.8	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	9.0	0.0	0.0	0.0	8.7	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.4	0.0	0.0	0.0	0.4	0.0	0.0

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	9.4	0.0	0.0	0.0	9.1	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.55	0.00	0.00	0.00	0.56	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	18	14	0	16	0	0
Lane Assignment		T+R	T+R	T+R		T+R		
Lanes in Grp	0	1	1	1	0	1	0	0
Grp Vol (v), veh/h	0	598	52	100	0	566	0	0
Grp Sat Flow (s), veh/h/ln	0	1849	1499	1503	0	1845	0	0
Q Serve Time (g_s), s	0.0	23.1	5.7	11.0	0.0	22.2	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	23.1	5.7	11.0	0.0	22.2	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.06	0.81	0.88	0.00	0.06	0.00	0.00
Lane Grp Cap (c), veh/h	0	1322	107	135	0	1299	0	0
V/C Ratio (X)	0.00	0.45	0.49	0.74	0.00	0.44	0.00	0.00
Avail Cap (c_a), veh/h	0	1322	165	164	0	1299	0	0
Upstream Filter (I)	0.00	1.00	1.00	1.00	0.00	0.95	0.00	0.00
Uniform Delay (d1), s/veh	0.0	10.2	76.0	75.4	0.0	10.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	3.4	13.3	0.0	1.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	11.3	79.4	88.7	0.0	11.8	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	9.3	2.2	4.3	0.0	9.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.4	0.1	0.5	0.0	0.4	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	9.8	2.3	4.8	0.0	9.4	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.57	0.21	0.58	0.00	0.58	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	17.4
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↱		↕	
Traffic Vol, veh/h	21	137	33	41	262	39	38	0	11	17	3	14
Future Vol, veh/h	21	137	33	41	262	39	38	0	11	17	3	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	149	36	45	285	42	41	0	12	18	3	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	327	0	0	185	0	0	618	630	167	615	627	306
Stage 1	-	-	-	-	-	-	213	213	-	396	396	-
Stage 2	-	-	-	-	-	-	405	417	-	219	231	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1233	-	-	1390	-	-	402	399	877	403	400	734
Stage 1	-	-	-	-	-	-	789	726	-	629	604	-
Stage 2	-	-	-	-	-	-	622	591	-	783	713	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1233	-	-	1390	-	-	373	375	877	379	376	734
Mov Cap-2 Maneuver	-	-	-	-	-	-	373	375	-	379	376	-
Stage 1	-	-	-	-	-	-	772	711	-	616	580	-
Stage 2	-	-	-	-	-	-	581	567	-	756	698	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.9	14.4	13.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	373	877	1233	-	-	1390	-	-	473
HCM Lane V/C Ratio	0.111	0.014	0.019	-	-	0.032	-	-	0.078
HCM Control Delay (s)	15.9	9.2	8	0	-	7.7	0	-	13.3
HCM Lane LOS	C	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	0.1	-	-	0.1	-	-	0.3

Intersection: 4: Wulfsohn Road & Midland Ave

Movement	EB	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	T	R	L	TR	LTR	LT	R
Maximum Queue (ft)	42	22	43	38	10	840	45	36
Average Queue (ft)	12	1	20	6	0	808	15	10
95th Queue (ft)	35	17	47	27	6	953	41	34
Link Distance (ft)		776			3357	825	327	
Upstream Blk Time (%)						70		
Queuing Penalty (veh)						219		
Storage Bay Dist (ft)	100		25	150				75
Storage Blk Time (%)		0	1					
Queuing Penalty (veh)		0	5					

Intersection: 13: Colorado Ave & 8th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	227	192	72	73
Average Queue (ft)	167	128	36	35
95th Queue (ft)	240	188	64	63
Link Distance (ft)	218	226	404	398
Upstream Blk Time (%)	5	0		
Queuing Penalty (veh)	12	0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 15: 9th Street & Colorado Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	59	73	31	93
Average Queue (ft)	31	41	4	49
95th Queue (ft)	52	66	20	78
Link Distance (ft)	501	211	418	404
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: 9th Street & SH-82

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	97	182	94	124	161	380	316	95	337	336
Average Queue (ft)	38	66	34	41	56	192	143	16	156	141
95th Queue (ft)	86	138	76	91	132	341	279	57	306	287
Link Distance (ft)		211		277		433	433		412	412
Upstream Blk Time (%)		0				0	0		0	0
Queuing Penalty (veh)		0				0	0		0	0
Storage Bay Dist (ft)	75		75		150			125		
Storage Blk Time (%)	6	14	4	5	0	10			10	
Queuing Penalty (veh)	5	5	2	2	0	9			2	

Intersection: 20: GMF/PnR & Wulfsohn Road

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	28	1535	299	126	203
Average Queue (ft)	2	1080	150	22	92
95th Queue (ft)	16	2015	329	134	230
Link Distance (ft)	825	1500	334	334	254
Upstream Blk Time (%)		50	13	2	14
Queuing Penalty (veh)		0	0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection	
Int Delay, s/veh	97.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	459	172	9	905	43	257	1	9	44	2	59
Future Vol, veh/h	37	459	172	9	905	43	257	1	9	44	2	59
Conflicting Peds, #/hr	0	0	2	2	0	0	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	25	150	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	516	193	10	1017	48	289	1	10	49	2	66

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1065	0	0	711	0	0	1698	1687	518	1763	1856	1042
Stage 1	-	-	-	-	-	-	602	602	-	1061	1061	-
Stage 2	-	-	-	-	-	-	1096	1085	-	702	795	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	654	-	-	888	-	-	~ 73	94	558	66	74	279
Stage 1	-	-	-	-	-	-	486	489	-	271	300	-
Stage 2	-	-	-	-	-	-	~ 259	293	-	429	399	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	654	-	-	886	-	-	~ 52	87	557	61	68	279
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 121	182	-	166	180	-
Stage 1	-	-	-	-	-	-	454	457	-	254	297	-
Stage 2	-	-	-	-	-	-	~ 194	290	-	393	373	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	$ 718.9	28
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	124	654	-	-	886	-	-	167	279
HCM Lane V/C Ratio	2.419	0.064	-	-	0.011	-	-	0.309	0.238
HCM Control Delay (s)	$ 718.9	10.9	-	-	9.1	-	-	35.9	21.9
HCM Lane LOS	F	B	-	-	A	-	-	E	C
HCM 95th %tile Q(veh)	26.3	0.2	-	-	0	-	-	1.2	0.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	27.7
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	371	79	27	375	68	62	10	31	37	19	25
Future Vol, veh/h	34	371	79	27	375	68	62	10	31	37	19	25
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	431	92	31	436	79	72	12	36	43	22	29
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	31.7	29.7	12.3	11.8
HCM LOS	D	D	B	B

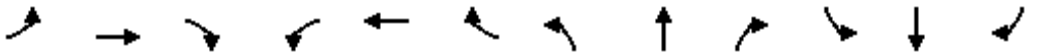
Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	60%	7%	6%	46%
Vol Thru, %	10%	77%	80%	23%
Vol Right, %	30%	16%	14%	31%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	103	484	470	81
LT Vol	62	34	27	37
Through Vol	10	371	375	19
RT Vol	31	79	68	25
Lane Flow Rate	120	563	547	94
Geometry Grp	1	1	1	1
Degree of Util (X)	0.236	0.849	0.829	0.187
Departure Headway (Hd)	7.088	5.43	5.458	7.161
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	509	658	656	504
Service Time	5.095	3.526	3.556	5.17
HCM Lane V/C Ratio	0.236	0.856	0.834	0.187
HCM Control Delay	12.3	31.7	29.7	11.8
HCM Lane LOS	B	D	D	B
HCM 95th-tile Q	0.9	9.5	8.9	0.7

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	68	17	19	49	59	0	0	0	69	38	18
Future Vol, veh/h	14	68	17	19	49	59	0	0	0	69	38	18
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	79	20	22	57	69	0	0	0	80	44	21
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	8	0	8.6
HCM LOS	A	A	-	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	14%	15%	55%
Vol Thru, %	100%	69%	39%	30%
Vol Right, %	0%	17%	46%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	99	127	125
LT Vol	0	14	19	69
Through Vol	0	68	49	38
RT Vol	0	17	59	18
Lane Flow Rate	0	115	148	145
Geometry Grp	1	1	1	1
Degree of Util (X)	0	0.139	0.171	0.183
Departure Headway (Hd)	4.682	4.36	4.158	4.529
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	824	865	794
Service Time	2.707	2.376	2.172	2.548
HCM Lane V/C Ratio	0	0.14	0.171	0.183
HCM Control Delay	7.7	8.1	8	8.6
HCM Lane LOS	N	A	A	A
HCM 95th-tile Q	0	0.5	0.6	0.7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	13	67	33	17	97	63	1925	16	25	958	25
Future Volume (veh/h)	53	13	67	33	17	97	63	1925	16	25	958	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.92	1.00		0.93	1.00		0.97	1.00		0.97
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	55	13	69	34	18	100	65	1985	16	26	988	26
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	148	20	105	171	22	124	407	2507	20	148	2427	64
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.08	0.08	0.08	0.10	0.10	0.10	0.03	0.69	0.69	0.02	0.69	0.69
Unsig. Movement Delay												
Ln Grp Delay, s/veh	75.3	0.0	81.3	71.3	0.0	97.3	8.8	22.9	22.8	21.0	12.5	12.5
Ln Grp LOS	E	A	F	E	A	F	A	C	C	C	B	B
Approach Vol, veh/h		137			152			2066			1040	
Approach Delay, s/veh		78.9			91.5			22.4			12.7	
Approach LOS		E			F			C			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	8	4	5	6		
Case No	1.1	4.0	10.0	10.0	1.1	4.0		
Phs Duration (G+Y+Rc), s	8.0	122.5	20.9	18.6	9.3	121.3		
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5		
Max Green (Gmax), s	6.5	108.3	18.7	18.5	5.7	109.1		
Max Allow Headway (MAH), s	3.8	5.2	5.3	4.9	3.8	5.3		
Max Q Clear (g_c+I1), s	2.7	65.7	14.9	11.0	3.8	22.7		
Green Ext Time (g_e), s	0.0	26.4	0.2	0.3	0.0	8.6		
Prob of Phs Call (p_c)	0.71	1.00	1.00	1.00	0.95	1.00		
Prob of Max Out (p_x)	1.00	0.00	1.00	0.18	1.00	0.00		

Left-Turn Movement Data												
Assigned Mvmt		1		3	7	5						
Mvmt Sat Flow, veh/h		1781		1781	1781	1781						

Through Movement Data												
Assigned Mvmt			2	8	4		6					
Mvmt Sat Flow, veh/h			3612	232	239		3534					

Right-Turn Movement Data												
Assigned Mvmt			12	18	14		16					
Mvmt Sat Flow, veh/h			29	1289	1268		93					

Left Lane Group Data												
Assigned Mvmt		1	0	3	7	5	0	0	0			
Lane Assignment	L (Pr/Pm)			L	LL (Pr/Pm)							

Lanes in Grp	1	0	1	1	1	0	0	0
Grp Vol (v), veh/h	26	0	34	55	65	0	0	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	1781	1781	0	0	0
Q Serve Time (g_s), s	0.7	0.0	3.0	5.0	1.8	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.7	0.0	3.0	5.0	1.8	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	215	0	1781	1781	556	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	116.8	0.0	0.0	0.0	116.8	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	54.3	0.0	0.0	0.0	96.1	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	8.6	0.0	0.0	0.0	2.7	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	148	0	171	148	407	0	0	0
V/C Ratio (X)	0.18	0.00	0.20	0.37	0.16	0.00	0.00	0.00
Avail Cap (c_a), veh/h	179	0	196	194	416	0	0	0
Upstream Filter (I)	0.95	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	20.4	0.0	70.8	73.7	8.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.6	1.5	0.2	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	21.0	0.0	71.3	75.3	8.8	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.4	0.0	1.4	2.3	0.7	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.4	0.0	1.4	2.4	0.7	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.09	0.00	0.48	0.80	0.12	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	8	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	975	0	0	0	497	0	0
Grp Sat Flow (s), veh/h/ln	0	1777	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	63.2	0.0	0.0	0.0	20.7	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	63.2	0.0	0.0	0.0	20.7	0.0	0.0
Lane Grp Cap (c), veh/h	0	1233	0	0	0	1220	0	0
V/C Ratio (X)	0.00	0.79	0.00	0.00	0.00	0.41	0.00	0.00
Avail Cap (c_a), veh/h	0	1233	0	0	0	1220	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	0.95	0.00	0.00
Uniform Delay (d1), s/veh	0.0	17.6	0.0	0.0	0.0	11.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	5.2	0.0	0.0	0.0	1.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	22.9	0.0	0.0	0.0	12.5	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	25.0	0.0	0.0	0.0	8.2	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	1.8	0.0	0.0	0.0	0.3	0.0	0.0

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	26.8	0.0	0.0	0.0	8.5	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	1.57	0.00	0.00	0.00	0.53	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	18	14	0	16	0	0
Lane Assignment		T+R	T+R	T+R		T+R		
Lanes in Grp	0	1	1	1	0	1	0	0
Grp Vol (v), veh/h	0	1026	118	82	0	517	0	0
Grp Sat Flow (s), veh/h/ln	0	1864	1521	1507	0	1851	0	0
Q Serve Time (g_s), s	0.0	63.7	12.9	9.0	0.0	20.7	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	63.7	12.9	9.0	0.0	20.7	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.02	0.85	0.84	0.00	0.05	0.00	0.00
Lane Grp Cap (c), veh/h	0	1294	146	125	0	1271	0	0
V/C Ratio (X)	0.00	0.79	0.81	0.65	0.00	0.41	0.00	0.00
Avail Cap (c_a), veh/h	0	1294	167	164	0	1271	0	0
Upstream Filter (I)	0.00	1.00	1.00	1.00	0.00	0.95	0.00	0.00
Uniform Delay (d1), s/veh	0.0	17.7	75.3	75.6	0.0	11.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	5.1	22.0	5.7	0.0	0.9	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	22.8	97.3	81.3	0.0	12.5	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	26.4	5.1	3.5	0.0	8.6	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	1.8	0.9	0.2	0.0	0.3	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	28.2	6.0	3.7	0.0	8.9	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	1.66	0.55	0.45	0.00	0.55	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	24.8
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↱		↕	
Traffic Vol, veh/h	18	242	15	7	204	10	67	3	20	27	4	27
Future Vol, veh/h	18	242	15	7	204	10	67	3	20	27	4	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	263	16	8	222	11	73	3	22	29	4	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	233	0	0	279	0	0	571	560	271	568	563	228
Stage 1	-	-	-	-	-	-	311	311	-	244	244	-
Stage 2	-	-	-	-	-	-	260	249	-	324	319	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1335	-	-	1284	-	-	432	437	768	434	435	811
Stage 1	-	-	-	-	-	-	699	658	-	760	704	-
Stage 2	-	-	-	-	-	-	745	701	-	688	653	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1335	-	-	1284	-	-	405	426	768	411	424	811
Mov Cap-2 Maneuver	-	-	-	-	-	-	405	426	-	411	424	-
Stage 1	-	-	-	-	-	-	686	646	-	746	699	-
Stage 2	-	-	-	-	-	-	709	696	-	653	641	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	14.5	12.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	406	768	1335	-	-	1284	-	-	535
HCM Lane V/C Ratio	0.187	0.028	0.015	-	-	0.006	-	-	0.118
HCM Control Delay (s)	15.9	9.8	7.7	0	-	7.8	0	-	12.6
HCM Lane LOS	C	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0.1	0	-	-	0	-	-	0.4

Intersection: 4: Wulfsohn Road & Midland Ave

Movement	EB	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	T	R	L	TR	LTR	LT	R
Maximum Queue (ft)	54	22	47	35	39	840	90	89
Average Queue (ft)	18	1	18	5	2	797	36	36
95th Queue (ft)	44	16	46	24	20	976	72	73
Link Distance (ft)		776			3357	825	327	
Upstream Blk Time (%)						64		
Queuing Penalty (veh)						191		
Storage Bay Dist (ft)	100		25	150				75
Storage Blk Time (%)	0	0	0				2	2
Queuing Penalty (veh)	1	0	2				1	1

Intersection: 13: Colorado Ave & 8th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	220	177	97	80
Average Queue (ft)	146	110	43	38
95th Queue (ft)	228	169	76	69
Link Distance (ft)	218	226	404	398
Upstream Blk Time (%)	4			
Queuing Penalty (veh)	10			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 15: 9th Street & Colorado Ave

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	61	72	71
Average Queue (ft)	33	37	34
95th Queue (ft)	52	58	54
Link Distance (ft)	501	211	404
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: 9th Street & SH-82

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	98	166	100	268	174	482	476	132	336	317
Average Queue (ft)	57	59	44	125	54	429	405	29	151	138
95th Queue (ft)	102	133	102	238	153	523	543	90	289	274
Link Distance (ft)		211		277		433	433		412	412
Upstream Blk Time (%)		0		2		30	28			
Queuing Penalty (veh)		0		0		0	0			
Storage Bay Dist (ft)	75		75		150			125		
Storage Blk Time (%)	20	8	4	42	0	38			10	
Queuing Penalty (veh)	16	4	5	14	0	24			3	

Intersection: 20: GMF/PnR & Wulfsohn Road

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LTR
Maximum Queue (ft)	31	1310	347	251	277
Average Queue (ft)	1	622	229	66	161
95th Queue (ft)	15	1493	438	275	329
Link Distance (ft)	825	1500	334	334	254
Upstream Blk Time (%)		9	51	15	44
Queuing Penalty (veh)		0	0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Appendix D - April 2023 Traffic Counts

Study Name	8th&Colorado
Start Date	Tuesday, April 25, 2023 11:00 AM
End Date	Wednesday, April 26, 2023 6:45 PM
Site Code	

Overview

This report contains turning movement volume (TMV) data of vehicular traffic in the intersection of study.

Content

Summary	Contains a TMV summary of all vehicular traffic in the intersection for defined peak periods
TMV Table	Contains a pivot table of the TMV road and crosswalk data
TMV Data	Contains measured TMV data of all vehicular traffic in the intersection for each approach
Ped Data	Contains detected pedestrian information for the intersection's crosswalks

Traffic Study

Start Date	Tuesday, April 25, 2023 11:00 AM	
End Date	Wednesday, April 26, 2023 6:45 PM	
Classification Categories	Lights, Buses, Trucks, Bicycles on Crosswalk, Pedestrians	
04/25/2023 AM Peaks	11:00 AM - 12:00 PM	
04/25/2023 PM Peaks	12:00 PM - 1:00 PM	
04/25/2023 PM Peaks	5:00 PM - 6:00 PM	
04/26/2023 AM Peaks	11:00 AM - 12:00 PM	
04/26/2023 PM Peaks	12:00 PM - 1:00 PM	729 DHV
04/26/2023 PM Peaks	4:45 PM - 5:45 PM	557 DHV

Study Name	8th&Colorado
Start Date	Tuesday, April 25, 2023 11:00 AM
End Date	Wednesday, April 26, 2023 6:45 PM
Site Code	

Report Summary

		Southbound						Westbound						Northbound						Eastbound								Crosswalk	
Time Period	**Class.**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**Total**		**s on Cr**	**odestria**	**Total**
Peak 1	Lights	11	10	24	0	45	60	29	99	25	0	153	182	14	7	18	0	39	77	42	144	24	0	210	128	447	N	0	11	11
Specified Period	%	100%	91%	89%	0%	92%	97%	97%	97%	100%	0%	97%	96%	93%	88%	78%	0%	85%	92%	88%	97%	100%	0%	95%	94%	95%		0%	100%	
11:00 AM - 12:00 PM	Buses	0	0	0	0	0	0	0	1	0	0	1	0	0	0	4	0	4	4	4	0	0	0	4	5	9	E	0	13	13
One Hour Peak	%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	0%	0%	17%	0%	9%	5%	8%	0%	0%	0%	2%	4%	2%		0%	100%	
11:00 AM - 12:00 PM	Trucks	0	1	3	0	4	2	1	2	0	0	3	8	1	1	1	0	3	3	2	4	0	0	6	3	16	S	0	10	10
	%	0%	9%	11%	0%	8%	3%	3%	2%	0%	0%	2%	4%	7%	13%	4%	0%	7%	4%	4%	3%	0%	0%	3%	2%	3%		0%	100%	
	Total	**11**	**11**	**27**	**0**	**49**	**62**	**30**	**102**	**25**	**0**	**157**	**190**	**15**	**8**	**23**	**0**	**46**	**84**	**48**	**148**	**24**	**0**	**220**	**136**	**472**	W	0	12	12
	PHF	0.55	0.69	0.75	0	0.82	0.74	0.68	0.75	0.78	0	0.8	0.91	0.75	0.67	0.64	0	0.72	0.88	0.71	0.95	0.67	0	0.86	0.85	0.92		0%	100%	
	Approach %					10%	13%					33%	40%					10%	18%					47%	29%			**0**	**46**	**46**
Peak 2	Lights	12	15	36	0	63	71	39	99	22	1	161	225	22	0	34	0	56	108	71	166	32	0	269	145	549	N	0	29	29
Specified Period	%	100%	100%	100%	0%	100%	97%	95%	99%	100%	100%	98%	99%	100%	0%	89%	0%	93%	97%	96%	99%	100%	0%	98%	97%	98%		0%	100%	
12:00 PM - 1:30 PM	Buses	0	0	0	0	0	1	1	0	0	0	1	1	0	0	4	0	4	3	3	1	0	0	4	4	9	E	0	39	39
One Hour Peak	%	0%	0%	0%	0%	0%	1%	2%	0%	0%	0%	1%	0%	0%	0%	11%	0%	7%	3%	4%	1%	0%	0%	1%	3%	2%		0%	100%	
12:00 PM - 1:00 PM	Trucks	0	0	0	0	0	1	1	1	0	0	2	1	0	0	0	0	0	0	0	1	0	0	1	1	3	S	0	0	0
	%	0%	0%	0%	0%	0%	1%	2%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	1%	1%		0%	0%	
	Total	**12**	**15**	**36**	**0**	**63**	**73**	**41**	**100**	**22**	**1**	**164**	**227**	**22**	**0**	**38**	**0**	**60**	**111**	**74**	**168**	**32**	**0**	**274**	**150**	**561**	W	0	14	14
	PHF	0.38	0.54	0.69	0	0.56	0.79	0.73	0.86	0.92	0.25	0.89	0.87	0.55	0	0.68	0	0.83	0.77	0.8	0.88	0.73	0	0.89	0.87	0.86		0%	100%	
	Approach %					11%	13%					29%	40%					11%	20%					49%	27%			**0**	**82**	**82**
Peak 3	Lights	17	14	39	0	70	85	49	158	22	0	229	195	17	16	36	0	69	79	43	139	20	0	202	211	570	N	0	26	26
Specified Period	%	100%	100%	98%	0%	99%	100%	100%	100%	100%	0%	100%	99%	100%	100%	88%	0%	93%	94%	90%	100%	100%	0%	98%	98%	98%		0%	100%	
4:00 PM - 6:30 PM	Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	5	5	0	0	0	5	5	10	E	0	17	17
One Hour Peak	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	12%	0%	7%	6%	10%	0%	0%	0%	2%	2%	2%		0%	100%	
5:00 PM - 6:00 PM	Trucks	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	S	0	14	14
	%	0%	0%	3%	0%	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	100%	
	Total	**17**	**14**	**40**	**0**	**71**	**85**	**49**	**158**	**22**	**0**	**229**	**196**	**17**	**16**	**41**	**0**	**74**	**84**	**48**	**139**	**20**	**0**	**207**	**216**	**581**	W	0	0	0
	PHF	0.85	0.7	0.77	0	0.93	0.73	0.82	0.86	0.69	0	0.91	0.86	0.71	0.67	0.85	0	0.77	0.75	0.8	0.83	0.62	0	0.92	0.89	0.95		0%	0%	
	Approach %					12%	15%					39%	34%					13%	14%					36%	37%			**0**	**57**	**57**

Study Name	8th&Colorado
Start Date	Tuesday, April 25, 2023 11:00 AM
End Date	Wednesday, April 26, 2023 6:45 PM
Site Code	

Report Summary

		Southbound						Westbound						Northbound						Eastbound								Crosswalk	
Time Period	**Class.**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**Total**		**s on Cr**	**destria**	**Total**
Peak 1	Lights	14	15	35	0	64	72	42	168	84	2	296	197	13	14	24	0	51	140	41	147	16	0	204	206	615	N	0	52	52
Specified Period	%	100%	94%	97%	0%	97%	99%	98%	99%	100%	100%	99%	99%	100%	100%	83%	0%	91%	97%	93%	99%	100%	0%	98%	97%	98%		0%	100%	
11:00 AM - 12:00 PM	Buses	0	1	0	0	1	1	1	1	0	0	2	0	0	0	5	0	5	4	3	0	0	0	3	6	11	E	0	32	32
One Hour Peak	%	0%	6%	0%	0%	2%	1%	2%	1%	0%	0%	1%	0%	0%	0%	17%	0%	9%	3%	7%	0%	0%	0%	1%	3%	2%		0%	100%	
11:00 AM - 12:00 PM	Trucks	0	0	1	0	1	0	0	1	0	0	1	3	0	0	0	0	0	0	0	2	0	0	2	1	4	S	0	12	12
	%	0%	0%	3%	0%	2%	0%	0%	1%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	1%		0%	100%	
	Total	**14**	**16**	**36**	**0**	**66**	**73**	**43**	**170**	**84**	**2**	**299**	**200**	**13**	**14**	**29**	**0**	**56**	**144**	**44**	**149**	**16**	**0**	**209**	**213**	**630**	W	0	18	18
	PHF	0.7	0.67	0.64	0	0.72	0.68	0.9	0.9	0.68	0.5	0.82	0.86	0.81	0.58	0.66	0	0.82	0.84	0.69	0.96	0.44	0	0.86	0.85	0.93		0%	100%	
	Approach %					10%	12%					47%	32%					9%	23%					33%	34%			**0**	**114**	**114**
Peak 2	Lights	20	23	18	0	61	95	67	164	109	1	341	218	17	16	34	0	67	177	45	182	12	0	239	218	708	N	0	50	50
Specified Period	%	100%	100%	100%	0%	100%	100%	100%	96%	98%	100%	98%	99%	100%	100%	89%	0%	94%	96%	88%	98%	100%	0%	96%	96%	97%		0%	100%	
12:00 PM - 1:30 PM	Buses	0	0	0	0	0	0	0	1	0	0	1	0	0	0	4	0	4	5	5	0	0	0	5	5	10	E	1	39	40
One Hour Peak	%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	11%	0%	6%	3%	10%	0%	0%	0%	2%	2%	1%		3%	98%	
12:00 PM - 1:00 PM	Trucks	0	0	0	0	0	0	0	5	2	0	7	3	0	0	0	0	0	3	1	3	0	0	4	5	11	S	1	22	23
Pedestrians	%	0%	0%	0%	0%	0%	0%	0%	3%	2%	0%	2%	1%	0%	0%	0%	0%	0%	2%	2%	2%	0%	0%	2%	2%	2%		4%	96%	
151	**Total**	**20**	**23**	**18**	**0**	**61**	**95**	**67**	**170**	**111**	**1**	**349**	**221**	**17**	**16**	**38**	**0**	**71**	**185**	**51**	**185**	**12**	**0**	**248**	**228**	**729**	W	0	38	38
	PHF	0.71	0.64	0.56	0	0.9	0.79	0.8	0.71	0.87	0.25	0.82	0.89	0.71	0.57	0.79	0	0.74	0.86	0.8	0.87	0.75	0	0.9	0.76	0.88		0%	100%	
	Approach %					8%	13%					48%	30%					10%	25%					34%	31%	2.9%		**2**	**149**	**151**
Peak 3	Lights	17	15	28	0	60	85	53	125	19	1	198	202	24	7	32	0	63	79	45	149	25	0	219	174	540	N	0	26	26
Specified Period	%	100%	100%	97%	0%	98%	99%	100%	98%	100%	50%	99%	98%	100%	88%	89%	0%	93%	93%	88%	99%	100%	0%	96%	97%	97%		0%	100%	
4:00 PM - 6:45 PM	Buses	0	0	0	0	0	0	0	1	0	0	1	0	0	0	4	0	4	3	3	0	0	0	3	5	8	E	1	13	14
One Hour Peak	%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	11%	0%	6%	4%	6%	0%	0%	0%	1%	3%	1%		7%	93%	
4:45 PM - 5:45 PM	Trucks	0	0	1	0	1	1	0	1	0	1	2	4	0	1	0	0	1	3	3	2	0	0	5	1	9	S	0	22	22
Pedestrians	%	0%	0%	3%	0%	2%	1%	0%	1%	0%	50%	1%	2%	0%	13%	0%	0%	1%	4%	6%	1%	0%	0%	2%	1%	2%		0%	100%	
74	**Total**	**17**	**15**	**29**	**0**	**61**	**86**	**53**	**127**	**19**	**2**	**201**	**206**	**24**	**8**	**36**	**0**	**68**	**85**	**51**	**151**	**25**	**0**	**227**	**180**	**557**	W	0	12	12
	PHF	0.85	0.75	0.72	0	0.8	0.83	0.83	0.88	0.79	0.5	0.9	0.9	0.67	0.5	0.9	0	0.74	0.85	0.8	0.92	0.78	0	0.93	0.92	0.95		0%	100%	
	Approach %					11%	15%					36%	37%					12%	15%					41%	32%	3.1%		**1**	**73**	**74**

Study Name	9th & Colorado
Start Date	Tuesday, April 25, 2023 11:00 AM
End Date	Wednesday, April 26, 2023 6:45 PM
Site Code	

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Traffic Study

Start Date	Tuesday, April 25, 2023 11:00 AM	
End Date	Wednesday, April 26, 2023 6:45 PM	
Classification Categories	Lights, Buses, Trucks, Bicycles on Crosswalk, Pedestrians	
04/25/2023 AM Peaks	11:00 AM - 12:00 PM	
04/25/2023 PM Peaks	12:30 PM - 1:30 PM	
04/25/2023 PM Peaks	4:15 PM - 5:15 PM	
04/26/2023 AM Peaks	11:00 AM - 12:00 PM	
04/26/2023 PM Peaks	12:15 PM - 1:15 PM	352 DHV
04/26/2023 PM Peaks	4:30 PM - 5:30 PM	273 DHV

Study Name	9th & Colorado
Start Date	Tuesday, April 25, 2023 11:00 AM
End Date	Wednesday, April 26, 2023 6:45 PM
Site Code	

Report Summary

		Southbound						Westbound						Northbound						Eastbound								Crosswalk	
Time Period	**Class.**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**Total**		**s on Cr**	**odestria**	**Total**
Peak 1	Lights	15	25	38	0	78	43	33	28	8	0	69	75	0	0	1	0	1	49	16	37	10	0	63	44	211	N	0	0	0
Specified Period	%	100%	93%	88%	0%	92%	90%	89%	97%	100%	0%	93%	91%	0%	0%	100%	0%	100%	96%	100%	95%	91%	0%	95%	98%	93%		0%	0%	
11:00 AM - 12:00 PM	Buses	0	0	3	0	3	5	4	0	0	0	4	3	0	0	0	0	0	0	0	0	1	0	1	0	8	E	0	6	6
One Hour Peak	%	0%	0%	7%	0%	4%	10%	11%	0%	0%	0%	5%	4%	0%	0%	0%	0%	0%	0%	0%	0%	9%	0%	2%	0%	4%		0%	100%	
11:00 AM - 12:00 PM	Trucks	0	2	2	0	4	0	0	1	0	0	1	4	0	0	0	0	0	2	0	2	0	0	2	1	7	S	0	4	4
	%	0%	7%	5%	0%	5%	0%	0%	3%	0%	0%	1%	5%	0%	0%	0%	0%	0%	4%	0%	5%	0%	0%	3%	2%	3%		0%	100%	
	Total	**15**	**27**	**43**	**0**	**85**	**48**	**37**	**29**	**8**	**0**	**74**	**82**	**0**	**0**	**1**	**0**	**1**	**51**	**16**	**39**	**11**	**0**	**66**	**45**	**226**	W	0	14	14
	PHF	0.54	0.68	0.9	0	0.92	0.57	0.58	0.66	0.67	0	0.64	0.89	0	0	0.25	0	0.25	0.64	0.5	0.81	0.55	0	0.75	0.8	0.8		0%	100%	
	Approach %					38%	21%					33%	36%					0%	23%					29%	20%			**0**	**24**	**24**
Peak 2	Lights	27	48	38	0	113	64	37	37	5	0	79	93	0	3	0	0	3	68	15	55	24	1	95	65	290	N	0	20	20
Specified Period	%	100%	100%	90%	0%	97%	90%	84%	97%	100%	0%	91%	94%	0%	100%	0%	0%	100%	99%	94%	96%	100%	100%	97%	98%	95%		0%	100%	
12:00 PM - 1:45 PM	Buses	0	0	4	0	4	6	6	0	0	0	6	5	0	0	0	0	0	1	1	1	0	0	2	0	12	E	0	17	17
One Hour Peak	%	0%	0%	10%	0%	3%	8%	14%	0%	0%	0%	7%	5%	0%	0%	0%	0%	0%	1%	6%	2%	0%	0%	2%	0%	4%		0%	100%	
12:30 PM - 1:30 PM	Trucks	0	0	0	0	0	1	1	1	0	0	2	1	0	0	0	0	0	0	0	1	0	0	1	1	3	S	0	8	8
	%	0%	0%	0%	0%	0%	1%	2%	3%	0%	0%	2%	1%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	1%	2%	1%		0%	100%	
	Total	**27**	**48**	**42**	**0**	**117**	**71**	**44**	**38**	**5**	**0**	**87**	**99**	**0**	**3**	**0**	**0**	**3**	**69**	**16**	**57**	**24**	**1**	**98**	**66**	**305**	W	0	28	28
	PHF	0.61	0.8	0.66	0	0.77	0.89	0.79	0.73	0.62	0	0.81	0.82	0	0.25	0	0	0.25	0.78	0.67	0.71	0.86	0.25	0.82	0.69	0.87		0%	100%	
	Approach %					38%	23%					29%	32%					1%	23%					32%	22%			**0**	**73**	**73**
Peak 3	Lights	12	29	32	0	73	52	40	48	7	0	95	100	0	0	0	0	0	50	14	68	12	0	94	60	262	N	0	11	11
Specified Period	%	92%	100%	84%	0%	91%	91%	89%	98%	100%	0%	94%	93%	0%	0%	0%	0%	0%	100%	100%	99%	100%	0%	99%	97%	95%		0%	100%	
4:00 PM - 6:45 PM	Buses	0	0	6	0	6	4	4	0	0	0	4	6	0	0	0	0	0	0	0	0	0	0	0	0	10	E	0	6	6
One Hour Peak	%	0%	0%	16%	0%	8%	7%	9%	0%	0%	0%	4%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%		0%	100%	
4:15 PM - 5:15 PM	Trucks	1	0	0	0	1	1	1	1	0	0	2	1	0	0	0	0	0	0	0	1	0	0	1	2	4	S	0	1	1
	%	8%	0%	0%	0%	1%	2%	2%	2%	0%	0%	2%	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	3%	1%		0%	100%	
	Total	**13**	**29**	**38**	**0**	**80**	**57**	**45**	**49**	**7**	**0**	**101**	**107**	**0**	**0**	**0**	**0**	**0**	**50**	**14**	**69**	**12**	**0**	**95**	**62**	**276**	W	0	26	26
	PHF	0.46	0.72	0.86	0	0.74	0.84	0.7	0.77	0.58	0	0.9	0.86	0	0	0	0	0	0.78	0.7	0.82	0.75	0	0.88	0.82	0.87		0%	100%	
	Approach %					29%	21%					37%	39%					0%	18%					34%	22%			**0**	**44**	**44**

Study Name	9th & Colorado
Start Date	Tuesday, April 25, 2023 11:00 AM
End Date	Wednesday, April 26, 2023 6:45 PM
Site Code	

Report Summary

		Southbound						Westbound						Northbound						Eastbound								Crosswalk	
Time Period	**Class.**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**Total**		**s on Cr**	**destria**	**Total**
Peak 1	Lights	14	71	51	0	136	57	49	32	7	2	90	80	0	0	0	0	0	91	13	27	8	1	49	47	275	N	0	10	10
Specified Period	%	100%	100%	94%	0%	98%	92%	91%	97%	100%	100%	94%	96%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	98%	97%		0%	100%	
11:00 AM - 12:00 PM	Buses	0	0	3	0	3	5	5	0	0	0	5	3	0	0	0	0	0	0	0	0	0	0	0	0	8	E	0	12	12
One Hour Peak	%	0%	0%	6%	0%	2%	8%	9%	0%	0%	0%	5%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%		0%	100%	
11:00 AM - 12:00 PM	Trucks	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	S	0	13	13
	%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%		0%	100%	
	Total	**14**	**71**	**54**	**0**	**139**	**62**	**54**	**33**	**7**	**2**	**96**	**83**	**0**	**0**	**0**	**0**	**0**	**91**	**13**	**27**	**8**	**1**	**49**	**48**	**284**	W	1	22	23
	PHF	0.7	0.66	0.79	0	0.81	0.82	0.71	0.82	0.58	0.5	0.73	0.86	0	0	0	0	0	0.65	0.65	0.75	0.5	0.25	0.82	0.86	0.79		4%	96%	
	Approach %					49%	22%					34%	29%					0%	32%					17%	17%			**1**	**57**	**58**
Peak 2	Lights	27	114	50	0	191	68	48	27	7	2	84	75	0	0	2	0	2	134	13	23	20	1	57	57	334	N	1	12	13
Specified Period	%	96%	99%	89%	0%	96%	92%	89%	96%	100%	100%	92%	89%	0%	0%	100%	0%	100%	99%	100%	88%	100%	100%	95%	97%	95%		8%	92%	
12:00 PM - 1:45 PM	Buses	1	0	5	0	6	6	6	0	0	0	6	5	0	0	0	0	0	0	0	0	0	0	0	1	12	E	0	9	9
One Hour Peak	%	4%	0%	9%	0%	3%	8%	11%	0%	0%	0%	7%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	3%		0%	100%	
12:15 PM - 1:15 PM	Trucks	0	1	1	0	2	0	0	1	0	0	1	4	0	0	0	0	0	1	0	3	0	0	3	1	6	S	1	8	9
	%	0%	1%	2%	0%	1%	0%	0%	4%	0%	0%	1%	5%	0%	0%	0%	0%	0%	1%	0%	12%	0%	0%	5%	2%	2%		11%	89%	
	Total	**28**	**115**	**56**	**0**	**199**	**74**	**54**	**28**	**7**	**2**	**91**	**84**	**0**	**0**	**2**	**0**	**2**	**135**	**13**	**26**	**20**	**1**	**60**	**59**	**352**	W	0	39	39
	PHF	0.78	0.74	0.82	0	0.83	0.8	0.79	0.78	0.58	0.5	0.88	0.84	0	0	0.5	0	0.5	0.78	0.65	0.81	0.83	0.25	0.79	0.87	0.92		0%	100%	
	Approach %					57%	21%					26%	24%					1%	38%					17%	17%	5.1%		**2**	**68**	**70**
Peak 3	Lights	14	34	43	0	91	44	32	40	16	0	88	99	0	0	0	0	0	64	14	56	12	0	82	54	261	N	0	5	5
Specified Period	%	93%	100%	91%	0%	95%	90%	86%	98%	100%	0%	94%	95%	0%	0%	0%	0%	0%	100%	100%	98%	100%	0%	99%	96%	96%		0%	100%	
4:00 PM - 6:45 PM	Buses	0	0	4	0	4	4	4	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	8	E	0	11	11
One Hour Peak	%	0%	0%	9%	0%	4%	8%	11%	0%	0%	0%	4%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%		0%	100%	
4:30 PM - 5:30 PM	Trucks	1	0	0	0	1	1	1	1	0	0	2	1	0	0	0	0	0	0	0	1	0	0	1	2	4	S	0	6	6
	%	7%	0%	0%	0%	1%	2%	3%	2%	0%	0%	2%	1%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	1%	4%	1%		0%	100%	
	Total	**15**	**34**	**47**	**0**	**96**	**49**	**37**	**41**	**16**	**0**	**94**	**104**	**0**	**0**	**0**	**0**	**0**	**64**	**14**	**57**	**12**	**0**	**83**	**56**	**273**	W	0	11	11
	PHF	0.62	0.85	0.62	0	0.89	0.77	0.84	0.64	0.57	0	0.81	0.93	0	0	0	0	0	0.84	0.7	0.75	0.6	0	0.83	0.67	0.9		0%	100%	
	Approach %					35%	18%					34%	38%					0%	23%					30%	21%	4.4%		**0**	**33**	**33**

Study Name	9th & Grand
Start Date	Tuesday, April 25, 2023 11:00 AM
End Date	Thursday, April 27, 2023 6:45 PM
Site Code	

Overview

This report contains turning movement volume (TMV) data of vehicular traffic in the intersection of study.

Content

Summary	Contains a TMV summary of all vehicular traffic in the intersection for defined peak periods
TMV Table	Contains a pivot table of the TMV road and crosswalk data
TMV Data	Contains measured TMV data of all vehicular traffic in the intersection for each approach
Ped Data	Contains detected pedestrian information for the intersection's crosswalks

Traffic Study

Start Date	Tuesday, April 25, 2023 11:00 AM	
End Date	Thursday, April 27, 2023 6:45 PM	
Classification Categories	Lights, Buses, Trucks, Bicycles on Crosswalk, Pedestrians	
04/25/2023 AM Peaks	11:00 AM - 12:00 PM	
04/25/2023 PM Peaks	12:30 PM - 1:30 PM	
04/25/2023 PM Peaks	4:45 PM - 5:45 PM	
04/27/2023 AM Peaks	11:00 AM - 12:00 PM	
04/27/2023 PM Peaks	12:45 PM - 1:45 PM	2014 DHV
04/27/2023 PM Peaks	4:45 PM - 5:45 PM	2719 SHV

Study Name	9th & Grand
Start Date	Tuesday, April 25, 2023 11:00 AM
End Date	Thursday, April 27, 2023 6:45 PM
Site Code	

Report Summary

		Southbound						Westbound						Northbound						Eastbound								Crosswalk	
Time Period	**Class.**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**Total**		**s on Cr**	**odestria**	**Total**
Peak 1	Lights	22	647	10	0	679	651	37	17	15	0	69	19	1	603	24	0	628	721	59	8	11	0	78	63	1454	N	0	6	6
Specified Period	%	96%	94%	100%	0%	95%	93%	97%	100%	94%	0%	97%	100%	100%	93%	83%	0%	92%	94%	91%	100%	92%	0%	92%	91%	94%		0%	100%	
11:00 AM - 12:00 PM	Buses	1	4	0	0	5	3	0	0	0	0	0	0	0	3	4	0	7	7	3	0	0	0	3	5	15	E	0	33	33
One Hour Peak	%	4%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	0%	1%	1%	5%	0%	0%	0%	4%	7%	1%		0%	100%	
11:00 AM - 12:00 PM	Trucks	0	34	0	0	34	46	1	0	1	0	2	0	0	44	1	0	45	38	3	0	1	0	4	1	85	S	0	7	7
	%	0%	5%	0%	0%	5%	7%	3%	0%	6%	0%	3%	0%	0%	7%	3%	0%	7%	5%	5%	0%	8%	0%	5%	1%	5%		0%	100%	
	Total	**23**	**685**	**10**	**0**	**718**	**700**	**38**	**17**	**16**	**0**	**71**	**19**	**1**	**650**	**29**	**0**	**680**	**766**	**65**	**8**	**12**	**0**	**85**	**69**	**1554**	W	0	8	8
	PHF	0.82	0.86	0.62	0	0.87	0.94	0.73	0.71	0.67	0	0.85	0.59	0.25	0.96	0.56	0	0.95	0.86	0.77	0.5	0.5	0	0.82	0.69	0.92		0%	100%	
	Approach %					46%	45%					5%	1%					44%	49%					5%	4%			**0**	**54**	**54**
Peak 2	Lights	22	684	9	0	715	566	64	36	31	0	131	19	0	478	11	0	489	775	60	10	24	0	94	69	1429	N	0	17	17
Specified Period	%	92%	96%	100%	0%	95%	93%	100%	100%	97%	0%	99%	100%	0%	92%	65%	0%	91%	95%	94%	100%	92%	0%	94%	90%	94%		0%	100%	
12:00 PM - 1:45 PM	Buses	0	3	0	0	3	4	0	0	0	0	0	0	0	3	6	0	9	7	4	0	1	0	5	6	17	E	0	28	28
One Hour Peak	%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	35%	0%	2%	1%	6%	0%	4%	0%	5%	8%	1%		0%	100%	
12:30 PM - 1:30 PM	Trucks	2	29	0	0	31	39	0	0	1	0	1	0	0	38	0	0	38	30	0	0	1	0	1	2	71	S	0	8	8
	%	8%	4%	0%	0%	4%	6%	0%	0%	3%	0%	1%	0%	0%	7%	0%	0%	7%	4%	0%	0%	4%	0%	1%	3%	5%		0%	100%	
	Total	**24**	**716**	**9**	**0**	**749**	**609**	**64**	**36**	**32**	**0**	**132**	**19**	**0**	**519**	**17**	**0**	**536**	**812**	**64**	**10**	**26**	**0**	**100**	**77**	**1517**	W	0	13	13
	PHF	0.67	0.93	0.45	0	0.92	0.94	0.8	0.75	0.8	0	0.89	0.68	0	0.93	0.61	0	0.91	0.93	0.7	0.62	0.81	0	0.71	0.71	0.98		0%	100%	
	Approach %					49%	40%					9%	1%					35%	54%					7%	5%			**0**	**66**	**66**
Peak 3	Lights	19	624	22	1	666	1744	90	19	22	0	131	53	20	1609	38	0	1667	696	50	11	44	0	105	76	2569	N	1	14	15
Specified Period	%	90%	99%	100%	100%	99%	99%	100%	100%	100%	0%	100%	100%	100%	99%	88%	0%	99%	98%	91%	100%	98%	0%	95%	92%	98%		7%	93%	
4:00 PM - 6:45 PM	Buses	1	3	0	0	4	0	0	0	0	0	0	0	0	0	5	0	5	8	5	0	0	0	5	6	14	E	0	11	11
One Hour Peak	%	5%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	12%	0%	0%	1%	9%	0%	0%	0%	5%	7%	1%		0%	100%	
4:45 PM - 5:45 PM	Trucks	1	5	0	0	6	20	0	0	0	0	0	0	0	19	0	0	19	5	0	0	1	0	1	1	26	S	0	10	10
	%	5%	1%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	1%	0%	0%	2%	0%	1%	1%	1%		0%	100%	
	Total	**21**	**632**	**22**	**1**	**676**	**1764**	**90**	**19**	**22**	**0**	**131**	**53**	**20**	**1628**	**43**	**0**	**1691**	**709**	**55**	**11**	**45**	**0**	**111**	**83**	**2609**	W	0	6	6
	PHF	0.66	0.93	0.69	0.25	0.92	0.93	0.73	0.68	0.61	0	0.73	0.63	0.71	0.93	0.83	0	0.94	0.95	0.76	0.46	0.75	0	0.87	0.86	0.93		0%	100%	
	Approach %					26%	68%					5%	2%					65%	27%					4%	3%			**1**	**41**	**42**

Study Name	9th & Grand
Start Date	Tuesday, April 25, 2023 11:00 AM
End Date	Thursday, April 27, 2023 6:45 PM
Site Code	

Report Summary

		Southbound						Westbound						Northbound						Eastbound								Crosswalk	
Time Period	**Class.**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**Total**		**s on Cr**	**destria**	**Total**
Peak 1	Lights	23	701	13	0	737	791	23	11	24	0	58	53	33	754	66	0	853	775	50	7	14	0	71	100	1719	N	0	26	26
Specified Period	%	100%	94%	100%	0%	94%	94%	92%	100%	100%	0%	97%	98%	97%	94%	96%	0%	94%	94%	91%	100%	100%	0%	93%	97%	94%		0%	100%	
11:00 AM - 12:00 PM	Buses	0	2	0	0	2	3	0	0	0	0	0	0	0	3	3	0	6	5	3	0	0	0	3	3	11	E	0	20	20
One Hour Peak	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	1%	1%	5%	0%	0%	0%	4%	3%	1%		0%	100%	
11:00 AM - 12:00 PM	Trucks	0	46	0	0	46	48	2	0	0	0	2	1	1	46	0	0	47	48	2	0	0	0	2	0	97	S	0	10	10
	%	0%	6%	0%	0%	6%	6%	8%	0%	0%	0%	3%	2%	3%	6%	0%	0%	5%	6%	4%	0%	0%	0%	3%	0%	5%		0%	100%	
	Total	**23**	**749**	**13**	**0**	**785**	**842**	**25**	**11**	**24**	**0**	**60**	**54**	**34**	**803**	**69**	**0**	**906**	**828**	**55**	**7**	**14**	**0**	**76**	**103**	**1827**	W	0	17	17
	PHF	0.64	0.97	0.65	0	0.97	0.94	0.69	0.46	0.86	0	0.68	0.84	0.85	0.96	0.66	0	0.92	0.97	0.81	0.58	0.7	0	0.86	0.7	0.93		0%	100%	
	Approach %					43%	46%					3%	3%					50%	45%					4%	6%			**0**	**73**	**73**
Peak 2	Lights	29	766	15	0	810	907	34	8	27	0	69	50	25	842	58	0	925	848	55	10	31	0	96	95	1900	N	1	28	29
Specified Period	%	100%	94%	94%	0%	95%	94%	100%	100%	100%	0%	100%	94%	93%	94%	91%	0%	94%	94%	93%	100%	100%	0%	96%	94%	94%		3%	97%	
12:00 PM - 1:45 PM	Buses	0	2	0	0	2	6	0	0	0	0	0	0	0	6	6	0	12	6	4	0	0	0	4	6	18	E	0	23	23
One Hour Peak	%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	9%	0%	1%	1%	7%	0%	0%	0%	4%	6%	1%		0%	100%	
12:15 PM - 1:15 PM	Trucks	0	44	1	0	45	49	0	0	0	0	0	3	2	49	0	0	51	44	0	0	0	0	0	0	96	S	1	5	6
	%	0%	5%	6%	0%	5%	5%	0%	0%	0%	0%	0%	6%	7%	5%	0%	0%	5%	5%	0%	0%	0%	0%	0%	0%	5%		17%	83%	
	Total	**29**	**812**	**16**	**0**	**857**	**962**	**34**	**8**	**27**	**0**	**69**	**53**	**27**	**897**	**64**	**0**	**988**	**898**	**59**	**10**	**31**	**0**	**100**	**101**	**2014**	W	0	18	18
	PHF	0.6	0.85	0.8	0	0.85	0.95	0.85	0.67	0.61	0	0.72	0.83	0.56	0.93	0.67	0	0.95	0.85	0.82	0.5	0.7	0	0.86	0.87	0.93		0%	100%	
	Approach %					43%	48%					3%	3%					49%	45%					5%	5%	5.7%		**2**	**74**	**76**
Peak 3	Lights	20	766	22	0	808	1701	85	15	28	0	128	47	14	1573	39	0	1626	837	43	11	43	0	97	74	2659	N	1	20	21
Specified Period	%	91%	98%	100%	0%	98%	98%	100%	100%	97%	0%	99%	100%	100%	98%	95%	0%	98%	98%	91%	100%	98%	0%	95%	95%	98%		5%	95%	
4:00 PM - 6:45 PM	Buses	0	3	0	0	3	13	0	0	1	0	1	0	0	13	2	0	15	7	3	0	0	0	3	2	22	E	3	20	23
One Hour Peak	%	0%	0%	0%	0%	0%	1%	0%	0%	3%	0%	1%	0%	0%	1%	5%	0%	1%	1%	6%	0%	0%	0%	3%	3%	1%		13%	87%	
4:45 PM - 5:45 PM	Trucks	2	12	0	0	14	23	0	0	0	0	0	0	0	22	0	0	22	13	1	0	1	0	2	2	38	S	2	20	22
	%	9%	2%	0%	0%	2%	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	2%	2%	0%	2%	0%	2%	3%	1%		9%	91%	
	Total	**22**	**781**	**22**	**0**	**825**	**1737**	**85**	**15**	**29**	**0**	**129**	**47**	**14**	**1608**	**41**	**0**	**1663**	**857**	**47**	**11**	**44**	**0**	**102**	**78**	**2719**	W	0	21	21
	PHF	0.69	0.92	0.69	0	0.95	0.95	0.73	0.75	0.66	0	0.77	0.78	0.58	0.92	0.85	0	0.92	0.93	0.84	0.69	0.73	0	0.88	0.93	0.95		0%	100%	
	Approach %					30%	64%					5%	2%					61%	32%					4%	3%	2.2%		**6**	**81**	**87**

Study Name	RFTA Access
Start Date	Tuesday, April 25, 2023 7:00 AM
End Date	Wednesday, April 26, 2023 6:30 PM
Site Code	

Overview

This report contains turning movement volume (TMV) data of vehicular traffic in the intersection of study.

Content

Summary	Contains a TMV summary of all vehicular traffic in the intersection for defined peak periods
TMV Table	Contains a pivot table of the TMV road and crosswalk data
TMV Data	Contains measured TMV data of all vehicular traffic in the intersection for each approach
Ped Data	Contains detected pedestrian information for the intersection's crosswalks

Traffic Study

Start Date	Tuesday, April 25, 2023 7:00 AM	
End Date	Wednesday, April 26, 2023 6:30 PM	
Classification Categories	Lights, Buses, Trucks, Bicycles on Crosswalk, Pedestrians	
04/25/2023 AM Peaks	7:45 AM - 8:45 AM	
04/26/2023 AM Peaks	7:30 AM - 8:30 AM	157 DHV
04/26/2023 PM Peaks	4:00 PM - 5:00 PM	181 DHV

Study Name	RFTA Access
Start Date	Tuesday, April 25, 2023 7:00 AM
End Date	Wednesday, April 26, 2023 6:30 PM
Site Code	

Report Summary

		Southbound						Westbound						Northbound						Eastbound								Crosswalk		
Time Period	**Class.**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**Total**		**s on Cr**	**destria**	**Total**
Peak 1	Lights	4	4	1	0	9	13	2	16	1	0	19	61	4	5	8	0	17	16	11	56	6	0	73	28	118	N	0	0	0
Specified Period	%	80%	80%	100%	0%	82%	93%	100%	73%	50%	0%	70%	87%	57%	100%	73%	0%	68%	73%	85%	92%	86%	0%	90%	74%	82%		0%	0%	
7:00 AM - 9:15 AM	Buses	0	0	0	0	0	0	0	5	0	0	5	5	0	0	2	0	2	2	2	5	0	0	7	7	14	E	0	6	6
One Hour Peak	%	0%	0%	0%	0%	0%	0%	0%	23%	0%	0%	19%	7%	0%	0%	18%	0%	8%	9%	15%	8%	0%	0%	9%	18%	10%		0%	100%	
7:45 AM - 8:45 AM	Trucks	1	1	0	0	2	1	0	1	1	1	3	4	3	0	1	2	6	4	0	0	1	0	1	3	12	S	0	0	0
	%	20%	20%	0%	0%	18%	7%	0%	5%	50%	100%	11%	6%	43%	0%	9%	100%	24%	18%	0%	0%	14%	0%	1%	8%	8%		0%	0%	
	Total	**5**	**5**	**1**	**0**	**11**	**14**	**2**	**22**	**2**	**1**	**27**	**70**	**7**	**5**	**11**	**2**	**25**	**22**	**13**	**61**	**7**	**0**	**81**	**38**	**144**	W	0	1	1
	PHF	0.62	0.62	0.25	0	0.92	0.58	0.5	0.69	0.5	0.25	0.75	0.76	0.58	0.62	0.69	0.25	0.62	0.5	0.46	0.69	0.44	0	0.75	0.86	0.9		0%	100%	
	Approach %					8%	10%					19%	49%					17%	15%					56%	26%			**0**	**7**	**7**

Study Name	RFTA Access
Start Date	Tuesday, April 25, 2023 7:00 AM
End Date	Wednesday, April 26, 2023 6:30 PM
Site Code	

Report Summary

		Southbound						Westbound						Northbound						Eastbound								Crosswalk	
Time Period	**Class.**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**Total**		**s on Cr**	**odestria**	**Total**
Peak 1	Lights	2	2	4	0	8	10	3	18	1	0	22	76	1	0	11	0	12	18	15	71	7	0	93	31	135	N	0	0	0
Specified Period	%	100%	100%	100%	0%	100%	100%	100%	72%	25%	0%	69%	93%	33%	0%	69%	0%	63%	82%	94%	95%	100%	0%	95%	72%	86%		0%	0%	
7:00 AM - 9:15 AM	Buses	0	0	0	0	0	0	0	7	1	0	8	6	2	0	4	0	6	2	1	4	0	0	5	11	19	E	0	6	6
One Hour Peak	%	0%	0%	0%	0%	0%	0%	0%	28%	25%	0%	25%	7%	67%	0%	25%	0%	32%	9%	6%	5%	0%	0%	5%	26%	**12.1%**		0%	100%	
7:30 AM - 8:30 AM	Trucks	0	0	0	0	0	0	0	0	2	0	2	0	0	0	1	0	1	2	0	0	0	0	0	1	3	S	0	0	0
Pedestrians	%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	6%	0%	0%	0%	6%	0%	5%	9%	0%	0%	0%	0%	0%	2%	**1.9%**		0%	0%	
13	**Total**	**2**	**2**	**4**	**0**	**8**	**10**	**3**	**25**	**4**	**0**	**32**	**82**	**3**	**0**	**16**	**0**	**19**	**22**	**16**	**75**	**7**	**0**	**98**	**43**	**157**	W	0	0	0
	PHF	0.5	0.25	0.33	0	0.5	0.62	0.75	0.69	0.5	0	0.8	0.85	0.38	0	0.8	0	0.68	0.69	0.5	0.78	0.58	0	0.84	0.72	0.91		0%	0%	
	Approach %					5%	6%					20%	52%					12%	14%					62%	27%	**14.0%**		**0**	**6**	**6**
Peak 2	Lights	12	2	12	0	26	6	0	45	1	0	46	81	4	3	15	0	22	7	4	65	3	1	73	73	167	N	0	3	3
Specified Period	%	100%	100%	100%	0%	100%	100%	0%	88%	100%	0%	88%	95%	100%	100%	88%	0%	92%	78%	67%	94%	100%	100%	92%	90%	92%		0%	100%	
4:00 PM - 6:30 PM	Buses	0	0	0	0	0	0	0	6	0	0	6	4	0	0	2	0	2	2	2	4	0	0	6	8	14	E	0	2	2
One Hour Peak	%	0%	0%	0%	0%	0%	0%	0%	12%	0%	0%	12%	5%	0%	0%	12%	0%	8%	22%	33%	6%	0%	0%	8%	10%	**7.7%**		0%	100%	
4:00 PM - 5:00 PM	Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0
Pedestrians	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0.0%**		0%	0%	
14	**Total**	**12**	**2**	**12**	**0**	**26**	**6**	**0**	**51**	**1**	**0**	**52**	**85**	**4**	**3**	**17**	**0**	**24**	**9**	**6**	**69**	**3**	**1**	**79**	**81**	**181**	W	0	9	9
	PHF	0.5	0.5	0.3	0	0.38	0.75	0	0.85	0.25	0	0.87	0.76	0.5	0.75	0.85	0	0.86	0.75	0.75	0.78	0.75	0.25	0.86	0.84	0.85		0%	100%	
	Approach %					14%	3%					29%	47%					13%	5%					44%	45%	**7.7%**		**0**	**14**	**14**

Study Name	W Wulfsohn & Midland Ave
Start Date	Tuesday, April 25, 2023 7:00 AM
End Date	Wednesday, April 26, 2023 6:30 PM
Site Code	

Overview

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Traffic Study

Start Date	Tuesday, April 25, 2023 7:00 AM	
End Date	Wednesday, April 26, 2023 6:30 PM	
Classification Categories	Lights, Buses, Trucks, Bicycles on Crosswalk, Pedestrians	
04/25/2023 AM Peaks	7:00 AM - 8:00 AM	
04/25/2023 PM Peaks	4:00 PM - 5:00 PM	
04/26/2023 AM Peaks	7:00 AM - 8:00 AM	969 DHV
04/26/2023 PM Peaks	4:00 PM - 5:00 PM	1309 DHV

Study Name	W Wulfsohn & Midland Ave
Start Date	Tuesday, April 25, 2023 7:00 AM
End Date	Wednesday, April 26, 2023 6:30 PM
Site Code	

Report Summary

		Southbound						Westbound						Northbound						Eastbound								Crosswalk		
Time Period	**Class.**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**Total**		**s on Cr**	**odestria**	**Total**
Peak 1	Lights	5	1	12	0	18	39	13	233	5	0	251	584	10	1	22	0	33	58	52	562	25	1	640	261	942	N	0	0	0
Specified Period	%	83%	100%	92%	0%	90%	95%	93%	98%	100%	0%	98%	97%	100%	100%	81%	0%	85%	95%	96%	97%	96%	100%	97%	96%	97%		0%	0%	
7:00 AM - 9:15 AM	Buses	0	0	0	0	0	0	0	3	0	0	3	8	0	0	4	1	5	3	2	8	0	0	10	7	18	E	0	0	0
One Hour Peak	%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	1%	0%	0%	15%	100%	13%	5%	4%	1%	0%	0%	2%	3%	2%		0%	0%	
7:00 AM - 8:00 AM	Trucks	1	0	1	0	2	2	1	2	0	0	3	8	0	0	1	0	1	0	0	7	1	0	8	4	14	S	0	0	0
	%	17%	0%	8%	0%	10%	5%	7%	1%	0%	0%	1%	1%	0%	0%	4%	0%	3%	0%	0%	1%	4%	0%	1%	1%	1%		0%	0%	
	Total	**6**	**1**	**13**	**0**	**20**	**41**	**14**	**238**	**5**	**0**	**257**	**600**	**10**	**1**	**27**	**1**	**39**	**61**	**54**	**577**	**26**	**1**	**658**	**272**	**974**	W	0	0	0
	PHF	0.5	0.25	0.81	0	0.71	0.68	0.7	0.75	0.62	0	0.77	0.72	0.62	0.25	0.75	0.25	0.89	0.76	0.75	0.72	0.65	0.25	0.73	0.8	0.76		0%	0%	
	Approach %					2%	4%					26%	62%					4%	6%					68%	28%			**0**	**0**	**0**
Peak 2	Lights	22	1	10	0	33	23	12	725	1	1	739	323	1	2	64	6	73	64	56	311	9	0	376	811	1221	N	0	0	0
Specified Period	%	96%	100%	100%	0%	97%	96%	100%	99%	100%	100%	99%	99%	100%	67%	93%	100%	92%	96%	95%	99%	100%	0%	98%	98%	98%		0%	0%	
4:00 PM - 6:45 PM	Buses	0	0	0	0	0	1	0	1	0	0	1	3	0	1	5	0	6	2	2	3	0	0	5	6	12	E	0	0	0
One Hour Peak	%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%	0%	1%	0%	33%	7%	0%	8%	3%	3%	1%	0%	0%	1%	1%	1%		0%	0%	
4:00 PM - 5:00 PM	Trucks	1	0	0	0	1	0	0	6	0	0	6	0	0	0	0	0	0	1	1	0	0	0	1	7	8	S	1	1	2
	%	4%	0%	0%	0%	3%	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	1%	2%	0%	0%	0%	0%	1%	1%		50%	50%	
	Total	**23**	**1**	**10**	**0**	**34**	**24**	**12**	**732**	**1**	**1**	**746**	**326**	**1**	**3**	**69**	**6**	**79**	**67**	**59**	**314**	**9**	**0**	**382**	**824**	**1241**	W	1	0	1
	PHF	0.57	0.25	0.62	0	0.61	0.46	0.38	0.83	0.25	0.25	0.83	0.88	0.25	0.75	0.78	0.38	0.82	0.84	0.78	0.86	0.56	0	0.85	0.85	0.89		100%	0%	
	Approach %					3%	2%					60%	26%					6%	5%					31%	66%			**2**	**1**	**3**

Study Name	W Wulfsohn & Midland Ave
Start Date	Tuesday, April 25, 2023 7:00 AM
End Date	Wednesday, April 26, 2023 6:30 PM
Site Code	

Report Summary

		Southbound						Westbound						Northbound						Eastbound								Crosswalk		
Time Period	**Class.**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**R**	**T**	**L**	**U**	**I**	**O**	**Total**		**s on Cr**	**odestria**	**Total**
Peak 1	Lights	4	3	2	0	9	34	13	233	1	0	247	584	3	0	22	0	25	61	57	579	21	0	657	259	938	N	0	0	0
Specified Period	%	100%	100%	40%	0%	75%	100%	100%	98%	100%	0%	98%	97%	100%	0%	76%	0%	78%	97%	97%	98%	100%	0%	98%	96%	97%		0%	0%	
7:00 AM - 9:15 AM	Buses	0	0	0	0	0	0	0	3	0	0	3	5	0	0	6	0	6	1	1	5	0	0	6	9	15	E	0	0	0
One Hour Peak	%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	1%	0%	0%	21%	0%	19%	2%	2%	1%	0%	0%	1%	3%	2%		0%	0%	
7:00 AM - 8:00 AM	Trucks	0	0	3	0	3	0	0	2	0	0	2	12	0	0	1	0	1	1	1	9	0	0	10	3	16	S	0	0	0
Pedestrians	%	0%	0%	60%	0%	25%	0%	0%	1%	0%	0%	1%	2%	0%	0%	3%	0%	3%	2%	2%	2%	0%	0%	1%	1%	1.7%		0%	0%	
0	**Total**	**4**	**3**	**5**	**0**	**12**	**34**	**13**	**238**	**1**	**0**	**252**	**601**	**3**	**0**	**29**	**0**	**32**	**63**	**59**	**593**	**21**	**0**	**673**	**271**	**969**	W	0	0	0
	PHF	1	0.38	0.42	0	0.6	0.57	0.41	0.78	0.25	0	0.8	0.73	0.38	0	0.66	0	0.67	0.79	0.87	0.74	0.75	0	0.76	0.79	0.77		0%	0%	
	Approach %					1%	4%					26%	62%					3%	7%					69%	28%			**0**	**0**	**0**
Peak 2	Lights	28	2	14	0	44	15	10	733	6	0	749	369	1	1	64	0	66	81	73	354	4	1	432	826	1291	N	0	0	0
Specified Period	%	100%	100%	100%	0%	100%	100%	100%	99%	100%	0%	99%	99%	100%	100%	96%	0%	96%	96%	96%	99%	100%	100%	98%	99%	99%		0%	0%	
4:00 PM - 6:30 PM	Buses	0	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0	2	1	1	3	0	0	4	2	6	E	0	0	0
One Hour Peak	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	3%	0%	3%	1%	1%	1%	0%	0%	1%	0%	0%		0%	0%	
4:00 PM - 5:00 PM	Trucks	0	0	0	0	0	0	0	7	0	0	7	2	0	0	1	0	1	2	2	2	0	0	4	8	12	S	4	1	5
Pedestrians	%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	1%	0%	0%	1%	0%	1%	2%	3%	1%	0%	0%	1%	1%	0.9%		80%	20%	
7	**Total**	**28**	**2**	**14**	**0**	**44**	**15**	**10**	**740**	**6**	**0**	**756**	**374**	**1**	**1**	**67**	**0**	**69**	**84**	**76**	**359**	**4**	**1**	**440**	**836**	**1309**	W	1	1	2
	PHF	0.7	0.5	0.58	0	0.73	0.75	0.5	0.88	0.5	0	0.88	0.91	0.25	0.25	0.88	0	0.91	0.91	0.9	0.93	0.5	0.25	0.96	0.9	0.92		50%	50%	
	Approach %					3%	1%					58%	29%					5%	6%					34%	64%			**5**	**2**	**7**

Appendix E - Combined Scenario Results – MOEs by Movement

RFTA GMF TIS
Operational Result Summary

Intersection	Approach Movement		Link/Storage Bay Distance (L_T_R)	2023 Baseline					2043 Background					2043 Background + RFTA					2043 Background + GM + RFTA				
				Overall LOS	Overall Delay	LOS	Delay	95th % Q (L_T_R)	Overall LOS	Overall Delay	LOS	Delay	95th % Q (L_T_R)	Overall LOS	Overall Delay	LOS	Delay	95th % Q (L_T_R)	Overall LOS	Overall Delay	LOS	Delay	95th % Q (L_T_R)
#20 Wulfsohn Rd. and RFTA / PnR	EB L	AM	825	A	2.2	A	7.5	8	A	2.2	A	7.5	7	A	3.6	A	7.6	19	A	2.7	A	8	16
		PM		A	2.7	A	7.3	7	A	2.7	A	7.3	4	A	4.9	A	7.4	14	A	3.4	A	7.7	15
	WB L	AM	1500**			A	7.3	7			A	7.3	6			A	7.5	15			A	7.7	2015
		PM				A	7.4	6			A	7.3	2			A	7.4	7			A	7.8	1493
	NB R	AM	334**			A	8.5	20			A	8.5	23			A	8.7	35			A	9.2	134
		PM				A	8.7	23			A	8.7	22			A	8.8	42			A	9.8	275
	NB T/L	AM	334**			B	10.1	42			B	10.1	41			B	12	50			C	15.9	329
		PM				A	9.8	41			A	9.8	40			B	11.1	55			C	15.9	438
	SB	AM	254**			A	9.9	33			A	9.9	35			B	10.8	45			B	13.3	230
		PM				A	9.3	35			A	9.3	43			B	10	56			B	12.6	329
#4 - Midland Avenue and Wulfsohn Road	EB L	AM	95_776_25	A	1.4	A	8.3	29_0_27	A	1.4	A	8.4	31_0_28	A	2.6	A	8.4	32_16_38	E	47.1	A	8.5	35_17_47
		PM		A	2.4	A	9.8	31_0_28	A	2.6	B	10.3	14_8_31	A	8.6	B	10.3	17_10_35	F	97.8	B	10.9	44_16_46
	WB L	AM	95_1350			B	10.6	6_2			B	11.1	6_2			B	11.4	24_9			B	11.9	27_6
		PM				A	8.5	6_2			A	8.6	20_17			A	8.7	20_24			A	9.1	24_20
	NB	AM	825			D	27.9	57			D	32.8	66			E	43.5	134			F	367.2	953
		PM				D	32.1	66			E	39.4	82			F	88	239			F	718.9	976
	SB T/L	AM	327			C	24.6	35			D	27.6	32			D	29.2	32			D	34.3	41
		PM				C	21.8	32			C	24.3	40			C	24.8	41			E	35.9	72
	SB R	AM	75			B	10.6	27			B	10.9	26			B	11	24			B	11.3	34
		PM				C	16.9	26			C	18.7	53			C	18.7	56			C	21.9	73
#13 8th St. and Colorado Ave.	EB	AM	218	B	11	B	10.3	87	B	12.1	B	11.1	97	C	15.9	B	13.5	191	D	31.7	D	37.2	240
		PM		B	10.2	B	10.7	97	B	10.8	B	11.5	166	B	12.1	B	13.4	186	D	27.7	D	31.7	228
	WB	AM	226			B	12.1	137			B	13.7	146			C	19.6	157			E	37.2	188
		PM				B	10.2	146			B	10.9	105			B	11.8	106			D	29.7	169
	NB	AM	404			B	10.3	50			A	9.8	53			B	10.8	61			B	12.2	64
		PM				A	9.2	53			A	9.5	72			B	10.2	79			B	12.3	76
	SB	AM	398			A	9.1	49			A	9.5	55			B	10.3	63			B	11.6	63
		PM				A	9.2	55			A	9.5	60			A	9.9	71			B	11.8	69
#15 9th St. and Colorado Ave.	EB	AM	501	A	8.8	A	8.1	51	A	9.1	A	8.3	54	A	9.6	A	8.5	57	A	9.6	A	8.5	52
		PM		A	8	A	7.9	54	A	8.1	A	8	53	A	8.2	A	8.1	56	A	8.2	A	8.1	52
	WB	AM	211			A	8	62			A	8.2	63			A	8.5	62			A	8.5	66
		PM				A	7.8	63			A	7.9	60			A	8	60			A	8	58
	NB	AM	418			A	7.9	15			A	8	16			A	8.1	21			A	8.1	20
		PM				--	--	--			--	--	--			--	--	--			--	--	--
	SB	AM	404			A	9.3	78			A	9.7	79			B	10.4	79			B	10.4	78
		PM				A	8.2	79			A	8.4	52			A	8.6	51			A	8.6	54
#16 9th St. and Grand Ave.	EB L	AM	75	A	9.8	D	42	59	B	10.5	D	41.7	72	B	17.4	E	72.7	85	B	17.4	E	72.7	86
		PM		C	20.5	E	76.2	72	C	23.2	E	76.1	95	C	23.9	E	75	98	C	24.8	E	75.3	102
	EB T/R	AM	211			D	45.4	75			D	45.4	83			F	88.7	127			F	88.7	138
		PM				E	79.9	83			F	80.3	120			F	81.3	138			F	81.3	133
	WB L	AM	75			D	43.5	62			D	43.3	58			E	75.8	74			E	75.8	76
		PM				E	71.8	58			E	71.5	104			E	71.3	91			E	71.3	102
	WB T/R	AM	277			D	45.3	70			D	45.2	70			E	79.4	88			E	79.4	91
		PM				F	91.4	70			F	97.3	222			F	97.3	200			F	97.3	238
	NB L	AM	150			A	6.9	116			A	7.3	147			A	8.1	137			A	8.5	132
		PM				A	7.4	147			A	8.1	144			A	8.5	151			A	8.8	153
	NB TT/R	AM	433_433			B	11.4	266_227			B	12.7	306_261			B	11.2	331_270			B	11.4	341_279
		PM				B	16.9	306_261			C	20.4	553_556			C	21.1	548_554			C	22.9	523_543
	SB L	AM	125			A	8.2	49			A	8.9	59			A	8	62			A	8.1	57
		PM				B	13.3	59			B	17.8	73			B	18.4	81			C	21	90
	SB TT/R	AM	412_412			A	1.2	164_173			A	1.5	218_213			B	11.4	290_272			B	11.8	306_287
		PM				B	10.7	218_213			B	11.7	264_251			B	12.2	263_247			B	12.5	289_274

BASELINE TRAFFIC - K-H MTS 2021 Adjusted Volumes & SGM Counts 2023

*95th percentile queue exceeds link distance
*95th percentile queue exceeds storage bay distance
**Modeled link distance differs from actual link distance

Unsignalized Intersections

	Level of Service	Delay (seconds)
A	(Highly Desirable)	< 10.0
B	(Desirable)	10.1 to 15
C	(Acceptable)	15.1 to 25
D	(Acceptable in Urban Areas)	25.1 to 35
E	(Unacceptable)	35.1 to 50
F	(Unacceptable)	> 50

Appendix F - Trip Generation, Reduction, Distribution, Assignment Worksheet

Trip Generation - RFTA GMF
ITE Trip Generation, 11th Edition

Land Use	Number of Units	ITE Code	Weekday Rate	AM Rate	AM Entering	AM Exiting	PM Rate	PM Entering	PM Exiting	Weekday Traffic	AM IN	AM OUT	PM IN	PM OUT
			Design Hour Rates							**Weekday Design Hour Traffic**				
Ph9-Park and Ride	45	90	4.76	0.73	0.59	0.15	0.58	0.14	0.43	214	26	7	7	20
Ph8-Warehousing	9.6	150	1.71	0.17	0.13	0.04	0.18	0.05	0.13	16	1	0	0	1
Ph9-Multi-Family (Mid-rise)	74	221	4.15	0.28	0.07	0.21	0.39	0.24	0.15	307	5	16	18	11
Ph3-General Office Building (ksf)	13.1	710	15.11	2.23	1.96	0.27	2.37	0.40	1.96	198	26	3	5	26
Ph6-General Office Building (ksf)	19.2	710	14.40	2.11	1.86	0.25	2.18	0.37	1.81	277	36	5	7	35
Ph3/4/5/7 - 60 Bus expansion		*	* based on RFTA 60-bus projections (by RFTA 6/2023)								3	14	4	8
Total Traffic										**1,012**	**97**	**45**	**41**	**101**
Total DHV												**142**		**142**
***Ph9** HOUSING 10% Transit Reduction*						***MULTI FAMILY HOUSING Transit Reduction***			*10%*	*276*	*5*	*14*	*16*	*10*
***Ph3** OFFICE 10% Transit Reduction*						***OFFICE Transit Reduction***			*10%*	*178*	*23*	*3*	*5*	*23*
***Ph6** OFFICE 10% Transit Reduction*						***OFFICE Transit Reduction***			*10%*	*249*	*32*	*5*	*6*	*32*
Total Traffic (reduced)										**934**	**90**	**43**	**38**	**94**
Total DHV (reduced)												**133**		**132**

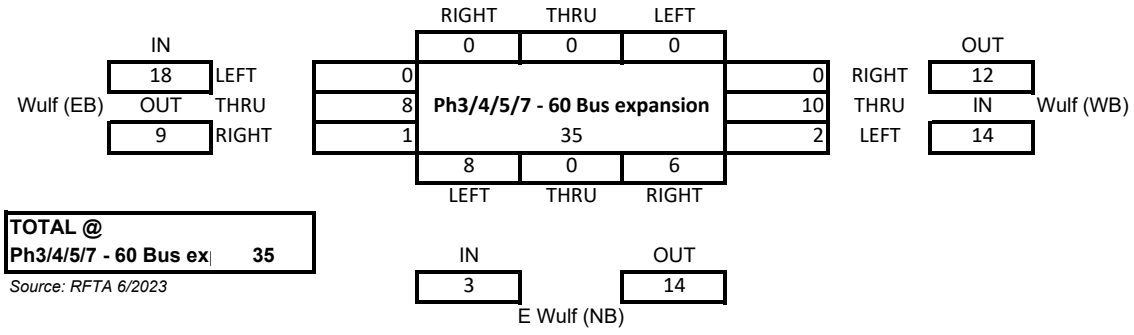
	ITE Code	Basis of Rate	Time Period Used Above	Weekday Design Hour Distribution AM IN	AM OUT	PM IN	PM OUT
Ph9-Park and Ride	90	Fitted Curve	Peak Hour adjacent Street	80%	20%	25%	75%
Ph8-Warehousing	150	Ave Rate	Peak Hour adjacent Street	77%	23%	28%	72%
Ph9-Multi-Family (Mid-rise)	221	Fitted Curve	Peak Hour adjacent Street	26%	74%	61%	39%
General Office Building (ksf)	710	Fitted Curve	Peak Hour adjacent Street	88%	12%	17%	83%

	Weekday Design Hour Traffic			
Phase	AM IN	AM OUT	PM IN	PM OUT
Phase 3/4/5/7	26	17	9	31
Phase 6	32	5	6	32
Phase 8	1	0	0	1
Phase 9	31	21	23	30

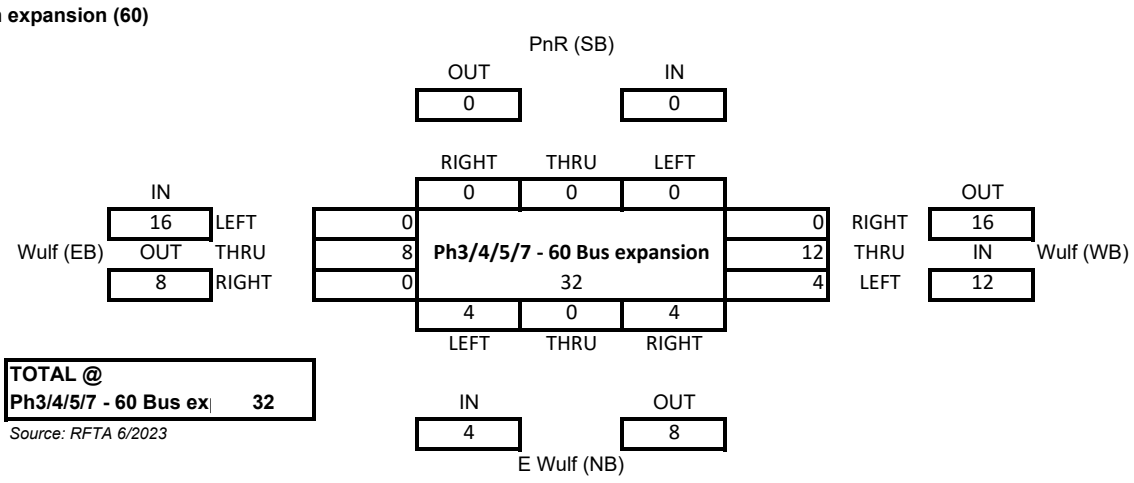
TRIP DISTRIBUTION AND ASSIGNMENT at Wulfsohn Rd and RFTA GMF / PnR

Ph3/4/5/7 - 60 Bus expansion

AM - Projected Bus traffic increase with expansion (60)

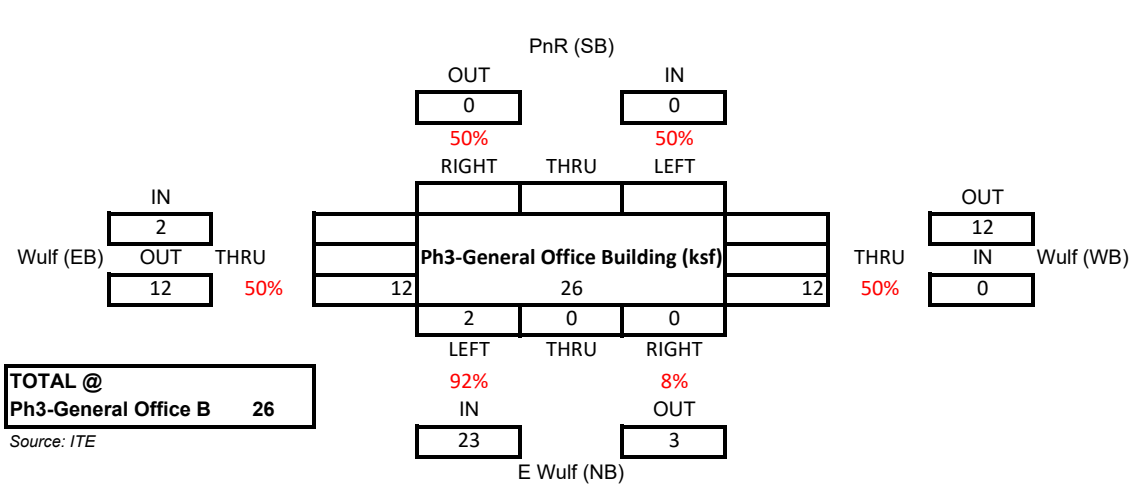


PM - Projected Bus traffic increase with expansion (60)

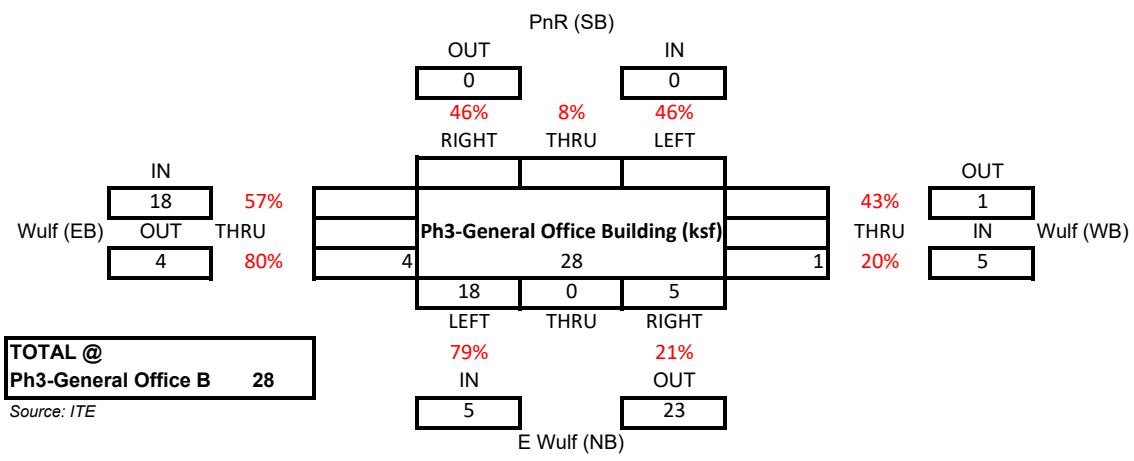


Ph3-General Office Building (ksf)

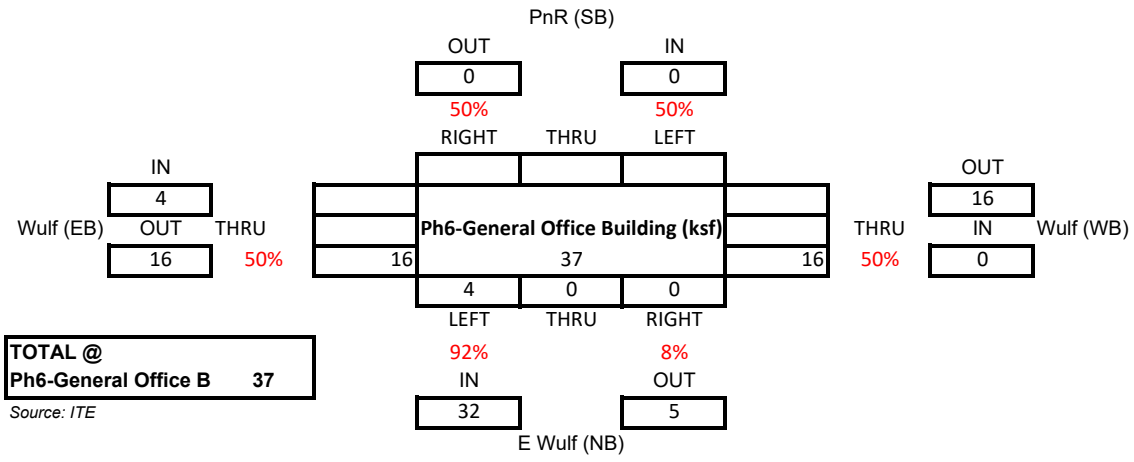
Weekday AM



Weekday PM



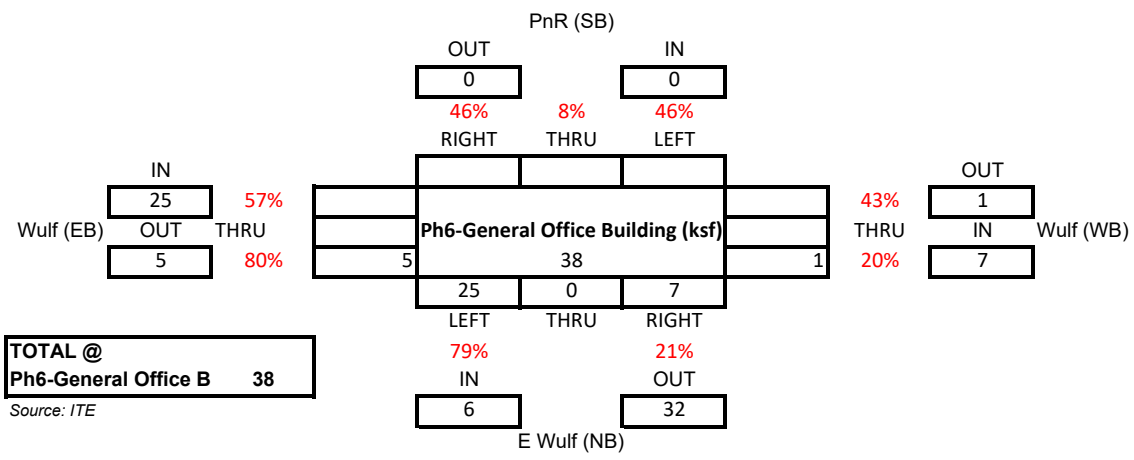
Ph6-General Office Building (ksf)
Weekday AM



TOTAL @
Ph6-General Office B 37

Source: ITE

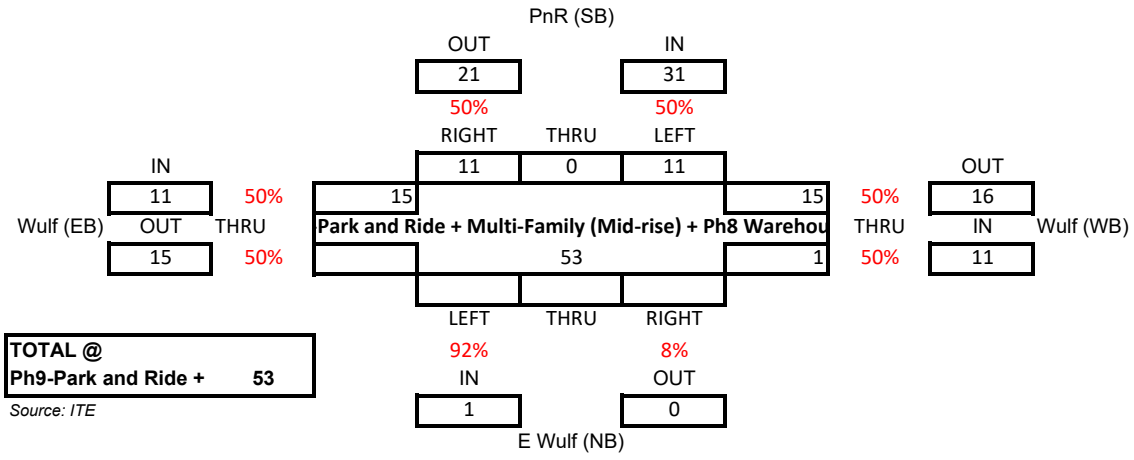
Weekday PM



TOTAL @
Ph6-General Office B 38

Source: ITE

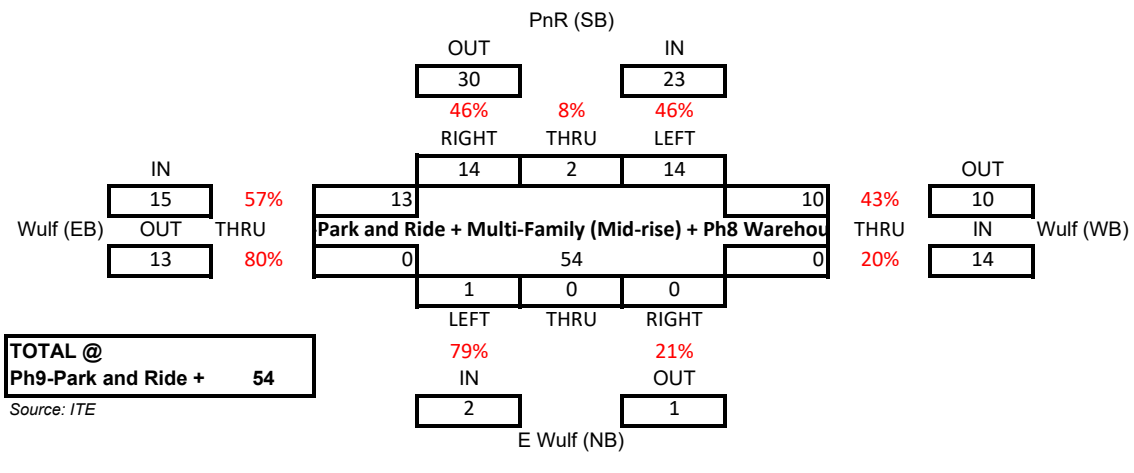
Ph9-Park and Ride + Multi-Family (Mid-rise) + Ph8 Warehousing
Weekday AM



TOTAL @
Ph9-Park and Ride + 53

Source: ITE

Weekday PM

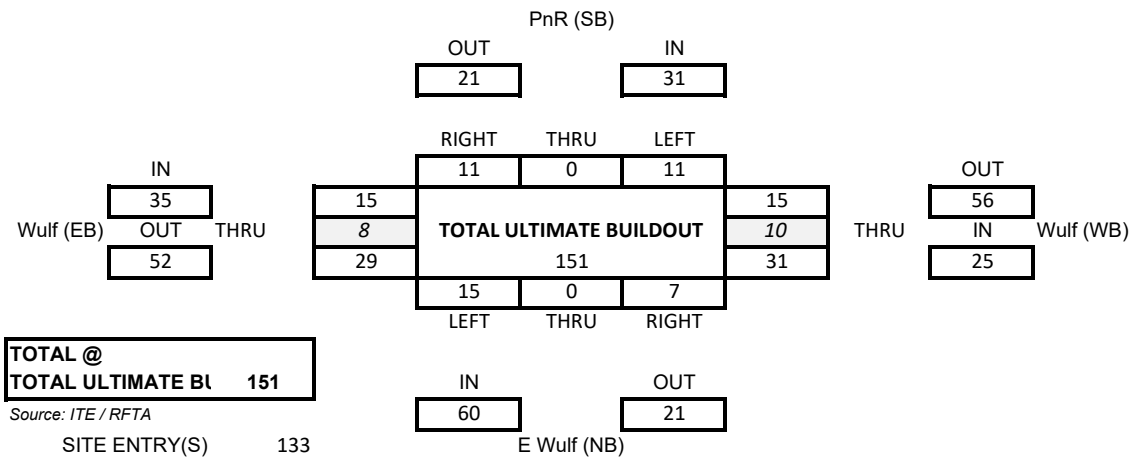


TOTAL @
Ph9-Park and Ride + 54

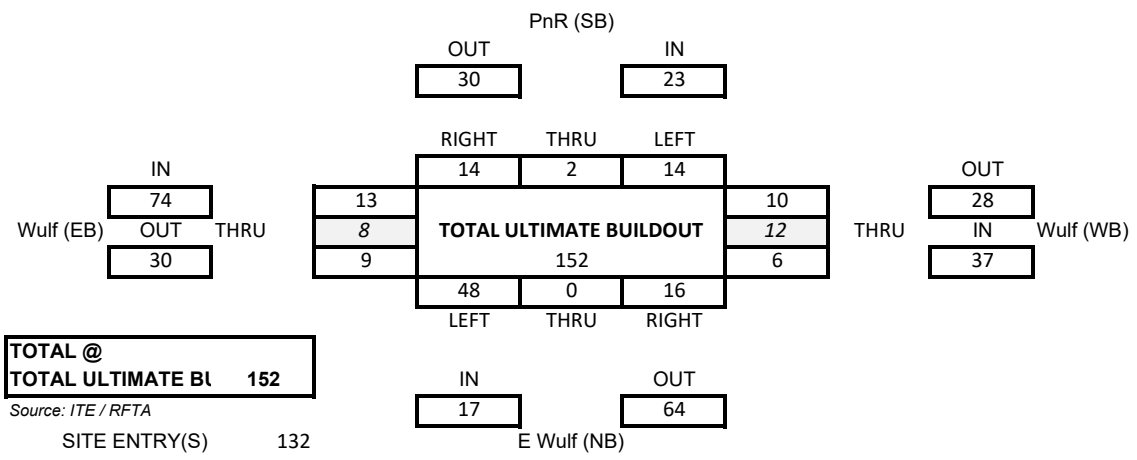
Source: ITE

TOTAL ULTIMATE BUILDOUT

Weekday AM



Weekday PM



RFTA	HOUR	DHV	% 2023 DHV
TOTAL ULTIMATE BUILDOUT	AM	82	6.0%
	PM	94	6.3%
	2023 DHV		
	AM	1,359	
	AM	1,493	

INFO FROM IAN ADAMS RFTA

Wulfsohn Rd and RFTA GMF / PnR

Projected Bus traffic increase with expansion AM

PnR (SB)

OUT	IN
0	0

			RIGHT	THRU	LEFT			
	IN		0	0	0		OUT	
	18	LEFT	0			0	RIGHT	12 From 8th/Colorado
Wulf (EB)	OUT	THRU	8	Wulfsohn Rd and RFTA GMF / Pn		10	THRU	IN Wulf (WB)
	9	RIGHT	1	35		2	LEFT	14 To 8th/Colorado
			8	0	6			
			LEFT	THRU	RIGHT			

TOTAL @ Wulfsohn Rd and RF 35

Source: RFTA 6/2023

IN	OUT
3	14

E Wulf (NB)

Projected Bus traffic increase with expansion PM

PnR (SB)

OUT	IN
0	0

			RIGHT	THRU	LEFT			
	IN		0	0	0		OUT	
	16	LEFT	0			0	RIGHT	16
Wulf (EB)	OUT	THRU	8	Wulfsohn Rd and RFTA GMF / Pn		12	THRU	IN Wulf (WB)
	8	RIGHT	0	32		4	LEFT	12
			4	0	4			
			LEFT	THRU	RIGHT			

TOTAL @ Wulfsohn Rd and RF 32

Source: RFTA 6/2023

IN	OUT
4	8

E Wulf (NB)

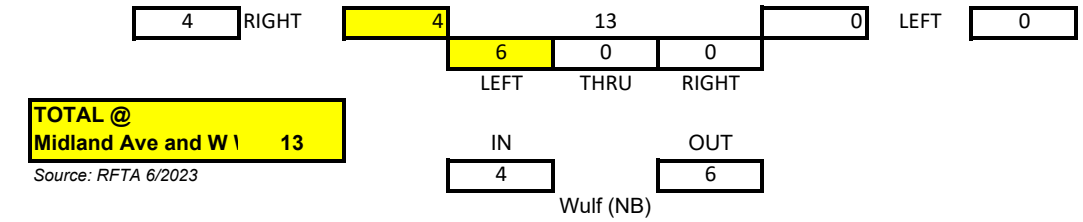
Midland Ave and W Wulfsohn Rd

Projected Bus traffic increase with expansion AM

Mid Center (SB)

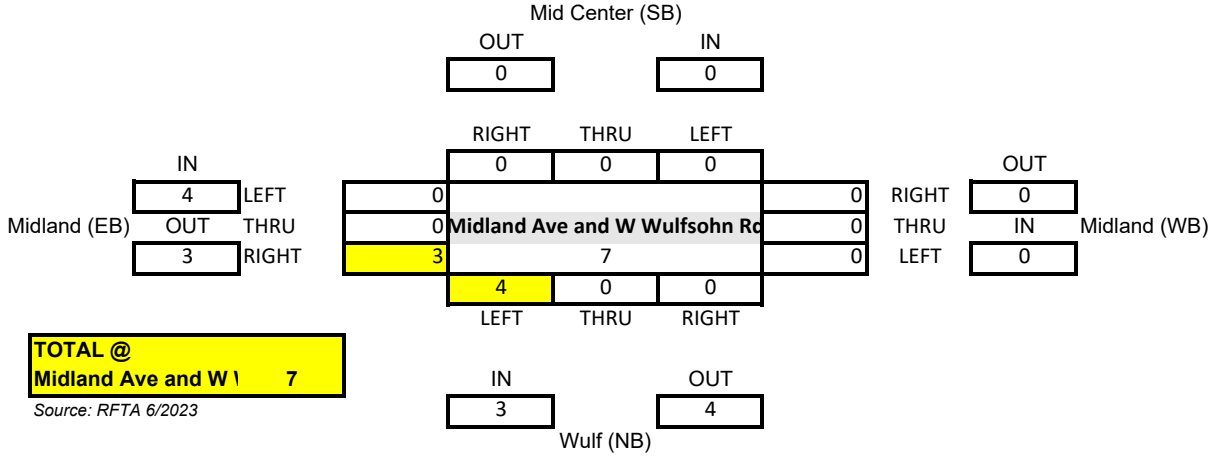
OUT	IN
0	0

			RIGHT	THRU	LEFT			
	IN		0	0	0		OUT	
	9	LEFT	0			0	RIGHT	3
Midland (EB)	OUT	THRU	0	Midland Ave and W Wulfsohn Rd		3	THRU	IN Midland (WB)



Source: RFTA 6/2023

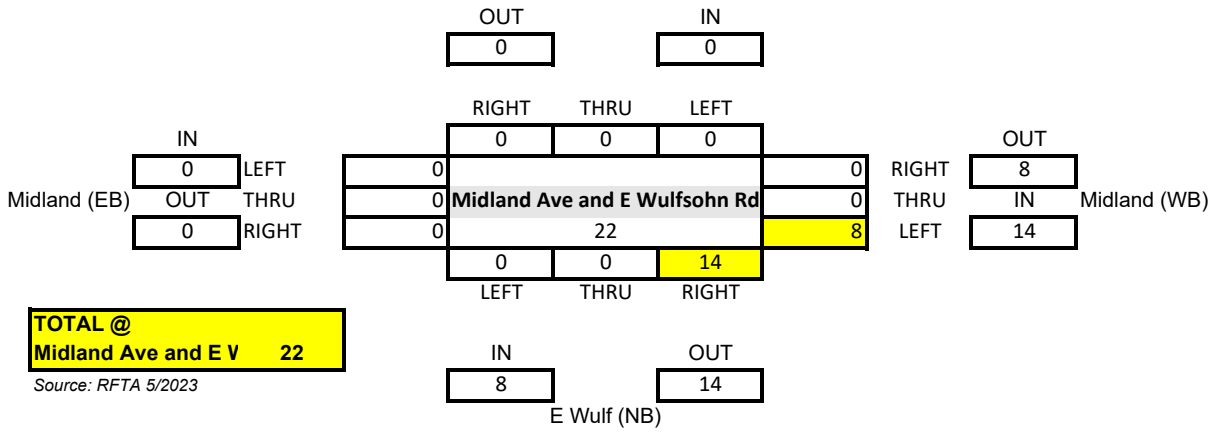
Projected Bus traffic increase with expansion PM



Source: RFTA 6/2023

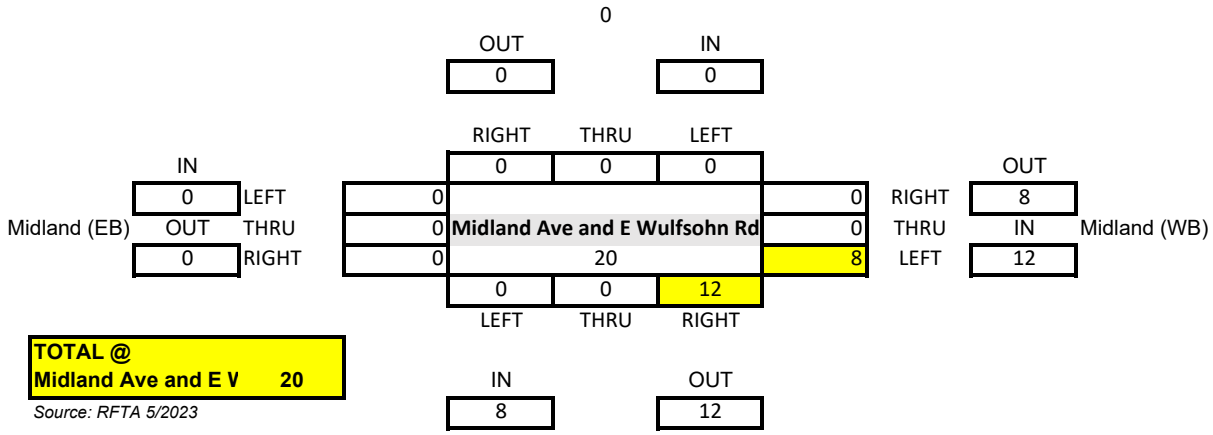
Midland Ave and E Wulfsohn Rd

Projected Bus traffic increase with expansion AM



Source: RFTA 5/2023

Projected Bus traffic increase with expansion PM



Source: RFTA 5/2023

Appendix G – Pedestrian Crossing Analysis

COLORADO
Department of Transportation

COLORADO DEPARTMENT OF TRANSPORTATION

Pedestrian Crossing Installation Guide

2021 Edition

Appendix B: Pedestrian Crossing Evaluation Worksheet

Location Description

State Highway & Milepost:	Major Street:	Crossing Location:
Wulfsohn Road	RFTA Access / PnR	☑ At Intersection ☐ Mid-Block ☐ Roundabout

Existing Traffic Control:	Existing Crossing Treatments (if any):	Speed Limit:
☐ Stop Sign ☐ Traffic Signal ☐ Uncontrolled	none	25

Official School Crossing:	Nearby Pedestrian Generators (schools, transit stops, commercial businesses, etc.):
☐ Yes ☐ No	RFTA Park and Ride and RFTA GMF

Roadway Configuration:

☑ 2-Lane ☐ 3-Lane w/ Striped Median ☐ 3-Lane w/ Raised Median
☐ 4-Lane ☐ 5-Lane w/ Striped Median ☐ 5-Lane w/ Raised Median
☐ 6-Lane ☐ Other: _____

Crossing Distance by Direction:

Total Distance: 28
Dist. to Median: _____ ☑ N ☐ E ☐ S ☐ W ☐ Other ____
Dist. to Median: _____ ☐ N ☐ E ☐ S ☐ W ☐ Other ____

Stopping Sight Distance (uncontrolled locations only): 425 Is the SSD ≥ 8x the speed limit? ☑ Yes ☐ No
If no, are improvements to SSD feasible? ☐ Yes ☐ No

Traffic Volumes and Operations

	AM	MID-DAY	PM	OTHER
Start and End Time:	to	to	to	to
Day of Week:	Thursday			
No. of Transit Boardings (if applicable):				
No. of Young, Elderly, and Disabled Peds (YED):				
No. of Bicyclists:				
No. of Non YED Pedestrians:				
Total Pedestrians (adjusted for 2x YED):	(13) 45		(14) 48	

Major Street Vehicle Volume (Daily): (2023 -184) / 2043 - 592 DHV; ADT (1500 vpd) / 5000 vpd

Nearest Intersection (Direction #1)

Cross Street Name: Midland and RFTA Access(es)

Located at _____ feet to the ☐ N ☐ E ☐ S ☐ W of the crossing location. Signalized? ☐ Yes ☐ No

	AM	MID-DAY	PM	OTHER
How many times per hour did the downstream vehicle queue back up into the pedestrian crossing?	0		0	
If multiple lanes per direction, are queue lengths approximately equal?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
If no, which lane is longer (inside, outside, middle) and by how much?				

Nearest Intersection (Direction #2)

Cross Street Name: _____

Located _____ feet to the ☐ N ☐ E ☐ S ☐ W of the crossing location. Signalized? ☐ Yes ☐ No

	AM	MID-DAY	PM	OTHER
How many times per hour did the downstream vehicle queue back up into the pedestrian crossing?				
If multiple lanes per direction, are queue lengths approximately equal?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
If no, which lane is longer (inside, outside, middle) and by how much?				

Appendix C. Figures and Tables

Figure C1. Guidelines for the Installation of Pedestrian Hybrid Beacons on Low-Speed Roadways

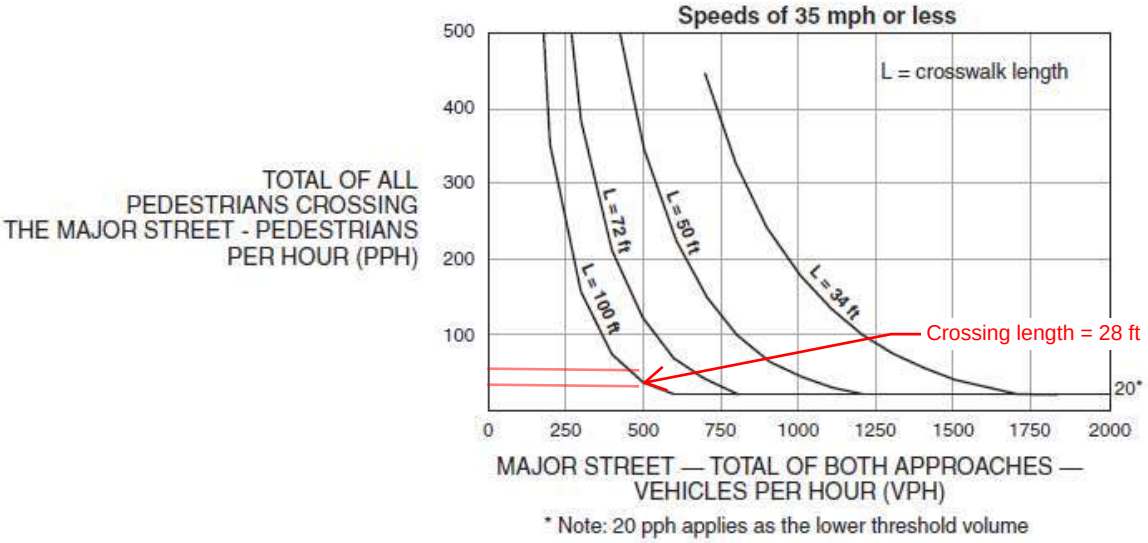
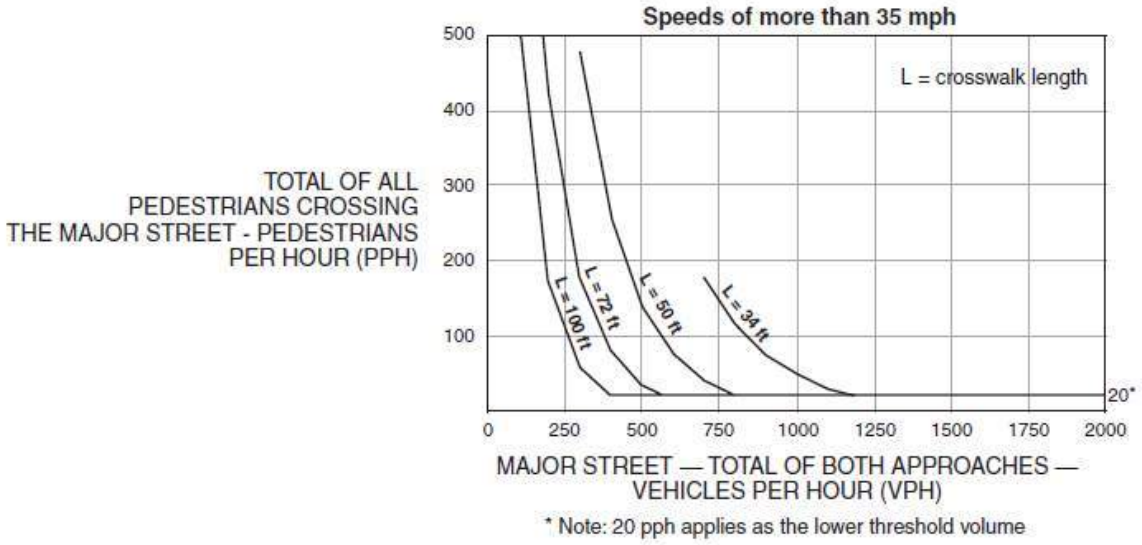


Figure C2. Guidelines for the Installation of Pedestrian Hybrid Beacons on High-Speed Roadways



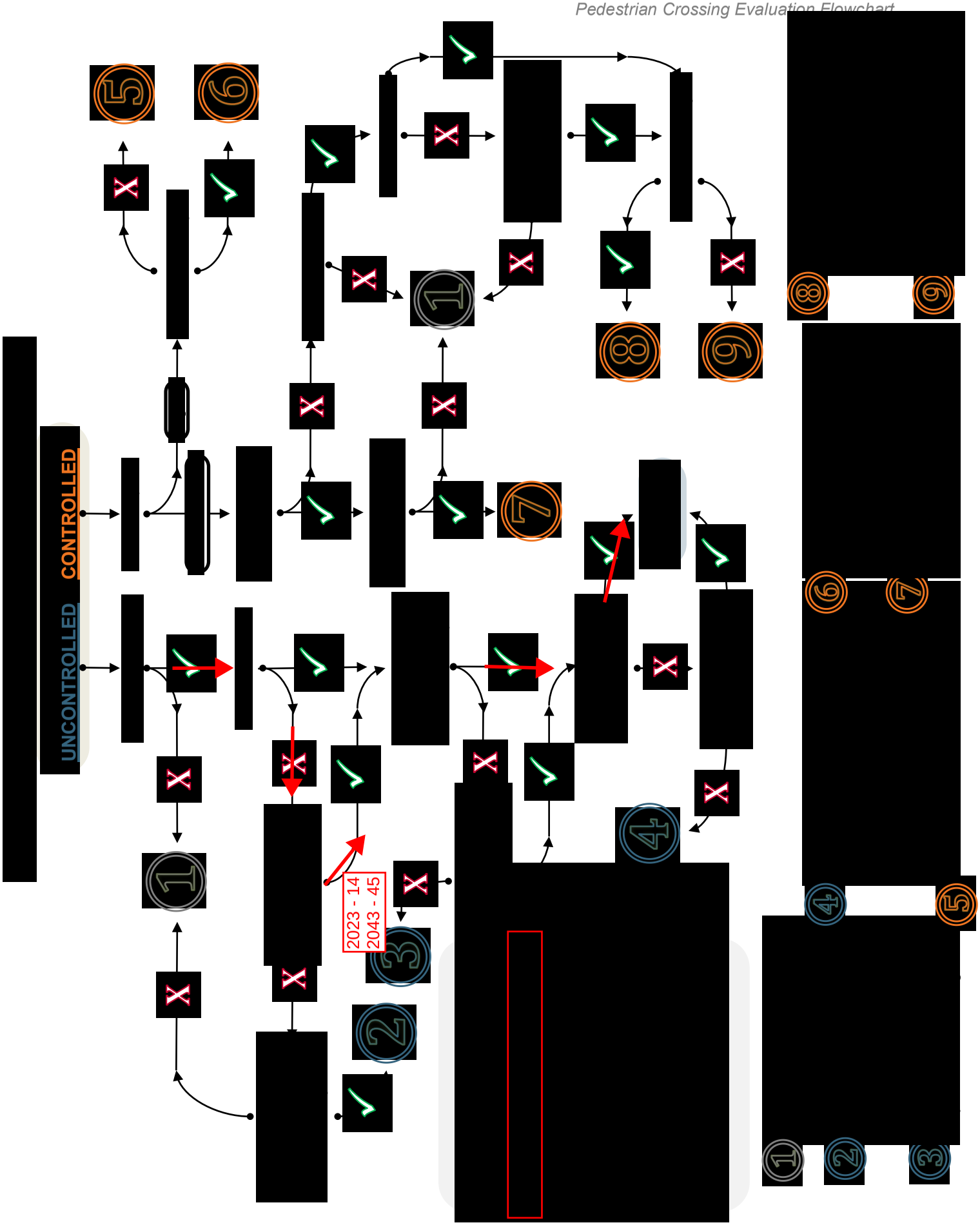

CONTROLLED
UNCONTROLLED
2023 - 14
2043 - 45

Table C1. Criteria for Pedestrian Crossing Treatments at Uncontrolled Locations

The criteria for pedestrian crossing treatments at uncontrolled locations is intended as a general minimum. Engineering judgment should be used on a case-by-case basis. Prevailing speed may be used if significantly different than posted speed.

Roadway Configuration	Roadway ADT and Posted Speed (mph)															
	1,500 – 9,000 vpd				9,001 – 12,000 vpd				12,001 – 15,000 vpd				> 15,000 vpd			
	≤30	35	40	≥45	≤30	35	40	≥45	≤30	35	40	≥45	≤30	35	40	≥45
2 lanes, one-way street	A	B	C	E	A	B	C	E	B	B	C	E	B	C	C	E
2 lanes, two-way street with no median	A	B	C	E	A	B	C	E	B	B	C	E	B	C	C	E
3 lanes with raised median	A	B	D	E	A	C	D	E	B	D	D	E	C	D	D	E
3 lanes without raised median	C	C	D	E	C	C	D	E	C	C	D	E	C	D	D	E
4 lanes with raised median	A	B	C	E	A	B	C	E	B	B	C	E	B	C	C	E
4 lanes, two-way street without raised median	A	D	D	E	B	D	D	E	B	D	D	E	D	D	D	E
5 lanes with raised median	A	B	D	E	B	C	D	E	B	C	D	E	C	C	D	E
5 lanes without raised median	D	D	D	E	D	D	D	E	D	D	D	E	D	D	D	E
6 lanes with or without raised median	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F

Treatment Descriptions:

A. Install marked crosswalk with enhanced roadside signs.

Install a marked crosswalk with a standard W11-2 with a W16-7p plaque mounted on the side of the roadway at the crosswalk location and a standard W11-2 advanced pedestrian warning sign. Use S1-1 signs for school crossing locations. An optional R6-1 may be used in addition.

B. Install marked crosswalk with enhanced roadside and in-roadway signs.

C. Install marked crosswalk with enhanced signs and geometric improvements to increase pedestrian visibility and reduce exposure.

D. Install marked crosswalk with enhanced signs, pedestrian activated RRFBs, and geometric improvements to increase visibility pedestrian and reduce exposure.

E. Do not install marked crosswalk at uncontrolled crossing. Determine if speed limit can effectively be reduced to 40 mph by making geometric or other infrastructure changes (i.e., bulb out, median refuge, etc.). If so, utilize criteria D above. If this is not possible, if pedestrian volume meets warrants, consider a pedestrian hybrid beacon, pedestrian traffic signal, or grade separated crossing.

F. Do not install marked crosswalk at uncontrolled crossings with three (3) or more through lanes per direction or where the speed limit is greater or equal to 45 mph and/or there is not a median refuge on a 5-lane crossing. Consider pedestrian hybrid beacon, pedestrian traffic signal, or separated crossing.

Appendix C: Preliminary Soil, Geotechnical, and Geohazard Report

REPORT

RFTA Glenwood Maintenance Facility Phase 6 - Administration Building and BRT Station

Final Geotechnical Report

Submitted to:

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20365011-002-RPT-0

August 25, 2023

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APPENDIX B
Laboratory Testing

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Drilled Shaft Axial Capacity Charts

1.0 INTRODUCTION

1.1 Project Overview

Shrewsberry & Associates, LLC has retained WSP USA Inc. (WSP) to perform a preliminary geotechnical engineering study as part of their support to Roaring Fork Transportation Authority (RFTA) for Part II of the RFTA Glenwood Springs Maintenance Facility (GMF) Phase 6-Administration Building and Bus Rapid Transit (BRT) Station, located at the intersection of Midland Avenue and Wulfsohn Road in western Glenwood Springs, Colorado. This report presents the results of the geotechnical investigation and contains preliminary geotechnical recommendations for the proposed development.

The project site is the RFTA Glenwood Maintenance Facility (GMF) located in Glenwood Springs, Colorado shown in Figure 1.

The specific project site location as well as borehole locations are shown in Figure 1.

Figure 1: Borehole Locations

1.2 Scope of Services

WSP provided the following services as outlined in the scope of work dated December 27, 2022.

- A field investigation program that included drilling five boreholes. A detailed description of the field investigation program is provided in Section 2.1. Borehole logs are included in Appendix A.
- Laboratory testing on representative soil samples collected during the field investigation to determine material classification and subsurface conditions at the project site relative to the proposed construction.
- Engineering analysis and preparation of preliminary geotechnical recommendations for the foundation type, site preparation methods, and development risks for the proposed development.
- Preparation of this report summarizing the findings and our recommendations.

2.0 GEOTECHNICAL FIELD INVESTIGATION

2.1 Geotechnical Drilling Investigation

Five geotechnical boreholes were drilled within the proposed development from May 1 to May 4, 2023. The Locations of the boreholes are shown in Figure 1. A summary of the borehole coordinates is provided in Table 1.

Table 1: Summary of Boreholes

BOREHOLE IDENTIFIER (ID)	DEPTH (FT)	LATITUDE[1]	LONGITUDE[1]	APPROXIMATE ELEVATION (FT)[2]
BH-1	85	39.557560	-107.353959	5809
BH-2	85	39.557700	-107.354609	5801
BH-3	5	39.557472	-107.354639	5802
BH-4	85	39.558321	-107.354278	5786
BH-5	5	39.557354	-107.354186	5810

Notes:
ID = identifier
Ft = feet
1 = locations not surveyed. Coordinates provided from a handheld global positioning system (GPS) device or estimated from mapping tools.
2 = Elevations estimated from contours.

The borehole logs (Logs of Boreholes), provided in Appendix A, list the borehole identifier and drilling date, and describe the earthen materials encountered and depths of soil samples that were collected. The boundaries between different soil types (if encountered) shown on the logs are approximate because the actual transition between soil layers may be gradual.

A Central Mine Equipment Company (CME) CME-75 truck-mounted drill rig owned and operated by Dakota Drilling, LLC of Denver, Colorado, was used to advance the geotechnical boreholes and to obtain soil samples for observation, description, classification, and testing. The boreholes were advanced using an eight (8) inch hollow-stem auger for both five-foot holes and down hole hammer drilling with air as the flushing medium (Overburden Drilling Eccentric, ODEX) for the three deep holes.

Standard Penetration Tests (SPTs) were conducted in general accordance with American Society for Testing and Materials (ASTM) Method D1586. Samples were collected for field classification using a Standard Penetration Test (SPT) split-spoon barrel sampler and a modified California split-spoon brass ring-lined barrel sampler for

collecting undisturbed samples at regular intervals, including depths of two and five feet, and then every five feet up to a depth of 85 feet below ground surface (ft-bgs) when possible. The samples were driven either 18 inches (standard split-spoon sampler) or 12 inches (modified California split-spoon sampler), or until refusal, into the soil at the bottom of the borehole. Soil is retained inside the split barrel shaft and is visually classified. The split-spoon sampler was driven with a 140-pound hammer freely falling from a height of 30 inches. The number of blows required for each six inches of penetration was recorded. The number of blows required to advance the sampler the last 12 inches is the penetration resistance N-value, or blow count, and provides a qualitative measure of the relative density of cohesionless soils or consistency of cohesive soils. The N-value recorded in the field for each SPT is shown on the borehole logs included in Appendix A. The SPTs were conducted using a rope and cathead with a safety hammer. The energy efficiency of this system is estimated to be approximately 60 percent of the theoretical free-fall energy. Therefore, for geotechnical correlations based on 60 percent efficiency, the SPT blow counts were used without correction.

Samples collected from the SPT split-spoon samplers were placed and sealed in plastic bags. Ring samples were placed in capped plastic tubes lined with plastic bags. WSP geotechnical personnel were present throughout the field investigation to observe the drilling and to record SPT blow counts. Soils were classified in general accordance with ASTM D 2488, “Standard Recommended Practice for Description of Soils (Visual-Manual Procedure)”. The boring logs present soil descriptions based on the field classifications that have been updated where necessary based on the results of the laboratory testing in accordance with ASTM D 2487, “Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)”.

2.2 Geotechnical Laboratory Testing

Geotechnical laboratory testing was performed on selected samples from the field investigation by WSP’s Phoenix laboratory to substantiate field classifications and to provide engineering properties necessary for developing preliminary geotechnical design recommendations.

The laboratory testing program included sieve (grain-size) analysis, Atterberg Limit tests (plasticity), and moisture determination. Tests are performed in accordance with the standard procedures listed in Table 2, below. The laboratory test results are presented in Appendix B. The soil samples were also checked against the field classifications, which were then updated as appropriate in accordance with ASTM Method D2487.

Table 2: Geotechnical Test Methods Applied to Representative Soil Samples

GEOTECHNICAL TEST	TEST METHOD	NUMBER OF TESTS
In-situ Moisture Content	ASTM D2216	18
Sieve (Grain-Size) Analysis	ASTM C136/C117	21
Atterberg Limits (Soil Plasticity)	ASTM D4318	21
Collapse Potential of Soils	ASTM D5333	3
R-Value	ASTM D2844	1
Modified Proctor	ASTM D1557	1
pH and Resistivity	ASTM D6276/D4972/G187	2
Soluble Sulfates and Chlorides	ASTM G516/D512	2

Notes:
ASTM=American Society for Testing and Materials

3.0 SITE CONDITIONS

The elevation of the site is approximately 5,800 feet above mean sea level (ft amsl). Much of the site is paved for parking or roadways as part of the existing RFTA facilities. The north portion of the site investigated for this project included an area that had recently been rough graded with approximately 10 to 15 feet of new fill, and portions of the area were being used for construction trailers for the current construction activity at the site. Evidence of recent debris flow events can be observed on the surface in the drainage to the west of the GMF and debris flows are known to occur in the channel that reports to a ditch just uphill of the GMF, and in channels that are mitigated by a larger berm to the southeast.

The RFTA GMF is a very active bus depot and bus maintenance facility that has on-going large-scale construction south of the geotechnical drilling locations. Four of the five boreholes are located within the overflow and employee parking lot. The last borehole is located just north of the public parking lot fill placed in the past several years. The parking lot and bare soil surfaces were relatively dry and accessible on the days of drilling.

3.1 Regional Geology

The site is on the south side of the Colorado River Valley at the west end of the wide area that is occupied by the City of Glenwood Springs. The valley is an erosional feature formed within the Maroon Formation by the Colorado River with the upper part of the Eagle Valley Evaporite Formation exposed sporadically near the valley floor. Quaternary deposition of alluvial river gravels has occurred over the bedrock then eroded to form the current channel of the river. The most recent deposition is the numerous debris fans upon which much of Glenwood Springs has been constructed, especially over the past 20 years. The site is located on the western edge of an active debris fan that likely overlies river gravels deposited on sandstone or evaporite bedrock.

The reddish colored Maroon Formation sandstone, arkosic sandstone, shale, and siltstone layers dip steeply to the south in this area as the Grand Hogback feature turns east then south along the boundaries of Glenwood Springs. The south dipping strata exposed by the north-facing slope results in steep cliffs over which surface water flows causing intense erosion and subsequent debris flows. The Maroon Formation is associated with frequent debris and mud flow events wherever it outcrops in Western Colorado. Debris flow mitigation has been installed previously to protect this and other sites on the fan.

3.2 Debris Fan Formation

The project site is located on an active debris fan, as noted above. The term active refers to the fact that debris flows generally occur every few years and deposit material behind existing mitigation berms or in ditches and must be regularly cleaned by the City of Glenwood springs. Understanding the nature of debris fans and their formation will help with the understanding of the unique geologic hazards and geotechnical conditions at the site.

Debris fans form when transported soil is deposited during intense precipitation or snowmelt event. Fans develop over hundreds to thousands of years as subsequent flows cause erosion and deposition of material, which changes the topography near the channel causing subsequent flows to deposit on other parts of the fan. This process is known as avulsion and channel relocation can be caused by surface elevation changes or by drainage channels being blocked by logs and boulders. Over time, a relatively uniform, fan shaped feature forms.

Overburden soils underlying the site near the planned improvements consists primarily of rocky, clayey, sandy, silty alluvial soils deposited by debris flow events originating from drainage basins to the south of the site. Rapid deposition of soil and rock comprising a flow occurs because the gradient of the fan is less than the gradient of the channel above the apex. Flow material consists of water with 25% to 45% entrained solids by volume. As the

flow slows on the fan, deposition occurs as the water content and fluid shear stresses decrease. Some flows are more viscous than others and some have higher percentages of gravel, cobble and boulder sized material. Flows also exhibit variable amounts of logs, organic material and charcoal which can be included in the soils that comprise the fan. The fan is essentially made up of lenticular deposits that are the width and height of the flow events that deposited them.

The depositional environment on the fan results in subsurface conditions that include low density soils with an unstable structure that are prone to collapse when wetted. Buried logs or other accumulations of organics can be problematic for foundations if they are near the surface. Variable amounts of rock clasts can cause differential permeability between layers resulting in seasonal perched water tables that can cause unexpected hydro collapse or can cause constructability issues.

3.3 Generalized Subsurface Conditions

Important points related to the subsurface conditions at the sites are summarized below:

- BH-1, BH-2, BH-3, and BH-5 were drilled through asphalt and approximately 6 inches of base course. BH-4 began in fill material which was very similar to the native soil described below.
- Silty Sand / Silty Gravel (SM/SG) soils with 25 to 45 percent non-plastic fines were observed in all boreholes. It was described as red to brownish red, with gravel percentages between 0 and 28 percent.
- SPT N60 values averaged approximately 20 to 30. No distinct layering was identified (see Figure 2), but blowcounts in excess of 40 occurred sporadically between elevation 5,780 and 5,755, and again below 5,735 in BH-2, likely indicative of cobbles or boulders.
- Boulders and cobbles up to 2 feet in diameter were noted by the driller.
- The dense alluvial gravels layer was not definitively encountered in any of the boreholes but could have potentially been encountered at the bottom of BH-2. This layer was encountered at a depth of approximately 100 feet in nearby boreholes for the GMF expansion project.
- No significant organic material was encountered in any of the boreholes.

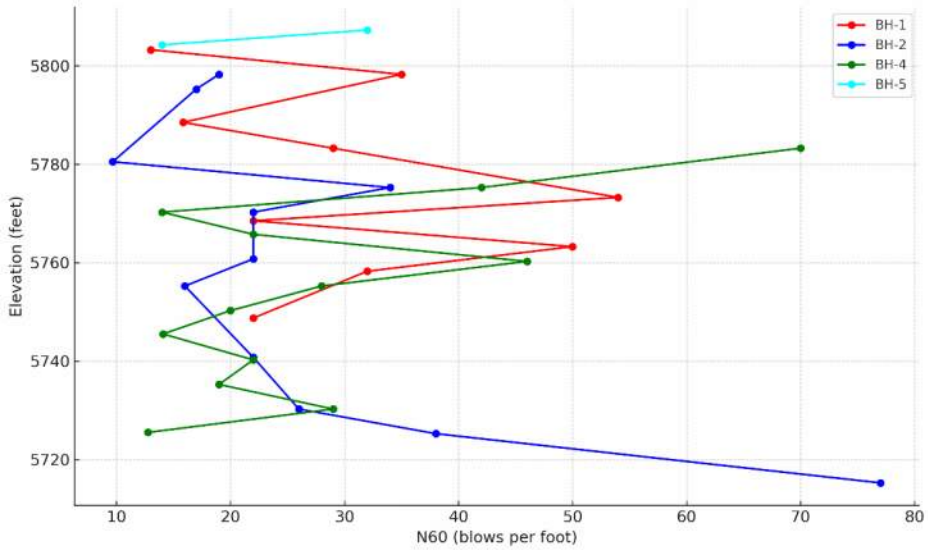

Figure 2: Plot of N60 Blowcounts versus Elevation

3.4 Groundwater

Groundwater was not encountered in any of the boreholes advanced at the site. The site is approximately 120 feet above the Colorado River, so the groundwater depth is estimated to be near that elevation. Borehole observations are representative of groundwater conditions at the time of WSP's field exploration and may not be indicative of other times. It should be noted that the presence of subsurface water can be influenced by changing factors including varying seasonal and weather conditions.

3.5 Geologic Hazards

Geologic hazards relevant to this site include potentially hydro-collapsible soil, and debris flows. No soils with high swell potential were encountered on this project site. Further discussion regarding identified geologic hazards is provided in the following paragraphs.

3.5.1 Collapsible Soil

Hydro-compactive or collapsible soils are subject to significant volume reduction when wetted while subject to foundation loading. This volume reduction occurs primarily because of the dissolution of cementitious materials, such as calcium carbonate, that bond soil particles or softening of desiccated clay colloids that support flocculated soil fabrics. The wetting and loading history of the soil influences the collapse potential, and a soil may collapse under even relatively low loads, when the soil moisture content exceeds past levels. Often, the placement of a new structure changes the drainage or evapotranspiration regime of the soil, increasing the likelihood of a collapse event (Houston et al. 2002).

Hydro compaction represents the largest risk for construction on debris fans. Other nearby investigations have identified collapse potentials greater than 10% at low normal pressures. There are several examples of structures in Glenwood Springs that experienced unacceptable deformations because of hydro-collapse, including facilities at the GMF.

On parts of the fan that have not been graded or altered, the upper depth of soil has been wetted many times and is therefore less susceptible to collapse unless a significant additional vertical load is applied. The depth of wetting from surface infiltration on the undisturbed parts of the fan is typically assumed to be less than 20 feet, however the site is on a highly disturbed part of the fan where grading cuts and fills may have exposed previously unwetted soils increasing the potential for future collapse with changing moisture content and loading.

Three hydro-collapse tests were performed for this project, and the measured hydro-collapse strain at a normal pressure of 4 ksf ranged from approximately 2 to 4 percent. This demonstrates that hydro-collapse potential exists at the site, even at depths of up to 40 feet below grade.

Ponding of water, shallow unpaved gradients, poorly designed or constructed foundation drainage systems, and other potential sources of wetting should be avoided or mitigated.

3.5.2 Debris Flows

There are several drainage basins up gradient of the RFTA facility that have the potential for generating debris flows. For the most part, these have been mitigated by berms or ditches. We understand that they have generally performed well and the COGS cleans them periodically after flow events.

One basin just east of the site produced a series of debris flows during the time the geotechnical investigation was being conducted. These flows were significant enough to cover the road and require substantial maintenance efforts to clear. But they do not threaten the proposed facilities for this project.

4.0 GEOTECHNICAL RECOMMENDATIONS

4.1 Geotechnical feasibility

The following recommendations are based on the field investigation, laboratory testing, and geotechnical analyses conducted for the project. WSP believes that it is feasible to construct the proposed facilities and associated improvements based on geotechnical considerations, provided the recommendations contained in this report are properly considered and implemented in the planning, design, and construction phases of the project.

4.2 Seismic Design of Structures

Application of the American Society of Civil Engineers 7 Standard 2022 (ASCE 7-22) to the project site yielded a design spectrum with peak ground acceleration (PGA) value, modified to the site, of 0.21g (21 percent of gravity). Seismic design parameters for the project site can be found in Table 3.

Table 3: Seismic Design Parameters (ASCE 7-22)

Parameter	Design Value
Site Classification	CD
Building Risk Category	III
PGA_M – Site modified PGA	0.21g
Spectral Response Acceleration	
S_S – MCE_R ground motion for 0.2 second period	0.32g
S_1 – MCE_R ground motion for 1.0 second period	0.057g
S_{MS} – Site modified S_S	0.36g
S_{M1} – Site modified S_1	0.1g
S_{DS} – Numeric seismic design value at 0.2s SA	0.24g
S_{D1} – Numeric seismic design value at 1.0s SA	0.069g
T_L – Long-period transition period	4 seconds
Seismic Design Category	B

The Vs_{100} shear wave velocity, or the average shear wave velocity in the top 100 feet, was taken as approximately 1,400 ft/sec based on seismic data collected by Collier Geophysics (2022) for the maintenance facility.

4.3 Hydro Collapse and Geotechnical Risk

There is real risk of post-construction settlement caused by hydro-collapse based on the history at the site and nearby and corroborated by the field and laboratory testing. The likelihood of this occurrence is difficult if not impossible to predict. The consequence or magnitude of the potential hydro-collapse settlement depends on the thickness of the potentially collapsible deposit that is partially to fully wetted. Assuming 20 to 60 feet of the deposit is wetted, and using the laboratory collapse data, we estimate that the potential hydro-collapse settlement under anticipated building loads could range from 2.5 inches to greater than 7 inches. Because the lab results for this project showed collapse of 4% or less, the actual hydro-collapse settlement could be significantly more given that laboratory collapse tests from other nearby boreholes have shown collapse potential up to 10%.

One approach to hydro-collapse mitigation is to try to prevent wetting of the subsurface. This approach is not recommended as it is difficult to implement with any degree of certainty in the results. However, incorporating means to prevent moisture infiltration should still be a component of the project, just not the sole means of mitigation. WSP believes that this risk warrants mitigation in the form of ground improvement and/or deep foundations. This recommendation is in line with the approach being taken on the current maintenance facility construction.

4.4 Ground Improvement Recommendations

There are two types of ground improvement that WSP believes are suitable for this project: drilled displacement grout columns and compaction grouting.

4.4.1 Compaction Grouting

Compaction grouting involves drilling a hole and using the hollow drill stem to inject a low-slump grout at high pressure from the bottom up to densify the soil around the hole and form a rigid column. This method of ground improvement has been used on RFTA GMF facilities both for remediation of hydro-collapse settlement, and during construction to proactively mitigate potential hydro-collapse.

4.4.2 Drilled Displacement Grout Columns

Drilled displacement grout columns use a foundation drill rig equipped with a drill bit with a counter-flighted auger tip. This drill tip uses the torque and crowd pressure of the drilling to force the soil laterally as it advances, so no soil spoils are generated at the surface. Once the target depth is reached, grout or concrete is pumped through the hollow drill stem as the drill stem is withdrawn. The typical column diameter is 24 inches.

4.4.3 Preliminary Column Layout

WSP recommends that a preliminary compaction grouting or displacement grout column spacing of 10 feet be used with a treatment depth of 100 feet below grade for column and wall locations, and 50 feet for the remainder of the building footprint. This configuration is consistent with what is being used for compaction grouting at the GMF expansion project.

4.5 Foundation Recommendations

The following sections contain recommendations for both shallow and deep foundations. Shallow foundations should be constructed in conjunction with ground improvement as recommended in Section 4.4. For the deep foundation option, interior portions of the building not supported by deep foundations should be treated with ground improvement as recommended in Section 4.4.

4.5.1 Shallow Spread Footings

Isolated column footings and wall footings can be designed based on the recommendations provided below provided that ground improvement columns are located within 3 feet of the bottom of the footing.

- WSP recommends shallow foundations be supported on at least 2 feet of engineered fill overlying the ground improvement columns.
- Loose or otherwise disturbed soil in between ground improvement columns, if encountered at the base of the engineered fill layer, should be over-excavated and re-compacted as engineered fill in accordance with Section 5.4.
- Isolated column footings and continuous wall footings should have minimum widths of 24 and 18 inches, respectively.
- Shallow foundation should be embedded a minimum of 36 inches below grade for frost considerations or constructed in accordance with appropriate City of Glenwood Springs (COGS) building code requirements.
- Shallow spread footing foundations supported on engineered fill material overlying ground improvement, as described above, may be dimensioned using an allowable bearing capacity of 4,000 psf, when the base of the foundation is located at least 2 feet below the lowest adjacent grade.
- Continuous wall footings supported on engineered fill overlying ground improvement, as described above, may be dimensioned for an allowable bearing capacity of 3,000 psf, when located at a depth of 1.5 feet below the lowest adjacent grade.
- Total and differential settlement of column and wall footings dimensioned using the values provided above are not anticipated to exceed 1.0 inch and 0.75 inch, respectively.
- Exterior grades around the proposed building should be covered with impervious or low permeability material or soil and should drain away from the structures to avoid an accumulation of water beneath the foundations and slabs.
- Wet utilities (water, sewer, drainage, etc.) should be located away from foundations so that the water will not readily access foundation soil should any leakage occur.
- Foundation perimeter drains should be designed and constructed to eliminate the potential for surface or subsurface water to wet the foundation soils.

4.5.2 Slab-on-Grade Floors

Any areas to receive new concrete slab-on-grade floors should be well drained and level. The top 10 inches of subgrade should be scarified, moisture conditioned, and compacted in accordance with Section 5.4. WSP recommends placing the floor slabs on 6 inches of base course. The base course provides for drainage beneath the floor slab; provides a suitable working platform and leveling course for the construction operation, especially during adverse weather; and provides additional support to the floor slab. Base course should meet the requirements for Colorado Department of Transportation (CDOT) Class 6 aggregate base course.

Structural design of the slab should be conservatively based on a modulus of subgrade reaction of 100 pounds per cubic inch (pci). The modulus of subgrade reaction may be increased to 125 pci for slabs bearing on 6 inches of base course, as described above.

In the areas where the applied contact pressure exceeds the typical floor load, as with heavy equipment or other concentrated loads, WSP recommends isolating the equipment slab from the adjacent floor slab and designing the equipment slab as a mat foundation using the modulus of subgrade reaction as specified above. Areas adjacent to foundations should be designed to drain away from the structures to avoid an accumulation of water beneath the slabs. The designer should refer to ACI Design Manual, Section 302.1R (2019) for additional floor slab design considerations.

4.5.3 Drilled Shaft Foundations

WSP recommends drilled shaft foundations as the deep foundation option for this project. Driven piles may be difficult to drive to the necessary depth with the presence of boulders. Drilled shafts have been successfully constructed on the GMF site and can be excavated to the depths necessary. Drilled shafts can be combined with an interior structural floor slab system supported on elevated grade beams if desired. Drilled shaft recommendations are provided in the following sections.

Drilled shaft design was performed in accordance with the following design standards and references:

- Federal Highway Administration (FHWA) Geotechnical Engineering Circular (GEC) No. 10 - Drilled Shafts: Construction Procedures and LRFD Design Methods (Brown, Turner, and Castelli 2010)
- IBC Chapter 18 (IBC 2021)
- Minnesota Department of Transportation Geotechnical Engineering Manual (MNDOT 2021)

4.5.3.1 Drilled Shaft Design Parameters

The following design parameters are recommended for drilled shaft foundation design:

- N60 (blows/ft) – 20
- Bulk Unit Weight, γ (pcf) – 115
- Elastic Modulus (ksf) – 600 (assumes ground improvement)
- Lateral Soil Modulus, k (pci) – 150 (assumes ground improvement)

4.5.3.2 Downdrag Due to Potential Hydro-Collapse

Even though WSP is recommending ground improvement within the building footprint, it is possible that if hydro-collapse occurs at some time in the future, down drag could be applied to the drilled shafts. We assumed a zone of wetting (and subsequent hydro collapse) 30 feet thick for this analysis and that below 30 feet, the soil becomes relatively stiff again resulting in the neutral axis being at the bottom of the wetting front. The drag force varies according to the diameter of the drilled shaft a shown in Table 4.

Table 4: Design Drag Force as a Function of Drilled Shaft Diameter

DRILLED SHAFT DIAMETER (FT)	DOWNWARD DRAG FORCE (KIPS)
1	150
1.5	225
2	300
2.5	370

DRILLED SHAFT DIAMETER (FT)	DOWNWARD DRAG FORCE (KIPS)
3	445
4	590
5	740
6	885

Notes:

Additional guidance on how to apply drag forces is provided in Section 4.5.3.3.

4.5.3.3 Axial Resistance Charts

WSP prepared a set of design charts to present the recommended drilled shaft allowable axial capacity as a function of depth for various diameter drilled shafts at both the geotechnical strength and service limit states. The resulting charts are presented in Appendix C. The parameters in Section 4.5.3.1 were used with the Beta Method for side resistance, and the O'Neill and Reese method for base resistance. Settlement calculations were performed using the O'Neill and Reese mobilized side and base resistance charts.

To size the drilled shaft foundations based on strength limit axial capacity, the following procedure should be used: draw a vertical line in Figure C-1 corresponding to the required allowable axial capacity per shaft. The intersection of the vertical line with the curve corresponding to the desired drilled shaft diameter will indicate the minimum drilled shaft length. Repeat the procedure for uplift loading using Figure C-2. The required drilled shaft length will be the greater of the depths determined using these two charts.

To estimate the settlement of the drilled shaft, you will utilize Figures C-3 to C-8. For each of these figures, draw a horizontal line at the computed drilled shaft length and determine the allowable service limit load corresponding to the selected drilled shaft diameter at a given settlement value. Plot the load determined using the figure against the settlement (indicated beneath the X-Axis on each chart). This load-displacement curve can be used with the required service limit load to calculate the estimated settlement. Note that these charts also include elastic compression of the shaft.

Drag forces should be applied to the structural strength limit state checks, but not to the geotechnical strength limit, in other words, do not add the drag force to the computed strength limit load prior to using Figure C-1 or C-2. Drag forces should be included when evaluating the geotechnical service limit state (load-displacement curve generated from C-3 to C-8).

4.5.3.4 Lateral Analysis

A lateral load analysis should be performed by the structural designer once a drilled shaft is sized based on axial capacity considerations. The required length of the drilled shaft will be the longer of the lengths computed in the axial and lateral load analyses. The lateral modulus for this analysis is provided in Section 4.5.3.1.

If hydro-collapse occurs, there could be a loss in lateral resistance. This scenario can be modeled by utilizing a Y-multiplier of 1.2 on the p-y curves in the top 30 feet.

4.5.3.5 Construction Considerations

Unstable excavation conditions should be expected during the drilled shaft excavation. The presence of silty sand and well-graded sand lenses are strong indicators that the sides of shaft excavations will not be stable if unsupported. **The drilled shaft contractor should anticipate the use of stabilizing techniques (e.g., temporary casing or polymer slurry) during drilling.**

The presence of cobbles and boulders is sometimes only indicated on the borehole logs by the numerous instances of sampler refusal (indicated on the logs where blow counts reached or exceeded 50 before a penetration of 6 inches was achieved), low sample recovery percentage, and by description of drilling action (e.g., auger chattering or grinding). The samplers used to perform SPTs during the field program are limited in diameter so that the largest particle that can be retrieved is less than 2.5 inches. This introduces a bias toward smaller particles in the soil samples that were collected so that the subsequent sieve analysis indicates material that is finer than the actual condition of the soil in the ground. WSP recommends that the drilled shaft contractor be prepared to retrieve rounded cobbles and boulders approximately 12 to 24 inches in diameter from the drilled shaft excavations.

All drilled shaft foundations should be constructed in accordance with Section 503 of the CDOT Standard Specifications.

The majority of the drilled shaft loads are expected to be carried in side friction resistance. However, over the long term some load will be transferred to the base of shafts. Accordingly, WSP recommends that the bottom of the drilled shafts be cleaned by at least two passes of a flat-bottom auger or cleanout bucket immediately (no more than two hours) prior to placement of the reinforcement cage and concrete.

A qualified inspector should complete a drilled shaft construction observation report for each drilled shaft constructed. The report should detail the nature of the materials encountered during shaft excavation and verify proper shaft depth and diameter, cleaning of the shaft base, reinforcement cage materials and installation, and concrete placement.

A temporary surface casing is recommended to prevent surface sloughing or ravelling and to ensure personnel safety. The casing diameter should not be more than 12 inches larger than the drilled shaft diameter. Common practice is to use a corrugated steel casing for this purpose.

Fall protection should be provided for workers at the open shaft as required by OSHA.

4.6 Foundation Walls and Lateral Loads

Foundations located below grade and shear keys may derive lateral load resistance from passive resistance along the vertical sides of the foundations, friction acting on the bases of the foundations, or a combination of the two.

Active lateral earth pressures from horizontal backfills behind structures that are free to rotate at least 0.1 percent of the structure height can be designed for the active earth pressure conditions. Structures that are restrained against movement or rotation at the top should be designed for at-rest earth pressure conditions. Earth pressure coefficients and equivalent fluid pressures for these conditions are provide in Table 5 according to the material type being retained.

The recommended values do not include induced wall pressures from compaction, or construction. Care must be taken during the compaction operation not to overstress retaining walls. Heavy construction equipment should be

kept at least 3 feet away from the walls while the backfill soil is being placed. Hand-operated compaction equipment should be used to compact the backfill soils within the 3-foot wide zone adjacent to the walls. Soil/pavements at the toe of retaining walls should be in place and cured prior to backfilling. WSP should be contacted when development plans are finalized for review of wall and backfill conditions on a case-by-case basis. Sloping backfills will result in lateral earth pressures greater than those provided above.

The recommended lateral earth pressures provided above assume that adequate drainage is provided behind the walls to prevent the buildup of hydrostatic pressures. Walls should be provided with back drains and weep holes to reduce the potential for the buildup of hydrostatic pressure.

Live load surcharge pressure equivalent to a vertical height of 2-ft of earth should be applied to walls where the vehicle traffic can come within a horizontal distance from the top of the wall equal to one-half its height. Additional loads on retaining walls will be imposed by surcharge, which can be evaluated on a case-by-case basis.

Base friction coefficients to be applied to the total vertical force on the structure are provided in Table 6. Passive resistance should only be included where material provided the resistance will be available over the life of the structure (for example, passive resistance should be neglected where scour is anticipated to occur, or a subsequent excavation might be made). Ultimate passive earth pressure coefficients and equivalent fluid pressures for various site materials are provided in Table 6.

A factor of safety (FoS) of 1.5 is recommended for calculations involving base friction, and a FoS of 2.0 is recommended for passive earth pressure calculations. Passive resistance may require lateral movement equal to three percent of the embedded depth of the structure to fully mobilize. If less displacement is desired, the structural designer can prorate the passive resistance for the tolerable displacement. The maximum passive pressure should be capped at the value obtained at a depth of 10 feet.

Table 5: Earth Pressure Coefficients and Equivalent Fluid Pressures Behind Retaining Structures

Retained Material Description	Earth Pressure Coefficients		Equivalent Fluid Pressure (psf/ft)	
	Active	At-Rest	Active	At-Rest
Native Silty / Gravely Sand, In-Situ	0.36	0.56	30	52
Engineered Fill	0.26	0.44	33	55
Structural Fill	0.24	0.41	30	52

Table 6: Equivalent Passive Fluid Pressure and Base Friction Coefficients

Resisting Material Description	Earth Pressure Coefficient	Equivalent Fluid Pressure (psf/ft)	Ultimate Base Friction Coefficient
	Passive	Passive (No FoS)	
Native Silty / Gravely Sand, In-Situ	2.56	281	0.62
Engineered Fill	3.54	442	0.67
Structural Fill	3.85	481	0.73

5.0 SITE GRADING AND EARTHWORK

All site preparation and earthwork operations should be performed in accordance with applicable codes. All references to maximum-dry density and optimum-moisture content are established in accordance with ASTM standard test method D1557 (Modified Proctor). General recommendations for site preparation after rough grading and engineered-fill placement are provided below.

5.1 Drainage

Infiltration of water into utility trenches or foundation excavations should be prevented during construction. Surface features which could retain water in the areas adjacent to the proposed building should be sealed or eliminated. In areas where sidewalks or paving do not immediately adjoin the structure, WSP recommends that protective slopes be provided with a minimum grade of approximately 5 percent for at least 10 feet from the perimeter walls. Backfill against footings, exterior walls, and utility line trenches should be well compacted and free of all construction debris to reduce possibility of moisture infiltration.

5.2 Temporary Excavations

It is anticipated that shallow excavation within the study area can be accomplished with conventional earthmoving equipment. Instability in the form of caving, sloughing, and raveling should be expected in excavations which extend into granular deposits.

Safe, stable construction slopes are the responsibility of the contractor and depend on the ground and site conditions encountered at the time of construction. Excavations should be sloped or shored in the interest of safety following local regulations including current OSHA excavation and trenching safety standards.

5.3 Site Preparation Prior to Filling

Any obvious obstructions (e.g., boulders, existing pavements or debris from previous development) or exposed deleterious organic or inert materials should be removed from the base of the cuts that will receive new engineered fill.

Prior to placement of any engineered fill, the upper 8 inches of the exposed subgrade will be scarified, moisture conditioned and compacted to a minimum of 90 percent of the maximum density, as determined by the Modified Proctor (ASTM D1557) test, to provide a uniform bearing surface for construction of subsequent lifts of fill. This procedure will also serve to identify pockets of loose subgrade that could affect compaction of the initial lifts of engineered fill. Any loose pockets of subgrade that are detected should be removed to a depth until the base can sustain compaction of the upper 8 inches to 90 percent of the maximum density.

WSP should be notified immediately if the subsurface conditions exposed during grading operations vary from those described in this report, because revision of the recommendations contained herein may be necessary.

5.4 Engineered Fill

Based on our geotechnical investigation, the soils encountered on this site are likely to meet the requirements of engineered fill. All earthwork shall be in accordance with Sections 203 and 206 of the CDOT standard specifications. Structure backfill shall meet the requirements of Structure Backfill (Class 1) from the CDOT standard specifications. Engineered fill should be placed such that compacted lift thickness is equal to or less than 8 inches for rubber-tired or smooth drum roller type equipment and not exceeding 6 inches for sheep’s foot rollers. The fill placed at foundation locations should be compacted to 92 percent of the maximum dry density as

determined by ASTM D1557 (Modified Proctor) at an as-compacted moisture content of within 2 percent of the optimum moisture content. Fill compaction placed at locations not supporting foundations may be compacted to 87 percent of maximum dry density as determined by ASTM D1557.

6.0 PAVEMENT RECOMMENDATIONS

We understand that as part of this project there will be paved roads and turn-arounds for buses. WSP has provided both flexible and rigid pavement sections, however, no traffic loading has been provided for the site. So we have back-calculated the ESAL values for several different pavement sections. Shrewsberry and RFTA will need to determine if these values are sufficient. We assume that all pavement mixes and placement procedures will follow relevant CDOT standards.

6.1 Design Parameters

WSP performed one R-Value test on material obtained from borehole BH3. The tested R-Value was 46. Published correlations with percent passing the #200 sieve and the plasticity index were evaluated against the index testing performed for the project. Nearly all of the correlated R-Values were higher than the tested value, so 46 was used for design. This resulted in a resilient modulus of approximately 15,000 psi.

We assume that the RFTA busses have an approximate gross (loaded) weight of 40,000 pounds, or about 2.22 18-kip single axle loadings.

6.2 Flexible Pavement Design

WSP selected several flexible pavement sections and reported the allowable 18-kip single axle loadings and the approximate equivalent number of bus loadings. The results are summarized below.

Table 7: Flexible Pavement Options

Section Number	Thickness of AC (in)	Thickness of AB (in)	Allowable 18-kip Single Axle (ESAL) Loadings	Approximate Number of RFTA Bus Loadings
1	6	8	4,000,000	1,800,000
2	7	10	10,000,000	4,500,000
3	7	12	15,000,000	6,750,000

6.3 Rigid Pavement Design

Rigid pavement sections are recommended for most areas for this project. This type of pavement is better suited for bus turning movements. Plain jointed Portland Cement Concrete Pavement (PCCP) does not have any load transfer devices. Given the heavy bus volume and the potential for hydro-collapse settlement, WSP recommends that Jointed Reinforced (Doweled) PCCP be used to improve performance and reduce maintenance issues.

Table 8: Rigid Pavement Options

Section Number	PCCP Type	Thickness (in)	Allowable 18-kip Single Axle (ESAL) Loadings	Approximate Number of RFTA Bus Loadings
1	Plain Jointed (No Dowels)	10	3,000,000	1,351,000
2	Jointed Reinforced (Dowels)	10	8,000,000	3,603,000
3	Jointed Reinforced (Dowels)	11	15,000,000	6,750,000
4	Jointed Reinforced (Dowels)	12	27,000,000	12,160,000

6.4 Subgrade Preparation for Hydro-Compaction Mitigation

The pavement subgrade should be over-excavated to a depth of 3 feet below the top of subgrade wherever possible. The same material may be recompacted back into the excavation, but this will increase the density of the material and reduce the permeability which will help reduce the risk of hydro-collapse. The subgrade should be compacted to 92 percent of maximum density according to Modified Proctor (ASTM D1577), and within 2 percent wet of optimum moisture content.

7.0 SOIL CORROSIVITY

Laboratory tests for soil corrosion potential were performed on selected soil samples. A pH value of 8.3 was obtained from the laboratory testing. Generally, a pH between 6.5 and 7.5 is considered neutral with respect to corrosion, and the tested site soils fall just outside the neutral range on the basic side and should be considered mildly corrosive by this measure. Electrical resistivity values from 1,141 to 1,476 ohm-centimeters were obtained from laboratory testing.

On-site soils were also evaluated for soluble sulfate and chloride content to assess their corrosive potential with respect to sulfate attack. The average soluble sulfates and chloride contents measure in the lab were 9 parts per million (ppm) and 213 ppm, respectively. By this measure, the onsite soils are not corrosive, so no cement type restrictions are required.

8.0 LIMITATIONS

This report has been prepared exclusively for the use of Shrewsberry and Associates, LLC and RFTA. No other parties shall be entitled to rely on any of the information, conclusions, or opinions contained in this report without the prior written approval from Shrewsberry and WSP USA Inc.

This geotechnical report provides a compilation of the data collected during the geotechnical investigation that was completed for the project and provides recommendations to a level suitable to support the detailed design phase of the proposed project. Although no contaminated soils were observed and collected during the field investigation (based on field observations), this report does not take the place of a proper environmental

investigation that would be implemented to identify contaminants (should they exist) that may be encountered throughout the project site.

The conclusions and recommendations in this report have been prepared in a manner consistent with the level of care and skill ordinarily exercised by engineering professionals currently practicing under similar conditions, subject to the time limits and financial and physical constraints imposed on, or otherwise applicable, to WSP's analyses. The client has the responsibility to see that all parties to the project, including the designer, contractor, subcontractors, etc., are made aware of this report in its entirety. This report contains information that may be useful in the preparation of contract specifications and contractor cost estimates. However, this report is not written as a specification document and may not contain sufficient information for this use without proper modification.

9.0 REFERENCES

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APPENDIX A

Borehole Logs

METHOD OF SOIL CLASSIFICATION

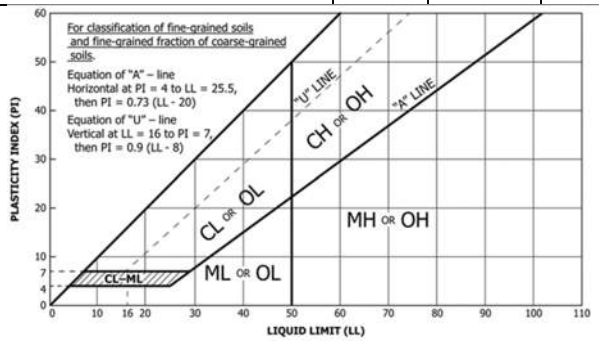
The WSP Canada Soil Classification[1] System is based on the Unified Soil Classification System (USCS) (after ASTM D2487)

Organic or Inorganic	Soil Group	Type of Soil		Gradation or Plasticity	$Cu = \frac{D_{60}}{D_{10}}$		$Cc = \frac{(D_{30})^2}{D_{10} x D_{60}}$	Organic Content [6,9]	USCS Group Symbol [3,5,7]	Primary Group Name [2]
INORGANIC (Organic Content <30% by mass)	**COARSE-GRAINED SOILS** (>50% by mass is larger than 0.075 mm)	GRAVELS (>50% by mass of coarse fraction is larger than 4.75 mm)	Clean Gravels with <5% fines [3] (by mass)	Well Graded	≥4	(and)	≥1 to ≤3	≤30%	GW	Well-graded GRAVEL [4,6]
				Poorly Graded	<4	(and/or)	<1 or >3		GP	Poorly graded GRAVEL [4,6]
			Gravels with >12% fines [3] (by mass)	Below A Line	n/a				GM	SILTY GRAVEL [4,6]
				Above A Line	n/a				GC	CLAYEY GRAVEL [4,5,6]
		SANDS (≥50% by mass of coarse fraction is smaller than 4.75 mm)	Clean Sands with <5% fines [7] (by mass)	Well Graded	≥6	(and)	≥1 to ≤3		SW	Well-graded SAND [6,8]
				Poorly Graded	<6	(and/or)	<1 or >3		SP	Poorly graded SAND [6,8]
			Sands with >12% fines [7] (by mass)	Below A Line	n/a				SM	SILTY SAND [6,8]
				Above A Line	n/a				SC	CLAYEY SAND [5,6,8]

Organic or Inorganic	Soil Group	Type of Soil	Laboratory Tests	Field Indicators					Organic Content [B,H]	USCS Group Symbol [A]	Primary Group Name [A]
				Dilatancy	Dry Strength	Shine Test	Thread Diameter (mm)	Toughness (of 3 mm thread)			
INORGANIC (Organic Content <30% by mass)	**FINE-GRAINED SOILS** (≥50% by mass is smaller than 0.075 mm)	SILTS (Nonplastic or PI and LL plot **below A-Line** on Plasticity Chart below) [C]	Liquid Limit <50 [D]	Rapid	None to Low	Dull to None	3 to >6	Low/can't roll 3 mm	<15%	ML	SILT [H]
				None to Slow	Low to Medium	Dull to Slight	3 to 6	Low	15% to 30%	OL	ORGANIC SILT
			Liquid Limit ≥50 [D]	None to V.Slow	Low to Medium	Slight	3 to 6	Low to Medium	<15%	MH	ELASTIC SILT [H]
				None	Medium to High	Dull to Slight	1 to 3	Low to Medium	15% to <30%	OH	ORGANIC SILT
		CLAYS (PI and LL plot **above A-Line** on Plasticity Chart below) [A]	Liquid Limit <50 [D]	None to Medium Slow	Medium to High	Slight to Shiny	1 to 3	Medium	<15%	CL	LEAN CLAY [A,E,F,G,H]
				None to V.Slow	Medium to High	Slight to Shiny	1 to 3	Medium	15% to <30%	OL	ORGANIC CLAY [E,F,G]
			Liquid Limit ≥50 [D]	None	High to V.High	Shiny	<1	High	<15%	CH	FAT CLAY [E,F,G,H]
				None	High	Shiny	<1 to 1	High	15% to <30%	OH	ORGANIC CLAY [E,F,G]
HIGHLY ORGANIC SOILS (Organic Content >30% by mass)		Peat and mineral soil mixtures	Relatively lightweight, possibly spongy. Some water may squeeze from sample. Some shrinkage may occur on air drying. Sand fraction may be visible. Low to high dilatancy. Thread weak near plastic limit. Low to medium dry strength.						30% to <75%	PT	SILTY PEAT, SANDY PEAT
		Predominantly peat, may contain some mineral soil, fibrous or amorphous peat	Lightweight, spongy. Much water squeezes from sample. Shrinks considerably on air drying (i.e., very high water content). Plant structure identiable to altered.						75% to 100%		PEAT

Coarse-Grained Soil Note(s):

1. Based on the material passing the 75 mm sieve.
2. If field sample contains or drilling observations indicate cobbles or boulders or both, add, "with cobbles" or "with cobbles and boulders". Include notes on the depth(s) encountered, and sizes if possible.
3. Gravels with 5% to 12% fines require dual symbols:
   (GW-GM) Well-graded GRAVEL with silt,
   (GW-GC) Well-graded GRAVEL with clay,
   (GP-GM) Poorly graded GRAVEL with silt,
   (GP-GC) Poorly graded GRAVEL with clay.
4. If soil contains ≥15% sand, add "with sand" to Group Name.
5. If fines classify as CL-ML, use dual symbol (GC-GM) or (SC-SM) for Group Symbol.
6. If the soil has an organic content (OC) 15%≤OC<30% the prefix "Organic" should be added before the Group Name. If the soil has an organic content 3%≤OC<15% add "with organic fines" to Group Name. If the soil contains >0% to ≤3% organics, the descriptor "trace organics" may be added.
7. Sands with 5% to 12% fines require dual symbols:
   (SW-SM) Well-graded SAND with silt,
   (SW-SC) Well-graded SAND with clay,
   (SP-SM) Poorly graded SAND with silt,
   (SP-SC) Poorly graded SAND with clay.
8. If soil contains ≥15% gravel, add "with gravel" to Group Name.



Fine-Grained Soil Note(s):

- **A.** If Atterberg limits plot above the A-line but in the 'hatched' area on the plasticity chart, soil is a (CL-ML) SILTY CLAY.
- **B.** If the soil contains >0% to ≤3% organics, the descriptor "trace organics" may be added.
- **C.** If fine-grained materials are nonplastic (i.e., a plastic limit (PL) cannot be measured), soil is a (ML) SILT.
- **D.** If soil has a liquid limit (LL) >30% to <50%, the term 'medium plasticity' may be included in the description, but the Group Name/Symbol is not changed.
- **E.** If soil contains 15% to <30% +No.200, add "with sand" or "with gravel".
- **F.** If soil contains ≥30% +No.200 mainly sand, add "Sandy" to Group Name.
- **G.** If soil contains ≥30% +No.200 mainly gravel, add "Gravelly" to Group Name.
- **H.** If the soil has an organic content (OC) 3%≤OC<15% add "with organic fines" to Group Name.

ABBREVIATIONS AND TERMS USED ON RECORDS OF BOREHOLES AND TEST PITS

PARTICLE SIZES OF CONSTITUENTS

Soil Constituent	Particle Size Description	Millimetres	Inches (US Std. Sieve Size)
BOULDERS	Not Applicable	>300	>12
COBBLES	Not Applicable	75 to 300	3 to 12
GRAVEL	Coarse Fine	19 to 75 4.75 to 19	0.75 to 3 (4) to 0.75
SAND	Coarse Medium Fine	2.00 to 4.75 0.425 to 2.00 0.075 to 0.425	(10) to (4) (40) to (10) (200) to (40)
SILT/CLAY	Classified by plasticity	<0.075	< (200)

GRADATIONAL COMPONENT TERMS

% (by mass)	Term
≤ 5	Use “trace”
> 5 to ≤ 12	Use “few”
> 12 to <30	Use “little”
≥ 30 to <50	Use “some”
≥ 50	Use “mostly”

PENETRATION RESISTANCE

Standard Penetration Resistance (SPT), N:

The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in.) required to drive a 50 mm (2 in.) split-spoon sampler for a distance of 300 mm (12 in.). Values reported are as recorded in the field and are uncorrected.

Cone Penetration Test (CPT)

An electronic cone penetrometer with a 60° conical tip and a project end area of 10 cm^2 pushed through ground at a penetration rate of 2 cm/s. Measurements of tip resistance (q_t), porewater pressure (u) and sleeve frictions are recorded electronically at 25 mm penetration intervals.

Dynamic Cone Penetration Resistance (DCPT); Nd:

The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in.) to drive uncased a 50 mm (2 in.) diameter, 60° cone attached to "A" size drill rods for a distance of 300 mm (12 in.).

PH: Sampler advanced by hydraulic pressure
PM: Sampler advanced by manual pressure
WH: Sampler advanced by static weight of hammer
WR: Sampler advanced by weight of sampler and rod

SAMPLES

AS	Auger sample
BS	Block sample
CS	Chunk sample
DD	Diamond Drilling
DO or DP	Seamless open ended, driven, pushed tube sampler, or geoprobe macro-core – note size
DS	Denison type sample
FS	Foil Sample
GS	Grab Sample
MC	Modified California Samples – note sample diameter and hammer weight
MS	Modified Shelby (for frozen soil)
RC	Rock core
SC	Soil core
SS	Split-spoon sampler (50 mm OD); larger sizes use MC
ST	Slotted tube
TO	Thin-walled, open – note size (Shelby tube)
TP	Thin-walled, piston – note size (Shelby tube)
WS	Wash sample

SOIL TESTS

w	water content
PL , w_p	plastic limit
LL , w_L	liquid limit
C	consolidation (oedometer) test
CHEM	chemical analysis (refer to text)
CID	consolidated isotropically drained triaxial test[1]
CIU	consolidated isotropically undrained triaxial test with porewater pressure measurement[1]
D_R	relative density (specific gravity, Gs)
DS	direct shear test
GS	specific gravity
M	sieve analysis for particle size
MH	combined sieve and hydrometer (H) analysis
MPC	Modified Proctor compaction test
SPC	Standard Proctor compaction test
OC	organic content test
SO_4	concentration of water-soluble sulphates
UC	unconfined compression test
UU	unconsolidated undrained triaxial test
V (FV)	field vane (LV-laboratory vane test)
γ	unit weight

1. Tests anisotropically consolidated prior to shear are shown as CAD, CAU.

NON-COHESIVE (COHESIONLESS) SOILS

Compactness[2]

Term	SPT ‘N’ (blows/0.3m)[1]
Very Loose	0 to 4
Loose	4 to 10
Compact	10 to 30
Dense	30 to 50
Very Dense	>50

1. SPT ‘N’ in general accordance with ASTM D1586, uncorrected for the effects of overburden pressure.
2. Definition of compactness terms are based on SPT ‘N’ ranges as provided in Terzaghi, Peck and Mesri (1996). Many factors affect the recorded SPT ‘N’ value, including hammer efficiency (which may be greater than 60% in automatic trip hammers), overburden pressure, groundwater conditions, and grainsize. As such, the recorded SPT ‘N’ value(s) should be considered only an approximate guide to the soil compactness. These factors need to be considered when evaluating the results, and the stated compactness terms should not be relied upon for design or construction.

Field Moisture Condition

Term	Description
Dry	Soil flows freely through fingers.
Moist	Soils are darker than in the dry condition and may feel cool.
Wet	As moist, but with free water forming on hands when handled.

COHESIVE SOILS

Consistency

Term	Undrained Shear Strength (kPa)	SPT ‘N’[1,2] (blows/0.3m)
Very Soft	<12	0 to 2
Soft	12 to 25	2 to 4
Firm	25 to 50	4 to 8
Stiff	50 to 100	8 to 15
Very Stiff	100 to 200	15 to 30
Hard	>200	>30

1. SPT ‘N’ in general accordance with ASTM D1586, uncorrected for overburden pressure effects; approximate only.
2. SPT ‘N’ values should be considered ONLY an approximate guide to consistency; for sensitive clays (e.g., Champlain Sea clays), the N-value approximation for consistency terms does NOT apply. Rely on direct measurement of undrained shear strength or other manual observations.

Water Content

Term	Description
w < PL	Material is estimated to be drier than the Plastic Limit.
w ~ PL	Material is estimated to be close to the Plastic Limit.
w > PL	Material is estimated to be wetter than the Plastic Limit.

LIST OF SYMBOLS

Unless otherwise stated, the symbols employed in the report are as follows:

I. GENERAL

π	3.1416
ln x	natural logarithm of x
$\log_{10}$	x or log x, logarithm of x to base 10
g	acceleration due to gravity
t	time

II. STRESS AND STRAIN

γ	shear strain
Δ	change in, e.g. in stress: $\Delta\sigma$
ε	linear strain
ε_v	volumetric strain
η	coefficient of viscosity
υ	Poisson's ratio
σ	total stress
σ'	effective stress ($\sigma' = \sigma - u$)
σ'_{vo}	initial effective overburden stress
$\sigma_1, \sigma_2, \sigma_3$	principal stress (major, intermediate, minor)
σ_{oct}	mean stress or octahedral stress $= (\sigma_1 + \sigma_2 + \sigma_3)/3$
τ	shear stress
u	porewater pressure
E	modulus of deformation
G	shear modulus of deformation
K	bulk modulus of compressibility

III. SOIL PROPERTIES

(a) Index Properties

$\rho(\gamma)$	bulk density (bulk unit weight)*
$\rho_d(\gamma_d)$	dry density (dry unit weight)
$\rho_w(\gamma_w)$	density (unit weight) of water
$\rho_s(\gamma_s)$	density (unit weight) of solid particles
γ'	unit weight of submerged soil ($\gamma' = \gamma - \gamma_w$)
D_R	relative density (specific gravity) of solid particles ($D_R = \rho_s / \rho_w$) (formerly G_s)
e	void ratio
n	porosity
S	degree of saturation

* Density symbol is ρ. Unit weight symbol is γ where $\gamma = \rho g$ (i.e. mass density multiplied by acceleration due to gravity)

(a) Index Properties (continued)

w	water content
w_l or LL	liquid limit
w_p or PL	plastic limit
I_p or PI	plasticity index = $(w_l - w_p)$
NP	nonplastic
w_s	shrinkage limit
I_L	liquidity index = $(w - w_p) / I_p$
I_C	consistency index = $(w_l - w) / I_p$
e_{max}	void ratio in loosest state
e_{min}	void ratio in densest state
I_D	density index = $(e_{max} - e) / (e_{max} - e_{min})$ (formerly relative density)

(b) Hydraulic Properties

h	hydraulic head or potential
q	rate of flow
v	velocity of flow
i	hydraulic gradient
k	hydraulic conductivity (coefficient of permeability)
j	seepage force per unit volume

(c) Consolidation (one-dimensional)

C_c	compression index (normally consolidated range)
C_r	recompression index (over-consolidated range)
C_s	swelling index
C_α	secondary compression index
m_v	coefficient of volume change
c_v	coefficient of consolidation (vertical direction)
c_h	coefficient of consolidation (horizontal direction)
T_v	time factor (vertical direction)
U	degree of consolidation
σ'_p	pre-consolidation stress
OCR	over-consolidation ratio = σ'_p / σ'_{vo}

(d) Shear Strength

τ_p, τ_r	peak and residual shear strength
ϕ'	effective angle of internal friction
δ	angle of interface friction
μ	coefficient of friction = tan δ
c′	effective cohesion
c_u, s_u	undrained shear strength ($\phi = 0$ analysis)
p	mean total stress $(\sigma_1 + \sigma_3)/2$
p′	mean effective stress $(\sigma'_1 + \sigma'_3)/2$
q	$(\sigma_1 - \sigma_3)/2$ or $(\sigma'_1 - \sigma'_3)/2$
q_u	compressive strength $(\sigma_1 - \sigma_3)$
S_t	sensitivity

Notes: 1 $\tau = c' + \sigma' \tan \phi'$

2 shear strength = (compressive strength)/2

RECORD OF BOREHOLE: BH-1

CLIENT: Shrewsberry & Associates
PROJECT: RFTA Geotechnical Investigation
PROJECT NO: 20365011
LOCATION: Glenwood Springs, CO, USA

DATE: May 02, 2023
INCLINATION: 90.0°
CONTRACTOR: Dakota Drilling

ELEVATION: 5809.0 ft (Ground)
COORDINATES: Lat: 39.557560° Long: -107.353959°
COORD SYS: Geographical Coordinates
HORZ DATUM: NAD83 VERT DATUM: NAVD88

DEPTH (ft)	DESCRIPTION	USCS	ELEV. DEPTH (ft)	NUMBER	TYPE	REC %	BLOWS	N-VALUE	ADDITIONAL OBSERVATIONS
0	ASPHALT.		0.0						
0	FILL.		5808.6						
0	(SM) Silty sand, some SAND, few gravel; brownish red.		0.4						
1			5808.1	SS1	SS	42	14-50/4"		
1			0.9						
2	(SM) Silty sand, some SAND, few gravel; brownish red; dry to moist.		5805.5						
2			3.5						
3				SS2	SS	67	8-6-7	13	
4			5801.5						
4	(SM) Silty sand, some SAND, some non plastic FINES, few gravel; brownish red; dry to moist.	SM	7.5						
5				SS3	SS	90	14-15-20	35	
6			5796.5						
6	(SM) Silty sand with gravel, some SAND, little gravel; red; dry to moist.		12.5						
7				SS4	SS	76	15-20-50/3"		
8			5791.5						
8	(GM) Silty gravel with sand, some gravel, some sand; brownish red; dry to moist.	GM	17.5						
9				MC1	MC2		17-19	36	
10			5786.5						
10	(SM) Silty sand with gravel, some SAND, some gravel, some non plastic fines; brownish red; moist.		22.5						
11				SS6	SS	57	12-11-18	29	
12			5779.0						
12	(SM) Silty sand with gravel, some SAND, little gravel, little non plastic fines; brownish red; dry to moist.		30.0	SS7	SS	20	50/6"		30.00 ft: Rough drilling. Driller notes 1-2 ft boulder.
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36				SS8	SS	67	24-19-35	54	
37			5771.5						
38	(SM) Silty sand with gravel, some SAND, little gravel; brownish red; dry to moist.	SM	37.5						
39									
40				MC2	MC2		82-18	50	40.00 ft: Loose, gravelly, unconsolidated sample.
41									
42			5766.5						
43	(SM) Silty sand, mostly SAND, few gravel; red; moist.		42.5						
44									
45									
46				SS9	SS	73	7-18-32	50	
47			5761.5						
48	(SM) Silty sand, some SAND, some non plastic FINES, few gravel; red; moist.		47.5						
49									
50									

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HAMMER TYPE: Manual-Safety

REV: Rev 0

LOGGED: Cody Stopka DATE: May 02, 2023
CHECKED: Randy Post DATE: Jul 13, 2023

Golder Log Imperial / Soil-General 6 / Golder - 3 Imperial US / ASTM D2487 Auto (most common ASTM) / 2023-08-25

RECORD OF BOREHOLE: BH-1

CLIENT: Shrewsberry & Associates
PROJECT: RFTA Geotechnical Investigation
PROJECT NO: 20365011
LOCATION: Glenwood Springs, CO, USA

DATE: May 02, 2023
INCLINATION: 90.0°
CONTRACTOR: Dakota Drilling

ELEVATION: 5809.0 ft (Ground)
COORDINATES: Lat: 39.557560° Long: -107.353959°
COORD SYS: Geographical Coordinates
HORZ DATUM: NAD83 VERT DATUM: NAVD88

DEPTH (ft)	DRILL RIG	DRILL METHOD	MATERIAL PROFILE: DESCRIPTION	USCS	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	REC %	BLOWS	N-VALUE	ADDITIONAL LAB TESTING	GROUNDWATER OBSERVATIONS	ADDITIONAL OBSERVATIONS
51			(SM) Silty sand, some SAND, some non plastic FINES, few gravel; red; moist.	SM			SS10	SS	100	9-9-23	32			
52														
53														
54														
55														55.00 ft: Rough drilling. Driller notes 1-2 ft boulder.
56														
57														
58														
59														
60						5749.0	MC3	MC2		50				60.00 ft: Rough drilling. Driller notes 1-2 ft boulder.
61			(GM) Silty gravel with sand, some GRAVEL, some SAND, little non plastic fines; red.	GM		60.0								
62														
63														
64														
65														65.00 ft: Rough drilling. Driller notes 1-2 ft boulder.
66														
67														
68														
69														
70							SS11	SS	72	3320-50/3"				
71														
72														
73														
74														
75														75.00 ft: Rough drilling. Driller notes 1-2 ft boulder.
76														
77						5731.5								
78			(GM) Silty gravel with sand, some GRAVEL, some SAND; red; dry to moist.			77.5								
79														
80														80.00 ft: Rough drilling. Driller notes 1-2 ft boulder.
81														
82														
83														
84														
85						5723.6	SS12	SS	36	5/5"				
86			End of hole at 85.42 ft.											
87														
88														
89														
90														
91														
92														
93														
94														
95														
96														
97														
98														
99														
100														

HAMMER TYPE: Manual-Safety

REV: Rev 0

LOGGED: Cody Stopka DATE: May 02, 2023
CHECKED: Randy Post DATE: Jul 13, 2023

Golder Log Imperial / Soil-General 6 / Golder - 3 Imperial US / ASTM D2487 Auto (most common ASTM) / 2023-08-25

RECORD OF BOREHOLE: BH-2

CLIENT: Shrewsberry & Associates
PROJECT: RFTA Geotechnical Investigation
PROJECT NO: 20365011
LOCATION: Glenwood Springs, CO, USA

DATE: May 04, 2023
INCLINATION: 90.0°
CONTRACTOR: Dakota Drilling

ELEVATION: 5801.0 ft (Ground)
COORDINATES: Lat: 39.557700° Long: -107.354609°
COORD SYS: Geographical Coordinates
HORZ DATUM: NAD83 VERT DATUM: NAVD88

DEPTH (ft)	DESCRIPTION	USCS	ELEV. / DEPTH (ft)	SAMPLE NUMBER	SAMPLE TYPE	REC %	BLOWS	N-VALUE	ADDITIONAL OBSERVATIONS
0	ASPHALT.		0.0						
0	FILL.		5800.6						
0	(SM) Silty sand with gravel, mostly SAND, little gravel; brownish red; moist.		0.4						
2			5800.1	SS1	SS	63	8-12-7	19	
3			0.9						
4	(SM) Silty sand with gravel, some SAND, little gravel; red; moist.		5797.5						
4			3.5						
6				SS2	SS	63	5-6-11	17	
7			5793.5						
8	(SM) Silty sand with gravel, some sand, some gravel; brownish red; moist.		7.5						
10				SS3	SS	67	21-50/2"		
15			5786.0						15.00 ft: Driller notes sampler bouncing off rocks. No sample collected.
15	(SM) Silty sand with gravel, some SAND, some non plastic fines, some gravel; red; moist.		15.0						
20				MC1	MC2		11-11	22	
22			5778.5						
22	(SM) Silty sand with gravel, some SAND, some gravel, little non plastic fines; red.	SM	22.5						
25				SS4	SS	67	25-20-14	34	
27			5773.5						
27	(SM) Silty sand with gravel, some SAND, some non plastic FINES, little gravel; red.		27.5						
30				SS5	SS	87	10-8-14	22	
34			5766.0						
35	(SM) Silty sand with gravel, some SAND, little gravel; brownish red; moist.		35.0						35.00 ft: Rough drilling. Driller notes 1-2 ft boulder.
40				MC2	MC2		50		40.00 ft: Failed MC sample, unconsolidated.
42			5758.5						
42	(SM) Silty sand with gravel, some SAND, little gravel; red; dry.		42.5						
45				SS6	SS	17	7-10-6	16	
50									

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HAMMER TYPE: Manual-Safety

REV: Rev 0

LOGGED: Cody Stopka DATE: May 04, 2023
CHECKED: Randy Post DATE: Jul 13, 2023

Golder Log Imperial / Soil-General 6 / Golder - 3 Imperial US / ASTM D2487 Auto (most common ASTM) / 2023-08-25

RECORD OF BOREHOLE: BH-2

CLIENT: Shrewsberry & Associates
PROJECT: RFTA Geotechnical Investigation
PROJECT NO: 20365011
LOCATION: Glenwood Springs, CO, USA

DATE: May 04, 2023
INCLINATION: 90.0°
CONTRACTOR: Dakota Drilling

ELEVATION: 5801.0 ft (Ground)
COORDINATES: Lat: 39.557700° Long: -107.354609°
COORD SYS: Geographical Coordinates
HORZ DATUM: NAD83 VERT DATUM: NAVD88

DEPTH (ft)	DRILL RIG	DRILL METHOD	MATERIAL PROFILE: DESCRIPTION	USCS	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	REC %	BLOWS	N-VALUE	ADDITIONAL LAB TESTING	GROUNDWATER OBSERVATIONS	ADDITIONAL OBSERVATIONS
51			(SM) Silty sand with gravel, some SAND, little gravel; red; dry.	SM										50.00 ft: Driller notes sampler bouncing off rocks. No sample collected.
52														
53														
54														
55						5746.0								55.00 ft: Driller notes sampler bouncing off rocks. No sample collected.
56			(SM) Silty sand with gravel, some SAND, little gravel; brownish red; dry.			55.0								
57														
58														
59														
60							MC3	MC2		50				60.00 ft: Failed MC sample, unconsolidated.
61														
62														
63														
64														
65							SS7	SS	60	28-50/4"				
66														
67						5733.5								
68			(SM) Silty sand with gravel, some SAND, some gravel, some non plastic fines; red; moist.			67.5								
69														
70														
71							SS8	SS	60	28-14-12	26			
72						5728.5								
73			(SM) Silty sand with gravel, some SAND, some gravel; red; moist.			72.5								
74														
75														
76							SS9	SS	67	17-24-14	38			
77														
78														
79														
80						5721.0								80.00 ft: Driller notes sampler bouncing off rocks. No sample collected.
81			(SM) Silty sand with gravel, some sand, some gravel, some non plastic fines; red; moist.			80.0								
82														
83														
84														
85														
86						5714.5	SS10	SS	80	5-32-45	77			
87			End of hole at 86.50 ft.											
88														
89														
90														
91														
92														
93														
94														
95														
96														
97														
98														
99														
100														

HAMMER TYPE: Manual-Safety

REV: Rev 0

LOGGED: Cody Stopka DATE: May 04, 2023
CHECKED: Randy Post DATE: Jul 13, 2023

Golder Log Imperial / Soil-General 6 / Golder - 3 Imperial US / ASTM D2487 Auto (most common ASTM) / 2023-08-25

RECORD OF BOREHOLE: BH-3

CLIENT: Shrewsberry & Associates
PROJECT: RFTA Geotechnical Investigation
PROJECT NO: 20365011
LOCATION: Glenwood Springs, CO, USA

DATE: May 01, 2023
INCLINATION: 90.0°
CONTRACTOR: Dakota Drilling

ELEVATION: 5802.0 ft (Ground)
COORDINATES: Lat: 39.557472° Long: -107.354639°
COORD SYS: Geographical Coordinates
HORZ DATUM: NAD83 VERT DATUM: NAVD88

DEPTH (ft)	DRILL RIG	DRILL METHOD	MATERIAL PROFILE: DESCRIPTION	USCS	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	REC %	BLOWS	N-VALUE	ADDITIONAL LAB TESTING	GROUNDWATER OBSERVATIONS	ADDITIONAL OBSERVATIONS
0		Hollow Stem Auger	ASPHALT.			0.0								
1			FILL.			5801.6								
2			(GM) Silty gravel with sand, some GRAVEL, some sand; brownish red; dry to moist.	GM		0.4	Bulk	AS						
3						5801.1	SH	SS	99	50/5"				
4			(GM) Silty gravel with sand, some GRAVEL, some sand, little non plastic fines; brownish red; dry to moist.			0.9 5798.5								
5						3.5	SS2	SS	100	12-50/4"				
6			End of hole at 5.83 ft.			5796.2								

HAMMER TYPE: Manual-Safety

REV: Rev 0

LOGGED:
CHECKED: Randy Post

DATE: May 01, 2023
DATE: Jul 13, 2023

Golder Log Imperial / Soil-General 6 / Golder - 3 Imperial US / ASTM D2487 Auto (most common ASTM) / 2023-08-25

RECORD OF BOREHOLE: BH-4

CLIENT: Shrewsberry & Associates
PROJECT: RFTA Geotechnical Investigation
PROJECT NO: 20365011
LOCATION: Glenwood Springs, CO, USA
DATE: May 03, 2023
INCLINATION: 90.0°
CONTRACTOR: Dakota Drilling
ELEVATION: 5786.0 ft (Ground)
COORDINATES: Lat: 39.558321° Long: -107.354278°
COORD SYS: Geographical Coordinates
HORZ DATUM: NAD83 VERT DATUM: NAVD88

DEPTH (ft)	DESCRIPTION	USCS	ELEV. DEPTH (ft)	SAMPLE NUMBER	SAMPLE TYPE	REC %	BLOWS	N-VALUE	ADDITIONAL OBSERVATIONS
0	MIXTURE of SOIL and ROCK.		0.0						
1	(SM) Silty sand with gravel, some SAND, little gravel; brownish red; moist.		5785.0 1.0						
2				SS1	SS	80	20-30-40	70	
3			5782.5						
4	(SM) Silty sand with gravel, some sand, some gravel; brownish red; moist.		3.5						
5				SS2	SS	60	23-50/3"		
6		SM							
7			5778.5						
8	(SM) Silty sand with gravel, some SAND, little gravel; brownish red; moist.		7.5						
9									
10									
11				SS3	SS	100	16-16-26	42	
12			5773.5						
13	(SC-SM) Silty, clayey sand with gravel, some SAND, some non plastic FINES, little gravel; brownish red; moist.		12.5						
14									
15									15.00 ft: Strong organic smell.
16				SS4	SS	73	14-7-7	14	
17		SC-SM	5768.5						
18	(SC-SM) Silty, clayey sand with gravel, some SAND, little gravel; brownish red; moist.		17.5						
19									
20				MC1	MC2		50		
21									
22			5763.5						
23	(SM) Silty sand with gravel, some SAND, some non plastic fines, little gravel; red; moist.		22.5						
24									
25				SS5	SS	73	10-25-21	46	
26									
27			5758.5						
28	(SM) Silty sand with gravel, some SAND, little gravel; brownish red; moist.		27.5						
29									
30									30.00 ft: Rough drilling. Driller notes 1-2 ft boulder.
31				SS6	SS	23	27-16-12	28	
32			5753.5						
33	(SM) Silty sand with gravel, some SAND, some non plastic fines, little gravel; brownish red; moist.		32.5						
34									
35									
36				SS7	SS	67	9-9-11	20	
37		SM	5748.5						
38	(SM) Silty sand with gravel, some SAND, some non plastic FINES, little gravel; red; moist.		37.5						
39									
40				MC2	MC2		12-20	32	
41									
42			5743.5						
43	(SM) Silty sand with gravel, some SAND, little gravel; brownish red; dry to moist.		42.5						
44									
45									
46				SS8	SS	67	17-11-11	22	
47			5738.5						
48	(SM) Silty sand, mostly SAND, some non plastic FINES, few gravel; brownish red; moist.		47.5						
49									
50									

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HAMMER TYPE: Manual-Safety

REV: Rev 0

LOGGED: Cody Stopka DATE: May 03, 2023
CHECKED: Randy Post DATE: Jul 13, 2023

Golder Log Imperial / Soil-General 6 / Golder - 3 Imperial US / ASTM D2487 Auto (most common ASTM) / 2023-08-25

RECORD OF BOREHOLE: BH-4

CLIENT: Shrewsberry & Associates
PROJECT: RFTA Geotechnical Investigation
PROJECT NO: 20365011
LOCATION: Glenwood Springs, CO, USA

DATE: May 03, 2023
INCLINATION: 90.0°
CONTRACTOR: Dakota Drilling

ELEVATION: 5786.0 ft (Ground)
COORDINATES: Lat: 39.558321° Long: -107.354278°
COORD SYS: Geographical Coordinates
HORZ DATUM: NAD83 VERT DATUM: NAVD88

DEPTH (ft)	DRILL RIG	DRILL METHOD	MATERIAL PROFILE: DESCRIPTION	USCS	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	REC %	BLOWS	N-VALUE	ADDITIONAL LAB TESTING	GROUNDWATER OBSERVATIONS	ADDITIONAL OBSERVATIONS
51			(SM) Silty sand, mostly SAND, some non plastic FINES, few gravel; brownish red; moist.	SM			SS9	SS	73	12-10-9	19			
52						5733.5								
53			(SM) Silty sand, some SAND, few gravel; red; dry to moist.			52.5								
54														
55														
56							SS10	SS	43	12-15-14	29			
57						5728.5								
58			(SM) Silty sand, some SAND, some non plastic FINES, few gravel; red; dry to moist.			57.5								
59														
60														
61							MC3	MC2		12-17	29			
62														
63														
64														
65						5721.0								65.00 ft: Rough drilling. Driller notes 1-2 ft boulder.
66			(SM) Silty sand with gravel, some SAND, some non plastic FINES, little gravel; brownish red; dry to moist.			65.0								
67														
68														
69														
70														
71							SS11	SS	43	8-50/5"				
72														
73														
74														
75														75.00 ft: Rough drilling. Driller notes 1-2 ft boulder.
76														
77														
78														
79														
80														80.00 ft: Rough drilling. Driller notes 1-2 ft boulder.
81														
82														
83														
84														
85						5701.0								~~85.00 ft: Failed MC sample, no sample return.~~
85			End of hole at 85.00 ft.											
86														
87														
88														
89														
90														
91														
92														
93														
94														
95														
96														
97														
98														
99														
100														

HAMMER TYPE: Manual-Safety

REV: Rev 0

LOGGED: Cody Stopka DATE: May 03, 2023
CHECKED: Randy Post DATE: Jul 13, 2023

Golder Log Imperial / Soil-General 6 / Golder - 3 Imperial US / ASTM D2487 Auto (most common ASTM) / 2023-08-25

RECORD OF BOREHOLE: BH-5

CLIENT:	Shrewsberry & Associates	DATE:	May 01, 2023	ELEVATION:	5810.0 ft (Ground)
PROJECT:	RFTA Geotechnical Investigation			COORDINATES:	Lat: 39.557354° Long: -107.354186°
PROJECT NO:	20365011	INCLINATION:	90.0°	COORD SYS:	Geographical Coordinates
LOCATION:	Glenwood Springs, CO, USA	CONTRACTOR:	Dakota Drilling	HORZ DATUM:	NAD83 VERT DATUM: NAVD88

DEPTH (ft)	DRILL RIG	DRILL METHOD	MATERIAL PROFILE: DESCRIPTION	USCS	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	TYPE	REC %	BLOWS	N-VALUE	SHEAR STRENGTH (Nat Vane, Rem Vane, Pocket Pen, Q, U, Torvane)	ADDITIONAL LAB TESTING	GROUNDWATER OBSERVATIONS	ADDITIONAL OBSERVATIONS
0			ASPHALT.			0.0									
0			FILL.			5809.6									
1		Hollow Stem Auger	(SM) Silty sand with gravel, some SAND, little gravel; red.	SM		0.4									
2						5809.1	SS1	SS	67	12-17-15	32				
3						0.9									
4			(SM) Silty sand with gravel, some SAND, some non plastic FINES, little gravel; red.			5806.5									
5						3.5									
6						5803.5	SS2	SS	93	5-5-9	14				
7			End of hole at 6.50 ft.												
8															
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HAMMER TYPE:

REV: Rev 0

LOGGED: Cody Stopka DATE: May 01, 2023

CHECKED: Randy Post DATE: Jul 13, 2023

Golder Log Imperial / Soil-General 6 / Golder - 3 Imperial US / ASTM D2487 Auto (most common ASTM) / 2023-08-25

APPENDIX B

Laboratory Testing

PROJECT: RFTA - Glenwood Maintenance Facility
LOCATION: Lakewood, CO
MATERIAL: Soil

JOB NO: 17-2023-4233
WORK ORDER NO: 1
DATE ASSIGNED: 5/22/23

MOISTURE CONTENT OF SOIL (ASTM D2216)

LAB #	BORING & DEPTH	WET WT. (gram)	DRY WT. (gram)	MOISTURE CONTENT
23-1393-03	BH1-SS3 (10-11.5')	591.0	542.2	9.0%
23-1393-06	BH1-SS6 (25-26.5')	429.8	400.0	7.5%
23-1393-08	BH1-SS8 (35-36.5')	542.5	513.4	5.7%
23-1393-11	BH1-SS10 (50-51.5')	510.3	486.0	5.0%
23-1393-13	BH1-SS11 (70-71.25')	430.8	418.2	3.0%
23-1393-19	BH2-SS4 (25-26.5')	532.6	506.9	5.1%
23-1393-20	BH2-SS5 (30-31.5')	524.7	494.1	6.2%
23-1393-25	BH2-SS8 (70-71.5')	492.1	472.0	4.3%
23-1393-27	BH2-SS10 (85-86.5')	465.8	443.2	5.1%
23-1393-28	BH3-Bulk (1-5')	857.6	802.9	6.8%
23-1393-30	BH3-SS2 (5-5.83')	401.8	387.2	3.8%
23-1393-34	BH4-SS4 (15-16.5')	458.8	426.7	7.5%
23-1393-36	BH4-SS5 (25-26.5')	428.0	406.6	5.3%
23-1393-38	BH4-SS7 (35-36.5')	474.5	450.6	5.3%
23-1393-41	BH4-SS9 (50-51.5')	434.5	403.6	7.7%
23-1393-44	BH4-SS11 (70-70.92')	275.6	255.4	7.9%
23-1393-46	BH5-Bulk (1-5')	927.8	879.1	5.5%
23-1393-48	BH5-SS2 (5-6.5')	494.6	454.2	8.9%

WSP USA
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Phoenix, AZ 85040

REVIEWED BY Hiram Franco

PROJECT: RFTA - Glenwood Maintenance Facility
LOCATION: Lakewood, CO
MATERIAL: Soil

JOB NO: 17-2023-4233
WORK ORDER NO: 1
DATE ASSIGNED: 5/22/23

MECHANICAL SIEVE ANALYSIS (ASTM C136/C117) PLASTICITY INDEX (ASTM D4318)
GROUP SYMBOL, USCS (ASTM D2487)

PERCENT PASSING BY WEIGHT

				Silt or	SAND								GRAVEL									COBBLES	
				Clay	Fine			Medium			Coarse		Fine				Coarse						
Location & Depth	USCS	LL	PI	#200	#100	#50	#40	#30	#16	#10	#8	#4	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	3"	6"	Lab #
BH1-SS3 (10-11.5')	SM	NV	NP	45	58	68	73	76	81	83	84	88	90	94	95	100	100	100	100	100	100	100	23-1393-03
BH1-SS6 (25-26.5')	SM	NV	NP	31	40	49	52	55	60	62	63	68	71	78	82	94	100	100	100	100	100	100	23-1393-06
BH1-SS8 (35-36.5')	SM	NV	NP	27	35	44	48	52	59	62	64	70	73	80	87	96	100	100	100	100	100	100	23-1393-08
BH1-SS10 (50-51.5')	SM	NV	NP	43	57	70	76	81	86	88	89	92	93	95	95	96	100	100	100	100	100	100	23-1393-11
BH1-SS11 (70-71.25')	GM	NV	NP	25	32	39	43	46	50	53	55	62	64	72	79	95	100	100	100	100	100	100	23-1393-13
BH2-MC1 (20-21')	SM	NV	NP	33	42	51	54	57	61	64	65	69	72	76	79	90	90	100	100	100	100	100	23-1393-18
BH2-SS4 (25-26.5')	SM	NV	NP	28	36	45	49	53	57	60	61	65	67	71	73	81	87	87	100	100	100	100	23-1393-19

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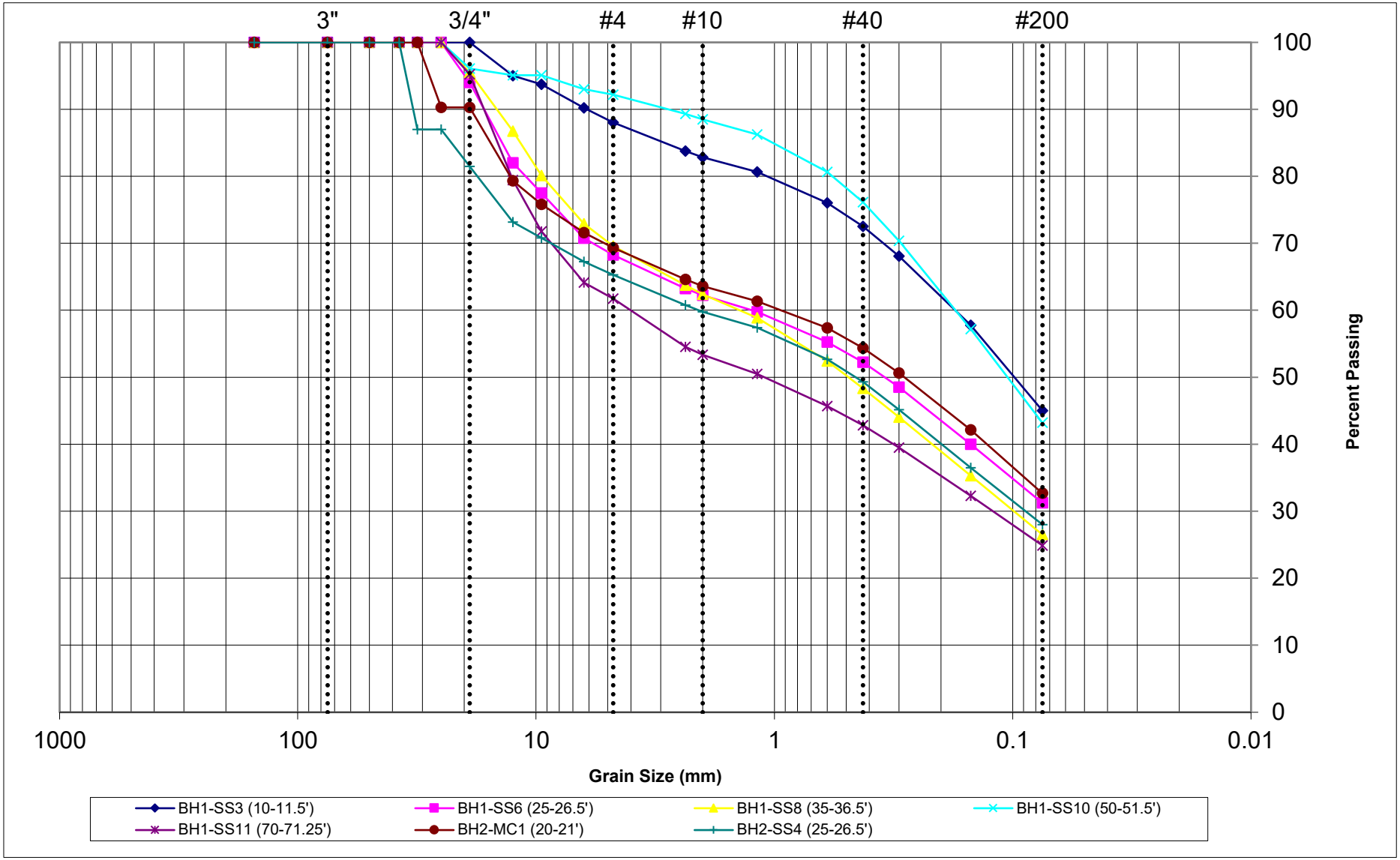
PROJECT: RFTA - Glenwood Maintenance Facility
LOCATION: Lakewood, CO
MATERIAL: Soil

JOB NO: 17-2023-4233
WORK ORDER NO: 1
DATE ASSIGNED: 5/22/23

MECHANICAL SIEVE ANALYSIS GRAPHS



PROJECT: RFTA - Glenwood Maintenance Facility
LOCATION: Lakewood, CO
MATERIAL: Soil

JOB NO: 17-2023-4233
WORK ORDER NO: 1
DATE ASSIGNED: 5/22/23

MECHANICAL SIEVE ANALYSIS (ASTM C136/C117) PLASTICITY INDEX (ASTM D4318)
GROUP SYMBOL, USCS (ASTM D2487)

PERCENT PASSING BY WEIGHT

				Silt or	SAND								GRAVEL									COBBLES	
				Clay	Fine			Medium			Coarse		Fine				Coarse						
Location & Depth	USCS	LL	PI	#200	#100	#50	#40	#30	#16	#10	#8	#4	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	3"	6"	Lab #
BH2-SS5 (30-31.5')	SM	NV	NP	36	47	57	62	65	70	73	74	79	82	88	92	100	100	100	100	100	100	100	23-1393-20
BH2-SS8 (70-71.5')	SM	NV	NP	31	39	47	50	53	57	60	61	68	70	75	77	85	93	100	100	100	100	100	23-1393-25
BH2-SS10 (85-86.5')	SM	NV	NP	32	41	48	51	54	58	60	62	67	69	73	79	91	100	100	100	100	100	100	23-1393-27
BH3-Bulk (1-5')	SM	NV	NP	32	39	47	51	54	60	65	67	75	79	86	91	97	98	100	100	100	100	100	23-1393-28
BH3-SS2 (5-5.83')	GM	NV	NP	24	31	37	41	43	47	49	50	55	57	60	63	72	78	86	100	100	100	100	23-1393-30
BH4-SS4 (15-16.5')	SM	NV	NP	42	55	67	71	75	79	81	82	85	87	89	92	95	95	100	100	100	100	100	23-1393-34
BH4-SS5 (25-26.5')	SM	NV	NP	33	42	51	55	58	63	65	67	73	75	82	87	90	100	100	100	100	100	100	23-1393-36

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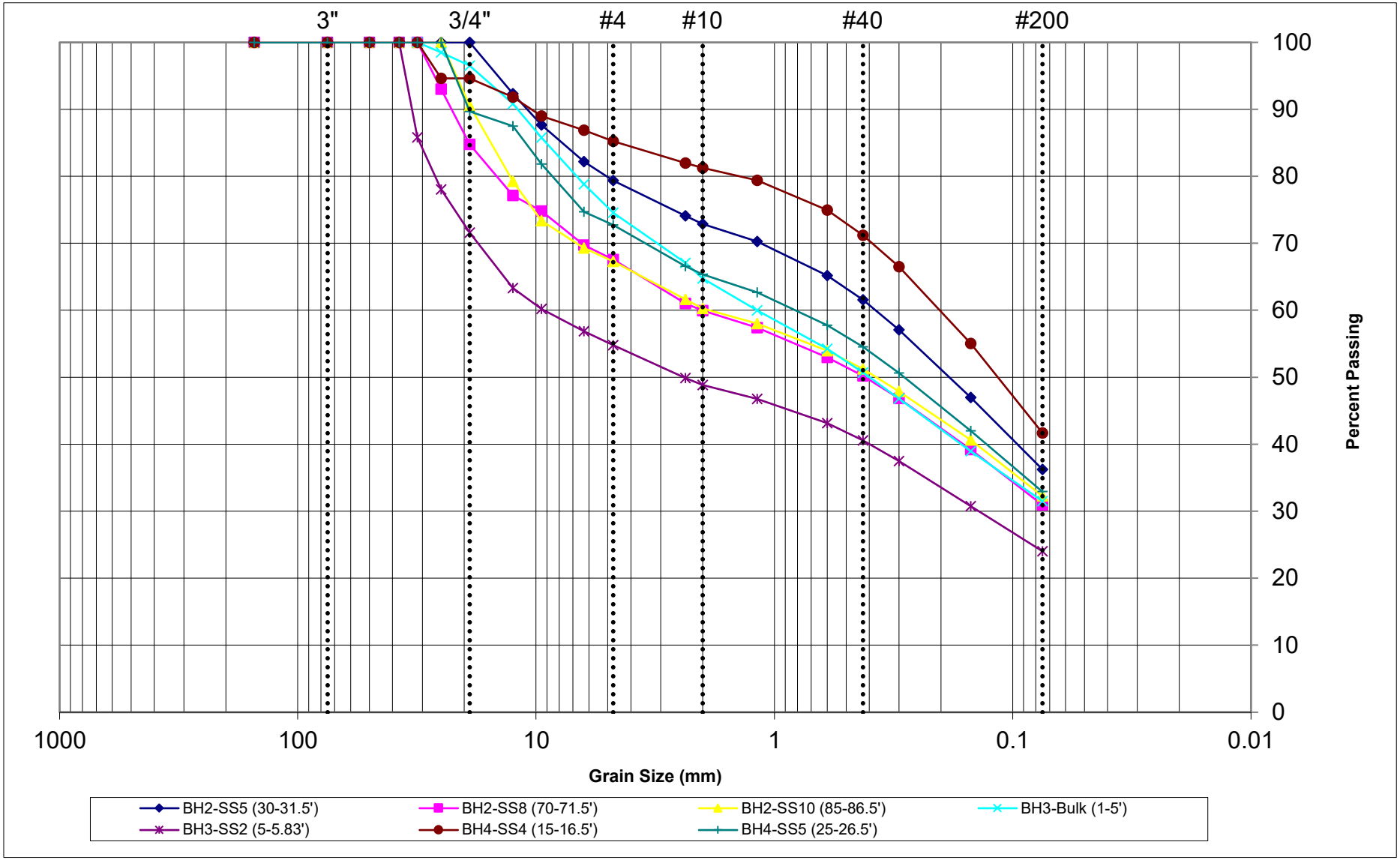
REVIEWED BY Hiram Franco

PROJECT: RFTA - Glenwood Maintenance Facility
LOCATION: Lakewood, CO
MATERIAL: Soil

JOB NO: 17-2023-4233
WORK ORDER NO: 1
DATE ASSIGNED: 5/22/23

MECHANICAL SIEVE ANALYSIS GRAPHS



PROJECT: RFTA - Glenwood Maintenance Facility
LOCATION: Lakewood, CO
MATERIAL: Soil

JOB NO: 17-2023-4233
WORK ORDER NO: 1
DATE ASSIGNED: 5/22/23

MECHANICAL SIEVE ANALYSIS (ASTM C136/C117) PLASTICITY INDEX (ASTM D4318)
GROUP SYMBOL, USCS (ASTM D2487)

PERCENT PASSING BY WEIGHT

				Silt or	SAND								GRAVEL									COBBLES	
				Clay	Fine			Medium			Coarse		Fine				Coarse						
Location & Depth	USCS	LL	PI	#200	#100	#50	#40	#30	#16	#10	#8	#4	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	3"	6"	Lab #
BH4-SS7 (35-36.5')	SM	NV	NP	31	41	53	59	63	65	68	69	74	76	81	85	92	100	100	100	100	100	100	23-1393-38
BH4-MC2 (40-41')	SM	NV	NP	37	48	57	61	65	69	72	73	78	80	82	84	87	90	100	100	100	100	100	23-1393-39
BH4-SS9 (50-51.5')	SM	NV	NP	38	50	64	70	75	83	86	87	91	93	97	98	100	100	100	100	100	100	100	23-1393-41
BH4-MC3 (60-61')	SM	NV	NP	42	54	66	71	76	81	84	85	88	91	95	99	100	100	100	100	100	100	100	23-1393-43
BH4-SS11 (70-70.92')	SM	NV	NP	39	53	65	71	75	79	80	81	83	85	86	88	92	100	100	100	100	100	100	23-1393-44
BH5-Bulk (1-5')	SM	NV	NP	26	32	39	42	45	52	57	60	68	74	84	91	97	99	100	100	100	100	100	23-1393-46
BH5-SS2 (5-6.5')	SM	NV	NP	37	48	59	64	68	74	77	78	83	85	89	92	97	100	100	100	100	100	100	23-1393-48

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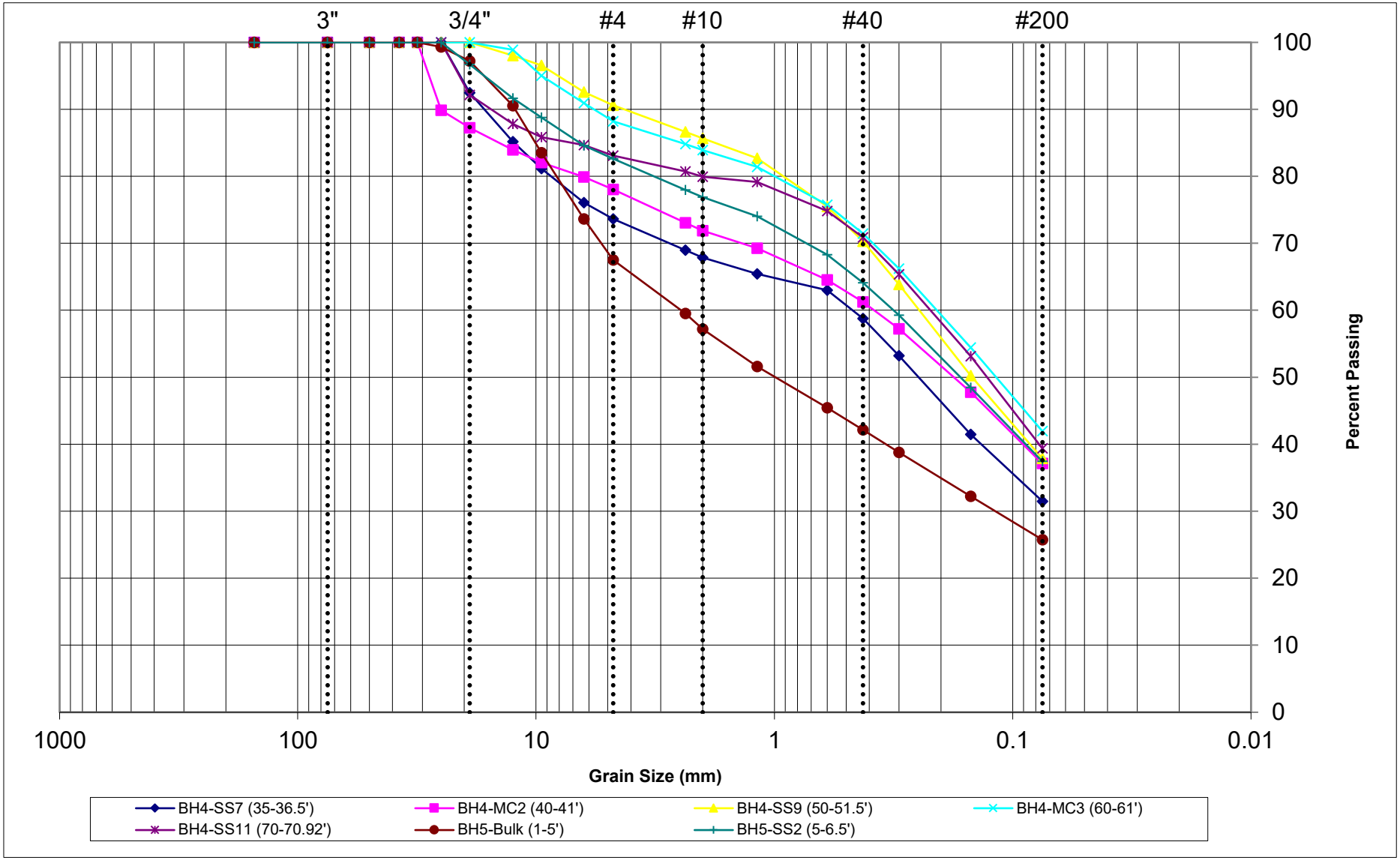
REVIEWED BY Hiram Franco

PROJECT: RFTA - Glenwood Maintenance Facility
LOCATION: Lakewood, CO
MATERIAL: Soil

JOB NO: 17-2023-4233
WORK ORDER NO: 1
DATE ASSIGNED: 5/22/23

MECHANICAL SIEVE ANALYSIS GRAPHS



PROJECT: RFTA - Glenwood Maintenance Facility
LOCATION: Lakewood, CO
MATERIAL: Soil
SAMPLE SOURCE: BH5-Bulk (1-5')

JOB NO: 17-2023-4233
WORK ORDER NO: 1
LAB NO: 23-1393-46
DATE SAMPLED: 5/23/23

LABORATORY COMPACTION CHARACTERISTICS OF SOILS USING MODIFIED EFFORTS (56,000ft-lb-ft/cu.ft) (ASTMD1557A)

MAXIMUM DRY DENSITY (pcf):	126.3
OPTIMUM MOISTURE (%):	8.9

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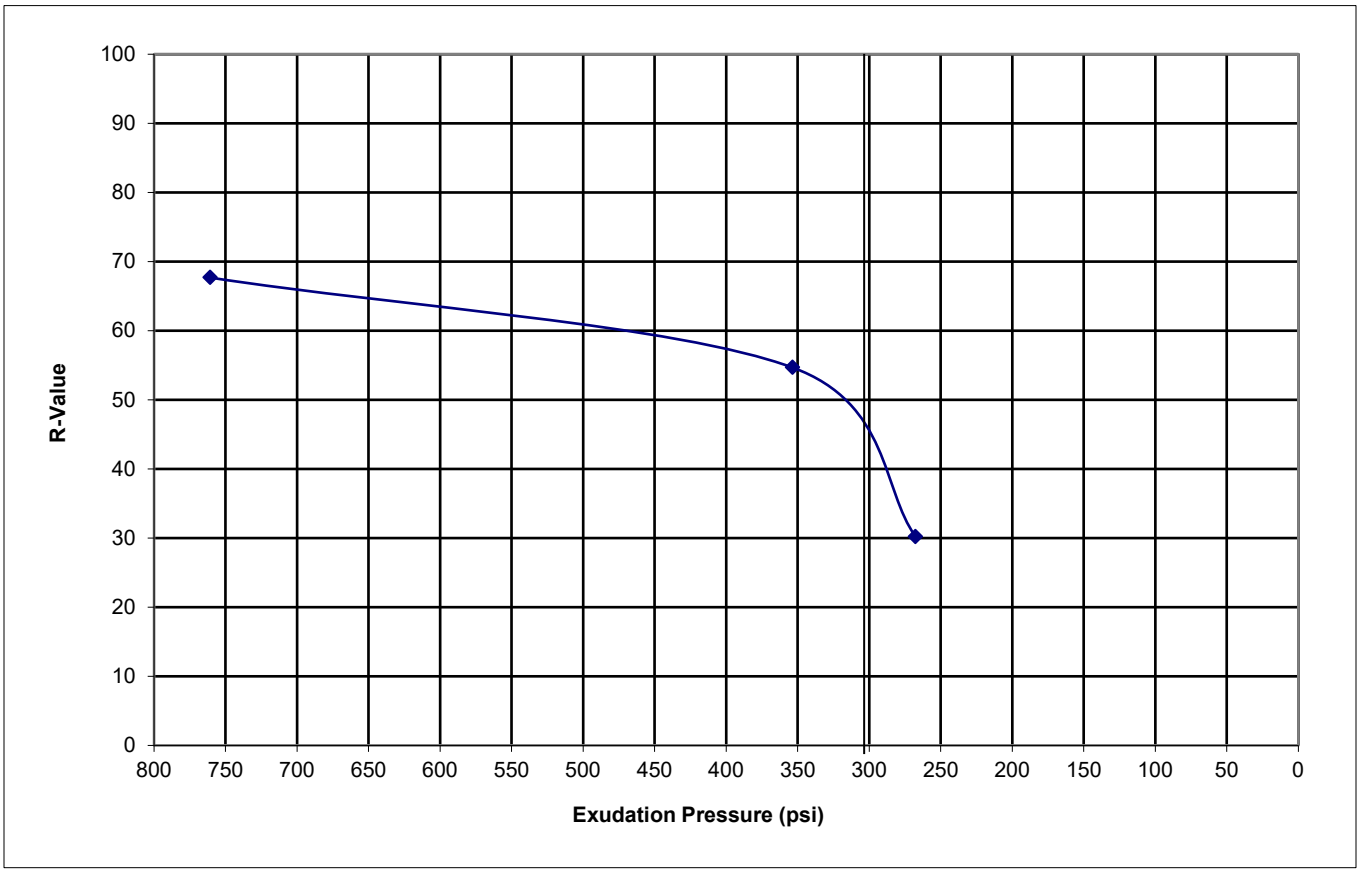
PROJECT: RFTA - Glenwood Maintenance Facility
LOCATION: Lakewood, CO
MATERIAL: Soil
SAMPLE SOURCE: BH3-Bulk (1-5')

JOB NO: 17-2023-4233
WORK ORDER NO: 1
LAB NO: 23-1393-28
DATE SAMPLED: 05/23/23

RESISTANCE R-VALUE AND EXPANSION PRESSURE OF COMPACTED SOILS (ASTM D2844)

SPECIMEN ID	A	B	C
Moisture Content	10.3%	9.4%	8.5%
Compaction Pressure (psi)	30	35	35
Specimen Height (inches)	2.54	2.55	2.50
Dry Density (pcf)	129.2	128.9	130.8
Horiz. Pres. @ 1000lbs (psi)	40.0	25.0	18.0
Horiz. Pres. @ 2000lbs (psi)	83.0	48.0	33.0
Displacement	5.36	4.83	4.59
Expansion Pressure (psi)	0.0	0.0	0.0
Exudation Pressure (psi)	268	354	761
R Value	30	55	68



R Value at 300 PSI = 46

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Phoenix, AZ 85040

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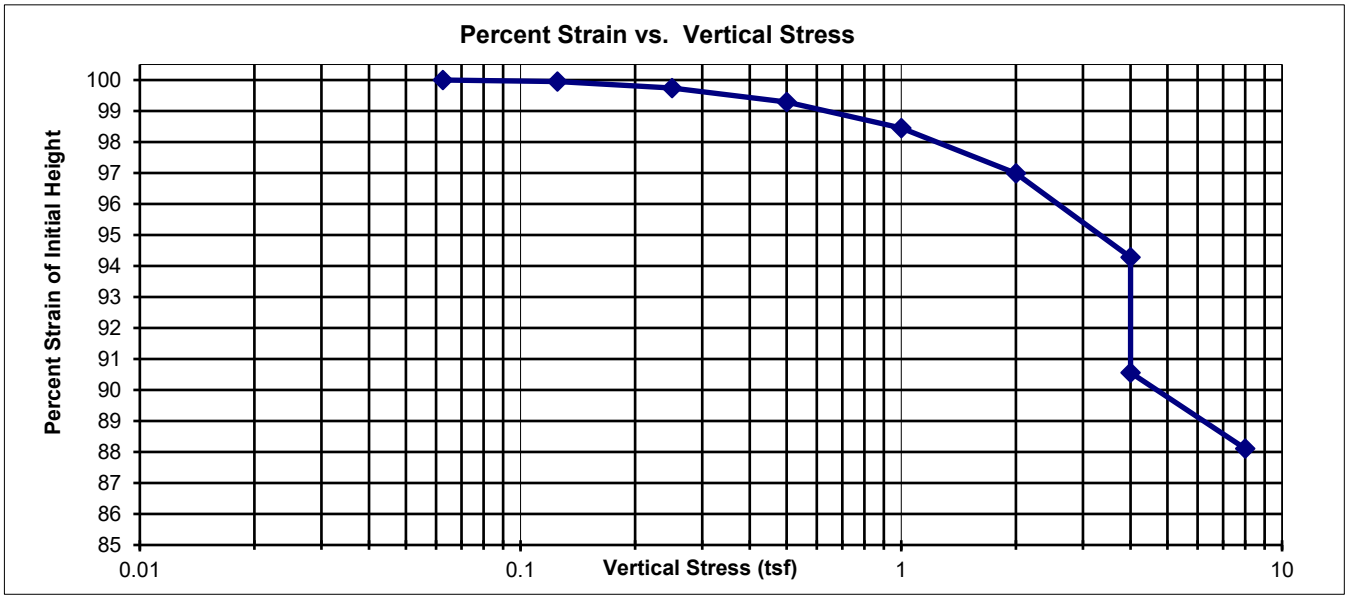
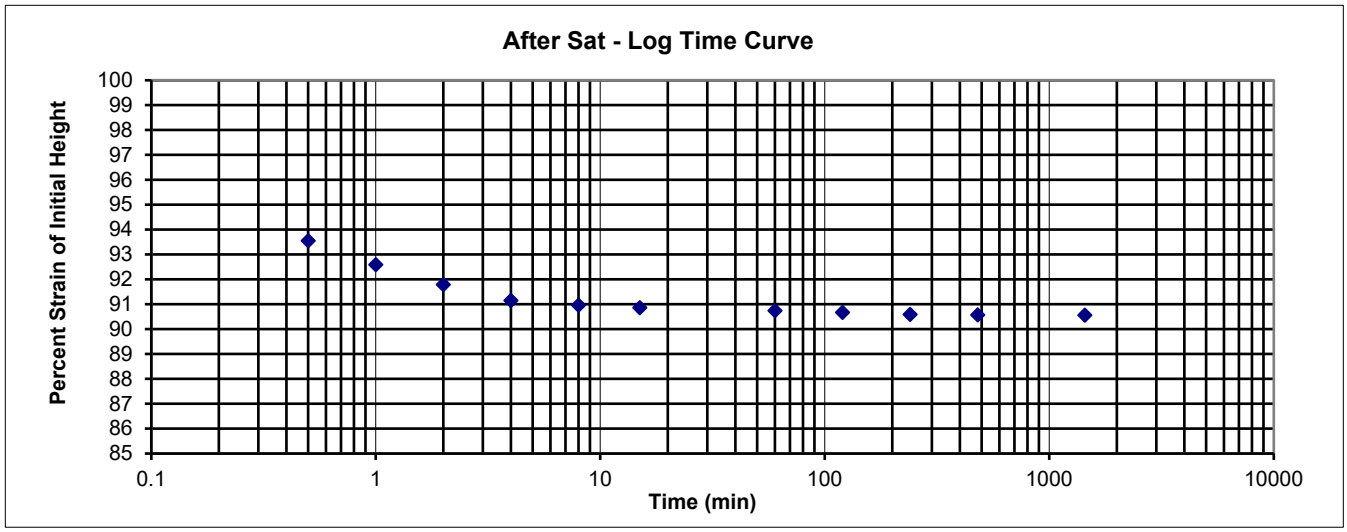
PROJECT: RFTA - Glenwood Maintenance Facility
LOCATION: Lakewood, CO
MATERIAL: Soil
SAMPLE SOURCE: BH2-MC1 (20-21')
SAMPLE PREP: In Situ

JOB NO: 17-2023-4233
WORK ORDER NO: 1
LAB NO: 23-1393-18
DATE ASSIGNED: 5/22/23

MEASUREMENT OF COLLAPSE POTENTIAL OF SOILS (ASTM D5333)

INITIAL VOLUME (cu.in):	4.60	VOLUME BEFORE SAT (cu.in):	4.34
INITIAL MOISTURE CONTENT:	6.5%	FINAL VOLUME AFTER SAT (cu.in):	3.68
INITIAL DRY DENSITY(pcf):	107.9	FINAL MOISTURE CONTENT:	12.6%
INITIAL DEGREE OF SATURATION:	33%	DRY DENSITY BEFORE SAT (pcf):	113.9
INITIAL VOID RATIO:	0.54	FINAL DEGREE OF SATURATION:	145%
SATURATED AT:	4 tsf	FINAL VOID RATIO:	0.23
		FINAL DRY DENSITY AT 4 TSF:	134.4





Note: The final dry density is calculated using final specimen height at 4 tsf.

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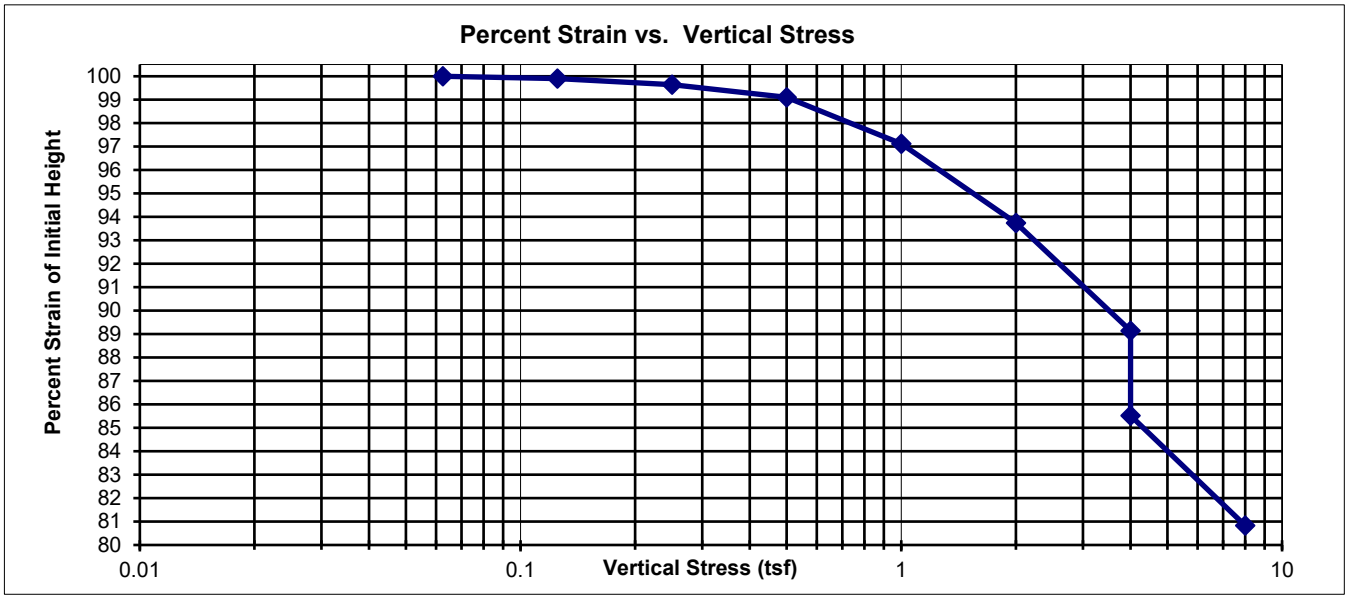
REVIEWED BY Hiram Franco

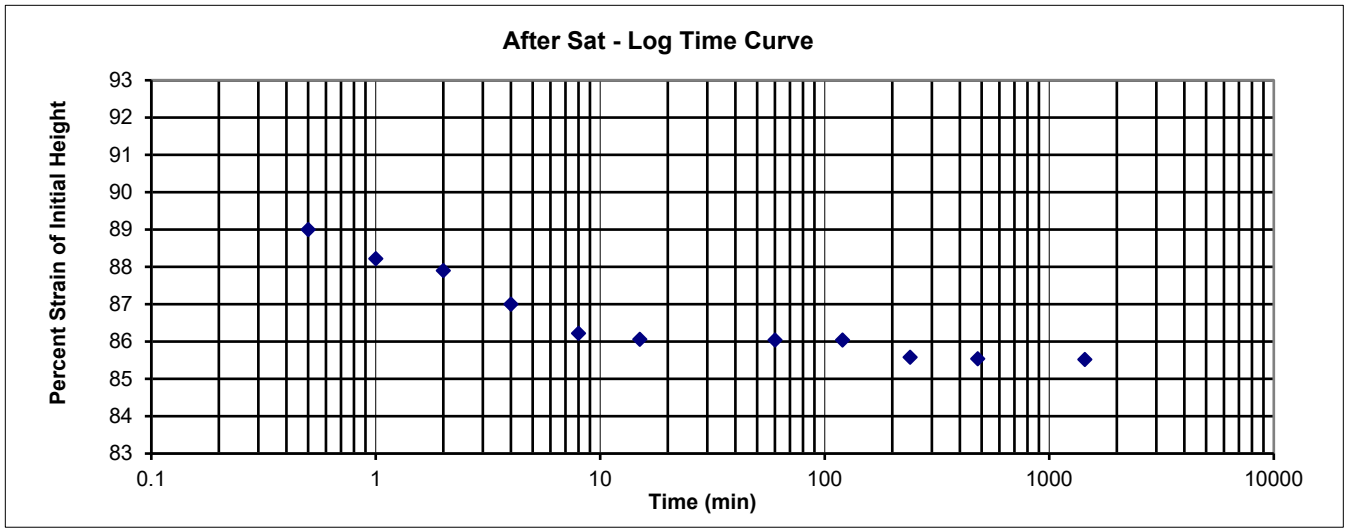
PROJECT: RFTA - Glenwood Maintenance Facility
LOCATION: Lakewood, CO
MATERIAL: Soil
SAMPLE SOURCE: BH4-MC2 (40-41')
SAMPLE PREP: In Situ

JOB NO: 17-2023-4233
WORK ORDER NO: 1
LAB NO: 23-1393-39
DATE ASSIGNED: 5/22/23

MEASUREMENT OF COLLAPSE POTENTIAL OF SOILS (ASTM D5333)

INITIAL VOLUME (cu.in):	4.60	VOLUME BEFORE SAT (cu.in):	4.10
INITIAL MOISTURE CONTENT:	10.1%	FINAL VOLUME AFTER SAT (cu.in):	3.80
INITIAL DRY DENSITY(pcf):	98.1	FINAL MOISTURE CONTENT:	13.9%
INITIAL DEGREE OF SATURATION:	39%	DRY DENSITY BEFORE SAT (pcf):	109.5
INITIAL VOID RATIO:	0.69	FINAL DEGREE OF SATURATION:	93%
SATURATED AT:	4 tsf	FINAL VOID RATIO:	0.40
		FINAL DRY DENSITY AT 4 TSF:	118.3





Note: The final dry density is calculated using final specimen height at 4 tsf.

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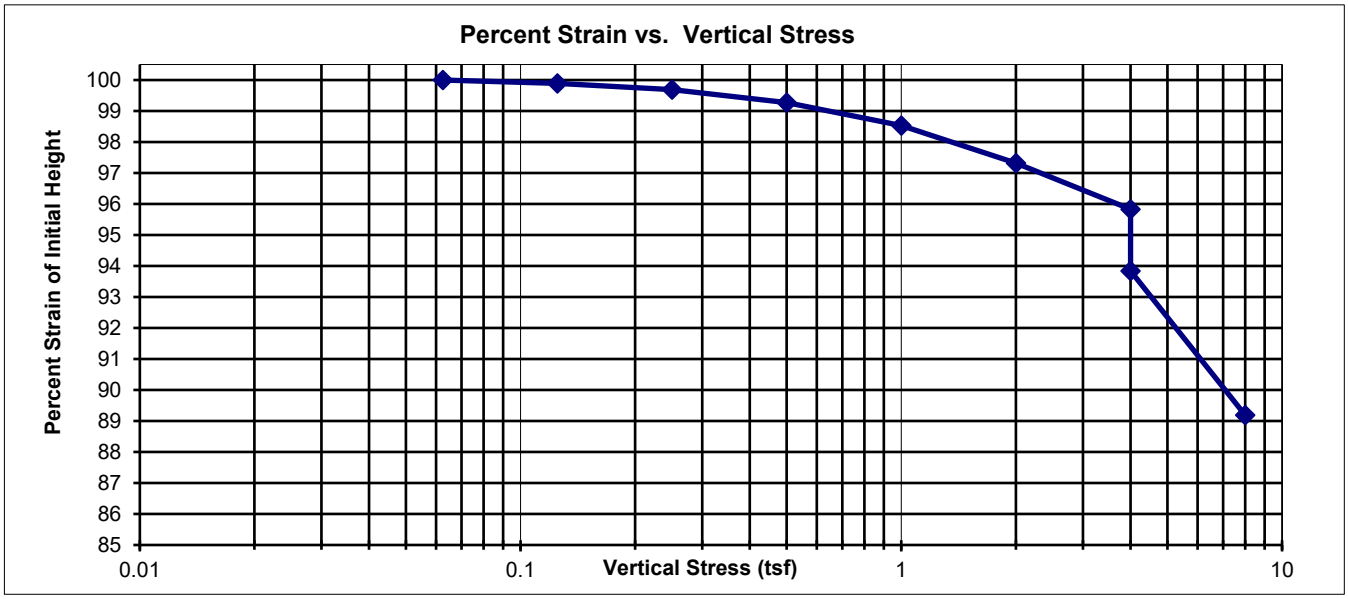
REVIEWED BY Hiram Franco

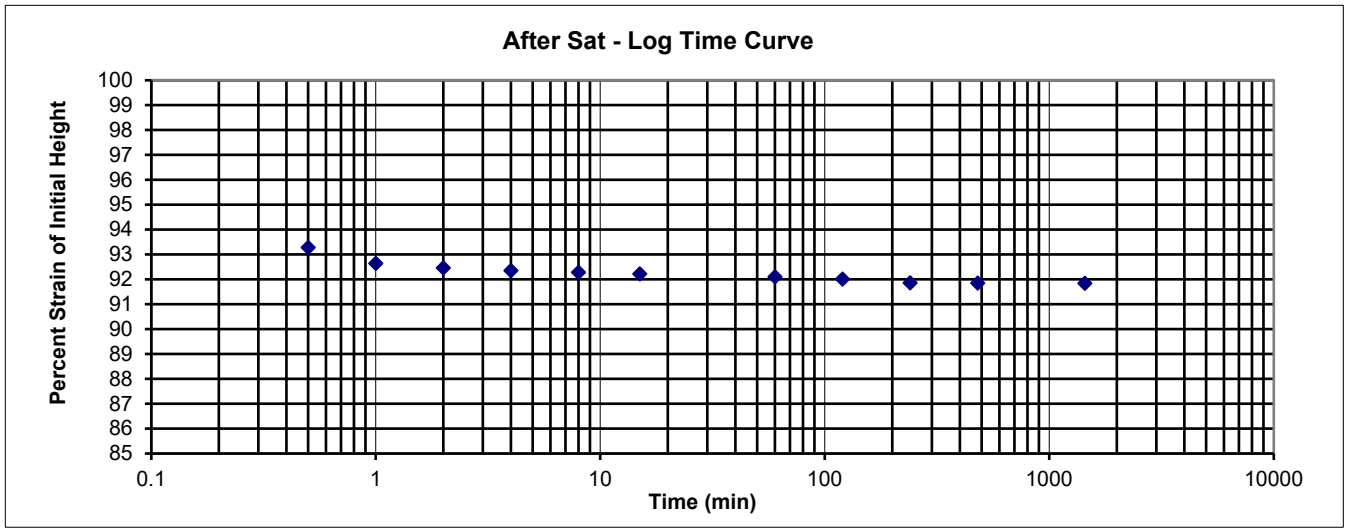
PROJECT: RFTA - Glenwood Maintenance Facility
LOCATION: Lakewood, CO
MATERIAL: Soil
SAMPLE SOURCE: BH4-MC3 (60-61')
SAMPLE PREP: In Situ

JOB NO: 17-2023-4233
WORK ORDER NO: 1
LAB NO: 23-1393-43
DATE ASSIGNED: 5/22/23

MEASUREMENT OF COLLAPSE POTENTIAL OF SOILS (ASTM D5333)

INITIAL VOLUME (cu.in):	4.60	VOLUME BEFORE SAT (cu.in):	4.41
INITIAL MOISTURE CONTENT:	5.5%	FINAL VOLUME AFTER SAT (cu.in):	3.59
INITIAL DRY DENSITY(pcf):	108.4	FINAL MOISTURE CONTENT:	12.6%
INITIAL DEGREE OF SATURATION:	28%	DRY DENSITY BEFORE SAT (pcf):	112.5
INITIAL VOID RATIO:	0.53	FINAL DEGREE OF SATURATION:	171%
SATURATED AT:	4 tsf	FINAL VOID RATIO:	0.20
		FINAL DRY DENSITY AT 4 TSF:	138.3





Note: The final dry density is calculated using final specimen height at 4 tsf.

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Phoenix, AZ 85040

REVIEWED BY Hiram Franco

MOTZZ LABORATORY, INC.

Report: 946881
Reported: 6/15/2023
Received: 6/5/2023
PO: 17-2023-4233

Laboratory Analysis Report

WSP USA Environment & Infrastructure Inc.
Franco Escalante
4600 E. Washington Street Suite 600
Phoenix, Arizona 85034

Project: 17-2023-4233 WO1

Lab Number	Sample ID	
946881-1	23-1393-49	BH1-Composite 1

Test Parameter

Test	*Method*	*Result*	*Units*
pH (CaCl2)	ASTM D6276	7.9	SU
pH (Water)	ASTM D4972	8.2	SU
Resistivity (at Saturation)	ASTM G187	1141	ohm-cm
Sulfate	ASTM DD516	8	ppm
Chloride	ASTM D512c	196	ppm

Lab Number	Sample ID	
946881-2	23-1393-50	BH4-Composite 2

Test Parameter

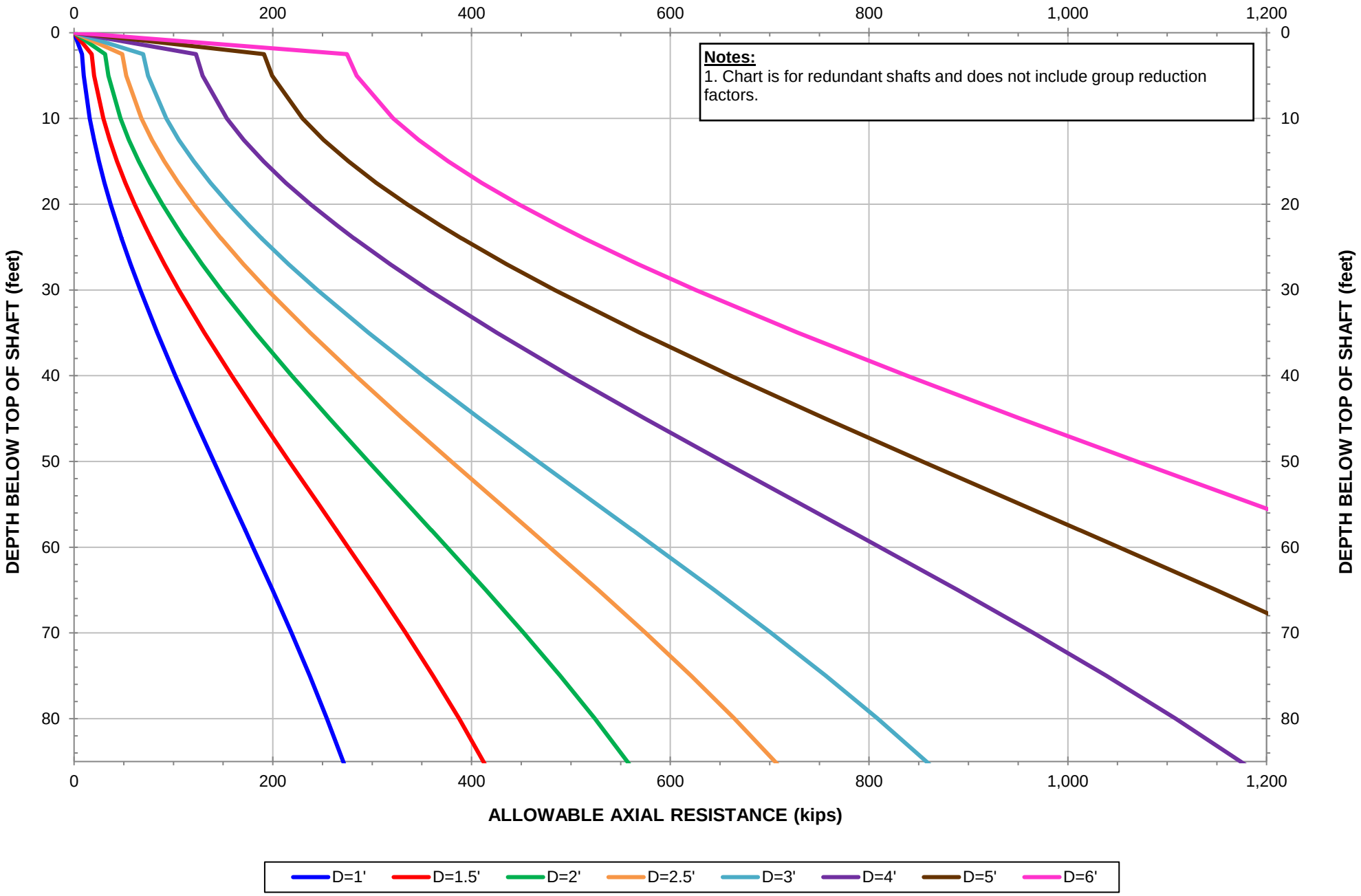
Test	*Method*	*Result*	*Units*
pH (CaCl2)	ASTM D6276	7.9	SU
pH (Water)	ASTM D4972	8.3	SU
Resistivity (at Saturation)	ASTM G187	1476	ohm-cm
Sulfate	ASTM D516	9	ppm
Chloride	ASTM D512c	230	ppm

APPENDIX C

Drilled Shaft Axial Capacity Charts

ALLOWABLE DRILLED SHAFT AXIAL RESISTANCE

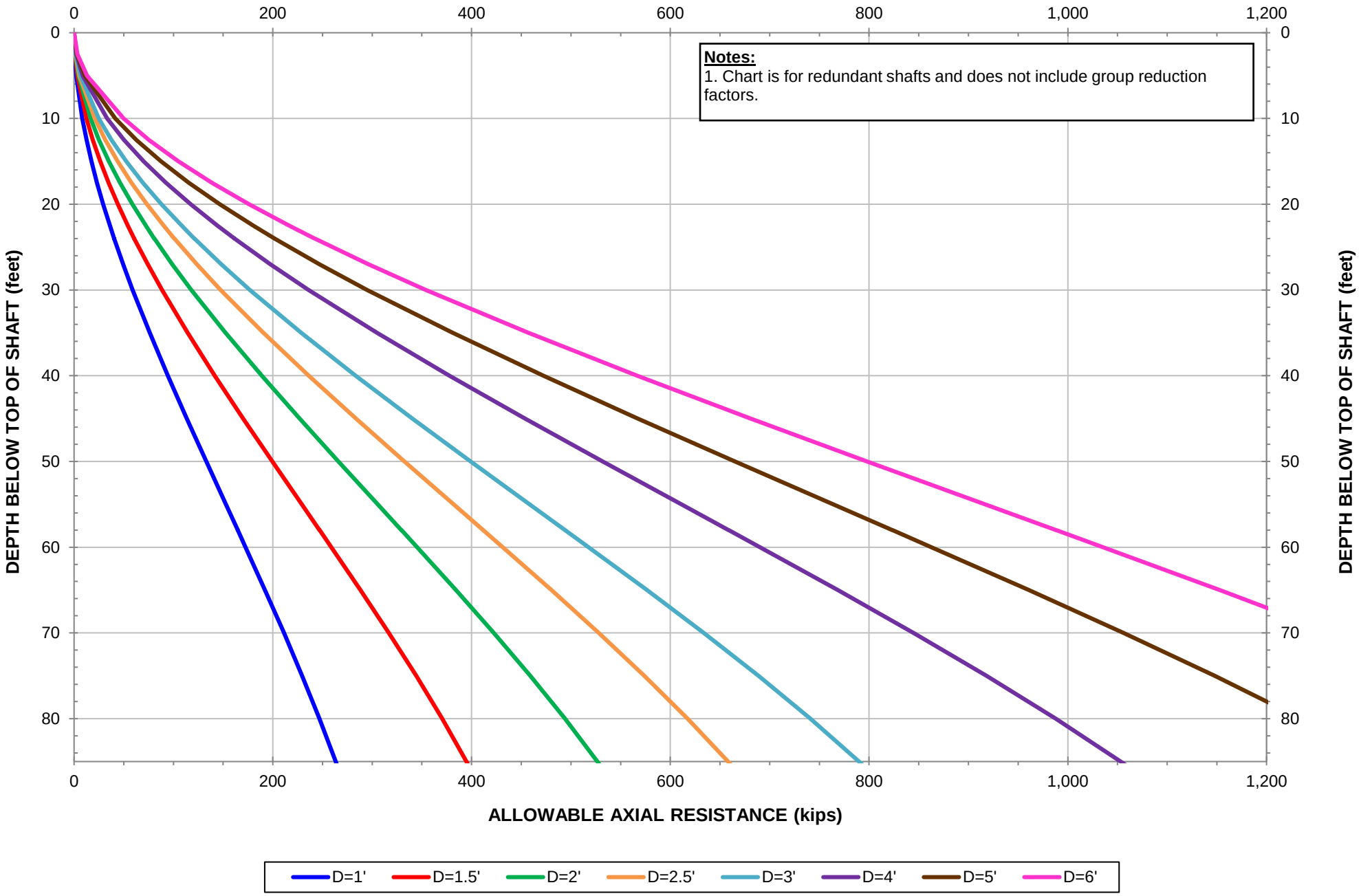
RFTA GMF Phase 6: Admin Building



Made By: RMP (Rev. 0)
Checked By: RAP
Approved By: RMP

ALLOWABLE DRILLED SHAFT AXIAL RESISTANCE

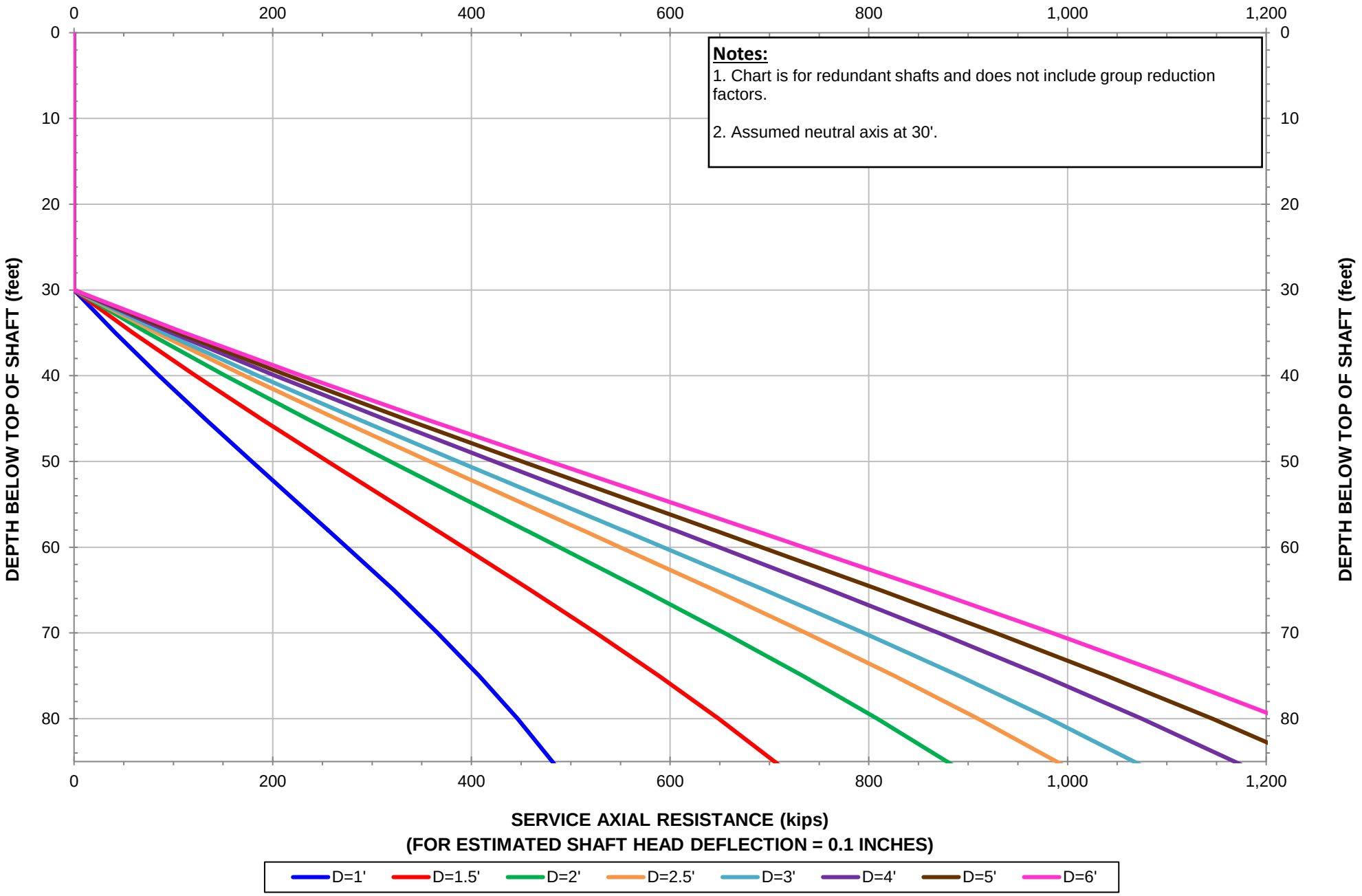
RFTA GMF Phase 6: Admin Building - Uplift



Made By: RMP (Rev. 0)
Checked By: RAP
Approved By: RMP

SERVICE LIMIT DRILLED SHAFT AXIAL RESISTANCE

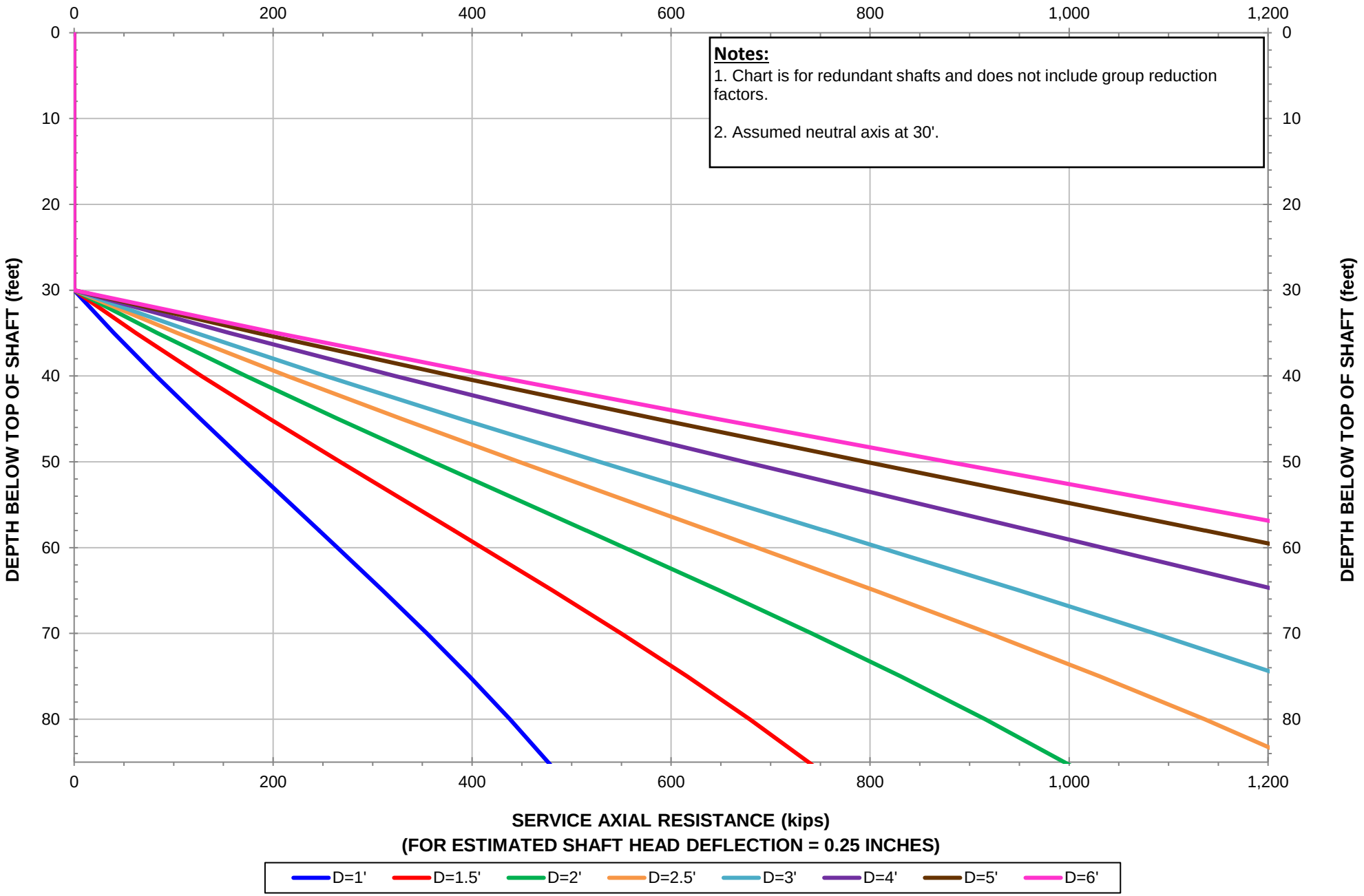
RFTA GMF Phase 6: Admin Building - Service with Downdrag



Made By: RMP (Rev. 0)
Checked By: RAP
Approved By: RMP

SERVICE LIMIT DRILLED SHAFT AXIAL RESISTANCE

RFTA GMF Phase 6: Admin Building - Service with Downdrag



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Checked By: RAP
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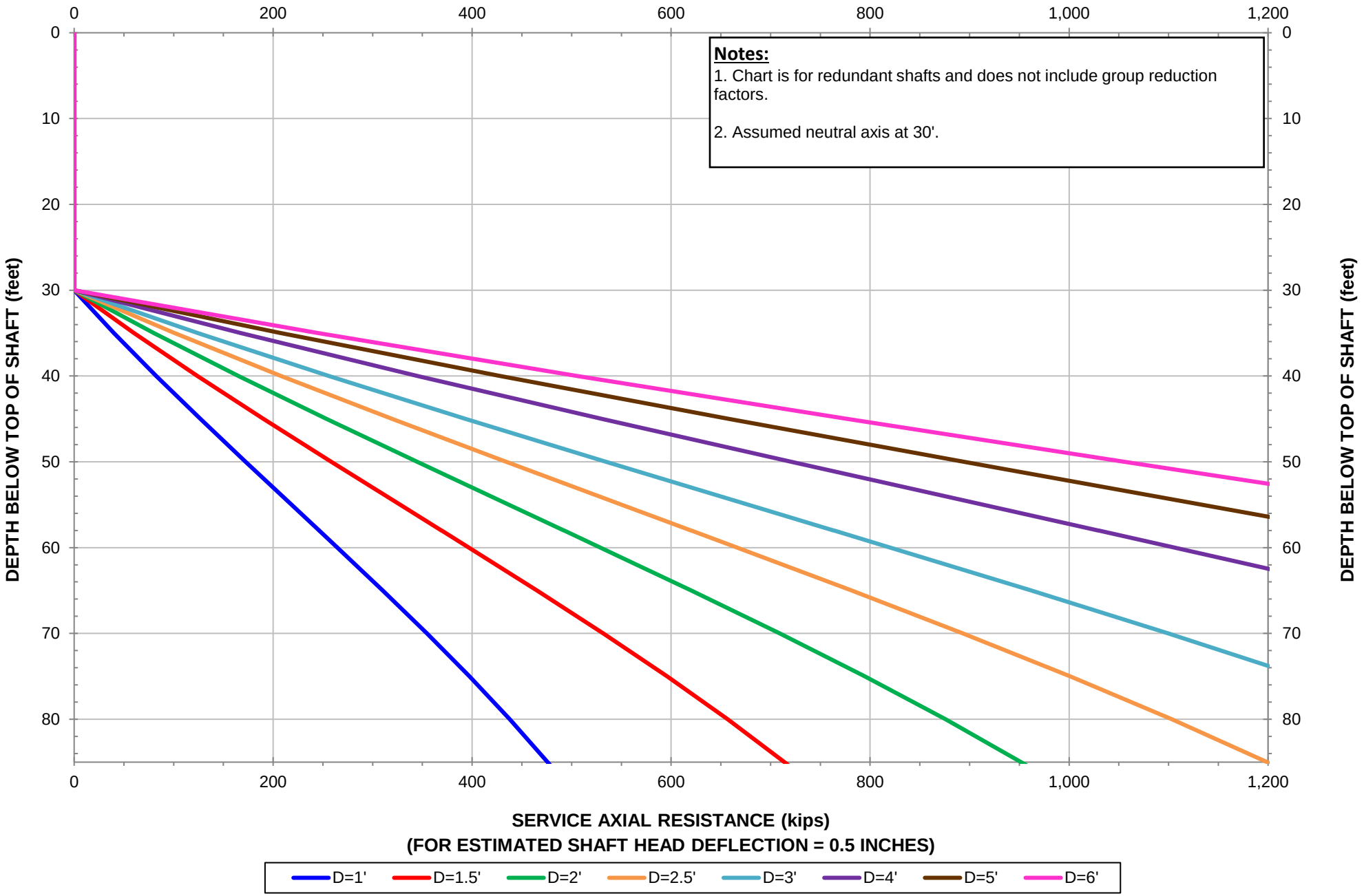
SERVICE LIMIT DRILLED SHAFT AXIAL RESISTANCE

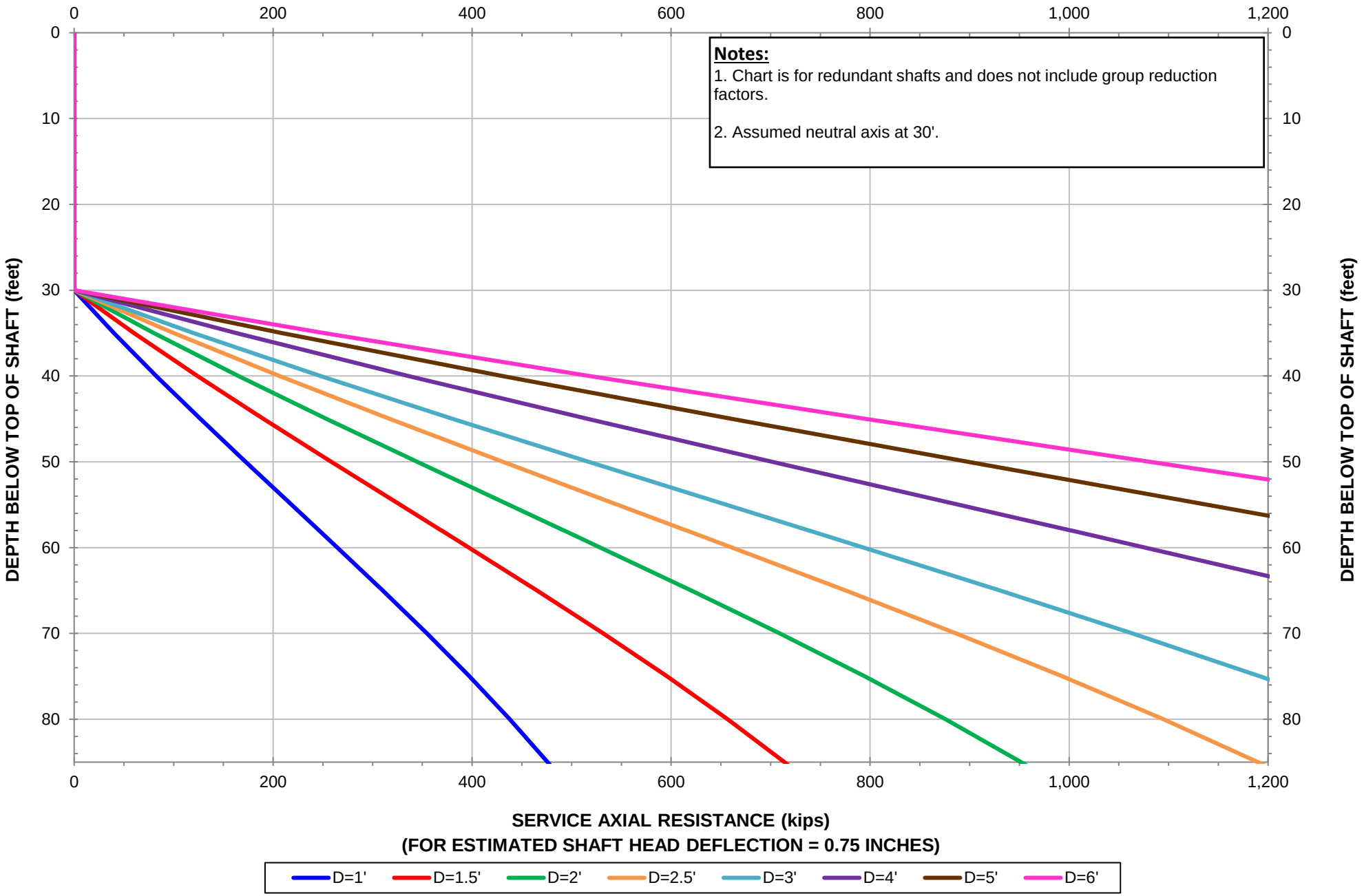
RFTA GMF Phase 6: Admin Building - Service with Downdrag



Made By: RMP (Rev. 0)
Checked By: RAP
Approved By: RMP

SERVICE LIMIT DRILLED SHAFT AXIAL RESISTANCE

RFTA GMF Phase 6: Admin Building - Service with Downdrag



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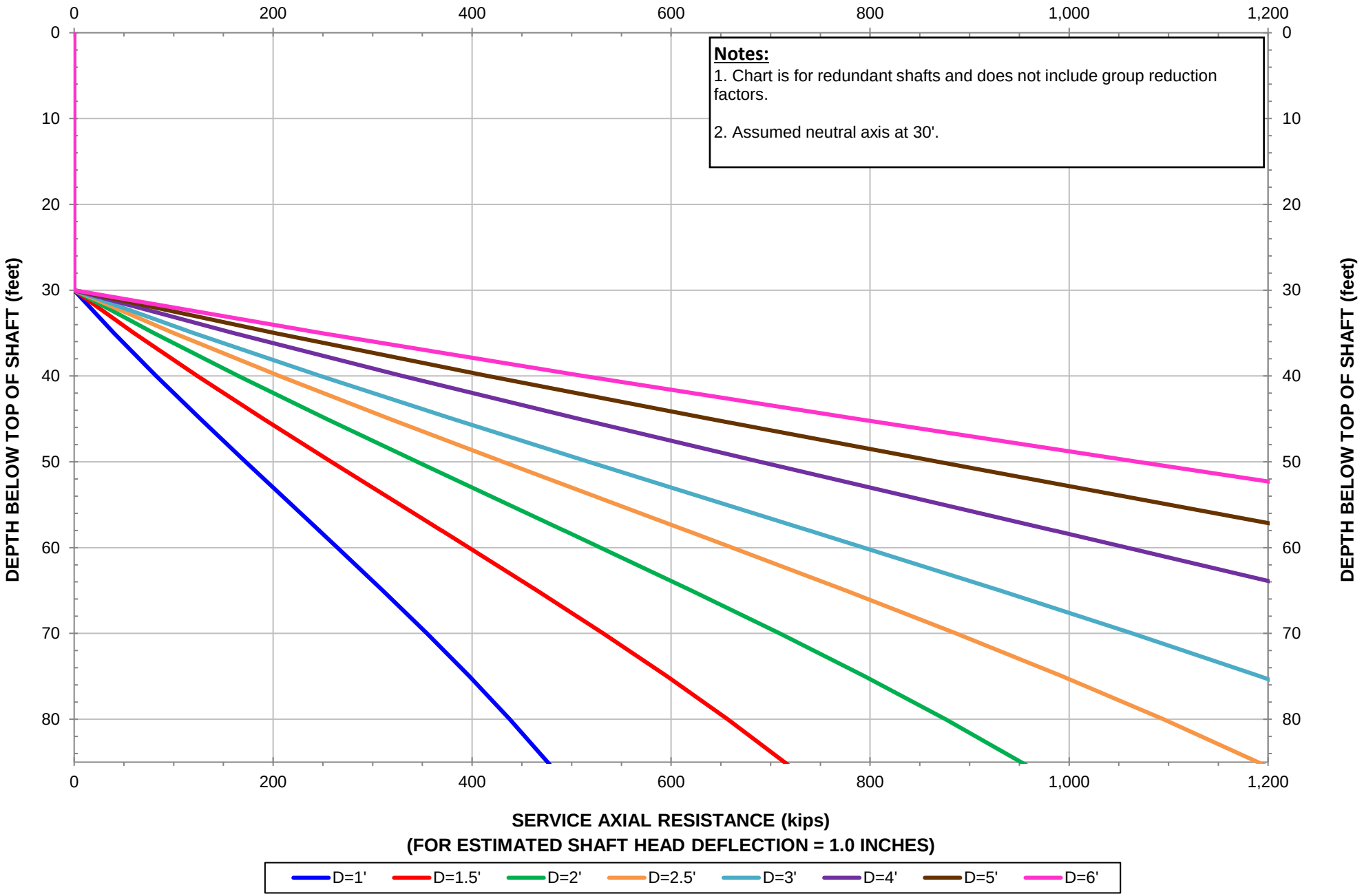
Approved By: RMP

SERVICE LIMIT DRILLED SHAFT AXIAL RESISTANCE

RFTA GMF Phase 6: Admin Building - Service with Downdrag



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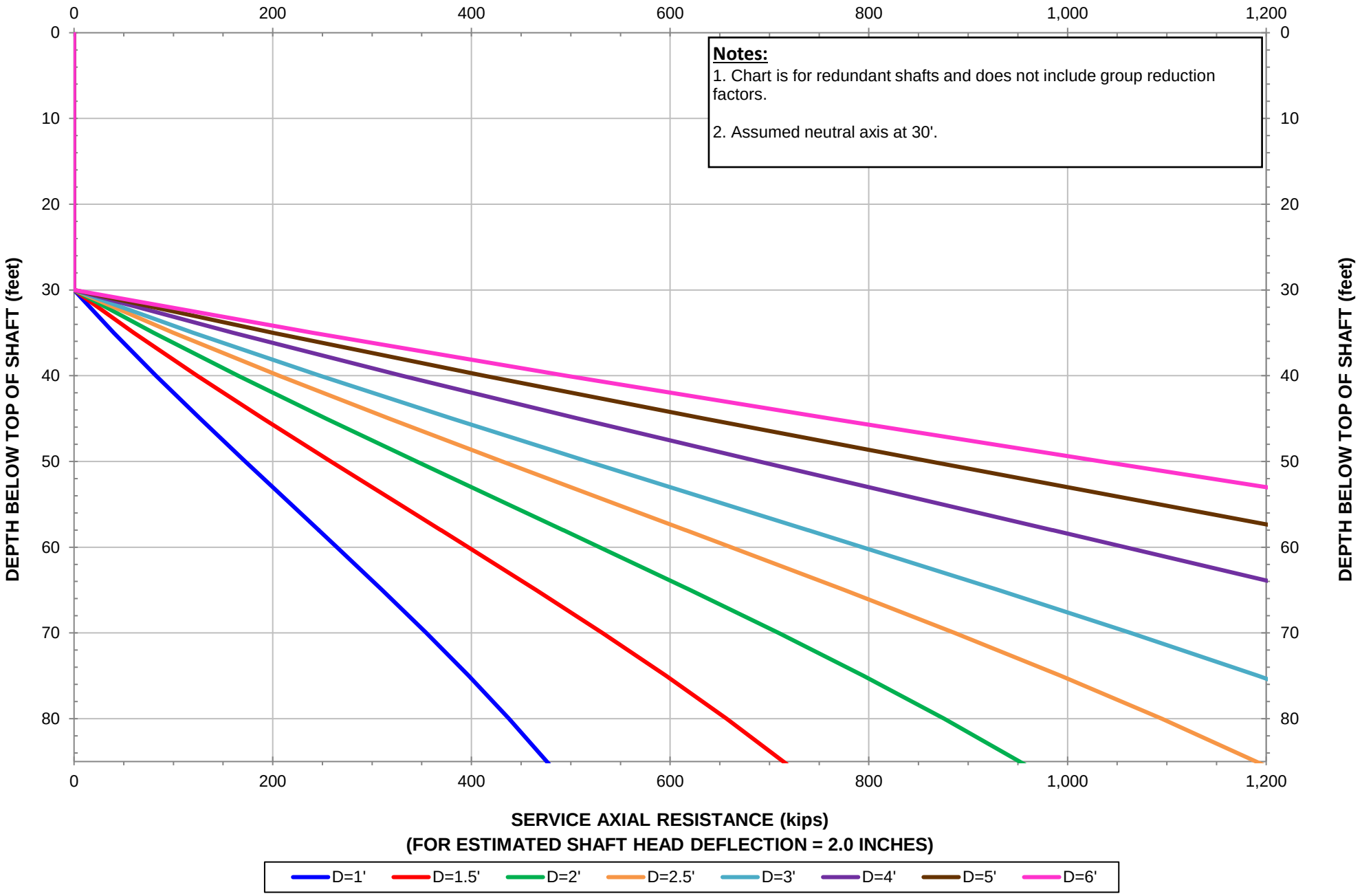
Checked By: RAP
Approved By: RMP

SERVICE LIMIT DRILLED SHAFT AXIAL RESISTANCE

RFTA GMF Phase 6: Admin Building - Service with Downdrag



Made By: RMP (Rev. 0)
Checked By: RAP
Approved By: RMP

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CTL|THOMPSON

Founded in 1971

GEOLOGIC HAZARD EVALUATION

RFTA FACILITY EXPANSION
2307 WULFSOHN ROAD
GLENWOOD SPRINGS, COLORADO

Prepared for:

SAUNDERS, INC.
86 Inverness Place North
Englewood, CO 80112

Attention:
Jennifer Renninger
Assistant Project Manager

Project No. GS06668.000-115

September 9, 2022

CTL|Thompson, Inc.
Denver, Fort Collins, Colorado Springs, Glenwood Springs, Pueblo, Summit County – Colorado
Cheyenne, Wyoming and Bozeman, Montana

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SCOPE

This report presents the results of our Geologic Hazards Evaluation for the proposed development of the Roaring Fork Transit Authority (RFTA) Expansion Project at 2307 Wulfsohn Road in Glenwood Springs, Colorado. Our investigation was performed to identify geologic hazards present on the property. Our report includes descriptions of historic and current site conditions, site geology, and geologic hazards. We believe our report is in general conformance with our understanding of the intent of the Glenwood Springs City Code.

The report contains descriptions of mapped geology, site conditions observed during site reconnaissance, and geologic hazards. The report is based on review of available previous investigations, mapping, plans, site reconnaissance, and our understanding of proposed construction. If plans or grades change, this report and it is contents may require revision; we should be made aware of design changes. Other types of construction may require revision of this report and the recommended design criteria.

SITE CONDITIONS AND SITE HISTORY

The property is located at 2307 Wulfsohn Road in Glenwood Springs, Colorado. A RFTA facility is north of the site. A site visit was made on August 28th to observe current site conditions. A berm runs along the southern end of the site and is part of a catchment basin/debris pond system upslope of the property. The property sits on the western toe of a debris fan that originates from the north face of Red Mountain. The site slopes towards the north/northwest. The property is currently being used as a parking area. An aerial photograph of the site is shown on Photo 1.

The property was previously occupied by a Municipal Operations Center (MOC) that was owned by the City of Glenwood Springs. The structure was stepped into the natural slope of the site, with the upper (south) part of the building having one story and the northern part of the structure having a lower level with partial upper-level floor. We

believe site grades were achieved by minor cuts and fills. The structure experienced issues related to subsurface wetting and settlement and was ultimately deconstructed.

PROPOSED CONSTRUCTION

The new building footprint is proposed on the benched area of the property that was graded after deconstruction of the MOC building. We understand the new RFTA building will be a one and two-story, steel-framed structure that will step-down to the north. The main level of the building will be used for bus parking. Preliminary plans indicate the structure is planned to be supported on drilled shafts with lengths on the order of 50 to 80 feet and diameters of 48 to 60 inches. Compaction grouting to greater depths is being considered. Keller NA is providing design-build services for the building foundation system.

To achieve proposed grades, excavations will be made into the berm running along the southern portion of the site. The excavation will be retained with a soil nail wall with reinforced shotcrete. A retaining wall will also be constructed downslope of the proposed structure. The downslope earth retention system will consist of a soil nail and reinforced shotcrete wall behind and below a GRS wall. The earth retention systems design and construction are the responsibility of GSI, the design-build subcontractor.

PREVIOUS CTL|THOMPSON, INC. INVESTIGATIONS

CTL has performed numerous investigations of the RFTA property. The following reports were reviewed in preparation of this report:

- Geologic and Preliminary Geotechnical Investigation – Glenwood Meadows (Project No. GS-2871; report dated February 1, 2000)
- Geotechnical Investigation – Glenwood Springs Municipal Operations Center (MOC) (Project No. GS05594-125; report dated October 13, 2011)
- Geotechnical Engineering Investigation – RFTA Facility Expansion (Project No. GS06668.000-125; report dated February 14, 2022)

- Supplemental Geotechnical Engineering Investigation – RFTA Facility Expansion (Project No. GS06668.000-125; report dated April 6, 2022)

- Geotechnical Engineering Investigation – RFTA Facility Expansion (Project No. GS06668.000-125; report dated July 21, 2022)

SITE GEOLOGY

According to the "Geologic Map of the Glenwood Springs Quadrangle, Garfield County, Colorado" (Kirkham, R.M., Streufert, R.K., Cappa, J.A., Shaw, C.A., Allen, J.L., and Jones, J.V., Colorado Geological Survey Map Series MS-38, 2008) and our borings within the property, the site is underlain by young debris flow deposits consisting of poorly-sorted boulder, cobble, pebble, and gravel in a fine-grained matrix. The Eagle Valley Evaporite underlies the debris flow deposits at greater depth. An excerpt from the 2008 map is reproduced below.

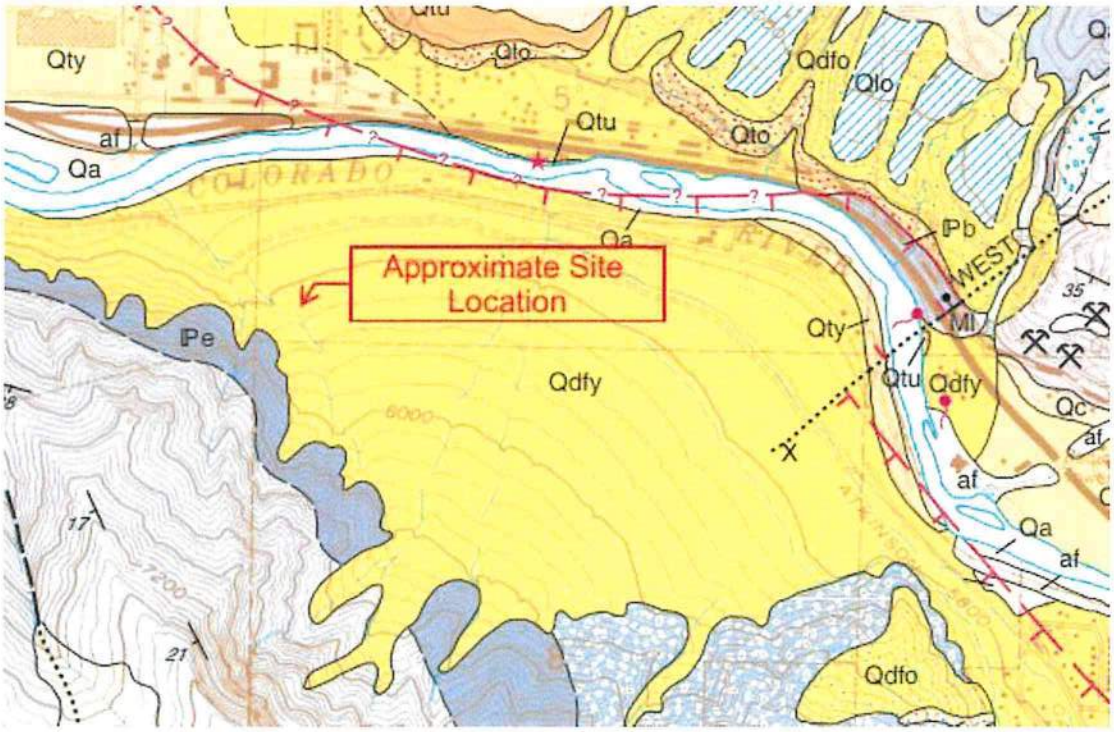


Figure 1 – Excerpt from the Geologic Map of the Glenwood Springs Quadrangle by Colorado Geological Survey, 2008. Approximate site location denoted by red arrow.

GEOLOGIC HAZARDS

This section is intended to discuss geologic hazards present on the RFTA property and is based on field reconnaissance, review of published maps, review of provided documents, and our experience.

Hydrocollapsible Soils

We reviewed Sheet 10 of the "General Geologic Hazards Map - Geologic Hazards of the Glenwood Springs Metropolitan Area, Garfield County, Colorado" prepared by Lincoln Devore Testing Laboratory in December 1977. Mapping indicates the RFTA property lies within a "zone of potential hydrocompaction and related settlement hazards" with a "severe hazard zone" rating.

The site is underlain by debris flow deposits consisting of unsorted and unstratified silt, clay, sand, gravel, cobbles, and occasional boulders to depths of at least 90 feet, as indicated by borings drilled during previous investigations. Debris flow deposits are susceptible to collapse when wetted. We understand the previous structure experienced settlement issues likely related to subsurface wetting. There is risk of hydrocollapsible soils on this site. The risk has been lowered to some degree by previous site development and associated increase in soil moisture content. It is critical that surface drainage be designed, constructed, and maintained to provide rapid removal of surface runoff. We believe the use of compaction grouting and drilled shafts for the proposed structure are positive approaches to improve support properties of the natural soils and reduce potential for differential movement of the building.

Debris Flows

The property sits on the western toe of a debris fan. The fan is active and subject to periodic debris flows, mud flows, and alluvial events. The source basin for debris has reduced in size over the past several thousand years and the magnitude and frequency

of events has steadily decreased. A debris flow pond is present upslope of the site to the south. Per our review of the "Master Drainage Report for Glenwood Meadows" prepared by High Country Engineering (Project No. 2000031.000 X 316; report dated May 24, 2002), this pond was designed in conjunction with four other debris flow ponds throughout the fan to capture stormwater runoff and debris flows from contributing drainage basins, which will be released at a controlled rate through outfall structures.

At the time of our visit, there was evidence of recent deposition of finer grained material in the debris flow pond, with gravel being the approximate maximum particle size. The approximate thickness of deposition appeared to be on the order of about 1-foot. The bottom of the basin was moist at the time of our site visit; however it is difficult to discern if the material was recently deposited or if the moisture was related to a recent precipitation event. Site photos are presented below.

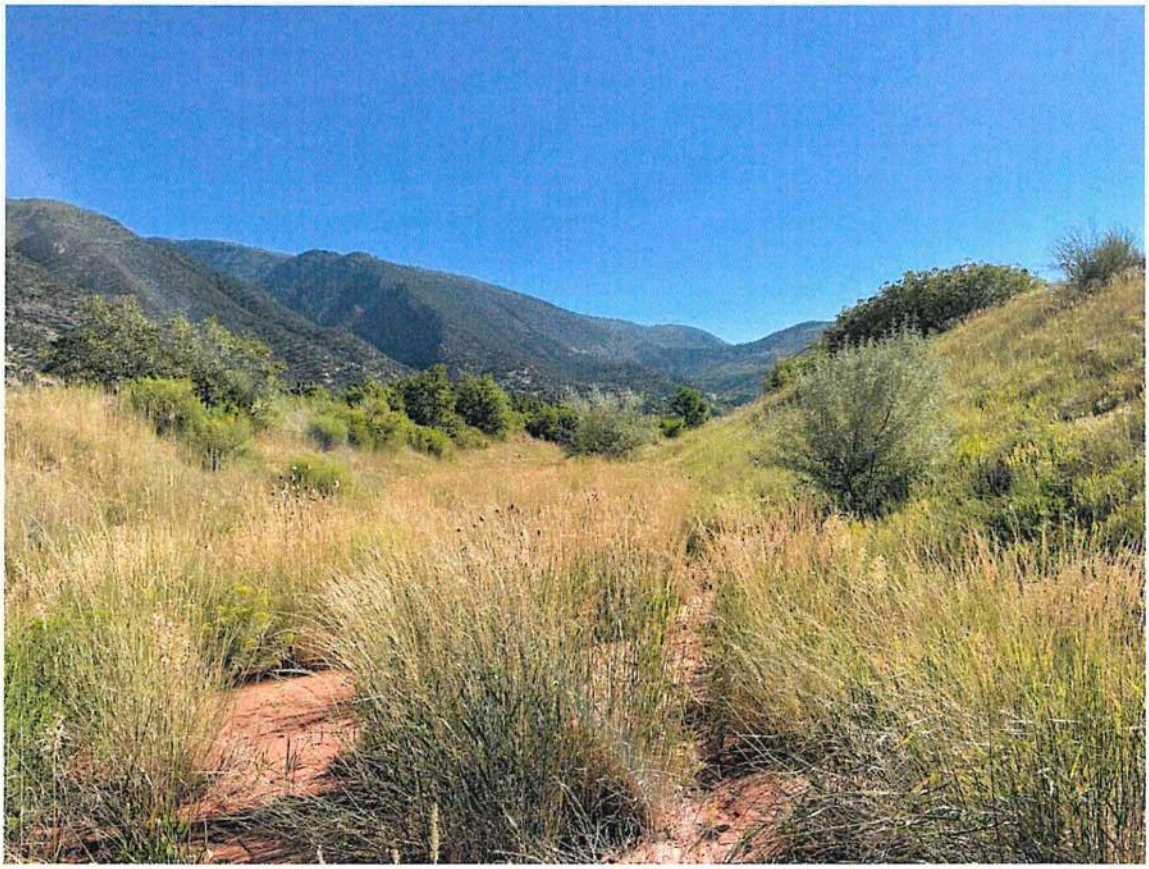


Photo 1: Debris flow pond, looking east. Photo obtained on August 28, 2022.

Photo 2: Debris flow pond, looking west/southwest. Photo obtained on August 28, 2022.

It appears that the debris flow pond is functioning as intended. We believe risk due to a significant debris flow event is low for the RFTA property considering the system of debris flow ponds present along the debris fan. It is critical the pond is routinely cleaned out to allow it to perform as designed.

We understand current plans include excavating into the northern side of the debris flow pond berm to allow for construction of drive lanes. The excavation will be permanently retained with a soil nail wall. Any modifications made to the debris flow pond should be evaluated to confirm it does not impact its intended design. The design volume of the basin should be taken into consideration during design of the southern retaining wall. All other criteria presented in the referenced Master Drainage Report should be considered in redevelopment of the RFTA property.

Rockfall

We did not observe evidence of rockfall on the property. The mountaintops upslope from the site could be a source for rockfall, however the source material is relatively depleted and the topography of the slope above the site directs potential rockfall away from the property. We observed few boulders along the top of the southern slope of the debris flow pond, with sizes of about 1-foot by 1-foot. The boulders were covered in lichen with vegetation growing around them, indicating they did not recently fall. We do not believe rockfall poses a significant risk to the property.

Seismicity

The RFTA property is located within the Western Mountain Seismotectonic Province. The West Glenwood Fault is mapped approximately 1-mile southwest of the subject site. There are several other faults that displace the Grand Hogback south of the site. These faults are considered active, however they are not considered likely to cause significant earthquakes.

Per the "Colorado Earthquake and Fault Map Server", the most recent recorded earthquake occurred on August 28, 2016 with a measured Modified Mercalli intensity V. Earthquakes of this intensity result in moderate shaking and may result in cracking of weak masonry structures. We believe ground accelerations associated with a modified intensity V earthquake can be expected at this site and structures should be designed accordingly.

GEOTECHNICAL RISK

The concept of risk is an important aspect with any geotechnical evaluation primarily because the methods used to develop geotechnical recommendations do not comprise an exact science. We never have complete knowledge of subsurface conditions. Our analysis must be tempered with engineering judgment and experience.

Therefore, the recommendations presented in any geotechnical evaluation should not be considered risk-free. Our recommendations represent our judgment of those measures that are necessary to increase the chances that the structures will perform satisfactorily. It is critical that all recommendations in this report are followed during construction.

LIMITATIONS

We believe this investigation was conducted in a manner consistent with that level of care and skill ordinarily used by geotechnical engineers practicing in this area at this time. No warranty, express or implied, is made. If we can be of further service in discussing the contents of this report or analysis of the influence of subsurface conditions on the project, please call.

CTL | THOMPSON, INC.

COLORADO LICENSED ERIN CHRISTINE BEACH 54368 PROFESSIONAL ENGINEER

Erin C. Beach, P.E., P.G.
Geotechnical Project Manager

Reviewed by:

Erin Beach
Sep 9 2022 2:19 PM

John Mechling, P.E.
Senior Principal Engineer

Via e-mail: j.renninger@saundersinc.com

COLORADO REGISTERED JOHN MECHLING 27429 PROFESSIONAL ENGINEER 9/7/22

Appendix D: Drainage Study

Building a Better World for All of Us®

MEMORANDUM

DATE: August 20, 2024

RE: West Glenwood Roaring Fork Transit Authority Bus Facility Improvements
Planning Submittal Drainage Memorandum Phases 6A, 6B, and 8
SEH No. ROFTA17800

1.0 Intent

The goal of this memorandum is to provide planning level drainage analysis for Phases 6A, 6B, and 8 of the West Glenwood Springs Bus Facility improvements project. This planning level memorandum will discuss conceptual drainage design and their compliance with the overall drainage plan for the site.

2.0 Background

The project site is located in Glenwood Springs, Colorado. The existing site along Wulfsohn Road includes a bus stop, bus parking, and a park and ride area. The proposed improvements will expand this existing area into a Bus Operations Facility for Roaring Fork Transit Authority (RFTA). SEH has been contracted to work on three phases of these improvements. Phase 6A is the Transit Center and will include a single building to be used as a transportation hub, bus pickup/dropoff areas, and parking. Phase 6A is located between Wulfsohn Road and Midland Avenue. Phase 6B is the Administration Building and associated parking located to the south of Wulfsohn Road. Phase 8 is Storage Building A located on the southwest corner of the Bus Operations Facility.

Site Location Map

3.0 Existing Condition

The existing site is partially developed. Phases 6A and 6B have existing parking lots. Phase 8 is located on an area that is partially parking and paritially undeveloped in the existing condition. The site is steep and generally flows to the northwest. The majority of the site drains to three ponds that are connected in series on the northwest portion of the property near the intersection of Wulfsohn Road and Midland Avenue.

The Phase 6A project site is approximately 5.00 acres with a total impervious value of 43.9%. The area generally flows over land to the west where it is collected in an existing pond. An Existing Drainage Map can be found attached to this memo.

The Phase 6B project site is approximately 1.85 acres with a total impervious value of 55.4%. The area generally flows over land to the west were it is collected in an exisiting area inlet and conveyed north via storm sewer to an existing pond. An Existing Drainage Map can be found attached to this memo.

Phase 8 is approximately 0.22 acres. With an impervious value of approximately 32.0%. Runoff from the area is conveyed overland to the west and then north via the existing storm system to an existing pond.

4.0 Existing Drainage Studies

A Drainage Report for the RFTA Bus Operations Facility Improvements was completed by SGM in April of 2022. The study looked at the overall proposed site's impact on existing infrastructure including the existing ponds. This study was used as a reference to assess the affects the proposed improvements in Phases 6A, 6b, and 8 will have on the existing ponds and storm system. Excerpts from the Drainage Report can be found attached to this memo.

5.0 Criteria

The drainage design criteria used for memorandum, and to be used in the proposed design of the site will be from Glenwood Springs Engineering Standards and Mile High Flood District Urban Storm Drainage Criteria Manual.

6.0 Proposed Design

The proposed design of this site will look to use the existing infrastructure where possible to convey flows to the existing ponds on the northwest side of the site as laid out in the SGM Drainage Report.

6.1 Phase 6A

Phase 6A will have a proposed area of 4.93 acres and proposed impervious value of 66.5%. Runoff from the proposed site will be collected via curb and gutter and directed to inlets and conveyed to an underground water quality and detention facility via storm sewer. This underground storage facility will take the place of the existing pond. The facility will be sized to provide water quality treatment and flood attenuation for the majority of the proposed impervious area of the Phase 6A site. A Proposed Drainage Map can be found attached to this memo.

6.2 Phase 6B

Phase 6B will have a proposed area of 2.07 acres and proposed impervious value of 60.8%. Flows from phase 6B will be conveyed to a proposed inlet in the proposed parking lot and conveyed west via proposed storm sewer where it connects to the existing storm system. Flows will then be conveyed north to the existing pond.

6.3 **Phase 8**

Phase 8 is approximately 0.22 acres. With an impervious value of approximately 77.0%. Phase 8 will have minimal storm design. The proposed storage building will be located at the bottom of a steep slope. A swale will be constructed to divert runoff to the west where it will be collected by the existing storm system and conveyed to the north to the existing pond.

7.0 **Conclusion**

The final proposed design to be completed in future submittals will comply with design criteria laid out in the Glenwood Springs Engineering Standards and Mile High Flood District Urban Storm Drainage Criteria Manual. The proposed design will conform to the overall drainage plan laid out in SGM's Drainage Report.

Impervious area from Phase 6A will be conveyed to an underground storage facility which will provide water quality treatment and provide storage to allow for historic release rates.

Phase 6B will increase the existing impervious value from 55.4% to 60.8% while increasing the area from 1.85 acres to 2.07 acres. The proposed site will be less than the 69.2% imperviousness accounted for by the overall drainage plan. The site for Phase 6B lies mostly within basin 670 with a portion of basin 600 from SGM's Drainage Report. All of the Phase 6B site is accounted for in the report and directed to the existing pond. As the proposed site has lower impervious value than the pond was designed for, Phase 6B improvements will not negatively impact the existing pond.

The storage building in Phase 8 is accounted for in SGM's Drainage report. Storage Building A is shown in the RFTA Master Layout Exhibit within the Report and flows have been analyzed with the additional impervious area of this building are accounted for in the existing storm system and the existing pond and will therefore cause no adverse effects.

Attachments: SGM's Report Excepts, Existing Drainage Basin Maps, Proposed Drainage Basin Maps

DRAINAGE REPORT

RFTA BUS OPERATIONS FACILITY IMPROVEMENTS
GLENWOOD SPRINGS, CO

April 2022

For Review

04/11/2022 10:56:15 AM

Prepared by
Ryan Stowe, E.I.

QAQC by
Rick Barth, P.E. 0036749

Supervised by
Jeff Simonson, P.E. 0026152

SGM

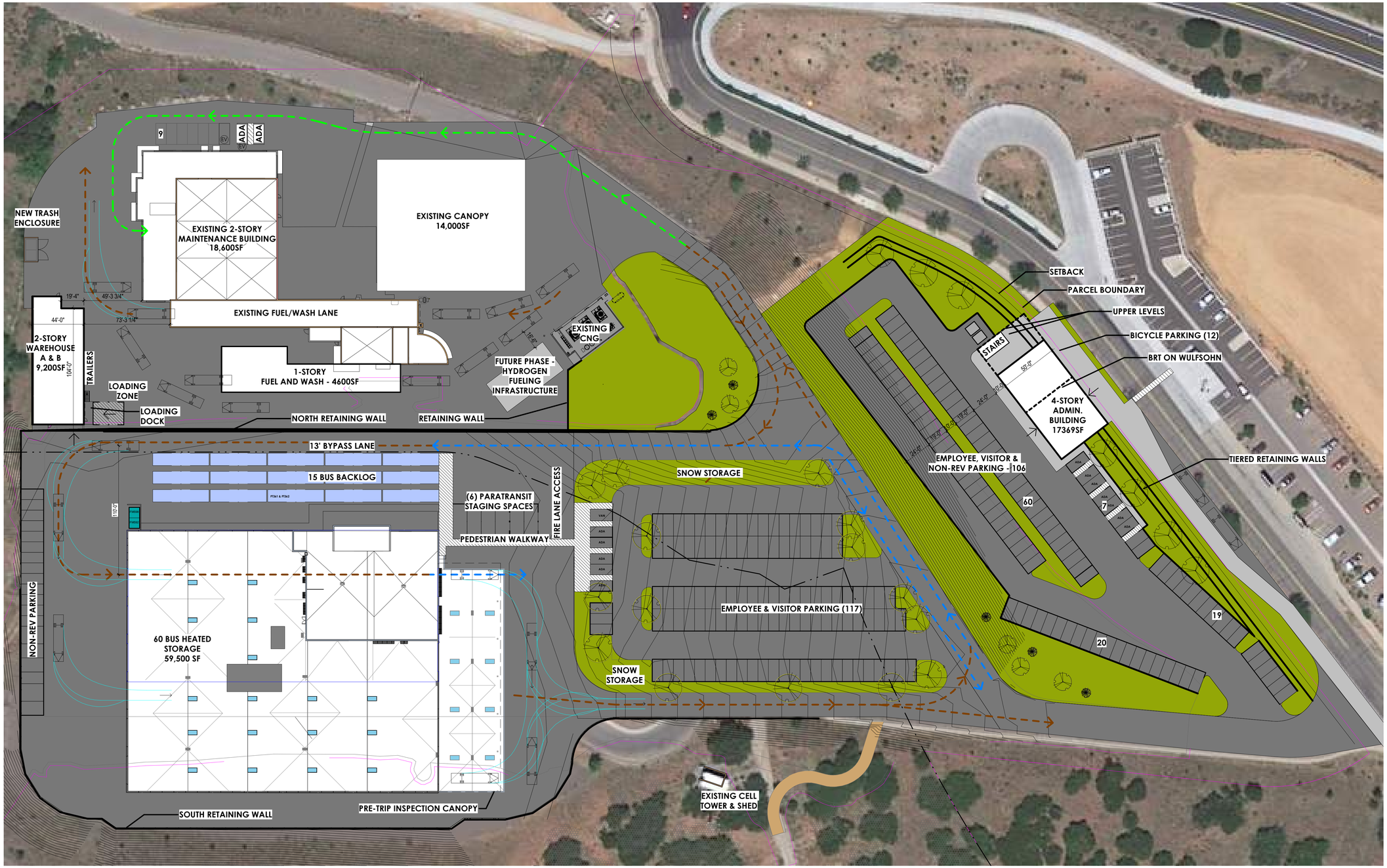
118 West 6th, Suite 200
Glenwood Springs, CO 81601
970.945.1004

Figure 2 - RFTA Master Layout Exhibit

BUILDINGS	POR	PROVIDED
WAREHOUSE A	4,933 GSF	5,000 GSF
WAREHOUSE B	6,200 GSF	6,200 GSF
ADMIN BUILDING	17,369 GSG	17,369 GSF

PARKING	POR	PROVIDED
EMPLOYEE	63 (75% = 47)	47
VISITOR & PARTON	43	43
DISABILITY	7	7
NON-REV	9	9
TOTAL	125	106

TRAILER PARKING AT WAREHOUSES



1 A-100b **NEXT STEPS CONCEPTUAL PLAN**
1" = 40'-0"

Stantec

Stantec Architecture Inc.
999 18th Street, Suite 202
Denver, 80202-2424
Tel: (303) 295-1717 • www.stantec.com

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SAUNDERS

Consultants

SGM

bluegreen
www.bluegreenaspen.com

Legend

Client/Project Logo

RFTA
Roaring Fork Transportation Authority

Client/Project

GLENWOOD SPRINGS MAINTENANCE FACILITY - BUS STORAGE & OPERATIONS

2307 WULFSOHN RD.,
GLENWOOD SPRINGS, CO 81601

NEXT STEPS CONCEPTUAL PLAN

A-100b

03/16/2022

STANTEC PROJECT #2270417345

Colorado River

Devereux Road

Railroad Tracks

North Discharge
Existing 48-inch pipe

North Discharge
Existing 48-inch pipe

Existing 18-inch pipe

Existing 48-inch pipe

Midland Avenue

Midland Avenue
Multi-use Path

Existing Inlet with no
outlet pipe.

Existing 24-inch pipe

Wulfson Rd

Existing Debris
Catch Basin

100 110 120 200 210 300 310 320 330 340 350 360 400 410 420 430 500 510 600 610 620 630 640 650 660 670 680 700 710 800 810 820 900

Legend

- Existing Pipe
- Existing Stage Storage
- Existing Impervious

Existing Basins

Basin Type

- Onsite
- Offsite

SGM
118 W. Sixth St., Suite 200
Glenwood Springs, CO 81601
970.945.1004
www.sgm-inc.com

Figure 4
Proposed Drainage Exhibit Part 2
RFTA, Glenwood Springs, CO

Date:	12/22/2021	Job No.	2021-445.001
Map by:	RRS		
Coordinate System:		Projection:	
Data Sources:	xxxx, xxxx, xxxxx xxxxx, xxx	Page:	XX/XX/XXXX
File:	I:\2015\2015-373-TownOfVail\001-StormWaterMap\H-Dwgs\GIS\MXDs\Mapbooks\Vail_SW_Mapbook_Overview_042715.mxd		

The information displayed above is intended for general planning purposes. Refer to legal documentation/data sources for descriptions/locations.

0 280 560 Feet

1 inch = 208 feet

N W E S

Subcatchment500: Runoff Area=0.259 ac 25.48% Impervious Runoff Depth>0.25"
Tc=5.0 min CN=68 Runoff=0.09 cfs 0.005 af

Subcatchment510: Runoff Area=3.707 ac 15.94% Impervious Runoff Depth>0.16"
Tc=5.0 min CN=64 Runoff=0.52 cfs 0.050 af

Subcatchment600: Runoff Area=8.420 ac 28.66% Impervious Runoff Depth>0.28"
Tc=5.0 min CN=69 Runoff=3.34 cfs 0.194 af

Subcatchment610: Runoff Area=0.231 ac 3.03% Impervious Runoff Depth>0.08"
Tc=5.0 min CN=59 Runoff=0.00 cfs 0.001 af

Subcatchment620: Runoff Area=0.078 ac 0.00% Impervious Runoff Depth>0.06"
Tc=5.0 min CN=58 Runoff=0.00 cfs 0.000 af

Subcatchment630: Runoff Area=0.757 ac 16.25% Impervious Runoff Depth>0.16"
Tc=5.0 min CN=64 Runoff=0.11 cfs 0.010 af

Subcatchment640: Runoff Area=0.106 ac 0.00% Impervious Runoff Depth>0.06"
Tc=5.0 min CN=58 Runoff=0.00 cfs 0.001 af

Subcatchment650: Runoff Area=0.115 ac 0.87% Impervious Runoff Depth>0.06"
Tc=5.0 min CN=58 Runoff=0.00 cfs 0.001 af

Subcatchment660: Runoff Area=1.533 ac 91.32% Impervious Runoff Depth>1.63"
Tc=5.0 min CN=95 Runoff=4.35 cfs 0.209 af

Subcatchment670: Runoff Area=1.437 ac 88.66% Impervious Runoff Depth>1.46"
Tc=5.0 min CN=93 Runoff=3.75 cfs 0.175 af

Subcatchment680: Runoff Area=2.882 ac 17.70% Impervious Runoff Depth>0.18"
Tc=5.0 min CN=65 Runoff=0.53 cfs 0.043 af

Subcatchment700: Runoff Area=1.059 ac 47.40% Impervious Runoff Depth>0.54"
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Subcatchment800: Runoff Area=0.810 ac 45.56% Impervious Runoff Depth>0.50"
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Subcatchment810: Runoff Area=8.130 ac 8.15% Impervious Runoff Depth>0.11"
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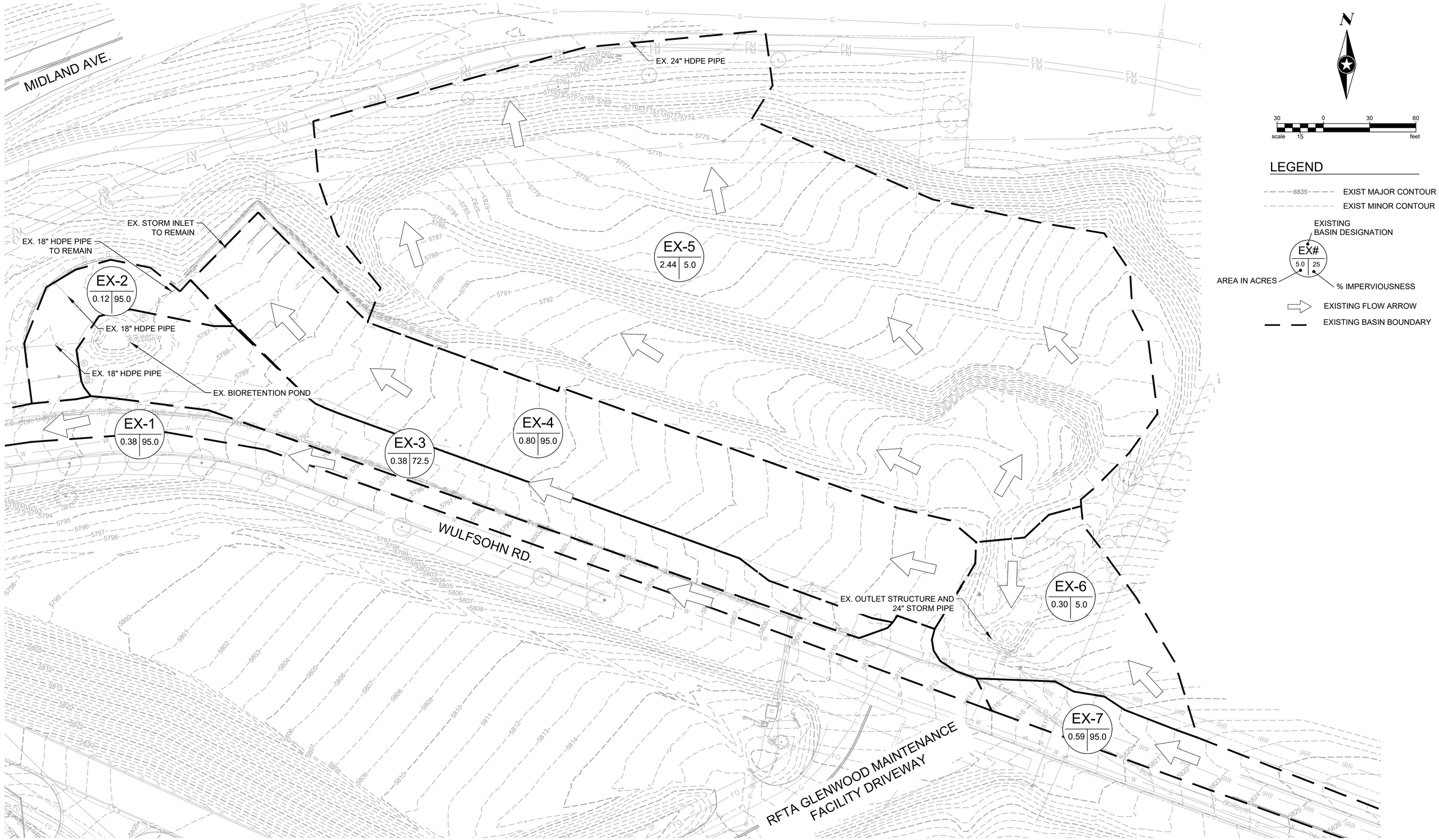
Subcatchment820: Runoff Area=23.436 ac 1.05% Impervious Runoff Depth>0.06"
Flow Length=1,968' Tc=16.1 min CN=58 Runoff=0.18 cfs 0.122 af

Subcatchment900: Runoff Area=6.007 ac 2.43% Impervious Runoff Depth>0.08"
Tc=5.0 min CN=59 Runoff=0.07 cfs 0.038 af



X:\PTI\RIROFTA\173800\99 Civil\5-final-dsgn\50-final-dsgn\50-Hydro\CAD\173800 EX PHA Drainage Map_New.dwg 8/22/2024 5:43 PM

Print Date:	8/22/2024 5:43 PM		
File Name:	173800 EX PHA Drainage Map_New.dwg		
Horiz. Scale: As Noted		Vert. Scale: As Noted	

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(800) 490-4966
Fax (720) 540-6801

Sheet Revisions

Rev.	Date	Comments	Init.

ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

Revised:

Void:

EXISTING DRAINAGE MAP
PHASE 6A

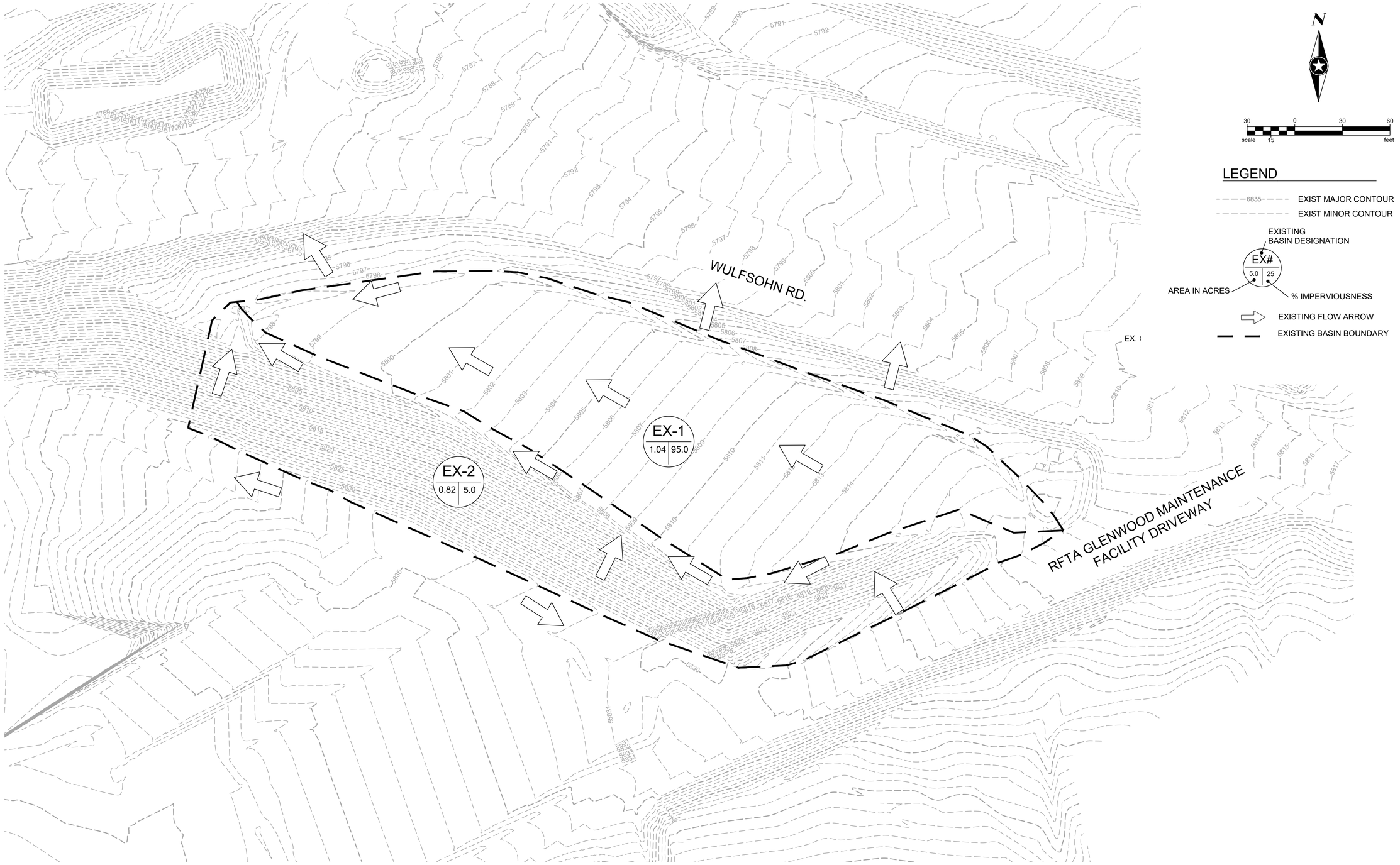
Designer:	D. Hoesly	Structure Numbers	
Detailer:	K. Boldt		
Sheet Subset:		Subset Sheets:	of

Project No./Code

TRG M535-014

25924

Sheet Number



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Horiz. Scale: As Noted	Vert. Scale: As Noted

Short Elliott Hendrickson Inc.
Colorado Center Tower One
Suite 6000
2000 South Colorado Boulevard
Denver, CO 80222-7900
Tele. (720) 540-6800
(800) 490-4966
Fax (720) 540-6801

Sheet Revisions

Rev.	Date	Comments	Init.

ROARING FORK TRANSPORTATION AUTHORITY

WEST GLENWOOD TRANSIT CENTER AND ADMINISTRATION OFFICES

2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

FIR Plans

No Revisions:

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EXISTING DRAINAGE MAP
PHASE 6B

Designer:	D. Hoesly	Structure Numbers	
Detailer:	K. Boldt		
Sheet Subset:		Subset Sheets:	of

Project No./Code

TRG M535-014

25924

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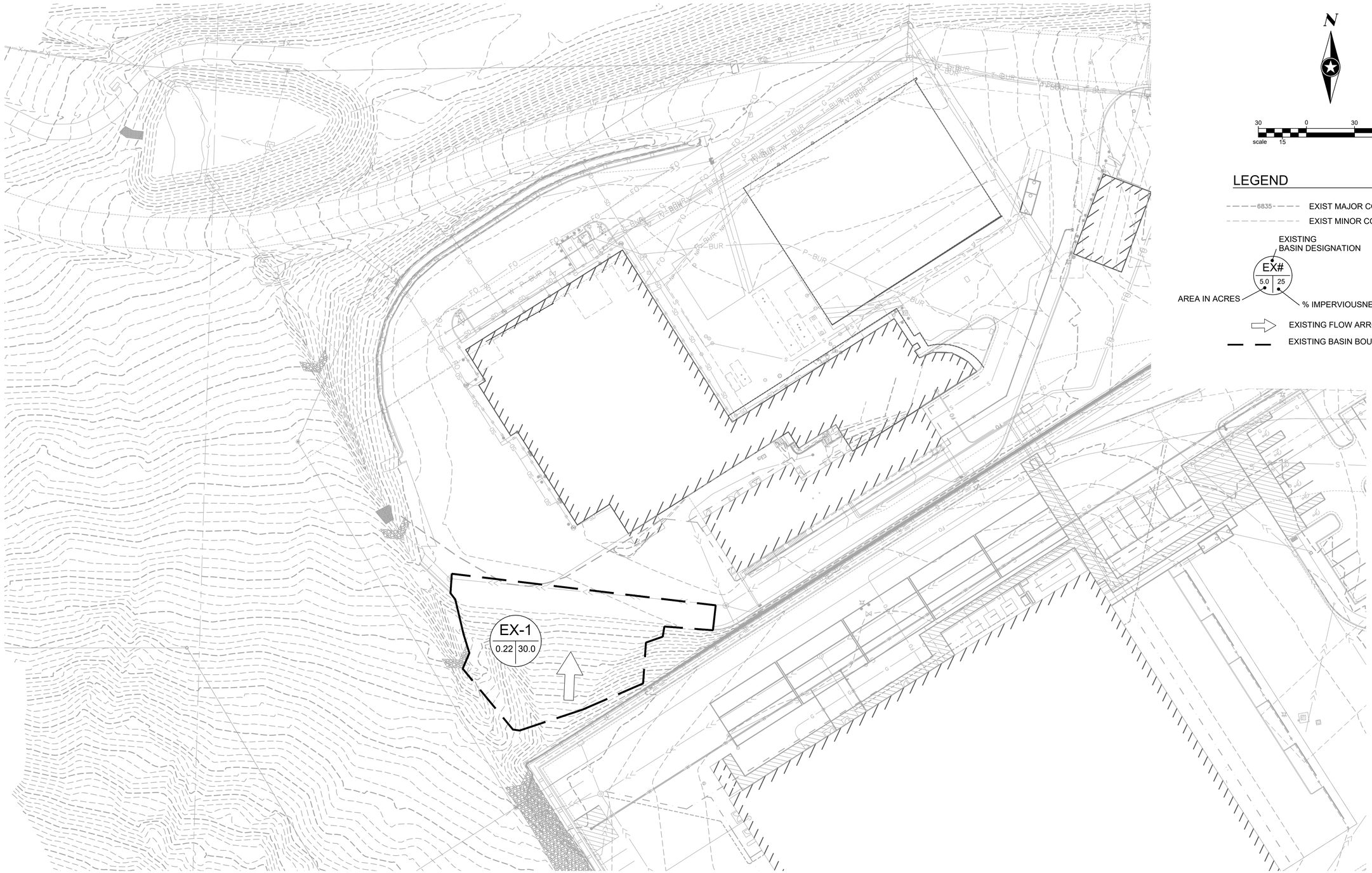

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EXISTING DRAINAGE MAP
PHASE 8

Designer:	D. Hoesly	Structure Numbers	
Detailer:	K. Boldt		
Sheet Subset:		Subset Sheets:	of

Project No./Code

TRG M535-014
25924
Sheet Number

MIDLAND AVE.

WULFSOHN RD.

RFTA GLENWOOD MAINTENANCE FACILITY DRIVEWAY

EX. 24" HDPE PIPE

EX. STORM INLET TO REMAIN

EX. 18" HDPE PIPE TO REMAIN

EX. 18" HDPE PIPE

EX. 18" HDPE PIPE

EX. BIORETENTION POND

EX. OUTLET STRUCTURE AND 24" STORM PIPE

P-1 | 0.18 | 95.0

P-2 | 0.12 | 95.0

P-3 | 0.52 | 86.0

P-4 | 0.27 | 95.0

P-5 | 0.32 | 95.0

P-6 | 0.38 | 95.0

P-7 | 0.24 | 95.0

P-8 | 0.14 | 95.0

P-9 | 0.22 | 95.0

P-10 | 0.14 | 95.0

P-11 | 0.09 | 95.0

P-12 | 0.36 | 95.0

P-13 | 0.30 | 5.0

P-14 | 0.59 | 95.0

P-15 | 0.99 | 5.0

P-16 | 0.19 | 5.0

N

30 0 30 60

scale 15 feet

LEGEND

- 6835 — PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED BASIN DESIGNATION (P-X | 5.0 | 25)
- AREA IN ACRES
- % IMPERVIOUSNESS
- PROPOSED FLOW ARROW
- PROPOSED BASIN BOUNDARY
- 1 DESIGN POINT

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PROPOSED DRAINAGE MAP
PHASE 6A

Designer:	D. Hoesly	Structure Numbers	
Detailer:	K. Boldt		
Sheet Subset:		Subset Sheets:	of

Project No./Code

TRG M535-014

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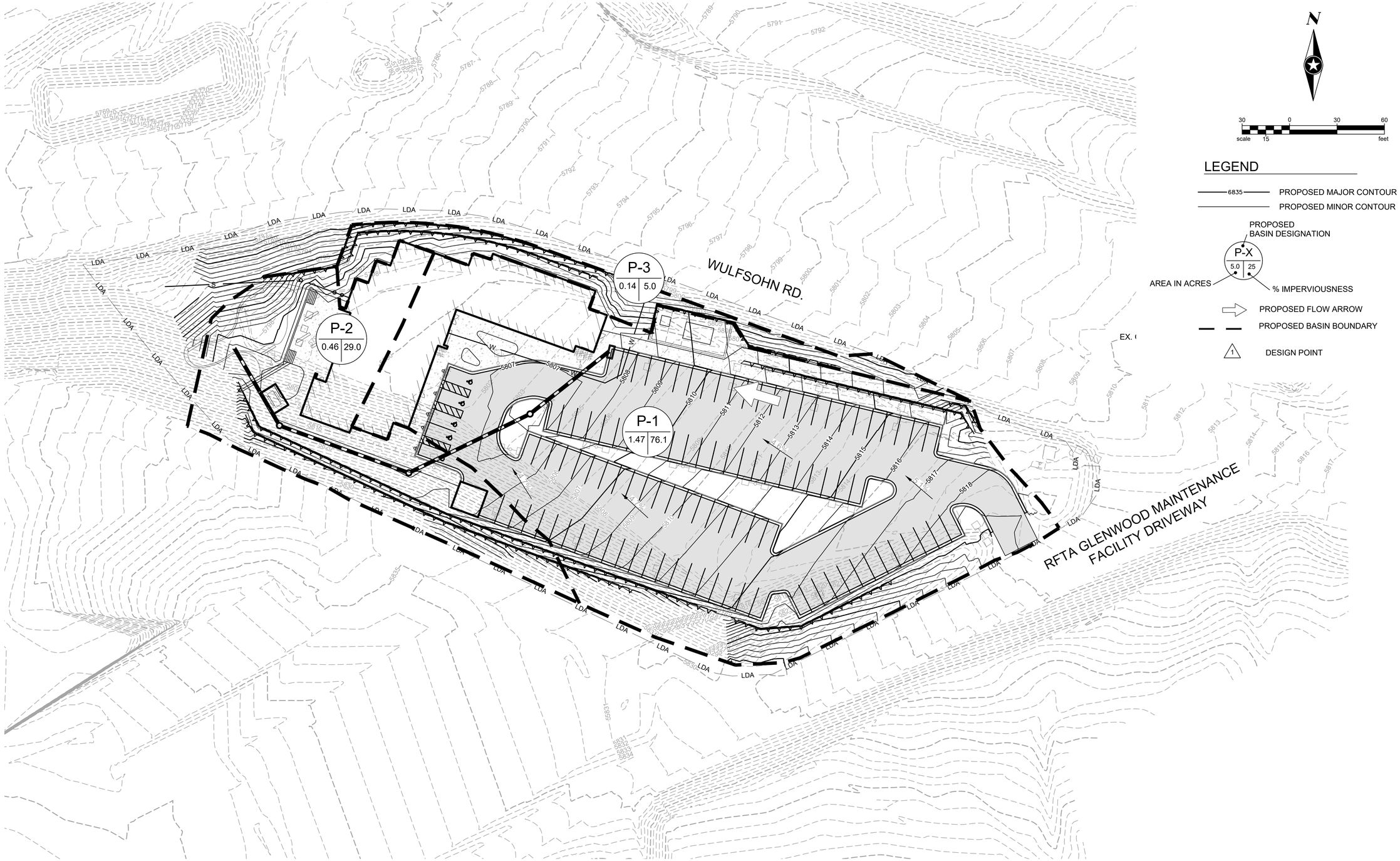
Sheet Number



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Void:

PROPOSED DRAINAGE MAP
PHASE 6B

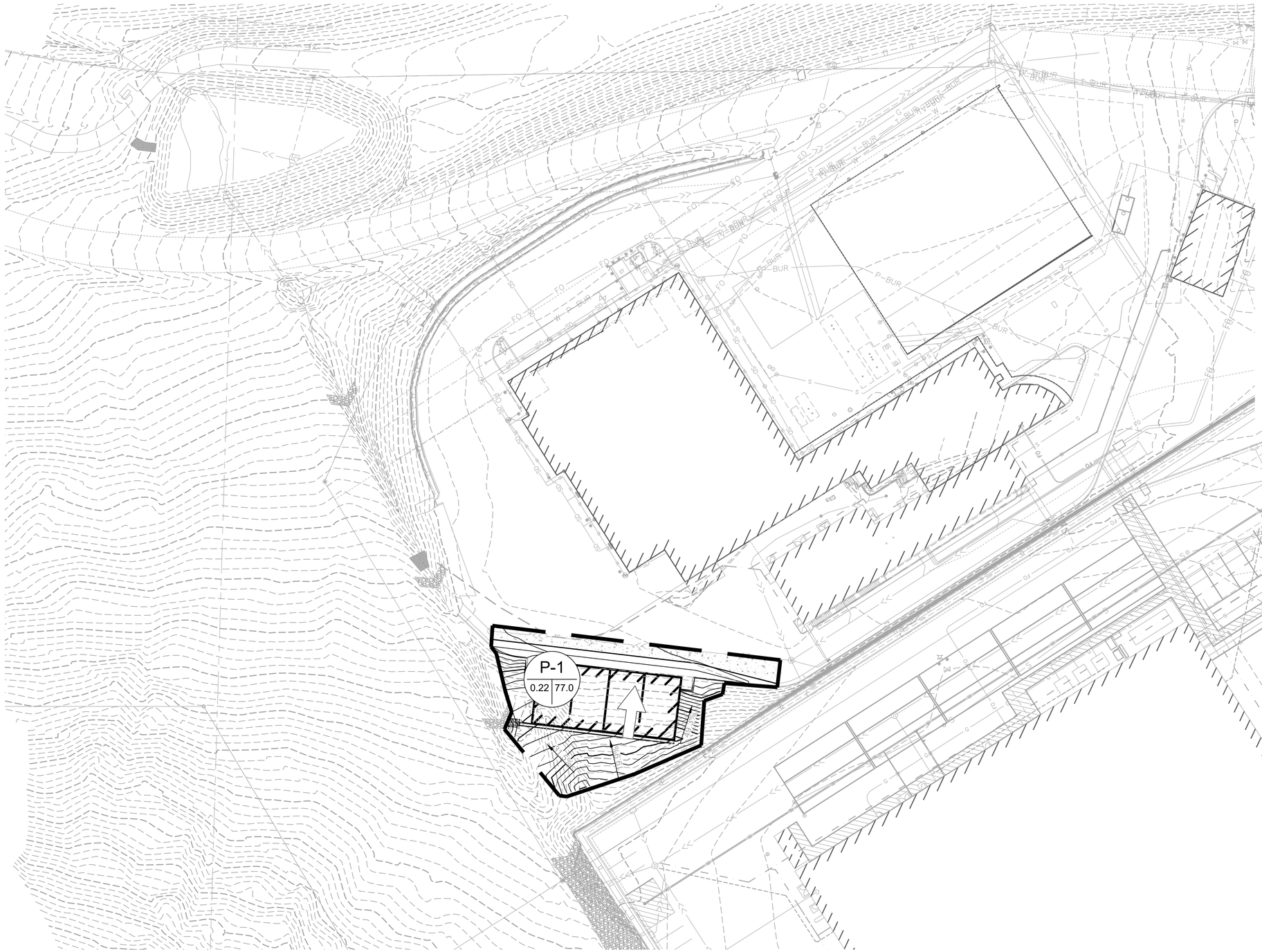
Designer:	D. Hoesly	Structure Numbers	
Detailer:	K. Boldt		
Sheet Subset:		Subset Sheets:	of

Project No./Code

TRG M535-014

25924

Sheet Number



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scale 15 feet

LEGEND

6835 PROPOSED MAJOR CONTOUR

PROPOSED MINOR CONTOUR

PROPOSED BASIN DESIGNATION

P-X
5.0 | 25

AREA IN ACRES

% IMPERVIOUSNESS

PROPOSED FLOW ARROW

PROPOSED BASIN BOUNDARY

1 DESIGN POINT

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FIR Plans

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Revised:

Void:

PROPOSED DRAINAGE MAP
PHASE 8

Designer:	D. Hoesly	Structure Numbers	
Detailer:	K. Boldt		
Sheet Subset:		Subset Sheets:	of

Project No./Code

TRG M535-014

25924

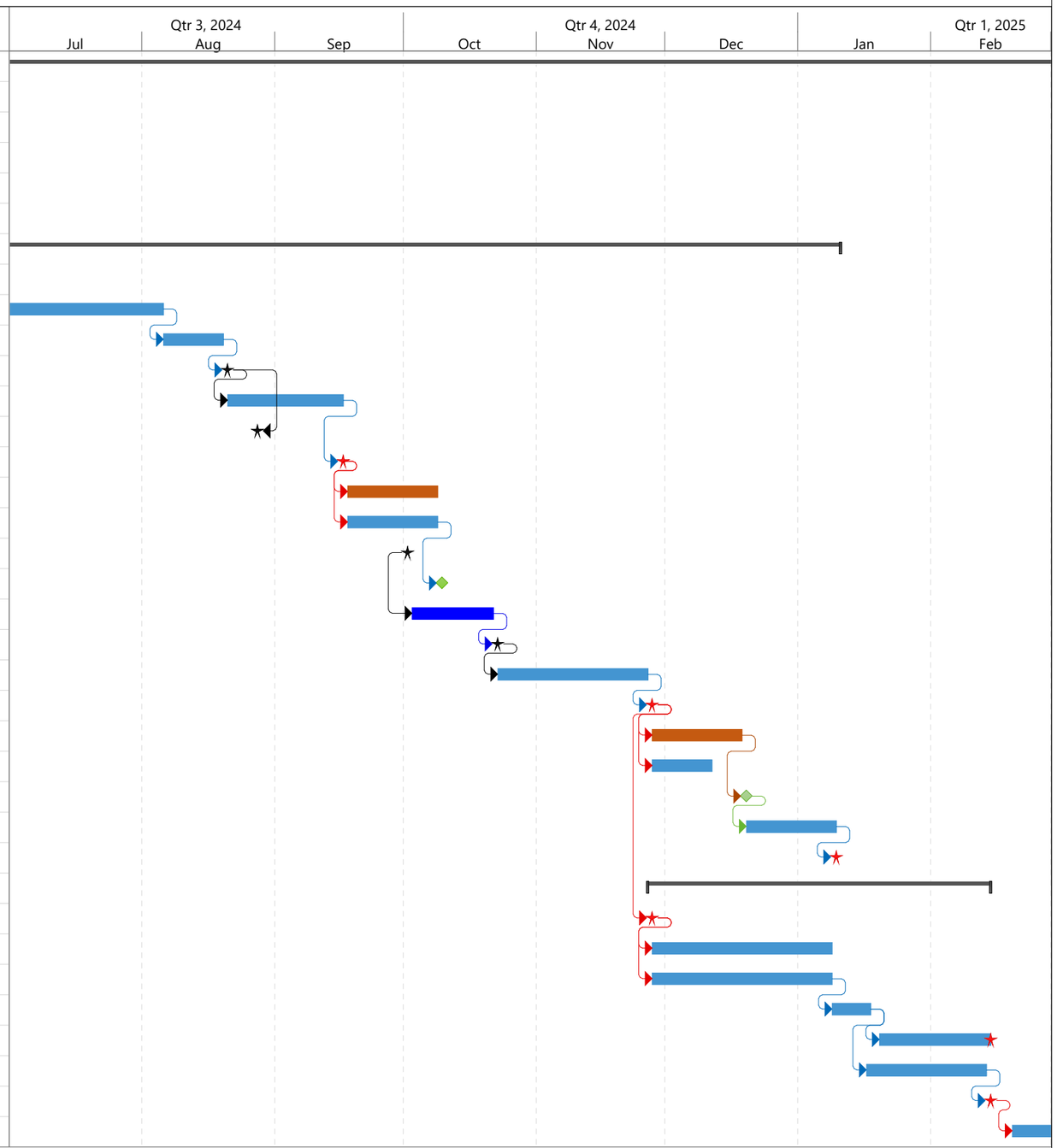
Sheet Number

Appendix E: Project Timeline

Total Project Duration = 855 days (Calendar)

RFTA West Glenwood Transit-Administration Building PH-6/8
Project Schedule

ID	*	Task Name	Duration	Start	Finish
0		**RFTA W.G. Transit & Administration Building (PH 6/8)**	**855 days**	**Fri 5/5/23**	**Thu 8/13/26**
1		Anticipated Intent to Award	0 days	Fri 5/5/23	Fri 5/5/23
2		Contracting	41 days	Fri 5/5/23	Fri 6/30/23
3		**Programming & Data Gathering**	**63 days**	**Tue 7/11/23**	**Thu 10/5/23**
15		**Schematic Design**	**112 days**	**Fri 10/6/23**	**Mon 3/11/24**
29		**Design Development**	**47 days**	**Tue 3/12/24**	**Wed 5/15/24**
38		**Construction Documents**	**172 days**	**Thu 5/16/24**	**Fri 1/10/25**
39		Preparation of 50% CD & 1041 Refinement (6A-8)	24 days	Thu 5/16/24	Tue 6/18/24
40		Revisions to 6B	34 days	Wed 6/19/24	Mon 8/5/24
41		Preparations of L&E / 1041 Documents (6A-6B-8)	10 days	Tue 8/6/24	Mon 8/19/24
42		**L&E / 1041 - Completeness Submittal**	**1 day**	**Tue 8/20/24**	**Tue 8/20/24**
43		Finalize 50% Construction Documents	19 days	Wed 8/21/24	Mon 9/16/24
44		**L&E / 1041 - Final Application Submittal**	**1 day**	**Tue 8/27/24**	**Tue 8/27/24**
45		50% CD Package - RFTA Submittal	1 day	Tue 9/17/24	Tue 9/17/24
46		50% CD Cost Opinion & Constructability Review	15 days	Wed 9/18/24	Tue 10/8/24
47		50% Stakeholder Review	15 days	Wed 9/18/24	Tue 10/8/24
48		**L&E / 1041 - COGS Department Review Meeting**	**1 day**	**Tue 10/1/24**	**Tue 10/1/24**
49		50% CD Stakeholder Review Meeting	1 day	Wed 10/9/24	Wed 10/9/24
50		**L&E / 1041 - Comment Revisions**	**13 days**	**Thu 10/3/24**	**Mon 10/21/24**
51		**L&E / 1041 - Planning & Zoning Commission Meeting**	**1 day**	**Tue 10/22/24**	**Tue 10/22/24**
52		Preparation of 95% Construction Documents	25 days	Wed 10/23/24	Tue 11/26/24
53		95% Construction Documents - RFTA Submittal	1 day	Wed 11/27/24	Wed 11/27/24
54		95% CD Cost Opinion & Constructability Review	15 days	Thu 11/28/24	Wed 12/18/24
55		95% CD Stakeholder Review	10 days	Thu 11/28/24	Wed 12/11/24
56		95% CD Stakeholder Review Meeting	1 day	Thu 12/19/24	Thu 12/19/24
57		Preparation of Final Construction Documents	15 days	Fri 12/20/24	Thu 1/9/25
58		Final Construction Documents - RFTA Submittal	1 day	Fri 1/10/25	Fri 1/10/25
59		**Permitting (Estimated)**	**58 days**	**Wed 11/27/24**	**Fri 2/14/25**
60		COGS Planning/Zoning & Building Permit Submital	1 day	Wed 11/27/24	Wed 11/27/24
61		Contractor Bidding - RFTA Submittal	30 days	Thu 11/28/24	Wed 1/8/25
62		COGS Building Department 1st Review	30 days	Thu 11/28/24	Wed 1/8/25
63		Review and Address Comments	7 days	Thu 1/9/25	Fri 1/17/25
64		Contractor Bidding Addendum - RFTA Submittal	20 days	Mon 1/20/25	Fri 2/14/25
65		COGS Building Department 2nd Review	20 days	Fri 1/17/25	Thu 2/13/25
66		Building Permit	1 day	Fri 2/14/25	Fri 2/14/25
67		**Construction (Estimated)**	**540 days**	**Thu 2/20/25**	**Thu 8/13/26**



Project: RFTA W.G. Transit & Administration Building (PH 6/8)
Date: Fri 8/16/24

Pending COGS Approval
Task
Summary
Client Submittal
Stakeholder Meetings
Design Team Submittal
COGS LE / 1041

Appendix F: Written Authorization & Statement Regarding Mineral Owners & Lessees

ROARING FORK TRANSPORTATION AUTHORITY
0051 Service Center Road
Aspen, Colorado 81611
970.925.8484 |

To Whom it May Concern,

Short Elliot Hendrickson Inc. (S.E.H.) and DHM Design are authorized to represent the Roaring Fork Transportation Authority for the L&E and 1041 application of the West Glenwood Transit Center, RFTA Administration and Operations Building, and the Glenwood Maintenance Facility Storage building located at 2307 Wulfsohn Rd. in Glenwood Springs, CO

Ben Ludlow

Roaring Fork Transportation Authority

Capital Projects Program Manager

ROARING FORK TRANSPORTATION AUTHORITY
0051 Service Center Road
Aspen, Colorado 81611
970.925.8484 |

To Whom it May Concern,

RFTA has examined the records of the County Clerk and Recorder for the existence of any mineral estate owners or lessees, and no such mineral estate owners or lessees exist at 2307 Wulfsohn Rd. in Glenwood Springs, CO.

Ben Ludlow

Roaring Fork Transportation Authority

Capital Projects Program Manager

Appendix G: Archeological Resources

ERO

Consultants in Natural Resources and the Environment

Technical Memorandum
File and Literature Review for Archaeological Resources Glenwood Maintenance Facility, Phases 6A, 6B, and 8 Garfield County, Colorado

Prepared for—
Roaring Fork Transportation Authority

July 3, 2024

On behalf of the Roaring Fork Transportation Authority (RFTA), ERO Resources Corporation (ERO) conducted an archaeological file review for the proposed Glenwood Maintenance Facility (project). The project involves expansion of the existing maintenance facility located near the Wulfsohn Road and Midland Avenue intersection on the north side of Glenwood Springs in Garfield County, Colorado. Because RFTA is using a grant from the Federal Transit Administration (FTA), the project requires reviews under the National Environmental Policy Act and must consider potential effects on archaeological resources pursuant to Section 106 (54 United States Code [U.S.C.] § 306108) of the National Historic Preservation Act (NHPA, 1966, as amended; 54 U.S.C. § 300101 et seq.). The Colorado Department of Transportation is coordinating the Section 106 compliance process on behalf of the FTA. ERO conducted a file search and literature review to identify known or potential archaeological resources that may be impacted by the project.

Project Description

RFTA proposes to renovate and expand its current maintenance facility into a new centrally located operations, maintenance, and administrative center called the Regional Transit Center (RTC). The RTC will function as the main regional transit center for RFTA. The RTC will address RFTA's current operational deficiencies and accommodate forecasted growth in population, employment, and ridership demand in RFTA's three-county service area. The RTC will provide sufficient bus storage, operations, maintenance, and administrative capacity and capability to support RFTA's long-term vison of creating greater connectivity between local, regional, and statewide transit systems. The RTC project includes 10 phases (Table 1). This technical memorandum addresses Section 106 compliance needs for Phases 6A, 6B, and 8.

Table 1. Project phases.

Phase	Scope
1	Lowering and grading the existing grade and construction of a temporary bus parking lot (for maintaining operations during future phases).
2	Additional grading and excavation and renovation and expansion of a fleet maintenance building.
3	Demolition, grading, excavation, and site preparation. Construction of a new Operations Center, Bus Storage Building A (with 30 indoor bus storage spaces), pre-trip bus inspection zones, bus backlog parking, and Maintenance Warehouse A.
4	Glenwood Maintenance Facility Administration building renovation. Relocate access road.
5	Construction of Bus Building 30B, associated drives, and pre-trip bus inspection zones.
6	**Construction of RFTA Transit Center (6A) and Administration Building (6B) with associated drives and parking area.**
7	Construction of bus fueling drive lanes and a bus wash area.
8	**Construction of Warehouse B, associated drives, and parking area.**
9	Construction of RFTA Housing Phase 1 with associated drives and parking.
10	Construction of RFTA Housing Phase 2 with associated drives and parking.

Project Area

The project area includes all areas of potential ground disturbance for the project including construction staging and access (8.43 acres). The project area overlaps existing roads and areas of previous disturbance. The legal location is the southwest quarter of Section 5 and the southwest quarter of Section 6, Township 6 South, Range 89 West of the 6th Principal Meridian in Garfield County, Colorado (Figure 1 and Figure 2, attached).

Methodology

The purpose of the cultural resource file and literature review is to determine if any previously documented cultural resources listed in or eligible for listing in the National Register of Historic Places (NRHP) or State Register of Historic Places (SRHP) could be impacted by the proposed project. A "cultural resource" is defined as an archaeological site, structure, or building constructed 50 or more years ago (Little et al. 2000). For this project, a 45-year age criterion was used as a buffer in the event the project is delayed after Section 106 consultation is completed. This review is focused on archaeological sites. A cultural resource listed in or eligible for listing in the NRHP/SRHP is a "historic property." To assist with project planning and potential consultation obligations under Section 106 of the NHPA (36 Code of Federal Regulations 800) and the State Register Act, Colorado Revised Statutes 34-80.1-104, ERO reviewed the previous cultural resource surveys and resource documentation completed in the project area and a 0.5-mile buffer by conducting a file search with the Office of Archaeology and Historic Preservation (OAHP). The OAHP provided the results to ERO on June 7, 2024 (File Search No. 26272) (Figure 3, attached).

Results

The file search identified eight previously conducted cultural resource surveys that intersect the file search area (Table 2). Of these, two surveys intersect the project area (GF.CH.R5 and MC.PA.R78). Survey MC.PA.R78 covers the entire project area.

Table 2. Previous cultural inventories within the project area and 0.5-mile buffered file search area.

Survey ID	Report Title (Date)	Institution
DT.LM.NR187	*A Class III Cultural Resource Inventory of the Proposed Salinity Soil Stability Project (BLM#: 22UN-24)* (2022)	Bureau of Land Management (BLM) - Uncompahgre Field Office
GF.CH.R5	*Glenwood Springs Alternative Transportation Route Cultural Resource Inventory, Garfield County, Colorado (Original and Addendum)* (2006)	Metcalf Archaeological Consultants
GF.EP.R1	*Cultural Resource Inventory for the Glenwood Springs 201 Facility Plan, City of Glenwood Springs, Garfield County, Colorado* (2003)	Metcalf Archaeological Consultants
GF.LM.NR593	*Chatfield Ranch Right of Way, A Class III Cultural Resource Inventory in Garfield County, Colorado S#5400-8* (2003)	Metcalf Archaeological Consultants
MC.CH.R94	*A Class III Cultural Resources Survey of the Roaring Fork Railroad Authority Environmental Impact Statement, Glenwood Springs to Brush Creek Transportation Corridor, Eagle, Garfield, and Pitkin Counties, Colorado* (2008)	Western Cultural Resource Management, Inc.
MC.CH.R96	*A Cultural Resource Survey of Interstates 25, 70, 225, and 270, U.S. Highways 34 and 160, and State Highways 13 and 470, for the Proposed Adesta Communications Fiber Optic System, Colorado (C SW00-102)* (2008)	Centennial Archaeology, Inc.
MC.LM.R639	*Class III Cultural Resource Inventory Public Service Company of Colorado, Palisade to Shoshone Transmission Line, Garfield and Mesa Counties, Colorado (BLM # CRIR 15911-04)* (2012)	BLM Grand Junction Field Office
MC.PA.R78	*Class III Cultural Resources Survey for the Roaring Fork Transportation Authority Bus Rapid Transit Project Along Colorado State Highway 82, Garfield, Eagle, and Pitkin Counties, Colorado* (2010)	FTA

The OAHP records indicate seven previously documented historical resources are located within the 0.5-mile buffer file search area (see *Technical Memorandum, File and Literature Review for Historical Resources Glenwood Maintenance Facility, Phases 6A, 6B, and 8, Garfield County, Colorado*). No previously documented archaeological resources intersect the file search area.

In addition to the OAHP file search, ERO reviewed historical maps (General Land Office 1885; U.S. Geological Survey 1930, 1963, 1968) and imagery to determine if historical archaeological sites may have been previously located in the project area. Maps do not indicate the presence of any potential archaeological resources in the project area. Aerial imagery shows that nearly the entire project area was disturbed by the construction of Wulfsohn Road, the parking lots, and utilities from 2002 to 2023 (Google, Inc. 2024). Approximately two small areas totaling 0.03 acre appear to remain intact along the east side of the project area. Trees that predate construction activities remain standing in these areas.

Summary

The file search was conducted with a 0.5-mile buffer around the project area. No archaeological resources have been previously documented in the file search area. The project area was completely surveyed in 2010 (MC.PA.R78). The project area has been thoroughly disturbed by construction activities related to the facility; 0.03 acre or less (less than 1 percent) of land appears not to have been disturbed. Therefore, a cultural resource survey is unlikely to identify any additional archaeological resources in the project area.

Certification of Results

Justin Batista, Project Archaeologist

Attachments

Figure 1. Project Location (USGS 1:24,000 topographic quadrangle)
Figure 2. Project Location (Aerial imagery)
Figure 3. File Search Results

References Cited

General Land Office
1885 Original Survey Plat, Township 6 South Range 89 West. Electronic database, https://glorecords.blm.gov/results/, accessed June 25, 2024.

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Little, Barbara, Erika M. Seibert, Jan Townsend, John H. Sprinkle Jr., and John Knoerl
2000 *National Register Bulletin: Guidelines for Evaluating and Registering Archaeological Properties*. Prepared by the U.S. Department of the Interior.

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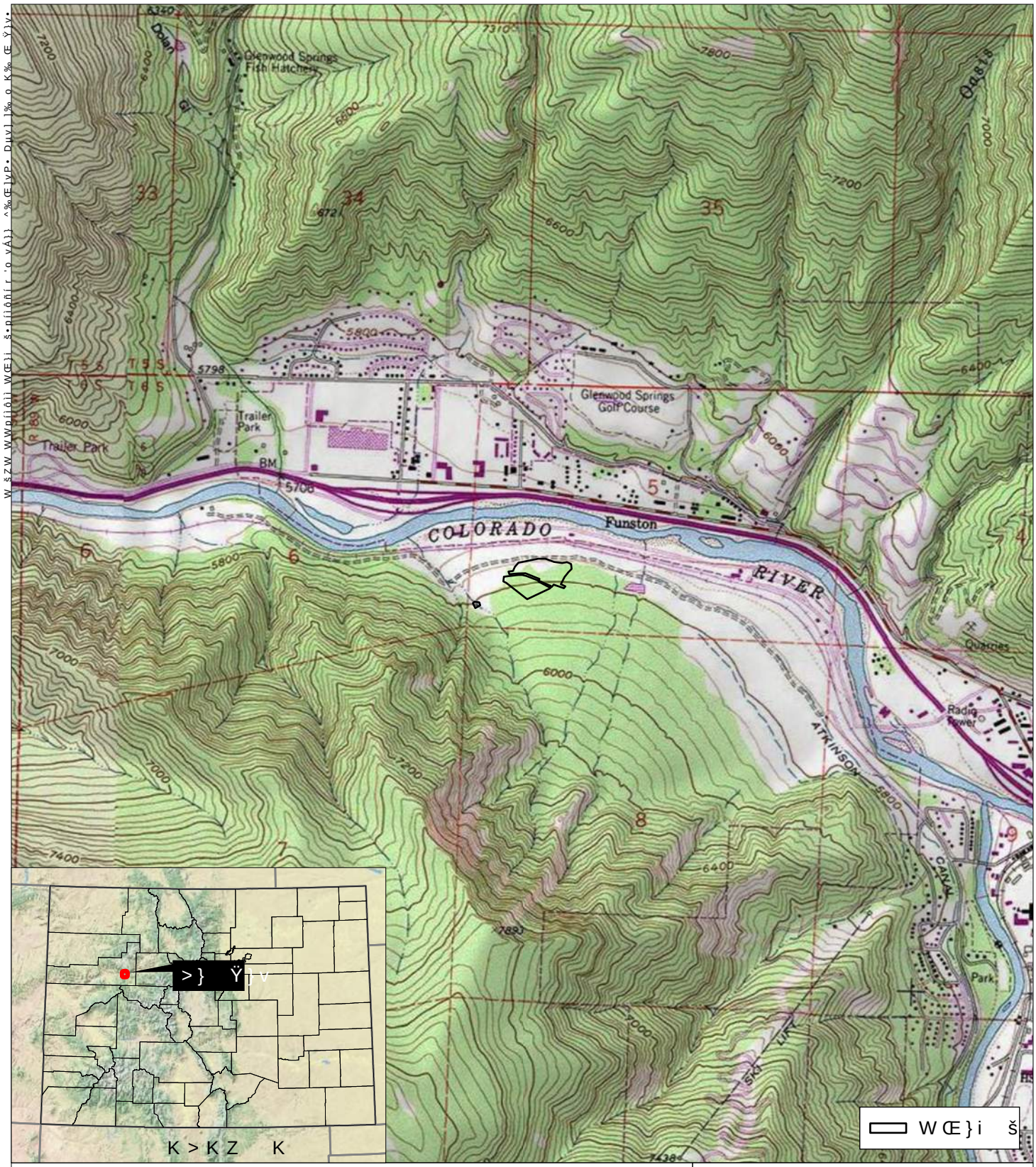
1963 Glenwood Springs, Colorado. Topographic Map. 1:24,000. U.S. Geological Survey, Denver, Colorado.
1968 Glenwood Springs, Colorado. Topographic Map. 1:24,000. U.S. Geological Survey, Denver, Colorado.



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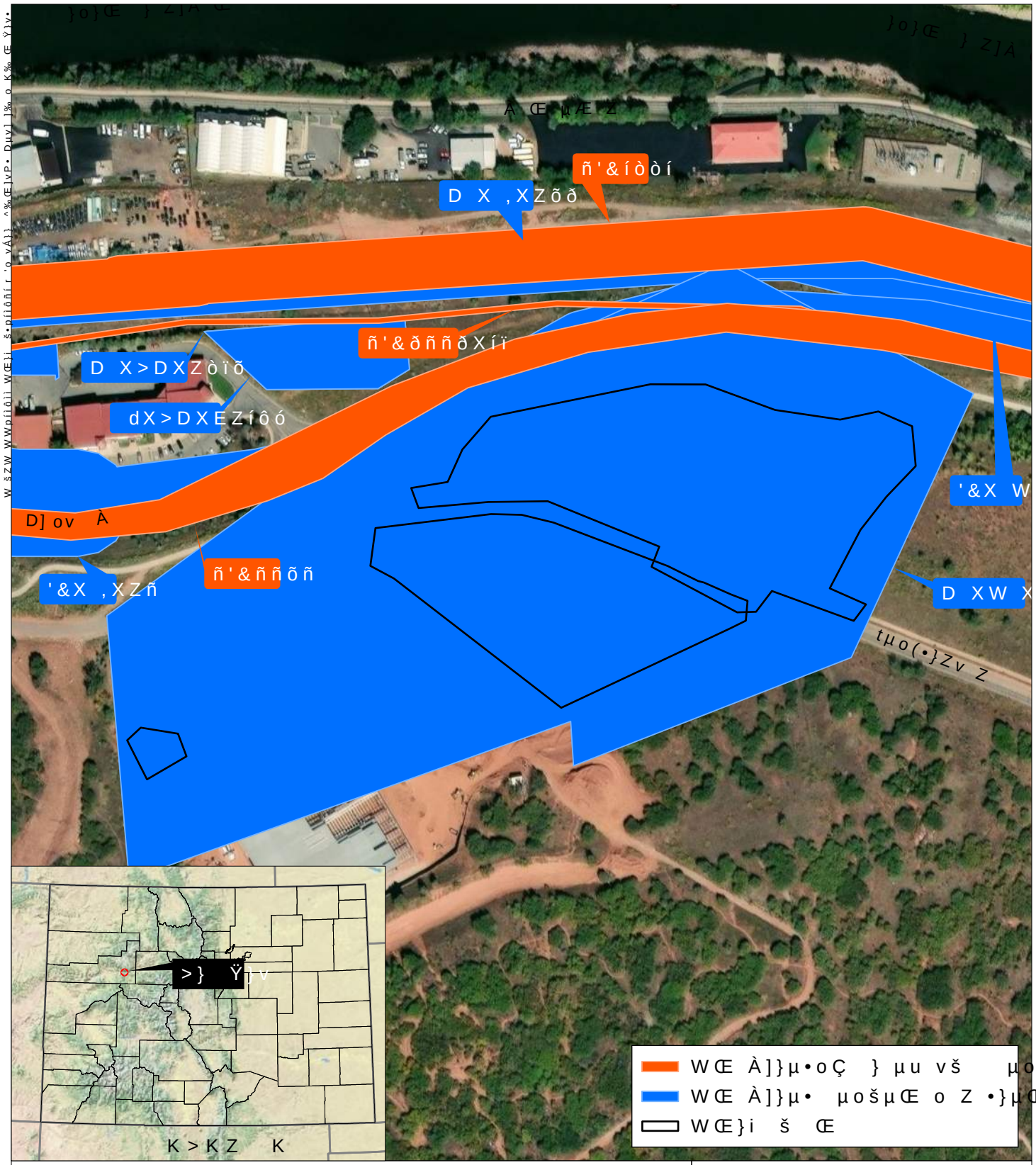

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Appendix H: Historical Resources

ERO

Consultants in Natural Resources and the Environment

Technical Memorandum
File and Literature Review for Historical Resources
Glenwood Maintenance Facility, Phases 6A, 6B, and 8
Garfield County, Colorado

Prepared for—
Roaring Fork Transportation Authority

July 3, 2024

On behalf of the Roaring Fork Transportation Authority (RFTA), ERO Resources Corporation (ERO) conducted a historic file review for the proposed Glenwood Maintenance Facility (project). The project involves expansion of the existing maintenance facility located near the Wulfsohn Road and Midland Avenue intersection on the north side of Glenwood Springs in Garfield County, Colorado. Because RFTA is using a grant from the Federal Transit Administration (FTA), the project requires reviews under the National Environmental Policy Act and must consider potential effects on historical resources pursuant to Section 106 (54 United States Code [U.S.C.] § 306108) of the National Historic Preservation Act (NHPA, 1966, as amended; 54 U.S.C. § 300101 et seq.). The Colorado Department of Transportation (CDOT) is coordinating the Section 106 compliance process on behalf of the FTA. ERO conducted a file search and literature review to identify known or potential historical resources that may be impacted by the project.

Project Description

RFTA proposes to renovate and expand its current maintenance facility into a new centrally located operations, maintenance, and administrative center called the Regional Transit Center (RTC). The RTC will function as the main regional transit center for RFTA. The RTC will address RFTA's current operational deficiencies and accommodate forecasted growth in population, employment, and ridership demand in RFTA's three-county service area. The RTC will provide sufficient bus storage, operations, maintenance, and administrative capacity and capability to support RFTA's long-term vison of creating greater connectivity between local, regional, and statewide transit systems. The RTC project includes 10 phases (Table 1). This technical memorandum addresses Section 106 compliance needs for Phases 6A, 6B, and 8. See the attached *Design Plans* for additional details on the prosed work for Phases 6A, 6B, and 8.

Table 1. Project phases.

Phase	Scope
1	Lowering and grading the existing grade and the construction of a temporary bus parking lot (for maintaining operations during future phases).
2	Additional grading and excavation and renovation and expansion of a fleet maintenance building.
3	Demolition, grading, excavation, and site preparation. Construction of a new Operations Center, Bus Storage Building A (with 30 indoor bus storage spaces), pre-trip bus inspection zones, bus backlog parking, and Maintenance Warehouse A.
4	Glenwood Maintenance Facility Administration building renovation. Relocate access road.
5	Construction of Bus Building 30B, associated drives, and pre-trip bus inspection zones.
6	**Construction of RFTA Transit Center (6A) and Administration Building (6B) with associated drives and parking area.**
7	Construction of bus fueling drive lanes and a bus wash area.
8	**Construction of Warehouse B, associated drives, and parking area.**
9	Construction of RFTA Housing Phase 1 with associated drives and parking.
10	Construction of RFTA Housing Phase 2 with associated drives and parking.

Area of Potential Effects

The area of potential effects (APE) incorporates the project area where all potential ground disturbance may take place including construction staging and access may occur. Because the project proposes to expand an existing facility, the APE also accommodates possible visual impacts by incorporating a 500-foot buffer around the project area that intersects all adjacent parcels (69.54 acres). The legal location is Sections 5 through 8, Township 6 South; Range 89 West of the 6th Principal Meridian in Garfield County, Colorado (Figure 1 and Figure 2, attached).

Methodology

The purpose of the cultural resource file and literature review is to determine if any previously documented cultural resources listed in or eligible for listing in the National Register of Historic Places (NRHP) or State Register of Historic Places (SRHP) could be impacted by the proposed project. A "cultural resource" is defined as an archaeological site, structure, or building constructed 50 or more years ago (Little et al. 2000). For this project, a 45-year age criterion was used as a buffer in the event the project is delayed after Section 106 consultation is completed. This review is focused on cultural resources that are part of the built environment rather than archaeological sites. A cultural resource listed in or eligible for listing in the NRHP/SRHP is a "historic property." To assist with project planning and potential consultation obligations under Section 106 of the NHPA (36 Code of Federal Regulations [CFR] 800) and the State Register Act, Colorado Revised Statutes 34-80.1-104, ERO reviewed the previous cultural resource surveys and resource documentation completed in the APE and a 0.5-mile buffer by conducting a file search with the Office of Archaeology and Historic Preservation (OAHP). The OAHP provided the results to ERO on June 7, 2024 (File Search No. 26272).

Results

The file search identified eight previously conducted cultural resource surveys that intersect the 0.5-mile buffer surrounding the search area (Table 2). Of these, six surveys intersect the APE (DT.LM.NR187, GF.CH.R5, GF.EP.R1, MC.CH.R94, MC.LM.R639, and MC.PA.R78).

Table 2. Previous cultural inventories within the 0.5-mile buffered file search area.

Survey ID	Report Title (Date)	Institution	Intersect the APE?
DT.LM.NR187	*A Class III Cultural Resource Inventory of the Proposed Salinity Soil Stability Project* (BLM#: 22UN-24)	Bureau of Land Management (BLM) - Uncompahgre Field Office (UFO)	Yes
GF.CH.R5	*Glenwood Springs Alternative Transportation Route Cultural Resource Inventory, Garfield County, Colorado (Original and Addendum)* (2006)	Metcalf Archaeological Consultants	Yes
GF.EP.R1	*Cultural Resource Inventory for the Glenwood Springs 201 Facility Plan, City of Glenwood Springs, Garfield County, Colorado* (2003)	Metcalf Archaeological Consultants	Yes
GF.LM.NR593	*Chatfield Ranch Right of Way, A Class III Cultural Resource Inventory in Garfield County, Colorado S#5400-8* (2003)	Metcalf Archaeological Consultants	No
MC.CH.R94	*A Class III Cultural Resources Survey of the Roaring Fork Railroad Authority Environmental Impact Statement, Glenwood Springs to Brush Creek Transportation Corridor, Eagle, Garfield, and Pitkin Counties, Colorado* (2008)	Western Cultural Resource Management, Inc.	Yes
MC.CH.R96	*A Cultural Resource Survey of Interstates 25, 70, 225, and 270, U.S. Highways 34 and 160, and State Highways 13 and 470, for the Proposed Adesta Communications Fiber Optic System, Colorado (C SW00-102)* (2008)	Centennial Archaeology, Inc.	No
MC.LM.R639	*Class III Cultural Resource Inventory Public Service Company of Colorado, Palisade to Shoshone Transmission Line, Garfield and Mesa Counties, Colorado (BLM # CRIR 15911-04)* (2012)	BLM Grand Junction Field Office	Yes
MC.PA.R78	*Class III Cultural Resources Survey for the Roaring Fork Transportation Authority Bus Rapid Transit Project Along Colorado State Highway 82, Garfield, Eagle, and Pitkin Counties, Colorado* (2010)	FTA	Yes

The OAHP records indicate seven previously documented cultural resources are located within the 0.5-mile buffer file search area (Table 3; Figure 3, attached). None of the previously documented cultural resources intersect the project area but four previously documented cultural resources intersect the APE (5GF1661, 5GF1661.6, 5GF4554.13, and 5GF5595). All four cultural resources are linear resources including a railroad, transmission line, and road.

Table 3. Previously documented cultural resources within the 0.5-mile buffered file search area.

Site Number	Name	Eligibility	Intersect the APE?
5GF1661	Denver and Rio Grande Western Railroad Aspen Branch	Officially eligible, 2020	Yes

Site Number	Name	Eligibility	Intersect the APE?
5GF1661.6	Denver and Rio Grande Western Railroad, Aspen Branch - Segment	Officially eligible, supports eligibility of entire linear resource, 2012	Yes
5GF1662	Atkinson Canal	Officially eligible, 1993	No
5GF2935.5	U.S. Highway 6 - Segment	Field eligible, supports eligibility of entire linear resource, 2012	No
5GF4554.13	Shoshone - Palisade Transmission Line - Segment	Officially needs data, supports eligibility of entire linear resource, 2012	Yes
5GF4688	West Glenwood Springs Historical Marker	Unknown, 2013	No
5GF5595	Midland Avenue	Officially not eligible, 2019	Yes

ERO also reviewed the CDOT Historic Sites Viewer and Historic Streetcars of Colorado databases to see if any other previously documented cultural resources are in the APE that were not included in the OAHP file search results (Colorado Department of Transportation 2024a, 2024b). Neither database identified additional previously documented cultural resources.

Lastly, ERO reviewed historical aerial imagery and the Garfield County assessor website to determine if any undocumented historical buildings or structures are in the APE (Garfield County Assessor's Office 2024; Nationwide Environmental Title Research 2024). The project area overlaps Wulfsohn Road and three parcels owned by RFTA that contain parking lots and the existing RFTA building. Wulfsohn Road and the existing RFTA building was constructed circa 2002. The parking lots were built after 2005. The APE also intersects an RFTA warehouse constructed in 2002, the Midland Center constructed circa 2005, a greenhouse at 51359 Highway 6 constructed in 2016, TRUE Automotive constructed in 1995, White Water Rafting constructed in 1995, and Water Treatment Plant Road constructed in 2009 (Garfield County Assessor's Office 2024; Nationwide Environmental Title Research 2024). None of these buildings or structures meet the age criteria to be considered cultural resources.

Visual Effects

Four previously documented cultural resources overlap the APE (5GF1661, 5GF1661.6, 5GF4554.13, and 5GF5595). The Denver and Rio Grande Western Railroad Aspen Branch (5GF1661) is officially eligible, and segment 5GF1661.6 supports its eligibility. The Shoshone - Palisade Transmission Line – Segment officially needs data but segment 5GF4554.13 was determined supporting of its potential eligibility. Lastly, Midland Avenue (5GF5595) was determined not eligible in 2019. Because Midland Avenue is not a historic property, no further discussion of the visual effects on the resource is included in this technical memorandum.

The Denver and Rio Grande Western Railroad Aspen Branch (5GF1661) was built as a narrow-gauge railroad in November 1887 as part of competition to provide the first railroad service in the Grand Valley. It was widened to standard gauge by 1890 and experienced economic success until the Panic of 1893 (Briggs and Chance 2011). The Shoshone - Palisade Transmission Line (5GF4554) was constructed in phases from 1911 until 1941. The transmission line was upgraded to 69 kilovolt specifications by the

1960s. The section through Glenwood Canyon was rerouted in 1983 to accommodate I-70 (Engleman et al. 2011). Both locations for these linear resources were chosen for economic and geographic convenience. Neither historic property was designed with a viewshed in mind.

The proposed project includes the construction of a new single-story transit center, a three-story administration building, and a single-story storage building (see attached *Design Plans*). Viewsheds of the new construction will be limited because the two historic properties are downslope of the proposed development which is adjacent to modern buildings. The steep vegetated slope and existing development, including the current RFTA building, Midland Center, and bridges, will obscure most, if not all, of the new construction while not interrupting the prominent viewshed of the surrounding mountains (Figure 4 and Figure 5). Therefore, the integrity of setting for each historic property will not be impacted by the proposed project.

Figure 4. View toward the proposed construction (marked with an arrow) from Midland Avenue, adjacent to segment 5GF1661.6 and segment 5GF4554.13. Photo from August 2023 courtesy of Google Street View (Google, Inc. 2024).

Figure 5. View toward the proposed construction (marked with an arrow) from where segment 5GF1661.6 and segment 5GF4554.13 intersect Midland Avenue. Photo from August 2023 courtesy of Google Street View (Google, Inc. 2024).

Summary

The file search and literature review demonstrate that there are four previously documented cultural resources overlapping the APE (5GF1661, 5GF1661.6, 5GF4554.13, and 5GF5595). The Denver and Rio Grande Western Railroad Aspen Branch (5GF1661) is officially eligible and segment 5GF1661.6 supports its eligibility. The Shoshone - Palisade Transmission Line – Segment officially needs data but segment 5GF4554.13 was determined supporting of its potential eligibility. Midland Avenue (5GF5595) was determined not eligible in 2019. The proposed development will be mostly obscured from the viewsheds of 5GF1661 and 5GF4554 by a steep vegetated slope. Therefore, ERO recommends a determination of "no adverse effect" pursuant to 36 CFR 800.5 of the NHPA.

Please feel free to contact Leslie Moore by email at lmoore@eroresources.com or by phone at (443) 615-0554 with any questions you may have in reference to the file and literature review results.

Certification of Results

Leslie Moore

_____

Leslie Moore, Senior Historian

Attachments

Figure 1. Project Location (USGS 1:24,000 topographic quadrangle)
Figure 2. Project Location (Aerial imagery)
Figure 3. File Search Results
Design Plans

References Cited

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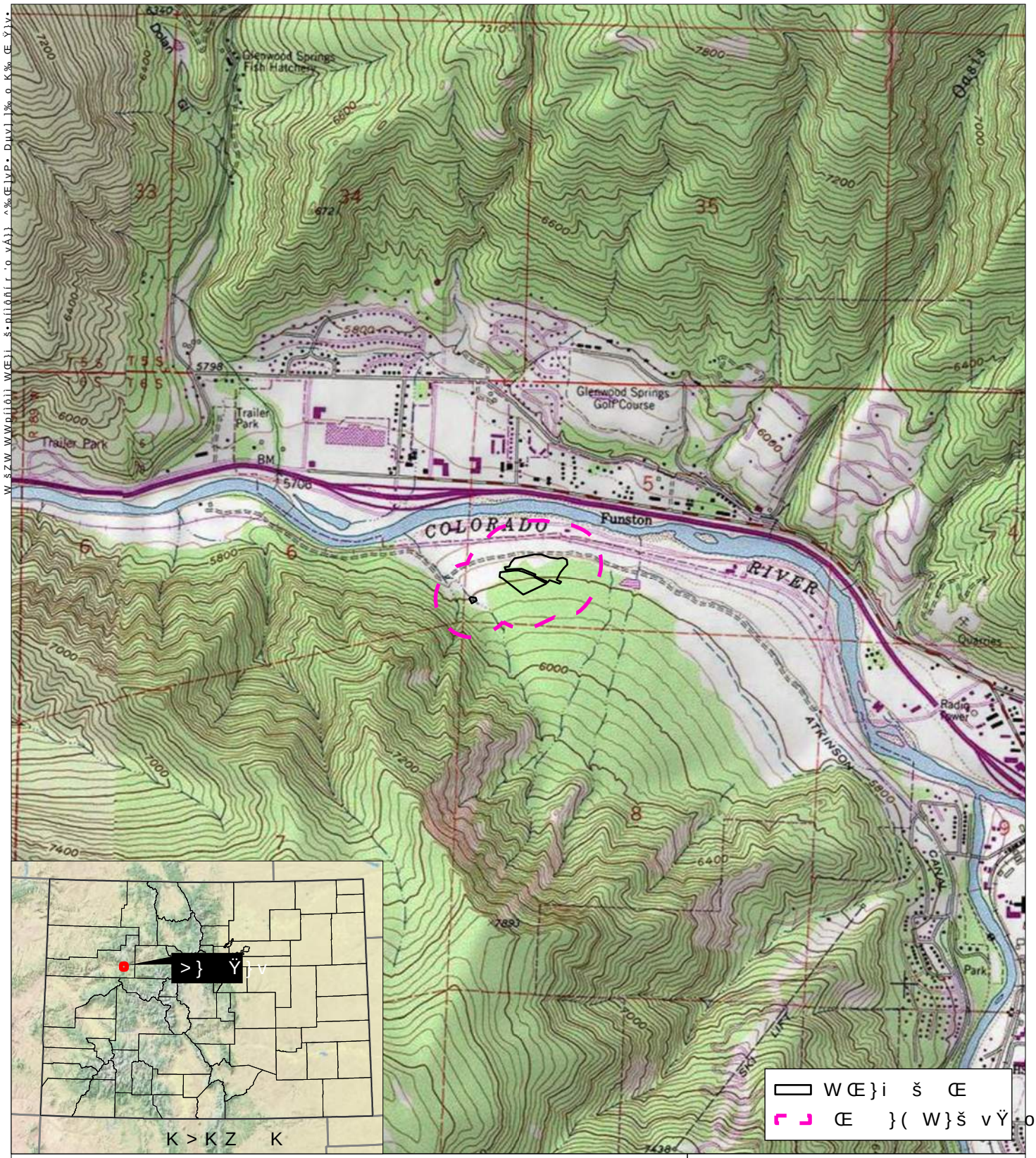

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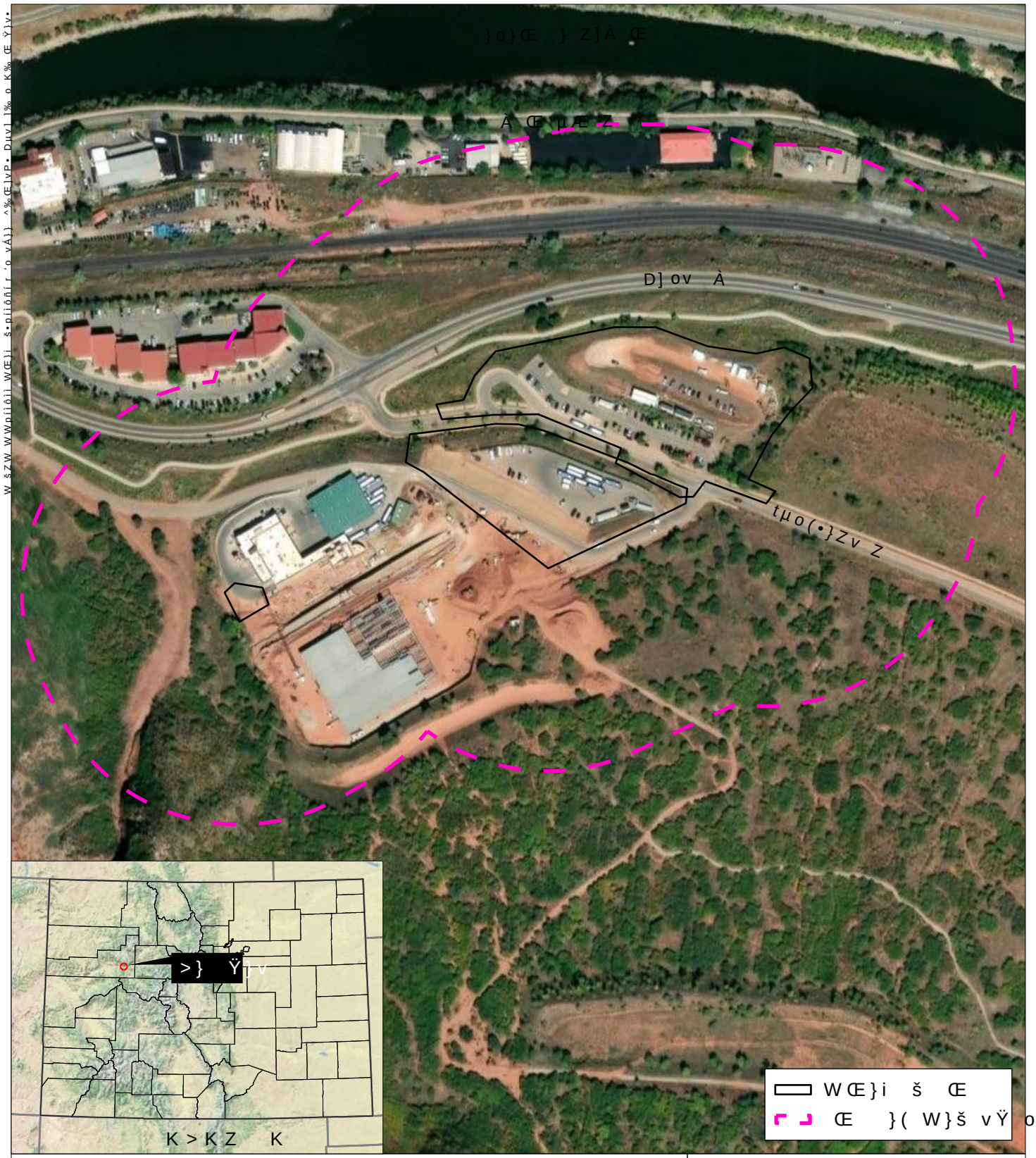

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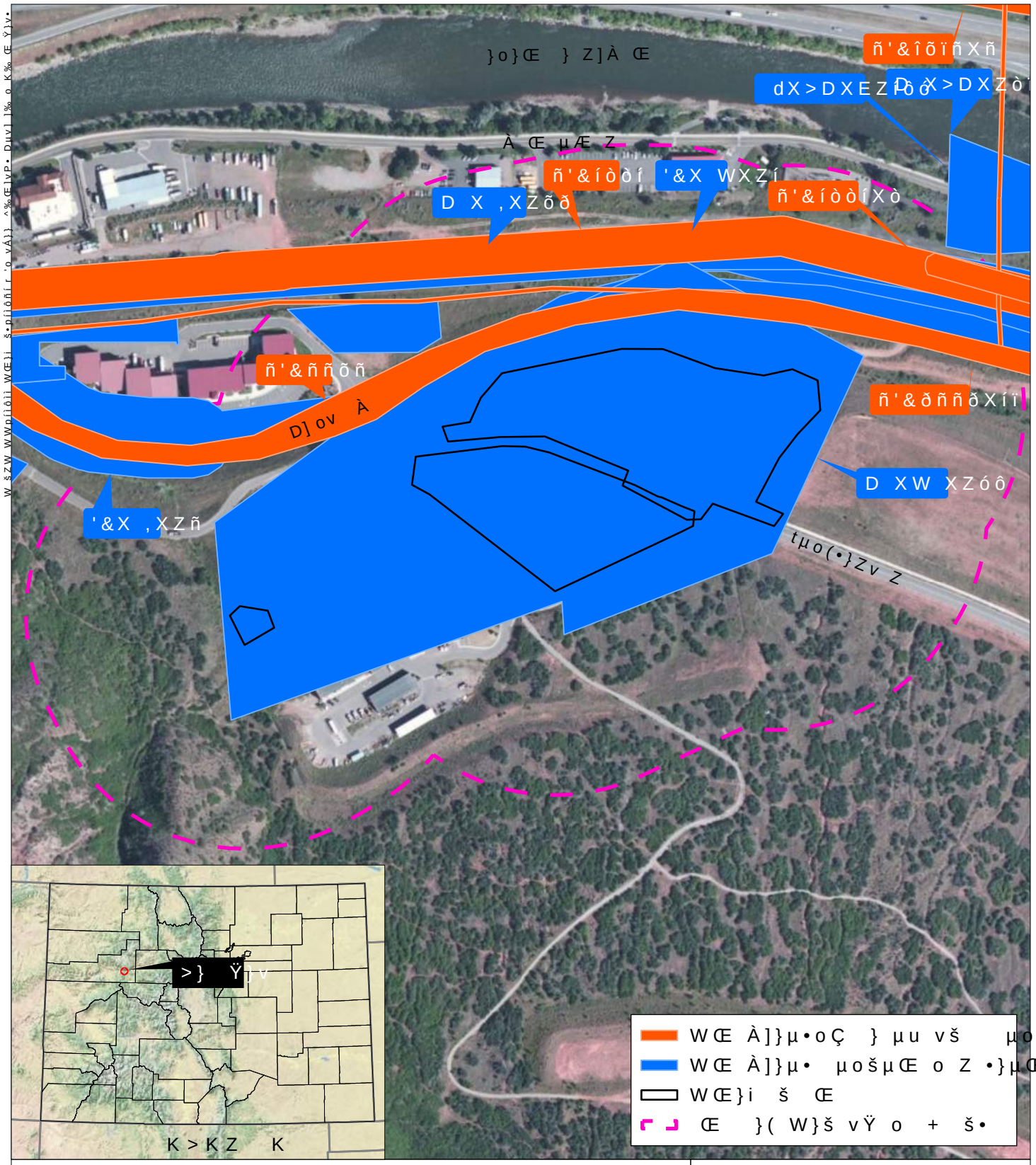

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Appendix I: Biological Resources

ERO

Consultants in Natural Resources and the Environment

Biological Resources Report
Glenwood Maintenance Facility, Phases 6A, 6B, and 8
Glenwood Springs, Colorado

Prepared for—

Roaring Fork Transit Authority
2307 Wulfsohn Road
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Prepared by—

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1626 Cole Boulevard, Suite 100
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(303) 830-1188
ERO Project #10851

July 29, 2024

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Summary

The Roaring Fork Transit Authority (RFTA) retained ERO Resources Corporation (ERO) to provide this Biological Resources Report (BRR) for the Glenwood Maintenance Facility, Phases 6A, 6B, and 8 project (project) in Glenwood Springs, Garfield County, Colorado (project area). The following biological resources are addressed in this BRR.

Wetlands and Other Waters of the U.S. – Based on a desktop assessment, an ephemeral drainage with potential wetlands may occur along the eastern boundary of Phase 6A of the project area; however, these potential aquatic resources (if present) appear to be associated with a roadside drainage swale excavated in dryland that would not carry relatively permanent flow and would be excluded by the U.S. Army Corps of Engineers from being a water of the United States. The aquatic features (if present) may be subject to the State Dredge and Fill Program(Colorado Department of Public Health and Environment (CDPHE) 2024). ***If work is planned in the drainage***, ***ERO recommends conducting a wetland delineation to determine the presence of aquatic resources as well as the need for Clean Water Act Section 404 permitting or state permitting, as appropriate.*** Additionally, a Colorado Department of Transportation (CDOT) Wetland Finding Report would be required if permanent wetland impacts exceed 500 square feet or combined temporary and permanent wetland impacts exceed 1,000 square feet.

Noxious Weeds – Noxious weeds have the potential to occur in the project area. ***ERO recommends CDOT Specifications for Noxious Weed Management be incorporated into the project construction documents.***

Federally Listed Threatened and Endangered Species – The project area does not contain habitat for any federally listed threatened or endangered species. No further action is necessary regarding federally listed threatened and endangered species.

State-Listed Threatened and Endangered Species and Species of Concern – The project area is located in a Colorado Parks and Wildlife (CPW) mapped area of Bald Eagle winter range and Bald Eagle winter forage area. Because of the ambient level of human disturbance in the project area and surrounding areas, ERO biologists concluded that the project activities would not likely disturb Bald Eagles potentially using the winter range or winter forage areas. Additionally, wetlands (if present) in the project area provide potential habitat for northern leopard frog; however, the northern leopard frog is unlikely to occur in the project area since it lacks permanent waterbodies.

Other Wildlife – The project area is located in High Priority Habitat for Elk Severe Winter Range mapped by CPW. The project area is predominantly impervious surfaces and existing disturbed areas adjacent to the existing facilities; however, surrounding the project area, suitable foraging habitat occurs for a variety of wildlife including black bear, elk, mountain lion, and mule deer. The project area is shown as occurring in black bear overall range, black bear fall concentration area, elk overall range, elk winter range, elk severe winter range, moose overall range, moose summer range, moose winter range, mountain lion overall range, mule deer overall range, mule deer winter range, and mule deer summer range. Due to the existing activities in the vicinity, the proposed project is unlikely to impede wildlife movement in the project area; however, during construction, wildlife could be temporarily disturbed by construction activities. ***ERO recommends contacting the local CPW district manager and requesting concurrence that the proposed project would not likely affect wintering ungulates***.

Migratory Birds and Raptors – Vegetation in and adjacent to the project area provides habitat for a variety of migratory birds including Bald Eagle. The Denver Field Office of the U.S. Fish and Wildlife Service (2009) and CDOT (2011) have identified the primary nesting season for migratory birds in eastern Colorado as occurring from April 1 through August 31. However, some birds, such as the Red-Tailed Hawk and Great Horned Owl, can nest as early as February or March. Because of variability in the breeding seasons of various bird species, ***ERO recommends a nest survey be conducted within one week prior to construction*** to determine if any active nests are present in the project area so they can be avoided. If active nests are found, any work that would destroy the nests could not be conducted until the birds have vacated the nests. If possible, ground-clearing activities should occur outside of the April 1 through August 31 migratory bird breeding season. If construction activities would occur during the migratory bird breeding season, a nest survey should be conducted immediately prior to construction.

Colorado Shortgrass Prairie Initiative (SGPI) – The project area is located outside of CDOT's mapped area for SGPI consultation. As such, no further action under SGPI is necessary.

Senate Bill 40 (SB40) Regulated Areas – No streams that fall under SB40 regulation occur in the project area; therefore, the project does not require SB40 Wildlife Certification.

Biological Resources Report
Glenwood Maintenance Facility, Phases 6A, 6B, and 8
Glenwood Springs, Colorado

July 29, 2024

Introduction

The Roaring Fork Transit Authority (RFTA) retained ERO Resources Corporation (ERO) to provide this Biological Resources Report (BRR) for the Glenwood Maintenance Facility, Phases 6A, 6B, and 8 project (project) in Glenwood Springs, Garfield County, Colorado (project area; Figure 1 and Figure 2).

This BRR presents the findings of a desktop review, and no 2024 site visit was performed as part of this assessment (2024 desktop review). The 2024 desktop review was informed by field studies previously conducted in 2020 for earlier phases of the overall project. During the 2024 desktop review, activities included analyzing potential wetlands; identifying federal- and state-listed threatened, endangered, candidate, and proposed (T&E) species habitat; and identifying other natural resources that might affect the proposed project. This BRR provides information on site conditions and resources as well as current regulatory requirements related to those resources.

Project Description

RFTA proposes to renovate and expand its current maintenance facility into a new centrally located operations, maintenance, and administrative center called the Regional Transit Center (RTC). The RTC will function as the main regional transit center for RFTA. The RTC will address RFTA's current operational deficiencies and accommodate forecasted growth in population, employment, and ridership demand in RFTA's three-county service area. The RTC will provide sufficient bus storage, operations, maintenance, and administrative capacity and capability to support RFTA's long-term vison of creating greater connectivity between local, regional, and statewide transit systems as shown in the project phases in Table 1.

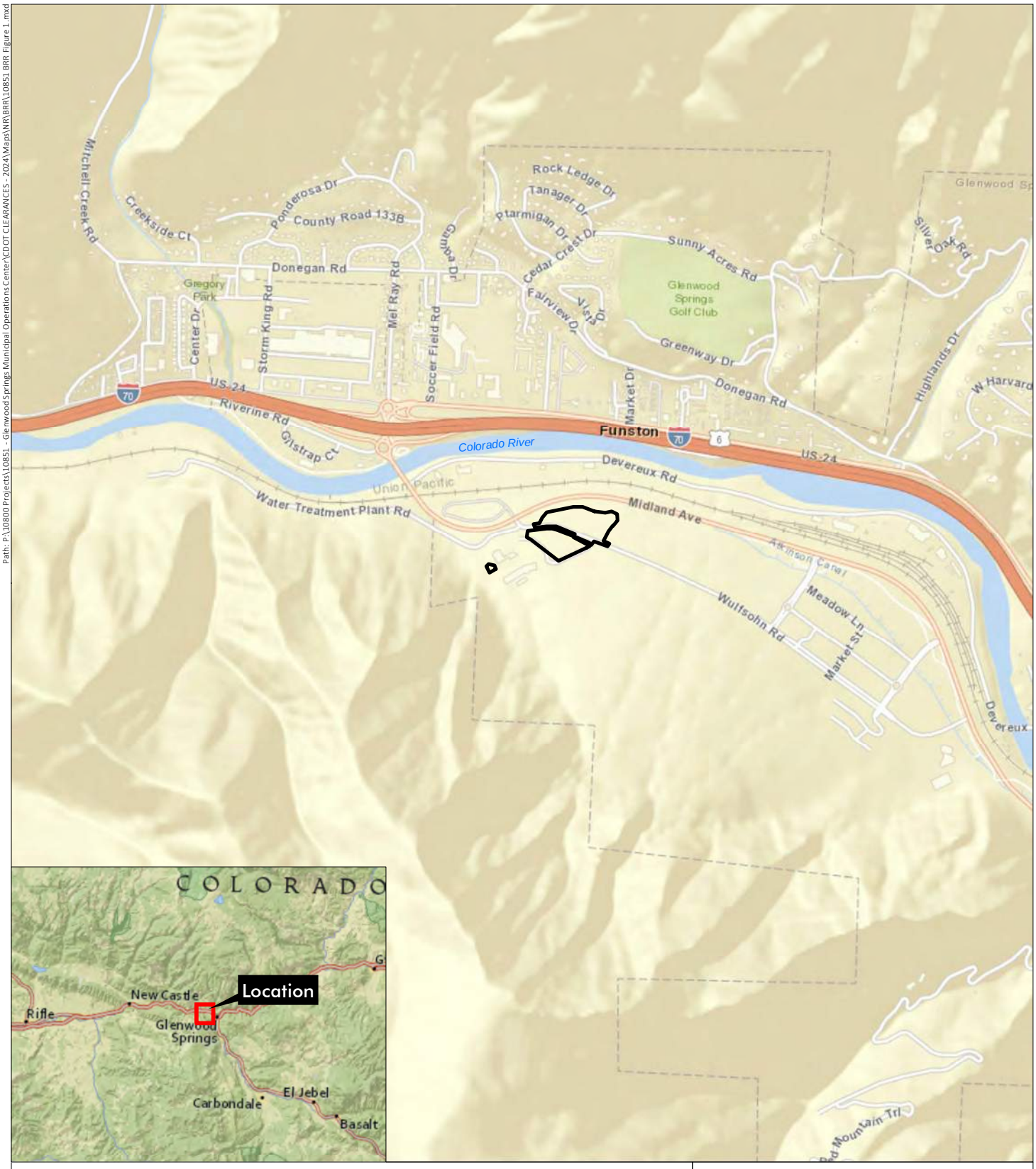
Table 1. Project phases.

Phase	Scope
1	Lowering and grading the existing grade and construction of a temporary bus parking lot (for maintaining operations during future phases).
2	Additional grading and excavation, and renovation and expansion of a fleet maintenance building.
3	**Demolition, grading, excavation, and site preparation of the area shown on Figure 2. Construction of a new Operations Center, Bus Storage Building A (with 30 indoor bus storage spaces), pre-trip bus inspection zones, bus backlog parking, and Maintenance Warehouse A.**
4	**Glenwood Maintenance Facility Administration building renovation. Relocate access road.**
5	**Construction of Bus Building 30B, associated drives, and pre-trip bus inspection zones.**
6	Construction of RFTA Administration Building with associated drives and parking area.
7	**Construction of bus fueling drive lanes and a bus wash area.**
8	**Construction of Warehouse B, associated drives, and parking area.**
9	Construction of RFTA Housing Phase 1 with associated drives and parking.
10	Construction of RFTA Housing Phase 2 with associated drives and parking.

Methods

During the 2024 desktop review, ERO analyzed available data to review and document biological resources in the project area. Any notable biological resources identified were recorded using aerial photographs. Specific methods for assessing biological resources included the following:

- **Waters of the U.S. (WOTUS), including wetlands:** ERO reviewed the U.S. Geological Survey (USGS) Glenwood Springs, CO topographic quadrangle map, National Wetland Inventory (NWI), National Hydrography Dataset (NHD), and aerial photography to identify mapped streams, areas of open water, and potential areas that could indicate wetlands or WOTUS.
- **Noxious weeds:** The potential for noxious weeds to occur in the project area was assessed using data gathered from the 2020 site visit.
- **Federally listed T&E species:** ERO reviewed the U.S. Fish and Wildlife Service (Service) list of federally listed species to identify T&E species having potential habitat in the project area and evaluated project conditions for suitable habitat for these species.
- **State-listed T&E species:** ERO reviewed the Colorado Parks and Wildlife (CPW) list of state-listed species to identify T&E species and species of concern having potential habitat in the project area and evaluated project conditions for suitable habitat for these species.
- **Wildlife:** ERO conducted a literature and database review of the Colorado T&E species list (CPW 2023a), CPW high-priority habitat (CPW 2021b), and other species wildlife data(CPW 2023b; CNHP 2024).
- **Migratory birds and raptors:** ERO reviewed the CPW nest database for any known nests within 0.5 mile of the project area (CPW 2023d).
- **Colorado Shortgrass Prairie Initiative (SGPI):** ERO conducted a site evaluation of the project area per the SGPI (Granau, Lee et al. 2003). The SGPI generally covers areas in Colorado east of Interstate 25 (I-25), with some smaller areas west of I-25.
- **Senate Bill 40 (SB40) regulated areas:** ERO assessed the project area for areas regulated under SB40 Wildlife Certification by reviewing USGS topographic maps (Figure 1) and the SB40 Wildlife Certification Guidelines (CPW and CDOT 2022).



Glenwood Maintenance Facility, Phase 6A, 6B, and 8

Section 5, T6S, R89W; 6th PM

UTM NAD 83: Zone 13N; 297716mE, 4381291mN

Longitude 107.354523°W, Latitude 39.557471°N

USGS Glenwood Springs, CO Quadrangle

Garfield County, Colorado

Project Area

N

0 750 1,500 Feet

Figure 1
Vicinity Map

Prepared for: Shrewsberry & Associates, LLC

File: 10851 BRR Figure 1.mxd (GS)

July 29, 2024

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Path: P:\10800 Projects\10851 - Glenwood Springs Municipal Operations Center\CDOT CLEARANCES - 2024\Maps\NR\BRR\10851 BRR Figure 2.mxd

Glenwood Maintenance Facility, Phase 6A, 6B, and 8

Inlet or Outfall
Limit of Delineation
Flow Path
Ordinary High Water Mark
Project Area Boundary

Image Source: Maxar Technologies©, September 27, 2023

0 100 200 Feet

N

Figure 2
Existing Conditions

Prepared for: Shrewsberry & Associates, LLC
File: 10851 BRR Figure 2.mxd (GS)
July 29, 2024

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Observations and Results

General Site Conditions, Vegetation Communities, and Wildlife Habitat

The project area is located south of the intersection of Wolfsohn Road and Midland Avenue, just south of the Colorado River and I-70 in Glenwood Springs, Colorado (Figure 1). The project area is in Section 5, Township 6 South, Range 89 West of the 6th Principal Meridian in Garfield County, Colorado (Figure 1). The UTM coordinates for the approximate center of the project area are 297716mE, 4381291mN, Zone 13 North. The longitude/latitude of the project area is 107.354523°W/39.557471°N. The elevation of the project area is approximately 5,800 feet above sea level.

The project area consists primarily of previously developed and disturbed land with existing paved lots, landscaping, temporary parking areas, equipment storage, and previously disturbed uplands (Figure 2). Wulfsohn Mountain Park trails and open space occurs to the east, south, and west; and an unnamed ephemeral drainage mapped in 2020 occurs south of Phase 8 of the project area (Figure 2).

Based on the 2024 desktop review, a minimal amount of vegetation occurs in the project area. This vegetation is likely dominated by a mix of native and nonnative upland species including cheatgrass (*Bromus tectorum*) and smooth brome (*Bromus inermis*). Ornamental tree and shrub landscaping may also occur in the project area and include plains cottonwood (*Populus deltoides*), Colorado blue spruce (*Picea pungens*), ponderosa pine (*Pinus ponderosa*), and common juniper (*Juniperus communis*) trees. The open space surrounding the project area is a Gambel oak (*Quercus gambelii*)-dominated ecosystem extending around the base of Wulfsohn Mountain.

Waters of the U.S., Including Wetlands

During the 2024 desktop review, assessed the project area for potential WOTUS, including abutting and adjacent wetlands. ERO reviewed USGS quadrangle topographic maps, the NHD, the NWI, and aerial photography to identify mapped streams, areas of open water, and potential areas that could indicate wetlands or WOTUS.

The project area is within Hydrologic Unit 12-140100050102 (South Canyon Creek-Colorado River subwatershed). The USGS Glenwood Springs, CO topographic quadrangle map, along with the NHD and NWI, indicate unnamed intermittent streams flow just west of Phase 8 of the project area and approximately 0.2 mile east of Phase 6A. During the 2020 site visit, one ephemeral drainage was mapped just west of Phase 8 (Figure 2). Based on aerial imagery, a potential drainage area may contain water and associated wetlands along the eastern boundary of Phase 6A. If present, these features appear to be associated with a roadside drainage swale excavated in dryland that would not carry a relatively permanent flow and would be excluded by the U.S. Army Corps of Engineers (Corps) from being a WOTUS. However, the aquatic features (if present) may be subject to State Dredge and Fill Policies (CDPHE 2024).

Recommendations

Based on the 2020 site visit and 2024 desktop review, no wetlands or WOTUS occur in Phase 6B or Phase 8 of the project area, and no further actions are required for those phases.

The eastern boundary of Phase 6A has the potential to support aquatic resources. If work is planned in this portion of Phase 6A, ERO recommends conducting a wetland delineation to confirm the presence/absence of aquatic resources, as well as the need for Clean Water Act (CWA) Section 404 permitting or compliance with State Dredge and Fill Policies (CDPHE 2024), as appropriate. Additionally, a CDOT Wetland Finding Report would be required if permanent wetland impacts exceed 500 square feet or combined temporary and permanent wetland impacts exceed 1,000 square feet.

Noxious Weeds

Although a noxious weed survey was not conducted in 2024, the 2020 findings indicate that noxious weeds have the potential to occur in the project area. ERO recommend adding CDOT Specifications for Noxious Weed Management to the project construction documents.

Federally Listed Threatened and Endangered Species

ERO assessed the project area for potential habitat for T&E species under the Endangered Species Act (ESA) of 1973, as amended (16 United States Code 1531 et seq.). Federal T&E species are protected under the ESA. Significant adverse effects on a federally listed species or its habitat require consultation with the Service under Section 7 or 10 of the ESA. Federally listed T&E species with habitat in the project area or with potential to be affected by projects in the project area are listed in Table 2.

Table 2. Federally listed T&E species potentially found in the project area or potentially affected by projects in the project area.

Common Name	Scientific Name	Status*	Habitat	Habitat Present or Potential to Be Affected by the Project?
Mammals				
Canada lynx	*Lynx canadensis*	T	Climax boreal forest with a dense understory of thickets and windfalls	No suitable habitat
Gray wolf	*Canis lupus*	E	Temperate forests, mountains, tundra, taiga, grasslands, and deserts	No suitable habitat
Birds				
Mexican Spotted Owl	*Strix occidentalis lucida*	T	Closed canopy forests in steep canyons	No suitable habitat
Yellow-billed Cuckoo	*Coccyzus americanus*	T	Wooded habitat with dense cover and nearby water	No suitable habitat and outside of known breeding areas

Common Name	Scientific Name	Status*	Habitat	Habitat Present or Potential to Be Affected by the Project?
Fish				
Bonytail chub	*Gila elegans*	E	Backwaters with rocky or muddy bottoms and flowing pools	No suitable habitat
Colorado pikeminnow	*Tychocheilus lucius*	E	Warm rivers that have large snowmelt runoff and lower, relatively stable base flows	No suitable habitat
Humpback chub	*Gila cypha*	T	Pools with substrates of silt, sand, boulder, or bedrock	No suitable habitat
Razorback sucker	*Xyrauchen texanus*	E	Large river species in areas with strong current and backwaters	No suitable habitat
Insects				
Monarch butterfly	*Danaus plexippus*	C	Open fields and meadows with milkweed	No suitable habitat
Silverspot butterfly	*Speyeria nokomis nokomis*	T	Streamside meadows and open seepage areas in generally desert landscapes	No suitable habitat
Plants				
Ute ladies'-tresses orchid	*Spiranthes diluvialis*	T	Moist to wet alluvial meadows, floodplains of perennial streams, and around springs and lakes below 7,800 feet in elevation	No suitable habitat

*T = Federally Threatened Species; E = Federally Endangered Species; C = Federal Candidate Species.
Source: Service 2024.

There is no likelihood for the proposed project to affect the Canada lynx, gray wolf, Mexican Spotted Owl, Yellow-Billed Cuckoo, bonytail chub, Colorado pikeminnow, humpback chub, razorback sucker, monarch butterfly, silverspot butterfly, or Ute-ladies' tresses orchid because of the lack of habitat in the project area. Because no suitable habitat for these species occurs in the project area, no additional action is necessary regarding these species.

State-Listed Threatened and Endangered Species and Species of Concern

Numerous species that potentially occur in the project area in Garfield County are considered T&E or species of concern by the State of Colorado (Table 3). According to Colorado law (Colo. Rev. Stat. Ann. §§ 33-2-102-106), the state must maintain a list of species determined T&E in the state. State-listed wildlife species that are not already protected under the ESA are protected under State Statute 33, which is regulated by CPW. No regulations currently exist for state species of concern. However, if any species were to be listed during construction, state regulations could be enforced.

The habitat affinities, presence of habitat in the project area, and impacts on these species or habitats are provided in the following discussion.

Table 3. CPW T&E species and species of concern potentially occurring in the project area in Garfield County.

Common Name	Scientific Name (Status*)	General Colorado Range	Habitat Present
Mammals			
Canada lynx	*Lynx canadensis* (SE)	Climax boreal forest with a dense understory of thickets and windfalls	No suitable habitat
Kit fox	*Vulpes macrotis* (SE)	Desert scrub, chaparral, and grasslands	No suitable habitat
North American wolverine	*Gulo gulo luscus* (SE)	Subalpine forests above 8,000 feet in elevation	No suitable habitat
Townsend's big eared bat	*Corynorhinus townsendii* (SC)	Woodlands with rocky outcrops	Located in overall range, but no suitable roost sites are located in the project area
Birds			
American Peregrine Falcon	*Falco peregrinus anatum* (SC)	Cliffs/canyons	No suitable habitat located within 0.5 mile of project area; nearest known nesting area is approximately 1.75 miles east of the project area
Bald Eagle	*Haliaeetus leucocephalus* (ST)	Near reservoirs and perennial rivers	Project area is located in CPW-mapped Bald Eagle winter range and winter forage areas; however, no Bald Eagle nests are mapped within 0.5 mile of the project area
Columbia Sharp-Tailed Grouse	*Tympanuchus phasianellus columbianus* (SC)	Native bunchgrass and shrub-steppe communities	No suitable habitat
Ferruginous Hawk	*Buteo regalis* (SC)	Open prairie and desert habitats	No suitable habitat
Greater Sandhill Crane	*Grus canadensis tabida* (SC)	Mudflats around reservoirs, moist meadows, agricultural areas	No suitable habitat
Sage Grouse	*Centrocercus urophasianus* (SC)	Shrub-steppe habitats between 4,000 and 9,000 feet in elevation	No suitable habitat
Western Yellow-Billed Cuckoo	*Coccyzus americanus occidentalis* (SC)	Wooded habitat with dense cover and nearby water	No suitable habitat and outside of known breeding areas
Fish			
Colorado River cutthroat trout	*Salmo clarki pleuriticus* (SC)	Cold mountain streams and rivers above 7,000 feet in elevation	No suitable habitat
Razorback sucker	*Xyrauchen texanus*	Large river species in areas with strong current and backwaters	No suitable habitat
Roundtail chub	*Gila latipinnis* (SC)	Slow-moving portions of the Colorado River and tributaries	No suitable habitat
Reptiles			
Longnose leopard lizard	*Gambelia wislizenii* (SC)	Arid and semiarid plains	No suitable habitat
Midget faded rattlesnake	*Crotalus oreganus concolor* (SC)	Only found in the Green River in Colorado	No suitable habitat

Common Name	Scientific Name (Status*)	General Colorado Range	Habitat Present
Amphibians			
Boreal toad	*Anaxyrus boreas* (SE)	High-altitude wetlands	No suitable habitat
Northern leopard frog	*Lithobates pipiens* (SC)	Wetlands, slow-moving streams, and ponds	No known suitable habitat; unlikely to occur

*SE = Colorado Endangered Species; ST = Colorado Threatened Species; SC = Colorado Species of Special Concern.
Sources: CPW 2023b; Colorado Natural Heritage Program 2024.

Of the species listed in Table 3, only the Bald Eagle (*Haliaeetus leucocephalus*) and northern leopard frog (*Lithobates pipiens*) have the potential to occur in the project area and are discussed in more detail below.

The Canada lynx, kit fox, North American wolverine, Townsend's big-eared bat, American Peregrine Falcon, Columbia Sharp-Tailed Grouse, Ferruginous Hawk, Greater Sandhill Crane, Sage Grouse, Western Yellow-Billed Cuckoo, Colorado River cutthroat trout, razorback sucker, roundtail chub, longnose leopard lizard, midget faded rattlesnake, and boreal toad would not be affected by the proposed project because the project area is outside of the known range, suitable habitat is not present, or potential habitat would not be impacted by project activities and, therefore, these species are not discussed in the following sections.

Bald Eagle

The Bald Eagle is a large North American bird with a historical distribution throughout most of the U.S. Most Bald Eagle nesting in Colorado occurs near lakes or reservoirs or along rivers. Typical Bald Eagle nesting habitat consists of forests or wooded areas that contain tall, aged, dying, and dead trees (Martell 1992). Bald Eagles seek aquatic habitat for foraging and typically prefer fish, although they also feed on birds, mammals, and carrion, particularly in winter (Buehler 2000; Sharps and Uresk 1990). Prairie dogs provide a major food resource for Bald Eagles wintering along the Colorado Front Range (Environmental Science and Engineering 1988).

No known Bald Eagle nests occur in the project area or within a 0.5-mile radius of the project area (the CPW-recommended buffer) and no Bald Eagles were observed during the 2020 site visit; however, the project area occurs in an area mapped as Bald Eagle winter range and Bald Eagle winter forage area(CPW 2023b). Winter range typically refers to those areas where Bald Eagles have been observed between November 15 and April 1 (CPW 2023b).

The project area consists primarily of existing disturbed areas. Other infrastructure and buildings within 0.5 mile of the project area include I-70, local roads, a railroad corridor, and various other commercial buildings and parking structures. Additional sources of anthropogenic (human-caused) disturbance in proximity of the project area include pedestrians, mountain bike cyclists, and other users of the open space area trails surrounding the project area. Because of the ambient level of human disturbance in the project area and surrounding area, ERO biologists concluded that the project activities would not likely disturb Bald Eagles potentially using the winter range or winter forage areas.

Northern Leopard Frog

The northern leopard frog (*Lithobates pipiens*) is a species of special concern in Colorado (CPW 2023a). Worldwide and locally in Colorado, amphibian populations have declined for reasons not well known. In Colorado, this frog can be found nearly statewide in mountains and lowlands but is scarce or absent in most of southeastern Colorado and the Republican River drainage in northeastern Colorado (CPW 2016). It is considered locally common but now rare or extirpated in many areas, particularly in the mountains.

The northern leopard frog prefers the banks and shallow portions of marshes, wet meadows, ponds, lakes, and streams, particularly where rooted aquatic vegetation is present (Hammerson 1999). The frogs prefer permanent water bodies and are a wide-ranging species known to elevations of 11,000 feet. In summer, they commonly inhabit wet meadows and fields. They take cover underwater, in damp niches, or in caves when inactive. Wintering sites are usually underwater, though some frogs possibly overwinter underground (Karns 1992).

If present, wetlands in or adjacent to the project area are potentially suitable habitat for northern leopard frogs. No northern leopard frogs were observed during the 2020 site visit; however, it is possible that the species occupies habitat in or adjacent to the project area. If the northern leopard frog is present in the project area, the project may adversely impact individuals. However, the project area is not likely to support habitat for this species nor are project activities likely to cause a trend toward federal listing or a loss of species viability throughout its range because the project area does not fit the description of preferred habitat because of a lack of permanent water bodies preferred by this frog.

Other Wildlife

The project area is shown as occurring in the CPW-mapped High Priority Habitat for Elk Severe Winter Range (CPW 2021). For any work conducted in areas mapped in the Elk Severe Winter Range, ERO recommends contacting the local CPW district manager requesting concurrence that the proposed project would not likely affect elk. However, because the project would primarily occur in previously disturbed areas and because of the ambient level of human disturbance in the project area and surrounding area, ERO biologists concluded that the project activities would likely only temporarily disturb elk potentially using the severe winter range.

A variety of other wildlife may occur in or adjacent to the project area, and the project area is shown as occurring in black bear (*Ursa americanus*) overall range, black bear fall concentration area, elk (*Cervus canadensis*) overall range, elk winter range, elk severe winter range, moose (*Alces alces*) overall range, moose summer range, moose winter range, mountain lion (*Puma concolor*) overall range, mule deer (*Odocoileus hemionus*) overall range, mule deer winter range, and mule deer summer range (Natural Diversity Information Source 2021). The project area abuts open space to the south, west, and east; however, the surrounding areas to the north have been significantly disturbed by human development, including construction of commercial and residential properties and roads. Additionally, the project area provides little suitable habitat for wildlife as it consists predominantly of paved and disturbed areas.

During the 2020 site visit, mule deer scat was observed south of the project area. It is likely that mountain lion, black bear, elk, and mule deer may forage or migrate adjacent to the project area; however, no designated wildlife corridors are mapped in the vicinity of the project area (CPW and CDOT 2024).

Migratory Birds and Raptors

Migratory birds, as well as their eggs and nests, are protected under the Migratory Bird Treaty Act (MBTA). In Colorado, all birds except for the European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), and rock dove (pigeon; *Columba livia*) are protected under the MBTA. The MBTA does not contain any prohibition that applies to the destruction of a bird nest alone (without birds or eggs), provided that no possession occurs during the destruction. While destruction of a nest by itself is not prohibited under the MBTA, nest destruction that results in the unpermitted take of migratory birds or their eggs is illegal and fully prosecutable under the MBTA (Service 2003b). The regulatory definition of a take means to pursue, hunt, shoot, wound, kill, trap, capture, or collect; or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect (50 Code of Federal Regulations 10.12).

Under the MBTA, the Service may issue nest depredation permits, which allow a permittee to remove an active nest. The Service, however, issues few permits and only under specific circumstances, usually related to human health and safety. Obtaining a nest depredation permit is unlikely and involves a process that takes, at a minimum, 8 to 12 weeks. The best way to avoid a violation of the MBTA is to remove vegetation outside of the active breeding season, which typically falls between March and August, depending on the species. MBTA enforcement actions are typically the result of a concerned member of the community reporting a violation.

Potential Habitat and Effects

ERO reviewed the CPW nest database for any known nests in the project area (CPW 2023c). No known raptor nests occur in the project area or within a 0.5-mile radius of the project area. During the 2020 site visit, ERO observed one potentially active rock dove (pigeon) nest inside an outbuilding near the southeastern portion of the project area; however, this species is not protected under the MBTA. During the 2020 site visit, ERO also observed an American crow (*Corvus brachyrhynchos*) foraging south of the project area. The breeding season for most birds in Colorado is March through August, with the exception of a few species that begin breeding in February, such as great-horned owls. CPW recommends a 0.33- or 0.25-mile buffer from active raptor nests, depending on the species (CPW 2020).

Recommendations

To avoid destruction of potential migratory bird nests, vegetation removal should be conducted outside of the breeding season. CDOT has identified the primary nesting season for migratory birds in Colorado as occurring from April 1 through August 31 (CDOT 2011). Because of variability in the breeding seasons, ERO recommends that a nest survey be conducted within one week prior to construction to determine if any active nests are present in the project area so that they can be avoided. Additional nest surveys during the nesting season may also be warranted to identify active nesting species that may present

additional development timing restrictions (e.g., Bald Eagles or Red-Tailed Hawks). If active nests are identified in or near the project area, activities that would directly affect the nests should be restricted. Habitat-disturbing activities (e.g., tree removal, grading, scraping, and grubbing) should be conducted during the nonbreeding season to avoid disturbing active nests, or to avoid a "take" of the migratory bird nests in the project area. Nests can be removed during the September 1 through March 31 nonbreeding season to preclude future nesting and avoid violations of the MBTA. There is no process for removing nests during the nonbreeding season; however, nests may not be collected under MBTA regulations. If the construction schedule does not allow vegetation removal outside of the breeding season, a nest survey should be conducted immediately prior to vegetation removal to determine if the nests are active and by which species. If active nests are found, any work that would destroy the nests or cause the birds to abandon young in the nest could not be conducted until the birds have vacated the nests.

The CPW has recommended buffer zones of 0.33 mile for active Red-Tailed Hawk nests and 0.25 mile for active Swainson's Hawk nests (CPW 2020). Activities that would directly impact an active nest, or that would encroach close enough to cause adult birds to abandon the nest during the breeding season, should be restricted. Construction activities that could potentially be within a Red-Tailed Hawk or other raptor buffer zone should commence outside of the February 15 through August 31 breeding season. Consultation with CPW or the Service may be required if construction is proposed within the CPW-recommended buffer zone of an active raptor nest.

Colorado SGPI

CDOT developed a programmatic agreement with the Service, the Federal Highway Administration, CPW, The Nature Conservancy, and the Colorado Natural Heritage Program to address potential effects of CDOT routine maintenance and upgrade activities on a number of T&E, proposed, candidate, and sensitive species found in the shortgrass prairie ecoregion of eastern Colorado (Service 2003a). The SGPI agreement generally covers areas in Colorado east of I-25, with some smaller areas west of I-25 (covered area).

ERO reviewed the covered area under the agreement, and the project area does not occur in the covered area. As such, no further action under the SGPI is necessary.

SB40 Regulated Areas

ERO assessed the project area for areas regulated under SB40 Wildlife Certification. SB40 requires state agencies to evaluate their actions for potential effects on streams important for fish and wildlife resources. CDOT and CPW have developed a consultation process for CDOT projects that includes criteria for which streams fall under SB40 jurisdiction and mitigation required for impacts on jurisdictional streams and associated riparian vegetation. SB40 jurisdictional streams are generally perennial, ephemeral, or intermittent streams that provide flowing water beneficial to fish and wildlife. Drainage ditches do not fall under SB40 jurisdiction.

ERO assessed the project area for areas regulated under SB40 Wildlife Certification. SB40 requires state agencies to evaluate their actions for potential effects on streams important for fish and wildlife resources. No streams falling under SB40 regulation occur in the project area; therefore, the project does not require SB40 Wildlife Certification.

Conclusions

The project area contains a limited number of regulated or sensitive biological resources that would need to be addressed during project design and construction. The impacts for each biological resource and recommended actions, including any mitigation commitments, are described in Table 4.

Table 4. Impacts, recommended actions, and mitigation commitments for each biological resource in the project area.

Biological Resource	Impact	Recommended Actions/ Mitigation Commitments
Waters of the U.S., including wetlands	Phase 6B and Phase 8 would not result in any impacts on wetlands or other WOTUS. The eastern boundary of Phase 6A has the potential to support wetlands or other WOTUS; however, these aquatic resources (if present) are unlikely to be found jurisdictional by the Corps.	If work is planned along the eastern boundary of Phase 6A, ERO recommends conducting a wetland delineation and determining the need for CWA Section 404 permitting or compliance with State Dredge and Fill Policies (CDPHE 2024). Additionally, a CDOT Wetland Finding Report will be required if permanent wetland impacts exceed 500 square feet or combined temporary and permanent wetland impacts exceed 1,000 square feet. If no work is planned to occur in these areas, no further action is necessary.
Noxious weeds	Noxious weed species could potentially be present in the project area.	CDOT specifications for Noxious Weed Management outlining best management practices to reduce the introduction and spread of noxious weeds should be added to the project construction documents.
Federally listed T&E species	No habitat for federally listed T&E species occurs in the project area.	No further action regarding federally listed T&E species is required due to the lack of suitable habitat in the project area. .
State-listed T&E species and state species of concern	The project area contains potential habitat for Bald Eagles.	No known Bald Eagle nests are within the CPW-recommended buffer of 0.5 mile; therefore, no further action is necessary regarding state-listed T&E species.
Wildlife	The project area is located in CPW-mapped High Priority Habitat for Elk Severe Winter Range. Due to the ambient level of human disturbance in the project area, it is unlikely the proposed project would permanently impede wildlife movement in the project area. However, it is likely wildlife would be temporarily disturbed by construction activities.	ERO recommends contacting the local CPW district manager requesting concurrence that the proposed project would not likely affect wintering elk.
Migratory birds and raptors	No known raptor migratory bird nests occur in the project area or within a 0.5-mile radius of the project area.	Vegetation should be removed outside of the breeding season and, minimally, a nest survey should be conducted within one week prior to construction activities. Section 240 Specification should be added to the project construction documents.
Colorado SGPI	The project area does not occur in the SGPI covered area.	No further action is required.

Biological Resource	Impact	Recommended Actions/ Mitigation Commitments
SB40 regulated areas	No SB40 regulated resources occur in the project area.	SB40 Wildlife Certification is not required.

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Appendix J: Paleontological Resources

WESTERN SLOPE PALEONTOLOGICAL SERVICES

Friday, May 3rd, 2024

RE: Paleontological Resources Impact Evaluation for the RFTA Regional Transit Center and Expansion Project

To whom it may concern,

Western Slope Paleontological Services (WSP) performed an analysis of existing paleontological data for the Roaring Fork Transportation Authority "Regional Transit Center and Expansion Project" in Garfield County, Colorado (project area). The analysis included a museum records search consisting of fossil locality data requests made at the University of Colorado Museum of Natural History (UCM) and the Denver Museum of Nature and Science (DMNS), and an online fossil locality records search through the Colorado Office of Archaeology and Historic Preservation Compass online database (Compass). In addition, an online search of geologic maps, scientific literature, and other sources of paleontological data within and near to the project area was undertaken as part of the analysis. Lastly, the Potential Fossil Yield Classification (PFYC) of the project area as designated by the Bureau of Land Management (BLM) was determined.

The 1:24,000-scale "Geologic Map of the Glenwood Springs Quadrangle, Garfield County, Colorado" (Kirkham et al. 2009) shows that the entire project area is situated in Holocene-age "younger debris-flow deposits" (Qdfy). Holocene deposits can contain the unfossilized remains of modern species of animals and plants, however, these deposits are typically too young to contain in situ fossils and are not generally considered to be paleontologically sensitive (Murphey and Daitch 2007). The BLM designates the Holocene deposits in the project area as PFYC 2, indicating geologic units that are "generally younger than 10,000 years old" and "are not likely to contain paleontological resources" (BLM 2016). Management concerns in PFYC 2 units "are generally low and further assessment is usually unnecessary," with standard stipulations usually recommended prior to land development "to accommodate unanticipated discoveries" (BLM 2016).

The UCM, DMNS, and Compass fossil locality searches all returned negative results, as no known fossil localities are known within the project area or within a 1-mile buffer. Also, no literature was found concerning fossil localities within the project area or 1-mile buffer. Hence, the project area is considered to be free of known fossil localities, and no further action concerning paleontological resources is necessary for this project.

Search results are available by request from WSP. Please contact me with this or any other requests/questions at westslopepaleo@gmail.com.

Sincerely,

Josh A. Smith
Principal/Paleontologist

Citation:

Kirkham, R.M., Streufert, R.K., Cappa, J.A., Shaw, C.A., Allen, J.L., and Schroeder, T.J. II, 2009, Geologic Map of the Glenwood Springs Quadrangle, Garfield County, Colorado, Colorado Geological Survey, Map Series MS-38, 1:24,000.

Appendix K: Initial Site Assessment Summary of Environmental Conditions

COLORADO DEPARTMENT OF TRANSPORTATION **INITIAL SITE ASSESSMENT (ISA)**	Region: **3** Route ID:	Project No.: Project Code (SA#):

Project Description

Project Name: **Glenwood Maintenance Facility (GMF), Phase 6A, 6B, and 8**
Milepost Begin: **NA** Milepost End: **NA** County: **Garfield**
Location: **The project area consists of Wulfsohn Road east of the intersection with Midland Avenue, the West Glenwood Park & Ride, and a portion of the parking lot for the RFTA GMF in Glenwood Springs, Colorado**
The project area is in the SW quarter of Section 5, Township 6 South, Range 89 West of the 6th Principal Meridian in Garfield County, Colorado
Main Project Elements: **Phase 6A consists of the construction of the Transit Center, which will be a 6,093 square foot building designed to accommodate needs for passengers and RFTA staff;**
Phase 6B consists of the construction of a 22,956 square foot building designed to cater to the existing and future needs of the RFTA. This phase also involves development of the parking area, landscaping, and a pedestrian bridge to provide access to Wulfsohn Road; and
Phase 8 consists of modifications and construction for a storage building to support RFTA's daily activities.

Project Features (Check if applies)

☐Structure Acquisition	☒Structure Modification	☐Structure Demolition
☐New ROW	☐Easements	☐Utility Relocation
☒Excavation/Drilling	Disturbance depth (if known): ft	☐Dewatering
Gw Anticipated: **No**	Depth to gw (if known): ft	Gw flow direction (if known): **N-NW**

Records Review & Interview(s)

The following records/sources were used in this assessment **('No' is implied if unchecked):**

☒ASTM Standard Environmental Record Sources ☒OPS ☒CDPHE ☐CDOT Internal Database Date:
☒ASTM Standard Search Radii or ☐Modified Search Radii:
☐Previous Environmental Reports/CDOT Files:
☒Other Files/Databases (Assessor, Fire dept., Building, Planning, etc.):

Topographic Map(s) ☒Current – date:**2022** ☒Historic – year(s): **1961, 1979, 1982, 1987, 2011, 2013, 2016, 2019, 2022**
Aerial Photograph(s) ☒Current – date:**2023** ☒Historic – year(s): **1955, 1960, 1979, 1983, 1989, 1993, 1999, 2006, 2011, 2015, 2019, 2023**

☐Sanborn Map(s) – year(s):
☐Local Street Directories – year(s):

Historic Land use(s) within the project area (if known): **undeveloped land, parking areas, road right-of-way,**

Interviews (Names/Title/Date/Comments):

Site Reconnaissance & Description

☐Visual inspection conducted Inspection Date:
If 'No' document the reason: **Site inspection was not required by project**

Project area and land use(s) description:
Wulfsohn Road southeast of the intersection with Midland Avenue, the West Glenwood Park & Ride, and portions of the parking lot for the RFTA GMF
☐Industrial ☐Light Industrial ☒Commercial ☐Residential ☐Agricultural ☒Undeveloped ☒Other: **parking lots**

Adjacent land use(s) description:
Undeveloped, Glenwood GMF and Maintenance and Operations Center (MOC)
☐Industrial ☐Light Industrial ☒Commercial ☐Residential ☐Agricultural ☒Undeveloped ☒ Other:**Glenwood MOC**

Attach additional pages as needed

CDOT Form #881
03/12

Potential Environmental Concerns on the immediate project area or directly adjacent to it
(Select from dropdown menu – Yes, No, Expected, or Unknown)

Potential Environmental Concern	Project Area	Adjacent Area	Potential Environmental Concern	Project Area	Adjacent Area
Evidence of underground tanks (pipes, vents, fill caps, etc.)	**Unknown**	**Unknown**	Protected/fenced/placarded area(s)	**Unknown**	**Unknown**
Aboveground storage tank(s)	**Unknown**	**Unknown**	Liquid waste (pits, ponds, etc.)	**Unknown**	**Unknown**
Monitoring/water well(s)	**Unknown**	**Unknown**	Oil sheen (soil/water)	**Unknown**	**Unknown**
Electrical/transformer Equipment	**Unknown**	**Unknown**	Oil/gas well(s)	**Unknown**	**Unknown**
Cistern(s), sump(s) drain(s)	**Unknown**	**Unknown**	Mine tailings/waste	**Unknown**	**Unknwon**
Barrel(s), drum(s), container(s)	**Unknown**	**Unknown**	Painted/preserved material(s)	**Unknown**	**Unknown**
Stockpile, surface trash, debris	**Unknown**	**Unknown**	Odor	**Unknown**	**Unknown**
Exposed/buried landfill	**Unknown**	**Unknown**	Chemical storage	**Unknown**	**Unknown**
Batteries	**Unknown**	**Unknown**	Suspect asbestos containing material	**Unknown**	**Unknown**
Surface staining	**Unknown**	**Unknown**	Suspected methamphetamine lab	**Unknown**	**Unknown**
Stressed vegetation	**Unknown**	**Unknown**			

Findings/Conclusions:

Are known hazardous or other waste sites on or adjacent to the project area, which may affect the project? **No**
Explain:

Recommendations:

☐Materials Management Plan ☐Force Account ☐Modified CDOT Specification(s) ☐Additional Assessment/Investigation*

Explain:

***Additional work must be approved by CDOT.**

Attachments:

☒Environmental Database Map	
☐Modified CDOT Specification(s)	
☐General Plan Note(s)	
☒Maps & Figures	
☐Agency File Data	

Completed by (Name and Title): **Courtney Sockwell - Env. Professional with ERO Resources Corp.**

Signature: Courtney Sockwell Date: **07/29/2024** Revised (if necessary):

CDOT Environmental Project Manager Approval: _____Date:

Attach additional pages as needed

CDOT Form #881
03/12

ERO

Consultants in Natural Resources and the Environment

Initial Site Assessment Summary of Environmental Conditions
Roaring Fork Transportation Authority
Glenwood Maintenance Facility, Phase 6A, 6B, and 8
Glenwood Springs, Colorado

Prepared for—

Roaring Fork Transportation Authority
2307 Wulfsohn Road
Glenwood Springs, Colorado 81601

Prepared by—

ERO Resources Corporation
1626 Cole Boulevard, Suite 100
Lakewood, Colorado 80401
(303) 830-1188
ERO Project #10851

July 29, 2024

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Appendix A Environmental Records

Initial Site Assessment Summary of Environmental Conditions
Roaring Fork Transportation Authority
Glenwood Maintenance Facility, Phase 6A, 6B, and 8
Glenwood Springs, Colorado

July 29, 2024

1.0 Introduction

The Roaring Fork Transportation Authority (RFTA) retained ERO Resources Corporation (ERO) to conduct an Initial Site Assessment (ISA) for the Glenwood Maintenance Facility (GMF), Phases 6A, 6B, and 8 in Glenwood Springs, Colorado (project area). The project area consists of Wulfsohn Road east of the intersection with Midland Avenue, the West Glenwood Park & Ride, and a portion of the parking lot for the RFTA GMF in Glenwood Springs, Colorado (Figure 1). This report presents the findings, opinions, and conclusions of this ISA.

This ISA was performed to satisfy the Work Scope and contract between RFTA and ERO dated April 23, 2023. The conclusions in this report are based on limited observations and investigations described herein at the time this ISA was conducted; future events may alter these findings.

The purpose of the project is to update and build facilities to support future RFTA operations, enhance passenger experience, and increase overall area accessibility.

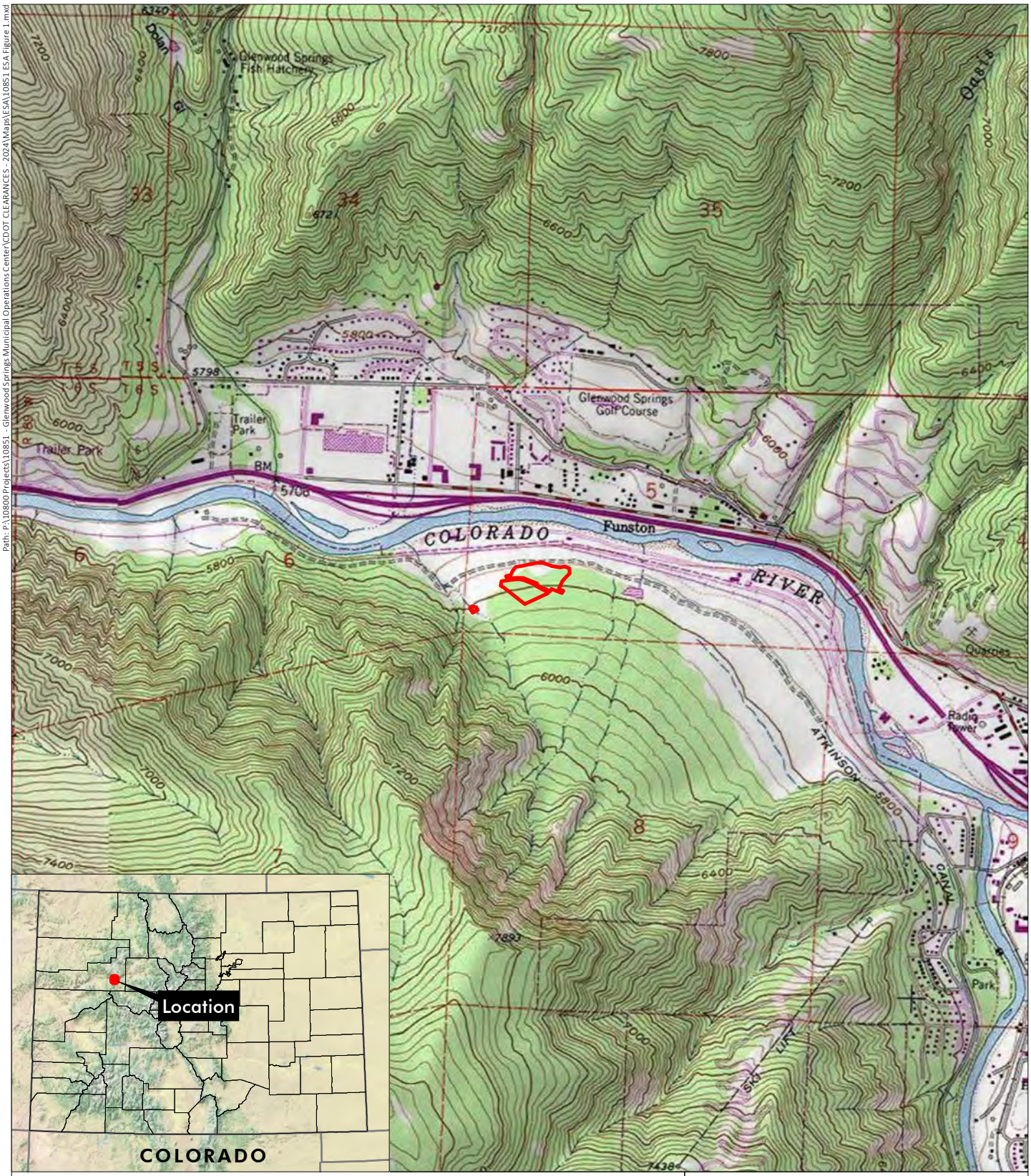
1.1 Location

The project area is in the SW quarter of Section 5, Township 6 South, Range 89 West of the 6th Principal Meridian in Garfield County, Colorado (Figure 1). According to the Garfield County Assessor's Office, the project area consists of Wulfsohn Road, its public rights-of-way (ROW), and portions of three Garfield County parcels all owned by RFTA (Garfield County Assessor's Office 2024).

1.2 Site and Vicinity General Characteristics

The project area consists of Wulfsohn Road southeast of the intersection with Midland Avenue, the West Glenwood Park & Ride, and portions of the parking lot for the RFTA GMF in Glenwood Springs, Colorado. The project area is generally bounded by undeveloped land and former municipal land undergoing construction for the new Glenwood Maintenance and Operations Center (MOC) (Figure 2).

Path: P:\10800 Projects\10851 - Glenwood Springs Municipal Operations Center\CDOT CLEARANCES - 2024\Maps\ESA\10851 ESA Figure 1.mxd



Glenwood Maintenance Facility, Phases 6A, 6B, and 8,
Glenwood Springs, Colorado

Section 5, T6S, R89W; 6th PM

UTM NAD 83: Zone 13N; 297716mE, 4381291mN

Longitude 107.354523°W, Latitude 39.557471°N

USGS Glenwood Springs, CO Quadrangle

Garfield County, Colorado

Project Area

0 1,000 2,000 Feet

N

Figure 1
Vicinity Map

Prepared for: Shrewsberry & Associates, LLC
File: 10851 ESA Figure 1.mxd (GS)
July 10, 2024

ERO Resources Corp.

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Path: P:\10800 Projects\10851 - Glenwood Springs Municipal Operations Center\CDOT CLEARANCES - 2024\Maps\ESA\10851 ESA Figure 2.mxd

Glenwood Maintenance Facility, Phases 6A, 6B, and 8, Glenwood Springs, Colorado

Project Area Boundary

Image Source: maxar Technologies©, September 27, 2024

0 75 150 Feet

N

Figure 2
Site Plan

Prepared for: Shrewsberry & Associates, LLC
File: 10851 ESA Figure 2.mxd (GS)
July 10, 2024

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2.0 Project Description

According to project plans from the RFTA, the general project scope consists of the following three phases (RFTA 2024):

- Phase 6A consists of the construction of the Transit Center, which will be a 6,093 square foot building designed to accommodate needs for passengers and RFTA staff;
- Phase 6B consists of the construction of a 22,956 square foot building designed to cater to the existing and future needs of the RFTA. This phase also involves development of the parking area, landscaping, and a pedestrian bridge to provide access to the newly constructed RFTA Operations Center and Bus Storage Facility, which is located across the access road; and
- Phase 8 consists of modifications and construction for a storage building to support RFTA's daily activities.

Based on current available information regarding the proposed project, the maximum depth of excavation in the project area is unknown. Based on groundwater levels identified in environmental reports for sites adjoining the project area, groundwater is not anticipated to be encountered during construction. Permanent or temporary easements and/or right-of-way acquisition will not be necessary.

3.0 Physical Setting

The elevation of the project area ranges from 5,790 to 5,850 feet above sea level (U.S. Geological Survey [USGS] 2024). Surface geology in the area is characterized by alluvial deposits of sand and gravel underlain by gypsum, anhydrite, and interbedded siltstone and minor dolomites of the Eagle Valley Evaporite (Tweto, Moench, and Reed Jr., 1978). According to a 2023 Site Characterization Report (SCR) prepared by TAIT Environmental Services, Inc. (TAIT), for the former RFTA MOC located adjoining to the south of the project area, groundwater in the vicinity of the project area was not encountered in soil borings up to 25 feet bgs (TAIT 2023). According to topographic information from the USGS 7.5-minute quadrangle map, surface water in the project area flows to the north-northwest, toward the Colorado River (USGS 2024). Based on the topography and field observations, the expected flow direction of the uppermost groundwater is to the north-northwest, toward the Colorado River.

4.0 Historical Review

4.1 Historical Use Information for the Project Area and Adjoining Properties

ERO used the following standard historical sources to evaluate current and past uses of the project area and adjoining properties:

- Historical aerial photographs from 1955 to 2023
- Historical topographic maps from 1961 to 2022

Other standard historical sources for the site, such as street directories, project area tax files, recorded land title records, building department records, and zoning/land use records, were not reasonably ascertainable, were not available, or, based on ERO's professional experience, are unlikely to be sufficiently useful, accurate, or complete and are unlikely to provide significant additional historical information with regard to the project area.

4.1.1 Historical Aerial Photographs

Historical aerial photographs from 1955 to 2023 showing the project area and surrounding area were reviewed and are discussed below (Environmental Data Resources [EDR] 2024a; Google Earth 2024).

1955 and 1960 Aerial Photographs; Scale: 1 inch=500 feet
The 1955 and 1960 aerial photographs show the project area and surrounding area to be undeveloped. A portion of the land northwest of the project area is developed for agricultural purposes. The Colorado River is visible north of the project area. U.S. Highway 6 (Highway 6) is visible north of the Colorado River. Several buildings are visible north of Highway 6.

1979 Aerial Photograph; Scale: 1 inch=500 feet
No significant changes to the project area are visible in the 1979 aerial photograph compared with the previous photograph. Significant changes to the surrounding area consist of the following:

- The Denver and Rio Grande Great Western Railroad (D&R GW RR) is visible north of the project area;
- Road construction is visible north of the Colorado River for U.S. Interstate 70 (I-70); and
- Development north of the Colorado River continues.

1983 Aerial Photograph; Scale: 1 inch=500 feet
No significant changes to the project area are visible in the 1983 aerial photograph compared with the previous photograph. Significant changes to the surrounding area consist of the following:

- Two new buildings and several roads are visible north of the project area, between the D&R GW RR and the Colorado River;
- I-70 is complete; and
- Development north of the Colorado River continues.

1989 and 1993 Aerial Photographs; Scale: 1 inch=500 feet
No significant changes to the project area or surrounding area are visible in the 1989 and 1993 aerial photographs compared with the previous photograph.

1999 Aerial Photograph; Scale: 1 inch=500 feet
No significant changes to the project area are visible in the 1999 aerial photograph compared with the previous photographs. Significant changes to the surrounding area consist of the following:

- Midland Avenue is visible north of the project area; and
- Development is visible between the D&R GW RR and the Colorado River.

2006 Aerial Photograph; Scale: 1 inch=500 feet
Significant changes to the project area and surrounding area in the 2006 aerial photograph compared with the previous photograph consist of the following:

- The Glenwood Springs MOC, administration buildings, and associated parking lots are visible on and adjoining the project area;
- The RFTA park and ride lot is visible on and adjoining the project area;
- Wulfsohn Road is visible crossing the project area;
- Grading is visible adjoining the project area to the east;
- A dirt road and an excavated sediment trench are visible southeast of the project area; and
- Several commercial office buildings are visible north and east-southeast of the project area.

2011 Aerial Photograph; Scale: 1 inch=500 feet
Significant changes to the project area and surrounding area in the 2011 aerial photograph compared with the previous photograph consist of the following:

- Soil disturbance is visible in the central and northern portions, as well as adjoining the northern portion of the project area.

2015 Aerial Photograph; Scale: 1 inch=500 feet
No significant changes to the project area or surrounding area are visible in the 2015 aerial photograph compared with the previous photograph.

2019 Aerial Photograph; Scale: 1 inch=500 feet
Significant changes to the project area and surrounding area in the 2019 aerial photograph compared with the previous photograph consist of the following:

- A parking lot and bus loop are visible in the central portion of the project area;
- Soil disturbance is visible in the northeast portion of the project area; and
- A concrete walking path is visible north of the project area.

2023 Aerial Photograph; Google Earth; Scale Variable
Significant changes to the project area and surrounding area in the 2023 aerial photograph compared with the previous photograph consist of the following:

- Soil disturbance and grading associated with the decommissioning of the former Vehicle Maintenance and Operations Center is visible on and adjoining the project area; and
- A dirt/gravel parking lot is visible in the northeast portion of the project area.

4.1.2 Historical Topographic Maps

Historical USGS topographic maps from 1961 to 2022 showing the project area and surrounding area were reviewed and are discussed below (USGS 2024).

1961 USGS 7.5-Minute Series, Glenwood Springs Quadrangle, CO; Scale: 1:24,000
The USGS topographic map from 1961 shows the project area and surrounding area to be undeveloped. An unnamed road is shown north of the project area. Multiple drainages are shown east and west of the project area, draining toward the Colorado River north of the project area.

1979 and 1982 USGS 7.5-Minute Series, Glenwood Springs Quadrangle, CO; Scale: 1:24,000
No significant changes to the project area are shown on the USGS topographic maps from 1979 and 1982 compared with the previous map. Significant changes to the surrounding area consist of the following:

- The D&R GW RR is visible north of the project area;
- An area of fill is shown east of the project area; and
- I-70 is shown north of the Colorado River.

1987 USGS 7.5-Minute Series, Glenwood Springs Quadrangle, CO; Scale: 1:24,000
No significant changes to the project area are shown on the USGS topographic map from 1987 compared with the previous map. Significant changes to the surrounding area consist of the following:

- Several new buildings, a road, and a bridge are shown north of the Colorado River.

2011, 2013, 2016, 2019, and 2022 USGS 7.5-Minute Series, Glenwood Springs Quadrangle, CO; Scale: 1:24,000
The 2011, 2013, 2016, 2019, and 2022 USGS topographic maps, with corresponding aerial photograph base maps, show the subject property and surrounding area as they appeared in the aerial photographs for the same period discussed above.

5.0 Records Review

5.1 Standard Environmental Records Sources

ERO contracted with a commercial database search company, EDR, to conduct a search of publicly available database records (EDR 2024b). All ASTM International (ASTM) search distance sites are measured from the project area boundary.

ERO reviewed initial search results for inaccuracies using both field and mapping data sources. In addition, ERO attempted to locate orphan sites, those that lack adequate location information to map, using zip code, city name, site name, or other information. No orphan sites were found to be within the approximate ASTM search distances. Sites identified in the surrounding area are discussed in the following sections and assessed as to their potential to be historical, known, or suspect environmental concerns associated with the project area. A summary is included in Table 1, and copies of records reviewed are in Appendix A.

Table 1. Summary of publicly available environmental records.

Record Sources	Search Distance (miles)[1]	Project Area	No. of Sites in Surrounding Area
Federal NPL site list	1.0	No	0
Federal Delisted NPL site list	0.5	No	0

Record Sources	Search Distance (miles)[1]	Project Area	No. of Sites in Surrounding Area
Federal Superfund Enterprise Management System (SEMS) list	0.5	No	0
Federal SEMS-Archive site list	0.5	No	0
Federal Resource Conservation and Recovery Act (RCRA) Corrective Action (RCRA) Corrective Action site list	1.0	No	1
Federal RCRA Treatment, Storage, and Disposal (TSD) facilities list	0.5	No	0
Federal RCRA generators list	Project area and adjoining	Yes	1
Federal institutional control/engineering control registries	Project area only	No	0
Federal Emergency Response Notification System list	Project area only	No	0
State NPL-equivalent sites[2]	1.0	No	0
State Comprehensive Environmental Response, Compensation, and Liability Information System-equivalent sites[2]	0.5	No	0
State landfill and/or solid waste disposal site list	0.5	No	2
State leaking storage tank list	0.5	Yes	8
State registered storage tank list	Project area and adjoining	Yes	2
State institutional control/engineering control registries	Project area only	No	0
State Voluntary Cleanup Program sites	0.5	No	0
State Brownfields sites	0.5	No	0
State Historical Cleaners	Project area and adjoining	No	0

[1]ASTM E1527 standard search distances.

[2]In Colorado, the lead agency for National Priorities List (NPL)/CERCLA may be either the Environmental Protection Agency or the Colorado Department of Public Health and Environment (CDPHE).

5.1.1 Federal Resource Conservation and Recovery Act Corrective Action Site List

The federal Resource Conservation and Recovery Act (RCRA) Corrective Action Site (CORRACTS) List provides a list of sites that have had or are undergoing corrective action or cleanup pursuant to the RCRA. One corrective action site is within 1 mile of the project area (Table 2) and is discussed further in section 5.2.1.

Table 2. Summary of corrective action sites within one mile of the project area.

Site Name	Address	Status	Distance and Direction
EIMCO Coal Machinery	2222 Devereux Road	Received regulatory closure in 2000	0.19 mile NW of the project area

5.1.2 Federal Resource Conservation and Recovery Information System

The Resource Conservation and Recovery Information System (RCRIS) includes two lists: (1) facilities on which treatment, storage, and/or disposal (TSD) of hazardous wastes occur; and (2) persons or entities that generate hazardous waste as defined and regulated by the RCRA. According to these lists, no TSD facilities are located within 0.5 mile of the project area, and the RFTA GMF site is located on and adjoining the project area. The RFTA GMF site is listed as a very-small quantity generator (VSQG) of nonhalogenated solvents and has no records of violations.

5.1.3 State Landfill and Solid Waste Disposal Sites

The CDPHE lists no permitted landfills and two other solid waste disposal sites within 0.5 mile of the project area (Table 3).

Table 3. Solid waste disposal sites within 0.5 mile of the project area.

Site Name	Address	Status	Distance and Direction
Discount Tire	51537 Highway 6	Waste tire generator	0.20 mile N of the project area
MCD Automotive Interests Colorado LLC	51429 Highway 6	Waste tire generator	0.23 mile N of the project area

5.1.4 State Leaking Storage Tank Sites

The Colorado Department of Labor and Employment, Division of Oil and Public Safety (CDLE/OPS) lists no leaking underground storage tank (LUST) or leaking aboveground storage tank (LAST) site in the project area. Eight LUST or LAST sites are located within 0.5 mile of the project area (Table 4). The RFTA GMF site and Glenwood MOC site are discussed further in section 5.2.3.

Table 4. LUST or LAST sites within 0.5 mile of the project area.

Site Name	Address	Status	Distance and Direction
Roaring Fork Transportation Authority Glenwood Maintenance Facility (RFTA GMF)	2307 Wulfsohn Road	Four event IDs, all closed	Adjoining the project area
Glenwood Springs Municipal Operations Center (MOC)	2301 Wulfsohn Road	Closed	Adjoining the project area to the south
EZ Way Rentals, Inc.	51527 US Highway 6	Two event IDs, both closed	0.21 mile N of the project area and across the Colorado River
Rey Motors, Inc	51457 Highway 6	Closed	0.24 mile N of the project area and across the Colorado River
7-11 #17211	51315 Highway 6	Closed	0.27 mile N of the project area and across the Colorado River
Alta Convenience #6318	51171 Highway 6	Closed	0.39 mile NW of the project area and across the Colorado River
Alta Convenience #6020	23 Mel Rey Road	Four event IDs, undergoing remediation	0.42 mile NW of the project area and across the Colorado River
West Carwash	77 Mel Rey Road	Closed	0.46 mine NW of the project area and across the Colorado River

5.1.5 State Registered Storage Tank Sites

CDLE/OPS lists the RFTA and Glenwood Springs Municipal Operations Center storage tank sites in and adjoining the project area (Table 5).

Table 5. Registered storage tank sites in and adjoining the project area.

Site/Address	Tanks/Status	Location/Direction
Roaring Fork Transportation Authority 2307 Wulfsohn Road	1 15,000-gallon Diesel UST/In use 1 6,000-gallon Gasoline UST/In use 1 3,000-gallon Gasoline UST/In use 1 1,000-gallon Used Oil UST/In use 1 2,000-gallon Diesel AST/Pending installation	Adjoining the project area
Glenwood Springs Municipal Operations Center 2301 Wulfsohn Road	1 12,000-gallon Gasoline/Diesel AST/Closed	Adjoining the project area to the south

5.2 Additional Environmental Records Sources

5.2.1 Colorado Department of Public Health and Environment

ERO reviewed the CDPHE Hazardous Materials and Waste Management Division online mapping application for any known sites that may indicate environmental concerns in or near the project area. The RFTA GMF was identified as a CDLE/OPS LUST site, as well as a VSQG on and adjoining the project area. This site is discussed in Section 5.1.4, Section 5.1.5 and Section 5.2.3. In addition, the EIMCO Coal Machinery corrective action site was identified in the surrounding area. This site is discussed in Section 5.1.1 and below (CDPHE 2024).

EIMCO Coal Machinery, 2222 Devereux Road. The EIMCO Coal Machinery site, at 2222 Devereux Road, is about 0.19-mile northwest of the project area. The site is a former chromium plating facility for mining tools that identified a hexavalent chromium release during a site assessment in 1992 (Foremost Solutions, Inc. [FMI] 2000). An onsite pit containing the electroplating tanks had leaked, resulting in elevated hexavalent chromium levels in the surrounding soil and groundwater. The pit and surrounding soils were excavated and removed (FMI 2000). Depth to water measurements in five monitoring wells from June of 1999 through April of 2000 for the site showed groundwater at depths from 18-32 feet bgs with a groundwater flow direction to the north-northwest, toward the Colorado River and away from the project area (FMI 2000). Following the installation of a recirculating anaerobic bioremediation system and a chemical reducing agent, groundwater concentrations were observed to be below state standards (FMI 2000). FMI submitted a No Further Action Request for this site in April of 2000 (FMI 2000), and CDPHE granted the site regulatory closure on May 1, 2000 (CDPHE 2000).

5.2.2 Colorado Energy and Carbon Management Commission Records

ERO reviewed records maintained by the Colorado Energy and Carbon Management Commission (CECMC), the agency that regulates oil and natural gas exploration and production in Colorado. According to the CECMC, no oil and gas wells are on or near the project area (CECMC 2024).

5.2.3 Colorado Department of Labor and Employment, Division of Oil and Public Safety (CDLE/OPS)

ERO reviewed records maintained by CDLE/OPS for the RFTA GMF site located at 2307 Wulfsohn Road, as well as the former Glenwood Springs MOC site at 2301 Wulfsohn Road.

RFTA GMF, 2307 Wulfsohn Road. The RFTA GMF has four closed releases associated with the site. Per a 2006 Storage Tank Report and Release Tracking Form, an overspill of about three gallons occurred at the diesel tank (RFTA 2006), and during a follow-on inspection, it was found that overfill protection systems on three of the USTs were compromised (CDLE/OPS 2006). According to the 2007 Site Characterization Report (SCR) prepared by Waste Engineering, Inc (WEI), as part of the sire characterization report, soil sampling was requested (WEI 2007a). Soil samples collected from beneath the tanks contained very low levels of petroleum hydrocarbons; groundwater was not encountered, and therefore, was not sampled (WEI 2007a). CDLE/OPS granted the site regulatory closure on May 10, 2007 (CDLE/OPS 2007a).

ERO also reviewed a second 2007 SCR for a release in October of 2007, also prepared by WEI. During the replacement of overfill protection equipment on the 3,000-gallon motor oil tank, an OPS inspector suspected a release and requested sampling and analysis of soils associated with the UST (WEI 2007b). The single soil sample analyzed contained petroleum hydrocarbons at levels below CDLE/OPS Tier-I Risk-Based Screening Levels (RBSLs), groundwater was not encountered; and therefore, was not sampled (WEI 2007b). CDLE/OPS granted the site regulatory closure on November 14, 2007 (CLDE/OPS 2007b).

Additionally, ERO reviewed a 2019 Minor Equipment Repair/Replacement Notification prepared by Palisades Technology and Management, LLC (PTM), stating that during spill bucket testing, a fill pipe could not be removed at the onsite gasoline and diesel USTs. During follow-on repair work for the fill pipes and spill buckets, no evidence of contamination was observed (PTM 2019). CDLE/OPS granted regulatory closure to the site on March 6, 2020 (CDLE/OPS 2020).

ERO also reviewed a 2023 SCR prepared by TAIT stating that a piping sump test failure had occurred (TAIT 2023). Soil borings to 25 feet were conducted and sampled, and the results showed no petroleum hydrocarbon concentrations above laboratory reporting limits (TAIT 2023); groundwater was not encountered, and therefore, was not sampled (TAIT 2023). CDLE/OPS granted the site regulatory closure on October 11, 2023 (CDLE/OPS 2023).

Glenwood Springs MOC, 2301 Wulfsohn Road. ERO reviewed the July 30, 2021, SCR prepared by ERO stating that a 12,000-gallon combination gasoline/diesel fuel AST and two fuel dispensers were removed (ERO 2021). Soil samples were taken from beneath the tank and the dispenser island. Low levels of diesel range organics and oil range organics were found in all samples beneath the AST, well below CDLE/OPS Tier I RSBLs, and no petroleum hydrocarbon concentrations were detected above laboratory reporting limits in the samples beneath the fuel dispensers (ERO 2021). The CDLE/OPS granted the site regulatory closure on September 24, 2021 (CDLE/OPS 2021).

5.2.4 Colorado Division of Water Resources

ERO reviewed records maintained by the Colorado Division of Water Resources (CDWR) for the project area. The CDWR has no records of water wells in the project area (CDWR 2024).

5.3 Interviews with Local Government Officials

5.3.1 Local Health Department

ERO contacted Garfield County on June 13, 2024 for information that may indicate environmental concerns in or near the project area. Mary Lynn Stevens, paralegal with Garfield County Attorney's Office, indicated that Garfield County does not have any responsive records for the project area (Stevens 2024).

5.3.2 Local Fire Department

ERO contacted the City of Glenwood Springs on June 13, 2024 for information that may indicate environmental concerns in or near the project area. Ryan Muse, city clerk with City of Glenwood Springs, indicated that there are multiple response records to the project area, none of which are environmentally relevant (Muse 2024).

6.0 Site Reconnaissance

A site reconnaissance was not required for this ISA and therefore, ERO did not conduct a site reconnaissance of the project area.

7.0 Evaluation

7.1 Findings

The project area consists of Wulfsohn Road southeast of the intersection with Midland Avenue, the West Glenwood Park & Ride, and portions of the parking lot for the RFTA GMF in Glenwood Springs, Colorado. The project area is generally bounded by undeveloped land and former municipal land undergoing construction for the new Glenwood MOC.

Federal, state, and local records identified the following sites or incidents typically associated with environmental concerns in or near the project area:

- 8 LUST or LAST sites in the surrounding area;
- 2 registered storage tank sites adjoining the project area;
- 1 VSQG adjoining the project area;
- 1 corrective action site; and
- 2 solid waste disposal sites.

7.2 Opinion

A summary of identified findings and ERO's determination if the findings constitute environmental concerns associated with the project area is presented in Table 6.

Table 6. Findings and opinions summary.

Finding	Environmental Concern	Rationale
Sites identified in the surrounding area: • 8 LUST or LAST sites in the surrounding area • 2 registered storage tank sites adjoining the project area • 1 VSQG adjoining the project area • 1 corrective action site • 2 solid waste disposal sites	No	The sites have received regulatory closure, are located hydrologically crossgradient to downgradient of the project area, are located too far away to adversely impact the project area or have no indication of having contributed to shallow soil contamination in the project area; groundwater is not anticipated to be encountered as part of the project.

7.3 Conclusions and Recommendations

This assessment has revealed no environmental concerns in connection with the project area.

8.0 References

Colorado Department of Labor and Employment, Division of Oil and Public Safety (CDLE/OPS). 2006. Suspected Release: 15558- Roaring Fork Transit Agency. November 2.

Colorado Department of Labor and Employment, Division of Oil and Public Safety (CDLE/OPS). 2007a. Petroleum Storage Tanks at the Roaring Fork Transit Agency, 2307 Wulfsohn Road, Glenwood Springs, Garfield County, Colorado. Event ID #10241. May 10.

Colorado Department of Labor and Employment, Division of Oil and Public Safety (CDLE/OPS). 2007b. The suspected release during the replacement of overfill protection at the Roaring Fork Transportation Authority, 2307 Wulfsohn Road, Glenwood Springs, Garfield County, Colorado. Event ID #10428. November 14.

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Environmental Data Resources (EDR). 2024a. The EDR Aerial Photo Decade Package, Glenwood Springs Municipal Operations Center, 2302 Wulfsohn Road, Glenwood Springs, CO 81601. Inquiry #7666145.5. Photo dates: 1955, 1960, 1979, 1983, 1989, 1993, 1999, 2006, 2011, 2015 and 2019. May 31.

ERO Resources Corporation (ERO). 2021. SCR-No Further Action Request. Former Glenwood Springs Municipal Operations Center, 2301 Wulfsohn Road, Glenwood Springs, Colorado. July 30.

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Garfield County Assessor's Office. 2024. Online mapping application. https://qpublic.schneidercorp.com/Application.aspx?AppID=1038&LayerID=22381&PageTypeID=1&PageID=9444. Last accessed June 19.

Google Earth. 2024. Aerial photography. www.googleearth.com. Photo date: 6/7/2023. Last accessed June 19.

Muse, Ryan. 2024. City of Glenwood Springs. Results of search of department files. June 13.

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Roaring Fork Transportation Authority (RFTA). 2006. Storage Tank Report and Release Tracking Form. November 3.

Roaring Fork Transportation Authority (RFTA). 2024. Glenwood Maintenance Facility Expansion, W.G. Transit Center & Administration Offices, Phase 6-Phase 8, Glenwood Springs, Colorado, 100% Schematic Design Narrative. February 23.

Stevens, Mary Lynn. 2024. Garfield County. Letter documenting results of review of department files. June 13.

TAIT Environmental Serivices, Inc. (TAIT). 2023. Site Characterization Report & No Further Action Request. Roaring Fork Transportation Authority, 2307 Wulfsohn Road, Glenwood Springs, Colorado 81601. April 25.

Tweto, Ogden; Moench, Robert H., and Reed Jr., John C. 1978. Geologic Map of the Leadville 1° by 2° Quadrangle, Northwestern Colorado. Map I-999.

U.S. Geological Survey (USGS). 2023. Topographic map viewer. https://ngmdb.usgs.gov/topoview/viewer/#8/39.682/-104.691. Map dates: 7.5-Minute Series, Glenwood Springs Quadrangle, 1961, photorevised 1982 and 1987 Orthophotographic Quadrangle, 2010, 2013, 2016, 2019, and 2022. Denver, CO. Last accessed June 19.

Waste Engineering, Inc. (WEI). 2007a. Site Characterization Report for Roaring Fork Transportation Authority, 2307 Wulfsohn Rd, Glenwood Springs, Colorado 81601. April 24.

Waste Engineering, Inc. (WEI). 2007b. Site Characterization Report for Roaring Fork Transportation Authority, 2307 Wulfsohn Rd, Glenwood Springs, Colorado 81601. October 22.

Appendix A Environmental Records

Glenwood Springs Municipal Operations Center
2302 Wulfsohn Rd
Glenwood Springs, CO 81601

Inquiry Number: 07666145.2r
May 30, 2024

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E1527 - 21), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E2247 - 16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E1528 - 22) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

2302 WULFSOHN RD
GLENWOOD SPRINGS, CO 81601

COORDINATES

Latitude (North):	39.5578380 - 39° 33' 28.21''
Longitude (West):	107.3544640 - 107° 21' 16.07''
Universal Tranverse Mercator:	Zone 13
UTM X (Meters):	297717.2
UTM Y (Meters):	4381122.0
Elevation:	5793 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	50011540 GLENWOOD SPRINGS, CO
Version Date:	2022
West Map:	50011641 STORM KING MOUNTAIN, CO
Version Date:	2022

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20190913
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
2302 WULFSOHN RD
GLENWOOD SPRINGS, CO 81601

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	WEST GLENWOOD SPRING	2302 AND 2307 WULFSO	FINDS, ECHO		TP
A2	WEST GLENWOOD SPRING	2302 AND 2307 WULFSO	NPDES		TP
B3	RFTA - ROARING FORK	2307 WULFSOHN RD	LUST, LTANKS, UST, AST	Lower	3, 0.001,
B4	ROARING FORK TRANSPO	2307 WULFSOHN RD	RCRA-VSQG, FINDS, ECHO	Lower	3, 0.001,
5	EIMCO COAL MACHINERY	2222 DEVERUEX ROAD	CORRACTS, RCRA NonGen / NLR, FINDS, ECHO	Lower	1002, 0.190, NW
C6	DISCOUNT TIRE	51537 HWY 6	SHWF	Lower	1063, 0.201, North
C7	GLENWOOD SPRINGS CHR	51537 HWY 6	AST	Lower	1063, 0.201, North
C8	E-Z WAY RENTALS INC	51517 US HWY 6 & 24	UST FINDER	Lower	1070, 0.203, North
9	SALLY BEAUTY SUPPLY	20 MARKET ST UNIT C	RCRA-VSQG	Lower	1095, 0.207, NNE
D10	E-Z WAY RENTALS INC	51517 US HWY 6 & 24	UST	Lower	1123, 0.213, North
D11	EZ WAY RENTALS INC	51527 US HWY 6	LTANKS	Lower	1140, 0.216, North
12	MCD AUTOMOTIVE INTER	51429 HWY 6	SHWF	Lower	1212, 0.230, NNW
D13	REY MOTORS INC	51457 HWY 6 & 24	UST FINDER, UST FINDER RELEASE	Lower	1279, 0.242, North
14	7-ELEVEN #17211	51315 HWY 6	UST FINDER, UST FINDER RELEASE	Lower	1446, 0.274, NW
E15	ALTA CONVENIENCE #63	51171 HWY 6 & 24	LTANKS, LUST, UST, ASBESTOS	Lower	2045, 0.387, NW
E16	ALTA CONVENIENCE #60	23 MEL REY RD	UST FINDER, UST FINDER RELEASE	Lower	2224, 0.421, NW
E17	23 MEL REY	23 MEL REY RD	LUST, LUST TRUST	Lower	2224, 0.421, NW
E18	23 MEL REY	23 MEL REY RD	LTANKS, UST	Lower	2224, 0.421, NW
F19	WEST CARWASH	77 MEL REY RD	UST FINDER, UST FINDER RELEASE	Lower	2409, 0.456, NW
F20	WEST CARWASH	77 MEL REY RD	LTANKS, LUST, UST	Lower	2409, 0.456, NW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
WEST GLENWOOD SPRING 2302 AND 2307 WULFSO GLENWOOD SPRINGS, CO 81601	FINDS Registry ID:: 110067620756 ECHO Registry ID: 110067620756	N/A
WEST GLENWOOD SPRING 2302 AND 2307 WULFSO GLENWOOD SPRINGS, CO 81601	NPDES Permit Number: COR404041	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Lists of Federal Delisted NPL sites

Delisted NPL ---------- National Priority List Deletions

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Lists of Federal RCRA TSD facilities

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Lists of Federal RCRA generators

RCRA-LQG ---------- RCRA - Large Quantity Generators

RCRA-SQG ---------- RCRA - Small Quantity Generators

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROLS ---------- Institutional Controls Sites List

Federal ERNS list

ERNS ---------- Emergency Response Notification System

Lists of state- and tribal hazardous waste facilities

SHWS ---------- This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF ---------- Solid Waste Sites & Facilities

Lists of state and tribal leaking storage tanks

LAST ---------- Leaking Aboveground Storage Tank Listing
INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land

Lists of state and tribal registered storage tanks

FEMA UST ---------- Underground Storage Tank Listing
INDIAN UST ---------- Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

AUL ---------- Environmental Covenants and Environmental Use Restrictions List

Lists of state and tribal voluntary cleanup sites

VCP ---------- Voluntary Cleanup & Redevelopment Act Application Tracking Report
INDIAN VCP ---------- Voluntary Cleanup Priority Listing

Lists of state and tribal brownfield sites

BROWNFIELDS ---------- Brownfields Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY ---------- Registered Recyclers Listing
HIST LF ---------- Historical Landfill List

INDIAN ODI	Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations
ODI	Open Dump Inventory
IHS OPEN DUMPS	Open Dumps on Indian Land
DENVER CO HISTORIC FILL	Denver City & County Historic Fill Areas

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL	Delisted National Clandestine Laboratory Register
CDL	Meth Lab Locations
US CDL	National Clandestine Laboratory Register

Local Land Records

LIENS 2	CERCLA Lien Information

Records of Emergency Release Reports

HMIRS	Hazardous Materials Information Reporting System
SPILLS	Spills Database
SPILLS 90	SPILLS 90 data from FirstSearch

Other Ascertainable Records

FUDS	Formerly Used Defense Sites
DOD	Department of Defense Sites
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR	Financial Assurance Information
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
PADS	PCB Activity Database System
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File

EXECUTIVE SUMMARY

ABANDONED MINES - Abandoned Mines
MINES MRDS - Mineral Resources Data System
DOCKET HWC - Hazardous Waste Compliance Docket Listing
UXO - Unexploded Ordnance Sites
FUELS PROGRAM - EPA Fuels Program Registered Listing
PFAS NPL - Superfund Sites with PFAS Detections Information
PFAS FEDERAL SITES - Federal Sites PFAS Information
PFAS TSCA - PFAS Manufacture and Imports Information
PFAS TRIS - List of PFAS Added to the TRI
PFAS RCRA MANIFEST - PFAS Transfers Identified In the RCRA Database Listing
PFAS ATSDR - PFAS Contamination Site Location Listing
PFAS WQP - Ambient Environmental Sampling for PFAS
PFAS NPDES - Clean Water Act Discharge Monitoring Information
PFAS ECHO - Facilities in Industries that May Be Handling PFAS Listing
PFAS ECHO FIRE TRAINING - Facilities in Industries that May Be Handling PFAS Listing
PFAS PART 139 AIRPORT - All Certified Part 139 Airports PFAS Information Listing
AQUEOUS FOAM NRC - Aqueous Foam Related Incidents Listing
BIOSOLIDS - ICIS-NPDES Biosolids Facility Data
PFAS - PFAS Information Listing
AQUEOUS FOAM - Class B Firefighting Foam Contaminating PFAS Listing
AIRS - Permitted Facility & Emissions Listing
ASBESTOS - Asbestos Abatement & Demolition Projects
METHANE SITE - Methane Site Investigations - Jefferson County 1980
Methane Investigation - Methane Gas & Swamp Findings
DRYCLEANERS - Drycleaner Facilities
Financial Assurance - Financial Assurance Information Listing
LEAD - LEAD
MINES - Permitted Mines Listing
UIC - Underground Injection Control
UMTRA - Uranium Mill Tailings Sites

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP - EDR Proprietary Manufactured Gas Plants
EDR Hist Auto - EDR Exclusive Historical Auto Stations
EDR Hist Cleaner - EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF - Recovered Government Archive Solid Waste Facilities List
RGA LUST - Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS: CORRACTS is a list of handlers with RCRA Corrective Action Activity. This report shows which nationally-defined corrective action core events have occurred for every handler that has had corrective action activity.

A review of the CORRACTS list, as provided by EDR, and dated 12/04/2023 has revealed that there is 1 CORRACTS site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
EIMCO COAL MACHINERY EPA ID:: COD981544786	***2222 DEVERUEX ROAD***	***NW 1/8 - 1/4 (0.190 mi.)***	***5***	***18***

Lists of Federal RCRA generators

RCRA-VSQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

A review of the RCRA-VSQG list, as provided by EDR, and dated 12/04/2023 has revealed that there are 2 RCRA-VSQG sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
ROARING FORK TRANSPO EPA ID:: COR000219642	***2307 WULFSOHN RD***	***0 - 1/8 (0.001 mi.)***	***B4***	***14***
SALLY BEAUTY SUPPLY EPA ID:: COR000253120	20 MARKET ST UNIT C	NNE 1/8 - 1/4 (0.207 mi.)	9	48

Lists of state and tribal landfills and solid waste disposal facilities

SHWF: A listing from the Solid Waste Information System, which is used to help administer the various programs of our solid waste and materials management program. It includes a wide variety of types of facilities and sites, and includes information obtained over several decades and numerous legacy data systems.

A review of the SHWF list, as provided by EDR, and dated 01/29/2024 has revealed that there are 2 SHWF sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
DISCOUNT TIRE	51537 HWY 6	N 1/8 - 1/4 (0.201 mi.)	C6	46
MCD AUTOMOTIVE INTER	51429 HWY 6	NNW 1/8 - 1/4 (0.230 mi.)	12	53

EXECUTIVE SUMMARY

Lists of state and tribal leaking storage tanks

LTANKS: Active and Closed OPS Petroleum Release Events in Colorado. Includes the OPS Open Event locations, but also shows locations of closed events (releases that have been issued a No Further Action determination).

A review of the LTANKS list, as provided by EDR, and dated 02/01/2024 has revealed that there are 5 LTANKS sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
RFTA - ROARING FORK	***2307 WULFSOHN RD***	***0 - 1/8 (0.001 mi.)***	***B3***	***10***
EZ WAY RENTALS INC	51527 US HWY 6	N 1/8 - 1/4 (0.216 mi.)	D11	52
ALTA CONVENIENCE #63	***51171 HWY 6 & 24***	***NW 1/4 - 1/2 (0.387 mi.)***	***E15***	***56***
23 MEL REY	***23 MEL REY RD***	***NW 1/4 - 1/2 (0.421 mi.)***	***E18***	***78***
WEST CARWASH	***77 MEL REY RD***	***NW 1/4 - 1/2 (0.456 mi.)***	***F20***	***83***

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Health's Leaking Underground Storage Tank List.

A review of the LUST list, as provided by EDR, and dated 03/01/2018 has revealed that there are 4 LUST sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
RFTA - ROARING FORK	***2307 WULFSOHN RD***	***0 - 1/8 (0.001 mi.)***	***B3***	***10***
Facility Id: 15558				
Status: Closed				
ALTA CONVENIENCE #63	***51171 HWY 6 & 24***	***NW 1/4 - 1/2 (0.387 mi.)***	***E15***	***56***
Facility Id: 9009				
Status: Closed				
23 MEL REY	***23 MEL REY RD***	***NW 1/4 - 1/2 (0.421 mi.)***	***E17***	***66***
Facility Id: 1655				
Status: Closed				
WEST CARWASH	***77 MEL REY RD***	***NW 1/4 - 1/2 (0.456 mi.)***	***F20***	***83***
Facility Id: 10965				
Status: Closed				

LUST TRUST: Reimbursement application package. The 1989 Colorado General Assembly established Colorado's Petroleum Storage Tank Fund. The Fund reimburses eligible applicants for allowable costs incurred in cleaning up petroleum contamination from underground and aboveground petroleum storage tanks, as well as for third-party liability expenses. Remediation of contamination caused by railroad or aircraft fuel is not eligible for reimbursement. The Fund satisfies federal Environmental Protection Agency financial assurance requirements. Monies in the Fund come from various sources, predominantly the state environmental surcharge imposed on all petroleum products except railroad or aircraft fuel.

A review of the LUST TRUST list, as provided by EDR, and dated 12/12/2023 has revealed that there is 1 LUST TRUST site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
23 MEL REY	***23 MEL REY RD***	***NW 1/4 - 1/2 (0.421 mi.)***	***E17***	***66***

Facility Id: 1655

Lists of state and tribal registered storage tanks

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The source is the State Oil Inspector's Office's Tank List.

A review of the UST list, as provided by EDR, and dated 05/23/2024 has revealed that there are 2 UST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
RFTA - ROARING FORK Facility Id: 15558 Tank Status: Currently In Use Tank Tag/Tank Status: 15558-3 Tank Tag/Tank Status: 15558-4 Tank Tag/Tank Status: 15558-1 Tank Tag/Tank Status: 15558-2	***2307 WULFSOHN RD***	***0 - 1/8 (0.001 mi.)***	***B3***	***10***
E-Z WAY RENTALS INC Facility Id: 7699 Tank Status: Permanently Closed Tank Tag/Tank Status: 7699-1	51517 US HWY 6 & 24	N 1/8 - 1/4 (0.213 mi.)	D10	51

AST: The Aboveground Storage Tank database contains registered ASTs. The source is the State Oil Inspector's Office's Tank List.

A review of the AST list, as provided by EDR, and dated 05/23/2024 has revealed that there are 2 AST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
RFTA - ROARING FORK Tank Status: Pending Installation Facility Id: 15558	***2307 WULFSOHN RD***	***0 - 1/8 (0.001 mi.)***	***B3***	***10***
GLENWOOD SPRINGS CHR Tank Status: Permanently Closed Facility Id: 16643	51537 HWY 6	N 1/8 - 1/4 (0.201 mi.)	C7	47

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or

dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 12/04/2023 has revealed that there is 1 RCRA NonGen / NLR site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
EIMCO COAL MACHINERY EPA ID:: COD981544786	***2222 DEVERUEX ROAD***	***NW 1/8 - 1/4 (0.190 mi.)***	***5***	***18***

UST FINDER: EPA developed UST Finder, a web map application containing a comprehensive, state-sourced national map of underground storage tank (UST) and leaking UST (LUST) data. It provides the attributes and locations of active and closed USTs, UST facilities, and LUST sites from states and from Tribal lands and US territories . UST Finder contains information about proximity of UST facilities and LUST sites to: surface and groundwater public drinking water protection areas; estimated number of private domestic wells and number of people living nearby; and flooding and wildfires.

A review of the UST FINDER list, as provided by EDR, and dated 06/08/2023 has revealed that there are 2 UST FINDER sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
E-Z WAY RENTALS INC	51517 US HWY 6 & 24	N 1/8 - 1/4 (0.203 mi.)	C8	47
REY MOTORS INC	***51457 HWY 6 & 24***	***N 1/8 - 1/4 (0.242 mi.)***	***D13***	***53***

UST FINDER RELEASE: US EPA's UST Finder data is a national composite of leaking underground storage tanks. This data contains information about, and locations of, leaking underground storage tanks. Data was collected from state sources and standardized into a national profile by EPA's Office of Underground Storage Tanks, Office of Research and Development, and the Association of State and Territorial Solid Waste Management Officials.

A review of the UST FINDER RELEASE list, as provided by EDR, and dated 06/08/2023 has revealed that there are 4 UST FINDER RELEASE sites within approximately 0.5 miles of the target property.

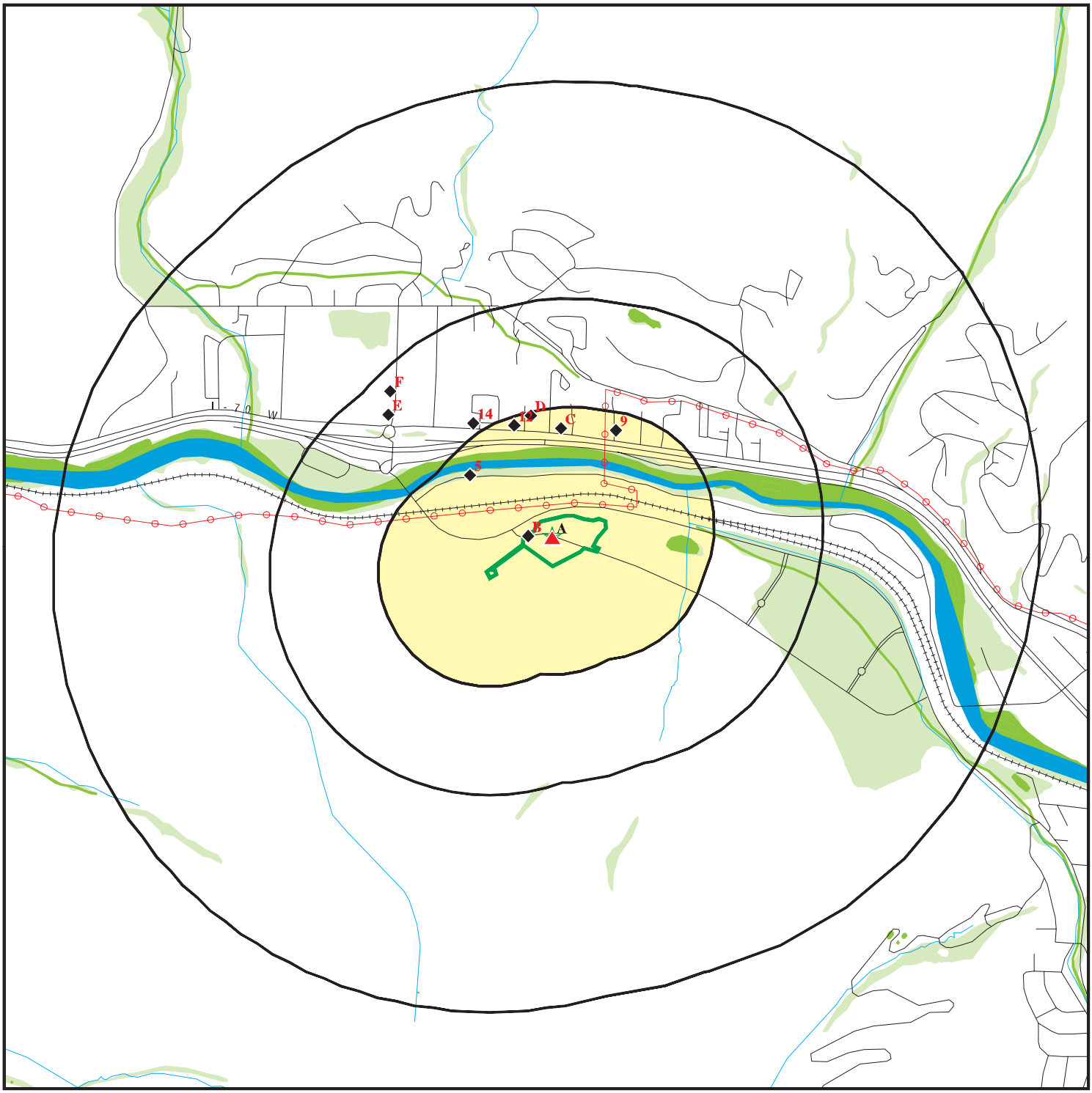
Lower Elevation	Address	Direction / Distance	Map ID	Page
REY MOTORS INC	***51457 HWY 6 & 24***	***N 1/8 - 1/4 (0.242 mi.)***	***D13***	***53***
7-ELEVEN #17211	***51315 HWY 6***	***NW 1/4 - 1/2 (0.274 mi.)***	***14***	***55***
ALTA CONVENIENCE #60	***23 MEL REY RD***	***NW 1/4 - 1/2 (0.421 mi.)***	***E16***	***64***
WEST CARWASH	***77 MEL REY RD***	***NW 1/4 - 1/2 (0.456 mi.)***	***F19***	***81***

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 3 records.

Site Name	Database(s)
GLENWOOD SPRINGS SECTION HQ	LTANKS, UST
GLENWOOD MUNICIPAL OPERATIONS CENT	LTANKS
GLENWOOD MUNICIPAL OPERATIONS CENT	AST

OVERVIEW MAP - 07666145.2R



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- National Wetland Inventory
- State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Glenwood Springs Municipal Operations Center	CLIENT:	ERO Resources
ADDRESS:	2302 Wulfsohn Rd Glenwood Springs CO 81601	CONTACT:	Jacob King
		INQUIRY #:	07666145.2r
LAT/LONG:	39.557838 / 107.354464	DATE:	May 30, 2024 11:06 am

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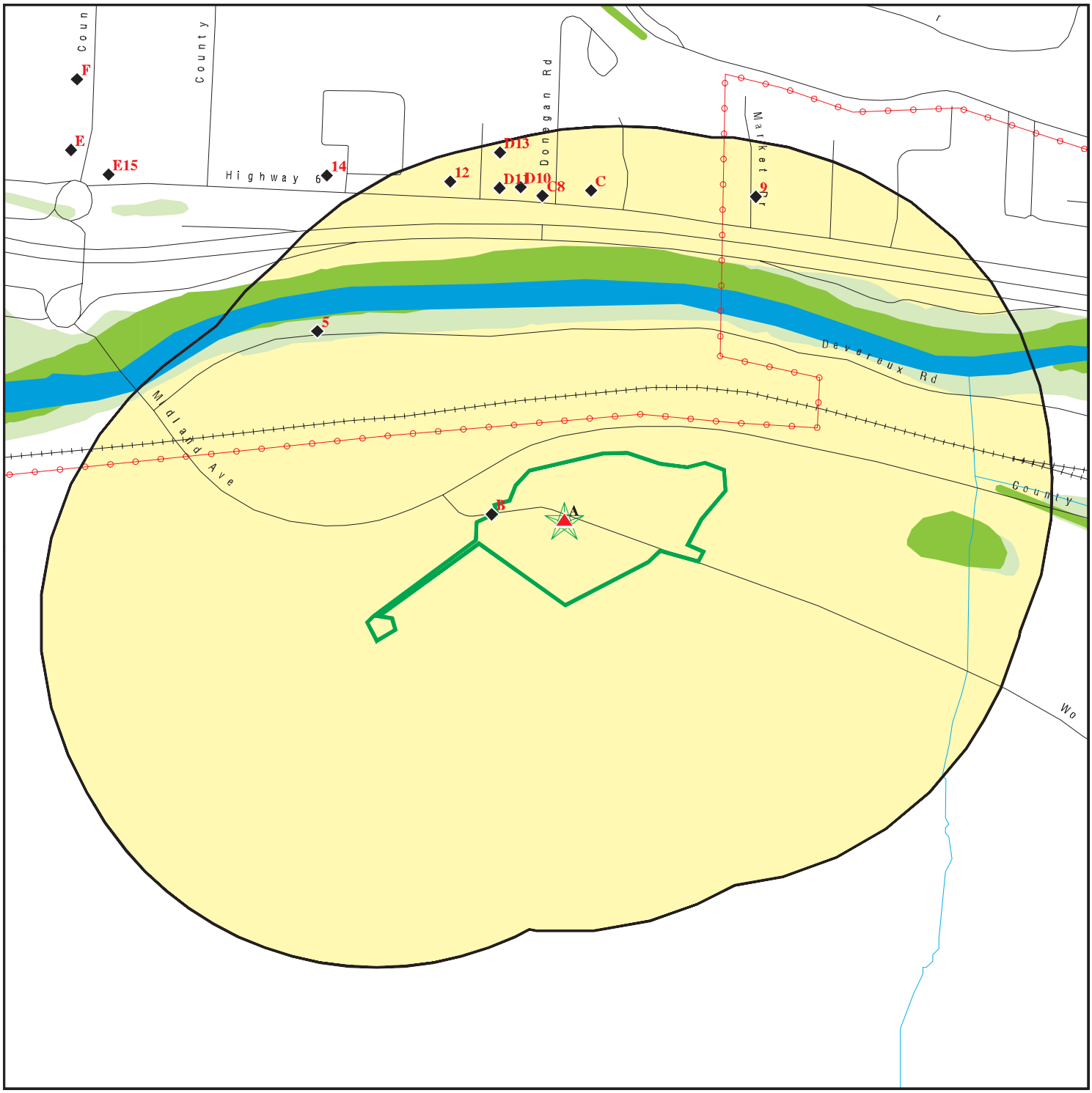
DETAIL MAP - 07666145.2R



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/16 1/8 1/4 Miles

Indian Reservations BIA

Power transmission lines

National Wetland Inventory

State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Glenwood Springs Municipal Operations Center	CLIENT:	ERO Resources
ADDRESS:	2302 Wulfsohn Rd Glenwood Springs CO 81601	CONTACT:	Jacob King
		INQUIRY #:	07666145.2r
LAT/LONG:	39.557838 / 107.354464	DATE:	May 30, 2024 11:06 am

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Lists of Federal NPL (Superfund) sites								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Lists of Federal Delisted NPL sites								
Delisted NPL	1.000		0	0	0	0	NR	0
Lists of Federal sites subject to CERCLA removals and CERCLA orders								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Lists of Federal CERCLA sites with NFRAP								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA facilities undergoing Corrective Action								
CORRACTS	1.000		0	1	0	0	NR	1
Lists of Federal RCRA TSD facilities								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA generators								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		1	1	NR	NR	NR	2
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
Lists of state- and tribal hazardous waste facilities								
SHWS	N/A		N/A	N/A	N/A	N/A	N/A	N/A
Lists of state and tribal landfills and solid waste disposal facilities								
SWF/LF	0.500		0	0	0	NR	NR	0
SHWF	0.500		0	2	0	NR	NR	2
Lists of state and tribal leaking storage tanks								
LTANKS	0.500		1	1	3	NR	NR	5

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LUST	0.500		1	0	3	NR	NR	4
LAST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
LUST TRUST	0.500		0	0	1	NR	NR	1
Lists of state and tribal registered storage tanks								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		1	1	NR	NR	NR	2
AST	0.250		1	1	NR	NR	NR	2
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
AUL	0.500		0	0	0	NR	NR	0
Lists of state and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
Lists of state and tribal brownfield sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
SWRCY	0.500		0	0	0	NR	NR	0
HIST LF	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
DENVER CO HISTORIC FILL	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	1	NR	NR	NR	1
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
MINES MRDS	TP		NR	NR	NR	NR	NR	0
FINDS	TP	1	NR	NR	NR	NR	NR	1
ECHO	TP	1	NR	NR	NR	NR	NR	1
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
PFAS NPL	0.250		0	0	NR	NR	NR	0
PFAS FEDERAL SITES	0.250		0	0	NR	NR	NR	0
PFAS TSCA	0.250		0	0	NR	NR	NR	0
PFAS TRIS	0.250		0	0	NR	NR	NR	0
PFAS RCRA MANIFEST	0.250		0	0	NR	NR	NR	0
PFAS ATSDR	0.250		0	0	NR	NR	NR	0
PFAS WQP	0.250		0	0	NR	NR	NR	0
PFAS NPDES	0.250		0	0	NR	NR	NR	0
PFAS ECHO	0.250		0	0	NR	NR	NR	0
PFAS ECHO FIRE TRAINING	0.250		0	0	NR	NR	NR	0
PFAS PART 139 AIRPORT	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
AQUEOUS FOAM NRC	0.250		0	0	NR	NR	NR	0
BIOSOLIDS	TP		NR	NR	NR	NR	NR	0
PFAS	TP		NR	NR	NR	NR	NR	0
AQUEOUS FOAM	0.250		0	0	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
ASBESTOS	TP		NR	NR	NR	NR	NR	0
METHANE SITE	TP		NR	NR	NR	NR	NR	0
Methane Investigation	TP		NR	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
LEAD	TP		NR	NR	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
NPDES	TP	1	NR	NR	NR	NR	NR	1
UIC	TP		NR	NR	NR	NR	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
UST FINDER	0.250		0	2	NR	NR	NR	2
UST FINDER RELEASE	0.500		0	1	3	NR	NR	4
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		3	5	11	10	0	0	29

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

N/A = This State does not maintain a SHWS list. See the Federal CERCLIS list.

A1 **WEST GLENWOOD SPRINGS PARK AND RIDE** **FINDS** **1018372482**
Target **2302 AND 2307 WULFSOHN RD** **ECHO** **N/A**
Property **GLENWOOD SPRINGS, CO 81601**

Site 1 of 2 in cluster A

Actual: **5793 ft.**

FINDS:
Registry ID: 110067620756

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
The National Pollutant Discharge Elimination System (NPDES) module of the Integrated Compliance Information System (ICIS). Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1018372482
Registry ID:	110067620756
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110067620756
Name:	WEST GLENWOOD SPRINGS PARK AND RIDE
Address:	2302 AND 2307 WULFSOHN RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601

A2 **WEST GLENWOOD SPRINGS PARK AND RIDE** **NPDES** **S118558053**
Target **2302 AND 2307 WULFSOHN RD** **N/A**
Property **GLENWOOD SPRINGS, CO 81601**

Site 2 of 2 in cluster A

Actual: **5793 ft.**

NPDES:

Name:	WEST GLENWOOD SPRINGS PARK AND RIDE
Address:	2302 And 2307 Wulfsohn Rd
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Primary Permit SIC Code:	4111
Permit Number:	COR404041
Permit Name:	Roaring Fork Transportation Authority
Termination Date:	Not reported
Receiving Water:	Colorado River
Issued:	04/01/2019
Effective:	04/01/2019
Expires:	2024-03-31 00:00:00
Permit Type Desc:	COR400000-Stormwater discharge associated with construction activities
Contact Name:	Bair
Contact Office Phone Num:	9703797510
Facility Type Desc:	Not reported
Latitude:	39.557043
Longitude:	-107.355922
Immediate Water:	Not reported
SW Construction Activity:	Highway
Permit SIC1:	1629
Legal First Name:	Kelley
Legal Last Name:	Collier
Legal Title:	COO

WEST GLENWOOD SPRINGS PARK AND RIDE (Continued) **S118558053**

Facility Contact Title:	PM
Stream Segment:	COLCLC04a
SW Construction Total Acres:	7.51
SW Construction Disturbed Acres:	5.2
SW Construction Start Date:	2016-04-01 00:00:00
SW Construction End Date:	2016-10-31 00:00:00
Reuse TREATER ID:	Not reported
Reuse TREATER:	Not reported
Facility Description:	Not reported
Facility Contact Organization:	Not reported
Billing Organization:	Not reported
Billing Fname:	Not reported
Billing Lname:	Not reported
Billing Title:	Not reported
DMR Organization:	Not reported
DMR Fname:	Not reported
DMR Lname:	Not reported
DMR Title:	Not reported
Permit Sector:	Construction
Permit Status:	Effective
Activity Description:	Not reported
Legal Address1:	Not reported
Legal City:	Not reported
Legal State:	Not reported
Legal Zip code:	Not reported
Legal Phone:	9703844885
Legal Email:	kcollier@rfta.com
Property Owner Organization:	Not reported
Property Owner FName:	Not reported
Property Owner LName:	Not reported
Property Owner Title:	Not reported
Property Owner Address1:	Not reported
Property Owner City:	Not reported
Property Owner State:	Not reported
Property Owner Zipcode:	Not reported
Property Owner Phone:	Not reported
Property Owner Email:	Not reported
Facility Contact Address1:	Not reported
Facility Contact City:	Not reported
Facility Contact State:	Not reported
Facility Contact Zipcode:	Not reported
Facility Contact Email:	jbair@rfta.com
Billing Address1:	Not reported
Billing City:	Not reported
Billing State:	Not reported
Billing Zipcode:	Not reported
Billing Phone:	Not reported
Billing Email:	Not reported
DMR Address1:	Not reported
DMR City:	Not reported
DMR State:	Not reported
DMR Zipcode:	Not reported
DMR Phone:	Not reported
DMR Email:	Not reported
Regulation ID:	Not reported
Major River Basin:	Not reported
Permit SIC2:	Not reported

WEST GLENWOOD SPRINGS PARK AND RIDE (Continued) **S118558053**

Permit SIC3: Not reported
Permit SIC4: Not reported

B3 **RFTA - ROARING FORK TRANSIT AGENCY** **LUST** **U003916829**
2307 WULFSOHN RD **LTANKS** **N/A**
< 1/8 **GLENWOOD SPRINGS, CO 81601** **UST**
0.001 mi. **AST**
3 ft. **Site 1 of 2 in cluster B**

Relative:
Lower

Actual:
5783 ft.

LUST:

Name:	ROARING FORK TRANSIT AGENCY
Address:	2307 WULFSOHN RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility Id:	15558
Status:	**Closed**
Event ID:	10241
Confirmed Release:	11/01/2006
Contact Name:	Technical Assistance Line
Contact Phone:	303-318-8547
Contact Email:	Not reported
Latitude Degrees:	39.555354
Longitude Degrees:	-107.346868

Facility Id:	15558
Status:	**Closed**
Event ID:	10428
Confirmed Release:	08/01/2007
Contact Name:	Technical Assistance Line
Contact Phone:	303-318-8547
Contact Email:	Not reported
Latitude Degrees:	39.555354
Longitude Degrees:	-107.346868

Click here for COSTIS:

LTANKS:

Facility ID:	15558
Name:	RFTA - ROARING FORK TRANSIT AGENCY
Address:	2307 WULFSOHN RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
NFA Type:	Tier I
Status:	Closed
Event ID:	17254
Release Date:	11/01/2022
Closed Date:	10/11/2023
Contact:	Hannah Williams
Phone:	(303) 318-8519
Email:	hannah.williams@state.co.us
Release Source:	Other
Release Cause:	Unknown
Reimbursement Total:	Not reported
Release Number:	REL-016242
URL:	https://socgov18.force.com/s/release/a183h000003TeBn

Facility ID:	15558
Name:	RFTA - ROARING FORK TRANSIT AGENCY
Address:	2307 WULFSOHN RD

RFTA - ROARING FORK TRANSIT AGENCY (Continued) **U003916829**

City,State,Zip:	GLENWOOD SPRINGS, CO 81601
NFA Type:	Tier I
Status:	Closed
Event ID:	13464
Release Date:	08/06/2019
Closed Date:	03/06/2020
Contact:	Hannah Williams
Phone:	(303) 318-8519
Email:	hannah.williams@state.co.us
Release Source:	Not reported
Release Cause:	Other
Reimbursement Total:	Not reported
Release Number:	REL-009866
URL:	https://socgov18.force.com/s/release/a183h000003KXp6

Facility ID:	15558
Name:	RFTA - ROARING FORK TRANSIT AGENCY
Address:	2307 WULFSOHN RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
NFA Type:	Tier I
Status:	Closed
Event ID:	10241
Release Date:	11/01/2006
Closed Date:	05/10/2007
Contact:	Bobby Sonnier
Phone:	(303) 318-8547
Email:	cdle_ops_public_record_center@state.co.us
Release Source:	Overfill - spill bucket
Release Cause:	Not reported
Reimbursement Total:	Not reported
Release Number:	REL-009981
URL:	https://socgov18.force.com/s/release/a183h000003KXqx

Facility ID:	15558
Name:	RFTA - ROARING FORK TRANSIT AGENCY
Address:	2307 WULFSOHN RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
NFA Type:	Tier I
Status:	Closed
Event ID:	10428
Release Date:	08/01/2007
Closed Date:	11/14/2007
Contact:	Tina Sandoval
Phone:	(303) 318-8547
Email:	cdle_ops_public_record_center@state.co.us
Release Source:	Overfill - spill bucket
Release Cause:	Not reported
Reimbursement Total:	Not reported
Release Number:	REL-009982
URL:	https://socgov18.force.com/s/release/a183h000003KXqy

UST:

Tank Tag:	15558-3
Substance:	RUL
Name:	RFTA - ROARING FORK TRANSIT AGENCY
Address:	2307 WULFSOHN RD
City,State,Zip:	GLENWOOD SPRINGS 81601

RFTA - ROARING FORK TRANSIT AGENCY (Continued) **U003916829**

Tank Tag:	15558-3
Substance:	RUL
Facility ID:	15558
Owner Name:	Roaring Fork Transportation Authority
Owner Address:	1340 Main St, Carbondale, CO 81623
Owner City:	Carbondale
Owner State:	CO
Owner Zip:	81623
Facility Type:	Non-Retail
Facility Category:	Commercial/Industrial
Capacity:	3000
Date Closed:	Not reported
Tank Status:	Currently In Use
Date Tank Installed:	09/24/2001
Tank Type:	UST
Latitude:	39.555354
Longitude:	-107.346868
Tank Material:	FRP: Fiberglass Reinforced Plastic
Tank Wall Type:	Not reported
Piping Type:	UG: Underground
Piping System:	Not reported
Piping Material:	FLEX: Flexible Plastic
Piping Wall Type:	Double-Walled
Overfill Prevention:	FV: Fill Tube Valve
Tank ID:	a1J3h000001jozp
Account Name:	ACCT-09329

Tank Tag:	15558-4
Substance:	USEDOIL
Name:	RFTA - ROARING FORK TRANSIT AGENCY
Address:	2307 WULFSOHN RD
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	15558-4
Substance:	USEDOIL
Facility ID:	15558
Owner Name:	Roaring Fork Transportation Authority
Owner Address:	1340 Main St, Carbondale, CO 81623
Owner City:	Carbondale
Owner State:	CO
Owner Zip:	81623
Facility Type:	Non-Retail
Facility Category:	Commercial/Industrial
Capacity:	1000
Date Closed:	Not reported
Tank Status:	Currently In Use
Date Tank Installed:	09/24/2001
Tank Type:	UST
Latitude:	39.555354
Longitude:	-107.346868
Tank Material:	FRP: Fiberglass Reinforced Plastic
Tank Wall Type:	Not reported
Piping Type:	UG: Underground
Piping System:	Not reported
Piping Material:	FLEX: Flexible Plastic
Piping Wall Type:	Double-Walled
Overfill Prevention:	Other
Tank ID:	a1J3h000001jozq

RFTA - ROARING FORK TRANSIT AGENCY (Continued) **U003916829**

Account Name:	ACCT-09329
Tank Tag:	15558-1
Substance:	DSL
Name:	RFTA - ROARING FORK TRANSIT AGENCY
Address:	2307 WULFSOHN RD
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	15558-1
Substance:	DSL
Facility ID:	15558
Owner Name:	Roaring Fork Transportation Authority
Owner Address:	1340 Main St, Carbondale, CO 81623
Owner City:	Carbondale
Owner State:	CO
Owner Zip:	81623
Facility Type:	Non-Retail
Facility Category:	Commercial/Industrial
Capacity:	15000
Date Closed:	Not reported
Tank Status:	Currently In Use
Date Tank Installed:	09/24/2001
Tank Type:	UST
Latitude:	39.555354
Longitude:	-107.346868
Tank Material:	FRP: Fiberglass Reinforced Plastic
Tank Wall Type:	Not reported
Piping Type:	UG: Underground
Piping System:	Not reported
Piping Material:	FLEX: Flexible Plastic
Piping Wall Type:	Double-Walled
Overfill Prevention:	FV: Fill Tube Valve
Tank ID:	a1J3h000001jozn
Account Name:	ACCT-09329
Tank Tag:	15558-2
Substance:	RUL
Name:	RFTA - ROARING FORK TRANSIT AGENCY
Address:	2307 WULFSOHN RD
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	15558-2
Substance:	RUL
Facility ID:	15558
Owner Name:	Roaring Fork Transportation Authority
Owner Address:	1340 Main St, Carbondale, CO 81623
Owner City:	Carbondale
Owner State:	CO
Owner Zip:	81623
Facility Type:	Non-Retail
Facility Category:	Commercial/Industrial
Capacity:	6000
Date Closed:	Not reported
Tank Status:	Currently In Use
Date Tank Installed:	09/24/2001
Tank Type:	UST
Latitude:	39.555354
Longitude:	-107.346868
Tank Material:	FRP: Fiberglass Reinforced Plastic

RFTA - ROARING FORK TRANSIT AGENCY (Continued) **U003916829**

Tank Wall Type:	Not reported
Piping Type:	UG: Underground
Piping System:	Not reported
Piping Material:	FLEX: Flexible Plastic
Piping Wall Type:	Double-Walled
Overfill Prevention:	FV: Fill Tube Valve
Tank ID:	a1J3h000001jozo
Account Name:	ACCT-09329

AST:

Name:	RFTA - ROARING FORK TRANSIT AGENCY
Address:	2307 WULFSOHN RD
City,State,Zip:	GLENWOOD SPRINGS 81601
Substance:	DSLDYE2
Tank Tag:	15558-5
Facility ID:	15558
Owner Name:	Not reported
Owner Address:	1340 Main St, Carbondale, CO 81623
Owner City:	Carbondale
Owner State:	CO
Owner Zip:	81623
Facility Type:	Non-Retail
Facility Category:	Commercial/Industrial
Capacity:	2000
Tank Status:	Pending Installation
Date Tank Installed:	Not reported
Date Closed:	Not reported
Tank Type:	AST
Latitude:	39.555354
Longitude:	-107.346868
Tank Material:	UL142/Equiv.
Tank Wall Type:	Double-Walled
Piping Type:	AG - Aboveground
Piping System:	Suction
Piping Material:	Not reported
Piping Wall Type:	Not reported
Overfill Prevention:	AL: External Aud/Vis Alarm
Tank ID:	a1JDo000003RSZU
Account Name:	ACCT-09329

B4 **ROARING FORK TRANSPORTATION AUTHORITY-GMF** **RCRA-VSQG** **1011488294**
2307 WULFSOHN RD **FINDS** **COR000219642**
< 1/8 **GLENWOOD SPRINGS, CO 81601** **ECHO**
0.001 mi.
3 ft. **Site 2 of 2 in cluster B**

Relative:
Lower

Actual:
5783 ft.

RCRA Listings:

Date Form Received by Agency:	20180606
Handler Name:	Roaring Fork Transportation Authority-Gmf
Handler Address:	Wulfsohn Rd
Handler City,State,Zip:	GLENWOOD SPRINGS, CO 81601
EPA ID:	COR000219642
Contact Name:	MIKE HERMES
Contact Address:	MAIN ST
Contact City,State,Zip:	CARBONDALE, CO 81623
Contact Telephone:	970-384-4860
Contact Fax:	Not reported

ROARING FORK TRANSPORTATION AUTHORITY-GMF (Continued) **1011488294**

Contact Email:	Not reported
Contact Title:	DIRECTOR OF FACILITIES
EPA Region:	08
Land Type:	County
Federal Waste Generator Description:	Conditionally Exempt Small Quantity Generator
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	MAIN ST
Mailing City,State,Zip:	CARBONDALE, CO 81623
Owner Name:	Dan Blankenship
Owner Type:	County
Operator Name:	Roaring Fork Trans Authority-Gmf
Operator Type:	County
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20180607
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

ROARING FORK TRANSPORTATION AUTHORITY-GMF (Continued) **1011488294**

Hazardous Waste Summary:
Waste Code: F005
Waste Description: The Following Spent Nonhalogenated Solvents: Toluene, Methyl Ethyl Ketone, Carbon Disulfide, Isobutanol, Pyridine, Benzene, 2-Ethoxyethanol, And 2-Nitropropane; All Spent Solvent Mixtures/Blends Containing, Before Use, A Total Of Ten Percent Or More (By Volume) Of One Or More Of The Above Nonhalogenated Solvents Or Those Solvents Listed In F001, F002, Or F004; And Still Bottoms From The Recovery Of These Spent Solvents And Spent Solvent Mixtures.

Handler - Owner Operator:
Owner/Operator Indicator: Operator
Owner/Operator Name: ROARING FORK TRANS AUTHORITY-GMF
Legal Status: County
Date Became Current: 20080722
Date Ended Current: Not reported
Owner/Operator Address: 2307 WULFSOHN RD
Owner/Operator City,State,Zip: GLENWOOD SPGS, CO 81601
Owner/Operator Telephone: 970-384-4880
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: DAN BLANKENSHIP
Legal Status: County
Date Became Current: 20080722
Date Ended Current: Not reported
Owner/Operator Address: 2307 WULFSOHN RD
Owner/Operator City,State,Zip: GLENWOOD SPGS, CO 81601
Owner/Operator Telephone: 970-384-4981
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: DAN BLANKENSHIP
Legal Status: County
Date Became Current: 20080722
Date Ended Current: Not reported
Owner/Operator Address: 2307 WULFSOHN RD
Owner/Operator City,State,Zip: GLENWOOD SPGS, CO 81601
Owner/Operator Telephone: 970-384-4981
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: ROARING FORK TRANS AUTHORITY-GMF
Legal Status: County
Date Became Current: 20080722
Date Ended Current: Not reported
Owner/Operator Address: 2307 WULFSOHN RD
Owner/Operator City,State,Zip: GLENWOOD SPGS, CO 81601
Owner/Operator Telephone: 970-384-4880
Owner/Operator Telephone Ext: Not reported

ROARING FORK TRANSPORTATION AUTHORITY-GMF (Continued) **1011488294**

Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 20080722
Handler Name: ROARING FORK TRANSPORTATION AUTHORITY-GMF
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20180606
Handler Name: ROARING FORK TRANSPORTATION AUTHORITY-GMF
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

List of NAICS Codes and Descriptions:
NAICS Code: 48412
NAICS Description: GENERAL FREIGHT TRUCKING, LONG-DISTANCE

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

FINDS:
Registry ID: 110037382338

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
The Resource Conservation and Recovery Act Information System (RCRAInfo) is EPA's comprehensive information system in support of the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. It tracks many types of information about generators, transporters, treaters, storers, and disposers of hazardous waste.

ROARING FORK TRANSPORTATION AUTHORITY-GMF (Continued) **1011488294**

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1011488294
Registry ID:	110037382338
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110037382338
Name:	ROARING FORK TRANSPORTATION AUTHORITY-GMF
Address:	2307 WULFSOHN RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601

---

5 NW 1/8-1/4 0.190 mi. 1002 ft. **EIMCO COAL MACHINERY**
2222 DEVERUEX ROAD
GLENWOOD SPRINGS, CO 81601

CORRACTS **1000210929**
RCRA NonGen / NLR **COD981544786**
FINDS
ECHO

Relative: Lower

Actual: 5701 ft.

CORRACTS:

Name:	EIMCO COAL MACHINERY
Address:	2222 DEVERUEX RD
Address 2:	Not reported
EPA ID:	COD981544786
Area Name:	ENTIRE FACILITY
Corrective Action:	AREA OF CONCERN
Actual Date:	19900907
Air Release Indicator:	Not reported
Groundwater Release Indicator:	Y
Soil Release Indicator:	Not reported
Surface Water Release Indicator:	Not reported

Name:	EIMCO COAL MACHINERY
Address:	2222 DEVERUEX RD
Address 2:	Not reported
EPA ID:	COD981544786
Area Name:	ENTIRE FACILITY
Corrective Action:	OTHER REPORT RECEIVED
Actual Date:	Not reported
Air Release Indicator:	Not reported
Groundwater Release Indicator:	Y
Soil Release Indicator:	Not reported
Surface Water Release Indicator:	Not reported

Name:	EIMCO COAL MACHINERY
Address:	2222 DEVERUEX RD
Address 2:	Not reported
EPA ID:	COD981544786
Area Name:	ENTIRE FACILITY
Corrective Action:	OTHER REPORT APPROVED
Actual Date:	Not reported
Air Release Indicator:	Not reported
Groundwater Release Indicator:	Y
Soil Release Indicator:	Not reported
Surface Water Release Indicator:	Not reported

Name:	EIMCO COAL MACHINERY
Address:	2222 DEVERUEX RD
Address 2:	Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

EPA ID: COD981544786
Area Name: ENTIRE FACILITY
Corrective Action: RFA INITIATION
Actual Date: 19900907
Air Release Indicator: Not reported
Groundwater Release Indicator: Y
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Name: EIMCO COAL MACHINERY
Address: 2222 DEVERUEX RD
Address 2: Not reported
EPA ID: COD981544786
Area Name: ENTIRE FACILITY
Corrective Action: RFA COMPLETED
Actual Date: 19900907
Air Release Indicator: Not reported
Groundwater Release Indicator: Y
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Name: EIMCO COAL MACHINERY
Address: 2222 DEVERUEX RD
Address 2: Not reported
EPA ID: COD981544786
Area Name: ENTIRE FACILITY
Corrective Action: NOTICE OF CONTAMINATION
Actual Date: 19920526
Air Release Indicator: Not reported
Groundwater Release Indicator: Y
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Name: EIMCO COAL MACHINERY
Address: 2222 DEVERUEX RD
Address 2: Not reported
EPA ID: COD981544786
Area Name: SWMU-SUMP
Corrective Action: CA PRIORITIZATION-LOW CA PRIORITY
Actual Date: 19950811
Air Release Indicator: Not reported
Groundwater Release Indicator: Y
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Name: EIMCO COAL MACHINERY
Address: 2222 DEVERUEX RD
Address 2: Not reported
EPA ID: COD981544786
Area Name: ENTIRE FACILITY
Corrective Action: INVESTIGATION IMPOSITION
Actual Date: 19910724
Air Release Indicator: Not reported
Groundwater Release Indicator: Y
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

Name: EIMCO COAL MACHINERY
Address: 2222 DEVERUEX RD
Address 2: Not reported
EPA ID: COD981544786
Area Name: SITE:GROUNDWATER
Corrective Action: INVESTIGATION IMPOSITION
Actual Date: 19910724
Air Release Indicator: Not reported
Groundwater Release Indicator: Y
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Name: EIMCO COAL MACHINERY
Address: 2222 DEVERUEX RD
Address 2: Not reported
EPA ID: COD981544786
Area Name: SWMU-SUMP
Corrective Action: INVESTIGATION IMPOSITION
Actual Date: 19910724
Air Release Indicator: Not reported
Groundwater Release Indicator: Y
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Name: EIMCO COAL MACHINERY
Address: 2222 DEVERUEX RD
Address 2: Not reported
EPA ID: COD981544786
Area Name: ENTIRE FACILITY
Corrective Action: INVESTIGATION WORKPLAN RECEIVED
Actual Date: 19920701
Air Release Indicator: Not reported
Groundwater Release Indicator: Y
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Click this hyperlink while viewing on your computer to access
65 additional CORRACTS: record(s) in the EDR Site Report.

RCRA Listings:
Date Form Received by Agency: 20020913
Handler Name: Eimco Coal Machinery
Handler Address: Deveruex Rd
Handler City,State,Zip: GLENWOOD SPRINGS, CO 81601-8702
EPA ID: COD981544786
Contact Name: DALE CRUSE
Contact Address: P.O BOX 844
Contact City,State,Zip: GLENWOOD SPRINGS, CO 81602
Contact Telephone: 303-945-7836
Contact Fax: Not reported
Contact Email: Not reported
Contact Title: Not reported
EPA Region: 08
Land Type: Other
Federal Waste Generator Description: Not a generator, verified
Non-Notifier: Not reported
Biennial Report Cycle: Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Co
State District:	R
Mailing Address:	P.O BOX 844
Mailing City,State,Zip:	GLENWOOD SPRINGS, CO 81602
Owner Name:	Baker International
Owner Type:	Private
Operator Name:	Not reported
Operator Type:	Not reported
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	Yes
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	Yes
Groundwater Controls Indicator:	Yes
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20020913
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D000
Waste Description:	Not Defined
Waste Code:	D001

EIMCO COAL MACHINERY (Continued) **1000210929**

Waste Description: Ignitable Waste

Handler - Owner Operator:
Owner/Operator Indicator: Owner
Owner/Operator Name: BAKER INTERNATIONAL
Legal Status: Private
Date Became Current: 18000101
Date Ended Current: Not reported
Owner/Operator Address: DATA NOT REQUESTED
Owner/Operator City,State,Zip: DATA NOT REQUESTED, CO 99999
Owner/Operator Telephone: 999-999-9999
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 19861113
Handler Name: EIMCO COAL MACHINERY
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Co
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20020913
Handler Name: EIMCO COAL MACHINERY
Federal Waste Generator Description: Not a generator, verified
State District Owner: Co
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Codes: No NAICS Codes Found

Has the Facility Received Notices of Violations:
Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	19920328
Actual Return to Compliance Date:	19920508
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19950415
Enforcement Identifier:	000
Date of Enforcement Action:	19920415
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	CODMI
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person:	COLGO
Enforcement Responsible Sub-Organization:	S
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	17100
Final Monetary Amount:	17100
Paid Amount:	Not reported
Final Count:	1
Final Amount:	17100
Found Violation:	Unknown
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Unknown
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 19880506
Actual Return to Compliance Date: 19880605
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 19880605
Enforcement Identifier: 001

EIMCO COAL MACHINERY (Continued) **1000210929**

Date of Enforcement Action:	19880520
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	19900907
Actual Return to Compliance Date:	19920415
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19910904
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	CODMI
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person:	COLGO
Enforcement Responsible Sub-Organization:	S
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 19900907
Actual Return to Compliance Date: 19920415
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 002
Date of Enforcement Action: 19910326
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: CODMI
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person: COLGO
Enforcement Responsible Sub-Organization: S
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - General
Date Violation was Determined: 19920328
Actual Return to Compliance Date: 19920508
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 19950415
Enforcement Identifier: 000
Date of Enforcement Action: 19920415
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: CODMI
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person: COLGO
Enforcement Responsible Sub-Organization: S
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: 17100
Final Monetary Amount: 17100
Paid Amount: Not reported
Final Count: 1
Final Amount: 17100

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Evaluation Action Summary:

Evaluation Date:	19960814
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	COSGA
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19930209
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	CORRECTIVE ACTION COMPLIANCE EVALUATION
Evaluation Responsible Person Identifier:	COSGA
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19940811
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	COSGA
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19910827
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE SCHEDULE EVALUATION
Evaluation Responsible Person Identifier:	COLGO
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19960522
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	COSGA
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19890811
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	CODMA
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	19920508
Scheduled Compliance Date:	19950415
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19990520
Evaluation Responsible Agency:	State
Found Violation:	Undetermined
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	COWAV
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19970620
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	COSGA
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

Evaluation Date:	19941212
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	COSGA
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20000501
Evaluation Responsible Agency:	State
Found Violation:	Undetermined
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	COWAV
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19940421
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	COSGA
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19950306
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	COSGA
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19880506
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	NON-FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	CONJA

EIMCO COAL MACHINERY (Continued) **1000210929**

Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	19880605
Scheduled Compliance Date:	19880605
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19960710
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	COSGA
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19940922
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	COSGA
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19920331
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	COLGO
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19920505
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	NON-FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	COLGO
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19971008
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	CORRECTIVE ACTION COMPLIANCE EVALUATION
Evaluation Responsible Person Identifier:	COSGA
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19950718
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	COSGA
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19900907
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	COLGO
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	19920415
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19900907
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	COLGO
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	19920415
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19921124
Evaluation Responsible Agency:	State

EIMCO COAL MACHINERY (Continued) **1000210929**

Found Violation:	No
Evaluation Type Description:	CORRECTIVE ACTION COMPLIANCE EVALUATION
Evaluation Responsible Person Identifier:	COLGO
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19960213
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	COSGA
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19900907
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	COLGO
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	19920508
Scheduled Compliance Date:	19950415
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19930609
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	CORRECTIVE ACTION COMPLIANCE EVALUATION
Evaluation Responsible Person Identifier:	COSGA
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19950531
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	COSGA
Evaluation Responsible Sub-Organization:	S
Actual Return to Compliance Date:	Not reported

EIMCO COAL MACHINERY (Continued) **1000210929**

Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

FINDS:
Registry ID: 110000738239

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
The Resource Conservation and Recovery Act Information System (RCRAInfo) is EPA's comprehensive information system in support of the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. It tracks many types of information about generators, transporters, treaters, storers, and disposers of hazardous waste.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000210929
Registry ID:	110000738239
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110000738239
Name:	EIMCO COAL MACHINERY
Address:	2222 DEVERUEX ROAD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601

C6 **DISCOUNT TIRE** **SHWF** **S128391493**
North **51537 HWY 6** **N/A**
1/8-1/4 **GLENWOOD SPRINGS, CO 81601**
0.201 mi.
1063 ft. **Site 1 of 3 in cluster C**

Relative:
Lower

Actual:
5718 ft.

SHWF:

Location ID:	GAR25
Facility ID:	GAR 3878
Name:	DISCOUNT TIRE
Address:	51537 HWY 6
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Activity Type:	Generator of Motor Vehicle and Trailer Waste Tires
Contact Organization:	Not reported
Contact Address:	Not reported
Contact City,State,Zip:	Not reported
Contact Phone:	Not reported
Activity Status:	Not reported
Facility Status:	Not reported
Commercial Status:	False
Government Facility Status:	Not reported
Title:	Not reported
Post Closure Unit:	False
Post Closure Ended:	False
Closure Units:	False
Clean Closed Units:	False
Latitude:	39.56139

DISCOUNT TIRE (Continued) **S128391493**

Longitude: -107.354423

C7 **GLENWOOD SPRINGS CHRYSLER DODGE** **AST** **A100288840**
North **51537 HWY 6** **N/A**
1/8-1/4 **GLENWOOD SPRINGS, CO 81601**
0.201 mi.
1063 ft. **Site 2 of 3 in cluster C**

Relative: AST:
Lower

Actual: Name:	GLENWOOD SPRINGS CHRYSLER DODGE
5718 ft. Address:	51537 HWY 6
City,State,Zip:	GLENWOOD SPRINGS 81601
Substance:	LPG
Tank Tag:	16643-1
Facility ID:	16643
Owner Name:	Rent-x
Owner Address:	51537 Hwy 6 & 24, Glenwood Springs, CO 81601
Owner City:	Glenwood Springs
Owner State:	CO
Owner Zip:	81601
Facility Type:	Non-Retail
Facility Category:	LPG Only
Capacity:	1100
Tank Status:	Permanently Closed
Date Tank Installed:	Not reported
Date Closed:	Not reported
Tank Type:	LPG-AG
Latitude:	39.561674
Longitude:	-107.353941
Tank Material:	Not reported
Tank Wall Type:	Not reported
Piping Type:	Not reported
Piping System:	Not reported
Piping Material:	Not reported
Piping Wall Type:	Not reported
Overfill Prevention:	Not reported
Tank ID:	a1J3h000001jqS6
Account Name:	ACCT-09479

C8 **E-Z WAY RENTALS INC** **UST FINDER** **1028202536**
North **51517 US HWY 6 & 24** **N/A**
1/8-1/4 **GLENWOOD SPRINGS, CO 81601**
0.203 mi.
1070 ft. **Site 3 of 3 in cluster C**

Relative: UST FINDER:
Lower

Actual: Object ID:	43232
5715 ft. Facility ID:	CO7699
Name:	E-Z WAY RENTALS INC
Address:	51517 US HWY 6 & 24
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Address Match Type:	StreetAddress
Open USTs:	0
Closed USTs:	1
TOS USTs:	0
Population 1500ft:	776

E-Z WAY RENTALS INC (Continued) **1028202536**

Private Wells 1500ft:	1
Within 100yr Floodplain:	No
Land Use:	Developed, Medium Intensity
Within SPA:	Yes
SPA PWS Facility ID:	CO0123185_252
SPA Water Type:	SW - Surface Water
SPA Facility Type:	IN - Intake
SPA HUC12:	140100050604
Within WHPA:	No
WHPA PWS Facility ID:	Not reported
WHPA Water Type:	Not reported
WHPA Facility Type:	Not reported
WHPA HUC12:	Not reported
Facility Status:	Closed UST(s)
Date of Last Inspection:	Not reported
EPA Region:	8
Tribe:	Not reported
Coordinate Source:	Geocode
X Coord:	-107.354776
Y Coord:	39.5614340000001
Latitude:	39.561434
Longitude:	-107.354776

UST FINDER:

Object ID:	144370
Facility ID:	CO7699
Tank ID:	CO7699-1
Tank Status:	Closed
Installation Date:	Not reported
Removal Date:	Not reported
Tank Capacity:	560
Substances:	Waste Oil
Tank Wall Type:	Single

---

9 **SALLY BEAUTY SUPPLY #10201** **RCRA-VSQG** **1026724219**
NNE **20 MARKET ST UNIT C** **COR000253120**
1/8-1/4 **GLENWOOD SPRINGS, CO 81601**
0.207 mi.
1095 ft.

Relative:
Lower

Actual:
5731 ft.

RCRA Listings:

Date Form Received by Agency:	20201206
Handler Name:	Sally Beauty Supply #10201
Handler Address:	Market St Unit C
Handler City,State,Zip:	GLENWOOD SPRINGS, CO 81601
EPA ID:	COR000253120
Contact Name:	DEBBIE MIDDLETON
Contact Address:	COLORADO BLVD
Contact City,State,Zip:	DENTON, TX 76210
Contact Telephone:	940-297-4964
Contact Fax:	Not reported
Contact Email:	DMIDDLETON@SALLYBEAUTY.COM
Contact Title:	ENVIRONMENTAL AND REGULATORY COMP. SPECIALIST
EPA Region:	08
Land Type:	Private
Federal Waste Generator Description:	Conditionally Exempt Small Quantity Generator
Non-Notifier:	Not reported

SALLY BEAUTY SUPPLY #10201 (Continued) **1026724219**

Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	GREY HAWK CT STE 200
Mailing City,State,Zip:	CARLSBAD, CA 92010
Owner Name:	Wmg Meadows Llc
Owner Type:	Private
Operator Name:	Sally Beauty Supply Llc
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20201218
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	Ignitable Waste

SALLY BEAUTY SUPPLY #10201 (Continued) **1026724219**

Waste Code: D002
Waste Description: Corrosive Waste

Waste Code: D005
Waste Description: Barium

Waste Code: D007
Waste Description: Chromium

Waste Code: D008
Waste Description: Lead

Waste Code: D009
Waste Description: Mercury

Waste Code: D011
Waste Description: Silver

Waste Code: D018
Waste Description: Benzene

Waste Code: D035
Waste Description: Methyl Ethyl Ketone

Waste Code: U002
Waste Description: 2-Propanone (I) (Or) Acetone (I)

Waste Code: U112
Waste Description: Acetic Acid, Ethyl Ester (I) (Or) Ethyl Acetate (I)

Waste Code: U118
Waste Description: 2-Propenoic Acid, 2-Methyl-, Ethyl Ester (Or) Ethyl Methacrylate

Waste Code: U123
Waste Description: Formic Acid (C,T)

Waste Code: U154
Waste Description: Methanol (I) (Or) Methyl Alcohol (I)

Handler - Owner Operator:
Owner/Operator Indicator: Operator
Owner/Operator Name: SALLY BEAUTY SUPPLY LLC
Legal Status: Private
Date Became Current: 20120518
Date Ended Current: Not reported
Owner/Operator Address: 3001 COLORADO BLVD
Owner/Operator City,State,Zip: DENTON, TX 76210
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: WMG MEADOWS LLC
Legal Status: Private
Date Became Current: 20120518
Date Ended Current: Not reported

SALLY BEAUTY SUPPLY #10201 (Continued) **1026724219**

Owner/Operator Address: 6900 E BELLEVIEW AVE #300
Owner/Operator City,State,Zip: ENGLEWOOD, CO 80111
Owner/Operator Telephone: 303-996-6300
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 20201206
Handler Name: SALLY BEAUTY SUPPLY #10201
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

List of NAICS Codes and Descriptions:
NAICS Code: 446120
NAICS Description: COSMETICS, BEAUTY SUPPLIES, AND PERFUME STORES

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

D10 **E-Z WAY RENTALS INC** **UST** **U003196031**
North **51517 US HWY 6 & 24** **N/A**
1/8-1/4 **GLENWOOD SPRINGS, CO 81601**
0.213 mi.
1123 ft. **Site 1 of 3 in cluster D**

Relative: **Lower**
Actual: **5717 ft.**

UST:
Tank Tag: 7699-1
Substance: USEDOIL
Name: E-Z WAY RENTALS INC
Address: 51517 US HWY 6 & 24
City,State,Zip: GLENWOOD SPRINGS 81601
Tank Tag: 7699-1
Substance: USEDOIL
Facility ID: 7699
Owner Name: Valley Petroleum 1981
Owner Address: 51517 Hwy 6 & 24, Glenwood Springs, CO 81601
Owner City: Glenwood Springs
Owner State: CO
Owner Zip: 81601
Facility Type: Non-Retail
Facility Category: Commercial/Industrial
Capacity: 560
Date Closed: 07/01/1996

E-Z WAY RENTALS INC (Continued) **U003196031**

Tank Status:	Permanently Closed
Date Tank Installed:	Not reported
Tank Type:	UST
Latitude:	39.56136
Longitude:	-107.355
Tank Material:	Asphalt Coated or Bare Steel
Tank Wall Type:	Not reported
Piping Type:	UG: Underground
Piping System:	Not reported
Piping Material:	Bare Steel
Piping Wall Type:	None
Overfill Prevention:	Not reported
Tank ID:	a1J3h000001jmh4
Account Name:	ACCT-12040

D11 **EZ WAY RENTALS INC** **LTANKS** **S125420584**
North **51527 US HWY 6** **N/A**
1/8-1/4 **GLENWOOD SPRINGS, CO 81601**
0.216 mi.
1140 ft. **Site 2 of 3 in cluster D**

Relative: LTANKS:
Lower

Actual:
5716 ft.

Facility ID:	13718
Name:	EZ WAY RENTALS INC
Address:	51527 US HWY 6
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
NFA Type:	Pre-RBCA
Status:	Closed
Event ID:	1414
Release Date:	Not reported
Closed Date:	08/05/1996
Contact:	Robert Shoup
Phone:	(303) 318-8547
Email:	cdle_ops_public_record_center@state.co.us
Release Source:	Not reported
Release Cause:	Not reported
Reimbursement Total:	Not reported
Release Number:	REL-001578
URL:	https://socgov18.force.com/s/release/a183h000003KVfQ

Facility ID:	13718
Name:	EZ WAY RENTALS INC
Address:	51527 US HWY 6
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
NFA Type:	Pre-RBCA
Status:	Closed
Event ID:	1462
Release Date:	11/13/1996
Closed Date:	04/29/1997
Contact:	Robert Shoup
Phone:	(303) 318-8547
Email:	cdle_ops_public_record_center@state.co.us
Release Source:	Not reported
Release Cause:	Not reported
Reimbursement Total:	Not reported
Release Number:	REL-001579
URL:	https://socgov18.force.com/s/release/a183h000003KVfR

12
NNW
1/8-1/4
0.230 mi.
1212 ft.

MCD AUTOMOTIVE INTERESTS COLORADO LLC
51429 HWY 6
GLENWOOD SPRINGS, CO 81601

SHWF **S128391492**
N/A

Relative:
Lower

Actual:
5717 ft.

SHWF:

Location ID:	GAR24
Facility ID:	GAR 3876
Name:	MCD AUTOMOTIVE INTERESTS COLORADO LLC
Address:	51429 HWY 6
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Activity Type:	Generator of Motor Vehicle and Trailer Waste Tires
Contact Organization:	Not reported
Contact Address:	Not reported
Contact City,State,Zip:	Not reported
Contact Phone:	Not reported
Activity Status:	Not reported
Facility Status:	Not reported
Commercial Status:	False
Government Facility Status:	Not reported
Title:	Not reported
Post Closure Unit:	False
Post Closure Ended:	False
Closure Units:	False
Clean Closed Units:	False
Latitude:	39.56147
Longitude:	-107.35611

D13
North
1/8-1/4
0.242 mi.
1279 ft.

REY MOTORS INC
51457 HWY 6 & 24
GLENWOOD SPRINGS, CO 81601

Site 3 of 3 in cluster D

UST FINDER **1028198900**
UST FINDER RELEASE **N/A**

Relative:
Lower

Actual:
5723 ft.

UST FINDER:

Object ID:	43238
Facility ID:	CO3899
Name:	REY MOTORS INC
Address:	51457 HWY 6 & 24
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Address Match Type:	PointAddress
Open USTs:	0
Closed USTs:	1
TOS USTs:	0
Population 1500ft:	885
Private Wells 1500ft:	2
Within 100yr Floodplain:	No
Land Use:	Developed, Medium Intensity
Within SPA:	Yes
SPA PWS Facility ID:	CO0123185_252
SPA Water Type:	SW - Surface Water
SPA Facility Type:	IN - Intake
SPA HUC12:	140100050604
Within WHPA:	No
WHPA PWS Facility ID:	Not reported
WHPA Water Type:	Not reported
WHPA Facility Type:	Not reported
WHPA HUC12:	Not reported
Facility Status:	Closed UST(s)

REY MOTORS INC (Continued) **1028198900**

Date of Last Inspection:	Not reported
EPA Region:	8
Tribe:	Not reported
Coordinate Source:	Geocode
X Coord:	-107.355384
Y Coord:	39.5619120000001
Latitude:	39.561912
Longitude:	-107.355384

UST FINDER:

Object ID:	131147
Facility ID:	CO3899
Tank ID:	CO3899-1
Tank Status:	Closed
Installation Date:	1974/04/24 16:00:00+00
Removal Date:	Not reported
Tank Capacity:	500
Substances:	Waste Oil
Tank Wall Type:	Single

UST FINDER RELEASE:

Object ID:	75932
Facility ID:	CO3899
Lust ID:	CO1700
Name:	REY MOTORS INC
Address:	51457 HWY 6 & 24
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Address Match Type:	PointAddress
Reported Date:	Not reported
Status:	No Further Action
Substance:	Not reported
Population within 1500ft:	824
Domestic Wells within 1500ft:	1
Land Use:	Developed, Medium Intensity
Within SPA:	Yes
SPA PWS Facility ID:	CO0123185_252
SPA Water Type:	SW - SurRELEASEe Water
SPA Facility Type:	IN - Intake
SPA HUC12:	140100050604
Within WHPA:	No
WHPA PWS Facility ID:	Not reported
WHPA Water Type:	Not reported
WHPA Facility Type:	Not reported
WHPA HUC12:	Not reported
Within 100yr Floodplain:	No
Tribe:	Not reported
EPA Region:	8
NFA Letter 1:	Not reported
NFA Letter 2:	Not reported
NFA Letter 3:	Not reported
NFA Letter 4:	Not reported
Closed With Residual Contaminate:	Not reported
Coordinate Source:	Geocode
X Coord:	-107.3554
Y Coord:	39.5614200000001
Latitude:	39.5614199999999

REY MOTORS INC (Continued) **1028198900**

Longitude: -107.3554

14
NW
1/4-1/2
0.274 mi.
1446 ft.

7-ELEVEN #17211 **UST FINDER** **1028203967**
51315 HWY 6 **UST FINDER RELEASE** **N/A**
GLENWOOD SPRINGS, CO 81601

Relative:
Lower

Actual:
5718 ft.

UST FINDER:

Object ID:	43236
Facility ID:	CO9092
Name:	7-ELEVEN #17211
Address:	51315 HWY 6
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Address Match Type:	Not reported
Open USTs:	2
Closed USTs:	0
TOS USTs:	0
Population 1500ft:	823
Private Wells 1500ft:	1
Within 100yr Floodplain:	No
Land Use:	Developed, High Intensity
Within SPA:	Yes
SPA PWS Facility ID:	CO0123185_252
SPA Water Type:	SW - Surface Water
SPA Facility Type:	IN - Intake
SPA HUC12:	140100050604
Within WHPA:	No
WHPA PWS Facility ID:	Not reported
WHPA Water Type:	Not reported
WHPA Facility Type:	Not reported
WHPA HUC12:	Not reported
Facility Status:	Open UST(s)
Date of Last Inspection:	Not reported
EPA Region:	8
Tribe:	Not reported
Coordinate Source:	State
X Coord:	-107.357848
Y Coord:	39.5618390000001
Latitude:	39.561839
Longitude:	-107.357848

UST FINDER:

Object ID:	122005
Facility ID:	CO9092
Tank ID:	CO9092-1
Tank Status:	Open
Installation Date:	1986/04/17 16:00:00+00
Removal Date:	Not reported
Tank Capacity:	10000
Substances:	Gasoline - Unleaded Regular (RUL)
Tank Wall Type:	Single

Object ID:	122006
Facility ID:	CO9092
Tank ID:	CO9092-2
Tank Status:	Open
Installation Date:	1986/04/17 16:00:00+00

7-ELEVEN #17211 (Continued) **1028203967**

Removal Date:	Not reported
Tank Capacity:	10000
Substances:	Gasoline - Premium (PUL)
Tank Wall Type:	Single

UST FINDER RELEASE:

Object ID:	75931
Facility ID:	CO9092
Lust ID:	CO8173
Name:	7-ELEVEN #17211
Address:	51315 HWY 6
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Address Match Type:	Not reported
Reported Date:	Not reported
Status:	No Further Action
Substance:	Not reported
Population within 1500ft:	823
Domestic Wells within 1500ft:	1
Land Use:	Developed, High Intensity
Within SPA:	Yes
SPA PWS Facility ID:	CO0123185_252
SPA Water Type:	SW - SurRELEASEe Water
SPA Facility Type:	IN - Intake
SPA HUC12:	140100050604
Within WHPA:	No
WHPA PWS Facility ID:	Not reported
WHPA Water Type:	Not reported
WHPA Facility Type:	Not reported
WHPA HUC12:	Not reported
Within 100yr Floodplain:	No
Tribe:	Not reported
EPA Region:	8
NFA Letter 1:	Not reported
NFA Letter 2:	Not reported
NFA Letter 3:	Not reported
NFA Letter 4:	Not reported
Closed With Residual Contaminate:	Not reported
Coordinate Source:	State
X Coord:	-107.35785
Y Coord:	39.5618400000001
Latitude:	39.5618399999999
Longitude:	-107.357849999999

E15 **ALTA CONVENIENCE #6318** **LTANKS** **U003241456**
NW **51171 HWY 6 & 24** **LUST** **N/A**
1/4-1/2 **GLENWOOD SPRINGS, CO 81601** **UST**
0.387 mi. **ASBESTOS**
2045 ft. **Site 1 of 4 in cluster E**

Relative: **Lower**

Actual: **5710 ft.**

LTANKS:

Facility ID:	9009
Name:	ALTA CONVENIENCE #6318
Address:	51171 HWY 6 & 24
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
NFA Type:	Tier III
Status:	Closed

ALTA CONVENIENCE #6318 (Continued) **U003241456**

Event ID:	7591
Release Date:	08/04/1999
Closed Date:	09/07/2016
Contact:	Julia Fraser
Phone:	(720) 326-1997
Email:	julia.fraser@state.co.us
Release Source:	Dispenser
Release Cause:	Not reported
Reimbursement Total:	Not reported
Release Number:	REL-011726
URL:	https://socgov18.force.com/s/release/a183h000003KYJ6

LUST:

Name:	TOMAHAWK TRUCK STOP
Address:	51171 HWY 6 & 24
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility Id:	9009
Status:	**Closed**
Event ID:	7591
Confirmed Release:	08/04/1999
Contact Name:	Julia Fraser
Contact Phone:	303-318-8504
Contact Email:	Not reported
Latitude Degrees:	39.561668
Longitude Degrees:	-107.360989

Click here for COSTIS:

UST:

Tank Tag:	9009-10
Substance:	DSL2/DEF/PUL
Name:	ALTA CONVENIENCE #6318
Address:	51171 HWY 6 & 24
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	9009-10
Substance:	DSL2/DEF/PUL
Facility ID:	9009
Owner Name:	Rich Spresser
Owner Address:	8400 E Prentice Ave Ste 400, Greenwood Village, CO 80111
Owner City:	Greenwood Village
Owner State:	CO
Owner Zip:	80111
Facility Type:	Retail
Facility Category:	Retail Gas Station
Capacity:	16000
Date Closed:	Not reported
Tank Status:	Currently In Use
Date Tank Installed:	12/05/2013
Tank Type:	UST
Latitude:	39.561668
Longitude:	-107.360989
Tank Material:	FRP: Fiberglass Reinforced Plastic
Tank Wall Type:	Not reported
Piping Type:	UG: Underground
Piping System:	Not reported
Piping Material:	FLEX: Flexible Plastic

ALTA CONVENIENCE #6318 (Continued) **U003241456**

Piping Wall Type:	Double-Walled
Overfill Prevention:	BF: Ball Float Valve
Tank ID:	a1J3h000001jmKV
Account Name:	ACCT-04396
Tank Tag:	9009-10
Substance:	DSL2/DEF/PUL
Name:	ALTA CONVENIENCE #6318
Address:	51171 HWY 6 & 24
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	9009-10
Substance:	DSL2/DEF/PUL
Facility ID:	9009
Owner Name:	Rich Spresser
Owner Address:	8400 E Prentice Ave Ste 400, Greenwood Village, CO 80111
Owner City:	Greenwood Village
Owner State:	CO
Owner Zip:	80111
Facility Type:	Retail
Facility Category:	Retail Gas Station
Capacity:	16000
Date Closed:	Not reported
Tank Status:	Currently In Use
Date Tank Installed:	12/05/2013
Tank Type:	UST
Latitude:	39.561668
Longitude:	-107.360989
Tank Material:	FRP: Fiberglass Reinforced Plastic
Tank Wall Type:	Not reported
Piping Type:	UG: Underground
Piping System:	Not reported
Piping Material:	FLEX: Flexible Plastic
Piping Wall Type:	Double-Walled
Overfill Prevention:	BF: Ball Float Valve
Tank ID:	a1J3h000001jmKV
Account Name:	ACCT-04396
Tank Tag:	9009-1
Substance:	RUL
Name:	ALTA CONVENIENCE #6318
Address:	51171 HWY 6 & 24
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	9009-1
Substance:	RUL
Facility ID:	9009
Owner Name:	Rich Spresser
Owner Address:	8400 E Prentice Ave Ste 400, Greenwood Village, CO 80111
Owner City:	Greenwood Village
Owner State:	CO
Owner Zip:	80111
Facility Type:	Retail
Facility Category:	Retail Gas Station
Capacity:	10000
Date Closed:	10/08/2012
Tank Status:	Permanently Closed
Date Tank Installed:	03/10/1974
Tank Type:	UST

ALTA CONVENIENCE #6318 (Continued) **U003241456**

Latitude:	39.561668
Longitude:	-107.360989
Tank Material:	ST: Cathodically Protected Steel
Tank Wall Type:	Not reported
Piping Type:	UG: Underground
Piping System:	Not reported
Piping Material:	FRP: Fiberglass Reinforced Plastic
Piping Wall Type:	None
Overfill Prevention:	FV: Fill Tube Valve
Tank ID:	a1J3h000001jmKU
Account Name:	ACCT-04396
Tank Tag:	9009-6
Substance:	DSL
Name:	ALTA CONVENIENCE #6318
Address:	51171 HWY 6 & 24
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	9009-6
Substance:	DSL
Facility ID:	9009
Owner Name:	Rich Spresser
Owner Address:	8400 E Prentice Ave Ste 400, Greenwood Village, CO 80111
Owner City:	Greenwood Village
Owner State:	CO
Owner Zip:	80111
Facility Type:	Retail
Facility Category:	Retail Gas Station
Capacity:	10000
Date Closed:	10/10/2012
Tank Status:	Permanently Closed
Date Tank Installed:	03/10/1978
Tank Type:	UST
Latitude:	39.561668
Longitude:	-107.360989
Tank Material:	ST: Cathodically Protected Steel
Tank Wall Type:	Not reported
Piping Type:	UG: Underground
Piping System:	Not reported
Piping Material:	FRP: Fiberglass Reinforced Plastic
Piping Wall Type:	None
Overfill Prevention:	FV: Fill Tube Valve
Tank ID:	a1J3h000001jmKa
Account Name:	ACCT-04396
Tank Tag:	9009-4
Substance:	PUL
Name:	ALTA CONVENIENCE #6318
Address:	51171 HWY 6 & 24
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	9009-4
Substance:	PUL
Facility ID:	9009
Owner Name:	Rich Spresser
Owner Address:	8400 E Prentice Ave Ste 400, Greenwood Village, CO 80111
Owner City:	Greenwood Village
Owner State:	CO
Owner Zip:	80111

ALTA CONVENIENCE #6318 (Continued) **U003241456**

Facility Type:	Retail
Facility Category:	Retail Gas Station
Capacity:	6000
Date Closed:	10/10/2012
Tank Status:	Permanently Closed
Date Tank Installed:	03/10/1978
Tank Type:	UST
Latitude:	39.561668
Longitude:	-107.360989
Tank Material:	ST: Cathodically Protected Steel
Tank Wall Type:	Not reported
Piping Type:	UG: Underground
Piping System:	Not reported
Piping Material:	FRP: Fiberglass Reinforced Plastic
Piping Wall Type:	None
Overfill Prevention:	FV: Fill Tube Valve
Tank ID:	a1J3h000001jmKY
Account Name:	ACCT-04396
Tank Tag:	9009-3
Substance:	DSL
Name:	ALTA CONVENIENCE #6318
Address:	51171 HWY 6 & 24
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	9009-3
Substance:	DSL
Facility ID:	9009
Owner Name:	Rich Spresser
Owner Address:	8400 E Prentice Ave Ste 400, Greenwood Village, CO 80111
Owner City:	Greenwood Village
Owner State:	CO
Owner Zip:	80111
Facility Type:	Retail
Facility Category:	Retail Gas Station
Capacity:	6000
Date Closed:	10/10/2012
Tank Status:	Permanently Closed
Date Tank Installed:	03/10/1978
Tank Type:	UST
Latitude:	39.561668
Longitude:	-107.360989
Tank Material:	ST: Cathodically Protected Steel
Tank Wall Type:	Not reported
Piping Type:	UG: Underground
Piping System:	Not reported
Piping Material:	FRP: Fiberglass Reinforced Plastic
Piping Wall Type:	None
Overfill Prevention:	FV: Fill Tube Valve
Tank ID:	a1J3h000001jmKX
Account Name:	ACCT-04396
Tank Tag:	9009-2
Substance:	RUL
Name:	ALTA CONVENIENCE #6318
Address:	51171 HWY 6 & 24
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	9009-2

ALTA CONVENIENCE #6318 (Continued) **U003241456**

Substance:	RUL
Facility ID:	9009
Owner Name:	Rich Spresser
Owner Address:	8400 E Prentice Ave Ste 400, Greenwood Village, CO 80111
Owner City:	Greenwood Village
Owner State:	CO
Owner Zip:	80111
Facility Type:	Retail
Facility Category:	Retail Gas Station
Capacity:	8000
Date Closed:	10/08/2012
Tank Status:	Permanently Closed
Date Tank Installed:	03/10/1974
Tank Type:	UST
Latitude:	39.561668
Longitude:	-107.360989
Tank Material:	ST: Cathodically Protected Steel
Tank Wall Type:	Not reported
Piping Type:	UG: Underground
Piping System:	Not reported
Piping Material:	FRP: Fiberglass Reinforced Plastic
Piping Wall Type:	None
Overfill Prevention:	FV: Fill Tube Valve
Tank ID:	a1J3h000001jmKW
Account Name:	ACCT-04396

Tank Tag:	9009-10
Substance:	DSL2/DEF/PUL
Name:	ALTA CONVENIENCE #6318
Address:	51171 HWY 6 & 24
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	9009-10
Substance:	DSL2/DEF/PUL
Facility ID:	9009
Owner Name:	Rich Spresser
Owner Address:	8400 E Prentice Ave Ste 400, Greenwood Village, CO 80111
Owner City:	Greenwood Village
Owner State:	CO
Owner Zip:	80111
Facility Type:	Retail
Facility Category:	Retail Gas Station
Capacity:	16000
Date Closed:	Not reported
Tank Status:	Currently In Use
Date Tank Installed:	12/05/2013
Tank Type:	UST
Latitude:	39.561668
Longitude:	-107.360989
Tank Material:	FRP: Fiberglass Reinforced Plastic
Tank Wall Type:	Not reported
Piping Type:	UG: Underground
Piping System:	Not reported
Piping Material:	FLEX: Flexible Plastic
Piping Wall Type:	Double-Walled
Overfill Prevention:	BF: Ball Float Valve
Tank ID:	a1J3h000001jmKV
Account Name:	ACCT-04396

ALTA CONVENIENCE #6318 (Continued) **U003241456**

Tank Tag:	9009-5
Substance:	DSL
Name:	ALTA CONVENIENCE #6318
Address:	51171 HWY 6 & 24
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	9009-5
Substance:	DSL
Facility ID:	9009
Owner Name:	Rich Spresser
Owner Address:	8400 E Prentice Ave Ste 400, Greenwood Village, CO 80111
Owner City:	Greenwood Village
Owner State:	CO
Owner Zip:	80111
Facility Type:	Retail
Facility Category:	Retail Gas Station
Capacity:	6000
Date Closed:	10/10/2012
Tank Status:	Permanently Closed
Date Tank Installed:	03/10/1978
Tank Type:	UST
Latitude:	39.561668
Longitude:	-107.360989
Tank Material:	ST: Cathodically Protected Steel
Tank Wall Type:	Not reported
Piping Type:	UG: Underground
Piping System:	Not reported
Piping Material:	FRP: Fiberglass Reinforced Plastic
Piping Wall Type:	None
Overfill Prevention:	FV: Fill Tube Valve
Tank ID:	a1J3h000001jmKZ
Account Name:	ACCT-04396

Tank Tag:	9009-9
Substance:	RUL
Name:	ALTA CONVENIENCE #6318
Address:	51171 HWY 6 & 24
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	9009-9
Substance:	RUL
Facility ID:	9009
Owner Name:	Rich Spresser
Owner Address:	8400 E Prentice Ave Ste 400, Greenwood Village, CO 80111
Owner City:	Greenwood Village
Owner State:	CO
Owner Zip:	80111
Facility Type:	Retail
Facility Category:	Retail Gas Station
Capacity:	15000
Date Closed:	Not reported
Tank Status:	Currently In Use
Date Tank Installed:	12/05/2013
Tank Type:	UST
Latitude:	39.561668
Longitude:	-107.360989
Tank Material:	FRP: Fiberglass Reinforced Plastic
Tank Wall Type:	Not reported
Piping Type:	UG: Underground

ALTA CONVENIENCE #6318 (Continued) **U003241456**

Piping System:	Not reported
Piping Material:	FLEX: Flexible Plastic
Piping Wall Type:	Double-Walled
Overfill Prevention:	BF: Ball Float Valve
Tank ID:	a1J3h000001jmKd
Account Name:	ACCT-04396

CO ASBESTOS:

Year:	2013
Permit Number:	Not reported
Permit Date:	Not reported
Contractor:	David Rippy Construction
Project:	31
Linear Ft:	Not reported
Square Ft:	Not reported
Project Type:	Demolition Projects
Demo Number:	13GA1285D
Notice Date:	2013-03-15 00:00:00
Drums:	Not reported
Begin Date:	Not reported
End Date:	Not reported

Year:	2014
Permit Number:	13GA1024N
Permit Date:	Not reported
Contractor:	Nelson Engineering & Construction, Inc.
Project:	Not reported
Linear Ft:	Not reported
Square Ft:	Not reported
Project Type:	Asbestos Abatement Projects
Demo Number:	Not reported
Notice Date:	2013-03-08 00:00:00
Drums:	Not reported
Begin Date:	Not reported
End Date:	Not reported

Year:	2013
Permit Number:	13GA1024N
Permit Date:	Not reported
Contractor:	Nelson Engineering & Construction, Inc.*
Project:	Not reported
Linear Ft:	Not reported
Square Ft:	Not reported
Project Type:	Asbestos Abatement Projects
Demo Number:	Not reported
Notice Date:	2013-03-08 00:00:00
Drums:	Not reported
Begin Date:	Not reported
End Date:	Not reported

E16 **ALTA CONVENIENCE #6020** **UST FINDER** **1028196213**
NW **23 MEL REY RD** **UST FINDER RELEASE** **N/A**
1/4-1/2 **GLENWOOD SPRINGS, CO 81601**
0.421 mi.
2224 ft. **Site 2 of 4 in cluster E**

Relative:
Lower

Actual:
5712 ft.

UST FINDER:

Object ID:	43237
Facility ID:	CO1655
Name:	ALTA CONVENIENCE #6020
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Address Match Type:	Not reported
Open USTs:	3
Closed USTs:	0
TOS USTs:	0
Population 1500ft:	545
Private Wells 1500ft:	1
Within 100yr Floodplain:	No
Land Use:	Developed, High Intensity
Within SPA:	No
SPA PWS Facility ID:	Not reported
SPA Water Type:	Not reported
SPA Facility Type:	Not reported
SPA HUC12:	Not reported
Within WHPA:	No
WHPA PWS Facility ID:	Not reported
WHPA Water Type:	Not reported
WHPA Facility Type:	Not reported
WHPA HUC12:	Not reported
Facility Status:	Open UST(s)
Date of Last Inspection:	Not reported
EPA Region:	8
Tribe:	Not reported
Coordinate Source:	State
X Coord:	-107.361372
Y Coord:	39.5618840000001
Latitude:	39.561884
Longitude:	-107.361372

UST FINDER:

Object ID:	131749
Facility ID:	CO1655
Tank ID:	CO1655-1
Tank Status:	Open
Installation Date:	1973/05/05 16:00:00+00
Removal Date:	Not reported
Tank Capacity:	8000
Substances:	Gasoline - Unleaded Regular (RUL)
Tank Wall Type:	Single

Object ID:	131750
Facility ID:	CO1655
Tank ID:	CO1655-2
Tank Status:	Open
Installation Date:	1973/05/05 16:00:00+00
Removal Date:	Not reported
Tank Capacity:	8000
Substances:	Gasoline - Premium (PUL)
Tank Wall Type:	Single

ALTA CONVENIENCE #6020 (Continued) **1028196213**

Object ID:	127418
Facility ID:	CO1655
Tank ID:	CO1655-3
Tank Status:	Open
Installation Date:	1979/05/06 16:00:00+00
Removal Date:	Not reported
Tank Capacity:	3000
Substances:	Diesel
Tank Wall Type:	Single

UST FINDER RELEASE:

Object ID:	75928
Facility ID:	CO1655
Lust ID:	CO8047
Name:	WESTMART TEXACO
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Address Match Type:	Not reported
Reported Date:	1999/12/18 15:59:59+00
Status:	No Further Action
Substance:	Not reported
Population within 1500ft:	545
Domestic Wells within 1500ft:	1
Land Use:	Developed, High Intensity
Within SPA:	No
SPA PWS Facility ID:	Not reported
SPA Water Type:	Not reported
SPA Facility Type:	Not reported
SPA HUC12:	Not reported
Within WHPA:	No
WHPA PWS Facility ID:	Not reported
WHPA Water Type:	Not reported
WHPA Facility Type:	Not reported
WHPA HUC12:	Not reported
Within 100yr Floodplain:	No
Tribe:	Not reported
EPA Region:	8
NFA Letter 1:	Not reported
NFA Letter 2:	Not reported
NFA Letter 3:	Not reported
NFA Letter 4:	Not reported
Closed With Residual Contaminate:	Not reported
Coordinate Source:	State
X Coord:	-107.36137
Y Coord:	39.56188
Latitude:	39.56188
Longitude:	-107.361369999999

E17 **23 MEL REY** **LUST** **S119772779**
NW **23 MEL REY RD** **LUST TRUST** **N/A**
1/4-1/2 **GLENWOOD SPRINGS, CO 81601**
0.421 mi.
2224 ft. **Site 3 of 4 in cluster E**

Relative:
Lower

Actual:
5712 ft.

LUST:

Name:	WESTMART TEXACO
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility Id:	1655
Status:	**Closed**
Event ID:	8047
Confirmed Release:	12/18/1999
Contact Name:	Technical Assistance Line
Contact Phone:	303-318-8547
Contact Email:	Not reported
Latitude Degrees:	39.561884
Longitude Degrees:	-107.361372

Click here for COSTIS:

CO LUST TRUST:

Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Pester Marketing Co
Event ID:	13465
RAP ID:	34391
Cap Status:	Approved
Eligibility Type Description:	Tank Owner/Operator
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Original
RAP Status:	Withdrawn
Total Reimbursement:	Not reported
Net Reimbursement:	$0.00
FPR Date:	Not reported
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	J Garcia
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	2/12/2020, 12:00 AM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a143h000001GcNz

Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Western Petroleum Co
Event ID:	13465
RAP ID:	34425
Cap Status:	Approved

23 MEL REY (Continued) **S119772779**

Eligibility Type Description:	Tank Owner/Operator
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Original
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$29,106.46
FPR Date:	6/19/2020
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	J Garcia
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	2/19/2020, 12:00 AM
Commitee Meeting Date:	6/19/2020
Protest Name:	Not reported
Payment Request ID:	a143h000001GhES

Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Western Petroleum Co
Event ID:	13465
RAP ID:	34622
Cap Status:	Approved
Eligibility Type Description:	Tank Owner/Operator
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Supplemental
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$26,436.93
FPR Date:	10/16/2020
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	J Garcia
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	3/26/2020, 12:00 AM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a143h000001GhET

Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Western Petroleum Co
Event ID:	13465
RAP ID:	34710
Cap Status:	Approved
Eligibility Type Description:	Tank Owner/Operator

23 MEL REY (Continued) **S119772779**

Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Supplemental
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$1,146.25
FPR Date:	8/17/2020
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	J Garcia
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	4/20/2020, 12:00 AM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a143h000001GhEU

Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Western Petroleum Co
Event ID:	13465
RAP ID:	34994
Cap Status:	Approved
Eligibility Type Description:	Tank Owner/Operator
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Supplemental
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$8,886.43
FPR Date:	11/2/2020
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	J Garcia
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	7/1/2020, 12:00 AM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a143h000001GhEV

Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Western Petroleum Co
Event ID:	13465
RAP ID:	35297
Cap Status:	Approved
Eligibility Type Description:	Tank Owner/Operator
Total Percent Reduction:	0

23 MEL REY (Continued) **S119772779**

Total Reimbursement for Event:	344949.59
RAP Type Description:	eRAP Supplemental
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$13,005.65
FPR Date:	2/9/2021
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	J Garcia
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	10/2/2020, 12:00 AM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a143h000001GhEW

Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Western Petroleum Co
Event ID:	13465
RAP ID:	35713
Cap Status:	Approved
Eligibility Type Description:	Tank Owner/Operator
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	eRAP Supplemental
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$7,021.00
FPR Date:	5/27/2021
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	J Garcia
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	1/28/2021, 12:00 AM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a143h000001GhEX

Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Not reported
Event ID:	13465
RAP ID:	Not reported
Cap Status:	Approved
Eligibility Type Description:	Not reported
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59

23 MEL REY (Continued) **S119772779**

RAP Type Description:	Not reported
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$6,201.41
FPR Date:	Not reported
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	Not reported
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	4/10/2023, 12:00 PM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a14Do000000od6M
Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Not reported
Event ID:	13465
RAP ID:	Not reported
Cap Status:	Approved
Eligibility Type Description:	Not reported
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Not reported
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$3,909.07
FPR Date:	Not reported
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	Not reported
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	7/6/2023, 12:00 PM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a14Do000000UZZY
Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Not reported
Event ID:	13465
RAP ID:	Not reported
Cap Status:	Approved
Eligibility Type Description:	Not reported
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Not reported

23 MEL REY (Continued) **S119772779**

RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$5,928.86
FPR Date:	Not reported
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	Not reported
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	7/7/2023, 12:00 PM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a14Do000000UZub

Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Not reported
Event ID:	13465
RAP ID:	Not reported
Cap Status:	Approved
Eligibility Type Description:	Not reported
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Not reported
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$3,103.07
FPR Date:	Not reported
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	Not reported
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	8/10/2023, 12:00 PM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a14Do000000UcOi

Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Not reported
Event ID:	13465
RAP ID:	Not reported
Cap Status:	Approved
Eligibility Type Description:	Not reported
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Not reported
RAP Status:	Paid

23 MEL REY (Continued) **S119772779**

Total Reimbursement:	Not reported
Net Reimbursement:	$36,198.31
FPR Date:	Not reported
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	Not reported
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	8/9/2022, 12:00 PM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a143h000000bWsT
Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Not reported
Event ID:	13465
RAP ID:	Not reported
Cap Status:	Approved
Eligibility Type Description:	Not reported
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Not reported
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$21,980.62
FPR Date:	Not reported
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	Not reported
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	9/9/2022, 12:00 PM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a143h000004Kc6n
Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Not reported
Event ID:	13465
RAP ID:	Not reported
Cap Status:	Approved
Eligibility Type Description:	Not reported
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Not reported
RAP Status:	Paid
Total Reimbursement:	Not reported

23 MEL REY (Continued) **S119772779**

Net Reimbursement:	$43,437.76
FPR Date:	Not reported
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	Not reported
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	10/11/2022, 12:00 PM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a143h000004KoDW

Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Not reported
Event ID:	13465
RAP ID:	Not reported
Cap Status:	Approved
Eligibility Type Description:	Not reported
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Not reported
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$3,890.63
FPR Date:	Not reported
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	Not reported
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	1/9/2023, 12:00 PM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a143h000004LrJy

Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Not reported
Event ID:	13465
RAP ID:	Not reported
Cap Status:	Approved
Eligibility Type Description:	Not reported
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Not reported
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$0.00

23 MEL REY (Continued) **S119772779**

FPR Date:	Not reported
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	Not reported
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	12/9/2022, 12:00 PM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a143h000004Le85
Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Not reported
Event ID:	13465
RAP ID:	Not reported
Cap Status:	Approved
Eligibility Type Description:	Not reported
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Not reported
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$1,390.75
FPR Date:	Not reported
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	Not reported
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	3/13/2023, 12:00 PM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a143h000004MIs1
Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Not reported
Event ID:	13465
RAP ID:	Not reported
Cap Status:	Approved
Eligibility Type Description:	Not reported
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Not reported
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$34,733.80
FPR Date:	Not reported

23 MEL REY (Continued) **S119772779**

Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	Not reported
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	11/10/2022, 12:00 PM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a143h000004L4X9
Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Not reported
Event ID:	13465
RAP ID:	Not reported
Cap Status:	Approved
Eligibility Type Description:	Not reported
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Not reported
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$7,519.90
FPR Date:	Not reported
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	Not reported
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	7/8/2022, 12:00 PM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a143h000003kgXt
Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Not reported
Event ID:	13465
RAP ID:	Not reported
Cap Status:	Approved
Eligibility Type Description:	Not reported
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Not reported
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$1,987.04
FPR Date:	Not reported
Pay Voucher Date:	Not reported

23 MEL REY (Continued) **S119772779**

Special Conditions:	Not reported
Fund Analyst:	Not reported
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	11/10/2023, 12:00 PM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a14Do000000Ml4P
Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Not reported
Event ID:	13465
RAP ID:	Not reported
Cap Status:	Approved
Eligibility Type Description:	Not reported
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Not reported
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$3,302.37
FPR Date:	Not reported
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	Not reported
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	9/13/2023, 12:00 PM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a14Do000000VC8c
Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Not reported
Event ID:	13465
RAP ID:	Not reported
Cap Status:	Approved
Eligibility Type Description:	Not reported
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Not reported
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$70,446.14
FPR Date:	Not reported
Pay Voucher Date:	Not reported
Special Conditions:	Not reported

23 MEL REY (Continued) **S119772779**

Fund Analyst:	Not reported
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	2/10/2023, 12:00 PM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a143h000004M8Il
Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Not reported
Event ID:	13465
RAP ID:	Not reported
Cap Status:	Approved
Eligibility Type Description:	Not reported
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Not reported
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$3,227.16
FPR Date:	Not reported
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	Not reported
Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	10/12/2023, 12:00 PM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a14Do000000mDyn
Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility ID:	1655
Payee Name:	Not reported
Event ID:	13465
RAP ID:	Not reported
Cap Status:	Approved
Eligibility Type Description:	Not reported
Total Percent Reduction:	0
Total Reimbursement for Event:	344949.59
RAP Type Description:	Not reported
RAP Status:	Paid
Total Reimbursement:	Not reported
Net Reimbursement:	$12,089.98
FPR Date:	Not reported
Pay Voucher Date:	Not reported
Special Conditions:	Not reported
Fund Analyst:	Not reported

23 MEL REY (Continued) **S119772779**

Category:	Retail Gas Station
Technical Reviewer:	Julia Fraser
Technical Reviewer Phone:	(720) 326-1997
Fund Analyst Phone:	(720) 582-6723
Date Received by OPS:	5/10/2023, 12:00 PM
Commitee Meeting Date:	Not reported
Protest Name:	Not reported
Payment Request ID:	a14Do000000oscU

Click here for COSTIS:

E18 **23 MEL REY** **LTANKS U003117277**
NW **23 MEL REY RD** **UST N/A**
1/4-1/2 **GLENWOOD SPRINGS, CO 81601**
0.421 mi.
2224 ft. **Site 4 of 4 in cluster E**

Relative: LTANKS:
Lower

Actual: Facility ID:	1655
5712 ft. Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
NFA Type:	RBCA-No Tier Specified
Status:	Closed
Event ID:	8047
Release Date:	12/18/1999
Closed Date:	04/13/2000
Contact:	Jane Bral
Phone:	(303) 318-8510
Email:	jane.bral@state.co.us
Release Source:	Not reported
Release Cause:	Not reported
Reimbursement Total:	Not reported
Release Number:	REL-012867
URL:	https://socgov18.force.com/s/release/a183h000003KYbV
Facility ID:	1655
Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
NFA Type:	Tier I
Status:	Closed
Event ID:	17190
Release Date:	08/08/2022
Closed Date:	03/13/2023
Contact:	Julia Fraser
Phone:	(720) 326-1997
Email:	julia.fraser@state.co.us
Release Source:	Other
Release Cause:	Other
Reimbursement Total:	Not reported
Release Number:	REL-016155
URL:	https://socgov18.force.com/s/release/a183h000003TTQY
Facility ID:	1655
Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601

23 MEL REY (Continued) **U003117277**

NFA Type:	Not reported
Status:	State Lead
Event ID:	13465
Release Date:	08/14/2019
Closed Date:	Not reported
Contact:	Hannah Williams
Phone:	(303) 318-8519
Email:	hannah.williams@state.co.us
Release Source:	Other
Release Cause:	Physical Damage
Reimbursement Total:	Not reported
Release Number:	REL-000284
URL:	https://socgov18.force.com/s/release/a183h000003KVKY

Facility ID:	1655
Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
NFA Type:	Administrative
Status:	Closed
Event ID:	13607
Release Date:	11/15/2019
Closed Date:	Not reported
Contact:	Julia Fraser
Phone:	(720) 326-1997
Email:	julia.fraser@state.co.us
Release Source:	Not reported
Release Cause:	Other
Reimbursement Total:	Not reported
Release Number:	REL-000285
URL:	https://socgov18.force.com/s/release/a183h000003KVKZ

UST:

Tank Tag:	1655-1
Substance:	RUL
Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	1655-1
Substance:	RUL
Facility ID:	1655
Owner Name:	23 Mel Ray Ventures
Owner Address:	625 S West End St. #4, Aspen, CO 81611
Owner City:	Aspen
Owner State:	CO
Owner Zip:	81611
Facility Type:	Retail
Facility Category:	Retail Gas Station
Capacity:	8000
Date Closed:	Not reported
Tank Status:	Currently In Use
Date Tank Installed:	05/05/1973
Tank Type:	UST
Latitude:	39.561884
Longitude:	-107.361372
Tank Material:	ST: Cathodically Protected Steel
Tank Wall Type:	Not reported

23 MEL REY (Continued) **U003117277**

Piping Type:	UG: Underground
Piping System:	Not reported
Piping Material:	FRP: Fiberglass Reinforced Plastic
Piping Wall Type:	None
Overfill Prevention:	FV: Fill Tube Valve
Tank ID:	a1J3h000001jqMr
Account Name:	ACCT-00049
Tank Tag:	1655-2
Substance:	PUL
Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	1655-2
Substance:	PUL
Facility ID:	1655
Owner Name:	23 Mel Ray Ventures
Owner Address:	625 S West End St. #4, Aspen, CO 81611
Owner City:	Aspen
Owner State:	CO
Owner Zip:	81611
Facility Type:	Retail
Facility Category:	Retail Gas Station
Capacity:	8000
Date Closed:	Not reported
Tank Status:	Currently In Use
Date Tank Installed:	05/05/1973
Tank Type:	UST
Latitude:	39.561884
Longitude:	-107.361372
Tank Material:	ST: Cathodically Protected Steel
Tank Wall Type:	Not reported
Piping Type:	UG: Underground
Piping System:	Not reported
Piping Material:	FRP: Fiberglass Reinforced Plastic
Piping Wall Type:	None
Overfill Prevention:	FV: Fill Tube Valve
Tank ID:	a1J3h000001jqMs
Account Name:	ACCT-00049
Tank Tag:	1655-3
Substance:	DSL
Name:	23 MEL REY
Address:	23 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	1655-3
Substance:	DSL
Facility ID:	1655
Owner Name:	23 Mel Ray Ventures
Owner Address:	625 S West End St. #4, Aspen, CO 81611
Owner City:	Aspen
Owner State:	CO
Owner Zip:	81611
Facility Type:	Retail
Facility Category:	Retail Gas Station
Capacity:	3000
Date Closed:	Not reported

23 MEL REY (Continued) **U003117277**

Tank Status:	Currently In Use
Date Tank Installed:	05/06/1979
Tank Type:	UST
Latitude:	39.561884
Longitude:	-107.361372
Tank Material:	ST: Cathodically Protected Steel
Tank Wall Type:	Not reported
Piping Type:	UG: Underground
Piping System:	Not reported
Piping Material:	FRP: Fiberglass Reinforced Plastic
Piping Wall Type:	None
Overfill Prevention:	FV: Fill Tube Valve
Tank ID:	a1J3h000001jqMt
Account Name:	ACCT-00049

F19 **WEST CARWASH** **UST FINDER** **1028194377**
NW **77 MEL REY RD** **UST FINDER RELEASE** **N/A**
1/4-1/2 **GLENWOOD SPRINGS, CO 81601**
0.456 mi.
2409 ft. **Site 1 of 2 in cluster F**

Relative: **Lower**
Actual: **5718 ft.**

UST FINDER:

Object ID:	43241
Facility ID:	CO10965
Name:	WEST CARWASH
Address:	77 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Address Match Type:	Not reported
Open USTs:	0
Closed USTs:	5
TOS USTs:	0
Population 1500ft:	612
Private Wells 1500ft:	2
Within 100yr Floodplain:	No
Land Use:	Developed, High Intensity
Within SPA:	No
SPA PWS Facility ID:	Not reported
SPA Water Type:	Not reported
SPA Facility Type:	Not reported
SPA HUC12:	Not reported
Within WHPA:	No
WHPA PWS Facility ID:	Not reported
WHPA Water Type:	Not reported
WHPA Facility Type:	Not reported
WHPA HUC12:	Not reported
Facility Status:	Closed UST(s)
Date of Last Inspection:	Not reported
EPA Region:	8
Tribe:	Not reported
Coordinate Source:	State
X Coord:	-107.361234
Y Coord:	39.562285
Latitude:	39.562285
Longitude:	-107.361234

UST FINDER:

Object ID:	133947
Facility ID:	CO10965

WEST CARWASH (Continued) **1028194377**

Tank ID:	CO10965-1
Tank Status:	Closed
Installation Date:	1970/05/01 16:00:00+00
Removal Date:	Not reported
Tank Capacity:	6000
Substances:	Gasoline
Tank Wall Type:	Single

Object ID:	133948
Facility ID:	CO10965
Tank ID:	CO10965-2
Tank Status:	Closed
Installation Date:	1970/05/01 16:00:00+00
Removal Date:	Not reported
Tank Capacity:	6000
Substances:	Gasoline
Tank Wall Type:	Single

Object ID:	133949
Facility ID:	CO10965
Tank ID:	CO10965-3
Tank Status:	Closed
Installation Date:	1970/05/01 16:00:00+00
Removal Date:	Not reported
Tank Capacity:	2000
Substances:	Gasoline
Tank Wall Type:	Single

Object ID:	133950
Facility ID:	CO10965
Tank ID:	CO10965-4
Tank Status:	Closed
Installation Date:	1970/05/01 16:00:00+00
Removal Date:	Not reported
Tank Capacity:	2000
Substances:	Gasoline
Tank Wall Type:	Single

Object ID:	133951
Facility ID:	CO10965
Tank ID:	CO10965-5
Tank Status:	Closed
Installation Date:	1970/05/01 16:00:00+00
Removal Date:	Not reported
Tank Capacity:	6000
Substances:	Gasoline
Tank Wall Type:	Single

UST FINDER RELEASE:

Object ID:	75929
Facility ID:	CO10965
Lust ID:	CO666
Name:	WEST CARWASH
Address:	77 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Address Match Type:	Not reported

WEST CARWASH (Continued) **1028194377**

Reported Date:	1997/06/20 15:59:59+00
Status:	No Further Action
Substance:	Not reported
Population within 1500ft:	614
Domestic Wells within 1500ft:	2
Land Use:	Developed, High Intensity
Within SPA:	No
SPA PWS Facility ID:	Not reported
SPA Water Type:	Not reported
SPA Facility Type:	Not reported
SPA HUC12:	Not reported
Within WHPA:	No
WHPA PWS Facility ID:	Not reported
WHPA Water Type:	Not reported
WHPA Facility Type:	Not reported
WHPA HUC12:	Not reported
Within 100yr Floodplain:	No
Tribe:	Not reported
EPA Region:	8
NFA Letter 1:	Not reported
NFA Letter 2:	Not reported
NFA Letter 3:	Not reported
NFA Letter 4:	Not reported
Closed With Residual Contaminate:	Not reported
Coordinate Source:	State
X Coord:	-107.36123
Y Coord:	39.5622900000001
Latitude:	39.5622899999999
Longitude:	-107.36123

F20 **WEST CARWASH** **LTANKS** **U003116754**
NW **77 MEL REY RD** **LUST** **N/A**
1/4-1/2 **GLENWOOD SPRINGS, CO 81601** **UST**
0.456 mi.
2409 ft. **Site 2 of 2 in cluster F**

Relative:
Lower

Actual:
5718 ft.

LTANKS:

Facility ID:	10965
Name:	WEST CARWASH
Address:	77 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
NFA Type:	Tier I
Status:	Closed
Event ID:	666
Release Date:	06/20/1997
Closed Date:	05/12/2006
Contact:	Winifred Bromley
Phone:	(303) 318-8547
Email:	cdle_ops_public_record_center@state.co.us
Release Source:	Tank
Release Cause:	Not reported
Reimbursement Total:	Not reported
Release Number:	REL-012735
URL:	https://socgov18.force.com/s/release/a183h000003KYZN

LUST:

Name:	WEST CARWASH

WEST CARWASH (Continued) **U003116754**

Address:	77 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS, CO 81601
Facility Id:	10965
Status:	**Closed**
Event ID:	666
Confirmed Release:	06/20/1997
Contact Name:	Technical Assistance Line
Contact Phone:	303-318-8547
Contact Email:	Not reported
Latitude Degrees:	39.562285
Longitude Degrees:	-107.361234

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UST:

Tank Tag:	10965-3
Substance:	GSLN
Name:	WEST CARWASH
Address:	77 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	10965-3
Substance:	GSLN
Facility ID:	10965
Owner Name:	Gilco Inc
Owner Address:	PO Box 1061, Rifle, CO 81650
Owner City:	Rifle
Owner State:	CO
Owner Zip:	81650
Facility Type:	Retail
Facility Category:	Retail Gas Station
Capacity:	2000
Date Closed:	07/31/1992
Tank Status:	Permanently Closed
Date Tank Installed:	05/01/1970
Tank Type:	UST
Latitude:	39.562285
Longitude:	-107.361234
Tank Material:	Asphalt Coated or Bare Steel
Tank Wall Type:	Not reported
Piping Type:	Other
Piping System:	Not reported
Piping Material:	Galvanized Steel
Piping Wall Type:	None
Overfill Prevention:	Not reported
Tank ID:	a1J3h000001jr43
Account Name:	ACCT-02597

Tank Tag:	10965-4
Substance:	GSLN
Name:	WEST CARWASH
Address:	77 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	10965-4
Substance:	GSLN
Facility ID:	10965
Owner Name:	Gilco Inc
Owner Address:	PO Box 1061, Rifle, CO 81650

WEST CARWASH (Continued) **U003116754**

Owner City:	Rifle
Owner State:	CO
Owner Zip:	81650
Facility Type:	Retail
Facility Category:	Retail Gas Station
Capacity:	2000
Date Closed:	07/31/1992
Tank Status:	Permanently Closed
Date Tank Installed:	05/01/1970
Tank Type:	UST
Latitude:	39.562285
Longitude:	-107.361234
Tank Material:	Asphalt Coated or Bare Steel
Tank Wall Type:	Not reported
Piping Type:	Other
Piping System:	Not reported
Piping Material:	Galvanized Steel
Piping Wall Type:	None
Overfill Prevention:	Not reported
Tank ID:	a1J3h000001jr44
Account Name:	ACCT-02597
Tank Tag:	10965-2
Substance:	GSLN
Name:	WEST CARWASH
Address:	77 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	10965-2
Substance:	GSLN
Facility ID:	10965
Owner Name:	Gilco Inc
Owner Address:	PO Box 1061, Rifle, CO 81650
Owner City:	Rifle
Owner State:	CO
Owner Zip:	81650
Facility Type:	Retail
Facility Category:	Retail Gas Station
Capacity:	6000
Date Closed:	07/31/1992
Tank Status:	Permanently Closed
Date Tank Installed:	05/01/1970
Tank Type:	UST
Latitude:	39.562285
Longitude:	-107.361234
Tank Material:	Asphalt Coated or Bare Steel
Tank Wall Type:	Not reported
Piping Type:	Other
Piping System:	Not reported
Piping Material:	Galvanized Steel
Piping Wall Type:	None
Overfill Prevention:	Not reported
Tank ID:	a1J3h000001jr42
Account Name:	ACCT-02597
Tank Tag:	10965-1
Substance:	GSLN
Name:	WEST CARWASH

WEST CARWASH (Continued) **U003116754**

Address:	77 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	10965-1
Substance:	GSLN
Facility ID:	10965
Owner Name:	Gilco Inc
Owner Address:	PO Box 1061, Rifle, CO 81650
Owner City:	Rifle
Owner State:	CO
Owner Zip:	81650
Facility Type:	Retail
Facility Category:	Retail Gas Station
Capacity:	6000
Date Closed:	07/31/1992
Tank Status:	Permanently Closed
Date Tank Installed:	05/01/1970
Tank Type:	UST
Latitude:	39.562285
Longitude:	-107.361234
Tank Material:	Asphalt Coated or Bare Steel
Tank Wall Type:	Not reported
Piping Type:	Other
Piping System:	Not reported
Piping Material:	Galvanized Steel
Piping Wall Type:	None
Overfill Prevention:	Not reported
Tank ID:	a1J3h000001jr41
Account Name:	ACCT-02597

Tank Tag:	10965-5
Substance:	GSLN
Name:	WEST CARWASH
Address:	77 MEL REY RD
City,State,Zip:	GLENWOOD SPRINGS 81601
Tank Tag:	10965-5
Substance:	GSLN
Facility ID:	10965
Owner Name:	Gilco Inc
Owner Address:	PO Box 1061, Rifle, CO 81650
Owner City:	Rifle
Owner State:	CO
Owner Zip:	81650
Facility Type:	Retail
Facility Category:	Retail Gas Station
Capacity:	6000
Date Closed:	01/01/1988
Tank Status:	Permanently Closed
Date Tank Installed:	05/01/1970
Tank Type:	UST
Latitude:	39.562285
Longitude:	-107.361234
Tank Material:	Asphalt Coated or Bare Steel
Tank Wall Type:	Not reported
Piping Type:	UG: Underground
Piping System:	Not reported
Piping Material:	Galvanized Steel
Piping Wall Type:	None

WEST CARWASH (Continued) **U003116754**

Overfill Prevention:	Not reported
Tank ID:	a1J3h000001jr45
Account Name:	ACCT-02597

Count: 3 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
GLENWOOD SPRINGS	U004008612	GLENWOOD SPRINGS SECTION HQ	DEVEREUX RD & DEVEREUX LN	81601	LTANKS, UST
GLENWOOD SPRINGS	S127311334	GLENWOOD MUNICIPAL OPERATIONS CENT	2301 WULFSOHN RD	81601	LTANKS
GLENWOOD SPRINGS	A100209180	GLENWOOD MUNICIPAL OPERATIONS CENT	2301 WULFSOHN RD	81601	AST

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 02/29/2024
Date Data Arrived at EDR: 03/01/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 05/01/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 02/29/2024
Date Data Arrived at EDR: 03/01/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 05/01/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Lists of Federal Delisted NPL sites

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 02/29/2024
Date Data Arrived at EDR: 03/01/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 05/01/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Quarterly

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 12/20/2023
Date Data Arrived at EDR: 12/20/2023
Date Made Active in Reports: 01/24/2024
Number of Days to Update: 35

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 03/26/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/22/2024
Date Data Arrived at EDR: 05/01/2024
Date Made Active in Reports: 05/24/2024
Number of Days to Update: 23

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 05/01/2024
Next Scheduled EDR Contact: 07/22/2024
Data Release Frequency: Quarterly

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 04/22/2024
Date Data Arrived at EDR: 05/01/2024
Date Made Active in Reports: 05/24/2024
Number of Days to Update: 23

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 05/01/2024
Next Scheduled EDR Contact: 07/22/2024
Data Release Frequency: Quarterly

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

Lists of Federal RCRA TSD facilities

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 303-312-6149
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

Lists of Federal RCRA generators

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 303-312-6149
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 303-312-6149
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 303-312-6149
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 02/14/2024
Date Data Arrived at EDR: 02/16/2024
Date Made Active in Reports: 04/04/2024
Number of Days to Update: 48

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/17/2024
Next Scheduled EDR Contact: 08/19/2024
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 02/13/2024
Date Data Arrived at EDR: 02/21/2024
Date Made Active in Reports: 04/04/2024
Number of Days to Update: 43

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/21/2024
Next Scheduled EDR Contact: 09/02/2024
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 02/13/2024
Date Data Arrived at EDR: 02/21/2024
Date Made Active in Reports: 04/04/2024
Number of Days to Update: 43

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/21/2024
Next Scheduled EDR Contact: 09/02/2024
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/12/2023
Date Data Arrived at EDR: 12/13/2023
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 77

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

Lists of state- and tribal hazardous waste facilities

SHWS: This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: Department of Public Health & Environment
Telephone: 303-692-3300
Last EDR Contact: 05/09/2024
Next Scheduled EDR Contact: 08/19/2024
Data Release Frequency: N/A

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF: Solid Waste Sites & Facilities

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/16/2023
Date Data Arrived at EDR: 11/09/2023
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 90

Source: Department of Public Health & Environment
Telephone: 303-692-3300
Last EDR Contact: 05/16/2024
Next Scheduled EDR Contact: 08/19/2024
Data Release Frequency: Varies

SHWF: Solid Waste Information System Listing

A listing from the Solid Waste Information System, which is used to help administer the various programs of our solid waste and materials management program. It includes a wide variety of types of facilities and sites, and includes information obtained over several decades and numerous legacy data systems.

Date of Government Version: 01/29/2024
Date Data Arrived at EDR: 01/31/2024
Date Made Active in Reports: 04/18/2024
Number of Days to Update: 78

Source: Department of Public Health & Environment
Telephone: 303-692-6349
Last EDR Contact: 05/09/2024
Next Scheduled EDR Contact: 08/12/2024
Data Release Frequency: Varies

Lists of state and tribal leaking storage tanks

LTANKS: Petroleum Release Events Listing

Active and Closed OPS Petroleum Release Events in Colorado. Includes the OPS Open Event locations, but also shows locations of closed events (releases that have been issued a No Further Action determination).

Date of Government Version: 02/01/2024
Date Data Arrived at EDR: 02/27/2024
Date Made Active in Reports: 05/14/2024
Number of Days to Update: 77

Source: Department of Labor & Employment
Telephone: 303-318-8525
Last EDR Contact: 05/29/2024
Next Scheduled EDR Contact: 09/09/2024
Data Release Frequency: Quarterly

LAST: Leaking Aboveground Storage Tank Listing
A listing of leaking aboveground storage tank sites. This list is no longer maintained. For current Leaking AST information, please see LTANKS.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/07/2018
Date Made Active in Reports: 04/03/2018
Number of Days to Update: 27
Source: Department of Labor & Employment
Telephone: 303-318-8525
Last EDR Contact: 05/31/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: No Update Planned

LUST: Leaking Underground Storage Tank List
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/07/2018
Date Made Active in Reports: 04/03/2018
Number of Days to Update: 27
Source: Department of Labor and Employment, Oil Inspection Section
Telephone: 303-318-8521
Last EDR Contact: 03/07/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/25/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/17/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 10/25/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 04/17/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/25/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 04/17/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/25/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/17/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 10/25/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 04/17/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/04/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 04/17/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 10/25/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 04/17/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 10/25/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/17/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Varies

TRUST: Lust Trust Sites
Reimbursement application package. The 1989 Colorado General Assembly established Colorado's Petroleum Storage Tank Fund. The Fund reimburses eligible applicants for allowable costs incurred in cleaning up petroleum contamination from underground and aboveground petroleum storage tanks, as well as for third-party liability expenses. Remediation of contamination caused by railroad or aircraft fuel is not eligible for reimbursement. The Fund satisfies federal Environmental Protection Agency financial assurance requirements. Monies in the Fund come from various sources, predominantly the state environmental surcharge imposed on all petroleum products except railroad or aircraft fuel.

Date of Government Version: 12/12/2023
Date Data Arrived at EDR: 12/13/2023
Date Made Active in Reports: 03/07/2024
Number of Days to Update: 85
Source: Department of Labor and Employment, Oil Inspection Section
Telephone: 303-318-8521
Last EDR Contact: 03/15/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Varies

Lists of state and tribal registered storage tanks

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 11/16/2023
Date Data Arrived at EDR: 11/16/2023
Date Made Active in Reports: 02/13/2024
Number of Days to Update: 89
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

UST: Underground Storage Tank Database
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 05/23/2024
Date Data Arrived at EDR: 05/24/2024
Date Made Active in Reports: 05/28/2024
Number of Days to Update: 4
Source: Department of Labor and Employment, Oil Inspection Section
Telephone: 303-318-8521
Last EDR Contact: 05/22/2024
Next Scheduled EDR Contact: 09/09/2024
Data Release Frequency: Quarterly

AST: Aboveground Tank List
Aboveground storage tank locations.

Date of Government Version: 05/23/2024
Date Data Arrived at EDR: 05/24/2024
Date Made Active in Reports: 05/28/2024
Number of Days to Update: 4

Source: Department of Labor and Employment, Oil Inspection Section
Telephone: 303-318-8521
Last EDR Contact: 05/22/2024
Next Scheduled EDR Contact: 09/09/2024
Data Release Frequency: Semi-Annually

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 10/24/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 04/17/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 10/24/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 04/17/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 10/24/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 04/17/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/24/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 04/17/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 10/24/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/17/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 10/24/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/17/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 10/17/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 04/17/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/24/2023
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 56

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/17/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

AUL: Environmental Real Covenants List

Senate Bill 01-145 gave authority to the Colorado Department of Public Health and Environment to approve requests to restrict the future use of a property using an enforceable agreement called an environmental covenant. When a contaminated site is not cleaned up completely, land use restrictions may be used to ensure that the selected cleanup remedy is adequately protective of human health and the environment.

Date of Government Version: 01/23/2024
Date Data Arrived at EDR: 01/24/2024
Date Made Active in Reports: 04/05/2024
Number of Days to Update: 72

Source: Department of Public Health & Environment
Telephone: 303-692-3331
Last EDR Contact: 04/19/2024
Next Scheduled EDR Contact: 08/05/2024
Data Release Frequency: Varies

Lists of state and tribal voluntary cleanup sites

VCP: Voluntary Cleanup & Redevelopment Act Application Tracking Report

The Voluntary Cleanup and Redevelopment Act is intended to permit and encourage voluntary cleanups by providing a method to determine clean-up responsibilities in planning the reuse of property. The VCRA was intended for sites which were not covered by existing regulatory programs.

Date of Government Version: 03/27/2024
Date Data Arrived at EDR: 03/27/2024
Date Made Active in Reports: 04/16/2024
Number of Days to Update: 20

Source: Department of Public Health and Environmental
Telephone: 303-692-3331
Last EDR Contact: 03/27/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Semi-Annually

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 07/08/2021
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 03/18/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Varies

Lists of state and tribal brownfield sites

BROWNFIELDS: Brownfields Sites Listing
Brownfields Sites Listing

Date of Government Version: 01/16/2024
Date Data Arrived at EDR: 01/16/2024
Date Made Active in Reports: 04/02/2024
Number of Days to Update: 77

Source: Department of Public Health & Environment
Telephone: 303-692-3331
Last EDR Contact: 04/16/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 03/11/2024
Date Data Arrived at EDR: 03/12/2024
Date Made Active in Reports: 05/10/2024
Number of Days to Update: 59

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/12/2024
Next Scheduled EDR Contact: 06/24/2024
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY: Registered Recyclers Listing
A listing of registered recycler locations in the state of Colorado.

Date of Government Version: 07/26/2023
Date Data Arrived at EDR: 08/24/2023
Date Made Active in Reports: 08/25/2023
Number of Days to Update: 1

Source: Department of Public Health & Environment
Telephone: 303-692-3337
Last EDR Contact: 03/04/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Semi-Annually

HISTORICAL LANDFILL: Historical Landfill List
Abandoned/Inactive Landfills.

Date of Government Version: 01/31/1993
Date Data Arrived at EDR: 04/24/1994
Date Made Active in Reports: 05/30/1994
Number of Days to Update: 36

Source: Department of Public Health & Environment
Telephone: 303-692-3300
Last EDR Contact: 09/05/1996
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 04/22/2024
Next Scheduled EDR Contact: 08/05/2024
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 04/15/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 04/19/2024
Next Scheduled EDR Contact: 08/04/2024
Data Release Frequency: Varies

DENVER CO HISTORIC FILL: Denver City & County Historic Fill Areas
This dataset denotes the approximate locations of historical fill areas within the City and County of Denver (CCoD) and with within approximately three-quarters of a mile of the CCoD boundaries. The data is of a general nature and obtained from historic and current documents that may not be accurate or precise.

Date of Government Version: 12/17/2019
Date Data Arrived at EDR: 01/07/2020
Date Made Active in Reports: 03/13/2020
Number of Days to Update: 66

Source: City & County of Denver
Telephone: 720-913-5237
Last EDR Contact: 04/04/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: No Update Planned

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 12/31/2023
Date Data Arrived at EDR: 02/21/2024
Date Made Active in Reports: 04/04/2024
Number of Days to Update: 43

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/21/2024
Next Scheduled EDR Contact: 09/02/2024
Data Release Frequency: No Update Planned

CDL: Meth Lab Locations

Meth lab locations that were reported to the Department of Public Health & Environment.

Date of Government Version: 12/18/2023
Date Data Arrived at EDR: 12/21/2023
Date Made Active in Reports: 03/18/2024
Number of Days to Update: 88

Source: Department of Public Health and Environment
Telephone: 303-692-3023
Last EDR Contact: 03/22/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Quarterly

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 12/31/2023
Date Data Arrived at EDR: 02/21/2024
Date Made Active in Reports: 04/04/2024
Number of Days to Update: 43

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/21/2024
Next Scheduled EDR Contact: 09/02/2024
Data Release Frequency: Quarterly

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/29/2024
Date Data Arrived at EDR: 03/01/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 26

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 05/01/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/12/2023
Date Data Arrived at EDR: 12/13/2023
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 77

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/20/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

CO ERNS: Spills Database

State reported spills.

Date of Government Version: 12/18/2023
Date Data Arrived at EDR: 12/21/2023
Date Made Active in Reports: 03/18/2024
Number of Days to Update: 88

Source: Department of Public Health and Environmental
Telephone: 303-692-2000
Last EDR Contact: 03/22/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Quarterly

SPILLS 2: Spills
A listing of spills reported to the Oil & Gas Conservation Commission

Date of Government Version: 12/07/2023
Date Data Arrived at EDR: 12/13/2023
Date Made Active in Reports: 03/07/2024
Number of Days to Update: 85

Source: Oil & Gas Conservation Commission
Telephone: 303-894-2100
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch
Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 10/15/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/06/2013
Number of Days to Update: 34

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 303-312-6149
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites
The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/30/2024
Date Data Arrived at EDR: 02/13/2024
Date Made Active in Reports: 04/04/2024
Number of Days to Update: 51

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 05/14/2024
Next Scheduled EDR Contact: 08/26/2024
Data Release Frequency: Varies

DOD: Department of Defense Sites
This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 06/07/2021
Date Data Arrived at EDR: 07/13/2021
Date Made Active in Reports: 03/09/2022
Number of Days to Update: 239

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/11/2024
Next Scheduled EDR Contact: 07/22/2024
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands
Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/04/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 07/30/2021
Date Data Arrived at EDR: 02/03/2023
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 05/09/2024
Next Scheduled EDR Contact: 08/19/2024
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 12/11/2023
Date Data Arrived at EDR: 12/13/2023
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 03/13/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA Watch List

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 04/29/2024
Next Scheduled EDR Contact: 08/12/2024
Data Release Frequency: No Update Planned

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/02/2024
Next Scheduled EDR Contact: 08/12/2024
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 06/14/2022
Date Made Active in Reports: 03/24/2023
Number of Days to Update: 283

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/14/2024
Next Scheduled EDR Contact: 06/24/2024
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 11/13/2023
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 86

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 05/16/2024
Next Scheduled EDR Contact: 08/26/2024
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 01/16/2024
Date Data Arrived at EDR: 01/17/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 70

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/17/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 02/29/2024
Date Data Arrived at EDR: 03/01/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 26

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 05/01/2024
Next Scheduled EDR Contact: 06/10/2024
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 02/01/2024
Date Data Arrived at EDR: 02/08/2024
Date Made Active in Reports: 04/04/2024
Number of Days to Update: 56

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 04/15/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 09/19/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 10/19/2023
Number of Days to Update: 16

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 05/01/2024
Next Scheduled EDR Contact: 08/12/2024
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 03/20/2023
Date Data Arrived at EDR: 04/04/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 66

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/04/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 03/28/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 01/02/2024
Date Data Arrived at EDR: 01/16/2024
Date Made Active in Reports: 03/13/2024
Number of Days to Update: 57
Source: Nuclear Regulatory Commission
Telephone: 301-415-0717
Last EDR Contact: 04/15/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 11/27/2023
Date Made Active in Reports: 02/22/2024
Number of Days to Update: 87
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 05/28/2024
Next Scheduled EDR Contact: 09/09/2024
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 05/28/2024
Next Scheduled EDR Contact: 09/09/2024
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 05/02/2024
Next Scheduled EDR Contact: 08/12/2024
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 03/25/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 04/23/2024
Next Scheduled EDR Contact: 08/05/2024
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2023
Date Data Arrived at EDR: 01/11/2024
Date Made Active in Reports: 01/16/2024
Number of Days to Update: 5

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 03/28/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 03/19/2024
Next Scheduled EDR Contact: 07/01/2024
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/04/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 03/03/2023
Date Data Arrived at EDR: 03/03/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 98

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 04/26/2024
Next Scheduled EDR Contact: 08/12/2024
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/16/2024
Next Scheduled EDR Contact: 08/26/2024
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 02/29/2024
Date Data Arrived at EDR: 03/01/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 26

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 05/01/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 01/02/2024
Date Data Arrived at EDR: 01/03/2024
Date Made Active in Reports: 01/04/2024
Number of Days to Update: 1

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 04/04/2024
Next Scheduled EDR Contact: 09/02/2024
Data Release Frequency: Quarterly

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 02/05/2024
Date Data Arrived at EDR: 02/21/2024
Date Made Active in Reports: 04/04/2024
Number of Days to Update: 43

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 05/21/2024
Next Scheduled EDR Contact: 09/02/2024
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 01/07/2022
Date Data Arrived at EDR: 02/24/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 82

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/22/2024
Next Scheduled EDR Contact: 09/02/2024
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/23/2024
Next Scheduled EDR Contact: 09/02/2024
Data Release Frequency: Varies

MINES MRDS: Mineral Resources Data System

Mineral Resources Data System

Date of Government Version: 08/23/2022
Date Data Arrived at EDR: 11/22/2022
Date Made Active in Reports: 02/28/2023
Number of Days to Update: 98

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 05/22/2024
Next Scheduled EDR Contact: 09/02/2024
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 11/28/2023
Date Data Arrived at EDR: 11/29/2023
Date Made Active in Reports: 12/11/2023
Number of Days to Update: 12

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 03/15/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/09/2024
Date Data Arrived at EDR: 02/27/2024
Date Made Active in Reports: 05/24/2024
Number of Days to Update: 87

Source: EPA
Telephone: (303) 312-6312
Last EDR Contact: 05/29/2024
Next Scheduled EDR Contact: 09/09/2024
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 12/17/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 03/04/2024
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 04/04/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 05/17/2024
Next Scheduled EDR Contact: 09/02/2024
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 09/06/2023
Date Data Arrived at EDR: 09/13/2023
Date Made Active in Reports: 12/11/2023
Number of Days to Update: 89

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 04/08/2024
Next Scheduled EDR Contact: 07/22/2024
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 02/12/2024
Date Data Arrived at EDR: 02/13/2024
Date Made Active in Reports: 04/04/2024
Number of Days to Update: 51

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 05/14/2024
Next Scheduled EDR Contact: 08/26/2024
Data Release Frequency: Quarterly

PFAS NPL: Superfund Sites with PFAS Detections Information

EPA's Office of Land and Emergency Management and EPA Regional Offices maintain data describing what is known about site investigations, contamination, and remedial actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) where PFAS is present in the environment.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 03/04/2024
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 703-603-8895
Last EDR Contact: 04/05/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

PFAS FEDERAL SITES: Federal Sites PFAS Information

Several federal entities, such as the federal Superfund program, Department of Defense, National Aeronautics and Space Administration, Department of Transportation, and Department of Energy provided information for sites with known or suspected detections at federal facilities.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 03/04/2024
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 04/05/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

PFAS TRIS: List of PFAS Added to the TRI

Section 7321 of the National Defense Authorization Act for Fiscal Year 2020 (NDAA) immediately added certain per- and polyfluoroalkyl substances (PFAS) to the list of chemicals covered by the Toxics Release Inventory (TRI) under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) and provided a framework for additional PFAS to be added to TRI on an annual basis.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 01/04/2024
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-566-0250
Last EDR Contact: 04/05/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

PFAS TSCA: PFAS Manufacture and Imports Information

EPA issued the Chemical Data Reporting (CDR) Rule under the Toxic Substances Control Act (TSCA) and requires chemical manufacturers and facilities that manufacture or import chemical substances to report data to EPA. EPA publishes non-confidential business information (non-CBI) and includes descriptive information about each site, corporate parent, production volume, other manufacturing information, and processing and use information.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 01/04/2024
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 04/05/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

PFAS RCRA MANIFEST: PFAS Transfers Identified In the RCRA Database Listing

To work around the lack of PFAS waste codes in the RCRA database, EPA developed the PFAS Transfers dataset by mining e-Manifest records containing at least one of these common PFAS keywords: PFAS, PFOA, PFOS, PERFL, AFFF, GENX, GEN-X (plus the VT waste codes). These keywords were searched for in the following text fields: Manifest handling instructions (MANIFEST_HANDLING_INSTR), Non-hazardous waste description (NON_HAZ_WASTE_DESCRIPTION), DOT printed information (DOT_PRINTED_INFORMATION), Waste line handling instructions (WASTE_LINE_HANDLING_INSTR), Waste residue comments (WASTE_RESIDUE_COMMENTS).

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 01/04/2024
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 04/05/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

PFAS ATSDR: PFAS Contamination Site Location Listing

PFAS contamination site locations from the Department of Health & Human Services, Center for Disease Control & Prevention. ATSDR is involved at a number of PFAS-related sites, either directly or through assisting state and federal partners. As of now, most sites are related to drinking water contamination connected with PFAS production facilities or fire training areas where aqueous film-forming firefighting foam (AFFF) was regularly used.

Date of Government Version: 06/24/2020
Date Data Arrived at EDR: 03/17/2021
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 601

Source: Department of Health & Human Services
Telephone: 202-741-5770
Last EDR Contact: 04/22/2024
Next Scheduled EDR Contact: 08/05/2024
Data Release Frequency: Varies

PFAS WQP: Ambient Environmental Sampling for PFAS

The Water Quality Portal (WQP) is a part of a modernized repository storing ambient sampling data for all environmental media and tissue samples. A wide range of federal, state, tribal and local governments, academic and non-governmental organizations and individuals submit project details and sampling results to this public repository. The information is commonly used for research and assessments of environmental quality.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 03/04/2024
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 04/05/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

PFAS NPDES: Clean Water Act Discharge Monitoring Information

Any discharger of pollutants to waters of the United States from a point source must have a National Pollutant Discharge Elimination System (NPDES) permit. The process for obtaining limits involves the regulated entity (permittee) disclosing releases in a NPDES permit application and the permitting authority (typically the state but sometimes EPA) deciding whether to require monitoring or monitoring with limits. Caveats and Limitations: Less than half of states have required PFAS monitoring for at least one of their permittees and fewer states have established PFAS effluent limits for permittees. New rulemakings have been initiated that may increase the number of facilities monitoring for PFAS in the future.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 03/04/2024
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 04/05/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

PFAS ECHO: Facilities in Industries that May Be Handling PFAS Listing

Regulators and the public have expressed interest in knowing which regulated entities may be using PFAS. EPA has developed a dataset from various sources that show which industries may be handling PFAS. Approximately 120,000 facilities subject to federal environmental programs have operated or currently operate in industry sectors with processes that may involve handling and/or release of PFAS.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 03/04/2024
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 04/05/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

PFAS ECHO FIRE TRAINING: Facilities in Industries that May Be Handling PFAS Listing

A list of fire training sites was added to the Industry Sectors dataset using a keyword search on the permitted facilitys name to identify sites where fire-fighting foam may have been used in training exercises. Additionally, you may view an example spreadsheet of the subset of fire training facility data, as well as the keywords used in selecting or deselecting a facility for the subset. as well as the keywords used in selecting or deselecting a facility for the subset. These keywords were tested to maximize accuracy in selecting facilities that may use fire-fighting foam in training exercises, however, due to the lack of a required reporting field in the data systems for designating fire training sites, this methodology may not identify all fire training sites or may potentially misidentify them.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 03/04/2024
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 04/05/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

PFAS PART 139 AIRPORT: All Certified Part 139 Airports PFAS Information Listing

Since July 1, 2006, all certified part 139 airports are required to have fire-fighting foam onsite that meet military specifications (MIL-F-24385) (14 CFR 139.317). To date, these military specification fire-fighting foams are fluorinated and have been historically used for training and extinguishing. The 2018 FAA Reauthorization Act has a provision stating that no later than October 2021, FAA shall not require the use of fluorinated AFFF. This provision does not prohibit the use of fluorinated AFFF at Part 139 civilian airports; it only prohibits FAA from mandating its use. The Federal Aviation Administration?s document AC 150/5210-6D - Aircraft Fire Extinguishing Agents provides guidance on Aircraft Fire Extinguishing Agents, which includes Aqueous Film Forming Foam (AFFF).

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 03/04/2024
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 04/05/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

AQUEOUS FOAM NRC: Aqueous Foam Related Incidents Listing

The National Response Center (NRC) serves as an emergency call center that fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. The spreadsheets posted to the NRC website contain initial incident data that has not been validated or investigated by a federal/state response agency. Response center calls from 1990 to the most recent complete calendar year where there was indication of Aqueous Film Forming Foam (AFFF) usage are included in this dataset. NRC calls may reference AFFF usage in the ?Material Involved? or ?Incident Description? fields.

Date of Government Version: 12/28/2023
Date Data Arrived at EDR: 12/28/2023
Date Made Active in Reports: 03/04/2024
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: 202-267-2675
Last EDR Contact: 04/05/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

PCS ENF: Enforcement data

No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 03/29/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

PCS: Permit Compliance System

PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 12/16/2016
Date Data Arrived at EDR: 01/06/2017
Date Made Active in Reports: 03/10/2017
Number of Days to Update: 63

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 03/29/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: No Update Planned

BIOSOLIDS: ICIS-NPDES Biosolids Facility Data

The data reflects compliance information about facilities in the biosolids program.

Date of Government Version: 12/31/2023
Date Data Arrived at EDR: 01/03/2024
Date Made Active in Reports: 01/16/2024
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 202-564-4700
Last EDR Contact: 04/16/2024
Next Scheduled EDR Contact: 07/29/2024
Data Release Frequency: Varies

PFAS: PFAS Information Listing

A list of entities that have tested groundwater and have found PFAS chemicals, specifically PFOA and PFOS, levels above the health advisory. Potential sources of these chemicals include military bases, fire stations or training centers, landfills, industrial sites, car racetracks, and ski resorts.

Date of Government Version: 01/19/2024
Date Data Arrived at EDR: 01/19/2024
Date Made Active in Reports: 04/08/2024
Number of Days to Update: 80

Source: Department of Public Health & Environment
Telephone: 303-692-3605
Last EDR Contact: 04/15/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

AQUEOUS FOAM: Class B Firefighting Foam Contaminating PFAS Listing

Class B foams put out fires caused by flammable liquids like gasoline, oil, and jet fuel. They may contain PFAS chemicals. Anyone using or storing Class B firefighting foam containing these chemicals must register through the Certificate of Registration Program.303-692-38

Date of Government Version: 01/02/2024
Date Data Arrived at EDR: 01/03/2024
Date Made Active in Reports: 03/26/2024
Number of Days to Update: 83

Source: Department of Public Health & Environment
Telephone: 303-692-3605
Last EDR Contact: 04/04/2024
Next Scheduled EDR Contact: 07/15/2024
Data Release Frequency: Varies

AIRS: Permitted Facility & Emissions Listing

A listing of Air Pollution Control Division permits and emissions data.

Date of Government Version: 04/18/2024
Date Data Arrived at EDR: 04/19/2024
Date Made Active in Reports: 04/24/2024
Number of Days to Update: 5

Source: Department of Public Health & Environment
Telephone: 303-692-3213
Last EDR Contact: 05/22/2024
Next Scheduled EDR Contact: 09/09/2024
Data Release Frequency: Varies

ASBESTOS: Asbestos Abatement & Demolition Projects

Asbestos abatement and demolition projects by the contractor.

Date of Government Version: 11/06/2019
Date Data Arrived at EDR: 01/09/2020
Date Made Active in Reports: 03/16/2020
Number of Days to Update: 67

Source: Department of Public Health & Environment
Telephone: 303-692-3100
Last EDR Contact: 04/25/2024
Next Scheduled EDR Contact: 08/12/2024
Data Release Frequency: Semi-Annually

METHANE SITE: Methane Site Investigations - Jefferson County 1980

The objectives of the study are to define as closely as possible the boundaries of methane producing solid waste landfills.

Date of Government Version: 12/31/1980
Date Data Arrived at EDR: 02/13/1995
Date Made Active in Reports: 04/04/1995
Number of Days to Update: 50

Source: Jefferson County Health Department
Telephone: 303-239-7175
Last EDR Contact: 01/27/1995
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

METHANE INVESTIGATION: Methane Gas & Swamp Findings

The primary objective of this study was to assess methane gas related hazards at selected landfill sites in Colorado. These sites were selected by the Colorado Department of Health following evaluation of responses received from County and Municipal agencies about completed and existing landfills within their jurisdiction.

Date of Government Version: 03/15/1979
Date Data Arrived at EDR: 02/13/1995
Date Made Active in Reports: 04/04/1995
Number of Days to Update: 50

Source: Department of Health
Telephone: 303-640-3335
Last EDR Contact: 01/27/1995
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DRYCLEANERS: Drycleaner Facilities

A listing of drycleaning facilities.

Date of Government Version: 04/18/2024
Date Data Arrived at EDR: 04/19/2024
Date Made Active in Reports: 04/24/2024
Number of Days to Update: 5

Source: Department of Public Health & Environment
Telephone: 303-692-3213
Last EDR Contact: 05/22/2024
Next Scheduled EDR Contact: 09/09/2024
Data Release Frequency: Varies

FIN ASSURANCE 1: Financial Assurance Information Listing

A listing of financial assurance information for hazardous waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 12/31/2023
Date Data Arrived at EDR: 01/04/2024
Date Made Active in Reports: 03/26/2024
Number of Days to Update: 82

Source: Department of Public Health & Environment
Telephone: 303-692-3350
Last EDR Contact: 04/05/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Varies

FIN ASSURANCE 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 12/31/2023
Date Data Arrived at EDR: 01/04/2024
Date Made Active in Reports: 03/26/2024
Number of Days to Update: 82

Source: Department of Public Health & Environment
Telephone: 303-392-3350
Last EDR Contact: 04/05/2024
Next Scheduled EDR Contact: 07/08/2024
Data Release Frequency: Quarterly

LEAD: Lead Abatement Permit Listing

Lead inspection

Date of Government Version: 11/07/2019
Date Data Arrived at EDR: 11/14/2019
Date Made Active in Reports: 01/21/2020
Number of Days to Update: 68

Source: Department of Publich Health & Environment
Telephone: 303-692-2000
Last EDR Contact: 04/25/2024
Next Scheduled EDR Contact: 08/12/2024
Data Release Frequency: Varies

MINES: Permitted Mines Listing

This dataset represents permitted mines in the State of Colorado

Date of Government Version: 01/08/2024
Date Data Arrived at EDR: 01/10/2024
Date Made Active in Reports: 04/02/2024
Number of Days to Update: 83

Source: Division of Reclamation Mining and safety
Telephone: 303-866-3567
Last EDR Contact: 04/09/2024
Next Scheduled EDR Contact: 07/22/2024
Data Release Frequency: Semi-Annually

NPDES: Permitted Facility Listing

A listing of permitted facilities from the Water Quality Control Division.

Date of Government Version: 12/01/2023
Date Data Arrived at EDR: 01/23/2024
Date Made Active in Reports: 04/08/2024
Number of Days to Update: 76

Source: Department of Public Health & Environment
Telephone: 303-692-3611
Last EDR Contact: 04/23/2024
Next Scheduled EDR Contact: 08/05/2024
Data Release Frequency: Varies

UIC: Underground Injection Control

A list of underground injection wells and their locations.

Date of Government Version: 02/05/2024
Date Data Arrived at EDR: 02/06/2024
Date Made Active in Reports: 02/27/2024
Number of Days to Update: 21

Source: Oil & Gas Conservation Commission
Telephone: 303-894-2100
Last EDR Contact: 05/02/2024
Next Scheduled EDR Contact: 08/19/2024
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

There were nine uranium mill tailings sites in Colorado designated for cleanup under the federal Uranium Mill Tailings Radiation Control Act. These nine sites, know commonly as UMTRA sites, were remediated jointly by the State of Colorado and the U.S. Department of Energy during the late 1980's and early 1990's. Mill tailings were removed from 8 of the mill sites and relocated in engineered disposal cells. A disposal cell is designed to encapsulate the material, reduce radon emanation, and prevent the movement of water through the material. At one site, Maybell, CO, the tailings were stabilized in-place at the mill site. After remediation of the tailings was completed, the State and DOE began to investigate the residual impacts to groundwater at the mill sites. The groundwater phase of the UMTRA program is on-going.

Date of Government Version: 11/14/2022
Date Data Arrived at EDR: 02/14/2023
Date Made Active in Reports: 02/15/2023
Number of Days to Update: 1

Source: Department of Public Health & Environment
Telephone: 970-248-7164
Last EDR Contact: 05/16/2024
Next Scheduled EDR Contact: 08/26/2024
Data Release Frequency: Varies

UST FINDER RELEASE: UST Finder Releases Database

US EPA's UST Finder data is a national composite of leaking underground storage tanks. This data contains information about, and locations of, leaking underground storage tanks. Data was collected from state sources and standardized into a national profile by EPA's Office of Underground Storage Tanks, Office of Research and Development, and the Association of State and Territorial Solid Waste Management Officials.

Date of Government Version: 06/08/2023
Date Data Arrived at EDR: 10/31/2023
Date Made Active in Reports: 01/18/2024
Number of Days to Update: 79

Source: Environmental Protecton Agency
Telephone: 202-564-0394
Last EDR Contact: 05/08/2024
Next Scheduled EDR Contact: 08/19/2024
Data Release Frequency: Semi-Annually

UST FINDER: UST Finder Database

EPA developed UST Finder, a web map application containing a comprehensive, state-sourced national map of underground storage tank (UST) and leaking UST (LUST) data. It provides the attributes and locations of active and closed USTs, UST facilities, and LUST sites from states and from Tribal lands and US territories . UST Finder contains information about proximity of UST facilities and LUST sites to: surface and groundwater public drinking water protection areas; estimated number of private domestic wells and number of people living nearby; and flooding and wildfires.

Date of Government Version: 06/08/2023
Date Data Arrived at EDR: 10/04/2023
Date Made Active in Reports: 01/18/2024
Number of Days to Update: 106

Source: Environmental Protection Agency
Telephone: 202-564-0394
Last EDR Contact: 05/08/2024
Next Scheduled EDR Contact: 08/19/2024
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Public Health & Environment in Colorado.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/15/2014
Number of Days to Update: 198

Source: Department of Public Health & Environment
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Labor and Employment, Oil Inspection Section in Colorado.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/02/2014
Number of Days to Update: 185

Source: Department of Labor and Employment, Oil Inspection Section
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ADAMS COUNTY:

LF ADAMS: Summary Report on Methane Gas Hazards and Surveys Conducted on Domestic and Demolition Landfills in Adams County

As of May 8, 1978, all known landfills or dumping sites in the Adams County area have been surveyed.

Date of Government Version: 05/08/1978
Date Data Arrived at EDR: 02/16/1995
Date Made Active in Reports: 04/04/1995
Number of Days to Update: 47

Source: Tri-County Health Department
Telephone: 303-761-1340
Last EDR Contact: 01/27/1995
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

ARAPAHOE COUNTY:

LF ARAPAHOE: A Survey of Landfills in Arapahoe County

A survey of Arapahoe County was conducted from August through November, 1977, of all open and closed landfills and dumpsites in the county. Each of the sites found was classified as domestic or demolition.

Date of Government Version: 12/31/1978
Date Data Arrived at EDR: 02/16/1995
Date Made Active in Reports: 04/04/1995
Number of Days to Update: 47

Source: Tri-County Health Department
Telephone: 303-761-1340
Last EDR Contact: 01/27/1995
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

BOULDER COUNTY:

LF BOULDER: Old Landfill Sites

Landfill sites in Boulder county.

Date of Government Version: 05/01/1986
Date Data Arrived at EDR: 11/14/1995
Date Made Active in Reports: 12/07/1995
Number of Days to Update: 23

Source: Boulder County Health Department
Telephone: 303-441-1182
Last EDR Contact: 01/30/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DENVER COUNTY:

LF DENVER: Landfills in Denver County

Landfill sites in the city and county of Denver.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 06/23/2017
Date Made Active in Reports: 09/06/2017
Number of Days to Update: 75

Source: City and County of Denver
Telephone: 720-913-4839
Last EDR Contact: 03/12/2024
Next Scheduled EDR Contact: 06/24/2024
Data Release Frequency: No Update Planned

LF DENVER CO METHANE: Investigation of Methane Gas Hazards

The purpose of this study was to assess the actual and potential generation, migration, explosive and related problem associated with specified old landfills, and to identify existing and potential problems, suggested strategies to prevent, abate, and control such problems and recommend investigative and monitoring functions as may be deemed necessary. Eight sites determined to be priorities due to population density and potential hazards to population and property were selected by the Colorado Department of Health.

Date of Government Version: 01/01/1981
Date Data Arrived at EDR: 01/29/2013
Date Made Active in Reports: 03/08/2013
Number of Days to Update: 38

Source: City and County of Denver Department of Environmental Health
Telephone: 720-865-5522
Last EDR Contact: 01/15/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DOUGLAS COUNTY:

LF DOUGLAS: Douglas County Landfill Key

Landfill sites in Douglas county.

Date of Government Version: 06/12/1991
Date Data Arrived at EDR: 02/16/1995
Date Made Active in Reports: 04/04/1995
Number of Days to Update: 47

Source: Tri-County Health Department
Telephone: 303-761-1340
Last EDR Contact: 01/27/1995
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

PUEBLO COUNTY:

LF PUEBLO: Designated Disposal & Landfill Sites
Only inert materials. Asphalt, cement, dirt & rock unless otherwise specified. These sites are no longer active.

Date of Government Version: 04/30/1990
Date Data Arrived at EDR: 11/16/1995
Date Made Active in Reports: 12/07/1995
Number of Days to Update: 21

Source: Pueblo City-County Health Department
Telephone: 719-583-4300
Last EDR Contact: 11/13/1995
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

TRI COUNTY:

LF TRI: Tri-County Area Solid Waste Facilities List (Adams, Arapahoe and Douglas Counties)
Closed Domestic Landfills in Adams County, Closed Domestic Landfills in Arapahoe County, Closed Demolition Landfills in Arapahoe County, Closed Domestic Landfills in Douglas County.

Date of Government Version: 10/15/1983
Date Data Arrived at EDR: 02/16/1995
Date Made Active in Reports: 04/04/1995
Number of Days to Update: 47

Source: Tri-County Health Department
Telephone: 303-761-1340
Last EDR Contact: 01/27/1995
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

WELD COUNTY:

LF WELD: Solid Waste Facilities in Weld County
Solid Waste Facilities in Weld County.

Date of Government Version: 01/16/2018
Date Data Arrived at EDR: 02/09/2018
Date Made Active in Reports: 02/23/2018
Number of Days to Update: 14

Source: Weld County Department of Public Health
Telephone: 970-304-6415
Last EDR Contact: 05/02/2024
Next Scheduled EDR Contact: 08/12/2024
Data Release Frequency: No Update Planned

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 02/05/2024
Date Data Arrived at EDR: 02/06/2024
Date Made Active in Reports: 04/25/2024
Number of Days to Update: 79

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/07/2024
Next Scheduled EDR Contact: 08/19/2024
Data Release Frequency: No Update Planned

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 11/30/2023
Date Made Active in Reports: 12/01/2023
Number of Days to Update: 1

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 04/25/2024
Next Scheduled EDR Contact: 08/05/2024
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/08/2024
Next Scheduled EDR Contact: 07/22/2024
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/01/2024
Next Scheduled EDR Contact: 06/17/2024
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Daycare Centers: Daycare Listing
Source: Department of Human Services
Telephone: 303-866-5958

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Riparian Vegetation Data
Source: Division of Wildlife
Telephone: 970-416-3360

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

GLENWOOD SPRINGS MUNICIPAL OPERATIONS CENTER
2302 WULFSOHN RD
GLENWOOD SPRINGS, CO 81601

TARGET PROPERTY COORDINATES

Latitude (North):	39.557838 - 39° 33' 28.22''
Longitude (West):	107.354464 - 107° 21' 16.07''
Universal Tranverse Mercator:	Zone 13
UTM X (Meters):	297717.2
UTM Y (Meters):	4381122.0
Elevation:	5793 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	50011540 GLENWOOD SPRINGS, CO
Version Date:	2022
West Map:	50011641 STORM KING MOUNTAIN, CO
Version Date:	2022

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

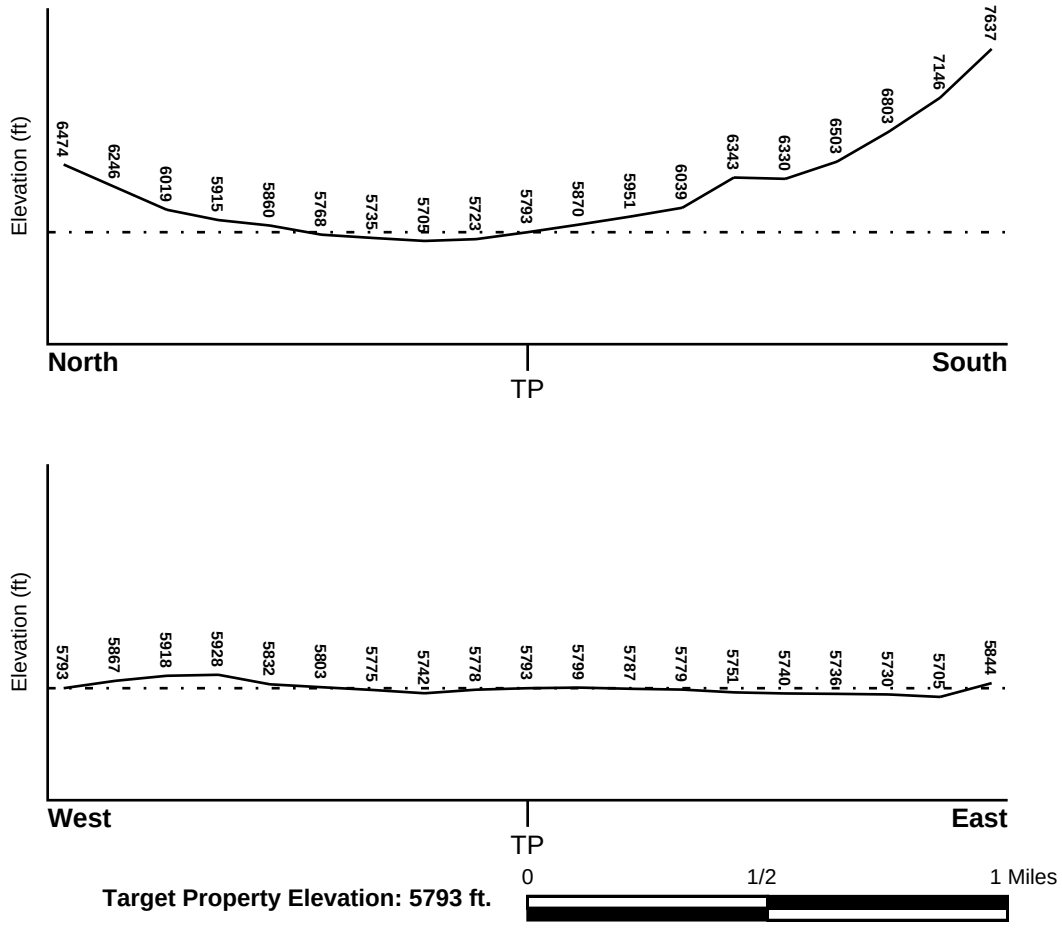
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General North

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
Not Reported	

Additional Panels in search area:	FEMA Source Type
Not Reported	

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NOT AVAILABLE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

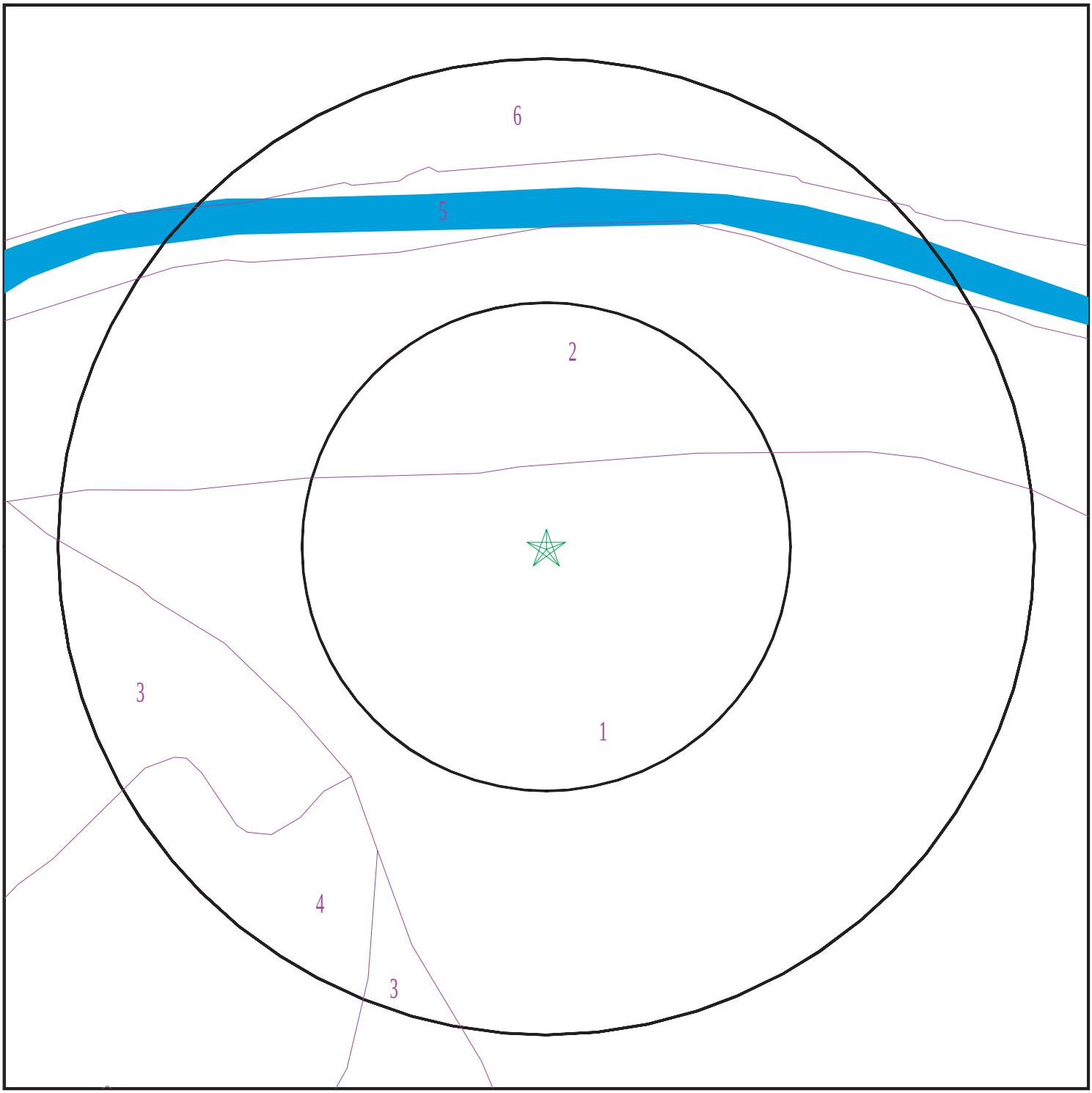
Era:	Paleozoic
System:	Ordovician
Series:	Lower Paleozoic
Code:	lPz *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 07666145.2r



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Glenwood Springs Municipal Operations Center	CLIENT:	ERO Resources
ADDRESS:	2302 Wulfsohn Rd Glenwood Springs CO 81601	CONTACT:	Jacob King
LAT/LONG:	39.557838 / 107.354464	INQUIRY #:	07666145.2r
		DATE:	May 30, 2024 11:06 am

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Chilton

Soil Surface Texture: channery loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	12 inches	channery loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 42.34 Min: 14.11	Max: 8.4 Min: 7.9
2	12 inches	22 inches	very channery sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 42.34 Min: 14.11	Max: 8.4 Min: 7.9
3	22 inches	59 inches	very cobbly sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 42.34 Min: 14.11	Max: 8.4 Min: 7.9

Soil Map ID: 2

Soil Component Name: Begay

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42.34 Min: 14.11	Max: 8.4 Min: 7.9
2	9 inches	59 inches	stony sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42.34 Min: 14.11	Max: 8.4 Min: 7.9

Soil Map ID: 3

Soil Component Name: Arle

Soil Surface Texture: very stony loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 38 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	very stony loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: 14.11 Min: 0.42	Max: Min:
2	9 inches	31 inches	very stony sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: 14.11 Min: 0.42	Max: Min:
3	31 inches	35 inches	weathered bedrock	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: 14.11 Min: 0.42	Max: Min:

Soil Map ID: 4

Soil Component Name: Torriorthents

Soil Surface Texture: variable

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 43 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	3 inches	variable	Not reported	Not reported	Max: 1.41 Min: 0.42	Max: Min:
2	3 inches	29 inches	fine sandy loam	Not reported	Not reported	Max: 1.41 Min: 0.42	Max: Min:
3	29 inches	33 inches	unweathered bedrock	Not reported	Not reported	Max: 1.41 Min: 0.42	Max: Min:

Soil Map ID: 5

Soil Component Name: Water

Soil Surface Texture: variable

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class:
Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

Soil Map ID: 6

Soil Component Name: Azeltine

Soil Surface Texture: gravelly sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	gravelly sandy loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILIS, Gravels, Clean Gravels, Well-graded gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 705 Min: 141.14	Max: 8.4 Min: 7.4
2	18 inches	59 inches	extremely gravelly sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILIS, Gravels, Clean Gravels, Well-graded gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 705 Min: 141.14	Max: 8.4 Min: 7.4

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	0.125
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	0.000

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

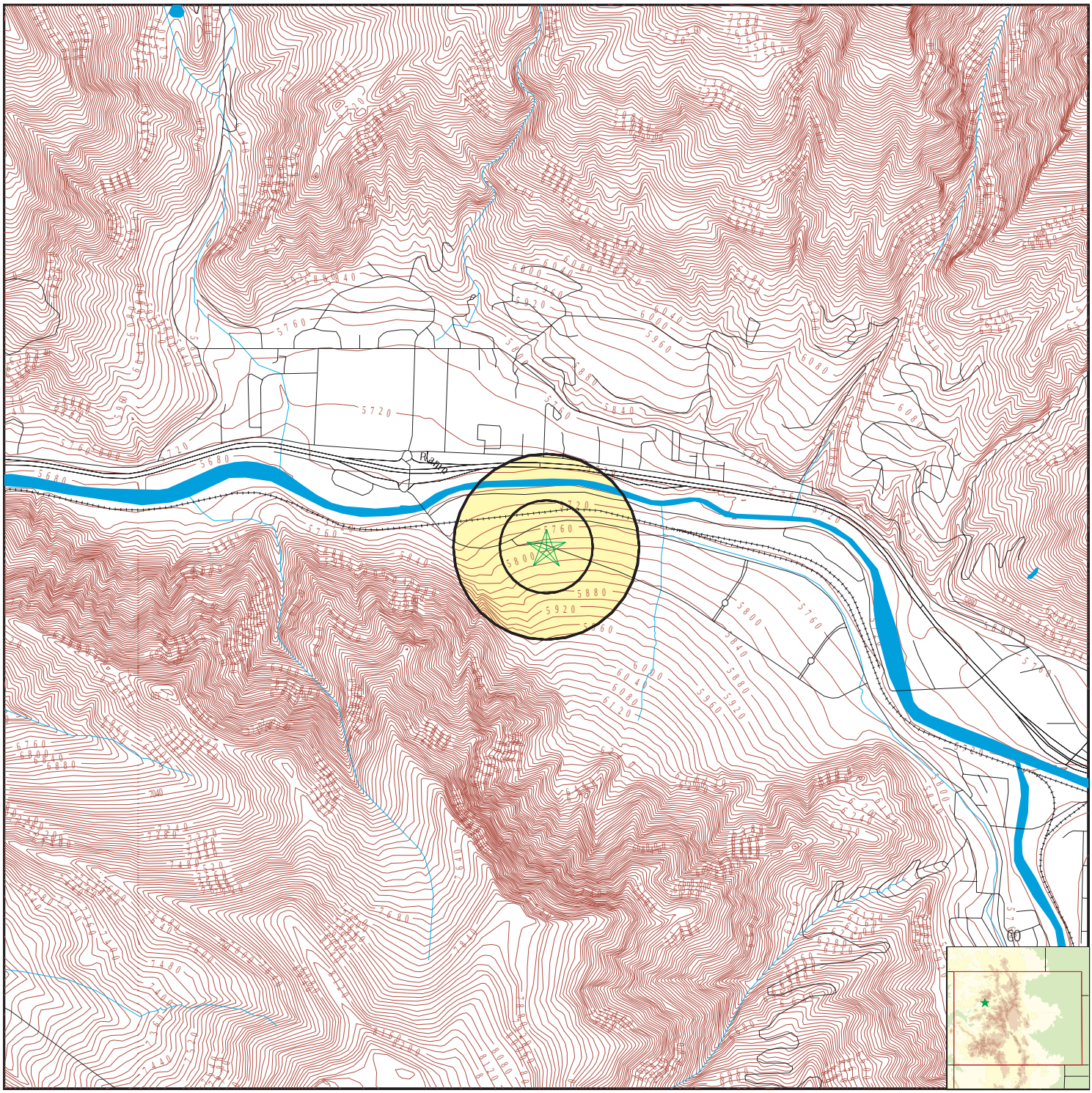
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 07666145.2r



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- Oil, gas or related wells

SITE NAME:	Glenwood Springs Municipal Operations Center	CLIENT:	ERO Resources
ADDRESS:	2302 Wulfsohn Rd Glenwood Springs CO 81601	CONTACT:	Jacob King
LAT/LONG:	39.557838 / 107.354464	INQUIRY #:	07666145.2r
		DATE:	May 30, 2024 11:06 am

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CO Radon

Radon Test Results

Zip	Total Sites	Avg	% sites<=4 pCi/L	% sites>4&<10 pCi/L	% sites>=10&<20 pCi/L	% sites>20 pCi/L
81601	16	5.04	56.25	37.50	0.00	6.25

Federal EPA Radon Zone for GARFIELD County: 1

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 81601

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	Not Reported	Not Reported	Not Reported	Not Reported
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	7.400 pCi/L	0%	100%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Riparian Vegetation Data
Source: Division of Wildlife
Telephone: 970-416-3360

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Colorado GIS Well Database
Source: Office of State Engineer, Division of Water Resources
Telephone: 303-866-3581
The GIS Well database includes all wells that the Division of Water Resources permits.

OTHER STATE DATABASE INFORMATION

Oil and Gas Well Locations
Source: Department of Natural Resources
Telephone: 303-894-2100

RADON

State Database: CO Radon
Source: Department of Public Health & Environment
Telephone: 303-692-3090
Radon Study in Colorado

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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Glenwood Springs Municipal Operations Center

2302 Wulfsohn Rd

Glenwood Springs, CO 81601

Inquiry Number: 7666145.5

May 31, 2024

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

05/31/24

Site Name:

Glenwood Springs Municipal O
2302 Wulfsohn Rd
Glenwood Springs, CO 81601
EDR Inquiry # 7666145.5

Client Name:

ERO Resources
1626 Cole Boulevard, Suite 100
Lakewood, CO 80401
Contact: Jacob King

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	*Scale*	*Details*	*Source*
2019	1"=500'	Flight Year: 2019	USDA/NAIP
2015	1"=500'	Flight Year: 2015	USDA/NAIP
2011	1"=500'	Flight Year: 2011	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
1999	1"=500'	Flight Date: September 07, 1999	USGS
1993	1"=500'	Acquisition Date: September 03, 1993	USGS/DOQQ
1989	1"=500'	Flight Date: July 19, 1989	USGS
1983	1"=500'	Flight Date: September 10, 1983	USDA
1979	1"=500'	Flight Date: September 07, 1979	USGS
1960	1"=500'	Flight Date: August 18, 1960	USGS
1955	1"=500'	Flight Date: October 16, 1955	USGS

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EDR

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YEAR: 2015
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EDR

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EDR

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YEAR: 1999

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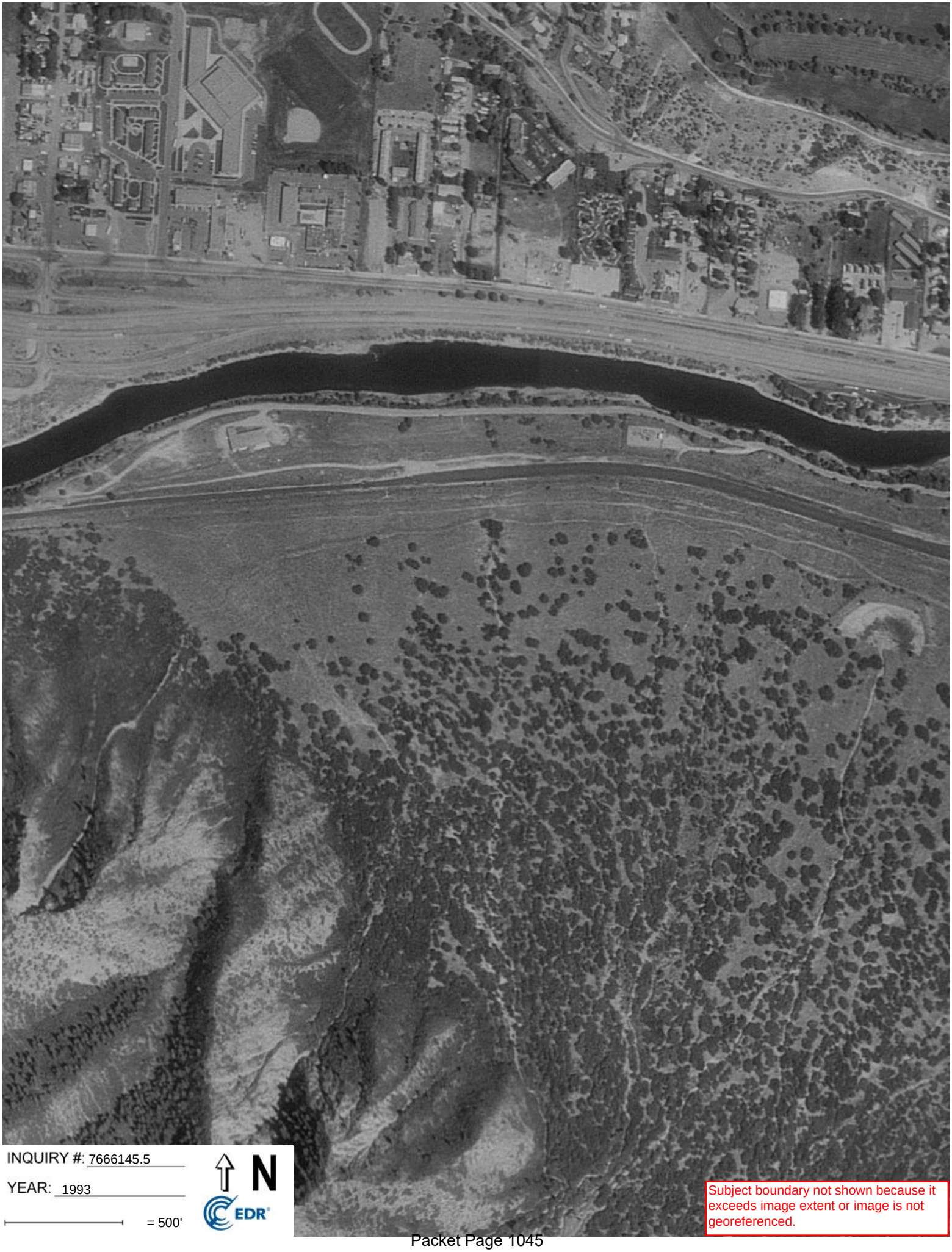

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EDR

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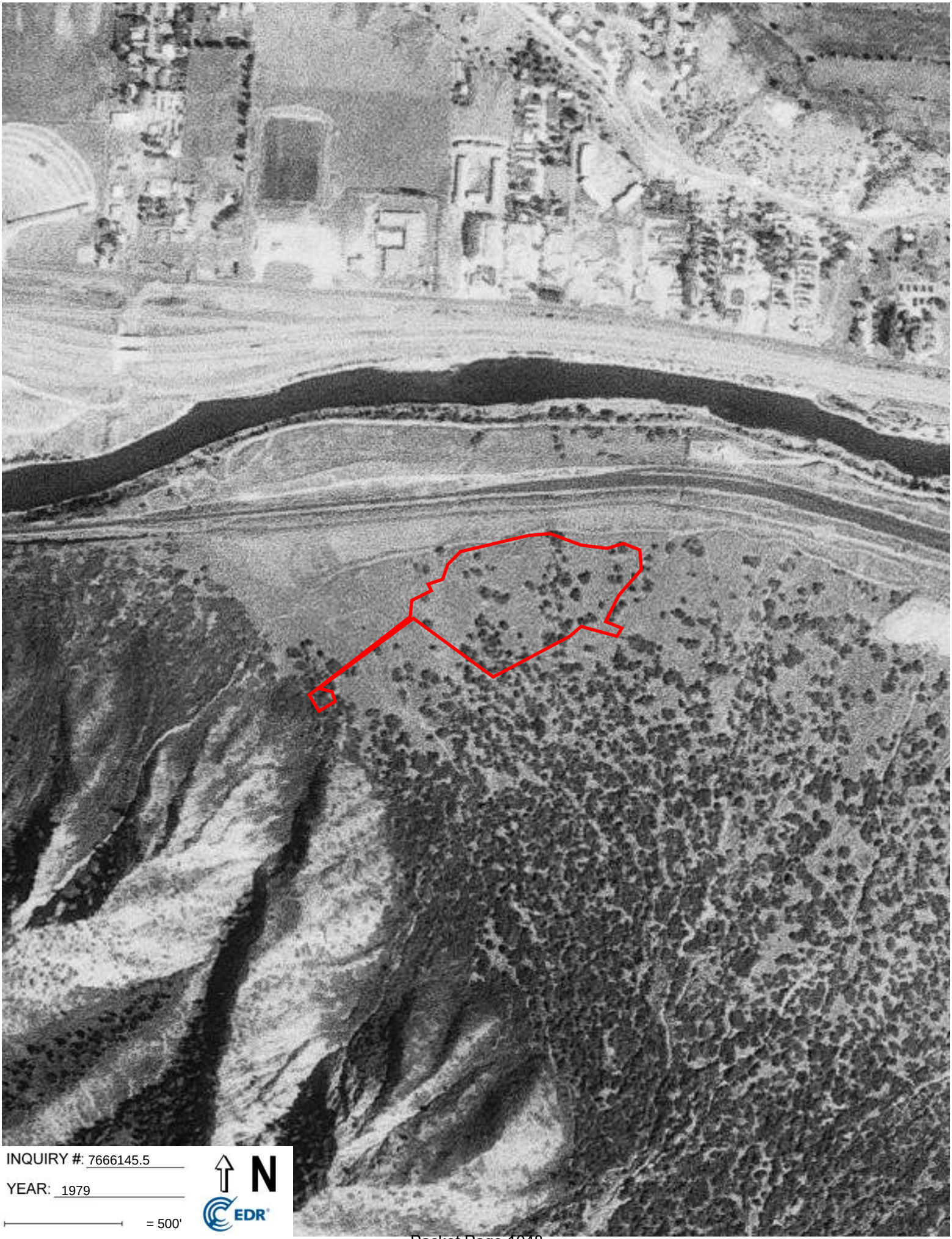

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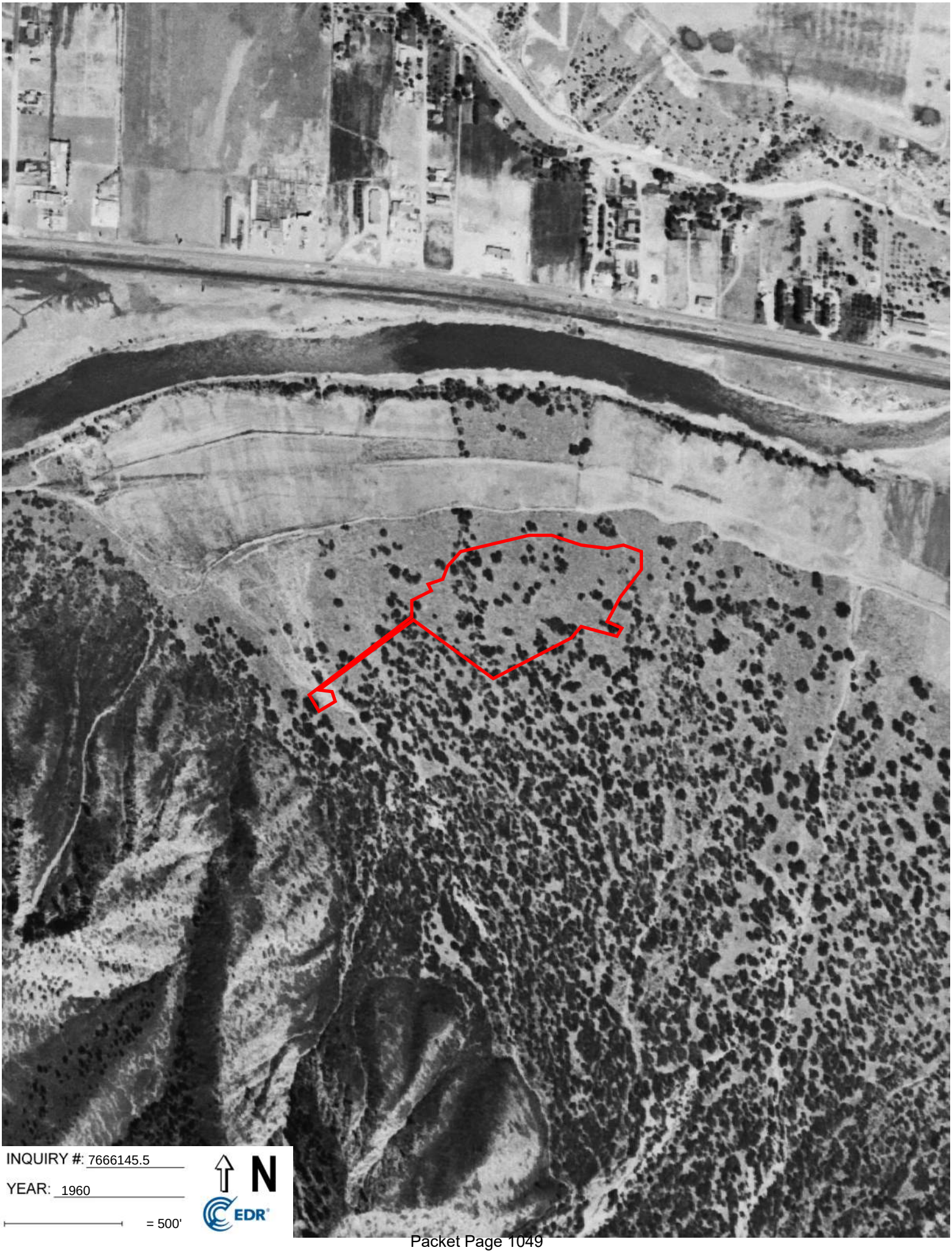
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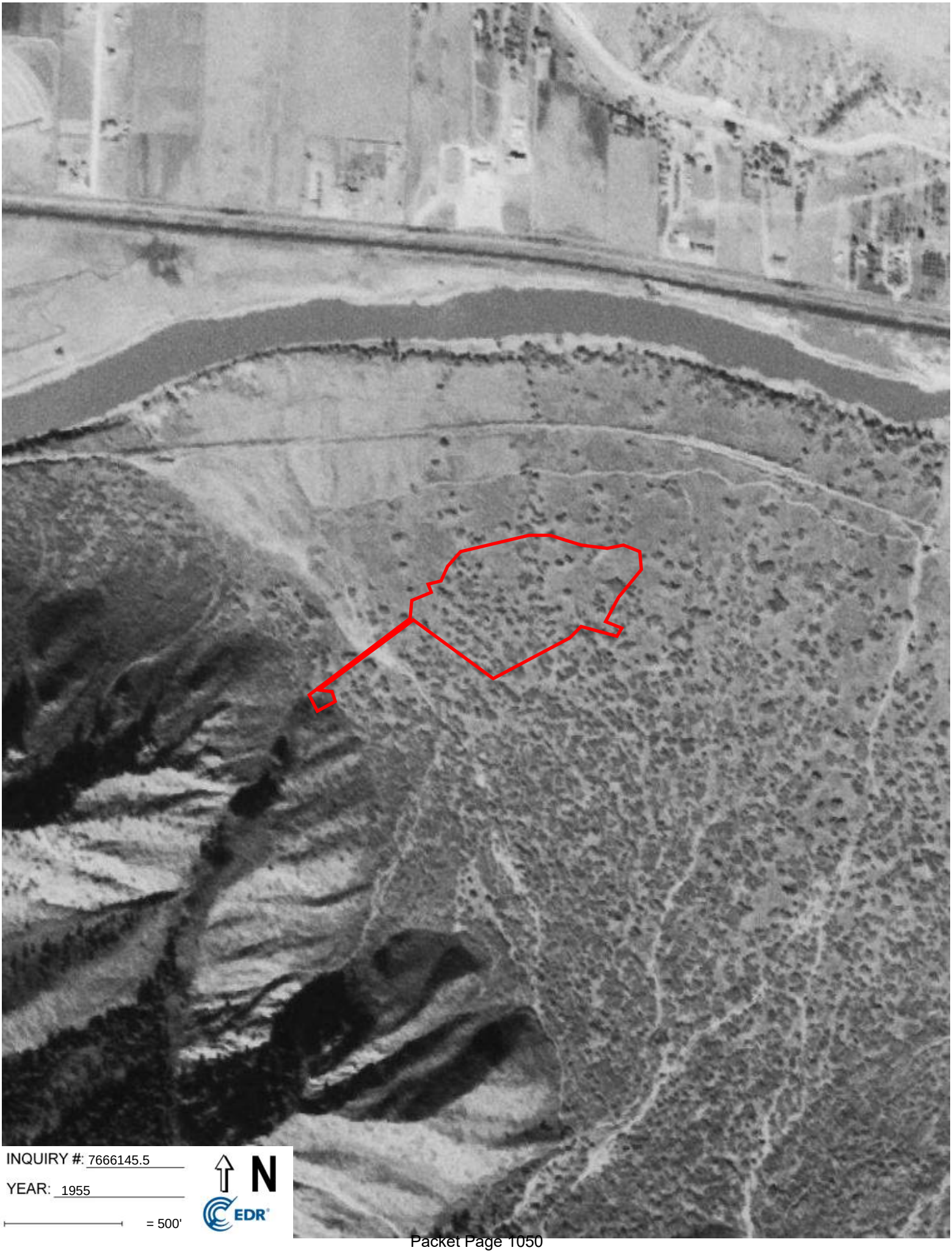
EDR



INQUIRY #: 7666145.5

YEAR: 1955

= 500'

N

EDR

ROARING FORK TRANSPORTATION AUTHORITY

Glenwood Maintenance Facility Expansion
W.G. Transit Center & Administration Offices
Phase 6 – Phase 8
Glenwood Springs, Colorado

100% Schematic Design Narrative

Prepared by SEH and their Design Consultants

SEH

General Information

A. Project Description

1. Nestled in the scenic landscapes of Glenwood Springs, Colorado, the Roaring Fork Transportation Authority (RFTA) Transit Center, Administration Building and Storage Building aim to provide a productive workplace environment and unparalleled transportation services to the vibrant community of Glenwood Springs.

B. Scope of Work

1. The project spans across three distinct phases – Phase 6A, Phase 6B, and Phase 8

Phase 6A – Transit Center

A. Phase 6A will be a single-level building occupying 3,093 gross square feet designed to function as a Transportation Hub offering a welcoming and comfortable environment for its users. The station houses a spacious lobby/waiting area and ticketing area where passengers can purchase tickets for their journeys. Furthermore, the station features essential support spaces, including a bus driver lounge area, and a kitchenette, catering to the diverse needs of both passengers and staff. Complementing its functional interior, the exterior of the building is adorned with carefully landscaped surroundings, complete with benches to accommodate waiting passengers and facilitate efficient bus activities.

Phase 6B – W.G. Administration Building

A. Phase 6B consists of the development of a 22,956 gross square feet three-story building designed not only to cater to RFTA's existing administrative needs but also anticipate future growth by prioritizing flexibility and efficiency. This facility will function as the center for RFTA's administrative functions, housing offices, meeting rooms, and support spaces tailored to various departments. From administration and finance to procurement and marketing, the complex accommodates the diverse needs of RFTA's administrative activities. In addition, the design also incorporates multiple coffee station, a small workout space and multiple exterior spaces, including a Roof Balcony on the third floor, for the

enjoyment of employees during their breaks. Furthermore, this phase encompasses the development of the parking area, landscaping, and a pedestrian bridge, designed to provide easy access from Wulfsohn Rd.

Phase 8 – Storage Building

A. In Phase 8, RFTA addresses the crucial need for storage infrastructure to support its day-to-day activities. This one-story storage building is purposefully designed to accommodate the storage of materials and resources essential for RFTA's operations.

B. Our design philosophy for this project aligns closely with the RFTA WG Transit Center and Administration Building Program of Requirements, with a focus on addressing specific operational, administrative, expansion, environmental, and safety concerns.

C. Safety stands as the highest priority, considering the inherent risks associated with coordinating pedestrians, buses, and Wulfsohn Road traffic on the existing site. Furthermore, our commitment to sustainable practices resonates with the RFTA's dedication to the environment. While the project aims to implement efficient energy strategies where feasible, it will not pursue green building endorsements.

D. Embracing the architectural and aesthetic essence of western Colorado and the surrounding community, our design ensures alignment with local planning regulations. In addition our design also ensures compliance with all regulatory provisions and aims to meet or exceed all requirements while serving the best interests of RFTA and the community.

Landscape Design

Phase 6A – Transit Center

A. The landscape for the transit station is designed to provide visual interest, guide wayfinding, and provide shelter and gathering space.

B. Raised planters located throughout the platform provide a purposeful circulation experience, guiding transit users towards bus queuing zones and to the shelter of the station building. The planters are organically shaped and are envisioned to be tilted and varying in height, mimicking the dynamic flow of water through local riverways. This sense of movement also evokes the eddy and flow of people traveling through the station and up and down valley.

C. While the planters provide a physical clue for the flow of pedestrian traffic, bench seating and two canopy shelters provide places for rest, gathering, and protection from the elements.

D. The benches are shown as separate from the planters, which allows for flexibility in form and materiality of the planters as they do not need to necessarily function as seating. Benches in the form of site furnishings also allows the seating to more easily work with the slope of the platform. Benches with and without backrests are shown on the plan. An off-the-shelf product manufactured in both backless and with backrests will help unify the overall aesthetic and also keep maintenance of site furnishings straightforward.

E. Two overhead canopies are provided; one is located on the eastern side of the platform and one is located on the western side. These canopies are associated with seating, but are also large enough to provide standing room as well. The roof forms of the canopies would echo the angle of the Station building architecture, but in shed form.

F. There is an enclosed bike storage building shown to the west of the Station building. This building would include internal, secured bike storage, with the roof extending past the footprint on the long axis to create exterior covered bike parking.

G. Trees are located to provide shade, reinforce wayfinding, and provide visual interest. Shade trees are located in the platform hardscape, while smaller ornamental trees are located in the planters. Herbaceous plantings are for the most part contained within the planters. The plant palette for the platform emphasizes drought tolerant woody and herbaceous plant material, with an emphasis on low maintenance groundcovers, shrubs, and grasses.

H. The landscape downhill from the transit center, associated with the surface parking and to the west and north of the platform, is envisioned as an extension of the existing native plant palette at the Wulfsohn Road-Midland Avenue intersection. This palette will create a seamless landscape aesthetic when viewed from Midland Avenue or from the west.

Phase 6B – W.G. Administration Building

I. The landscape for the administration building is designed to meet the POR stated program needs and create a unique identity with some echoing of elements found at the transit center.

J. The design provides a strong emphasis of the building entry by locating planters to direct views towards the front doors and reinforce the angle of the architectural canopy and vestibule. The planters are visible when vehicles enter the parking lot, providing an early indication that this is an important location.

K. At the rear of the building, an outdoor space with patio is shown with casual seating, a picknick table with overhead canopy, trees, and an artificial turf area. The patio is approximately 80’ x 25’ feet and 2000 square feet in area. This outdoor space can accommodate individual employee breaks or larger groups spilling out from the multi-purpose room. Amphitheater style steps are shown on the south west side of the patio near the covered picnic table. This area can be used for outdoor classroom space or informal gatherings.

L. The patio steps down to the native landscape where a soft-surface path creates an informal circuit with benches oriented towards the western view. This is a place where employees can have a private moment, take a phone call, or get up from their desks and move around.

Phase 8 – Storage Building

A. There is no ornamental landscaping associated with the storage building. Where site disturbance occurs, the revegetation shall consist of native plant material that will visually blend with the existing sagebrush meadow.

Architectural Design

A. Our design philosophy for this project aligns closely with the RFTA WG Transit Center and Administration Building Program of Requirements, with a focus on addressing specific operational, administrative, expansion, environmental, and safety concerns.

B. Safety stands as the highest priority, considering the inherent risks associated with coordinating pedestrians, buses, and Wulfsohn Road traffic on the existing site. Furthermore, our commitment to sustainable practices resonates with the RFTA's dedication to the environment. While the project aims to implement efficient energy strategies where feasible, it will not pursue green building endorsements.

C. Embracing the architectural and aesthetic essence of western Colorado and the surrounding community, our design ensures alignment with local planning regulations. In addition our

design also ensures compliance with all regulatory provisions and aims to meet or exceed all requirements while serving the best interests of RFTA and the community.

D. Building Program Requirements
1. Refer to Appendix for updated Building Program Requirements.

Phase 6A – Transit Station

A. The Project consists of one new BRT Station in Glenwood Springs, CO. The BRT Station will be one-story and include spaces which support buses on routes, customer service, storage, and driver support.

1.	Area:	appx. 3,093 gsf
2.	Stories/Height:	1 Story / 21-8”
3.	Occupancy:	Business (per IBC 2021)
4.	Construction Type:	Type II-B (per IBC 2021)
5.	Sprinklers:	NFPA 13 (full)
6.	Frontage:	Min 30 feet on all sides

Phase 6B – Administration Building

B. The Project consists of one new administration building in Glenwood Springs, CO. The administration building will be three-story and include spaces which support the Owner’s administration and planning staff, facility management, and maintenance staff and operations.

1.	Area:	appx. 31,383 gsf
2.	Stories/Height:	3 Stories / 41’-10”
3.	Occupancy:	Business (per IBC 2021)
4.	Construction Type:	Type II-B (per IBC 2021)
5.	Sprinklers:	NFPA 13 (full)
6.	Frontage:	Min 30 feet on all sides

Phase 8 – Storage Building

C. The Project consists of one new maintenance building in Glenwood Springs, CO. The maintenance building will be one-story and include spaces which support the Owner’s vehicle fleet maintenance operations.

1.	Area:	appx. 3,640 gsf
2.	Stories/Height:	1/20 feet
3.	Occupancy:	Storage, Business (per NFPA 5000)
4.	Construction Type:	Type II-000 (per NFPA 5000)
5.	Sprinklers:	NFPA 13 (full)
6.	Frontage:	Min 30 feet on three sides

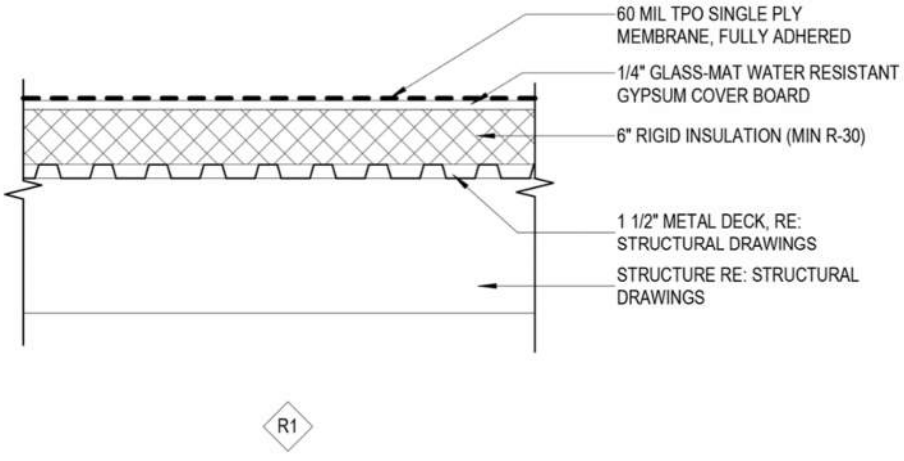
D. Exterior Wall Systems
1. Phase 6A – Transit Station
   i) Metal Stud Wall w/ Stone Venner or Hardi Plan
2. Phase 6B – Administration Building

i) Precast Concrete wall with Stone / Brick Venner

3. Phase 8 – Storage Building
   i) CIP Concrete with CMU Venner

E. Roofing Systems

1. There are two main types of roof systems: low-slope and steep-slope roofs. Low-slope roofs have a slope between 1/4 inch per foot and 3 in 12, while steep-slope roofs have a pitch greater than 3 in 12.
2. Low-Slope Roof Systems
   i) Include membrane roofs that must meet specific conditions to ensure adequate performance. Firstly, the minimum slope for low-slope roofs must be 1/4 inch per foot. Secondly, all low-slope roofs must be cool roofs to improve energy performance. Cover boards must also be provided above the insulation for all low-slope roofs.
   ii) Additionally, all membrane roofs must be fully adhered, and ideally, should slope toward the perimeter of the building to prevent water from ponding on the roof. When interior drains are used, it's important to consider eliminating potential water ponding and debris collection at the drain to maintain the roof's integrity. By adhering to these approved low-slope roof conditions, the design will ensure that the roofing systems are efficient, durable, and reliable.
   iii) Roof design is intended to provide positive drainage.
   iv) The minimum acceptable roof slope is 1/4 inch per foot
   v) Roof drains are located along the roof perimeter
   vi) Each roof drain shall be accompanied by an overflow drain.
   vii) Membrane shall be 60 mills TPO single ply membrane (type III, reinforced,) fully adhered, high reflectivity
   viii) The roof waterproofing membrane system shall be highly resistive to physical damage.



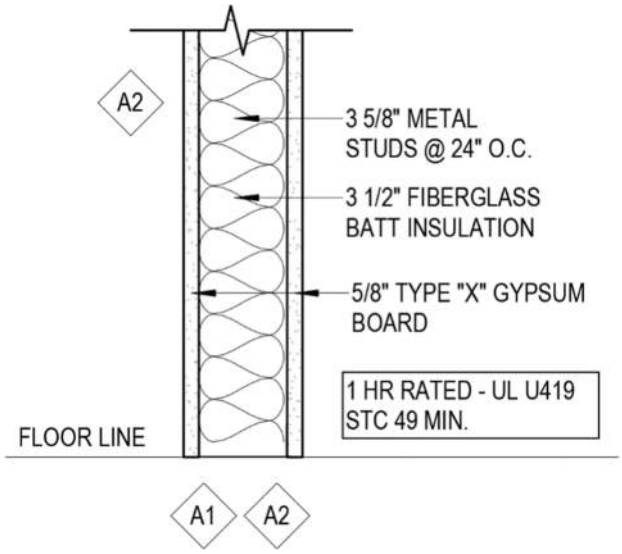
3. Roof accessories: roof hatches to access roof levels
   i) Roof ladders where required to access all roof levels not accessibly by hatch

ii) Walkway pads at all hatches, ladders and equipment requiring maintenance and other high traffic areas

4. Canopies and Shade Structures
   i) Metal clad canopies are provided at entry locations
5. Steep-Slope Roof Systems
   i) The slope of the roof must be at least 3 units vertical in 12 units horizontal. Additionally, in colder climates, ice and water shield must be installed on steep-slope roofs to prevent damage caused by ice dams.
   ii) Roof drains are located along the roof perimeter
   iii) Each roof drain shall be accompanied by an overflow drain.
   iv) Membrane shall be 60 mills TPO single ply membrane (type III, reinforced,) fully adhered, high reflectivity
   v) The roof waterproofing membrane system shall be highly resistive to physical damage.
6. Roof Flashing
   i) Copings and Flashings
      (1) Prefinished metal to match building finishes

F. Interior Partitions

1. Interior Partitions shall be 5/8” minimum Gypsum Board over Metal stud framing at 16” on center.
2. Interior Partition Selection Criteria
   i) At areas where sound transmission is a concern (offices, or conference spaces) sound attenuating batt insulation and acoustic sealant will be utilized.
   ii) Where greater sound isolation is required, improved sound walls will be implemented including sound attenuating batt insulation with multiple layers of gypsum board and resilient channels.
   iii) Sound walls shall use acoustical sealant, and penetrations shall be limited and staggered between stud spacing.
   iv) Acoustical separation requirements and acoustical ratings description:
      (1) 1hr rated – UL U419 – STC 40 min.
      (2) 2hr rated - UL U419 - STC 52 min.
3. Finishes
   i) Gypsum board: Type X, level-4 finish at exposed areas.
   ii) Wall finishes are selected based on their ability to withstand moderate to heavy abuse as ell as ability to be maintained by maintenance personnel.
   iii) Toilet Rooms: Restroom walls shall be porcelain or glazed tile from floor to a minimum of 6’-0” above finished floor. If tile is not taken to the ceiling, paint shall be epoxy. Shower wall shall be porcelain or glazed tile from floor to ceiling.



4. Design Flexibility
   i) Abuse resistant gypsum board will be applied depending on the nature of the space and may be single sided or on both sides where partitions separate similar activities.

G. Thermal and Moisture Protection

1. Exterior walls:
   i) 3 inch Continuous Polyisocyanurate Foam-Plastic Board Insulation (R: 6.8/inch) total R value of 20.4
   ii) Minimum R13 Glass-fiber blanket insulation
2. Roof:
   i) 5 inch Polyisocyanurate Foam-Plastic Board Insulation (R:6.8/inch) total r value of 34
3. Maintenance Structures:
   i) Exterior walls:
      (1) 3 inch Continuous Polyisocyanurate Foam-Plastic Board Insulation (R: 6.8/inch) total R value of 20.4
      (2) Minimum R13 Glass-fiber blanket cavity insulation
   ii) Roof:
      (1) 5 inch Polyisocyanurate Foam-Plastic Board Insulation (R:6.8/inch) total R value of 34
   iii) Breaks in the thermal barrier should be avoided whenever possible. The Designer of Record shall provide design and details that allow for continuous insulation for all building components.
   iv) All fiberglass insulation shall be formaldehyde free and conform to ASTM C665 Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
   v) Rigid insulation must conform to ASTM C578 Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
   vi) Air Barriers
   vii) Vapor Retarder

viii) Moisture Barrier
ix) Flashing

4. Exterior Windows
   i) 1-inch insulated units w/ low-e coating.
   ii) Tinting off the glazing shall be provided to reduce glare and heat gain.
   iii) Thermally broken aluminum frame construction
   iv) Commercial grade and vandal resistant hardware
5. Interior Windows
   i) Window units are provided to facilitate supervision between interior spaces.
   ii) Tempered at safety locations, heat-strengthened where required, and meeting requirements for fire-resistant glazing at rated locations.
   iii) 1” clear float glass panes
   iv) Steel hollow metal frames
6. Entry and Storefront Systems
   i) Heavy duty 4-1/2-inch thermally broken aluminum framing systems
   ii) 1-inch insulated glazing and low-E coating.
   iii) Glazing at ground doors and as specified in code shall be tempered safety glass
   iv) Stiles shall be at minimum 2” thick
   v) Center mullions provided at double entry doors

H. Door Systems

1. Steel Doors
   i) Interior steel doors shall meet the requirements of SDI-100 Grade II – Heavy Duty 1-3/4” thick; 18 gage faces, seamless. Interior steel doors over 36” wide shall meet the requirements of SDI-100 Grade III – Extra Heavy Duty 1-3/4” thick; 16 gage faces, seamless. Interior steel frames shall be minimum 16 gage steel (minimum 14 gage steel for openings over 36” wide). Provide galvanized doors and frames to ASTM A653/A653M Class 60 where humidity or wash-down operations are present.
   ii) All doors shall be sized to facilitate movement of equipment (new or replacement). All doors shall be a minimum of 3’-0” wide and 7’-0” high.
2. Wood Doors
   i) Wood doors may include vision panels and additional features without compromising performance. Doors may have power assist or electronic locking mechanisms. Fabrication standards must meet industry requirements, with hollow metal frames factory primed. Wood doors must use bonded structural composite core, AWI Premium Grade, with shop-finished hardwood veneer. Grade 1 heavy-duty mortise locks are required. Frames should be Level 3, 0.053-inch thick galvanized, with a lifetime warranty, STC 45, and a 15-minute forced entry rating. All doors must facilitate equipment movement, with a minimum width of 3 feet and height of 7 feet.
3. Frames
   i) Interior frames shall be fully welded hollow metal, 16 gauge, fully grouted at masonry and spot grouted at rated stud walls. Frames shall be fully prepped for hardware including 12 gauge reinforcing where applicable. Ratings and labels as required.
4. Access Doors
   i) Typical interior access doors shall be a minimum of 30” x 30” minimum and sized for equipment that the opening serves.
   ii) Frame: 16 gage steel, 1” wide flange; reinforce at strike.
   iii) Panel: 14 gage steel, sandwich type; reinforce at latch; baked enamel primer coat.

iv) Hardware: concealed, pin-type, 175˚ opening hinge; self-latching, lever-handle – operable from both sides; screwdriver operated, metal cam lock.

5. Hardware
   i) All door assemblies installed in the means of egress shall meet the requirements of the National Fire Protection Association (NFPA), 101 Life Safety Code.
   ii) All hardware to have a minimum 2-year warranty unless noted otherwise.
   iii) Door closers shall be LCN 4040-series closers with 10-year warranty.
   iv) Hinges shall be maintenance free with lifetime warranty.
   v) Exist devices shall be Von Duprin 99-series exit devices with 3-year warranty.
   vi) Surface flush bolts and floor mounted doorstops are not permitted.
   vii) Avoid overhead stops.
   viii) Provide drip edge, door bottom, astragal, gasketing as appropriate for the location and use.
   ix) All Hardware shall be satin chromium/stainless finish, dependent upon base metal:
      (1) BHMA Finish Standard #626 (US Standard Finish US26D)
      (2) BHMA Finish Standard #628 (US Standard Finish US28)
      (3) BHMA Finish Standard #652 (US Standard Finish US26D)
      (4) BHMA Finish Standard #630 (US Standard Finish US32D)

I. Signage Systems

1. Interior Signage: As required by code, all rooms will be identified at their respective entries with an accessible sign. Each room sign will include the room name and room number which correspond to the building plan and fire alarm system plans. The name and number designations will be shown both in contrasting text and accessible Braille lettering.
2. Attach signs to wall surfaces using mounting tape squares in each corner of the sign except at each top corner and one centered at bottom of sign for 6" x 6" units. Bathroom signs are to be 8” wide x 9” high All doors shall to be numbered with a sign on the upper frame of the door.
3. Locate surface-mounted signs on the wall adjacent to the latch side of the door (or the nearest adjacent wall) at 60" above finished floor from the centerline of the sign (any size) and out of the swing of the door. Mount signs with right edge 4" from inside face of the door jamb.
4. Exterior Building Signage: The building's design should allow space for the name on the front elevation. Individually cut or cast metal letters shall be provided.

J. Interiors

1. Finishes have been selected per the requirements stated in the RFTA WG Transit Center and Administration Building – Program of Requirements.
2. Ceilings
   i) Ceiling heights shall be a minimum of 9’-0” above finished floor.
3. Acoustical Ceilings:

Surface Texture:	Fine textures with perforations.
Acoustics Open Office:	NRC ≥ 0.85; CAC ≥ 35 Privacy Index ≥ 80% Sound Masking 45-48 dBA Reverberation Time ≥.8 sec

Acoustics Enclosed Office:	NRC ≥ 0.60; CAC ≥ 35 Privacy Index > 80% Sound Masking 40-42 dBA Reverberation Time 0.6 sec,
Durability:	Impact Resistance Scratch Resistance Moisture resistance.
Maintenance:	Cleanable,
Warranty:	30 Year Systems Warranty
Environmental:	Total Recycled Content >20% Recycled in a closed loop process back to Manufacturer USDA Certified Bio-Preferred Light Reflectance >85%, CDPH/EHLP/V 1.1 2010 Product EPD Available Safety Data Sheet 10,000 ppm.

i) Ceiling tiles below service items shall be uncut, easily removed, and shall be free of devices and fixtures.

4. Gypsum Ceilings:
   i) Gypsum ceilings and soffits shall be painted with flat paint finish except as noted. Restrooms, showers, and housekeeping rooms shall be gypsum ceiling with gloss epoxy paint finish.
5. Above Ceiling Access:
   i) Provide access as required for access to service and maintenance items above ceiling. Access shall not be hindered by fixtures or devices in ceiling panels, or by conduit, pipes, et.
6. Floor Finishes
   i) Carpet:
      (1) Broadloom/m/Carpet Tile: Texture appearance retention rating of 3 or higher (Heavy traffic). Type 6 or Type 6, BCF Nylon. 10-year warranty. 10% Post-Consumer Recycled Content. NSF 140 Gold Level Certified. If broadloom, provide pad. Provide 4” rubber straight base molding – corners and special shapes shall be factory-made (no field bends permitted).
   ii) Resilient Tile:
      (1) Vinyl Composition Tile: Standard VCT. Class I Solid Color; Class II Through Pattern. Thickness of 0.125” or greater. Static load limit greater than or equal to 125 psi. Specialty finish applied. 5-year warranty. 5% recycled content. Meets NSF, is CA 1350 compliant and Floor Score Certified. Provide 4” rubber coved base molding – corners and special shapes shall be factory-made (no field bends permitted).
   iii) Rubber Tile:
      (1) Class II Laminated A&B (A=Solid Color Wear Layer; B=Mottled Wear Layer). Thickness of 0.080” or greater. 5-year warranty. 0% VOC emissions – CA 1350

compliant. Provide 4” rubber coved base molding – corners and special shapes shall be factory made (no field bends permitted).

iv) Rubber Gym Tile:
   (1) Rubber Tile: High-impact flooring designed for fitness setting. Thickness of 3/8” or greater. 5-year warranty. 0% VOC emissions – CA 1350 compliant. Provide 4” rubber coved base molding – corners and special shapes shall be factory made (no field bends permitted).

v) Seamless Resilient Sheet:
   (1) Seamless Sheet Vinyl: Heterogeneous Type I (Clear Wear Layer 0.020 inches) Type II (Filled Wear Layer 0.050 inches). Static load limit greater than or equal to 175 psi. Specialty topcoat applied. 5-year warranty. 5% recycled/renewable content meets Sustainability NSF332 and is CA 1350 compliant. Manufacturer approved heat welding.
   (2) Extend flooring up wall for 6” base – corners and special shapes shall be purpose-specific and factory-made accessories and sealed to flooring system.

vi) Linoleum:
   (1) Thickness no less than 2.5mm. Static load limit greater than or equal to 150 psi. Factory surface applied. 2-year warranty. 10% recycled/renewable content. 30% minimum binder content. Is VOC emission – CA 1350 compliant. Manufacturer approved heat welding. Extend flooring up wall for 6” base – corners and special shapes shall be purpose-specific and factory-made accessories and sealed to flooring system.

vii) Tile:
   (1) Porcelain Tile: Conforms to ANSI A137.1. Commercial (Abrasion Class IV). Virtuous (P3/E3/O3). Stain and chemical Class
   (2) B or better. 18-month warranty. Tile in toilet and shower rooms shall use non-white, epoxy grout.
   (3) Provide purpose-specific factory-made tile shapes for (minimum 4”) base; inside corners; outside corners; etc.

viii) Heavy-duty Tile
   (1) Quarry Tile: Conforms to ANSI A137.1. Commercial (Abrasion Class IV). Virtuous (Class E3). Breaking strength greater than or equal to 350 lbs. Stain and chemical Class B or better. 18-month warranty. Tile at housekeeping rooms shall use non-white, epoxy grout. Provide matching base tile to a minimum of 1’-0” above finished floor.

ix) Concrete Coating
   (1) Above-Grade Parking Deck Coating: Provide a clear, filmless, low solid, penetrating water repellent at horizontal concrete surfaces. Coating shall resist water and chloride ion intrusion, stain damage, freeze/thaw spalling, efflorescence, and rust damage.
   (2) Basis of Design: Tnemec Dur-A-Pell 20. Provide striping for safety systems, accessibility clearances, lane designations, parking spaces/limits, and door clearance zones as a minimum.

x) Service Bays:
   (1) Provide an 1/8” thick minimum epoxy coating with urethane topcoat system. System shall be self-leveling and protect surface from impact, abrasion, wet conditions, and mild chemicals. Surface preparation shall include thoroughly

cleaning and blasting in accordance with SSPC-SP13/NACE No. 6 Surface Preparation of Concrete prior to application of coating system. Basis of Design: Modified Polyamine Epoxy Tnemec Series 237 PowerTread. with Aliphatic Moisture Cured Urethane Tnemec Series 247 EverThane topcoat. Provide striping as required by the Owner.

Structural Design

A. The authority having jurisdiction is the City of Glenwood Springs, CO. Glenwood Springs has adopted the International Building Code, 2021 Edition (2021 IBC) with local amendments. The design information, based on the more stringent of the 2021 IBC with Glenwood Springs amendments and ASCE 7-16, is listed in Table 4.1.
B. The structures fall into Risk Category II and assumes Occupancy A-3 for the assembly areas, B for the business areas, and S-2 for the storage areas.

Table 4.1: Building Design Information[1]

Design Component	ASCE 7-16 / 2021 IBC
Ultimate Design Wind Speed	Risk Category II, wind speed of 115 mph
Wind Exposure Category	C
Seismic Design Category	B
Weathering	Severe
Winter Design Temperature	-2°F
Mean Annual Temperature	48° F
Snow Load[1]	50 psf (ground snow load – *pg*) 31.5 psf (balanced flat roof snow load – *pf*)
Frost Line Depth	36"

Applicable Codes and Standards

Based on the information above the structural design will be based on the following material codes and design loads listed in:

- Table 4.2 - Structural and Building Design Standards
- Table 4.3 – Transit Center Building Design Loads
- Table 4.4 – Transit Center Administration Building Design Loads
- Table 4.5 – Transit Center Storage Building Design Loads

Table 4.2: Structural and Building Design Codes

Design Component	Code Description
Structural Steel	American Institute of Steel Construction (AISC) Steel Construction Manual 16th
Concrete	American Concrete Institute (ACI) ACI 318-14 – Building Code Requirements for Structural Concrete, 2014 ACI 301-16 – Specifications for Structural Concrete, 2010 ACI MCP – Manual of Concrete Practice Precast Prestressed Concrete Institute (PCI)
Masonry	Building Code Requirements and Specification for Masonry Structures TMS402/602 - 16-
Wood	National Design Specification for Wood Construction, 2018
Design Loads	American Society of Civil Engineers (ASCE) Minimum Design Loads for Buildings and Other Structures, ASCE 7-16

Phase 6A - Transit Station

A. Design Loads

Table 4.3: Transit Station Building Design Loads

Design Loads	Value / Description
Live Load	
Roof, L_r:	20 psf (reducible per code)
Floor (Public Areas and Corridors):	100 psf
Floor (Storage):	125 psf
Snow Load	
Ground Snow Load *pg*:	50 psf
Flat Roof, *pf*:	31.5 psf
Exposure Factor, *Ce*	0.90 (Fully Exposed)
: Importance Factor,	1.00 (Risk Category II), 1.00
Wind Load	
Ultimate Wind Speed, *Vult* : Wind Exposure:	115 mph (Risk Category II)[1] C
Internal Pressure Coef.	+/- 0.18

Seismic Loads	
Risk	II
Category	1.0 (Risk Category II)
Importance Factor, *Ie*:	
Mapped Spectral Response Parameters:	0.417 g (ATC Hazards by Location)
S	0.085 g (ATC Hazards by Location)
s	D
S	
1	
Site Class:	0.408 g (ATC Hazards by Location)
Design Spectral Response	0.136 g (ATC Hazards by Location)
Acceleration Parameters:	B
SD	Light-framed walls (cold-formed
S	steel) with wood panels
SD	Light-framed walls (cold-formed steel) with wood
1	structural panels
Seismic Design Category:	0.0627
Bearing Wall Systems	6.5

Design Loads	Value / Description
Geotechnical Criteria:	
Foundation Type:	Spread Footers
Bearing Material:	Improved Soils and Structural Fill
Net Allowable Bearing Pressure:	4,000 psf

B. Materials

1. The structural system is expected to be comprised on Light-framed walls (cold-formed steel) with wood panels, structural steel members, and cast in place concrete. The following is a list of assumed materials and properties.
   i) Concrete: 4,000 psi (minimum) 28-day strength
   ii) Steel: ASTM A992, A500, A36
   iii) Wood: Hem-Fir

C. Framing

1. Roof Framing
   i) The roof framing is expected to consist of steel beams, supported by exterior load bearing Light-framed walls (cold-formed steel) with wood panels, and interior steel girders and columns, with steel decking.
2. Lateral System
   i) The lateral system is expected to consist of Light-framed walls (cold-formed steel) with wood structural panels.

D. Foundations

1. Slab on Grade
   i) SEH anticipates a slab on grade supported on at least 6 inches of base course.
2. Foundations

i) Based on the most recent geotechnical report, completed in August of 2023, SEH expects that the building will be supported on shallow, reinforced concrete spread footers bearing on improved soils and structural fill.'

Phase 6B - Administration Building

A. Design Loads

Table 4.4: Administration Building Design Loads

Design Loads	Value / Description
Live Load	
Roof, L_r:	20 psf (reducible per code)
Floor (Office Areas):	50 psf
Floor (Lobby Areas and Corridors):	100 psf
Floor (Storage):	125 psf
Snow Load	
Ground Snow Load	50 psf
***pg*: Flat Roof, *pf*:**	31.5 psf
Exposure Factor, *Ce*	0.90 (Fully Exposed)
: Importance Factor,	1.00 (Risk Category II), 1.00
Wind Load	
Ultimate Wind Speed,	115 mph (Risk Category II)[1]
***Vult* : Wind Exposure:**	C
Internal Pressure Coef.	+/- 0.18
Seismic Loads	
Risk	II
Category	1.0 (Risk Category II)
Importance Factor, *Ie*:	
Mapped Spectral Response Parameters:	0.417 g (ATC Hazards by Location)
S	0.085 g (ATC Hazards by Location)
s	D
S	
1	
Site Class:	0.408 g (ATC Hazards by Location)
Design Spectral Response	0.136 g (ATC Hazards by Location)
Acceleration Parameters:	B
SD	Precast Walls
S	Precast Shear Walls
SD	0.1359
1	3
Seismic Design Category:	Equivalent Lateral Force
Bearing Wall Systems	

Design Loads	Value / Description
Geotechnical Criteria:	
Foundation Type:	Spread Footers
Bearing Material:	Improved Soils and Structural Fill
Net Allowable Bearing Pressure:	4,000 psf

B. Materials

1. The structural system is expected to be comprised on precast walls, structural steel members, and cast in place concrete. The following is a list of assumed materials and properties.
    a. Concrete: 4,000 psi (minimum) 28-day strength
    b. Steel: ASTM A992, A500, A36

C. Framing

1. Roof Framing
    i) The roof framing is expected to consist of steel beams, supported by exterior load bearing precast walls, and interior steel girders and columns, with steel decking.
2. Floor Framing
3. The floor framing is expected to consist of steel beams, supported by exterior load bearing precast walls, and interior steel girders and columns, with composite steel decking.
4. Lateral System
    i) The lateral system is expected to consist of precast shear walls.

D. Foundations

1. Slab on Grade
    i) SEH anticipates a slab on grade supported on at least 6 inches of base course.

E. Foundations

1. Based on the most recent geotechnical report, completed in August of 2023, SEH expects that the building will be supported on shallow, reinforced concrete spread footers bearing on improved soils and structural fill.

F. Retaining Walls

1. The retaining walls adjacent to the building are expected to consist of reinforced concrete.

G. Pedestrian Bridge

1. The pedestrian bridge adjacent to the building is expected to be a pre-engineered truss bridge supported by reinforced concrete abutments.

Mechanical Design

Phase 6A - Transit Station

A. Project Description

1. Mechanical, Electrical, Plumbing and Fire Protection design of the new BRT Station will meet the following criteria. This criteria outlines proposed systems for the BRT Station and represents a general overview of the design approach. Code compliant systems will

be designed and installed to include acceptance and approval from the proper Authorities Having Jurisdiction (AHJ).

B. Fire Protection

1. Code Compliance
   i) Applicable Local and State Building and Fire Codes and Amendments
   ii) NFPA 13 Standard for the Installation of Sprinkler Systems
   iii) Owner Standards and Requirements
2. Incoming Fire Service Main
   i) The water-based fire suppression system will be served from a new combined fire and domestic water service main supplied by an existing municipal water main. Incoming fire service main will be located in a designated water entry area on the first floor. Connection to the city water main will be by the Civil Contractor. The sprinkler system and Fire Sprinkler Contractor work will begin at the point of connection at the flange inside the building. Hydrant flow tests of the municipal water main will be required and coordinated with the water purveyor to ensure adequate capacity at the site.
   ii) Reference hydrant flow data will be provided by the water purveyor and sizing of the main and associated fire sprinkler systems will be based on those pressures and flows. Hydrant flow data will indicate whether a fire pump is required to provide the necessary pressures and flows to protect all areas of the facility.
   iii) Backflow prevention devices will be designed and installed per the requirements of the AHJ. A Fire Department Connection (FDC) will be provided. Location of FDC will be at designated water entry area near sprinkler risers or in nearby location approved by the AHJ. FDC type and specifications will be coordinated with requirements of the AHJ.
3. Automatic Sprinkler System
   i) An automatic fire sprinkler system will be provided and installed in all spaces of the building except those areas where sprinkler omittance is permitted by the standard and fire code.
   ii) Sprinkler main and branch piping sizes will be hydraulically calculated by the Fire Protection Contractor in accordance with NFPA 13.
   iii) The sprinkler system will be a wet-pipe type system. It will be zoned based on space usage and hazards as defined by the occupancy type. The BRT Station will be primarily Group S-2 and Group B occupancy. Each zone will be provided a control valve assembly with isolation valve, tamper switch, flow switch, and all other required appurtenances. Control assemblies will be located in the water entry area or at locations approved by the Architect and Owner.
   iv) Quick response type sprinklers will be installed throughout the building. Recessed style sprinklers will be installed in all areas with a finished ceiling. Standard upright style sprinklers will be installed in all areas without a finished ceiling. All sprinklers installed in areas where they may be subject to mechanical damage will be provided with standard protective guards. All sprinkler styles and finishes will be approved by the Owner and Architect prior to installation.
   v) Sprinkler spacing and locations will be in accordance with the requirements of NFPA 13. Offices, restrooms, and common spaces will be provided with sprinkler protection in accordance with the requirements for Light Hazard occupancies per NFPA 13.A main sprinkler drain will be provided for the sprinkler systems. The main sprinkler

drain will discharge to a floor drain or to the exterior of the building in a location approved by the Owner and AHJ. A single air vent will be provided for each sprinkler zone.

vi) All piping shall be new and conform to the requirements of NFPA 13. Fire sprinkler system piping material for all wet-pipe systems will be black steel conforming to ASTM A53, A795 or A135. Schedule 40 piping with threaded fittings will be installed for piping 2 inches in diameter and smaller. Schedule 10 piping with grooved fittings will be installed for piping 2 ½ inches and larger. Schedule 5 piping is not permitted. CPVC piping systems may be used in lieu of black steel if CPVC piping system is only installed in locations approved by the manufacturer.

4. Commercial Cooking Operations
   i) No commercial kitchen equipment or Type I hoods are anticipated as part of the design of the facility. Therefore, no automatic fire extinguishing system interlocked with the Type I hood is required.
5. Design and Calculation
   i) The Fire Sprinkler Contractor will be the Engineer of Record for the sprinkler system. The design and engineering of the system will be by the Fire Sprinkler Contractor. Hydraulic calculations and shop drawings will be performed and calculated by the Contractor. Per NFPA 13, the water supply information utilized for the performance of the hydraulic calculations shall be dated within one year of system installation. These shop drawings and calculations are required to be signed and stamped by a Professional Engineer registered in the State of Colorado or signed and certified by a minimum Level IV Senior Engineering Technician of the National Institute for Certification of Engineering Technology (NICET) practicing in the Fire Protection Field. The signed shop drawings will certify that the fire sprinkler system has been hydraulically calculated in compliance with NFPA and governing codes. The signing party is required to be familiar with this type of installation and have previous similar experience.

C. Heating, Ventilation, and Air Conditioning

1. Code Compliance
   i) Applicable Local and State Building, Mechanical, Energy Conservation, Plumbing, Fire and Fuel Gas Codes and Amendments
   ii) NFPA 70 National Electrical Code
   iii) ASHRAE Standard 62.1 Ventilation for Acceptable Indoor Air Quality
   iv) ASHRAE Standard 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings
   v) Owner Standards and Requirements
2. Mechanical Design Information
   i) Location: Glenwood Springs, CO
   ii) Climate Zone: 5B
   iii) Elevation: 5,761 ft above sea level
   iv) Summer Outside Air Conditions: 95.1 deg F / 58.9 deg F (DB/WB)
   v) Summer Indoor Conditions: 75 deg F, 60% RH
   vi) Winter Outside Air Conditions: -0.2 deg F (DB)
   vii) Winter Indoor Conditions: 72 deg F
   viii) Ventilation Rate: ASHRAE 62.1
3. Mechanical Systems Information

i) The building will be ventilated and conditioned using various independent HVAC systems. Below are the anticipated systems required:
   (1) Ground Source Heat Pump
      (a) A central ground source heat pump (GSHP) system will serve all hydronic heating and cooling equipment in the facility. The GSHP system will include a vertical loop array located below the parking long adjacent to the facility. GSHP equipment will be located in the mechanical room. The GSHP plant equipment will include manifolds, piping, pumps, staged compressor water source heat pump, heat exchanger, and associated accessories, sensors, controls, and valving. The heating water system shall serve air handling units, energy recovery ventilators, terminal boxes and radiant floor snowmelt system.
   (2) Snowmelt System
      (a) A radiant slab snowmelt system will be provided to prevent snow and ice accumulation at the North Bay entrances of each fire station. Each snowmelt system will consist of a dedicated condensing wall-mounted boiler that provide hydronic heating to snowmelt loops embedded in the driveway apron concrete.
   (3) Air Handling Equipment
      (a) A variable air volume air handling unit with terminal boxes equipped with reheat coils will be provided to serve the common areas, offices, restrooms, and storage rooms. Hydronic heating and cooling at the AHU and terminal boxes via coils fed by the ground source heat pump plant.
   (4) Ventilation
      (a) Restrooms and showers throughout the facility will be provided with code required dedicated exhaust fans. Exhaust fans will be switched to turn on/off with the lights. The design and construction shall provide sufficient ventilation to obtain acceptable air quality, determined using the Ventilation Rate Procedure of ANSI/ASHRAE 62.1.
   (5) Data Equipment Room
      (a) A computer room air conditioning (CRAC) unit will be provided to serve the data equipment room.

4. Testing, Balancing, and Commissioning
   i) All air systems will be tested and adjusted by a NEBB or TABB certified contractor. HVAC and Hydronic systems will be commissioned to ensure they operate as intended and meet the required conditioning and ventilation setpoints.
5. Controls
   i) HVAC systems will each be provided with their own thermostat located within the conditioned area.
   ii) A central building management system (BMS) will be provided for the facility. The BMS will control, monitor, and trend space temperatures, setpoints, lighting, and building energy consumption. The system will be a full DDC, internet accessible control system with all new equipment included.
6. Remote Access
   i) Remote access to the BMS will be provided via web-based interface. Remote access will have, at a minimum, the following levels of control capability based on credentials provided during log-in:

(1) View Only Access: No adjustment capability.
(2) Operator Access: Similar level of control to that available via the operator workstation interface. Override default setpoint values
(3) Technician Access: Full control, troubleshooting, adjustment, and programming capabilities. Change default setpoint values.

7. Trending
   i) All trending will be shown graphically for a user adjustable time period. Data will be exportable to Microsoft Excel. The following is a list of the minimum points that will be trended for at least 13 months. All other points will be trended for 4 weeks:
      (1) Outside Air Temperature
      (2) Alarms – Equipment, Code, Time
      (3) All Temperature Sensors – Every 5 minute interval, max.
      (4) Fan/Motor Speed – Every 5 minute interval, max.
8. Graphics
   i) All BMS points will be represented by graphic display on the web-based interface. Graphical floor plans will indicate zone designations as well as space temperature setpoints and space temperature. Background color of zones will be changed as follows:
      (1) None: Space Temperature is withing +/- 3 deg of setpoint
      (2) Red: Space Temperature is greater than 4 deg above setpoint
      (3) Blue: Space Temperature is less than 4 deg below setpoint
9. Adjustability
   i) All setpoints and parameters will be independently adjustable and clearly identified as setpoints and not read only values. The occupancy mode (occupied or unoccupied) will be determined through a user-adjustable, graphical, seven-day schedule with a holiday schedule. A single point software command feature will be provided for each of the major systems to reset all overridden variables back to default values. All default values will be automatically indicated adjacent to any value that has been overridden.
10. Alarms
    i) All manufacturer's alarms will be reported to the BMS. Alarms will include:
       (1) Equipment common alarms
       (2) Status / Equipment failure
       (3) Room Temperature > 5deg F +/- from setpoint
       (4) Fan failure by AFMS
       (5) Dirty Filter by differential pressure sensor above setpoint
    ii) User-adjustable dial-out alarming capability will be provided to destination (via text message / email / other). The quantity of unique dial-out alarm codes available to the operator will be equal to at least the quantity of points within the system. The initial dial-out alarm setpoints will be:
       (1) Generalized equipment failure.
       (2) Generalized space temperature low limit (for any monitored space)
       (3) Generalized space temperature high limit (for any monitored space)
11. Energy Management
    i) Demand-limiting programs and optimum start/stop programs will be considered for HVAC systems and included in the controls, as necessary.

D. Plumbing

1. Code Compliance
   i) Applicable Local and State Building, Plumbing, Energy Conservation, Fire and Fuel Gas Codes and Amendments
   ii) Owner Standards and Requirements
2. Plumbing Fixture Flow Rate Information
   i) The plumbing fixture flow rates will meet EPA Watersense requirements and shall not exceed:
      (1) Water closets: 1.28 gallons per flush
      (2) Lavatory faucets: 1.5 gallons per minute
      (3) Sink faucets: 1.5 gallons per minute
      (4) Shower heads: 2.0 gallons per minute
3. General Plumbing Fixture and System Information
      (1) Domestic water piping, faucets, valves, and associated equipment will be lead-free Domestic water piping, faucets, valves, and associated equipment will be lead-free.
      (2) Isolation valves will be provided on all branch piping. These branches will be provided for each group of plumbing fixtures, each piece of equipment, or area requiring water service.
      (3) Floor drains will be provided in restrooms.
      (4) Floor drains will be provided in mechanical rooms and for equipment requiring drainage.
      (5) Floor drains will have trap seal devices, ASSE 1072 listed.
      (6) Water hammer arrestors will be provided on all water piping branches serving flush valve fixtures and equipment with solenoid valves such as clothes washers.
      (7) Freeze-proof wall hydrants will be provided at the exterior of the building space as requested by the Owner.
      (8) Building unit fixtures will be approved by the Architect and Owner.
      (9) Public and private toilet room flush valves will be standard lever type activation.
      (10) All ADA lavatory waste piping and water supplies will be insulated with commercial grade insulation kits.
      (11) All floor mounted equipment will be mounted on housekeeping pads.
   ii) The following fixtures are anticipated in the design:
      (1) Driver Lounge
         (a) Two-deep-compartment sink – high clearance faucet with wrist-blades, garbage disposal
         (b) Dishwasher
         (c) Coffee-maker
         (d) Refrigerator with ice maker
      (2) Driver Restroom
         (a) Water Closet – flush valve, elongated bowl, split seat, ADA
         (b) Lavatory – standard faucet, wrist blade handles
         (c) Floor drain
      (3) Public Restroom
         (a) Water Closet – flush valve, elongated bowl, split seat, ADA
         (b) Lavatory – standard faucet, wrist blade handles
         (c) Floor drain
      (4) Station Lobby

(a) Drinking Fountain
(5) Janitor
(a) Mop Sink
(b) Floor drain

4. Domestic Water
   i) Building will require a new water service and meter. Backflow prevention devices, as well as pressure regulating devices will be installed as required by the AHJ.
   ii) Domestic water service will enter the building as a combined fire and domestic service.
   iii) A centralized hot water heater and circulation system will be installed to provide hot water to fixtures. The water heating system will fed by the ground source heat pump plant and stored in a hot water storage tank. Tempered water will be delivered to all public hand-washing stations through point-of-use ASSE 1070 mixing valves, this includes hand washing sinks in the kitchen area. One mixing valve may serve multiple side by side fixtures. Where public faucets have a hot and cold supply the temperature downstream of the mixing valve will be set at 110 deg F maximum.
   iv) Domestic water distribution piping may be PEX piping if it meets code requirements and is only installed in locations approved by the manufacturer.
5. Irrigation
   i) A separate backflow prevention device and main will be provided to supply site irrigation systems. Piping and appurtenances will be sized for 20 gallons per minute demand.
6. Sanitary Waste and Vent
   i) Sanitary waste and vent system will be a conventional system.
   ii) Throughout the building there will be sanitary risers and vent stacks. The stacks will be located as strategically as possible to minimize the quantity required. Termination of vent stacks will require special attention so the odor does not affect air intake locations.
7. Storm Drainage
   i) Storm drain piping will terminate below grade and discharge to nearest storm water system.
   ii) Overflow drain piping will terminate above grade at a downspout nozzle. The building will have separate storm and overflow systems. The storm and overflow drain systems will be based on rainfall rates as outlined in governing codes and requirements.
8. Natural Gas Piping
   i) This building will not have a natural gas service. All appliances and equipment will be electric.

Phase 6B - Administration Building

A. Project Description

1. Mechanical, Electrical, Plumbing and Fire Protection design of the new administration building will meet the following criteria. This criteria outlines proposed systems for the administration building and represents a general overview of the design approach. Code compliant systems will be designed and installed to include acceptance and approval from the proper Authorities Having Jurisdiction (AHJ).

B. Fire Protection

1. Code Compliance
   i) Applicable Local and State Building and Fire Codes and Amendments
   ii) NFPA 13 Standard for the Installation of Sprinkler Systems
   iii) Owner Standards and Requirements
2. Incoming Fire Service Main
   i) The water-based fire suppression system will be served from a new combined fire and domestic water service main supplied by an existing municipal water main. Incoming fire service main will be located in a designated water entry area on the first floor. Connection to the city water main will be by the Civil Contractor. The sprinkler system and Fire Sprinkler Contractor work will begin at the point of connection at the flange inside the building. Hydrant flow tests of the municipal water main will be required and coordinated with the water purveyor to ensure adequate capacity at the site.
   ii) Reference hydrant flow data will be provided by the water purveyor and sizing of the main and associated fire sprinkler systems will be based on those pressures and flows. Hydrant flow data will indicate whether a fire pump is required to provide the necessary pressures and flows to protect all areas of the facility.
   iii) Backflow prevention devices will be designed and installed per the requirements of the AHJ. A Fire Department Connection (FDC) will be provided. Location of FDC will be at designated water entry area near sprinkler risers or in nearby location approved by the AHJ. FDC type and specifications will be coordinated with requirements of the AHJ.
3. Automatic Sprinkler System
   i) An automatic fire sprinkler system will be provided and installed in all spaces of the building except those areas where sprinkler omittance is permitted by the standard and fire code.
   ii) Sprinkler main and branch piping sizes will be hydraulically calculated by the Fire Protection Contractor in accordance with NFPA 13.
   iii) The sprinkler system will be a wet-pipe type system. It will be zoned based on space usage and hazards as defined by the occupancy type. The administration building will be primarily Group S-2 and Group B occupancy. Each zone will be provided a control valve assembly with isolation valve, tamper switch, flow switch, and all other required appurtenances. Control assemblies will be located in the water entry area or at locations approved by the Architect and Owner.
   iv) Quick response type sprinklers will be installed throughout the building. Recessed style sprinklers will be installed in all areas with a finished ceiling. Standard upright style sprinklers will be installed in all areas without a finished ceiling. All sprinklers installed in areas where they may be subject to mechanical damage will be provided with standard protective guards. All sprinkler styles and finishes will be approved by the Owner and Architect prior to installation.
   v) Sprinkler spacing and locations will be in accordance with the requirements of NFPA 13. Offices, restrooms, and common spaces will be provided with sprinkler protection in accordance with the requirements for Light Hazard occupancies per NFPA 13.
   vi) A main sprinkler drain will be provided for the sprinkler systems. The main sprinkler drain will discharge to a floor drain or to the exterior of the building in a location approved by the Owner and AHJ. A single air vent will be provided for each sprinkler zone.

vii) All piping shall be new and conform to the requirements of NFPA 13. Fire sprinkler system piping material for all wet-pipe systems will be black steel conforming to ASTM A53, A795 or A135. Schedule 40 piping with threaded fittings will be installed for piping 2 inches in diameter and smaller. Schedule 10 piping with grooved fittings will be installed for piping 2 ½ inches and larger. Schedule 5 piping is not permitted. CPVC piping systems may be used in lieu of black steel if CPVC piping system is only installed in locations approved by the manufacturer.

4. Commercial Cooking Operations
   i) No commercial kitchen equipment or Type I hoods are anticipated as part of the design of the facility. Therefore, no automatic fire extinguishing system interlocked with the Type I hood is required.
5. Design and Calculation
   i) The Fire Sprinkler Contractor will be the Engineer of Record for the sprinkler system. The design and engineering of the system will be by the Fire Sprinkler Contractor. Hydraulic calculations and shop drawings will be performed and calculated by the Contractor. Per NFPA 13, the water supply information utilized for the performance of the hydraulic calculations shall be dated within one year of system installation. These shop drawings and calculations are required to be signed and stamped by a Professional Engineer registered in the State of Colorado or signed and certified by a minimum Level IV Senior Engineering Technician of the National Institute for Certification of Engineering Technology (NICET) practicing in the Fire Protection Field. The signed shop drawings will certify that the fire sprinkler system has been hydraulically calculated in compliance with NFPA and governing codes. The signing party is required to be familiar with this type of installation and have previous similar experience.

C. Heating, Ventilation, and Air Conditioning

1. Code Compliance
   i) Applicable Local and State Building, Mechanical, Energy Conservation, Plumbing, Fire and Fuel Gas Codes and Amendments
   ii) NFPA 70 National Electrical Code
   iii) ASHRAE Standard 62.1 Ventilation for Acceptable Indoor Air Quality
   iv) ASHRAE Standard 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings
   v) Owner Standards and Requirements
2. Mechanical Design Information
   i) Location: Glenwood Springs, CO
   ii) Climate Zone: 5B
   iii) Elevation: 5,761 ft above sea level
   iv) Summer Outside Air Conditions: 95.1 deg F / 58.9 deg F (DB/WB)
   v) Summer Indoor Conditions: 75 deg F, 60% RH
   vi) Winter Outside Air Conditions: -0.2 deg F (DB)
   vii) Winter Indoor Conditions: 72 deg F
   viii) Ventilation Rate: ASHRAE 62.1
3. Mechanical Systems Information
   i) The building will be ventilated and conditioned using various independent HVAC systems. Below are the anticipated systems required:
      (1) Air Handling Equipment

(a) Packaged rooftop units and terminal reheat boxes will provide heating and cooling to each zone. Each zone will be served by a terminal reheat box located above the ceiling and controlled by a thermostat located in the space. The primary energy source will be natural gas heating and DX cooling.

(2) Ventilation

(a) Restrooms and showers throughout the facility will be provided with code required dedicated exhaust fans. Exhaust fans will be switched to turn on/off with the lights. The design and construction shall provide sufficient ventilation to obtain acceptable air quality, determined using the Ventilation Rate Procedure of ANSI/ASHRAE 62.1.

(3) Data Equipment Rooms

(a) A computer room air conditioning (CRAC) unit will be provided to serve data equipment rooms.

4. Testing, Balancing, and Commissioning

i) All air systems will be tested and adjusted by a NEBB or TABB certified contractor. HVAC and Hydronic systems will be commissioned to ensure they operate as intended and meet the required conditioning and ventilation setpoints.

5. Controls

i) HVAC systems will each be provided with their own thermostat located within the conditioned area.

ii) A central building management system (BMS) will be provided for the facility. The BMS will control, monitor, and trend space temperatures, setpoints, lighting, and building energy consumption. The system will be a full DDC, internet accessible control system with all new equipment included.

6. Remote Access

i) Remote access to the BMS will be provided via web-based interface. Remote access will have, at a minimum, the following levels of control capability based on credentials provided during log-in:

(1) View Only Access: No adjustment capability.

(2) Operator Access: Similar level of control to that available via the operator workstation interface. Override default setpoint values

(3) Technician Access: Full control, troubleshooting, adjustment, and programming capabilities. Change default setpoint values.

7. Trending

i) All trending will be shown graphically for a user adjustable time period. Data will be exportable to Microsoft Excel. The following is a list of the minimum points that will be trended for at least 13 months. All other points will be trended for 4 weeks:

(1) Outside Air Temperature

(2) Alarms – Equipment, Code, Time

(3) All Temperature Sensors – Every 5 minute interval, max.

(4) Fan/Motor Speed – Every 5 minute interval, max.

8. Graphics

i) All BMS points will be represented by graphic display on the web-based interface. Graphical floor plans will indicate zone designations as well as space temperature setpoints and space temperature. Background color of zones will be changed as follows:

(1) None: Space Temperature is withing +/- 3 deg of setpoint

(2) Red: Space Temperature is greater than 4 deg above setpoint
(3) Blue: Space Temperature is less than 4 deg below setpoint

9. Adjustability
   i) All setpoints and parameters will be independently adjustable and clearly identified as setpoints and not read only values. The occupancy mode (occupied or unoccupied) will be determined through a user-adjustable, graphical, seven-day schedule with a holiday schedule. A single point software command feature will be provided for each of the major systems to reset all overridden variables back to default values. All default values will be automatically indicated adjacent to any value that has been overridden.
10. Alarms
    i) All manufacturer's alarms will be reported to the BMS. Alarms will include:
       (1) Equipment common alarms
       (2) Status / Equipment failure
       (3) Room Temperature > 5deg F +/- from setpoint
       (4) Fan failure by AFMS
       (5) Dirty Filter by differential pressure sensor above setpoint
11. User-adjustable dial-out alarming capability will be provided to destination (via text message / email / other). The quantity of unique dial-out alarm codes available to the operator will be equal to at least the quantity of points within the system. The initial dial-out alarm setpoints will be:
    (1) Generalized equipment failure.
    (2) Generalized space temperature low limit (for any monitored space)
    (3) Generalized space temperature high limit (for any monitored space)
12. Energy Management
13. Demand-limiting programs and optimum start/stop programs will be considered for HVAC systems and included in the controls, as necessary.

D. Plumbing

1. Code Compliance
   i) Applicable Local and State Building, Plumbing, Energy Conservation, Fire and Fuel Gas Codes and Amendments
   ii) Owner Standards and Requirements
2. Plumbing Fixture Flow Rate Information
   i) The plumbing fixture flow rates will meet EPA Watersense requirements and shall not exceed:
      (1) Water closets: 1.28 gallons per flush
      (2) Lavatory faucets: 1.5 gallons per minute
      (3) Sink faucets: 1.5 gallons per minute
      (4) Shower heads: 2.0 gallons per minute
   ii) General Plumbing Fixture and System Information
      (1) Domestic water piping, faucets, valves, and associated equipment will be lead-free Domestic water piping, faucets, valves, and associated equipment will be lead-free.
      (2) Isolation valves will be provided on all branch piping. These branches will be provided for each group of plumbing fixtures, each piece of equipment, or area requiring water service.
      (3) Floor drains will be provided in restrooms.

(4) Floor drains will be provided in mechanical rooms and for equipment requiring drainage.
(5) Floor drains will have trap seal devices, ASSE 1072 listed.
(6) Water hammer arrestors will be provided on all water piping branches serving flush valve fixtures and equipment with solenoid valves such as clothes washers.
(7) Freeze-proof wall hydrants will be provided at the exterior of the building space as requested by the Owner.
(8) Building unit fixtures will be approved by the Architect and Owner.
(9) Public and private toilet room flush valves will be standard lever type activation.
(10) All ADA lavatory waste piping and water supplies will be insulated with commercial grade insulation kits.
(11) All floor mounted equipment will be mounted on housekeeping pads.

iii) The following fixtures are anticipated in the design:
(1) Kitchenette
(a) Two-deep-compartment sink – high clearance faucet with wrist-blades, garbage disposal
(b) Dishwasher
(c) Coffee-maker
(d) Refrigerator with ice maker
(2) Public Restroom
(a) Water Closet – flush valve, elongated bowl, split seat, ADA
(b) Lavatory – standard faucet, wrist blade handles
(c) Floor drain
(3) Lobby
(a) Drinking Fountain
(4) Janitor
(a) Mop Sink
(b) Floor drain
(5) Water Entry
(a) Floor drain

3. Domestic Water
i) Building will require a new water service and meter. Backflow prevention devices, as well as pressure regulating devices will be installed as required by the AHJ.
ii) Domestic water service will enter the building as a combined fire and domestic service.
iii) A centralized hot water heater and circulation system will be installed to provide hot water to fixtures. The water heating system will employ natural gas as the heating media. Tempered water will be delivered to all public hand-washing stations through point-of-use ASSE 1070 mixing valves, this includes hand washing sinks in the kitchen area. One mixing valve may serve multiple side by side fixtures. Where public faucets have a hot and cold supply the temperature downstream of the mixing valve will be set at 110 deg F maximum.
iv) Domestic water distribution piping may be PEX piping if it meets code requirements and is only installed in locations approved by the manufacturer.
4. Irrigation

i) A separate backflow prevention device and main will be provided to supply site irrigation systems. Piping and appurtenances will be sized for 20 gallons per minute demand.

5. Sanitary Waste and Vent
   i) Sanitary waste and vent system will be a conventional system.
   ii) Throughout the building there will be sanitary risers and vent stacks. The stacks will be located as strategically as possible to minimize the quantity required. Termination of vent stacks will require special attention so the odor does not affect air intake locations.
6. Storm Drainage
   i) Storm drain piping will terminate below grade and discharge to nearest storm water system.
   ii) Overflow drain piping will terminate above grade at a downspout nozzle. The building will have separate storm and overflow systems. The storm and overflow drain systems will be based on rainfall rates as outlined in governing codes and requirements.
7. Natural Gas Piping
   i) This building will not have a natural gas service. All appliances and equipment will be electric.

Phase 8 - Storage Building

A. Project Description

1. Mechanical, Electrical, Plumbing and Fire Protection design of the new administration building will meet the following criteria. This criteria outlines proposed systems for the administration building and represents a general overview of the design approach. Code compliant systems will be designed and installed to include acceptance and approval from the proper Authorities Having Jurisdiction (AHJ).

B. Fire Protection

1. No fire protection equipment or sprinkler system are anticipated as part of the design of the facility.

C. Heating, Ventilation, and Air Conditioning

1. Code Compliance
   i) Applicable Local and State Building, Mechanical, Energy Conservation, Plumbing, Fire and Fuel Gas Codes and Amendments
   ii) NFPA 70 National Electrical Code
   iii) ASHRAE Standard 62.1 Ventilation for Acceptable Indoor Air Quality
   iv) ASHRAE Standard 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings
   v) Owner Standards and Requirements
2. Mechanical Design Information
   i) Location: Glenwood Springs, CO
   ii) Climate Zone: 5B
   iii) Elevation: 5,761 ft above sea level
   iv) Summer Outside Air Conditions: 95.1 deg F / 58.9 deg F (DB/WB)
   v) Summer Indoor Conditions: 75 deg F, 60% RH
   vi) Winter Outside Air Conditions: -0.2 deg F (DB)
   vii) Winter Indoor Conditions: 72 deg F

viii) Ventilation Rate: ASHRAE 62.1

3. Mechanical Systems Information
   i) The building will be ventilated and conditioned using various independent HVAC systems. Below are the anticipated systems required:
   ii) Unit Heaters
      (1) Electric unit heaters will provide heating to the maintenance building. The unit heaters will be controlled by a thermostat located in the space. The primary energy source will be electric heating.
   iii) Ventilation
      (1) Facility will be provided with code required dedicated exhaust fans. Exhaust fans will be interlocked with CO sensors to meet code required rates for vehicle maintenance bays. The design and construction shall provide sufficient ventilation to obtain acceptable air quality, determined using the Ventilation Rate Procedure of ANSI/ASHRAE 62.1.
4. Testing, Balancing, and Commissioning
   i) All air systems will be tested and adjusted by a NEBB or TABB certified contractor. HVAC systems will be commissioned to ensure they operate as intended and meet the required conditioning and ventilation setpoints.
5. Controls
   i) The maintenance building electric unit heaters will be provided with thermostat and timing controls.
   ii) Gas monitoring sensors will control the exhaust fan system as well as a manual override. Sensors will be dual element and will detect air quality to maintain permissible pollutant/contaminant ppm levels. Sensor coverage is approximately 5,000 sqft.

D. Plumbing

1. Code Compliance
   i) Applicable Local and State Building, Plumbing, Energy Conservation, Fire and Fuel Gas Codes and Amendments
   ii) Owner Standards and Requirements
2. General Plumbing Fixture and System Information
   i) Trench drains will be provided in the vehicle maintenance bays.
   ii) Building unit fixtures will be approved by the Architect and Owner.
3. Domestic Water
   i) No domestic water system is anticipated as part of the design of the facility.
4. Irrigation
   i) No irrigation water system is anticipated as part of the design of the facility.
5. Sanitary Waste and Vent
   i) Sanitary waste and vent system will be a conventional system.
6. Storm Drainage
   i) Storm drain piping will terminate below grade and discharge to nearest storm water system.
   ii) Overflow drain piping will terminate above grade at a downspout nozzle. The building will have a primary storm systems. The storm drain system will be based on rainfall rates as outlined in governing codes and requirements.
7. Natural Gas Piping

i) This building will not have a natural gas service. All appliances and equipment will be electric.

Electrical Design

A. Project Description

1. The electrical narrative identifies the systems criteria to be used in the development of the construction cost estimates. The use is not intended to cover all systems in their entirety, but to be used as a guide and basis for which the electrical systems will be designed. See other discipline narratives for additional information about project scope and equipment. All work shall be executed in accordance with local and state codes, and latest editions of IBC, NEC, NFPA and ADA.

Phase 6A - Transit Station

A. Normal Power

1. The size of the service, based on the building size of 3,173 square feet, will be 400 amps at 120/208 volts.
   i) Rough-in for four passenger vehicle charging stations shall be provided.
2. Two bus fast-charging stations will be located adjacent to and west of the Transit Station. Each bus charging station will have a separate utility service meter. Each charging station service size will be 800 amps at 277/480 volts. The distribution switchboards will be located next to the charging stations and will be NEMA 3R rated. Space for a third bus fast-charging station will be included.

B. Emergency Power

1. Emergency power for lighting will utilize battery backup.
2. A 60-amp 4-pole transfer switch will be provided for emergency power. A feeder from the Phase 6B admin building generator set shall be provided. Control wiring between the Transit Center transfer switch and Admin generator shall be provided.

C. Uninterruptable Power Supply

1. Uninterruptible Power Supply (UPS) system(s) shall be provided for equipment located in the MDF and IDF rooms. UPS shall be rack mountable in a standard 19” 4-post server rack.
2. Battery system shall be sized for a minimum of fifteen minutes of backup supply.

D. Power Distribution

1. Separate panelboards for lighting, HVAC, and receptacle power will be required.
   i) All panelboards/switchboards will be located in the electrical room.
   ii) Panelboards shall have minimum 30% spare capacity and will have copper bussing.
   iii) TVSS will be provided for all main panels and switchboards.
   iv) Surge protection shall be provided on main panelboards.
   v) Arc flash labeling for distribution equipment shall be provided.
   vi) Lamecoid labeling will be required for panels and equipment with labeling information per NEC.
   vii) Arc Flash analysis shall be provided by the contractor.
   viii) Provide Owner submetering as required by code. The meters shall be digital and capable of monitoring 3-phases independently and overall, for maximum, peak, average, and RMS of the following: amperes, voltages, power factor, volt-amps, wattage and kVar. The system shall be capable of recording these values for a period of not less than 30 days continuously and shall also generate a legible report.

The metering system shall be networked together with a Main PC and shall be located in the Owners designated area. Energy usage shall be reported on a graphical interface as required by code.

2. Commissioning for generator, transfer switches, switchboards, grounding systems, connections, and lighting controls shall be provided.
3. Provide local disconnect switches for mechanical equipment. Mechanical equipment shall be coordinated to meet the available fault current.
4. All interior building conductors shall be installed in conduit and shall be of the following types: electrical metallic tubing (EMT), intermediate metal conduit (IMC), or galvanized rigid conduit (GRC), unless otherwise noted.
5. Provide compression fittings on EMT conduits. Flexible steel conduit shall be utilized for equipment connections in dry areas and liquid-tight conduit shall be utilized in areas subject to moisture unless otherwise noted.
6. Exterior conduit installed underground shall be schedule 40 PVC with PVC Coated GRC elbows.
7. Armored (AC) and Metal Clad (MC), cable shall be acceptable for use in this facility where concealed within wall and ceiling cavities. All homerun circuitry to panelboards shall be installed in conduit.

E. Devices and Outlets

1. Building standard general-purpose receptacles shall be 20 Amp, 120 VAC duplex, specification grade NEMA 5-20R.
2. Floor outlets are required in conference rooms and open space areas.
3. Ground Fault Circuit Interrupter (GFCI) receptacles shall be 20 Amp, 120 VAC duplex, specification grade NEMA 5-20R, and isolated ground, computer grade receptacles shall be 20 Amp, 120 VAC duplex, specification grade NEMA 5-20R.
4. Provide compression-type two-hole connections on all panel board, transformer, ground bus, switchboard, and switchgear conductor connections. Use hydraulic compression tools to provide the correct circumferential pressure for compression connectors. Use tools and dies recommended by the manufacturer of the connectors. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately compressed on the conductor.
5. Private offices shall be provided with two (2) wall mounted fourplex receptacles or four (4) duplex outlets as a minimum. Where printers may be identified to be installed in offices, provide a dedicated duplex at the printer location and branch circuiting shall accommodate two (2) printers per 20A branch circuit.
6. MDF Room shall have one standard duplex receptacle on each of the “short” walls and two standard duplex receptacles on each of the “long” walls. In addition, provide dedicated 20A branch circuits wherever necessary for the special telecom equipment in this room.
7. MDF room to have one (1) fourplex receptacle supplied from a dedicated circuit mounted at 7’-0″ above finished floor and one (1) standard duplex receptacle shall be provided on each wall of IDF Rooms. One of the dedicated fourplex receptacles shall be mounted on the plywood backboard at 7’-0″ above finished floor. The standard duplex receptacles shall be mounted at 18″ above finished floor.
8. Provide a 4” x ¼” x 12” (minimum length) grounding bar in the MDF room. These ground plates shall be interconnected by a #2 AWG copper conductor and shall connect to the main service grounding electrode system.

F. Interior Lighting

1. All lighting shall be LED with a minimum CRI of 80 and a color temperature of 35k.
2. The IDF Room shall be provided with strip type luminaires with reflectors having 10% up-light and arranged perpendicular to the Telecom equipment to equally illuminate front and back of equipment racks.
3. Public spaces and lobby areas shall have decorative lighting with downlights and accent lighting.
4. Enclosed offices, huddle/small conference rooms, copy/work rooms and break rooms and similar spaces shall be provided with architectural type recessed 2'x2' or 2'x4' luminaires, which have a flat center panel, have an approximate 3500 lumen package, are dimmable to 1%.
5. Common Areas: Corridors, lobbies, and other common spaces shall be illuminated, depending on the function, with combinations of down lights, decorative wall sconces, decorative pendant hung fixtures and recessed flat panel type luminaires.
6. Provide undercabinet type task luminaires under all upper cabinets in all office, break room and work/copy room casework, millwork, etc. Undercabinet luminaires shall be locally separately switched from overhead lighting.
7. Toilet rooms shall be illuminated with wall mounted luminaires located above the urinals and water closets with luminaires located above mirrors/lavatory vanities, as well as down lights spaced 8 feet to 10 feet on center down the center of the room. At a minimum, one (1) fixture located near the door shall be unswitched, and shall be fed by an emergency source in smaller toilet rooms. In larger toilet rooms (over three toilets), there shall be additional downlights fed by an emergency source to illuminate in stalls and pathway to entry/exit.
8. Utility, mechanical, and electrical equipment rooms, and janitor's closets shall be illuminated by 4' strip luminaires with industrial reflectors having 10% minimum up-light and with wire guards.

G. Exterior Lighting

1. All lighting shall be LED with a CRI of 80 and color temperature of 35k.
2. Exterior parking lot, roadway, and pedestrian walkway lighting shall primarily consist of pole mounted LED "Dark Sky" compliant, full cutoff luminaires.
3. Lighting at building entrances shall be provided with exterior decorative wall sconces.
4. Parking lots, roadways, and pedestrian walkways shall be illuminated to a maintained average of 2 foot candles at pavement level, with an average to minimum ratio not exceeding 4:1. Pole mounted luminaires shall be located on traffic islands for protection from damage.
5. In areas where there are no traffic islands or where the islands are too small to provide protection, the poles shall be mounted on 36" high reinforced concrete pole bases. All pole bases are to extend 8'-0" minimum below the finished grade and shall be reviewed for proper design and reinforcement by a licensed practicing professional structural engineer.
6. Luminaires outdoors shall be shielded appropriately to ensure that light from the luminaires does not trespass onto other properties or cause a problem or hazard condition to drivers elsewhere in the area including public access ways.
7. Provide exterior lighting adequate for inspection and repair around utility transformers and generators and provide with battery or inverter back-up and provide these luminaires on separate switches from any other lighting on the circuit.

8. Provisions for site cameras and site wi-fi systems shall be integrated in to site poles as required.

H. Lighting Control

1. Lighting controls will meet the latest version of the International Energy Conservation Code.
2. Offices will have automatic controls to turn lights off with manual on (vacancy sensor). Storage, restrooms, and other similar areas will have automatic on and off (occupancy sensor). Sensors will be dual technology and will be wall or ceiling mounted to optimize performance
3. Areas with skylights or windows will have dimmable daylighting controls for 15 feet within the daylight area
4. Building entrances will have security dusk to dawn lighting controlled by a photocell and motion sensor. Remaining exterior lighting will be capable of being reduced by at least 30%.
5. An automated lighting control system will be provided for the facility exterior lighting. The interior lighting will be controlled locally. All controls will meet the current requirements of the IECC, and the local jurisdictional.

I. Fire Alarm

1. Provide an Analog Addressable Fire Alarm System that shall meet the requirements of the codes and NFPA and is suitable for the type and occupancy as defined by the building codes.
2. Fire alarm conductors shall be run in conduit and boxes shall have red covers.
3. Minimum smoke detection will be the basis of design. The system shall utilize photo-electric smoke detection including duct detection, rate-of-rise/fixed temperature heat detection, single-action manual pull-stations, horns, strobes, control modules, monitor modules and relays as necessary to form a complete detection and notification system for the new building.
4. The new work shall be integrated and compatible with the existing campus system. New Fire Alarm Control Panels shall be located at the building served. In addition to panel locations coordinated with Glenwood Springs Fire Department, provide Master Control at OP121 Dispatch, networked to monitor all new work.
5. Provide Brothers or Kroy labelling of all fire alarm devices such that they are visible and readable from the normal viewing positions. The labels shall indicate the network the devices are located on and the associated address of that device.
6. Duct detectors which are inaccessible from the floor shall have a remote indicator light and keyed test switch labeled to match duct detector.
7. The new work shall be integrated and compatible with the existing campus system. New Fire Alarm Control Panels shall be located at the building served. In addition to panel locations coordinated with Glenwood Springs Fire Department, provide Master Control at OP121 Dispatch, networked to monitor all new work.

Phase 6B - Administration Building

A. Normal Power

1. The size of the service based on the building size of 31,066 square feet will be 600 amps at 480/277 volts.
   i) Rough-in for four passenger vehicles will be provided.

B. Emergency Power

1. An emergency generator to accommodate the load of the electrical service in its entirety with an additional 20% spare capacity, including any derating of capacity associated with the elevation of the site. The generator shall be provided in an enclosure exterior to the building. The generator shall provide 277/480V, 3-phase, 4-wire output power to the building distribution system via automatic transfer switches.
2. The generator shall utilize an integral radiator unit. Provide engine start batteries and chargers. Provide oil jacket heaters and battery warmers as necessary for cold starting.
3. Provide system condition and alarm reporting for each generator at a remote status and alarm panel located at OP121 Dispatch, Bus Storage and Operations Building. Provide a remote paging feature to the Owner's maintenance and/or other responding personnel. Provide alarm of "low fuel" at eight (8) hours full load run time remaining.
4. Provide a sub-base mounted fuel tank for thirty-six (36) hours of full load operation and provisions for emergency fuel delivery. Emergency fuel delivery shall be made available and provided to ensure the tank may be completely replenished before the tank fuel is run dry. The engine shall operate on no. 1 or no. 2 diesel.
5. Provide a generator tap box, and a resistive load bank rated at a minimum of 40% of the generator full load kW rating with the ability to step the load onto the system while running to maintain efficient generator loading.
6. Provide two transfer switches, one each for emergency and life safety power. The transfer switches and emergency distribution and branch panel boards shall all be required to be located within electrical room.

C. Uninterruptable Power Supply

1. Uninterruptible Power Supply (UPS) system(s) shall be provided for equipment located in the MDF and IDF rooms. UPS shall be rack mountable in a standard 19" 4-post server rack.
2. Where the number of equipment loads being served are under 5 items, the items shall be served by local UPS units. Where the number of loads exceed 5, the UPS shall be a centralized unit with a distribution panel board on the output to serve the loads from a common location. Refer to the panel board requirements14 above for additional information.
3. Battery system shall be sized for a minimum of fifteen minutes of backup supply.

D. Power Distribution

1. Separate panelboards for lighting, HVAC, and receptacle power will be required.
   i) All panelboards/switchboards will be located in the electrical room.
   ii) Panelboards shall have minimum 30% spare capacity and will have copper bussing.
   iii) TVSS will be provided for all main panels and switchboards.
   iv) Surge protection shall be provided on main panelboards.
   v) Arc flash labeling for distribution equipment shall be provided.
   vi) Lamecoid labeling will be required for panels and equipment with labeling information per NEC.
   vii) Arc Flash analysis shall be provided by the contractor.
   viii) Provide Owner submetering as required by code. The meters shall be digital and capable of monitoring 3-phases independently and overall, for maximum, peak, average, and RMS of the following: amperes, voltages, power factor, volt-amps, wattage and kVar. The system shall be capable of recording these values for a period of not less than 30 days continuously and shall also generate a legible report. The metering system shall be networked together with a Main PC and shall be

located in the Owners designated area. Energy usage shall be reported on a graphical interface as required by code.

2. Commissioning for generator, transfer switches, switchboards, grounding systems, connections, and lighting controls shall be provided.
3. Provide local disconnect switches for mechanical equipment. Mechanical equipment shall be coordinated to meet the available fault current.
4. All interior building conductors shall be installed in conduit and shall be of the following types: electrical metallic tubing (EMT), intermediate metal conduit (IMC), or galvanized rigid conduit (GRC), unless otherwise noted.
5. Provide compression fittings on EMT conduits. Flexible steel conduit shall be utilized for equipment connections in dry areas and liquid-tight conduit shall be utilized in areas subject to moisture unless otherwise noted.
6. Exterior conduit installed underground shall be schedule 40 PVC with PVC Coated GRC elbows.
7. Armored (AC) and Metal Clad (MC), cable shall be acceptable for use in this facility where concealed within wall and ceiling cavities. All homerun circuitry to panelboards shall be installed in conduit.

E. Devices and Outlets

1. Building standard general-purpose receptacles shall be 20 Amp, 120 VAC duplex, specification grade NEMA 5-20R.
2. Floor outlets are required in conference rooms and open space areas. Floor outlet shall be fire rated poke thru's above grade and weatherproof boxes at grade.
3. Ground Fault Circuit Interrupter (GFCI) receptacles shall be 20 Amp, 120 VAC duplex, specification grade NEMA 5-20R, and isolated ground, computer grade receptacles shall be 20 Amp, 120 VAC duplex, specification grade NEMA 5-20R.
4. Provide compression-type two-hole connections on all panel board, transformer, ground bus, switchboard, and switchgear conductor connections. Use hydraulic compression tools to provide the correct circumferential pressure for compression connectors. Use tools and dies recommended by the manufacturer of the connectors. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately compressed on the conductor.
5. Private offices shall be provided with two (2) wall mounted fourplex receptacles or four (4) duplex outlets as a minimum. Where printers may be identified to be installed in offices, provide a dedicated duplex at the printer location and branch circuiting shall accommodate two (2) printers per 20A branch circuit.
6. Furniture System Workstations: Branch circuit density as a minimum shall accommodate one (1) 20A circuit per two workstations and shall match the configuration of the systems furniture wiring harness and meet the requirements of the NEC for powered furniture systems.
7. Open office areas shall be provided with a minimum of four (4) duplexes (20A branch circuit). This power is to be placed on the walls of these areas and is in addition to the power requirements for the systems furniture in these areas.
8. The IDF Room requires dedicated 20A branch circuits for the telephone, data, and security systems. Provide four (4) fourplexes, mounted on unistrut above equipment racks, one (1) above each equipment rack and each connected to a dedicated 20A branch circuit.

9. One (1) fourplex receptacle supplied from a dedicated circuit mounted at 7'-0″ above finished floor and one (1) standard duplex receptacle shall be provided on each wall of IDF Rooms. One of the dedicated fourplex receptacles shall be mounted on the plywood backboard at 7'-0″ above finished floor. The standard duplex receptacles shall be mounted at 18″ above finished floor.
10. MDF Room shall have one standard duplex receptacle on each of the "short" walls and two standard duplex receptacles on each of the "long" walls. In addition, provide dedicated 20A branch circuits wherever necessary for the special telecom equipment in this room.
11. Provide a 4" x ¼" x 12" (minimum length) grounding bar in the MDF room and in all IDF telecom closets. These ground plates shall be interconnected by a #2 AWG copper conductor and shall connect to the main service grounding electrode system.

F. Interior Lighting

1. All lighting shall be LED with a minimum CRI of 80 and a color temperature of 35k.
2. IDF Rooms and MDF Room shall be provided with strip type luminaires with reflectors having 10% up-light and arranged perpendicular to the Telecom equipment to equally illuminate front and back of equipment racks.
3. Public spaces and lobby areas shall have decorative lighting with downlights and accent lighting.
4. Enclosed offices, huddle/small conference rooms, copy/work rooms and break rooms and similar spaces shall be provided with architectural type recessed 2'x2' or 2'x4' luminaires, which have a flat center panel, have an approximate 3500 lumen package, are dimmable to 1%.
5. Open office space lighting shall be provided by cable or pendant suspended luminaires, which produce 90% indirect and 10% direct light.
6. Common Areas: Corridors, lobbies, and other common spaces shall be illuminated, depending on the function, with combinations of down lights, decorative wall sconces, decorative pendant hung fixtures and recessed flat panel type luminaires.
7. Provide undercabinet type task luminaires under all upper cabinets in all office, break room and work/copy room casework, millwork, etc. Undercabinet luminaires shall be locally separately switched from overhead lighting.
8. Toilet rooms shall be illuminated with wall mounted luminaires located above the urinals and water closets with luminaires located above mirrors/lavatory vanities, as well as down lights spaced 8 feet to 10 feet on center down the center of the room. At a minimum, one (1) fixture located near the door shall be unswitched, and shall be fed by an emergency source in smaller toilet rooms. In larger toilet rooms (over three toilets), there shall be additional downlights fed by an emergency source to illuminate in stalls and pathway to entry/exit.
9. Utility, mechanical, and electrical equipment rooms, and janitor's closets shall be illuminated by 4' strip luminaires with industrial reflectors having 10% minimum up-light and with wire guards.

G. Exterior Lighting

1. All lighting shall be LED.
2. Exterior parking lot, roadway, and pedestrian walkway lighting shall primarily consist of pole mounted LED "Dark Sky" compliant, full cutoff luminaires.
3. Lighting at building entrances shall be provided with exterior decorative wall sconces.

4. Parking lots, roadways, and pedestrian walkways shall be illuminated to a maintained average of 2 foot candles at pavement level, with an average to minimum ratio not exceeding 4:1. Pole mounted luminaires shall be located on traffic islands for protection from damage.
5. In areas where there are no traffic islands or where the islands are too small to provide protection, the poles shall be mounted on 36” high reinforced concrete pole bases. All pole bases are to extend 8’-0” minimum below the finished grade and shall be reviewed for proper design and reinforcement by a licensed practicing professional structural engineer.
6. Luminaires outdoors shall be shielded appropriately to ensure that light from the luminaires does not trespass onto other properties or cause a problem or hazard condition to drivers elsewhere in the area including public access ways.
7. Provide exterior lighting adequate for inspection and repair around utility transformers and generators and provide with battery or inverter back-up and provide these luminaires on separate switches from any other lighting on the circuit.
8. Provisions for site cameras and site wi-fi systems shall be integrated in to site poles as required.

H. Lighting Control

1. Lighting controls will meet the latest version of the International Energy Conservation Code.
2. Offices will have automatic controls to turn lights off with manual on (vacancy sensor). Storage, restrooms, and other similar areas will have automatic on and off (occupancy sensor). Sensors will be dual technology and will be wall or ceiling mounted to optimize performance
3. Areas with skylights or windows will have dimmable daylighting controls for 15 feet within the daylight area
4. Building entrances will have security dusk to dawn lighting controlled by a photocell and motion sensor. Remaining exterior lighting will be capable of being reduced by at least 30%.
5. An automated lighting control system will be provided for the facility exterior lighting. The interior lighting will be controlled locally. All controls will meet the current requirements of the IECC, and the local jurisdictional.

I. Fire Alarm

1. Provide an Analog Addressable Fire Alarm System that shall meet the requirements of the codes and NFPA and is suitable for the type and occupancy as defined by the building codes.
2. Fire alarm conductors shall be run in conduit and boxes shall have red covers.
3. Minimum smoke detection will be the basis of design. The system shall utilize photo-electric smoke detection including duct detection, rate-of-rise/fixed temperature heat detection, single-action manual pull-stations, horns, strobes, control modules, monitor modules and relays as necessary to form a complete detection and notification system for the new building.
4. The new work shall be integrated and compatible with the existing campus system. New Fire Alarm Control Panels shall be located at the building served. In addition to panel locations coordinated with Glenwood Springs Fire Department, provide Master Control at OP121 Dispatch, networked to monitor all new work.

5. Provide Brothers or Kroy labelling of all fire alarm devices such that they are visible and readable from the normal viewing positions. The labels shall indicate the network the devices are located on and the associated address of that device.
6. Duct detectors which are inaccessible from the floor shall have a remote indicator light and keyed test switch labeled to match duct detector.
7. The new work shall be integrated and compatible with the existing campus system. New Fire Alarm Control Panels shall be located at the building served. In addition to panel locations coordinated with Glenwood Springs Fire Department, provide Master Control at OP121 Dispatch, networked to monitor all new work.

Phase 8 - Storage Building

A. Normal Power

1. The size of the service, shall be 100 amps at 120/208 volts. The building shall be fed from the existing GMF building.

B. Power Distribution

1. All panelboards/switchboards will be located in the electrical room.
2. Panelboards shall have minimum 30% spare capacity and will have copper bussing.
3. TVSS will be provided for all main panels and switchboards.
4. Surge protection shall be provided on main panelboards.
5. Arc flash labeling for distribution equipment shall be provided.
6. Lamecoid labeling will be required for panels and equipment with labeling information per NEC.
7. Arc Flash analysis shall be provided by the contractor.
8. Provide Owner submetering as required by code. The meters shall be digital and capable of monitoring 3-phases independently and overall, for maximum, peak, average, and RMS of the following: amperes, voltages, power factor, volt-amps, wattage and kVar. The system shall be capable of recording these values for a period of not less than 30 days continuously and shall also generate a legible report. The metering system shall be networked together with a Main PC and shall be located in the Owners designated area. Energy usage shall be reported on a graphical interface as required by code.
9. Provide local disconnect switches for mechanical equipment. Mechanical equipment shall be coordinated to meet the available fault current.
10. All interior building conductors shall be installed in conduit and shall be of the following types: electrical metallic tubing (EMT), intermediate metal conduit (IMC), or galvanized rigid conduit (GRC), unless otherwise noted.
11. Provide compression fittings on EMT conduits. Flexible steel conduit shall be utilized for equipment connections in dry areas and liquid-tight conduit shall be utilized in areas subject to moisture unless otherwise noted.
12. Exterior conduit installed underground shall be schedule 40 PVC with PVC Coated GRC elbows.
13. Armored (AC) and Metal Clad (MC), cable shall be acceptable for use in this facility where concealed within wall and ceiling cavities. All homerun circuitry to panelboards shall be installed in conduit.
14. Devices and Outlets
15. Building standard general-purpose receptacles shall be 20 Amp, 120 VAC duplex, specification grade NEMA 5-20R.
16. Floor outlets are required in conference rooms and open space areas.

17. Ground Fault Circuit Interrupter (GFCI) receptacles shall be 20 Amp, 120 VAC duplex, specification grade NEMA 5-20R, and isolated ground, computer grade receptacles shall be 20 Amp, 120 VAC duplex, specification grade NEMA 5-20R.
18. Provide compression-type two-hole connections on all panel board, transformer, ground bus, switchboard, and switchgear conductor connections. Use hydraulic compression tools to provide the correct circumferential pressure for compression connectors. Use tools and dies recommended by the manufacturer of the connectors. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately compressed on the conductor.

C. Interior Lighting

1. All lighting shall be LED with a minimum CRI of 80 and a color temperature of 35k.
2. Common Areas: Corridors, lobbies, and other common spaces shall be illuminated, depending on the function, with combinations of down lights, decorative wall sconces, decorative pendant hung fixtures and recessed flat panel type luminaires.
3. Toilet rooms shall be illuminated with wall mounted luminaires located above the urinals and water closets with luminaires located above mirrors/lavatory vanities, as well as down lights spaced 8 feet to 10 feet on center down the center of the room. At a minimum, one (1) fixture located near the door shall be unswitched, and shall be fed by an emergency source in smaller toilet rooms. In larger toilet rooms (over three toilets), there shall be additional downlights fed by an emergency source to illuminate in stalls and pathway to entry/exit.
4. Utility, mechanical, and electrical equipment rooms, and janitor's closets shall be illuminated by 4' strip luminaires with industrial reflectors having 10% minimum up-light and with wire guards.

D. Exterior Lighting

1. All lighting shall be LED with a CRI of 80 and color temperature of 35k.
2. Exterior parking lot, roadway, and pedestrian walkway lighting shall primarily consist of pole mounted LED "Dark Sky" compliant, full cutoff luminaires.
3. Lighting at building entrances shall be provided with exterior decorative wall sconces.
4. Parking lots, roadways, and pedestrian walkways shall be illuminated to a maintained average of 2 foot candles at pavement level, with an average to minimum ratio not exceeding 4:1. Pole mounted luminaires shall be located on traffic islands for protection from damage.
5. Luminaires outdoors shall be shielded appropriately to ensure that light from the luminaires does not trespass onto other properties or cause a problem or hazard condition to drivers elsewhere in the area including public access ways.
6. Provisions for site cameras and site wi-fi systems shall be integrated in to site poles as required.

E. Lighting Control

1. Lighting controls will meet the latest version of the International Energy Conservation Code.
2. Building entrances will have security dusk to dawn lighting controlled by a photocell and motion sensor. Remaining exterior lighting will be capable of being reduced by at least 30%.
3. An automated lighting control system will be provided for the facility exterior lighting. The interior lighting will be controlled locally. All controls will meet the current requirements of the IECC, and the local jurisdictional.

Telecommunications Design

Phase 6A - Transit Station

A. Project Description

1. The telecommunications system at the RFTA Phase 6B Administrative Building aims to provide reliable, efficient, and secure infrastructure. Services and systems supported by the communications network include voice, data, CATV, fire alarm, electronic security, building automation, and Owner systems.
2. Telecommunications systems shall comply the RFTA Phase 6 Program of Requirements (POR) dated January 16, 2023, as well as the National Electrical Code (NEC), EIA/TIA standards, and BICSI.

B. Telecommunications

1. Outside Plant:
   - i) The new Transit Station will be served from existing RFTA Glenwood campus main point-of-presence and MDF, Data Equipment Room FM531.
   - ii) At a minimum, a concrete-encased ductbank with four (4) 4” conduits shall be provided between the nearest serving communications vault and the communications entrance facility inside the Transit Station.
   - iii) New vaults shall be provided as required.
   - iv) The incoming cabling shall consist of one (1) 12-strand and one (1) 6-strand OS2 singlemode armored optical fiber for communications and fire alarm, respectively.
   - v) The fiber optic cabling shall be terminated to a rack-mount fiber optic enclosure.
2. Equipment Facilities:
   - i) The Transit Station shall have a single Telecom Room (TR) serving as the primary telecom room and communications entrance facility (EF).
   - ii) This TR shall house telecommunications distributions equipment supporting data, voice, wireless access, and structured cabling distribution for horizontal cabling.
3. Distribution Frames:
   - i) The TR shall house an Intermediate Distribution Frame (IDF).
   - ii) Distribution frames consist of:
     - (1) Free-standing floor-mounted 4-post racks,
     - (2) Rack-mounted RJ45 patch panels (Category 6A minimum compliance).
     - (3) Rack-mounted fiber optic patch panels.
     - (4) Wall mount copper backbone termination panels.
     - (5) Cross-connect cabling and patch cables.
     - (6) Cable management.
     - (7) Cable runway.
4. Telecommunications Spaces:
   - i) All new Telecommunications Spaces shall be built out in adherence to current BICSI best practices with the following considerations:
     - (1) Architectural
       - (a) Minimum interior dimensions: TR/IDF: 10’-0” x 10’-0”
       - (b) Floors shall be sealed concrete.
       - (c) Open to structure with no dropped ceiling.
       - (d) Finished walls along all four sides that extend to building structure.
       - (e) Walls shall be lined with AC-grade void-free ¾” plywood painted on all sides with two (2) coats of fire-retardant white paint.

(f) Doors to be a minimum of 36” wide x 84” tall and swing out, away from the room, where permitted by code.
(g) Entrance to the room shall not be through an electrical room, mechanical room, or a non-circulation space (i.e., storage or restroom).

(2) Electrical/Lighting:
(a) Per Rack: One (1) dedicated, non-switched 30A 120V circuit on a twist lock receptacle (L6-30R) and one (1) dedicated, non-switched 20A 120V circuit on a quad receptacle (5-20R) mounted to the cable runway to the rear of the rack.
(b) 20A 120V duplex convenience outlets placed at 6’ intervals on perimeter walls at standard outlet height, with at least one (1) per wall.
(c) Lighting with a minimum of 50 foot-candles (538 lux measured at 3 feet (1 meter) from the floor in front of a behind the equipment racks. Provide one light fixture with emergency power or battery pack.
(d) An electrical panel shall be provided inside each room and shall be dedicated to serving only the equipment in the telecom room.

(3) Mechanical/Plumbing:
(a) A dedicated fan coil unit (FCU) that maintains the temperature between 64° and 75° and humidity between 30% and 50%. FCU shall be located outside the telecom room such that only serving supply/return ductwork is in the space.
(b) VAV’s may be used in TR/IDFs as heat loads dictate and may be located in the telecommunications space.
(c) Ductwork or piping (e.g., water, waste, steam) shall not be routed through, above, or in the walls enclosing the telecommunications space.

5. Grounding and Bonding:
i) All telecommunications equipment will be bonded to the electrical system ground per TIA-607-D standard.
ii) The primary bonding busbar (PBB) shall be located in the telecom room.
(1) The PBB shall be connected to the main grounding electrode in the main electrical panel and to the cable runway, equipment rack bonding busbar (RBB), and building steel within the telecom room.

6. Horizontal Infrastructure and Cabling:
i) Horizontal cabling shall be installed in cable tray or J-hooks above accessible ceilings to the conduit termination at the outlet.
ii) Cabling shall be installed in conduit through inaccessible locations, such as gypsum board ceilings and walls.
iii) 4” conduit sleeves shall be provided from the TR to above accessible ceilings to allow cabling installation.
iv) Re-enterable fire-rated cable pathways shall be provided at fire-rated partitions.
v) Two (2) 2” conduits, each with a weatherhead, shall be provided as a pathway from the IDF to the roof for radio antennae or satellite connectivity.
vi) Telecom outlets shall consist of a 4-11/16” x 4-11/16” x 2-1/8” metal outlet box with a 1-gang mud-ring cover plate.
vii) 1” EMT shall be routed from each outlet to the nearest accessible ceiling space.
viii) Faceplates shall be thermoplastic with label windows at the top and bottom with four (4) ports to accept keystone-style jacks.

ix) Wall phones shall have a 1-port stainless steel wall plate with mounting studs.
x) All horizontal cabling shall be four-pair Category 6A UTP, plenum rated.
xi) Connectors shall be IDC-type Category 6A rated RJ45/8P8C, non-keyed. All terminations shall be T568B.
(1) Basis of Design:
(a) Belden
(b) Commscope
(c) Leviton
(d) Superior Essex
xii) Typical outlet configurations:
(1) Workstation: two (2) Category 6A cables
(2) Wireless access points: two (2) Category 6A cables
(3) CCTV cameras: one (1) Category 6A cable

7. Wireless access points shall be located to provide Wi-Fi coverage throughout the building and immediate building exterior (building-mounted) to achieve 99% coverage.

C. Audio Visual and Controls Systems

1. PA System
i) The PA system will provide audible notification of announcements and recorded content.
ii) The PA system will integrate with a visual display system that presents departures, arrivals, and bus boarding location.
iii) The public address system will consist of:
(1) In-ceiling or surface mounted loudspeakers
(2) Power amplifier and digital signal processor
(3) Push-to-talk paging microphone
(4) Audio source intake from automated scheduling system, weather alert system, and other operational system equipment.

2. Digital Signage
i) Digital signage displays communicate information by playing content from a digital signage player.
ii) Digital signage will be sized based on AVIXA DISCAS Basic Decision Making viewing with a minimum element height of 4%. (ANSI/INFOCOMM V202.01:2016)
iii) The standard player solution uses:
(1) LED/LCD displays mounted on tilt wall mount, Panasonic or equal.
(2) Digital signage players with 64GB micro SD card, BrightSign or equal.
(3) Data outlet and duplex power receptacle at display height.
(4) Content shall be dynamically pulled content from the cloud.

3. Audiovisual Systems by Space
i) Terminal Exterior
(1) Passenger loading/unloading zones.
(2) PA System
ii) Lobby / Waiting
(1) This entrance space will be utilized by customers for waiting, checking schedules, purchasing tickets, and for accessing the restrooms.
(2) This system will include:
(a) PA System
(b) Digital Signage

iii) Driver Lounge
(1) The driver's breakroom shall have a single display for use by the terminal drivers.
(2) This display is intended to display on going weather and have the audio portion of the broadcast broadcasted through PA speakers mounted in the ceiling.

D. Electronic Safety and Security

1. Electronic Security Overview: the electronic security system at Administration Building shall enhance safety and security within the facilities, ensuring a secure environment for staff and visitors. This section contains proposed access control and video surveillance systems.
2. Access Control:
   i) Access Control equipment (system controllers, credential readers, alarm switches, field control modules, electronic door hardware, network equipment and power supplies) will be deployed and complement the Roaring Fork Transit Authority operation security plan, policies, and procedures.
      (1) Basis of Design: Nice/Linear eMerge 5000.
   ii) All cable and wires will meet or exceed the individual device manufacturers' recommendation.
   iii) Head end equipment, network equipment, associated control modules and required supporting devices are to be located within a secure Telecom Room.
   iv) Credential reader technology will be determined following the selection of a credential type.
      (1) Basis of Design: HID
   v) The building exterior will be monitored through credential doors, and door contacts.
   vi) Interior locations will be discussed with the owner. It is expected at this time that the following rooms will require access control:
      (1) Station Clerk/Ticketing OP155
      (2) Road Supervisor OP151
      (3) IDF FM544
3. Surveillance Systems:
   i) Surveillance system equipment (servers, cameras, control modules, mounts, power supplies and network switches) will be deployed and complement the Roaring Fork Transit Authority Operation Security plan, policies, and procedures.
      (1) Basis of Design: Mobotix.
   ii) The surveillance system equipment shall be fully compatible and integrated with the access control system and all intrusion detection equipment.
   iii) All headend and or network equipment will be installed within a secured telecom or security room.
   iv) All cable and wires will meet or exceed the individual device manufacturers' recommendations. Cable runs will not exceed device manufacturers recommendations and will terminate in the secured telecom room.
   v) Surveillance system equipment shall monitor and store a minimum of 60-days of video at 30 fps frame rate.
   vi) Camera locations and specific views will be determined by the technology design team or specified by Owners.
   vii) The following recommended camera installation locations will be coordinated with the project team.
      (1) Access-controlled doors.

(2) Elevator Cab
(3) Hallways

Phase 6B - Administration Building

A. Telecommunications

1. The telecommunications system at the RFTA Phase 6B Administrative Building aims to provide reliable, efficient, and secure infrastructure. Services and systems supported by the communications network include voice, data, CATV, fire alarm, electronic security, building automation, and Owner systems.
2. Telecommunications systems shall comply the RFTA Phase 6 Program of Requirements (POR) dated January 16, 2023, as well as the National Electrical Code (NEC), EIA/TIA standards, and BICSI.
3. Outside Plant:
   i) Same as Building 6A
4. Equipment Facilities:
   i) The Administration Building shall have a Main Equipment Room (ER) serving as the primary telecom room and communications entrance facility.
   ii) Additional telecom rooms (TR's) shall be centrally located on each floor and should be vertically stacked, floor-to-floor to best facilitate cable routing between levels.
   iii) The ER and TRs shall house telecommunications distribution equipment supporting data, voice, wireless access, and structured cabling distribution for both horizontal and backbone cabling.
5. Distribution Frames:
   i) The ER and each TR will house an intermediate Distribution Frame (IDF).
   ii) Distribution frames consist of:
      (1) Free-standing floor-mounted 4-post racks,
      (2) Rack-mounted RJ45 patch panels (Category 6A minimum compliance).
      (3) Rack-mounted fiber optic patch panels.
      (4) Wall mount copper backbone termination panels.
      (5) Cross-connect cabling and patch cables.
      (6) Cable management.
      (7) Cable runway.
6. Telecommunications Spaces:
   i) Same as Building 6A.
7. Grounding and Bonding:
   i) All telecommunications equipment will be bonded to the electrical system ground per TIA-607-D standard.
   ii) The primary bonding busbar (PBB) shall be located in the ER and be connected to the grounding electrode in the main electrical panel.
   iii) Secondary bonding busbars (SBB) shall be provided in each TR and shall be connected to the electrical panelboard, cable runway, equipment rack bonding busbar (RBB), and building steel within the telecom room.
   iv) The Telecommunications Bonding Backbone (TBB) shall extend from the PBB to the SBB on the top floor, with each intermediate SBB tapping off the TBB.
   v) Bonding provisions shall be provided for cable tray and conduit to connect to the telecommunications bonding system.
8. Horizontal Infrastructure and Cabling:

i) Same as Building 6A.
ii) Backbone Infrastructure and Cabling:
iii) Backbone infrastructure and cabling shall maintain a hierarchical star topology.
iv) Backbone cabling shall be routed in basket-style cable tray above accessible ceilings.
v) EMT conduit shall be used where cabling is routed through inaccessible partitions; pull-boxes shall be provided, as required.
vi) The following backbone cables will be homerun from the ER to each TR:
(1) One (1) 12-strand Singlemode OS2 optical fiber, plenum-rated (OFNP)
(2) One (1) 25-pair Category 5e UTP, plenum-rated – for analog phone lines required to support the life safety systems and elevators.
vii) All fiber strands shall be terminated and housed in a fiber optic patch panel.
viii) Fiber connectors shall be UPC, ceramic, epoxy polish, and LC type. Fiber connectors shall be pre-connectorized pigtail assemblies and fusion spliced to the backbone.
ix) Each pair of the Cat5e UTP cabling shall be terminated to pre-loaded rack mount backbone patch panel in the ER and in each TR.

9. Distributed Antenna Systems (DAS)
i) Life safety DAS (ERRCS) and cellular DAS systems are not included in the current design scope.
ii) An ERRCS will be required and should be coordinated with the AHJ. A
iii) Cellular DAS should be considered to augment cellular connectivity inside the facility.

B. Audio Visual and Control Systems

1. Digital Signage
i) Same as Building 6A.
2. Room Scheduling
i) Room scheduling displays are intended to communicate room booking information by pulling schedule data from a central database or calendar.
ii) At this time, all conference rooms are intended to have a room scheduling panel. However, the project may target savings in these systems by downsizing the touch panel to a 5” or 7” model or forego the touch panel entirely and only installing rough-in.
iii) Room scheduling panels are anticipated at the following spaces:
(1) Multipurpose
(2) Small Meetings
(3) Standard Conference (Qty 2)
(4) Large Conference
3. Audiovisual Systems by Space
i) Pre-function
(1) This entrance space will be utilized for multiple functions, including as a pre-function area for the adjacent multipurpose space or overflow for the multipurpose space.
(2) This system will include:
(a) Displays, wall-mounted above counter height
(b) A digital signage player
(c) A wired HDMI video input on the wall
(d) A wireless content sharing device

(e) In-ceiling loudspeakers
(f) A wall-mounted button panel to control the system (display on/off, audio volume, video source selection).

ii) Multipurpose
(1) To keep this space functional for multiple uses and configurations, the AV systems included will be relatively minimal.
(2) This system will include:
(a) Displays, wall-mounted above counter height
(3) A wired HDMI video input available on the wall
(a) A wireless content sharing device
(b) In-ceiling loudspeakers
(c) Wireless microphones (qty 2)
(d) A wall-mounted button panel to control the system (display on/off, audio volume, video source selection).

iii) Small Meeting
(1) The small meeting room is intended to be collaborative break-out spaces used by small groups.
(2) These systems will include:
(a) Displays, wall-mounted above table height.
(b) A wired HDMI video input, available on the wall.
(c) A wireless content sharing device.
(d) A wall-mounted button panel to control the system (display on/off, audio volume, video source selection).
(e) BYO video conferencing system using Vaddio HuddleSHOT or equal, which provides a camera, microphone, and speaker in a wall-mounted sound bar form factor.

iv) Standard Conference (Qty: 2)
(1) The standard conference rooms are intended to be collaborative meeting spaces used by small-to-medium sized groups.
(2) These spaces have walls composed entirely of glazing which limits the ability to mount AV equipment to the walls. This necessitates the use of systems mounted to mobile furniture or ceiling-mounted equipment.
(3) These systems will include:
(a) Displays, mounted to a portable cart OR ceiling mount projector and motorized screen.
(b) A wired HDMI video input, available at the portable cart OR via poke-thru at the floor and extended to the tabletop.
(c) A wireless content sharing device.
(d) A surface-mounted touch screen or button panel to control the system (display on/off, audio volume, video source selection) located at the conference room table.
(e) BYO video conferencing system: for a portable cart, a Vaddio HuddleSHOT or equal, which provides a camera, microphone, and speaker in a sound bar form factor OR an installed solution that would leverage ceiling-mounted microphones and loudspeakers, and a camera integrated into the projection screen.

v) Large Conference (Qty: 1)

(1) The Large Conference room is intended to be an executive board room and meeting space for larger groups.
(2) This space has walls composed entirely of glazing which limits the ability to mount AV equipment to the walls. This necessitates the use of ceiling-mounted AV equipment and connectivity at the table via poke-thru' s at the floor.
(3) These systems will include:
(a) A ceiling mount projector and motorized screen.
(b) Several wired HDMI video inputs, via poke-thru at the floor and extended to the tabletop.
(c) A wireless content sharing device.
(d) A tabletop touch screen to control the system (display on/off, audio volume, video source selection) located at the conference room table.
(e) BYO video conferencing support that allows users with a laptop running Teams or Zoom to leverage the installed AV components (microphones, loudspeakers, camera) to conduct meetings.
(f) An integrated video conferencing system using an in-room PC that allows the system to run natively without the need for an external laptop. This system includes ceiling-mounted microphones and loudspeakers, and two (2) PTZ cameras – one integrated into the projection screen and the other mounted to the ceiling at the opposite end of the room.

C. Electronic Safety and Security

1. Electronic Security Overview: the electronic security system at Administration Building shall enhance safety and security within the facilities, ensuring a secure environment for staff and visitors. This section contains proposed access control and video surveillance systems.
2. Access Control:
i) Access Control equipment (system controllers, credential readers, alarm switches, field control modules, electronic door hardware, network equipment and power supplies) will be deployed and complement the Roaring Fork Transit Authority operation security plan, policies, and procedures.
(1) Basis of Design: Nice/Linear eMerge 5000.
ii) All cable and wires will meet or exceed the individual device manufacturers' recommendation.
iii) Head end equipment, network equipment, associated control modules and required supporting devices are to be located within a secure Telecom Room.
iv) Credential reader technology will be determined following the selection of a credential type.
(1) Basis of Design: HID
v) The building exterior will be monitored through credential doors, and door contacts.
vi) Interior locations will be discussed with the owner. It is expected at this time that the following rooms will require access control:
(1) Secure Storage/Safe AD144,
(2) Mech FM544,
(3) Storeroom/Media AD223,
(4) MDF FM541,
(5) Level 1 Electrical Room,
(6) Secure File Storage AD206,

(7) IDF FM542,
(8) Level 2 Electrical Room,
(9) IDF FM543,
(10) Level 3 Electrical Room,
(11) Special Project Mgr AD112,
(12) Executive Officer AD104,
(13) Executive Officer AD103,
(14) Executive Officer AD102,
(15) Executive Officer AD101.

3. Surveillance Systems:
   i) Surveillance system equipment (servers, cameras, control modules, mounts, power supplies and network switches) will be deployed and complement the Roaring Fork Transit Authority Operation Security plan, policies, and procedures.
      (1) Basis of Design: Mobotix.
   ii) The surveillance system equipment shall be fully compatible and integrated with the access control system and all intrusion detection equipment.
   iii) All headend and or network equipment will be installed within a secured telecom or security room.
   iv) All cable and wires will meet or exceed the individual device manufacturers' recommendations. Cable runs will not exceed device manufacturers recommendations and will terminate in the secured telecom room.
   v) Surveillance system equipment shall monitor and store a minimum of 60-days of video at 30 fps frame rate.
   vi) Camera locations and specific views will be determined by the technology design team or specified by Owners.
   vii) The following recommended camera installation locations will be coordinated with the project team.
      (1) Access-controlled doors.
      (2) Elevator Cab
      (3) Hallways

Phase 8 - Storage Building

D. Telecommunications

1. Limited telecommunications scope is expected for the new Storage Building. Backbone cabling will be run from the nearest serving IDF to support communications and security requirements.
2. A wall mount telecommunication enclosure will house an IDF for consolidation of backbone cabling, horizontal cabling, and network equipment.
3. Communications outlets and wireless access points shall be provided as dictated by program requirements.

E. Electronic Safety and Security

1. Electronic security system equipment will be provided at the Storage Building and will be tied back to systems elsewhere on campus for monitoring and control.
2. Overhead door contacts and surveillance cameras are expected to be installed at exterior doors to the storage building.
3. Surveillance cameras are expected to be installed at interior and exterior locations at the storage building.

Acoustical Design

A. General Information

1. Acoustical design criteria outlined herein are based on the January 16, 2023, RFTA Program of Requirements (POR) for the project. Salas O'Brien is hereby confirming acoustical design criteria identified in the POR, proposing supplementary acoustical design criteria not identified in the POR, and providing recommendations to fulfill these acoustical design goals.

Phase 6A – Transit Station

A. Room Acoustics

1. Reverberation Time Criteria
2. Reverberation Time (RT) criteria is a single number rating that describes average reverberation in a space (125-4000Hz). Per the POR, spaces should be designed to control RTs to not exceed those listed in the following tables. Room type RT values that are not identified in the POR are indicated with an asterisk (*).

Room Type	Maximum RT (seconds)
Office (private)	0.6
Ticketing	0.8
Lounge	0.8*
Lobby	1.0*

3. Office (private)
   i) This room should have a mineral fiber type sound-absorbing ACT ceiling (NRC 0.60 minimum, CAC 35 minimum) throughout the entire ceiling area.
4. Ticketing
   i) This room should have a mineral fiber type sound-absorbing ACT ceiling (NRC 0.85 minimum, CAC 35 minimum) throughout the entire ceiling area. Additionally, the floor should be carpeted.
5. Lounge
   i) These rooms should have mineral fiber type sound-absorbing ACT ceilings (NRC 0.80 minimum, CAC 35 minimum) throughout the entire ceiling area.
6. Lobby
   i) This space should have a 1" thick minimum sound-absorptive ceiling finish (NRC 0.80 minimum) concealing most of the roof underside area.

B. SOUND ISOLATION

1. Sound Isolation Criteria for Interior Walls
   i) Sound Transmission Class (STC) is a single number rating that describes a partition's sound transmission loss in a controlled lab environment. Sound isolation in the field (ASTC) is typically 3-5 points lower than the partition's STC measured in a lab. Per the POR, interior elements should be designed to perform at STC values equal or greater than those listed in the following tables. Room type STC values not identified in the POR are indicated with an asterisk (*). It is our understanding that operable partitions will not be used on this project.

Room Type	Minimum STC
Office (private)	45
Ticketing	45
Toilet (private)	45*

2. Interior Wall Types
   i) For STC 45 walls, partition should consist of two layers of 5/8”, 2psf minimum gypsum board on one side of a single 3-5/8” steel stud with batt insulation in stud cavities and one layer of 5/8”, 2psf gypsum board on the other side of the stud. This wall shall extend and seal to floor/roof deck above.
3. Interior Doors
   i) The POR calls for STC 45 rated solid-core wood doors. However, we do not recommend specifying STC rated door/frame/hardware assemblies for this project due to their high costs and low value. STC rated solid-core wood door/frame assemblies come as a kit of many parts, and in our experience, do not typically perform better than properly specified built-up gasketed door/frame/hardware assemblies that are simpler to install. We recommend that interior doors at rooms with STC partitions consist of kerfed steel frame filled with mineral wool, solid-core wood door with 6psf minimum surface weight, 5/8” minimum laminated glass at any vision lite, kerf-mounted silicone bulb type head/jamb seals, fixed neoprene multi-fin door bottom sweep, and metal threshold. If requirement for STC rated door/frame/hardware assemblies is maintained, then we instead recommend STC 45+ rated wood-veneer-faced hollow metal doors that have the door, frame, and hardware factory-assembled.
4. Interior Windows
   i) Interior windows in walls with STC 45 requirements should have steel frame filled with mineral wool, dual glazing consisting of 1/4” minimum laminated glass and 3/16” minimum monolithic glass separated by a 2” minimum airspace, and neoprene or silicone gasketing.
5. Sealed Joints and Penetrations
   i) All walls and floors at sound isolating assemblies are to have backer rod and acoustical sealant applied on both sides of the wall and floor at perimeter joints and at penetrations due to structural and building service systems.

C. BUILDING SERVICES NOISE

1. Noise Criteria
   i) Noise Criteria (NC) is a single number rating that describes maximum background (ambient) noise levels within interior spaces. Per the POR and 2023 ASHRAE Handbook – HVAC Applications, building services should be designed to produce NC levels not exceeding those listed in the following tables.

Room Type	Maximum NC
Office (private)	35
Ticketing	35
Lounge	40
Lobby	40
Corridor	45

2. Air Handling Units
   i) Air handling units should be selected for efficient operation and low noise levels to minimize the extent of noise reduction measures necessary. Rooftop-mounted air handling units should be supported directly on a vibration isolation curb with constrained spring isolators.
3. Heat Pumps
   i) Heat pumps should be quiet-type with insulated panels and compressor enclosures. Heat pumps should be located away from spaces with criteria of NC-40 or less.
4. VAV Terminal Units
   i) VAV terminal units should be quiet-type (e.g., Price SDV) to minimize the extent of noise reduction measures necessary.
5. Duct Distribution
   i) Avoid running ductwork serving spaces with criteria of NC-35 or less directly from an adjacent, noisy space such as a mechanical room or restroom. Main ducts should be run within hallways where possible, with separate branch ducts serving each individual space.
   ii) Ducts should be designed to have duct air velocities not exceeding the following:

Location:	NC-30	NC-35	NC-40	NC-45	NC-50
	Maximum duct air velocity (fpm)				
Main supply and return ducts outside of space	1800	2000	2200	2400	2600
Main supply and return ducts within space (including above ceilings)	1100	1300	1500	1700	1900
Branch supply and return ducts	800	900	1000	1100	1200
Terminal supply and return ducts < 10 diameters from outlet/inlet	500	550	600	650	700

   iii) Air balancing dampers should be located at branch takeoffs away from supply outlets and return inlets – a minimum of 5 duct diameters from the nearest terminal device.
   iv) Supply diffusers and return grilles should have NC ratings at least 5 points below the space's NC target.
   v) Return air systems at spaces with gasketed doors should have a lined sheet metal transfer duct in a "U" or "S" profile thru partitions. Minimum length of transfer duct should be 7 duct diameters. Return air grilles within ACT ceilings should have a lined sheet metal elbow boot. Minimum length of boot to be 4 duct diameters.

6. Duct Lining
    i) Internal duct lining should be used at final branch return ducts and at supply ducts downstream of VAV terminal units serving spaces with criteria of NC-40 or less. Duct lining should be 1” thick minimum, 1.5 pcf density fiberglass core with integral coated facing.
7. Flex Ducts
    i) Flex ducts with 1” thick acoustical insulation should be provided for all concealed terminal supply and return ducts located less than 10 duct diameters from supply diffusers and return grilles.
8. Duct Sound Attenuators
    i) For general pricing purposes, anticipate a 7-foot long elbow duct sound attenuator in the main supply and return duct for each AHU, a 7-foot long duct sound attenuator downstream of heat pumps serving spaces that are NC-40 or less, and a 5-foot long duct sound attenuator downstream of VAV terminals serving spaces that are NC-30.
9. Vibration Isolation
    i) Mechanical and plumbing equipment is to be supported from vibration isolators per the 2023 ASHRAE Handbook – HVAC Applications. Ductwork and piping connections to vibration isolated equipment are to use flexible duct/pipe connectors.
    ii) All transformers should be supported from elastomer-in-shear mounts. Electrical connections to transformers and vibration isolated mechanical/plumbing equipment should be made with flexible steel conduit installed in a slack “U-shape” in sufficient length to not become taut during normal operation.
10. Transformer Sound Levels
    i) Transformer sound levels should be at least 3dB less than sound levels indicated in NEMA ST 20.
11. Electrical/Telecommunications Box Penetrations
    i) For back boxes recessed into sound walls, back-to-back boxes should be staggered a minimum of 16 inches o.c. Back boxes and conduit connections should be covered with sound putty pads (e.g., Kinetics Isobacker).

Phase 6B - Administration Building

A. ROOM ACOUSTICS

1. Reverberation Time Criteria

Room Type	Maximum RT (seconds)
Conference	0.6*
Meeting	0.6*
Quiet	0.6*
Office (private)	0.6
Office/Workspace/Copy/Plan (shared/open)	0.8
Workroom	0.8*
Flexible	0.8*
Fitness	0.8*
Locker	0.8*
Kitchenette	0.8*
Pre-Function	1.0*
Lounge/Reception	1.0*

2. Conference, Meeting, Flexible
    i) These rooms should have mineral fiber type sound-absorbing ACT ceilings (NRC 0.80 minimum, CAC 35 minimum) throughout the entire ceiling area. Two adjacent walls should have 1” sound-absorbing panels (NRC 0.80 minimum) from 3’-0” AFF to door height.
3. Flexible
    i) This room should have a mineral fiber type sound-absorbing ACT ceiling (NRC 0.80 minimum, CAC 35 minimum) throughout the entire ceiling area. Interior walls should have tackable 1” sound-absorbing panels (NRC 0.80 minimum) from 3’-0” AFF to door height.
4. Quiet, Office (private), Fitness, Locker, Kitchenette
    i) These rooms should have mineral fiber type sound-absorbing ACT ceilings (NRC 0.60 minimum, CAC 35 minimum) throughout the entire ceiling area.
5. Office/Workspace/Copy/Plan/Workroom (shared/open)
    i) These rooms should have mineral fiber type sound-absorbing ACT ceilings (NRC 0.85 minimum, CAC 35 minimum) throughout the entire ceiling area. Additionally, the floor should be carpeted.
6. Pre-Function, Lounge/Reception
    i) These rooms should have mineral fiber type sound-absorbing ACT ceilings (NRC 0.80 minimum, CAC 35 minimum) throughout the entire ceiling area.

B. SOUND ISOLATION

1. Sound Isolation Criteria for Interior Walls and Floors

Room Type	Minimum STC	
Flexible (adjacency to Women/Men restroom)	60*	
Quiet (adjacency to Women/Men restroom)		60*
Office (private) (adjacency to Women/Men restroom)	60*	
Meeting (adjacency to Office [private])	50*	
Flexible (adjacency to Media/Pre-Function/Corridor)		45
Quiet (adjacency to Storage/Office [shared/open])		45*
Meeting (adjacency to Copy/Office [shared/open])		45
Conference	45	
Office (private) (adjacency to Plan/Office[private]/Office[shared/open]/Plan)		45
Fitness	45	
Toilet (private)	45*	

2. Interior Wall Types
    i) For STC 45 walls, partition should consist of two layers of 5/8”, 2psf minimum gypsum board on one side of a single 3-5/8” steel stud with batt insulation in stud cavities and one layer of 5/8”, 2psf gypsum board on the other side of the stud. This wall shall extend and seal to floor/roof deck above.
    ii) For STC 50 walls, partition should consist of two layers of 5/8”, 2psf minimum gypsum board on both sides of a single 3-5/8” steel stud with batt insulation in stud cavities. This wall shall extend and seal to floor/roof deck above.

3. For STC 60 walls, partition should consist of two layers of 5/8”, 2psf minimum gypsum board on both sides of double 3-5/8” steel studs (separated by 1/4" gap) with batt insulation in stud cavities. This wall shall extend and seal to floor/roof deck above.
4. Interior Floor Types and Finishes
    i) To meet STC 45+ floor/ceiling composite construction at Levels 2 and 3, the floor structure should consist of a 3” minimum thickness of normal weight concrete and ceilings below should be ACT. At Levels 2 and 3; all offices (private and shared/open), open office circulation areas, and conference/meeting rooms should have carpet flooring to reduce noise/vibration from footfall and chair movement.
    ii) At the Fitness room, a 1/2" wide slab isolation joint should be provided along the room perimeter and filled with resilient polyethylene foam. Minimal rebar dowels should cross the joint. Additionally, 1/2" thick rubber sports flooring should be provided within the Fitness room to reduce noise/vibration from weights, treadmills, etc.
5. Interior Doors
    i) Same as Phase 6A.
6. Interior Windows
    i) Same as Phase 6A.
7. Sealed Joints and Penetrations
    i) Same as Phase 6A.
8. Workstation Furniture
    i) To provide some, albeit limited, speech privacy at open workstations, furniture partitions should surround workstations on 3 sides with an opaque partition up to the height desired to interrupt sightlines but no higher than 51” above the floor. Above the opaque partitions, there should be glazing extending up to at least 60” above the floor. The interior side of opaque partitions above counter height should have 1” sound-absorbing panels.
9. Electronic Sound Masking (designed by others)
    i) To provide additional speech privacy via steady-state background noise levels; Offices (private) should have electronic sound-masking systems operating at 40-42dBA and Office/Workspace/Copy/Plan/Workroom (shared/open) areas should have electronic sound-masking systems operating at 45-48dBA.

C. BUILDING SERVICES NOISE

Noise Criteria

Room type NC levels not identified in the POR or ASHRAE Handbook are indicated with an asterisk (*).

Room Type	Maximum NC
Flexible	30
Conference	35
Meeting	35
Office (private)	35
Office/Workspace/Copy/Plan (shared/open)	35
Quiet	35
Workroom	40*
Pre-Function	40*
Lounge/Reception	40

Kitchenette (open)		40	
Fitness			40*
Corridor			45
Locker			50*
Kitchenette (enclosed)	50*		

1. Air Handling Units
   i) Same as Phase 6A.
2. Heat Pumps
   i) Same as Phase 6A.
3. VAV Terminal Units
   i) VAV terminal units should be quiet-type (e.g., Price SDV) to minimize the extent of noise reduction measures necessary. VAV terminal units serving spaces with targets of NC-30 or less should be located outside the noise-sensitive space or outside the ceiling plenum of the noise-sensitive space.
4. Duct Distribution
   i) Same as Phase 6A.
5. Duct Lining
   i) Same as Phase 6A.
6. Flex Ducts
   i) Same as Phase 6A.
7. Duct Sound Attenuators
   i) Same as Phase 6A.
8. Routing of Piping
   i) Mechanical and plumbing piping should not be routed through spaces with criteria of NC-30.
9. Vibration Isolation
   i) Same as Phase 6A.
10. Transformer Sound Levels
    i) Same as Phase 6A.
11. Electrical/Telecommunications Box Penetrations
    i) Same as Phase 6A.

Phase 8 - Storage Building (N/A)

Detailed Space List - Transit

Program Number	Priority	Space Name	Qty	Standard	Required Area	Requested Area	Excluded Area
Office Spaces							
OP151	A	Office - Raod Supervisor	1	100 NASF	100 NASF		
OP155-56	A	Station Clerk (2 Wkstns)	1	240 NASF	240 NASF		
OP157	A	Break	1	60 NASF	60 NASF		
OP158	A	Staff Toilet	1	60 NASF	60 NASF		
Support Spaces							
OP205	A	Lost & Found Storeroom	1	180 NASF	180 NASF		
OP206	A	Merchandise Sales	1	30 NASF	30 NASF		
OP223	A	Driver Lounge	1	300 NASF	300 NASF		
OP227	A	Driver Kitchenette	1	80 NASF	80 NASF		
OP241-42	A	Station Driver Restroom	2	80 NASF	160 NASF		
OP251	A	Station Lobby	1	575 NASF	575 NASF		
OP252	A	Facilities Maintenance Storage	1	180 NASF	180 NASF		
OP253	A	Mechanical / Electrical	1	150 NASF	150 NASF		
OP254	A	Restrooms (Men / Women)	2	180 NASF	360 NASF		
OP255	A	Janitor	2	50 NASF	100 NASF		
TOTAL REQUIRED Operations Departmental Assigned Space					2,575 NASF		
TOTAL REQUESTED Operations Departmental Assigned Space						0 NASF	
TOTAL EXCLUDED Operations Departmental Assigned Space							0 NASF

Detailed Space List - Administration & Facilities

Program Number	Priority	Space Name	Qty	Standard	Required Area	Requested Area	Excluded Area
Office Spaces - Administration							
AD101-03	A	Office - Executive Officers	3	180 NASF	540 NASF		
AD104	B	Office - Future Executive Officer	1	180 NASF	180 NASF		
AD112	A	Office - Senior Project Manager	1	120 NASF	120 NASF		
AD105	A	Workstation - Administrative Assistant	1	90 NASF	90 NASF		
AD106	B	Workstation - Administrative Assistant	1	90 NASF	90 NASF		
AD107	B	Small Meeting	1	213 NASF	213 NASF		
AD108-09	B	Future / Visit	2	60 NASF	120 NASF		
AD110	B	Waiting	1	120 NASF	120 NASF		
AD208	B	Executive Storage / Future Office	1	120 NASF	120 NASF		
Office Spaces - Projects							
AD111	A	Special Projects Mgr	1	120 NASF	120 NASF		
AD114-17	A	Workstation - Capital Improvements	6	60 NASF	360 NASF		
AD118	A	Office - Plan Room	1	140 NASF	140 NASF		
AD119	A	Workstation - Visitor	1	60 NASF	60 NASF		
Office Spaces - Rio Grande Trail							
RG101	A	Office - RG Corridor Director	1	120 NASF	120 NASF		
RG102	B	Workstation - Business Specialist	1	60 NASF	60 NASF		
Office Spaces - Human Resources							
AD121	A	Office - Human Resources Director	1	120 NASF	120 NASF		
AD125	B	Office - Future	1	120 NASF	120 NASF		
AD122	A	Manager	1	60 NASF	60 NASF		
AD123	A	Management	1	60 NASF	60 NASF		
AD124	A	Workstation - Human Resources Generalist	1	60 NASF	60 NASF		
AD126	A	Workstation - Business Support Specialist	1	60 NASF	60 NASF		
AD127-29	B	Workstation - Future Business Support Specialist	3	60 NASF	180 NASF		
AD206	A	File Storeroom (secure)	1	60 NASF	60 NASF		
AD132	A	Human Resources Waiting Area	1	60 NASF	60 NASF		
Office Spaces - Finance							
AD131	A	Office - Finance Director	1	120 NASF	120 NASF		
AD132	A	Office - Accounting Mgr	1	120 NASF	120 NASF		
AD133	A	Office - Budget Mgr	1	120 NASF	120 NASF		
AD135	A	Office - Payroll Specialist	1	120 NASF	120 NASF		
AD136	B	Office - Future Office	1	120 NASF	120 NASF		
AD137-42	A	Workstation - Finance Staff	6	60 NASF	360 NASF		
AD143-44	A	Workstation - Fare Clerks	2	60 NASF	120 NASF		
AD145	A	Workstation - Future Business Specialist	1	60 NASF	60 NASF		
AD146	B	Workstation - Bullpen Meeting	1	120 NASF	120 NASF		
AD147	B	Workstation - Future / Visit	1	60 NASF	60 NASF		
AD148	A	Secure Storage - Safe	1	117 NASF	117 NASF		

Program Number	Priority	Space Name	Qty	Standard	Required Area	Requested Area	Excluded Area
Office Spaces - Procurement							
AD151	A	Office - Procurement Manager	1	120 NASF	120 NASF		
AD153	B	Workstation - Procurement Specialist III	1	60 NASF	60 NASF		
AD154-56	A	Workstation - Procurement Specialist	3	60 NASF	180 NASF		
AD157-58	A	Workstation - Future / Visit	2	60 NASF	120 NASF		
Office Spaces - Planning							
AD161	A	Office - Planning Director	1	120 NASF	120 NASF		
AD164	A	Workstation - Assistant Planner	1	60 NASF	60 NASF		
AD165	B	Workstation - Assistant Planner	1	60 NASF	60 NASF		
AD166	B	Workstation - Regional Transportation Planner	1	60 NASF	60 NASF		
AD167	A	Workstation - Mobility Coordinator	1	60 NASF	60 NASF		
AD168	B	Workstation - Bullpen	1	80 NASF	80 NASF		
AD169	A	Workstation - Corridor Transit Planner	1	60 NASF	60 NASF		
Office Spaces - Marketing							
AD171	A	Office - Marketing Communications Mgr	1	120 NASF	120 NASF		
AD174	A	Workstation - Communications Specialist	1	60 NASF	60 NASF		
AD175	A	Workstation - Creative Comm. Associate	1	60 NASF	60 NASF		
AD176-177	A	Workstation - Future / Visit	2	60 NASF	120 NASF		
Office Spaces - Facilities Maintenance							
FM101	A	Office - Facilites Director	1	120 NASF	120 NASF		
FM102	A	Office - Facilities Manager	1	120 NASF	120 NASF		
FM104	A	Office - Housing Manager	1	120 NASF	120 NASF		
AD130	A	Workstation - Housing Cordinator Coordinator	1	60 NASF	60 NASF		
FM106-08	A	Workstation - Business Specialists	3	60 NASF	180 NASF		
FM128-29	A	Workstation - Visitors	2	60 NASF	120 NASF		
FM130-31	B	Workstation - Visitors	2	60 NASF	120 NASF		
FM232	A	Facilities Maintenace Supplies Storeroom	1	180 NASF	180 NASF		
Office Spaces - Technology							
FM151	A	Office - Technology Director	1	120 NASF	120 NASF		
FM152	A	Office - Technology Manager	2	120 NASF	240 NASF		
FM155-56	A	Workstation - Network Admin	2	60 NASF	120 NASF		
FM157	A	Workstation - Database Admin	1	60 NASF	60 NASF		
FM158	A	Workstation - Data Analyst	1	60 NASF	60 NASF		
FM160	A	Workstation - Cyber Security Mgr	1	60 NASF	60 NASF		
FM161	A	Workstation - Business Specialist	1	60 NASF	60 NASF		
FM162-63	A	Workstation - Developer	2	60 NASF	120 NASF		
FM164-65	A	Workstation - Visitors	2	30 NASF	60 NASF		
FM166-69	A	Workstation - Systems Analyst	4	60 NASF	120 NASF		
FM171	A	Help Desk Workroom (4 Wkstns)	1	300 NASF	300 NASF		

Program Number	Priority	Space Name	Qty	Standard	Required Area	Requested Area	Excluded Area
Support Spaces		.					
AD201	A	Reception Area	1	240 NASF	240 NASF		
AD202	A	Copy / Work Room - Marketing	1	120 NASF	120 NASF		
AD203A	A	Copy / Work Room (2nd Flr)	1	120 NASF	120 NASF		
AD203B	A	Executive Copy / Work Room (3rd Flr)	1	120 NASF	120 NASF		
AD203C	A	Copy / Work Room (3rd Flr)	1	80 NASF	80 NASF		
AD209	A	RFTA Store & Marketing Storage	1	120 NASF	120 NASF		
AD211A	A	Conference Room - Small (4-6) (2nd Flr)	1	180 NASF	180 NASF		
AD211B	A	Conference Room - Small (4-6) (2nd Flr)	1	150 NASF	150 NASF		
AD211C	A	Conference Room - Small (4-6) (3rd Flr)	1	150 NASF	150 NASF		
AD216A	B	Conference Room - Standard (8-10) (1st Flr)	1	300 NASF	300 NASF		
AD216B	B	Conference Room - Standard (8-10) (2nd Flr)	1	300 NASF	300 NASF		
AD217	A	Conference Room - Large (18-20)	1	480 NASF	480 NASF		
AD221	A	Multi-Purpose Room - Pre-Function	1	360 NASF	360 NASF		
AD222	A	Multi-Purpose Room - Flexible	1	980 NASF	980 NASF		
AD223	A	Multi-Purpose Room - Storeroom & Media	1	200 NASF	200 NASF		
AD226-28	A	Kitchenette	3	120 NASF	360 NASF		
AD231	A	Archive Record Storeroom	1	180 NASF	180 NASF		
AD234	B	Fitness Room	1	180 NASF	180 NASF		
AD235	B	Locker Room	1	150 NASF	150 NASF		
AD236-37	B	Shower	2	80 NASF	160 NASF		
AD238-39	A	Waiting / Lounge	2	135 NASF	270 NASF		
AD241-43	A	Restrooms (Men/Women)	3	360 NASF	1,080 NASF		
FM523-26	A	Housekeeping Closet - Admin	3	80 SF	240 SF		
FM541	A	MDF	1	120 SF	120 SF		
FM542-543	A	IDF	2	120 SF	240 SF		
FM544	A	Mechanical Room	1	200 SF	200 SF		
FM545	A	Electrical Room - Distribution	1	200 SF	200 SF		
FM546-548	A	Electrical Room - Satellite	3	80 SF	240 SF		
TOTAL REQUIRED Administration Departmental Assigned Space					16,030 NASF		
TOTAL REQUESTED Administration Departmental Assigned Space						0 NASF	
TOTAL EXCLUDED Administration Departmental Assigned Space							0 NASF

RECEIVED
APR 18 2000
HAZARDOUS MATERIALS
AND WASTE MANAGEMENT

April 17, 2000

Future Innovations Today
FOREMOST Solutions, Inc
Enhanced In Situ Bioremediation
Using "BioLuxing" Technology

Mr. Walter Avramenko
Hazardous Waste Cleanup Unit Leader
Colorado Department of Public Health and Environment
HMWMD-HWC-B2
4300 Cherry Creek Drive South
Denver, CO 80246-1530

FSI#97009

Re: Results of Semiannual Groundwater Monitoring. Progress Report on voluntary cleanup at the former EIMCO facility in Glenwood Springs, Colorado. Request for No Further Action Letter and Well Closure

Dear Mr. Avramenko:

On April 27, 1999, FOREMOST Solutions, Inc. (FSI) proposed a plan for a voluntary cleanup of the former EIMCO facility in Glenwood Springs, Colorado. Your office provided comments and approved of the plan on May 20, 1999. The plan was subsequently put into operation. This document provides a progress report on that project which we are submitting for our client, Glenwood Industrial, LLC. It also provides the results of semiannual groundwater monitoring during June and December 1999, and it makes a request for well closure and a "No Further Action" letter from your office. We would appreciate your review and receipt of any comments you might have regarding this report and on our request.

EXECUTIVE SUMMARY

Semiannual groundwater monitoring continues to show that the concentrations of total dissolved chromium are below the Colorado Drinking Water Standard at the down gradient Monitoring Well 5 (MW-5). Concentrations of total dissolved chromium at this location have been below the Federal Drinking Water standard for the past two years and at or below the Colorado Standard for the past year during both high and low water level periods. In June 1999, concentrations were below the Colorado Standard in all wells on the property except for MW-3, which at 0.12 mg/l was only slightly above the Federal Standard of 0.10 mg/l. Semiannual groundwater monitoring in December, 1999 showed that all wells were at or below 0.02 mg/l which is well below the Colorado Standard of 0.05 mg/l. These results indicate that chromium contamination from the site is no longer impacting the down gradient water quality. Consequently, FSI requests that the Colorado Department of Public Health and Environment (CDPHE) approve well closure and issue a letter of No Further Action for this site.

The June 1999 sampling did indicate that small amounts of chromium were still continuing to leach from under the building during high groundwater periods. This impact is seen as an increase at MW-3. In order to minimize this localized impact, Glenwood Industrial LLC decided to install a treatment system that would remove residual amounts of soluble chromium that might be trapped under the building so that it could no longer contribute groundwater impacts during high water periods.

A combined chemical and biochemical recirculation system was designed by FSI for this purpose. The system was approved by CDPHE and placed into operation between July and December 1999.

Groundwater monitoring from wells downgradient of the former plating operation showed that measurable amounts of dissolved chromium were flushed from under the building by the remediation system. Contaminated groundwater was removed from MW-3 and discharged into a treatment/infiltration trench near the location of the former plating pit. A bioremediation matrix in the trench was design to provide reducing conditions that would precipitate the soluble chromium in the recirculated groundwater. This system was augmented with the addition of a chemical reducing agent, calcium polysulfide, in order to speed the establishment of reducing conditions and to minimize soluble chromium bypassing the treatment system and going to the Colorado River.

The combined treatment system proved to be successful in removing soluble chromium from under the warehouse building. Active pumping of groundwater was suspended in December when the levels in all wells had dropped to below the Colorado Standard or to nearly pretreatment conditions. Testing of groundwater in down gradient wells in March 2000 verified that chromium concentrations continue to stay below the Colorado Standard.

BACKGROUND

The former EIMCO Coal Machinery, Inc. facility located at 2222 Devereux Road, Glenwood Springs, Colorado was a suspected source for low levels of hexavalent chromium contamination in groundwater. According to file records, this company performed chromium plating of mining tools at this facility until 1992. The plating was conducted in tanks that were located in a concrete-block pit along the South side of the warehouse building. A site assessment of the property in 1992 showed that the only contaminant of concern was chromium that was present in soil under the pit. Apparently, leakage of aqueous chromium solutions from the pit area had led to hexavalent chromium contamination in the soil under the building. The pit and some of the adjacent soils were subsequently removed.

Monitoring of groundwater at the site has shown that groundwater moves in a north-northwest direction (**Figure 1**) and that hexavalent chromium contamination continues to persist under the building. Groundwater flowing under the building continued to exhibit low levels of hexavalent chromium contamination in MW-3 especially during high water table conditions. The chrome concentrations are lowest when the groundwater levels are lowest, i.e. in December and highest when the groundwater levels rise, i.e. in June. The attached **Table 1** summarizes the levels of chrome in groundwater samples from the site between July 1992 and December 1998. The concentrations have continued to decline over time and were nearing State and Federal standards in 1998. Groundwater from the farthest down gradient monitoring well (MW-5) was below the State Standard in December 1998.

CURRENT SITUATION

In April 1999, the EIMCO property was sold to Glenwood Industrial, LLC (P.O. Box 1150 in Glenwood Springs, Colorado 81602) who subsequently engaged FOREMOST Solutions, Inc. (FSI) to provide technical consultation and site remediation. All correspondence regarding these activities should be sent to FSI at 350 Indiana Street, Suite 415, Golden, CO 80401.

The CDPHE had required EIMCO to test groundwater at the site. EIMCO did this on a quarterly basis between 1993 and 1997. Since 1997, this testing has been done on a semi-annual basis.

FSI's evaluation of the site led to the conclusion that residual amounts of hexavalent chromium were still trapped in the pore spaces of the soil under the building and former pit area. Whenever the groundwater would rise, some of this chromium would be mobilized and carried to the downstream monitoring wells MW-3 and MW-5 and then into the Colorado River. The levels of chromium contamination observed at these wells continued to decline over the years. In June 1998 chromium concentrations were below both Federal and State groundwater standards at all wells but MW-3 where the concentration of total dissolved chromium was 0.25 mg/l. In December 1998, all groundwater monitoring wells were below the Colorado Standard of 0.05 mg/l.

On June 29, 1999, the concentration of total dissolved chromium was below the Colorado Standard for all wells except MW-3 where the concentration was 0.12 mg/l. This is very close to the Federal Standard of 0.10 mg/l and only twice the Colorado Standard. However, both Glenwood Industrial and CDPHE would like to see a permanent solution to this problem and a certification of "no further action" from the State. Consequently, Glenwood Industrial requested FSI to install and operate a remediation system that would remove residual soluble chromium from the vadose zone under the building and thereby minimize the potential for periodic contamination of the groundwater when the water table would rise.

REMEDIATION SYSTEM

FSI proposed to install a recirculating anaerobic bioremediation system that would reduce the highly water soluble hexavalent chromium to insoluble trivalent chromium. The system relied on 1) bioremediation of natural organic matter to provide the reducing conditions for chromium and 2) on the addition of a chemical reducing agent to enhance the reducing conditions. This system was constructed in May 1999 and placed into operation in July 1999.

Bioremediation System

A plan view of the system is shown in **Figure 1A.** A side view of the system is shown in **Figure 2.** The system was designed to flush soluble chromium from under the warehouse building and former plating pit. This soluble chromium was then collected by a downstream pumping well and discharged into an anaerobic bioremediation matrix located in a treatment/infiltration (T/I) trench above the former plating pit. The system was designed so that soluble hexavalent chromium would be reduced to the insoluble trivalent chromium in the anaerobic environment of the trench.

Soluble components of the natural organic materials in the bioremediation matrix are carried with the recirculated groundwater that infiltrates into the soil under the building. A portion of the chromium under the building would be reduced as it reacts with these soluble organic components. The reduced chromium precipitates and remains fixated as insoluble trivalent chromium in the soil pore spaces under the building. This reduces the amount of soluble chromium that will have to be recirculated through the treatment system and speeds the time required to remove soluble chromium from the groundwater.

Chemical Fixation System
Dilute aqueous solutions of a water-soluble chemical reducing agent (calcium polysulfide) were added to the groundwater and the bioremediation system after several months in order to speed the establishment of the necessary reducing conditions and further decrease the time required for treatment.

RULE AUTHORIZATION

An application for a Class V Injection Well Rule Authorization was made to the U.S. Environmental Protection Agency (US EPA) for the recirculation of groundwater at the site and for the injection of aqueous solutions of calcium polysulfide. This application was approved by D. Edwin Hogle, Director of the Groundwater Program, US EPA, Region 8, and FSI was notified by letter on July 30, 1999.

SYSTEM INSTALLATION

A diagram of the remediation system is shown in **Figure 1A**. The recirculation line trench extends from MW-3 along the West and South sides of the building to the T/I trench, a total of about 150 ft. in length. The T/I trench was located as close to the former plating pit as possible. The recirculation line and the distribution line in the T/I trench were constructed of 1 in. Schedule 40 PVC pipe with 0.02 in. slots. The distribution line was slotted on one side. A 2 in. slotted riser was installed in the center of the T/I trench to observe the water level in the trench.

A Perc Test was performed to measure the rate of water infiltration or percolation into the near surface soils for the construction of a septic system on the property. The Perc Test provided an estimate of percolation rate through the bottom of the T/I trench and allowed FSI to appropriately size a submersible pump for the treatment system. A submersible pump was installed in MW-3 and connected to the recirculation line along with a three-way valve for water sampling and drainage.

T/I TRENCH AND BIOREMEDIATION MATRIX

The T/I trench was 20 ft long, 2 ft. wide and 4 ft. deep. The sides of the trench and the bioremediation matrix were covered with black plastic sheeting to reduce water loses to the sides, retain heat, minimize oxygen infusion and to help maintain anaerobic conditions. The bottom 2.5 ft. of the trench was filled with about 100 cubic ft. of the Bioremediation Matrix.

The Bioremediation Matrix was made up of porous ceramic diatomaceous earth pellets (Isolite® CG-6) and dry, pulverized cow manure, about 70/30 by volume. The manure provided a natural rich organic and nutrient material with a high microbial population. The Isolite provided a good matrix for the bacteria and allowed adequate water flow through the fine-grained manure. A cross section of the T/I trench is shown in **Figure 3**.

An access pipe was installed in the center of the T/I trench so that calcium polysulfide solutions could be added to the bottom of the trench.

A float switch was used to control the submersible pump and the level of water in the T/I trench.

SYSTEM OPERATION

The submersible pump was operated at a frequency that would keep the T/I trench filled with about 2.5 ft. of water. The system was turned on and off on a regular basis to assure that overflow did not occur.

GROUNDWATER MONITORING

FSI continued with the collection of groundwater samples from the monitoring wells on the site and arranged for them to be tested at Evergreen Analytical Laboratories for Total Dissolved Chromium according to Standard US EPA procedures. During operation of the treatment system, samples from the recirculation system at MW-3 were tested on a monthly basis. Samples were also tested from MW-2 and MW-4 to see if the system flushed any soluble chromium into these areas. The results of these analyses are shown in **Table 2**. Laboratory test reports are attached in **Appendix A**. FSI periodically made water level measurements and these results are shown in **Table 3**.

RESULTS OF TREATMENT SYSTEM OPERATION

Concentrations of total dissolved chromium at all monitoring wells were at or below the Colorado Standard of 0.05 mg/l in December 1998. During the semiannual groundwater sampling in June 1999 all monitoring wells were below the Colorado Standard except for MW-3 where the concentration of 0.12 mg/l was only slightly above the Federal Standard of 0.1 mg/l. The water table at this time was relatively high at 26.1 ft. bgs in MW-3. The remediation system was placed into operation after the semiannual sampling.

Groundwater samples from MW-2 and MW-3 were tested after the remediation system was in operation for several weeks. MW-2 is closer to the location of the former plating area than MW-3, and it showed the first effects of the recirculation system. At this time, MW-2 had a concentration of 0.36 mg/l while MW-3 was unchanged at 0.11 mg/l. As anticipated, the recirculated groundwater was seeping through the Vadose zone and pushing before it some quantity of chromium contaminated water that had been trapped in the pore spaces above the water table. These two wells were tested again in September and the results showed that the concentrations in MW-2 were dropping as the front moved past, and the concentrations in MW-3 were increasing as the front arrived at this down gradient location. The groundwater level at this time had dropped to about 31.5 ft. bgs at MW-3, and stayed at this level through the end of December 1999. The groundwater level started to rise again in April 2000 (**Table 3**).

MW-2, MW-3 and MW-4 were tested in October. This testing showed no significant contamination at MW-4. However, the concentrations at MW-2 and -3 were relatively unchanged at about 0.25 mg/l. Higher concentrations in MW-3 were not of concern since this water was being pumped back up gradient to the infiltration trench for treatment. However we were concerned that some of the groundwater that passed MW-2 might not be captured by the recirculation system and could flow to the Colorado River. Consequently, we decided to begin the chemical treatment at this time in order to reduce this possibility.

Approximately 200 gallons of a 1% by volume aqueous calcium polysulfide (CPS) solution were added to MW-2 and MW-4, and about 800 gallons were added to the bottom of the T/I trench. The purpose of the CPS was to quickly establish anaerobic or reducing conditions that would fixate any soluble chromium at these locations. This process proved to be successful. Testing of MW-2 and MW-4 in November showed concentrations at or below the Colorado Standard, whereas MW-3 that had no CPS added showed a slight drop to 0.23 mg/l. These wells were tested again in early December and the concentrations of total dissolved chromium then were at or below the detection limit of 0.01 mg/l, and the concentrations at MW-3 had continued to drop to 0.18 mg/l. This drop was indicative that treated water was now reaching MW-3 and that the front of contaminated water had been pumped to the treatment system. Consequently, we decided to stop active recirculation of groundwater at this time in order to allow time for the treated water to drain from the vadose zone and the groundwater levels to return to their natural condition. An additional treatment of CPS was provided at this time to assure that reducing conditions would be maintained in the subsurface.

The semiannual groundwater sampling was performed three weeks later on December 30, 1999. At this time, all monitoring wells were below the Colorado Standard of 0.05 mg/l. In fact, all were at or below 0.02 mg/l. The three monitoring wells closest to the warehouse were sampled again in March 2000. These test results verified that soluble chromium concentrations continue to stay below the Colorado Standard.

CONCLUSIONS

In summary, a combined chemical and biochemical treatment system was installed to remove soluble chromium that had been trapped under the warehouse building. The treatment system was operated until the concentration of chromium in the recirculated groundwater was near pretreatment levels. The treatment system was shown to be successful at removing soluble chromium contamination from groundwater. Testing of down gradient monitoring wells confirmed that essentially all residual soluble chromium has been removed from the system. The calcium polysulfide solution treatment effectively reduced total dissolved chromium concentrations in groundwater to below the Colorado Standard.

Semiannual groundwater monitoring has continued to show that the concentrations of total dissolved chromium are below the Colorado Standard down gradient of the site at MW-5. Concentrations of total dissolved chromium at this location have been below the Federal Standard for the past two years and were at or below the Colorado Standard for the past year and a quarter during both high and low water level periods. These results indicate that chromium from the site is no longer impacting the down gradient water quality. Groundwater monitoring three months after the treatment system was shut down showed that soluble chromium concentrations continue to stay well below the Colorado Standard.

REQUEST FOR SITE CLOSURE

FSI requests closure for this site on the basis that 1) residual soluble chromium has been removed from under the warehouse and no longer poses a threat to down gradient water systems, 2) down gradient groundwater is no longer impacted by the site and 3) this groundwater has continued to stay well below the Colorado Standard for over a year.

FSI requests CDPHE to issue a "No Further Action" letter for the site and approve the closure of the five groundwater monitoring wells at the site. FSI proposes to close these wells by removing the top three ft. of casing and filling the remaining casing with sand and high solids bentonite or cement grout. The ground surface will be restored to its pre-well condition.

FSI would appreciate your review and comments regarding this report and our requests.

Sincerely,
FOREMOST Solutions, Inc.

Theodore O. Meiggs, Ph.D.
Vice President & General Manager

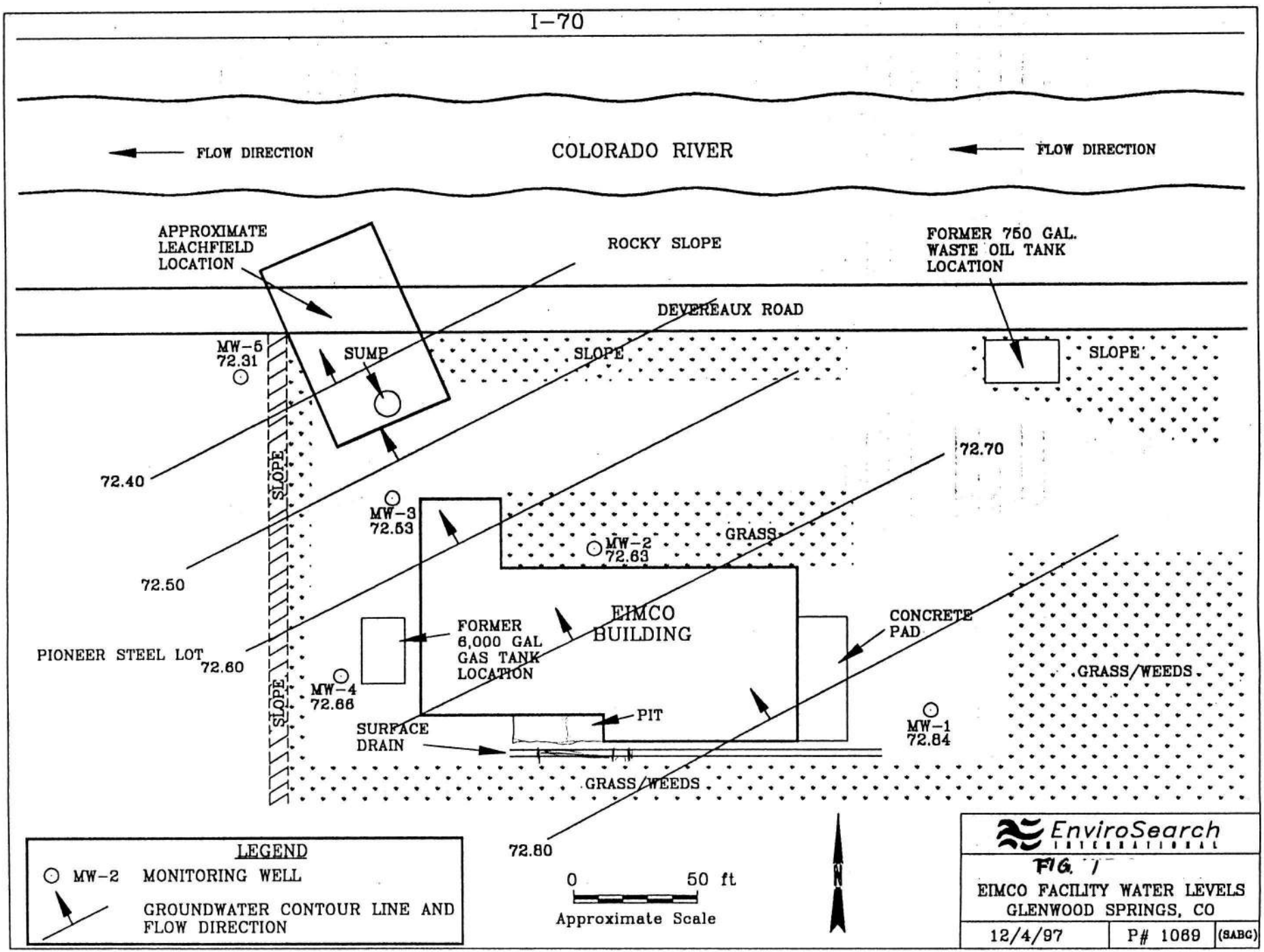
Attachments: Figures 1A, 1-3
Tables 1-3
Appendix A

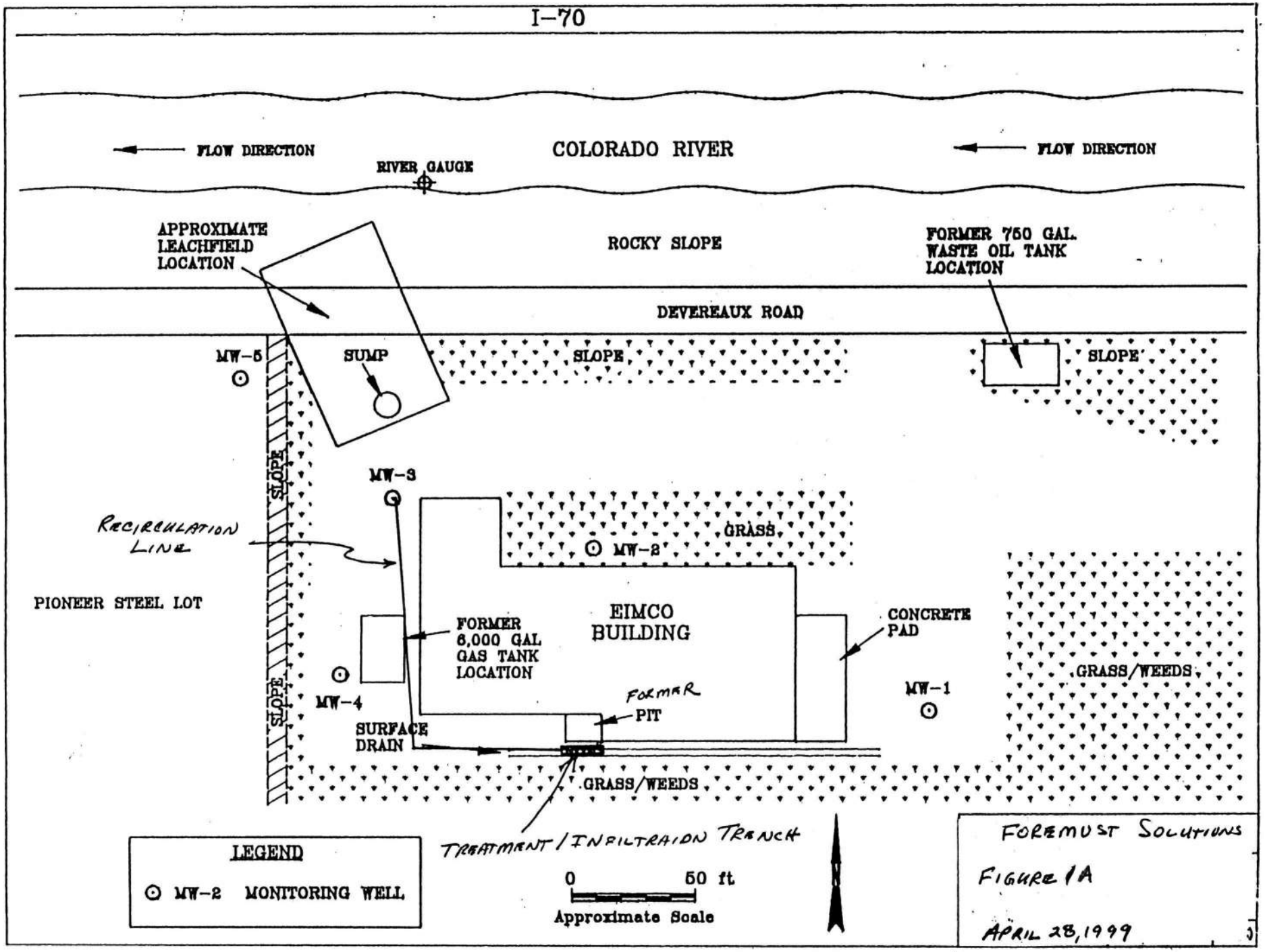
cc. Mr. Gary Schultz, Glenwood Industrial, LLC
Ms. Valois Shea, U.S. Environmental Protection Agency, Region 8

Table 1: July 1992 to December 1998
Summary of Analytical Results for Groundwater Samples (mg/l)
Glenwood Industrial, LLC Facility, Glenwood Springs, Colorado

Date	Parameter	MW-1	MW-2	MW-3	MW-4	MW-5
July, 1992	Total Dissolved Chromium (mg/l)	0.033	<0.010	0.014	NA	NA
April 15, 1993	"	<0.010	<0.010	0.041	<0.010	NA
February 14, 1994	"	0.03	<0.02	0.09	<0.020	NA
May 11, 1994	"	0.03	<0.020	1.09	<0.020	NA
June 9, 1994	"	<0.010	0.02	0.64	<0.010	NA
October 1, 1994	"	<0.020	0.08	0.09	<0.020	NA
March 21, 1995	"	<0.020	0.11	0.14	<0.020	NA
June 7, 1995	"	<0.010	0.012	0.992	<0.010	NA
September 7, 1995	"	<0.005	0.052	0.325	0.029	NA
December 28, 1995	"	<0.010	0.047	0.096	<0.010	NA
March 14, 1996	"	<0.005	0.018	0.165	<0.005	NA
June 27, 1996	"	0.009	0.014	0.502	0.014	NA
October 9, 1996	"	NA	NA	NA	NA	0.174
December 16, 1996	"	<0.005	0.035	0.103	<0.005	0.09
June 4, 1997	"	<0.005	<0.005	0.785	0.007	0.135
December 4, 1997	"	<0.005	0.013	0.071	<0.005	0.093
June 8, 1998	"	<0.005	<0.005	0.248	<0.005	0.074
December 8, 1998	"	<0.005	0.006	0.049	<0.005	0.05

Note: Federal Drinking Water Standard for Total Dissolved Chromium is 0.10 mg/l
Colorado Drinking Water Standard for Total Dissolved Chromium is 0.05 mg/l


I-70
FLOW DIRECTION
COLORADO RIVER
FLOW DIRECTION
APPROXIMATE LEACHFIELD LOCATION
ROCKY SLOPE
FORMER 750 GAL. WASTE OIL TANK LOCATION
DEVEREAUX ROAD
MW-5 72.31
SUMP
SLOPE
SLOPE
72.40
SLOPE
72.70
MW-3 72.53
MW-2 72.63
GRASS
72.50
EIMCO BUILDING
FORMER 6,000 GAL GAS TANK LOCATION
CONCRETE PAD
PIONEER STEEL LOT
72.60
MW-4 72.66
GRASS/WEEDS
PIT
SURFACE DRAIN
MW-1 72.84
GRASS/WEEDS
72.80
LEGEND
MW-2 MONITORING WELL
GROUNDWATER CONTOUR LINE AND FLOW DIRECTION
0 50 ft
Approximate Scale
EnviroSearch INTERNATIONAL
FIG. 1
EIMCO FACILITY WATER LEVELS
GLENWOOD SPRINGS, CO
12/4/97
P# 1069
(SABC)


I-70
FLOW DIRECTION
COLORADO RIVER
FLOW DIRECTION
RIVER GAUGE
APPROXIMATE LEACHFIELD LOCATION
ROCKY SLOPE
FORMER 750 GAL. WASTE OIL TANK LOCATION
DEVEREAUX ROAD
MW-5
SUMP
SLOPE
SLOPE
SLOPE
MW-3
RECIRCULATION LINE
GRASS
MW-2
PIONEER STEEL LOT
EIMCO BUILDING
CONCRETE PAD
FORMER 6,000 GAL GAS TANK LOCATION
GRASS/WEEDS
MW-4
FORMER PIT
MW-1
SURFACE DRAIN
GRASS/WEEDS
TREATMENT/INFILTRATION TRENCH
LEGEND
MW-2 MONITORING WELL
0 50 ft
Approximate Scale
FOREMUST SOLUTIONS
FIGURE 1A
APRIL 28, 1999

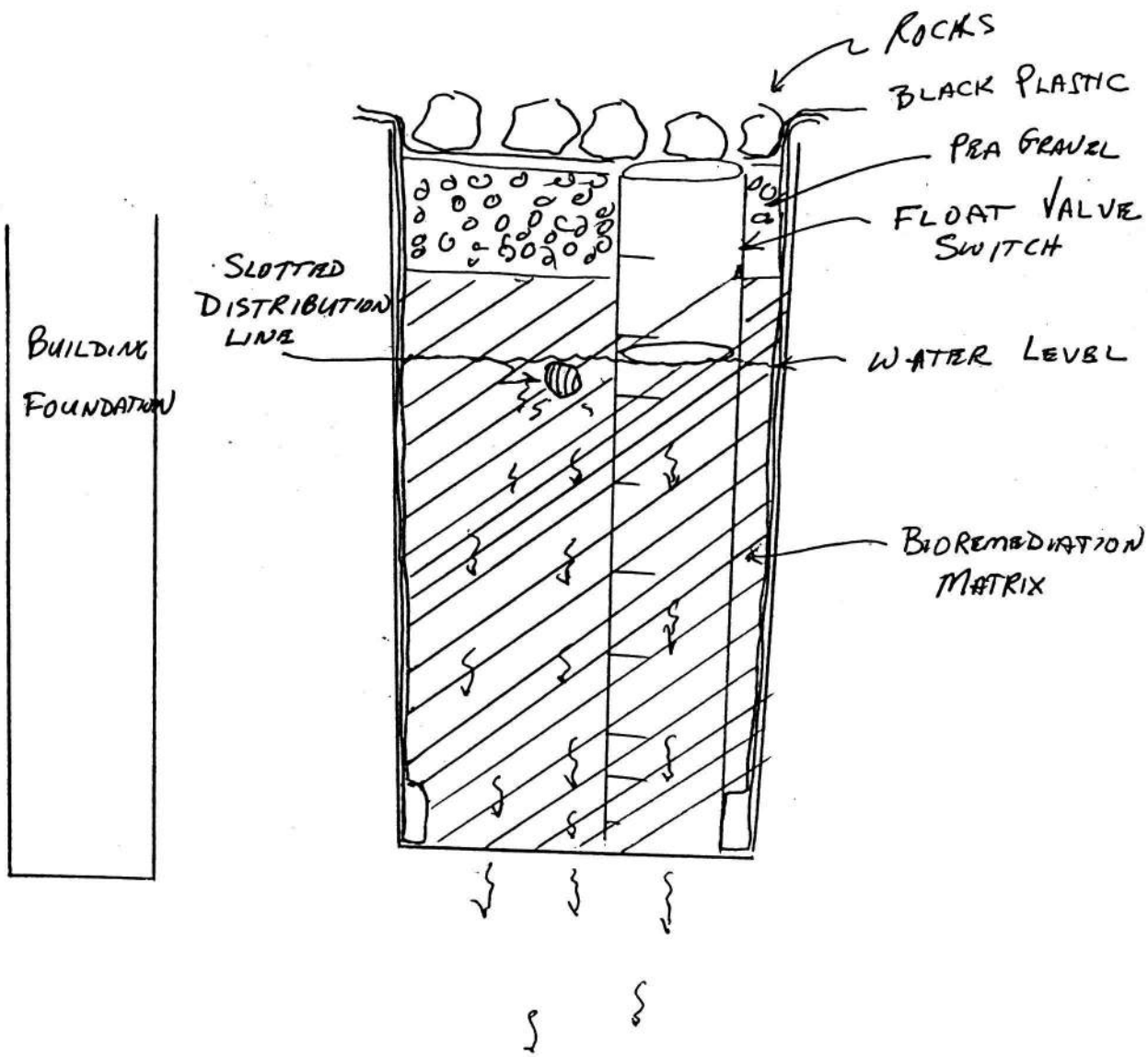


FIGURE 3 ANAEROBIC BIOTREATMENT TRENCH

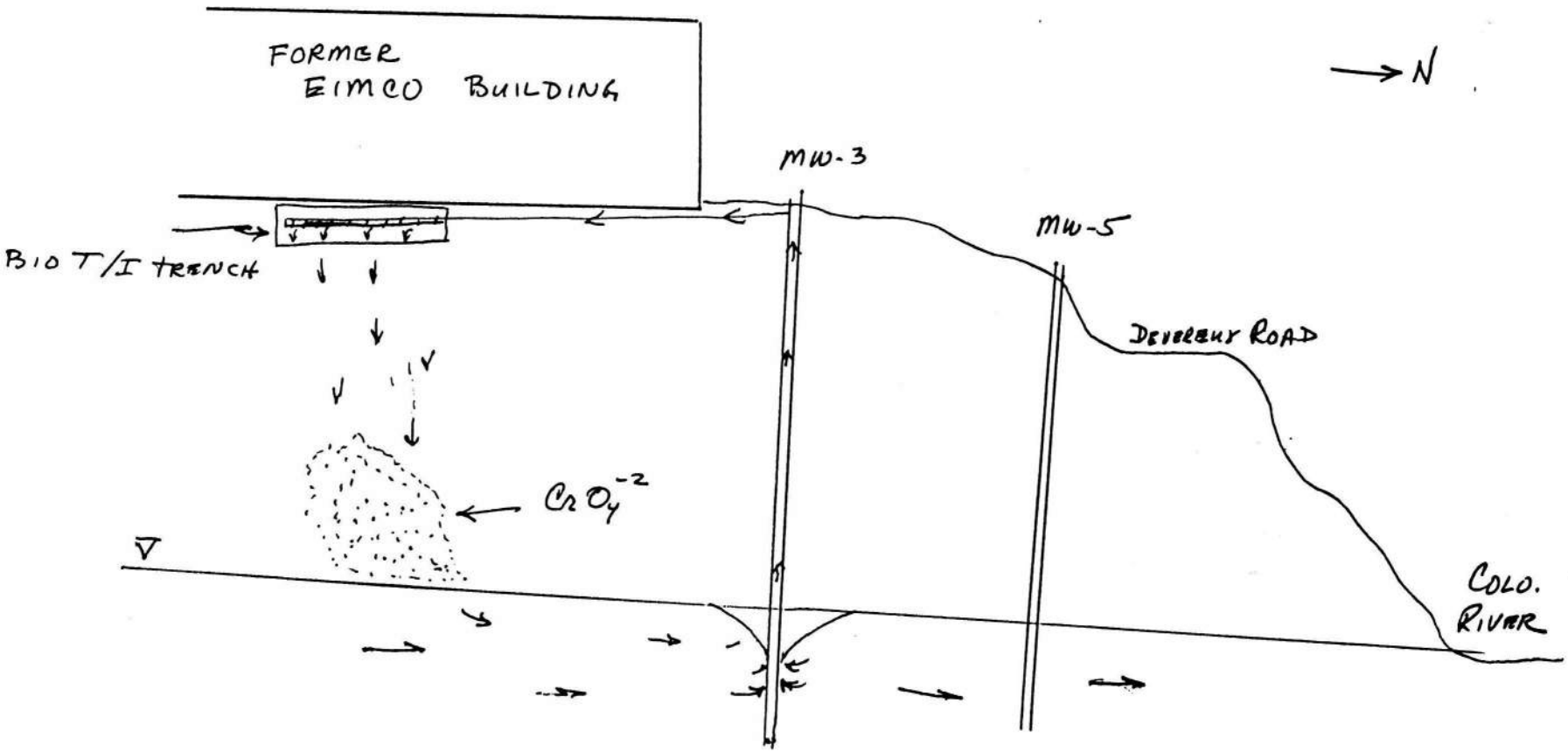


FIGURE 2 SIDE VIEW OF RECIRCULATION SYSTEM AND TREATMENT/ INFILTRATION TRENCH. (NOT TO SCALE MW-3 is 40 ft. DEEP) GROUNDWATER VARIES FROM 21-31 ft. DEEP

Table 2: June 1999 to March 2000
Summary of Analytical Results for Groundwater Samples (mg/l)
Glenwood Industrial, LLC Facility, Glenwood Springs, Colorado

Date	Parameter	MW-1	MW-2	MW-3	MW-4	MW-5
June 29, 1999	Total Dissolved Cr (mg/l)	<0.002	<0.002	0.12	<0.002	<0.002
Operate Recirculation System						
July 31, 1999	"	NA	0.36	0.11	NA	NA
September 2, 1999	"	NA	0.16	0.24	NA	NA
October 1, 1999	"	NA	0.24	0.26	<0.05	NA
Chemical Treatment						
November 9, 1999	"	NA	0.03	0.23	0.06	NA
December 7, 1999	"	NA	<0.01	0.18	0.01	NA
Chemical Treatment						
December 30, 1999	"	<0.02	<0.02	<0.02	<0.02	0.02
March 23, 2000	"	NA	0.02	<0.02	<0.02	NA

Note: Federal Drinking Water Standard for Total Dissolved Chromium is 0.10 mg/l
Colorado Drinking Water Standard is 0.05 mg/l

Table 3: June 1999 to April 2000
Summary of Water Level Measurements
Glenwood Industrial, LLC Facility, Glenwood Springs, Colorado

Date	Parameter	MW-1	MW-2	MW-3	MW-4	MW-5
29-Jun-99	Water Level (feet bgs)	25.1	25.8	26.1	24.8	17.9
31-Jul-99	"	NA	NA	NA	NA	NA
2-Sep-99	"	NA	31.0	31.6	NA	NA
5-Oct-99	"	NA	30.5	32.3	29.5	NA
12-Dec-99	"	NA	31.4	31.5	30.1	NA
30-Dec-99	"	30.9	31.6	31.7	30.3	23.8
5-Apr-00	"	30.7	31.3	31.4	30.0	23.0

APPENDIX A

ANALYTICAL REPORTS

Evergreen Analytical, Inc.
4036 Youngfield St., Wheat Ridge, CO 80033
(303) 425-6021

Chromium

ICP-MS ,200.8, Dissolved

Method Number : E200.8
Date Received : 06/30/1999
Date Prepared : 07/01/1999

Client Project ID :
Lab Work Order : 99-3168
Units : mg/L

Lab Sample ID	Client Sample ID	Sample Matrix	Sample Date	Analysis Date	Dilution Factor	Sample Result	Reporting Limit
99-3168-01A	MW-1	Groundwater	06/29/1999	07/07/1999	1	0.0096 B	0.0014
99-3168-02A	MW-3	Groundwater	06/29/1999	07/07/1999	1	0.12 B	0.0014
99-3168-03A	MW-2	Groundwater	06/29/1999	07/07/1999	1	0.015 B	0.0014
99-3168-04A	MW-4	Groundwater	06/29/1999	07/07/1999	1	0.013 B	0.0014
99-3168-05A	MW-5	Groundwater	06/29/1999	07/07/1999	1	0.0055 B	0.0014
MB-4781				07/07/1999	1	0.006	0.0014

Qualifiers:

U - Not Detected at the Reporting Limit
E - Reported concentration above quantitation range
S - Spike recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Analyst

Approved

07/19/1999 3:11:29 PM

EVERGREEN ANALYTICAL, Inc.
4036 Youngfield St. Wheat Ridge, CO 80033
(303) 425-6021

Analysis Report

Date Sampled	: 06/29/99	Client	: Foremost Solutions
Date Received	: 06/30/99	Lab Project Number	: 99-3168
Date Prepared	: 06/30/99	Matrix	: Water
Date Analyzed	: 06/30/99	Method	: EPA 150.1

Evergreen Sample #	Client Sample I.D.	pH
99-3168-01	MW-1	7.30
99-3168-02	MW-2	7.30
99-3168-03	MW-3	7.71
99-3168-04	MW-4	7.39
99-3168-05	MW-5	7.48

K.P. Musick IV
Analyst

Approved

Evergreen Analytical, Inc.
4036 Youngfield St., Wheat Ridge, CO 80033
(303) 425-6021

Chromium

ICP-MS ,200.8, Dissolved

Method Number : E200.8
Date Received : 08/05/1999
Date Prepared : 08/13/1999

Client Project ID : 97009
Lab Work Order : 99-3855
Units : mg/L

Lab Sample ID	Client Sample ID	Sample Matrix	Sample Date	Analysis Date	Dilution Factor	Sample Result	Reporting Limit
99-3855-01A	#1 MW-2	Groundwater	07/31/1999	08/17/1999	1	0.36	0.0014
99-3855-02A	#2 MW-3	Groundwater	07/31/1999	08/17/1999	1	0.11	0.0014
MB-5061				08/17/1999	1	U	0.0014

Qualifiers:

U - Not Detected at the Reporting Limit
E - Reported concentration above quantitation range
S - Spike recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CM
Analyst

WKA
Approved

8/19/1999 11:20:23 AM

Evergreen Analytical, Inc.
4036 Youngfield St., Wheat Ridge, CO 80033
(303) 425-6021

Chromium

ICP-MS ,200.8, Dissolved

Method Number : E200.8
Date Received : 09/03/1999
Date Prepared : 09/07/1999

Client Project ID : Glenwood Industrial
Lab Work Order : 99-4451
Units : mg/L

Lab Sample ID	Client Sample ID	Sample Matrix	Sample Date	Analysis Date	Dilution Factor	Sample Result	Reporting Limit
99-4451-01A	MW2	Groundwater	09/02/1999	09/08/1999	1	0.16	0.0014
99-4451-02A	MW3	Groundwater	09/02/1999	09/08/1999	1	0.24	0.0014
MB-5216				09/08/1999	1	U	0.0014

Qualifiers:

U - Not Detected at the Reporting Limit
E - Reported concentration above quantitation range
S - Spike recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Analyst

Approved

9/8/99 3:30:38 PM

Evergreen Analytical, Inc.
4036 Youngfield St., Wheat Ridge, CO 80033
(303) 425-6021

Chromium

ICP-MS ,200.8, Dissolved

Method Number : E200.8
Date Received : 10/04/1999
Date Prepared : 10/05/1999

Client Project ID :
Lab Work Order : 99-4999
Units : mg/L

Lab Sample ID	Client Sample ID	Sample Matrix	Sample Date	Analysis Date	Dilution Factor	Sample Result	Reporting Limit
99-4999-01A	MW-2	Groundwater	10/01/1999	10/05/1999	1	0.24 B	0.0014
99-4999-02A	MW-3	Groundwater	10/01/1999	10/05/1999	1	0.29 B	0.0014
99-4999-03A	MW-4	Groundwater	10/01/1999	10/05/1999	1	0.047 B	0.0014
MB-5376				10/05/1999	1	0.0023	0.0014

Qualifiers:

U - Not Detected at the Reporting Limit
E - Reported concentration above quantitation range
S - Spike recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Analyst

Approved 10/7/99 5:28:25 PM

TOTAL P.02

Evergreen Analytical, Inc.
4036 Youngfield St., Wheat Ridge, CO 80033
(303) 425-6021

Chromium

ICP-MS ,200.8, Dissolved

Method Number : E200.8
Date Received : 11/11/1999
Date Prepared : 11/16/1999

Client Project ID : Glenwood Ind.
Lab Work Order : 99-5727
Units : mg/L

Lab Sample ID	Client Sample ID	Sample Matrix	Sample Date	Analysis Date	Dilution Factor	Sample Result	Reporting Limit
99-5727-01A	MW#2	Groundwater	11/09/1999	11/17/1999	1	0.029	0.0014
99-5727-02A	MW#3	Groundwater	11/09/1999	11/17/1999	1	0.23	0.0014
99-5727-03A	MW#4	Groundwater	11/09/1999	11/17/1999	1	0.059	0.0014
MB-5632				11/17/1999	1	U	0.0014

Qualifiers:

U - Not Detected at the Reporting Limit
E - Reported concentration above quantitation range
S - Spike recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Analyst

Approved

11/17/99 3:04:51 PM

TOTAL P.02

Evergreen Analytical, Inc.
4036 Youngfield St., Wheat Ridge, CO 80033
(303) 425-6021

Chromium

ICP Metals,200.7,NPDES,Dissolved

Method Number : E200.7
Date Received : 12/09/1999
Date Prepared : 12/14/1999

Client Project ID : 97009
Lab Work Order : 99-6227
Units : mg/L

Lab Sample ID	Client Sample ID	Sample Matrix	Sample Date	Analysis Date	Dilution Factor	Sample Result	Reporting Limit
99-6227-01A	Well #2	Groundwater	12/07/1999	12/15/1999	1	U	0.01
99-6227-02A	Well #3	Groundwater	12/07/1999	12/15/1999	1	0.18	0.01
99-6227-03A	Well #4	Groundwater	12/07/1999	12/15/1999	1	0.01	0.01
MB-5823				12/15/1999	1	U	0.011

Qualifiers:

U - Not detected at the Reporting Limit (RL)
B - Analyte detected in the associated Method Blank

Analyst

Approved *12/16/99 3:54:00 PM*

Evergreen Analytical, Inc.
4036 Youngfield St., Wheat Ridge, CO 80033
(303) 425-6021

Chromium

ICP-MS ,200.8, Dissolved

Method Number : E200.8
Date Received : 01/03/2000
Date Prepared : 01/04/2000

Client Project ID : Glenwood Industrial
Lab Work Order : 00-0001
Units : mg/L

Lab Sample ID	Client Sample ID	Sample Matrix	Sample Date	Analysis Date	Dilution Factor	Sample Result	Reporting Limit
00-0001-01A	MW-1	Groundwater	12/30/1999	01/06/2000	1	0.0071	0.0014
00-0001-02A	MW-2(a)	Groundwater	12/30/1999	01/06/2000	1	0.009	0.0014
00-0001-03A	MW-3	Groundwater	12/30/1999	01/06/2000	1	0.019	0.0014
00-0001-04A	MW-4	Groundwater	12/30/1999	01/06/2000	1	0.014	0.0014
00-0001-05A	MW-5	Groundwater	12/30/1999	01/06/2000	1	0.021	0.0014
00-0001-06A	MW-2(b)	Groundwater	12/30/1999	01/06/2000	1	0.012	0.0014
MB-5942				01/06/2000	1	U	0.0014

Qualifiers:

U - Not Detected at the Reporting Limit
E - Reported concentration above quantitation range
S - Spike recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank

MC
Analyst

Approved

1/10/2000 12:09:17 PM

Evergreen Analytical, Inc.
4036 Youngfield St., Wheat Ridge, CO 80033
(303) 425-6021

Chromium

ICP-MS ,200.8, Dissolved

Method Number : E200.8
Date Received : 03/27/2000
Date Prepared : 03/29/2000

Client Project ID : GLENWOOD IND.
Lab Work Order : 00-1449
Units : mg/L

Lab Sample ID	Client Sample ID	Sample Matrix	Sample Date	Analysis Date	Dilution Factor	Sample Result	Reporting Limit
00-1449-01A	MW-2	Groundwater	03/23/2000	03/29/2000	1	0.02	0.00077
00-1449-02A	MW-3	Groundwater	03/23/2000	03/29/2000	1	0.011	0.00077
00-1449-03A	MW-4	Groundwater	03/23/2000	03/29/2000	1	0.012	0.00077
MB-6481				03/29/2000	1	U	0.00077

Qualifiers:

U - Not Detected at the Reporting Limit
E - Reported concentration above quantitation range
S - Spike recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Analyst

Approved

03/30/2000 2:52:28 PM

EVERGREEN ANALYTICAL, Inc.
4036 Youngfield St. Wheat Ridge, CO 80033
(303) 425-6021

Analysis Report

Date Sampled	: 03/23/00	Client Project I.D.	: Glenwood Ind.
Date Received	: 03/27/00	Lab Project Number	: 00-1449
Date Prepared	: 03/28/00	Matrix	: Water
Date Analyzed	: 03/28/00	Method	: EPA 150.1

Evergreen Sample #	Client Sample I.D.	pH
00-1449-01	MW-2	7.33
00-1449-02	MW-3	7.21
00-1449-03	MW-4	7.23

K.P. Musick
Analyst

Approved

STATE OF COLORADO

Bill Owens, Governor
Jane E. Norton, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION
http://www.cdphe.state.co.us/hm/

4300 Cherry Creek Dr. S.
Denver, Colorado 80246-1530
Phone (303) 692-3300
Fax (303) 759-5355

222 S. 6th Street, Room 232
Grand Junction, Colorado 81501-2768
Phone (970) 248-7164
Fax (970) 248-7198

Colorado Department
of Public Health
and Environment

May 1, 2000

Theodore O. Meiggs Ph.D.
FOREMOST Solutions, Inc.
350 Indiana Street, Suite 415
Golden, Colorado 80401

RE: Cleanup of Chromium Contamination
EIMCO / Glenwood Industrial, LLC Site
2222 Deveruex Road, Glenwood Springs
COD981544786

Dear Mr. Meiggs:

I have received your April 17, 2000 semiannual groundwater report in which sampling data are presented and the progress of the cleanup effort is described. My review of your report suggests that the combined chemical and boichemical treatment system has converted the highly water soluble hexavalent chromium to insoluble trivalent chromium, thereby stabilizing the contamination and preventing continued leaching to ground water at the Glenwood Springs facility. Test results confirm that ground water quality has improved with the reduction of chromium concentrations to below the State standard for this contaminant in all wells.

Based on the information provided in the April 17th report, the treatment of both the source area and ground water appears to have been successful. Unless new data is generated proving otherwise, the Department does not intend to have the owners or tenants of the 2222 Deveruex Road facility pursue this matter any further. No further corrective action is required with regard to this past release. We also concur with your proposal to close the five ground water monitoring wells in accordance with procedures established by the State Engineers Office (Department of Natural Resources, Division of Water Resources). I thank you and your client, Glenwood Industrial, for having chosen to pursue this matter to its successful conclusion.

Please feel free to call me at (303) 692-3362 if you have any questions regarding this letter.

Sincerely,

Walter Avramenko, Unit Leader
Hazardous Waste Corrective Action Unit
Compliance Program

cc: Gary Schultz - Glenwood Industrial, LLC
Valois Shea - USEPA Region VIII / UIC Program
Kathleen Wahlberg - CDPHE / HMWMD

STATE OF COLORADO

Bill Owens, Governor
Jane E. Norton, Executive Director

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Grand Junction, Colorado 81501-2768
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Fax (970) 248-7198

Colorado Department
of Public Health
and Environment

April 25, 2000

Mr. Gary Schultz
Glenwood Industrial, LLC
P.O. Box 1150
Glenwood Springs, CO 81602-1150

Dear Mr. Schultz:

RE: Glenwood Industrial, LLC
Receipt of Completion Report
EPA ID#COD981544786
Project # 002GENV06ALL01

The Hazardous Materials and Waste Management Division of the Colorado Department of Public Health and Environment (the Department) acknowledges receipt of a document titled, "Results of Semiannual Groundwater Monitoring", dated April 21, 2000. This document was received in our office on April 24, 2000.

It has been determined that this document is a "Completion Report" pursuant to 6CCR 1007-3 §100.26. Therefore, it is estimated that the Department review will be completed within 30 days and will take no more than 40 hours. The proposed review completion date is May 18, 2000. Please refer any comments or questions to Walter Avramenko at (303)692-3362.

Sincerely,

Kathleen D. Wahlberg
Program Analyst

cc: Walter Avramenko, HMWMD

STATE OF COLORADO

Bill Owens, Governor
Jane E. Norton, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION
http://www.cdphe.state.co.us/hm/

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Denver, Colorado 80246-1530
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222 S. 6th Street, Room 232
Grand Junction, Colorado 81501-2768
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Colorado Department
of Public Health
and Environment

April 21, 2000

Theodore O. Meiggs Ph.D.
FOREMOST Solutions, Inc.
350 Indiana Street, Suite 415
Golden, Colorado 80401

RE: Voluntary Cleanup of Chromium Contamination
EIMCO / Glenwood Industrial, LLC. Site
2222 Deveruex Road, Glenwood Springs
COD981544786

Dear Mr. Meiggs:

I have received your April 17, 2000 semiannual groundwater report in which sampling data are presented and the progress of the cleanup effort is discussed. A quick review of your report suggests that the recirculating anaerobic bioremediation system has converted the highly water soluble hexavalent chromium to insoluble trivalent chromium, thereby stabilizing the contamination and preventing continued leaching to groundwater at the Glenwood Springs facility.

On July 1, 1999 a new regulation went into effect to deal with cleanups similar to what was undertaken at Camelot Cleaners. A copy of this new regulation, 6 CCR 1007-3, Section 100.26, is included with this letter for your review. Considering our long involvement at the site and the all the documents currently contained within our files, I see no need for preparing a formal application to close this site under this new streamlined process. Before proceeding with a thorough review of the April 17, 2000 report, I ask that either you or your client prepare a short letter requesting that the Department review the report and approve its recommendation (no further action) under this corrective action plan rule. This letter should acknowledge that your client is requesting that the site be handled under the new rule and that the previously submitted documents be considered the required "application". The only other additional information requested is noted in 100.21(c)(1) and (2) of this rule. Without such a request and the deadlines the new rule imposes upon the review process, Unit staff who are reviewing other documents prepared under compliance orders, permits and this new rule may not be able to review your report in a timely manner.

Please feel free to call me at (303) 692-3362 if you have any questions regarding this letter or the new corrective action plan rule.

Sincerely,

Walter Avramenko, Unit Leader
Hazardous Waste Cleanup Unit
Compliance Program

(2) Permits issued under this section shall provide for construction of such facilities as necessary, and for operation of the facility for not longer than one year. Any permit may be renewed not more than three times. Each such renewal shall be for a period of not more than one year.

(d) The Department may order an immediate termination of all operations at the facility at any time it determines that termination is necessary to protect human health and the environment.

§ 100.26 Corrective Action Plan.

(a) The owner or operator of a hazardous waste facility that is subject to the corrective action or closure requirements of Part 264 or Part 265, but that does not currently have a treatment, storage or disposal permit, may submit an application for a Corrective Action Plan to conduct corrective action or closure. Applications for such permits may be for entire facilities or portions thereof.

(b) The Department shall review applications submitted under this section and shall provide formal written notification that a corrective action plan submitted to the Department under this section has been approved or disapproved. In the event the corrective action plan is not approved by the Department, the Department shall promptly provide the applicant with a written statement of the reasons for such denial. If the Department disapproves a corrective action plan based upon the applicant's failure to submit the information required by subsection (c), the Department shall notify the applicant of the specific information omitted by the applicant. The Department shall use its best efforts to:

(1) Complete the review of the initial application within sixty (60) days after submittal and spend no more than forty (40) hours to review simple corrective action plans and no more than one hundred (100) hours to review more complex corrective action plans;

(2) Complete the review of each separate report/plan submitted under a phased approach corrective action plan within sixty (60) days after submittal of such report/plan and spend no more than forty (40) hours to review such report/plan; and

(3) Complete the review of the completion report for an approved corrective action plan within thirty (30) days after submittal of such completion report and spend no more than twenty (20) hours to review such completion report.

(c) Applications for Corrective Action Plans under this section shall include, at a minimum, the following:

(1) name(s) and address(es) of the owner and operator of the facility;

(2) name and telephone number of the facility contact person for the application;

(3) location of the facility;

(4) EPA Identification Number of the facility;

(5) description of historic uses and waste handling practices at the facility;

(6) description of site characterization activities and type and extent of contamination identified to date, including a description of any hazardous waste or hazardous constituents; and

(7) a Corrective Action Plan that either:

(i) includes characterization data that describes fully the vertical and horizontal extent of contamination and either:

(A) a remediation plan or

(B) a request for no further action

that is based on meeting state standards or risk-based cleanup goals; or

(ii) provides for a phased approach to investigation of the full vertical and horizontal extent of contamination and cleanup of hazardous wastes and constituents, as necessary, based on state standards or risk-based cleanup goals.

(d) Corrective Action Plans approved under this section:

(1) shall specify the date they become effective;

(2) shall specify actions the applicant must take to comply with the closure or corrective action requirements of Part 264 or 265, as appropriate, and a schedule for implementing such actions; and

(3) may designate corrective action management units or temporary units under §§ 264.552 or 264.553, in accordance with § 100.21(e);

(e) Corrective Action Plans approved under this section are subject to the provisions of § 100.32.

(f) Corrective Action Plans approved under this section do not authorize any action that requires a permit under this Part for the treatment, storage, or disposal of hazardous waste.

(g) Corrective Action Plans approved under this section, and any determinations that the Department makes pursuant thereto, are requirements of Part 3 of the Act, and are subject to appeal pursuant to the provisions of § 25-15-305, C.R.S.

(h) Corrective Action Plans approved under this section do not excuse, nor constitute a defense to, any prior violation of the Act or the Regulations. Approval of a Corrective Action Plan under this section does not impair the Department's ability to take any other appropriate action (including issuing or modifying permits or orders) regarding releases of hazardous wastes or hazardous constituents that are not addressed in the Corrective Action Plan.

STATE OF COLORADO

Bill Owens, Governor
Jane E. Norton, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION
http://www.cdphe.state.co.us/hm/

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222 S. 6th Street, Room 232
Grand Junction, Colorado 81501-2768
Phone (970) 248-7164
Fax (970) 248-7198

Colorado Department
of Public Health
and Environment

May 20, 1999

Theodore O. Meiggs Ph.D.
FOREMOST Solutions, Inc.
350 Indiana Street, Suite 415
Golden, Colorado 80401

RE: Voluntary Cleanup of Chromium Contamination
EIMCO / Glenwood Industrial, LLC. Site
2222 Deveruex Road, Glenwood Springs
COD981544786

Dear Mr. Meiggs:

I have reviewed your May 6, 1999 letter workplan which proposes to construct and operate a system to remediate chromium contaminated groundwater at the former EIMCO facility in Glenwood Springs, Colorado. Your plan proposes to use a recirculating anaerobic bioremediation system that will reduce the highly water soluble hexavalent chromium to insoluble trivalent chromium. My only comments to the plan are discussed in the paragraphs that follow.

1. You propose to continue sampling groundwater from monitoring wells on-site semi-annually. Considering that hexavalent chromium is water soluble and that fluids will be circulating through the suspected source area, it is possible that the start-up of the treatment system will initially mobilize some of the hexavalent chromium in the soil and carry it into the underlying aquifer. If this occurs, chromium concentrations in downgradient well MW-3 could conceivable increase until the necessary anaerobic conditions have been established after which concentrations should decline. I therefore recommend that groundwater samples be collected from MW-3 at least quarterly following system start-up, if not more frequently, to ensure that high levels of contamination are not released into the Colorado River alluvium where groundwater is expected to move quickly. More frequent monitoring of this sampling point should continue until groundwater travel times indicate that sufficient time has elapsed to have observed an effect at MW-3 and no major increases in chromium concentrations are observed in this well after fluids injected into the treatment/infiltration trench have had an opportunity to reach this well. Afterwards, MW-3 may be included in the semi-annual sampling program with the other wells.

2. Data collected during the implementation of the workplan should be summarized in a report sent to me semi-annually, shortly after the collection of the semi-annual groundwater monitoring data. This report should evaluate the success of the treatment system to remediate both the source area and the groundwater.

3. A report summarizing all data collected at the site and the system's success at achieving the groundwater standard should be included with your no further action request.

Assuming that the comments noted above are incorporated into your proposal, I hereby approve the May 6, 1999 workplan and recommend that it be implemented as soon as is technically feasible.

Please feel free to call me at (303) 692-3362 if you have any questions regarding this letter or your proposed corrective action program, or simply wish to update me on the progress of cleanup activities.

Sincerely,

Walter Avramenko, Unit Leader
Hazardous Waste Cleanup Unit
Compliance Program

cc: Sheila Gaston - CDPHE

HMWMD Corrective Action Review Tracking Form

Facility Name: EIMCO **EPA ID No.:** COD981544786

NOTICE OF INSPECTION - ✓ Yes ___ No **Submitted By:** Avramenko

NOI Review Date: 5-20-99 **Enforcement Followup Review:** ___ Yes

If Non-Notifier, Complete Location Address: *Street:* ___

City: ___ *County:* ___ *Zip:* ___

Coverage Area(s) Evaluated with Violation Determination *(Enter Y, N, or U)*: ___ GOR-Other Generator ___ DOR-Other TSD ___ CAS-CA Schedule **Other Area Codes with Determination:** ___ ___ ___

Notification(s): ___ LQG, ___ SQG, ___ Exempt, ___ LDF, ___ TSF, ___ Transporter, ___ Non-Notifier, or ___ Other ___

NOI Comments: Reviewed FSI's May 6, 1999 workplan for Gw treatment. Responded with an approval letter.

CORRECTIVE ACTION EVENT TRACKING - **Instrument Type:** Voluntary

New Instrument? ___ Yes ✓ No If yes and Project Number is needed, complete CA Project Intiation Form.

___ GW ___ Soil ___ Air ___ SW

CORRECTIVE ACTION EVENT INFORMATION

Provide Area Name or Area Type (SWMU/OU/AOC/RUR) and Number If new area, enter name, CA006, and identify media contaminated (GW, Air, Soil, and/or Surface Water)	Event Code	Status Code	Scheduled Date	Actual Date
Area Name(s): Site: Groundwater	CA 300	___	__/__/__	5/20/99
Event Comments: " "				
Area Name(s): " "	CA 400	___	__/__/__	5/20/99
Event Comments: " "	450			5-20-99
Area Name(s): " "	CA 500	___	__/__/__	5/20/99
Event Comments:				

If the event is also a Permitting/Closure event, complete SPAR Form. If an enforcement action, update the Case Development System.

FILING INFORMATION

Vol. No. ___

File in ___ **M&E Files or** ___ **Facilities Files** **Complete the following if Facilities File**

Facility Code: ___ ___ ___ **Submitted By:** ___ CDPHE ___ Facility **Document Date:** ___

Content: ___ Other ___ Correspondence ___ Tech Material ___ Response to Comments

Catagory: ___ 1. Correspondence ___ 2. Confidential Information ___ 8. Corrective Action ___ 11. Miscellaneous

Keywords: ___

Enter NOI Comments into Filing Database: ___ Yes ___ No

CRIS ROUTING INFORMATION

		INITIALS
Inspector:	Complete NOI Section and Submit to Tracking ASAP	___
Inspector:	Draft Offline Documentation. In CRIS select Determination and Documentation Type. Send "Review" Action Item.	___
Unit Leader:	Review Document. In CRIS review Doc. Type & Deter.	___
Review	Send "Edit / Miscellaneous / Determination" Action Item(s).	
Inspector:	Revise Offline Documentation.	___
Revise	In CRIS, Send "Review" Action Item.	
Unit Leader:	Sign Documentation. Submit Documents to Admin. Asst.	MA 5-20
Approve	In CRIS, Send "Finalize" Action Item	

	INITIALS
Administrative Assistant:	
Mail Original Letter, and Copies as Listed	___
Copy to Lead Inspector ___YES ___NO	
White copy of this Form To Tracking → DONE	
Copy of Letter with yellow copy of this Form to File	
In CRIS, Delete Action Item only after Documents Received.	
Tracking:	
Track NOI Section in CRIS.	___
Track CAR Event(s) in RCRIS.	___

Remember: **The Actual Date is the date of the correspondence which may be different than the NOI Review Date.. This Form replaces the NOI Form, Routing Form and CA Tracking Form for Corrective Action Reviews Only.**

Instrument Type and Authority

Unilateral Order (U-C)	**Operating Permit (O-A)**	**Consent Order (A-D)**	**Post-Closure Permit (P-A)**
Consent Decree (C-D)	**Judicial Order (J-U)**	**Permit Mod (M-A)**	**Order Modification (N-D)**
Judicial Decree (D-U)	**Other (Z-) (Specify Instrument Type)**		**Voluntary Corrective Action (V-U)**

RCRIS EVENT AND STATUS CODES

Event Code	Event Description **Status Code** & Status Code Description
006	Type of Unit **AC** Area of Concern - **OU** Operable Unit - **RU** Regulated Unit Release - **SM** SWMU
010	RFA Initiation
050	RFA Complete **RF** assessment was an RFA - **PA** assessment was a PA-Plus **IK** assessment by institutional knowledge
060	Notice of Contamination
070**	RFI Determination **YE** RFI necessary - **NO** **RFI not necessary
075	CA Prioritization **HI** high - **ME** medium - **LO** low priority
100	RFI Imposition **DC** focused data collection for stabilization evaluation
110	RFI Workplan Received
120	RFI WP Mod Requested
140	RFI WP NOD (Enter NOD # in Event Comments)
150	RFI Workplan Approved
155	RFI Supp Info Requested
160	RFI Supp Info Received
170	RFI Supp Info Satisfactory
180	RFI Implementation Begun
190	RFI Report Recieved
195	RFI Progess Reports Received
200	RFI Report Approved
210**	CA Responsibility Referred **SF** referred to CERCLA - **OT** referred to other non-RCRA Federal Authority
225	Stabilization Measures Evaluated **YE** amenable - **IN** more investigation - **NR** not required - **NF** not feasible
250	CMS Imposed
260	CMS Workplan Received
270	CMS Workplan Mod Requested
300	CMS Workplan Approved
305	CMS Supp Info Requested
310	CMS Supp Info Received
320	CMS Supp Info Adequate
330	CMS Implementation Begun
340	CMS Report Received
345	CMS Progress Reports Received
350	CMS Approved (Complete)
370	Petition for No Further Action
375**	Decision on Petition for NFA
380	Public Notice on Proposed Remedy
400	Remedy Selection (CM Imposed)
410	Submitted Remedy Design
446	Completed CMD Approval **30%, 60%, or 90%** Completed
447	Completed Interim Measures Design Approval **30%, 60%, or 90%** Completed
450	CM Design Approved
460	Cost Est. for Remedy Received
470	Financial Assur for Remedy Demo
496	Completed CMI Workplan **30%, 60%, or 90%** Completed
497	Completed IM Implementation Workplan **30%, 60%, or 90%** Completed
500	CM Implementation WP Approved
506	CM Implemented
510	Deter of Technically Impractibility
550**	Cert. of Remedy Completion (CMI)
600*	Stabilization Measures Implemented **Mark All That Apply** **SR** primary measure is source removal/treatment **EC** primary measure is exposure control by barrier and/or institutional control (capping, fencing...) **GW** groundwater extraction and treatment **OT** other (Enter Event Comments) ***Unit Specific Event Comments for CA600 Required**
650**	Stabilization Measures Constructed or Completed **CC** construction completed **SC** stabilization completed
725	Current Human Exposure Under Control **YE** yes, controlled - **NC** no control measures necessary - **NO** not controlled - **IN** insufficient data
750	Migration of Contaminated GW Under Control **YE** yes, controlled - **NR** no release to GW - **NO** not controlled - **IN** insufficient data
999	CA Process Terminated **NF** no further action - **RM** remediation completed
**	**ENTER CA999 EVENT IF PROCESS TERMINATED**

*For the following **Other Event Codes** enter one of the following Status Codes:*

AS additional study - **IM** interim measure
TS treatability study - **DI** design investigation -
OM operation and maintenance

801	Other Imposed
811	Other Workplan Received
812	Other Workplan Modification Requested
814	Other Workplan Approved
816	Other Supplemental Information Requested
817	Other Supplemental Information Received
818	Other Supplemental Information Adequate
821	Other Implementation Begun
831	Other Report Received
832	Other Progress Report Received
834	Other Report Approved
841	Other Approval
____	Other (See Tracking, Enter Event Comments)

If event code is bolded, then event will go to EPA's National Database.

STATE OF COLORADO

Bill Owens, Governor
Jane E. Norton, Executive Director

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HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION
http://www.cdphe.state.co.us/hm/

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Colorado Department
of Public Health
and Environment

Howard Roitman, Division Director
Hazardous Materials and Waste Management Division

Fax Transmission Sheet
Fax #: (303) 759-5355

IMMEDIATE DELIVERY TO: Theodore Meiggs

COMPANY/AGENCY: FSI

TELEPHONE#: _____

TELEFAX#: 303-278-0624

FROM: Walter Avramenko FAXED 13:57 5-20

TELEPHONE: 303-692-3362

SUBJECT: Elmco Plan Approval

DATE: May 20, 1999

NUMBER OF PAGES TO FOLLOW: 2

COMMENTS: _____

STATE OF COLORADO

Bill Owens, Governor
Jane E. Norton, Executive Director

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and Environment

Howard Roitman, Division Director
Hazardous Materials and Waste Management Division

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TELEPHONE#:_____

TELEFAX#:_____

FROM:_____

TELEPHONE:_____

SUBJECT:_____

DATE:_____

NUMBER OF PAGES TO FOLLOW:_____

COMMENTS:_____

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Colorado Department
of Public Health
and Environment

May 20, 1999

Theodore O. Meiggs Ph.D.
FOREMOST Solutions, Inc.
350 Indiana Street, Suite 415
Golden, Colorado 80401

RE: Voluntary Cleanup of Chromium Contamination
EIMCO / Glenwood Industrial, LLC. Site
2222 Deveruex Road, Glenwood Springs
COD981544786

Dear Mr. Meiggs:

I have reviewed your May 6, 1999 letter workplan which proposes to construct and operate a system to remediate chromium contaminated groundwater at the former EIMCO facility in Glenwood Springs, Colorado. Your plan proposes to use a recirculating anaerobic bioremediation system that will reduce the highly water soluble hexavalent chromium to insoluble trivalent chromium. My only comments to the plan are discussed in the paragraphs that follow.

1. You propose to continue sampling groundwater from monitoring wells on-site semi-annually. Considering that hexavalent chromium is water soluble and that fluids will be circulating through the suspected source area, it is possible that the start-up of the treatment system will initially mobilize some of the hexavalent chromium in the soil and carry it into the underlying aquifer. If this occurs, chromium concentrations in downgradient well MW-3 could conceivable increase until the necessary anaerobic conditions have been established after which concentrations should decline. I therefore recommend that groundwater samples be collected from MW-3 at least quarterly following system start-up, if not more frequently, to ensure that high levels of contamination are not released into the Colorado River alluvium where groundwater is expected to move quickly. More frequent monitoring of this sampling point should continue until groundwater travel times indicate that sufficient time has elapsed to have observed an effect at MW-3 and no major increases in chromium concentrations are observed in this well after fluids injected into the treatment/infiltration trench have had an opportunity to reach this well. Afterwards, MW-3 may be included in the semi-annual sampling program with the other wells.

May 20, 1999
EIMCO / Glenwood Industrial, LLC. Site
May 20, 1999

2. Data collected during the implementation of the workplan should be summarized in a report sent to me semi-annually, shortly after the collection of the semi-annual groundwater monitoring data. This report should evaluate the success of the treatment system to remediate both the source area and the groundwater.

3. A report summarizing all data collected at the site and the system's success at achieving the groundwater standard should be included with your no further action request.

Assuming that the comments noted above are incorporated into your proposal, I hereby approve the May 6, 1999 workplan and recommend that it be implemented as soon as is technically feasible.

Please feel free to call me at (303) 692-3362 if you have any questions regarding this letter or your proposed corrective action program, or simply wish to update me on the progress of cleanup activities.

Sincerely,

Walter Avramenko, Unit Leader
Hazardous Waste Cleanup Unit
Compliance Program

cc: Sheila Gaston - CDPHE

STATE OF COLORADO

Roy Romer, Governor
Patti Shwayder, Executive Director

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Colorado Department
of Public Health
and Environment

July 12, 1996

Mr. Hal J. Pos
Parsons Behle & Latimer
P.O. Box 11898
Salt Lake City, Utah 84147-0998

RE: Status of Groundwater Sampling and Installation of an Additional Monitoring Well
Eimco Coal Machinery, Inc.
2222 Devereux Road, Glenwood Springs, CO
EPA ID# COD 98 154 4786

Dear Mr. Pos:

The Hazardous Materials and Waste Management Division (the Division), has reviewed the June 21, 1996 document titled "Status of Groundwater Sampling and Installation of an Additional Monitoring Well" submitted by Envirosearch International in Eimco's behalf. This document is a response to the June 3, 1996 letter from the Division.

Based upon the documented trends of the ground water flow beneath this facility, it does not appear that the proposed monitor well location for MW-5 would be down-gradient of MW-3. MW-3 has consistently shown the highest levels of chromium concentrations in the ground water. In order to determine if the ground water contamination is leaving the site, MW-5 should be installed down-gradient of and to the north/northwest of MW-3. Possibly, about 50 feet east of the proposed location, just outside the approximate leach field boundary. The exact location of the monitor well may be determined in the field based upon the site logistics.

The Division also recommends that a water sample be collected for analysis from the new monitor well, MW-5, after installation and development in addition to being included in the semi-annual ground water sampling to be conducted in December. This additional information may hasten the Division's determination concerning the possibility of an off-site ground water impact. The sample analysis should follow the same guidelines as the previously approved quarterly ground water sampling plan.

Eimco Coal Machinery, Inc. should prepare and submit a response to the comments above within 15 days of receipt of this letter.

If you have any questions of a technical nature please contact Sheila Gaston, of the Division, at (303) 692-3332. Questions of a legal nature should be directed to Daniel Miller, of the Office of the Attorney General, at (303) 866-5129.

Sincerely,

Walter Avramenko, Unit Leader
Hazardous Waste Cleanup and Permitting Unit
Compliance Program

cc: Joe Cettin, Eimco Coal Machinery
Daniel Miller, AGO
Mark Bean, Garfield County Regulatory Office
Corbin Darling, EPA
Craig Scola, Envirosearch International

STATE OF COLORADO

Roy Romer, Governor
Patti Shwayder, Acting Executive Director

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Colorado Department
of Public Health
and Environment

June 3, 1996

Mr. Hal J. Pos
Parsons Behle & Latimer
P.O. Box 11898
Salt Lake City, Utah 84147-0998

RE: Status Report of Groundwater Sampling
Eimco Coal Machinery, Inc.
2222 Devereux Road, Glenwood Springs, CO
EPA ID# COD 98 154 4786

Dear Mr. Pos:

The Hazardous Materials and Waste Management Division (the Division), has reviewed the May 13, 1996 document entitled "Status Report of Groundwater Sampling" submitted by Envirosearch International in Eimco's behalf. This document includes data from the March 14, 1996 sampling of the existing four monitor wells at the site.

As discussed with Craig Scola of Envirosearch on May 22, 1996, the Division agrees that sufficient ground water sampling data has been obtained to reduce the sampling frequency to semi annually. Based upon the results of the sampling completed to date, the most beneficial months to collect future ground water samples would be June and December. The sampling should continue to be conducted as approved under the quarterly ground water sampling plan and should continue to include the measurement of ground water elevations at the time of sampling.

The quarterly ground water sampling data has continued to show seasonally high concentrations of dissolved chromium in the most downgradient well, MW-3. Due to the fact that the levels of ground water contamination have not been reduced by the remediation of the sump area, the Division recommends that an additional monitor well should be installed down gradient of MW-3 in order to evaluate the impact of or potential for impact on off-site ground water. The monitor well should be installed as far downgradient from the site as is physically possible. The purpose of this well would be to determine if the chromium contamination in excess of the allowable state standard has continued off-site in the direction of the river, or if it is contained on-site.

The off-site monitor well should also be included in the semi-annual ground water sampling events completed following its installation.

Eimco Coal Machinery, Inc. should prepare and submit a response to the comments above within 15 days of receipt of this letter.

If you have any questions of a technical nature please contact Sheila Gaston, of the Division, at (303) 692-3332. Questions of a legal nature should be directed to Daniel Miller, of the Office of the Attorney General, at (303) 866-5129.

Sincerely,

Walter Avramenko, Unit Leader
Hazardous Waste Cleanup and Permitting Unit
Compliance Program

cc: John Habets, Eimco Coal Machinery
Daniel Miller, AGO
Mark Bean, Garfield County Regulatory Office
Corbin Darling, EPA

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Roy Romer
Governor

Patricia A. Nolan, MD, MPH
Executive Director

April 26, 1994

Mr. Hal J. Pos
Parsons Behle & Latimer
P.O. Box 11898
Salt Lake City, Utah 84147-0998

RE: Report of Former Chromium Plating Pit Excavation Activities and Subsequent Groundwater Monitoring
Eimco Coal Machinery, Inc.
EPA ID# COD 98 154 4786

Dear Mr. Pos:

The Hazardous Materials and Waste Management Division of the Colorado Department of Health (the Division), has reviewed the March 29, 1994 report entitled "Report of Former Chromium Plating Pit Excavation Activities and Subsequent Groundwater Monitoring" submitted by Envirosearch International in Eimco's behalf. This report includes data from the former chromium plating pit excavation and the resampling of the four on-site monitor wells. The Division has the following comments on the investigation report:

1. All five confirmation soil samples collected following the pit excavation showed levels of total chromium below 100 ppm. The Division is of the opinion that the contaminated soil with the potential of being a threat to local groundwater has been remediated. Unless we receive evidence to the contrary, no further action is required by the Division with regard to the soil around this former pit.

2. Following discussions with Eric Silco of Envirosearch, it has been determined that the latest groundwater samples were analyzed for total metals instead of dissolved metals. Therefor, these results do not really reflect the current contaminant levels with respect to the state regulatory standard of 50 ppb for dissolved chromium. Based on this information, Mr. Silco has proposed to complete the next quarterly sampling event in mid-May in order to continue to monitor the groundwater quality at this facility. The Division concurs with this decision and will continue to evaluate the results of this groundwater monitoring program in order to determine if further remediation activities will be required. A report of the field procedures and laboratory results should be submitted to the Division within 30 days of the sampling event.

All sample generation and handling protocols should be followed as outlined in the original Site Assessment Quality Assurance Project Plan.

If you have any questions of a technical nature please contact Sheila Gaston, of the Division, at (303) 692-3332. Questions of a legal nature should be directed to Daniel Miller, of the Office of the Attorney General, at (303) 866-5129.

Sincerely,

Walter Avramenko, Unit Leader
Corrective Action Unit
Monitoring and Enforcement Section
Hazardous Waste Control Program

cc: John Habets, Eimco Coal Machinery
Daniel Miller, AGO
Mark Bean, Garfield County Regulatory Office

STATE OF COLORADO

Roy Romer, Governor
Patti Shwayder, Acting Executive Director

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Colorado Department
of Public Health
and Environment

February 14, 1996

Mr. Hal J. Pos
Parsons Behle & Latimer
P.O. Box 11898
Salt Lake City, Utah 84147-0998

RE: Status Report of Groundwater Sampling
Eimco Coal Machinery, Inc., 2222 Devereux Road, Glenwood Springs
EPA ID# COD 98 154 4786

Dear Mr. Pos:

The Hazardous Materials and Waste Management Division (the Division), has reviewed the January 30, 1996 report entitled "Status Report of Groundwater Sampling" submitted by Envirosearch International on Eimco's behalf. This report includes data from the resampling of the existing four monitor wells at the site.

The Division has the following comments on the sampling report:

- The chain-of-custody form for the sampling event was not included in the report. Please submit a copy of the form with all of the appropriate signatures.

- Map 2 of the report shows the ground-water flow direction and ground-water elevations for this sampling event. The report does not include the actual depth to ground-water measurements and casing elevations for each well from which the ground-water elevations were calculated. Please submit a table containing this information for at least the past four sampling events.

Within 30 days of the receipt of this letter, please submit the above requested information. The quarterly ground-water sampling should continue as proposed in the sampling report.

If you have any questions of a technical nature please contact Sheila Gaston, of the Division, at (303) 692-3332. Questions of a legal nature should be directed to Daniel Miller, of the Office of the Attorney General, at (303) 866-5129.

Sincerely,

Walter Avramenko, Unit Leader
Hazardous Waste Cleanup and Permitting Unit
Compliance Program

cc: John Habets, Eimco Coal Machinery
Craig Scola, Envirosearch International
Daniel Miller, AGO
Mark Bean, Garfield County Regulatory Office
Corbin Darling, EPA

STATE OF COLORADO

Roy Romer, Governor
Patricia A. Nolan, MD, MPH, Executive Director

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Colorado Department
of Public Health
and Environment

August 25, 1994

Mr. Hal J. Pos
Parsons Behle & Latimer
P.O. Box 11898
Salt Lake City, Utah 84147-0998

RE: Status Report of Groundwater Sampling
Eimco Coal Machinery, Inc.
2222 Devereux Road, Glenwood Springs, CO
EPA ID# COD 98 154 4786

Dear Mr. Pos:

The Hazardous Materials and Waste Management Division (the Division), has reviewed the June 23, 1994 report entitled "Status Report of Groundwater Sampling" submitted by Envirosearch International in Eimco's behalf. This report includes data from the resampling of the existing four monitor wells at the site. The Division has the following comments on the investigation report and on the proposed groundwater monitoring plan:

INVESTIGATIVE METHODOLOGY - Ground Water Sampling

The aforementioned report stated that "a distinct mappable groundwater flow direction could not be drawn utilizing the water level measurements provided by Huntingdon Chen-Northern" from the May 11, 1994 sampling event. Please submit the actual groundwater elevations reported by Chen-Northern to the Division for review. Also, submit any quality control data generated by the laboratory which analyzed the samples collected on May 11, 1994.

A review of boring logs for this site shows that the monitor wells were completed in the water bearing zone which consists of boulders with sand and silt to at least a depth of 52 feet. Has any information been collected to indicate at what depth some type of confining layer might be reached so as to determine the thickness of this aquifer? Also, please submit a log of borehole and well construction for MW-4.

ANALYTICAL RESULTS - Groundwater Sampling

The analytical report for the June 9, 1994 samples provided in Attachment 1 includes a report for sample ID EIMCO/MW-5. Was this a duplicate sample collected from MW-3?

INVESTIGATION CONCLUSIONS

The Division agrees that quarterly sampling of the groundwater should continue (as stated in the June 10, 1993 letter from the Division) in order to evaluate the effectiveness of the source area remediation. The next sampling event should be completed as soon as possible and would fulfill the requirement of the next quarterly sampling. The most recent increase in chromium levels in MW-3 could be a result of the disturbance of the contaminated soils in the source area during the recent remediation. If the chromium levels in MW-3 do not begin to decrease in the upcoming sampling events, an additional monitoring well may need to be installed downgradient of MW-3 to evaluate the impact of the on-site groundwater contamination to the river.

Eimco Coal Machinery, Inc. should prepare and submit a response to the information requested above within 15 days of receipt of this letter.

If you have any questions of a technical nature please contact Sheila Gaston, of the Division, at (303) 692-3332. Questions of a legal nature should be directed to Daniel Miller, of the Office of the Attorney General, at (303) 866-5129.

Sincerely,

Walter Avramenko, Unit Leader
Corrective Action Unit
Monitoring and Enforcement Section
Hazardous Waste Control Program

cc: John Habets, Eimco Coal Machinery
Daniel Miller, AGO
Mark Bean, Garfield County Regulatory Office

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Roy Romer
Governor

Patricia A. Nolan, MD, MPH
Executive Director

June 10, 1993

Mr. Hal J. Pos
Parsons Behle and Latimer
P.O. Box 11898
Salt Lake City, Utah 84147-0998

RE: Addendum # One Site Assessment Report
Eimco Coal Machinery, Inc.
EPA ID# COD 98 154 4786

Dear Mr. Pos:

The Hazardous Materials and Waste Management Division of the Colorado Department of Health (the Division), has reviewed the June 7, 1993 report entitled "Addendum # One Site Assessment Report" submitted by Envirosearch International in Eimco's behalf. This report includes data from the installation of a fourth monitor well at the facility and the resampling of the existing three monitor wells. The report also presents remedial recommendations for the former chromium plating pit. The Division has the following comments on the investigation report and on the proposed remediation:

1. Section 3.0 Analytical Results
The federal maximum contaminant level for chromium in drinking water of 100 ppb, referenced in this section, does not apply due to the lower state regulatory standard of 50 ppb for dissolved chromium in groundwater. The report also assumes the hexavalent chromium result in MW-3 to be 41 ppb instead of the reported laboratory result of 61 ppb. In a discussion with the laboratory, it was stated that the notation on their report that the hexavalent chromium result "is probably lower than 0.061 due to cloudiness of sample during analysis" was incorrect because in checking the analyst's records, no cloudiness for that sample was recorded. In fact, a 1:2 dilution of the sample was required for analysis due to the concentration of color developed during analysis. In any event, the dissolved chromium and hexavalent chromium results on MW-3 are very close to the regulatory limit of 50 ppb for groundwater.

2. Section 5.0 Remedial Recommendations
In addition to the proposed excavation of the concrete floor and three of the cinder

block walls, some confirmation samples will need to be taken. The Division recommends that one soil sample be taken from each of these four locations. These should not be composite samples, but point samples centrally located in each wall and the floor sample should be taken underneath the sump after removal. These samples are needed to verify the concentration levels of chromium which will remain in the soil.

Due to the increasing levels of dissolved chromium reported in MW-3, the Division will require quarterly monitoring of the groundwater at this facility for at least one year. All four monitor wells should be samples every three months. A report of the field procedures and laboratory results should be submitted to the Division within 30 days of the sampling event.

All sample generation and handling protocols should be followed as outlined in the original Site Assessment Quality Assurance Project Plan.

The Division agrees with the goals and methods contained within the remediation plan and recommends that the plan be implemented as soon as technically feasible. This approval is contingent upon the incorporation of the above comments and recommendations in the plan. Within 15 days of receipt of this letter, Eimco Coal Machinery, Inc. should prepare a letter outlining how it will modify the plan to address the Division's concerns and incorporate the recommended changes.

If you have any questions of a technical nature please contact Sheila Gaston, of the Division, at (303) 692-3332. Questions of a legal nature should be directed to Daniel Miller, of the Office of the Attorney General, at (303) 866-5129.

Sincerely,

Walter Avramenko, Unit Leader
Corrective Action Unit
Monitoring and Enforcement Section
Hazardous Waste Control Program

cc: John Habets, Eimco Coal Machinery
Daniel Miller, AGO
Mark Bean, Garfield County Regulatory Office

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Roy Romer
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Patricia A. Nolan, MD, MPH
Executive Director

April 19, 1993

Mr. Hal J. Pos
Parsons, Behl and Latimer
P.O. Box 11898
Salt Lake City, Utah 84147-0998

RE: Eimco Coal Machinery, Inc.
EPA ID# COD981544786
Response to March 31, 1993 proposal for Decontamination of Former Plating Pit

Dear Mr. Pos:

The Hazardous Materials and Waste Management Division of the Colorado Department of Health (the Division), has reviewed the March 31, 1993 document entitled "Decontamination of Former Plating Pit At The Eimco Coal Machinery Facility, Glenwood Springs, Colorado" submitted by EnviroSearch in Eimco's behalf. This document discusses the proposed scope of work to decontaminate the former chrome plating pit located at the aforementioned facility. The Division agrees with the workplan proposed in this document with the following additions/revisions:

1. Task 1 Pit Decontamination

The final rinse water from the steam cleaning of the plating pit should be tested for total chromium to aid in the determination of "clean" for the pit. If total chromium analytical results are elevated in this rinse water, further cleaning may be necessary.

2. Task 2 Confirmation Sampling

The discussion of composited "solid" samples from three locations in the pit does not indicate how many subsamples will be included in each composite. This decision can highly effect the value of the resulting data. In order to identify specific locations of contamination, composite samples are not appropriate. If your are trying to determine if contamination is generally present over a large surface area, composites are appropriate as long as the number of subsamples is kept to a

minimum. Any elevated composite results, however, could mean that any one of the subsamples or all of them are contaminated. This could lead to resampling and retesting of each specific subsample location. Your sampling plan should specify the exact location of each sample to be taken and how each sample will be analyzed (separately or as part of a composite).

3. The actual decommissioning of the former chrome plating tank pit should not be performed until data from the decontamination process has been received, reviewed and approval is given by the Division.

All sample generation and handling protocols should be followed as outlined in the original Site Assessment Quality Assurance Project Plan.

We recommend that Eimco prepare and submit a response as to how these additions/revisions will be incorporated into the workplan to the Division for our review within 15 days of the receipt of this letter.

If you have any questions of a technical nature please contact Sheila Gaston, of the Division, at (303) 692-3332.

Sincerely,

Walter Avramenko, Unit Leader
Corrective Action Unit
Monitoring and Enforcement Section
Hazardous Waste Control Program

cc: John Habets, Eimco Coal Machinery

STATE OF COLORADO

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Roy Romer
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Patricia A. Nolan, MD, MPH
Executive Director

March 2, 1993

Mr. Hal J. Pos
Parsons, Behl and Latimer
P.O. Box 11898
Salt Lake City, Utah 84147-0998

RE: Eimco Coal Machinery, Inc.
EPA ID# COD981544786
Response to January 22, 1993 Addendum # One Site Assessment Quality Assurance Project Plan

Dear Mr. Pos:

The Hazardous Materials and Waste Management Division of the Colorado Department of Health (the Division), has reviewed the January 22, 1993 document entitled "Addendum # One Site Assessment Quality Assurance Project Plan" submitted by Envirosearch International in Eimco's behalf. This report included historical information pertaining to potential sources of contamination at the facility and proposed additional investigative activities to be performed. The Division agrees with the workplan proposed in this report as follows:

1. Section 2.1 One additional monitoring well (MW-4) to be located as identified on Map A-1 of the report. The purpose of this monitoring well is to further investigate possible ground water contamination at the site and to gather more information for ground water flow determination. The monitor well will be analyzed at a minimum for total chromium and pH.

2. Section 2.2 Ground water samples will be collected from all existing wells on site and will be analyzed at a minimum for total chromium and pH.

3. Section 2.3 A sample of the septic tank contents will be collected and analyzed for total chromium.

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Executive Director

NOV 24 1992

Mr. Hal J. Pos
Parsons, Behle and Latimer
P.O. Box 11898
Salt Lake City, UT 84147-0898

RE: Eimco Coal Machinery, Inc.
EPA ID #COD981544736
Response to October 2, 1992 Site Assessment Report

Dear Mr. Pos:

The Colorado Department of Health, Hazardous Materials and Waste Management Division (the "Department") has received the October 2, 1992 Site Assessment Report for the Eimco Coal Machinery, Inc. ("Eimco") facility in Glenwood Springs, which you submitted on Eimco's behalf. The report summarized soil and groundwater data obtained during an investigation of contamination associated with Eimco's former chrome plating pit. The Department has the following comments regarding the report:

Pit/Sump Area:

In section 6.0 of the report, two courses of action are proposed for the site: 1) the cleaning and backfilling of the plating pit area and 2) the continued monitoring of groundwater with the newly installed wells for one year. Regarding the cleaning of the sump area, we were under the impression that all residues had already been removed from the pit/sump area. Since this is apparently not the case, we strongly recommend that all residues be removed, and the area steam cleaned as soon as possible. Of course, any residues, wash water or other wastes must be adequately characterized and disposed in compliance with the Colorado Hazardous Waste Regulations. Regarding the backfilling of the pit/sump area with gravel and lime, we do not believe this is a wise course of action since the area has not yet been adequately characterized. At this point, it is not clear from the data available that the concrete of which the pit/sump is composed does not itself exhibit a hazardous waste characteristic and/or is not still acting as source of contamination to the surrounding soil and groundwater. In addition, soil sample 2C (taken at the 6' interval) was found to contain significantly elevated levels of chromium (101 mg/kg) which appear to be increasing with depth. Also, the East floor sample taken in Feb 1992, shows elevated levels of chromium (220 mg/kg). Considering these elevated levels and also considering that the walls of the pit are constructed of

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cinder block, the concrete and soils underneath and around the pit may still be acting as a source of contamination. Although we are aware of the practical difficulties associated with further sampling in the pit area, it is important to fully delineate the extent of contamination around and underneath the pit area.

Monitoring Wells:

Regarding the monitoring of the groundwater in the area, we do not believe that the wells installed have yielded enough information to accurately determine the direction of groundwater flow or to verify whether the aquifer is or is not unacceptably contaminated. First of all, MW-1 is showing the highest level of contamination and thus does not appear to accurately represent background conditions at the site. Secondly, due to the proximity of the Colorado River to the site it seems likely that groundwater flow may have a more westerly component than is indicated in the report. Thirdly, all three wells are aligned along a straight line making it virtually impossible to determine the direction of groundwater flow. Therefore, an additional well placed due west of the pit area and another background well placed further upgradient would triangulate the area and help to better characterize groundwater flow direction.

Other Possible Source Areas:

During previous site inspections of Eimco by the Department, it was noted that the area around MW-1 often served as a storage area for used oil, automotive batteries, used equipment, etc. Therefore it seems feasible that chromium containing materials may have also been located in this area at some time and that perhaps MW-1 is actually located in an area of contamination instead of in a background area. Previous inspections also indicate that Eimco used a 750 gallon underground storage tank to collect used oil. This tank also collected drainage from the floor drains in the shop area. Although our records do not specify the location of this underground storage tank, it appears to have been located east of the Eimco building and may be impacting MW-1 results. We suggest that Eimco further investigate the location of this tank and the possibility of chromium materials having been stored near MW-1.

In addition we have noted that MW-3 (14 ppb chromium) is located in the general proximity of Eimco's former septic tank for domestic waste. Since Eimco had no connection to a POTW during the time it occupied the Devereux Road site and ran their chrome plating operations, the septic system and any associated leachfield warrants further careful investigation. Such investigation should include acquiring an accurate history of the septic system, location of the leach field, sampling of the septic tank contents and sampling of soils in leachfield area.

Summary:

The Department recommends that Eimco do the following in order to further evaluate soil and groundwater contamination at this site:

1. Prepare a soil investigation workplan to fully characterize contamination found around the former chromium plating tank pit. The sampling data shows that the soils in the vicinity of the pit are contaminated with chromium. The plan should also address whether or not the concrete walls and floor of the pit are hazardous waste (for example, characteristic for chromium).

2. Prepare a ground-water sampling workplan whose goal will be to accurately determine the direction of ground water flow and to fully characterize local water quality. The sampling data indicates that a release has impacted the underlying aquifer. Additional wells are needed upgradient of MW-1 and downgradient of the former plating pit area.

3. Prepare a workplan to characterize soil contamination around the used oil underground storage tank, septic tank and associated leachfield. The purpose of this sampling is to evaluate whether these three waste management units are impacting water quality in the underlying aquifer.

We recommend that Eimco prepare and submit these plans to the Department for our review and approval within 30 days of receipt of this letter. The plans should specify sampling locations, equipment, and analytical methods that will be employed to characterize this contamination. A decision to close the plating tank pit and monitor the ground water can only be made after the magnitude and full extent of the contamination is fully known.

We appreciate Eimco's efforts in dealing with the issue of chromium contamination at this site. The Department usually conducts site investigation/remediation activities such as these under an administrative order on consent, signed by the Department and the facility. However, if work proceeds satisfactorily, as it has to date at the Eimco site, we hope to avoid this step in our management of this case.

If you have any questions of a technical nature please contact Lillian Gonzalez, of the Department, at (303) 692-3344. Questions of a legal nature should be directed to Daniel Miller, of the Office of the Attorney General, at (303) 866-5129.

Sincerely,

Walter Avramenko, Unit Leader
Corrective Action Unit
Hazardous Waste Control Program

pc: John Habets, Eimco Coal Machinery
Daniel Miller, AGO

eimco-sa

BEFORE THE HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION

DEPARTMENT OF HEALTH

STATE OF COLORADO

* *

COMPLIANCE ORDER ON CONSENT NO. 92-04-15-01

* *

IN THE MATTER OF EIMCO COAL MACHINERY, INC.

* *

This Compliance Order on Consent is entered into by the Colorado Department of Health through the Hazardous Materials and Waste Management Division ("the Division") and by Eimco Coal Machinery, Inc. ("Eimco").

Findings of Fact

1. Eimco is a Delaware corporation doing business at 2222 Devereux Road in Glenwood Springs, Colorado.

2. Eimco formerly operated under the name "Baker Mine Service" which was owned by Baker International. The current general manager of Eimco is Mr. Jack Van Hoose.

3. Eimco manufactures and services machinery used in the coal mining industry. Eimco's operations involve mechanical repair, machining of various metals, painting and chrome plating.

4. On September 7, 1990, inspectors from the Division conducted an inspection of Eimco to determine compliance with the Colorado Hazardous Waste Act.

5. During the 1990 inspection, inspectors observed Eimco's chrome plating operation. The tanks for the plating line were positioned in a concrete vault constructed below the floor level of the building. A grate was positioned over the vault and around the tanks to serve as a walking surface. The inspectors observed that liquid was pooled in the bottom of the vault.

6. During the 1990 inspection, Mr. Van Hoose stated that Eimco does not have service to a publicly owned treatment works (POTW). Therefore, according to Mr. Van Hoose, no wastewater from the chrome plating operation leaves Eimco via the POTW. Mr. Van hoose stated that instead, rinses are reused as makeup water for the plating baths and all spilled material accumulates in the vault underneath the tanks.

7. During the 1990 inspection, inspectors observed a circular tank of approximately 300-400 gallon capacity, located next to the chrome plating area, filled approximately one-half full with an orange brown liquid. Mr. Van Hoose stated that the material was waste which had been pumped from the vault several years ago when snowmelt had seeped into the vault through the concrete walls and combined with plating wastes already in the vault. Mr. Kevin Wakefield, Eimco's chrome plating operator, stated that the previous chrome plating operator had "treated" the waste pumped from the vault and that an additional three barrels of treated waste was being stored outside. Mr. wakefield stated that he had been Eimco's chrome plating operator for three years, as of the date of the 1990 inspection.

8. During the 1990 inspection, inspectors asked Mr. Wakefield how often the vault is pumped. Mr. Wakefield replied that he had never pumped it in his three years at Eimco as the chrome plating operator.

9. During the 1990 inspection, inspectors requested documentation of lab analysis for the chromium waste stored in the tank and drums. Eimco responded by forwarding a copy of a November 20, 1989 laboratory report, for samples marked "waste barrels", which showed that the chromium concentration in the liquid sample was 480 mg/l.

10. On August 11, 1989, inspectors from the Division conducted an inspection of Eimco to determine compliance with the Colorado Hazardous Waste Act.

11. During the 1989 inspection, inspectors observed two 55-gallon drums which Mr. Van Hoose stated were partially full of waste chromium sludge. According to Mr. Van Hoose, the sludge was generated form filtering liquid which was pooled in the vault below the plating tanks. Mr. Van Hoose stated that the vault had to be pumped because snowmelt had seeped through the vault the previous winter. The inspectors observed liquid in the vault during the 1989 inspection.

12. During the 1990 inspection, inspectors asked Mr. Van Hoose if any waste generated by Eimco had ever been sent off-site for disposal under a hazardous waste manifest. He replied that no waste had. During the 1990 inspection the inspectors asked Mr. Van Hoose if the chromium waste present during the 1989 inspection had been disposed. Mr. Van Hoose stated that he had been trying to arrange for disposal of the waste but the waste was still on site.

13. Eimco does not have a hazardous waste permit issued either by the Division or by the U.S. Environmental Protection Agency and has never been granted interim status for the treatment, storage or disposal of hazardous waste. Eimco has never notified the Division of hazardous waste activity pursuant to 6 CCR 1007-3, Part 99.

14. On or about November 10, 1986, Baker Mine Service notified the Division that it was a generator of ignitable waste and EP Toxic waste. Baker Mine Service ran a similar if not identical operation to Eimco's Baker Mine Service operator out of the same building from which Eimco currently operates (2222 Devereux Road, Glenwood Springs, Colorado).

Conclusions of Law

15. A solid waste includes any material which is accumulated, stored, or treated before or in lieu of being abandoned by being disposed, burned or incinerated. 6 CCR 1007-3, Section 261.2(b)(3). Eimco's chromium waste is a solid waste because it is being stored prior to disposal.

16. A solid waste is a hazardous waste if it exhibits any of the characteristics of hazardous waste as defined in 6 CCR 1007-3, Part 261, Subpart C or if it is listed in 6 CCR 1007-3, Part 261, Subpart D. 6 CCR 1007-3, Section 261.3(a).

17. Wastewater treatment sludges from electroplating operations are listed as hazardous wastes with the hazardous waste number F006. 6 CCR 1007-3, Section 261.31. "Sludges" are defined as any solid, semi-solid or liquid waste generated from municipal, commercial or industrial wastewater treatment plant. 6 CCR 1007-3, Section 260.10. The wastes in the 300-400 gallon tank and the 55 gallon drums described in paragraph #7 of this Order on Consent were wastewaters, derived from Eimco's chrome plating operation, which had been treated. These wastes thus are listed wastewater treatment sludges with the hazardous waste number F006.

18. If a conditionally exempt small quantity generator of hazardous waste accumulates more than a total of 1000 kg of hazardous waste on site it becomes subject to the requirements applicable to generators of 100-1000 kg of hazardous waste per month. 6 CCR 1007-3, Section 261.5. Eimco's accumulation of one-half of a 300 gallon container plus three 55-gallon drums of EP toxic chromium waste exceeds this threshold, and makes it subject to the requirements for generators of 100-1000 kg of hazardous waste per month.

19. A generator of 100-1000 kg of hazardous waste per month may accumulate hazardous waste on site without a permit for a maximum of 180 days. 6 CCR 1007-3, Section 262.34(d). Eimco's storage of hazardous waste on site for over one year (from at least August 11, 1989 to at least September 7, 1990) without a hazardous waste permit or interim status is a violation of Section 25-15-308(1)(b), C.R.S. (1989).

ORDER ON CONSENT

Based on the foregoing Findings of Fact and Conclusions of Law, and pursuant to Section 25-15-308, C.R.S. (1989), Eimco is hereby ordered and consents to comply with the following:

20. Manage all containers and tanks of hazardous waste as specified in 6 CCR 1007-3, Section 262.34(d) and 6 CCR 1007-3, Part 265, Subpart I (if the waste is placed in containers) or the applicable portions of 6 CCR 1007-3, Part 265, Subpart J (if the waste if placed in tanks).

PENALTIES

21. In full accord and satisfaction of the alleged violations described in this Compliance Order on Consent, Eimco agrees to pay the sum of $17,100.00 in civil penalties. Payment is due within thirty (30) days of the effective date of this Compliance Order on Consent by certified or cashier's check drawn to the order of "Colorado Department of Health" and delivered to the Hazardous Materials and Waste Management Division at 4210 East 11th Avenue, Denver, Colorado 80220.

22. Without any admission of liability, Eimco hereby consents to issuance of this Compliance Order on Consent and agrees to abide by all of the terms and conditions herein. Eimco understands that violation of this Compliance Order on Consent may subject Eimco to legal action for injunctive relief and for penalties in accordance with Sections 25-15-308(2) and 25-15-309, C.R.S. (1989).

SCOPE AND EFFECT OF AGREEMENT

23. The parties' obligations under this Compliance Order on Consent are limited to the matter expressly stated in the Compliance Order on Consent. Eimco is signing this Compliance Order on Consent to compromise a claim and, as such, the admissibility of this Compliance Order on Consent shall be governed by Colorado and Federal Rules of Evidence 408.

24. In exchange for Eimco's compliance with the provisions of this Compliance Order on Consent and payment of civil penalties, the Department agrees not to initiate any administrative or civil proceedings against Eimco, its officers, directors, agents, servants, employees, attorneys, and all affiliated corporate entities, successors and assigns, past and present, based on facts arising out of or related to this Compliance Order on Consent or other facts currently known to the Department with respect to Eimco's illegal storage of hazardous waste as of the September 7, 1991 inspection. This release, however will not prevent the Department from enforcing the terms of this Compliance Order on Consent, and does not release Eimco from liability for future violations of state hazardous waste laws.

LIMITATION OF LIABILITY

25. The Department shall not be liable for any injury or damages to persons or property arising from acts or omissions of Eimco, its employees, agents or contractors in carrying out the activities pursuant to this Compliance Order on Consent. The Department shall not be considered a party to any contract entered into by Eimco its employees, agents or contractors in

carrying out the activities pursuant to this Compliance Order on Consent, nor shall it be considered an owner or operator of the Eimco facility.

NOTICES

26. Unless otherwise specified, reports, notices, submissions and communications required under this Compliance Order on Consent shall be in writing and shall be sent to:

FOR THE STATE OF COLORADO

Frederick R. Dowsett, Unit Leader
Hazardous Materials and Waste Management Division
Colorado Department of Health
4210 East 11th Avenue
Denver, Colorado 80220

FOR EIMCO

John Habets, Director of Human Resources
Eimco Coal Machinery, Inc.
2030 Pleasant Valley Road
Fairmont, West Virginia 26554

MODIFICATION

27. This Agreement may be modified in writing upon mutual agreement of the Parties.

TERMINATION DATE

28. This Compliance Order on Consent shall terminate three years after the effective date of this agreement.

COUNTERPARTS

29. This Compliance Order on Consent may be executed in multiple counterparts, each of which shall be deemed an original, but all of which shall constitute one and the same agreement.

BINDING EFFECT AND EFFECTIVE DATE

30. This Compliance Order on Consent is binding upon the parties to the Compliance Order on Consent and their corporate subsidiaries or parents. The undersigned warrant that they are authorized to legally bind their respective principals to this Compliance Order on Consent. This Compliance Order on Consent shall become effective when all required signatures have been obtained.

FOR THE COLORADO DEPARTMENT OF HEALTH

4/13/92
DATE

BY: Frederick R. Dowsett, Unit Leader
Monitoring & Enforcement
Hazardous Materials & Waste Management
Division

FOR EIMCO COAL MACHINERY, INC.

4/8/92
DATE

John Habets, Director of Human Resources
Eimco Coal Machinery, Inc.

APPROVED AS TO FORM:

4/15/92
DATE

Daniel S. Miller
First Assistant Attorney General
Office of the Attorney General

FRD:LG/ccb/8-12

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece next to the article number.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

John M. Habets
Eimco Coal Machinery, Inc.
2030 Pleasant Valley Road
Fairmont, West VA 26554

4a Article Number

P 326 796 071

4b. Service Type

☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

6/2/92

5. Signature (Addressee)

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

PS Form **3811**, October 1990 ☆U.S. GPO: 1990—273-861 **DOMESTIC RETURN RECEIPT**

P 326 796 071

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to John Habets Eimco Coal Machinery	
Street and No 2030 Pleasant Valley	
P.O., State and ZIP Code Fairmont, West VA	
Postage	$ 26554
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

Form 3800, June 1985 U.S.G.P.O. 1989-234-555

COLORADO
DEPARTMENT
OF▲HEALTH

ROY ROME
Governor

PATRICIA A. NOLAN, MD, MPH
Executive Director

4210 East 11th Avenue
Denver, Colorado 80220-3716
Phone (303) 320-8333

Telephone numbers:
Main Building, Denver
(303) 322-9076

Ptarmigan Place, Denver
(303) 320-1529

First National Bank Building, Denver
(303) 355-6559

Grand Junction Office
(303) 248-7198

Pueblo Office
(719) 543-8441

Certified Mail # P 326 796 023
RETURN RECEIPT REQUESTED

April 3, 1992

Mr. John Habets
Director of Human Resources
Eimco Coal Machinery, Inc.
2030 Pleasant Valley Road
Fairmont, WV 26554

RE: Hazardous Materials and Waste Management Division
Compliance Order No. 91-03-26-02
Offer to Compromise Regarding Civil Penalties

Dear Mr. Habets:

On March 26, 1991, Eimco Coal Machinery, Inc. ("Eimco") was served with a compliance order issued by the Hazardous Materials and Waste Management Division of the Colorado Department of Health ("the Division") pursuant to Section 25-15-308(2), C.R.S. (1989). The Division issued this order based upon its finding that Eimco had violated the Colorado Hazardous Waste Act ("the Act") by illegally storing hazardous waste.

Section 25-15-308(2) authorizes the Division to request that the Attorney General of Colorado bring suit for injunctive relief and for penalties pursuant to Sections 25-15-309 and 25-15-310, respectively. Section 25-15-309 provides that the court may assess and collect penalties of up to $25,000 for each day of each violation of the Act and the regulation implementing the Act. This letter constitutes the Division's offer to compromise its judicial claims for civil penalties against Eimco in accordance with the following terms.

The Division has reviewed the information concerning the violations(s) available to it and has analyzed the seriousness of the violations(s), and the potential for harm. Based on these factors, the Division believes that a total penalty of $17,100.00 is appropriate. The Division, therefore, will agree in writing to settle its claims against Eimco in exchange for: Eimco's signing of the enclosed compliance order on consent and delivery of a cashier's check or certified funds in the amount of $17,100.00 (payable to the Colorado Department of Health) within 30 days of the effective date of the enclosed compliance order on consent. Please note that a revised Penalty Computation Worksheet is also enclosed.

If you do not accept this offer to compromise, the Division may, without further notice, ask the Attorney general of Colorado to bring suit against Eimco for penalties and, if appropriate, injunctive relief pursuant to the Act. You should be aware that in such event the Division's request to the Court regarding the amount of penalties will not be bound or limited in any way by this offer to compromise.

Should you have any questions, please contact Lillian Gonzalez at (303) 331-4873. I believe that a speedy resolution of this matter is in the best interests of both Eimco and the people of Colorado.

This offer to compromise shall not be admissible to prove the validity for or invalidity of any claim or its amount pursuant to Colorado and Federal Rules of Evidence 408.

Sincerely,

Frederick R. Dowsett, Unit Leader
Monitoring & Enforcement
Hazardous Materials & Waste Management Division

cc: Daniel Miller, AGO
Jack Van Hoose, Eimco

Enclosures

FRD:LG/ccb/32-33

COLORADO
DEPARTMENT
OF HEALTH

ROY ROMER
Governor

PATRICIA A. NOLAN, MD, MPH
Executive Director

4210 East 11th Avenue
Denver, Colorado 80220-3716
Phone (303) 320-8333

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Enclosures

FRD:LG/ccb/32-33

BEFORE THE HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION

DEPARTMENT OF HEALTH

STATE OF COLORADO

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19. A generator of 100-1000 kg of hazardous waste per month may accumulate hazardous waste on site without a permit for a maximum of 180 days. 6 CCR 1007-3, Section 262.34(d). Eimco's storage of hazardous waste on site for over one year (from at least August 11, 1989 to at least September 7, 1990) without a hazardous waste permit or interim status is a violation of Section 25-15-308(1)(b), C.R.S. (1989).

ORDER ON CONSENT

Based on the foregoing Findings of Fact and Conclusions of Law, and pursuant to Section 25-15-308, C.R.S. (1989), Eimco is hereby ordered and consents to comply with the following:

20. Manage all containers and tanks of hazardous waste as specified in 6 CCR 1007-3, Section 262.34(d) and 6 CCR 1007-3, Part 265, Subpart I (if the waste is placed in containers) or the applicable portions of 6 CCR 1007-3, Part 265, Subpart J (if the waste if placed in tanks).

PENALTIES

21. In full accord and satisfaction of the alleged violations described in this Compliance Order on Consent, Eimco agrees to pay the sum of $17,100.00 in civil penalties. Payment is due within thirty (30) days of the effective date of this Compliance Order on Consent by certified or cashier's check drawn to the order of "Colorado Department of Health" and delivered to the Hazardous Materials and Waste Management Division at 4210 East 11th Avenue, Denver, Colorado 80220.

22. Without any admission of liability, Eimco hereby consents to issuance of this Compliance Order on Consent and agrees to abide by all of the terms and conditions herein. Eimco understands that violation of this Compliance Order on Consent may subject Eimco to legal action for injunctive relief and for penalties in accordance with Sections 25-15-308(2) and 25-15-309, C.R.S. (1989).

SCOPE AND EFFECT OF AGREEMENT

23. The parties' obligations under this Compliance Order on Consent are limited to the matter expressly stated in the Compliance Order on Consent. Eimco is signing this Compliance Order on Consent to compromise a claim and, as such, the admissibility of this Compliance Order on Consent shall be governed by Colorado and Federal Rules of Evidence 408.

24. In exchange for Eimco's compliance with the provisions of this Compliance Order on Consent and payment of civil penalties, the Department agrees not to initiate any administrative or civil proceedings against Eimco, its officers, directors, agents, servants, employees, attorneys, and all affiliated corporate entities, successors and assigns, past and present, based on facts arising out of or related to this Compliance Order on Consent or other facts currently known to the Department with respect to Eimco's illegal storage of hazardous waste as of the September 7, 1991 inspection. This release, however will not prevent the Department from enforcing the terms of this Compliance Order on Consent, and does not release Eimco from liability for future violations of state hazardous waste laws.

LIMITATION OF LIABILITY

25. The Department shall not be liable for any injury or damages to persons or property arising from acts or omissions of Eimco, its employees, agents or contractors in carrying out the activities pursuant to this Compliance Order on Consent. The Department shall not be considered a party to any contract entered into by Eimco its employees, agents or contractors in

carrying out the activities pursuant to this Compliance Order on Consent, nor shall it be considered an owner or operator of the Eimco facility.

NOTICES

26. Unless otherwise specified, reports, notices, submissions and communications required under this Compliance Order on Consent shall be in writing and shall be sent to:

FOR THE STATE OF COLORADO

Frederick R. Dowsett, Unit Leader
Hazardous Materials and Waste Management Division
Colorado Department of Health
4210 East 11th Avenue
Denver, Colorado 80220

FOR EIMCO

John Habets, Director of Human Resources
Eimco Coal Machinery, Inc.
2030 Pleasant Valley Road
Fairmont, West Virginia 26554

MODIFICATION

27. This Agreement may be modified in writing upon mutual agreement of the Parties.

TERMINATION DATE

28. This Compliance Order on Consent shall terminate three years after the effective date of this agreement.

COUNTERPARTS

29. This Compliance Order on Consent may be executed in multiple counterparts, each of which shall be deemed an original, but all of which shall constitute one and the same agreement.

BINDING EFFECT AND EFFECTIVE DATE

30. This Compliance Order on Consent is binding upon the parties to the Compliance Order on Consent and their corporate subsidiaries or parents. The undersigned warrant that they are authorized to legally bind their respective principals to this Compliance Order on Consent. This Compliance Order on Consent shall become effective when all required signatures have been obtained.

FOR THE COLORADO DEPARTMENT OF HEALTH

DATE

BY: Frederick R. Dowsett, Unit Leader
Monitoring & Enforcement
Hazardous Materials & Waste Management
Division

FOR EIMCO COAL MACHINERY, INC.

DATE

John Habets, Director of Human Resources
Eimco Coal Machinery, Inc.

APPROVED AS TO FORM:

DATE

Daniel S. Miller
First Assistant Attorney General
Office of the Attorney General

FRD:LG/ccb/8-12

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece next to the article number.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

JOhn Habets
Eimco Coal Machinery, Inc.
2030 Pleasant Valley Road
Fairmont, WV 26554

4a. Article Number

P 326 796 023

4b. Service Type

☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

4-7-92 EK

5. Signature (Addressee)

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

PS Form **3811**, October 1990 ☆U.S. GPO: 1990—273-861 **DOMESTIC RETURN RECEIPT**

P 326 796 023

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to John Habets Eimco Coal Machinery	
Street and No 2030 Pleasant Valley	
P O , State and ZIP Code FAIRMONT, WV 26554	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, June 1985 U.S.G.P.O. 1989-234-555

COLORADO
DEPARTMENT
OF HEALTH

4210 East 11th Avenue
Denver, Colorado 80220-3716
Phone (303) 320-8333

**Hazardous Materials and
Waste Management Division
Telefax Number: (303) 331-4401**

Telefax Numbers:
Main Building/Denver
(303) 322-9076

Ptarmigan Place/Denver
(303) 320-1529

First National Bank Building/Denver
(303) 355-6559

Grand Junction Office
(303) 248-7198

Pueblo Office
(719) 543-8441

ROY ROMER
Governor

JOEL KOHN
Interim Executive Director

March 30, 1992

Mr. Jack Van Hoose
Eimco Coal Machinery, Inc.
P.O. Box 1755
Price, UT 84501

RE: Extension of Accumulation
Period Under Colorado
Hazardous Waste Regulations
EPA ID# ~~COD983785619~~ COD98 154 4768

Dear Mr. Van Hoose:

This will confirm that we have received your March 9, 1992 request for an extension of the 90-day hazardous waste accumulation period.

Under authority granted to the Department by 6 CCR 1007-3, part 262.34(b), you have been granted a 30-day extension to the 90-day accumulation period. This 30-day extension ends on April 10, 1992. Since the regulations do not provide for any additional extensions, you are advised to take steps to properly dispose of the material as a hazardous waste within the extension period. As confirmation of such, please forward a copy of the manifest to the Department within 10 days of shipping the waste.

If you have any questions or if any further problems arise, please contact Lillian Gonzalez at (303) 331-4873.

Sincerely,

Frederick R. Dowsett

Frederick R. Dowsett, Unit Leader
Monitoring & Enforcement
Hazardous Materials & Waste Management Division

FRD:LG/ccb/2

COLORADO
DEPARTMENT
OF HEALTH

4210 East 11th Avenue
Denver, Colorado 80220-3716
Phone (303) 320-8333

Telefax Numbers:
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First National Bank Building/Denver
(303) 355-6559

Grand Junction Office
(303) 248-7198

Pueblo Office
(719) 543-8441

ROY ROMER
Governor

JOEL KOHN
Interim Executive Director

COD 981544786

July 24, 1991

CERTIFIED MAIL # P 561501102
Return Receipt Requested

Mr. Jack Van Hoose
Eimco Coal Machinery, Inc.
P.O. Box 844
Glenwood Springs, CO 81602

Re: Hazardous Materials and Waste Management Division
Compliance Order No. 91-03-26-02
Record of Informal Conference
- and -
Service of Amended Compliance Order

Dear Mr. Van Hoose:

On behalf of the Hazardous Materials and Waste Management Division of the Colorado Department of Health ("the Division"), I would like to thank you and Eimco Coal Machinery, Inc. ("Eimco") for taking time to meet informally with the Division on April 9, 1991 to discuss the violation of the Colorado Hazardous Waste Act described in Compliance Order No. 91-03-26-02. This letter summarizes our informal conference and articulates the Division's final position with regard to this case.

Compliance Order No. 91-03-26-02 contains the Division's findings that Emico violated the Colorado Hazardous Waste Act by storing hazardous wastes on site in excess of the allowable time periods. At the informal conference you indicated that the wastes cited in the order had either been sent to an authorized hazardous waste facility or is scheduled for disposal in the near future. You also indicated that an updated notification of hazardous waste activity had been submitted to the Department. My staff and I have reviewed the case, including the information offered at the conference.

Based upon this information, the Division has concluded that the Compliance Order should be revised to reflect the information you submitted. The Division, therefore, withdraws Compliance Order No. 91-03-26-02 and in its place, hereby serves you with Amended Compliance Order No. 91-03-26-02. This Amended Compliance Order contains the Division's final factual determinations in this matter. The enclosed Amended Compliance Order will become effective ten (10) calendar days after the date on which you receive this letter.

In addition, the Division encourages Eimco to investigate the integrity of their plating sump and ensure its contents do not pose a threat to human health or the environment. A leak test and application or reapplication of an impervious coating may be appropriate.

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You are also hereby notified that the Division intends to seek a civil penalty from Eimco in this matter as authorized by Sections 25-15-308 and 309, C.R.S. (1989). You are being notified of the amount the Division would be willing to settle for, along with any conditions the offer would be subject to, by separate letter.

Should you desire to discuss the technical aspects of this matter, you may call Lillian Gonzalez at the Department of Health at (303) 331-4873. If you wish to discuss the legal aspects of this case, please contact Daniel Miller at the Colorado Attorney General's Office at (303) 620-4732.

I urge you to give this matter your immediate attention.

Sincerely,

Frederick R. Dowsett, Unit Leader
Monitoring & Enforcement
Hazardous Materials & Waste Management Division

cc: Daniel S. Miller, AGO
Charles Brinkman, EPA
Thomas Burns, EPA

FRD:LG/cal
8308K:7-8

BEFORE THE HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION

DEPARTMENT OF HEALTH

STATE OF COLORADO

* *

AMENDED COMPLIANCE ORDER NO. 91-03-26-02

* *

IN THE MATTER OF EIMCO COAL MACHINERY, INC.

* *

This Compliance Order is issued by the Colorado Department of Health through the Hazardous Materials and Waste Management Division ("the Division") to Eimco Coal Machinery, Inc. ("Eimco") pursuant to the Division's authority under Section 25-15-308, C.R.S. (1989).

Findings of Fact

1. Eimco is a Delaware corporation doing business at 2222 Devereux Road in Glenwood Springs, Colorado.

2. Eimco formerly operated under the name "Baker Mine Service" which was owned by Baker International. The current general manager of Eimco is Mr. Jack Van Hoose.

3. Eimco manufactures and services machinery used in the coal mining industry. Eimco's operations involve mechanical repair, machining of various metals, painting and chrome plating.

4. On September 7, 1990, inspectors from the Division conducted an inspection of Eimco to determine compliance with the Colorado Hazardous Waste Act.

5. During the 1990 inspection, inspectors observed Eimco's chrome plating operation. The tanks for the plating line were positioned in a concrete vault constructed below the floor level of the building. A grate was positioned over the vault and around the tanks to serve as a walking surface. The inspectors observed that liquid was pooled in the bottom of the vault.

6. During the 1990 inspection, Mr. Van Hoose stated that Eimco does not have service to a publicly owned treatment works (POTW). Therefore, according to Mr. Van Hoose, no wastewater from the chrome plating operation leaves Eimco via the POTW. Mr. Van Hoose stated that instead, rinses are reused as makeup water for the plating baths and all spilled material accumulates in the vault underneath the tanks.

7. During the 1990 inspection, inspectors observed a circular tank of approximately 300-400 gallon capacity, located next to the chrome plating area, filled approximately one-half full with an orange brown liquid. Mr. Van Hoose stated that the material was waste which had been pumped from the vault several years ago when snowmelt had seeped into the vault through the concrete walls and combined with plating wastes already in the vault. Mr. Kevin Wakefield, Eimco's chrome plating operator, stated that the previous chrome plating operator had "treated" the waste pumped from the vault and that an additional three barrels of treated waste was being stored outside. Mr. Wakefield stated that he had been Eimco's chrome plating operator for three years, as of the date of the 1990 inspection.

8. During the 1990 inspection, inspectors asked Mr. Wakefield how often the vault is pumped. Mr. Wakefield replied that he had never pumped it in his three years at Eimco as the chrome plating operator.

9. During the 1990 inspection, inspectors requested documentation of lab analysis for the chromium waste stored in the tank and drums. Eimco responded by forwarding a copy of a November 30, 1989 laboratory report, for samples marked "waste barrels", which showed that the chromium concentration in the liquid sample was 480 mg/l.

10. On August 11, 1989, inspectors from the Division conducted an inspection of Eimco to determine compliance with the Colorado Hazardous Waste Act.

11. During the 1989 inspection, inspectors observed two 55-gallon drums which Mr. Van Hoose stated were partially full of waste chromium sludge. According to Mr. Van Hoose, the sludge was generated from filtering liquid which was pooled in the vault below the plating tanks. Mr. Van Hoose stated that the vault had to be pumped because snowmelt had seeped through the vault the previous winter. The inspectors observed liquid in the vault during the 1989 inspection.

12. During the 1990 inspection, inspectors asked Mr. Van Hoose if any waste generated by Eimco had ever been sent off-site for disposal under a hazardous waste manifest. He replied that no waste had. During the 1990 inspection the inspectors asked Mr. Van Hoose if the chromium waste present during the 1989 inspection had been disposed. Mr. Van Hoose stated that he had been trying to arrange for disposal of the waste but the waste was still on site.

13. Eimco does not have a hazardous waste permit issued either by the Division or by the U.S. Environmental Protection Agency and has never been granted interim status for the treatment, storage or disposal of hazardous waste.

14. On or about November 10, 1986, Baker Mine Service notified the Division that it was a generator of ignitable waste and EP Toxic waste. Baker Mine Service ran a similar if not identical operation to Eimco's. Baker Mine Service operated out of the same building from which Eimco currently operates (2222 Devereux Road, Glenwood Springs, Colorado).

Conclusions of Law

15. A solid waste includes any material which is accumulated, stored, or treated before or in lieu of being abandoned by being disposed, burned or incinerated. 6 CCR 1007-3, Section 261.2(b)(3). Eimco's chromium waste is a solid waste because it is being stored prior to disposal.

16. A solid waste is a hazardous waste if it exhibits any of the characteristics of hazardous waste as defined in 6 CCR 1007-3, Part 261, Subpart C or if it is listed in 6 CCR 1007-3, Part 261, Subpart D. 6 CCR 1007-3, Section 261.3(a).

17. Wastewater treatment sludges from electroplating operations are listed as hazardous wastes with the hazardous waste number F006. 6 CCR 1007-3, Section 261.31. "Sludges" are defined as any solid, semi-solid or liquid waste generated from municipal, commercial or industrial wastewater treatment plant. 6 CCR 1007-3, Section 260.10. The wastes in the 300-400 gallon tank and the 55 gallon drums described in paragraph #7 of this Order were wastewaters, derived from Eimco's chrome plating operation, which had been treated. These wastes thus are listed wastewater treatment sludges with the hazardous waste number F006.

18. If a conditionally exempt small quantity generator of hazardous waste accumulates more than a total of 1000 kg of hazardous waste on site it becomes subject to the requirements applicable to generators of 100-1000 kg of hazardous waste per month. 6 CCR 1007-3, Section 261.5. Eimco's accumulation of one-half of a 300 gallon container plus three 55-gallon drums of EP toxic chromium waste exceeds this threshold, and makes it subject to the requirements for generators of 100-1000 kg of hazardous waste per month.

19. A generator of 100-1000 kg of hazardous waste per month may accumulate hazardous waste on site without a permit for a maximum of 180 days. 6 CCR 1007-3, Section 262.34(d). Eimco's storage of hazardous waste on site for over one year (from at least August 11, 1989 to at least September 7, 1990) without a hazardous waste permit or interim status is a violation of Section 25-15-308(1)(b), C.R.S., (1989).

ORDER

Based on the foregoing Findings of Fact and Conclusions of Law, and pursuant to Section 25-15-308, C.R.S. (1989), Eimco is hereby ordered to comply with the following:

20. Within 30 days of the effective date of this Order, Eimco must submit documentation that all hazardous wastes stored in excess of the allowable time limits have been sent off site to a facility which is authorized for the treatment, storage, or disposal of hazardous waste. The documentation must at least include all manifests, waste profiles, any additional reports of analyses and any other shipping paperwork. Eimco must also submit written verification that all future wastes generated will be managed according to the applicable portions of 6 CCR 1007-3. The applicable portions include, but are not limited to, those which specify storage time limits (6 CCR 1007-3. Section 262.34) and those which specify the proper management of hazardous waste containers and tanks (6 CCR 1007-3, Section 262.34(d); 6 CCR 1007-3, Part 265, Subparts I & J), including proper labeling.

NOTICE OF LIABILITY FOR CIVIL PENALTIES AND INJUNCTIVE RELIEF

Section 25-15-309, C.R.S. (1989), provides that any person who violates the Hazardous Waste Act, Sections 25-15-101 to 313, C.R.S. (1989), the regulations implementing the Act, 6 CCR 1007-3, or any compliance order of the Department of Health which is not subject to a stay pending judicial review, shall be subject to a civil penalty of not more than $25,000 per violation for each day during which such violation occurs. The Colorado Department of Health may request that the Attorney General bring suit for injunctive relief or civil or criminal penalties or both for failure to comply with Section 25-15-308 and this Order.

NOTICE OF EFFECTIVE DATE OF ORDER

This Order shall become effective 10 days after receipt.

COLORADO DEPARTMENT OF HEALTH

7/22/91
DATE

BY: Frederick R. Dowsett, Unit Leader
Monitoring & Enforcement
Hazardous Materials and Waste Management Division

APPROVED AS TO FORM BY:

7/18/91
DATE

Daniel S. Miller
First Assistant Attorney General
Natural Resources Section
110 16th Street, 10th Floor
Denver, CO 80202
(303) 620-4732

FRD:LG/cal
8308K:1-4

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested

1 ☑ Show to whom delivered, date, and addressee's address. *(Extra charge)*

2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to: MR. JACK VAN HOOSE EIMCO COAL MACHINERY, INC. P.O. BOX 844 Glenwood Springs, CO 81602	4. Article Number P561501102 Type of Service: ☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail ☐ Return Receipt for Merchandise Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature — Addressee X	8. Addressee's Address *(ONLY if requested and fee paid)*
6. Signature — Agent X Panda Jolie Hamilton	
7. Date of Delivery	

PS Form 3811, Apr. 1989 ★U.S.G.P.O. 1989-238-815 **DOMESTIC RETURN RECEIPT**

PS Form 3800, June 1985 ☆U.S.G.P.O. 1989-234-555

Postmark or Date	
TOTAL Postage and Fees	$
Return Receipt showing to whom, Date, and Address of Delivery	
Return Receipt showing to whom and Date Delivered	
Restricted Delivery Fee	
Special Delivery Fee	
Certified Fee	
Postage	$
P.O., State and ZIP Code Glenwood Springs, CO 81602	
Street and No. P.O. BOX 844	
Sent to MR. JACK VAN HOOSE EIMCO COAL MACHINERY, INC.	

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

P 561 501 102

COLORADO
DEPARTMENT
OF HEALTH

ROY ROMER
Governor

JOEL KOHN
Interim Executive Director

4210 East 11th Avenue
Denver, Colorado 80220-3716
Phone (303) 320-8333

Telefax Numbers:
Main Building/Denver
(303) 322-9076

Ptarmigan Place/Denver
(303) 320-1529

First National Bank Building/Denver
(303) 355-6559

Grand Junction Office
(303) 248-7198

March 26, 1991

CERTIFIED MAIL # P 561 501 067
Return Receipt Requested

The Corporation Company
1600 Broadway
Denver, CO 80202

RE: Hazardous Materials & Waste Management Division
Eimco Coal Machinery Inc.
Compliance Order # 91-03-26-02
- and -
Invitation to Informal Conference

Dear Sir or Madam:

You are hereby served with Compliance Order No. 91-03-26-02 issued by the Hazardous Materials and Waste Management Division of the Colorado Department of Health ("the Division") pursuant to Section 25-15-308(2), C.R.S. (1989). This Order is based upon findings by the Division that Eimco Coal Machinery Inc. ("Eimco") has violated the Colorado Hazardous Waste Act, Sections 25-15-301 through 313, C.R.S. (1989) ("the Act"), as more particularly described in the enclosed Compliance Order.

Please take note that the Division will meet with you, at your request, after your receipt of this Order to discuss the Order and receive any evidence or arguments Eimco may have concerning the existence or gravity of the violation(s). I urge you to take advantage of the opportunity to discuss this matter with the Division. If you do not request a meeting, you are hereby notified that the enclosed Compliance Order will become effective ten (10) calendar days after the date on which you receive this letter.

You are also hereby notified that the Division intends to seek a civil penalty from Eimco in this matter as authorized by Sections 25-15-308 and 309 of the Act. The amount of the penalty will be influenced by a variety of factors including the seriousness of the violation(s), the potential for harm resulting from the violation(s) and the performance of Eimco in quickly complying with the terms of the enclosed Compliance Order. A copy of the penalty policy used by the Division will be made available to you upon request. The Act authorizes the Division to seek penalties of up to $25,000 for each day of each violation of the Act, the regulations implementing the Act, or the enclosed Order.

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Should you desire to schedule a meeting or to discuss the technical aspects of this matter, you may call Lillian Gonzalez at the Division (telephone (303) 331-4873). If you have retained legal counsel, he or she may contact Daniel S. Miller at the Colorado Attorney General's Office (telephone (303) 620-4732) to discuss legal aspects of the case.

I urge you to give this matter your immediate attention.

Sincerely,

Frederick R. Dowsett, Unit Leader
Monitoring & Enforcement
Hazardous Materials & Waste Management Division

Enclosure: Compliance Order # 91-03-26-02

cc w/encl: Jack Van Hoose, Eimco
Thomas Burns, EPA
Charlie Brinkman, EPA

FRD:LG/cal
8308K:6-7

BEFORE THE HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION

DEPARTMENT OF HEALTH

STATE OF COLORADO

* *

COMPLIANCE ORDER NO. 91-03-26-02

* *

IN THE MATTER OF EIMCO COAL MACHINERY, INC.

* *

This Compliance Order is issued by the Colorado Department of Health through the Hazardous Materials and Waste Management Division ("the Division") to Eimco Coal Machinery, Inc. ("Eimco") pursuant to the Division's authority under Section 25-15-308, C.R.S. (1989).

Findings of Fact

1. Eimco is a Delaware corporation doing business at 2222 Devereux Road in Glenwood Springs, Colorado.

2. Eimco formerly operated under the name "Baker Mine Service" which was owned by Baker International. The current general manager of Eimco is Mr. Jack Van Hoose.

3. Eimco manufactures and services machinery used in the coal mining industry. Eimco's operations involve mechanical repair, machining of various metals, painting and chrome plating.

4. On September 7, 1990, inspectors from the Division conducted an inspection of Eimco to determine compliance with the Colorado Hazardous Waste Act.

5. During the 1990 inspection, inspectors observed Eimco's chrome plating operation. The tanks for the plating line were positioned in a concrete vault constructed below the floor level of the building. A grate was positioned over the vault and around the tanks to serve as a walking surface. The inspectors observed that liquid was pooled in the bottom of the vault.

6. During the 1990 inspection, Mr. Van Hoose stated that Eimco does not have service to a publicly owned treatment works (POTW). Therefore, according to Mr. Van Hoose, no wastewater from the chrome plating operation leaves Eimco via the POTW. Mr. Van Hoose stated that instead, rinses are reused as makeup water for the plating baths and all spilled material accumulates in the vault underneath the tanks.

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12. During the 1990 inspection, inspectors asked Mr. Van Hoose if any waste generated by Eimco had ever been sent off-site for disposal under a hazardous waste manifest. He replied that no waste had. During the 1990 inspection the inspectors asked Mr. Van Hoose if the chromium waste present during the 1989 inspection had been disposed. Mr. Van Hoose stated that he had been trying to arrange for disposal of the waste but the waste was still on site.

13. Eimco does not have a hazardous waste permit issued either by the Division or by the U.S. Environmental Protection Agency and has never been granted interim status for the treatment, storage or disposal of hazardous waste. Eimco has never notified the Division of hazardous waste activity pursuant to 6 CCR 1007-3, Part 99.

14. On or about November 10, 1986, Baker Mine Service notified the Division that it was a generator of ignitable waste and EP Toxic waste. Baker Mine Service ran a similar if not identical operation to Eimco's. Baker Mine Service operated out of the same building from which Eimco currently operates (2222 Devereux Road, Glenwood Springs, Colorado).

Conclusions of Law

15. A solid waste includes any material which is accumulated, stored, or treated before or in lieu of being abandoned by being disposed, burned or incinerated. 6 CCR 1007-3, Section 261.2(b)(3). Eimco's chromium waste is a solid waste because it is being stored prior to disposal.

16. A solid waste is a hazardous waste if it exhibits any of the characteristics of hazardous waste as defined in 6 CCR 1007-3, Part 261, Subpart C or if it is listed in 6 CCR 1007-3, Part 261, Subpart D. 6 CCR 1007-3, Section 261.3(a).

17. Wastewater treatment sludges from electroplating operations are listed as hazardous wastes with the hazardous waste number F006. 6 CCR 1007-3, Section 261.31. "Sludges" are defined as any solid, semi-solid or liquid waste generated from municipal, commercial or industrial wastewater treatment plant. 6 CCR 1007-3, Section 260.10. The wastes in the 300-400 gallon tank and the 55 gallon drums described in paragraph #7 of this Order were wastewaters, derived from Eimco's chrome plating operation, which had been treated. These wastes thus are listed wastewater treatment sludges with the hazardous waste number F006.

18. If a conditionally exempt small quantity generator of hazardous waste accumulates more than a total of 1000 kg of hazardous waste on site it becomes subject to the requirements applicable to generators of 100-1000 kg of hazardous waste per month. 6 CCR 1007-3, Section 261.5. Eimco's accumulation of one-half of a 300 gallon container plus three 55-gallon drums of EP toxic chromium waste exceeds this threshold, and makes it subject to the requirements for generators of 100-1000 kg of hazardous waste per month.

19. A generator of 100-1000 kg of hazardous waste per month may accumulate hazardous waste on site without a permit for a maximum of 180 days. 6 CCR 1007-3, Section 262.34(d). Eimco's storage of hazardous waste on site for over one year (from at least August 11, 1989 to at least September 7, 1990) without a hazardous waste permit or interim status is a violation of Section 25-15-308(1)(b), C.R.S., (1989).

ORDER

Based on the foregoing Findings of Fact and Conclusions of Law, and pursuant to Section 25-15-308, C.R.S. (1989), Eimco is hereby ordered to comply with the following:

20. Immediately begin managing all containers of hazardous waste as specified in 6 CCR 1007-3, Section 262.34(d) and 6 CCR 1007-3, Part 265, Subpart I (if the waste is placed in containers) or the applicable portions of 6 CCR 1007-3, Part 265, Subpart J (if the waste is placed in tanks). These requirements include, but are not limited to, labeling hazardous waste tanks and/or containers with the words "hazardous waste" and with an accumulation start date.

21. Within 30 days of the effective date of this Compliance Order, Eimco must submit a written plan detailing the designated disposal site, method of disposal, volume of waste disposed, projected date of waste shipment, waste analysis/profiles and any other pertinent information regarding the treatment and disposal of the chrome wastewater treatment sludge currently stored on-site. Plans for the management of future wastes generated shall be included.

22. Within 30 days of the effective date of this Compliance Order, submit an updated Notification of Hazardous Waste Activity (Form 8700-12).

NOTICE OF LIABILITY FOR CIVIL PENALTIES AND INJUNCTIVE RELIEF

Section 25-15-309, C.R.S. (1989), provides that any person who violates the Hazardous Waste Act, Sections 25-15-101 to 313, C.R.S. (1989), the regulations implementing the Act, 6 CCR 1007-3, or any compliance order of the Department of Health which is not subject to a stay pending judicial review, shall be subject to a civil penalty of not more than $25,000 per violation for each day during which such violation occurs. The Colorado Department of Health may request that the Attorney General bring suit for injunctive relief or civil or criminal penalties or both for failure to comply with Section 25-15-308 and this Order. The Compliance Order deadlines will remain as stated herein unless modified subsequent to the informal conference.

NOTICE OF EFFECTIVE DATE OF ORDER

Unless you request an informal conference (pursuant to the following paragraph) within 10 days of receipt of this Order, this Order shall then become effective immediately. Should you request an informal conference, the above compliance deadlines, excepting the deadlines specified in paragraph 20 are suspended pending further notice to be issued after such conference.

OPPORTUNITY TO REQUEST INFORMAL CONFERENCE

If you wish to contest any findings made herein or explain any circumstances that tend to mitigate the violation(s), you may request an informal conference within 10 calendar days of the receipt of the Compliance Order. The Division will schedule a conference to be held within 20 days of your receipt of this Compliance Order. Although this conference is an informal proceeding, you may, if you so desire, have legal counsel attend with you. Should you wish to schedule an informal conference, or should you have any questions regarding this Compliance Order, contact:

Lillian Gonzalez
Monitoring & Enforcement Unit
Hazardous Materials & Waste Management Division
Colorado Department of Health
4210 East 11th Avenue
Denver, Colorado 80220
(303) 331-4873

COLORADO DEPARTMENT OF HEALTH

3/25/91
DATE

BY: Frederick R. Dowsett, Unit Leader
Monitoring & Enforcement
Hazardous Materials and Waste Management
Division

APPROVED AS TO FORM BY:

3/25/91
DATE

Daniel S. Miller
First Assistant Attorney General
Natural Resources Section
110 16th Street, 10th Floor
Denver, CO 80202
(303) 620-4732

FRD:LG/cal
8308K:1-5

SENDER: Complete items 1 and 2 when additional services are desired, and complete item 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fee and check box(es) for additional service(s) requested.

1. ☑ Show to whom delivered, date, and addressee's address. *(Extra charge)*
2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:

The Corporation Company
1600 Broadway
Denver, CO 80202

4. Article Number
P561501067

Type of Service:
- ☐ Registered
- ☑ Certified
- ☐ Express Mail
- ☐ Insured
- ☐ COD
- ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee
X

6. Signature — Agent
X

7. Date of Delivery

8. Addressee's Address *(ONLY if requested and fee paid)*

PS Form 3811, Apr. 1989 ★U.S.G.P.O. 1989-238-815 DOMESTIC RETURN RECE

LG/cal P 561 501 067

RECEIPT FOR CERTIFIED MAIL
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(See Reverse)

Sent to
The Corporation Company
Street and No
1600 Broadway
P.O., State and ZIP Code
Denver, CO 80202

Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, June 1985 ☆U.S.G.P.O. 1989-234-555

Tim Kelley

From: Bill Hickman

Sent: Thursday, November 02, 2006 9:36 AM

To: Mahesh Albuquerque; Marilyn Hajicek; Tim Kelley; Bev Snodgrass

Subject: Suspected Release: 15558 - ROARING FORK TRANSIT AGENCY

During 11/1/06 inspection, 2" of diesel was found in sub-pump containment at diesel UST. Unable to determine source of release at time of inspection. O/O later indicated that there was a possible tank overfill that occurred last week, and possibly some of that product migrated from the tank fill to the STP containment. During the inspection, it was also found that the spill buckets for 3 tanks, including the diesel, are heavily cracked/torn and not liquid tight, so any spillage into the spill bucket as a result of an overfill would not have been contained. O/O was instructed to notify OPS of a suspected release w/in 24 hours, to remove product from containment by 11/2/06, to perform lake test/hydrotest of STP containment, and tightness testing of piping, and report results to OPS w/in 7 days. Other release detection records were requested to be submitted by with the routine inspection.

OVERFILL ON 10/27/06 CONFIRMED BY BILL HICKMAN

//

LOGGED IN 11/3/06 BY [illegible] NEW ACCESS FACILITY ? Y N

STORAGE TANK REPORT AND RELEASE TRACKING FORM

UST X AST ____ COUNTY garfield FAC ID# 15558

LETTER REQUIRED YES NO TECH STAFF BS LEAK EVENT ID# 10241

SITE NAME Roaring Forks Transit Agency

SITE LOCATION 2307 W Wulfsohn Rd

SITE CITY STATE & ZIP Glenwood Springs 81601

OWNER/OPERATOR Roaring Forks Transit OID# ____

MAILING ADDRESS Same

OWNER CITY STATE & ZIP ____

CONTACT PERSON & PHONE NO Russ Decker Cell 970 274-1170

COMMENTS: Office 970 384-4966

RUSS DECKER

VERBAL OR WRITTEN RELEASE INFORMATION

CONTACTED BY Russ Decker REPORT DATE 11/1/06

PHONE # (970) 384-4966 RELEASE DATE 11/1/06

OPERATING SITE? Y N RELEASE: CONFIRMED (CIRCLE ONE) SUSPECTED

OIL INSPECTOR PRESENT Y N Bill Hickman SEND SCR PACKET ? Y N

TYPE OF PRODUCT: GASOLINE ____ DIESEL X WASTE OIL ____ FUEL OIL ____ OTHER ____

AMOUNT OF RELEASE ~ 3 gallons

SURFACE WATER IMPACT ____
GROUNDWATER IMPACT ____
SURFACE SPILL ____
STAINED SOILS ____

SOILS W/PETROLEUM ODORS ____
HIGH PID READINGS ____
FREE PRODUCT SOIL ____
FREE PRODUCT WATER ____
LAB ANALYSIS SOIL ____
LAB ANALYSIS WATER ____
SIR ____

ATG FAILED ____
ATG INCONCLUSIVE ____
FAILED PTTT ____
INCONCLUSIVE PTTT ____
FAILED PLTT ____
INCONCLUSIVE PLTT ____
OTHER ____

COMMENTS: Fuel Delivery 10/27/06 (overspill)
Mr Hickman Found it today
Being pumped out
10/27/06

AGENCIES CONTACTED

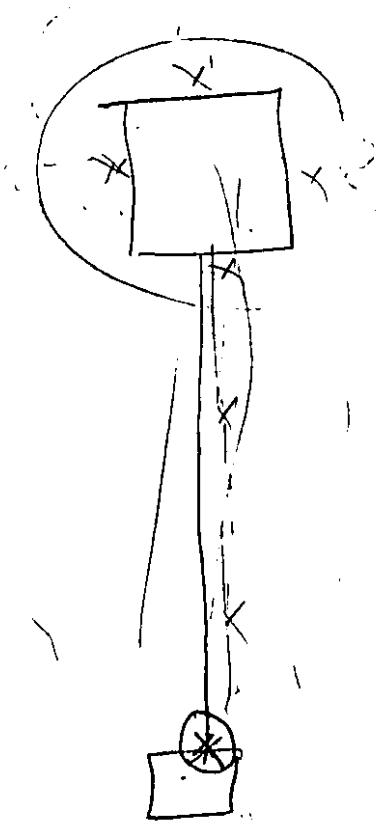
WQCD ____ LOCAL HEALTH DEPT ____ FIRE DEPT ____ OTR ____

****

COMMENTS: ____

12/24/06

SEND LETTER TA name ____ 2/7/07



FACILITY ID#: 15558

EVENT ID#: 10241

ROARING FORK TRANSIT AGENCY
2307 WULFSOHN RD
GLENWOOD SPRINGS

DATE RECEIVED: 4/30/2007

REPORT TYPE: SCR - Site Characterization Report Received

REVIEWER: Sonnier

SARDONYX ID: USGARROA 5

COMMENTS:

FILE COPY

WEI
Waste Engineering, Inc.
818 Colorado Avenue, Suite 307, P.O. Box 219
Glenwood Springs, Colorado 81602
(970) 945-7755 TEL
(970) 945-9210 FAX

www.wrightwater.com
e-mail: cheydenberk@wrightwater.com

15558

RECEIVED
APR 30 2007
DIVISION OF OIL AND PUBLIC SAFETY

April 24, 2007

Via First Class Mail

Mr. Bobby Sonnier
Colorado Department of Labor and Employment
Division of Oil and Public Safety
Remediation Section
633 17th Street, Suite 500
Denver, CO 80202-3660

Re: Site Characterization Report for Roaring Fork Transportation Authority
2307 Wulfsohn Rd Glenwood Springs, CO 81601 Facility ID# 15558

Dear Mr. Sonnier:

Waste Engineering, Inc. (WEI) is submitting the attached Site Characterization Report (SCR). During our conversations, we indicated the data obtained during our investigation was limited. At your request, we obtained grab samples at each of the 10,000-gallon underground storage tank (UST) fill dispensers. The samples were obtained at approximately 1½ feet below ground surface. The samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), diesel range organics (DRO), and gasoline range organics (GRO). Subsequently, the diesel tank sample was analyzed for polyaromatic hydrocarbons (PAHs).

WEI completed this SCR on behalf of Roaring Fork Transportation Authority (RFTA). As indicated during our conversation, due to the limited data collected at the Site, a majority of the information required in the SCR is not available.

Should you have any questions or require additional information, please do not hesitate to call.

Very truly yours,

WASTE ENGINEERING, INC.

By _____
D. Craig Heydenberk
Senior Environmental Scientist

C:_WORK\WEI\002-040\020mo\Cover letter.doc

SITE CHARACTERIZATION REPORT (SCR)

Submit the completed SCR to:

Colorado Department of Labor and Employment
Oil Inspection Section
(Technical Reviewer's Name - if known)
633 17th Street, Suite 500
Denver, CO 80202-3660

This standardized format is required for all SCRs submitted to the Colorado Oil Inspection Section for releases occurring on or after **February 1, 1999**.

This SCR is intended to replace the Initial Site Characterization Report (ISCR). In addition to the information formerly included in the ISCR, it is required that the SCR define the extent of contamination. The SCR incorporates risk based corrective actions through Tier 1 or Tier 1A, as appropriate to the site. This report must be submitted in duplicate.

IMPORTANT

Refer to the OIS Owner/Operator Guidance Document for assistance in report preparation.

This report is required to be submitted within 90 days of the release.

If contamination has never been detected above Tier 1 and/or MCLs, a No Further Action Request (NFAR) Report may be submitted in place of this SCR.

Facility ID # 15558

SITE CHARACTERIZATION REPORT

SITE INFORMATION

Site Name: Roaring Fork Transportation Authority	Type of Business on Site: Bus Maintenance	
Site Address: 2307 Wulfsohn Road		
City: Glenwood Springs	County: Garfield	Zip Code: 81623
Phone Number: (970) 384-4966	Fax Number: (970) 928-8273	
Site Contact Person: Mr. Russ Decker		

OWNER/OPERATOR INFORMATION

Name: Roaring Fork Transportation Authority		
Address: 0051 Service Center Drive		
City: Aspen	State: Colorado	Zip Code: 81611
Phone Number: (970) 384-4966	Fax Number: (970) 928-8273	
Contact Person: Mr. Russ Decker		

ENVIRONMENTAL CONSULTANT INFORMATION

Name: Waste Engineering, Inc.		
Address: P. O. Box 219		
City: Glenwood Springs	State: Colorado	Zip Code: 81611
Phone Number: (970) 945-7755	Fax Number: (970) 945-9210	
Contact Person: D. Craig Heydenberk		

Date Report was completed: April 24, 2007

INSTRUCTIONS FOR COMPLETING REPORT: Complete all applicable sections and appendices of this report. If a question does not apply to the site, insert ANA≡.

Limit your responses to the suggested space(s). If you are using the computer version of this form, the bracketed number after each question (e.g. [2]) is the number of suggested lines for each answer. Do not use bold type when answering, except as requested in the Tables of the Appendices. Insert rows in tables as needed, and delete any unused rows. Contact the Oil Inspection Section technical assistance line at (303) 318-8547 if you have any questions. The OIS Regulations, Guidance Document, Report Formats, and additional program related information can be found at the Oil Inspection Website at http://oil.cdle.state.co.us. Call (303) 321-4164 for a copy of the Regulations (commodity # 615-82-44-0899) or the Guidance Document (commodity # 615-82-44-0626).

SITE CHARACTERIZATION REPORT SUMMARY

What type of product was released? (Check all that apply) Leaded Gasoline ___Unleaded Gasoline _X_ Diesel_X_ Waste Oil ____ Other

Is there evidence of any released hazardous substance on the site? (If this is an AST release and it exceeds the RCRA level for TCLP benzene, it is a hazardous substance.) Yes ___ No __X_ (check one). **If yes, contact the Colorado Department of Public Health and Environment.**

Does soil contamination exist? (check all that apply) Onsite __X__ Offsite ____ **If so, what is the vertical extent of soil contamination? From** _____ft to_____ft (unknown). **What is the soil type?** Pea gravel bedding – Undisturbed soil consists of alluvial silts, clays, and gravels.

Does groundwater contamination exist? (check all that apply) Onsite ____ Offsite _____
The need for a Ground water evaluation has not been determined.

Is free product present in the soil or groundwater? Yes ___ No ___ (check one)
The need for a Ground water evaluation has not been determined.

What is the depth to groundwater (in feet)? Based on the difference in elevation between the Site and Colorado River – The depth to Groundwater is estimated at 300 feet.

For each category, list the distance from the source to the nearest point of exposure (POE). Only list POEs within 1/4 mile of the site.

	Property Boundary	Surficial Soils	Subsurface Utilities	Structures	Groundwater Wells	Surface Water	Sensitive Environment
Distance (ft)	100	0	50	50	Unknown	800	800 Colorado River

List the highest concentration of the following constituents found

	Benzene	Toluene	Ethyl Benzene	Xylenes	TVPH	TEPH	TPH	Oil & Grease	Other
Soil (mg/Kg)	>0.053	1.4	4.4	24	580	6,600	N/A	N/A	YES - PAHs
Water (µg/l)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO
Vapor (µg/m^3)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO

List the highest concentration of the following constituents remaining on site

	Benzene	Toluene	Ethyl Benzene	Xylenes	TVPH	TEPH	TPH	Oil & Grease	Other
Soil (mg/Kg)	>0.053	1.4	4.4	24	580	6,600	N/A	N/A	YES - PAHs
Water (µg/l)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO
Vapor (µg/m^3)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO

N/A = Not Analyzed

The need for a Groundwater evaluation has not been determined.

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A. RELEASE INFORMATION

1. History of this release.

a) **Date of release (If actual release date is unknown, input the date that the release was first suspected).** [1] February 6, 2007

b) Date that OIS was notified of the suspected release. [1] February 6, 2007

c) Date that the suspected release was confirmed. [1] February 27, 2007

d) **Date that OIS was notified of the confirmed release.** [1] March 1, 2007

e) Include the location of the release on Figure 1, Appendix C.

2. How release was discovered.

a) Discovered at tank removal or closure in place (yes/no) No

b) Discovered during subsurface investigation (yes/no) Yes

c) Discovered as a result of release detection or system failure (yes/no) No

d) Impacts discovered at off-site property (yes/no) No

a) Other (describe) [1) The release was suspected by an OPS Inspector during his observation of replacement of overfill protection. Sampling and analysis of soil samples was requested.

3. Release description.

b) **Product(s) released [1]** Diesel and Gasoline.

c) Quantity released [1] The quantity release is not known but would be limited to quantity released from the original overfill assembly.

B. SITE HISTORY

1. List known historical uses of the site on the table below.

Type of Use and/or Business Name	Begin Date	End Date
Bus Maintenance	2002	current
Previously Undeveloped		

2. **Describe any previous releases at the site on the table below.** No previous releases are known or have been reported.

Date of Prior Release	Product	Quantity (gallons)	Source/Cause of Release (Identify location on Fig. 1)	No Further Action Letter Issued? (y/n) (If yes enter date)
ANA≅	ANA≅	ANA≅	ANA≅	ANA≅

3. **If a no further action letter has not been issued for a previous release explain on-going activities [1].** No previous releases are known or have been reported.

C. RELEASE CONFIRMATION

1. **Storage tank removal/closure in place. (Complete Section F-1 to describe tank excavation dimensions, soil laboratory results, etc.).**

a) **How many tanks were removed or closed in place? [1]** No tanks have been removed or closed in place.

b) **How many tanks remain on site which are in operation? [1]** Two 10,000-gallon tanks remain on site and in operation.

c) **How many tanks remain on site which have not been properly closed in place?** 0 - Two 10,000-gallon tanks remain on site and in operation.

d) **List on the table below information concerning tank removal/closure in place. (Tank # as identified on Figure 1 and/or Figure 2, Appendix C).**

Tank #	Date Removed or Closed	Indicate closed in place(I), removed (R)	Tank Condition (corrosion, holes, etc.)	Contamination Suspected? (y/n)	Samples Analyzed? (y/n)
ANA≅	ANA≅	ANA≅	ANA≅	ANA≅	ANA≅

b) **Were tank removal or closure in place activities performed in accordance with API recommended practice 1604, or equivalent?** (yes/no) No **If no, describe tank removal/closure in place activities? [1]** No tanks have been removed or closed in place.

2. **Subsurface investigation performed prior to a confirmed release, such as for a property transaction, or to confirm release detection or system failure. (Complete Section F-2 to describe soil boring installations, soil laboratory results, etc.).** The release was suspected by an OPS Inspector during his observation of the replacement of overfill protection. Sampling and analysis of soil samples was requested.

a) List on the table below information concerning site investigation.

Sample #	Date of Investigation	Contamination Suspected? (y/n)	Samples Analyzed? (y/n)
Diesel	2/8/07	N	Y
Gasoline	2/8/07	N	Y

b) If this investigation was performed as the result of release detection or system failure what part of the UST system failed? [1] No - The release was suspected by OPS Inspector during replacement of overfill protection. Sampling and analysis of soil samples was requested.

i. **Was the system repaired?** (yes/no) The overfill protection assembly will be replaced.
ii. **Date of repair.** [1] On hold. Until OPS reviews this SCR.

D. SITE CLASSIFICATION AND INITIAL RESPONSE/ABATEMENT

1. **Site Classification Table.** A site characterization has not been completed. As a result the site classification tables can not be completed.

a) Complete the Site Classification Table presented in Appendix G. See D.1

b) What is the current site classification? (1, 2, 2a, 3, 4) Unknown.

c) Has the site classification changed since the submittal of the Site Summary Form (SSF)? (As the extent of contamination is defined at the time of this report, the Site Classification Table will no longer contain unknown (U) threats). A site summary form was not requested by the OPS.

d) What classification was indicated for the site on the SSF? (1, 2, 2a, 3, 4) See D.1

2. **Initial response and abatement. (Did the site classification ever indicate the need for an emergency response?** (yes/no) No **(If yes, answer the following questions and include all supporting documentation such as required permits in Appendix H, and waste manifests in Appendix F.)**

a) Was the presence of explosive vapors ever detected at the site? (yes/no) Explosive vapors were not noticeable during the sampling.

i. **If yes what actions were taken to mitigate explosion risks?** [2] See 2.a
ii. **Have these actions been completed?** ANA≅

b) Was the presence of vapors or surficial particulates, in concentrations which may cause acute health effects, ever detected at the site? ANA≅

i. **If yes, what actions were taken to mitigate the acute health risks?**
ii. **Have these actions been completed?** ANA≅

c) **Was the presence of free product on the ground surface, surface water, exposed soils, or in utilities ever detected at the site?** Regarding ground surface and exposed soil – No. No surface water was observed. The need for a utility investigation has not been determined.

i. **If yes, what actions were taken to mitigate these conditions? [2]** ANA≅
ii. **Have these actions been completed?** (yes/no) ANA≅

d) **Was any water supply well, supply line, storm water, or surface water body ever impacted by the release?** (yes/no) The site is connected to city water. Supply lines have not been evaluated. Stormwater was not observed during the site investigation. Given the estimated distance to the Colorado River (800'), it is unlikely that the Colorado River has been impacted.

i. **If yes what actions were taken to mitigate the risk of exposure to these Points of Exposure (POEs)? [2]** ANA≅
ii. **Have these actions been completed?** (yes/no) ANA≅

e) **Are there any other site classification sub-classifications, which relate to potential emergency situations, as listed above (e.g., Sub-classification 2.1 - Explosive vapors may accumulate in buildings within six months) currently applicable to this site?** (yes/no) A site characterization has not been completed. As a result the site classification or sub-classification tables can not be completed at this time.

i. **If yes, are activities underway or completed to mitigate these threats? [2]** ANA≅

ii. **Will mitigation activities be included in the corrective action plan (CAP)?** (yes/no) A CAP for this release has not been requested by the OPS.

E. FREE PRODUCT

1. **Complete this section if free product has been discovered in wells, borings, or excavations.** A site characterization involving wells and borings has not been completed. A site characterization involving wells and borings has not been completed. Free product was not observed to a maximum depth excavated at the site of 1.5 feet BGS.

2. **Free Product in Wells or Borings** See E.1

a) **Provide information regarding free product located in wells or borings in Tables 4 and 5, Appendix B.**

b) **On what date was free product discovered? [1]** A site characterization involving wells and borings has not been completed. Free product was not observed to a maximum depth excavated at the site of 1.5 feet BGS.

c) **On what date was the OIS notified of the presence of free product? [1]** A site characterization involving wells and borings has not been completed. Free product was not observed to a maximum depth excavated at the site of 1.5 feet BGS.

d) **Has free product been recovered?** (yes/no) No

e) **If so, what was the recovery method? [2]** ANA≅

f) **What was the quantity recovered? [1]** ANA≅

g) **How was recovered free product disposed? [1]** ANA≅

3. **Free Product in Excavations**

a) **Provide information regarding free product discovered in excavations.**

Date Discovered	Location	Product Thickness	Recovery Method	Date Recovery Completed	Quantity Recovered
ANA≅	ANA≅	ANA≅	ANA≅	ANA≅	ANA≅

Free product was not observed to a maximum depth excavated at the site of 1.5 feet BGS.

b) **On what date was the OIS notified of the presence of free product? [1]** ANA≅

c) **How was recovered free product disposed? [1]** ANA≅

F. SOIL INVESTIGATION

1. **Excavations. (Includes excavations, trenches and construction excavations.)**

a) **Excavation dimensions.**

i. **Complete the following table for each excavation.**

Free product was not observed to a maximum depth excavated at the site of 1.5 feet BGS.

Excavation #	Length of Excavation	Width of Excavation	Depth of Excavation	Depth to Groundwater in Excavation (if present)
Diesel	4 feet	5 feet	1.5 feet	Not Present to 1.5
Gasoline	5 feet	9 feet	1.5 feet	Not Present to 1.5

ii. **Plot the location of each excavation (include excavation #) on Figure 2, Appendix C.**

b) **Excavation Organic Vapor Meter (OVM) screening measurements.**

i. **List all OVM measurements on Table 1, Appendix B.**

ii. **Indicate the locations of OVM measurements (which did not have a laboratory analysis performed at the same location) on Figure 2a, Appendix C.**

c) Excavation Soil Sampling.

i. List all soil laboratory results on Table 2, Appendix B. Identify the locations where samples were obtained on Figure 2, Appendix C.
ii. List the rationale for the sampling locations on Table 2, Appendix B.
iii. Present geological observations including lithology in section J.
iv. Were soils samples collected according to procedures filed with the OIS as part of the Listed Consultant program? Yes **According to the OIS Owner/Operator Guidance Document?** No **If neither, describe soil sampling collection procedures. [3]** Only one sample was requested by the OPS for each tank obtained near the original spill/overfill protection device.

d) Soil Disposition

i. Complete the following table if any soils were excavated.

Excavation Number	Cubic Yards of Contaminated* Soil Excavated	Disposition of Contaminated* Soil	Cubic Yards of Clean Soil Excavated	Disposition of Clean Soil
Diesel	0	0	0	0
Gasoline	0	0	0	0

*** Soil concentrations above Tier 1 RBSLs and 500 mg/kg TPH.**

ii. Attach waste disposal manifests in Appendix F. No soil disposal has occurred.

e) If groundwater was detected in the excavation complete Section H.

f) **Was extent defined to Tier 1 RBSLs and to the TPH threshold level of 500 mg/Kg?** No **If no, why not? [2]** A Site characterization has not been requested by the OPS.

2. Soil Borings/Direct Push Points Soil sampling involving Borings/Direct Push Points has not been performed at the Site or Requested by the OPS.

a) Borehole/direct push OVM screening.

i. Include the OVM screening measurements on the boring logs (Appendix E) for samples screened during the boring installations.
ii. Indicate the locations of the borings (which did not have laboratory analyses of soil collected from the boring) on Figure 3a, Appendix C.

b) Soil Sampling in the borehole/direct push points See 2.0

i. List all soil laboratory results on Table 2, Appendix B. Present boring locations on Figure 3, Appendix C.
ii. List the rationale for the sampling locations on Table 2, Appendix B.
iii. Present geological observations including lithology on the boring logs (Appendix E) and in section J.

iv. Were soils samples collected according to procedures filed with the OIS as part of the Listed Consultant program? ANA≅ **According to the OIS Owner/Operator Guidance Document?** ANA≅ **If neither, describe soil sampling collection procedures. [3]**

c) Soil Disposition

i. Were any contaminated soils generated during borehole installation activities? ANA≅ **If yes, how were they disposed? [1]** ANA≅

ii. If any contaminated soils were disposed, attach waste disposal manifests in Appendix F.

d) **Was the extent of soil contamination defined to Tier 1 RBSLs and to the TPH threshold value of 500mg/Kg?** No **If no, why not? [2]** A site characterization has not been performed or requested by the OPS.

G. SOIL VAPOR INVESTIGATION

1. **Was the purpose of soil vapor sample collection to assist in defining the extent of petroleum hydrocarbon contamination in the subsurface?** A soil vapor investigation has not been performed or requested by the OPS.

2. **Was the purpose of soil vapor sample collection to identify threats to structures that may be impacted from soil vapors?** ANA≅ **If yes briefly describe rationale for selected locations and depths (e.g., proximity to source, soil types, utilities, etc.) [3]**

3. **How many samples were collected from each point? [1]** ANA≅

4. **Show the location of each sampling point on Figure 4, Appendix C. List sample results, sample location rationale, and depths on Table 3, Appendix B.** ANA≅

5. **What was the vapor point installation method? [2]** ANA≅

6. **What was the method of sample collection? [2]** ANA≅

7. **Were vapor samples collected according to procedures filed with the OIS as part of the Listed Consultant program?** ANA≅ **According to the OIS Owner/Operator Guidance Document?** ANA≅ **If neither, describe vapor sampling collection procedures. [3]** ANA≅

H. GROUNDWATER INVESTIGATION

1. **Were monitoring wells installed, and groundwater sampled?** No – A groundwater investigation has not been performed or requested by the OPS.

a) What is the average depth to groundwater at the site? ANA≅

b) For each monitoring well completed at the site list information regarding surveyed elevation of the measuring point, depth to groundwater, depth to product and

groundwater elevation on Table 5, Appendix B. Present the locations of the monitoring wells, including groundwater elevation values on Figure 6, Appendix C.

c) List all groundwater laboratory results on Table 4, Appendix B. Present monitoring well locations on Figure 5, Appendix C.

2. **Was groundwater discovered in locations other than wells (e.g., tank excavations)?** A groundwater investigation has not been performed or requested by the OPS

a) At what locations (other than in wells) was groundwater discovered? [2] ANA≅

b) Identify the locations where groundwater was discovered (other than in wells) on Figure 5, Appendix C or on Figure 2, Appendix C, as appropriate. If groundwater at these locations was sampled, provide the sample results on Table 4, Appendix B. If groundwater was not sampled at these locations, explain why not [2] ANA≅

c) If excavation dewatering was necessary, provide volume data, manifests, discharge permits, and compliance sampling results in Appendix H.

3. **Were groundwater samples collected according to procedures filed with the OIS as part of the Listed Consultant program?** (yes/no) ANA≅ **According to the OIS Owner/Operator Guidance Document?** (yes/no) ANA≅ **If neither, describe groundwater sample collection procedures. [3]** A groundwater investigation has not been performed or requested by the OPS.

4. **Has the extent of groundwater contamination been defined to concentrations below the MCLs?** (yes/no) No **If no, why not? [2]** A groundwater investigation has not been performed or requested but the OPS.

I. QUALITY ASSURANCE/QUALITY CONTROL

1. Sampling Handling

a) Was all decontamination performed during this investigation in accordance with the QA/QC filed with the OIS as part of Listed Consultant program? Yes

b) Was all decontamination performed during this investigation in accordance with the QA/QC as described in Owner/Operator guidance document? Yes

c) If the answer to both of the above is no, complete the following table.

Equipment	Decontamination Method
ANA≅	ANA≅

2. Provide all information regarding sample handling and shipping as instructed in Appendix D.

J. GEOLOGY AND HYDROGEOLOGY

1. Regional Geology -within ½ mile (This information is required if minimal site specific data is available. If the site geology has been characterized, regional data should only be obtained, as necessary, to supplement site specific data).

a) What is the lithology and stratigraphy of the unsaturated and uppermost saturated intervals? [2] Surficial geology consists of unconsolidated alluvial materials. The alluvium includes sands, silts, and gravels.

b) Describe any features that may affect regional groundwater flow. [2] The Site is located approximately 800 feet south of the Colorado River.

c) What is the source of the information listed above? [1] Site observation and knowledge of area.

2. Site Geology (Using the data collected during excavation activities and the drilling logs located in Appendix E answer the following questions. If complex geology exists at the site, which a cross-section would help to illustrate, include it in Appendix E with the borings logs). ANA≅

a) What is the lithology and stratigraphy of the unsaturated and uppermost saturated intervals? [2] Unknown

b) Describe any features at the site which could affect groundwater flow such as the slope of the uppermost bedrock unit [2] Unknown

3. Regional Hydrogeology (within ½ mile) (This information is required if groundwater was not encountered during the site characterization. If groundwater was encountered, regional data should only be obtained, as necessary, to supplement site specific data).

Based on the difference in elevation between the Site and Colorado River – The depth to Groundwater is estimated at 300 feet.

a) What is the average depth to groundwater? [1] Unknown

b) What is the average thickness of the uppermost saturated interval? [1] Unknown

c) What is the regional groundwater flow direction? [1] Unknown

d) **Is there evidence that the flow direction may vary? [1]** Unknown

e) **What is the source of the information? [1]** ANA≡

4. **Site Hydrogeology** A groundwater investigation has not been performed or requested by the OPS.

a) **What is the average depth to groundwater? [1]** Unknown

b) **What is the average thickness of the uppermost saturated interval? [1]** Unknown

c) **What is the groundwater flow direction? [1]** Based on topography Groundwater Flow Direction is expected to be to the North.

i. If there is evidence that flow direction varies, include groundwater elevation maps indicating the varying flow directions (Figure 6, Appendix C). Unknown
ii. What is the suspected or known reason for this variation? [2] ANA≡
iii. What is the most prevalent flow direction? [1] Based on topography the most prevalent flow direction is to the North.

d) **Complete the following table of aquifer parameters.**

Parameter	Value	How Was This Value Estimated? (Include Identification Numbers of Wells Tested)
Hydraulic Gradient	Unknown	Unknown
Effective Porosity*	Unknown	Unknown
Hydraulic Conductivity*	Unknown	Unknown
Groundwater Flow Velocity	Unknown	Unknown

*May be estimated based on soil types during Tier 1 only

K. POINTS OF EXPOSURE

1. **Property Boundary** A Site Investigation involving the evaluation of the extent and degree of contamination has not been performed or requested by the OPS.

a) **What is the distance from the source of contamination to the nearest downgradient property boundary? [1]** It is estimated at 200 feet.

b) **Provide the location of all site property boundaries on Figure 7, Appendix C.**

2. **Surficial Soils**

a) **Is there reason to suspect that persons will come into contact with surficial soils containing contaminant concentrations not protective of exposure through dermal contact, inhalation, or ingestion?** No

b) **If yes, what is the distance from the source to the nearest surficial soils that persons may come into contact with?** ANA≡

c) Indicate the location of all impacted surficial soils that persons may come into contact with on Figure 7, Appendix C.

3. Utilities

a) Are there utilities that could potentially be impacted by the release? (yes/no) Yes

b) Complete the information concerning all utilities both on-site and off-site on the table below and provide utility locations on Figure 7, Appendix C.

Utility	Depth to Water	Depth to Utility	Impacted (y/n)	Potential to be Impacted (y/n)
Natural Gas Line	Unknown	4'	Unknown	y
Water Line	Unknown	8'	Unknown	y
Sanitary Sewer Line	Unknown	8'	Unknown	y
Storm Sewer Line	Unknown	8'	Unknown	y
Subsurface Power Line	Unknown	4'	Unknown	y
Communication Conduit	Unknown	4'	Unknown	y
Other (None)	-	-	Unknown	y

c) What is the distance from the source to the nearest impacted or potentially impacted utility? Approximately 30' to the North.

4. Structures (excludes structures that house a business which dispenses petroleum products as part of normal operations). A Site Investigation involving the evaluation of the extent and degree of contamination has not been performed or requested by the OPS.

a) Are there structures that have been impacted by vapor migration from contaminated groundwater or soils? The occurrence of vapor migration was not noticed during or Site investigation or reported by onsite personnel.

b) Are there structures that have the potential to be impacted by vapor migration from contaminated groundwater or soils? (yes/no) The occurrence of vapor migration was not noticed during or Site investigation or reported by onsite personnel.

c) Present all structures, including those that have been impacted or have the potential to be impacted by vapor migration from either contaminated groundwater or soil on Figure 7, Appendix C.

d) What is the distance from the source to the nearest structure that has been impacted or has the potential to be impacted by vapor migration from contaminated groundwater or soils [1]. 50 feet.

5. **Groundwater Wells (excluding monitoring wells)** A groundwater well search has not been performed or requested by the OPS.

   a) List the location and uses of all groundwater wells located within ½ mile of the site. Include this information on Table 6, Appendix B. Present the location of the wells on a U.S.G.S. 7.5' Quadrangle Topographic map (Figure 8, Appendix C).

   b) How many groundwater wells are located downgradient and within ½ mile of the site? [1] Unknown

   c) Is there a producing groundwater well whose radius of influence could affect groundwater flow at the site? (yes/no) Unknown

   d) What is the distance from the source to the nearest downgradient groundwater well? [1] Unknown

6. **Surface Water/Sensitive Environments**

   a) Identify the location of all surface water features (lakes, streams, wetlands, etc.) located within ½ mile of the site on Figure 8, Appendix C.

   b) What is the distance from the source to the nearest downgradient surface water feature? [1] The Colorado River is located approximately 800 feet North of the Site.

L. EXPOSURE PATHWAYS

An evaluation of the extent and degree Characterization has not been performed or requested by the OPS. As a result, The Exposure Pathway Screening Criteria Table cannot be completed.

a) Complete the Exposure Pathway Screening Criteria Table

Exposure Pathway Screening Criteria - Bases for Eliminating Pathways	Y	N
Groundwater (Ingestion):		
--Impacted groundwater concentrations are below MCLs, or		
--Impacted water-bearing unit is designated as "non-usable" by the CWQCC, or		
--Groundwater plume is stable or diminishing within the property boundary (as demonstrated by four quarters of monitoring), and --There is no impact to a water supply well, (active or inactive), and --Dissolved oxygen concentrations are higher outside of the defined plume, and --Groundwater flow velocity is <50 ft/year, and --Transport modeling results are consistent with site observations.		
Groundwater (Enclosed Space Vapors):		
--Impacted groundwater concentrations are below MCLs, or		
--No existing structure is within the influence of the contamination, or		
--There is an existing structure within the influence of the contamination, and the structure houses a business which dispenses petroleum products as part of its operation.		
Surficial Soils (Ingestion, Ambient Vapors, Particulates, Dermal Contact):		
--Impacted soils concentrations below Tier 1 limits, or		
--Impacted soils have been removed from the site.		
Subsurface Soils (Enclosed Space Vapors):		
--Impacted soils are below Tier 1 limits, or		
--No existing structure is within the influence of the contamination.		
--There is an existing structure within the influence of the contamination, and the structure houses a business which dispenses petroleum products as part of its operation.		
Subsurface Soils (Leaching to Groundwater):		
--Impacted soils are below Tier 1 limits.		

b) Do the responses to the Exposure Pathway Screening Criteria Table indicate that any pathways may be eliminated from further consideration? (yes/no) Unknown

c) Are there any conditions not included in the table that may result in the elimination of any additional pathways? (yes/no) Unknown

d) If so, identify the pathway and conditions here. Any pathway elimination not specified in the table is subject to OIS approval. [4] ANA≅

e) For all pathways that may be eliminated, attach any supporting documentation (e.g., documentation of a "non-useable" designation by the CWQCC) in Appendix H.

f) What are the completed exposure pathways? See L.

i. **Groundwater (Ingestion)** (yes/no)
ii. **Groundwater (Enclosed Space Vapors)** (yes/no)
iii. **Surficial Soils (Ingestion, Ambient Vapors, Particulates, Dermal Contact)** (yes/no)
iv. **Subsurface Soils (Enclosed Space Vapors)** (yes/no)
v. **Subsurface Soils (Leaching to Groundwater)** (yes/no)

M. LAND USE

1. **All sites are considered under the residential land use classification unless the industrial classification is requested and approved by the OIS. Is an industrial classification being requested for this site?** (yes/no) An Industrial land use may be appropriate.

a) If yes, is the property and any currently or potentially impacted property currently zoned Industrial? (yes/no) The Site and surrounding property is zoned light industrial.

b) If yes, has the OIS been added to the list of parties to be notified of any application for rezoning? (yes/no) No

c) If yes, include official documentation of the addition of the OIS to this list (this documentation must indicate that the OIS will remain on the list until the OIS requests to be removed from the list). Include this documentation in Appendix H.

N. RISK BASED SCREENING LEVEL (RBSL) SELECTION

A Site Characterization involving the evaluation of the extent and degree of soil contamination has not been performed or requested by the OPS.

1. **Complete the following table to determine the appropriate RBSL(s) for the site. Refer to the OIS Storage Tank Regulations (7 C.C.R. 1101-14, Table 5-1) for the Tier 1 RBSL look-up table. If a "y" has been indicated in the Pathway Completed column, the RBSL and Source Concentration columns should be completed for every COC that exceeds the Tier 1 RBSL in Table 5-1. Consider the Land Use designation for the site to determine the correct RBSL for each completed pathway.**

Exposure Pathway	Pathway Completed (y/n)	Chemical of Concern (COC)	RBSL	Source Concentration
Surficial Soil (mg/Kg)		Benzene		
		Toluene		
		Ethylbenzene		
		Xylene		
Soil Leaching to groundwater (mg/Kg)		Benzene	0.26	> .053
		Toluene	140	1.4
		Ethylbenzene	190	4.4
		Xylene	260	24
Soil Vapor to Indoor Air (ug/m^3)		Benzene		
		Toluene		
		Ethylbenzene		
		Xylene		
Groundwater to Indoor air inhalation (mg/l)		Benzene		
		Toluene		
		Ethylbenzene		
		Xylene		
Groundwater Ingestion (mg/l)		Benzene		
		Toluene		
		Ethylbenzene		
		Xylene		

2. **RBSLs per media**

a) **Were both the Surficial Soil and Soil Leaching to Groundwater exposure pathways complete?** (yes/no) **If yes, the RBSLs for soil will be those for the Soil Leaching to Groundwater exposure pathway.** Unknown

b) **Were both the Groundwater to Indoor Air Inhalation and Groundwater Ingestion pathways complete?** (yes/no) **If yes, the RBSLs for groundwater will be those for the Groundwater Ingestion exposure pathway.** Unknown

O. TOTAL PETROLEUM HYDROCARBONS (TPH)/POLYNUCLEAR AROMATIC HYDROCARBONS (PAH)

A Site investigation involving the evaluation of the extent and degree of soil contamination has not been performed or requested by the OPS.

1. Source concentrations

a) Are all of the concentrations of the chemicals of concern (benzene, toluene, ethylbenzene, xylenes) associated with this release below the RBSLs or SS-RBSLs? (yes/no) Based upon the two soil samples collected at the Site, RBSLs for BTEX have not been exceeded.

b) Does the TPH concentration exceed the threshold value of 500 mg/Kg? Yes, both samples had reported DRO and GRO concentrations above 500 mg/Kg.

2. PAH Evaluation - If both answers to question #1 above are yes, then a soil sample collected from the area believed to be the most contaminated must be analyzed for the 16 priority PAHs. For the following questions refer to the Tier 1 RBSL table for PAHs in the Owner/Operator Guidance Document.

a) If the surficial soil pathway is complete at this site answer the following questions:

i. Do site PAH concentrations exceed the Tier 1 RBSLs for any compounds for the surficial soil pathway? PAH concentrations for the Diesel do not exceed Tier I RBSL's. PAH analysis for Gasoline was not requested by the OPS.

ii. If yes, list the compounds that exceed the RBSLs and the concentrations at which they remain on the site. ANA≅

b) If the subsurface soil leaching to groundwater pathway is complete at this site answer the following questions:

i. Do site PAH concentrations exceed the Tier 1 RBSLs for benz(a)-anthracene, dibenz(a,H)-anthracene or naphthalene compounds for the subsurface soil leaching to groundwater pathway? PAH concentrations for Diesel do not exceed the Tier 1 RBSLs. PAH analysis for Gasoline was not requested by the OPS.

ii. If yes, list the compounds at the site that exceed the RBSLs for the above compounds and the concentrations at which they remain on the site.

iii. Do PAH levels exceed the Tier 1 RBSLs for the 13 chemicals not specified in "i" above for the surficial soil pathway? (yes/no) PAH concentrations for Diesel do not exceed the Tier 1 PAH RBSLs. PAH analysis for Gasoline was not requested by the OPS.

iv. If yes, list the compounds at the site that exceed the RBSLs for the above compounds and the concentrations at which they remain on the site. See O.2.b.iii.

c) If the groundwater volatilizing to indoor air pathway is complete at this site answer the following questions: A Groundwater investigation has not been performed or requested by the OPS.

i. **Do site napthalene concentrations exceed the Tier 1 RBSL for the groundwater volatilizing to indoor air pathway?** (yes/no) Unknown

ii. **If yes, what is the concentration of napthalene in groundwater remaining on the site?** ANA≅

d) If the groundwater ingestion pathway is complete at this site answer the following questions: See O.2.c

i. **Do site benzo(a)-pyrene concentrations exceed the Tier 1 RBSL for the groundwater ingestion pathway?** (yes/no) Unknown

ii. **If yes, what is the concentration of benzo(a)-pyrene in groundwater remaining on the site?** Unknown

P. TIER 1A

1. **Has a Tier 1A evaluation been performed for this site?** (yes/no) No

2. **Was there reason to believe, based on site conditions, that the collection of site-specific information would lead to a significantly different cleanup goal?** (yes/no) Unknown

3. **Were site-specific data collected to be used as input parameters into the Tier 1A Model? (For a Tier 1A evaluation, site-specific data must be collected from the site, or calculated from data collected from the site, as outlined in the Owner/Operator Guidance Document.)** (yes/no) No

4. **If site-specific input parameters were used to create Tier 1A SS-RBSLs, list those parameters on the following table and indicate the source of the data. Include locations where data are collected on the appropriate figure.** A site characterization has not been performed or requested by the OPS.

Parameter	Value	How Was This Value Determined? (Include Identification Numbers of Wells Tested, Location of Borings, etc.)
Depth to subsurface soil source		Unknown
Depth to groundwater		Unknown
Thickness of the capillary fringe		Unknown
Thickness of the unsaturated zone		Unknown
Length of source		Unknown
Width of source		Unknown
Hydraulic conductivity		Unknown
Gradient		Unknown
Fraction of organic carbon		Unknown
Total porosity		Unknown
Unsaturated zone water content		Unknown
Unsaturated zone air content		Unknown
Infiltration rate		Unknown
Soil bulk density		Unknown
Distance to point of exposure		Unknown
Effective porosity		Unknown

5. **Attach the Tier 1A SS-RBSL table generated by inputting site specific data collected above into the Tier 1A Model (located on the OIS webpage)**

Q. RECOMMENDATIONS

1. **Are all source concentrations remaining at the site below RBSLs in soil and MCLs in groundwater?** (yes/no) Unknown **If yes, you may request no further action.** A groundwater investigation has not been performed or requested by the OPS.

2. **Are source concentrations remaining at the site above RBSLs in soil and/or MCLs in groundwater?** (yes/no) An investigation involving evaluation of the extent a degree of soil contamination or groundwater evaluation has not been performed or requested by the OPS. **If yes, do you recommend remediation to Tier 1 levels?** (yes/no) Unknown **What method(s) of remediation will you be evaluating in your corrective action plan (CAP)? [2]** Unknown

3. **Have you performed a Tier 1A evaluation?** (yes/no) No **Are all source concentrations remaining at the site below the SS-RBSLs generated in the Tier 1A evaluation?** (yes/no) Unknown
If yes, you may request a no further action.

4. **Have you performed a Tier 1A evaluation?** (yes/no) No **Are source concentrations remaining at the site above the SS-RBSLs generated in the Tier 1A evaluation?** (yes/no) Unknown **If yes, do you recommend remediation to Tier 1A levels, or Tier 1 levels?** (yes/no) Unknown **What method(s) of remediation will you be evaluating in your CAP?[2]** Unknown

5. **Have you performed a Tier 1A evaluation?** (yes/no) No **Are source concentrations remaining at the site above the SS-RBSLs generated in the Tier 1A evaluation?** (yes/no) Unknown **If yes, do you recommend proceeding to a Tier 2 evaluation?** (yes/no) Unknown **What method(s) of remediation will you be evaluating in your CAP to cleanup to Tier 2 should site specific target levels be exceeded? [2]** Unknown

APPENDIX A - INSTRUCTIONS

1. TABLES (Appendix B)

Table 1 - Summary of Organic Vapor Meter Readings

This table lists the results of field screening of soil samples with an Organic Vapor Meter (OVM). Information presented shall include sample location, OVM reading, sample depth (ft bgs), and an indication of whether the sample was analyzed at a laboratory.

Table 2 - Summary of Soil Laboratory Results

This table lists the results obtained from laboratory testing of soil samples. Information presented shall include sample designation, sample collection date, sample depth (ft bgs), and analyte concentrations. If any analyte was detected which is not listed on this table, answer Ayes≅ in the AOther≅ column and attach the laboratory analytical reports for those analytes. Concentrations that exceed the Tier 1 RBSL for the soil leaching to groundwater pathway must be entered in bold type face. Also include on Table 2 the rationale for sample collection, using the codes listed in the footnote.

TVPH = Total Volatile Petroleum Hydrocarbons
TEPH = Total Extractable Petroleum Hydrocarbons
TPH = Total Petroleum Hydrocarbons

Table 2a - Summary of PAH Soil Laboratory Results

If a sample was analyzed for the priority PAHs the results obtained from the laboratory testing should be listed on this table. Information presented shall include sample designation, sample collection date, sample depth (ft bgs), and analyte concentrations in mg/Kg. This analysis will only be required when the BTEX constituents are below site cleanup goals and TPH concentrations exceed 500mg/Kg.

Table 3 - Summary of Vapor Laboratory Results

This table lists the results obtained from laboratory testing of vapor samples. Information presented shall include sample designation, sample collection date, sample depth (ft bgs), and analyte concentrations. If any analyte was detected which is not listed on this table, answer Ayes≅ in the AOther≅ column and attach the laboratory analytical reports for those analytes. Also included on this table is the rationale for sample collection.

Table 4 - Summary of Groundwater Laboratory Results

This table must be included when water samples are collected and shall present the results obtained from laboratory testing of water samples. Information presented shall include sample designation, sample collection date, sample depth (depth below grade level when collected from an excavation), analyte concentrations, and analytical methods. If any analyte was detected which is not listed on this table, answer Ayes≅ in the AOther≅ column and attach the laboratory analytical reports for those analytes. Concentrations that exceed Colorado groundwater standards (MCLs) shall be presented in boldface type. Sample locations must be illustrated on Figure 5.

Table 5 - Groundwater Elevation Table

This table shall include the surveyed elevation of each well measured during this investigation, the date of the measurement, depth to water, depth to product, product thickness, product elevation, and the corrected elevation of the groundwater.

Table 6 - Summary of Water Well Information

This table shall include the results of a water well survey for wells located within 2 mile of the site. Information presented shall include the well number, geographic location (cadastral coordinates), approximate distance from site (if known), approximate compass direction from site (if known), use of each well, well depth, water level, and pumping rate. Wells down gradient of the site shall be presented in boldface type.

2. FIGURES (Appendix C)

Requirements common to all maps include the following: title block with figure number, site name, site address, date, scale, north arrow, and a legend. Distinct symbols should be used to differentiate varying sampling and analytical techniques (e.g.∋ = Monitoring Well, = Borehole, = Geoprobe Point, = OVM locations, Φ = laboratory data). All maps must be created to scale.

Figure 1 - Site Map

This map shall illustrate the important features at the site and the area immediately adjacent to the site. Include locations of property boundaries, fences, streets (with names), site buildings and adjacent structures, USTs/ASTs, piping runs and dispensers, and type of ground cover.

Figure 2 - Excavation Sample Location Map

This map shall illustrate the former locations of the tanks, and the sampling locations from within each tank excavation. For each of these sampling locations include a text box with sample depth and laboratory analytical results. Also include on the map the location of soils stockpiled. Clearly identify the dimensions of the excavation areas. Include features from Figure 1 as necessary for reference (e.g., major structures).
Diesel ex 4x5
Gas ex 5x9

Figure 2a – OVM Screening Locations
The two soil samples obtained at the Site were not screened using an OVM.

This map shall illustrate locations of samples collected for soil screening (as indicated in Table 2), which were not submitted to the laboratory for analysis. Include features from Figure 1 as necessary for reference (e.g., major structures, excavations, etc.). If the screened soils were submitted for analysis the location of the sample should not be identified on this figure, but should be placed on either Figure 2 or 3.

Figure 3 - Soil Sample Location Map

This map shall illustrate the sampling locations at the site (outside of the tank excavation(s)). Include features from Figure 1 as necessary for reference (e.g., major structures, excavations, etc.) For each of these sampling locations include a text box with sample depth and laboratory analytical results.

Figure 4 - Vapor Sample Location Map
A site investigation involving vapor sampling has not been performed or requested by the OPS.

This map shall illustrate the sampling locations at the site. Include features from Figure 1 as necessary for reference (e.g. major structures, excavations, etc.). For each of these sampling locations include a text box with sample depth and laboratory analytical results.

Figure 5 - Groundwater Sample Location Map
A site investigation involving a groundwater evaluation has not been performed or requested by the OPS.

This map shall illustrate the groundwater sampling locations at the site. Include features from Figure 1 as necessary for reference (e.g., major structures, excavations, etc.). For each of these sampling locations include a text box with laboratory analytical results.

Figure 6 - Groundwater Elevation Map
A site investigation involving a groundwater evaluation has not been performed or requested by the OPS.

This map shall illustrate the locations at which groundwater levels have been measured. Figure 1 may be used as a base map. Include the date of the measurement (separate maps must be created for individual measuring events) and the relative groundwater elevation.

Provide groundwater elevation contours and an indication of the groundwater flow direction.

Figure 7 – POE Location Map
A site investigation involving an evaluation of potential receptors has not been performed or requested by the OPS.

This figure will identify each property in the vicinity of the site which could potentially be affected by the release. The properties will be illustrated by land use (e.g., single family residential, vacant land, retail, dry cleaning, gas station, etc.). This figure will also identify all potential POEs (property boundaries, surficial soils, subsurface utilities, groundwater wells and surface water features/sensitive environments).

Figure 8 – Area Surface Water, Groundwater, Topographical Map

This map is used to provide regional topographic and POE information. Include a portion of a U.S.G.S. 7 2' Quadrangle Topographic Map or equivalent, measuring a minimum of six inches by six inches with the site located in the middle of the six inch by six inch section. The map shall include a scale (approximately 1" = 2,000'), distinct site location marker, and geographic contour intervals. Clearly identify surface water features and water wells (excluding monitoring wells) within ½-mile radius of the site. Provide a text box with the associated permit number (as indicated in Table 6) of each water well location.
Note: A groundwater well inventory has no been performed or requested by the OPS.

3. LABORATORY DOCUMENTATION (Appendix D)

Chain of Custody forms which accompany samples for laboratory analyses are required to contain the following information: site name and address, sample number, date and time sampled, matrix description (e.g. soil, water), container size, type and decontamination status (e.g. 40 ml laboratory decontaminated amber glass VOA vial), preservation method (e.g. HCl 5%, 4E C), date and method of transport to laboratory (e.g. hand delivered, Fed Ex etc.), analyte and methodology of analyses requested (e.g. Total Extractable Petroleum Hydrocarbons (TEPH) by EPA Method 8015 Modified), and the name and signature of the person collecting the samples. Also attach all laboratory reports, and laboratory quality assurance/quality control reports.

4. BOREHOLE LITHOLOGIC LOGS AND WELL COMPLETION (Appendix E)
A site investigation involving borehole has not been performed or requested by the OPS.

Boring logs must include the site name and address, boring number, date completed, surface elevation, depth, borehole diameter, initial and static water levels (if available), drilling method, sampling method, lithologic graphic to scale, an indication of the intervals from which samples were obtained, results of VOC screening, and a geologic description and/or Unified Soil Classification System (USCS) class of each rock or soil type encountered including any staining or petroleum odors.

The following additional information should be included with the lithologic logs if a well has been completed. Include the total depth of the well, the casing elevation, the diameter of the well casing, the well casing material (e.g. PVC, stainless steel), the length and depth

of the screened interval, the size and type of perforations of the screen (e.g. 0.010" milled slots), the type of filter pack material placed in the well (e.g. 10-20 mesh washed silica sand), the type of annular seal (e.g. 1/2" bentonite pellets), the type of grout used to fill the remaining annular space (e.g. Portland cement 5% bentonite), the type of well casing cap, the method of securing the well casing cap, and the type of protective surface casing. Also included should be a well completion graphic to scale which indicates the depth to the top of the filter pack, the depth to the top of the annular seal, and the location of the screened interval.

Also included in Appendix E should be any cross-sections completed to illustrate site conditions.

5. **WASTE DISPOSAL MANIFESTS (Appendix F)**
   Contaminated soil removal has not been performed or requested by the OPS.

Attach copies of all manifests provided by transporters, landfills, treatment facilities, etc.

6. **SITE CLASSIFICATION CHECKLIST (Appendix G)**

To complete the Site Classification Checklist, place a check in the Threat (T) box if the situation, designated by sub-class (SUB), exists at the site. If the threat does not exist, check the N box. The U box should only have been checked when the Site Classification Checklist was submitted with the Site Summary Form. Upon completion of this report all conditions which exist at the site should be known. Check the Response (R) box if an appropriate response action has been completed for the existing condition at the site. If the response action has been completed and the threat no longer exists, the site classification will be the classification of the next most highly listed threat. The site will be classified by the first table where a threat box has been checked and an appropriate response has not been completed. However, complete the entire form and perform appropriate response actions for each condition which exists at the site. Complete response actions in order of highest priority (1 being the highest).

7. **SUPPORTING DOCUMENTATION (Appendix H)**

Attach all supporting documentation as required(e.g., permits for initial response and abatement activities, industrial zoning designation, water quality designation, etc.).

APPENDIX B - TABLES

TABLE 1- SUMMARY OF ORGANIC VAPOR METER READINGS

OVM measurements were not taken during our site investigation, as an OVM meter was not readily available.

Sample Location I.D.	Date	Sample Depth (ft)	OVM Reading (ppm)	Laboratory Analyzed (y/n)
N/A	N/A	N/A	N/A	N/A

N/D = Not Detected
N/A = Not Analyzed

Site Street Address _2307 Wulfsohn Road City Glenwood Springs _____

TABLE 2 - SUMMARY OF SOIL LABORATORY RESULTS

Sample Number	Date	Sample Depth (ft)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethyl-Benzene (mg/Kg)	Xylenes (mg/Kg)	MTBE (mg/Kg)	TVPH (mg/Kg)	TEPH (mg/Kg)	TPH (mg/Kg)	Oil & Grease (mg/Kg)	Other Analytes? * (y/n)	Rationale**
Diesel	2/8/0	1.5	.053	1.4	4.4	24	N/A	N/A	6,600	N/A	N/A	Y	RC
Gasoline	2/8/0	1.5	> .053	1.1	3.4	20	N/A	580	N/A	N/A	N/A	N	RC

Identify any sample results which exceed Tier 1 RBSLs for soil leaching to groundwater pathway or 500mg/Kg TPH by presenting those results in bold typeface.
N/D = Less than the stated laboratory detection limit
N/A = Not Analyzed
* If □yes□, list other analytes detected in a separate table
**Rationale – Release confirmation (RC), In plume (IP), Upgradient (UG), Downgradient (DG), Point of Compliance (POC), Post excavation (PE), Define extent (DE), Waste characterization (WC)

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Site Street Address _2307 Wulfsohn Road City Glenwood Springs _____

TABLE 2a - SUMMARY OF SOIL PAH LABORATORY RESULTS

Sample Collection Date	Compound	Concentration mg/Kg	Depth sample collected (ft)	Sample # of TPH Sample	TPH Concentration in Original Sample mg/Kg
2/8/2007	Acenaphthene	< .180	1½	Diesel	6,600
	Acenaphthylene	< .180	1½	Diesel	6,600
	Anthracene	< .180	1½	Diesel	6,600
	Benzo(a)-anthracene	< .180	1½	Diesel	6,600
	Benzo(a)-pyrene	< .180	1½	Diesel	6,600
	Benzo(b)-fluoranthene	< .180	1½	Diesel	6,600
	Benzo(g,h,i)-perylene	< .180	1½	Diesel	6,600
	Benzo(k)-fluoranthene	< .180	1½	Diesel	6,600
	Chrysene	< .180	1½	Diesel	6,600
	Dibenzo(a,h)-anthracene	< .180	1½	Diesel	6,600
	Fluoranthene	< .180	1½	Diesel	6,600
	Fluorene	< .180	1½	Diesel	6,600
	Indeno(1,2,3-CD)-pyrene	< .180	1½	Diesel	6,600
	Naphthalene	1.90	1½	Diesel	6,600
	Phenanthrene	0.07	1½	Diesel	6,600
	Pyrene	< .180	1½	Diesel	6,600

Identify any sample results which exceed Tier 1 RBSLs for the surficial soil pathway by presenting those results in bold typeface.
Responses which are common to all compounds (e.g., Sample collection date) only need to be completed for the first compound.
Repeat table if more than one sample is analyzed for PAHs
N/D = Less than the stated laboratory detection limit
N/A = Not Analyze

Site Street Address _2307 Wulfsohn Road City Glenwood Springs _____

TABLE 3 - SUMMARY OF VAPOR LABORATORY RESULTS

A site characterization involving an evaluation of vapors has not been performed or requested by the OPS.

Sample Number	Date	Sample Depth (ft)	Benzene (µg/m^3)	Toluene (µg/ m^3)	Ethyl-Benzene (µg/ m^3)	Xylenes (µg/ m^3)	MTBE (µg/ m^3)	TVPH (µg/ m^3)	TEPH (µg/ m^3)	TPH (µg/ m^3)	Oil & Grease (µg/ m^3)	Other Analytes? * (y/n)	Rationale**

N/D = Less than the stated laboratory detection limit
N/A = Not Analyzed
* If □yes□, list other analytes detected in a separate table
**Rationale – Assist in defining extent (DE), Identify threats to points of exposure (POE)

Site Street Address _2307 Wulfsohn Road City Glenwood Springs

TABLE 4 - SUMMARY OF GROUNDWATER LABORATORY RESULTS

A site characterization involving wells and borings has not been completed or observed by the OPS. Free product was not observed to a maximum depth excavated at the site of 1.5 feet BGS

Sample Number	Date	Sample Depth (ft)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-Benzene (µg/l)	Xylenes (µg/l)	MTBE (µg/l)	TVPH (mg/l)	TEPH (mg/l)	TPH (mg/l)	Oil & Grease (mg/l)	Other Analytes?* (y/n)	Rationale **

Identify any sample results which exceed Colorado Groundwater Standards (MCLs) by presenting those results in bold typeface.
N/D = Less than the stated laboratory detection limit
N/A = Not Analyzed
* If □yes□, list other analytes detected in a separate table
**Rationale – Release confirmation (RC), In plume (IP), Upgradient (UG), Downgradient (DG), Point of Compliance (POC), Define extent (DE), Waste characterization (WC)

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Site Street Address _2307 Wulfsohn Road City Glenwood Springs _____

TABLE 5 - GROUNDWATER ELEVATION

A site characterization involving wells and borings has not been completed or requested by the OPS. Free product was not observed to a maximum depth excavated at the site of 1.5 feet BGS

Well #	Date Measured	Surveyed Elevation (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Top of Product Elevation (ft)	Water Table Elevation (ft)	Corrected Water Table Elevation (ft)

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TABLE 6 - SUMMARY OF WATER WELL INFORMATION

A site characterization involving wells and borings has not been completed or requested by the OPS. Free product was not observed to a maximum depth excavated at the site of 1.5 feet BGS.

Permit Number*	Geographic Location	Approx. Direction from Site	Approx. Distance from Site (ft) (if known)	Listed Use	Well Depth (ft)	Water Level (ft)	Pumping Rate (gpm)

*Information from the Colorado Division of Water Resources
Indicate any wells which appear to be downgradient of the site in bold typeface.
Uses: O = Other Use, OM = Other Use (Monitoring Well), 1 = Agricultural, 3 = Commercial Use, 8 = Domestic Use, 9 = Livestock Use

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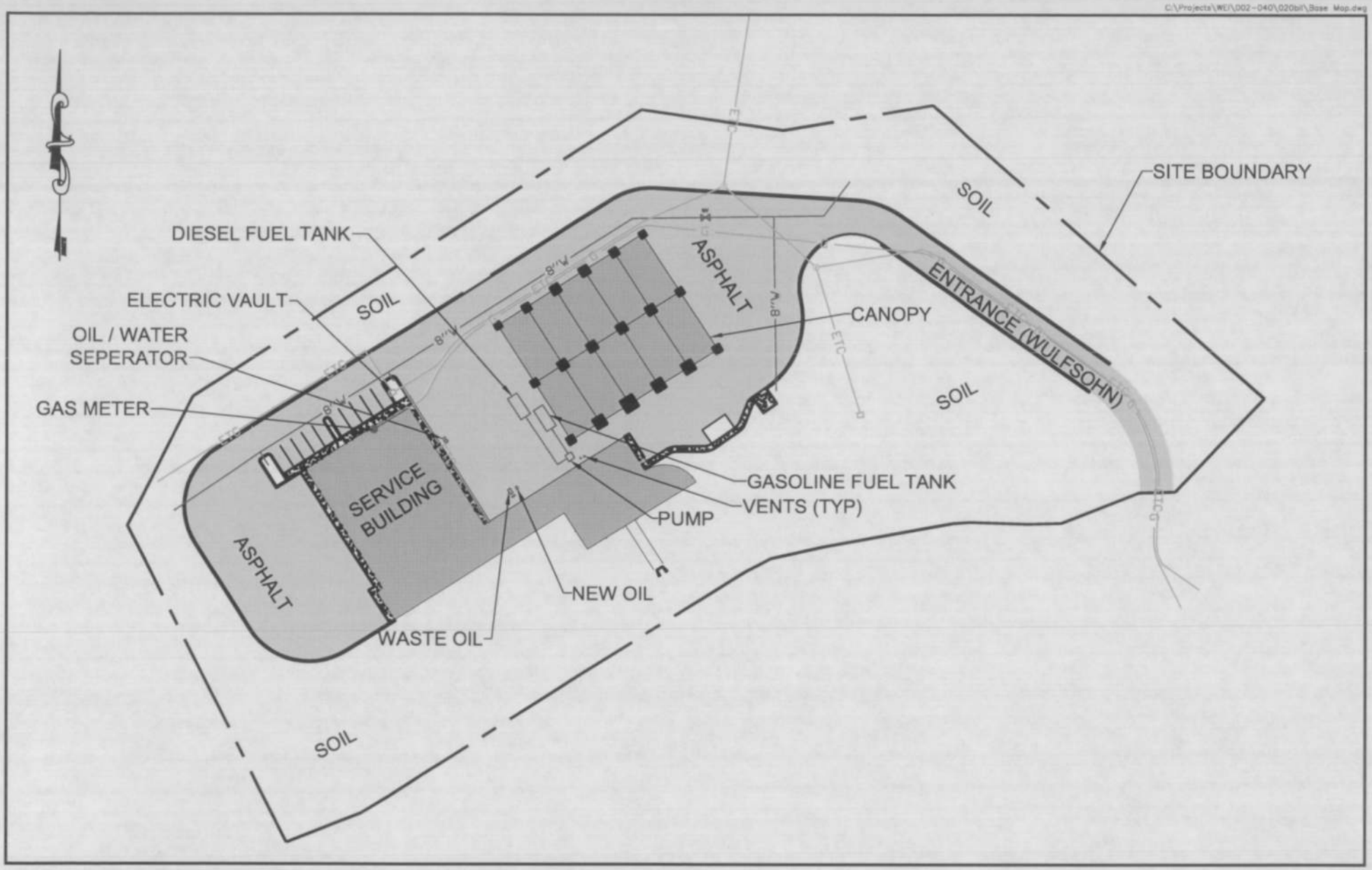
APPENDIX C - FIGURES



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(970) 945-7755

DESIGN	BLL
DETAIL	BLL
CHECK	DCH
DATE	04/12/07
SCALE	1"= 100'

ROARING FORK TRANSIT AUTHORITY

FIGURE 1
SITE MAP

C:\Projects\WEI\002-040\020bil\Base Map.dwg

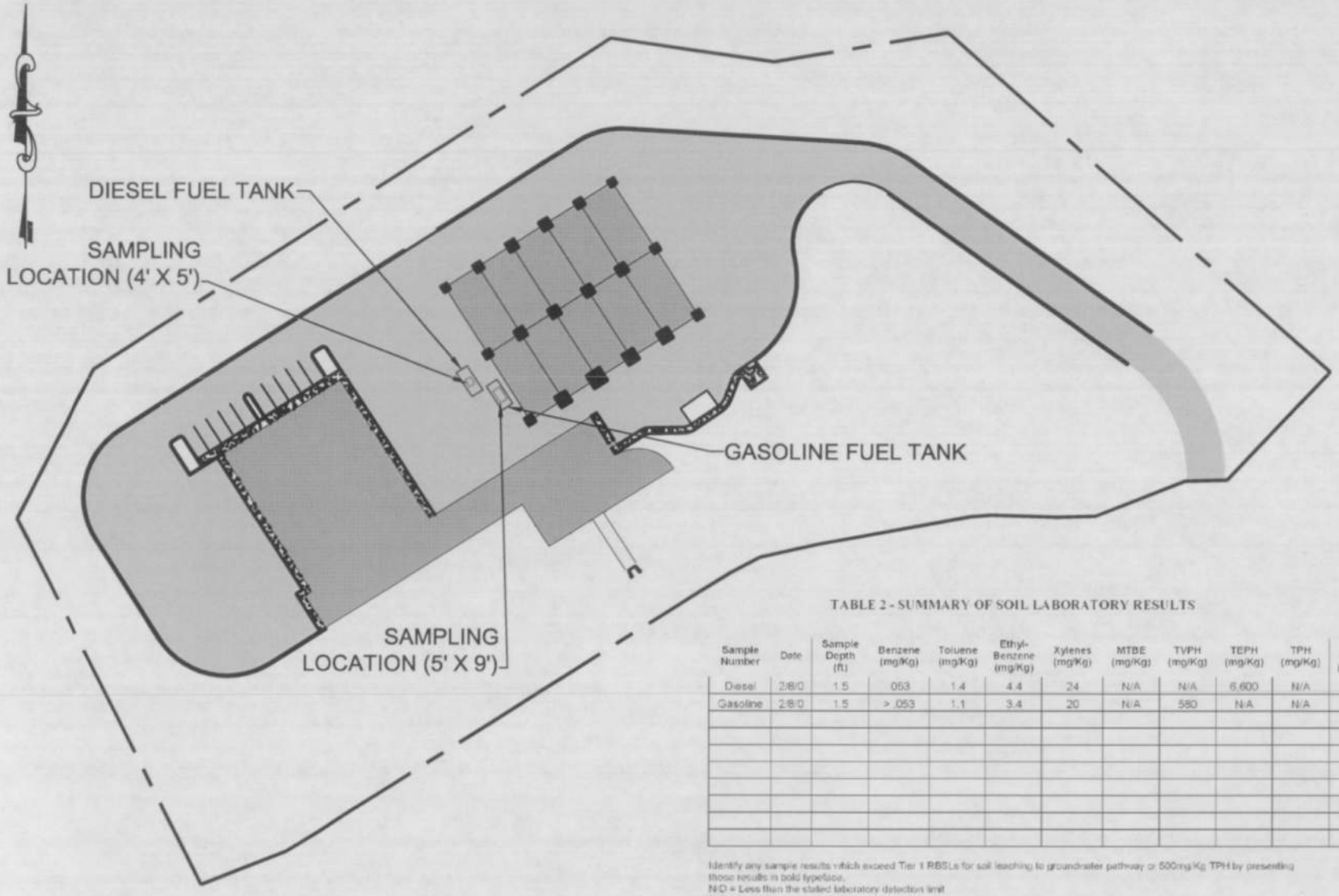

TABLE 2 - SUMMARY OF SOIL LABORATORY RESULTS

Sample Number	Date	Sample Depth (ft)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethyl-Benzene (mg/Kg)	Xylenes (mg/Kg)	MTBE (mg/Kg)	TVPH (mg/Kg)	TEPH (mg/Kg)	TPH (mg/Kg)	Oil & Grease (mg/Kg)	Other Analytes? * (y/n)	Rationale**
Diesel	2/8/0	1.5	.053	1.4	4.4	24	N/A	N/A	6,600	N/A	N/A	Y	RC
Gasoline	2/8/0	1.5	> .053	1.1	3.4	20	N/A	580	N/A	N/A	N/A	N	RC

Identify any sample results which exceed Tier 1 RBSLs for soil leaching to groundwater pathway or 500mg/Kg TPH by presenting those results in bold typeface.
N/D = Less than the stated laboratory detection limit
N/A = Not Analyzed
* If ? yes ? , list other analytes detected in a separate table
**Rationale – Release confirmation (RC), In plume (IP), Upgradient (UG), Downgradient (DG), Point of Compliance (POC), Post excavation (PE), Define extent (DE), Waste characterization (WC)

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FIGURE 2
EXCAVATION SAMPLE OCATION MAP

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THE TWO SOIL SAMPLES
WERE NOT SCREENED
USING AN OVM

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FIGURE 2a

OVM SCREENING LOCATIONS

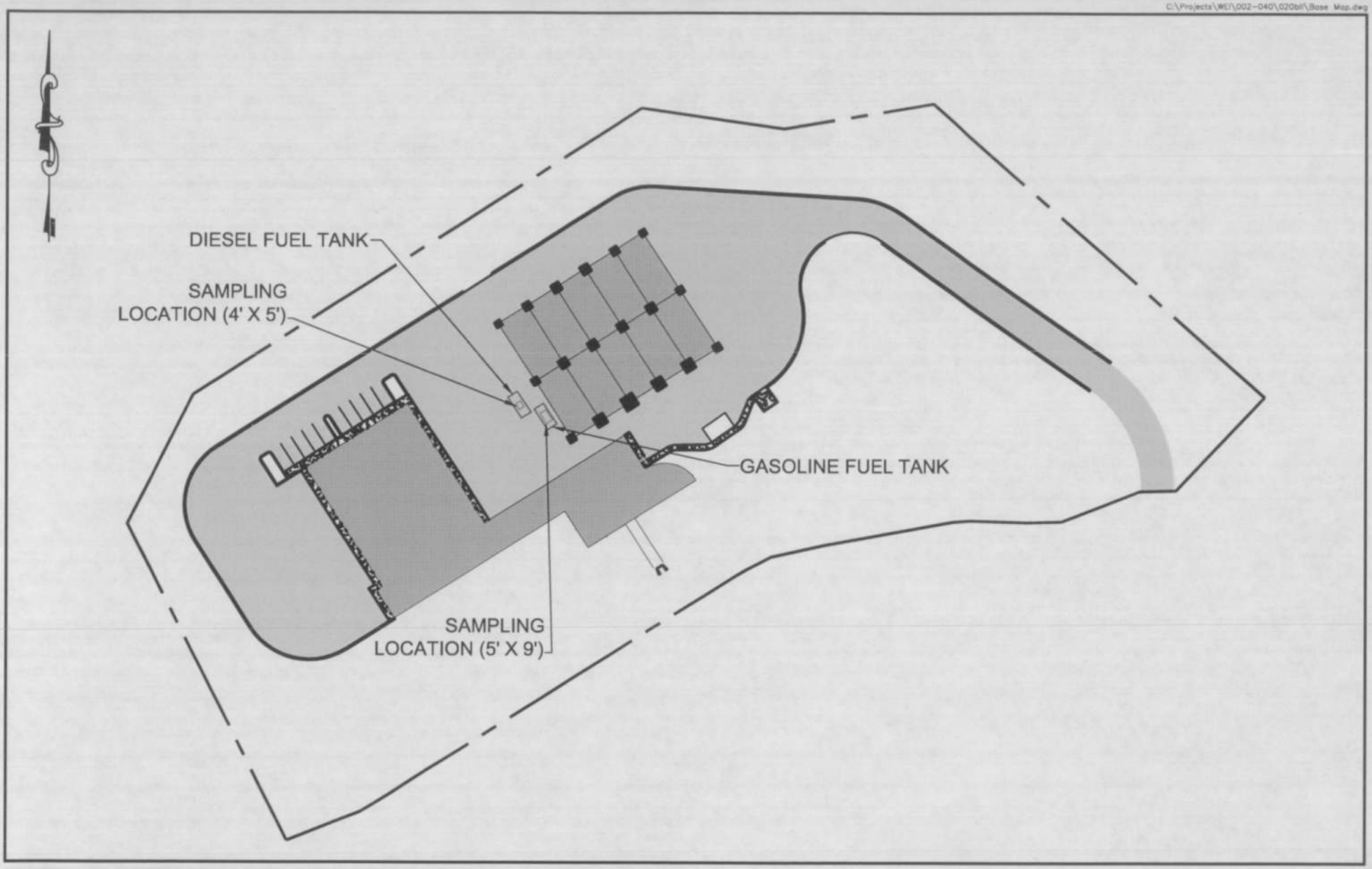

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FIGURE 3
SOIL SAMPLE LOCATION MAP

C:\Projects\WEI\002-040\020bll\Base Map.dwg

A SITE INVESTIGATION INVOLVING VAPOR SAMPLING HAS NOT BEEN PERFORMED OR REQUESTED BY THE OPS

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FIGURE 4

VAPOR SAMPLING LOCATION MAP

C:\Projects\WEI\002-040\020bil\Base Map.dwg

A SITE INVESTIGATION INVOLVING A GROUNDWATER EVALUATION HAS NOT BEEN PERFORMED OR REQUESTED BY THE OPS

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DESIGN	BLL
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CHECK	DCH
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SCALE	1"= 100'

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FIGURE 5

GROUNDWATER SAMPLING LOCATION MAP

C:\Projects\WEI\002-040\020bll\Base Map.dwg

A SITE INVESTIGATION INVOLVING
A GROUNDWATER EVALUATION
HAS NOT BEEN PERFORMED OR
REQUESTED BY THE OPS

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DESIGN	BLL
DETAIL	BLL
CHECK	DCH
DATE	04/04/07
SCALE	1"= 100'

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FIGURE 6

GROUNDWATER ELVATION MAP

C:\Projects\WEI\002-040\020bill\Base Map.dwg

A SITE INVESTIGATION INVOLVING AN EVALUATION OF POTENTIAL RECEPTORS HAS NOT BEEN PERFORMED OR REQUESTED BY THE OPS

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DETAIL	BLL
CHECK	DCH
DATE	04/04/07
SCALE	1"= 100'

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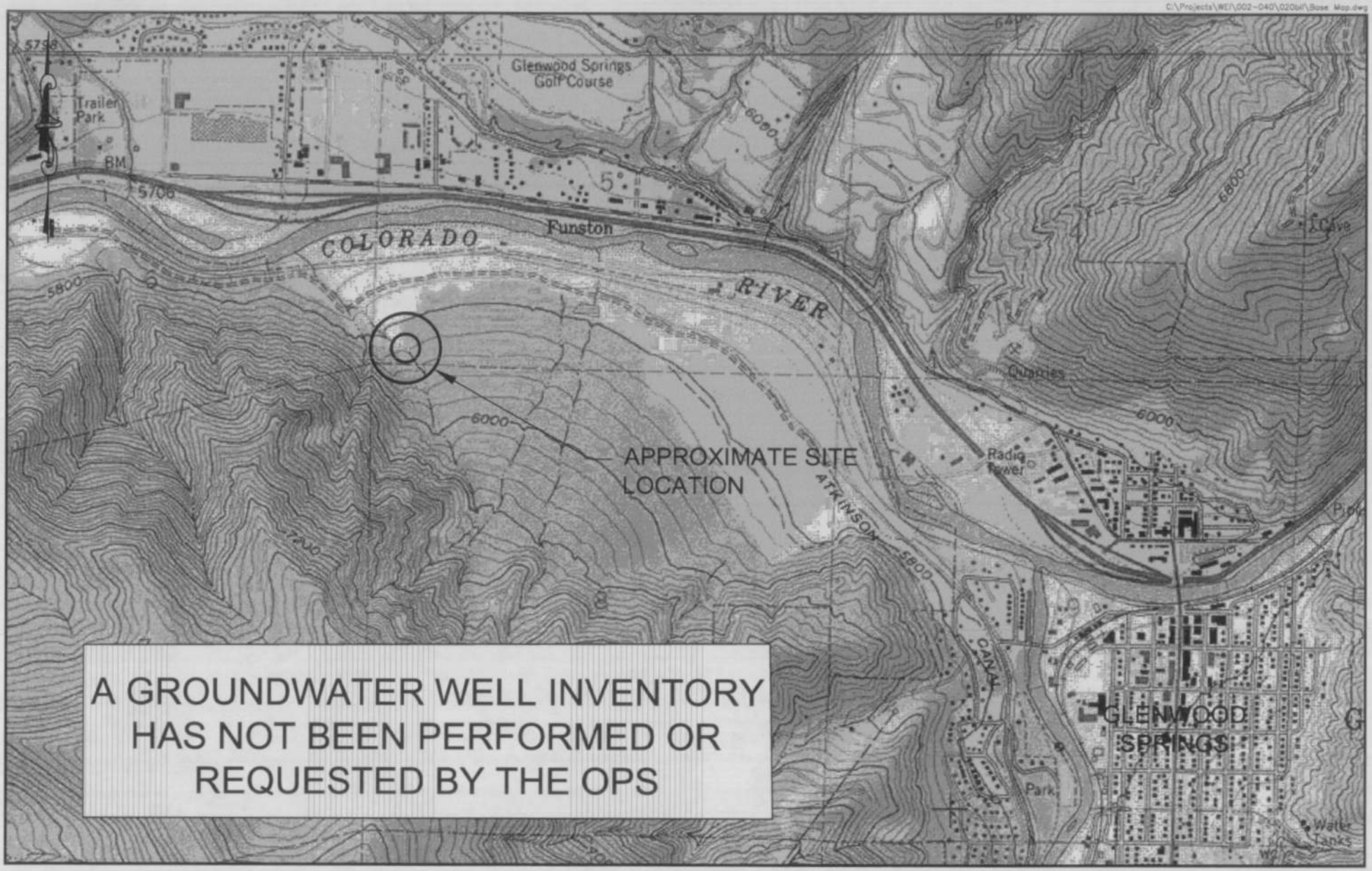
FIGURE 7

POE LOCATION MAP



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DATE	04/04/07
SCALE	1"= 100'

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FIGURE 8

AREA SURFACE WATER, GROUNDWATER, TOPOGRAPHICAL MAP

APPENDIX D - LABORATORY DOCUMENTATION

ANALYTICA
Environmental Laboratories

Analytica Environmental
Laboratories, Inc.
12189 Pennsylvania Street
Thornton, CO 80241
Phone: 303-469-8868
Fax: 303-469-5254

2/15/2007

Waste Engineering, Inc.
P.O. Box 219
Glenwood Springs, CO 81602
Attn: Craig Heydenberk

Work Order #: B0702099
Date: 2/15/2007
Work ID: RFTA-GWS
Date Received: 2/10/2007
Proj #: none

Sample Identification

Lab Sample Number	Client Description	Lab Sample Number	Client Description
B0702099-01	Diesel Tank	B0702099-02	Gasoline Tank

Enclosed are the analytical results for the submitted sample(s). Please review the CASE NARRATIVE for a discussion of any data and/or quality control issues. Listings of data qualifiers, analytical codes, key dates, and QC relationships are provided at the end of the report.

Sincerely,

Joseph Egry
Project Manager

"The Science of Analysis, The Art of Service"

Case Narrative

Analytica Environmental Laboratories, Inc.

Work Order: B0702099

Samples were prepared and analyzed according to EPA or equivalent methods outlined in the following references:

Test Methods for Evaluating Solid Waste, USEPA SW-846, Third Edition, Revision 4, December 1996.

Standard Method for Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixtures, ASTM D 2216-80, July 1980.

REVIEW FOR COMPLIANCE WITH ANALYTICA QA PLAN
A summary of our review is shown below, organized by test:

SAMPLE RECEIPT:
Two (2) samples were received at a temperature of 4.6 deg C at Analytica-Thornton on 2/10/2007 12:00:00 PM. The samples were received in good condition and in order per chain of custody.

Test Method: Aromatic VOCs by GC/PID via method 8021B - BTEX - Solid

HOLDING TIMES:
Holding times were met for this Test

SAMPLE PREPARATION ISSUES AND OBSERVATIONS:
There were no unusual observations.

INSTRUMENT PERFORMANCE CHECKS:
Instrument checks were within method criteria.

INITIAL CALIBRATIONS:
Initial calibrations were within method criteria.

OPENING CONTINUING CALIBRATIONS:
Opening continuing calibrations were within method criteria.

CLOSING CONTINUING CALIBRATIONS:
Closing continuing calibrations were within method criteria or not applicable.

INTERNAL STANDARD AREAS:
There were no Internal Standard outliers.

SURROGATE RECOVERIES:
The samples shown below have the surrogate outside of control windows. This result was confirmed by reanalysis. The LCS, and method blank do not show this effect and this is considered likely to be due to sample matrix.

Sample	LabID	Surrogate	Recovery	LCL	UCL	
Diesel Tank	B0702099-01B	p-Bromofluorobenzene	46.	77	120	Complete
Gasoline Tank	B0702099-02A	p-Bromofluorobenzene	49.	77	120	Complete
Diesel Tank	B0702099-01B	p-Bromofluorobenzene	47.	77	120	Rrun
Gasoline Tank	B0702099-02A	p-Bromofluorobenzene	44.	77	120	Rrun

METHOD BLANK OUTLIERS:
There are no method blank outliers.

LCS OUTLIERS:
There are no LCS outliers.

MS/MSD and DUP OUTLIERS:
There are no MS/MSD or DUP outliers.

Test Method: ASTM D2216 - Pmoist - Solid

All method criteria was met for this test.

Test Method: SVOC by GC/FID via method 8015B - DRO - Solid

HOLDING TIMES:
Holding times were met for this Test

SAMPLE PREPARATION ISSUES AND OBSERVATIONS:
There were no unusual observations.

INSTRUMENT PERFORMANCE CHECKS:
Instrument checks were within method criteria.

INITIAL CALIBRATIONS:
Initial calibrations were within method criteria.

OPENING CONTINUING CALIBRATIONS:
Opening continuing calibrations were within method criteria.

CLOSING CONTINUING CALIBRATIONS:
Closing continuing calibrations were within method criteria or not applicable.

SURROGATE RECOVERIES:
There were no surrogate outliers.

METHOD BLANK OUTLIERS:
There are no method blank outliers.

LCS OUTLIERS:
There are no LCS outliers.

MS/MSD and DUP OUTLIERS:
As shown below, the matrix spike and matrix spike duplicate were outside of limits the target. The sample has a concentration greater than four times spike amount. In this case it is not appropriate to calculate a recovery. The result should be used as a replicate.

Type	Client Sample	LabSample	Analyte	Recovery	LCL	UCL	Parent	Spike
MS	Diesel Tank	B0702099-01A	Diesel Range Organic	-801	50	129	6600	70.4
MSD	Diesel Tank	B0702099-01A	Diesel Range Organic	-540	50	129	6600	70.4

Test Method: VOC by GC/FID via method 8015B - GRO - Solid

HOLDING TIMES:
Holding times were met for this Test

Holding times were met for this Test

SAMPLE PREPARATION ISSUES AND OBSERVATIONS:
There were no unusual observations.

INSTRUMENT PERFORMANCE CHECKS:
Instrument checks were within method criteria.

INITIAL CALIBRATIONS:
Initial calibrations were within method criteria.

OPENING CONTINUING CALIBRATIONS:
Opening continuing calibrations were within method criteria.

CLOSING CONTINUING CALIBRATIONS:
Closing continuing calibrations were within method criteria or not applicable.

SURROGATE RECOVERIES:
There were no surrogate outliers.

METHOD BLANK OUTLIERS:
There are no method blank outliers.

LCS OUTLIERS:
There are no LCS outliers.

MS/MSD and DUP OUTLIERS:
There are no MS/MSD or DUP outliers.

Detailed Analytical Report

Analytica Environmental Laboratories, Inc.

Workorder (SDG): B0702099

Project: RFTA-GWS

Client: Waste Engineering, Inc.

Client Project Number: none

Report Section: Client Sample Report

Client Sample Name: Diesel Tank

Matrix: Soil

Collection Date: 2/8/2007 9:30:00AM

The following test was conducted by: Analytica - Thornton

Lab Sample Number: B0702099-01A
Prep Date: 2/12/2007
Analytical Method ID: SVOC by GC/FID via method 8015B - DRO
Prep Method ID: 3550B
Prep Batch Number: T070213002
Report Basis: Dry Weight Basis
Sample prep wt./vol: 30.01 g

Analysis Date: 2/13/2007 9:27:18PM
Instrument: GC_E
File Name: 07021311.D
Dilution Factor: 100
Percent Moisture 5.50
Analyst Initials: lw
Prep Extract Vol: 1.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Diesel Range Organics	n/a	6,600		mg/Kg	530	150	2

Surrogate	CASNo	Result	Flags	Units	PQL	MDL	Spike	% Recov	LCL	UCL	run #:
o-Terphenyl	84-15-1	ND		mg/Kg	35	28	1.8	108	50	150	2 DIL

The following test was conducted by: Analytica - Thornton

Lab Sample Number: B0702099-01B
Prep Date: 2/14/2007
Analytical Method ID: Aromatic VOCs by GC/PID via method 8021B - BTEX
Prep Method ID: P&TSoil
Prep Batch Number: T070215005
Report Basis: Dry Weight Basis
Sample prep wt./vol: 5.00 g

Analysis Date: 2/14/2007 3:57:00PM
Instrument: GC_B
File Name: 07021412.D
Dilution Factor: 100
Percent Moisture 5.50
Analyst Initials:
Prep Extract Vol: 5.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Benzene	71-43-2	ND		ug/Kg	53	14	1
Ethylbenzene	100-41-4	4,400		ug/Kg	110	24	
Toluene	108-88-3	1,400		ug/Kg	110	21	
Xylenes, Total	1330-20-7	24,000		ug/Kg	210	72	

Surrogate	CASNo	Result	Flags	Units	PQL	MDL	Spike	% Recov	LCL	UCL	run #:
p-Bromofluorobenzene	460-00-4	1,300		ug/Kg	53	35	2,900	47.0	77	120	1 LOW

Detailed Analytical Report

Analytica Environmental Laboratories, Inc.

Workorder (SDG): B0702099

Project: RFTA-GWS

Client: Waste Engineering, Inc.

Client Project Number: none

Report Section: Client Sample Report

Client Sample Name: Gasoline Tank

Matrix: Soil

Collection Date: 2/8/2007 9:30:00AM

The following test was conducted by: Analytica - Thornton

Lab Sample Number: B0702099-02A
Prep Date: 2/14/2007
Analytical Method ID: Aromatic VOCs by GC/PID via method 8021B - BTEX
Prep Method ID: P&TSoil
Prep Batch Number: T070215005
Report Basis: Dry Weight Basis
Sample prep wt./vol: 5.00 g

Analysis Date: 2/14/2007 5:21:00PM
Instrument: GC_B
File Name: 07021415.D
Dilution Factor: 100
Percent Moisture 5.14
Analyst Initials:
Prep Extract Vol: 5.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Benzene	71-43-2	ND		ug/Kg	53	14	2
Ethylbenzene	100-41-4	3,400		ug/Kg	110	24	
Toluene	108-88-3	1,100		ug/Kg	110	21	
Xylenes, Total	1330-20-7	20,000		ug/Kg	210	72	

Surrogate	CASNo	Result	Flags	Units	PQL	MDL	Spike	% Recov	LCL	UCL	run #:
p-Bromofluorobenzene	460-00-4	1,400		ug/Kg	53	35	2,800	49.7	77	120	2 LOW

The following test was conducted by: Analytica - Thornton

Lab Sample Number: B0702099-02A
Prep Date: 2/14/2007
Analytical Method ID: VOC by GC/FID via method 8015B - GRO
Prep Method ID: P&TSoil
Prep Batch Number: T070215006
Report Basis: Dry Weight Basis
Sample prep wt./vol: 5.00 g

Analysis Date: 2/14/2007 4:53:00PM
Instrument: GC_B
File Name: 07021414.D
Dilution Factor: 100
Percent Moisture 5.14
Analyst Initials:
Prep Extract Vol: 5.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Gasoline Range Organics	n/a	580,000		ug/Kg	11,000	1,400	1

Surrogate	CASNo	Result	Flags	Units	PQL	MDL	Spike	% Recov	LCL	UCL	run #:
p-Bromofluorobenzene	460-00-4	960		ug/Kg	160	53	1,600	60.8	50	150	1

Detailed Analytical Report

Analytica Environmental Laboratories, Inc.

Workorder (SDG): B0702099

Project: RFTA-GWS

Client: Waste Engineering, Inc.

Client Project Number: none

Report Section: Method Blank Report

Client Sample Name: MB

Matrix: Solid Collection Date: 2/12/2007 2:30:00PM

The following test was conducted by: Analytica - Thornton

Lab Sample Number: T070213002-MB
Prep Date: 2/12/2007
Analytical Method ID: SVOC by GC/FID via method 8015B - DRO
Prep Method ID: 3550B
Prep Batch Number: T070213002
Report Basis: As Received
Sample prep wt./vol: 30.00 g

Analysis Date: 2/13/2007 4:34:19PM
Instrument: GC_E
File Name: 07021305.D
Dilution Factor: 1
Percent Moisture NA
Analyst Initials: lwm
Prep Extract Vol: 1.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Diesel Range Organics	n/a	ND		mg/Kg	5.0	1.4	1

Surrogate	CASNo	Result	Flags	Units	PQL	MDL	Spike	% Recov	LCL	UCL	run #:
o-Terphenyl	84-15-1	2.0		mg/Kg	0.33	0.26	1.7	119	50	150	1

The following test was conducted by: Analytica - Thornton

Lab Sample Number: T070215005-MB
Prep Date: 2/14/2007
Analytical Method ID: Aromatic VOCs by GC/PID via method 8021B - BTEX
Prep Method ID: P&TSoil
Prep Batch Number: T070215005
Report Basis: As Received
Sample prep wt./vol: 5.00 g

Analysis Date: 2/14/2007 3:30:00PM
Instrument: GC_B
File Name: 07021411.D
Dilution Factor: 1
Percent Moisture NA
Analyst Initials:
Prep Extract Vol: 5.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Benzene	71-43-2	ND		ug/Kg	0.50	0.13	1
Ethylbenzene	100-41-4	ND		ug/Kg	1.0	0.23	
Toluene	108-88-3	ND		ug/Kg	1.0	0.20	
Xylenes, Total	1330-20-7	ND		ug/Kg	2.0	0.68	

Surrogate	CASNo	Result	Flags	Units	PQL	MDL	Spike	% Recov	LCL	UCL	run #:
p-Bromofluorobenzene	460-00-4	26		ug/Kg	0.50	0.33	27	94.6	77	120	1

The following test was conducted by: Analytica - Thornton

Lab Sample Number: T070215006-MB
Prep Date: 2/14/2007
Analytical Method ID: VOC by GC/FID via method 8015B - GRO
Prep Method ID: P&TSoil
Prep Batch Number: T070215006
Report Basis: As Received
Sample prep wt./vol: 5.00 g

Analysis Date: 2/14/2007 3:30:00PM
Instrument: GC_B
File Name: 07021411.D
Dilution Factor: 1
Percent Moisture NA
Analyst Initials:
Prep Extract Vol: 5.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Gasoline Range Organics	n/a	ND		ug/Kg	100	13	1

Surrogate	CASNo	Result	Flags	Units	PQL	MDL	Spike	% Recov	LCL	UCL	run #:
p-Bromofluorobenzene	460-00-4	13		ug/Kg	1.5	0.50	15	87.9	50	150	1

Workorder (SDG): B0702099

Project: **RFTA-GWS**

Client: **Waste Engineering, Inc.**

Client Project Number: **none**

Tests Run at: Analytica Environmental Laboratories - Thornton, Colorado

Workorder (SDG): B0702099

Project: RFTA-GWS

Project Number:

Prep Batch: **T070213002**

QUALITY CONTROL REPORT

LCS/LCSD REPORT

Analysis: SVOC by GC/FID via method 8015B - DRO

MB: T070213002-MB

Prep Date: 2/12/2007

MB Anal. Date: 2/13/2007 4:34:19PM

Units: mg/Kg

LCS Anal. Date: 2/13/2007 5:23:36PM LCSD Anal. Date: 2/13/2007 6:12:06PM

Matrix: Solid

Analyte Name	SampResult	LCSRes.	SDRes.	SPLev	SPDLev	Recov.	SD Recov	RPD	Recov Lim	RPDLim	Flag
Diesel Range Organics	ND	70.1	72.9	66.7	66.7	105.1	109.3	3.9	75 - 125	20	

MS/MSD REPORT

Analysis: SVOC by GC/FID via method 8015B - DRO

Parent: B0702099-01A

Prep Date: 2/12/2007

Samp. Anal. Date: 2/13/2007 9:27:18PM

Units: mg/Kg

MS Anal. Date: 2/13/2007 11:53:16PM MSD Anal. Date: 2/14/2007 2:19:20AM

Matrix: Soil

Analyte Name	SampResult	MSRes.	MSDRes	SPLev	SPDLev	Recov.	MSD Rec.	RPD	Recov Lim	RPDLim	Flag
Diesel Range Organics	6,600	6,040	6,220	70.4	70.4	-795.1	-539.6	2.9	50 - 129	20	*NOTE 2* *NOTE 2*

FOOTNOTES TO QC REPORT

Note 1: Results are shown to three significant figures to avoid rounding errors in calculations.

Note 2: If the sample concentration is greater than 4 times the spike level, a recovery is not meaningful, and the result should be used as a replicate. In such cases the spike is not as high as expected random measurement variability of the sample result itself.

Note 3: For sample duplicates, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample and duplicate results are not five times the PQL or greater, then the RPD is not expected to fall within the window shown and the comparison should be made on the basis of the absolute difference. Analytica uses the criterion that the absolute difference should be less than the PQL for water or less than 2XPQL for other matrices.

Note 4: For serial dilutions, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample result is not 50 times the MDL or greater, then the fact that the RPD does not meet the 10% criterion has little signifcance. Otherwise it indicates that a matrix bias may exist at the analytical step.

Workorder (SDG): B0702099

Project: **RFTA-GWS**

Client: **Waste Engineering, Inc.**

Client Project Number: **none**

Tests Run at: Analytica Environmental Laboratories - Thornton, Colorado

Workorder (SDG): B0702099

Project: RFTA-GWS

Project Number:

QUALITY CONTROL REPORT

Prep Batch: **T070214007**

SAMPLE DUPLICATE REPORT

Analysis: ASTM D2216 - Pmoist

Base Sample: B0702099-01A
Prep Date: 2/12/2007

Samp. Anal. Date: 2/12/2007 3:00:00PM

DUP Anal. Date: 2/12/2007 3:00:00PM

Units: %

Matrix: Soil

Analyte Name	SampResult	DUPRes.	RPD	RPDLim	Flag
Moisture	5.50	6.21	12.1	20	

Prep Batch: **T070215001**

SAMPLE DUPLICATE REPORT

Analysis: ASTM D2216 - Pmoist

Base Sample: B0702099-02B
Prep Date: 2/14/2007

Samp. Anal. Date: 2/14/2007 4:05:00PM

DUP Anal. Date: 2/14/2007 4:05:00PM

Units: %

Matrix: Soil

Analyte Name	SampResult	DUPRes.	RPD	RPDLim	Flag
Moisture	5.14	5.80	12.1	20	

FOOTNOTES TO QC REPORT

Note 1: Results are shown to three significant figures to avoid rounding errors in calculations.

Note 2: If the sample concentration is greater than 4 times the spike level, a recovery is not meaningful, and the result should be used as a replicate. In such cases the spike is not as high as expected random measurement variability of the sample result itself.

Note 3: For sample duplicates, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample and duplicate results are not five times the PQL or greater, then the RPD is not expected to fall within the window shown and the comparison should be made on the basis of the absolute difference. Analytica uses the criterion that the absolute difference should be less than the PQL for water or less than 2XPQL for other matrices.

Note 4: For serial dilutions, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample result is not 50 times the MDL or greater, then the fact that the RPD does not meet the 10% criterion has little signifcance. Otherwise it indicates that a matrix bias may exist at the analytical step.

Workorder (SDG): B0702099

Project: **RFTA-GWS**

Client: **Waste Engineering, Inc.**

Client Project Number: **none**

Tests Run at: Analytica Environmental Laboratories - Thornton, Colorado
Workorder (SDG): B0702099
Project: RFTA-GWS
Project Number:

QUALITY CONTROL REPORT

Prep Batch: **T070215006**

LCS/LCSD REPORT

Analysis: VOC by GC/FID via method 8015B - GRO
MB: T070215006-MB
Prep Date: 2/14/2007
MB Anal. Date: 2/14/2007 3:30:00PM
Units: ug/Kg
LCS Anal. Date: 2/14/2007 2:34:00PM LCSD Anal. Date: 2/14/2007 3:02:00PM
Matrix: Solid

Analyte Name	SampResult	LCSRes.	SDRes.	SPLev	SPDLev	Recov.	SD Recov	RPD	Recov Lim	RPDLim	Flag
Gasoline Range Organics	ND	443	451	500	500	88.6	90.2	1.8	60 - 118	20	

Prep Batch: **T070215005**

LCS/LCSD REPORT

Analysis: Aromatic VOCs by GC/PID via method 8021B - BTEX
MB: T070215005-MB
Prep Date: 2/14/2007
MB Anal. Date: 2/14/2007 3:30:00PM
Units: ug/Kg
LCS Anal. Date: 2/14/2007 1:38:00PM LCSD Anal. Date: 2/14/2007 2:06:00PM
Matrix: Solid

Analyte Name	SampResult	LCSRes.	SDRes.	SPLev	SPDLev	Recov.	SD Recov	RPD	Recov Lim	RPDLim	Flag
Benzene	ND	10.6	10.6	10.0	10.0	106.0	106.0	0.0	70 - 130	20	
Toluene	ND	10.4	10.4	10.0	10.0	104.0	104.0	0.0	70 - 130	20	
Ethylbenzene	ND	10.3	10.3	10.0	10.0	103.0	103.0	0.0	70 - 130	20	
Xylenes, Total	ND	31.2	31.3	30.0	30.0	104.0	104.3	0.3	77 - 112	20	

FOOTNOTES TO QC REPORT

Note 1: Results are shown to three significant figures to avoid rounding errors in calculations.

Note 2: If the sample concentration is greater than 4 times the spike level, a recovery is not meaningful, and the result should be used as a replicate. In such cases the spike is not as high as expected random measurement variability of the sample result itself.

Note 3: For sample duplicates, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample and duplicate results are not five times the PQL or greater, then the RPD is not expected to fall within the window shown and the comparison should be made on the basis of the absolute difference. Analytica uses the criterion that the absolute difference should be less than the PQL for water or less than 2XPQL for other matrices.

Note 4: For serial dilutions, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample result is not 50 times the MDL or greater, then the fact that the RPD does not meet the 10% criterion has little significance. Otherwise it indicates that a matrix bias may exist at the analytical step.

Workorder (SDG): B0702099

Project: **RFTA-GWS**

Client: **Waste Engineering, Inc.**

Client Project Number: **none**

SURROGATE RECOVERY SUMMARY REPORT

Detailed Analytical Report

Analytica Environmental Laboratories, Inc.

Workorder (SDG): B0702099

Project: **RFTA-GWS**

Client: **Waste Engineering, Inc.**

Client Project Number: **none**

Test Method: **SVOC by GC/FID via method 8015B - DRO**

Lab Sample #:	B0702099-01A			Dilution:	1	
Analysis Date:	2/13/2007 7:49:48PM			Client Sample:	**Diesel Tank**	
Batch Number:	T070213002			Data File:	07021309.D	
AnalyteName	**SSRecov**	**LCL**	**UCL**	**SSFlag**		**Result Status**
o-Terphenyl	218	50	150	HIGH		Rrun

Lab Sample #:	B0702099-01A			Dilution:	100	
Analysis Date:	2/13/2007 9:27:18PM			Client Sample:	**Diesel Tank**	
Batch Number:	T070213002			Data File:	07021311.D	
AnalyteName	**SSRecov**	**LCL**	**UCL**	**SSFlag**		**Result Status**
o-Terphenyl	108	50	150		DILUTED OUT	Complete

Lab Sample #:	T070213002-MB			Dilution:	1	
Analysis Date:	2/13/2007 4:34:19PM			Client Sample:	**MB**	
Batch Number:	T070213002			Data File:	07021305.D	
AnalyteName	**SSRecov**	**LCL**	**UCL**	**SSFlag**		**Result Status**
o-Terphenyl	119	60	120			Complete

Lab Sample #:	T070213002-LCS			Dilution:	1	
Analysis Date:	2/13/2007 5:23:36PM			Client Sample:	**LCS**	
Batch Number:	T070213002			Data File:	07021306.D	
AnalyteName	**SSRecov**	**LCL**	**UCL**	**SSFlag**		**Result Status**
o-Terphenyl	97	60	120			Complete

Lab Sample #:	T070213002-LCSD			Dilution:	1	
Analysis Date:	2/13/2007 6:12:06PM			Client Sample:	**LCSD**	
Batch Number:	T070213002			Data File:	07021307.D	
AnalyteName	**SSRecov**	**LCL**	**UCL**	**SSFlag**		**Result Status**
o-Terphenyl	92	60	120			Complete

Lab Sample #:	B0702099-01A-MS			Dilution:	1	
Analysis Date:	2/13/2007 10:15:51PM			Client Sample:	**MS**	
Batch Number:	T070213002			Data File:	07021312.D	
AnalyteName	**SSRecov**	**LCL**	**UCL**	**SSFlag**		**Result Status**
o-Terphenyl	221	50	150	HIGH		Rrun

Lab Sample #:	B0702099-01A-MS			Dilution:	100	
Analysis Date:	2/13/2007 11:53:16PM			Client Sample:	**MS**	
Batch Number:	T070213002			Data File:	07021314.D	
AnalyteName	**SSRecov**	**LCL**	**UCL**	**SSFlag**		**Result Status**
o-Terphenyl	94	50	150		DILUTED OUT	Complete

Lab Sample #:	B0702099-01A-MSD			Dilution:	1	
Analysis Date:	2/14/2007 12:42:05AM			Client Sample:	**MSD**	
Batch Number:	T070213002			Data File:	07021315.D	
AnalyteName	**SSRecov**	**LCL**	**UCL**	**SSFlag**		**Result Status**
o-Terphenyl	239	50	150	HIGH		Rrun

Lab Sample #:	B0702099-01A-MSD			Dilution:	100	
Analysis Date:	2/14/2007 2:19:20AM			Client Sample:	**MSD**	
Batch Number:	T070213002			Data File:	07021317.D	
AnalyteName	**SSRecov**	**LCL**	**UCL**	**SSFlag**		**Result Status**

Workorder (SDG): B0702099

Project: **RFTA-GWS**

Client: **Waste Engineering, Inc.**

Client Project Number: **none**

Test Method: **SVOC by GC/FID via method 8015B - DRO**

Lab Sample #: B0702099-01A-MSD | Dilution: 100
Analysis Date: 2/14/2007 2:19:20AM | Client Sample: **MSD**
Batch Number: T070213002 | Data File: 07021317.D

AnalyteName	SSRecov	LCL	UCL	SSFlag		Result Status
o-Terphenyl	100	50	150		DILUTED OUT	Complete

Test Method: **Aromatic VOCs by GC/PID via method 8021B - BTEX**

Lab Sample #: B0702099-01B | Dilution: 100
Analysis Date: 2/14/2007 3:57:00PM | Client Sample: **Diesel Tank**
Batch Number: T070215005 | Data File: 07021412.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
p-Bromofluorobenzene	47	77	120	LOW	Complete

Lab Sample #: B0702099-01B | Dilution: 100
Analysis Date: 2/14/2007 4:25:00PM | Client Sample: **Diesel Tank**
Batch Number: T070215005 | Data File: 07021413.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
p-Bromofluorobenzene	48	77	120	LOW	Rrun

Lab Sample #: B0702099-02A | Dilution: 100
Analysis Date: 2/14/2007 4:53:00PM | Client Sample: **Gasoline Tank**
Batch Number: T070215005 | Data File: 07021414.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
p-Bromofluorobenzene	44	77	120	LOW	Rrun

Lab Sample #: B0702099-02A | Dilution: 100
Analysis Date: 2/14/2007 5:21:00PM | Client Sample: **Gasoline Tank**
Batch Number: T070215005 | Data File: 07021415.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
p-Bromofluorobenzene	50	77	120	LOW	Complete

Lab Sample #: T070215005-MB | Dilution: 1
Analysis Date: 2/14/2007 3:30:00PM | Client Sample: **MB**
Batch Number: T070215005 | Data File: 07021411.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
p-Bromofluorobenzene	95	77	120		Complete

Lab Sample #: T070215005-LCS | Dilution: 1
Analysis Date: 2/14/2007 1:38:00PM | Client Sample: **LCS**
Batch Number: T070215005 | Data File: 07021407.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
p-Bromofluorobenzene	99	77	120		Complete

Lab Sample #: T070215005-LCSD | Dilution: 1
Analysis Date: 2/14/2007 2:06:00PM | Client Sample: **LCSD**
Batch Number: T070215005 | Data File: 07021408.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
p-Bromofluorobenzene	100	77	120		Complete

Detailed Analytical Report

Analytica Environmental Laboratories, Inc.

Workorder (SDG): B0702099

Project: **RFTA-GWS**

Client: **Waste Engineering, Inc.**

Client Project Number: **none**

Test Method: **VOC by GC/FID via method 8015B - GRO**

Lab Sample #:	B0702099-02A	Dilution:	100
Analysis Date:	2/14/2007 4:53:00PM	Client Sample:	Gasoline Tank
Batch Number:	T070215006	Data File:	07021414.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
p-Bromofluorobenzene	61	50	150		Complete

Lab Sample #:	B0702099-02A	Dilution:	100
Analysis Date:	2/14/2007 5:21:00PM	Client Sample:	Gasoline Tank
Batch Number:	T070215006	Data File:	07021415.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
p-Bromofluorobenzene	68	50	150		Rrun

Lab Sample #:	T070215006-MB	Dilution:	1
Analysis Date:	2/14/2007 3:30:00PM	Client Sample:	MB
Batch Number:	T070215006	Data File:	07021411.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
p-Bromofluorobenzene	88	63	130		Complete

Lab Sample #:	T070215006-LCS	Dilution:	1
Analysis Date:	2/14/2007 2:34:00PM	Client Sample:	LCS
Batch Number:	T070215006	Data File:	07021409.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
p-Bromofluorobenzene	90	63	130		Complete

Lab Sample #:	T070215006-LCSD	Dilution:	1
Analysis Date:	2/14/2007 3:02:00PM	Client Sample:	LCSD
Batch Number:	T070215006	Data File:	07021410.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
p-Bromofluorobenzene	92	63	130		Complete

Workorder (SDG): B0702099

Project: **RFTA-GWS**

Client: **Waste Engineering, Inc.**

Client Project Number: **none**

QC BATCH ASSOCIATIONS - BY METHOD BLANK

Lab Project ID: **68,650** **Lab Project Number:** **B0702099**

Prep Date: 2/12/2007

Lab Method Blank Id: T070213002-MB
Prep Batch ID: T070213002
Method: SVOC by GC/FID via method 8015B - DRO

This Method blank and sample preparation batch are associated with the following samples, spikes, and duplicates:

SampleNum	ClientSampleName	DataFile	AnalysisDate
T070213002-LCS	LCS	07021306.D	2/13/2007 5:23:36PM
T070213002-LCSD	LCSD	07021307.D	2/13/2007 6:12:06PM
B0702099-01A	Diesel Tank	07021311.D	2/13/2007 9:27:18PM
B0702099-01A-MS	MS	07021314.D	2/13/2007 11:53:16PM
B0702099-01A-MSD	MSD	07021317.D	2/14/2007 2:19:20AM

Prep Date: 2/12/2007

Lab Method Blank Id: T070214007-MB
Prep Batch ID: T070214007
Method: ASTM D2216 - Pmoist

This Method blank and sample preparation batch are associated with the following samples, spikes, and duplicates:

SampleNum	ClientSampleName	DataFile	AnalysisDate
B0702099-01A	Diesel Tank		2/12/2007 3:00:00PM
B0702099-01A-DUP	DUP		2/12/2007 3:00:00PM

Prep Date: 2/14/2007

Lab Method Blank Id: T070215001-MB
Prep Batch ID: T070215001
Method: ASTM D2216 - Pmoist

This Method blank and sample preparation batch are associated with the following samples, spikes, and duplicates:

SampleNum	ClientSampleName	DataFile	AnalysisDate
B0702099-02B	Gasoline Tank		2/14/2007 4:05:00PM
B0702099-02B-DUP	DUP		2/14/2007 4:05:00PM

Prep Date: 2/14/2007

Lab Method Blank Id: T070215005-MB
Prep Batch ID: T070215005
Method: Aromatic VOCs by GC/PID via method 8021B - BTEX

This Method blank and sample preparation batch are associated with the following samples, spikes, and duplicates:

SampleNum	ClientSampleName	DataFile	AnalysisDate
T070215005-LCS	LCS	07021407.D	2/14/2007 1:38:00PM
T070215005-LCSD	LCSD	07021408.D	2/14/2007 2:06:00PM
B0702099-01B	Diesel Tank	07021412.D	2/14/2007 3:57:00PM
B0702099-02A	Gasoline Tank	07021415.D	2/14/2007 5:21:00PM

Workorder (SDG): B0702099

Project: **RFTA-GWS**

Client: **Waste Engineering, Inc.**

Client Project Number: **none**

QC BATCH ASSOCIATIONS - BY METHOD BLANK

Lab Project ID: **68,650** **Lab Project Number:** **B0702099**

Prep Date: 2/14/2007

Lab Method Blank Id: T070215006-MB

Prep Batch ID: T070215006

Method: VOC by GC/FID via method 8015B - GRO

This Method blank and sample preparation batch are associated with the following samples, spikes, and duplicates:

SampleNum	ClientSampleName	DataFile	AnalysisDate
T070215006-LCS	LCS	07021409.D	2/14/2007 2:34:00PM
T070215006-LCSD	LCSD	07021410.D	2/14/2007 3:02:00PM
B0702099-02A	Gasoline Tank	07021414.D	2/14/2007 4:53:00PM

Workorder (SDG): B0702099

Project: **RFTA-GWS**

Client: **Waste Engineering, Inc.**

Client Project Number: **none**

DATA FLAGS AND DEFINITIONS

The PQL is the Method Quantitation Limit as defined by USACE.
Reporting Limit: Limit below which results are shown as "ND". This may be the PQL, MDL, or a value between. See the report conventions below.

Result Field:

ND = Not Detected at or above the Reporting Limit
NA = Analyte not applicable (see Case Narrative for discussion)

Qualifier Fields:

LOW = Recovery is below Lower Control Limit
HIGH = Recovery , RPD, or other parameter is above Upper Control Limit
E = Reported concentration is above the instrument calibration upper range

Organic Analysis Flags:

B = Analyte was detected in the laboratory method blank
J = Analyte was detected above MDL or Reporting Limit but below the Quant Limit (PQL)

Inorganic Analysis Flags:

J = Analyte was detected above the Reporting Limit but below the Quant Limit (PQL)
W = Post digestion spike did not meet criteria
S = Reported value determined by the Method of Standard Additions (MSA)

Several ways of defining the limit of detection and quantitation are prevalent in the laboratory industry and may appear in Analytica reports. These include the following:

MRL = "minimum reporting level", from the EPA Safe Drinking Water program (SDW)
PQL = "practical quantitation limit", from SW-846
EQL = "estimated quantitation limit", from SW-846
LOQ = "limit of quantitation", from a number of authoritative sources

In Analytica's work, all of these terms have the same meaning, equivalent to the EPA definition of the MRL. This reporting level is supported by a satisfactory calibration data point which is at that level or lower, and also is supported by a method detection limit (MDL) determined by the procedure in 40CFR. The MDL is lower than the MRL and represents an estimate of the level where positive detections have a 99% probability of being real, but where quantitation accuracy is unknown.

The MRL as defined by Analytica is the lowest demonstrated point of known quantitation accuracy.
The MRL should not be confused with the MCL, which is the EPA-defined "maximum contaminant level" allowed for certain regulated targets under specific regulations, such as the National Primary Drinking Water Regulations. Normally, the MRL is set at a level which is much lower than the MCL in order to ensure that levels are well below those limits. Not all target analytes have MCL levels established.

Other Flags may be applied. See Case Narrative for Description

Workorder (SDG): B0702099

Project: **RFTA-GWS**

Client: **Waste Engineering, Inc.**

Client Project Number: **none**

REPORTING CONVENTIONS FOR THIS REPORT

B0702099

TestPkgName	Basis	# Sig Figs	Reporting Limit
8015/5030B (Solid) - GRO	Dry Weight Basis	2	Report to PQL
8015B/3550B (Solid) - DRO	Dry Weight Basis	2	Report to PQL
8021/5030B (Solid) - BTEX	Dry Weight Basis	2	Report to PQL
ASTMD2216/ASTMD2216 (Solid) - Pmoist	As Received	3	Report to MDL, J qual below PQL

Analytica Chain of Custody Form

5438 Shaune Drive, Juneau, AK 99801, (907) 780-6668, (907) 780-6670 fax
5761 Silverado Way, # N, Anchorage, AK 99518, (907) 258-2155, (907) 258-6834 fax
3330 Industrial Ave, Fairbanks, AK 99701, (907) 456-3116, (907) 456-3125 fax
12189 Pennsylvania St, Thornton, CO 80241, (303) 469-8868, (303) 469-5254 fax

Chain of Custody No: 54213

Client Name & Address: WEI

Public Water System (PWS) ID#:

Project Name: BFTA - GWS

Section To be Completed by Analytica

Quote ID:

LGN: BO702097

Account #:

Cash | Credit Card

Report to: Heydenberk

Phone No: (970) 945-7755

Fax No: 945-9210

E-mail: cheydenberk@Wright+Water.com

Turnaround Time for Results (TAT)

~~Standard~~ Expedited (< 10 days, prior authorization required)

(please specify due date below; add'l charges may apply)

Requested Due Date for Results:

Invoice to Name & Address:

Special Instructions/Comments: Please Call for Rush availability

P.O. or Contract No: 992-999.CO-BFTA

Kit Prep/Shipping Charge: $

Requested Analysis/Method

Client Sample Identification / Location	Date Sampled	Time Sampled	Matrix (S-DW-WW-Other)	No. of Containers	DRO Lot # / Pres.	BTEX Lot # / Pres.	GRO Lot # / Pres.	Lot # / Pres.	Lot # / Pres.	Lot # / Pres.	Lot # / Pres.	Field Preserved	Field Filtered	MS/MSD ?
Diesel Tank	2/8/07	9:30	S	2	X	X								
Gasoline Tank	2/8/07	9:30	S	2		X	X							

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	2-9-07	10:00	[signature]	2/10/07	1200
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Name of Sampler: (printed)	Heydenberk				

Section To Be Completed by Analytica

	THO	ANC	JNU	FBKS
Condition of Custody Seal?:	None			
Initialed By:				
Temp/Loc:	4.6			
Thermo ID#:				
Shipped Via:	Fedex			

Version 2.0

ANALYTICA

Cooler Receipt Form

Client: Waste Engineering, Inc. **Client Code:** 022120 **Order #:** B0702099
Project: RFTA-GWS

Cooler ID: 1

A. Preliminary Examination Phase: **Date cooler opened:** 2/10/2007
Cooler opened by: LQ **Signature:** LQ

1. Was airbill Attached?	Yes	**Airbill #:** 852537190230		**Carrier Name:**	FedEx
2. Custody Seals?	N/A	**How many?** 0	**Location:**	**Seal Name:**	
3. Seals intact?	Yes				
4. COC Attached?	Yes	**Properly Completed?**	Yes	**Signed by AEL employee?**	Yes
5. Project Identification from custody paper:		RFTA-GWS			
6. Preservative:	BlueGel	**Temperature:**	4.6		

Designated person initial here to acknowledge receipt: LQ **Date:** 2/10/07

COMMENTS:

B. Log-In Phase: **Samples Log-in Date:** 2/12/2007 **Log-in By:** LQ

1. Packing Type:	Bubblewrap		
2. Were samples in separate bags?	N/A		
3. Were containers intact?	Yes	**Labels agree with COC?**	Yes
4. Number of bottles received:	4	**Number of samples received:**	2
5. Correct containers used?	Yes	**Correct preservatives added?**	N/A
6. Sufficient sample volume?	Yes		
7. Bubbles in VOA samples?	N/A		
8. Was Project manager called and status discussed?	No		
9. Was anyone called?	No	**Who was called?** _____	**By whom?** _____ **Date:** _____

COMMENTS:

ANALYTICA
Environmental Laboratories

Analytica Environmental
Laboratories, Inc.
12189 Pennsylvania Street
Thornton, CO 80241
Phone: 303-469-8868
Fax: 303-469-5254

2/27/2007

Waste Engineering, Inc.
P.O. Box 219
Glenwood Springs, CO 81602
Attn: Craig Heydenberk

Work Order #: B0702146
Date: 2/27/2007
Work ID: RFTA-GWS
Date Received: 2/10/2007
Proj #: none

Sample Identification

Lab Sample Number	Client Description	Lab Sample Number	Client Description
B0702146-01	Diesel Tank		

Enclosed are the analytical results for the submitted sample(s). Please review the CASE NARRATIVE for a discussion of any data and/or quality control issues. Listings of data qualifiers, analytical codes, key dates, and QC relationships are provided at the end of the report.

Sincerely,

Joseph Egry
Project Manager

"The Science of Analysis, The Art of Service"

Case Narrative

Analytica Environmental Laboratories, Inc.

Work Order: B0702146

Samples were prepared and analyzed according to EPA or equivalent methods outlined in the following references:

Standard Method for Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixtures, ASTM D 2216-80, July 1980.

Test Methods for Evaluating Solid Waste, USEPA SW-846, Third Edition, Revision 4, December 1996.

REVIEW FOR COMPLIANCE WITH ANALYTICA QA PLAN
A summary of our review is shown below, organized by test:

SAMPLE RECEIPT:
One sample was received at a temperature of 4.6 deg C at Analytica-Thornton on 2/10/2007 12:00:00 PM. The sample was received in good condition and in order per chain of custody.

Test Method: ASTM D2216 - Pmoist - Solid

All method criteria was met for this test.

Test Method: SW8270C - Semivolatile Organics by GC/MS - PAH - Solid

HOLDING TIMES:
Holding times were met for this Test

SAMPLE PREPARATION ISSUES AND OBSERVATIONS:
There were no unusual observations.

INSTRUMENT PERFORMANCE CHECKS:
Instrument checks were within method criteria.

INITIAL CALIBRATIONS:
Initial calibrations were within method criteria.

OPENING CONTINUING CALIBRATIONS:
One of the targets show %D values greater than 20% in the opening CCV shown below. The CCC's and the SPCC's are in control. The average %D in the CCV is less than 15%. Thus this CCV meets criteria.

RunDate	Data File	Analyte	Recovery	LCL	UCL
2/23/2007 1:56:00 PM	07022303.D	Benzo(g,h,i)perylene	120.	80	120

CLOSING CONTINUING CALIBRATIONS:
There is a CCC out of limits in the closing CCV, as shown below. SW-846 does not require that closing CCVs meet criteria for internal standard analytical methods such as these. The calibration standard information is included to indicate the degree of analytical system degradation caused by the analysis of the samples. There are no negative consequences for data usability.

RunDate	Data File	Analyte	Recovery	LCL	UCL
2/23/2007 11:58:00 PM	07022320.D	Benzo(g,h,i)perylene	136.	80	120
2/23/2007 11:58:00 PM	07022320.D	Dibenzo(a,h)anthracene	136	80	120
2/23/2007 11:58:00 PM	07022320.D	Fluoranthene	-C 78.1	80	120

2/23/2007 11:58:00 PM	07022320.D	Indeno(1,2,3-cd)pyrene	133.	80	120

INTERNAL STANDARD AREAS:
There were no Internal Standard outliers.

SURROGATE RECOVERIES:
There were no surrogate outliers.

METHOD BLANK OUTLIERS:
There are no method blank outliers.

LCS OUTLIERS:
The LCS and LCSD shown below have one of the targets outside of control windows. These are high recoveries and Acenaphthylene is not detected in associated samples.

Type	BatchNumber	Analyte	Recovery	LCL	UCL	Status
LCS	T070222002	Acenaphthylene	160.	48	133	Complete
LCSD	T070222002	Acenaphthylene	168.	48	133	Complete

MS/MSD and DUP OUTLIERS:
The matrix spike and matrix spike duplicate recoveries shown below indicates a laboratory bias when considered with the LCS/LCSD recoveries shown above. In this case, the recoveries are elevated, and target is not detected in associated samples. Since the bias is high and target is not observed, the results are considered to be fully usable.

Type	Client Sample	LabSample	Analyte	Recovery	LCL	UCL	Parent	Spike
MS	Diesel Tank	B0702146-01A	Acenaphthylene	171	48	133	0.00	1760
MSD	Diesel Tank	B0702146-01A	Acenaphthylene	178	48	133	0.00	1760

Detailed Analytical Report

Analytica Environmental Laboratories, Inc.

Workorder (SDG): B0702146

Project: RFTA-GWS

Client: Waste Engineering, Inc.

Client Project Number: none

Report Section: Client Sample Report

Client Sample Name: Diesel Tank

Matrix: Soil

Collection Date: 2/8/2007 9:30:00AM

The following test was conducted by: Analytica - Thornton

Lab Sample Number: B0702146-01A
Prep Date: 2/22/2007
Analytical Method ID: SW8270C - Semivolatile Organics by GC/MS - PAH
Prep Method ID: 3550B
Prep Batch Number: T070222002
Report Basis: Dry Weight Basis
Sample prep wt./vol: 30.00 g

Analysis Date: 2/23/2007 4:19:00PM
Instrument: MS2BNA
File Name: 07022307.D
Dilution Factor: 1
Percent Moisture 5.14
Analyst Initials: jk
Prep Extract Vol: 2.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Acenaphthene	83-32-9	ND		ug/Kg	180	27	1
Acenaphthylene	208-96-8	ND		ug/Kg	180	30	
Anthracene	120-12-7	ND		ug/Kg	180	28	
Benzo(a)anthracene	56-55-3	ND		ug/Kg	180	18	
Benzo(a)pyrene	50-32-8	ND		ug/Kg	180	20	
Benzo(b)fluoranthene	205-99-2	ND		ug/Kg	180	24	
Benzo(g,h,i)perylene	191-24-2	ND		ug/Kg	180	54	
Benzo(k)fluoranthene	207-08-9	ND		ug/Kg	180	41	
Chrysene	218-01-9	ND		ug/Kg	180	19	
Dibenzo(a,h)anthracene	53-70-3	ND		ug/Kg	180	54	
Fluoranthene	206-44-0	ND		ug/Kg	180	22	
Fluorene	86-73-7	ND		ug/Kg	180	26	
Indeno(1,2,3-cd)pyrene	193-39-5	ND		ug/Kg	180	49	
Naphthalene	91-20-3	1,900		ug/Kg	180	21	
Phenanthrene	85-01-8	70	J	ug/Kg	180	21	
Pyrene	129-00-0	ND		ug/Kg	180	29	

Surrogate	CASNo	Result	Flags	Units	PQL	MDL	Spike	% Recov	LCL	UCL	run #:
2-Fluorobiphenyl	321-60-8	3,000		ug/Kg	180	21	3,500	85.8	36	121	1
D14-Terphenyl	92-94-4D	3,200		ug/Kg	180	21	3,500	89.8	30	134	
D5-Nitrobenzene	98-95-3D	3,000		ug/Kg	180	27	3,500	85.7	30	122	

Detailed Analytical Report

Analytica Environmental Laboratories, Inc.

Workorder (SDG): B0702146

Project: RFTA-GWS

Client: Waste Engineering, Inc.

Client Project Number: none

Report Section: Method Blank Report

Client Sample Name: MB

Matrix: Solid

Collection Date: 2/22/2007 9:07:00AM

The following test was conducted by: Analytica - Thornton

Lab Sample Number: T070222002-MB
Prep Date: 2/22/2007
Analytical Method ID: SW8270C - Semivolatile Organics by GC/MS - PAH
Prep Method ID: 3550B
Prep Batch Number: T070222002
Report Basis: As Received
Sample prep wt./vol: 30.00 g

Analysis Date: 2/23/2007 2:32:00PM
Instrument: MS2BNA
File Name: 07022304.D
Dilution Factor: 1
Percent Moisture NA
Analyst Initials: jk
Prep Extract Vol: 2.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Acenaphthene	83-32-9	ND		ug/Kg	170	26	1
Acenaphthylene	208-96-8	ND		ug/Kg	170	28	
Anthracene	120-12-7	ND		ug/Kg	170	26	
Benzo(a)anthracene	56-55-3	ND		ug/Kg	170	17	
Benzo(a)pyrene	50-32-8	ND		ug/Kg	170	19	
Benzo(b)fluoranthene	205-99-2	ND		ug/Kg	170	23	
Benzo(g,h,i)perylene	191-24-2	ND		ug/Kg	170	51	
Benzo(k)fluoranthene	207-08-9	ND		ug/Kg	170	39	
Chrysene	218-01-9	ND		ug/Kg	170	18	
Dibenzo(a,h)anthracene	53-70-3	ND		ug/Kg	170	52	
Fluoranthene	206-44-0	ND		ug/Kg	170	21	
Fluorene	86-73-7	ND		ug/Kg	170	25	
Indeno(1,2,3-cd)pyrene	193-39-5	ND		ug/Kg	170	47	
Naphthalene	91-20-3	ND		ug/Kg	170	20	
Phenanthrene	85-01-8	ND		ug/Kg	170	20	
Pyrene	129-00-0	ND		ug/Kg	170	28	

Surrogate	CASNo	Result	Flags	Units	PQL	MDL	Spike	% Recov	LCL	UCL	run #:
2-Fluorobiphenyl	321-60-8	**2,700**		ug/Kg	170	20	3,300	**82.0**	36	121	1
D14-Terphenyl	92-94-4D	**3,100**		ug/Kg	170	20	3,300	**94.4**	30	134	
D5-Nitrobenzene	98-95-3D	**2,700**		ug/Kg	170	25	3,300	**82.0**	30	122	

Workorder (SDG): B0702146
Project: **RFTA-GWS**
Client: **Waste Engineering, Inc.**
Client Project Number: **none**

Tests Run at: Analytica Environmental Laboratories - Thornton, Colorado
Workorder (SDG): B0702146
Project: RFTA-GWS
Project Number:
Prep Batch: **T070222002**

QUALITY CONTROL REPORT

LCS/LCSD REPORT

Analysis: SW8270C - Semivolatile Organics by GC/MS - PAH
MB: T070222002-MB
Prep Date: 2/22/2007
MB Anal. Date: 2/23/2007 2:32:00PM
Units: ug/Kg
LCS Anal. Date: 2/23/2007 3:07:00PM LCSD Anal. Date: 2/23/2007 3:43:00PM
Matrix: Solid

Analyte Name	SampResult	LCSRes.	SDRes.	SPLev	SPDLev	Recov.	SD Recov	RPD	Recov Lim	RPDLim	Flag
Naphthalene	ND	1,360	1,450	1,670	1,670	81.6	87.0	6.4	45 - 136	40	
Acenaphthylene	ND	2,670	2,810	1,670	1,670	160.2	168.6	5.1	48 - 133	40	high,highdup
Acenaphthene	ND	1,420	1,510	1,670	1,670	85.2	90.6	6.1	43 - 122	40	
Fluorene	ND	1,430	1,530	1,670	1,670	85.8	91.8	6.8	58 - 130	40	
Phenanthrene	ND	1,570	1,640	1,670	1,670	94.2	98.4	4.4	54 - 140	40	
Anthracene	ND	1,590	1,660	1,670	1,670	95.4	99.6	4.3	59 - 131	40	
Fluoranthene	ND	1,690	1,870	1,670	1,670	101.4	112.2	10.1	51 - 140	40	
Pyrene	ND	1,710	1,600	1,670	1,670	102.6	96.0	6.6	40 - 127	40	
Benzo(a)anthracene	ND	1,690	1,760	1,670	1,670	101.4	105.6	4.1	58 - 118	40	
Chrysene	ND	1,630	1,710	1,670	1,670	97.8	102.6	4.8	55 - 139	40	
Benzo(b)fluoranthene	ND	1,190	1,320	1,670	1,670	71.4	79.2	10.4	41 - 133	40	
Benzo(k)fluoranthene	ND	1,360	1,480	1,670	1,670	81.6	88.8	8.5	49 - 138	40	
Benzo(a)pyrene	ND	1,340	1,420	1,670	1,670	80.4	85.2	5.8	40 - 138	40	
Indeno(1,2,3-cd)pyrene	ND	1,480	1,310	1,670	1,670	88.8	78.6	12.2	48 - 125	40	
Dibenzo(a,h)anthracene	ND	1,570	1,410	1,670	1,670	94.2	84.6	10.7	50 - 129	40	
Benzo(g,h,i)perylene	ND	1,490	1,250	1,670	1,670	89.4	75.0	17.5	50 - 125	40	

MS/MSD REPORT

Analysis: SW8270C - Semivolatile Organics by GC/MS - PAH
Parent: B0702146-01A
Prep Date: 2/22/2007
Samp. Anal. Date: 2/23/2007 4:19:00PM
Units: ug/Kg
MS Anal. Date: 2/23/2007 5:30:00PM MSD Anal. Date: 2/23/2007 6:41:00PM
Matrix: Soil

Analyte Name	SampResult	MSRes.	MSDRes	SPLev	SPDLev	Recov.	MSD Rec.	RPD	Recov Lim	RPDLim	Flag
Naphthalene	1,890	3,850	4,150	1,760	1,760	111.5	128.7	7.5	45 - 136	40	
Acenaphthylene	ND	3,010	3,120	1,760	1,760	171.3	177.6	3.6	48 - 133	40	*highMShighMSD*
Acenaphthene	ND	1,650	1,710	1,760	1,760	93.9	97.4	3.6	43 - 122	40	
Fluorene	ND	1,560	1,670	1,760	1,760	88.8	95.1	6.8	58 - 130	40	
Phenanthrene	70.3	1,600	1,670	1,760	1,760	87.0	91.1	4.3	54 - 140	40	

Workorder (SDG): B0702146
Project: **RFTA-GWS**
Client: **Waste Engineering, Inc.**
Client Project Number: **none**

Tests Run at: Analytica Environmental Laboratories - Thornton, Colorado
Workorder (SDG): B0702146
Project: RFTA-GWS
Project Number:

QUALITY CONTROL REPORT

Prep Batch: **T070222002**

MS/MSD REPORT

Analysis: SW8270C - Semivolatile Organics by GC/MS - PAH
Parent: B0702146-01A
Prep Date: 2/22/2007
Samp. Anal. Date: 2/23/2007 4:19:00PM
Units: ug/Kg
MS Anal. Date: 2/23/2007 5:30:00PM MSD Anal. Date: 2/23/2007 6:41:00PM Matrix: Soil

Analyte Name	SampResult	MSRes.	MSDRes	SPLev	SPDLev	Recov.	MSD Rec.	RPD	Recov Lim	RPDLim	Flag
Anthracene	ND	1,570	1,700	1,760	1,760	89.3	96.8	8.0	59 - 131	40	
Fluoranthene	ND	1,240	1,610	1,760	1,760	70.6	91.7	26.0	51 - 140	40	
Pyrene	ND	1,160	1,290	1,760	1,760	66.0	73.4	10.6	46 - 135	40	
Benzo(a)anthracene	ND	1,660	1,730	1,760	1,760	94.5	98.5	4.1	58 - 118	40	
Chrysene	ND	1,520	1,620	1,760	1,760	86.5	92.2	6.4	55 - 139	40	
Benzo(b)fluoranthene	ND	1,230	1,320	1,760	1,760	70.0	75.2	7.1	41 - 133	40	
Benzo(k)fluoranthene	ND	1,370	1,270	1,760	1,760	78.0	72.3	7.6	49 - 138	40	
Benzo(a)pyrene	ND	1,320	1,360	1,760	1,760	75.1	77.4	3.0	40 - 138	40	
Indeno(1,2,3-cd)pyrene	ND	1,450	1,650	1,760	1,760	82.5	93.9	12.9	48 - 125	40	
Dibenzo(a,h)anthracene	ND	1,610	1,820	1,760	1,760	91.6	103.6	12.2	50 - 129	40	
Benzo(g,h,i)perylene	ND	1,480	1,690	1,760	1,760	84.2	96.2	13.2	50 - 125	40	

FOOTNOTES TO QC REPORT

Note 1: Results are shown to three significant figures to avoid rounding errors in calculations.

Note 2: If the sample concentration is greater than 4 times the spike level, a recovery is not meaningful, and the result should be used as a replicate. In such cases the spike is not as high as expected random measurement variability of the sample result itself.

Note 3: For sample duplicates, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample and duplicate results are not five times the PQL or greater, then the RPD is not expected to fall within the window shown and the comparison should be made on the basis of the absolute difference. Analytica uses the criterion that the absolute difference should be less than the PQL for water or less than 2XPQL for other matrices.

Note 4: For serial dilutions, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample result is not 50 times the MDL or greater, then the fact that the RPD does not meet the 10% criterion has little signifcance. Otherwise it indicates that a matrix bias may exist at the analytical step.

Workorder (SDG): B0702146

Project: **RFTA-GWS**

Client: **Waste Engineering, Inc.**

Client Project Number: **none**

SURROGATE RECOVERY SUMMARY REPORT

Workorder (SDG): B0702146
Project: **RFTA-GWS**
Client: **Waste Engineering, Inc.**
Client Project Number: **none**

Test Method: **SW8270C - Semivolatile Organics by GC/MS - PAH**

Lab Sample #: B0702146-01A | Dilution: 1
Analysis Date: 2/23/2007 4:19:00PM | Client Sample: **Diesel Tank**
Batch Number: T070222002 | Data File: 07022307.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
2-Fluorobiphenyl	86	36	121		Complete
D14-Terphenyl	90	30	134		Complete
D5-Nitrobenzene	86	30	122		Complete

Lab Sample #: B0702146-01A | Dilution: 10
Analysis Date: 2/23/2007 4:54:00PM | Client Sample: **Diesel Tank**
Batch Number: T070222002 | Data File: 07022308.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
2-Fluorobiphenyl	79	36	121		Confirm
D14-Terphenyl	111	30	134		Confirm
D5-Nitrobenzene	104	30	122		Confirm

Lab Sample #: T070222002-MB | Dilution: 1
Analysis Date: 2/23/2007 2:32:00PM | Client Sample: **MB**
Batch Number: T070222002 | Data File: 07022304.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
2-Fluorobiphenyl	82	36	121		Complete
D14-Terphenyl	94	30	134		Complete
D5-Nitrobenzene	82	30	122		Complete

Lab Sample #: T070222002-LCS | Dilution: 1
Analysis Date: 2/23/2007 3:07:00PM | Client Sample: **LCS**
Batch Number: T070222002 | Data File: 07022305.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
2-Fluorobiphenyl	90	36	121		Complete
D14-Terphenyl	132	30	134		Complete
D5-Nitrobenzene	89	30	122		Complete

Lab Sample #: T070222002-LCSD | Dilution: 1
Analysis Date: 2/23/2007 3:43:00PM | Client Sample: **LCSD**
Batch Number: T070222002 | Data File: 07022306.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
2-Fluorobiphenyl	93	36	121		Complete
D14-Terphenyl	123	30	134		Complete
D5-Nitrobenzene	90	30	122		Complete

Lab Sample #: B0702146-01A-MS | Dilution: 1
Analysis Date: 2/23/2007 5:30:00PM | Client Sample: **MS**
Batch Number: T070222002 | Data File: 07022309.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
2-Fluorobiphenyl	88	36	121		Complete
D14-Terphenyl	90	30	134		Complete
D5-Nitrobenzene	80	30	122		Complete

Workorder (SDG): B0702146

Project: **RFTA-GWS**

Client: **Waste Engineering, Inc.**

Client Project Number: **none**

Test Method: **SW8270C - Semivolatile Organics by GC/MS - PAH**

Lab Sample #: B0702146-01A-MS Dilution: 10
Analysis Date: 2/23/2007 6:06:00PM Client Sample: MS
Batch Number: T070222002 Data File: 07022310.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
2-Fluorobiphenyl	79	36	121		Rrun
D14-Terphenyl	105	30	134		Rrun
D5-Nitrobenzene	107	30	122		Rrun

Lab Sample #: B0702146-01A-MSD Dilution: 1
Analysis Date: 2/23/2007 6:41:00PM Client Sample: MSD
Batch Number: T070222002 Data File: 07022311.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
2-Fluorobiphenyl	87	36	121		Complete
D14-Terphenyl	91	30	134		Complete
D5-Nitrobenzene	110	30	122		Complete

Lab Sample #: B0702146-01A-MSD Dilution: 10
Analysis Date: 2/23/2007 7:16:00PM Client Sample: MSD
Batch Number: T070222002 Data File: 07022312.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
2-Fluorobiphenyl	81	36	121		Rrun
D14-Terphenyl	100	30	134		Rrun
D5-Nitrobenzene	99	30	122		Rrun

Workorder (SDG): B0702146

Project: **RFTA-GWS**

Client: **Waste Engineering, Inc.**

Client Project Number: **none**

QC BATCH ASSOCIATIONS - BY METHOD BLANK

Lab Project ID: **68,889** **Lab Project Number:** **B0702146**

Prep Date: 2/22/2007

Lab Method Blank Id: T070222002-MB
Prep Batch ID: T070222002
Method: SW8270C - Semivolatile Organics by GC/MS - PAH

This Method blank and sample preparation batch are associated with the following samples, spikes, and duplicates:

SampleNum	ClientSampleName	DataFile	AnalysisDate
T070222002-LCS	LCS	07022305.D	2/23/2007 3:07:00PM
T070222002-LCSD	LCSD	07022306.D	2/23/2007 3:43:00PM
B0702146-01A	Diesel Tank	07022307.D	2/23/2007 4:19:00PM
B0702146-01A-MS	MS	07022309.D	2/23/2007 5:30:00PM
B0702146-01A-MSD	MSD	07022311.D	2/23/2007 6:41:00PM

Prep Date: 2/22/2007

Lab Method Blank Id: T070223001-MB
Prep Batch ID: T070223001
Method: ASTM D2216 - Pmoist

This Method blank and sample preparation batch are associated with the following samples, spikes, and duplicates:

SampleNum	ClientSampleName	DataFile	AnalysisDate
B0702112-04A	Batch QC		2/22/2007 3:30:00PM
B0702146-01A	Diesel Tank		2/22/2007 3:30:00PM
B0702112-04A-DUP	DUP		2/22/2007 3:30:00PM

Workorder (SDG): B0702146

Project: **RFTA-GWS**

Client: **Waste Engineering, Inc.**

Client Project Number: **none**

DATA FLAGS AND DEFINITIONS

The PQL is the Method Quantitation Limit as defined by USACE.
Reporting Limit: Limit below which results are shown as "ND". This may be the PQL, MDL, or a value between. See the report conventions below.

Result Field:

ND = Not Detected at or above the Reporting Limit
NA = Analyte not applicable (see Case Narrative for discussion)

Qualifier Fields:

LOW = Recovery is below Lower Control Limit
HIGH = Recovery , RPD, or other parameter is above Upper Control Limit
E = Reported concentration is above the instrument calibration upper range

Organic Analysis Flags:

B = Analyte was detected in the laboratory method blank
J = Analyte was detected above MDL or Reporting Limit but below the Quant Limit (PQL)

Inorganic Analysis Flags:

J = Analyte was detected above the Reporting Limit but below the Quant Limit (PQL)
W = Post digestion spike did not meet criteria
S = Reported value determined by the Method of Standard Additions (MSA)

Several ways of defining the limit of detection and quantitation are prevalent in the laboratory industry and may appear in Analytica reports. These include the following:

MRL = "minimum reporting level", from the EPA Safe Drinking Water program (SDW)
PQL = "practical quantitation limit", from SW-846
EQL = "estimated quantitation limit", from SW-846
LOQ = "limit of quantitation", from a number of authoritative sources

In Analytica's work, all of these terms have the same meaning, equivalent to the EPA definition of the MRL. This reporting level is supported by a satisfactory calibration data point which is at that level or lower, and also is supported by a method detection limit (MDL) determined by the procedure in 40CFR. The MDL is lower than the MRL and represents an estimate of the level where positive detections have a 99% probability of being real, but where quantitation accuracy is unknown.

The MRL as defined by Analytica is the lowest demonstrated point of known quantitation accuracy.
The MRL should not be confused with the MCL, which is the EPA-defined "maximum contaminant level" allowed for certain regulated targets under specific regulations, such as the National Primary Drinking Water Regulations. Normally, the MRL is set at a level which is much lower than the MCL in order to ensure that levels are well below those limits. Not all target analytes have MCL levels established.

Other Flags may be applied. See Case Narrative for Description

Workorder (SDG): B0702146

Project: **RFTA-GWS**

Client: **Waste Engineering, Inc.**

Client Project Number: **none**

REPORTING CONVENTIONS FOR THIS REPORT

B0702146

TestPkgName	Basis	# Sig Figs	Reporting Limit
8270C/3550B (Solid) - PAH	Dry Weight Basis	2	Report to MDL, J qual below PQL
ASTMD2216/ASTMD2216 (Solid) - Pmoist	As Received	3	Report to MDL, J qual below PQL

Analytica Chain of Custody Form

ANALYTICA GROUP

5438 Shaune Drive, Juneau, AK 99801, (907) 780-6868, (907) 780-6870 fax
5761 Silverado Way, # N, Anchorage, AK 99518, (907) 258-2155, (907) 258-6834 fax
3330 Industrial Ave., Fairbanks, AK 99701, (907) 456-3116, (907) 456-3125 fax
12189 Pennsylvania St., Thornton, CO 80241, (303) 469-6888, (303) 469-6254 fax

Page 1 of 1

Chain of Custody No: 54213

Client Name & Address: WEI

Public Water System (PWS) ID#:

Project Name: RFTA - GWS

Section To Be Completed by Analytica

Quote ID:

LGN: B0702146 ~~B0702099~~

Account #: Cash Credit Cred

Report to: Heydenberk

Phone No: (970) 945-7755

Fax No: 945-9210

E-mail: cheydenberk@Wright-Water.com

Turnaround Time for Results (TAT)

~~Standard~~ Expedited (4-6 days, prior authorization required) (please specify due date below; add'l charges may apply)

Requested Due Date for Results:

Invoice to Name & Address:

Special Instructions/Comments: Please Call for Bush availability

P.O. or Contract No: 992-999.000-RFTA

Requested Analysis/Method

KI Prep/Shipping Charge: $

Client Sample Identification / Location	Date Sampled	Time Sampled	Matrix (S-SW-WW-Other)	No. of Containers	DRO	BTEX	GRO	DAH						Field Preserved	Field Filtered	MS/MSD ?
Diesel Tank	2/8/07	9:30	S	2	X	X		X								
Gasoline Tank	2/8/07	9:30	S	2		X	X									

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	2-9-07	10:00	[signature]	2/10/07	1200
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

Name of Sampler: (printed) Heydenberk

Section To Be Completed by Analytica

	THQ	ANC	JNU	FBKS
Condition of Custody Seal:	None			
Initialed By:				
Temp/Loc:	4.6			
Thermo ID#:				
Shipped Via:	Fedex			

Cooler Receipt Form

ANALYTICA

Client: Waste Engineering, Inc. **Client Code:** 022120 **Order #:** B0702146
Project: RFTA-GWS

Cooler ID: 1

A. Preliminary Examination Phase: **Date cooler opened:** 2/10/2007
Cooler opened by: LQ **Signature:** LQ

1. Was airbill Attached? Yes **Airbill #:** 852537190230 **Carrier Name:** FedEx
2. Custody Seals? N/A **How many?** 0 **Location:** **Seal Name:**
3. Seals intact? Yes
4. COC Attached? Yes **Properly Completed?** Yes **Signed by AEL employee?** Yes
5. Project Identification from custody paper: RFTA-GWS
6. Preservative: BlueGel **Temperature:** 4.6

Designated person initial here to acknowledge receipt: LQ **Date:** 2/10/07

COMMENTS:

B. Log-In Phase: **Samples Log-in Date:** 2/12/2007 **Log-in By:** LQ

1. Packing Type: Bubblewrap
2. Were samples in separate bags? N/A
3. Were containers Intact? Yes **Labels agree with COC?** Yes
4. Number of bottles received: 1 **Number of samples received:** 1
5. Correct containers used? Yes **Correct preservatives added?** N/A
6. Sufficient sample volume? Yes
7. Bubbles in VOA samples? N/A
8. Was Project manager called and status discussed? No
9. Was anyone called? No **Who was called?** _____ **By whom?** _____ **Date:** _____

COMMENTS:

APPENDIX E - BOREHOLE LITHOLOGIC LOGS AND WELL COMPLETION

Soil sampling involving Borings/Direct Push Points has not been performed at the Site or Requested by the OPS.

APPENDIX F - WASTE DISPOSAL MANIFESTS

Contaminated soil has not been generated at the site. Disposal has not occurred.

APPENDIX G - SITE CLASSIFICATION CHECKLIST

A site characterization has not been completed. As a result the site classification tables cannot be completed at this time.

CLASSIFICATION 1 - CURRENT THREAT TO HUMAN HEALTH , SAFETY, OR SENSITIVE ENVIRONMENT						
✓	R	N	U	SUB	Threat	Response Action
				1.1	Explosive levels, or concentrations of vapors that could cause acute health effects, are present in a residence or other building.	*Evacuate occupants, begin emergency abatement measures such as subsurface ventilation, or building pressurization or free product removal. Notify local fire authority.*
				1.2	Explosive levels of vapors are present in subsurface utility system(s).	*Evacuate vicinity immediately, begin emergency abatement measures such as ventilation.*
				1.3	Free product is present in measurable quantities at ground surface, on surface water bodies, in utilities, or on surface water.	*Prevent further free product migration by appropriate containment measures, institute free product removal, restrict area access.*
				1.4	A water supply well, supply line, or surface intake is impacted** above action levels.	*Notify user(s) provide alternate water supply, control contaminated water and treat water at the point-of-use.*
				1.5	Ambient vapor/particulate concentrations of concern from an acute exposure or safety viewpoint.	*Install a vapor barrier, remove the source, or restrict access to affected area.*
				1.6	Surface water, storm water, or groundwater which is impacted** above action levels is discharging directly to a surface water body used for human drinking water or contact recreation, or a sensitive environment.	*Minimize extent of impact by containment measures, and implement habitat management to minimize exposures.*

CLASSIFICATION 2 - SHORT-TERM THREAT (0-6 MONTHS) TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENT

T	R	N	U	SUB	Threat	Response Action
				2.1	Explosive vapor levels, or concentrations that could cause acute health effects, may accumulate in a residence or other buildings within six months.	*Assess the potential for vapor migration through monitoring/modeling and remove source, if necessary, or install a vapor migration barrier.*
				2.2	Surficial soils impacted** above action levels, are exposed and less than 500 ft from public access, dwellings, parks, sensitive environment, playgrounds, day care centers, schools, or similar use facilities.	*Remove soils, cover area, or restrict access.*
				2.3	A water supply well producing from the affected groundwater is impacted** above action levels, or is located less than 120 ft* down-gradient of the known extent of contamination.	*Notify owner/user, evaluate need for point-of-use water treatment, hydraulic control, or alternative water supply.*
				2.4	Groundwater is impacted** above action levels and a water supply well producing from a different interval is within the known extent of contamination.	*Notify owner, monitor groundwater well quality and determine need for prevention of vertical migration to the supply well.*
				2.5	Surface water, storm water, or groundwater, impacted** above action levels, discharges within 500 ft of a surface water body used for human drinking water or contact recreation, or a sensitive environment.	*Begin containment measures. Restrict access to areas near discharge. Evaluate magnitude and impact to discharge area.*
				2.6	Free product, of any measurable thickness on groundwater is discovered.	*Prevent free product migration by appropriate containment measures. Begin free product removal immediately.*
				2.7	Groundwater impacted** above action levels is present offsite.	*Define extent and degree of contamination. Notify OIS of name and address of impacted parties.*

CLASSIFICATION 2a - INTERMEDIATE-TERM THREAT (7-24 MONTHS) TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENT

T	R	N	U	SUB	Threat	Response Action
				2a.1	Explosive vapor levels, or concentrations that could cause acute health effects may accumulate in a residence or other buildings within seven to twenty four months.	*Assess the potential for vapor migration, through monitoring/modeling and remove source, if necessary, or install a vapor migration barrier.*
				2a.2	Groundwater is impacted** above action levels and a water supply well producing from the impacted interval is located between 120 ft and 500 ft* down-gradient of the known extent of contamination.	*Notify owner/user, evaluate need for point-of-use water treatment, hydraulic control, or alternate water supply.*

CLASSIFICATION 3 - LONG-TERM THREAT (>2 YEARS) TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENT

T	R	N	U	SUB	Threat	Response Action
				3.1	Subsurface soils (> 3 ft bgs) are impacted** above action levels, and depth from impacted soils to the first groundwater is less than 50 ft.	*Define the extent of contamination. Monitor groundwater. Determine the potential for future contaminant migration to the groundwater.*
				3.2	Groundwater is impacted** above action levels onsite with the potential to migrate offsite.	*Define the extent of contamination. Monitor groundwater. Determine the potential for future contaminant migration to the groundwater at the property boundary.*
				3.3	Groundwater is impacted** above action levels, and water supply wells producing from the impacted interval are located between 500 ft and ½ mile* down gradient of the known extent of contamination.	*Define extent of contamination. Monitor the dissolved plume and evaluate the potential for future contaminant migration, for natural attenuation and the need for hydraulic control.*
				3.4	Surface water, storm water, or groundwater impacted** above action levels, discharges within 1500 ft of a surface water body used for human drinking water or contact recreation, or sensitive environment.	*Investigate potential impact on sensitive environment or surface water body, restrict access to area of discharge and evaluate the need for containment/controls measures.*

CLASSIFICATION 4 - NO DEMONSTRABLE LONG-TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENT

T	R	N	U	SUB	Threat	Response Action
				4.1	Impacted** soils above action levels are located more than 3 ft bgs and are greater than 50 ft above the nearest groundwater.	*Monitor groundwater and evaluate effect of natural attenuation on leachate migration.*
				4.2	Groundwater is impacted** above action levels and water supply wells that do not produce from the impacted interval are located downgradient outside the known extent of contamination.	*Monitor groundwater and evaluate effect of natural attenuation on dissolved plume migration.*
				4.3	Surficial soils impacted** above action levels are exposed and greater than 500 ft from public access, dwellings, parks, sensitive environments, sensitive resources, playgrounds, day care centers, schools, or similar use facilities.	*Restrict access to affected soils.*

* These distances are based on conservative assumptions for groundwater flow velocity. These distances can be adjusted provided supporting documentation is submitted to and approved by the OIS.
**If the extent of contamination has not been defined the owner/operator must assume that all potential POEs are within the impacted area.

APPENDIX H - SUPPORTING DOCUMENTATION

Reported laboratory results are included in Appendix D.

USGAPRoA 005

BILL RITTER, JR
Governor

DONALD J. MARES
Executive Director

RICHARD O. PIPER
Director of Oil and Public Safety

DEPARTMENT OF LABOR AND EMPLOYMENT
Division of Oil and Public Safety
Remediation Section
633 17th Street, Suite 500
Denver, Colorado 80202-3660
(303) 318-8500; Fax (303) 318-8546
Website: http://oil.cdle.state.co.us

FILE COPY

May 10, 2007

RUSS DECKER
ROARING FORK TRANSPORTATION AUTHORITY
2307 WULFSOHN RD
GLENWOOD SPRINGS CO 81601

Re: Petroleum Storage Tanks (PSTs) at the Roaring Fork Transit Agency, 2307 Wulfsohn Road, Garfield County, Glenwood Springs, Colorado. Event ID 10241

Dear Mr. Decker:

The Division of Oil and Public Safety (OPS) has reviewed the Site Characterization Report for the above referenced site that was received on April 30, 2007.

Based solely upon the information submitted, which shows that contamination levels are below state cleanup levels, OPS does not require any further investigation or remedial action at this time. If conditions change, OPS reserves the right to determine if any additional actions are necessary. This no further action (NFA) letter is in reference to the release reported on November 1, 2006.

OPS cannot release you from any liability that may be associated with any contamination at or from this site.

Please address correspondence regarding this site to me. If you have any questions call me at (303) 318-8532.

Sincerely,

Bobby J. Sonnier, P.G.
Environmental Protection Specialist
Remediation Section

cc: Jennifer Steffes, Petroleum Assessment Section Supervisor
Craig Heydenberk, Waste Engineering, Inc., P.O. Box 219, Glenwood Springs, Colorado 81611

FACILITY ID#: 15558

EVENT ID#: 10428

ROARING FORK TRANSIT AGENCY
2307 WULFSOHN RD
GLENWOOD SPRINGS

DATE RECEIVED: 10/25/2007

REPORT TYPE: SCR - Site Characterization Report Received

REVIEWER: Sandoval

SARDONYX ID: USGARROA 5

COMMENTS:

WEI
Waste Engineering, Inc.
818 Colorado Avenue, Suite 307, P.O. Box 219
Glenwood Springs, Colorado 81602
(970) 945-7755 TEL
(970) 945-9210 FAX
e-mail: cheydenberk@wrightwater.com

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OCT 25 2007
DIVISION OF OIL AND PUBLIC SAFETY
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October 22, 2007

Via First Class Mail

Mr. Bobby Sonnier
Colorado Department of Labor and Employment
Division of Oil and Public Safety
Remediation Section
633 17th Street, Suite 500
Denver, CO 80202-3660

Re: Site Characterization Report for Roaring Fork Transportation Authority
2307 Wulfsohn Rd Glenwood Springs, CO 81601 Facility ID# 15558
10428

Dear Mr. Sonnier:

Waste Engineering, Inc. (WEI) is submitting the attached Site Characterization Report (SCR) completed on behalf of Roaring Fork Transportation Authority (RFTA). The data obtained during our investigation is limited. At your request, we obtained one grab sample at a fill dispenser for an underground storage tank (UST) used to store new motor oil. The sample was obtained at approximately 1½ feet below ground surface. The samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), and oil and grease.

Due to the limited data collected at the Site, a majority of the information required in the SCR is not available.

Should you have any questions or require additional information, please do not hesitate to call.

Very truly yours,

WASTE ENGINEERING, INC.

By DCH
D. Craig Heydenberk
Senior Environmental Scientist

cc: Russ Decker

C:_WORK\WEI\002-040\020mo\Cover letter_NewMotorOil.doc

RECEIVED
OCT 2 5 2007
DIVISION OF OIL AND PUBLIC SAFETY

SITE CHARACTERIZATION REPORT (SCR)

FILE COPY

Submit the completed SCR to:

Colorado Department of Labor and Employment
Oil Inspection Section
(Technical Reviewer's Name - if known)
633 17th Street, Suite 500
Denver, CO 80202-3660

This standardized format is required for all SCRs submitted to the Colorado Oil Inspection Section for releases occurring on or after **February 1, 1999**.

This SCR is intended to replace the Initial Site Characterization Report (ISCR). In addition to the information formerly included in the ISCR, it is required that the SCR define the extent of contamination. The SCR incorporates risk based corrective actions through Tier 1 or Tier 1A, as appropriate to the site. This report must be submitted in duplicate.

IMPORTANT

Refer to the OIS Owner/Operator Guidance Document for assistance in report preparation.

This report is required to be submitted within 90 days of the release.

If contamination has never been detected above Tier 1 and/or MCLs, a No Further Action Request (NFAR) Report may be submitted in place of this SCR.

Facility ID # 15558

SITE CHARACTERIZATION REPORT

SITE INFORMATION

Site Name: Roaring Fork Transportation Authority	Type of Business on Site: Bus Maintenance	
Site Address: 2307 Wulfsohn Road		
City: Glenwood Springs	County: Garfield	Zip Code: 81623
Phone Number: (970) 384-4966	Fax Number: (970) 928-8273	
Site Contact Person: Mr. Russ Decker		

OWNER/OPERATOR INFORMATION

Name: Roaring Fork Transportation Authority		
Address: 0051 Service Center Drive		
City: Aspen	State: Colorado	Zip Code: 81611
Phone Number: (970) 384-4966	Fax Number: (970) 928-8273	
Contact Person: Mr. Russ Decker		

ENVIRONMENTAL CONSULTANT INFORMATION

Name: Waste Engineering, Inc.		
Address: P. O. Box 219		
City: Glenwood Springs	State: Colorado	Zip Code: 81611
Phone Number: (970) 945-7755	Fax Number: (970) 945-9210	
Contact Person: D. Craig Heydenberk		

Date Report was completed: October 22, 2007

INSTRUCTIONS FOR COMPLETING REPORT: Complete all applicable sections and appendices of this report. If a question does not apply to the site, insert ANA≡.

Limit your responses to the suggested space(s). If you are using the computer version of this form, the bracketed number after each question (e.g. [2]) is the number of suggested lines for each answer. Do not use bold type when answering, except as requested in the Tables of the Appendices. Insert rows in tables as needed, and delete any unused rows. Contact the Oil Inspection Section technical assistance line at (303) 318-8547 if you have any questions. The OIS Regulations, Guidance Document, Report Formats, and additional program related information can be found at the Oil Inspection Website at http://oil.cdle.state.co.us. Call (303) 321-4164 for a copy of the Regulations (commodity # 615-82-44-0899) or the Guidance Document (commodity # 615-82-44-0626).

SITE CHARACTERIZATION REPORT SUMMARY

What type of product was released? (Check all that apply) Leaded Gasoline ___Unleaded Gasoline ___ Diesel___ Waste Oil ____ Other _X_ - New Motor Oil

Is there evidence of any released hazardous substance on the site? (If this is an AST release and it exceeds the RCRA level for TCLP benzene, it is a hazardous substance.) Yes ___ No __X_ (check one). **If yes, contact the Colorado Department of Public Health and Environment.**

Does soil contamination exist? (check all that apply) Onsite __X__ Offsite ____ **If so, what is the vertical extent of soil contamination? From** ____ft to____ft (unknown). **What is the soil type?** Pea gravel bedding – Natural soil consists of alluvial silts, clays, and gravels.

Does groundwater contamination exist? (check all that apply) Onsite ___ Offsite ___ Unknown_X_ The need for a groundwater evaluation has not been established.

Is free product present in the soil or groundwater? Yes ___ No ___ Unknown_X_ The need for a groundwater evaluation has not been established.

What is the depth to groundwater (in feet)? Based on the difference in elevation between the Site and Colorado River – The depth to groundwater is estimated at 300 feet.

For each category, list the distance from the source to the nearest point of exposure (POE). Only list POEs within 1/4 mile of the site.

	Property Boundary	Surficial Soils	Subsurface Utilities	Structures	Groundwater Wells	Surface Water	Sensitive Environment
Distance (ft)	125	0	30	25	Unknown	850	850 Colorado River

List the highest concentration of the following constituents found

	Benzene	Toluene	Ethyl Benzene	Xylenes	TVPH	TEPH	TPH	Oil & Grease	Other
Soil (mg/Kg)	<0.00051	<0.001	<0.001	0.0026	N/A	N/A	N/A	310	N/A
Water (µg/l)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO
Vapor (µg/m^3)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO

List the highest concentration of the following constituents remaining on site

	Benzene	Toluene	Ethyl Benzene	Xylenes	TVPH	TEPH	TPH	Oil & Grease	Other
Soil (mg/Kg)	<0.00051	<0.001	<0.001	0.0026	N/A	N/A	N/A	310	N/A
Water (µg/l)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO
Vapor (µg/m^3)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO

N/A = Not Analyzed

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A. RELEASE INFORMATION

1. History of this release.

a) **Date of release (If actual release date is unknown, input the date that the release was first suspected).** [1] August 1, 2007

b) **Date that OIS was notified of the suspected release.** [1] August 1, 2007

c) **Date that the suspected release was confirmed.** [1] August 1, 2007

d) **Date that OIS was notified of the confirmed release.** [1] August 1, 2007

e) **Include the location of the release on Figure 1, Appendix C.**

2. How release was discovered.

a) **Discovered at tank removal or closure in place** (yes/no) No

b) **Discovered during subsurface investigation** (yes/no) No

c) **Discovered as a result of release detection or system failure** (yes/no) No

d) **Impacts discovered at off-site property** (yes/no) No

a) **Other (describe)** [1] The release was suspected by an OPS Inspector during his observation of replacement of overfill protection. Sampling and analysis of soil samples was requested.

3. Release description.

b) **Product(s) released** [1] New motor oil.

c) **Quantity released** [1] The quantity released is not known but would be limited to quantity released from the original overfill assembly.

B. SITE HISTORY

1. List known historical uses of the site on the table below.

Type of Use and/or Business Name	Begin Date	End Date
Bus Maintenance	2002	current
Previously Undeveloped		

2. **Describe any previous releases at the site on the table below.** No previous releases are known or have been reported.

Date of Prior Release	Product	Quantity (gallons)	Source/Cause of Release (Identify location on Fig. 1)	No Further Action Letter Issued? (y/n) (If yes enter date)
ANA≅	ANA≅	ANA≅	ANA≅	ANA≅

3. **If a no further action letter has not been issued for a previous release explain on-going activities [1].** No previous releases are known or have been reported.

C. RELEASE CONFIRMATION

1. **Storage tank removal/closure in place. (Complete Section F-1 to describe tank excavation dimensions, soil laboratory results, etc.).**

a) **How many tanks were removed or closed in place? [1]** No tanks have been removed or closed in place.

b) **How many tanks remain on site which are in operation? [1]** Two 10,000-gallon tanks remain on site and in operation. The site also includes an 850-gallon UST used to store waste oil. The new motor oil tank is 3,000-gallon.

c) **How many tanks remain on site which have not been properly closed in place?** 0 - Two 10,000-gallon tanks remain on site and in operation and an 850-gallon tank.

d) **List on the table below information concerning tank removal/closure in place. (Tank # as identified on Figure 1 and/or Figure 2, Appendix C).**

Tank #	Date Removed or Closed	Indicate closed in place(I), removed (R)	Tank Condition (corrosion, holes, etc.)	Contamination Suspected? (y/n)	Samples Analyzed? (y/n)
ANA≅	ANA≅	ANA≅	ANA≅	ANA≅	ANA≅

b) **Were tank removal or closure in place activities performed in accordance with API recommended practice 1604, or equivalent?** (yes/no) No **If no, describe tank removal/closure in place activities? [1]** No tanks have been removed or closed in place.

2. **Subsurface investigation performed prior to a confirmed release, such as for a property transaction, or to confirm release detection or system failure. (Complete Section F-2 to describe soil boring installations, soil laboratory results, etc.).** The release was suspected by an OPS Inspector during his observation of the replacement of overfill protection. Sampling and analysis of soil samples was requested.

a) List on the table below information concerning site investigation.

Sample #	Date of Investigation	Contamination Suspected? (y/n)	Samples Analyzed? (y/n)
New Motor Oil	July 13, 2007	N	Y

b) If this investigation was performed as the result of release detection or system failure what part of the UST system failed? [1] No - The release was suspected by OPS Inspector during replacement of overfill protection. Sampling and analysis of soil samples was requested.

i. **Was the system repaired?** (yes/no) The overfill protection assembly will be replaced.
ii. **Date of repair.** [1] Repairs have been made. The concrete will be replaced following review approval from the OPS.

D. SITE CLASSIFICATION AND INITIAL RESPONSE/ABATEMENT

1. **Site Classification Table.** A site characterization has not been completed. As a result the site classification tables can not be completed.

a) Complete the Site Classification Table presented in Appendix G. See D.1

b) What is the current site classification? (1, 2, 2a, 3, 4) Unknown.

c) Has the site classification changed since the submittal of the Site Summary Form (SSF)? (As the extent of contamination is defined at the time of this report, the Site Classification Table will no longer contain unknown (U) threats). A Site Summary Report was requested by the OPS. The SSR was submitted to the OPS on September 5, 2007

d) What classification was indicated for the site on the SSF? (1, 2, 2a, 3, 4) See D.1

2. **Initial response and abatement. (Did the site classification ever indicate the need for an emergency response?** (yes/no) No **(If yes, answer the following questions and include all supporting documentation such as required permits in Appendix H, and waste manifests in Appendix F.)**

a) Was the presence of explosive vapors ever detected at the site? (yes/no) No.

i. **If yes what actions were taken to mitigate explosion risks?** [2] See 2.a
ii. **Have these actions been completed?** ANA≡

b) Was the presence of vapors or surficial particulates, in concentrations which may cause acute health effects, ever detected at the site? ANA≡

i. **If yes, what actions were taken to mitigate the acute health risks?**
ii. **Have these actions been completed?** ANA≡

c) Was the presence of free product on the ground surface, surface water, exposed soils, or in utilities ever detected at the site? Regarding ground surface and exposed soil – No. No surface water was observed. The need for a utility investigation has not been determined.

i. If yes, what actions were taken to mitigate these conditions? [2] ANA≡
ii. Have these actions been completed? (yes/no) ANA≡

d) Was any water supply well, supply line, storm water, or surface water body ever impacted by the release? (yes/no) The site is connected to city water. Supply lines have not been evaluated. Stormwater was not observed during the site investigation. Given the estimated distance to the Colorado River (800'), it is unlikely that the Colorado River has been impacted.

i. If yes what actions were taken to mitigate the risk of exposure to these Points of Exposure (POEs)? [2] ANA≡
ii. Have these actions been completed? (yes/no) ANA≡

e) Are there any other site classification sub-classifications, which relate to potential emergency situations, as listed above (e.g., Sub-classification 2.1 - Explosive vapors may accumulate in buildings within six months) currently applicable to this site? (yes/no) No.

i. **If yes, are activities underway or completed to mitigate these threats? [2]** ANA≡

ii. Will mitigation activities be included in the corrective action plan (CAP)? (yes/no) A CAP for this release has not been requested by the OPS.

E. FREE PRODUCT

1. Complete this section if free product has been discovered in wells, borings, or excavations. A site characterization involving wells and borings has not been completed. Free product was not observed to a maximum depth excavated at the site of 1.5 feet BGS.

2. Free Product in Wells or Borings See E.1

a) Provide information regarding free product located in wells or borings in Tables 4 and 5, Appendix B.

b) On what date was free product discovered? [1] A site characterization involving wells and borings has not been completed. Free product was not observed to a maximum depth excavated at the site of 1.5 feet BGS.

c) On what date was the OIS notified of the presence of free product? [1] A site characterization involving wells and borings has not been completed. Free product was not observed to a maximum depth excavated at the site of 1.5 feet BGS.

d) Has free product been recovered? (yes/no) No

e) If so, what was the recovery method? [2] ANA≡

f) **What was the quantity recovered? [1]** ANA≅

g) **How was recovered free product disposed? [1]** ANA≅

3. **Free Product in Excavations**

a) **Provide information regarding free product discovered in excavations.**

Date Discovered	Location	Product Thickness	Recovery Method	Date Recovery Completed	Quantity Recovered
ANA≅	ANA≅	ANA≅	ANA≅	ANA≅	ANA≅

Free product was not observed to a maximum depth excavated at the site of 1.5 feet BGS.

b) **On what date was the OIS notified of the presence of free product? [1]** ANA≅

c) **How was recovered free product disposed? [1]** ANA≅

F. SOIL INVESTIGATION

1. **Excavations. (Includes excavations, trenches and construction excavations.)**

a) **Excavation dimensions.**

i. **Complete the following table for each excavation.**

Free product was not observed to a maximum depth excavated at the site of 1.5 feet BGS.

Excavation #	Length of Excavation	Width of Excavation	Depth of Excavation	Depth to Groundwater in Excavation (if present)
New Motor Oil	4 feet	4 feet	1.5 feet	Not Present to 1.5

ii. **Plot the location of each excavation (include excavation #) on Figure 2, Appendix C.**

b) **Excavation Organic Vapor Meter (OVM) screening measurements.**

i. **List all OVM measurements on Table 1, Appendix B.**
ii. **Indicate the locations of OVM measurements (which did not have a laboratory analysis performed at the same location) on Figure 2a, Appendix C.**

c) Excavation Soil Sampling.

i. List all soil laboratory results on Table 2, Appendix B. Identify the locations where samples were obtained on Figure 2, Appendix C.
ii. List the rationale for the sampling locations on Table 2, Appendix B.
iii. Present geological observations including lithology in section J.
iv. Were soils samples collected according to procedures filed with the OIS as part of the Listed Consultant program? Yes **According to the OIS Owner/Operator Guidance Document?** No **If neither, describe soil sampling collection procedures. [3]** Only one sample was requested by the OPS for this tank. The sample was collected near the original spill/overfill protection device.

d) Soil Disposition

i. Complete the following table if any soils were excavated.

Excavation Number	Cubic Yards of Contaminated* Soil Excavated	Disposition of Contaminated *Soil	Cubic Yards of Clean Soil Excavated	Disposition of Clean Soil
New Motor Oil	0	0	0	0

*** Soil concentrations above Tier 1 RBSLs and 500 mg/kg TPH.**

ii. Attach waste disposal manifests in Appendix F. No soil disposal has occurred.

e) If groundwater was detected in the excavation complete Section H.

f) **Was extent defined to Tier 1 RBSLs and to the TPH threshold level of 500 mg/Kg?** Yes **If no, why not? [2]**

2. Soil Borings/Direct Push Points Soil sampling involving Borings/Direct Push Points has not been performed at the Site or Requested by the OPS.

a) Borehole/direct push OVM screening.

i. Include the OVM screening measurements on the boring logs (Appendix E) for samples screened during the boring installations.
ii. Indicate the locations of the borings (which did not have laboratory analyses of soil collected from the boring) on Figure 3a, Appendix C.

b) Soil Sampling in the borehole/direct push points See 2.0

i. List all soil laboratory results on Table 2, Appendix B. Present boring locations on Figure 3, Appendix C.
ii. List the rationale for the sampling locations on Table 2, Appendix B.
iii. Present geological observations including lithology on the boring logs (Appendix E) and in section J.

iv. Were soils samples collected according to procedures filed with the OIS as part of the Listed Consultant program? ANA≅ **According to the OIS Owner/Operator Guidance Document?** ANA≅ **If neither, describe soil sampling collection procedures. [3]**

c) Soil Disposition

i. Were any contaminated soils generated during borehole installation activities? ANA≅ **If yes, how were they disposed? [1]** ANA≅

ii. If any contaminated soils were disposed, attach waste disposal manifests in Appendix F.

d) **Was the extent of soil contamination defined to Tier 1 RBSLs and to the TPH threshold value of 500mg/Kg?** Yes **If no, why not? [2]** A site characterization has not been performed or requested by the OPS.

G. SOIL VAPOR INVESTIGATION

1. **Was the purpose of soil vapor sample collection to assist in defining the extent of petroleum hydrocarbon contamination in the subsurface?** A soil vapor investigation has not been performed or requested by the OPS.

2. **Was the purpose of soil vapor sample collection to identify threats to structures that may be impacted from soil vapors?** ANA≅ **If yes briefly describe rationale for selected locations and depths (e.g., proximity to source, soil types, utilities, etc.) [3]**

3. **How many samples were collected from each point? [1]** ANA≅

4. **Show the location of each sampling point on Figure 4, Appendix C. List sample results, sample location rationale, and depths on Table 3, Appendix B.** ANA≅

5. **What was the vapor point installation method? [2]** ANA≅

6. **What was the method of sample collection? [2]** ANA≅

7. **Were vapor samples collected according to procedures filed with the OIS as part of the Listed Consultant program?** ANA≅ **According to the OIS Owner/Operator Guidance Document?** ANA≅ **If neither, describe vapor sampling collection procedures. [3]** ANA≅

H. GROUNDWATER INVESTIGATION

1. **Were monitoring wells installed, and groundwater sampled?** No – A groundwater investigation has not been performed or requested by the OPS.

a) What is the average depth to groundwater at the site? ANA≅

b) For each monitoring well completed at the site list information regarding surveyed elevation of the measuring point, depth to groundwater, depth to product and

groundwater elevation on Table 5, Appendix B. Present the locations of the monitoring wells, including groundwater elevation values on Figure 6, Appendix C.

c) List all groundwater laboratory results on Table 4, Appendix B. Present monitoring well locations on Figure 5, Appendix C.

2. **Was groundwater discovered in locations other than wells (e.g., tank excavations)?** A groundwater investigation has not been performed or requested by the OPS

a) At what locations (other than in wells) was groundwater discovered? [2] ANA≡

b) Identify the locations where groundwater was discovered (other than in wells) on Figure 5, Appendix C or on Figure 2, Appendix C, as appropriate. If groundwater at these locations was sampled, provide the sample results on Table 4, Appendix B. If groundwater was not sampled at these locations, explain why not [2] ANA≡

c) If excavation dewatering was necessary, provide volume data, manifests, discharge permits, and compliance sampling results in Appendix H.

3. **Were groundwater samples collected according to procedures filed with the OIS as part of the Listed Consultant program?** (yes/no) ANA≡ **According to the OIS Owner/Operator Guidance Document?** (yes/no) ANA≡ **If neither, describe groundwater sample collection procedures.** [3] A groundwater investigation has not been performed or requested by the OPS.

4. **Has the extent of groundwater contamination been defined to concentrations below the MCLs?** (yes/no) No **If no, why not?** [2] A groundwater investigation has not been performed or requested but the OPS.

I. QUALITY ASSURANCE/QUALITY CONTROL

1. Sampling Handling

a) Was all decontamination performed during this investigation in accordance with the QA/QC filed with the OIS as part of Listed Consultant program? Yes

b) Was all decontamination performed during this investigation in accordance with the QA/QC as described in Owner/Operator guidance document? Yes

c) If the answer to both of the above is no, complete the following table.

Equipment	Decontamination Method
ANA≅	ANA≅

2. Provide all information regarding sample handling and shipping as instructed in Appendix D.

J. GEOLOGY AND HYDROGEOLOGY

1. Regional Geology -within ½ mile (This information is required if minimal site specific data is available. If the site geology has been characterized, regional data should only be obtained, as necessary, to supplement site specific data).

a) What is the lithology and stratigraphy of the unsaturated and uppermost saturated intervals? [2] Surficial geology consists of unconsolidated alluvial materials. The alluvium includes sands, silts, and gravels.

b) Describe any features that may affect regional groundwater flow. [2] The Site is located approximately 850 feet south of the Colorado River.

c) What is the source of the information listed above? [1] Site observation and knowledge of area.

2. Site Geology (Using the data collected during excavation activities and the drilling logs located in Appendix E answer the following questions. If complex geology exists at the site, which a cross-section would help to illustrate, include it in Appendix E with the borings logs). ANA≅

a) What is the lithology and stratigraphy of the unsaturated and uppermost saturated intervals? [2] Unknown

b) Describe any features at the site which could affect groundwater flow such as the slope of the uppermost bedrock unit [2] Unknown

3. Regional Hydrogeology (within ½ mile) (This information is required if groundwater was not encountered during the site characterization. If groundwater was encountered, regional data should only be obtained, as necessary, to supplement site specific data). Based on the difference in elevation between the Site and Colorado River – The depth to Groundwater is estimated at 300 feet.

a) What is the average depth to groundwater? [1] Unknown

b) What is the average thickness of the uppermost saturated interval? [1] Unknown

c) What is the regional groundwater flow direction? [1] Unknown

d) **Is there evidence that the flow direction may vary? [1]** Unknown

e) **What is the source of the information? [1]** ANA≡

4. **Site Hydrogeology** A groundwater investigation has not been performed or requested by the OPS.

a) **What is the average depth to groundwater? [1]** Unknown

b) **What is the average thickness of the uppermost saturated interval? [1]** Unknown

c) **What is the groundwater flow direction? [1]** Based on topography Groundwater Flow Direction is expected to be to the North.

i. **If there is evidence that flow direction varies, include groundwater elevation maps indicating the varying flow directions (Figure 6, Appendix C).** Unknown
ii. **What is the suspected or known reason for this variation? [2]** ANA≡
iii. **What is the most prevalent flow direction? [1]** Based on topography the most prevalent flow direction is to the North.

d) **Complete the following table of aquifer parameters.**

Parameter	Value	How Was This Value Estimated? (Include Identification Numbers of Wells Tested)
Hydraulic Gradient	Unknown	Unknown
Effective Porosity*	Unknown	Unknown
Hydraulic Conductivity*	Unknown	Unknown
Groundwater Flow Velocity	Unknown	Unknown

*May be estimated based on soil types during Tier I only

K. POINTS OF EXPOSURE

1. **Property Boundary** A Site Investigation involving the evaluation of the extent and degree of contamination has not been performed or requested by the OPS.

a) **What is the distance from the source of contamination to the nearest downgradient property boundary? [1]** It is estimated at 125 feet.

b) **Provide the location of all site property boundaries on Figure 7, Appendix C.**

2. **Surficial Soils**

a) **Is there reason to suspect that persons will come into contact with surficial soils containing contaminant concentrations not protective of exposure through dermal contact, inhalation, or ingestion?** No

b) **If yes, what is the distance from the source to the nearest surficial soils that persons may come into contact with?** ANA≡

c) Indicate the location of all impacted surficial soils that persons may come into contact with on Figure 7, Appendix C.

3. Utilities

a) Are there utilities that could potentially be impacted by the release? (yes/no) Yes

b) Complete the information concerning all utilities both on-site and off-site on the table below and provide utility locations on Figure 7, Appendix C.

Utility	Depth to Water	Depth to Utility	Impacted (y/n)	Potential to be Impacted (y/n)
Natural Gas Line	Unknown	4'	Unknown	y
Water Line	Unknown	8'	Unknown	y
Sanitary Sewer Line	Unknown	8'	Unknown	y
Storm Sewer Line	Unknown	8'	Unknown	y
Subsurface Power Line	Unknown	4'	Unknown	y
Communication Conduit	Unknown	4'	Unknown	y
Other (None)	-	-	Unknown	y

c) What is the distance from the source to the nearest impacted or potentially impacted utility? Approximately 30' to the North.

4. Structures (excludes structures that house a business which dispenses petroleum products as part of normal operations). A Site Investigation involving the evaluation of the extent and degree of contamination has not been performed or requested by the OPS.

a) Are there structures that have been impacted by vapor migration from contaminated groundwater or soils? The occurrence of vapor migration was not noticed during or Site investigation or reported by onsite personnel.

b) Are there structures that have the potential to be impacted by vapor migration from contaminated groundwater or soils? (yes/no) The occurrence of vapor migration was not noticed during or Site investigation or reported by onsite personnel.

c) Present all structures, including those that have been impacted or have the potential to be impacted by vapor migration from either contaminated groundwater or soil on Figure 7, Appendix C.

d) What is the distance from the source to the nearest structure that has been impacted or has the potential to be impacted by vapor migration from contaminated groundwater or soils [1]. 25 feet.

5. **Groundwater Wells (excluding monitoring wells)** A groundwater well search has not been performed or requested by the OPS.

a) List the location and uses of all groundwater wells located within ½ mile of the site. Include this information on Table 6, Appendix B. Present the location of the wells on a U.S.G.S. 7.5' Quadrangle Topographic map (Figure 8, Appendix C).

b) How many groundwater wells are located downgradient and within ½ mile of the site? [1] Unknown

c) Is there a producing groundwater well whose radius of influence could affect groundwater flow at the site? (yes/no) Unknown

d) What is the distance from the source to the nearest downgradient groundwater well? [1] Unknown

6. **Surface Water/Sensitive Environments**

a) Identify the location of all surface water features (lakes, streams, wetlands, etc.) located within ½ mile of the site on Figure 8, Appendix C.

b) What is the distance from the source to the nearest downgradient surface water feature? [1] The Colorado River is located approximately 850 feet North of the Site.

L. EXPOSURE PATHWAYS

An evaluation of the extent and degree Characterization has not been performed or requested by the OPS. As a result, The Exposure Pathway Screening Criteria Table cannot be completed.

a) Complete the Exposure Pathway Screening Criteria Table

Exposure Pathway Screening Criteria - Bases for Eliminating Pathways	Y	N
Groundwater (Ingestion):		
--Impacted groundwater concentrations are below MCLs, or		
--Impacted water-bearing unit is designated as "non-usable" by the CWQCC, or		
--Groundwater plume is stable or diminishing within the property boundary (as demonstrated by four quarters of monitoring), and --There is no impact to a water supply well, (active or inactive), and --Dissolved oxygen concentrations are higher outside of the defined plume, and --Groundwater flow velocity is <50 ft/year, and --Transport modeling results are consistent with site observations.		
Groundwater (Enclosed Space Vapors):		
--Impacted groundwater concentrations are below MCLs, or		
--No existing structure is within the influence of the contamination, or		
--There is an existing structure within the influence of the contamination, and the structure houses a business which dispenses petroleum products as part of its operation.		
Surficial Soils (Ingestion, Ambient Vapors, Particulates, Dermal Contact):		
--Impacted soils concentrations below Tier 1 limits, or		
--Impacted soils have been removed from the site.		
Subsurface Soils (Enclosed Space Vapors):		
--Impacted soils are below Tier 1 limits, or		
--No existing structure is within the influence of the contamination.		
--There is an existing structure within the influence of the contamination, and the structure houses a business which dispenses petroleum products as part of its operation.		
Subsurface Soils (Leaching to Groundwater):		
--Impacted soils are below Tier 1 limits.		

b) Do the responses to the Exposure Pathway Screening Criteria Table indicate that any pathways may be eliminated from further consideration? (yes/no) Unknown

c) Are there any conditions not included in the table that may result in the elimination of any additional pathways? (yes/no) Unknown

d) If so, identify the pathway and conditions here. Any pathway elimination not specified in the table is subject to OIS approval. [4] ANA≡

e) For all pathways that may be eliminated, attach any supporting documentation (e.g., documentation of a "non-useable" designation by the CWQCC) in Appendix H.

f) What are the completed exposure pathways? See L.

i. **Groundwater (Ingestion)** (yes/no)
ii. **Groundwater (Enclosed Space Vapors)** (yes/no)
iii. **Surficial Soils (Ingestion, Ambient Vapors, Particulates, Dermal Contact)** (yes/no)
iv. **Subsurface Soils (Enclosed Space Vapors)** (yes/no)
v. **Subsurface Soils (Leaching to Groundwater)** (yes/no)

M. LAND USE

1. **All sites are considered under the residential land use classification unless the industrial classification is requested and approved by the OIS. Is an industrial classification being requested for this site?** (yes/no) An Industrial land use may be appropriate.

a) If yes, is the property and any currently or potentially impacted property currently zoned Industrial? (yes/no) The Site and surrounding property is zoned light industrial.

b) If yes, has the OIS been added to the list of parties to be notified of any application for rezoning? (yes/no) No

c) If yes, include official documentation of the addition of the OIS to this list (this documentation must indicate that the OIS will remain on the list until the OIS requests to be removed from the list). Include this documentation in Appendix H.

N. RISK BASED SCREENING LEVEL (RBSL) SELECTION

A Site Characterization involving the evaluation of the extent and degree of soil contamination has not been performed or requested by the OPS.

1. **Complete the following table to determine the appropriate RBSL(s) for the site. Refer to the OIS Storage Tank Regulations (7 C.C.R. 1101-14, Table 5-1) for the Tier 1 RBSL look-up table. If a "y" has been indicated in the Pathway Completed column, the RBSL and Source Concentration columns should be completed for every COC that exceeds the Tier 1 RBSL in Table 5-1. Consider the Land Use designation for the site to determine the correct RBSL for each completed pathway.**

Exposure Pathway	Pathway Completed (y/n)	Chemical of Concern (COC)	RBSL	Source Concentration
Surficial Soil (mg/Kg)		Benzene		
		Toluene		
		Ethylbenzene		
		Xylene		
Soil Leaching to groundwater (mg/Kg)		Benzene		
		Toluene		
		Ethylbenzene		
		Xylene		
Soil Vapor to Indoor Air (ug/m^3)		Benzene		
		Toluene		
		Ethylbenzene		
		Xylene		
Groundwater to Indoor air inhalation (mg/l)		Benzene		
		Toluene		
		Ethylbenzene		
		Xylene		
Groundwater Ingestion (mg/l)		Benzene		
		Toluene		
		Ethylbenzene		
		Xylene		

2. **RBSLs per media**

a) **Were both the Surficial Soil and Soil Leaching to Groundwater exposure pathways complete?** (yes/no) **If yes, the RBSLs for soil will be those for the Soil Leaching to Groundwater exposure pathway.** Unknown

b) **Were both the Groundwater to Indoor Air Inhalation and Groundwater Ingestion pathways complete?** (yes/no) **If yes, the RBSLs for groundwater will be those for the Groundwater Ingestion exposure pathway.** Unknown

O. TOTAL PETROLEUM HYDROCARBONS (TPH)/POLYNUCLEAR AROMATIC HYDROCARBONS (PAH)

A Site investigation involving the evaluation of the extent and degree of soil contamination has not been performed or requested by the OPS.

1. Source concentrations

a) Are all of the concentrations of the chemicals of concern (benzene, toluene, ethylbenzene, xylenes) associated with this release below the RBSLs or SS-RBSLs? (yes/no) Based upon the one soil sample collected at the Site, RBSLs for BTEX have not been exceeded.

b) Does the TPH concentration exceed the threshold value of 500 mg/Kg? No, the oil and grease concentration is 310 mg/Kg..

2. PAH Evaluation - If both answers to question #1 above are yes, then a soil sample collected from the area believed to be the most contaminated must be analyzed for the 16 priority PAHs. For the following questions refer to the Tier 1 RBSL table for PAHs in the Owner/Operator Guidance Document.

a) If the surficial soil pathway is complete at this site answer the following questions:

i. Do site PAH concentrations exceed the Tier 1 RBSLs for any compounds for the surficial soil pathway? PAH analysis was not requested by the OPS.

ii. If yes, list the compounds that exceed the RBSLs and the concentrations at which they remain on the site. ANA≡

b) If the subsurface soil leaching to groundwater pathway is complete at this site answer the following questions:

i. Do site PAH concentrations exceed the Tier 1 RBSLs for benz(a)-anthracene, dibenz(a,H)-anthracene or naphthalene compounds for the <u>subsurface soil leaching to groundwater</u> pathway? PAH analysis was not requested by the OPS.

ii. If yes, list the compounds at the site that exceed the RBSLs for the above compounds and the concentrations at which they remain on the site.

iii. Do PAH levels exceed the Tier 1 RBSLs for the 13 chemicals not specified in "i" above for the <u>surficial soil</u> pathway? (yes/no) PAH analysis was not requested by the OPS.

iv. If yes, list the compounds at the site that exceed the RBSLs for the above compounds and the concentrations at which they remain on the site. See O.2.b.iii.

c) If the groundwater volatilizing to indoor air pathway is complete at this site answer the following questions: A groundwater investigation has not been performed or requested by the OPS.

i. **Do site napthalene concentrations exceed the Tier 1 RBSL for the groundwater volatilizing to indoor air pathway?** (yes/no) Unknown

ii. **If yes, what is the concentration of napthalene in groundwater remaining on the site?** ANA≅

d) If the groundwater ingestion pathway is complete at this site answer the following questions: See O.2.c

i. **Do site benzo(a)-pyrene concentrations exceed the Tier 1 RBSL for the groundwater ingestion pathway?** (yes/no) Unknown

ii. **If yes, what is the concentration of benzo(a)-pyrene in groundwater remaining on the site?** Unknown

P. TIER 1A

1. **Has a Tier 1A evaluation been performed for this site?** (yes/no) No

2. **Was there reason to believe, based on site conditions, that the collection of site-specific information would lead to a significantly different cleanup goal?** (yes/no) Unknown

3. **Were site-specific data collected to be used as input parameters into the Tier 1A Model? (For a Tier 1A evaluation, site-specific data must be collected from the site, or calculated from data collected from the site, as outlined in the Owner/Operator Guidance Document.)** (yes/no) No

4. **If site-specific input parameters were used to create Tier 1A SS-RBSLs, list those parameters on the following table and indicate the source of the data. Include locations where data are collected on the appropriate figure.** A site characterization has not been performed or requested by the OPS.

Parameter	Value	How Was This Value Determined? (Include Identification Numbers of Wells Tested, Location of Borings, etc.)
Depth to subsurface soil source		Unknown
Depth to groundwater		Unknown
Thickness of the capillary fringe		Unknown
Thickness of the unsaturated zone		Unknown
Length of source		Unknown
Width of source		Unknown
Hydraulic conductivity		Unknown
Gradient		Unknown
Fraction of organic carbon		Unknown
Total porosity		Unknown
Unsaturated zone water content		Unknown
Unsaturated zone air content		Unknown
Infiltration rate		Unknown
Soil bulk density		Unknown
Distance to point of exposure		Unknown
Effective porosity		Unknown

5. **Attach the Tier 1A SS-RBSL table generated by inputting site specific data collected above into the Tier 1A Model (located on the OIS webpage)**

Q. RECOMMENDATIONS

1. **Are all source concentrations remaining at the site below RBSLs in soil and MCLs in groundwater?** (yes/no) Unknown **If yes, you may request no further action.** A groundwater investigation has not been performed or requested by the OPS.

2. **Are source concentrations remaining at the site above RBSLs in soil and/or MCLs in groundwater?** (yes/no) An investigation involving evaluation of the extent a degree of soil contamination or groundwater evaluation has not been performed or requested by the OPS. **If yes, do you recommend remediation to Tier 1 levels?** (yes/no) Unknown **What method(s) of remediation will you be evaluating in your corrective action plan (CAP)?** [2] Unknown

3. **Have you performed a Tier 1A evaluation?** (yes/no) No **Are all source concentrations remaining at the site below the SS-RBSLs generated in the Tier 1A evaluation?** (yes/no) Unknown
If yes, you may request a no further action.

4. **Have you performed a Tier 1A evaluation?** (yes/no) No **Are source concentrations remaining at the site above the SS-RBSLs generated in the Tier 1A evaluation?** (yes/no) Unknown **If yes, do you recommend remediation to Tier 1A levels, or Tier 1 levels?** (yes/no) Unknown **What method(s) of remediation will you be evaluating in your CAP?[2]** Unknown

5. **Have you performed a Tier 1A evaluation?** (yes/no) No **Are source concentrations remaining at the site above the SS-RBSLs generated in the Tier 1A evaluation?** (yes/no) Unknown **If yes, do you recommend proceeding to a Tier 2 evaluation?** (yes/no) Unknown **What method(s) of remediation will you be evaluating in your CAP to cleanup to Tier 2 should site specific target levels be exceeded? [2]** Unknown

APPENDIX A - INSTRUCTIONS

1. TABLES (Appendix B)

Table 1 - Summary of Organic Vapor Meter Readings

This table lists the results of field screening of soil samples with an Organic Vapor Meter (OVM). Information presented shall include sample location, OVM reading, sample depth (ft bgs), and an indication of whether the sample was analyzed at a laboratory.

Table 2 - Summary of Soil Laboratory Results

This table lists the results obtained from laboratory testing of soil samples. Information presented shall include sample designation, sample collection date, sample depth (ft bgs), and analyte concentrations. If any analyte was detected which is not listed on this table, answer Ayes≅ in the AOther≅ column and attach the laboratory analytical reports for those analytes. Concentrations that exceed the Tier 1 RBSL for the soil leaching to groundwater pathway must be entered in bold type face. Also include on Table 2 the rationale for sample collection, using the codes listed in the footnote.

TVPH = Total Volatile Petroleum Hydrocarbons
TEPH = Total Extractable Petroleum Hydrocarbons
TPH = Total Petroleum Hydrocarbons

Table 2a - Summary of PAH Soil Laboratory Results

If a sample was analyzed for the priority PAHs the results obtained from the laboratory testing should be listed on this table. Information presented shall include sample designation, sample collection date, sample depth (ft bgs), and analyte concentrations in mg/Kg. This analysis will only be required when the BTEX constituents are below site cleanup goals and TPH concentrations exceed 500mg/Kg.

Table 3 - Summary of Vapor Laboratory Results

This table lists the results obtained from laboratory testing of vapor samples. Information presented shall include sample designation, sample collection date, sample depth (ft bgs), and analyte concentrations. If any analyte was detected which is not listed on this table, answer Ayes≅ in the AOther≅ column and attach the laboratory analytical reports for those analytes. Also included on this table is the rationale for sample collection.

Table 4 - Summary of Groundwater Laboratory Results

This table must be included when water samples are collected and shall present the results obtained from laboratory testing of water samples. Information presented shall include sample designation, sample collection date, sample depth (depth below grade level when collected from an excavation), analyte concentrations, and analytical methods. If any analyte was detected which is not listed on this table, answer Ayes≅ in the AOther≅ column and attach the laboratory analytical reports for those analytes. Concentrations that exceed Colorado groundwater standards (MCLs) shall be presented in boldface type. Sample locations must be illustrated on Figure 5.

Table 5 - Groundwater Elevation Table

This table shall include the surveyed elevation of each well measured during this investigation, the date of the measurement, depth to water, depth to product, product thickness, product elevation, and the corrected elevation of the groundwater.

Table 6 - Summary of Water Well Information

This table shall include the results of a water well survey for wells located within 2 mile of the site. Information presented shall include the well number, geographic location (cadastral coordinates), approximate distance from site (if known), approximate compass direction from site (if known), use of each well, well depth, water level, and pumping rate. Wells down gradient of the site shall be presented in boldface type.

2. FIGURES (Appendix C)

Requirements common to all maps include the following: title block with figure number, site name, site address, date, scale, north arrow, and a legend. Distinct symbols should be used to differentiate varying sampling and analytical techniques (e.g.ɔ = Monitoring Well, = Borehole, = Geoprobe Point, = OVM locations, Φ = laboratory data). All maps must be created to scale.

Figure 1 - Site Map

This map shall illustrate the important features at the site and the area immediately adjacent to the site. Include locations of property boundaries, fences, streets (with names), site buildings and adjacent structures, USTs/ASTs, piping runs and dispensers, and type of ground cover.

Figure 2 - Excavation Sample Location Map

This map shall illustrate the former locations of the tanks, and the sampling locations from within each tank excavation. For each of these sampling locations include a text box with sample depth and laboratory analytical results. Also include on the map the location of soils stockpiled. Clearly identify the dimensions of the excavation areas. Include features from Figure 1 as necessary for reference (e.g., major structures).
Diesel ex 4x5
Gas ex 5x9

Figure 2a – OVM Screening Locations
The one soil sample obtained at the Site was not screened using an OVM.

This map shall illustrate locations of samples collected for soil screening (as indicated in Table 2), which were not submitted to the laboratory for analysis. Include features from Figure 1 as necessary for reference (e.g., major structures, excavations, etc.). If the screened soils were submitted for analysis the location of the sample should not be identified on this figure, but should be placed on either Figure 2 or 3.

Figure 3 - Soil Sample Location Map

This map shall illustrate the sampling locations at the site (outside of the tank excavation(s)). Include features from Figure 1 as necessary for reference (e.g., major structures, excavations, etc.) For each of these sampling locations include a text box with sample depth and laboratory analytical results.

Figure 4 - Vapor Sample Location Map
A site investigation involving vapor sampling has not been performed or requested by the OPS.

This map shall illustrate the sampling locations at the site. Include features from Figure 1 as necessary for reference (e.g. major structures, excavations, etc.). For each of these sampling locations include a text box with sample depth and laboratory analytical results.

Figure 5 - Groundwater Sample Location Map
A site investigation involving a groundwater evaluation has not been performed or requested by the OPS.

This map shall illustrate the groundwater sampling locations at the site. Include features from Figure 1 as necessary for reference (e.g., major structures, excavations, etc.). For each of these sampling locations include a text box with laboratory analytical results.

Figure 6 - Groundwater Elevation Map
A site investigation involving a groundwater evaluation has not been performed or requested by the OPS.

This map shall illustrate the locations at which groundwater levels have been measured. Figure 1 may be used as a base map. Include the date of the measurement (separate maps must be created for individual measuring events) and the relative groundwater elevation.

Provide groundwater elevation contours and an indication of the groundwater flow direction.

Figure 7 – POE Location Map
A site investigation involving an evaluation of potential receptors has not been performed or requested by the OPS.

This figure will identify each property in the vicinity of the site which could potentially be affected by the release. The properties will be illustrated by land use (e.g., single family residential, vacant land, retail, dry cleaning, gas station, etc.). This figure will also identify all potential POEs (property boundaries, surficial soils, subsurface utilities, groundwater wells and surface water features/sensitive environments).

Figure 8 – Area Surface Water, Groundwater, Topographical Map

This map is used to provide regional topographic and POE information. Include a portion of a U.S.G.S. 7 2' Quadrangle Topographic Map or equivalent, measuring a minimum of six inches by six inches with the site located in the middle of the six inch by six inch section. The map shall include a scale (approximately 1" = 2,000'), distinct site location marker, and geographic contour intervals. Clearly identify surface water features and water wells (excluding monitoring wells) within ½-mile radius of the site. Provide a text box with the associated permit number (as indicated in Table 6) of each water well location.
Note: A groundwater well inventory has not been performed or requested by the OPS.

3. LABORATORY DOCUMENTATION (Appendix D)

Chain of Custody forms which accompany samples for laboratory analyses are required to contain the following information: site name and address, sample number, date and time sampled, matrix description (e.g. soil, water), container size, type and decontamination status (e.g. 40 ml laboratory decontaminated amber glass VOA vial), preservation method (e.g. HCl 5%, 4E C), date and method of transport to laboratory (e.g. hand delivered, Fed Ex etc.), analyte and methodology of analyses requested (e.g. Total Extractable Petroleum Hydrocarbons (TEPH) by EPA Method 8015 Modified), and the name and signature of the person collecting the samples. Also attach all laboratory reports, and laboratory quality assurance/quality control reports.

4. BOREHOLE LITHOLOGIC LOGS AND WELL COMPLETION (Appendix E)
A site investigation involving borehole has not been performed or requested by the OPS.

Boring logs must include the site name and address, boring number, date completed, surface elevation, depth, borehole diameter, initial and static water levels (if available), drilling method, sampling method, lithologic graphic to scale, an indication of the intervals from which samples were obtained, results of VOC screening, and a geologic description and/or Unified Soil Classification System (USCS) class of each rock or soil type encountered including any staining or petroleum odors.

The following additional information should be included with the lithologic logs if a well has been completed. Include the total depth of the well, the casing elevation, the diameter of the well casing, the well casing material (e.g. PVC, stainless steel), the length and depth

of the screened interval, the size and type of perforations of the screen (e.g. 0.010" milled slots), the type of filter pack material placed in the well (e.g. 10-20 mesh washed silica sand), the type of annular seal (e.g. 1/2" bentonite pellets), the type of grout used to fill the remaining annular space (e.g. Portland cement 5% bentonite), the type of well casing cap, the method of securing the well casing cap, and the type of protective surface casing. Also included should be a well completion graphic to scale which indicates the depth to the top of the filter pack, the depth to the top of the annular seal, and the location of the screened interval.

Also included in Appendix E should be any cross-sections completed to illustrate site conditions.

5. WASTE DISPOSAL MANIFESTS (Appendix F)

Contaminated soil removal has not been performed or requested by the OPS.

Attach copies of all manifests provided by transporters, landfills, treatment facilities, etc.

6. SITE CLASSIFICATION CHECKLIST (Appendix G)

To complete the Site Classification Checklist, place a check in the Threat (T) box if the situation, designated by sub-class (SUB), exists at the site. If the threat does not exist, check the N box. The U box should only have been checked when the Site Classification Checklist was submitted with the Site Summary Form. Upon completion of this report all conditions which exist at the site should be known. Check the Response (R) box if an appropriate response action has been completed for the existing condition at the site. If the response action has been completed and the threat no longer exists, the site classification will be the classification of the next most highly listed threat. The site will be classified by the first table where a threat box has been checked and an appropriate response has not been completed. However, complete the entire form and perform appropriate response actions for each condition which exists at the site. Complete response actions in order of highest priority (1 being the highest).

7. SUPPORTING DOCUMENTATION (Appendix H)

Attach all supporting documentation as required(e.g., permits for initial response and abatement activities, industrial zoning designation, water quality designation, etc.).

APPENDIX B - TABLES

TABLE 1- SUMMARY OF ORGANIC VAPOR METER READINGS

OVM measurements were not taken during our site investigation, as an OVM meter was not readily available.

Sample Location I.D.	Date	Sample Depth (ft)	OVM Reading (ppm)	Laboratory Analyzed (y/n)
N/A	N/A	N/A	N/A	N/A

N/D = Not Detected
N/A = Not Analyzed

Site Street Address _2307 Wulfsohn Road City Glenwood Springs _____

TABLE 2 - SUMMARY OF SOIL LABORATORY RESULTS

Sample Number	Date	Sample Depth (ft)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethyl-Benzene (mg/Kg)	Xylenes (mg/Kg)	MTBE (mg/Kg)	TVPH (mg/Kg)	TEPH (mg/Kg)	TPH (mg/Kg)	Oil & Grease (mg/Kg)	Other Analytes?* (y/n)	Rationale**
New Motor Oil	7/11/07	5.5	0.00051	0.001	0.001	0.0026	N/A	N/A	N/A	N/A	310	N	RC

Identify any sample results which exceed Tier 1 RBSLs for soil leaching to groundwater pathway or 500mg/Kg TPH by presenting those results in bold typeface.
N/D = Less than the stated laboratory detection limit
N/A = Not Analyzed
* If yes, list other analytes detected in a separate table
**Rationale – Release confirmation (RC), In plume (IP), Upgradient (UG), Downgradient (DG), Point of Compliance (POC), Post excavation (PE), Define extent (DE), Waste characterization (WC)

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Site Street Address _2307 Wulfsohn Road City Glenwood Springs

TABLE 2a - SUMMARY OF SOIL PAH LABORATORY RESULTS

PAH analysis has not been performed. The reported laboratory results are below the TIER-1 RBSL's.

Sample Collection Date	Compound	Concentration mg/Kg	Depth sample collected (ft)	Sample # of TPH Sample	TPH Concentration in Original Sample mg/Kg

Identify any sample results which exceed Tier 1 RBSLs for the surficial soil pathway by presenting those results in bold typeface.
Responses which are common to all compounds (e.g., Sample collection date) only need to be completed for the first compound.
Repeat table if more than one sample is analyzed for PAHs
N/D = Less than the stated laboratory detection limit
N/A = Not Analyze

Site Street Address _2307 Wulfsohn Road City Glenwood Springs

TABLE 3 - SUMMARY OF VAPOR LABORATORY RESULTS

A site characterization involving an evaluation of vapors has not been performed or requested by the OPS.

Sample Number	Date	Sample Depth (ft)	Benzene (µg/m^3)	Toluene (µg/ m^3)	Ethyl-Benzene (µg/ m^3)	Xylenes (µg/ m^3)	MTBE (µg/ m^3)	TVPH (µg/ m^3)	TEPH (µg/ m^3)	TPH (µg/ m^3)	Oil & Grease (µg/ m^3)	Other Analytes? * (y/n)	Rationale**

N/D = Less than the stated laboratory detection limit
N/A = Not Analyzed
* If [yes: , list other analytes detected in a separate table
**Rationale – Assist in defining extent (DE), Identify threats to points of exposure (POE)

Site Street Address _2307 Wulfsohn Road City Glenwood Springs

TABLE 4 - SUMMARY OF GROUNDWATER LABORATORY RESULTS

A site characterization involving wells and borings has not been completed or observed by the OPS. Free product was not observed to a maximum depth excavated at the site of 1.5 feet BGS

Sample Number	Date	Sample Depth (ft)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-Benzene (µg/l)	Xylenes (µg/l)	MTBE (µg/l)	TVPH (mg/l)	TEPH (mg/l)	TPH (mg/l)	Oil & Grease (mg/l)	Other Analytes?* (y/n)	Rationale **

Identify any sample results which exceed Colorado Groundwater Standards (MCLs) by presenting those results in bold typeface.
N/D = Less than the stated laboratory detection limit
N/A = Not Analyzed
* If [yes[, list other analytes detected in a separate table
**Rationale – Release confirmation (RC), In plume (IP), Upgradient (UG), Downgradient (DG), Point of Compliance (POC), Define extent (DE), Waste characterization (WC)

Site Street Address _2307 Wulfsohn Road City Glenwood Springs _____

TABLE 5 - GROUNDWATER ELEVATION

A site characterization involving wells and borings has not been completed or requested by the OPS. Free product was not observed to a maximum depth excavated at the site of 1.5 feet BGS

Well #	Date Measured	Surveyed Elevation (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Top of Product Elevation (ft)	Water Table Elevation (ft)	Corrected Water Table Elevation (ft)

Packet Page 1332

Site Street Address _2307 Wulfsohn Road City Glenwood Springs _____

TABLE 6 - SUMMARY OF WATER WELL INFORMATION

A site characterization involving wells and borings has not been completed or requested by the OPS. Free product was not observed to a maximum depth excavated at the site of 1.5 feet BGS.

Permit Number*	Geographic Location	Approx. Direction from Site	Approx. Distance from Site (ft) (if known)	Listed Use	Well Depth (ft)	Water Level (ft)	Pumping Rate (gpm)

*Information from the Colorado Division of Water Resources
Indicate any wells which appear to be downgradient of the site in bold typeface.
Uses: O = Other Use, OM = Other Use (Monitoring Well), 1 = Agricultural, 3 = Commercial Use, 8 = Domestic Use, 9 = Livestock Use

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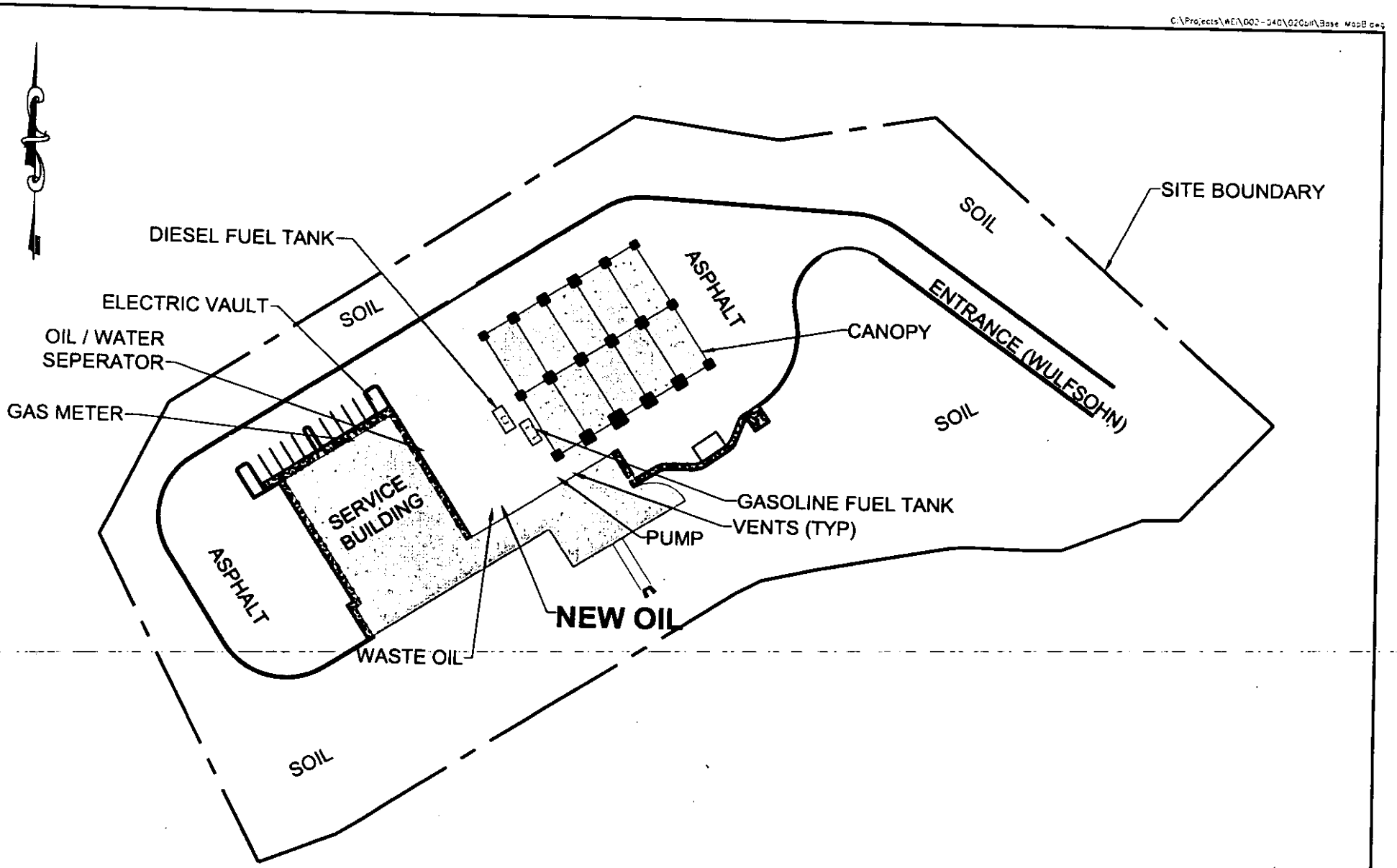
APPENDIX C - FIGURES



WEI
WASTE
ENGINEERING, INC.
818 COLORADO AVENUE
GLENWOOD SPRINGS, CO 81601
(970) 945-7755

DESIGN	BLL
DETAIL	BLL
CHECK	DCH
DATE	10/17/07
SCALE	1"= 100'

ROARING FORK TRANSIT AUTHORITY

FIGURE 1
SITE MAP

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THE SOIL SAMPLE WAS NOT SCREENED USING AN OVM

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SCALE	1"= 100'

ROARING FORK TRANSIT AUTHORITY

FIGURE 2a

OVM SCREENING LOCATIONS

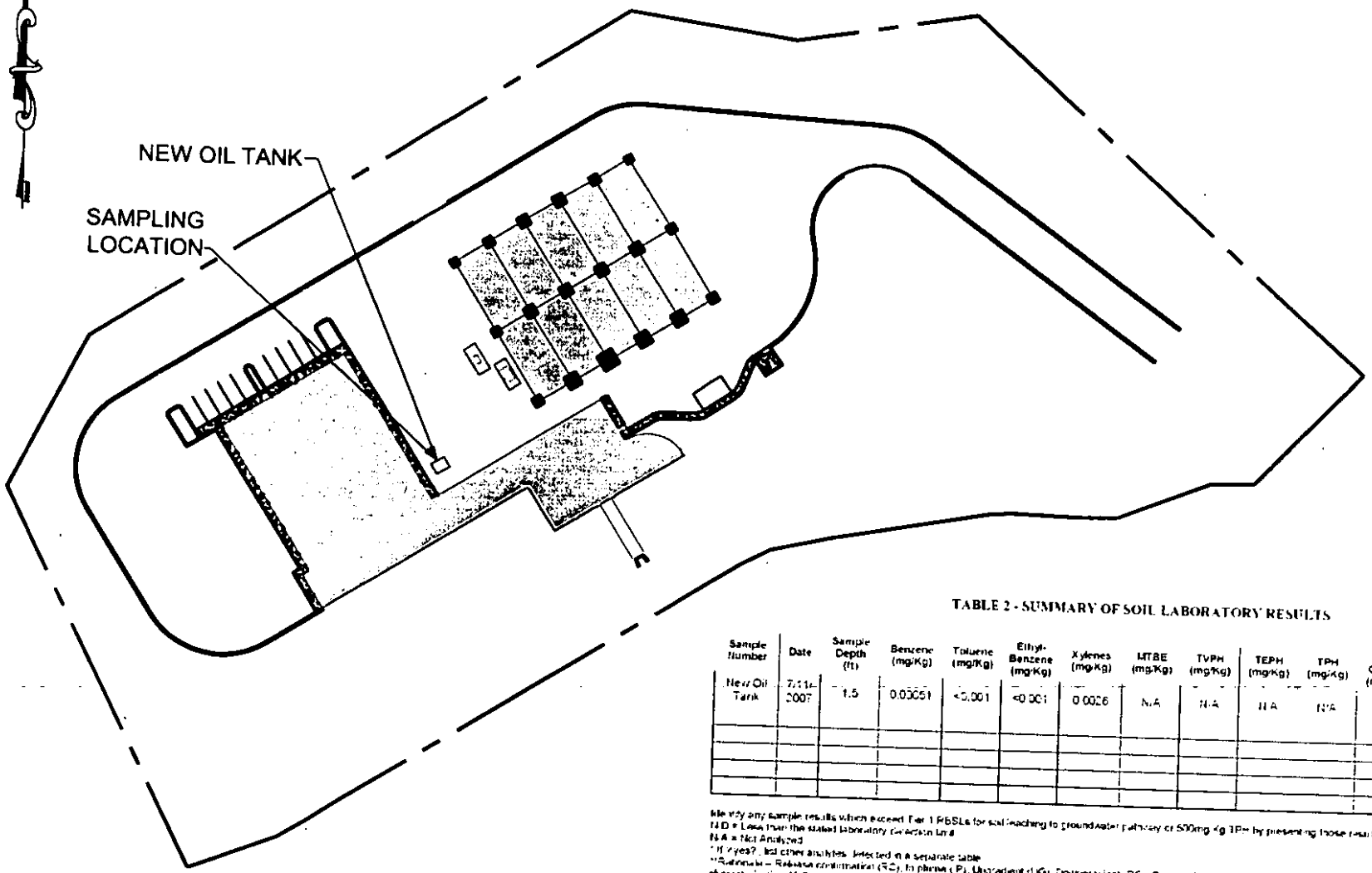

TABLE 2 - SUMMARY OF SOIL LABORATORY RESULTS

Sample Number	Date	Sample Depth (ft)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethyl-Benzene (mg/Kg)	Xylenes (mg/Kg)	MTBE (mg/Kg)	TVPH (mg/Kg)	TEPH (mg/Kg)	TPH (mg/Kg)	Oil & Grease (mg/Kg)	Other Analytes? * (yn)	Rationale**
New Oil Tank	7/11/2007	1.5	0.00351	<0.001	<0.001	0.0026	N/A	N/A	N/A	N/A	319	N	RC

Identify any sample results which exceed Tier 1 RBSLs for soil leaching to groundwater pathway or 500mg/Kg TPH by presenting those results in bold typeface
N/D = Less than the stated laboratory detection limit
N/A = Not Analyzed
* If yes?, list other analytes detected in a separate table
**Rationale = Release confirmation (RC), In plume (P), Upgradient (UG), Downgradient (DG), Point of Compliance (POC), Post excavation (PE), Delineation (DE), Waste characterization (WC)

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SCALE	1"= 100'

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FIGURE 2
EXCAVATION SAMPLE OCATION MAP

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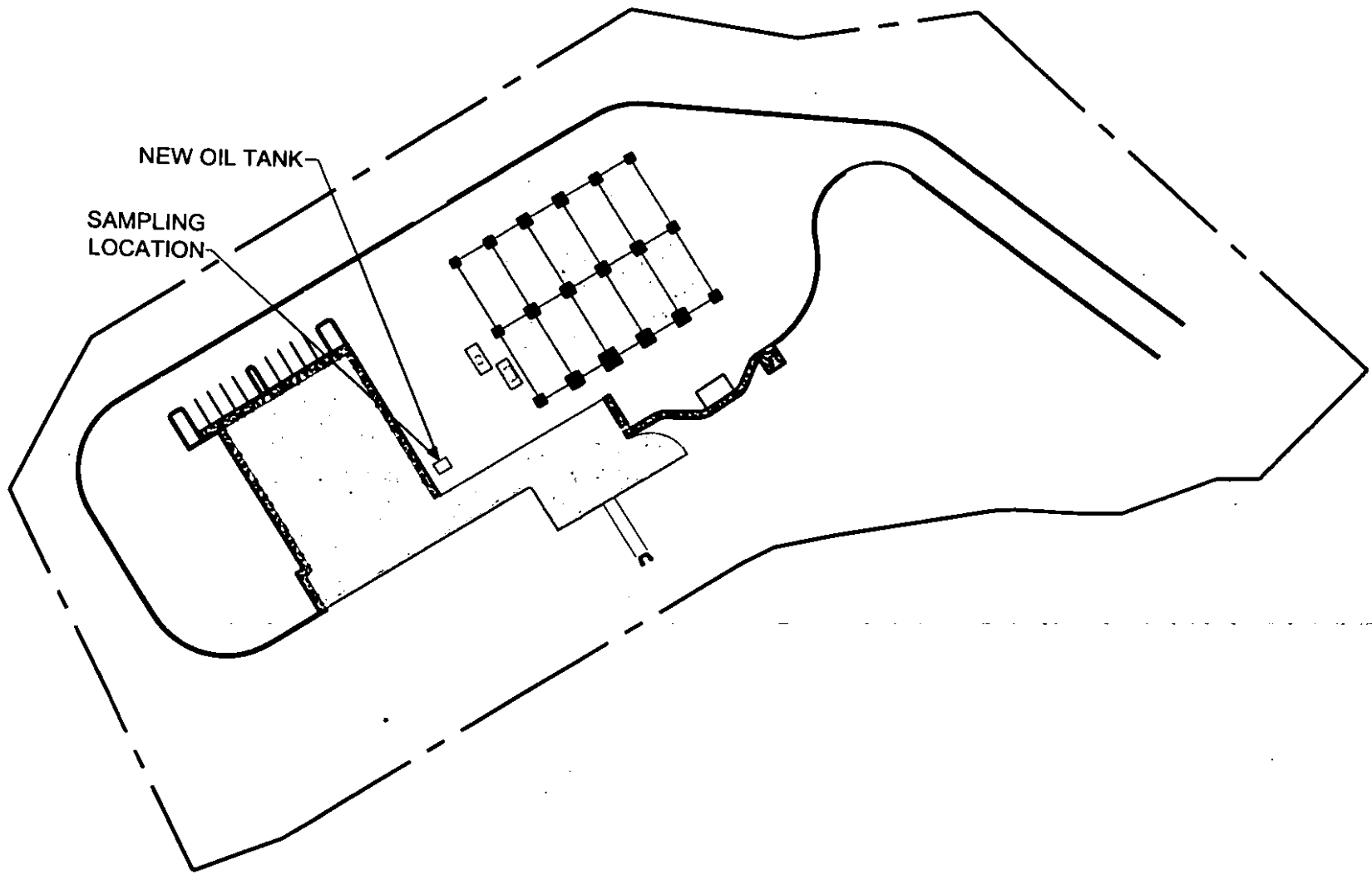

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FIGURE 3
SOIL SAMPLE LOCATION MAP

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A SITE INVESTIGATION INVOLVING VAPOR SAMPLING HAS NOT BEEN PERFORMED OR REQUESTED BY THE OPS

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FIGURE 4

VAPOR SAMPLING LOCATION MAP

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A SITE INVESTIGATION INVOLVING
A GROUNDWATER EVALUATION
HAS NOT BEEN PERFORMED OR
REQUESTED BY THE OPS

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SCALE	1"= 100'

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FIGURE 5

GROUNDWATER SAMPLING LOCATION MAP

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A SITE INVESTIGATION INVOLVING
A GROUNDWATER EVALUATION
HAS NOT BEEN PERFORMED OR
REQUESTED BY THE OPS

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SCALE	1"= 100'

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FIGURE 6

GROUNDWATER ELVATION MAP

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A SITE INVESTIGATION INVOLVING AN EVALUATION OF POTENTIAL RECEPTORS HAS NOT BEEN PERFORMED OR REQUESTED BY THE OPS

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SCALE	1"= 100'

ROARING FORK TRANSIT AUTHORITY

FIGURE 7

POE LOCATION MAP

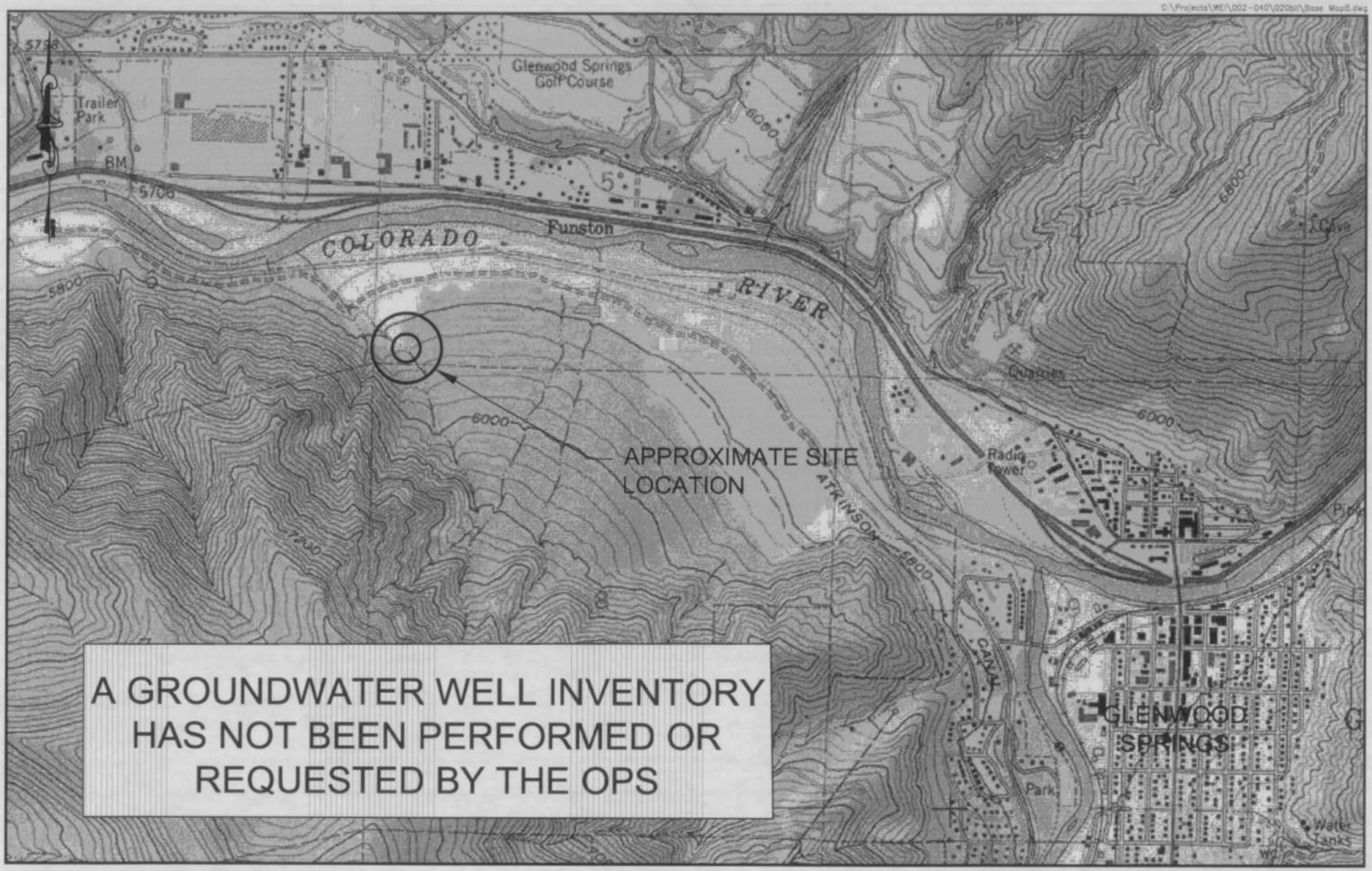

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FIGURE 8

AREA SURFACE WATER, GROUNDWATER, TOPOGRAPHICAL MAP

APPENDIX D - LABORATORY DOCUMENTATION

ANALYTICA
Environmental Laboratories

Analytica Environmental
Laboratories, Inc.
12189 Pennsylvania Street
Thornton, CO 80241
Phone: 303-469-8868
Fax: 303-469-5254

7/31/2007

Waste Engineering, Inc.
P.O. Box 219
Glenwood Springs, CO 81602
Attn: Craig Heydenberk

Work Order #: B0707088
Date: 7/31/2007
Work ID: RFTA
Date Received: 7/12/2007
Proj #: none

Sample Identification

Lab Sample Number	Client Description	Lab Sample Number	Client Description
B0707088-01	W 0 @ 1.5'		

Enclosed are the analytical results for the submitted sample(s). Please review the CASE NARRATIVE for a discussion of any data and/or quality control issues. Listings of data qualifiers, analytical codes, key dates, and QC relationships are provided at the end of the report.

Sincerely,

Joseph Egry
Project Manager

"The Science of Analysis, The Art of Service"

Case Narrative

Analytica Environmental Laboratories, Inc.

Work Order: B0707088

Samples were prepared and analyzed according to EPA or equivalent methods outlined in the following references:

USEPA Method 1664, EPA-821-B-94-004b, N-Hexane Extractable Material (HEM) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM) by Extraction and Gravimetry (Oil and Grease and Total Petroleum Hydrocarbons), April 1995.

Test Methods for Evaluating Solid Waste, USEPA SW-846, Third Edition, Revision 1, December 1996.

Standard Method for Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixtures, ASTM D 2216-80, July 1980.

REVIEW FOR COMPLIANCE WITH ANALYTICA QA PLAN
A summary of our review is shown below, organized by test:

SAMPLE RECEIPT:
One sample was received at a temperature of 3.3 deg C at Analytica-Thornton on 7/12/2007 9:50:00 AM. Custody seals were not present on the shipping container when received by the laboratory.

Test Method: 1664 FOR SOILS - Total - Solid

HOLDING TIMES:
Holding times were met for this Test

SAMPLE PREPARATION ISSUES AND OBSERVATIONS:
There were no unusual observations.

METHOD BLANK OUTLIERS:
There are no method blank outliers.

LCS OUTLIERS:
There are no LCS outliers.

MS/MSD and DUP OUTLIERS:
There are no MS/MSD or DUP outliers.

Test Method: Aromatic VOCs by GC/PID via method 8021B - BTEX - Solid

HOLDING TIMES:
Holding times were met for this Test

SAMPLE PREPARATION ISSUES AND OBSERVATIONS:
There were no unusual observations.

INSTRUMENT PERFORMANCE CHECKS:
Instrument checks were within method criteria.

INITIAL CALIBRATIONS:
Initial calibrations were within method criteria.

OPENING CONTINUING CALIBRATIONS:

The opening and closing CCVs are in control for the targets.

RunDate	Data File	Analyte	Recovery	LCL	UCL
7/25/2007 6:23:00 PM	07072502.D	p-Bromofluorobenzene	72.1	85	115

CLOSING CONTINUING CALIBRATIONS:

RunDate	Data File	Analyte	Recovery	LCL	UCL
7/26/2007 12:33:00 AM	07072512.D	p-Bromofluorobenzene	68.0	85	115

SURROGATE RECOVERIES:

The LCS and LCSD have the surrogate outside of control windows. All associated samples have normal surrogate recoveries and the LCS and LCSD have normal target recoveries.

Sample	LabID	Surrogate	Recovery	LCL	UCL	
LCS	T070730022-LCS	p-Bromofluorobenzene	73.	77	120	Complete
LCSD	T070730022-LCSD	p-Bromofluorobenzene	72.	77	120	Complete

METHOD BLANK OUTLIERS:
There are no method blank outliers.

LCS OUTLIERS:
There are no LCS outliers.

MS/MSD and DUP OUTLIERS:
There are no MS/MSD or DUP outliers.

Test Method: ASTM D2216 - Pmoist - Solid

All method criteria was met for this test.

Detailed Analytical Report

Analytica Environmental Laboratories, Inc.

Workorder (SDG): B0707088

Project: RFTA

Client: Waste Engineering, Inc.

Client Project Number: none

Report Section: Client Sample Report

Client Sample Name: W 0 @ 1.5'

Matrix: Soil

Collection Date: 7/11/2007 9:00:00AM

The following test was conducted by: Analytica - Thornton

Lab Sample Number: B0707088-01A
Prep Date: 7/13/2007
Analytical Method ID: 1664 FOR SOILS - Total
Prep Method ID: 1664_S
Prep Batch Number: T070718009
Report Basis: Dry Weight Basis
Sample prep wt./vol: 50.05 g

Analysis Date: 7/13/2007 1:00:00PM
Instrument: SCALE
File Name:
Dilution Factor: 1
Percent Moisture 2.50
Analyst Initials: G. Yates/ L. Friedman
Prep Extract Vol: 1.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Hexane-Extractable Material	na	310		mg/Kg	42	11	1

The following test was conducted by: Analytica - Thornton

Lab Sample Number: B0707088-01B
Prep Date: 7/25/2007
Analytical Method ID: Aromatic VOCs by GC/PID via method 8021B - BTEX
Prep Method ID: P&TSoil
Prep Batch Number: T070730022
Report Basis: Dry Weight Basis
Sample prep wt./vol: 5.00 g

Analysis Date: 7/25/2007 9:29:00PM
Instrument: GC_B
File Name: 07072507.D
Dilution Factor: 1
Percent Moisture 2.50
Analyst Initials: RA
Prep Extract Vol: 5.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Benzene	71-43-2	ND		ug/Kg	0.51	0.14	1
Ethylbenzene	100-41-4	ND		ug/Kg	1.0	0.24	
Toluene	108-88-3	ND		ug/Kg	1.0	0.20	
Xylenes, Total	1330-20-7	2.6		ug/Kg	2.1	0.70	

Surrogate	CASNo	Result	Flags	Units	PQL	MDL	Spike	% Recov	LCL	UCL	run #:
p-Bromofluorobenzene	460-00-4	21		ug/Kg	0.51	0.34	28	77.4	77	120	1

Detailed Analytical Report

Analytica Environmental Laboratories, Inc.

Workorder (SDG): B0707088

Project: RFTA

Client: Waste Engineering, Inc.

Client Project Number: none

Report Section: Method Blank Report

Client Sample Name: MB

Matrix: Solid

Collection Date: 7/13/2007 12:00:00AM

The following test was conducted by: Analytica - Thornton

Lab Sample Number: T070718009-MB
Prep Date: 7/13/2007
Analytical Method ID: 1664 FOR SOILS - Total
Prep Method ID: 1664_S
Prep Batch Number: T070718009
Report Basis: As Received
Sample prep wt./vol: 50.03 g

Analysis Date: 7/13/2007 1:00:00PM
Instrument: SCALE
File Name:
Dilution Factor: 1
Percent Moisture NA
Analyst Initials: G. Yates/ L. Friedman
Prep Extract Vol: 1.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Hexane-Extractable Material	na	ND		mg/Kg	41	10	1

The following test was conducted by: Analytica - Thornton

Lab Sample Number: T070730022-MB
Prep Date: 7/25/2007
Analytical Method ID: Aromatic VOCs by GC/PID via method 8021B - BTEX
Prep Method ID: P&TSoil
Prep Batch Number: T070730022
Report Basis: As Received
Sample prep wt./vol: 5.00 g

Analysis Date: 7/25/2007 8:52:00PM
Instrument: GC_B
File Name: 07072506.D
Dilution Factor: 1
Percent Moisture NA
Analyst Initials: RA
Prep Extract Vol: 5.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Benzene	71-43-2	ND		ug/Kg	0.50	0.13	1
Ethylbenzene	100-41-4	ND		ug/Kg	1.0	0.23	
Toluene	108-88-3	ND		ug/Kg	1.0	0.20	
Xylenes, Total	1330-20-7	ND		ug/Kg	2.0	0.68	

Surrogate	CASNo	Result	Flags	Units	PQL	MDL	Spike	% Recov	LCL	UCL	run #:
p-Bromofluorobenzene	460-00-4	21		ug/Kg	0.50	0.33	27	78.2	77	120	1

Detailed Analytical Report

Analytica Environmental Laboratories, Inc.

Workorder (SDG): B0707088

Project: **RFTA**

Client: **Waste Engineering, Inc.**

Client Project Number: **none**

Tests Run at: Analytica Environmental Laboratories - Thornton, Colorado

Workorder (SDG): B0707088

Project: RFTA

Project Number:

Prep Batch: **T070718009**

QUALITY CONTROL REPORT

LCS/LCSD REPORT

Analysis: 1664 FOR SOILS - Total

MB: T070718009-MB

Prep Date: 7/13/2007

MB Anal. Date: 7/13/2007 1:00:00PM

Units: mg/Kg

LCS Anal. Date: 7/13/2007 1:00:00PM LCSD Anal. Date: 7/13/2007 1:00:00PM Matrix: Solid

Analyte Name	SampResult	LCSRes.	SDRes.	SPLev	SPDLev	Recov.	SD Recov	RPD	Recov Lim	RPDLim	Flag
Hexane-Extractable Material	ND	782	790	800	800	97.8	98.8	1.0	61 - 133	20	

MS/MSD REPORT

Analysis: 1664 FOR SOILS - Total

Parent: B0707088-01A

Prep Date: 7/13/2007

Samp. Anal. Date: 7/13/2007 1:00:00PM

Units: mg/Kg

MS Anal. Date: 7/13/2007 1:00:00PM MSD Anal. Date: 7/13/2007 1:00:00PM Matrix: Soil

Analyte Name	SampResult	MSRes.	MSDRes	SPLev	SPDLev	Recov.	MSD Rec.	RPD	Recov Lim	RPDLim	Flag
Hexane-Extractable Material	307	1,130	1,230	821	821	100.3	112.5	8.5	70 - 130	20	

FOOTNOTES TO QC REPORT

Note 1: Results are shown to three significant figures to avoid rounding errors in calculations.

Note 2: If the sample concentration is greater than 4 times the spike level, a recovery is not meaningful, and the result should be used as a replicate. In such cases the spike is not as high as expected random measurement variability of the sample result itself.

Note 3: For sample duplicates, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample and duplicate results are not five times the PQL or greater, then the RPD is not expected to fall within the window shown and the comparison should be made on the basis of the absolute difference. Analytica uses the criterion that the absolute difference should be less than the PQL for water or less than 2XPQL for other matrices.

Note 4: For serial dilutions, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample result is not 50 times the MDL or greater, then the fact that the RPD does not meet the 10% criterion has little signifcance. Otherwise it indicates that a matrix bias may exist at the analytical step.

Detailed Analytical Report

Analytica Environmental Laboratories, Inc.

Workorder (SDG): B0707088

Project: RFTA

Client: Waste Engineering, Inc.

Client Project Number: none

Tests Run at: Analytica Environmental Laboratories - Thornton, Colorado

Workorder (SDG): B0707088

Project: RFTA

Project Number:

Prep Batch: T070730022

QUALITY CONTROL REPORT

LCS/LCSD REPORT

Analysis: Aromatic VOCs by GC/PID via method 8021B - BTEX

MB: T070730022-MB

Prep Date: 7/25/2007

MB Anal. Date: 7/25/2007 8:52:00PM

Units: ug/Kg

LCS Anal. Date: 7/25/2007 7:38:00PM LCSD Anal. Date: 7/25/2007 8:15:00PM Matrix: Solid

Analyte Name	SampResult	LCSRes.	SDRes.	SPLev	SPDLev	Recov.	SD Recov	RPD	Recov Lim	RPDLim	Flag
Benzene	ND	11.1	11.3	10.0	10.0	111.0	113.0	1.8	70 - 130	20	
Toluene	ND	11.4	11.3	10.0	10.0	114.0	113.0	0.9	70 - 130	20	
Ethylbenzene	ND	11.0	11.2	10.0	10.0	110.0	112.0	1.8	70 - 130	20	
Xylenes, Total	ND	34.3	34.7	30.0	30.0	114.3	115.7	1.2	70 - 130	20	

MS/MSD REPORT

Benzene	ND	12.9	10.3	125.8	70 - 130	20
Toluene	ND	12.8	10.3	124.8	70 - 130	20
Ethylbenzene	ND	12.2	10.3	119.0	70 - 130	20
Xylenes, Total	2.55	35.5	30.8	107.1	70 - 130	20

FOOTNOTES TO QC REPORT

Note 1: Results are shown to three significant figures to avoid rounding errors in calculations.

Note 2: If the sample concentration is greater than 4 times the spike level, a recovery is not meaningful, and the result should be used as a replicate. In such cases the spike is not as high as expected random measurement variability of the sample result itself.

Note 3: For sample duplicates, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample and duplicate results are not five times the PQL or greater, then the RPD is not expected to fall within the window shown and the comparison should be made on the basis of the absolute difference. Analytica uses the criterion that the absolute difference should be less than the PQL for water or less than 2XPQL for other matrices.

Note 4: For serial dilutions, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample result is not 50 times the MDL or greater, then the fact that the RPD does not meet the 10% criterion has little signifcance. Otherwise it indicates that a matrix bias may exist at the analytical step.

Workorder (SDG): B0707088

Project: RFTA

Client: Waste Engineering, Inc.

Client Project Number: none

SURROGATE RECOVERY SUMMARY REPORT

Test Method: **Aromatic VOCs by GC/PID via method 8021B - BTEX**

Lab Sample #: B0707088-01B
Analysis Date: 7/25/2007 9:29:00PM
Batch Number: T070730022
Dilution: 1
Client Sample: W 0 @ 1.5'
Data File: 07072507.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
p-Bromofluorobenzene	77	77	120		Complete

Lab Sample #: B0707088-01B
Analysis Date: 7/25/2007 10:05:00PM
Batch Number: T070730022
Dilution: 1
Client Sample: W 0 @ 1.5'
Data File: 07072508.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
p-Bromofluorobenzene	76	77	120	LOW	Rrun

Lab Sample #: T070730022-MB
Analysis Date: 7/25/2007 8:52:00PM
Batch Number: T070730022
Dilution: 1
Client Sample: MB
Data File: 07072506.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
p-Bromofluorobenzene	78	77	120		Complete

Lab Sample #: T070730022-LCS
Analysis Date: 7/25/2007 7:38:00PM
Batch Number: T070730022
Dilution: 1
Client Sample: LCS
Data File: 07072504.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
p-Bromofluorobenzene	73	77	120	LOW	Complete

Lab Sample #: T070730022-LCSD
Analysis Date: 7/25/2007 8:15:00PM
Batch Number: T070730022
Dilution: 1
Client Sample: LCSD
Data File: 07072505.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
p-Bromofluorobenzene	73	77	120	LOW	Complete

Lab Sample #: B0707088-01B-MSD
Analysis Date: 7/25/2007 11:19:00PM
Batch Number: T070730022
Dilution: 1
Client Sample: MSD
Data File: 07072510.D

AnalyteName	SSRecov	LCL	UCL	SSFlag	Result Status
p-Bromofluorobenzene	80	77	120		Complete

Detailed Analytical Report

Analytica Environmental Laboratories, Inc.

Workorder (SDG): B0707088
Project: RFTA
Client: Waste Engineering, Inc.
Client Project Number: none

QC BATCH ASSOCIATIONS - BY METHOD BLANK

Lab Project ID: 75,315 **Lab Project Number:** B0707088

Lab Method Blank Id: T070718006-MB
Prep Batch ID: T070718006
Method: ASTM D2216 - Pmoist
Prep Date: 7/13/2007

This Method blank and sample preparation batch are associated with the following samples, spikes, and duplicates:

SampleNum	ClientSampleName	DataFile	AnalysisDate
B0707051-01A	Batch QC		7/13/2007 10:50:00AM
B0707088-01A	W 0 @ 1.5'		7/13/2007 10:50:00AM
B0707051-01A-DUP	DUP		7/13/2007 10:50:00AM

Lab Method Blank Id: T070718009-MB
Prep Batch ID: T070718009
Method: 1664 FOR SOILS - Total
Prep Date: 7/13/2007

This Method blank and sample preparation batch are associated with the following samples, spikes, and duplicates:

SampleNum	ClientSampleName	DataFile	AnalysisDate
B0707088-01A	W 0 @ 1.5'		7/13/2007 1:00:00PM
T070718009-LCS	LCS		7/13/2007 1:00:00PM
T070718009-LCSD	LCSD		7/13/2007 1:00:00PM
B0707088-01A-MS	MS		7/13/2007 1:00:00PM
B0707088-01A-MSD	MSD		7/13/2007 1:00:00PM

Lab Method Blank Id: T070730022-MB
Prep Batch ID: T070730022
Method: Aromatic VOCs by GC/PID via method 8021B - BTEX
Prep Date: 7/25/2007

This Method blank and sample preparation batch are associated with the following samples, spikes, and duplicates:

SampleNum	ClientSampleName	DataFile	AnalysisDate
T070730022-LCS	LCS	07072504.D	7/25/2007 7:38:00PM
T070730022-LCSD	LCSD	07072505.D	7/25/2007 8:15:00PM
B0707088-01B	W 0 @ 1.5'	07072507.D	7/25/2007 9:29:00PM
B0707088-01B-MSD	MSD	07072510.D	7/25/2007 11:19:00PM

Workorder (SDG): B0707088

Project: **RFTA**

Client: **Waste Engineering, Inc.**

Client Project Number: **none**

DATA FLAGS AND DEFINITIONS

The PQL is the Method Quantitation Limit as defined by USACE.
Reporting Limit: Limit below which results are shown as "ND". This may be the PQL, MDL, or a value between. See the report conventions below.

Result Field:

ND = Not Detected at or above the Reporting Limit
NA = Analyte not applicable (see Case Narrative for discussion)

Qualifier Fields:

LOW = Recovery is below Lower Control Limit
HIGH = Recovery , RPD, or other parameter is above Upper Control Limit
E = Reported concentration is above the instrument calibration upper range

Organic Analysis Flags:

B = Analyte was detected in the laboratory method blank
J = Analyte was detected above MDL or Reporting Limit but below the Quant Limit (PQL)

Inorganic Analysis Flags:

J = Analyte was detected above the Reporting Limit but below the Quant Limit (PQL)
W = Post digestion spike did not meet criteria
S = Reported value determined by the Method of Standard Additions (MSA)

Several ways of defining the limit of detection and quantitation are prevalent in the laboratory industry and may appear in Analytica reports. These include the following:

MRL = "minimum reporting level", from the EPA Safe Drinking Water program (SDW)
PQL = "practical quantitation limit", from SW-846
EQL = "estimated quantitation limit", from SW-846
LOQ = "limit of quantitation", from a number of authoritative sources

In Analytica's work, all of these terms have the same meaning, equivalent to the EPA definition of the MRL. This reporting level is supported by a satisfactory calibration data point which is at that level or lower, and also is supported by a method detection limit (MDL) determined by the procedure in 40CFR. The MDL is lower than the MRL and represents an estimate of the level where positive detections have a 99% probability of being real, but where quantitation accuracy is unknown.

The MRL as defined by Analytica is the lowest demonstrated point of known quantitation accuracy.
The MRL should not be confused with the MCL, which is the EPA-defined "maximum contaminant level" allowed for certain regulated targets under specific regulations, such as the National Primary Drinking Water Regulations. Normally, the MRL is set at a level which is much lower than the MCL in order to ensure that levels are well below those limits. Not all target analytes have MCL levels established.

Other Flags may be applied. See Case Narrative for Description

Workorder (SDG): B0707088

Project: RFTA

Client: Waste Engineering, Inc.

Client Project Number: none

REPORTING CONVENTIONS FOR THIS REPORT

B0707088

TestPkgName	Basis	# Sig Figs	Reporting Limit
1664_S/SG/1664_S/SG (Solid) - Total	Dry Weight Basis	2	Report to PQL
8021/5030B (Solid) - BTEX	Dry Weight Basis	2	Report to PQL
ASTMD2216/ASTMD2216 (Solid) - Pmoist	As Received	3	Report to MDL, J qual below PQL

ANALYTICA GROUP

Analytica Chain of Custody Form

12189 Pennsylvania St.
Thornton, CO 80241
(303) 469-8868
(303) 469-5254 fax

4307 Arctic Boulevard
Anchorage, AK 99503
(907) 258-2155
(907) 258-6634 fax

475 Hall St.
Fairbanks, AK 99701
(907) 456 - 3116
(907) 456-3125 Fax

5438 Shaune Drive
Juneau, AK 99801
(907) 780-6668
(907) 780-6670 fax

Page 1 of 1

Chain of Custody No: 60439

Client Name & Address: WEI PO219 Glenwood Spring

Report to: Heydenberk

Phone No: 970 945-7755

Fax No: 970 945-9216

E-mail:

Special Instructions/Comments:

Public Water System (PWS) ID#:

Project Name: RFTA

Turnaround Time for Results (TAT)

X Standard ___ Expedited (< 10 days, prior authorization required) (please specify due date below; add'l charges may apply)

Requested Due Date for Results:

Section To be Completed by Analytica

Quote ID:

LGN: B0707088

Account #:

Cash | Credit Card

Invoice to Name & Address: Jane

P.O. or Contract No: 972 022 000

Kit Prep/Shipping Charge: $

Requested Analysis/Method

Client Sample Identification / Location	Date Sampled	Time Sampled	Matrix (S-DW-WW-Other)	No. of Containers	HI	026 1644	BTEX					Field Preserved	Field Filtered	MS/MSD ?
WO@ 1½'	7/11/07	9:00	S	3		X	X							

Relinquished by:	Date	Time	Received by:	Date	Time
DCH	7/11/07	9:00	[signature]	7/12/07	09:50
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

Name of Sampler: (printed) D. Heydenberk

Section To Be Completed by Analytica

	THO	ANC	JNU	FBKS
Condition of Custody Seal?:	None			
Initialed By:	—			
Temp/Loc:	3.3			
Thermo ID#:				
Shipped Via:	F			

Version 2.0

ANALYTICA

Cooler Receipt Form

Client: Waste Engineering, Inc. Client Code: 022120 Order #: B0707088
Project: RFTA

Cooler ID: 1

A. Preliminary Examination Phase:

Date cooler opened: 7/12/2007
Cooler opened by: GP Signature: LQ for GP

1. Was airbill Attached? Yes Airbill #: 861692557975 Carrier Name: FedEx
2. Custody Seals? No How many? 0 Location: Seal Name:
3. Seals intact? Yes
4. COC Attached? Yes Properly Completed? Yes Signed by AEL employee? Yes
5. Project identification from custody paper: RFTA
6. Preservative: Wetice Temperature: 3.3

Designated person initial here to acknowledge receipt: LQ for GP Date: 7/12/07

COMMENTS:

B. Log-In Phase: Samples Log-In Date: 7/12/2007 Log-In By: LQ

1. Packing Type: Other
2. Were samples in separate bags? N/A
3. Were containers intact? Yes Labels agree with COC? Yes
4. Number of bottles received: 3 Number of samples received: 1
5. Correct containers used? Yes Correct preservatives added? Yes
6. Sufficient sample volume? Yes
7. Bubbles in VOA samples? N/A
8. Was Project manager called and status discussed? No
9. Was anyone called? No Who was called? _____ By whom? _____ Date: _____

COMMENTS:

APPENDIX E - BOREHOLE LITHOLOGIC LOGS AND WELL COMPLETION

Soil sampling involving Borings/Direct Push Points has not been performed at the Site or Requested by the OPS.

APPENDIX F - WASTE DISPOSAL MANIFESTS

Contaminated soil has not been generated at the site. Disposal has not occurred.

APPENDIX G - SITE CLASSIFICATION CHECKLIST

A site characterization has not been completed. As a result the site classification tables cannot be completed at this time.

Site Street Address _2307 Wulfsohn Road City Glenwood Springs _____

CLASSIFICATION 1 - CURRENT THREAT TO HUMAN HEALTH , SAFETY, OR SENSITIVE ENVIRONMENT

F	R	N	U	SUB	Threat	Response Action
				1.1	Explosive levels, or concentrations of vapors that could cause acute health effects, are present in a residence or other building.	*Evacuate occupants, begin emergency abatement measures such as subsurface ventilation, or building pressurization or free product removal. Notify local fire authority.*
				1.2	Explosive levels of vapors are present in subsurface utility system(s).	*Evacuate vicinity immediately, begin emergency abatement measures such as ventilation.*
				1.3	Free product is present in measurable quantities at ground surface, on surface water bodies, in utilities, or on surface water.	*Prevent further free product migration by appropriate containment measures, institute free product removal, restrict area access.*
				1.4	A water supply well, supply line, or surface intake is impacted** above action levels.	*Notify user(s) provide alternate water supply, control contaminated water and treat water at the point-of-use.*
				1.5	Ambient vapor/particulate concentrations of concern from an acute exposure or safety viewpoint.	*Install a vapor barrier, remove the source, or restrict access to affected area.*
				1.6	Surface water, storm water, or groundwater which is impacted** above action levels is discharging directly to a surface water body used for human drinking water or contact recreation, or a sensitive environment.	*Minimize extent of impact by containment measures, and implement habitat management to minimize exposures.*

CLASSIFICATION 2 - SHORT-TERM THREAT (0-6 MONTHS) TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENT

T	R	N	U	SUB	Threat	Response Action
				2.1	Explosive vapor levels, or concentrations that could cause acute health effects, may accumulate in a residence or other buildings within six months.	*Assess the potential for vapor migration through monitoring/modeling and remove source, if necessary, or install a vapor migration barrier.*
				2.2	Surficial soils impacted** above action levels, are exposed and less than 500 ft from public access, dwellings, parks, sensitive environment, playgrounds, day care centers, schools, or similar use facilities.	*Remove soils, cover area, or restrict access.*
				2.3	A water supply well producing from the affected groundwater is impacted** above action levels, or is located less than 120 ft* down-gradient of the known extent of contamination.	*Notify owner/user, evaluate need for point-of-use water treatment, hydraulic control, or alternative water supply.*
				2.4	Groundwater is impacted** above action levels and a water supply well producing from a different interval is within the known extent of contamination.	*Notify owner, monitor groundwater well quality and determine need for prevention of vertical migration to the supply well.*
				2.5	Surface water, storm water, or groundwater, impacted** above action levels, discharges within 500 ft of a surface water body used for human drinking water or contact recreation, or a sensitive environment.	*Begin containment measures. Restrict access to areas near discharge. Evaluate magnitude and impact to discharge area.*
				2.6	Free product, of any measurable thickness on groundwater is discovered.	*Prevent free product migration by appropriate containment measures. Begin free product removal immediately.*
				2.7	Groundwater impacted** above action levels is present offsite.	*Define extent and degree of contamination. Notify OIS of name and address of impacted parties.*

CLASSIFICATION 2a - INTERMEDIATE-TERM THREAT (7-24 MONTHS) TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENT

T	R	N	U	SUB	Threat	Response Action
				2a.1	Explosive vapor levels, or concentrations that could cause acute health effects may accumulate in a residence or other buildings within seven to twenty four months.	*Assess the potential for vapor migration, through monitoring/modeling and remove source, if necessary, or install a vapor migration barrier.*
				2a.2	Groundwater is impacted** above action levels and a water supply well producing from the impacted interval is located between 120 ft and 500 ft* down-gradient of the known extent of contamination.	*Notify owner/user, evaluate need for point-of-use water treatment, hydraulic control, or alternate water supply.*

CLASSIFICATION 3 - LONG-TERM THREAT (>2 YEARS) TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENT

T	R	N	U	SUB	Threat	Response Action
				3.1	Subsurface soils (> 3 ft bgs) are impacted** above action levels, and depth from impacted soils to the first groundwater is less than 50 ft.	*Define the extent of contamination. Monitor groundwater. Determine the potential for future contaminant migration to the groundwater.*
				3.2	Groundwater is impacted** above action levels onsite with the potential to migrate offsite.	*Define the extent of contamination. Monitor groundwater. Determine the potential for future contaminant migration to the groundwater at the property boundary.*
				3.3	Groundwater is impacted** above action levels, and water supply wells producing from the impacted interval are located between 500 ft and ½ mile* down gradient of the known extent of contamination.	*Define extent of contamination. Monitor the dissolved plume and evaluate the potential for future contaminant migration, for natural attenuation and the need for hydraulic control.*
				3.4	Surface water, storm water, or groundwater impacted** above action levels, discharges within 1500 ft of a surface water body used for human drinking water or contact recreation, or sensitive environment.	*Investigate potential impact on sensitive environment or surface water body, restrict access to area of discharge and evaluate the need for containment/controls measures.*

CLASSIFICATION 4 - NO DEMONSTRABLE LONG-TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENT

T	R	N	U	SUB	Threat	Response Action
				4.1	Impacted** soils above action levels are located more than 3 ft bgs and are greater than 50 ft above the nearest groundwater.	*Monitor groundwater and evaluate effect of natural attenuation on leachate migration.*
				4.2	Groundwater is impacted** above action levels and water supply wells that do not produce from the impacted interval are located downgradient outside the known extent of contamination.	*Monitor groundwater and evaluate effect of natural attenuation on dissolved plume migration.*
				4.3	Surficial soils impacted** above action levels are exposed and greater than 500 ft from public access, dwellings, parks, sensitive environments, sensitive resources, playgrounds, day care centers, schools, or similar use facilities.	*Restrict access to affected soils.*

* These distances are based on conservative assumptions for groundwater flow velocity. These distances can be adjusted provided supporting documentation is submitted to and approved by the OIS.
**If the extent of contamination has not been defined the owner/operator must assume that all potential POEs are within the impacted area.

APPENDIX H - SUPPORTING DOCUMENTATION

Reported laboratory results are included in Appendix D.

USGARRoA 005

BILL RITTER, JR
Governor

DONALD J. MARES
Executive Director

RICHARD O. PIPER
Division Director

DEPARTMENT OF LABOR AND EMPLOYMENT
Division of Oil and Public Safety
Remediation Section
633 17th Street, Suite 500
Denver, Colorado 80202-3660
(303) 318-8500; Fax (303) 318-8546
Website: http://oil.cdle.state.co.us

FILE COPY

November 14, 2007

RUSS DECKER
ROARING FORK TRANSPORTATION AUTHORITY
0051 SERVICE CENTER DRIVE
ASPEN CO 81611

Re: The suspected release during the replacement of overfill protection at the Roaring Fork Transportation Authority, 2307 Wulfsohn Rd., Glenwood Springs, Garfield County, Colorado. (Event ID 10428)

Dear Mr. Decker:

The Division of Oil and Public Safety (OPS) has reviewed the Site Characterization Report for the above referenced site that was received on October 25, 2007.

Based solely upon the information submitted, which shows that contamination levels are below state cleanup levels, OPS does not require any further investigation or remedial action at this time. If conditions change, OPS reserves the right to determine if any additional actions are necessary. This no further action (NFA) letter is in reference to the suspected release during the replacement of overfill protection.

OPS cannot release you from any liability that may be associated with any contamination at or from this site.

Please address correspondence regarding this site to me. If you have any questions call me at (303) 318-8524.

Sincerely,

Tina Sandoval
Remediation Technician
Remediation Section

TR Kelley
Environmental Protection Specialist
Remediation Section

cc: Laura Smith, P.E., Remediation Section Manager
Craig Heydenberk, Waste Engineering, Inc., P.O. Box 219, Glenwood Springs, CO 81611

November 11, 2019

David Sarno
Petroleum Equipment Sales and Service, Inc
P.O. Box 1818
Glenwood Springs, Colorado 81602

Subject: **Spill Bucket Repair Assessment,**
RFTA Maintenance Facility, Glenwood Springs CO

Dear Mr. Sarno:

On November 6, 2019, Palisades Technology and Management, LLC (PTM) conducted a limited assessment at the Roaring Fork Transit Authority (RFTA) maintenance facility located at 2301 Wulfsohn Road in Glenwood Springs, Colorado. This assessment was performed in conjunction with repairs to the spill buckets on three underground storage tanks (USTs) at the site.

During testing of the spill buckets, it was reported that the bucket on the oil UST test failed and testing could not be performed on the unleaded or diesel spill buckets as the fill pipe could not be removed. Due to these uncertainties, PTM was onsite during the repair work to assess the potential for a release.

The PTM representative observed the excavation of the fill pipe and spill bucket of the three USTs and performed visual inspection and screening of soils with a photoionization detector (PID) to assess the potential for a release of petroleum products to the subsurface. No stained soils or odors were noted surrounding or under the spill bucket on the three USTs. PID readings from soil (tank bedding) collected during excavation activities was non-detect for organic vapors. Additionally, a visual inspection of the top of the oil UST was performed due to the failure of the spill bucket. No evidence of a release of oil was observed on the top of the tank or in tank bedding between the spill bucket and the top of the tank.

No additional action is required by RFTA as no evidence of a release was observed during the limited assessment. If you have questions or concerns, please contact the undersigned.

Sincerely,

David M Cox

David Cox
President
Palisades Technology and Management, LLC
palisadestech@gmail.com

Palisades Technology and
Management, LLC
4950 S Yosemite St, #F2-123
Greenwood Village, CO 80111
720-250-8551

Colorado Department of Labor and Employment
Division of Oil and Public Safety – Compliance Section
633 17th Street, Suite 500
Denver, CO 80202-3610

Phone: 303-318-8525
Email: cdle_oil_inspection@state.co.us
Web: www.colorado.gov/ops

Minor Equipment Repair/Replacement Notification

(Revised 5/8/2019)

Submit this form, including the completed OPS Secondary Containment/Spill Container Testing form and/or precision line tightness test results to OPS within 7 days after replacement/testing.

Facility Information

Facility Name:	RFTA			Facility ID #:	15558
Facility Address:	2307 Wulfsohn Rd	City:	Glenwood SP	ZIP:	81601
A/B Operator Name:		Phone Number:		Email Address:	

Installer/Qualified Service Technician (QST) Information

Company Name:	Petrol. Equipment Sales + Service				
Address:	PO Box 1818	City/State/ZIP:	Glenwood SP, CO 81602		
Contact Name:	DAVID SARNO	Phone Number:	9703798698	Email Address:	DAVID SARNO @ AOL.COM
Certified Installer/QST Name:	DAVID SARNO			Installer/QST ID #:	

Work Performed

Description:

- ☐ Repair **OR** ☒ Replace **existing** spill containment at fill or vapor recovery connection
- ☐ Repair **OR** ☐ Replace **existing** overfill protection device with dissimilar type
- ☐ Repair **OR** ☐ Replace **existing** ☐ UDC **OR** ☐ STP **OR** ☐ Transition sump

OPS Tank ID #	15558-1	15558-2	15558-4				
Capacity	15,000 gal	6000 gal	4000 gal	gal	gal	gal	gal
Product Stored in Tank	DIESEL	UNLEAD	OIL				
Spill Containment Location							
Spill Containment Wall Type	D	D	D				
Spill Containment Size	5 gal	5 gal	5 gal	gal	gal	gal	gal
Overfill Prevention Device	FILL VALVE	FV	FV				
Containment Sump Type	N/A	N/A	N/A				
Sump Wall Type							
Containment Sump Manufacturer							
Piping Type – Wall							
Piping Type – Material							

Where product piping has been altered, cut or disassembled and removed to allow replacement of containment sumps, show amount replaced below.

Piping must be precision tightness tested following repair and before returning to service.

Piping Length Removed/Replaced	ft	ft	ft	ft	ft	ft	ft

Checklist

Item	Date Completed	N/A
Date repair/replacement work was completed	11/12/2019	
If a release has occurred, a report must be made to OPS within 24 hours of discovery by calling 303-318-8547.		☐
Has spill containment/sumps been tested hydrostatically or using another approved method with pass results? ☒ Yes ☐ No		
Has piping been precision tightness tested following repair and before returning to service with pass results? ☐ Yes ☐ No		☐

Certification Information

I certify under penalty of law that the information provided here and in supporting documents is true, accurate and complete.

Installer/QST Name:	DAVID SARNO	Installer/QST Signature:	David Sarno	Date:	11/12/19

Installer and/or Qualified Service Technician (QST) Contact Information must be provided.

Colorado Department of Labor and Employment
Division of Oil and Public Safety – Compliance Section
633 17th Street, Suite 500
Denver, CO 80202-3610

Phone: 303-318-8525
Email: cdle_oil_inspection@state.co.us
Web: www.colorado.gov/ops

Secondary Containment and Spill Prevention Equipment Tightness Testing

(Revised 5/8/2019)

OPS Facility ID:	15558	OPS Installation #:		☐Minor Equipment or N/A	Installation Date:	11/12/19

Facility Information		Installer Information	
Facility Name:	RFTA	Company Name:	Petrol. Equip Sales
Address:	2307 Wulfsohn Rd	Address:	PO Box 1818
City/State/ZIP:	Gws, CO 81601	City/State/ZIP:	Gws, CO 81602
A/B Operator Name:	Scott Keegan	OPS Certified Installer Name:	David Sarno
Phone #:	970 412 3907	Phone #:	(970) 379 8698
Email Address:	SKeegan@RFTA.com	Email Address:	DavidSarno@aol.com

Secondary Containment Present at Site (check all that apply)

☐DW Tanks ☐DW Piping ☑Spill Buckets/Spill Containers
☐STP/Piping Sump Containment ☐Under-Dispenser Containment ☐Fill Riser Containment

DW Tanks (Annular Testing)

OPS Tank # Assigned						
Test Method Used						
If 'Other' - Describe Test Method						
Test Equipment Mfr./Model						
Test Start Time						
Initial Reading						
Test End Time						
Final Reading						
Change in Readings						
Pass/Fail Threshold/Criteria						
Result						

DW Piping (Secondary Testing)

OPS Tank # Assigned						
Test Method Used						
If 'Other' - Describe Test Method						
Test Equipment Mfr./Model						
Test Start Time						
Initial Reading						
Test End Time						
Final Reading						
Change in Readings						
Pass/Fail Threshold/Criteria						
Result						

Spill Buckets/Spill Containers

OPS Tank # Assigned	15558-1	15558-2	15558-4			
Test Method Used	HYDRO	HYDRO	HYDRO			
If 'Other' - Describe Test Method						
Test Equipment Mfr./Model						
Test Start Time	11:00	11:10	11:20			
Initial Reading	12 1/4"	12"	12 1/8"			
Test End Time	12:00	12:10	12:20			
Final Reading	12 1/4"	12"	12 1/8"			
Change in Readings	0	0	0			
Pass/Fail Threshold/Criteria	< 1/8"	< 1/8"	< 1/8"			
Result	PASS	PASS	PASS			

STP/Piping Sump Containment						
OPS Tank # Assigned						
Test Method Used						
If 'Other' - Describe Test Method						
Test Equipment Mfr./Model						
Test Start Time						
Initial Reading						
Test End Time						
Final Reading						
Change in Readings						
Pass/Fail Threshold/Criteria						
Result						
Under-Dispenser Containment						
UDC #						
Test Method Used						
If 'Other' - Describe Test Method						
Test Equipment Mfr./Model						
Test Start Time						
Initial Reading						
Test End Time						
Final Reading						
Change in Readings						
Pass/Fail Threshold/Criteria						
Result						
Fill Riser Containment						
OPS Tank # Assigned						
Test Method Used						
If 'Other' - Describe Test Method						
Test Equipment Mfr./Model						
Test Start Time						
Initial Reading						
Test End Time						
Final Reading						
Change in Readings						
Pass/Fail Threshold/Criteria						
Result						
Was an OPS inspector present during testing?				☐Yes	☒No	
Was a completed copy of the manufacturer's installation checklist received?				☐Yes	☐No	

Inspector Name:		Inspector Signature:		Date:	

Certification Information

I certify under penalty of law that the information provided here and in supporting documents is true, accurate and complete.
Note: When an OPS inspector is not present, this form must be signed by the tester *and* Qualified Service Technician (QST) before submitting to OPS.

Tester Name:	DAVID SALAS	Tester Signature:	Dale Lewis	Date:	11/12/19
QST Name:	"	QST Signature:	Dale Lewis	Date:	11/12/19
OPS Use:	**Date Reviewed:**		**Reviewed by:**		

COLORADO
Division of Oil and Public Safety
Department of Labor and Employment

Remediation Program
633 17th Street, Suite 500
Denver, CO 80202-3660
303-318-8547 | colorado.gov/ops | cdle_remediation@state.co.us

March 6, 2020

VIA EMAIL: ahenderson@rfta.com

Angela Henderson
Roaring Fork Transportation Authority
1340 Main Street
Carbondale, CO 81623

Re: No Further Action (NFA) Determination for RFTA-Roaring Fork Transit Agency, 2307 Wulfsohn Road, Glenwood Springs, Garfield County, Colorado. (Event ID 13464, Facility ID 15558)

Dear Ms. Henderson:

The Division of Oil and Public Safety (OPS) has reviewed the NFA request for the referenced site received on February 26, 2020.

Based solely upon the information submitted regarding the diesel, regular unleaded, and lube oil spill buckets that failed hydrostatic testing (15558-1, 15558-2, 15558-3), OPS will require no further action at this time. If conditions change, OPS reserves the right to determine if any additional actions are necessary. This NFA letter is in reference to the confirmed release reported to OPS on August 14, 2019.

OPS cannot release you from any liability that may be associated with any contamination at or from this site.

Please address correspondence regarding this site to me and if you have any questions, please contact me at 303-318-8519 or via email at hannah.phillips@state.co.us.

Sincerely,

K. Hannah Williams

K. Hannah Williams
Environmental Protection Specialist
Petroleum Program

Department of Labor and Employment
Division of Oil and Public Safety
Remediation Section
633 17th Street, Suite 500
Denver, CO 80202-3660
303-318-8547 (technical assistance)
Website: www.colorado.gov/ops/remediation

Select a report title from the list:

SCR - No Further Action Request

Facility ID:	**15748**
Event ID:	**13987**
Reporting Period:	**Qtr 1**
Year:	**2021**
Submittal Date:	**July 30, 3021**
SCR submitted:	**July 30, 2021**
Date last CAP approved:	
Date CAP scope ends:	

March 5, 2019
Version 2.0.3

ERO Resources Corp.

AST Closure Narrative
Former Glenwood Springs Municipal Operations Center
2301 Wulfsohn Road, Glenwood Springs, Colorado
Event ID: 13987, Facility ID: 15748

Introduction

ERO Resources Corporation (ERO) has completed this narrative, on behalf of the Roaring Fork Transportation Authority (RFTA), to document ERO's oversight of the removal of an aboveground storage tank (AST) and two fuel dispensers from the former City of Glenwood Springs Municipal Operation Center (MOC) located at 2301 Wulfsohn Road in Glenwood Springs, Colorado (hereafter referred to as "the facility"). The facility location is shown on Figure 1 and Figure 2. The narrative also discusses sample results from soil samples collected at these features to determine if there were releases from historical operations. Figure 3 shows the locations of the soil samples collected.

The AST was a dual-compartment, concrete encased tank located on a concrete pad southwest of the former MOC building. The AST consisted of two 6,000-gallon compartments, one for unleaded gasoline and one for diesel. Product flowlines ran from the tanks aboveground to two dispensers just south of the tank. The concrete pad was surrounded by asphalt.

Soil Sampling

Aboveground Storage Tank: On January 12, 2021, in order to determine if there had been a release from the tanks, ERO had American Demolition, Inc. (ADI), the demolition contractor of the facility, excavate holes about two feet deep at the edges of the concrete pad on either side of each tank compartment and at the north end of the pad for a total of five samples. ERO then collected soil samples of native soils beneath the concrete pad and road base. The soils in each hole were also screened with the photoionization detector (PID). No evidence of a release from the tanks, such as staining, odors, or PID detections, was noted.

Fuel Dispensers: On January 27, 2021, ADI removed the two fuel dispensers and the concrete island they were mounted to and ERO collected native soil samples from beneath where the dispensers had been. The soils were also screened with the PID. No evidence of releases from beneath the fuel dispensers, such as staining, odors, or PID detections, was noted.

Soil Sample Analysis

The soil samples were placed in iced coolers and delivered under chain-of-custody to SGS Mountain States Laboratory for analysis. The AST samples were analyzed for benzene,

Denver
1842 Clarkson St.
Denver, CO 80218
303.830.1188

Durango
1015 ½ Main Avenue
Durango, CO 81301
970.422.2136

Hotchkiss
P.O. Box 932
161 South 2nd St.
Hotchkiss, CO 81419
970.872.3020

Idaho
4001 East Main Street
Emmett, ID 83617
208.365.7684

www.eroresources.com

toluene, ethylbenzene, and xylenes (BTEX) and gasoline range organics (GRO) by EPA Method 8260, and diesel-range organics (DRO) and oil-range organics (ORO) by EPA Method 8015. The fuel dispenser samples were analyzed for BTEX, GRO, and methyl tert-butyl ether (MTBE) by Method 8260 and DRO by Method 8015. The laboratory analytical reports are attached (note that the reports include results for soil samples from other features at the facility not related to this AST closure).

Soil Sample Results

Aboveground Storage Tank: No BTEX compounds or GRO were detected in any of the AST samples and low concentrations of DRO and ORO were detected in all five AST samples at combined concentrations of between 60.2 and 110.2 mg/kg, well below the Tier 1 Risk Based Screening Level (RBSL) of 500 milligrams per kilogram (mg/kg).

Fuel Dispensers: No BTEX, GRO, MTBE, and DRO concentrations were detected above the laboratory reporting limit in either dispenser sample.

Tank Removal

The AST was removed from the facility on February 4, 2021 by loading it onto a flatbed truck and transporting it to Gould Construction, Inc. in Glenwood Springs, Colorado to be reused.

Conclusions

Based on the soil sample results and observations, it is ERO's professional opinion that any historical release from the AST has not resulted in soil contamination exceeding the RBSLs. Therefore, on behalf of RFTA, ERO requests No Further Action for the facility.

Site Information

Event ID: 13987 **Reporting Period: Qtr 1** **Year: 2021**

SITE INFORMATION					
Site Name:	Glenwood Municipal Operations Center	Business on Site:	Formerly a repair garage		
Site Address:	2301 Wulfsohn Rd.				
City:	Glenwood Springs	County:	Garfield	Zip Code:	81601
Latitude:	39° 33' 21"	Longitude:	107° 21' 22"		
PROPERTY OWNER INFORMATION					
Name:	Roaring Fork Transportation Authority				
Address:	2307 Wulfsohn Rd.				
City:	Glenwood Springs	State:	CO	Zip Code:	81601
Phone Number:	970-384-4862	Fax Number:			
Contact Person:	Nicholas Senn	Email:	nsenn@rfta.com		
RESPONSIBLE PARTY INFORMATION					
Name:	Same as above				
Address:					
City:		State:		Zip Code:	
Phone Number:		Fax Number:			
Contact Person:		Email:			
ENVIRONMENTAL CONSULTANT INFORMATION					
Name:	ERO Resources Corp.				
Address:	1842 Clarkson St.				
City:	Denver	State:	CO	Zip Code:	80218
Phone Number:	303-830-1188	Fax Number:	(303) 830-1199		
Project Mgr:	Craig Sovka	Email:	csovka@eroresources.com		
REP:		Email:			

RELEASE INFORMATION			
Date Release was Suspected		Date OPS was notified of suspected release	
Date Release was Confirmed	1/21/2021	Date OPS was notified of confirmed release	2/26/2021
Product Released:	diesel	How was Release Discovered:	Tank Closure - Removal
Source of Release:	Tank	Quantity in Gallons:	Unknown
Cause of Release:	Other		
Provide Brief Description of System Repair:	No repairs. The tank was removed.		

PREVIOUS RELEASE INFORMATION

Date of Prior Release	Event ID	Product	Quantity (Gallons)	Source of Release	Date NFA Letter Issued

TANK INFORMATION	**RESPONSE**
Is the facility open and actively dispensing fuel?	No
If the facility no longer dispenses fuel what is the current use of the property?	Vacant
Number of tanks in use (locate tanks, piping, and dispensers on site map)	0
Number of tanks in temporary closure (locate tanks, piping, and dispensers on site map)	0
Number of tanks removed (locate tanks, piping, and dispensers on site map)	1
Tanks closed in place (locate tanks, piping, and dispensers on site map)	0
Date(s) of tank closure	2/4/2021
SITE LITHOLOGY AND AQUIFER PARAMETERS	**RESPONSE**
Predominant lithology in the unsaturated zone	Sandy Silt
Predominant lithology in the saturated zone	unknown
Date of hydraulic conductivity test. Include and label test data in 'Model Input' tab.	N/A
Hydraulic conductivity of the impacted aquifer in cm/sec	
Estimated effective porosity in the saturated zone (%)	
Hydraulic gradient *(specify wells used to calculate gradient in narrative)*	
Estimated groundwater flow velocity in ft/day (1 cm/sec = approximately 2,835 ft/day)	
General flow direction during this reporting period	
Historically predominant flow direction	
If LNAPL present, highest transmissivity value (Tn) calculated (ft^2/day). Include and label test data in 'Model Input' tab.	
OTHER POTENTIAL SOURCES	**RESPONSE**
Are there offsite sources that may account for the contamination found? If yes, detail in the narrative.	No

Exposure Pathways and Receptors

Event ID: 13987 **Reporting Period: Qtr 1** **Year: 2021**

POINTS OF EXPOSURE	THREATENED	IMPACTED	DISTANCE FROM SOURCE (ft)
Property Boundary	no	no	200
Surficial Soils	no	yes	0
Subsurface Utilities	no	no	170
Structures	no	no	310
Groundwater Wells	no	no	unknown
Surface Water	no	no	1600
Sensitive Environments	no	no	unknown

UTILITY	DEPTH TO WATER	DEPTH TO UTILITY	THREATENED	IMPACTED	IDENTIFIED ON POE MAP?
Gas Line	UNK	UNK	no	no	no
Water Line	UNK	UNK	no	no	no
Sanitary Sewer Line	UNK	UNK	no	no	no
Storm Sewer Line	UNK	UNK	no	no	no
Communication Line	UNK	UNK	no	no	no
Other	UNK	UNK	no	no	no

Impacted and Potentially Impacted Offsite Properties ***(If >3, note details for them in narrative)***

Property Address	Property Use	Exposure Pathway	Status	Report Sent to Property Owner?
Owner Name	**Mailing Address**		**Phone**	**Email**
Property Address	**Property Use**	**Exposure Pathway**	**Status**	**Report Sent to Property Owner?**
Owner Name	**Mailing Address**		**Phone**	**Email**
Property Address	**Property Use**	**Exposure Pathway**	**Status**	**Report Sent to Property Owner?**
Owner Name	**Mailing Address**		**Phone**	**Email**

EXPOSURE PATHWAYS	ELIMINATED?	REASON
Groundwater (Ingestion)	yes	Soil concentrations below RBSLs
Groundwater (Enclosed Space Vapors)	yes	Soil concentrations below RBSLs
Surficial Soil (Ingestion, Ambient Vapors, Particulates, Dermal Contact)	yes	Soil concentrations below RBSLs
Subsurface Soil (Enclosed Space Vapors)	yes	Soil concentrations below RBSLs
Subsurface Soil (Leaching to Groundwater)	yes	Soil concentrations below RBSLs

All exposure pathways must be eliminated to request an NFA determination

Water Well and Surface Water Data Table

Click on a cell in the section in which you wish the additional row. Then click "New Row"

Event ID: 13987 **Reporting Period: Qtr 1** **Year: 2021**

Permit Number or Surface Water Designation*	Geographic Location (Lat/Long or T/R/S)	Approx. Direction From Site	Approx Distance From Site (ft)	Listed Uses	Well Depth	Water Level	Top of Screen	Pumping Rate	Potential Point of Exposure?	Rationale for Elimination
493-G	S 6, T 6 S, R 89 W	NNW	1000	Geotherma	275	NA	NA	NA	No	Geothermal heating wells
Colorado River		N	1500	NA	NA	NA	NA	NA	No	Too far from AST

*Information from the Colorado Division of Water Resources. AT A MINIMUM, input an identifier and the distance from the site.

Colorado Division of Water Resources Listed Uses

0 STORAGE	A AUGMENTATION
1 IRRIGATION	B EXPORT FROM BASIN
2 MUNICIPAL	C CUMULATIVE ACCRETION TO RIVER
3 COMMERCIAL	D CUMULATIVE DEPLETION FROM RIVER
4 INDUSTRIAL	E EVAPORATIVE
5 RECREATION	F FEDERAL RESERVED
6 FISHERY	G GEOTHERMAL
7 FIRE	H HOUSEHOLD USE ONLY
8 DOMESTIC	K SNOW MAKING
9 STOCK	M MINIMUM STREAMFLOW
	N NET EFFECT ON RIVER
	P POWER GENERATION
	Q OTHER
	R RECHARGE
	S EXPORT FROM STATE
	T TRANSMOUNTAIN EXPORT
	W WILDLIFE
	X ALL BENEFICIAL USES

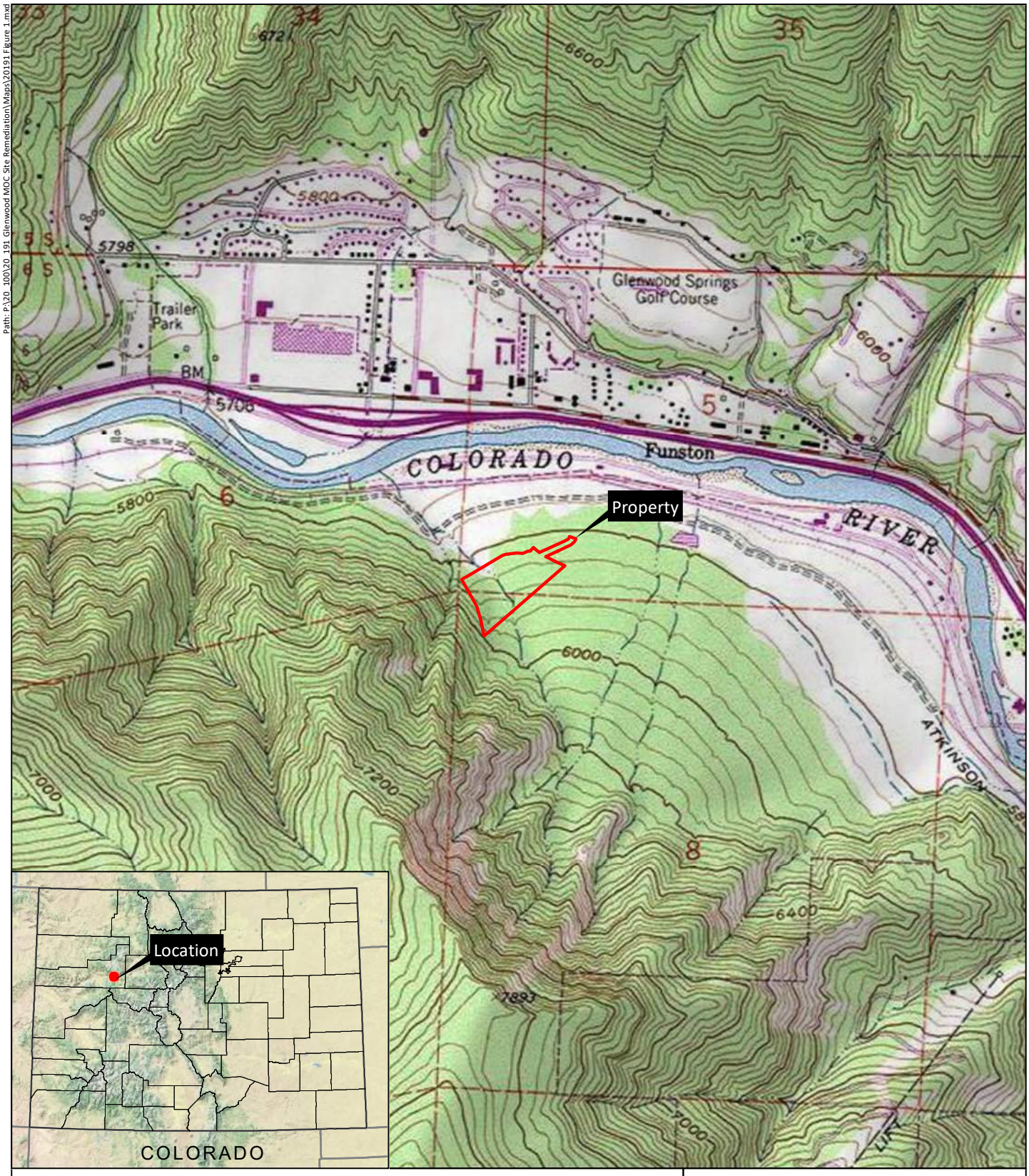
Soil Analytical Results Table

Event ID: 13987 **Reporting Period:** Qtr 1 **Year:** 2021

Click on a cell in the section in which you wish the additional row. Then click "New Row"

Sample Location	Date	Rationale for sample location	Sample Depth (ft)	Vertical Interval	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)	TVPH (mg/kg)	TEPH (mg/kg)	Oil & Grease (mg/kg)	Disposition of Soil	*Confirmation for Sample Location(s)
North End AST	01/12/21	TANK	2.0	vadose	<0.0012	<0.0024	<0.0024	<0.0024	<0.24	17	53	LIP	
Northeast AST	01/12/21	TANK	2.0	vadose	<0.0011	<0.0022	<0.0022	<0.0022	<0.22	14	47	LIP	
Southeast AST	01/12/21	TANK	2.0	vadose	<0.0011	<0.0022	<0.0022	<0.0022	<0.22	46	64	LIP	
Northwest AST	01/12/21	TANK	2.0	vadose	<0.0011	<0.0023	<0.0023	<0.0023	<0.23	19	57	LIP	
Southwest AST	01/12/21	TANK	2.0	vadose	<0.0011	<0.0022	<0.0022	<0.0022	<0.22	42	33	LIP	
North Dispenser	01/27/21	DISP	2.0	vadose	<0.0011	<0.0022	<0.0022	<0.0022	<0.22	<11		LIP	
South Dispenser	01/27/21	DISP	2.0	vadose	<0.0011	<0.0021	<0.0021	<0.0021	<0.21	<11		LIP	

Path: P:\20_100\20_191 Glenwood MOC Site Remediation\Maps\20191 Figure 1.mxd



Former Municipal Operations Center, Glenwood Springs, CO

Sections 5 and 8, T6S, R89W; 6th PM

UTM NAD 83: Zone 13N; 297620mE, 4381134mN

Longitude 107.35559°W, Latitude 39.556037°N

USGS Glenwood Springs, CO Quadrangle

Garfield County, Colorado

Copyright:© 2013 National Geographic Society, i-cubed

0 750 1,500 feet

N

Figure 1
Vicinity Map

Prepared for: Roaring Fork Transportation Authority
File: 20191 Figure 1.mxd [dlH]
April 21, 2021

ERO Resources Corp.

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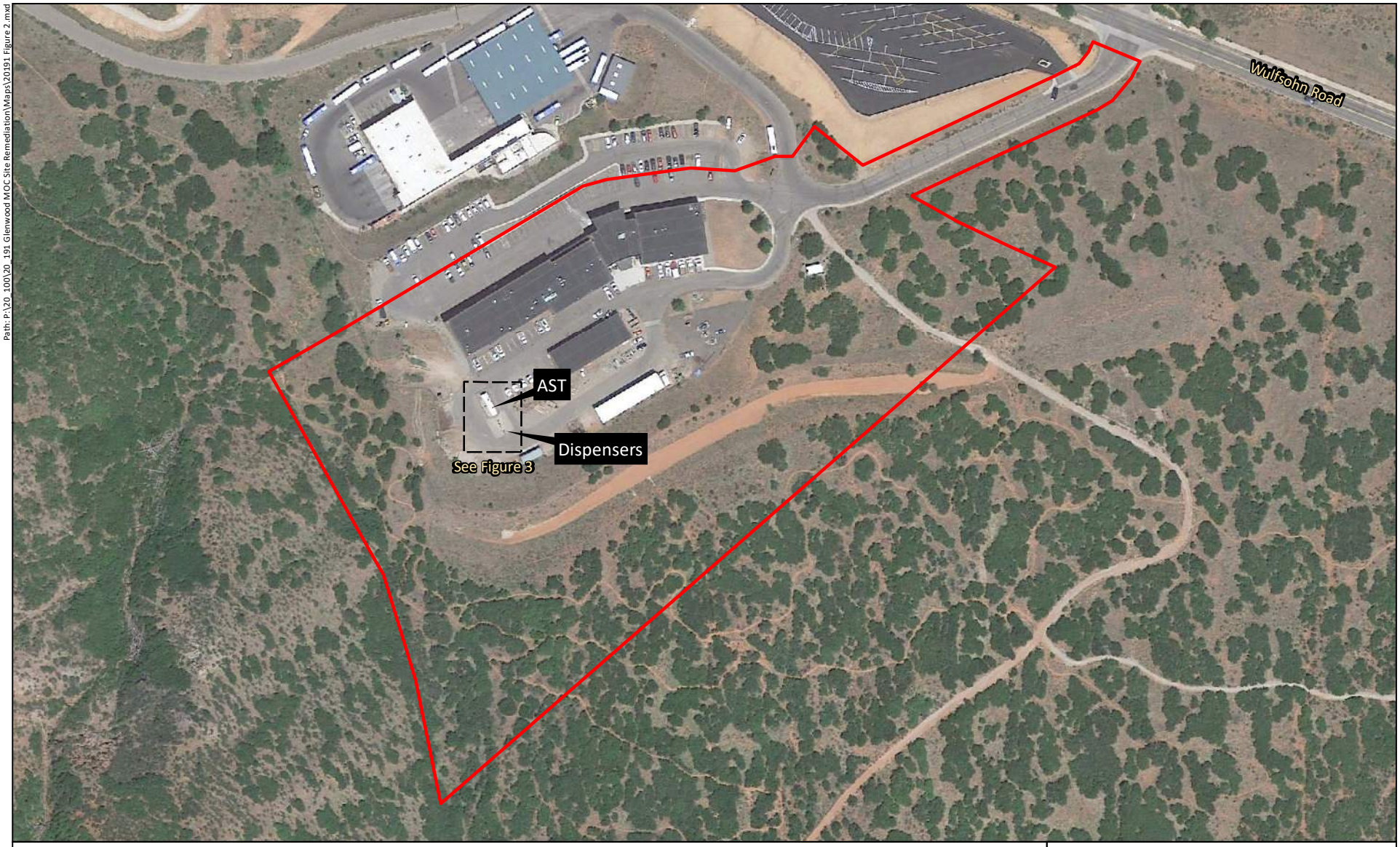
Path: P:\20_100\20_191 Glenwood MOC Site Remediation\Maps\20191 Figure 2.mxd



Former Glenwood Springs Municipal Operations Center, Glenwood Springs, CO

Property

0 60 120 feet

N

Figure 2
Site Plan

Prepared for: Roaring Fork Transportation Authority
File: 20191 Figure 2.mxd [dlH]
July 28, 2021

ERO Resources Corp.

Aerial Image: © Copyright Google Earth Pro 6/3/2017

Path: P:\20_100\20_191 Glenwood MOC Site Remediation\Maps\20191 Figure 3.mxd

Former Municipal Operations Center, Glenwood Springs, CO

Soil Sample Location

0 10 20 feet

N

Figure 3
AST/Dispensers Soil Sample Location Map

Prepared for: Roaring Fork Transportation Authority
File: 20191 Figure 3.mxd [dlH]
April 21, 2021

ERO Resources Corp.

Aerial Image: © Copyright Google Earth Pro 6/3/2017

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

ERO Resources Corporation

RFTA MOC

20-191

SGS Job Number: DA31799

Sampling Dates: 01/12/21 - 01/13/21

Report to:

ERO Reosources Corporation
1842 Clarkson Street
Denver, CO 80218
csovka@eroresources.com

ATTN: Craig Sovka

Total number of pages in report: 64

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Jason Savoie
General Manager

Client Service contact: Carissa Cumine 303-425-6021

Certifications: CO (CO00049), NE (NE-OS-06-04), ND (R-027), UT (NELAP CO00049) LA (LA150028), TX (T104704511), WY (8TMS-L)

This report shall not be reproduced, except in its entirety, without the written approval of SGS. Test results relate only to samples analyzed.

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SGS North America Inc.

Sample Summary

ERO Resources Corporation

Job No: DA31799

RFTA MOC
Project No: 20-191

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
This report contains results reported as ND = Not detected. The following applies:							
Organics ND = Not detected above the MDL							
DA31799-1	01/12/21	12:30	CS	01/13/21	SO	Soil	HYDRAULIC LIFT
DA31799-2	01/12/21	15:45	CS	01/13/21	SO	Soil	NORTH END AST
DA31799-3	01/12/21	15:55	CS	01/13/21	SO	Soil	NORTHEAST AST
DA31799-4	01/12/21	16:05	CS	01/13/21	SO	Soil	SOUTHEAST AST
DA31799-5	01/12/21	16:15	CS	01/13/21	SO	Soil	NORTHWEST AST
DA31799-6	01/12/21	16:25	CS	01/13/21	SO	Soil	SOUTHWEST AST
DA31799-7	01/13/21	11:00	CS	01/13/21	SO	Soil	UNDER STREET SWEEPINGS
DA31799-8	01/13/21	11:30	CS	01/13/21	SO	Soil	NATIVE SOIL IN DRAINAGE

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Summary of Hits

Job Number: DA31799
Account: ERO Resources Corporation
Project: RFTA MOC
Collected: 01/12/21 thru 01/13/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
DA31799-1	**HYDRAULIC LIFT**					
Acetone [a]		89.8 B	55	24	ug/kg	SW846 8260B
TPH-DRO (C10-C28)		10.7 J	11	10	mg/kg	SW846-8015D
TPH-ORO (> C28-C40)		63.2	17	17	mg/kg	SW846-8015D
DA31799-2	**NORTH END AST**					
TPH-DRO (C10-C28)		16.6	12	12	mg/kg	SW846-8015D
TPH-ORO (> C28-C40)		53.3	18	18	mg/kg	SW846-8015D
DA31799-3	**NORTHEAST AST**					
TPH-DRO (C10-C28)		13.7	11	11	mg/kg	SW846-8015D
TPH-ORO (> C28-C40)		46.5	17	17	mg/kg	SW846-8015D
DA31799-4	**SOUTHEAST AST**					
TPH-DRO (C10-C28)		46.0	11	11	mg/kg	SW846-8015D
TPH-ORO (> C28-C40)		64.2	17	17	mg/kg	SW846-8015D
DA31799-5	**NORTHWEST AST**					
TPH-DRO (C10-C28)		19.3	12	11	mg/kg	SW846-8015D
TPH-ORO (> C28-C40)		57.2	18	18	mg/kg	SW846-8015D
DA31799-6	**SOUTHWEST AST**					
TPH-DRO (C10-C28)		41.6	11	11	mg/kg	SW846-8015D
TPH-ORO (> C28-C40)		33.0	17	17	mg/kg	SW846-8015D
DA31799-7	**UNDER STREET SWEEPINGS**					
Acetone [a]		67.0 B	55	24	ug/kg	SW846 8260B
TPH-ORO (> C28-C40)		35.1	17	17	mg/kg	SW846-8015D
DA31799-8	**NATIVE SOIL IN DRAINAGE**					
Acetone [a]		58.0 B	55	24	ug/kg	SW846 8260B
TPH-DRO (C10-C28)		66.2	11	10	mg/kg	SW846-8015D
TPH-ORO (> C28-C40)		153	16	16	mg/kg	SW846-8015D
HEM Oil and Grease		978	270		mg/kg	SW846 9071B

(a) Analyte was detected in the associated method blank. Common lab contaminant.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	HYDRAULIC LIFT		
Lab Sample ID:	DA31799-1	**Date Sampled:**	01/12/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846 8260B	**Percent Solids:**	90.7
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V58467.D	1	01/18/21 13:25	DC	n/a	n/a	V5V2982
Run #2							

	Initial Weight	Final Volume
Run #1	5.00 g	5.0 ml
Run #2		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	89.8	55	24	ug/kg	B
107-02-8	Acrolein	ND	22	17	ug/kg	
107-13-1	Acrylonitrile	ND	11	8.8	ug/kg	
71-43-2	Benzene	ND	1.1	0.55	ug/kg	
108-86-1	Bromobenzene	ND	2.2	0.55	ug/kg	
74-97-5	Bromochloromethane	ND	2.2	0.66	ug/kg	
75-27-4	Bromodichloromethane	ND	2.2	0.55	ug/kg	
75-25-2	Bromoform	ND	2.2	1.1	ug/kg	
104-51-8	n-Butylbenzene	ND	2.2	0.55	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.2	0.55	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.2	0.55	ug/kg	
75-15-0	Carbon disulfide	ND	2.2	0.55	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.2	0.55	ug/kg	
108-90-7	Chlorobenzene	ND	2.2	0.55	ug/kg	
75-00-3	Chloroethane	ND	2.2	0.88	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	4.4	1.4	ug/kg	
67-66-3	Chloroform	ND	2.2	0.55	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.2	0.55	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.2	0.55	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	11	7.7	ug/kg	
124-48-1	Dibromochloromethane	ND	2.2	0.66	ug/kg	
106-93-4	1,2-Dibromoethane	ND	2.2	0.55	ug/kg	
95-50-1	o-Dichlorobenzene	ND	2.2	0.55	ug/kg	
541-73-1	m-Dichlorobenzene	ND	2.2	0.55	ug/kg	
106-46-7	p-Dichlorobenzene	ND	2.2	0.55	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	2.2	0.55	ug/kg	
75-34-3	1,1-Dichloroethane	ND	2.2	0.55	ug/kg	
107-06-2	1,2-Dichloroethane	ND	2.2	0.55	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	2.2	0.55	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	2.2	0.55	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	2.2	0.55	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.2	0.55	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	HYDRAULIC LIFT		
Lab Sample ID:	DA31799-1	**Date Sampled:**	01/12/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846 8260B	**Percent Solids:**	90.7
Project:	RFTA MOC		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.2	0.55	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.2	0.55	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.2	0.55	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.2	0.55	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.2	0.55	ug/kg	
100-41-4	Ethylbenzene	ND	2.2	0.55	ug/kg	
87-68-3	Hexachlorobutadiene	ND	2.2	0.61	ug/kg	
591-78-6	2-Hexanone	ND	11	5.5	ug/kg	
98-82-8	Isopropylbenzene	ND	2.2	0.55	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.2	0.55	ug/kg	
74-83-9	Methyl bromide	ND	2.2	0.55	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2.2	0.55	ug/kg	
74-87-3	Methyl chloride	ND	2.2	0.99	ug/kg	
74-95-3	Methylene bromide	ND	2.2	0.66	ug/kg	
75-09-2	Methylene chloride	ND	4.4	3.3	ug/kg	
78-93-3	Methyl ethyl ketone	ND	11	5.5	ug/kg	
108-10-1	4-Methyl-2-pentanone	ND	11	5.5	ug/kg	
91-20-3	Naphthalene	ND	4.4	3.3	ug/kg	
103-65-1	n-Propylbenzene	ND	2.2	0.55	ug/kg	
100-42-5	Styrene	ND	2.2	0.55	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.2	0.55	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.2	0.55	ug/kg	
127-18-4	Tetrachloroethylene	ND	2.2	0.55	ug/kg	
108-88-3	Toluene	ND	2.2	1.1	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	2.2	1.1	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	2.2	1.1	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.2	0.55	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.2	0.55	ug/kg	
79-01-6	Trichloroethylene	ND	2.2	0.55	ug/kg	
75-69-4	Trichlorofluoromethane	ND	2.2	1.1	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	2.2	0.55	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.2	0.55	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.2	0.55	ug/kg	
108-05-4	Vinyl Acetate	ND	11	5.5	ug/kg	
75-01-4	Vinyl chloride	ND	2.2	0.55	ug/kg	
1330-20-7	Xylene (total)	ND	2.2	1.1	ug/kg	
	TPH-GRO (C6-C10)	ND	220	110	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	HYDRAULIC LIFT		
Lab Sample ID:	DA31799-1	**Date Sampled:**	01/12/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846 8260B	**Percent Solids:**	90.7
Project:	RFTA MOC		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-131%
2037-26-5	Toluene-D8	95%		70-130%
460-00-4	4-Bromofluorobenzene	99%		70-130%
17060-07-0	1,2-Dichloroethane-D4	103%		70-130%

(a) Analyte was detected in the associated method blank. Common lab contaminant.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	HYDRAULIC LIFT		
Lab Sample ID:	DA31799-1	**Date Sampled:**	01/12/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846 8082A SW846 3546	**Percent Solids:**	90.7
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE50871.D	1	01/19/21 17:32	GN	01/19/21	OP19753	GEE2942
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	10.0 ml
Run #2		

PCB List w 1262 & 1268

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	18	7.3	ug/kg	
11104-28-2	Aroclor 1221	ND	18	7.3	ug/kg	
11141-16-5	Aroclor 1232	ND	18	7.3	ug/kg	
53469-21-9	Aroclor 1242	ND	18	7.3	ug/kg	
12672-29-6	Aroclor 1248	ND	18	7.3	ug/kg	
11097-69-1	Aroclor 1254	ND	18	7.7	ug/kg	
11096-82-5	Aroclor 1260	ND	18	7.3	ug/kg	
37324-23-5	Aroclor 1262	ND	18	7.3	ug/kg	
11100-14-4	Aroclor 1268	ND	18	5.5	ug/kg	
1336-36-3	Total PCBs	ND	18	7.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	38%		10-149%
877-09-8	Tetrachloro-m-xylene	36%		10-149%
2051-24-3	Decachlorobiphenyl	39%		11-162%
2051-24-3	Decachlorobiphenyl	39%		11-162%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	HYDRAULIC LIFT		
Lab Sample ID:	DA31799-1	**Date Sampled:**	01/12/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846-8015D SW846 3546	**Percent Solids:**	90.7
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH054087.D	1	01/16/21 15:57	NO	01/16/21	OP19750	GFH2153
Run #2	FM11389.D	1	01/19/21 17:10	NO	01/16/21	OP19751	GFM346

	Initial Weight	Final Volume
Run #1	20.0 g	1.0 ml
Run #2	20.0 g	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	10.7	11	10	mg/kg	J
	TPH-ORO (> C28-C40)	63.2 [a]	17	17	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	81%	80%	25-141%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	HYDRAULIC LIFT		
Lab Sample ID:	DA31799-1	**Date Sampled:**	01/12/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
		Percent Solids:	90.7
Project:	RFTA MOC		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
%solids							
Solids, Percent	90.7		%	1	01/14/21	ST	SM2540G-2011 M
HEM Oil and Grease	< 280	280	mg/kg	1	01/20/21	ST	SW846 9071B

RL = Reporting Limit

Report of Analysis

Client Sample ID:	NORTH END AST		
Lab Sample ID:	DA31799-2	**Date Sampled:**	01/12/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846 8260B	**Percent Solids:**	82.0
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V58472.D	1	01/18/21 15:21	DC	n/a	n/a	V5V2982
Run #2							

	Initial Weight	Final Volume
Run #1	5.08 g	5.0 ml
Run #2		

Purgeable Aromatics+ GRO

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.2	0.60	ug/kg	
108-88-3	Toluene	ND	2.4	1.2	ug/kg	
100-41-4	Ethylbenzene	ND	2.4	0.60	ug/kg	
1330-20-7	Xylene (total)	ND	2.4	1.2	ug/kg	
	TPH-GRO (C6-C10)	ND	240	120	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-131%
2037-26-5	Toluene-D8	98%		70-130%
460-00-4	4-Bromofluorobenzene	99%		70-130%
17060-07-0	1,2-Dichloroethane-D4	100%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	NORTH END AST		
Lab Sample ID:	DA31799-2	**Date Sampled:**	01/12/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846-8015D SW846 3546	**Percent Solids:**	82.0
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH054089.D	1	01/16/21 16:18	NO	01/16/21	OP19750	GFH2153
Run #2	FM11391.D	1	01/19/21 17:48	NO	01/16/21	OP19751	GFM346

	Initial Weight	Final Volume
Run #1	20.0 g	1.0 ml
Run #2	20.0 g	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	16.6	12	12	mg/kg	
	TPH-ORO (> C28-C40)	53.3 [a]	18	18	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	69%	77%	25-141%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	NORTHEAST AST		
Lab Sample ID:	DA31799-3	**Date Sampled:**	01/12/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846 8260B	**Percent Solids:**	89.7
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V58473.D	1	01/18/21 15:44	DC	n/a	n/a	V5V2982
Run #2							

	Initial Weight	Final Volume
Run #1	5.00 g	5.0 ml
Run #2		

Purgeable Aromatics+ GRO

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.1	0.56	ug/kg	
108-88-3	Toluene	ND	2.2	1.1	ug/kg	
100-41-4	Ethylbenzene	ND	2.2	0.56	ug/kg	
1330-20-7	Xylene (total)	ND	2.2	1.1	ug/kg	
	TPH-GRO (C6-C10)	ND	220	110	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		70-131%
2037-26-5	Toluene-D8	97%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%
17060-07-0	1,2-Dichloroethane-D4	103%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	NORTHEAST AST		
Lab Sample ID:	DA31799-3	**Date Sampled:**	01/12/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846-8015D SW846 3546	**Percent Solids:**	89.7
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH054091.D	1	01/16/21 16:40	NO	01/16/21	OP19750	GFH2153
Run #2	FM11393.D	1	01/19/21 18:27	NO	01/16/21	OP19751	GFM346

	Initial Weight	Final Volume
Run #1	20.0 g	1.0 ml
Run #2	20.0 g	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	13.7	11	11	mg/kg	
	TPH-ORO (> C28-C40)	46.5 [a]	17	17	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	82%	88%	25-141%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SOUTHEAST AST		
Lab Sample ID:	DA31799-4	**Date Sampled:**	01/12/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846 8260B	**Percent Solids:**	90.1
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V58474.D	1	01/18/21 16:07	DC	n/a	n/a	V5V2982
Run #2							

	Initial Weight	Final Volume
Run #1	5.09 g	5.0 ml
Run #2		

Purgeable Aromatics+ GRO

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.1	0.55	ug/kg	
108-88-3	Toluene	ND	2.2	1.1	ug/kg	
100-41-4	Ethylbenzene	ND	2.2	0.55	ug/kg	
1330-20-7	Xylene (total)	ND	2.2	1.1	ug/kg	
	TPH-GRO (C6-C10)	ND	220	110	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		70-131%
2037-26-5	Toluene-D8	96%		70-130%
460-00-4	4-Bromofluorobenzene	99%		70-130%
17060-07-0	1,2-Dichloroethane-D4	100%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SOUTHEAST AST		
Lab Sample ID:	DA31799-4	**Date Sampled:**	01/12/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846-8015D SW846 3546	**Percent Solids:**	90.1
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH054099.D	1	01/16/21 18:06	NO	01/16/21	OP19750	GFH2153
Run #2	FM11399.D	1	01/19/21 20:22	NO	01/16/21	OP19751	GFM346

	Initial Weight	Final Volume
Run #1	20.0 g	1.0 ml
Run #2	20.0 g	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	46.0	11	11	mg/kg	
	TPH-ORO (> C28-C40)	64.2 [a]	17	17	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	89%	87%	25-141%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	NORTHWEST AST		
Lab Sample ID:	DA31799-5	**Date Sampled:**	01/12/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846 8260B	**Percent Solids:**	85.6
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V58475.D	1	01/18/21 16:31	DC	n/a	n/a	V5V2982
Run #2							

	Initial Weight	Final Volume
Run #1	5.09 g	5.0 ml
Run #2		

Purgeable Aromatics+ GRO

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.1	0.57	ug/kg	
108-88-3	Toluene	ND	2.3	1.1	ug/kg	
100-41-4	Ethylbenzene	ND	2.3	0.57	ug/kg	
1330-20-7	Xylene (total)	ND	2.3	1.1	ug/kg	
	TPH-GRO (C6-C10)	ND	230	110	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		70-131%
2037-26-5	Toluene-D8	96%		70-130%
460-00-4	4-Bromofluorobenzene	99%		70-130%
17060-07-0	1,2-Dichloroethane-D4	99%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	NORTHWEST AST		
Lab Sample ID:	DA31799-5	**Date Sampled:**	01/12/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846-8015D SW846 3546	**Percent Solids:**	85.6
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH054097.D	1	01/16/21 17:44	NO	01/16/21	OP19750	GFH2153
Run #2	FM11401.D	1	01/19/21 21:01	NO	01/16/21	OP19751	GFM346

	Initial Weight	Final Volume
Run #1	20.0 g	1.0 ml
Run #2	20.0 g	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	19.3	12	11	mg/kg	
	TPH-ORO (> C28-C40)	57.2 [a]	18	18	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	73%	69%	25-141%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SOUTHWEST AST		
Lab Sample ID:	DA31799-6	**Date Sampled:**	01/12/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846 8260B	**Percent Solids:**	88.3
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V58476.D	1	01/18/21 16:54	DC	n/a	n/a	V5V2982
Run #2							

	Initial Weight	Final Volume
Run #1	5.04 g	5.0 ml
Run #2		

Purgeable Aromatics+ GRO

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.1	0.56	ug/kg	
108-88-3	Toluene	ND	2.2	1.1	ug/kg	
100-41-4	Ethylbenzene	ND	2.2	0.56	ug/kg	
1330-20-7	Xylene (total)	ND	2.2	1.1	ug/kg	
	TPH-GRO (C6-C10)	ND	220	110	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-131%
2037-26-5	Toluene-D8	97%		70-130%
460-00-4	4-Bromofluorobenzene	100%		70-130%
17060-07-0	1,2-Dichloroethane-D4	98%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SOUTHWEST AST		
Lab Sample ID:	DA31799-6	**Date Sampled:**	01/12/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846-8015D SW846 3546	**Percent Solids:**	88.3
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH054093.D	1	01/16/21 17:01	NO	01/16/21	OP19750	GFH2153
Run #2	FM11395.D	1	01/19/21 19:05	NO	01/16/21	OP19751	GFM346

	Initial Weight	Final Volume
Run #1	20.0 g	1.0 ml
Run #2	20.0 g	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	41.6	11	11	mg/kg	
	TPH-ORO (> C28-C40)	33.0 [a]	17	17	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	74%	70%	25-141%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	UNDER STREET SWEEPINGS		
Lab Sample ID:	DA31799-7	**Date Sampled:**	01/13/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846 8260B	**Percent Solids:**	90.3
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V58477.D	1	01/18/21 17:17	DC	n/a	n/a	V5V2982
Run #2							

	Initial Weight	Final Volume
Run #1	5.02 g	5.0 ml
Run #2		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	67.0	55	24	ug/kg	B
107-02-8	Acrolein	ND	22	17	ug/kg	
107-13-1	Acrylonitrile	ND	11	8.8	ug/kg	
71-43-2	Benzene	ND	1.1	0.55	ug/kg	
108-86-1	Bromobenzene	ND	2.2	0.55	ug/kg	
74-97-5	Bromochloromethane	ND	2.2	0.66	ug/kg	
75-27-4	Bromodichloromethane	ND	2.2	0.55	ug/kg	
75-25-2	Bromoform	ND	2.2	1.1	ug/kg	
104-51-8	n-Butylbenzene	ND	2.2	0.55	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.2	0.55	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.2	0.55	ug/kg	
75-15-0	Carbon disulfide	ND	2.2	0.55	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.2	0.55	ug/kg	
108-90-7	Chlorobenzene	ND	2.2	0.55	ug/kg	
75-00-3	Chloroethane	ND	2.2	0.88	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	4.4	1.4	ug/kg	
67-66-3	Chloroform	ND	2.2	0.55	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.2	0.55	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.2	0.55	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	11	7.7	ug/kg	
124-48-1	Dibromochloromethane	ND	2.2	0.66	ug/kg	
106-93-4	1,2-Dibromoethane	ND	2.2	0.55	ug/kg	
95-50-1	o-Dichlorobenzene	ND	2.2	0.55	ug/kg	
541-73-1	m-Dichlorobenzene	ND	2.2	0.55	ug/kg	
106-46-7	p-Dichlorobenzene	ND	2.2	0.55	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	2.2	0.55	ug/kg	
75-34-3	1,1-Dichloroethane	ND	2.2	0.55	ug/kg	
107-06-2	1,2-Dichloroethane	ND	2.2	0.55	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	2.2	0.55	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	2.2	0.55	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	2.2	0.55	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.2	0.55	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	UNDER STREET SWEEPINGS		
Lab Sample ID:	DA31799-7	**Date Sampled:**	01/13/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846 8260B	**Percent Solids:**	90.3
Project:	RFTA MOC		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.2	0.55	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.2	0.55	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.2	0.55	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.2	0.55	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.2	0.55	ug/kg	
100-41-4	Ethylbenzene	ND	2.2	0.55	ug/kg	
87-68-3	Hexachlorobutadiene	ND	2.2	0.61	ug/kg	
591-78-6	2-Hexanone	ND	11	5.5	ug/kg	
98-82-8	Isopropylbenzene	ND	2.2	0.55	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.2	0.55	ug/kg	
74-83-9	Methyl bromide	ND	2.2	0.55	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2.2	0.55	ug/kg	
74-87-3	Methyl chloride	ND	2.2	0.99	ug/kg	
74-95-3	Methylene bromide	ND	2.2	0.66	ug/kg	
75-09-2	Methylene chloride	ND	4.4	3.3	ug/kg	
78-93-3	Methyl ethyl ketone	ND	11	5.5	ug/kg	
108-10-1	4-Methyl-2-pentanone	ND	11	5.5	ug/kg	
91-20-3	Naphthalene	ND	4.4	3.3	ug/kg	
103-65-1	n-Propylbenzene	ND	2.2	0.55	ug/kg	
100-42-5	Styrene	ND	2.2	0.55	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.2	0.55	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.2	0.55	ug/kg	
127-18-4	Tetrachloroethylene	ND	2.2	0.55	ug/kg	
108-88-3	Toluene	ND	2.2	1.1	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	2.2	1.1	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	2.2	1.1	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.2	0.55	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.2	0.55	ug/kg	
79-01-6	Trichloroethylene	ND	2.2	0.55	ug/kg	
75-69-4	Trichlorofluoromethane	ND	2.2	1.1	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	2.2	0.55	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.2	0.55	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.2	0.55	ug/kg	
108-05-4	Vinyl Acetate	ND	11	5.5	ug/kg	
75-01-4	Vinyl chloride	ND	2.2	0.55	ug/kg	
1330-20-7	Xylene (total)	ND	2.2	1.1	ug/kg	
	TPH-GRO (C6-C10)	ND	220	110	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	UNDER STREET SWEEPINGS		
Lab Sample ID:	DA31799-7	**Date Sampled:**	01/13/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846 8260B	**Percent Solids:**	90.3
Project:	RFTA MOC		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-131%
2037-26-5	Toluene-D8	96%		70-130%
460-00-4	4-Bromofluorobenzene	100%		70-130%
17060-07-0	1,2-Dichloroethane-D4	100%		70-130%

(a) Analyte was detected in the associated method blank. Common lab contaminant.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	UNDER STREET SWEEPINGS		
Lab Sample ID:	DA31799-7	**Date Sampled:**	01/13/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846-8015D SW846 3546	**Percent Solids:**	90.3
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH054095.D	1	01/16/21 17:23	NO	01/16/21	OP19750	GFH2153
Run #2	FM11397.D	1	01/19/21 19:44	NO	01/16/21	OP19751	GFM346

	Initial Weight	Final Volume
Run #1	20.0 g	1.0 ml
Run #2	20.0 g	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	11	11	mg/kg	
	TPH-ORO (> C28-C40)	35.1 [a]	17	17	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	81%	83%	25-141%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	UNDER STREET SWEEPINGS		
Lab Sample ID:	DA31799-7	**Date Sampled:**	01/13/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
		Percent Solids:	90.3
Project:	RFTA MOC		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
%solids							
Solids, Percent	90.3		%	1	01/14/21	ST	SM2540G-2011 M
HEM Oil and Grease	< 280	280	mg/kg	1	01/20/21	ST	SW846 9071B

RL = Reporting Limit

Report of Analysis

Client Sample ID:	NATIVE SOIL IN DRAINAGE		
Lab Sample ID:	DA31799-8	**Date Sampled:**	01/13/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846 8260B	**Percent Solids:**	91.0
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V58478.D	1	01/18/21 17:41	DC	n/a	n/a	V5V2982
Run #2							

	Initial Weight	Final Volume
Run #1	5.03 g	5.0 ml
Run #2		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	58.0	55	24	ug/kg	B
107-02-8	Acrolein	ND	22	16	ug/kg	
107-13-1	Acrylonitrile	ND	11	8.7	ug/kg	
71-43-2	Benzene	ND	1.1	0.55	ug/kg	
108-86-1	Bromobenzene	ND	2.2	0.55	ug/kg	
74-97-5	Bromochloromethane	ND	2.2	0.66	ug/kg	
75-27-4	Bromodichloromethane	ND	2.2	0.55	ug/kg	
75-25-2	Bromoform	ND	2.2	1.1	ug/kg	
104-51-8	n-Butylbenzene	ND	2.2	0.55	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.2	0.55	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.2	0.55	ug/kg	
75-15-0	Carbon disulfide	ND	2.2	0.55	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.2	0.55	ug/kg	
108-90-7	Chlorobenzene	ND	2.2	0.55	ug/kg	
75-00-3	Chloroethane	ND	2.2	0.87	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	4.4	1.4	ug/kg	
67-66-3	Chloroform	ND	2.2	0.55	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.2	0.55	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.2	0.55	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	11	7.6	ug/kg	
124-48-1	Dibromochloromethane	ND	2.2	0.66	ug/kg	
106-93-4	1,2-Dibromoethane	ND	2.2	0.55	ug/kg	
95-50-1	o-Dichlorobenzene	ND	2.2	0.55	ug/kg	
541-73-1	m-Dichlorobenzene	ND	2.2	0.55	ug/kg	
106-46-7	p-Dichlorobenzene	ND	2.2	0.55	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	2.2	0.55	ug/kg	
75-34-3	1,1-Dichloroethane	ND	2.2	0.55	ug/kg	
107-06-2	1,2-Dichloroethane	ND	2.2	0.55	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	2.2	0.55	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	2.2	0.55	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	2.2	0.55	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.2	0.55	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	NATIVE SOIL IN DRAINAGE		
Lab Sample ID:	DA31799-8	**Date Sampled:**	01/13/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846 8260B	**Percent Solids:**	91.0
Project:	RFTA MOC		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.2	0.55	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.2	0.55	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.2	0.55	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.2	0.55	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.2	0.55	ug/kg	
100-41-4	Ethylbenzene	ND	2.2	0.55	ug/kg	
87-68-3	Hexachlorobutadiene	ND	2.2	0.60	ug/kg	
591-78-6	2-Hexanone	ND	11	5.5	ug/kg	
98-82-8	Isopropylbenzene	ND	2.2	0.55	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.2	0.55	ug/kg	
74-83-9	Methyl bromide	ND	2.2	0.55	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2.2	0.55	ug/kg	
74-87-3	Methyl chloride	ND	2.2	0.98	ug/kg	
74-95-3	Methylene bromide	ND	2.2	0.66	ug/kg	
75-09-2	Methylene chloride	ND	4.4	3.3	ug/kg	
78-93-3	Methyl ethyl ketone	ND	11	5.5	ug/kg	
108-10-1	4-Methyl-2-pentanone	ND	11	5.5	ug/kg	
91-20-3	Naphthalene	ND	4.4	3.3	ug/kg	
103-65-1	n-Propylbenzene	ND	2.2	0.55	ug/kg	
100-42-5	Styrene	ND	2.2	0.55	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.2	0.55	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.2	0.55	ug/kg	
127-18-4	Tetrachloroethylene	ND	2.2	0.55	ug/kg	
108-88-3	Toluene	ND	2.2	1.1	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	2.2	1.1	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	2.2	1.1	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.2	0.55	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.2	0.55	ug/kg	
79-01-6	Trichloroethylene	ND	2.2	0.55	ug/kg	
75-69-4	Trichlorofluoromethane	ND	2.2	1.1	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	2.2	0.55	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.2	0.55	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.2	0.55	ug/kg	
108-05-4	Vinyl Acetate	ND	11	5.5	ug/kg	
75-01-4	Vinyl chloride	ND	2.2	0.55	ug/kg	
1330-20-7	Xylene (total)	ND	2.2	1.1	ug/kg	
	TPH-GRO (C6-C10)	ND	220	110	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	NATIVE SOIL IN DRAINAGE		
Lab Sample ID:	DA31799-8	**Date Sampled:**	01/13/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846 8260B	**Percent Solids:**	91.0
Project:	RFTA MOC		

VOA 8260 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		70-131%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	101%		70-130%
17060-07-0	1,2-Dichloroethane-D4	102%		70-130%

(a) Analyte was detected in the associated method blank. Common lab contaminant.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	NATIVE SOIL IN DRAINAGE		
Lab Sample ID:	DA31799-8	**Date Sampled:**	01/13/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
Method:	SW846-8015D SW846 3546	**Percent Solids:**	91.0
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH054128.D	1	01/19/21 12:51	NO	01/16/21	OP19750	GFP2153
Run #2	FM11403.D	1	01/19/21 21:39	NO	01/16/21	OP19751	GFM346

	Initial Weight	Final Volume
Run #1	20.0 g	1.0 ml
Run #2	20.0 g	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	66.2	11	10	mg/kg	
	TPH-ORO (> C28-C40)	153 [a]	16	16	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	62%	62%	25-141%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	NATIVE SOIL IN DRAINAGE		
Lab Sample ID:	DA31799-8	**Date Sampled:**	01/13/21
Matrix:	SO - Soil	**Date Received:**	01/13/21
		Percent Solids:	91.0
Project:	RFTA MOC		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
%solids							
Solids, Percent	91		%	1	01/14/21	ST	SM2540G-2011 M
HEM Oil and Grease	978	270	mg/kg	1	01/20/21	ST	SW846 9071B

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

Page 1 of 1

SGS North America Inc. - Wheat Ridge
4036 Youngfield Street, Wheat Ridge, CO 80033
TEL: 303-425-6021 FAX: 303-425-6854
www.sgs.com/ehsusa

Bottle Order Control #	FED-EX Tracking #
SGS Quote #	SGS Job # DA31799

Client / Reporting Information

Company: ERO
Street: 1842 Clarkson St.
City, State: Denver CO
Project Contact: 830 1188
Phone: Craig Sovka
Email:
Sampler(s) Name(s): Craig Sovka

Project Information

Project Name: RFTA MOC
Street:
City, State:
Project #: 20-191
Client Purchase Order #:
Project Manager:

Billing Information (If different from Report to)

Company:
Street Address:
City, State ZIP:
Attention:

Requested Analysis (see TEST CODE sheet)

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

Field ID / Point of Collection	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: NONE	HCl	NaOH	HNO3	H2SO4	DI Water	MEOH	ENCORE	Na2S2O3	Na2SO3	VOCs / GRO	TPH (GRO/DRO)	PCBs	BTEX / GRO	DRO						LAB USE ONLY
Hydraulic Lift	1/12/21	1230	CAS	SO	3	X										X	X	X								01
North End AST		1545			2														X	X						02
Northeast AST		1555			2														X	X						03
Southeast AST		1605			2														X	X						04
Northwest AST		1615			2														X	X						05
Southwest AST		1625			2														X	X						06
Under Street Sweepings	1/13	1100			2											X	X									07
Native Soil in Drainage	"	1130			2											X	X									08
																										1/13/21

Turnaround Time (Business days)

- [ ] Standard 10 Business Days
- [x] 5 Business Days ~~RUSH~~
- [ ] 3 Business Days RUSH
- [ ] 2 Business Days RUSH
- [ ] 1 Business Day EMERGENC

Emergency & Rush T/A data available via LabLink. RUSH TAT approval needed.

Special Reporting Instructions

- [x] Report in PPB
- [ ] Report in PPM
- [ ] Report MDLs

Data Deliverable Information

- [x] Commercial "A" (Level 1, Results Only)
- [ ] Commercial "B" (Level 2, Results + QC Summary)
- [ ] COMMBN (Results/QC/Narrative)
- [ ] COMMBN+ [Results/QC/Narrative (+ chromatograms)]
- [ ] REDT2
- [ ] FULT1
- [ ] EDD Format _____

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date/Time:	Received By: 1	Relinquished By: 2	Date/Time:	Received By: 2
Craig Sovka	1/13/21 1610				
Relinquished by Sampler: 3	Date/Time:	Received By: 3	Relinquished By: 4	Date/Time:	Received By: 4

Custody Seal # Intact [x] Not Intact [ ] Absent [ ]
Preserved where applicable [x]
Cooler Temp. °C: 2.0 Therm. ID: 1D80 On Ice [x]

http://www.sgs.com/en/terms-and-conditions

SGS Sample Receipt Summary

Job Number: DA31799 **Client:** ERO **Project:** RFTA MOC

Date / Time Received: 1/13/2021 4:10:00 PM **Delivery Method:** **Airbill #'s:** HD

Cooler Temps (Initial/Adjusted): #1: (2/2);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun;		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	☑
2. Trip Blank listed on COC:	☐		☐	☑
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Comments

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

DA31799: Chain of Custody
Page 2 of 2

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V2982-MB	5V58463.D	1	01/18/21	DC	n/a	n/a	V5V2982

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	2640	2500	1100	ug/kg	
107-02-8	Acrolein	ND	1000	750	ug/kg	
107-13-1	Acrylonitrile	ND	500	400	ug/kg	
71-43-2	Benzene	ND	50	25	ug/kg	
108-86-1	Bromobenzene	ND	100	25	ug/kg	
74-97-5	Bromochloromethane	ND	100	30	ug/kg	
75-27-4	Bromodichloromethane	ND	100	25	ug/kg	
75-25-2	Bromoform	ND	100	50	ug/kg	
104-51-8	n-Butylbenzene	ND	100	25	ug/kg	
135-98-8	sec-Butylbenzene	ND	100	25	ug/kg	
98-06-6	tert-Butylbenzene	ND	100	25	ug/kg	
75-15-0	Carbon disulfide	ND	100	25	ug/kg	
56-23-5	Carbon tetrachloride	ND	100	25	ug/kg	
108-90-7	Chlorobenzene	ND	100	25	ug/kg	
75-00-3	Chloroethane	ND	100	40	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	200	65	ug/kg	
67-66-3	Chloroform	ND	100	25	ug/kg	
95-49-8	o-Chlorotoluene	ND	100	25	ug/kg	
106-43-4	p-Chlorotoluene	ND	100	25	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	500	350	ug/kg	
124-48-1	Dibromochloromethane	ND	100	30	ug/kg	
106-93-4	1,2-Dibromoethane	ND	100	25	ug/kg	
95-50-1	o-Dichlorobenzene	ND	100	25	ug/kg	
541-73-1	m-Dichlorobenzene	ND	100	25	ug/kg	
106-46-7	p-Dichlorobenzene	ND	100	25	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	100	25	ug/kg	
75-34-3	1,1-Dichloroethane	ND	100	25	ug/kg	
107-06-2	1,2-Dichloroethane	ND	100	25	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	100	25	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	100	25	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	100	25	ug/kg	
78-87-5	1,2-Dichloropropane	ND	100	25	ug/kg	
142-28-9	1,3-Dichloropropane	ND	100	25	ug/kg	
594-20-7	2,2-Dichloropropane	ND	100	25	ug/kg	
563-58-6	1,1-Dichloropropene	ND	100	25	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	100	25	ug/kg	

Method Blank Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V2982-MB	5V58463.D	1	01/18/21	DC	n/a	n/a	V5V2982

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	100	25	ug/kg	
100-41-4	Ethylbenzene	ND	100	25	ug/kg	
87-68-3	Hexachlorobutadiene	ND	100	28	ug/kg	
591-78-6	2-Hexanone	ND	500	250	ug/kg	
98-82-8	Isopropylbenzene	ND	100	25	ug/kg	
99-87-6	p-Isopropyltoluene	ND	100	25	ug/kg	
74-83-9	Methyl bromide	ND	100	25	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	100	25	ug/kg	
74-87-3	Methyl chloride	ND	100	45	ug/kg	
74-95-3	Methylene bromide	ND	100	30	ug/kg	
75-09-2	Methylene chloride	ND	200	150	ug/kg	
78-93-3	Methyl ethyl ketone	ND	500	250	ug/kg	
108-10-1	4-Methyl-2-pentanone	ND	500	250	ug/kg	
91-20-3	Naphthalene	ND	200	150	ug/kg	
103-65-1	n-Propylbenzene	ND	100	25	ug/kg	
100-42-5	Styrene	ND	100	25	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	100	25	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	100	25	ug/kg	
127-18-4	Tetrachloroethylene	ND	100	25	ug/kg	
108-88-3	Toluene	ND	100	50	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	100	50	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	100	50	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	100	25	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	100	25	ug/kg	
79-01-6	Trichloroethylene	ND	100	25	ug/kg	
75-69-4	Trichlorofluoromethane	ND	100	50	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	100	25	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	100	25	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	100	25	ug/kg	
108-05-4	Vinyl Acetate	ND	500	250	ug/kg	
75-01-4	Vinyl chloride	ND	100	25	ug/kg	
1330-20-7	Xylene (total)	ND	100	50	ug/kg	
	TPH-GRO (C6-C10)	ND	10000	5000	ug/kg	

Method Blank Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V2982-MB	5V58463.D	1	01/18/21	DC	n/a	n/a	V5V2982

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	97%	70-131%
2037-26-5	Toluene-D8	94%	70-130%
460-00-4	4-Bromofluorobenzene	97%	70-130%
17060-07-0	1,2-Dichloroethane-D4	99%	70-130%

(a) Common lab contaminant.

Method Blank Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V2982-MB	5V58464.D	1	01/18/21	DC	n/a	n/a	V5V2982

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	54.8	50	22	ug/kg	
107-02-8	Acrolein	ND	20	15	ug/kg	
107-13-1	Acrylonitrile	ND	10	8.0	ug/kg	
71-43-2	Benzene	ND	1.0	0.50	ug/kg	
108-86-1	Bromobenzene	ND	2.0	0.50	ug/kg	
74-97-5	Bromochloromethane	ND	2.0	0.60	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	0.50	ug/kg	
75-25-2	Bromoform	ND	2.0	1.0	ug/kg	
104-51-8	n-Butylbenzene	ND	2.0	0.50	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.0	0.50	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.0	0.50	ug/kg	
75-15-0	Carbon disulfide	ND	2.0	0.50	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	0.50	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	0.50	ug/kg	
75-00-3	Chloroethane	ND	2.0	0.80	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	4.0	1.3	ug/kg	
67-66-3	Chloroform	ND	2.0	0.50	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.0	0.50	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.0	0.50	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	7.0	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	0.60	ug/kg	
106-93-4	1,2-Dibromoethane	ND	2.0	0.50	ug/kg	
95-50-1	o-Dichlorobenzene	ND	2.0	0.50	ug/kg	
541-73-1	m-Dichlorobenzene	ND	2.0	0.50	ug/kg	
106-46-7	p-Dichlorobenzene	ND	2.0	0.50	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/kg	
75-34-3	1,1-Dichloroethane	ND	2.0	0.50	ug/kg	
107-06-2	1,2-Dichloroethane	ND	2.0	0.50	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.50	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.50	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.0	0.50	ug/kg	
142-28-9	1,3-Dichloropropane	ND	2.0	0.50	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.0	0.50	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.0	0.50	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.50	ug/kg	

Method Blank Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V2982-MB	5V58464.D	1	01/18/21	DC	n/a	n/a	V5V2982

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.50	ug/kg	
100-41-4	Ethylbenzene	ND	2.0	0.50	ug/kg	
87-68-3	Hexachlorobutadiene	ND	2.0	0.55	ug/kg	
591-78-6	2-Hexanone	ND	10	5.0	ug/kg	
98-82-8	Isopropylbenzene	ND	2.0	0.50	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.0	0.50	ug/kg	
74-83-9	Methyl bromide	ND	2.0	0.50	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	0.50	ug/kg	
74-87-3	Methyl chloride	ND	2.0	0.90	ug/kg	
74-95-3	Methylene bromide	ND	2.0	0.60	ug/kg	
75-09-2	Methylene chloride	ND	4.0	3.0	ug/kg	
78-93-3	Methyl ethyl ketone	ND	10	5.0	ug/kg	
108-10-1	4-Methyl-2-pentanone	ND	10	5.0	ug/kg	
91-20-3	Naphthalene	ND	4.0	3.0	ug/kg	
103-65-1	n-Propylbenzene	ND	2.0	0.50	ug/kg	
100-42-5	Styrene	ND	2.0	0.50	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	0.50	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.50	ug/kg	
127-18-4	Tetrachloroethylene	ND	2.0	0.50	ug/kg	
108-88-3	Toluene	ND	2.0	1.0	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	1.0	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	1.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.50	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.50	ug/kg	
79-01-6	Trichloroethylene	ND	2.0	0.50	ug/kg	
75-69-4	Trichlorofluoromethane	ND	2.0	1.0	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	2.0	0.50	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.50	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.50	ug/kg	
108-05-4	Vinyl Acetate	ND	10	5.0	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	0.50	ug/kg	
1330-20-7	Xylene (total)	ND	2.0	1.0	ug/kg	
	TPH-GRO (C6-C10)	ND	200	100	ug/kg	

Method Blank Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V2982-MB	5V58464.D	1	01/18/21	DC	n/a	n/a	V5V2982

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	95%	70-131%
2037-26-5	Toluene-D8	98%	70-130%
460-00-4	4-Bromofluorobenzene	101%	70-130%
17060-07-0	1,2-Dichloroethane-D4	95%	70-130%

(a) Common lab contaminant.

Blank Spike Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V2982-BS	5V58460.D	1	01/18/21	DC	n/a	n/a	V5V2982

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	250	328	131	30-198
107-02-8	Acrolein	100	88.1	88	66-137
107-13-1	Acrylonitrile	100	83.9	84	70-130
71-43-2	Benzene	50	44.3	89	68-130
108-86-1	Bromobenzene	50	48.4	97	70-130
74-97-5	Bromochloromethane	50	46.8	94	70-130
75-27-4	Bromodichloromethane	50	47.3	95	70-130
75-25-2	Bromoform	50	50.8	102	68-130
104-51-8	n-Butylbenzene	50	47.3	95	68-130
135-98-8	sec-Butylbenzene	50	48.8	98	69-130
98-06-6	tert-Butylbenzene	50	50.0	100	70-130
75-15-0	Carbon disulfide	50	40.3	81	67-130
56-23-5	Carbon tetrachloride	50	43.9	88	67-130
108-90-7	Chlorobenzene	50	46.3	93	70-130
75-00-3	Chloroethane	50	49.7	99	69-130
110-75-8	2-Chloroethyl vinyl ether	50	47.0	94	68-130
67-66-3	Chloroform	50	44.0	88	70-130
95-49-8	o-Chlorotoluene	50	47.8	96	67-130
106-43-4	p-Chlorotoluene	50	47.9	96	68-130
96-12-8	1,2-Dibromo-3-chloropropane	50	46.9	94	68-130
124-48-1	Dibromochloromethane	50	46.9	94	70-130
106-93-4	1,2-Dibromoethane	50	48.5	97	70-130
95-50-1	o-Dichlorobenzene	50	45.2	90	70-130
541-73-1	m-Dichlorobenzene	50	46.5	93	69-130
106-46-7	p-Dichlorobenzene	50	44.7	89	69-130
75-71-8	Dichlorodifluoromethane	50	50.2	100	33-173
75-34-3	1,1-Dichloroethane	50	42.5	85	70-130
107-06-2	1,2-Dichloroethane	50	44.9	90	70-130
75-35-4	1,1-Dichloroethylene	50	39.9	80	70-130
156-59-2	cis-1,2-Dichloroethylene	50	45.0	90	70-130
156-60-5	trans-1,2-Dichloroethylene	50	42.8	86	69-130
78-87-5	1,2-Dichloropropane	50	45.5	91	70-130
142-28-9	1,3-Dichloropropane	50	46.7	93	70-130
594-20-7	2,2-Dichloropropane	50	45.1	90	67-130
563-58-6	1,1-Dichloropropene	50	45.6	91	70-130
10061-01-5	cis-1,3-Dichloropropene	50	48.4	97	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V2982-BS	5V58460.D	1	01/18/21	DC	n/a	n/a	V5V2982

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
10061-02-6	trans-1,3-Dichloropropene	50	48.2	96	68-130
100-41-4	Ethylbenzene	50	47.0	94	69-130
87-68-3	Hexachlorobutadiene	50	43.6	87	67-130
591-78-6	2-Hexanone	250	233	93	58-130
98-82-8	Isopropylbenzene	50	47.8	96	70-130
99-87-6	p-Isopropyltoluene	50	49.2	98	70-130
74-83-9	Methyl bromide	50	48.5	97	57-130
1634-04-4	Methyl Tert Butyl Ether	50	44.8	90	70-130
74-87-3	Methyl chloride	50	51.2	102	51-137
74-95-3	Methylene bromide	50	47.7	95	70-130
75-09-2	Methylene chloride	50	42.7	85	69-130
78-93-3	Methyl ethyl ketone	250	237	95	61-136
108-10-1	4-Methyl-2-pentanone	250	246	98	69-130
91-20-3	Naphthalene	50	50.0	100	70-130
103-65-1	n-Propylbenzene	50	49.2	98	68-130
100-42-5	Styrene	50	50.4	101	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	46.5	93	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	50.4	101	68-130
127-18-4	Tetrachloroethylene	50	45.5	91	68-130
108-88-3	Toluene	50	44.6	89	65-130
87-61-6	1,2,3-Trichlorobenzene	50	46.1	92	70-130
120-82-1	1,2,4-Trichlorobenzene	50	46.1	92	70-130
71-55-6	1,1,1-Trichloroethane	50	43.8	88	68-130
79-00-5	1,1,2-Trichloroethane	50	46.5	93	70-130
79-01-6	Trichloroethylene	50	45.1	90	70-130
75-69-4	Trichlorofluoromethane	50	48.0	96	70-130
96-18-4	1,2,3-Trichloropropane	50	49.6	99	68-130
95-63-6	1,2,4-Trimethylbenzene	50	46.9	94	66-130
108-67-8	1,3,5-Trimethylbenzene	50	48.9	98	68-130
108-05-4	Vinyl Acetate	200	192	96	70-130
75-01-4	Vinyl chloride	50	50.3	101	65-130
1330-20-7	Xylene (total)	150	140	93	69-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V2982-BS	5V58460.D	1	01/18/21	DC	n/a	n/a	V5V2982

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	96%	70-131%
2037-26-5	Toluene-D8	96%	70-130%
460-00-4	4-Bromofluorobenzene	102%	70-130%
17060-07-0	1,2-Dichloroethane-D4	99%	70-130%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V2982-BS	5V58461.D	1	01/18/21	DC	n/a	n/a	V5V2982

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
	TPH-GRO (C6-C10)	2000	1860	93	57-136

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	95%	70-131%
2037-26-5	Toluene-D8	98%	70-130%
460-00-4	4-Bromofluorobenzene	100%	70-130%
17060-07-0	1,2-Dichloroethane-D4	97%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
DA31799-1MS	5V58468.D	1	01/18/21	DC	n/a	n/a	V5V2982
DA31799-1MSD	5V58469.D	1	01/18/21	DC	n/a	n/a	V5V2982
DA31799-1	5V58467.D	1	01/18/21	DC	n/a	n/a	V5V2982

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Compound	DA31799-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	89.8	B	275	380	106	272	371	103	2	5-239/30
107-02-8	Acrolein	ND		110	73.2	66	109	81.1	74	10	5-183/30
107-13-1	Acrylonitrile	ND		110	88.7	80	109	84.0	78	5	37-162/30
71-43-2	Benzene	ND		54.9	44.5	81	54.5	44.1	81	1	48-130/30
108-86-1	Bromobenzene	ND		54.9	48.8	89	54.5	47.1	86	4	27-136/30
74-97-5	Bromochloromethane	ND		54.9	49.3	90	54.5	47.1	86	5	58-130/30
75-27-4	Bromodichloromethane	ND		54.9	49.8	91	54.5	48.2	88	3	47-130/30
75-25-2	Bromoform	ND		54.9	54.7	100	54.5	52.2	96	5	33-130/30
104-51-8	n-Butylbenzene	ND		54.9	47.7	87	54.5	47.0	86	1	5-168/30
135-98-8	sec-Butylbenzene	ND		54.9	48.6	89	54.5	47.8	88	2	12-149/30
98-06-6	tert-Butylbenzene	ND		54.9	50.0	91	54.5	48.5	89	3	20-147/30
75-15-0	Carbon disulfide	ND		54.9	43.0	78	54.5	44.9	82	4	37-143/30
56-23-5	Carbon tetrachloride	ND		54.9	47.0	86	54.5	47.0	86	0	37-136/30
108-90-7	Chlorobenzene	ND		54.9	46.8	85	54.5	46.1	85	2	26-130/30
75-00-3	Chloroethane	ND		54.9	58.2	106	54.5	50.3	92	15	43-148/30
110-75-8	2-Chloroethyl vinyl ether	ND		54.9	50.0	91	54.5	42.8	79	16	56-134/30
67-66-3	Chloroform	ND		54.9	47.7	87	54.5	47.4	87	1	56-130/30
95-49-8	o-Chlorotoluene	ND		54.9	49.2	90	54.5	46.9	86	5	5-202/30
106-43-4	p-Chlorotoluene	ND		54.9	49.9	91	54.5	46.6	86	7	5-227/30
96-12-8	1,2-Dibromo-3-chloropropane	ND		54.9	47.9	87	54.5	48.8	90	2	7-187/30
124-48-1	Dibromochloromethane	ND		54.9	49.8	91	54.5	49.1	90	1	41-130/30
106-93-4	1,2-Dibromoethane	ND		54.9	49.1	89	54.5	49.2	90	0	51-132/30
95-50-1	o-Dichlorobenzene	ND		54.9	46.4	85	54.5	44.5	82	4	12-139/30
541-73-1	m-Dichlorobenzene	ND		54.9	46.0	84	54.5	45.5	84	1	13-139/30
106-46-7	p-Dichlorobenzene	ND		54.9	44.3	81	54.5	43.0	79	3	13-136/30
75-71-8	Dichlorodifluoromethane	ND		54.9	54.2	99	54.5	48.0	88	12	26-173/30
75-34-3	1,1-Dichloroethane	ND		54.9	45.7	83	54.5	45.0	83	2	58-130/30
107-06-2	1,2-Dichloroethane	ND		54.9	47.2	86	54.5	44.8	82	5	59-130/30
75-35-4	1,1-Dichloroethylene	ND		54.9	42.7	78	54.5	45.1	83	5	55-130/30
156-59-2	cis-1,2-Dichloroethylene	ND		54.9	47.3	86	54.5	46.5	85	2	55-130/30
156-60-5	trans-1,2-Dichloroethylene	ND		54.9	45.9	84	54.5	46.1	85	0	49-130/30
78-87-5	1,2-Dichloropropane	ND		54.9	46.4	85	54.5	45.6	84	2	59-130/30
142-28-9	1,3-Dichloropropane	ND		54.9	50.1	91	54.5	48.3	89	4	55-130/30
594-20-7	2,2-Dichloropropane	ND		54.9	46.0	84	54.5	48.6	89	5	43-136/30
563-58-6	1,1-Dichloropropene	ND		54.9	48.4	88	54.5	47.9	88	1	42-132/30
10061-01-5	cis-1,3-Dichloropropene	ND		54.9	52.2	95	54.5	49.9	92	5	40-133/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
DA31799-1MS	5V58468.D	1	01/18/21	DC	n/a	n/a	V5V2982
DA31799-1MSD	5V58469.D	1	01/18/21	DC	n/a	n/a	V5V2982
DA31799-1	5V58467.D	1	01/18/21	DC	n/a	n/a	V5V2982

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Compound	DA31799-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
10061-02-6	trans-1,3-Dichloropropene	ND		54.9	49.3	90	54.5	48.1	88	2	40-130/30
100-41-4	Ethylbenzene	ND		54.9	48.1	88	54.5	48.1	88	0	25-144/30
87-68-3	Hexachlorobutadiene	ND		54.9	42.2	77	54.5	42.8	79	1	5-153/30
591-78-6	2-Hexanone	ND		275	261	95	272	247	91	6	43-149/30
98-82-8	Isopropylbenzene	ND		54.9	50.3	92	54.5	50.0	92	1	21-143/30
99-87-6	p-Isopropyltoluene	ND		54.9	49.2	90	54.5	48.2	88	2	12-151/30
74-83-9	Methyl bromide	ND		54.9	51.7	94	54.5	48.0	88	7	5-167/30
1634-04-4	Methyl Tert Butyl Ether	ND		54.9	47.6	87	54.5	45.3	83	5	66-130/30
74-87-3	Methyl chloride	ND		54.9	55.2	101	54.5	49.6	91	11	34-162/30
74-95-3	Methylene bromide	ND		54.9	49.0	89	54.5	48.3	89	1	55-130/30
75-09-2	Methylene chloride	ND		54.9	46.0	84	54.5	44.3	81	4	58-130/30
78-93-3	Methyl ethyl ketone	ND		275	265	97	272	241	88	9	41-169/30
108-10-1	4-Methyl-2-pentanone	ND		275	280	102	272	252	93	11	54-147/30
91-20-3	Naphthalene	ND		54.9	48.5	88	54.5	48.0	88	1	5-164/30
103-65-1	n-Propylbenzene	ND		54.9	49.8	91	54.5	48.4	89	3	21-144/30
100-42-5	Styrene	ND		54.9	52.8	96	54.5	50.8	93	4	12-159/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		54.9	49.1	89	54.5	48.1	88	2	38-131/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		54.9	51.5	94	54.5	46.7	86	10	33-149/30
127-18-4	Tetrachloroethylene	ND		54.9	47.5	87	54.5	47.7	88	0	27-134/30
108-88-3	Toluene	ND		54.9	46.9	85	54.5	45.9	84	2	34-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		54.9	43.7	80	54.5	44.6	82	2	5-157/30
120-82-1	1,2,4-Trichlorobenzene	ND		54.9	44.5	81	54.5	46.0	84	3	5-164/30
71-55-6	1,1,1-Trichloroethane	ND		54.9	46.4	85	54.5	47.4	87	2	45-130/30
79-00-5	1,1,2-Trichloroethane	ND		54.9	50.6	92	54.5	47.9	88	5	30-152/30
79-01-6	Trichloroethylene	ND		54.9	48.7	89	54.5	48.0	88	1	31-147/30
75-69-4	Trichlorofluoromethane	ND		54.9	53.7	98	54.5	45.9	84	16	55-133/30
96-18-4	1,2,3-Trichloropropane	ND		54.9	50.9	93	54.5	48.0	88	6	51-134/30
95-63-6	1,2,4-Trimethylbenzene	ND		54.9	49.4	90	54.5	48.0	88	3	5-174/30
108-67-8	1,3,5-Trimethylbenzene	ND		54.9	50.1	91	54.5	47.8	88	5	26-138/30
108-05-4	Vinyl Acetate	ND		220	66.7	30	218	50.1	23	28	5-158/30
75-01-4	Vinyl chloride	ND		54.9	54.0	98	54.5	50.2	92	7	55-138/30
1330-20-7	Xylene (total)	ND		165	145	88	163	144	88	1	24-143/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
DA31799-1MS	5V58468.D	1	01/18/21	DC	n/a	n/a	V5V2982
DA31799-1MSD	5V58469.D	1	01/18/21	DC	n/a	n/a	V5V2982
DA31799-1	5V58467.D	1	01/18/21	DC	n/a	n/a	V5V2982

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Surrogate Recoveries	MS	MSD	DA31799-1	Limits
1868-53-7	Dibromofluoromethane	101%	100%	99%	70-131%
2037-26-5	Toluene-D8	101%	98%	95%	70-130%
460-00-4	4-Bromofluorobenzene	102%	99%	99%	70-130%
17060-07-0	1,2-Dichloroethane-D4	101%	100%	103%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
DA31799-1MS	5V58470.D	1	01/18/21	DC	n/a	n/a	V5V2982
DA31799-1MSD	5V58471.D	1	01/18/21	DC	n/a	n/a	V5V2982
DA31799-1	5V58467.D	1	01/18/21	DC	n/a	n/a	V5V2982

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Compound	DA31799-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		2190	2000	91	2190	1800	82	11	5-173/30

CAS No.	Surrogate Recoveries	MS	MSD	DA31799-1	Limits
1868-53-7	Dibromofluoromethane	97%	96%	99%	70-131%
2037-26-5	Toluene-D8	97%	96%	95%	70-130%
460-00-4	4-Bromofluorobenzene	98%	98%	99%	70-130%
17060-07-0	1,2-Dichloroethane-D4	99%	98%	103%	70-130%

* = Outside of Control Limits.

GC/LC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19753-MB	EE50867.D	1	01/19/21	GN	01/19/21	OP19753	GEE2942

The QC reported here applies to the following samples: **Method:** SW846 8082A

DA31799-1

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	17	6.7	ug/kg	
11104-28-2	Aroclor 1221	ND	17	6.7	ug/kg	
11141-16-5	Aroclor 1232	ND	17	6.7	ug/kg	
53469-21-9	Aroclor 1242	ND	17	6.7	ug/kg	
12672-29-6	Aroclor 1248	ND	17	6.7	ug/kg	
11097-69-1	Aroclor 1254	ND	17	7.0	ug/kg	
11096-82-5	Aroclor 1260	ND	17	6.7	ug/kg	
37324-23-5	Aroclor 1262	ND	17	6.7	ug/kg	
11100-14-4	Aroclor 1268	ND	17	5.0	ug/kg	
1336-36-3	Total PCBs	ND	17	7.0	ug/kg	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	75%	10-149%
877-09-8	Tetrachloro-m-xylene	72%	10-149%
2051-24-3	Decachlorobiphenyl	81%	11-162%
2051-24-3	Decachlorobiphenyl	81%	11-162%

Method Blank Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19750-MB	FH054086.D	1	01/16/21	NO	01/16/21	OP19750	GFP2152

The QC reported here applies to the following samples: **Method:** SW846-8015D

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	10	9.5	mg/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	90%	25-141%

Method Blank Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19751-MB	FM11377.D	1	01/19/21	NO	01/16/21	OP19751	GFM346

The QC reported here applies to the following samples: **Method:** SW846-8015D

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-ORO (> C28-C40)	ND	15	15	mg/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	81%	25-141%

Blank Spike Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19753-BS	EE50868.D	1	01/19/21	GN	01/19/21	OP19753	GEE2942

The QC reported here applies to the following samples: **Method:** SW846 8082A

DA31799-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
12674-11-2	Aroclor 1016	167	128	77	70-133
11096-82-5	Aroclor 1260	167	141	85	75-139
1336-36-3	Total PCBs	333	268	80	70-139

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	66%	10-149%
877-09-8	Tetrachloro-m-xylene	63%	10-149%
2051-24-3	Decachlorobiphenyl	75%	11-162%
2051-24-3	Decachlorobiphenyl	75%	11-162%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19750-BS	FH054124.D	1	01/19/21	NO	01/16/21	OP19750	GFP2153

The QC reported here applies to the following samples: **Method:** SW846-8015D

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	250	236	94	49-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	101%	25-141%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19751-BS	FM11379.D	1	01/19/21	NO	01/16/21	OP19751	GFM346

The QC reported here applies to the following samples: **Method:** SW846-8015D

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-ORO (> C28-C40)	100	77.9	78	69-132

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	84%	25-141%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19753-MS	EE50869.D	1	01/19/21	GN	01/19/21	OP19753	GEE2942
OP19753-MSD	EE50870.D	1	01/19/21	GN	01/19/21	OP19753	GEE2942
DA31799-1	EE50871.D	1	01/19/21	GN	01/19/21	OP19753	GEE2942

The QC reported here applies to the following samples: **Method:** SW846 8082A

DA31799-1

CAS No.	Compound	DA31799-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	ND		183	119	65	184	137	75	14	10-200/30
11096-82-5	Aroclor 1260	ND		183	144	79	184	149	81	3	10-189/30
1336-36-3	Total PCBs	ND		366	264	72	368	286	78	8	10-200/30

CAS No.	Surrogate Recoveries	MS	MSD	DA31799-1	Limits
877-09-8	Tetrachloro-m-xylene	58%	60%	38%	10-149%
877-09-8	Tetrachloro-m-xylene	57%	58%	36%	10-149%
2051-24-3	Decachlorobiphenyl	70%	73%	39%	11-162%
2051-24-3	Decachlorobiphenyl	69%	73%	39%	11-162%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19750-MS	FH054125.D	1	01/19/21	NO	01/16/21	OP19750	GFH2154
OP19750-MSD	FH054127.D	1	01/19/21	NO	01/16/21	OP19750	GFH2154
DA31870-1	FH054129.D	1	01/19/21	NO	01/16/21	OP19750	GFH2154

The QC reported here applies to the following samples: **Method:** SW846-8015D

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Compound	DA31870-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	Spike mg/kg	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	18.9		294	252	79	294	253	80	0	10-149/30

CAS No.	Surrogate Recoveries	MS	MSD	DA31870-1	Limits
84-15-1	o-Terphenyl	84%	79%	69%	25-141%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA31799
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19751-MS	FM11381.D	1	01/19/21	NO	01/16/21	OP19751	GFM346
OP19751-MSD	FM11383.D	1	01/19/21	NO	01/16/21	OP19751	GFM346
DA31823-1	FM11385.D	1	01/19/21	NO	01/16/21	OP19751	GFM346

The QC reported here applies to the following samples: **Method:** SW846-8015D

DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8

CAS No.	Compound	DA31823-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	Spike mg/kg	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-ORO (> C28-C40)	313		108	397	78	108	424	103	7	10-163/30

CAS No.	Surrogate Recoveries	MS	MSD	DA31823-1	Limits
84-15-1	o-Terphenyl	85%	66%	68%	25-141%

* = Outside of Control Limits.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA31799
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
HEM Oil and Grease	GP28423/GN52292	250	0.00	mg/kg	800	790	98.8	70-130%

Associated Samples:
Batch GP28423: DA31799-1, DA31799-7, DA31799-8
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA31799
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Percent	GN52250	DA31784-1	%	17.5	17.6	0.6	0-10%

Associated Samples:
Batch GN52250: DA31799-1, DA31799-2, DA31799-3, DA31799-4, DA31799-5, DA31799-6, DA31799-7, DA31799-8
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA31799
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
HEM Oil and Grease	GP28423/GN52292	DA31799-1	mg/kg	0.00	882	849	96.3	65-130%

Associated Samples:
Batch GP28423: DA31799-1, DA31799-7, DA31799-8
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA31799
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
HEM Oil and Grease	GP28423/GN52292	DA31799-1	mg/kg	0.00	882	882	3.8	30%

Associated Samples:
Batch GP28423: DA31799-1, DA31799-7, DA31799-8
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

ERO Resources Corporation

RFTA MOC

20-191

SGS Job Number: DA32064

Sampling Date: 01/27/21

Report to:

ERO Reosources Corporation
1842 Clarkson Street
Denver, CO 80218
csovka@eroresources.com

ATTN: Craig Sovka

Total number of pages in report: **58**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Jason Savoie
General Manager

Client Service contact: Carissa Cumine 303-425-6021

Certifications: CO (CO00049), NE (NE-OS-06-04), ND (R-027), UT (NELAP CO00049) LA (LA150028), TX (T104704511), WY (8TMS-L)

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SGS North America Inc.

Sample Summary

ERO Resources Corporation

Job No: DA32064

RFTA MOC
Project No: 20-191

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
DA32064-1	01/27/21	10:00	CS	01/27/21	SO	Soil	WEST SEPARATOR
DA32064-2	01/27/21	10:15	CS	01/27/21	SO	Soil	CENTER SEPARATOR
DA32064-3	01/27/21	10:30	CS	01/27/21	SO	Soil	EAST SEPARATOR
DA32064-4	01/27/21	10:45	CS	01/27/21	SO	Soil	NORTH DISPENSER
DA32064-5	01/27/21	11:00	CS	01/27/21	SO	Soil	SOUTH DISPENSER

This report contains results reported as ND = Not detected. The following applies:
Organics ND = Not detected above the MDL

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Summary of Hits

Job Number: DA32064
Account: ERO Resources Corporation
Project: RFTA MOC
Collected: 01/27/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
DA32064-1	**WEST SEPARATOR**					
TPH-DRO (C10-C28)		12.1	12	12	mg/kg	SW846-8015D
TPH-ORO (> C28-C40)		27.8	18	18	mg/kg	SW846-8015D
Barium		165	1.2		mg/kg	SW846 6010C
Chromium		20.1	1.2		mg/kg	SW846 6010C
Lead		7.4	6.0		mg/kg	SW846 6010C
DA32064-2	**CENTER SEPARATOR**					
TPH-ORO (> C28-C40)		19.9	17	17	mg/kg	SW846-8015D
Barium		98.9	1.0		mg/kg	SW846 6010C
Chromium		14.2	1.0		mg/kg	SW846 6010C
Lead		5.7	5.2		mg/kg	SW846 6010C
DA32064-3	**EAST SEPARATOR**					
TPH-ORO (> C28-C40)		23.2	17	17	mg/kg	SW846-8015D
Barium		96.8	1.1		mg/kg	SW846 6010C
Chromium		13.3	1.1		mg/kg	SW846 6010C
DA32064-4	**NORTH DISPENSER**					
No hits reported in this sample.						
DA32064-5	**SOUTH DISPENSER**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WEST SEPARATOR		
Lab Sample ID:	DA32064-1	**Date Sampled:**	01/27/21
Matrix:	SO - Soil	**Date Received:**	01/27/21
Method:	SW846 8260B	**Percent Solids:**	81.9
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V58554.D	1	01/29/21 14:25	DC	n/a	n/a	V5V2986
Run #2							

	Initial Weight	Final Volume
Run #1	5.03 g	5.0 ml
Run #2		

Purgeable Aromatics+ GRO

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.2	0.61	ug/kg	
108-88-3	Toluene	ND	2.4	1.2	ug/kg	
100-41-4	Ethylbenzene	ND	2.4	0.61	ug/kg	
1330-20-7	Xylene (total)	ND	2.4	1.2	ug/kg	
	TPH-GRO (C6-C10)	ND	240	120	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	115%		70-131%
2037-26-5	Toluene-D8	96%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%
17060-07-0	1,2-Dichloroethane-D4	113%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WEST SEPARATOR		
Lab Sample ID:	DA32064-1	**Date Sampled:**	01/27/21
Matrix:	SO - Soil	**Date Received:**	01/27/21
Method:	SW846-8015D SW846 3546	**Percent Solids:**	81.9
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH054383.D	1	01/30/21 19:01	NO	01/30/21	OP19791	GFH2160
Run #2	FM11439.D	1	01/30/21 19:29	NO	01/30/21	OP19792	GFM347

	Initial Weight	Final Volume
Run #1	20.0 g	1.0 ml
Run #2	20.0 g	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	12.1	12	12	mg/kg	
	TPH-ORO (> C28-C40)	27.8 [a]	18	18	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	78%	79%	25-141%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WEST SEPARATOR		
Lab Sample ID:	DA32064-1	**Date Sampled:**	01/27/21
Matrix:	SO - Soil	**Date Received:**	01/27/21
		Percent Solids:	81.9
Project:	RFTA MOC		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 3.0	3.0	mg/kg	1	01/28/21	01/28/21	JD	SW846 6010C [1]	SW846 3050B [4]
Barium	165	1.2	mg/kg	1	01/28/21	01/28/21	JD	SW846 6010C [1]	SW846 3050B [4]
Cadmium	< 6.0	6.0	mg/kg	5	01/28/21	01/29/21	JD	SW846 6010C [3]	SW846 3050B [4]
Chromium	20.1	1.2	mg/kg	1	01/28/21	01/28/21	JD	SW846 6010C [1]	SW846 3050B [4]
Lead	7.4	6.0	mg/kg	1	01/28/21	01/28/21	JD	SW846 6010C [1]	SW846 3050B [4]
Mercury	< 0.10	0.10	mg/kg	1	01/28/21	01/29/21	KP	SW846 7471B [2]	SW846 7471B [5]
Selenium	< 6.0	6.0	mg/kg	1	01/28/21	01/28/21	JD	SW846 6010C [1]	SW846 3050B [4]
Silver	< 18	18	mg/kg	5	01/28/21	01/29/21	JD	SW846 6010C [3]	SW846 3050B [4]

(1) Instrument QC Batch: MA13553
(2) Instrument QC Batch: MA13555
(3) Instrument QC Batch: MA13559
(4) Prep QC Batch: MP32054
(5) Prep QC Batch: MP32056

RL = Reporting Limit

Report of Analysis

Client Sample ID:	WEST SEPARATOR		
Lab Sample ID:	DA32064-1	**Date Sampled:**	01/27/21
Matrix:	SO - Soil	**Date Received:**	01/27/21
		Percent Solids:	81.9
Project:	RFTA MOC		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
%solids							
Solids, Percent	81.9		%	1	01/28/21	ST	SM2540G-2011 M
HEM Oil and Grease	< 310	310	mg/kg	1	02/04/21	ST	SW846 9071B

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CENTER SEPARATOR		
Lab Sample ID:	DA32064-2	**Date Sampled:**	01/27/21
Matrix:	SO - Soil	**Date Received:**	01/27/21
Method:	SW846 8260B	**Percent Solids:**	89.8
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V58555.D	1	01/29/21 14:49	DC	n/a	n/a	V5V2986
Run #2							

	Initial Weight	Final Volume
Run #1	5.09 g	5.0 ml
Run #2		

Purgeable Aromatics+ GRO

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.1	0.55	ug/kg	
108-88-3	Toluene	ND	2.2	1.1	ug/kg	
100-41-4	Ethylbenzene	ND	2.2	0.55	ug/kg	
1330-20-7	Xylene (total)	ND	2.2	1.1	ug/kg	
	TPH-GRO (C6-C10)	ND	220	110	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		70-131%
2037-26-5	Toluene-D8	97%		70-130%
460-00-4	4-Bromofluorobenzene	100%		70-130%
17060-07-0	1,2-Dichloroethane-D4	97%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CENTER SEPARATOR		
Lab Sample ID:	DA32064-2	**Date Sampled:**	01/27/21
Matrix:	SO - Soil	**Date Received:**	01/27/21
Method:	SW846-8015D SW846 3546	**Percent Solids:**	89.8
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH054385.D	1	01/30/21 19:23	NO	01/30/21	OP19791	GFH2160
Run #2	FM11441.D	1	01/30/21 20:07	NO	01/30/21	OP19792	GFM347

	Initial Weight	Final Volume
Run #1	20.0 g	1.0 ml
Run #2	20.0 g	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	11	11	mg/kg	
	TPH-ORO (> C28-C40)	19.9 [a]	17	17	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	80%	79%	25-141%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CENTER SEPARATOR		
Lab Sample ID:	DA32064-2	**Date Sampled:**	01/27/21
Matrix:	SO - Soil	**Date Received:**	01/27/21
		Percent Solids:	89.8
Project:	RFTA MOC		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 2.6	2.6	mg/kg	1	01/28/21	01/28/21	JD	SW846 6010C [1]	SW846 3050B [4]
Barium	98.9	1.0	mg/kg	1	01/28/21	01/28/21	JD	SW846 6010C [1]	SW846 3050B [4]
Cadmium	< 1.0	1.0	mg/kg	1	01/28/21	01/28/21	JD	SW846 6010C [1]	SW846 3050B [4]
Chromium	14.2	1.0	mg/kg	1	01/28/21	01/28/21	JD	SW846 6010C [1]	SW846 3050B [4]
Lead	5.7	5.2	mg/kg	1	01/28/21	01/28/21	JD	SW846 6010C [1]	SW846 3050B [4]
Mercury	< 0.084	0.084	mg/kg	1	01/28/21	01/29/21	KP	SW846 7471B [2]	SW846 7471B [5]
Selenium	< 5.2	5.2	mg/kg	1	01/28/21	01/28/21	JD	SW846 6010C [1]	SW846 3050B [4]
Silver	< 15	15	mg/kg	5	01/28/21	01/29/21	JD	SW846 6010C [3]	SW846 3050B [4]

(1) Instrument QC Batch: MA13553
(2) Instrument QC Batch: MA13555
(3) Instrument QC Batch: MA13559
(4) Prep QC Batch: MP32054
(5) Prep QC Batch: MP32056

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CENTER SEPARATOR		
Lab Sample ID:	DA32064-2	**Date Sampled:**	01/27/21
Matrix:	SO - Soil	**Date Received:**	01/27/21
		Percent Solids:	89.8
Project:	RFTA MOC		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
%solids							
Solids, Percent	89.8		%	1	01/28/21	ST	SM2540G-2011 M
HEM Oil and Grease	< 280	280	mg/kg	1	02/04/21	ST	SW846 9071B

RL = Reporting Limit

Report of Analysis

Client Sample ID:	EAST SEPARATOR		
Lab Sample ID:	DA32064-3	**Date Sampled:**	01/27/21
Matrix:	SO - Soil	**Date Received:**	01/27/21
Method:	SW846 8260B	**Percent Solids:**	86.5
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V58556.D	1	01/29/21 15:13	DC	n/a	n/a	V5V2986
Run #2							

	Initial Weight	Final Volume
Run #1	5.09 g	5.0 ml
Run #2		

Purgeable Aromatics+ GRO

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.1	0.57	ug/kg	
108-88-3	Toluene	ND	2.3	1.1	ug/kg	
100-41-4	Ethylbenzene	ND	2.3	0.57	ug/kg	
1330-20-7	Xylene (total)	ND	2.3	1.1	ug/kg	
	TPH-GRO (C6-C10)	ND	230	110	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		70-131%
2037-26-5	Toluene-D8	97%		70-130%
460-00-4	4-Bromofluorobenzene	99%		70-130%
17060-07-0	1,2-Dichloroethane-D4	99%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EAST SEPARATOR		
Lab Sample ID:	DA32064-3	**Date Sampled:**	01/27/21
Matrix:	SO - Soil	**Date Received:**	01/27/21
Method:	SW846-8015D SW846 3546	**Percent Solids:**	86.5
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH054387.D	1	01/30/21 19:44	NO	01/30/21	OP19791	GFH2160
Run #2	FM11443.D	1	01/30/21 20:46	NO	01/30/21	OP19792	GFM347

	Initial Weight	Final Volume
Run #1	20.0 g	1.0 ml
Run #2	20.0 g	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	12	11	mg/kg	
	TPH-ORO (> C28-C40)	23.2 [a]	17	17	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	78%	77%	25-141%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EAST SEPARATOR		
Lab Sample ID:	DA32064-3	**Date Sampled:**	01/27/21
Matrix:	SO - Soil	**Date Received:**	01/27/21
		Percent Solids:	86.5
Project:	RFTA MOC		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 2.8	2.8	mg/kg	1	01/28/21	01/28/21	JD	SW846 6010C [1]	SW846 3050B [4]
Barium	96.8	1.1	mg/kg	1	01/28/21	01/28/21	JD	SW846 6010C [1]	SW846 3050B [4]
Cadmium	< 1.1	1.1	mg/kg	1	01/28/21	01/28/21	JD	SW846 6010C [1]	SW846 3050B [4]
Chromium	13.3	1.1	mg/kg	1	01/28/21	01/28/21	JD	SW846 6010C [1]	SW846 3050B [4]
Lead	< 5.6	5.6	mg/kg	1	01/28/21	01/28/21	JD	SW846 6010C [1]	SW846 3050B [4]
Mercury	< 0.096	0.096	mg/kg	1	01/28/21	01/29/21	KP	SW846 7471B [2]	SW846 7471B [5]
Selenium	< 5.6	5.6	mg/kg	1	01/28/21	01/28/21	JD	SW846 6010C [1]	SW846 3050B [4]
Silver	< 17	17	mg/kg	5	01/28/21	01/29/21	JD	SW846 6010C [3]	SW846 3050B [4]

(1) Instrument QC Batch: MA13553
(2) Instrument QC Batch: MA13555
(3) Instrument QC Batch: MA13559
(4) Prep QC Batch: MP32054
(5) Prep QC Batch: MP32056

RL = Reporting Limit

Report of Analysis

Client Sample ID:	EAST SEPARATOR		
Lab Sample ID:	DA32064-3	**Date Sampled:**	01/27/21
Matrix:	SO - Soil	**Date Received:**	01/27/21
		Percent Solids:	86.5
Project:	RFTA MOC		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
%solids							
Solids, Percent	86.5		%	1	01/28/21	ST	SM2540G-2011 M
HEM Oil and Grease	< 290	290	mg/kg	1	02/04/21	ST	SW846 9071B

RL = Reporting Limit

Report of Analysis

Client Sample ID:	NORTH DISPENSER		
Lab Sample ID:	DA32064-4	**Date Sampled:**	01/27/21
Matrix:	SO - Soil	**Date Received:**	01/27/21
Method:	SW846 8260B	**Percent Solids:**	91.5
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V58557.D	1	01/29/21 15:36	DC	n/a	n/a	V5V2986
Run #2							

	Initial Weight	Final Volume
Run #1	5.03 g	5.0 ml
Run #2		

Purgeable Aromatics, MTBE and GRO

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.1	0.54	ug/kg	
108-88-3	Toluene	ND	2.2	1.1	ug/kg	
100-41-4	Ethylbenzene	ND	2.2	0.54	ug/kg	
1330-20-7	Xylene (total)	ND	2.2	1.1	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2.2	0.54	ug/kg	
	TPH-GRO (C6-C10)	ND	220	110	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		70-131%
2037-26-5	Toluene-D8	97%		70-130%
460-00-4	4-Bromofluorobenzene	98%		70-130%
17060-07-0	1,2-Dichloroethane-D4	102%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	NORTH DISPENSER		
Lab Sample ID:	DA32064-4	**Date Sampled:**	01/27/21
Matrix:	SO - Soil	**Date Received:**	01/27/21
Method:	SW846-8015D SW846 3546	**Percent Solids:**	91.5
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH054389.D	1	01/30/21 20:06	NO	01/30/21	OP19791	GFH2160
Run #2							

	Initial Weight	Final Volume
Run #1	20.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	11	10	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	84%		25-141%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SOUTH DISPENSER		
Lab Sample ID:	DA32064-5	**Date Sampled:**	01/27/21
Matrix:	SO - Soil	**Date Received:**	01/27/21
Method:	SW846 8260B	**Percent Solids:**	93.3
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V58558.D	1	01/29/21 16:00	DC	n/a	n/a	V5V2986
Run #2							

	Initial Weight	Final Volume
Run #1	5.05 g	5.0 ml
Run #2		

Purgeable Aromatics, MTBE and GRO

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.1	0.53	ug/kg	
108-88-3	Toluene	ND	2.1	1.1	ug/kg	
100-41-4	Ethylbenzene	ND	2.1	0.53	ug/kg	
1330-20-7	Xylene (total)	ND	2.1	1.1	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2.1	0.53	ug/kg	
	TPH-GRO (C6-C10)	ND	210	110	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	116%		70-131%
2037-26-5	Toluene-D8	103%		70-130%
460-00-4	4-Bromofluorobenzene	99%		70-130%
17060-07-0	1,2-Dichloroethane-D4	101%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SOUTH DISPENSER		
Lab Sample ID:	DA32064-5	**Date Sampled:**	01/27/21
Matrix:	SO - Soil	**Date Received:**	01/27/21
Method:	SW846-8015D SW846 3546	**Percent Solids:**	93.3
Project:	RFTA MOC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH054391.D	1	01/30/21 20:27	NO	01/30/21	OP19791	GFH2160
Run #2							

	Initial Weight	Final Volume
Run #1	20.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	11	10	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	81%		25-141%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

Page 1 of 1

SGS North America Inc. - Wheat Ridge
4036 Youngfield Street, Wheat Ridge, CO 80033
TEL: 303-425-6021 FAX: 303-425-6854
www.sgs.com/ehsusa

Bottle Order Control #	FED-EX Tracking #
SGS Quote #	SGS Job # DA32064

Client / Reporting Information

Company: ERO
Street: 1842 Clarkson St
City, State: Denver CO
Project Contact: Craig Sovka
Phone: 8301188
Email:
Sampler(s) Name(s): Craig Sovka

Project Information

Project Name: RFTA MOC
Street:
City, State:
Project #: 20-191
Client Purchase Order #:
Project Manager:
Attention:

Billing Information (If different from Report to)

Company:
Street Address:
City, State ZIP:

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB-Equipment Blank; RB - Rinse Blank; TB - Trip Blank

Field ID / Point of Collection	Collection Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: NONE	HCl	NaOH	HNO3	H2SO4	DI Water	MEOH	ENCORE	Na2S2O3	Na2SO3	VOCs / GRO	TPH (DRO/ORO/GRO)	RCRA metals	BTEX/GRO/MTBE	DRO	LAB USE ONLY
West Separator	11/27/21	1000	CAS	SO	3	X										X	X	X			01
Center Separator	11	1015	CAS	SO	3	X										X	X	X			02
East Separator	11	1030	CAS	SO	3	X										X	X	X			03
North Dispenser	11	1045	11	11	2	X													X	X	04
South Dispenser	11	1100	11	11	2	X													X	X	05

Turnaround Time (Business days)

- [ ] Standard 10 Business Days
- [x] 5 Business Days RUSH
- [ ] 3 Business Days RUSH
- [ ] 2 Business Days RUSH
- [ ] 1 Business Day EMERGENC

Special Reporting Instructions
- [ ] Report in PPB
- [x] Report in PPM
- [ ] Report MDLs

Emergency & Rush T/A data available via LabLink. RUSH TAT approval needed.

Data Deliverable Information

- [x] Commercial "A" (Level 1, Results Only)
- [ ] Commercial "B" (Level 2, Results + QC Summary)
- [ ] COMMBN (Results/QC/Narrative)
- [ ] COMMBN+ [Results/QC/Narrative (+ chromatograms)]
- [ ] REDT2
- [ ] FULT1
- [ ] EDD Format

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date/Time:	Received By: 1	Relinquished By: 2	Date/Time:	Received By: 2
Craig Sovka	11/27/21 1510				
Relinquished by Sampler: 3	Date/Time:	Received By: 3	Relinquished By: 4	Date/Time:	Received By: 4

Custody Seal # Intact [ ] Not Intact [ ] Absent [ ]
Preserved where applicable [ ] Cooler Temp. °C: AD 4.2 FedEx Therm. ID: On Ice [x]

http://www.sgs.com/en/terms-and-conditions

EHSA-QAC-0027-00-FORM-Wheat Ridge - DW COC; Rev. Date: 4/10/18

DA32064: Chain of Custody
Page 1 of 2

SGS Sample Receipt Summary

Job Number: DA32064 **Client:** ERO **Project:** RFTA MOC

Date / Time Received: 1/27/2021 3:10:00 PM **Delivery Method:** **Airbill #'s:** HD

Cooler Temps (Initial/Adjusted): #1: (4.2/4.2);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:	IR Gun;	
3. Cooler media:	Ice (Bag)	
4. No. Coolers:	1	

Quality Control Preservation	Y	N	N/A
1. Trip Blank present / cooler:	☐	☐	☑
2. Trip Blank listed on COC:	☐	☐	☑
3. Samples preserved properly:	☑	☐	
4. VOCs headspace free:	☐	☐	☑

Comments

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: DA32064
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V2986-MB	5V58547.D	1	01/29/21	DC	n/a	n/a	V5V2986

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA32064-1, DA32064-2, DA32064-3, DA32064-4, DA32064-5

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	25	ug/kg	
100-41-4	Ethylbenzene	ND	100	25	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	100	25	ug/kg	
108-88-3	Toluene	ND	100	50	ug/kg	
1330-20-7	Xylene (total)	ND	100	50	ug/kg	
	TPH-GRO (C6-C10)	ND	10000	5000	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	106%	70-131%
2037-26-5	Toluene-D8	98%	70-130%
460-00-4	4-Bromofluorobenzene	96%	70-130%
17060-07-0	1,2-Dichloroethane-D4	98%	70-130%

Method Blank Summary

Job Number: DA32064
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V2986-MB	5V58548.D	1	01/29/21	DC	n/a	n/a	V5V2986

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA32064-1, DA32064-2, DA32064-3, DA32064-4, DA32064-5

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/kg	
100-41-4	Ethylbenzene	ND	2.0	0.50	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	0.50	ug/kg	
108-88-3	Toluene	ND	2.0	1.0	ug/kg	
1330-20-7	Xylene (total)	ND	2.0	1.0	ug/kg	
	TPH-GRO (C6-C10)	ND	200	100	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	108%	70-131%
2037-26-5	Toluene-D8	95%	70-130%
460-00-4	4-Bromofluorobenzene	98%	70-130%
17060-07-0	1,2-Dichloroethane-D4	106%	70-130%

Blank Spike Summary

Job Number: DA32064
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V2986-BS	5V58544.D	1	01/29/21	DC	n/a	n/a	V5V2986

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA32064-1, DA32064-2, DA32064-3, DA32064-4, DA32064-5

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	47.3	95	68-130
100-41-4	Ethylbenzene	50	49.4	99	69-130
1634-04-4	Methyl Tert Butyl Ether	50	54.1	108	70-130
108-88-3	Toluene	50	46.7	93	65-130
1330-20-7	Xylene (total)	150	151	101	69-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	70-131%
2037-26-5	Toluene-D8	100%	70-130%
460-00-4	4-Bromofluorobenzene	102%	70-130%
17060-07-0	1,2-Dichloroethane-D4	102%	70-130%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: DA32064
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V2986-BS	5V58545.D	1	01/29/21	DC	n/a	n/a	V5V2986

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA32064-1, DA32064-2, DA32064-3, DA32064-4, DA32064-5

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
	TPH-GRO (C6-C10)	2000	1720	86	57-136

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	106%	70-131%
2037-26-5	Toluene-D8	96%	70-130%
460-00-4	4-Bromofluorobenzene	101%	70-130%
17060-07-0	1,2-Dichloroethane-D4	100%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA32064
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
DA32100-1MS	5V58550.D	1	01/29/21	DC	n/a	n/a	V5V2986
DA32100-1MSD	5V58551.D	1	01/29/21	DC	n/a	n/a	V5V2986
DA32100-1	5V58549.D	1	01/29/21	DC	n/a	n/a	V5V2986

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA32064-1, DA32064-2, DA32064-3, DA32064-4, DA32064-5

CAS No.	Compound	DA32100-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		53.6	50.5	94	52.7	47.0	89	7	48-130/30
100-41-4	Ethylbenzene	ND		53.6	52.9	99	52.7	48.5	92	9	25-144/30
1634-04-4	Methyl Tert Butyl Ether	ND		53.6	55.4	103	52.7	54.6	104	1	66-130/30
108-88-3	Toluene	ND		53.6	50.2	94	52.7	47.1	89	6	34-130/30
1330-20-7	Xylene (total)	ND		161	166	103	158	148	94	11	24-143/30

CAS No.	Surrogate Recoveries	MS	MSD	DA32100-1	Limits
1868-53-7	Dibromofluoromethane	104%	105%	111%	70-131%
2037-26-5	Toluene-D8	99%	99%	96%	70-130%
460-00-4	4-Bromofluorobenzene	103%	99%	100%	70-130%
17060-07-0	1,2-Dichloroethane-D4	101%	99%	104%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA32064
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
DA32100-1MS	5V58552.D	1	01/29/21	DC	n/a	n/a	V5V2986
DA32100-1MSD	5V58553.D	1	01/29/21	DC	n/a	n/a	V5V2986

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA32064-1, DA32064-2, DA32064-3, DA32064-4, DA32064-5

CAS No.	Compound	ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND [a]		2110	1860	88	2140	1720	80	8	5-173/30

CAS No.	Surrogate Recoveries	MS	MSD	Limits
1868-53-7	Dibromofluoromethane	116%	109%	70-131%
2037-26-5	Toluene-D8	96%	95%	70-130%
460-00-4	4-Bromofluorobenzene	102%	100%	70-130%
17060-07-0	1,2-Dichloroethane-D4	100%	100%	70-130%

(a) Result is from Run #3.

* = Outside of Control Limits.

GC/LC Semi-volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: DA32064
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19791-MB	FH054365.D	1	01/30/21	NO	01/30/21	OP19791	GFH2160

The QC reported here applies to the following samples: **Method:** SW846-8015D

DA32064-1, DA32064-2, DA32064-3, DA32064-4, DA32064-5

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	10	9.5	mg/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	96%	25-141%

Method Blank Summary

Job Number: DA32064
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19792-MB	FM11431.D	1	01/30/21	NO	01/30/21	OP19792	GFM347

The QC reported here applies to the following samples: **Method:** SW846-8015D

DA32064-1, DA32064-2, DA32064-3

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-ORO (> C28-C40)	ND	15	15	mg/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	81%	25-141%

Blank Spike Summary

Job Number: DA32064
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19791-BS	FH054367.D	1	01/30/21	NO	01/30/21	OP19791	GFH2160

The QC reported here applies to the following samples: **Method:** SW846-8015D

DA32064-1, DA32064-2, DA32064-3, DA32064-4, DA32064-5

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	250	201	80	49-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	87%	25-141%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: DA32064
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19792-BS	FM11433.D	1	01/30/21	NO	01/30/21	OP19792	GFM347

The QC reported here applies to the following samples: **Method:** SW846-8015D

DA32064-1, DA32064-2, DA32064-3

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-ORO (> C28-C40)	100	86.9	87	69-132

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	75%	25-141%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA32064
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19791-MS	FH054369.D	1	01/30/21	NO	01/30/21	OP19791	GFH2160
OP19791-MSD	FH054371.D	1	01/30/21	NO	01/30/21	OP19791	GFH2160
DA32076-1	FH054373.D	1	01/30/21	NO	01/30/21	OP19791	GFH2160

The QC reported here applies to the following samples: **Method:** SW846-8015D

DA32064-1, DA32064-2, DA32064-3, DA32064-4, DA32064-5

CAS No.	Compound	DA32076-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	Spike mg/kg	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	1370		286	2770	489* [a]	286	2860	520* [a]	3	10-149/30

CAS No.	Surrogate Recoveries	MS	MSD	DA32076-1	Limits
84-15-1	o-Terphenyl	81%	93%	41%	25-141%

(a) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA32064
Account: ERORCODN ERO Resources Corporation
Project: RFTA MOC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19792-MS	FM11435.D	1	01/30/21	NO	01/30/21	OP19792	GFM347
OP19792-MSD	FM11437.D	1	01/30/21	NO	01/30/21	OP19792	GFM347
DA32064-1	FM11439.D	1	01/30/21	NO	01/30/21	OP19792	GFM347

The QC reported here applies to the following samples: **Method:** SW846-8015D

DA32064-1, DA32064-2, DA32064-3

CAS No.	Compound	DA32064-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	Spike mg/kg	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-ORO (> C28-C40)	27.8		122	110	67	122	121	76	10	10-163/30

CAS No.	Surrogate Recoveries	MS	MSD	DA32064-1	Limits
84-15-1	o-Terphenyl	73%	81%	79%	25-141%

* = Outside of Control Limits.

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: DA32064
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

QC Batch ID: MP32054
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/28/21

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	1.1	1.7		
Antimony	3.0	.21	.82		
Arsenic	2.5	.38	1	0.010	<2.5
Barium	1.0	.02	.16	0.10	<1.0
Beryllium	1.0	.09	.16		
Boron	5.0	.08	.29		
Cadmium	1.0	.02	.1	-0.060	<1.0
Calcium	40	.24	9.6		
Chromium	1.0	.03	.19	0.040	<1.0
Cobalt	0.50	.05	.12		
Copper	1.0	.08	.48		
Iron	7.0	.15	.69		
Lead	5.0	.21	.6	-0.33	<5.0
Lithium	0.50	.04	.07		
Magnesium	20	.68	3.9		
Manganese	0.50	.05	.07		
Molybdenum	1.0	.04	.36		
Nickel	3.0	.05	.24		
Phosphorus	10	1.5	4.3		
Potassium	200	9.9	6		
Selenium	5.0	.71	1	0.13	<5.0
Silicon	5.0	.47	.91		
Silver	3.0	.03	.05	0.020	<3.0
Sodium	40	.73	1.5		
Strontium	5.0	.001	.03		
Thallium	1.0	.18	.86		
Tin	5.0	1.2	1.2		
Titanium	1.0	.01	.27		
Uranium	5.0	.29	.44		
Vanadium	1.0	.04	.07		
Zinc	3.0	.04	.35		

Associated samples MP32054: DA32064-1, DA32064-2, DA32064-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: DA32064
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

QC Batch ID: MP32054 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/28/21

Metal	RL	IDL	MDL	MB raw	final

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA32064
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

QC Batch ID: MP32054
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/28/21

Metal	DA32063-1 Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	2.4	86.1	104	80.7	75-125
Barium	88.0	274	207	89.3	75-125
Beryllium	anr				
Boron					
Cadmium	0.0	41.9	51.9	80.8	75-125
Calcium					
Chromium	2.7	45.6	51.9	82.7	75-125
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	34.0	111	104	75.3	75-125
Lithium					
Magnesium					
Manganese	anr				
Molybdenum					
Nickel	anr				
Phosphorus	anr				
Potassium					
Selenium	0.0	81.2	104	78.3	75-125
Silicon					
Silver	0.0	14.4	20.7	69.4N(a)	75-125
Sodium					
Strontium					
Thallium	anr				
Tin					
Titanium					
Uranium					
Vanadium	anr				
Zinc	anr				

Associated samples MP32054: DA32064-1, DA32064-2, DA32064-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA32064
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

QC Batch ID: MP32054 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/28/21

	DA32063-1	Spikelot		QC
Metal	Original MS	ICPALL2	% Rec	Limits

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA32064
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

QC Batch ID: MP32054 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/28/21

Metal	DA32063-1 Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	2.4	76.5	102	72.8N(a)	11.8	20
Barium	88.0	222	204	65.4N(a)	21.0 (b)	20
Beryllium	anr					
Boron						
Cadmium	0.0	36.1	50.9	70.9N(a)	14.9	20
Calcium						
Chromium	2.7	39.5	50.9	72.3N(a)	14.3	20
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	34.0	90.1	102	56.2N(a)	20.8 (b)	20
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus	anr					
Potassium						
Selenium	0.0	71.9	102	70.7N(a)	12.1	20
Silicon						
Silver	0.0	12.4	20.4	60.9N(a)	14.9	20
Sodium						
Strontium						
Thallium	anr					
Tin						
Titanium						
Uranium						
Vanadium	anr					
Zinc	anr					

Associated samples MP32054: DA32064-1, DA32064-2, DA32064-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA32064
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

QC Batch ID: MP32054 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/28/21

Metal	DA32063-1 Original MSD	Spikelot ICPALL2 % Rec	MSD RPD	QC Limit

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
(b) High RPD due to possible sample matrix or nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: DA32064
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

QC Batch ID: MP32054
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/28/21

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	93.8	100	93.8	80-120
Barium	184	200	92.0	80-120
Beryllium	anr			
Boron				
Cadmium	47.1	50	94.2	80-120
Calcium				
Chromium	47.1	50	94.2	80-120
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	95.8	100	95.8	80-120
Lithium				
Magnesium				
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus	anr			
Potassium				
Selenium	93.7	100	93.7	80-120
Silicon				
Silver	17.9	20	89.5	80-120
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium				
Vanadium	anr			
Zinc	anr			

Associated samples MP32054: DA32064-1, DA32064-2, DA32064-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: DA32064
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

QC Batch ID: MP32054
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/28/21

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: DA32064
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

QC Batch ID: MP32054 Methods: SW846 6010C
Matrix Type: SOLID Units: ug/l

Prep Date: 01/28/21

Metal	DA32063-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	23.3	57.5	141.6(a)	0-10
Barium	864	908	5.0	0-10
Beryllium	anr			
Boron				
Cadmium	0.00	0.00	NC	0-10
Calcium				
Chromium	26.8	25.0	4.2	0-10
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	321	361	12.4*(b)	0-10
Lithium				
Magnesium				
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus	anr			
Potassium				
Selenium	0.00	0.00	NC	0-10
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium				
Vanadium	anr			
Zinc	anr			

Associated samples MP32054: DA32064-1, DA32064-2, DA32064-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: DA32064
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

QC Batch ID: MP32054 Methods: SW846 6010C
Matrix Type: SOLID Units: ug/l

Prep Date: 01/28/21

	DA32063-1		QC
Metal	Original SDL 1:5	%DIF	Limits

(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
(b) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: DA32064
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

QC Batch ID: MP32056 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/28/21

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.083	.00088	.033	0.00040	<0.083

Associated samples MP32056: DA32064-1, DA32064-2, DA32064-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA32064
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

QC Batch ID: MP32056 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/28/21

Metal	DA32063-1 Original	MS	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.041	0.40	0.337	106.5	75-125

Associated samples MP32056: DA32064-1, DA32064-2, DA32064-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA32064
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

QC Batch ID: MP32056 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/28/21

Metal	DA32063-1 Original	MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit
Mercury	0.041	0.40	0.354	101.5	0.0	20

Associated samples MP32056: DA32064-1, DA32064-2, DA32064-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: DA32064
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

QC Batch ID: MP32056 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/28/21

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.36	0.333	108.0	80-120

Associated samples MP32056: DA32064-1, DA32064-2, DA32064-3

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA32064
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
HEM Oil and Grease	GP28523/GN52421	250	0.00	mg/kg	800	720	90.0	70-130%

Associated Samples:
Batch GP28523: DA32064-1, DA32064-2, DA32064-3
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA32064
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Percent	GN52374	DA32100-1	%	93.3	93.4	0.1	0-10%

Associated Samples:
Batch GN52374: DA32064-1, DA32064-2, DA32064-3, DA32064-4, DA32064-5
(*) Outside of QC limits

8.2
8

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA32064
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
HEM Oil and Grease	GP28523/GN52421	DA32064-1	mg/kg	0.00	977	952	95.0	65-130%

Associated Samples:
Batch GP28523: DA32064-1, DA32064-2, DA32064-3
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

8.3
8

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA32064
Account: ERORCODN - ERO Resources Corporation
Project: RFTA MOC

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
HEM Oil and Grease	GP28523/GN52421	DA32064-1	mg/kg	0.00	977	855	10.7	30%

Associated Samples:
Batch GP28523: DA32064-1, DA32064-2, DA32064-3
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

COLORADO
Division of Oil and Public Safety
Department of Labor and Employment

Remediation Program
633 17th Street, Suite 500
Denver, CO 80202-3660
303-318-8547 | colorado.gov/ops | cdle_remediation@state.co.us

September 24, 2021 VIA EMAIL

NICHOLAS SENN
ROARING FORK TRANSPORATION AUTHORITY
2307 WULFSOHN RD
GLENWOOD SPRINGS CO 81601

Re: No Further Action (NFA) Determination for Glenwood Municipal Operations Center, 2301 Wulfsohn Rd., Glenwood Springs, Garfield County, Colorado. (Event ID #13987, Release ID #6194, Facility ID #15748)

Dear Nicholas Senn:

The Division of Oil and Public Safety (OPS) has reviewed the NFA request for the referenced site received on September 16, 2021.

Based solely upon the information submitted, which shows that petroleum contamination concentrations are below state cleanup levels, OPS will require no further investigation or remedial action at this time. If conditions change, OPS reserves the right to determine if any additional actions are necessary. This NFA letter is in reference to the removal of the 12,000 gallon aboveground storage tank on February 4, 2021.

Please submit a Site Decommissioning Report to OPS to document well abandonment and site decommissioning activities within 90 days of receiving this NFA Determination**. OPS cannot release you from any liability that may be associated with any contamination at or from this site.**

Please address correspondence regarding this site to me and if you have any questions, please contact me at 303-318-8507 or via email at michelle.howard@state.co.us.

Sincerely,

Michelle Howard
Environmental Protection Specialist
Petroleum Program

cc: Craig Sovka, ERO Resources Corp., sent via email

TAIT
RISING TO THE CHALLENGE
6163 E. County Road 16, Loveland, CO 80537
p:970/613/1447 www.tait.com

April 25, 2023

Mr. Dustin Goodman
Facilities Manager
Roaring Fork Transportation Authority (RFTA)
1340 Main Street
Carbondale, CO 81623

SUBJECT: SITE CHARACTERIZATION REPORT &
NO FURTHER ACTION REQUEST
ROARING FORK TRANSPORTATION AUTHORITY (RFTA)
2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601
FACILITY #15558, EVENT #17254

Dear Mr. Goodman:

This report documents the soil sampling and analysis performed by Tait Environmental Services, Inc. (TAIT) at the Roaring Fork Transportation Authority (RFTA) Glenwood Springs facility, located at 2307 Wulfsohn Road in Glenwood Springs, CO (site-Figure 1). Site Characterization was required by the Division of Oil and Public Safety – Petroleum Remediation Section. The Facility ID is #15558, and the Event ID is #17254. This Site Characterization Report (SCR) is being submitted in combination with a No Further Action Request (NFAR).

On November 2, 2022, the Colorado Division of Oil and Public Safety (OPS) received notification of a confirmed release at the site due to a piping sump testing failure. The OPS issued an Event Letter on November 7, 2022, requiring that a Site Characterization be performed at the site. A copy of the Event Letter is contained in Attachment A.

The Site Characterization activities were undertaken to determine if soil and/or groundwater contamination was present in the strata adjacent to the 1,000-gallon old oil underground storage tank (UST), designated as Tank #4. On April 11, 2023, a geophysical survey was completed at the site to determine the footprint of the tank, tank excavation, and adjacent underground fuel and vent lines. On April 12, 2023, a site assessment was completed to sample the soils adjacent to the base of the UST. All samples were submitted to an environmental laboratory for analysis.

SITE GEOLOGY AND HYDROGEOLOGY

The geology of the site and surrounding area was obtained from the following reference:

> Kirkham, Robert M., Streufert, Randall K., and Cappa, James A., 1995, Geologic Map of the Glenwood Springs Quadrangle, Garfield County, Colorado, Description of Map Units, Colorado Geological Survey, Division of Minerals and Geology, Department of Natural Resources, Open file 95-3.

According to the above reference, the site is directly underlain by Younger Debris Flows of Holocene age. These sediments consist of poorly sorted, clast-and matrix-supported, pebble and cobble gravel in a sandy silt or silty sand matrix. Fragments consist of sedimentary rock and basalt. In the area of the site, the Younger Debris flows are located directly downhill from the Eagle Valley Formation of Pennsylvania age and the Maroon Formation and Weber Sandstone of Pennsylvania and Permian age. These formations consist of red sandstone, conglomerate, mudstone, siltstone and shale which form the cliffs outcropping above and south of the site.

There was no readily available information concerning the groundwater conditions in the vicinity of the site.

During the soil sampling event at the site, the geology of the natural sediments beneath the site was determined as follows. Pea gravel was noted in borings B1 and B4 to depths ranging from eight (8) feet below ground surface (bgs) in boring B1 to about 13 feet bgs in boring B4. Both of these borings were located within the UST basin. Below these depths, sediments consisted of clayey and silty sands as described below.

Borings B2 and B3 were located outside of the UST basin and consisted primarily of red clayey and silty sands with variable gravel layers from depths of two (2) to 25 feet bgs. These sediments corresponded to the Younger Debris Flows; however, it was not possible to determine whether these sediments were partly foundation backfill that was placed in the area prior to development of the buildings. The provenance for these sediments appears to be from the Pennsylvanian and Permian aged sedimentary rocks in the cliffs above the facility to the south.

Groundwater was not encountered in the sediments; however, the finer grained layers in some of the borings were moist and appeared to be soaking up downward percolating surface water. The coarser grained layers in the borings were dry, indicating that no viable groundwater zone was present within the upper 25 feet of the geologic section in this area of the site.

Soil boring logs are contained in Attachment B.

GEOPHYSICAL INVESTIGATON

On April 11, 2023, TAIT contracted GPRS in Highlands Ranch, CO to perform a geophysical investigation of the UST area. The purpose of the survey was to locate utilities near the current UST system, outline the area of UST excavation, the USTs, and any underground piping lines as much as possible to allow for location of four (4) soil borings adjacent to the UST. A copy of the GPRS report is contained in Attachment C.

SOIL SAMPLING

On April 12, 2023, TAIT advanced 4 direct-push soil borings (B1, B2, B3, and B4) using a track-mounted Geoprobe 7822DT operated by Vista Geoscience of Golden, Colorado. Vista submitted a locates request to Colorado 811 (Ticket #A309302509-00A) in advance of drilling activities. To ensure that no lines were located adjacent to the UST, Vista potholed each boring to a depth of five (5) feet bgs.

Soil borings B1, B2, and B4 were each completed to a total depth of 25 feet bgs. Boring B3 met refusal at a depth of 22 feet bgs. Based on tank measurements and the geophysical results, it was determined that Tank #4 was within 18 inches of Tank #3 (2,000-gallon new oil tank), and it was determined that a soil boring could not be safely completed between the two USTs. As a result, the soil borings were located on the northern, western, and southern sides of Tank #4 in the locations shown on the Soil Boring Location Map (Figure 2).

Soil samples were collected at depths of 15 and 25 feet bgs (22 feet bgs in boring B3) in each boring. The 15-foot depth was representative of the soils beneath the tank basin, and consisted of the following samples:

B1-15
B2-15
B3-15
B4-15

Soil samples were collected from the 25-foot depth in accordance with the OPS "Guidance for Spill Bucket Assessment", which was dated March 3, 2021, and consisted to the following samples:

B1-25
B2-25
B3-22
B4-25

All soil samples were transferred from the acetate tubes directly into pre-cleaned, laboratory-supplied, Teflon-lined, 4-ounce glass jars. The glass jars were labeled and placed immediately into an iced cooler prior to transport to the analytical laboratory.

During the completion of the soil borings, volatile organic compound (VOC) readings in parts per million (ppm) were taken with a Mini-Rae 2000 photoionization detector (PID) at various depth intervals in each of the soil borings. None of the readings detected VOCs above 0.0 ppm. The PID readings are shown on the boring logs in Attachment B. Visual and olfactory observations of the soils did not indicate the presence of petroleum hydrocarbons in any of the samples.

LABORATORY ANALYSIS

All soil samples collected at the site were transported under standard chain-of-custody protocols to Origins Laboratory, Inc. in Denver, CO within 24 hours of sample collection. All samples were submitted for analysis for Total Petroleum Hydrocarbons (TPH) as Gasoline (C6-C10), Diesel (C10-C28) and Residual Range Organics (C28-C40) using EPA Method 8015D. All soil samples were also analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tert-butyl ether MTBE using EPA Method 8260D. Origins is a NELAP certified laboratory.

Gasoline, Diesel, Residual Range Organics, BTEX, and MTBE were not detected in any of the soil samples above their respective Laboratory Reporting Limits. As there were no TPH detections, analysis for Polycyclic Aromatic Hydrocarbons (PHHs) was not performed on any of the samples. The laboratory report and chain-of-custody documentation for the soil samples are included in Attachment D.

CONCLUSION

Based on the analytical results, no further work is recommended with respect to the UST at the site, and no further action is requested.

WASTE HANDLING

Potholed soil and borehole soil cuttings were generated during the drilling event. Based on the analytical results of the soil sampling, the waste soils obtained during the drilling event did not contain detectable concentrations of DRO, MORO, GRO, BTEX, and MTBE. These soils were transported off site to Raritan CWT of Englewood, CO under a non-hazardous waste manifest provided by Vista Geoscience. A copy of the manifest is contained in Attachment E.

LIMITATIONS

A soil sampling report contains professional opinions with respect to environmental issues of concern and/or additional actions that may be addressed at the site. In rendering a professional opinion, TAIT warrants that the services provided hereunder were performed within the limits described and in accordance with current generally accepted environmental consulting principles and practices.

TAIT represents that the services were performed in a manner consistent with industry standards. No other warranty, either expressed or implied, is intended by TAIT.

TAIT is not responsible for any potential impact of the property attributable to this document due to changes in applicable environmental standards, practices or regulations following performance of services. Services hereunder were performed in accordance with TAIT's agreement and understanding with, and solely for the use of the responsible party.

Opinions and/or recommendations are intended for the client, purpose, site, location, time frame and project parameters indicated. TAIT is not responsible for subsequent separation, detachment, or partial use of this document. Any reliance on this report by a third party shall be at such party's sole risk.

Should you have any questions concerning this report, please do not hesitate to contact the undersigned at (714) 719-6869 or via e-mail at pmccarter@tait.com.

TAIT ENVIRONMENTAL SERVICES, INC.

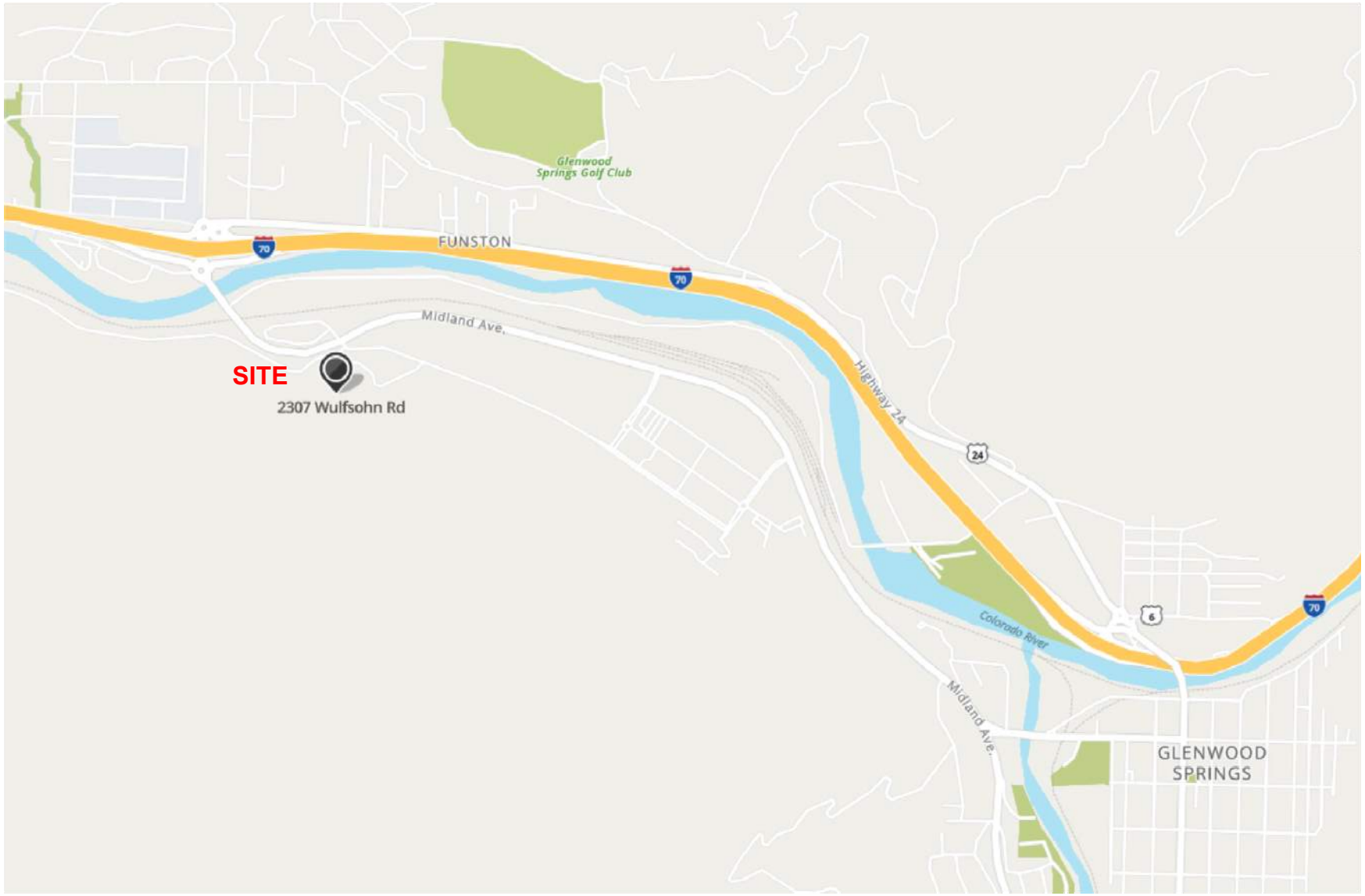
Sincerely,

Paul N. McCarter
Senior Geologist
Recognized Environmental Professional #9

Attachments:
Figure 1: Site Location Map
Figure 2: Soil Boring Location Map
Attachment A: OPS Event Letter
Attachment B: Soil Boring Logs
Attachment C: GPRS Geophysical Investigation Report
Attachment D: Laboratory Analytical Report
Attachment E: Non-hazardous Waste Manifest

ATTACHMENTS

FIGURES



Base Map from Mapquest, 2023

N

0 1,500

FEET
(Scale Approximate)

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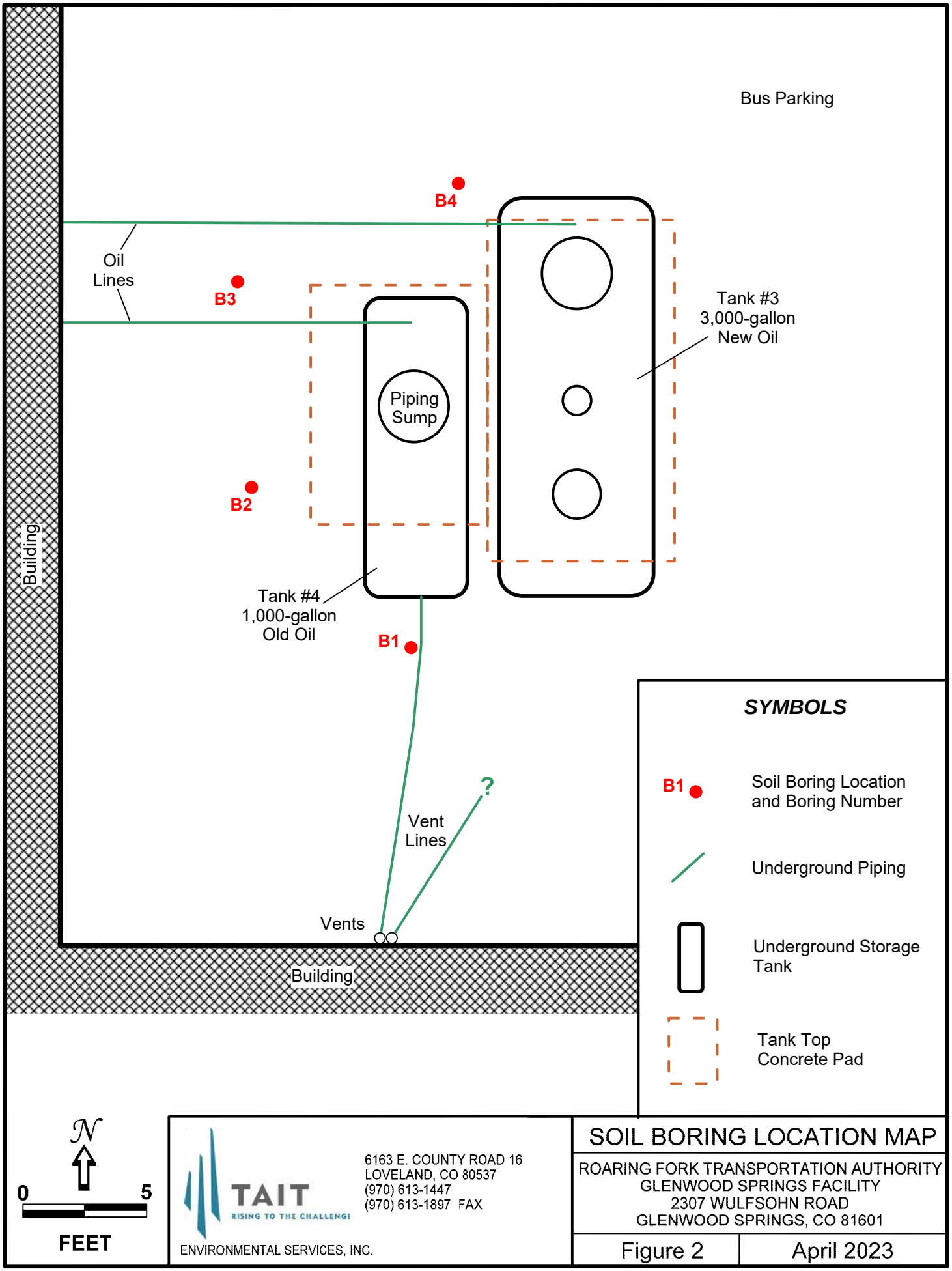
(970) 613-1897 FAX

SITE LOCATION MAP

ROARING FORK TRANSPORTATION AUTHORITY
GLENWOOD SPRINGS FACILITY
2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601

Figure 1	April 2023


Bus Parking
B4
Oil
Lines
B3
Tank #3
3,000-gallon
New Oil
Piping
Sump
B2
Building
Tank #4
1,000-gallon
Old Oil
B1
Vent
Lines
?
Vents
Building
SYMBOLS
B1
Soil Boring Location
and Boring Number
Underground Piping
Underground Storage
Tank
Tank Top
Concrete Pad
N
0
5
FEET
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SOIL BORING LOCATION MAP
ROARING FORK TRANSPORTATION AUTHORITY
GLENWOOD SPRINGS FACILITY
2307 WULFSOHN ROAD
GLENWOOD SPRINGS, CO 81601
Figure 2
April 2023

ATTACHMENT A

OPS Event Letter

COLORADO
Division of Oil and Public Safety
Department of Labor and Employment

Remediation Program
633 17th Street, Suite 500
Denver, CO 80202-3660
(303) 318-8525 | colorado.gov/ops | cdle_remediation@state.co.us

November 7, 2022

VIA EMAIL
Return Receipt Requested

MIKE HERMES
ROARING FORK
TRANSPORTATION AUTHORITY
1340 MAIN ST
CARBONDALE CO 81623

Re: Request for a Site Characterization Report (SCR) for Roaring Fork Transit Agency, 2307 Wulfsohn Rd., Glenwood Springs, Garfield County, Colorado (Event ID #17254, Release #16242, Facility ID #15558)

Dear Mike Hermes:

The Division of Oil and Public Safety (OPS) has received notification of a confirmed release on November 2, 2022, at the above-referenced address. As the owner/operator responsible for the release, OPS requests that you perform a Site Characterization according to the Petroleum Storage Tank Regulations and the Petroleum Program Guidance.

The purpose of Site Characterization is to define the extent of release source area(s), determine the distribution of contamination in the subsurface, determine if points of exposure are impacted or potentially impacted, evaluate all exposure pathways, and determine whether active remediation is needed. Appropriate pilot testing should be completed and reported in the SCR if active remediation is needed. You should obtain access to off-site properties, including rights-of-way, if the extent of contamination is beyond the release property boundary.

Site characterization results should be submitted to OPS within 180 days of the release discovery (by **May 1, 2023**) using the combined format provided on the OPS website. Failure to submit a complete SCR within 180 days will result in violation of the regulations and will subject you to penalties and enforcement as described in the Petroleum Storage Tank Statutes.

OPS encourages you to retain a Recognized Environmental Professional (REP) to complete the Site Characterization activities described. Responsible parties must identify a REP in order to seek reimbursement from the Petroleum Storage Tank Fund within the Reasonable Cost Guidelines.

In addition to the Site Characterization, appropriate repairs and/or replacements are required within 30 days of discovering the failure. Submit the minor equipment form to cdle_oil_inspection@state.co.us by (December 2, 2022). If the release is from an underground storage tank system, a Qualified Service Technician must complete the repairs or replacement of the equipment

Your cooperation in addressing this release event is appreciated and communication with OPS during characterization is recommended. You may contact the technical reviewer, Murray Brown at (303) 728-4849 or murray.brown@state.co.us, if you have any questions.

Sincerely,

Michelle Howard
Release Coordinator
Petroleum Program

cc: Murray Brown, OPS Area Inspector/EPS, sent via email
Dustin Goodman, Roaring Fork Transit Agency, sent via email

ATTACHMENT B

Soil Boring Logs

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BORING/WELL NO.

B1

PROJECT: Roaring Fork Transportation Authority (RFTA)	PROJECT NUMBER: RFTA2022
ADDRESS: 2307 Wulfsohn Road, Glenwood Springs CO	LOGGED BY: Paul McCarter
START DATE: 4-12-23 COMPLETION DATE: 4-12-23	CHECKED BY:
GROUND SURFACE ELEVATION (ft-msl): 5832	DRILLING COMPANY: Vista Geoscience
DRILLING EQUIPMENT: Track-mounted Geoprobe 7822DT	
BORING DEPTH (ft): 25 WELL DEPTH (ft): N/A	INITIAL WATER DEPTH (ft): N/A
WELL CASING ELEVATION (ft): N/A	WELL SCREEN INTERVAL (ft):
WELL MATERIALS: N/A	OVM/OVA: Mini-Rae
BACKFILL MATERIAL: Bentonite chips (hydrated); concrete patch	

OVM/OVA (ppm)	BLOW COUNTS	RECOVERY (%)	SAMPLE NUMBER	SAMPLE COLLECTION TIME	SAMPLE INTERVAL	DEPTH (FT BGS)	USCS LOG	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
									CONCRETE (REINFORCED - 7")
						5	GW		GRAVEL: pea gravel in tank basin, up to 1 inch.
0		10				10	SW		GRAVELLY SAND: red (10Y, 4/6), fine- medium-grained, up to 20% gravel layers to 1/4", dense, dry, possibly foundation backfill.
0		60	B1-15	3:05		15	SC		CLAYEY SAND: red (10Y, 4/6), up to 60% fine-grained sand, gravel layers, gravel to 1" or greater, dense, dry, possibly foundation backfill.
0		60				20			as above, decrease in number of gravel layers, dense, dry, possibly foundation backfill.
0		20	B1-25	3:15					as above, decrease in gravel layers, dense, dry, possibly foundation backfill.

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(970) 613-1897 FAX

BORING/WELL NO.

B2

PROJECT: Roaring Fork Transportation Authority (RFTA)	PROJECT NUMBER: RFTA2022
ADDRESS: 2307 Wulfsohn Road, Glenwood Springs CO	LOGGED BY: Paul McCarter
START DATE: 4-12-23 COMPLETION DATE: 4-12-23	CHECKED BY:
GROUND SURFACE ELEVATION (ft-msl): 5832	DRILLING COMPANY: Vista Geoscience
DRILLING EQUIPMENT: Track-mounted Geoprobe 7822DT	
BORING DEPTH (ft): 25 WELL DEPTH (ft): N/A	INITIAL WATER DEPTH (ft): N/A
WELL CASING ELEVATION (ft): N/A	WELL SCREEN INTERVAL (ft):
WELL MATERIALS: N/A	OVM/OVA: Mini-Rae
BACKFILL MATERIAL: Bentonite chips (hydrated); concrete patch	

OVM/OVA (ppm)	BLOW COUNTS	RECOVERY (%)	SAMPLE NUMBER	SAMPLE COLLECTION TIME	SAMPLE INTERVAL	DEPTH (FT BGS)	USCS LOG	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
						0			CONCRETE (reinforced - 7")
							GW		GRAVEL: pea gravel up to 1 inch.
							SC		CLAYEY SAND: red (10Y, 4/6), fine-grained, up to 30% clay and silt, gravel and cobble layers, dense, dry, possibly foundation backfill.
						5			
									as above, gravel layers, gravel to 1", dense, some gravel layers are moist, possibly foundation backfill.
0		20				10			
							SM		SILTY SAND: red (10Y, 4/6), fine-grained, up to 40% silt and clay, gravel layers, some broken cobbles, dense, dry, possibly foundation backfill.
0		60	B2-15	3:33		15			
							SC		CLAYEY SAND: red (10Y, 4/6), fine-grained, up to 40% clay, some gravel layers, clayey layers retaining some moisture, sands and gravels dense, dry, possibly foundation backfill.
0		50				20			
									as above, decrease in gravel layers, dense, dry, possibly foundation backfill.
0		30	B2-25	3:40					

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LOVELAND, CO 80537
(970) 613-1447
(970) 613-1897 FAX

BORING/WELL NO.

B3

PROJECT: Roaring Fork Transportation Authority (RFTA)	PROJECT NUMBER: RFTA2022
ADDRESS: 2307 Wulfsohn Road, Glenwood Springs CO	LOGGED BY: Paul McCarter
START DATE: 4-12-23 COMPLETION DATE: 4-12-23	CHECKED BY:
GROUND SURFACE ELEVATION (ft-msl): 5832	DRILLING COMPANY: Vista Geoscience
DRILLING EQUIPMENT: Track-mounted Geoprobe 7822DT	
BORING DEPTH (ft): 22 WELL DEPTH (ft): N/A	INITIAL WATER DEPTH (ft): N/A
WELL CASING ELEVATION (ft): N/A	WELL SCREEN INTERVAL (ft):
WELL MATERIALS: N/A	OVM/OVA: Mini-Rae
BACKFILL MATERIAL: Bentonite chips (hydrated); concrete patch	

OVM/OVA (ppm)	BLOW COUNTS	RECOVERY (%)	SAMPLE NUMBER	SAMPLE COLLECTION TIME	SAMPLE INTERVAL	DEPTH (FT BGS)	USCS LOG	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
						0			CONCRETE (REINFORCED - 7")
							GW		GRAVEL: pea gravel up to 1 inch.
							SC		CLAYEY SAND: red (10Y, 4/6), fine-grained, up to 30% clay and silt, gravel and cobble layers, dense, dry, possibly foundation backfill.
						5			
0		25				10			as above, fine-grained sand, up to 20% gravel layers, gravel to 1", dry, dense, possibly foundation backfill.
0		60	B3-15	4:00		15			as above, <10% gravel layers, dense, dry to slightly moist, possibly foundation backfill.
							SM		SILTY SAND: red (10Y, 4/6), up to 60% fine-grained sand, up to 20% gravel layers, gravel to 1", dense, dry, possibly foundation backfill.
0		30				20			
0		20	B3-22	4:10					refusal at 22'.

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LOVELAND, CO 80537
(970) 613-1447
(970) 613-1897 FAX

BORING/WELL NO.

B4

PROJECT: Roaring Fork Transportation Authority (RFTA)	PROJECT NUMBER: RFTA2022
ADDRESS: 2307 Wulfsohn Road, Glenwood Springs CO	LOGGED BY: Paul McCarter
START DATE: 4-12-23 COMPLETION DATE: 4-12-23	CHECKED BY:
GROUND SURFACE ELEVATION (ft-msl): 5832	DRILLING COMPANY: Vista Geoscience
DRILLING EQUIPMENT: Track-mounted Geoprobe 7822DT	
BORING DEPTH (ft): 25 WELL DEPTH (ft): N/A	INITIAL WATER DEPTH (ft): N/A
WELL CASING ELEVATION (ft): N/A	WELL SCREEN INTERVAL (ft):
WELL MATERIALS: N/A	OVM/OVA: Mini-Rae
BACKFILL MATERIAL: Bentonite chips (hydrated); concrete patch	

OVM/OVA (ppm)	BLOW COUNTS	RECOVERY (%)	SAMPLE NUMBER	SAMPLE COLLECTION TIME	SAMPLE INTERVAL	DEPTH (FT BGS)	USCS LOG	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
									CONCRETE (REINFORCED - 7")
							GW		GRAVEL: pea gravel in tank basin, up to 1 inch.
						5			
0		20				10			
							SC		CLAYEY SAND: red (10Y, 4/6), up to 50% fine-grained sand, 10% gravel layers, gravel to 1", dense, slightly moist.
0		20	B4-15	4:35		15			
									as above, 30% gravel layers, gravel to 1", dense, dry, possibly foundation backfill.
0		40				20			
									as above, finer grained layers are slightly moist, sand and gravel are dense, dry, possibly foundation backfill.
0		20	B4-25	4:40					

ATTACHMENT C

GPRS Geophysical Investigation Report

Summary of Scanning for Underground Storage Tanks (UST's)

Prepared For: TAIT & Associates

Prepared By:
Stanley Jones
stanley.jones@gprsinc.com
Project Manager-Denver
303.907.8348

April 12, 2023

April 12, 2023

TAIT & Associates
Attn: Paul McCarter
Site: 2307 Wulfsohn Rd, Glenwood Springs, CO 81601

We appreciate the opportunity to provide this report for our work completed on April 11, 2023.

PURPOSE

The purpose of this project was to determine the dimensions of underground storage tanks (USTs), suspected UST-related piping/anomalies remaining on the property and to determine the extents of the backfilled area containing USTs. The scope of work consisted of one location containing two tanks measuring approximately 40'x40'. The interiors of buildings were excluded from the scope of this project. The client marked the desired locations prior to our scanning and our markings were then placed onto the surface using paint.

EQUIPMENT

- **Underground Scanning GPR Antenna**. The antenna with frequencies ranging from 250 MHz-450 MHz is mounted in a stroller frame which rolls over the surface. The surface needs to be reasonably smooth and unobstructed in order to obtain readable scans. Obstructions such as curbs, landscaping, and vegetation will limit the feasibility of GPR. The data is displayed on a screen and marked in the field in real time. The total depth achieved can be as much as 8' or more with this antenna but can vary widely depending on the types of materials being scanned through. Some soil types such as clay may limit maximum depths to 3' or less. As depth increases, targets must be larger in order to be detected and non-metallic targets can be especially difficult to locate. Depths provided should always be treated as estimates as their accuracy can be affected by multiple factors. For more information, please visit: Link
- **Electromagnetic Pipe Locator**. The EM locator can passively detect the electromagnetic fields from live AC power or from radio signals travelling along some conductive utilities. It can also be used in conjunction with a transmitter to connect directly to accessible, metallic pipes or tracer wires. A current is sent through the pipe or tracer wire at a specific frequency and the resulting EM field can then be detected by the receiver. A utility's ability to be located depends on a variety of factors including access to the utility, conductivity, grounding, interference from other fields, and many others. Depths provided should always be treated as estimates as their accuracy can be affected by multiple factors. For more information, please visit: Link
- **GPS**. This handheld GPS unit offers accuracy down to 4 inches; however, the accuracy will depend on the satellite environment and obstructions and should not be considered to be survey-grade. Features can be collected as points, lines, or areas and then exported into Google Earth or overlaid on a CAD drawing. For more information, please visit: Link
- **Magnetometer**. The magnetometer detects the magnetic field of a ferromagnetic object. It responds to the difference in the magnetic field between two sensors. It is interpreted in the field by listening to changes in frequency as emitted by a speaker on the device. Larger metallic objects can be located at depths of up to 10' or more but total depths will depend on the size, type, shape, and orientation of objects along with the amount of interference from other objects. For more information, please visit: Link

PROCESS

The EM pipe locator was used to connect to accessible, traceable pipes that may be tank-related such as vent pipes or product lines. A current is induced onto the pipe which creates an electromagnetic field that can be traced using the receiver. We can then attempt to trace these pipes to their origin or end point and paint or flag their locations.

Initial GPR scans were collected in order to evaluate the data and calibrate the equipment. Based on these findings, a scanning strategy is formed, consisting of scanning the entire area in a grid with 2' scan spacing in order to locate any potential UST's that may remain at the site. The GPR data is viewed in real time and anomalies in the data were located and marked on the surface along with their depths using paint. Relevant scan examples were saved and will be provided in this report.

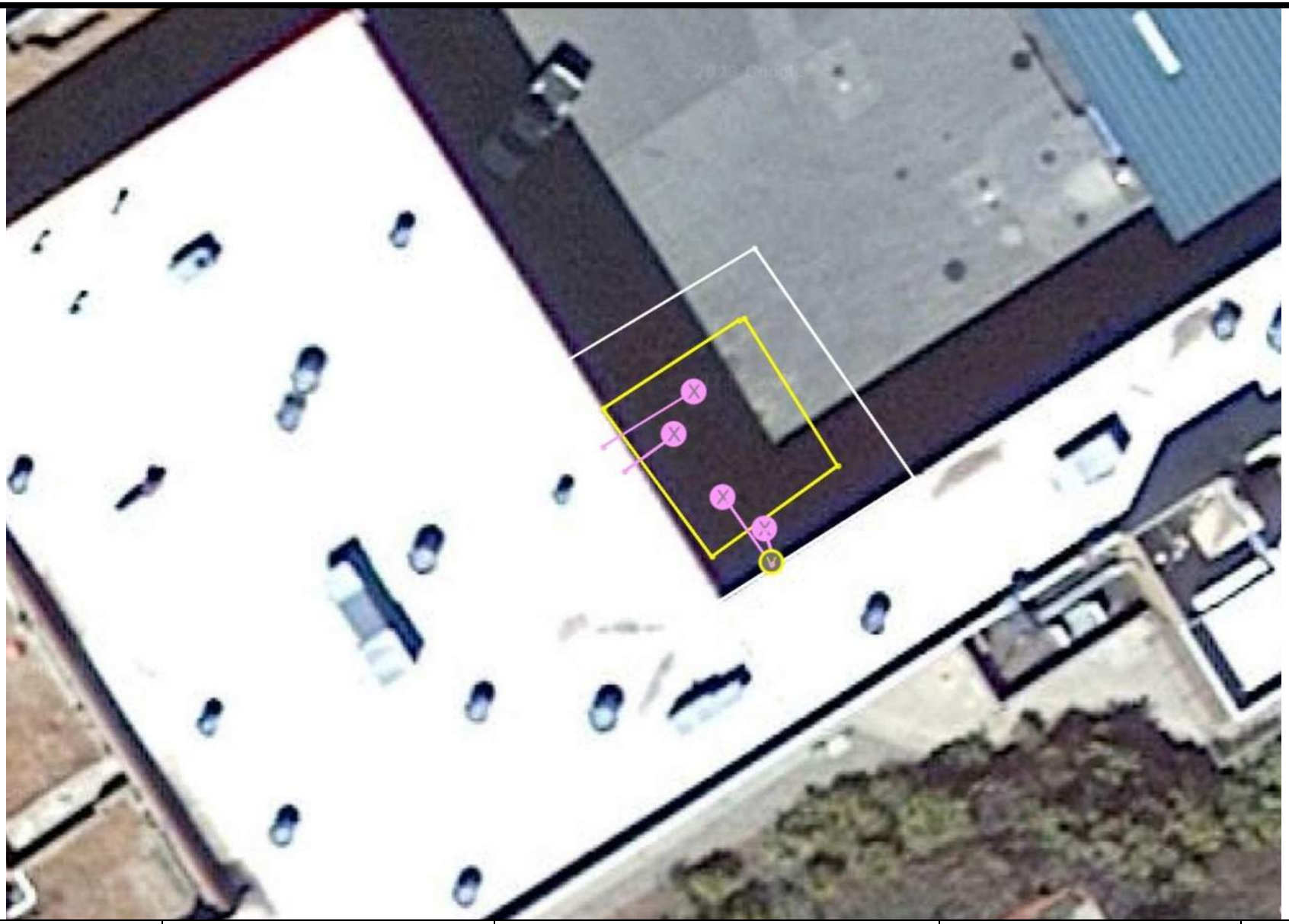
The magnetometer was used to sweep the site every 3'-5' to search for readings that may represent buried, ferrous objects. Upon detection, the readings will be marked on the surface and then investigated from multiple directions and with other methods such as GPR.

LIMITATIONS

Please keep in mind that there are limitations to any subsurface investigation. The equipment may not achieve maximum effectiveness due to soil conditions, above ground obstructions, reinforced concrete, and a variety of other factors. No subsurface investigation or equipment can provide a complete image of what lies below. Our results should always be used in conjunction with as many methods as possible including consulting existing plans and drawings, exploratory excavation or potholing, visual inspection of above-ground features, and utilization of services such as One Call/811. Depths are dependent on many factors so depth accuracy can vary throughout a site and should be treated as estimates only. Relevant scan examples were saved and will be provided in this report.

FINDINGS

The subsurface conditions at the time of the scanning allowed for maximum GPR depth penetration of 3-5' in most areas. Multiple utilities were observed during the scanning; however, utility locating was not part of the scope of this project. The equipment and methods used did detect reactions from potential UST's. Reactions from UST's were only visible in select areas. As a result, approximate boundaries of tanks were unable to be determined. Approximate extents of tank basin backfill were able to be determined and were marked on the surface. Tank associated lines were found and marked on the surface. The following pages will provide further explanation of the findings.



Prepared for: TAIT & Associates
Prepared By: Stanley Jones
Date of Scanning: 4/11/23

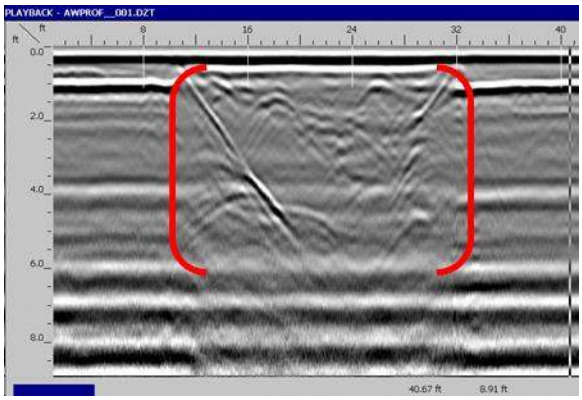
Terms and Conditions
GPRS does not provide land survey or civil engineering data collection or documentation. This is provided as a reference map of the field markings and is not survey-grade.

LEGEND

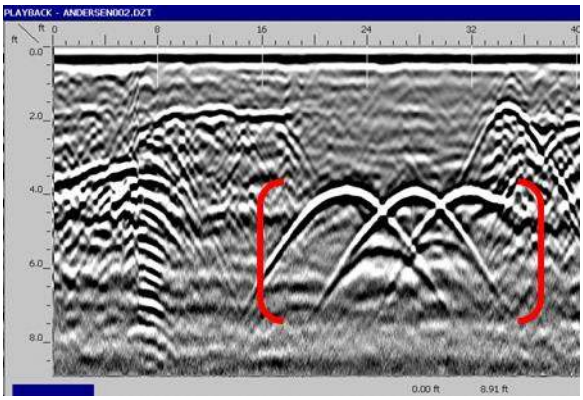
	ELECTRIC		SANITARY
	WATER		STORM
	COMM		TANK RELATED LINES
	TANK BASIN		SCAN AREA

2307 Wulfsohn Rd, Glenwood Springs, CO 81601

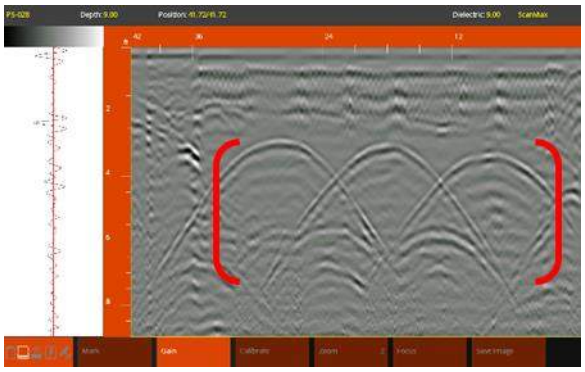
Prepared by:



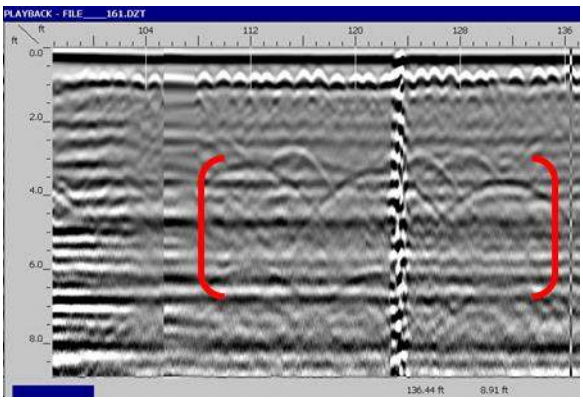
Sample GPR data screenshot showing a possible former tank pit or excavation. The change in the data from the excavation is apparent but GPR cannot determine whether this is due to a tank removal or whether tanks may still exist beyond the maximum depth penetration of the GPR signal.



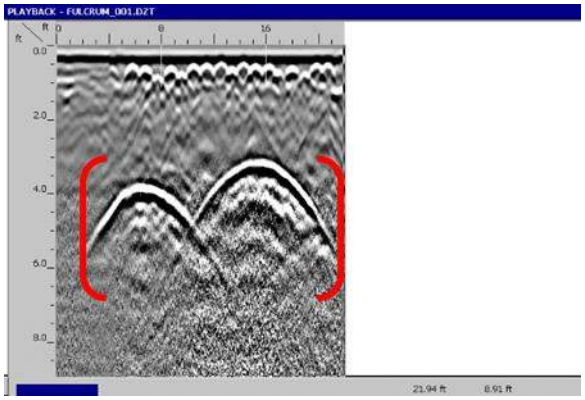
Sample GPR data screenshot showing three reactions from probable USTs. The diameters cannot be determined from these hyperbolas but they can be seen to be larger than a reaction from a typical utility.



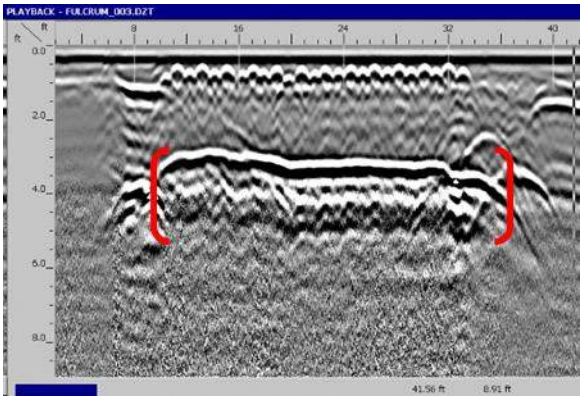
Sample GPR data screenshot showing three reactions from known USTs at an active fueling station. The concrete above the USTs is reinforced with wire mesh.



Sample GPR data screenshot showing three reactions from known USTs at an active fueling station. These USTs are non-metallic and therefore have a weaker reflection that is more difficult and sometimes impossible to identify in the GPR data.

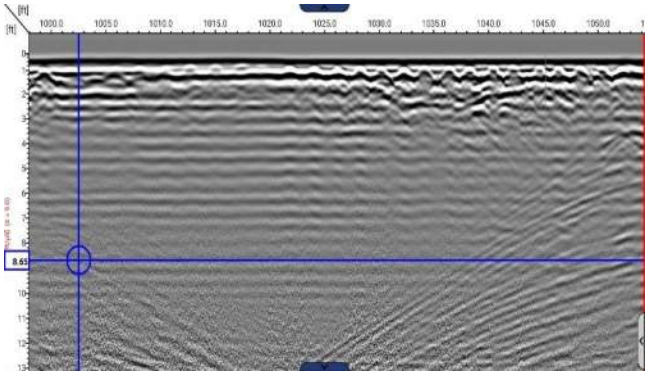


Sample GPR data screenshot showing two potential USTs. These reactions are larger than a typical utility but large utilities can look identical to a UST.

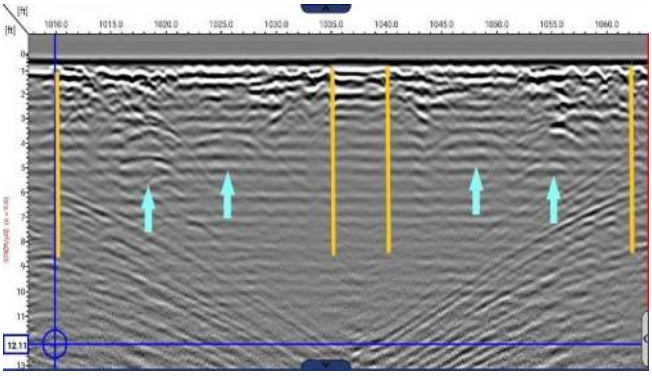


Sample GPR data screenshot showing a scan collected parallel along the top one of the suspected USTs shown in the data to the left. A parallel scan is used to determine a clear beginning and end to the reaction to the reaction which is an indicator of a UST and to determine an approximate length.

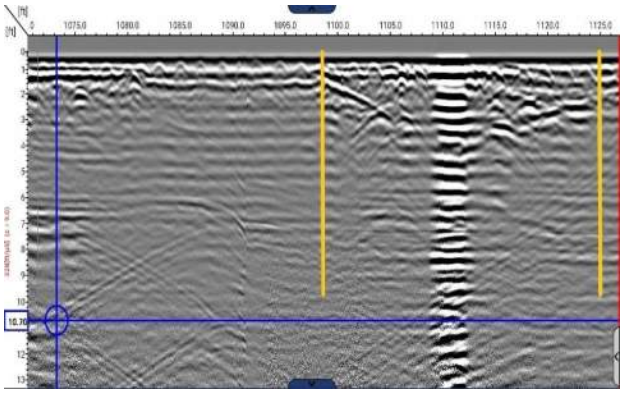
Sample Data Screenshots. (Not taken from this project)	Location: previously collected from various sites	GPRS



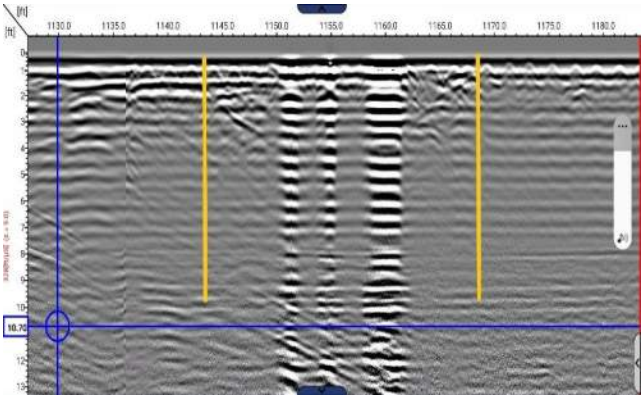
GPR data screenshot showing data typical for the area near the tanks. This scan was not taken over tank basin and no subsurface structures are pictured.



GPR data screenshot showing data consistent with USTs. Left scan taken E-W on south side of tank lids, right scan taken running W-E on north side of tank lids. Blue arrows are pointing to reactions of tanks. Orange lines showing approximate extents of possible tank basin backfill. Tanks only visible with GPR near central tank lids.



GPR screenshot showing scan taken running N-S over westernmost tank. Orange lines showing approximate extents of possible tank basin backfill. Large reaction in center due to tank lid. Length of tank was unable to be determined.



GPR screenshot showing scan taken N-S over easternmost tank. Orange lines show approximate extents of possible tank basin backfill. Three large reactions are caused by tank lids. Tank length was unable to be determined.

Site photo showing approximate extents of tank basin in pink brackets. Centers of tanks were marked where seen.

Site photo showing vent lines traced from nearby above ground vent. Lines were unable to be traced all the way to tanks and could not be seen using GPR.

Site photo showing two unknown lines at north ends of tanks. Lines were found using passive sweeps and depths were unable to be verified. Lines did not extend past approximate centers of tanks and are believed to be associated with tanks.

CLOSING

GPRS, Inc. has been in business since 2001, specializing in underground storage tank location, concrete scanning, utility locating, and shallow void detection for projects throughout the United States. I encourage you to visit our website (www.gprsinc.com) and contact any of the numerous references listed.

USTs were able to be seen in a small radius around tank lids of both tanks. Extents of tanks were unable to be determined using GPR. Centers of tanks were marked where they were able to be seen.

Approximate backfill extents of tank basin were able to be determined and were marked on the surface.

Tank associated lines were found and marked. Vent lines at the south end were unable to be traced all the way to either tank from the above ground vents and their depths were unable to be determined. Two unknown lines were found and marked at the north end of each tank and traced running into the nearby garage. Depths of these lines were unable to be determined.

GPRS appreciates the opportunity to offer our services, and we look forward to continuing to work with you on future projects. Please feel free to contact us for additional information or with any questions you may have regarding this report.

Signed,

Stanley Jones
Project Manager—Denver

Direct: 303.907.8348

stanley.jones@gprsinc.com

www.gprsinc.com

Reviewed,

Ryan Shannon
Area Manager—Denver

Direct: 303.913.8630

ryan.shannon@gprsinc.com

www.gprsinc.com

ATTACHMENT D

Laboratory Analytical Report

ORIGINS LABORATORY, INC

April 25, 2023

Tait Environmental Services

Paul McCarter

6163 E. County Rd 16

Loveland CO 80537

Project Name - RFTA Glenwood Springs **Project Number - RFTA2022 PO#AS813**

Attached are your analytical results for RFTA Glenwood Springs received by Origins Laboratory, Inc. April 13, 2023. This project is associated with Origins project number Y304288-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com

THE NELAC INSTITUTE

Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B1-15	Y304288-01	Soil	April 12, 2023 15:05	04/13/2023 11:30
B1-25	Y304288-02	Soil	April 12, 2023 15:15	04/13/2023 11:30
B2-15	Y304288-03	Soil	April 12, 2023 15:33	04/13/2023 11:30
B2-25	Y304288-04	Soil	April 12, 2023 15:40	04/13/2023 11:30
B3-15	Y304288-05	Soil	April 12, 2023 16:00	04/13/2023 11:30
B3-22	Y304288-06	Soil	April 12, 2023 16:10	04/13/2023 11:30
B4-15	Y304288-07	Soil	April 12, 2023 16:35	04/13/2023 11:30
B4-25	Y304288-08	Soil	April 12, 2023 16:40	04/13/2023 11:30

Origins Laboratory, Inc.

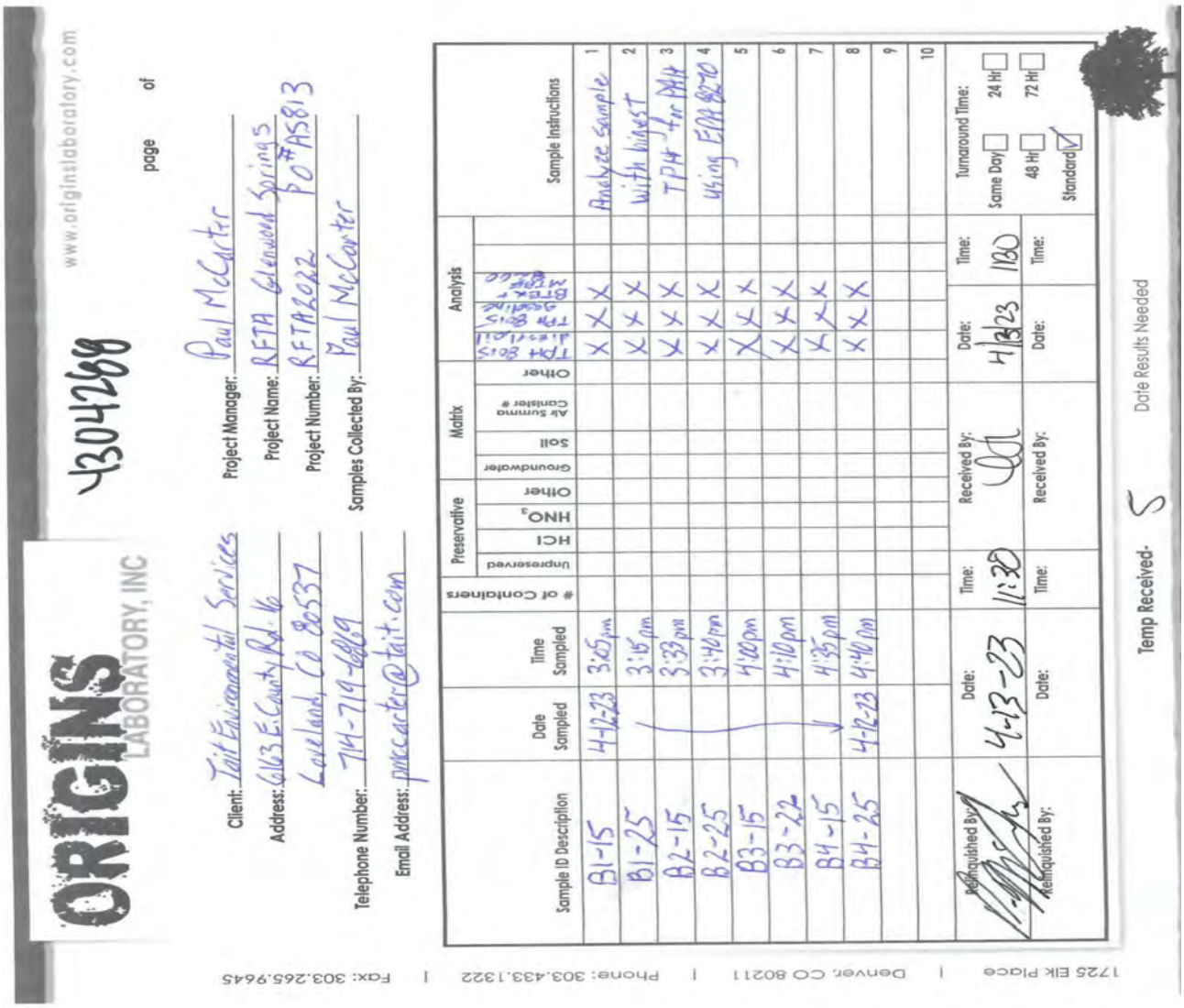
Jen Pellegrini For Noelle Doyle Mathis, President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ORIGINS LABORATORY, INC

Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs



Origins Laboratory, Inc.

Jen Pellegrini

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Jen Pellegrini For Noelle Doyle Mathis, President

Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs

Origins Laboratory

F-012207-01-R1
Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: 4B04288
Client: Tait Environ.
Client Project ID: RFTA Glenwood Springs

Checklist Completed by: JH/EHS
Shipped Via: FED
(UPS, FedEx, Hand Delivered, Pick-up, etc.)
Date/time completed: 4/13/23
Airbill #: n/a

Matrix(s) Received: (Check all that apply): X Soil/Solid ____ Water ____ Other: ____ (Describe)

Cooler Number/Temperature: 1 / 5 °C ____ / ____ °C ____ / ____ °C ____ / ____ °C

Thermometer ID: TD24

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C[1]?	✓			
Is there ice present (document if blue ice is used)	✓			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		✓		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		✓		
Were all samples received intact[1]?	✓			
Was adequate sample volume provided[1]?	✓			
Are short holding time analytes or samples with HTs due within 48 hours present[1]?		✓		
Is a chain-of-custody (COC) present and filled out completely[1]?	✓			
Does the COC agree with the number and type of sample bottles received[1]?	✓			
Do the sample IDs on the bottle labels match the COC[1]?	✓			
Is the COC properly relinquished by the client with date and time recorded[1]?	✓			
For volatiles in water – is there headspace (> ¼ inch bubble) present? **If yes, contact client and note in narrative.**			✓	
Are samples preserved that require preservation and was it checked [1]? *(note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)*			✓	
Additional Comments (if any):				

[1]*If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.*

Reviewed by (Project Manager)

4/14/23
Date/Time Reviewed

Origins Laboratory, Inc.

Jen Pellegrini

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President

Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs

B1-15
4/12/2023 3:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes

Origins Laboratory, Inc.

Y304288-01 (Soil)

BTEX-MTBE by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B3D1433	ZZZ	04/14/2023	04/16/2023	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Methyl tert-Butyl Ether	ND	0.00200	"	"	"	ZZZ	"	"	U
Surrogate: 1,2-Dichloroethane-d4	*71.6 %*	*70-130*			"		"	"	
Surrogate: Toluene-d8	*96.0 %*	*70-130*			"		"	"	
Surrogate: 4-Bromofluorobenzene	*97.8 %*	*70-130*			"		"	"	

TPH-Carbon Chain by EPA 8015D

Gasoline (C6-C10)	ND	25.0	mg/kg	1	B3D1424	ZZZ	04/14/2023	04/18/2023	U
Diesel (C10-C28)	ND	25.0	"	"	"	ZZZ	"	"	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U
Surrogate: o-Terphenyl	*89.1 %*	*50-150*			"		"	"	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs

B1-25
4/12/2023 3:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes

Origins Laboratory, Inc.

Y304288-02 (Soil)

BTEX-MTBE by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B3D1433	ZZZ	04/14/2023	04/16/2023	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Methyl tert-Butyl Ether	ND	0.00200	"	"	"	ZZZ	"	"	U
Surrogate: 1,2-Dichloroethane-d4	*72.0 %*	*70-130*			"		"	"	
Surrogate: Toluene-d8	*95.9 %*	*70-130*			"		"	"	
Surrogate: 4-Bromofluorobenzene	*98.8 %*	*70-130*			"		"	"	

TPH-Carbon Chain by EPA 8015D

Gasoline (C6-C10)	ND	25.0	mg/kg	1	B3D1424	ZZZ	04/14/2023	04/18/2023	U
Diesel (C10-C28)	ND	25.0	"	"	"	ZZZ	"	"	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U
Surrogate: o-Terphenyl	*90.5 %*	*50-150*			"		"	"	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs

B2-15
4/12/2023 3:33:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes

Origins Laboratory, Inc.

Y304288-03 (Soil)

BTEX-MTBE by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B3D1433	ZZZ	04/14/2023	04/16/2023	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Methyl tert-Butyl Ether	ND	0.00200	"	"	"	ZZZ	"	"	U
Surrogate: 1,2-Dichloroethane-d4	*72.1 %*	*70-130*			"		"	"	
Surrogate: Toluene-d8	*95.2 %*	*70-130*			"		"	"	
Surrogate: 4-Bromofluorobenzene	*96.8 %*	*70-130*			"		"	"	

TPH-Carbon Chain by EPA 8015D

Gasoline (C6-C10)	ND	25.0	mg/kg	1	B3D1424	ZZZ	04/14/2023	04/18/2023	U
Diesel (C10-C28)	ND	25.0	"	"	"	ZZZ	"	"	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U
Surrogate: o-Terphenyl	*89.6 %*	*50-150*			"		"	"	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs

B2-25
4/12/2023 3:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes

Origins Laboratory, Inc.

Y304288-04 (Soil)

BTEX-MTBE by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B3D1433	ZZZ	04/14/2023	04/16/2023	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Methyl tert-Butyl Ether	ND	0.00200	"	"	"	ZZZ	"	"	U
Surrogate: 1,2-Dichloroethane-d4	*73.9 %*	*70-130*			"		"	"	
Surrogate: Toluene-d8	*95.2 %*	*70-130*			"		"	"	
Surrogate: 4-Bromofluorobenzene	*97.5 %*	*70-130*			"		"	"	

TPH-Carbon Chain by EPA 8015D

Gasoline (C6-C10)	ND	25.0	mg/kg	1	B3D1424	ZZZ	04/14/2023	04/18/2023	U
Diesel (C10-C28)	ND	25.0	"	"	"	ZZZ	"	"	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U
Surrogate: o-Terphenyl	*90.4 %*	*50-150*			"		"	"	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs

B3-15
4/12/2023 4:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes

Origins Laboratory, Inc.

Y304288-05 (Soil)

BTEX-MTBE by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B3D1433	ZZZ	04/14/2023	04/16/2023	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Methyl tert-Butyl Ether	ND	0.00200	"	"	"	ZZZ	"	"	U
Surrogate: 1,2-Dichloroethane-d4	*71.9 %*	*70-130*			"		"	"	
Surrogate: Toluene-d8	*96.4 %*	*70-130*			"		"	"	
Surrogate: 4-Bromofluorobenzene	*98.2 %*	*70-130*			"		"	"	

TPH-Carbon Chain by EPA 8015D

Gasoline (C6-C10)	ND	25.0	mg/kg	1	B3D1424	ZZZ	04/14/2023	04/18/2023	U
Diesel (C10-C28)	ND	25.0	"	"	"	ZZZ	"	"	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U
Surrogate: o-Terphenyl	*91.2 %*	*50-150*			"		"	"	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs

B3-22
4/12/2023 4:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes

Origins Laboratory, Inc.
Y304288-06 (Soil)

BTEX-MTBE by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B3D1433	ZZZ	04/14/2023	04/16/2023	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Methyl tert-Butyl Ether	ND	0.00200	"	"	"	ZZZ	"	"	U
Surrogate: 1,2-Dichloroethane-d4	*74.3 %*	*70-130*			"		"	"	
Surrogate: Toluene-d8	*95.1 %*	*70-130*			"		"	"	
Surrogate: 4-Bromofluorobenzene	*96.9 %*	*70-130*			"		"	"	

TPH-Carbon Chain by EPA 8015D

Gasoline (C6-C10)	ND	25.0	mg/kg	1	B3D1424	ZZZ	04/14/2023	04/18/2023	U
Diesel (C10-C28)	ND	25.0	"	"	"	ZZZ	"	"	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U
Surrogate: o-Terphenyl	*90.2 %*	*50-150*			"		"	"	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs

B4-15
4/12/2023 4:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes

Origins Laboratory, Inc.

Y304288-07 (Soil)

BTEX-MTBE by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B3D1433	ZZZ	04/14/2023	04/16/2023	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Methyl tert-Butyl Ether	ND	0.00200	"	"	"	ZZZ	"	"	U
Surrogate: 1,2-Dichloroethane-d4	*74.2 %*	*70-130*			"		"	"	
Surrogate: Toluene-d8	*97.0 %*	*70-130*			"		"	"	
Surrogate: 4-Bromofluorobenzene	*97.5 %*	*70-130*			"		"	"	

TPH-Carbon Chain by EPA 8015D

Gasoline (C6-C10)	ND	25.0	mg/kg	1	B3D1424	ZZZ	04/14/2023	04/18/2023	U
Diesel (C10-C28)	ND	25.0	"	"	"	ZZZ	"	"	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U
Surrogate: o-Terphenyl	*88.0 %*	*50-150*			"		"	"	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs

B4-25
4/12/2023 4:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes

Origins Laboratory, Inc.
Y304288-08 (Soil)

BTEX-MTBE by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B3D1433	ZZZ	04/14/2023	04/16/2023	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Methyl tert-Butyl Ether	ND	0.00200	"	"	"	ZZZ	"	"	U
Surrogate: 1,2-Dichloroethane-d4	*74.4 %*	*70-130*			"		"	"	
Surrogate: Toluene-d8	*95.4 %*	*70-130*			"		"	"	
Surrogate: 4-Bromofluorobenzene	*98.3 %*	*70-130*			"		"	"	

TPH-Carbon Chain by EPA 8015D

Gasoline (C6-C10)	ND	25.0	mg/kg	1	B3D1424	ZZZ	04/14/2023	04/18/2023	U
Diesel (C10-C28)	ND	25.0	"	"	"	ZZZ	"	"	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U
Surrogate: o-Terphenyl	*89.2 %*	*50-150*			"		"	"	

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3D1424 - EPA 3550B										
Blank (B3D1424-BLK1)					Prepared: 04/14/2023 Analyzed: 04/18/2023					
Gasoline (C6-C10)	ND	25.0	mg/kg							U
Diesel (C10-C28)	ND	25.0	"							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	*24.1*		*"*	*24.9*		*96.7*	*50-150*			

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3D1424 - EPA 3550B										
LCS (B3D1424-BS1)					Prepared: 04/14/2023 Analyzed: 04/18/2023					
Gasoline (C6-C10)	884	50.0	mg/kg	1000		88.4	70-130			
Diesel (C10-C28)	965	50.0	"	1000		96.5	70-130			
Residual Range Organics (C28-C40)	964	200	"	1000		96.4	70-130			
Surrogate: o-Terphenyl	*52.2*		*"*	*49.8*		*105*	*50-150*			

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3D1424 - EPA 3550B										
Matrix Spike (B3D1424-MS1)		**Source: Y304277-05**			Prepared: 04/14/2023 Analyzed: 04/18/2023					
Gasoline (C6-C10)	936	50.0	mg/kg	1000	ND	93.6	70-130			
Diesel (C10-C28)	1020	50.0	"	1000	ND	102	70-130			
Residual Range Organics (C28-C40)	1010	200	"	1000	ND	101	70-130			
Surrogate: o-Terphenyl	*45.6*		*"*	*49.8*		*91.6*	*50-150*			

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3D1424 - EPA 3550B										
Matrix Spike Dup (B3D1424-MSD1)		**Source: Y304277-05**			Prepared: 04/14/2023 Analyzed: 04/18/2023					
Gasoline (C6-C10)	931	50.0	mg/kg	1000	ND	93.1	70-130	0.472	35	
Diesel (C10-C28)	1000	50.0	"	1000	ND	100	70-130	2.12	35	
Residual Range Organics (C28-C40)	1000	200	"	1000	ND	100	70-130	1.29	35	
Surrogate: o-Terphenyl	*52.1*		*"*	*49.8*		*105*	*50-150*			

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3D1433 - EPA 5030 (soil)										
Blank (B3D1433-BLK1)				Prepared: 04/14/2023 Analyzed: 04/16/2023						
Benzene	ND	0.00200	mg/kg							U
Toluene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Methyl tert-Butyl Ether	ND	0.00200	"							U
Surrogate: 1,2-Dichloroethane-d4	*0.084*		"	*0.125*		*67.3*	*70-130*			*S-GC*
Surrogate: Toluene-d8	*0.12*		"	*0.125*		*96.7*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.12*		"	*0.125*		*97.0*	*70-130*			

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3D1433 - EPA 5030 (soil)										
LCS (B3D1433-BS1)					Prepared: 04/14/2023 Analyzed: 04/16/2023					
Benzene	0.0985	0.00200	mg/kg	0.100		98.5	70-130			
Toluene	0.0988	0.00200	"	0.100		98.8	70-130			
Ethylbenzene	0.107	0.00200	"	0.100		107	70-130			
m,p-Xylene	0.230	0.00400	"	0.200		115	70-130			
o-Xylene	0.114	0.00200	"	0.100		114	70-130			
Methyl tert-Butyl Ether	0.102	0.00200	"	0.100		102	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.083*		"	*0.125*		*66.4*	*70-130*			*S-GC*
Surrogate: Toluene-d8	*0.12*		"	*0.125*		*98.2*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.12*		"	*0.125*		*97.6*	*70-130*			

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3D1433 - EPA 5030 (soil)										
Matrix Spike (B3D1433-MS1)		**Source: Y304288-01**			Prepared: 04/14/2023 Analyzed: 04/16/2023					
Benzene	0.101	0.00200	mg/kg	0.100	0.00196	99.4	70-130			
Toluene	0.101	0.00200	"	0.100	ND	101	70-130			
Ethylbenzene	0.113	0.00200	"	0.100	ND	113	70-130			
m,p-Xylene	0.244	0.00400	"	0.200	ND	122	70-130			
o-Xylene	0.122	0.00200	"	0.100	ND	122	70-130			
Methyl tert-Butyl Ether	0.102	0.00200	"	0.100	ND	102	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.084*		"	*0.125*		*67.0*	*70-130*			*S-GC*
Surrogate: Toluene-d8	*0.12*		"	*0.125*		*97.3*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.13*		"	*0.125*		*100*	*70-130*			

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3D1433 - EPA 5030 (soil)										
Matrix Spike Dup (B3D1433-MSD1)		**Source: Y304288-01**			Prepared: 04/14/2023 Analyzed: 04/16/2023					
Benzene	0.0914	0.00200	mg/kg	0.100	0.00196	89.4	70-130	10.3	20	
Toluene	0.0909	0.00200	"	0.100	ND	90.9	70-130	10.3	20	
Ethylbenzene	0.0965	0.00200	"	0.100	ND	96.5	70-130	16.2	20	
m,p-Xylene	0.208	0.00400	"	0.200	ND	104	70-130	16.1	20	
o-Xylene	0.105	0.00200	"	0.100	ND	105	70-130	15.2	20	
Methyl tert-Butyl Ether	0.0961	0.00200	"	0.100	ND	96.1	70-130	6.39	20	
Surrogate: 1,2-Dichloroethane-d4	*0.085*		"	*0.125*		*67.7*	*70-130*			*S-GC*
Surrogate: Toluene-d8	*0.12*		"	*0.125*		*97.5*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.12*		"	*0.125*		*97.1*	*70-130*			

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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Tait Environmental Services
6163 E. County Rd 16
Loveland CO 80537

Paul McCarter
Project Number: RFTA2022 PO#AS813
Project: RFTA Glenwood Springs

Notes and Definitions

U Sample is Non-Detect.

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.

Jen Pellegrini For Noelle Doyle Mathis, President

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ATTACHMENT E

Non-hazardous Waste Manifest

RARITAN CWT

Please print or type.

NON-HAZARDOUS WASTE MANIFEST

48490

GENERATOR

3. Generator's Name and Mailing Address
GLENWOOD SPRINGS MAINTENANCE FACILITY
4. Phone ( ) 2307 WULFSON RD. GLENWOOD SPRINGS, Co

5. Generating Location (if different)
2307 WULFSOHN ROAD, GLENWOOD SPRINGS, CO
6. Phone ( )

7. Transporter #1 Company Name
VISTA GEOSCIENCE

9. Transporter #1's Phone
(303) 277 1694

10. Transporter #2 Company Name

12. Transporter #2's Phone

13. Designated T/S/D Facility Name and Site Address
RARITAN CWT
2695 S. Raritan Street
Englewood, CO 80110

15. Facility's Phone
(303) 991-6002

16. Waste Shipping Name and Description	18. Containers No.	18. Containers Type	19. Total Quantity	20. Unit Wt/Vol
a. Non U.S. EPA or DOT regulated contaminated water/gasoline mix				Gallons
b. Non U.S. EPA or DOT regulated contaminated water/diesel mix				Gallons
c. Petroleum Contaminated Soil/Slurry				CYS
d. POTHOLE SLURRY			150	gallons

21. Additional Descriptions for Materials Listed Above
For Beneficial Reuse/Recycling

22. Special Handling Instructions and Additional Information

23. **GENERATOR'S CERTIFICATION:** I certify the materials described on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: Dustin Goodman | Signature | Month: 4 | Day: 17 | Year: 23

TRANSPORTER

24. **Transporter #1:** Acknowledgement of Receipt of Materials

Printed/Typed Name: David Fontana | Signature | Month: 4 | Day: 14 | Year: 23

25. **Transporter #2:** Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month | Day | Year

T/S/D FACILITY

26. Discrepancy Indication Space

27. **Facility Owner or Operator:** Certification of receipt of waste materials covered by this manifest (except as noted in Item 19)

Printed/Typed Name | Signature | Month | Day | Year

NHWM 08/15

ORIGINAL – RETURN TO GENERATOR

To order more forms call: 480-804-7328

COLORADO
Division of Oil and Public Safety
Department of Labor and Employment

Remediation Program
633 17th Street, Suite 500
Denver, CO 80202-3660
303-318-8547 | colorado.gov/ops | cdle_remediation@state.co.us

October 11, 2023 VIA EMAIL: mhermes@rfta.com

Mike Hermes
Roaring Fork Transportation Authority
1340 Main Street
Carbondale, CO 81623

Re: No Further Action (NFA) Determination for Roaring Fork Transit Agency, 2307 Wulfsohn Road, Glenwood Springs, Garfield County, Colorado. (Event ID 17254, Release ID 16242, Facility ID 15558)

Dear Mike Hermes:

The Division of Oil and Public Safety (OPS) has reviewed the Site Characterization Report (SCR) NFA request (RR-088835) for the referenced site received on April 26, 2023.

Based solely upon the information submitted, OPS will require no further action at this time. If conditions change, OPS reserves the right to determine if any additional actions are necessary. This NFA letter is in reference to a confirmed release reported on November 2, 2022.

Please submit a Site Decommissioning Report to OPS to document well abandonment and site decommissioning activities within 90 days of receiving this NFA Determination**. OPS cannot release you from any liability that may be associated with any contamination at or from this site.**

Please address correspondence regarding this site to me and if you have any questions, please contact me at 720-376-0239 or via email at Hannah.williams@state.co.us .

Sincerely,

K. Hannah Williams

K. Hannah Williams
Environmental Protection Specialist
Petroleum Program

cc: Dustin Goodman, Roaring Fork Transportation Authority, dgoodman@rfta.com
Ben Ludlow, Roaring Fork Transportation Authority, bludlow@rfta.com
Billy Bob Bates, Tait Environmental Services, Inc., bbbates@tait.com
Paul McCarter, OPS REP, Tait Environmental Services, Inc., pmccarter@tait.com

experience.arcgis.com/experience/2f3b9fd3d13f4d7299599e9f73f24538/page/Home%2FMap-Page/

Ajera | Payroll | Simple In/Out | Google Maps | Get Maps | topoView | COGCC GISOnline | CDPHE Map | OPS Map | CDWR Map | PublicAccess - Cust... | Data & Documents... | All Bookmarks

Open Petroleum Event Viewer

Colorado Department of Labor and Employment

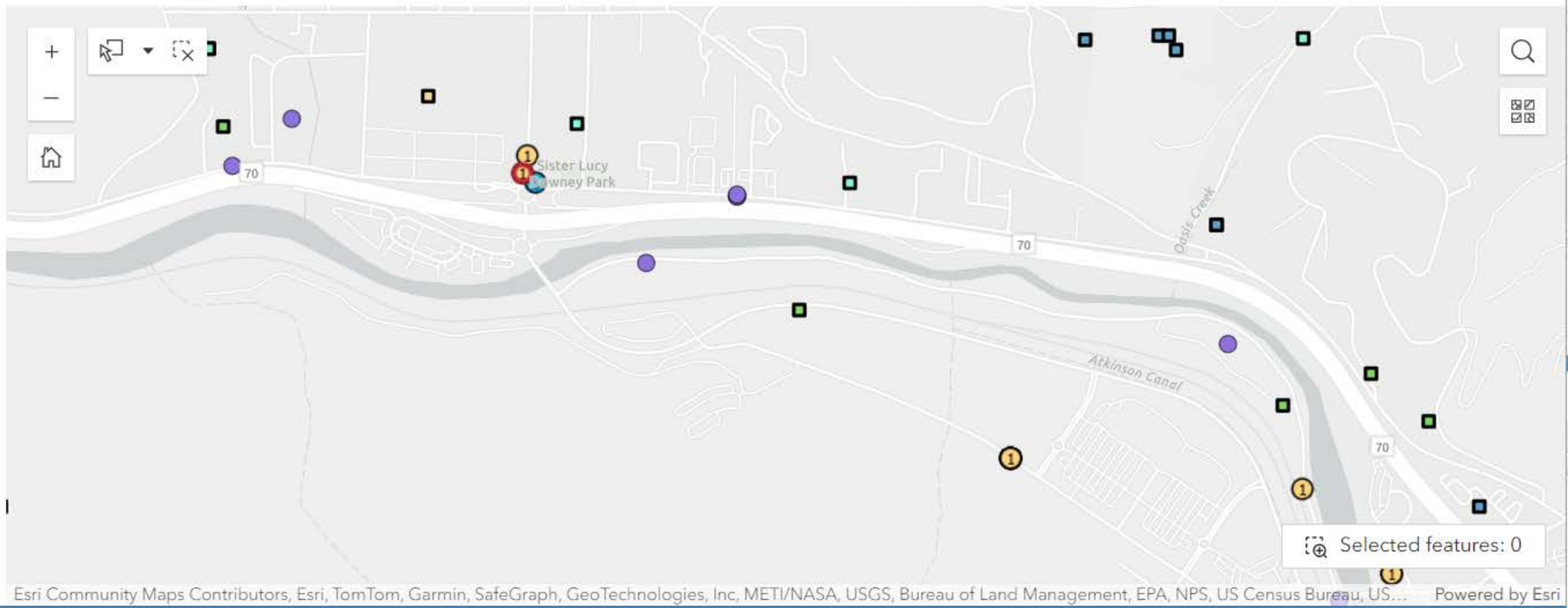
Help | Download Data

Layers | Search by Attribute | Search by Location

Other

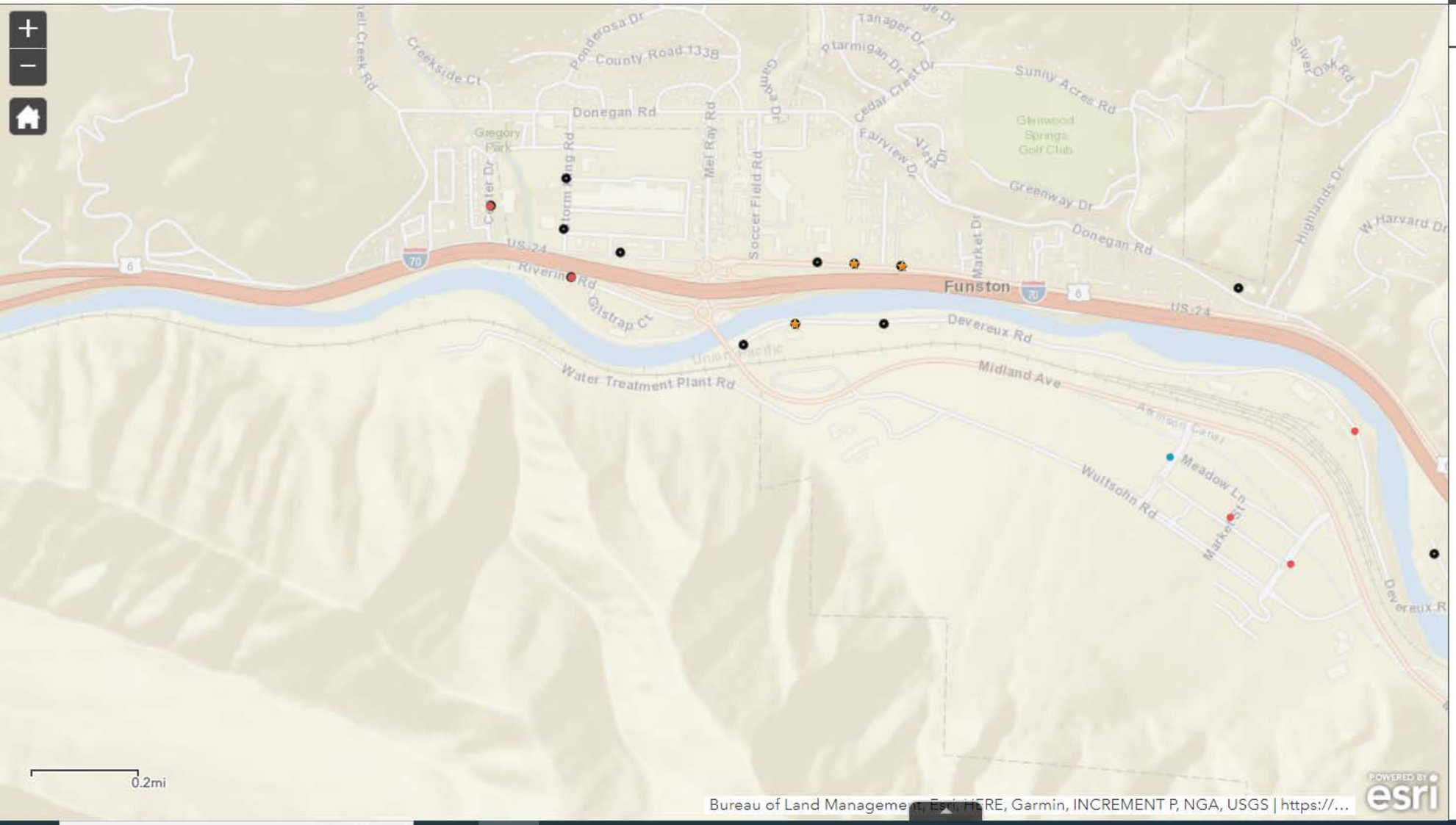
DNR Well Application Permits

- Augmentation
- Commercial
- Domestic
- Fire
- Industrial
- Irrigation
- Municipal



OPS Events (Map) | DNR Well Application Permits | All OPS Events - CIM

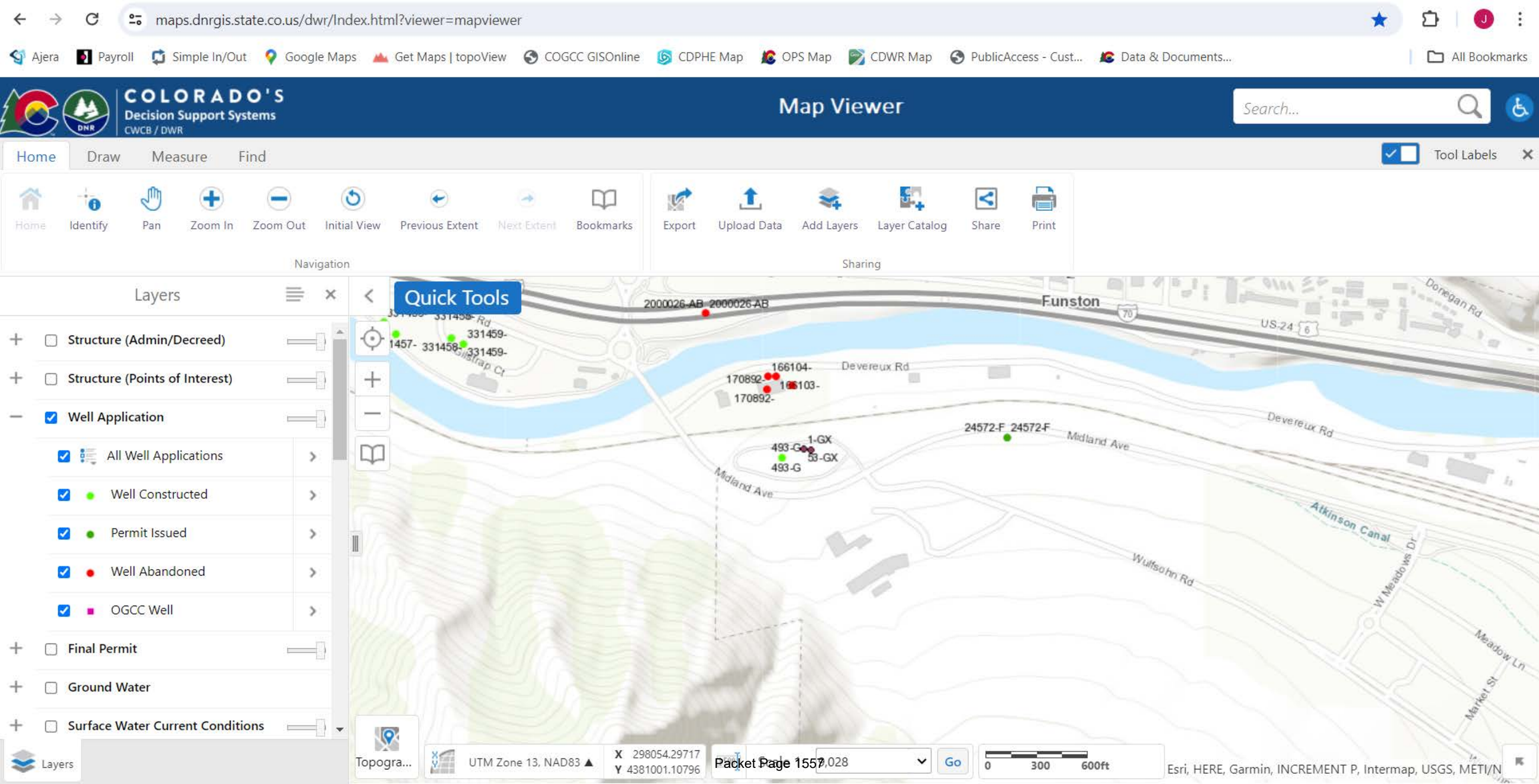
Event ID	Facility ID	Release Number	Release Record Type	Status	No Further Action (...	Site Name	Contact Nam
14,149	11,578	REL-015867	Confirmed	Closed	Tier I	King Soopers Fuel Center ...	Tom Fox
17,370	21,003	REL-016379	Site Assessment	Closed	Tier I	Former Texaco Gas Station	Kyle Campb
17,358	20,986	REL-016364	Site Assessment	Closed	Tier I	Former Cheapies	Michelle Ho



Sites legend

Layers

- Institutional controls
- Voluntary Cleanup and Redevelopment Program (VCUP)
- RCRA corrective action
- RCRA active handler
- Federal facilities
- Superfund / National Priorities List (NPL NRD)
- Brownfields
- Solid waste facilities
- Petroleum release events
- Waste tire haulers
- Waste tire registrants
- Uranium Mill Tailings (UMTRA)
- Counties
- May 2023 DI Communities
- Prior DI Community


maps.dnrgis.state.co.us/dwr/Index.html?viewer=mapviewer
Ajera
Payroll
Simple In/Out
Google Maps
Get Maps | topoView
COGCC GISOnline
CDPHE Map
OPS Map
CDWR Map
PublicAccess - Cust...
Data & Documents...
All Bookmarks
COLORADO'S
Decision Support Systems
CWCB / DWR
Map Viewer
Search...
Home
Draw
Measure
Find
Tool Labels
Home
Identify
Pan
Zoom In
Zoom Out
Initial View
Previous Extent
Next Extent
Bookmarks
Navigation
Export
Upload Data
Add Layers
Layer Catalog
Share
Print
Sharing
Layers
Structure (Admin/Decreed)
Structure (Points of Interest)
Well Application
All Well Applications
Well Constructed
Permit Issued
Well Abandoned
OGCC Well
Final Permit
Ground Water
Surface Water Current Conditions
Quick Tools
Funston
US-24
Devereux Rd
Midland Ave
Atkinson Canal
Wulfsohn Rd
Donegan Rd
Meadow Ln
Market St
Topogra...
UTM Zone 13, NAD83
X 298054.29717
Y 4381001.10796
Go
0
300
600ft
Esri, HERE, Garmin, INCREMENT P, Intermap, USGS, METI/N

cogccmap.state.co.us/cogcc_gis_online/

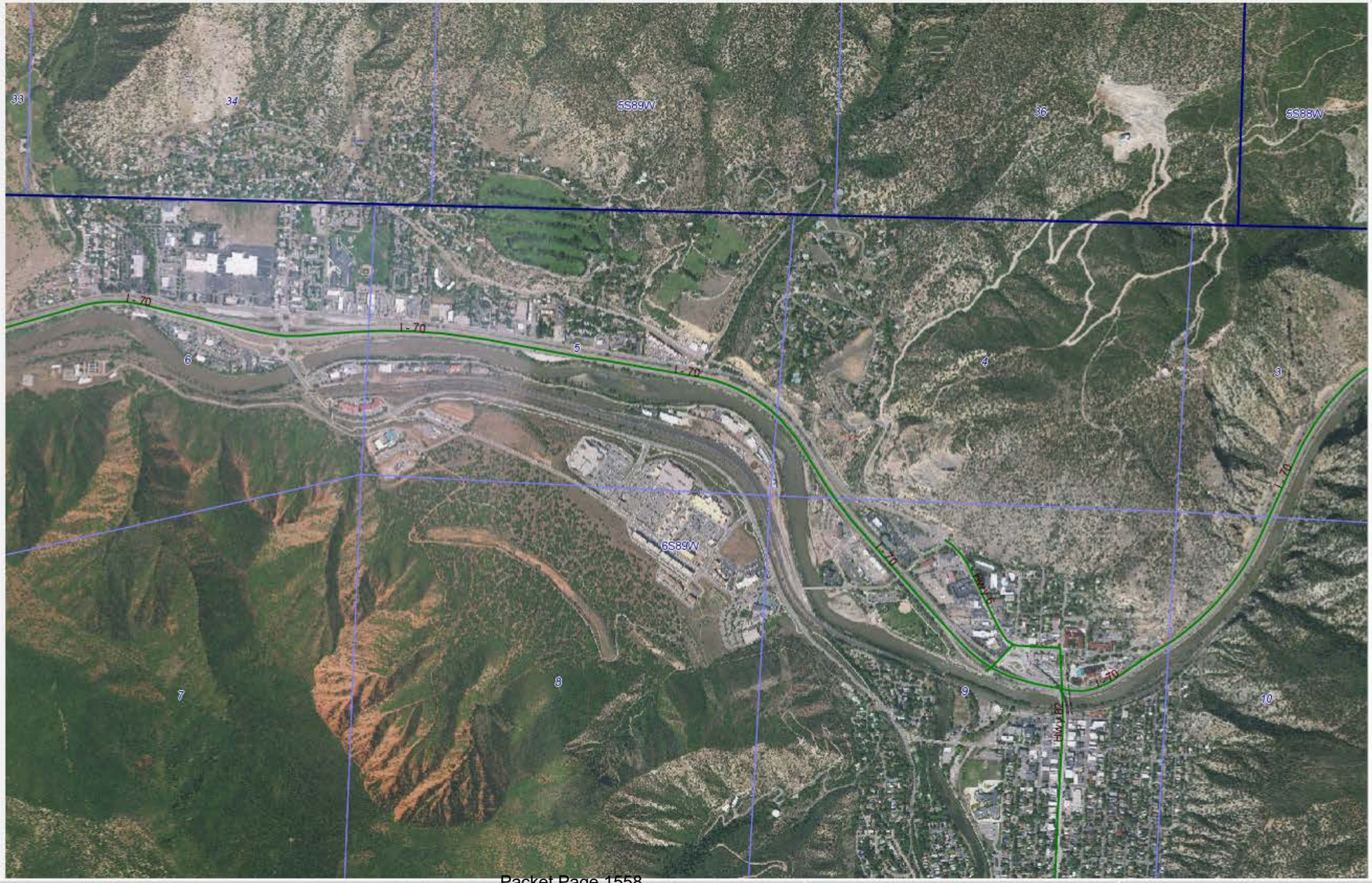
Ajera | Payroll | Simple In/Out | Google Maps | Get Maps | topoView | COGCC GISOnline | CDPHE Map | OPS Map | CDWR Map | PublicAccess - Cust... | Data & Documents... | All Bookmarks

ECMC GIS Online

Address Search | Zoom | Selection Results | Intersect | Add Point | Redline | Copy | Lat/Long | Print | Help

Layers

- Facilities
- Directional Wellbores
- Flowlines Fluid Type (APPROVED)
- COGCC
  - Staff Contacts (Mouseover For Flyout)
  - Environmental
  - Oil & Gas Fields
  - Orders
  - Projects Rulison & Rio Blanco
  - Rules
  - Seismic Permits
  - Orphaned Well Program
  - Other Projects
- Historic Wells
- Roads & Railroads (CDOT)
- Water Resources (DWR & CDPHE)
- Floodplains (FEMA)
- Environmental Sites
- Air Quality (CDPHE)
- Section, Township, & Range (PLSS)
- Local Government Designees (LGDs)
- Parks & Wildlife (CPW)
- National Wetlands Inventory (USFWS)
- State Land (SLB)
- Tribal Lands
- Federal Land (BLM)
- Surface Features
  - Places
  - Parcels
  - Airports
  - School Districts
  - Surface Owner
  - Cities
  - Counties
- Soil Survey (NRCS)
- Mining
- Geology
- Topography
- Aerial Imagery
  - 1990s (Black & White) Image Dates
  - 1990s (Black & White)
  - 2009 (NAIP)
  - 2011 (NAIP)
  - 2013 (NAIP)
  - 2015 (NAIP)
  - 2017 (NAIP)
  - 2019 (NAIP)
  - 2021 (NAIP)



COLORADO
Energy & Carbon Management Commission
Department of Natural Resources

MAPGUIDE HELP

- Disclaimer
- Map Layer Info
- Map User Guide
- Other Browsers
- FAQ's
- Flowlines

This screen space is used for various map functions, such as redlining and measuring distances, and will change depending on the function being used.

Need help? Map not working?

Please contact:

David Gates
david.gates@state.co.us
(303) 894-2100

NOTE - Many tablet and smart-phone browsers will not work with our interactive map. If you are having problems on a mobile device, please try using a computer-based browser instead.

X: 296036, Y: 4381444 (METER)

0 features selected | 1: 15744.78 | 3.37 x 2.17 (mi) | Powered by Infrastructure Map Server

From: MaryLynn Stevens
To: Jacob King
Cc: Jill Cantway
Subject: RE: Website inquiry - Open Records Request
Date: Thursday, June 13, 2024 2:27:10 PM

CAUTION This email originated from outside our organization. Do not click links or open attachments unless you recognize the sender and verify the email address matches their name.

Mr. King,

I am in receipt of your request set forth below. Garfield County does not have any responsive records on the properties. You may want to contact the City of Glenwood Springs to see if they have any records on the properties.

This request is closed.

Mary Lynn Stevens
Paralegal/Off. Mgr
Garfield County Attorney's Office

From: noreply@formstack.com <noreply@formstack.com>
Sent: Tuesday, June 11, 2024 1:39 PM
To: MaryLynn Stevens <mlstevens@garfield-county.com>; Jan Shute <jshute@garfield-county.com>; Jill Cantway <jcantway@garfield-county.com>
Subject: Website inquiry - Open Records Request

Date: 6/11/2024

Requestor's name: Jacob King

Organization represented (if any): ERO Resources Corporation

Address: 1626 Cole Blvd
Suite 100
Lakewood, CO 80401

Email: jking@eroresources.com

Phone number: (970) 818-1181

Fax:

Name of document(s) requested, including the department where the document(s) originated: ERO Resources Corporation is conducting an Initial Site Assessment (ISA) for the Roaring Fork Transportation Authority Glenwood Maintenance Facility project, located at 2307 Wulfsohn Road, Glenwood Springs, CO. ERO is requesting records for the following Garfield County parcels: 218505336002, 218505337001, and 218505337003.
A georectified PDF map of the project area or a KMZ will be provided upon request.

As part of this ISA, ERO is requesting a search of department records for the project area that may indicate a release or disposal of petroleum products or hazardous materials. Examples of such sites include underground and/or aboveground storage tanks, incidents involving hazardous substances or petroleum products spills, use or storage, landfills, or reports of illegal solid waste disposal, enforcement actions, complaints or inspection notices.

If you have any questions, please feel free to reach out via my email or cell phone at any time.

Thank you,
Jacob King

From:	Ryan M. Muse
To:	Jacob King
Cc:	Ryan M. Muse; Steve Boyd; Danyelle Rigli
Subject:	CORA Request Fulfilled
Date:	Thursday, June 13, 2024 5:38:34 PM
Attachments:	image001.png Glenwood Springs Fire CORA request.pdf 14-1309.pdf 21-879.pdf 22-332.pdf 22-1050.pdf 22-1540.pdf

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CAUTION This email originated from outside our organization. Do not click links or open attachments unless you recognize the sender and verify the email address matches their name.

Good afternoon, Jacob,

Attached are all the documents related to your CORA request.

Take care,

Ryan Muse
City Clerk
City of Glenwood Springs
970-384-6406
www.cogs.us
Accessibility Policy / Póliza de accesibilidad

Appendix L: List of Property Owners within 300 feet

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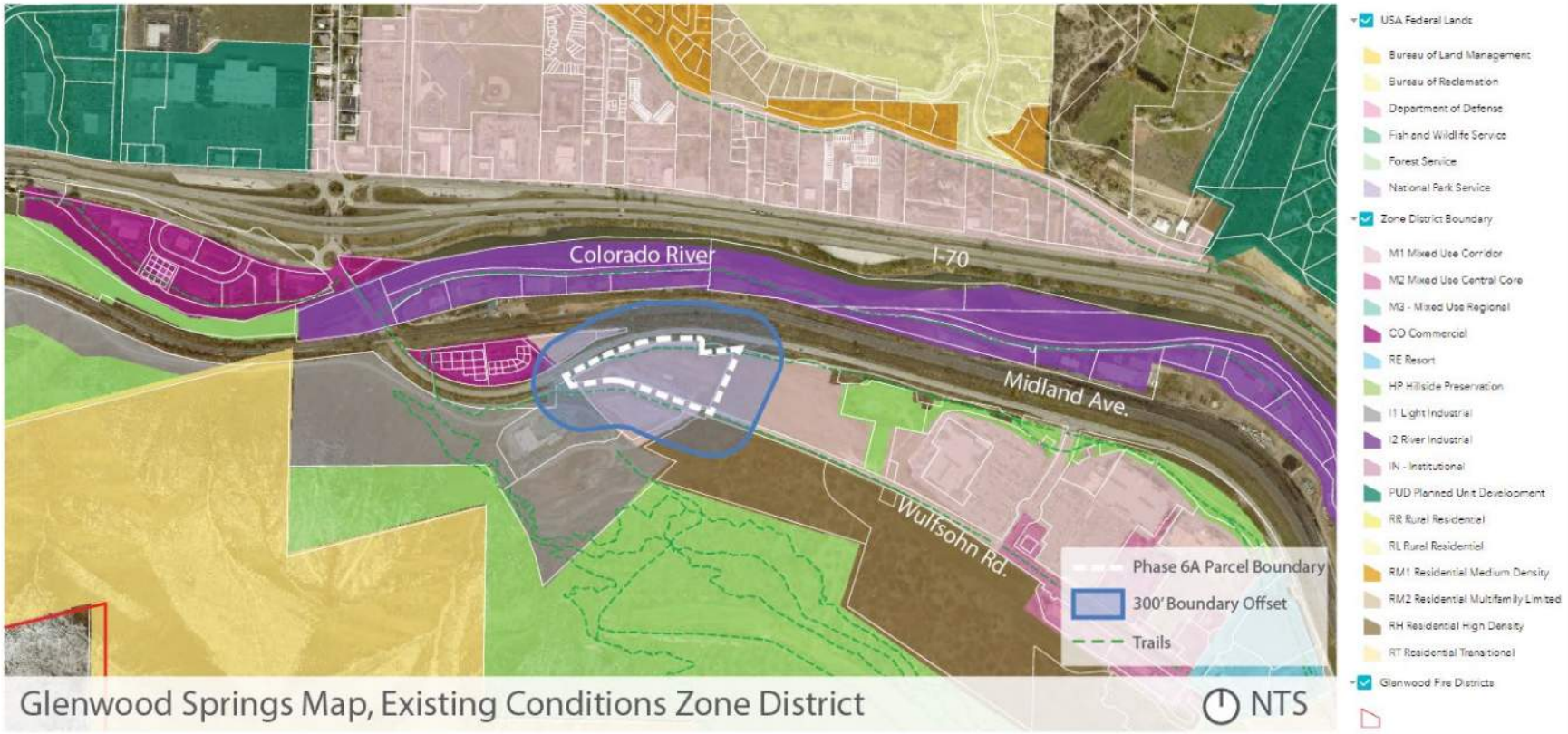

Parcel Number	Account Number	Address	Owner Name	Owner Address
218505338014	R041501	Not available	CENTURA VENTURES LLC	9100 E MINERAL CIRCLE ENGLEWOOD, CO 80112
218505337003	R041405	Not available	ROARING FORK TRANSPORTATION AUTHORITY	0766 INDUSTRY WAY CARBONDALE, CO 81623
218508143001	R084916	Not available	GLENWOOD MEADOWS, LLC	710 E DURANT AVENUE, SUITE W6 ASPEN, CO 81611
218505336004	R084509	Not available	ROARING FORK TRANSPORTATION AUTHORITY	2307 WULFSOHN ROAD GLENWOOD SPRINGS, CO 81601
218505336002	R009167	2307 WULFSOHN RD GLENWOOD SPRINGS CO 81601	ROARING FORK TRANSPORTATION AUTHORITY	1340 MAIN STREET CARBONDALE, CO 81623
218505336003	R009168	Not available	GLENWOOD SPRINGS, CITY OF	101 W 8TH STREET GLENWOOD SPRINGS, CO 81601
218505335004	R009105	Not available	GLENWOOD SPRINGS, CITY OF	101 W 8TH STREET GLENWOOD SPRINGS, CO 81601
218505335003	R009104	130 MIDLAND AVE GLENWOOD SPRINGS CO 81601	INTEGRATED MOUNTAIN GROUP INC	1001 GRAND AVENUE #201 GLENWOOD SPRINGS, CO 81601

Planning and Zoning Commission Report

Date: January 28, 2025
To: Planning and Zoning Commission
From: Hannah Klausman, Director, Economic & Community Development
Subject: Discussion, Fire Prevention Requirements in Single Family Homes

Not aplicable

ACTION ITEMS

Discussion on Fire prevention requirements for single family residential uses and Accessory Dwelling Uses.

BACKGROUND

In March 2022, City Council approved Ordinance 06-2022 adopting 2021 Building Codes. Part of the adoption included new regulations requiring fire sprinkler systems for new single-family homes and accessory dwelling units, which was not previously required by the City of Glenwood Springs. Fire sprinkler requirements have been a part of International Code Council requirements since 2009. City of Glenwood Springs Building Official Victor Meraz has included a memo attached to this report related to code and timeline.

City Council has requested a review of these requirements in light of escalating costs for constructing low density residential units. The City has historically encouraged ADU production through a variety of programs and flexible regulations. City Council and staff have heard feedback from Single Family Home and Accessory Dwelling unit permit applicants that the sprinkler system requirement is one more added expense making development of these products less feasible.

Title 060 of the Glenwood Springs Municipal Code regulates all construction, reconstruction, repair, remodeling, or other construction activity within the City of Glenwood Springs ("Glenwood Springs" or the "City") by the adoption of certain International and National Codes. Amending Title 060 is at the authority of City Council so there is no formal action item for Planning and Zoning Commission. This agenda item is meant to be a discussion to provide perspectives for Council consideration.

PROJECT SUMMARY

The discussion of requiring or waiving sprinkler systems in residential units centers on cost versus life safety.

Life Safety

Staff has included several flyers from the National Fire Sprinkler Association that details the benefits and life saving measures that sprinkler systems provide. This includes but is not limited to increased evacuation time and reduced loss of life, reduced spread of fire, reduced smoke and greenhouse gas emissions from fires, and increased emergency responder safety.

Cost

The National Fire Protection Association conducted a study through The Fire Protection Research Association to illustrate average costs of installing fire sprinkler systems. The last update was in 2013. Those numbers are included below for reference.

Table 2. Residential Sprinkler System Costs, 2008 to 2013

	2008 Cost		2013 Cost	
	$/Sprinklered ft^{2} [4]	Total Cost[5]	$/Sprinklered ft^{2}	Total Cost
Mean	$1.61	$6,316	$1.35	$6,026
Median	$1.42	$5,843	$1.22	$5,000
Minimum	$0.38	$2,386	$0.81	$1,695
Maximum	$3.66	$16,061	$2.47	$21,000

In some instances, a development will trigger a need to upgrade a water line that serves a property in order to provide adequate water flows and pressure for the fire sprinkler system and general household water needs. In these cases, there can be significant expense related to the construction of the water line upgrade. Costs for water line upgrades are highly dependent on specific site variables and staff does not have an average cost estimate.
Staff is also anecdotally aware of insurance premium reductions that coincide with a structure having a fire sprinkler system but does not have numbers of the amount.

Incentive Opportunities
Staff discussed this item with the Workforce Housing Fund Advisory Board (WFHAB). The Board considered whether or not this would be an item to offer financial incentives in exchange for deed restrictions. For example, granting the cost of the fire suppression system, or a no cost loan for the same purpose, in exchange for an affordability deed restriction. This item would need further discussion and program development however Staff wanted to note a possible incentive-based approach rather than deregulated approach.
The Fire Department has a $350 fee for design review and inspection of sprinkler systems. This could be another area of a fee to possibly waive, or subsidize, to reduce costs.

REVIEW CRITERIA AND STAFF ANALYSIS
Not applicable.

REVIEWING AGENCY COMMENTS
The Fire Department and the Building Department have submitted comments and recommendations that are attached to this report.

ACTION ITEMS & STAFF RECOMMENDATIONS
This item is for discussion only and will be reviewed and decided upon by City Council.

Suggested Findings:
None.

Planning and Zoning Commission Report

Date: January 28, 2025
To: Planning & Zoning Commission
From: Hannah Klausman, Director
Subject: Fire Prevention Requirements in Single Family Homes, Discussion

ACTION ITEM
Discussion on Fire prevention requirements for single family residential uses and Accessory Dwelling Uses.

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January 23, 2025

TO: Glenwood Springs City Planning and Zoning

Fire Sprinklers in 1+2 Family Homes and ADU's

"The Glenwood Springs Fire Department recommends no changes or omissions be made to adopted model fire codes and standards that require automatic fire sprinklers in every new residential occupancy. Fire sprinklers provide the best protection from injury or death from fire."

The 2021 International Fire Code Section 903.3.1.3 requires an NFPA 13D automatic sprinkler system in one- and two-family dwellings.

NFPA 13D systems use CPVC piping along with other cost effect designs with the main intent of the sprinkler being *Life Safety*. The system is designed to prevent fire from reaching flashover conditions in the room of origin and allows for occupants to escape along paths of egress.

Sprinkler heads are not required in closets, bathrooms, attics/crawlspaces
No fire alarm monitoring is required- a water flow switch activates an exterior Horn/Strobe.

Hydraulic calculations factor a maximum of 2 heads activating within the most remote/highest room with a density factor of 0.05gpm/ft^2. Systems are limited to a maximum of 40gpm and are only required to supply water for a 10-minute duration. System can be tied to a domestic water line or be a stand-alone system with dedicated tank, pump and valves.

The Glenwood Springs Fire Department has a permit fee of $350 for NFPA 13D systems that includes a plan review and on-site rough-in and final inspections to ensure adequate coverage and system compliance. GSFD enforces the State of Colorado Division of Fire Protection and Control's Fire and Life Safety rules regarding fire suppression system contractors.

The US Fire Administration reports that one of every five fires occurs in one- and two-family homes and that these fires are responsible for 68% civilian fire deaths and 56% of civilian fire injuries. Fires grow more rapidly and give off toxic gases due to modern consumer goods.

There are many benefits to installing a fire sprinkler system beyond life safety including construction incentives, reduction in insurance premiums, lowering carbon emissions and they promote community risk reduction as well as firefighter health and safety.

101 W. 8th Street Glenwood Springs, Colorado 81601 970-384-6480 FAX 970-945-8506

SERVICE THROUGH DEDICATION, PROFESSIONALISM AND EXCELLENCE

City of Glenwood Springs

Department of Community Development

Building Department

January 16, 2025

To whom it might concern:

Im attaching some Code Sections from the 2021 International Residential Code that address the installation of fire sprinklers in one and two family homes.

The International Code Council (ICC) included fire sprinkler requirements for new one- and two-family homes in the 2009 edition of the International Residential Code (IRC). The requirements went into effect on January 1, 2011.

Explanation

- The requirement for fire sprinklers in new homes was added to model codes in the United States in 2006 by the National Fire Protection Association (NFPA).
- The ICC's residential fire sprinkler seminar provides training on the requirements of the IRC for fire sprinkler systems in one- and two-family homes.
- Fire sprinkler systems help reduce fire and smoke damage, give residents more time to escape, and reduce the risk to firefighters.

R101.3 of the 2021 International Residential Code (IRC) establishes minimum requirements for the safety, health, and general welfare of the public. It also aims to protect life and property from fire and other hazards.

Purpose

- Ensure a reasonable level of safety, health, and general welfare
- Protect the public from fire and other hazards
- Ensure safety for firefighters and emergency responders

Requirements

- Structural strength
- Means of egress
- Stability
- Sanitation
- Light and ventilation
- Energy conservation
- Fire safety

R101.3 Purpose. The purpose of this code is to establish minimum requirements to provide a reasonable level of safety, health and general welfare through affordability, structural strength, means of egress, stability, sanitation, light and ventilation, energy conservation and safety to life and property from fire and other hazards and to provide a reasonable level of safety to fire fighters and emergency responders during emergency operations.

The code is intended to establish regulations providing for the safety, health and general welfare of building occupants, as well as for fire fighters and emergency responders during building emergencies. The intent becomes important in the applications of such sections as Sections R102, R104.11 and R113, as well as any enforcement-oriented interpretive action or judgement.

Like any code, the written text is subject to interpretation. Interpretations should not be affected by economics or the potential impact on any party. The only considerations should be the safety, health and welfare of occupants and emergency responders' safety.

R313.2 One- and two -family dwellings automatic fire sprinkler systems.

An automatic residential fire sprinkler system shall be installed in one- and two- family dwellings.

Exception: An automatic residential fire sprinkler system shall not be required for additions or alterations to existing buildings that are not already provided with an automatic residential sprinkler system.

R313.2.1 Design and installation.

An automatic residential fire sprinkler system shall be designed and installed in accordance with Section P2904 or NFPA 13D.

As Chief Building Official of the City of Glenwood Springs my responsibility is to establish that the homes that the citizens of the community reside are designed and constructed to be structurally stable with adequate means of egress, light and ventilation, and to provide a minimum acceptable level of protection to life and property from fire.

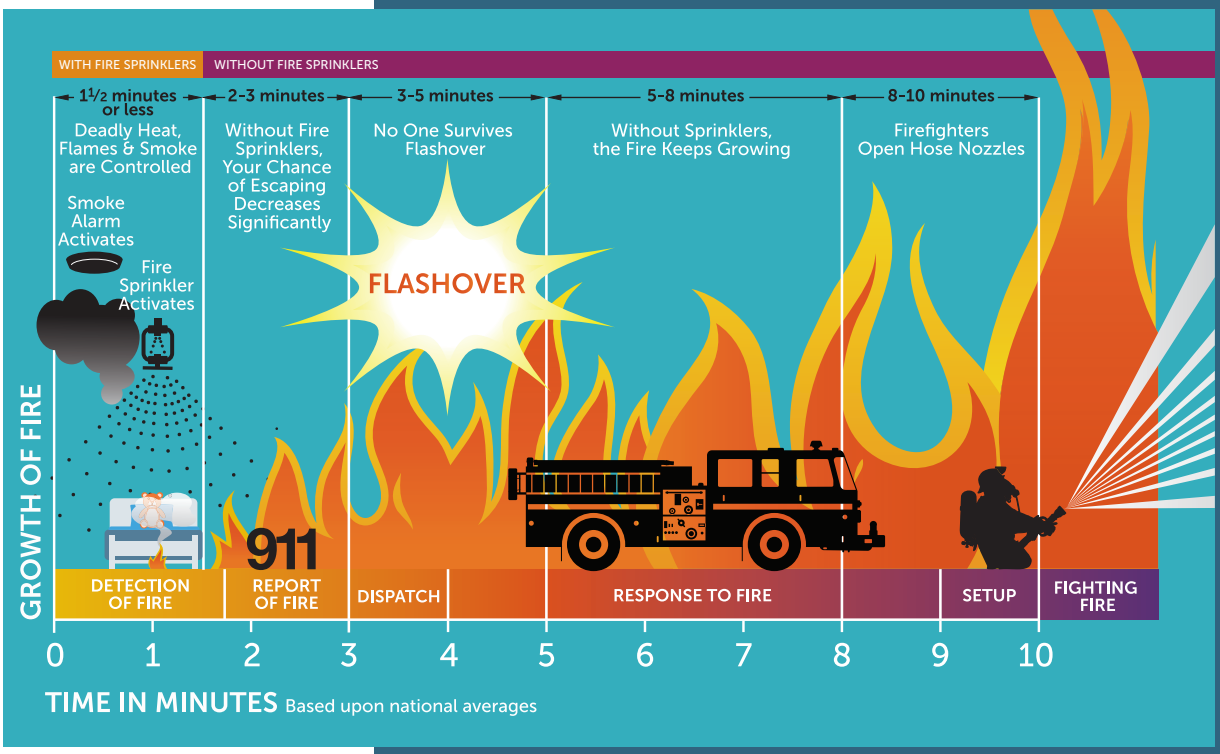
Sincerely,

Victor M Meraz
Chief Building Official

victor.meraz@cogs.us

HOME FIRE SPRINKLERS

FIRE IS FAST SPRINKLERS ARE FASTER



A home fire sprinkler can control a fire in 1.5 minutes or less.

Home fire sprinklers detect a fire and put water on it quickly, slowing the fire or even putting it out. That gives you and your family time to escape a fire safely.

With fire sprinklers

- Sprinkler closest to the fire activates.
- Water controls the fire, heat and smoke.
- Residents have time to safely escape.
- Damage is limited.

Without home fire sprinklers

- Flames keep growing.
- Flames, heat and gases spread.
- Flashover can occur. Everything catches fire.
- The fire becomes deadly.

LEARN MORE AT
HomeFireSprinkler.org

IF YOU PLAN TO BUILD OR BUY A HOME, ASK FOR FIRE SPRINKLERS

HOME FIRE SPRINKLER COALITION

HOME FIRE SPRINKLERS

PART OF FIRE SAFE COMMUNITIES

Home fire sprinklers provide superior protection for responders and residents, benefiting the entire community. Unrestricted fire growth is a safety hazard for firefighters and residents.

Installing sprinklers in new homes supports Community Risk Reduction.

Protect your community with home fire sprinklers

Unsprinklered new-home fire exposure puts responders at risk from fire, collapse, and health hazards. Each new home built without sprinklers makes the community less safe for all. By protecting new housing stock, existing resources can be directed at high-risk populations and existing unsprinklered structures.

Fire department resources are always scarce. By controlling the spread of fire, home fire sprinklers free up time that can be shifted to risk reduction programs such as smoke alarm distribution and fire safety education.

LEARN MORE AT
HomeFireSprinkler.org

IF YOU PLAN TO BUILD OR BUY A HOME, ASK FOR FIRE SPRINKLERS

HOME FIRE SPRINKLER COALITION

HOME FIRE SPRINKLERS

PROTECT WHAT YOU VALUE MOST

A home fire without sprinklers can become deadly in as little as two minutes. Not much time to safely escape.

Most home fire deaths happen at night, when people are sleeping.

Home fire sprinklers save lives

- Home fire sprinklers detect a fire and control it automatically.
- The sprinkler puts water on a fire while it is still small.
- That keeps heat, flames and poisonous smoke from spreading.

Without sprinklers

- Home fires burn hot and grow quickly.
- Two minutes isn't much time to escape.
- This is especially true for older adults, young children and people with disabilities.

LEARN MORE AT
HomeFireSprinkler.org

IF YOU PLAN TO BUILD OR BUY A HOME, ASK FOR FIRE SPRINKLERS

HOME FIRE SPRINKLER COALITION