



AGENDA
CITY OF GLENWOOD SPRINGS
Planning and Zoning Commission
Regular Meeting
JUNE 27, 2023
Council Chambers, First Floor
101 W. 8TH STREET
6:00 PM

- 1 Work Session 4:30PM
 - A. Strategic Housing Plan Update and Discussion
- 2 Regular Meeting Attendance Instructions 6:00 PM
 - A. This meeting is being held in person as well as via ZOOM.
Please click the link below to join the webinar:
<https://us02web.zoom.us/j/81323137261?pwd=TjJ4ZlJUZWRDNUIjOHQ1YWlPcU9aQT09>
Passcode: 177366
Or Telephone: Dial:
+1 719 359 4580 US
- 3 Roll Call
- 4 Conflicts of Interest
- 5 Receipt of the Minutes
 - A. May 23, 2023 Planning and Zoning Commission Meeting Minutes Draft
 - B. April 25, 2023 Planning and Zoning Commission Meeting Minutes Draft
- 6 Comments from citizens appearing for items not on the agenda
- 7 New Items
 - A. Strategic Housing Plan Update
 - B. Planning Item #27-23, Habitat for Humanity Administrative Site/Architectural Plan Review
 - C. Code Amendments to Title 070 regarding Child Care Uses (Continued to Next Meeting)
- 8 Commissioner Comments
- 9 Director Comments
- 10 Adjournment



MINUTES
CITY OF GLENWOOD SPRINGS
Planning and Zoning Commission
Regular Meeting
May 23, 2023
Council Chambers, First Floor
101 W. 8TH STREET 6:00 PM P&Z

1) Roll Call

Present: Commissioners: John Houghton, April Davey, Matthew Simms, George Shaver, Carolyn Cipperly, Gregory Cowan.

Also Present: Director of Community and Economic Development Hannah Klausman, Assistant City Attorney Richard Peterson-Kremer, Senior Planner Watkins Fulk-Gray.

Commissioner Shaver asked for a motion to seat alternates Commissioner Gregory Cowan and Commissioner John Houghton to the vacant seats. Commissioner Cipperly moved to seat the alternates and Commissioner Matt Simms seconded the motion.

- 2) Receipt of the Minutes:** Commissioner Shaver announced there was not a Quorum for members present at the last meeting to approve the minutes. He motioned we continue receipt of those minutes to our next regularly scheduled meeting. Commissioner Simms motioned to continue, and Commissioner Cipperly seconded the motion.

3) Comments from citizens appearing for items not on the agenda:

No public Comment

4) New Items

a. Planning File #01-23, Sign Variances for Walmart

Senior Planner Watkins Fulk-Gray presented information about five variances that Walmart is seeking for their proposed new signage. He explained some of the terminology and types of signs that will be used in the analysis and discussion. Walmart has several existing nonconformities with their signage. Seven total signs are requested. Watkins said that Staff recommends denial of all five action items. After explaining the Staff analysis, the P&Z's options, and code compliant alternatives, the P&Z asked the following questions:

- Clarification about what alternatives Walmart has for exposure from Highway 82. Watkins explained that they could request an off-premise sign.

Kevin Sturgeon, the representative for Walmart, discussed the existing signage, mentioning that a "Pickup" sign used to be on the building and was removed at some point. He offered Walmart's willingness to drop their request for the two variances related to the pole sign. He also offered to remove the "Outdoor" sign from their request, reducing the number of signs on the façade. Walmart has been rolling out a new brand for two or three years, and these requests are an attempt to update their signage to be consistent with their brand.

Questions and comments included:

- Clarifications about how the applicant's willingness to make changes to their requests affects the P&Z's options.
- Can the "Pickup" sign be considered a "directional sign" in terms of the Municipal Code? Watkins said that this would not be considered a directional sign.
- Why was the Pickup sign removed? The applicant guessed that it was removed for replacement, which was never accomplished.
- Watkins explained that if the applicant removed the "Outdoor" sign and modified the other signage, they could fall below the maximum sign area and not need a variance for maximum sign area.

Commissioner Cipperly motioned to approve Action Item #1, a variance to exceed the allowed number of signs, with the condition that the area of signage on the building facades will not exceed Code limits. Commissioner Cipperly proposed the following findings:

1. The subject property does have an exceptional topography;
2. The strict application of the code would produce hardship because the parking lot is huge and it is important for customers to use wayfinding signage on the building;
3. The applicant did not create the hardship because the signs had previously been allowed. It is unfortunate that the pickup sign went missing.
4. The variance does not harm the public and does not impair the intent or purposes of the Code;
5. The variance does demonstrate hardship not related to convenience or financial burden, because the store is representing several different departments and functions under the umbrella of one business;
6. The variance will not violate building or fire code requirements;
7. The variance is the minimum variance that will afford relief of the subject standards.

Commissioner Simms seconded the motion. Motion passes unanimously with a vote of 6-0.

Commissioner Cipperly motioned to deny Action Item #2, a variance to allow a wall sign that is not on a building frontage with the findings and conditions from the packet. Commissioner Simms seconded the motion. Motion passes unanimously with a vote of 6-0.

Commissioner Shaver noted that the applicant has withdrawn Action Items 3, 4, and 5.

b. Planning File #20-23, Variance to Glenwood Meadows Master Sign Plan

Senior Planner Watkins Fulk-Gray presented his analysis of the project. The request is to change a provision of the Glenwood Meadows Master Sign Plan, which is the governing document for signage in Glenwood Meadows. He explained some additional terminology that is necessary for the analysis of this request. Watkins stated that Staff recommends approval of the request.

Questions and comments included:

- What was the intent of having the return colors match the building colors? Watkins said he thinks it was about aesthetic colors.
- Will illumination come out the sides and cause visual pollution? Watkins said he is not aware of any problems with this issue.
- Why are there other signs not in compliance with this requirement? Why has the City not pursued remedying the nonconforming signs? Watkins said that some signs may have been issued sign permits incorrectly, although some signs do comply. Staff is obligated to follow the rules, and the applicant has stated they would like to change the rules.
- Do businesses have reasons to want to change this requirement?
- Do signs in the Meadows have to get sign permits? Yes.
- Are there any other entities in the Meadows that have to approve signs? The Meadows does have an internal process for approving plans.

Scott Goldammer, of Miller United, introduced himself as the applicant and owner's representative. The owners push businesses to have internally illuminated letters because of their visibility. Each business in the Meadows has a brand with very specific color requirements, and speculated that this provision may have been created by an architect thinking about the building itself. He believes the majority of the signs in the Meadows do not meet the letter return colors. National retailers are very particular about their signs and their brand, and for them to be visible with internal illumination.

Commissioner Simms motioned to approve the variance with the conditions and findings as written. Commissioner Cowan seconded the motion. Motion passes unanimously with a vote of 6-0.

c. Amendments to Title 070 of the Municipal Code related to site and building design standards and the variety of housing types.

Director Hannah Klausman presented Code Amendment proposals for Municipal Code Section 070.040.080 and 070.040.090 regarding requirements for housing type variety. Director Klausman explained that recent projects illustrated a mismatch between the requirements and project implementation which necessitated the code change. The code amendment included the following changes:

- The percentage that each housing type must be. Suggested 10% minimum percentage that the housing type must meet to qualify.
- Proposal of new housing variety type categories including multiple bedroom type configurations, Resident Occupancy Units, Deed Restricted for Affordability Units, and Live Work Units.

- Change the thresholds for applicability from parcel acreage to total number of units. Staff proposed unit count thresholds at 40 units, 80 units, and 120 units being required to provide two categories, three categories, and four categories respectively.
- The addition of housing variety requirements to the Nonresidential and Mixed-Use Site Design Code section where it currently is not required.

Director Klausman explained how the proposed code amendments met the criteria for approval which included consistency with the Comprehensive Plan and other City policies; compatible with other sections of code, addresses a demonstrated community need, is necessary to respond to substantial changes in conditions or policy, and is consistent with the general purpose of the code.

Commissioners discussed the following questions:

- Unit count thresholds;
- Category types for housing variety, including affordability levels;
- Intent of the variety per the Municipal code being aesthetic;
- Definitions of Live Work Units;
- Concern over the impact to the cost of construction.

Commissioner Cipperly motioned to recommend approval of the Code Amendments.

Commissioner Simms seconded the motion. Motion passes unanimously with a vote of 6-0.

5) Commissioner Comments

Commissioner Cipperly invited everyone to the ribbon cutting at the Cardiff Coke Ovens.

6) Director Comments

Director Hannah Klausman let everyone know very important applications will be coming up in June including the Strategic Housing Plan and further code changes. We also have a residential project for Habitat for Humanity in June.

7) Adjournment

Meeting adjourned at 8:55PM



MINUTES
CITY OF GLENWOOD SPRINGS
Planning and Zoning Commission
Regular Meeting
April 25, 2023
Council Chambers, First Floor
101 W. 8TH STREET 6:00 PM P&Z

1) Roll Call

Present: Commissioners Amy Connerton, Carolyn Cipperly, Peter Waller, Chair George Shaver, Amber Wissing, Joy White, April Davey, Gregory Cowan, Matthew Simms.

Also Present: Director of Community and Economic Development Hannah Klausman, Assistant City Attorney Richard Peterson-Kremer, Long Range Principal Planner Jim Hardcastle.

Commissioner Shaver motioned to seat alternate Commissioner April Davey to the vacant seat. Commissioner Waller seconded the motion.

- 2) Receipt of the Minutes:** January 24, 2023 Planning and Zoning Commission Minutes Draft
Commissioner Waller motioned to approve. Commissioner Connerton seconded the motion.
Motion passes Unanimously 6-0.

3) Comments from citizens appearing for items not on the agenda

No public Comment

4) New Items

a. Comprehensive Plan Update 2023 Brief to the Comprehensive Plan Update 2023

Principal Planner Jim Hardcastle presented the Comprehensive Plan Update 2023 Brief document and its intended uses. Mr. Hardcastle explained that the Brief document was a longer executive summary of the Comprehensive Plan and provides a user's guide to the larger document.

Commissioner comments included:

- Will the Comprehensive Plan Brief document be linked to the larger Plan document?
- Will there be a search function in the Brief document like what is used in the municipal code?
- Who wrote the Glenwood Character section of the Plan?
 - How was this section compiled?
 - Where will it be housed?

- Why is there a disconnect between actual page numbers and windowpane numbers when looking at the Plan?
- Item 4.5a regarding paid parking may not have been promoting pedestrian-friendly action. It sounds like a smaller action item.

Staff explained that the brief will not include clickable links to the Comprehensive Plan, only page number references. Staff collaborated to complete the Glenwood Character section of the Comprehensive Plan and was pulled from the originally approved plan dated March 16, 2023. It was accomplished by searching through the document in the narrative sections where staff then logged references to eleven different character value topics.

The approved Comprehensive Plan available online currently through the City's website is a "page" version PDF and does precisely align actual page numbers of the Plan to the windowpane numbers in the online viewer. The discrepancy arose through a different version we were all using during review of the draft document prior to approval known as "sheet" which doubled up pages in the pane.

Commissioner Waller motioned to approve. Commissioner White seconded the motion. Motion passes unanimously with a vote of 7-0.

b. Land Use and Quasi-Judicial Hearings Training

Assistant City Attorney Richard Peterson-Kremer presented Colorado Municipal League information on Quasi-Judicial and legislative proceedings at the Planning and Zoning Commission level.

Commissioner questions and comments included:

- Clarification on the difference between legislative and quasi-judicial proceedings and how to interact with the information.
- Clarification on the ability to attend other public engagement activities.
- What to do when receiving a public notification to their property on an item, and whether, if recusal is necessary whether representing as a member of the public is allowed.
- Suggestion of adding Conflicts of Interest to the agenda as a reminder to disclose any necessary information.

c. Housing Update

Director Hannah Klausman gave a presentation on the City's housing policies and programmatic data on affordable housing development. Director Klausman provided the following data:

- Voluntary Deed Restriction Program Units
- Inclusionary Housing Units
- Vacation Rental Permits
- Information on housing policies implemented by the City since 2018 including accessory dwelling unit code updates, and Parking standard updates.

5) Commissioner Comments

A suggestion that Dark Sky regulations be reviewed for incorporation.

Commissioners asked to see any new Traffic Studies that have come out with the City.

Comments about street lights on Midland being too bright.

6) Director Comments

Director Klausman thanked Mitchell Weimer for his service on the Planning and Zoning Commission and congratulated him on his election to City Council.

Mrs. Klausman outlined applications for the next meeting including possibly the Strategic Housing Plan update and Sign variances.

7) Adjournment

Meeting adjourned at 8:05PM

DRAFT

To: Planning and Zoning Commission
From: Watkins Fulk-Gray, Senior Planner
Date: June 27, 2023
RE: Strategic Housing Plan Update

Background and purpose:

The City's current Strategic Housing Plan was released in 2010. It is a long-range planning document that discusses the type of housing needs in Glenwood Springs, the jobs/housing relationship, housing goals, priority strategies, targets for the creation of new affordable housing, and notes on implementation of strategies. Staff believes that many of the strategies and principles in this plan are still valid and important, but that it is also time for an update to this plan.

In 2022 the City was awarded a State grant to fund the majority of an update to the City's Strategic Housing Plan. In addition to a plan with topics similar to the 2010 plan, the City elected to additionally commission a Needs Assessment, which includes valuable data about housing shortfalls, as well data about second homes and short-term rentals. In exchange for funding for the Strategic Housing Plan Update, the State requires that the City adopt or make a good faith effort to adopt at least one strategy from a list of approved strategies after the completion of the plan update. These strategies for possible adoption include:

1. Use of vacant publicly-owned property for affordable housing development
2. Subsidize/reduce local government fees
3. Expedited development review for affordable housing up to 120% AMI
4. Expedited development review for acquiring or repurposing underutilized commercial property
5. Density bonus program for housing needs
6. Promote sub metering utility charges for affordable housing
7. Dedicated funding source to subsidize affordable housing infrastructure costs and fees
8. Middle multifamily (duplex, triplex, other) use by right in single family residential zoning districts
9. Affordable housing as a use by right in residential zoning districts
10. ADU use by right in single family zoning districts
11. Allow planned unit developments (PUDs) with integrated affordable housing units
12. Allow small square footage residential unit sizes
13. Lessened minimum parking requirements for new affordable housing
14. Land donation/acquisition/banking program
15. Inclusionary zoning ordinance
16. Other novel, innovative, creative approaches

In the City's grant application to the State, we selected four of these strategies that we planned to pursue: use of vacant publicly-owned property for affordable housing development, establishment of a density bonus program, the creation of a funding source to subsidize infrastructure costs and associated fees

related to publicly owned water, sanitary sewer, storm sewers, and roadways infrastructure; and creation of a land donation, land acquisition, or land banking program. It is not required that the City adopt the specific strategies stated in the application; the strategies that are recommended for adoption are discussed in the next section.

The plan's chapters are: the introduction, description of numerous policy tools and funding sources, the needs assessment, a summary of public engagement, and the recommendation and implementation section.

Key discussion points:

The Needs Assessment portion of the draft plan identifies three goals, which are 1) reducing the number of cost burdened households in the city, 2) providing housing to fill job openings in our city, and 3) increasing the share of the workforce housed in Glenwood. Each of these three goals in the plan will have a "target," which can be adjusted according to the City's priorities. The target is tied to a mathematical formula that gives the needed number of new affordable units for the goal. These three goals and their targets are discussed in more detail below (#1-3). The next four discussion points (#4-7) are pulled from the Recommendation and Implementation section because they need greater discussion than other recommendations.

Key discussion points for the P&Z should include:

1. **Reducing the number of cost burdened households by 50%.** The goal of reducing the number of cost burdened households is related to helping individuals and families financially, which can have positive effects on families' mental health, physical health, housing stability, result in less need for public assistance, reduce the severity of financial emergencies, and result in better educational outcomes for kids. There are approximately 762 cost burdened households between 30% and 150% AMI. Providing affordable housing for all cost burdened households in Glenwood is not feasible, so the recommended strategy is to create affordable housing units for a percentage of the cost burdened households.

Questions for P&Z: The draft plan sets a 50% reduction in cost burdened households as the target, meaning providing housing affordable for 381 of these households that are cost burdened. Is 50% a reasonable target? Is the goal of reducing the number of cost burdened households of greater relative importance than the following two goals?

2. **Provide housing sufficient to fill 100% of the unfilled jobs.** Economic development is the implication of this goal. Businesses need to be fully staffed to operate at full capacity. Furthermore, businesses operating at less than full capacity can interfere with residents' daily errands, entertainment choices, and the effectiveness of important community institutions such as schools and the hospital.

Questions for P&Z: The consultant team set 100% as the housing target for unfilled jobs, equating to a need for 419 housing units. Should 100% be adjusted downward in favor of more aggressive targets for reducing cost burdened households or an increase in locally-housed workforce?

3. **Increase the share of the workforce housed in the City from 22% to 30%.** This goal is related to a reduction in traffic, greenhouse gas emissions, and other quality of life indicators. Providing

housing for a larger share of the local workforce means fewer workers will commute to their jobs from out of the city, potentially relieving the strain on the major downvalley-upvalley transportation routes.

Questions for P&Z: At the target of increasing the share of locally-housed workers by 8%, this equals the creation of approximately 546 new housing units. Is an 8% in-commuting reduction a reasonable target?

4. **For vacant City-owned parcels, identify those that are the highest near-term priority for housing development, and those that represent a long-term land reserve for affordable housing.** The City owns approximately eight parcels that are potentially suitable for housing. These could be developed in a variety of ways using the tools discussed in the Plan.

Questions for P&Z: Is it appropriate to identify specific parcels as an element of this Plan? Being specific may move the City along in its goal of producing more affordable housing. However, each parcel will have unique constraints and development potential, and while a recommendation would not have to dive deep into this analysis, the details about a site's constraints sometimes are very important. Staff recommends the Vogelaar Park parcel as the first priority.

5. **Prioritize preservation policy tools for near-term implementation.** In choosing a course of action, much depends on the available funding. The Workforce Housing Fund Advisory Board is estimated to bring in \$1.2 to \$1.5 million per year, so more funding sources will likely need to be leveraged with it.

Questions for P&Z: What preservation policy tools should be prioritized? Staff believes that mobile home preservation and the use of City-owned property should be at the top of the list for priorities.

6. **Update the zoning code's provisions for a density bonus.** The Municipal Code already allows a density bonus for developments creating one or more residential dwelling units deed restricted for resident occupied community housing. However, the City has not yet had any developer take advantage of this provision. Staff believes that clearer parameters for what the density bonus offers will help this opportunity gain traction. Modifications to the density bonus incentive are also a clear opportunity for the City to work to fulfill its State-mandated code update after the adoption of this Plan update.

Questions for P&Z: Some parameters to consider including in a future code change could include the affordability required to receive a density bonus, the number of bonus units possible, dimensional considerations for projects with density bonuses, and if parking may be reduced commensurate with number of bonus units. Are any of these appropriate for a code update? Are there other modifications to density bonus parameters the City should consider?

7. **Update the zoning code to enable up to three units on lots currently zoned for single-unit housing.** Currently, multifamily dwellings (three or more units) are allowed in the RM2, RH, and RT zones. The RR, RL, and RM1 zones are residential zone districts that do not allow triplexes or other forms of multifamily housing. Duplexes are currently allowed by right in the RM 2, RH, and RT zones, allowed by special use permit in the RL and RM1 zones, and not allowed in RR.

Questions for P&Z: Should the Municipal Code to be updated to allow triplexes in more of the city? If not triplexes, should duplexes be allowed in more of the city?

8. **Additional comments, considerations, and ideas.** Staff would like feedback in general on this Plan and how it can become a useful and actionable Plan.

Staff recommendations:

Staff believes that the policy tools and funding mechanism discussion is a thorough description of tools the City has or could have at its disposal to increase the supply of affordable housing. No substantive changes to the policy tools are recommended. The targets listed in the discussion points section along with the recommendations section of the plan should be discussed and modified pursuant to the priorities relative to one another.

The State grant requires that the City make a good faith effort to adopt new strategies from their “innovative solutions” strategy list for creating more affordable housing. While Glenwood Springs already has put in practice many of their qualifying strategies, Staff believes that at least two should be considered for code changes: a density bonus program and making middle multifamily (duplexes and triplexes) a use by right in what are currently single-family residential zone districts. These two potential changes are discussed above in discussion points #6 and #7.

Next steps:

Staff recommends the Planning & Zoning Commission recommend approval of the Strategic Housing Plan Update to City Council with modifications as necessary.

After the eventual adoption of the Plan, the City should begin consideration of drafting changes to the Municipal Code.

Draft Report

Strategic Housing Plan Update

The Economics of Land Use



Prepared for:
City of Glenwood Springs

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June 15, 2023

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1. Introduction

In 2022, the City of Glenwood Springs partnered with Economic & Planning Systems and RRC Associates to provide an update to the 2010 Strategic Housing Plan. Over the past decade, Glenwood Springs and the greater Roaring Fork Valley region have faced major housing market pressure, owing to an expanding economy, increasing levels of tourism and visitation, and a growing interest in local real estate from people outside of the region. As a result, housing has become increasingly unaffordable for local residents and especially the local workforce, presenting significant challenges for Glenwood Springs. A lack of affordable housing negatively affects the local economy, making workforce recruitment and retention harder and straining the ability of businesses to operate at full capacity. A lack of affordable housing and rising housing costs also leads to greater housing instability for residents, increasing the risk of displacement and undermining community health. Housing stability and affordability are critical goals for the immediate and long-term prosperity of Glenwood Springs, and the City is actively invested in seeking out solutions that advance these goals.

Throughout this effort, the consultant team, in partnership with City staff, have worked to create a detailed analysis of policy strategies that will both drive the development of affordable housing and preserve existing affordable housing. This Strategic Plan Update addresses four main housing policy areas, including:

- Use of vacant land for housing and public-private partnerships;
- Establishment of policies to preserve existing housing;
- Fine-tuning of density bonus program;
- Creation of dedicated funding sources for affordable housing;

The intention of this plan is to analyze these policy areas in detail and to deliver actionable recommendations on how the City can best implement these policies.

In addition, this plan includes a housing needs assessment that documents total housing need in Glenwood Springs. The needs assessment is intended to illustrate current housing conditions and to guide and inform future policy efforts. While a 2005 needs assessment and a 2019 regional housing study documented local housing needs, this needs assessment presents an updated methodology and accounts for current housing conditions.

This plan involved extensive public engagement efforts, including a public open house and work sessions with the City's Housing Commission, Planning and Zoning Commission, and City Council. These public engagement efforts have been critical to the direction of the project and are documented in detail in their own chapter.

Previous Strategic Plan

In 2010, the City of Glenwood Springs, together with a consultant team, prepared a Strategic Housing Plan to guide future housing policy efforts. This plan was intended to implement the recommendations from the 2005 Housing Needs Assessment. This Strategic Housing Plan put forward key housing goals and objectives as well as seven priority strategies. These strategies include:

- Public/Private Development on City Land
- Rehabilitation and Weatherization
- Commercial Linkage
- Housing Funding Strategies
- Inclusionary Housing Amendments
- Development Incentives
- Annexation Policies

This Strategic Plan Update builds on and expands the initial Strategic Plan effort. This Update provides a more detailed analysis of housing policy tools as well as a housing needs assessment. Recognizing that the housing affordability and policy environment has changed since 2010 and although the recommendations in the 2010 plan remain applicable, this Strategic Plan Update provides the City with a clear set of policy actions that can effect change in the current context.

It is also important to note the actions that the City of Glenwood Springs has taken on housing affordability over the past several years. Since 2019, the City has:

- Implemented short-term rental program changes, including overall caps, setback requirements between short-term rentals, reinstating Building Department Inspections, and increasing fees to cover staff time on managing the vacation rental program;
- Established inclusionary zoning requirements for a percentage of larger housing developments to restrict maximum rents and sales price to 100 percent of area median income and for units to be resident occupied;
- Made changes to the regulations for Accessory Dwelling Units that make adding an ADU within the exiting footprint of a building easier in addition to changing other dimensional standards to make ADUs easier to permit;
- Approved two City-owned parcels for affordable housing development with Habitat for Humanity Roaring Fork;
- Enacted code changes that facilitate the conversion of motels/hotels to housing;
- Passed a 2.5% increase in local lodging tax, the revenue of which will be allocated to various programs and projects that support affordable housing.

This Strategic Plan Update expands on these efforts and gives policymakers critical information and recommendations to further advance policies and programs to advance affordable housing in Glenwood Springs.

2. Policy Tools

Central to this strategic plan update is an evaluation of policy tools that the City can use to advance housing affordability in Glenwood Springs. This chapter provides an analysis of four key policy tools that would be used to expand and/or preserve affordable housing in Glenwood Springs. These include the use of vacant land for housing, preservation, funding sources, and a density bonus. The analysis incorporated best policy practices from around the state on how these policy tools could be implemented in Glenwood Springs.

Use of Vacant Land for Housing

This outlines a process for the City to structure public-private partnerships for housing development on City-owned land. The memorandum discusses key components of such a process, including defining the development opportunity, establishing evaluation criteria, and evaluating sale or lease models. In addition, an inventory and analysis of City-owned parcels best suited for development is provided, to frame the immediate opportunities.

Development Process

City-owned land is a key asset for accommodating future housing development, especially affordable housing. With high land costs and a relatively limited amount of developable land in Glenwood Springs, City-owned parcels represent an important opportunity for the City to help create new housing and expand affordable housing options. In addition, the City can seek to establish P3s for redevelopment on privately held sites. Certain privately held properties may be suitable for housing development, and the City can work with the owners of these properties directly to set the terms for redevelopment.

A list of potential parcels will be shown later in this section. It is recommended that the City identify and prioritize two to four parcels that are most suited for housing development and that will be the soonest to enter the RFP process. Once identified, the City should pursue the development of housing on these parcels.

Establishing a formalized process is a critical step towards utilizing City-owned land for new housing development. In order to attract housing development to these parcels, the City needs to form a partnership with a developer, drawing up terms that address the needs of each. The public private partnership (P3) works best when both parties can achieve the needed returns to justify the investment. For the private side, this takes the form of financial returns. For the public side, it typically represents advancing community goals, which in this case surround expanding the affordable housing inventory.

The initial step is to seek out and select a developer. This is best accomplished through a formalized, structured Request For Proposal (RFP) process, in which the City issues an RFP outlining project details and evaluation criteria. To achieve the greatest level of clarity, it is best practice to issue one RFP per project.

Implementing this policy tool will help the City achieve the following goals:

- Expanding avenues for affordable housing development by leveraging City-owned land.
- Building buy-in and support from elected officials and community members.
- Creating clarity and transparency for prospective developers, making housing development on City-owned parcels attractive.

When seeking out a development partner, the City should include key project elements in its request for proposals. This creates transparency and sets expectations for both potential developers and for City staff and elected officials.

Key project elements include:

- A range of units desired for the project
- Desired project density
- Desired development type(s) (i.e., townhomes, apartments, single family homes)
- Preferred mixture of for-sale or for-rent units
- Indication of whether the land will be sold or leased, and at what price
- Desired community benefits and/or amenities to be provided
- Type and degree of affordability restrictions required by the City
- Timeline for development

Evaluation Criteria

Effectively screening and selecting a development proposal requires establishing a clear and predictable set of criteria. The criteria below represent the most important considerations for a potential project, although City staff should be able to tailor a narrower set of evaluation standards for any specific project. Based on the attributes of a prospective project, City staff can apply specific weighting to each criterion that reflects the priorities of the City and the opportunities and constraints of a given site. Those in charge of selection may request more information and meet with the proposer as necessary.

Affordability

As this process is aimed at expanding the availability of affordable housing in Glenwood Springs, a key consideration for selecting a developer is the affordability that a project proposes to deliver. Ideally, the affordable units delivered by a proposed project needs to exceed the affordability prescribed by the existing inclusionary housing ordinance in Glenwood Springs, which requires

that 20 percent of rental units in residential projects with 10 or more units are affordable at an average of 100 percent of area median income.

To the extent that the City will commit additional funds, it can stipulate greater affordability. For some sites, it may seek a goal for 100 percent of the units to be sold/leased as affordable. As available, the City can provide the funds to cover the corresponding funding gap and increase the effectiveness of any given site to expanding the affordable housing supply.

The affordability of non-market rate, or deed restricted housing units is typically linked to area median income, or AMI, which is a measure of how much income households earn in a given area. Affordable units in a development are classified according to AMI level. For example, units at 80 percent AMI are required to charge a rental rate equivalent to 30 percent of the monthly income for a household that earns 80 percent of the area median income. Correspondingly, lower AMI levels charge lower rents. As a result, it is more financially challenging for a developer to build units at lower levels of AMI, and achieving these lower AMI levels in residential development often requires additional incentives.

An additional consideration is the extent to which the project provides affordable units in a variety of sizes, including 2- and 3-bedroom units. Larger units typically better serve families and residents looking to live with roommates in order to save on housing costs, which are two important areas of housing need.

A project should seek to:

- a. Deliver a significant number of affordable, deed-restricted units.
- b. Price the units at relatively deep levels of affordability, based on the funding available, recognizing the importance of lower AMI units.
- c. Provide units with a variety of bedroom types, including larger 2- and 3-bedroom units.

Financial Feasibility

For a parcel of land to attract housing development interest, the development must be financially feasible for a prospective developer. A proposed project should credibly demonstrate financial viability without the need for additional subsidy from public sources. A goal of this process is to seek development that balances financial feasibility with affordability. A project should:

- a. Provide evidence that the project is supportable in the market and is financially feasible with a reasonable but not excessive return on investment to the development entity. The return should align with industry standards.
- b. Minimize commitment of City financial resources and investment risk.
- c. In some cases, P3 development can create a recurring source of revenue for the City. If this can be achieved on a given site, the City should pursue this opportunity and channel these funds into future affordable housing projects.

That said, if the City prioritizes the percentage of units to be set aside as affordable and/or a pursuit of lower AMI levels, there may not be surplus revenue for the City to realize.

Community Benefits

An additional consideration for a proposed development is the provision of community benefits. While subject to the location and development constraints of a parcel, these benefits could include:

- a. Improvements to infrastructure in the public realm.
- b. High-quality green space or public space.
- c. Ground floor retail or community space, for sites near or within the urban fabric.

Development Team Experience

The qualifications and experience of the development team is another important selection factor. The developer should:

- a. Provide evidence of the developer's previous experience and financial capability to complete the project.
- b. Provide evidence of the development team's experience and technical capability to complete the project.
- c. Provide evidence of previous experience with Joint Development projects and/or experience working with public entities.

Models of Development

In formulating an effective RFP process for housing development on City-owned land, a key consideration is whether the City wants to sell or lease the property that will be developed. The sale model and the lease model each have particular advantages, disadvantages, and tradeoffs. The decision to sell or lease a parcel depends largely on the goals and priorities of the City in utilizing its land holdings for housing development. Considerations around attractiveness to developers, revenue generation, control of land, long-term enforcement of affordability restrictions, and capacity to manage land are particularly relevant to pursuing a sale or lease model. The following section provides an overview of each model, along with common advantages and disadvantages for each.

Sale Model

One model of utilizing vacant parcels for housing development is for the City to directly sell the property to a developer. For the sale model to work effectively, the City must establish restrictions for the development of the parcel related to the level of affordability and other project requirements that the City and the developer can agree upon. These function as binding requirements for the developer to follow in exchange for being sold the land. For the parcel to remain attractive for development, the agreed upon sale price would have to be lower than if sold outright without development restrictions. While the exact sale price would vary by parcel and circumstance, it would likely need to be below market value, reflecting the impact of the affordability component and other requirements.

Such a sale could be done such that the City would receive the purchase price as an interest-bearing long term revenue stream. The agreed upon sales price would be paid as an annuity paying the purchase price over an extended period of time, including interest.

There are a number of advantages for a landowner to enter into sale instead of leasing the property. These are:

- A sale is typically more attractive to prospective developers, as ownership of the land increases the long-term value of the property for the development, and positions the developer to receive more favorable financing terms from lenders.
- The City could generate revenue from the sale.
- The City would no longer be responsible for managing and maintaining the land, freeing it from using additional staff capacity or City resources.

There are, however, potential disadvantages to a landowner in a sale transaction. These are:

- The City would not retain ownership of the property and as a result would not have direct control over the property. Its ability to exert control over the property's uses would depend on how effectively it can enforce deed restrictions. The City would also lose its ability to exert control over a project's timeline.
- The City would have no opportunity to generate future revenues beyond the terms of the sale.
- The intended use of the property could change over the long term if the owner decides to redevelop or sell the property.

Lease Model

A ground lease (or land lease) involves the leasing of ground to a developer or builder who then has the right to develop and use the land for the duration of the lease. During the term of the lease, the tenant owns any improvements made to the property including any buildings it constructs. Ground leases tend to have longer terms, typically 50 years or more, and often up to 99 years with options, in order to allow the developer to obtain financing and to have the ability to utilize the land for its purposes over the useful life of the project. All expenses related to the property are the obligation of the leaseholder (e.g., taxes, repair and maintenance expenses, insurance costs, and financing costs).

Land leases are most common with commercial properties but there are some applications where they are used for residential development. This includes some mobile home parks, multifamily housing on public agency lands (such as joint development of transit station properties and where the sale of land is restricted), as well as when the land ownership is being held to facilitate the development of

affordable housing, which is potentially applicable here. There are a number of advantages for a landowner to enter into a ground lease instead of selling the property outright. These are:

- The landowner retains ownership of the property. This is an important consideration for the City, who has an interest in maintaining long-term ownership in order to ensure that the property has a socially and economically productive use over the long term.
- A landowner retains greater control over the type of development and permitted uses of the land that is leased. Many ground leases require a tenant to develop, construct and operate a specific type of project and not change the nature of the project without the landlord's prior approval. The landlord has more control over the deed restrictions on the land, which can be particularly important when reviewing transactions for future buyers of condominium-ized units that are developed and initially sold with affordability covenants.
- The total revenues from a ground lease (in nominal dollars) are usually higher over the term of the lease than if the property were sold upfront fee simple.

There are, however, potential disadvantages to a landowner in a ground lease transaction. These are:

- If a landowner permits its fee interest in the land to be security for the tenant's financing (a subordinated ground lease, which will almost certainly be the case), the landlord runs the risk of losing its property through foreclosure if the developer defaults under its financing and the lender will insist on having great flexibility as to uses.
- If a landowner does not include sufficient controls in the ground lease document, a landowner may have little or no control over the development and use of the land.
- The City may have limited capacity to manage the land as the long-term landlord.

Incentives

Typically, discounted land value is sufficient to generate interest from developers. However, given current market conditions in Glenwood Springs, high construction costs, and a persistent shortage of construction labor, additional incentives may be needed to encourage developers to seek out housing development opportunities on these sites. In addition, the affordability requirements that would likely be associated with development on City-owned sites and the corresponding limitations to future development revenues may further necessitate additional incentives. Providing additional incentives to developers could also be a way for the City to drive deeper levels of affordability in new projects that would otherwise not be feasible to achieve.

Land Inventory

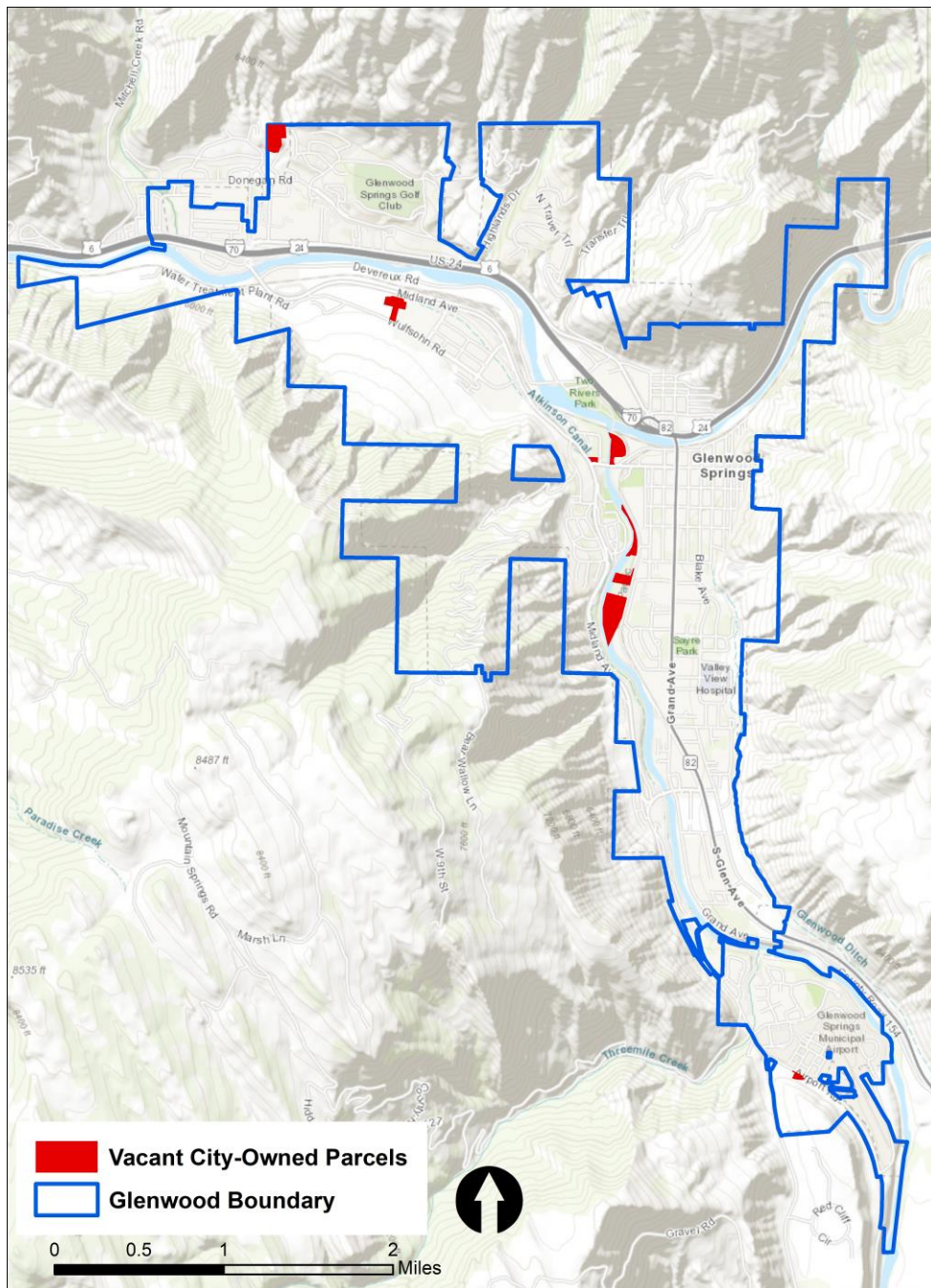
Currently, the City of Glenwood Springs owns nine parcels that can accommodate housing development. A summary of each parcel is shown below in **Table 1** and a map of each parcel is shown in **Figure 1**. The parcels vary in terms of size and context. In total, the inventory could accommodate 215 to 340 units of new housing. The parcels are located throughout Glenwood Springs, with a few located in the northwestern part of the City, a few located in the central part of the City along the Roaring Fork river, and one parcel located in the southern part of the City. Each parcel has particular constraints related to size, environmental barriers, and zoning. A key consideration for prioritizing parcels for housing development is location. In particular, the proximity of a parcel to transit is critical for connecting future residents to public transportation options and for limiting the potential traffic impacts of new housing development.

Table 1. Vacant City-Owned Parcels, Glenwood Springs

Name	Acres	Unit Potential	Zoning	Public Vote?
8th and Midland	0.40	5 to 10	RH- High Density	No
Iddings Property	0.80	15 to 20	RH- High Density	No
West Glenwood Estates	5.75	10 to 20	HP- Hillside	Yes
Glenwood Meadows Tract I	3.90	10 to 30	HP- Hillside	Yes
Confluence	3.80	50 to 75	LI- Light Industrial	No
Ballard Property	1.20	15 to 25	CO- Commercial	No
Raymond Property	2.96	20 to 30	RM1- Medium Density	No
Lone Pine Property	<u>10.00</u>	<u>70 to 100</u>	RM1- Medium Density	No
Total	29	295 to 310		

Source: City of Glenwood Springs; Economic & Planning Systems

Figure 1. Vacant, City-Owned Parcels, Glenwood Springs



Preservation Policies

This section describes policy approaches aimed at the preservation of housing stock in Glenwood Springs. This includes a discussion of key policy tools, the factors involved in establishing them, and ways to increase their effectiveness.

Role of Preservation

While the other policy tools presented in this strategic housing plan are intended to create new affordable housing, the tools described here are aimed at the preservation of existing housing stock. With rising home prices and rents, Glenwood Springs residents, and especially middle- and low-income residents, are vulnerable to market pressures and displacement. Preserving existing housing units and ensuring long-term affordability of these units is essential to improving housing stability and supporting the ability of residents to stay in Glenwood Springs. Moreover, preservation is an effective way to increase housing stability while investing fewer resources than is required by new development. The discussion around preservation is framed around the following questions:

- What are the most effective policy tools for preservation?
- How can the City best apply its resources to preserve existing housing stock?
- What groups or organizations can the City partner with to strengthen preservation efforts?
- What housing stock does the City want to prioritize in its preservation efforts?
Key housing types include:
 - Rental housing
 - Owner housing
 - Mobile homes
 - Hotel/Motel conversions
- What areas or neighborhoods, if any, are the highest priority for preservation?

Community Land Trusts

This section is organized around community land trusts and tools that are particularly relevant for mobile home park preservation. It then moves to a discussion on other preservation policy tools, including rental assistance, an apartment acquisition fund, rental rehab, hotel/motel acquisition and conversions, a home repair loan program, and property tax abatements.

A community land trust (CLT) is a model of land stewardship intended to ensure community control of land and long-term housing affordability. A CLT functions by acquiring and maintaining permanent ownership of land. With its land holdings,

CLTs develop product and 'go vertical' on the land they have acquired, by separating the ownership of land from the ownership of the home by selling the home itself to the buyer, but leasing the land beneath the home, often through a long-term (99-year lease is common) renewable lease. This approach keeps land under the permanent control of the CLT, which removes the land from the speculative market and ensures long-term affordability and a long-term use consistent with the mission of the CLT.

The CLT model creates several important benefits for housing affordability. By removing the cost of land from the price of a home, homes sold by a CLT are often sold at a below-market price that is more affordable to low- and middle-income households who would otherwise struggle to find housing options. As a result, prospective buyers of homes in a CLT are often income qualified. In addition, CLTs place deed restrictions on the future sale price of a home, preserving long-term affordability for future generations and insulating a home from excessive market inflation or speculation. While deed restrictions on appreciation limit the amount of equity homeowners can generate, this model expands access to the housing market, especially home ownership, to households that would otherwise be excluded from it. The CLT model is generally regarded as a more effective method of maintaining affordability, as lenders require the landowner to be engaged with any future transaction, and thus, the CLT is directly involved and can qualify prospective owners based on asset and income limits.

Establishing Land Holdings

A critical aspect of forming and running an effective CLT is establishing land holdings. Without land holdings, a CLT is limited in the impact it can make on creating and preserving affordable housing. The process of a CLT acquiring land is centered around a few key considerations:

- a) Generating funding for land acquisition.
- b) Establishing a decision-making process and criteria for acquiring land (deploying funds).
- c) Retaining (or contracting for) staff that can nimbly move in markets at the pace of traditional commercial brokers
- d) Locating and acquiring suitable parcels available at a low cost.

Given the financial constraints associated with forming and operating a CLT, low-cost land acquisition enable CLT's to be the most effective. Several possible avenues exist for a CLT in Glenwood Springs to create and grow land holdings, including:

- **Municipally-owned land:** The City could partner with a CLT to donate municipally-owned parcels, or sell them at a below-market cost, with the stipulation that the land is used for the desired purpose of affordable housing development. The City owns several parcels that are potentially suitable for a land trust. Prior to any transactions, it would need to prioritize particular

parcels for CLT ownership and optimal development programs, following its process for land disposition.

- **Land from private citizens or nonprofits** – A CLT could work with philanthropically-minded landowners, nonprofits, or foundations to acquire land at a low cost. As CLTs are mission-driven nonprofits, they are well-positioned to receive land donations to further their goals of expanding and preserving affordable housing.
- **Land from other public entities** – Other public entities, including the school district, state or federal agencies, could partner with a CLT to provide land for affordable housing. However, there is a relatively limited amount of such land in Glenwood Springs and public agencies often have approval processes as well as financial motivations, which make providing land to CLTs at a low cost challenging.

CLT Formation and Governance

The most common way CLTs are organized is as a nonprofit organization. Nonprofit CLTs are governed by a board, which typically consists of a combination of community members, residents of CLT properties, and people involved in the housing field. The composition of the board and the decision-making processes implemented by CLTs vary, with some CLTs opting for a greater degree of grassroots community control through giving CLT residents more board representation, while other CLTs do not emphasize direct resident or community participation in governance.

In Glenwood Springs, a nonprofit organization would likely form and run a CLT. Alternatively, an existing CLT could expand its work to Glenwood Springs, ideally with local support. There is, for example, a CLT with a capability of serving at a statewide level and is currently serving multiple municipalities on the Front Range. It is currently unclear what organization would take on forming and running a CLT, and the City should engage with various groups in the community to gauge possible interest and capacity.

Management of a CLT

A CLT must be operated and managed, which requires full-time staff. This means that a CLT has to be able to find qualified staff and secure funding for staffing needs as well as other ongoing operational needs. Funding for these needs can come from several sources, including grants from local governments and grants from foundations and nonprofits. Most CLTs also charge a small monthly land rent on homeowners as part of the land lease agreement, which can generate additional funding for operations.

Deed Restrictions

Following their mission of long-term housing affordability, CLTs set deed restrictions on the homes that they sell as part of the land lease agreement. When a homeowner purchases a home in a CLT, the owner agrees to sell the home at a restricted price, which typically follows a set resale and appreciation formula. The purpose of this is to preserve long-term affordability and ensure that the home is affordable to a future low- or middle-income buyer. In addition, a CLT typically sets resale terms that require a home to be sold to an income-qualified buyer. CLTs can establish additional deed restrictions on homes, including deed restrictions that require local employment, or that require primary residency. In setting deed restrictions, a CLT has to balance long-term affordability with the ability of homeowners to build wealth. The level of deed restrictions also depends on the extent to which a CLT receives public investment or subsidy, with greater public investment typically warranting deeper affordability requirements and more restrictive deed restrictions.

The formation of a CLT will have many benefits, both in the short-term—related acquisition and production, and in the long-term—related to effective management. A CLT can be utilized for a range of activities. Examples are provided in the following sections.

Mobile Home Park Preservation

Currently, there are seven mobile home parks with a total of 246 units in Glenwood Springs. Mobile homes are a form of naturally occurring affordable housing, as they are available at a lower cost than traditional homes and typically serve as housing for lower-income residents. This position in the housing market also makes mobile home residents particularly vulnerable to displacement. Typically, mobile homes are located in mobile home parks in which residents own their individual mobile homes, but do not own the land beneath the mobile home. The park itself is most commonly owned by a landlord who maintains the park and collects lot rent from each individual mobile home resident.

Mobile home residents are especially vulnerable to displacement pressures. As land is increasingly valuable in Colorado communities such as Glenwood Springs, mobile home parks are often considered by speculative developers and are sometimes sold and redeveloped into another use, resulting in the displacement of residents. More commonly, landlords will raise lot rents to establish better land sale values and sell the mobile home park to a new landlord that, in turn, raises lot rents to prove out the investment metrics, creating additional economic strain for residents and pushing many out. Mobile homes, despite their name, are expensive and cumbersome to move to another location, further compounding the economic strain on residents and further limiting the options residents have when faced with redevelopment or increasing lot rents.

As a key source of naturally occurring affordable housing, mobile homes are an important element of housing preservation strategy. With recent State legislation that has expanded policy tools for mobile home park preservation, the City can apply both its own policy tools and can promote and utilize State policy tools to support mobile home park preservation and improve housing stability for residents. This section provides an overview of the different policy approaches for mobile home park preservation.

Summary of Recent Legislation

In 2020 and in 2022, the Colorado State Legislature passed laws that significantly expand protections for mobile home park residents and that expand opportunities for residents to purchase their park, as well as a law that provides State funding for mobile home park preservation. Key provisions of the legislation include:

- Mobile home park owners must inform residents of their intent to sell a park or change the use of the land. Written notice must be delivered to park residents within 14 days of showing intent to sell.
- If an owner intends to sell a mobile home park, park residents have 120 days to make an offer to purchase the mobile home park and arrange financing before the owner can close on a sale. Previously, residents were not guaranteed any amount of time to make a purchase offer. The law requires the landlord to negotiate in good faith.
- A public entity can purchase a mobile home park with the purpose of preserving the park as long-term affordable housing, and the public entity can exercise a right of first refusal on purchasing the park. For this to happen, a majority of residents in a mobile home park have to agree to assign their right to purchase to the public entity.
- Park owners who will displace mobile home park residents resulting from a change in use of the park have to compensate the resident with relocation assistance within thirty days of receiving a request from the homeowner.
- Park owners are prohibited from retaliating against residents on the basis of complaints about park habitability violations and are prohibited from coercing or influencing residents in their decision to purchase their park.
- Residents or a residents' association have the right to request a meeting with the landlord, which the landlord must attend within 30 days, up to twice per year. Landlords also cannot prohibit residents from convening resident meetings on park property or charge a fee for doing so.
- The State established a \$35 million revolving loan and grant fund designated for mobile home park residents seeking to purchase or improve their mobile home park. This funding can be used for a limited number of purposes, including as financing for residents seeking to purchase their park, as grants to residents seeking to stabilize lot rents, or as grants to nonprofits who provide technical assistance to park residents such as assessments of park condition or legal services.

Resident Purchase of Mobile Home Parks

An important avenue for mobile home park preservation is enabling residents to purchase their park. As mobile home park residents typically do not own the land where the park is located, a sale to an outside buyer can cause a park to be redeveloped, which displaces residents, or can lead to higher lot rents, which can also displace residents. If residents are able to purchase their park, it can lead to greater stability and long-term preservation, with residents gaining greater ownership and control over their housing situation and better insulating residents from market pressures.

The biggest barrier to residents purchasing their mobile home park is financial, as successfully purchasing a park is expensive. Enabling residents to purchase their park often requires direct financial support, typically in the form of low-cost financing. Currently, possible sources of financing for this include local nonprofits and the recent fund established by the State. While these resources exist and are growing, purchasing a mobile home park is a complicated, time-intensive, and resource-intensive process. It is critical for residents to have the ability to access these resources as well as guidance and technical assistance on the purchasing process and financing options, which requires outreach and organization. Various nonprofits can take an active role in this process, such as Resident Owned Communities USA, Thistle ROC, and Manaus, as can the City, which will be described in the next section.

Connecting Residents with Resources and Outreach

A major barrier to residents purchasing their mobile home park is a lack of awareness and understanding of the process to do so. Residents need to be aware of their rights and need to be able to effectively navigate the process of purchasing their park. Ideally, such efforts are resident-initiated. However, the City can also play a role in connecting mobile home park residents with resources through different approaches, including:

- **Creating a Resource Guide** – The City could create a guide to help residents navigate laws around landlord-tenant regulations in mobile home parks, including laws around the process of selling a park, retaliation, repairs, forming community associations, and mediation. The guide would be publicly accessible and promoted to mobile home residents.
- **Complaint portal** – The City could create a portal or hotline for mobile home park residents to submit complaints about violations of code in their park. This would enable the City to better regulate mobile home parks, to better mediate disputes, and to connect residents with available resources.
- **Community Legal Nights** – This would be a semi-regular event in which mobile home park residents would be invited to learn about their rights as tenants and about available resources for navigating maintenance, resident purchases of parks, and disputes with landlords. These events could be held

by the City, or alternatively, by legal nonprofits or advocacy groups, such as the Colorado Poverty Law Project or Manaus, which would require the City to reach out and partner with these groups.

Land Use Overlays

Creating a zoning designation for mobile home communities allows for targeted regulations and standards for these areas. This strategy is also used by some communities as a way to preserve mobile homes as a component of the local housing stock; once an area is protected by a zoning designation, it is far more difficult for the owner to sell it for a different use or to change the use of the property and force the tenants to move. Currently, most mobile home parks in Glenwood Springs have a residential high density zoning designation, which is a zoning designation conducive to potential redevelopment. Adjusting the zoning to preclude redevelopment could prevent future redevelopment and displacement of residents.

Support for Maintenance and Infrastructure

A common issue for residents who purchase their mobile home park is the cost of deferred maintenance and site improvements. When these costs are high, it can push residents to raise lot rents to cover them, undermining some of the initial purpose and benefits of purchasing their park. To address this issue and ensure long-term stability, the City can work with residents to secure funding for site and infrastructure improvements. This assistance can take several forms, including direct loans or grants from the City, or grants from nonprofit or philanthropic sources. In the latter case, the City can work with residents to create clarity on necessary site improvements and to connect residents with available funding. Public assistance for mobile home park infrastructure and site improvements can carry requirements related to limiting lot rents, park uses, and deed restrictions.

Other Preservation Policy Tools

In addition to the policy tools described above, the City can implement and utilize other possible policy tools to preserve existing housing stock. The policy tools are organized according to whether they serve rental or owner housing and are summarized below.

Rental Housing

- **Rental assistance:** As rents rise, tenants often face a significant financial burden, potentially leading to eviction or the need to move to a less expensive housing situation. Under a tight rental market, a less expensive housing situation can mean moving out of a city altogether to a lower-cost market. A way to ensure that tenants are able to stay housed where they are is by providing rental assistance. To do this, the City can establish a rental assistance program using public funding. The program can be targeted for particular tenants based on income and current risk of displacement. Rental assistance payments can last for a set number of months and can carry conditions for the landlord, such as agreements to not raise rent or agreements to not evict the tenant for a certain amount of time.
- **Apartment acquisition fund:** A policy approach to preserve relatively lower-cost rental units and to make the units permanently affordable is by establishing an apartment acquisition fund. This fund would function by providing either low-interest loans or grants to land trusts, nonprofits, or tenants to acquire a rental building that goes up for sale. The program would target smaller, market-rate apartment buildings that house low-income renters, and the buyer of the building would commit to terms that permanently set the rents at levels affordable to low-income renters. Buildings like this often go up for sale, with the expectation that the buyer will either scrape the building and develop more expensive units, kicking the existing tenants out in the process, or that the buyer will sharply increase rents, pricing tenants out. It is important to prevent these units from being purchased by buyers who will not preserve their affordability and into the hands of organizations who are committed to long-term affordability.
- **Rental Rehab:** Older rental housing is often an important source of naturally occurring affordable housing for low- and middle-income populations. An approach to preserving older rental housing stock with habitability issues or with significant maintenance needs is a rental rehab program. Under such a program, the City would provide grants or low-interest loans to rental property owners to make essential repairs and repairs that improve tenant quality of life. Specific standards can be established for property eligibility. In exchange for the receiving public funding for rehab, landlords would have to agree to particular terms, including limits on rental rates, lease priority for tenants below a certain income level, and lease guarantees for existing tenants. This type of program could improve housing conditions for existing

renters and ensure their long-term housing stability by preserving critical rental housing stock.

- **Hotel Conversions:** A way to utilize existing buildings to grow the stock of affordable housing is through hotel conversions. With public funding, hotels can be converted into housing units and rented to local households. Converting an existing hotel into housing can be done at a significantly lower cost than creating a new housing unit, as it utilizes an existing building and infrastructure.

Owner Housing

- **Home Repair Loans and Grant Program:** Repair costs can often be a major financial burden for low- and middle-income homeowners. When costs become too high, owners can face pressure to sell their home and move elsewhere. A common way to prevent this from happening and to preserve housing stock for these homeowners is to provide access to low-interest home repair loans and grants. The City could establish a program with public funding and could set program parameters related to participant income, loan repayments, and sale restrictions, primarily targeting households at the greatest risk of displacement. Maintaining affordable housing that already exists and is owned by income-qualified residents is far more efficient than new construction.
- **Property Tax Abatements:** With rising housing prices in Glenwood Springs, the tax burden for homeowners has grown over the past several years. A growing tax burden can have a negative effect on low- and middle-income households, as well as seniors on fixed incomes, who face greater pressure to sell their home and move elsewhere. A property tax abatement program could lower the financial burden for homeowners and could help preserve this segment of the housing stock. Ideally, the program would be targeted at households that face the greatest displacement pressures, including low-income households and households on fixed incomes.

Density Bonus

This section describes policy approaches related to a density bonus in Glenwood Springs. This includes a discussion of a density bonus and its variations, the factors involved in establishing a density bonus, and its relationship with affordable housing.

What is a density bonus?

A density bonus is a land use tool that enables new residential developments to build a greater number of units than would otherwise be permitted by the underlying zoning. A density bonus can take several different forms depending on local zoning context, community character, or other development constraints. A density bonus provides an incentive for developers to build more housing units, better utilize existing land, and maximize the buildable area of a lot to enable infill development. Depending on context and policy intent, a density bonus can be achieved through various changes to land use regulations that enable the construction of more buildable finished floor area and therefore more units in a development, leading to greater density. The additional density expands the local housing supply and depending on the mechanism used to authorize the additional density, may include affordability restrictions.

A density bonus is a valuable housing policy tool because it provides the market an avenue to deliver workforce/affordable housing units while requiring minimal additional investment from the City. Allowing greater density on existing parcels can reduce per-unit development costs, making housing development more attractive. As the city has a limited amount of developable land remaining, allowing greater density is an effective way to utilize existing land without growing outward. Residential density, when built near transit service, can also expand the use of public transportation, reducing potential traffic impacts.

Since 2021, Glenwood Springs has offered a density bonus as part of its inclusionary housing ordinance. The density bonus is general, stating that “as part of any new residential or mixed-use development, the City may offer a density bonus.” To date, the density bonus has not attracted developer interest, as no project has taken advantage of the policy. The limited interest in the density bonus highlights the need to modify the policy, raise awareness in the community related to the availability of this option, and more clearly define the parameters to be used by the City for a density bonus approval.

Structure of a Density Bonus

An effective density bonus will clearly define the parameters for developments seeking additional density. Generally, there are two approaches. The first involves larger developments that are typically multifamily/condominium buildings. The second involves an approach of increasing the unit count in low-density single-family neighborhoods, in the form of Accessory Dwelling Units (ADUs) which add one unit to a given lot, or can involve two or three additional units for lots that can accommodate the design parameters.

An important parameter and possible future code change is to specify how many additional units can be built by using a density bonus under each of these types of programs. For example, a density bonus can be set at a particular number of units on a given lot or can be set as a percentage of units permitted by underlying zoning.

Another important parameter is specifying how a density bonus can be achieved. While this can vary by the type of housing a density bonus applies to, a density bonus is often achieved by modifying development standards and land use regulations, such as:

- Allowing a greater number of units on a given lot or a greater number of units per acre of land
- Allowing additional height or stories
- Allowing a higher floor-to-area ratio
- Reducing the required minimum lot size
- Reducing setback requirements
- Reducing parking requirements

Neighborhood Context

A density bonus policy typically varies by zoning and neighborhood context. Given the wide range of neighborhood and housing types in Glenwood Springs, a density bonus is likely to take different forms in different areas of the city. The form a density bonus takes also depends on policy priorities and the type of housing that the City is seeking to incentivize, whether duplexes, fourplexes, townhomes, or apartments. Generally, a density bonus in Glenwood Springs would be targeted to the following contexts:

- **Residential Neighborhoods** – In the residential neighborhoods in Glenwood Springs that primarily consist of single-family homes, a density bonus could be used to promote the construction of smaller residential developments, including duplexes, triplexes, and fourplexes, often referred to as 'missing middle' housing. This would involve changing the land use code to allow more units to be built on existing lots, such as allowing duplexes, triplexes, or fourplexes in the RM1, RL, and/or RR zone districts.

- **Commercial and Transit corridors** - In areas of Glenwood Springs with greater residential and commercial density, such as major corridors, a density bonus could be implemented to encourage the construction of multifamily housing. This would involve changes to the land use code such as increasing allowable height and reducing parking requirements, enabling more units to be built as part of particular multifamily projects. Using a density bonus to encourage transit-oriented development is also critical for connecting future residents of housing developments to public transportation options and in limiting the potential traffic impacts of new housing development. A density bonus could specifically permit greater density for residential projects close to existing transit stops or in transit corridors in Glenwood Springs.

Existing Glenwood Springs Land Use Regulations Context

- **Current Density Bonus Standards**
Glenwood Springs offers a density bonus as part of its inclusionary housing ordinance. The density bonus is general, stating that “as part of any new residential or mixed-use development, the City may offer a density bonus.”
- **Current Inclusionary Housing Standards**
Currently, Glenwood Springs has an inclusionary housing ordinance requiring 20 percent of new rental units and 10 percent of new for-sale units in projects with 10 or more units to be affordable at or below 100 percent of area median income.

Affordability and Relationship with Inclusionary Zoning Ordinance

As a policy tool aimed at expanding affordable housing, a density bonus should have transparent affordability parameters. A density bonus should specify how many units in a project need to be affordable and at what level of affordability.

Alternatively, a density bonus policy could be designed to require a greater level of affordability than required by the current inclusionary housing ordinance. If the goal of the density bonus is to achieve greater affordability than required by the inclusionary housing ordinance, the density bonus policy should provide specific parameters around the share of affordable units and average affordability level of units needed to receive the density bonus.

A density bonus has to balance the need for affordability with attractiveness to prospective developers. An effective density bonus would enable developments to deliver a greater level of affordability while maintaining financial feasibility. If affordability requirements are too high, there may be limited developer interest in using a density bonus.

Examples in Colorado

Currently, several municipalities in Colorado have density bonus programs, each with varying structures and standards. Three examples are shown below: Pagosa Springs, Denver, and Longmont.

Pagosa Springs

As of 2021, Pagosa Springs has a density bonus available for residential projects with two or more units. The density bonus specifies that the town can grant a density bonus of up to 50 percent of the number of allowable units permitted in an underlying zoning district for both rental and for-sale projects. The policy has an affordability requirement, as the additional units must be affordable to households at or below 120% of area median income. The density bonus can be achieved through various land use code modifications, including increasing allowable height, encroaching into setbacks, or reducing parking requirements.

Denver

As of 2022, Denver has an inclusionary housing ordinance (IHO) for rental and for-sale projects, which requires a certain share of affordable units in all new residential projects with 10 or more units. The policy grants a density bonus to projects that provide greater affordability than required by the IHO. Specifically, projects that exceed the affordability requirements of the IHO are eligible for height increases, reductions of parking requirements, and exemption from parking requirements if the projects is located within a quarter mile of a transit station.

Longmont

Longmont has an inclusionary housing ordinance for for-sale and rental projects, which requires a certain share of affordable units in all new residential projects. In conjunction with the IHO, for projects that meet the set-aside requirements, the City has several density bonus-related incentives, including a 20 percent increase in allowable unit density, increased allowable height, reductions in setback and landscaping standards, minimum lot size reductions, and reduced parking requirements. In this case, the density allowances do not generate additional units above the minimum IHO threshold but do make it easier for developers to comply.

Funding Sources

This section summarizes possible funding sources that the City of Glenwood Springs can dedicate to affordable and workforce housing programs.

Importance of Funding Sources

Establishing dedicated funding sources is essential to developing a robust set of policy tools and interventions to expand affordable and workforce housing. A litany of possible funding sources exists, and the purpose of this memo is to summarize the options available to The City of Glenwood Springs and provide an overview of the potential benefits and limitations of each funding source. Locally, a municipality can generate revenue for housing from fees and from taxes, which require different processes to implement and carry different requirements related to how revenue is used. The State of Colorado also has funding available for housing that municipalities can draw from. The State has made recent investments in affordable housing, including over \$450 million allocated in early 2022 from federal COVID-19 relief funds, as well as a 2022 law passed through ballot measure that will dedicate \$300 million annually to housing-related programs.

Current Funding for Housing

Until 2022, Glenwood Springs did not have any municipal funding sources dedicated to housing. In 2022, Glenwood Springs voters passed a 2.5 percent increase in the local lodging tax, which is expected to generate \$1.3 to \$1.5 million in revenue annually. The revenue will be placed into a Workforce Housing Fund that will be used to fund various housing programs and projects.

The primary goal of the Workforce Housing Fund is to increase the supply of workforce housing for individuals and families living and working within the city. The Workforce Housing Fund would be focused on maintaining the City's existing workforce housing stock and providing new workforce housing for Glenwood workers through the following programs:

- Property Acquisition, including land banking, rehabilitation of existing buildings, hotel or motel conversions, maintaining mobile home parks and other expenses related to maintaining other existing workforce housing.
- Forming partnerships with private, nonprofit and other public entities to develop workforce housing, including filling financing gaps and leveraging additional resources to create affordable workforce housing.
- Buy-downs and incentives, including using funds to defray the cost of existing housing stock for the purpose of affordable workforce housing.
- Down Payment Assistance, including providing a secondary loan to help potential home buyers enter the homeownership market.

Local Funding Sources

This section describes the possible local funding sources that Glenwood Springs could use to fund affordable housing. The section includes a detailed explanation of each funding source with an assessment of revenue potential, barriers, and other examples from around Colorado. The funding sources are categorized into taxes and fees, which carry different implementation and spending requirements. The table below shows a summary of each potential funding source.

Program	Election?	Description	Revenue Potential
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Fees

Residential Linkage	No	Levied per square foot of new development	N/A
Commercial Linkage	No	Levied per square foot of new development	N/A
Real Estate Transfer Fee	No	Regulatory fee imposed on all real estate transfers.	A \$500 flat fee would generate \$170,000 annually.
Short-term rental fee	No	A per-bedroom fee on short-term rentals charged annually.	A \$500 per-bedroom fee would generate \$110,000 annually

Taxes

Occupational Privilege Tax	Yes	Tax on employers for each employee per month	A \$2 per employee per month tax would generate \$750,000 annually
Attractions Tax	Yes	Tax charged on admission to places, events, and performances open to the public	N/A
Property Tax	Yes	Additional mill levy on property with revenue dedicated to housing	An increase of 2.00 mills would generate \$850,000 annually
Sales Tax	Yes	An increase of the municipal sales tax rate with revenue dedicated to housing	A 0.25% sales tax would generate \$1.5 million annually
Short-term rental tax	Yes	A tax levied on guest stays at short-term rentals	A 5% STR tax would generate \$340,000 annually
Vacancy Tax	Yes	New tax imposed annually on residential units that are not a primary residence.	A \$2,000 annual tax would generate \$700,000 annually

Source: Economic & Planning Systems

Fees

Fees can be a significant source of funding for affordable housing. Currently, the primary types of fees in Colorado are impact fees and regulatory fees, which carry different legal standards. Fees differ from taxes in that 1). Fees typically must have a reasonable relationship to the issue they seek to mitigate or offset, 2). Revenue collected from fees must be spent on costs related to their purpose, and 3). Fees can be implemented through an ordinance from the local governing body, rather than through a direct vote of the electorate. Given the constraints from TABOR and the political challenges associated with passing taxes through popular vote, fees are a viable avenue for generating additional funding. Additionally, recent court precedents, including the Aspen Bag Fee decision, have expanded the possible horizons of regulatory fees in Colorado.

Linkage Fees

An affordable housing linkage fee is a form of impact fee. Linkage fees function like capital impact fees (e.g., fire, police, transportation) or water and sewer tap fees in that they are levied on new residential and commercial development proportional to its impact on the public infrastructure and facilities funded with the fee. There must be a rational nexus and rough proportionality between the fee charged and the impact of the development on which it is levied. Implementing a linkage fee requires that a study be completed to determine this nexus. Linkage fees are typically charged on a per square foot basis at time of building permit. Like capital impact fees, linkage fees must be accounted for in a fund and spent on costs related to their purpose, affordable housing development in this case. These costs include construction, land acquisition, planning and design services, development fees, fee reimbursements or any cost related to the production or expansion of affordable housing.

Revenue Potential

A limitation of a linkage fee is that its revenue potential is dependent on the level of construction activity within a market, which can fluctuate by stage in a market cycle and by the level of developer interest in a particular market. In addition, the revenue potential of linkage fees is dependent upon the amount of developable land available and the buildout potential for new residential and commercial over time. In Glenwood Springs, long-term buildout potential and therefore linkage fee revenue potential may be limited due to a relatively small number of developable sites and land constraints.

Process for Adoption and Barriers

As a fee, not a tax, linkage fees are adopted by ordinance by the local governing body. While the legal validity of implementing linkage fees is well-established, linkage fees may encounter political pushback and pushback from the development community more broadly. Linkage fees place the burden of raising revenue for affordable housing on new residential and commercial development, rather than distributing the burden across the community, which poses challenges

for generating political support. Implementing a linkage fee also requires a nexus study to be conducted.

Examples Elsewhere in Colorado

Several municipalities have implemented affordable housing linkage fees, including Denver, Boulder, Aspen, Telluride, and Mountain Village. It is a commonly used tool to generate funding for affordable housing.

Short-term Rental Fee

A short-term rental fee is a regulatory fee levied on short-term guest rentals, typically on an annual per-bedroom basis. The fee applies to property owners with a short-term rental license. The fee is predicated on the existence of reasonable relationship between guest spending from short-term rentals and the demand for affordable housing that guest spending creates through generating employment. An STR fee also accounts for the possibility that a home used as a short-term rental could be occupied by a local resident, and the fee is further based on the difference between the impact of guest spending in the local economy and the baseline impact of local resident spending. In markets with a significant amount of visitation activity, a short-term rental fee is a viable way to generate funding for affordable housing from the tourism economy and in a way that is passed onto visitors rather than residents. As a regulatory fee, use of revenue is inflexible and must be allocated to costs related to its purpose. In the case of an STR fee, revenue would have to be placed in a fund restricted to implementing affordable and workforce housing-related programs.

Revenue Potential

The revenue potential of a short-term rental is directly linked to the number of licensed short-term rentals within a municipality. In Glenwood Springs, the base of short-term rentals is relatively small, with a total of 110 licensed short-term rentals. Assuming an average of 2 bedrooms per short-term rental, an annual per-bedroom fee of \$500, which is comparable to existing fees in other towns, would generate approximately \$110,000 in annual revenue.

Process for Adoption and Barriers

In order to legally justify the fee, a city would need to provide a study that demonstrates the rationale of a short-term rental fee. The study would determine an annual fee level based on a reasonable relationship between guest spending from STRs and the demand for affordable housing.

As a fee, not a tax, short-term rental fees are adopted by ordinance by the local governing body. Short-term rental fees have passed legal scrutiny in other municipalities. Generally, the biggest barrier would be political will, especially given the recent increase in lodging tax and the relatively small revenue potential.

Examples Elsewhere in Colorado

Breckenridge and Vail have implemented short-term rental fees, and several other municipalities and counties are currently exploring short-term rental fees as a way to generate funding for affordable housing.

Real Estate Transfer Fee

A real estate transfer fee is a possible type of regulatory fee on residential and commercial property sales. The fee would be charged at the time of closing on residential and commercial transactions within a given municipality, and it would be the responsibility of the buyers and sellers, realtors, title companies, and lenders to ensure that the fee is collected and remitted to the municipality. The municipality would place the fee revenue in a fund restricted to implementing a variety of workforce housing programs; the revenue would not be used for general operating purposes.

In order to adopt a real estate transfer fee as a regulatory fee, a municipality would have to demonstrate the rationale for the fee under the City's powers to regulate health, safety, general welfare, and morals under its police powers and to show a reasonable relationship between the fee being paid and the benefits received by the fee payers. A study would have to identify the direct and indirect benefits to fee payers. Finally, the fee would have to be reasonably related to the direct and indirect costs to a municipality of providing affordable and workforce housing services or regulating the development of affordable and workforce housing, the purposes for which the fee is collected.

A benefit of a real estate transfer fee is that it captures revenue from property sales, which distributes the burden of funding affordable housing across a broad segment of the community. It is also a relatively progressive revenue source, as fee payers are those who sell real estate and are generally higher income.

It is important to note that a real estate transfer fee has not yet been implemented anywhere in Colorado. As such, this is a preliminary description of the fee, so please note that implementing such a fee is unproven and could face legal risks.

Revenue potential

Current analyses suggest that a real estate transfer fee would have to be set as a flat fee on transactions. At a fee level of \$500 per transaction, and with 350 annual property sales in Glenwood Springs, a real estate transfer fee would generate approximately \$175,000 in revenue annually.

Process for Adoption and Barriers

As a regulatory fee, a real estate transfer fee could be adopted by ordinance by the local governing body. Real estate transfer fees have not yet passed legal scrutiny in other municipalities and would likely face legal pushback if implemented. While a few legal opinions suggest that the Colorado Supreme Court may rule favorably on a real estate transfer fee, there is no guarantee of

success. The risk of the fee not passing legal scrutiny is also substantial. If a municipality passes a real estate transfer fee, but the fee gets struck down by the State Supreme Court, the municipality is legally liable to return the fee revenue it has collected with 10% simple interest. While such a fee may have political support, the legal barriers and risks are currently high. However, it is worth noting that if other municipalities may pass a real estate transfer fee within the next few years, it could set a legal precedent and open the door for other municipalities to implement the fee.

Examples Elsewhere in Colorado

No municipalities currently have real estate transfer fees, but several have real estate transfer taxes, which were grandfathered in as they were implemented before TABOR. These include Aspen, Avon, Minturn, Telluride, Vail, Frisco, Ophir, and Crested Butte.

Taxes

Taxes are the most common funding source for affordable housing in Colorado. The primary challenge with taxes in Colorado is that passing a new tax or tax increase requires a vote and majority approval of the electorate through a ballot measure. The following taxes are the most commonly used taxes to fund affordable housing around the state.

Property Tax

Property tax revenue can serve as a dedicated funding source for housing, either by reallocating existing property tax revenues or establishing an additional property tax levy. Under Colorado law, a mill levy must be uniform on all taxable property. Property taxes are regarded as progressive, as property owners tend to be on the upper end of the income distribution. As property values have increased significantly over the past decade, a property tax levy is also a way to capture a portion of those gains for public purposes. Certain property owners, including low-income homeowners and seniors, can face a significant financial burden from increased property taxes, which can lead to housing instability. To address this, it is possible to establish a refund or abatement program for certain residents in order to reduce their property tax burden. Another advantage of property taxes is that it distributes the burden of generating revenue more broadly and evenly across the community.

Revenue potential

Under current valuations, a property tax levy of 2.00 mills in Glenwood Springs would generate approximately \$850,000 annually. This would increase the property tax burden of a median-priced home by \$10 per month.

Process for Adoption and Barriers

Property tax increases are legal and have been used in other communities to raise revenue for public investments. The largest barrier to using property taxes as a

dedicated funding source for housing, however, is political. Under TABOR, property tax increases require approval of the electorate. As raising property taxes increases the financial burden on property owners, they are often politically unpopular and unsuccessful when on the ballot, especially given recent increases in property values.

Examples elsewhere in Colorado

In 2022, voters in Grand County passed a ballot initiative to establish an additional property tax levy to be dedicated to housing. The proposed mill levy is 2.00 mills and it is projected to generate approximately \$1.2 million in revenue annually and will be managed by the Fraser River Valley Housing Partnership. While property taxes often face political resistance, this is a successful example of a mountain community with the political appetite to fund workforce and affordable housing through property taxes.

Short-term Rental tax

A short-term rental tax is an excise tax levied on guest stays in properties licensed as short-term rentals. Typically, a short-term rental tax is charged on visitor stays, on top of the existing sales and lodging taxes levied on visitor stays. In markets with a significant base of tourism, this tax can be an effective way to generate revenue from visitors rather than the local community. Moreover, as short-term rentals have proliferated as a lodging type over the past several years and have created negative impacts on housing markets, short-term rental taxes are increasingly seen as a viable, defensible revenue source for affordable housing.

Revenue potential

Glenwood Springs currently has 110 properties permitted as short-term rentals. Under current market conditions, a 5% short-term rental tax would generate approximately \$340,000 annually. Relative to other funding sources, the revenue potential is small, largely because of the limited number of licensed short-term rentals in Glenwood Springs.

Process for Adoption and Barriers

Implementing a short-term rental tax dedicated to affordable housing requires voter approval. Short-term rental taxes for housing have proven to be attractive for voters in recent elections around Colorado and have demonstrated political viability, although given the recent passage of a lodging tax increase in Glenwood Springs and limited revenue potential, a short-term rental tax may face political barriers, or indifference, in Glenwood Springs.

Examples elsewhere in Colorado

Short-term rental taxes have recently emerged in mountain and resort communities as an important funding source for housing. In the past year, voters

in several communities have passed short-term rental taxes to fund affordable and workforce housing, including:

- Aspen – 5% to 10% tax, depending on property classification.
- Carbondale – 6% tax
- Steamboat – 9% tax
- Salida – 4x increase on the nightly STR tax per bedroom
- Avon – 2% tax
- Frisco – 5% tax
- Dillon – 5% tax

Sales Tax

In markets where tourism or economic development is a strong driver of service-sector employment (and subsequently housing demand), such as Glenwood Springs, dedicating a portion of sales taxes towards housing can be an effective way to leverage a market driver without unduly burdening local households.

Sales taxes can generate a considerable amount of revenue. However, sales taxes are often regarded as regressive, as low-income households tend to spend a greater percentage of their income on local consumption than higher-income households, and therefore pay a higher share of their income to sales tax. While the burden of sales tax is distributed across the community and to visitors, the burden can be more significant for low-income households who consume locally.

Revenue Potential

Glenwood Springs currently has a local sales tax of 3.70%, and a total sales tax rate of 8.60% with state, county, and transit authority sales taxes included. Given current levels of activity, a quarter-cent sales tax (0.25%) would generate approximately \$1.5 million annually, making the revenue potential of a sales tax significant.

Process for Adoption and Barriers

Sales taxes are a well-established and widely used way for municipalities to generate revenue. The biggest barrier for sales tax is political, as increasing the sales tax rate requires voter approval. With a current sales tax rate of 8.60% and an economic environment in which the cost of living has been going up, raising the sales tax rate could very well face substantial political pushback.

Examples elsewhere in Colorado

Practically every community in Colorado has a local sales tax, although relatively few use the revenue for housing. Communities in Colorado, including Aspen, Summit County, and Loveland use a portion of sales tax revenue to fund affordable and workforce housing goals.

Occupational Privilege Tax

An Occupational Privilege Tax, commonly known as a 'Head Tax', is a tax levied on employers for each employee they have working for their business

establishment. An OPT is typically levied on a per employee per month basis. In Colorado, most places with an OPT levy the tax monthly on each employee, and levy an additional per month match on the employer for each employee they have. Under this structure, a \$2 monthly per employee OPT would generate \$4 per employee per month, with half paid by the employee and half paid by the employer. As this is a tax, revenue from an OPT can be dedicated to funding housing.

Revenue Potential

With a current employment base of 16,000 in Glenwood Springs, a \$2 per employee per month OPT with an employer match would generate approximately \$770,000 annually. Over time, revenue would grow if employment were to grow.

Process for Adoption and Barriers

An OPT requires voter approval, so the main barrier is political. As this tax is not commonly used in Colorado, successfully passing one would require building buy-in and coalitions in the community, among both employees and employers.

Examples elsewhere in Colorado

Currently, five jurisdictions in Colorado have an OPT: Denver, Greenwood Village, Aurora, Glendale, and Sheridan. OPT levels typically range from \$2 per employee per month to \$6 per employee per month.

Vacancy Tax

A vacancy tax is a tax levied on vacant homes. The definition of a vacant home can vary, but is generally considered a home that is not the owner's primary residence, and is also not rented out to tenants for any significant amount of time over the course of a year. Vacant homes are also commonly referred to as second homes. In mountain and resort communities across Colorado, vacant homes are common and often comprise a significant share of the total housing stock. Generally, a tax on vacant homes would be considered a progressive tax, as the burden would be placed on owners of vacant homes who tend to be high-income.

Revenue Potential

The revenue potential of a vacancy tax would likely fluctuate from year to year based on changes in the vacant housing stock. Assuming that there are 140 vacant housing units in Glenwood Springs, a \$2,000 annual tax would generate \$280,000 in revenue annually.

Process for Adoption and Barriers

Implementing a vacancy tax requires voter approval. Currently, no municipalities in Colorado have a vacancy tax, so no examples exist to show the legal barriers that a vacancy tax might encounter. The main barrier to a vacancy tax is gaining the support of the electorate.

A potential barrier for a vacancy tax is the need to establish a system to categorize vacant homes and collect and enforce the vacancy tax. Various models for this exist in other cities in North America. In most cases, a vacancy tax would require additional staff capacity and enforcement infrastructure.

Examples Elsewhere in Colorado

Currently, no municipalities in Colorado have a vacancy tax. In 2021, Crested Butte referred a vacancy tax (referred to as a community housing tax) to the municipal ballot that proposed to levy a \$2,500 annual tax on residential units that were not the primary residence of the owner and were not rented out for at least 6 months out of the year, and on undeveloped property that is zoned for residential use. The measure failed at the ballot, with 56% of voters rejecting the measure. No other communities in Colorado have attempted to pass a vacancy tax, although other cities in North America, including Vancouver and San Francisco, have implemented vacancy taxes.

Attractions/Admissions Tax

An admissions tax is a sales tax levied on any charge imposed to gain admission to any place, event, performance, or scheduled activity open to the public. Common examples of places that require such charges include concerts, theater performances, sports events, amusement parks, water parks, pools, and spas. As Glenwood Springs draws a high amount of visitors every year, many of whom visit the various paid attractions in the city, establishing an attractions tax would be a way to generate revenue from tourism without placing a significant additional burden on local households.

Revenue potential

Glenwood Springs has several attractions that require an admission charge, including Glenwood Hot Springs, Glenwood Caverns Adventure Park, and Iron Mountain Hot Springs. Given the high volume of visitors that these places attract, an admissions tax could generate a substantial amount of revenue for housing.

Process for Adoption and Barriers

This type of tax is applied in other municipalities in Colorado, so it is a relatively well-established revenue source. The primary barrier in Glenwood Springs would be political, as implementing this tax would have to gain majority approval of the electorate. This tax may draw pushback from various stakeholders in the community so it would likely require a concerted coalition-building to effort to convince the electorate.

Examples elsewhere in Colorado

Several municipalities around Colorado levy taxes on admissions to events and places that are open to the public. These include Aurora, Boulder, Northglenn, Arvada, Mt. Crested Butte, and Wheat Ridge. The tax rates typically range between 3% and 5%.

State Funding Sources

2022 State Investment in Affordable Housing

In 2022, the Colorado State Legislature invested a significant amount of funding in programs aimed at affordable housing and housing stability. Using funds from the American Rescue Plan Act, the State Legislature has allocated over \$400 million to various affordable housing programs, including:

- \$150 million for a revolving loan fund to support affordable housing developments
- \$138 million for a grant program to fund affordable housing-related projects, including infrastructure, new construction, land banking, affordable housing conversions, and eviction defense.
- \$35 million for a loan, grant, and technical assistance program to support mobile home owners seeking to purchase their mobile home park.
- \$40 million for a program that supports modular housing development.
- \$25 million to expand CHFA's middle income access program, which provides financing to support workforce housing developments.

The funding was officially allocated by the legislature as of late 2022, so funds will be available in the coming year. The Department of Local Affairs (DOLA) is responsible for administering the programs. This represents a significant influx of funding that municipalities should seek to leverage.

Colorado Proposition 123

In November 2022, Colorado voters passed State Proposition 123. Proposition 123 expands state funding for affordable housing by setting aside a small portion of annual state income tax revenue, equivalent to 0.1 percent of taxable income. In the first year, the measure is expected to generate \$290 million in revenue. This represents a large state investment in affordable housing, significantly higher than previous levels of state investment in housing. It is a potentially major funding source for municipalities and an important opportunity for Glenwood Springs to expand its funding for affordable and workforce housing.

The funding generated by proposition 123 will be allocated to a defined set of programs, described below. The law defines affordable housing as at or below 60% of area median income for rental housing, and at or below 100% of area median income for ownership housing.

The first three programs will be managed by the Office of Economic Development and International Trade (OEDIT). The second three programs will be managed by the Division of Housing within the Department of Local Affairs (DOLA).

Land Banking: \$26-\$43 million annually

- This will provide grants to local governments or loans to housing nonprofits for the purpose of acquiring land for affordable housing development. Loans made by the program can be forgiven if the land is zoned for housing within 5 years and permitted and funded for housing within 10 years.
- Municipalities can effectively use this funding to expand their inventory of publicly owned parcels, and with an expanded inventory, drive affordable housing development. Alternatively, municipalities can work with housing nonprofits or land trusts to expand their land holdings intended for affordable housing development.

Equity for affordable housing projects: \$70-\$121 million annually

- This will provide equity investments in rental projects that commit to permanent affordability at an average of 90% of area median income. The investment can be made in new projects as well as existing projects that commit to preserving affordability.
- This program also creates a structure for a tenant equity vehicle, which provides tenants living in the project for at least one year a share of the project's equity growth, which the tenant can apply to a down payment for a home.

Concessionary Debt for Affordable Housing projects: \$26-\$61 million annually

- This will provide low-interest debt financing for rental projects that are permanently affordable at an average of 60% of AMI. The funds will be available to both new projects and existing projects that commit to preserving affordability.
- Funding priority will go to projects that are high-density and align with goals of environmental sustainability.

Affordable Homeownership: up to \$58 million annually

- This creates a down payment assistance program for homeowners below 120% of AMI.
- This offers grants and loans to housing nonprofits and land trusts to support affordable home ownership.
- This also creates a grant and loan program to associations of mobile home park owners to assist them with purchasing their park.

Homelessness Prevention: up to \$52 million annually

- This provides grants and loans to housing nonprofits and local governments to expand rental assistance, housing vouchers, and eviction defense for those at risk of homelessness.
- Also provides loans and grants to support the development of supportive housing.

Capacity Building for local governments: Up to \$5.8 million annually

- This will provide grants to local governments to increase the capacity of planning departments, with the intent of enabling planning departments to more effectively process land use, permitting, and zoning applications for housing development.

Requirements for Participation

In order for a municipality to be eligible to receive funding, or for affordable housing projects within a jurisdiction to be eligible for funding, the municipality must meet specific standards.

- A municipality must establish a plan to increase the inventory of affordable housing units within its boundaries by three percent annually, starting in 2027. Municipalities have to submit this plan by November 1, 2023. Part of this plan is to establish a baseline level of existing affordable housing units, which the municipality can do by referencing estimates from the American Community Survey, or estimates from the Department of Housing.

A municipality must create a fast-track approval process for all housing development applications in which at least half of the units are affordable. The fast-track approval process requires that municipalities reach a decision on permit or zoning applications within 90 days of submittal, with certain exceptions.

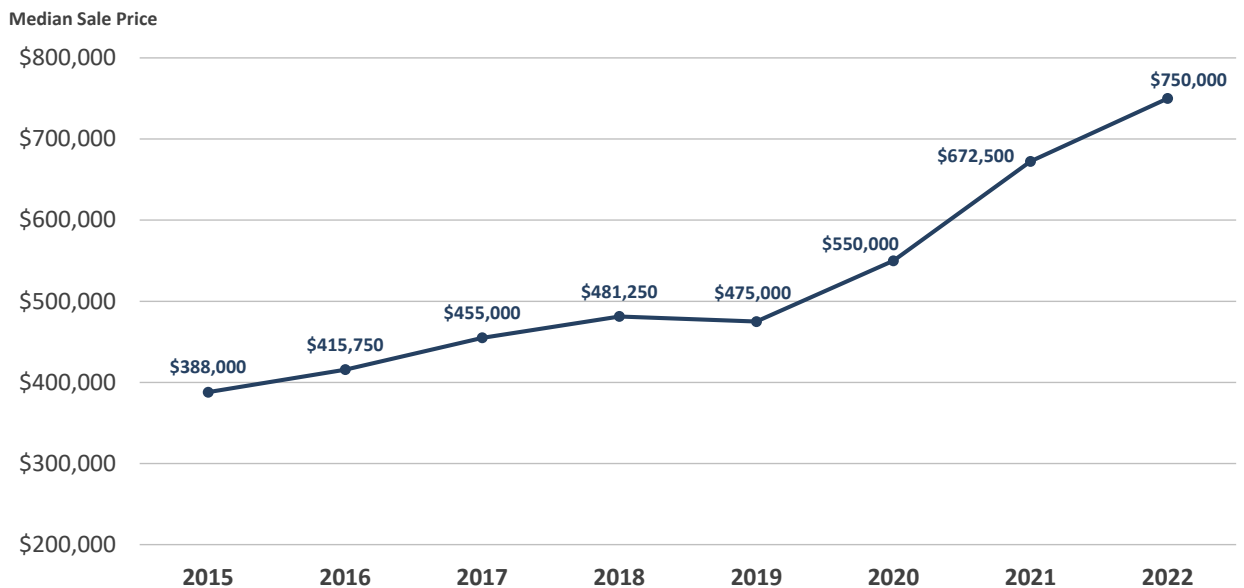
3. Needs Assessment

While the previous chapter focuses on housing policy tools the City can implement to address housing needs, this chapter documents housing market conditions and overall housing need in Glenwood Springs, focusing on the scale of housing need and organizing housing need by income level. This needs assessment is intended to inform policy decisions around housing policy tools and funding for housing programs, and ultimately to serve as a reference point for policymakers and City staff looking to better understand overall housing need when implementing policies and programs.

Market Context

Housing prices in Glenwood Springs have risen significantly in recent years. From 2015 to 2022, the median home sale price increased from \$388,000 to \$750,000, which represents a total increase of 93 percent and a compound annual increase of 9.9 percent, as shown in **Figure 2**.

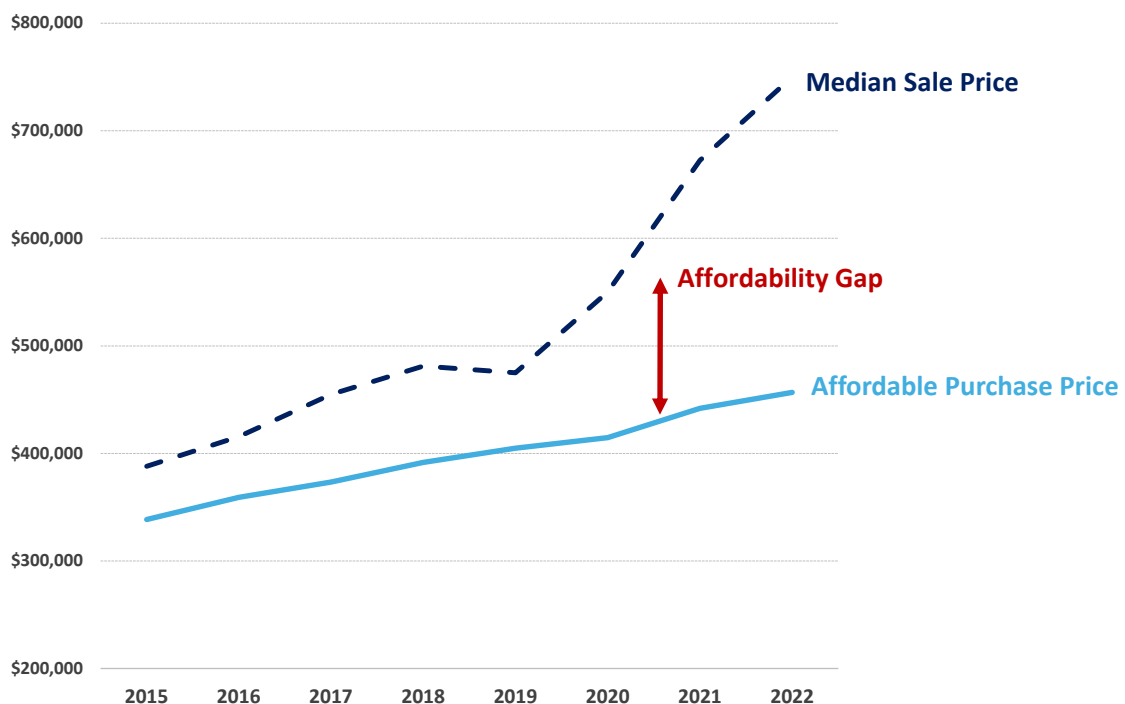
Figure 2. Median Home Sale Price (Inclusive of Single Family and Condo/Townhome Units), Glenwood Springs, 2015-2022



Source: MLS; Economic & Planning Systems

Incomes have not kept pace with housing prices in Glenwood Springs. The affordable purchase price, which represents the home purchase price at which a household earning the average wage pays 30 percent of its income on housing costs, increased at a much slower rate than the median home price. When the affordable purchase price is lower than the median home price, there is an 'affordability gap.' As shown in **Figure 3**, the affordability gap in Glenwood Springs increased from \$49,000 in 2015 to \$293,000 in 2022, indicating that housing has becoming even further out of reach financially for working households in Glenwood Springs over the past several years.

Figure 3. Affordability Gap for For-Sale Units, Glenwood Springs, 2015-2022



Source: MLS; Economic & Planning Systems

Second Homes

Second homes have accounted for a modest and generally stable share of Glenwood Springs' housing supply over the past 15 years. Second homes are classified by the US Census Bureau as vacant housing units for seasonal, recreational, or occasional use. The U.S. Census estimates that Glenwood Springs had an average of 140 such units over the 2017-2021 period, representing 3.3% of the City's housing inventory. Estimates were generally similar for the 2012-2016 period (196 units, 4.5% of supply) and the 2007-2011 period (145 units, 3.3% of supply).

For context, a much higher share of the housing stock is vacant units for seasonal, recreational or occasional use in Snowmass Village (42.4%), Aspen (34.9%) and Basalt (18.2%), as well as in Pitkin County as a whole (34.9%) and Eagle County as a whole (32.7%). The share of housing units which are second homes in Glenwood Springs (3.3%) is more comparable to Garfield County as a whole (4.1%), as well as Carbondale (1.6%), New Castle (1.6%), Silt (0.0%), Rifle (2.6%), and Parachute (1.0%).

Additional perspective is available by looking at the mailing address of Glenwood Springs homeowners. Communities with high levels of second homeownership tend to have a high share of homeowners with an out of region property tax mailing address. In Glenwood Springs, most single-family homes, condos/townhomes, and mobile homes are owned by people with a Glenwood Springs zip code (78.0%). An additional 9.5% are owned by persons with a mailing address in the broader Garfield / Pitkin / Eagle / Mesa County region, while 11.6% are owned by persons living elsewhere in Colorado or out of state.

Homeowner mailing address is an imperfect indicator of vacation homeownership, since out-of-region owners may use their unit in a variety of ways (e.g., second home, rented long-term to a Glenwood resident, etc.). As such, the Census data discussed previously is likely to be a better measure of second homeownership than homeowner mailing address.

Table 2. Owner Mailing Address of Single-Family, Condo, Townhome, and Mobile Home Units, Glenwood Springs, 2022

Owner Mailing Address	Units	% Total
Glenwood Springs	2,922	78%
Other Garfield County	214	6%
Pitkin, Eagle, and Mesa Counties	143	4%
Other Colorado	194	5%
Out of state	239	6%
Mailing address unavailable	33	1%
Total	3,745	100%

Source: Garfield County Assessor; Economic & Planning Systems

Short-term rentals

The City of Glenwood Springs licenses and regulates Short-Term Rentals (STRs), i.e., the rental of an entire dwelling unit for less than 30 days for monetary compensation. The City limits the supply STRs by capping them at 18% of the free-market housing stock in the City's General Improvement District (GID), and 5% of the free-market housing stock outside of the GID. Additionally, outside of the GID, an STR must be at least 250 feet away from another STR.

As of March 2023, Glenwood Springs had 108 licensed STRs, equivalent to approximately 2.5% of the City's housing stock. Interestingly, as of March 2023, most STRs were owned by persons living in a Glenwood Springs zip code (69%), and additional 7% of owners lived elsewhere in Garfield County or in other nearby communities. Only 22% lived elsewhere in Colorado or out-of-state. Insofar as second homeowners tend to live a reasonable distance away from their second home, this may suggest that there is not too much overlap between Glenwood Springs' second home housing stock and STR housing stock.

Also of note, most STRs in Glenwood Springs are single-family dwellings (79 percent), as shown in **Table 3**. Insofar as single-family units tend to have higher sales prices and values than attached units, this may imply that STRs are primarily concentrated within a higher-cost segment of Glenwood Springs's housing supply.

In addition to STRs, the City also licenses Accessory Tourist Rentals (ATRs), i.e., the rental of a single room in a residence. The City had 12 ATRs as of March 2023.

Table 3. Glenwood Springs STRs by Property Type, March 2023

Property Type	Units	%Total
Single Family Detached	85	79%
Duplex	8	7%
Condo	4	4%
Mixes Use	4	4%
Townhome	4	4%
Apartment	<u>3</u>	<u>3%</u>
Total	108	100%

Source: City of Glenwood Springs STR Log; Economic & Planning Systems

Needs Assessment

The main purpose of this chapter is to provide an estimate of total housing need in Glenwood Springs. An estimate of total housing need is important because it demonstrates the scale of affordable housing challenges in Glenwood Springs and informs policy and planning efforts on what housing programs to establish and how much funding to allocate to them. The housing need estimate shown in this strategic plan reflects need as of 2023.

The estimate of total housing need can be categorized into current need and future need. Current need (or 'catch-up') is the additional housing that is needed to meet current demand. Future need (or 'keep-up') is the additional housing that is needed to meet new housing demand over the next 20 years.

The estimate of current housing need has three main components, as listed below. Each component has an associated policy goal that determines the degree of need.

- **Cost burden:** Reduce the number of cost burdened households in Glenwood Springs by 50 percent.
- **Vacant jobs:** Provide housing sufficient to fill 100 percent of vacant/unfilled jobs in Glenwood Springs.
- **In-commuting:** Increase the share of the workforce housed in the City from 22 percent to 30 percent – or equivalently, reduce the share of the Glenwood Springs workforce that commutes in from another place from 78 percent to 70 percent.

These three components of need make up the total current housing need in Glenwood Springs. In the next section, each of these components will be described in detail and estimates of need will be shown and organized by area median income (AMI) level.

In addition to current housing needs, this needs assessment incorporates an estimate of future housing demand. This represents the housing need that will be generated by employment growth in Glenwood Springs over the next 20 years.

EPS has established a target income range for housing need between 30 percent and 150 percent of AMI. This reflects the income range that can realistically be served by affordable housing programs established by the City. Housing affordable to households under 30 percent of AMI requires deep financial support that cannot feasibly be provided through local housing programs and is typically served by federal subsidies, while housing affordable to households above 150 percent of AMI is generally market-rate and does not require financial support from local housing programs. While this needs assessment estimates housing need at all income levels, the addressable housing need target presented by this study reflects need between 30% and 150% of AMI.

Total housing need in Glenwood Springs can be met through a variety of policy tools, including those that produce new housing and those that preserve or improve the affordability of existing housing.

Cost Burden

A household is considered housing cost burdened if it spends more than 30 percent of its gross income on housing (including rent or mortgage, plus utilities, HOA fees, property taxes, and selected other housing costs). Cost burden is an important indicator for housing stability because it represents households in unaffordable living situations. For these households, cost burden creates financial strain and the potential for displacement. Cost burden is a relevant component of housing need because it accounts for current Glenwood Springs households who need more affordable housing situations.

The number of cost burdened households in Glenwood Springs was estimated for both owner and renter households by AMI level, using the most recent available data from the U.S. Census. As shown in **Table 4**, 898 renter households and 593 owner households are cost burdened, resulting in a total of 1,491 cost burdened households, which represents 33% of all households in Glenwood Springs. Renter households are more likely to be cost burdened (44%) than are owner households (24%). Among renters, a particularly high share of households below 60 percent of AMI are cost burdened (73%).

To estimate housing need, EPS did not include every cost burdened household. This needs assessment sets a policy goal of taking 50 percent of cost burdened households, or reducing cost burden by half. The reason for using 50 percent instead of all cost burdened households is that it is unrealistic and impractical from a policy perspective to change the housing situation of every cost burdened household, as many households may not want to move out or enter a different housing situation. Using this goal of reducing cost burden by 50 percent, the total housing need resulting from cost burden in Glenwood Springs is 746, and the housing need between 30% and 150% of AMI is 381.

Table 4. Cost Burden by AMI, Glenwood Springs, 2021

Cost Burden by AMI	Cost Burdened HHs	Share of total HHs	Half of Cost Burdened HHs
Renter Households			
Under 30% AMI	373	72%	187
30% to 60% AMI	352	73%	176
60% to 80% AMI	68	25%	34
80% to 100% AMI	36	18%	18
100% to 120% AMI	7	12%	3
120% to 150% AMI	10	12%	5
Above 150% AMI	52	12%	26
All Renter Households	898	44%	449
Owner Households			
Under 30% AMI	126	67%	63
30% to 60% AMI	116	45%	58
60% to 80% AMI	63	31%	31
80% to 100% AMI	51	26%	25
100% to 120% AMI	24	14%	12
120% to 150% AMI	36	14%	18
Above 150% AMI	178	14%	89
All Owner Households	593	24%	297
Total Cost Burdened Households	1,491	33%	746
Total Cost Burden between 30% and 150% AMI	762	35%	381

Source: U.S. Census; Economic & Planning Systems

Vacant Jobs

The second component of current housing need is vacant or unfilled jobs. Unfilled jobs are a key source of housing need because they are directly tied to the functioning and well-being of the local economy in Glenwood Springs. When jobs are unfilled, businesses are unable to fully operate, which has negative effects on business owners and on quality of life for local residents who patronize and rely on businesses in their day-to-day lives. It is clear that a lack of affordable housing is a major cause of job vacancies, as many potential employees are unable to live near these vacant jobs in Glenwood Springs due to prohibitively high housing costs. To fill these jobs, more housing is needed.

EPS estimated housing need from vacant jobs using data from the Colorado Department of Labor and Employment, which tracks job listings in municipalities across the state. Data on vacant jobs in Glenwood Springs was taken at the beginning of 2023 and was organized by AMI level. As shown in **Table 5**, there are a total of 988 vacant jobs in Glenwood Springs, most of which are at wage levels below 80 percent of AMI. Translating vacant jobs to housing demand required two additional adjustments. First, a jobs per person factor of 1.3 was applied to the number of vacant jobs, accounting for people who hold multiple jobs. This number was then divided by 1.6 to account for an average of 1.6 jobholders per household. The resulting number represents total housing demand from vacant jobs.

This needs assessment sets a policy goal of filling 100 percent of vacant jobs. As a result, filling vacant jobs generates a total housing need of 419 units in Glenwood Springs between 30% and 150% of AMI.

Table 5. Vacant Jobs by AMI, Glenwood Springs, 2023

AMI Category	Vacant Jobs	Jobs per Person	Jobholders per HH	Housing Need
Under 30% AMI	90	1.30	1.60	43
30% to 60% AMI	482	1.30	1.60	232
60% to 80% AMI	213	1.30	1.60	102
80% to 100% AMI	124	1.30	1.60	60
100% to 120% AMI	39	1.30	1.60	19
120% to 150% AMI	14	1.30	1.60	7
Above 150% AMI	26	1.30	1.60	12
Total	988			475
Total between 30% and 150% AMI	872			419

Source: CDLE, Economic & Planning Systems

Commuting

The final component of current housing need is a reduction of in-commuting. In-commuters, or people who commute from another place to work in Glenwood Springs, represent approximately 78 percent of the Glenwood Springs workforce. This is a relevant component of housing need because reducing in-commuting is beneficial for the City's economic health, for stability and quality of life for workers, and for the environment. Moreover, many Glenwood Springs workers who live elsewhere do so because of high housing costs and would prefer to live in Glenwood if affordable housing were available. To reduce in-commuting and enable a portion of the Glenwood workforce who commute in to live in Glenwood Springs, more housing is needed.

Currently, 78 percent of workers in Glenwood Springs commute in from other places. This means that only 22 percent of the workforce both works and lives in Glenwood Springs or is housed locally. To estimate housing need, we used data on commuting patterns from the U.S. Census (LEHD) and organized it by AMI level. As shown in **Table 6**, approximately 2,515 persons working in Glenwood Springs also live in Glenwood Springs. This needs assessment sets a policy goal of increasing the share of the workforce housed locally from 22 percent to 30 percent (or equivalently, reducing the share of in-commuters from 78 percent of the Glenwood Springs workforce to 70 percent). With this goal, an additional 914 workers would need to be housed locally. Accounting for an average of 1.6 jobholders per household, there is a need for 546 additional housing units between 30% and 150% of AMI in Glenwood Springs resulting from a reduction to in-commuting.

Table 6. In-Commuting, Glenwood Springs

Description	Current Status <i>a</i>	Goal <i>b</i>	Total <i>b-a</i>	Jobholders per HH	Units Needed
Share Housed Locally	22%	30%			
Under 30% AMI	0	0	0	1.60	0
30% to 60% AMI	398	543	145	1.60	90
60% to 80% AMI	95	129	34	1.60	21
80% to 100% AMI	993	1,354	361	1.60	226
100% to 120% AMI	50	68	18	1.60	11
120% to 150% AMI	866	1,181	315	1.60	197
Over 150% AMI	113	155	41	1.60	26
Total	2,515	3,429	914	1.60	572
Total 30% to 150% AMI	2,401	3,275	873	1.60	546

Source: LEHD; U.S. Census; Economic & Planning Systems

Future Demand ('Keep-up')

While reducing cost burden, filling vacant jobs, and reducing in-commuting are focused on addressing current housing need, the last component of this needs assessment estimates future housing demand, or 'keep-up' needs. Future housing demand accounts for the housing demand generated by employment growth in Glenwood Springs over the next 20 years. For Glenwood Springs to sustain its workforce at current levels, it is important to accommodate this future housing demand from employment growth.

Estimates of future housing demand were based on employment growth projections for Garfield County from the Department of Local Affairs (DOLA) and are shown in **Table 7**. Using these projections, EPS estimated that Glenwood Springs will capture 45 percent of countywide employment growth, which is in line with historic trends. Because only a portion of these new employees will live in Glenwood Springs, EPS applied a commuting factor to local employment growth. Consistent with the proposed policy goal of housing 30 percent of the workforce locally, we have set a target that 30 percent of future new employees will also live in Glenwood Springs. After adjusting for multiple jobholders and an average of 1.6 earners per household, this results in new housing demand of 651 units over the next 20 years, or 33 units annually.

Table 7. Future Housing Demand, Glenwood Springs, 2023-2043

Description	Factor	2023	2033	2043	2023-2043	
					Total	Ann. #
Factors						
Earners per HH	1.60					
Jobs per Employee	1.30					
Jobs Projection						
Garfield County		33,827	38,490	43,797		
Glenwood Springs	45% capture	15,222	17,321	19,709	4,487	224
Glenwood Housing Demand						
<u>1 - From Local Job Growth - Current</u>						
<u>Commuting Rates</u>						
Glenwood Jobs		15,222	17,321	19,709	4,487	224
Live in Glenwood	22%	3,349	3,811	4,336	987	49
Employees	1.30	2,576	2,931	3,335	759	38
Households	1.60	1,610	1,832	2,085	475	24
Glenwood Housing Demand						
<u>2 - From Local Job Growth - Target</u>						
<u>Commuting Rates</u>						
Glenwood Jobs		15,222	17,321	19,709	4,487	224
Current Housed Locally	22%	3,349	3,811	4,336	987	49
Target Housed Locally	30%	4,567	5,196	5,913	1,346	67
Net Additional Housed Locally		1,218	1,386	1,577	359	18
Employees	1.30	937	1,066	1,213	276	14
Households	1.60	585	666	758	173	9
Total Housing Demand		2,195	2,498	2,843	650	33

Source: DOLA; BLS; Economic & Planning Systems

Summary

To meet current housing needs, Glenwood Springs needs an additional 1,792 housing units (with some of the need potentially addressable by making a portion of the existing housing stock more affordable). A need for 746 additional units is created by reducing cost burden by 50 percent, a need for 475 additional units is created by filling 100 percent of vacant jobs, and a need for 572 additional units is created by increasing the share of the workforce housed locally from 22 percent to 30 percent.

After accounting for income level, total target need between 30% and 150% of AMI equals to 1,346 new and/or more affordable units. These estimates are summarized in **Table 8**.

It is important to note that this housing need can be met through a combination of new affordable housing development and the preservation of existing housing stock. The need for 1,346 additional units does not necessarily require building 1,346 new units. Policies that preserve the long-term affordability of existing housing units, such as buy downs, land trusts, rental rehab, and mobile home preservation, can be used to meet a portion of this housing need. It is ultimately up to the City to determine the policy tools that will be implemented to meet housing need.

Table 8. Summary of Current Housing Needs

AMI Level	Cost Burden	Unfilled Jobs	In Commuters	Total
Under 30% AMI	249	43	0	293
30% to 60% AMI	234	232	90	556
60% to 80% AMI	65	102	21	189
80% to 100% AMI	44	60	226	329
100% to 120% AMI	15	19	11	45
120% to 150% AMI	23	7	197	227
Above 150% AMI	115	12	26	153
Total	746	475	572	1,792
Need between 30% and 150% AMI	381	419	546	1,346

Source: Economic & Planning Systems

Looking at both catch-up and keep-up demand, Glenwood Springs needs 1,792 housing units to meet current housing needs and 650 housing units to meet future housing demand over the next 20 years. Combined, Glenwood Springs needs 2,442 units of housing over the next 20 years or 122 units annually.

Within the target range of 30% to 150% AMI, there is a current housing need of 1,346 units and a future housing need of 512 units. Combined, Glenwood Springs needs 1,858 units of housing between 30% and 150% of AMI over the next 20 years, or 93 units annually. These estimates are summarized in **Table 9**.

Table 9. Total Housing Need by AMI, Glenwood Springs

AMI Level	Current Need	Future Need	Total Need	% of Total	Annual Need
Under 30% AMI	293	65	358	15%	18
30% to 60% AMI	556	145	701	29%	35
60% to 80% AMI	189	13	202	8%	10
80% to 100% AMI	329	188	517	21%	26
100% to 120% AMI	45	64	109	4%	5
120% to 150% AMI	227	102	328	13%	16
Above 150% AMI	153	<u>73</u>	<u>226</u>	<u>9%</u>	<u>11</u>
Total	1,639	650	2,442	100%	122
Total, 30% to 150% AMI	1,346	512	1,858	100%	93

Source: Economic & Planning Systems

4. Public Engagement

As part of this Strategic Plan Update, the EPS and RRC team, along with City staff, conducted public engagement and outreach. The goal of the public engagement was to gather feedback from members of the public on the specific housing policy tools presented in the plan, and to get a sense of public sentiment on housing issues in Glenwood and what the desired role of the City is in addressing these issues.

The centerpiece of public engagement for this project was a public open house. The consultant team, in cooperation with City staff, held a public open house on Monday, February 13th at the Glenwood Springs recreation center, offering an afternoon session and an evening session that in total drew over 50 people. At the open house, the team presented boards with information on each policy tool and project background, which attendees could leave comments on with sticky notes. In addition, the team provided a survey that over 40 attendees filled out. The materials presented at the open house as well as the survey were made available online for people who could not attend the open house.

The open house gave the consultant team a significant amount of feedback on the housing ideas in this plan. A summary of the open house is provided below.

Open House Summary

Overall, the open house was constructive and insightful. Many attendees had a positive attitude towards the City's efforts and were curious and willing to share their ideas on housing. There is a general sense of urgency around housing issues in Glenwood and the perception that the City has a major role to play in addressing them. At the same time, there is an appetite to see implementation and results – the public wants to see progress and housing programs/policies that work, and wants to hold the City accountable for their impact.

The team summarized the sentiments we heard from the public on each policy tool and sentiments on housing policy more generally. The summary is based on a combination of what people wrote in the survey, the comments people provided on the boards, and what we heard in conversations. We have also summarized the results from a few specific survey questions. The summary is shown below:

General Thoughts

- Encourage valley-wide collaboration on housing issues and form partnerships with other jurisdictions.
- New housing should be transit oriented and be integrated with multimodal transportation options. People want new housing but recognize that vehicle traffic is currently a problem and should be limited where possible.
- The free market is not going to deliver the housing that people need, and the City needs to prioritize affordable and deed-restricted housing.
- Housing tools should prioritize incentives over restrictions and requirements: carrots, not sticks.
- Infill and upzoning are useful approaches to encouraging more housing, especially given land constraints. Single-family homes can easily become duplexes, fourplexes, and have ADUs.
- We need to monitor progress on housing programs and see results. The community should be engaged in these efforts, not just elected officials.
- There is a need for a multifaceted approach to addressing housing needs that uses multiple policy tools.
- Protecting community character is a concern with new housing development and growth.
- There is some hesitation around additional rental housing, and a perceived need for more for-sale units so that households can build wealth.
- There is some skepticism towards density and growth, as this creates additional traffic and crowding.

Vacant Land and P3s

- Selling land to private developers has risks and can be seen as a giveaway. It is more advantageous for the City to retain ownership of its land.
- The City should engage Garfield County to donate/use land for housing development.
- Parcels near transit should be a priority for new development.
- The City should consider what the right mix of residential and commercial is in mixed-use projects so that financing for residential does not become too challenging.
- A leasing model can be effective with the right deed restrictions.

Density Bonus

- A density bonus should be codified by the City and easy to understand.
- Infill development is a priority. It could be a good policy idea to allow and incentivize ADUs, duplexes, and fourplexes in existing single-family neighborhoods.
- Integrating housing density with transit is important. Multiple people mentioned the importance of incentives for density near transit lines, such as lower parking requirements.

- Efforts at dense residential development should be paired with expanding multimodal transportation options. This reduces car dependency and traffic impacts.
- There is a need to have higher affordability requirements for projects that receive density bonuses.

Preservation

- The City needs to be even more active in limiting short-term rentals and ensuring residential neighborhoods do not become commercialized. Houses should not become hotels.
- Community land trusts are a priority and should be built up.
- It is important to upgrade mobile homes to become more energy efficient.
- There is a need to expand housing options for seniors and to enable people to age in place.
- Home repair loans are an effective policy, especially for homeowners who are lower income.
- The City should ensure that it preserves land for future housing needs.
- For the preservation of older homes, habitability, such as the presence of mold and radon, may be a major issue.

Funding

- There is significant positive sentiment towards a vacancy tax and short-term rental fees. This reflects frustration with second homes and absentee ownership.
- An attractions tax, targeted at the hot springs and Glenwood caverns, is also an attractive option for funding.
- General hesitancy towards an occupational privilege tax (head tax). There is a worry that this could discourage hiring and harm both businesses and employees.
- General hesitancy towards higher property taxes.
- The City should be careful with adding fees and taxes, as this may stifle development and economic activity.
- The City needs to have a clear plan on how funding will actually be used by the City. The public wants to see results and accountability.

Key Survey Questions

- On a scale of 1 to 5 (with 1 being the least and 5 being the most), how involved should the City be in addressing Glenwood's housing needs?
 - Among 40 responses, there was an average score of 4.5.
 - This shows that attendees see the involvement and role of the City as crucial.
 - Only a few people assigned a low score, which means that only a few people see a limited role for the City.

- What do you think is a higher priority for Glenwood: preservation of existing housing stock or the production of new housing stock?
 - 13 people said preservation, 10 said production, and 8 said both.
 - Indicates that there is an appetite for an approach that uses both preservation and production policy tools.
- Out of all the policy tools you have seen tonight, which is the least appropriate for Glenwood?
 - Many respondents indicated that all of the tools are appropriate, depending on the context. There is a general appetite to see all the tools utilized.
 - Density bonus had the most responses, indicating that it is seen as the least appropriate.
 - Vacant land/P3s and funding sources also had a handful of responses indicating it is not appropriate.

5. Recommendations and Implementation

Development of Vacant Land and Public Private Partnership Opportunity

- 1. For vacant City-owned parcels, identify those that are the highest near-term priority for housing development, and those that represent a long-term land reserve for affordable housing.**

The existing analysis from City staff on City-owned land will help inform this. See **Figure 1** and **Table 1** of this report for an inventory of City-owned vacant parcels.

- 2. For each parcel that is a near-term priority, describe key characteristics and provide a summary of desired density, product type, affordability, and tenure of future residents. In addition, determine whether the development potential of each parcel is best achieved through a sale or a ground lease.**
- 3. Establish an RFP framework with transparent evaluation criteria for the proposed housing developments.**
- 4. Cultivate relationships with prospective developers and contractors to establish a pool of potential RFP respondents.**
- 5. Identify additional incentives that the City would be willing to provide for housing on the City-owned parcels identified for development, as these may be needed to attract developer interest.**

The use of these funds could be stipulated within the RFP solicitation, or could be introduced during project refinement after a developer has been selected.

Preservation

- 1. Prioritize preservation policy tools for near-term implementation.**

Mobile Homes

- Prioritize the preservation of mobile home parks. Mobile homes are a key part of Glenwood's naturally occurring affordable housing inventory, while residents are vulnerable to displacement. With recent State legislation expanding policy tools and funding, the City should support mobile home park preservation and improve housing stability for residents.
 - Expand existing information on mobile home park inventory to include zoning and land use potentials, assessed valuation, infrastructure condition, and resident concerns.
 - Identify mobile home parks with the highest risk of resident displacement and with the greatest need for assistance.

- Implement policies and programs to stabilize mobile home park residents. These can include land use overlays, supporting resident purchases of mobile home parks, support for park infrastructure and maintenance, and connecting park residents with legal and technical assistance.

Hotel conversions

- Continue efforts around identifying hotels for acquisition and conversion to housing.

2. Community land trusts

Determine whether to partner with a statewide/regional CLT or to form a CLT locally. Additionally, identify parcels for land acquisition/donation.

3. Recognize the potential for other preservation approaches to be implemented at a later date, including, rental assistance, apartment acquisition fund, relocation assistance, and home repair loan program.

4. Estimate costs associated with the higher priority preservation actions.

Develop a Sources and Uses analysis to test the depth of current funding available relative to the need. Commit funds and/or seek additional funds as needed.

Density Bonus

1. Update the zoning code to enable up to three units on lots currently zoned for single-unit housing.

Ensure adequate parameters on new units related to parking, design, and other neighborhood compatibility factors that accommodate the additional density within established neighborhoods and minimize impacts.

2. When major development occurs on commercial corridors, seek opportunities to increase development potential.

This strategy should be employed as opportunities arise.

3. Update code to define the affordability parameters required to receive a density bonus.

Note that there may be various levels of affordability requirements, reflecting the level of public funds invested in the housing stock. Each should be presented in the context of the current inclusionary housing ordinance.

4. Consider a density bonus policy that applies to residential projects below the 10-unit threshold set by the current inclusionary housing ordinance.

5. Update the existing density bonus to clearly define policy parameters and how developments can achieve it.

Raise awareness of this tool in the community.

Funding Sources

- 1. Estimate the annual revenue potential of the recently passed lodging tax increase dedicated for affordable housing (2C).**
- 2. Seek to leverage state funding sources for affordable housing, including funding recently allocated by the state legislature and upcoming funding that will be made available through proposition 123.**

Ensure that Glenwood Springs is eligible to receive this funding.

- 3. Establish a five-year plan that projects revenues from local sources, leverages those against potential state and federal sources, and provides a targeted estimate of resources.**

Develop a working set of assumptions related to potential expenditures and develop plans to address gaps as needed. Consider ways to expand funding sources locally.

Needs Assessment

- 1. Glenwood Springs has a total housing need of 1,858 units. This housing need is based on the following goals:**
 - Reduce the number of cost burdened households in Glenwood Springs by 50 percent, which leads to a need for 381 units.
 - Provide housing sufficient to fill 100 percent of vacant/unfilled jobs in Glenwood Springs, which leads to a need for 419 units.
 - Increase the share of the workforce housed in the City from 22 percent to 30 percent, which leads to a need for 546 units.
 - Accommodate future housing demand generated by employment growth over the next 20 years, which leads to a need for 512 units.
- 2. Categorize housing need into need served by production and need served by preservation.**
- 3. Update the housing needs assessment every five years to monitor and reflect changing economic and market conditions.**



Planning and Zoning Commission Report

Date: June 27, 2023
To: Planning and Zoning Commission
From: Watkins Fulk-Gray, Senior Planner
Subject: Planning File #27-23 – Admin Site/Architectural Plan
TBD Cowdin Drive

REQUEST	Consideration of an Administrative Site and Architectural Plan for three multifamily buildings with a total of 8 (eight) residential units.
APPLICANT	Habitat for Humanity
OWNER	City of Glenwood Springs
LOCATION	TBD Cowdin Drive (PIN 218509300002)
ZONE	RH (Residential High Density)
SURROUNDING LAND USES	North: Residential South: Veltus Park East: Residential West: Residential
LOT SIZE	0.41 acres (17,947 square feet)

ACTION ITEM

Per Section 070.060.050 of the *Glenwood Springs Municipal Code* (Code), the Director has the authority to approve or disapprove Administrative Site & Architectural Plans. However, per 070.60.050(a)(2)(c)(1)(i)(a), the Director has the authority to refer such applications to the Planning & Zoning Commission for review. The proposed development includes three buildings with a total of eight residential units. The application and related materials are attached.

Action 1 – Administrative Site Plan & Architectural Plan – approve Administrative Site & Architectural Plan for development of an 8-unit multifamily residential building.

Staff recommendation: Staff recommends **approval** of the Administrative Site/Architectural Plan for development of an 8-unit multifamily residential project with recommended findings and conditions on pages 10 and 11 of the staff report.

BACKGROUND

Project Summary

The application was submitted by Habitat for Humanity of the Roaring Fork Valley, which is the latest culmination of a partnership with the City to development affordable housing on City-owned

property. Habitat for Humanity and the City have also partnered to apply for grants from the State to cover some of the development costs of this project. Although the project is being undertaken in partnership with Habitat, the project will be reviewed for compliance with the Municipal Code as all other development projects are done.

The project will consist of the following bedroom configurations:

- 2 bed/1 bath: 6 units
- 3 bed/2 bath: 2 units.

Location and Background

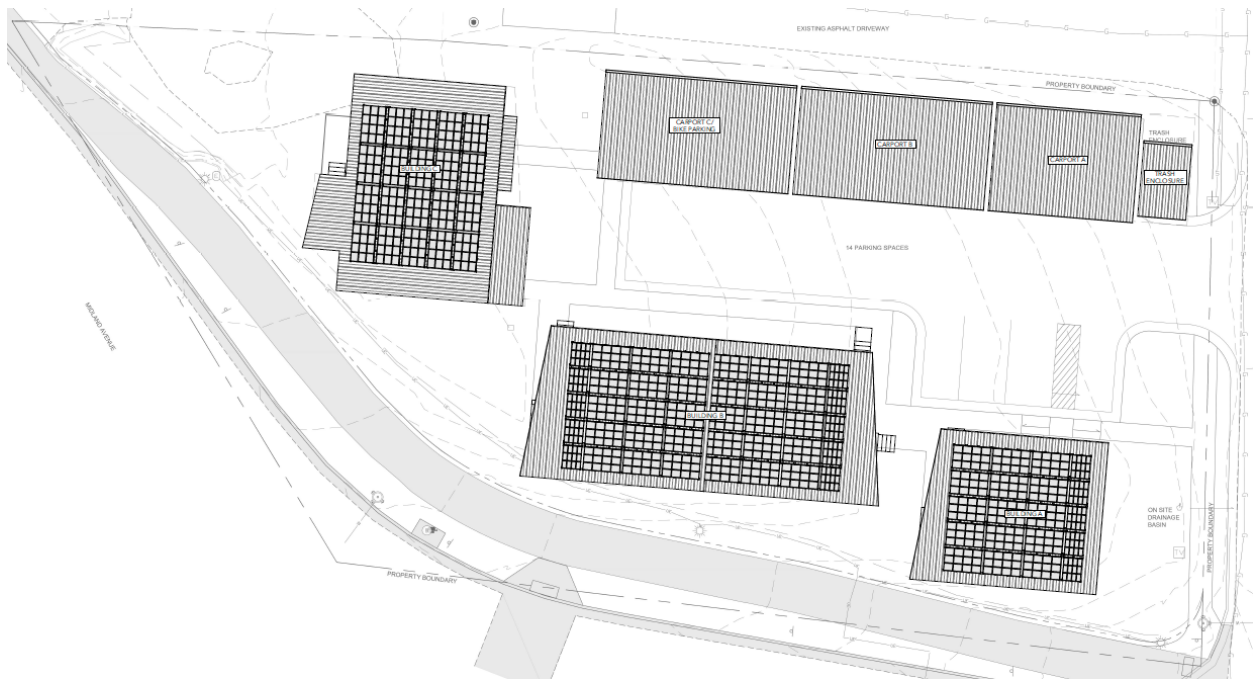
The proposed location for this development is a vacant parcel that is bounded by 8th Street, Midland Avenue, and Cowdin Drive. This site is zoned Residential High Density (RH). Adjacent uses include residential and a City park, Veltus Park.

PROJECT ANALYSIS

The application is an Administrative Site/Architectural Plan Application for an 8-unit multifamily residential development. The following section provides further details on the compliance of the proposed project with Code standards.

CODE STANDARD		PROPOSED	REQUIREMENT MET
Lot Standards	2,250 sf per unit	2,614 sf per unit	YES
Lot Coverage	N/A	N/A	N/A
Open Space	20% of parcel; 3,589 sf	3,751 sf	YES
Landscape	20% of parcel; 3,589 sf	8,268 sf	YES
Parking Area Landscaping			
Surface Area Landscape	10% of total parking area; 627 sf required	1,120 sf	YES
Interior Landscape	10 sf per parking space; 140 sf required	140 sf	YES
Setback			
Front	10' (Cowdin Dr.)	4'8.25"	NO
Rear	10'	39'3.25"	YES
Side	5'	11'6.25" and 5'	YES
Height	40' max	33'10.5" at highest	YES
Parking	1.5 per unit + 1 guest space per 5 units; 14 required	14	YES
Sidewalk	5'	5' and 10'	YES
Bike Parking	3 spaces	6	YES

CODE STANDARD		PROPOSED	REQUIREMENT MET
Trash Enclosure	Required to be enclosed	Enclosed	YES
Architectural Elements	Four sided, 5 elements	Yes except E elevation of Building A	NO
Storage	1 cubic ft per 3 square feet floor area per unit (2,566.5 cubic feet required total)	11,549.25	YES
Affordable Housing	1 price-restricted to 100% AMI, 2 resident-occupied	100% price-restricted to 80% AMI, 100% resident-occupied	YES



Above: Site plan with building A farthest to the east and building C farthest to the west.

Incentives for Residential Developments (Section 070.45.080)

This analysis will show that not all aspects of the development code are met with this project as proposed. Section 070.45.080 of the land use code provides for incentives that may be offered to new developments that provide affordable units. They are therefore eligible for a more flexible application of the code's standards. These are the areas in which the project does not meet the strict standards of the code:

1. front setback encroachment (trash enclosure)
2. planting strip requirements
 - a. Width along Cowdin
 - b. Width along 8th
 - c. Width along Midland
 - d. Street tree requirements along Cowdin
3. Landscaping requirements: parking area landscaping (add one tree)

4. minimum architectural features, building A east side
5. building orientation
 - a. building B: south side (8th St)
 - b. building A: east and south sides (8th St. and Cowdin).

All of the above items are eligible to be approved under the flexible application approach permitted by 070.45.080 and can be approved by the P&Z. However, Staff recommends that some of the above items be approved through flexibility and some of the above items changed through conditions of approval. Of the list of noncompliant items above, **these project elements are suggested for the flexible application of code standards:**

1. front setback encroachment (trash enclosure)
2. planting strip requirements:
 - a. Width along Cowdin
 - b. Width along 8th
 - c. Width along Midland
3. building orientation
 - a. building B: south side (8th St)
 - b. building A: south side (8th St.)

These remaining project elements are proposed to be brought to code compliance through suggested conditions of approval:

1. planting strip requirements
 - a. Street tree requirements along Cowdin
2. building orientation
 - a. building A: east side (Cowdin)
3. minimum architectural features, building A east side
4. Landscaping requirements: parking area landscaping (add one tree).

These items will be discussed in more detail in subsequent sections.

Site Layout and Building Design (Section 070.040.080)

Section 070.040.080 Residential Site and Building Design provides standards for multi-family developments related to building orientation, architectural elements, heights, and façade articulation.

Building Materials

The primary exterior building materials will be corrugated metal and composite Nichiha siding of two different colors and orientations. The composite siding is an approved primary material, and while the corrugated metal is not listed as an approved primary material, the Director has approved it as a primary material as allowed by 070.40.080(e)(6)(a)(1).

Building Color

Code requires that the predominant exterior colors on a multi-family building be earth tones to

minimize visual impact. The proposed materials comply with this requirement.

Building Orientation

Code requires that all units with frontage along the primary street shall have an entrance that faces the street, and for buildings with multiple street frontages to provide entrances to units along each street frontage. This site is bounded by three streets, Cowdin, 8th, and Midland, with the front designated as Cowdin. While Midland Avenue is the rear for the purposes of applying setbacks, building C has entrances oriented toward Midland because it is the closest street. Building B has frontage along 8th St. and Midland, but only has an entrance oriented toward Midland. The building adjacent to Cowdin, building A, has frontage along both 8th St. and Cowdin Dr., but does not provide entrances oriented to either street.

Staff recommends applying flexibility permitted by 070.45.080 to the building orientation standards for buildings A, B, and C. A strict application of the code would require building C to have unit entrances facing 8th St. and Midland Ave., building B would be required to have additional unit entrances along 8th St, and building A would need entrances on both 8th St. and Cowdin Dr. Staff believes the intent of the code is met already by the proposed design of buildings B and C, with their balconies and stairs visible from both streets that provide a visual connection with the street. With building A, which has entrances on neither Cowdin nor 8th St., Staff has suggested a condition of approval requiring an additional architectural feature on its east elevation, which will help orient the building toward Cowdin. As with buildings B and C, Staff believes the intent of the code is met by having balconies and stars visible from 8th St., and Staff recommends applying flexibility to the building orientation of building A also.



Four-sided Design

The code requires a minimum of five architectural features from an approved list on each side of a multifamily building. All elevations meet this requirement except the east elevation of Building A, which has four architectural features. Because this elevation faces Cowdin Dr., Staff believes that this elevation should meet the required number of features, and has suggested a condition of approval to this effect.

Transitions to Existing Residential

The site shares a lot line with two other lots, one of which is a single-family home and the other a multifamily building. Several design standards must be met for new residential structures adjacent to existing residential dwellings, which are contained in section 070.40.080(e)(8).

These standards are aimed at minimizing use impacts to the maximum extent feasible from loading and areas of movement, sources of audible noise, windows, and outdoor living spaces. The existing multifamily building at 709 Cowdin is separated from building A, the nearest proposed building, by the carport and a distance of at least 75 feet. Staff believes these two factors make the transition requirements not applicable to this residential structure.

The home at 710 Midland Ave., the other lot line shared with the project site, sits closer to one of the proposed structures, and is approximately 11 feet taller than the existing home. Building C is separated from the home by 33 feet, and is situated east of the existing by about 22 feet. The proposed roof pitch is at its low point on the west elevation facing the adjacent home. Staff believes the location of building C and its roof pitch will remove most potential impact from 710 Midland. The flexible application of these transition requirements is also permitted by Section 070.45.080.



Above: The site parcel looking northwest.

Lot Standards

The High-Density Residential (RH) district allows one attached unit per 2,250 square feet of lot area. This site's area would therefore allow up to nine units, meeting this code standard.

Lot Coverage

This project is not infill residential, as defined in the development code, because the site only shares a lot line with one single family home. Therefore, the requirements for maximum lot coverage included in infill development requirements do not apply.

Trash Enclosure

Code section 070.40.080(e)(4) states that trash enclosures, if not located within the footprint of a building, should be located away from the primary street "to the maximum extent feasible." The proposed location is adjacent to the primary street, inside the setback. The applicant has indicated that the trash enclosure will not fit in other locations, and that this is also the best location for trash removal services to access it. Staff believes this location can be approved based on the flexibility offered by Section 070.45.080.

Common Open Space

Code requires 20% of the site be common open space. The required amount of common open space is 3,589 square feet. Required buffer and landscape areas can count towards this amount, but interior parking lot landscaping areas cannot. The total amount of common open space proposed is 3,751 square feet, which meets code requirements. The applicants propose putting a picnic area in the northwest corner of the lot for the use of residents.

Landscaping

For a property zoned RH, the Code requires that 20% of the entire site be landscaped. The total amount of required landscaped area is 3,589 square feet. The proposed development will have 8,268 square feet of landscaping, which meets the requirement. Requirements for planting by type is found in the table below.

Plant Material	Code Requirement	Required	Provided	Meets Req.
Trees	1 per 400 sf req. landscaped area	9	16	YES
Shrubs	1 per 100 sf req. landscaped area	36	169	YES
Perennials	1 per 50 sf req. landscaped area	84	Provided through shrub substitution	YES
Street Trees	1 per 75 feet of street frontage	2, Cowdin 5, Midland/8 th	0 5	NO YES

Based on required landscaped area of 3,589 sf

The landscaping plan includes three shrub species that are not on the City's approved plant list. All selected species need to be on the City's approved plant list or another similar list as approved for Glenwood Springs's climate, so to comply with the landscaping requirements, some of the species on the landscaping plan will need to be changed. The landscaping plan also does not address the planting of perennials, which are required at a certain ratio. These items have been included as a suggested condition of approval.

The landscaping code requires that plants be grouped together by soil suitability and by water use in distinct hydrozones, which are requirements intended to increase the ability of plants to thrive and to prevent overwatering. A condition of approval has been suggested for the applicant to clarify this information and comply with these requirements.

Planting Strip

A planting strip provides separation between street and sidewalk and is required for new development. No planting strip and no sidewalk exist currently along this stretch of Cowdin Drive, but the applicant proposes creating a planting strip three feet in width. This does not meet the Municipal Code's required width of five feet. The applicant has stated that a variation from the width requirement here is necessary to accommodate water detention. The proposed planting strip

along Cowdin includes a turf seed mix. The Municipal Code requires that one street tree per 75 feet be planted, and a condition of approval has been included for the applicant to include two street trees for the approximately 116 feet of frontage along Cowdin Drive. For the approximately 310 feet of frontage along 8th St. and Midland Ave., five street trees will be required, which the applicant has included. A condition of approval has been included requiring the applicant to add to the landscaping plan that ball and burlap trees must have the burlap and cage removed prior to planting, as required by the code.

The existing planting strip along 8th Street and Midland Avenue tapers from a width of seven feet at its widest point to 0 along both ends of this stretch of frontage. This is not in compliance with the Municipal Code, which requires a 5-foot planting strip along the street frontage. Staff believes it is appropriate to allow variation from the code for the planting strip width of all sides through the flexibility enabled by Section 070.45.080 of the code. This would include allowing the tapering width of the planting strip as it exists today along Midland and allowing a three-foot planting strip along Cowdin.



Above: The corner of Cowdin Dr. and 8th St.

Parking Lot Landscaping

For parking lots with fewer than 20 spaces, the Code requires that 10% of the total parking area be designated for landscaping, including 10 square feet of interior parking landscaping per parking space. The proposal calls for 14 off-street parking spaces not in garages, therefore requiring 140 square feet of interior parking landscaping that can be included in the 10% of total parking area landscaping. This landscaping requirement is met with the landscaping plan as proposed.

Section 070.40.060(h)(6)(c) of the Municipal Code, Parking Area Landscaping Design, requires that parking area interior landscaping be distributed to physically break up blocks of parking spaces in order to provide shade. Because 10 of the 14 spaces are located under a covered carport, Staff believes that no changes are required to this block of parking and associated landscaping.

Three trees are required to be planted in the parking area, and they must meet the code requirement of “having widely branching growth habit and that reach a mature height of at least 30 feet.” Two trees are currently proposed in the parking area. A condition of approval has been suggested for the applicant’s landscaping plan to be revised to meet these requirements.

Off-Street Parking and Loading

Section 070.030.020(e)/Table 030.1 Table of Allowed Uses contains the parking requirements for development. The code requires 1.5 parking spaces per multifamily dwelling unit and one guest space per five multifamily dwellings. For eight multifamily units, the required number of spaces is 12 for the units themselves and two spaces for guest parking. This plan proposes 14 parking spaces, which meets code requirements.

Section 070.040.060(f)(2) outlines the amount of bicycle parking required. For a development with fewer than 50 vehicle spaces, three bicycle spaces are required. This plan includes six bicycle spaces located adjacent to the carport, meeting code requirements.

Access and Circulation

Access to the lot will be provided via Cowdin Dr. An existing sidewalk along 8th Street and Midland exceeds the sidewalk width requirements. Along Cowdin, where there is no sidewalk on either side, a new sidewalk with a five-foot width is planned.

Traffic Impact

The applicant has submitted a traffic assessment for the proposal. This assessment noted that a previous master traffic study for the larger area included this site area with the same assumed development buildout. This traffic study was performed by Kimley Horn in partnership with the City in January of 2023. It found that because all parking will be on-site and because the traffic generation potential of the site had already been factored into an analysis of the road network, no improvements to the street or lane infrastructure will be necessary for this development.

Drainage and Geotechnical

The applicant has submitted all required reports for drainage and geotechnical study. The Engineering Department has reviewed these reports and submitted minor comments and suggestions. A condition of approval has been suggested requiring compliance with the Engineering referral comments.

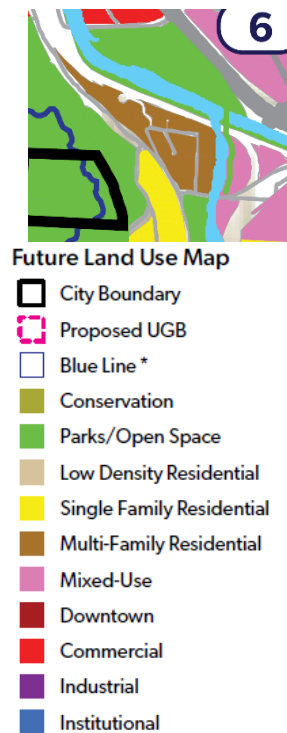
Community Housing

Section 070.045.70 provides for requirements for all residential and mixed-use developments proposing the construction of ten or more new dwelling units or residential lots. This project is not subject to Section 070.045.70, but Habitat for Humanity, as a nonprofit developer dedicated to affordable housing, proposes to make all the units affordable in accordance with the City’s Housing Guidelines.

COMPREHENSIVE PLAN COMPATIBILITY

Below is staff’s analysis of the proposed project and its compatibility with the Comprehensive Plan.

The subject property is shown on the Future Land Use Map in the Comprehensive Plan as Multi-family Residential, which is compatible with the proposed development.



The table below describes how the proposed project supports specific goals from the Comprehensive Plan.

Comprehensive Plan Policy Supported	Objectives and Strategies
Promote Transit Oriented Development	Concentrate growth in locations that can be served by high-frequency transit
Staff Comment: The site has a pedestrian connection to a RFTA bus stop.	
Encourage a compact urban form	
Staff Comment: Located in the center of the city, this is an infill project that makes efficient use of a vacant parcel.	
Foster and protect vibrant, diverse, safe, and well-connected neighborhoods	
Staff Comment: The project will provide affordable housing on a vacant parcel within an established neighborhood while providing required parking off-street.	
Support social diversity	
Staff Comment: The project will provide for-sale housing for people who would otherwise not be able to afford a for-sale product in Glenwood Springs	
Ensure adequate development of workforce housing	
Staff Comment: At least one person from each household in the proposed development must	

be a qualified member of the workforce in Glenwood Springs, pursuant to the City's guidelines.	
Increase housing density	
Staff Comment: This project provides multifamily housing of eight units.	
Provide diversity in housing types	
Staff Comment: This project provides two- and three-bedroom unit configurations, which are less common housing types in Glenwood.	
Direct growth to areas where utilities and services can be provided efficiently	
Staff Comment: Utilities are already available in this neighborhood.	
Reduce greenhouse gas emissions	
Staff Comment: Central locations with pedestrian or bicycle access to services and jobs decrease the need for driving, thus potentially reducing greenhouse gas emissions.	

SITE/ARCHITECTURAL PLAN REVIEW APPROVAL CRITERIA

An Administrative Site/Architectural Plan Review application must adhere to the approval criteria outlined in Section 070.060.050(a)(6) of the code as outlined below. Staff analysis follows each criteria.

- a. *The site/architectural plan is consistent with the general purpose and intent of this Code;*

Staff believes the proposed development is consistent with the general purpose and intent of the code.

- b. *The site/architectural plan is consistent with the dimensional, design, development, and all other standards of this Code;*

The following items are not consistent with the code as proposed: front setback encroachment, certain landscaping requirements, minimum architectural features, and building orientation. However, all of these requirements may be applied using site design flexibility incentive provided for in 070.45.080, meaning that the code's strict requirements may be waived at the discretion of the P&Z. While P&Z has this discretion, Staff has included recommended conditions of approval to bring some of these aforementioned issues into greater compliance with the land use code, including landscaping requirements and minimum architectural features for building A. These and other conditions, if adhered to, along with the recommended application of flexibility for the other noncompliant code items as discussed in this report, will result in consistency with the code.

- c. *The site/architectural plan is consistent with any previously approved plat, PUD, or any other precedent land use approval;*

Staff is not aware of any precedent land use approvals that come to bear on this parcel.

- d. *The site/architectural plan is consistent with the Comprehensive Plan and other adopted City policies and plans.*

As discussed above the current proposal is in compliance with both the Future Land Use map contained in the Comprehensive Plan and the goals and action items of the Comprehensive Plan.

REVIEWING AGENCY COMMENTS

An overview of any comments received from referral agencies is provided below. Comments are also attached with application information.

Engineering Department – The Engineering Department has numerous comments that are included in full as part of this packet. They note that a grading permit will be required. The Engineering Department also has several minor questions and concerns with the plan that can be likely be addressed without significant project redesign. A condition of approval has been included requiring the applicants to address these concerns at the time of Final Plan Review.

Public Works, Water, Wastewater, Electric –Comments submitted by these departments are included in the packet. They include minor questions, suggestions, and comments that can likely be answered or accommodated during the Final Plans Review process.

Police Department – The Police Department communicated that they have dealt extensively with parking problems in this neighborhood. They understand that the proposed project meets the minimum parking requirements, but noted that residents will not be able to use the Veltus Park overflow lot across 8th Street as parking for this development. A condition of approval has been suggested to this effect.

ACTION ALTERNATIVES AND STAFF RECOMMENDATION:

The Planning and Zoning Commission may approve, approve with conditions, or deny the Administrative Site & Architectural Plan and the variance. The Commission may also continue the hearing with a request for specific information necessary to determine compliance with the Municipal Code and city goals and policies.

Action 1 – Administrative Site & Architectural Plan – Administrative Site & Architectural Plan for development of an 8-unit multifamily residential building.

Staff Recommendation/Suggested Motion

Staff recommends **approval** of the Administrative Site & Architectural Plan with the following **findings and conditions**:

Suggested Findings:

1. The site/architectural plan is consistent with general purpose and intent of the Code;

2. The site/architectural plan is consistent with dimensional, design, development, and all other standards of this Code;
3. The site/architectural plan is not in conflict with precedent land use approvals; and
4. The site/architectural plan is consistent with goals and objectives of the Comprehensive Plan

Suggested Conditions

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 owner 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 owner shall comply with recommendations identified in the technical reports submitted as part of the application including but not limited to Geotechnical and Drainage.
4. Prior to approval of Final Plans Review, the applicant shall:
 - a. update landscape plan to include two street trees in the planting strip adjacent to Cowdin Dr.;
 - b. update the landscape plan to include a note that ball and burlap trees shall have burlap and cage removed prior to planting;
 - c. update the landscape plan to comply with all aspects of Section 070.040.050(c). The landscaping plan shall state the hydrozone of each planting and group the plantings of the same hydrozone in the same irrigation zone;
 - d. modify the landscaping plan to comply with the requirements of Section 070.40.060(h)(6)(c)(2), parking area tree characteristics, and Table 40.9: Parking Area landscaping Requirements;
 - e. provide a lighting plan that complies with the requirements of the Municipal Code, including parking area lighting;
 - f. modify the architectural plans for building A adding an architectural feature to the east elevation.
5. Prior to issuance of the building permit, the applicant shall:
 - a. provide evidence of recording the units' deed restrictions.
6. Prior to issuance of the Certificate of Occupancy, the applicant shall:
 - a. Provide as-built plans and an Improvement Survey Plat per the Engineering Standards.
7. Any trees on the site with a caliper of 14" or greater shall receive tree removal permits to the satisfaction of the Parks and Recreation Department.
8. Applicant shall adhere to all requirements in the Engineering referral comments.
9. Applicant shall adhere to all requirements in the Public Works referral comments.
10. It shall be communicated to future residents that the Veltus Park overflow lot shall not be utilized for resident parking.

ALTERNATIVE MOTION

***A member of City Council has requested that land use applications include suggested motions for both approval and denial. In most instances, staff has worked diligently with the applicant to address requirements outlined in the *Glenwood Springs Municipal Code* (Code) applicable to any given proposal. Therefore, we are usually in support of an application by the time it reaches the Planning and Zoning Commission and/or City Council. However, if the Planning and Zoning Commission does not believe the application meets the Code's minimum standards, your denial motion should be based on one or more of the same approval criteria applicable to the application. You should support your findings with information outlining the shortcomings of the request as shown in the example below:

MOTION TO DENY

Action 1:

Consideration of an Administrative Site/Architectural Plan review for the construction of an 8-unit multifamily building in the Residential High-Density District. I move to **DENY** finding that -

1. The site/architectural plan is not consistent with general purpose and intent of the Code because **[insert reasoning]**;
2. The site/architectural plan is not consistent with dimensional, design, development, and other standards of this Code **[insert where you find inconsistencies with Code requirements]**; and
3. The site/architectural plan is not consistent with precedent land use approvals **[insert where you find consistency with other relevant land use approvals]**; and
4. The site/architectural plan is not in conformance with **[insert applicable Comprehensive Plan or other City plan or policy sections here]** of the Comprehensive Plan and other City plans and policies.



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	☐	

Applicant/Property Owner Information:			
Applicant		Owner	
Habitat for Humanity of the Roaring Fork Valley, Inc.		City of Glenwood Springs, Colorado	
Relationship to Owner		Owner	
Contract to Acquire the Property Subject to the Application			
Applicant Address		Owner Address	
c/o The Myler Law Firm, P.C.	211 Midland Ave., Ste. 201, Basalt, CO 81621	101 W. 8th St.	Glenwood Springs, CO 81601
Phone 970-948-4150	Email Address dmyler@mylerlawpc.com	Phone 970-384-6407	Email Address hannah.klausman@cogs.us

Property Information:	
Address	Parcel Number
See attached Title Commitment.	
Subdivision	Lot and Block Number
Zone District	Existing Land Use Vacant Land

General Project Description:
Eight (8) Residential Workforce Housing Units

Signatures:		
The owner or applicant must be present at the hearing. All public hearings must be properly 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

application. (Attach additional incorporation documents if necessary.) I declare under the penalty of perjury that the above information is true and correct to the best of my knowledge.		
	Owner	Date

22860 Two Rivers Road #1 May 2nd, 2023

Basalt, Colorado 81621

970.925.8354

designworkshop.com

Watkins Fulk-Gray
Senior Planner
City of Glenwood Springs, Colorado

Watkins,

We are pleased to submit this Land Use Application and associated narrative for the Habitat Roaring Fork property located at the corner of 8th and Midland in Glenwood Springs. This application is for Administrative Site Plan and Architectural Review.

Introduction to the Application

The City of Glenwood is the current owner of the 8th and Midland property. The City of Glenwood Springs (City) previously issued a request for the development with the intention of attracting a 100% Community Housing project. Based on a Memorandum of Understanding (MOU) between the City and Habitat for Humanity (Habitat), Habitat provided a proposal to be the developer of the housing program and subsequently was selected to enter into a MOU with the City. This application is for the project to be developed with eight affordable residential units. Once the land use process is completed, the development of the project will be undertaken by Habitat. Based on the MOU, Habitat is the primary applicant for this project. A pre-application meeting was held with Community Development staff March 30th, 2023.

Project context and Location

The 8th Street and Midland Avenue property is located on a parcel that was remaining after roadway improvements were completed from 8th Street to Midland Avenue. These both are high traffic volume streets. Cowdin Drive is the primary access to the existing neighborhood. The existing neighborhood consists of residential buildings of one, two, and three stories, and range in age and style. Both single family and multi-family housing exist. The parcel is 0.48 acres in size and has more than 13 feet of elevation change across the length of the site. The average slope of the site is approximately 10% and the entire site is below 20% grade. The site contains fill materials that remain from the roadway construction that will need to be removed as they are unsuitable for building foundations. The property slopes generally to the east and is adjacent to excellent parks and the river corridor.

This land use application is for the Administrative Site Plan and Architectural Review and for a Minor Subdivision to accomplish a lot line adjustment for a portion of the parcel that is currently used for roadway and sidewalk.

Project Description

The project is conceived as a 100% Affordable Community Housing Project. This project will seek to provide much needed housing for families with incomes equal to or below 80% of the region's Average Median Income (AMI). The program is designed for young families and ownership will not be dependent on their workplace. Families qualifying and selected as the future owners of the residential units will be active volunteers in the construction of the project requiring 250 hours per adult of work toward ownership. This will be a unique first project for Glenwood Springs and is a positive step to address the affordable housing crisis in the region.

The project includes (6) 2-Bedroom units and (2)-3-bedroom units. The floor area for the 2-bedroom units is 855.5 gsf and the 3-bedrooms units are 1,283 gsf. The residential portion of the project totals 7,699.5 gsf. In addition, the walk-out basement area of Building C includes a common storage area for the residents made possible by the sloping site. This additional 1,180 sf of storage is a generous amenity for the future residents and far exceeds the storage requirements for Community Housing.

The parcel is in the RH (Residential High Density) zone district. The allowable density is determined by the lot area of 21,108 sf with a requirement for 2250 sf of lot area per dwelling unit. RH district density is 7 units and with the provision of a density bonus in Article 070.45.080 of the Development Code, the addition of 1 unit is possible as Community Housing. Other development standards are met except for several site flexibility and administrative adjustments that will improve the livability or site plan. Those requests follow in a later section of the application.

A carport will provide 10 covered parking spaces, providing weather protection and convenience for residents. There are an additional 4 parking spaces, bringing the total to the code requirement of 14 spaces, one of which is ADA accessible. Also included is a covered bicycle parking area, trash enclosure and individual outdoor spaces for each unit. Screening is provided for each patio for privacy and designed in common with each unit's entry. More than 20% of the site is common landscape and open spaces areas, which will be part of the site design that allows residents to have access to light and views to the south and west. A small common seating area with picnic tables and bar-b-q is located on the western side of the site. A new sidewalk is provided along Cowdin Drive which includes a landscape buffer strip and new four-foot-wide interior sidewalk access to the units.

Habitat is looking to sustainability solutions for the future including becoming energy self-reliance with all electric heating, appliances and supplemented with solar panels on the roof. The roof orientation and form are designed to accommodate the possibility for maximum collection and use of solar energy with roof mounted panels.

The some specific topics of the application is included below:

Site Geo- Hazard information

The Glenwood Geo-hazard generalized map show a possible moderate debris flow that may affect the site. This has been further studied, and a geo-hazard report prepared by Kumar Associates as well as a sub-surface soil investigation is included with this application. This study provides a conclusion that the hazard will not make the site unsuitable for the project and is included in the application appendix.

Zoning District Standards

The front yard (10 feet), side yard (5 feet) and rear yard (10) setbacks have been included in the site plan. The front yard is designated as Cowdin Avenue. A portion of the roof overhang encroaches into the setback at 8th street more than is normally allowed. A request and reasons for this are listed in the request for site plan flexibility as provided for in section 070.045.080(2). Otherwise, the applicant believes that the zoning standards for the district are compliant. See the site plan for zoning compliance.

Traffic Report

The recent traffic planning for Glenwood Springs includes an analysis of this neighborhood area. The density allocated to this site is for 8 dwelling units and therefore density is confirmed as the same as used in the traffic generation. See the traffic letter included in the application appendix.

On-site Parking

The zoning ratio of parking spaces to residential units is 1.5 parking spaces per residential unit. In addition, for every 5 units, one parking stall for guests is included. The project is proposing 8 residential units which equals 12 spaces at 1.5 spaces/unit. Guest parking is 1 space/5 units or 1.6 spaces for a total of 13.6 required. The project includes 14 spaces, one which is an ADA accessible space. The driveway width is 24 feet wide. Bicycle parking is located on the property, under the carport canopy. 3 bike parking spaces are required; there are 6 spaces proposed. The site plan shows the location and layout of the spaces.

Surface Water Drainage

The surface water drainage plan includes providing for existing drainage and the addition of newly developed impervious surface that would result. Due to adjacent utilities in 8th Street, which made connection to the existing storm sewer impractical, drywells will be included on site to manage the surface water runoff.

Utilities

The site will be connected to the main utilities systems that exist in the vicinity today. Water service will connect in Cowdin Drive, sanitary sewer is in 8th Street, and communications and electricity are located at the site. See the utility plan for proposed utilities and the connections to the existing system.

Architecture Plans

The residential units are designed to be a long-term quality living arrangement first and foremost. They share efficiency in the building systems with stackable plumbing, unit spaces, and repeatable architectural features. Each unit will have either a patio or balcony for outdoor living, and the common circulation is placed on the side of the units to minimum noise transmitting and avoiding circulation past bedrooms. The project originally was thought of as a three-story single structure, but refinement in conjunction with site information provided a site plan that could be three buildings, accomplished through breaking up the scale and mass of the building, improving the adjacent connection to the neighborhood, and better accommodating the density of the project. The western most building (building c) will include a partial basement with a two-story profile on the west side and a three-story profile on the east. The space will serve as owner storage, eliminating a common problem which is lack of adequate storage space. The building mass and scale will be compatible with the neighborhood and adjacent properties. (See the adjacent property height section)

The exterior materials will be a combination of architectural composite paneling of various colors and patterns, and wood structural elements for the roof support, stairways, and balconies and as an accent material, architectural metal siding. The railings for the stairs are metal with wire mesh infill. The elevations and rendering of the project show the composition of the exterior materials. The roof is standing and seam metal in a middle tone grey. No bright white color or shining/ reflective materials are included in the project's design. The individual buildings are designed as separate structures and present an appearance of individual houses in multi-family format.

The window design is varied and includes both horizontal and vertical styles. They are placed to allow views and the need for privacy between units and buildings. The community friendly character is enhanced by the window placement and visible unit entries.

Landscape Design

The landscape requirement for the zoning district is 20% of the site area. The project proposes 38% of the lot area to be landscape area. Both landscaped area and open space requirement are met in the plan. The plants selected are from the Glenwood Springs Parks and Recreation Plant List and the plan is consistent with the water efficiency standards of section 070.040.050(c)(3) of the code. The turf area, which is approximately 7,000 sf, will be Enviro-turf, which is a low water use turf and durable for residential use. The plan also includes screening of the parking lot and provides for shading by deciduous trees during summer months, supporting energy conservation within the units. Mature Austrian Pines are selected to provide screening from the adjacent property to the northwest of the project site.

Lighting Plan

The entries of the units will each have a porch light that will provide convenient, but minimal and safe lighting at the entry. No un-shielded light fixtures will be mounted on the buildings. No additional site lighting is proposed.

Snow Removal and Storage Locations

Much of the parking area will be covered by a carport and therefore will reduce the need for snow storage. Snow storage locations for other auto and pedestrian paving areas are located on the site plan.

Minor Subdivision of Parcel

The original parcel includes the area previously developed in conjunction with the roadway improvements connecting 8th Street to Midland Avenue. A portion of the improvements, including a public sidewalk and a small portion of 8th Street roadway, are within the boundaries of the original parcel. The purpose of the lot line adjustment is to separate the right-of-way use from the residential development ownership. The future development and the City will benefit by having clarified ownership. The proposed lot line adjustment is shown on the Draft Preliminary Plat. Several easements are shown on the preliminary plat. See the Plan package.

Requests for Administrative Adjustments

The 8th Street and Midland Avenue project has the following request that would alter the Development or the Design standards. As a 100% Community Housing Project several areas of adjustment have been identified which are listed below.

- 1. Primary building materials shall be selected for their ability to withstand Glenwood Spring's viable mountain climate 070.040.080(6).**

Materials with demonstrated durability include but are not limited to:

- i. Brick*
- ii. Stone*
- iii. Cementitious siding products*
- iv. Wood and log construction*
- v. Cast Concrete or*

v. Other comparable materials as approved by the director.

This design standards do not specifically allow architectural metal siding as an acceptable building material but does suggest that similar durable material as the list is appropriate. Since maintenance and longevity are a concern, architectural metal siding has been included in the material choice. The proposed dark matte color finish and corrugated texture add shadow on the surface of the structures. The request is to grant approval of the metal siding shown on the sample board as an accent material used for not more than 23.5% of the project's exterior surface provides additional architectural diversity for the project, avoiding a monotonous design.

Explain how your request will not result in incompatible development.

The visual impression of the proposed metal siding is similar to the other listed materials, but provides raised relief and texture, rather than a "flat" appearance. The specific material is shown on the sample board and is a positive addition to the character of the exterior of the buildings. The architectural metal would only be an accent exterior material.

Explain how the adjustment will not result in, or how you have mitigated any adverse impacts.

The use of the material would have no known impact. Characteristics of non-reflectivity, durability, maintenance free design and baked-on near permanent color finish makes the material suitable.

Explain how the adjustment is necessary to compensate for an unusual site condition.

The site program as 100% Community Housing makes attention to life cycle cost particularly important to not burden future housing residents with unsustainable costs. Rain and moisture are prevented from entering the building's sheathing and the sun damage has been shown to be negligible on direct south facing elevations satisfying durability concerns.

Explain how the adjustment is necessary to eliminate a minor inadvertent failure to comply with the Municipal Code.

The request is to utilize the directors' authority in considering durable materials that are not listed but allowed with approval. The adjustment would allow for accent building material and is helpful for affordable construction.

Explain how the adjustment is necessary to protect a sensitive resource, natural feature, or community asset.

Community housing has fallen behind in providing actual homes for the workforce to live. This adjustment will assist in the provision of 8 residential units within Glenwood Springs.

2. **Transitional height to Existing Residential 070.040.080(e)(8)(b):** *A new building with a height that exceeds that of an adjacent existing dwelling by one (1) story or more shall provide a transition using at least three (3) of the following techniques: 1. "Stepping down" building height and mass along the shared property line to meet the height of the existing neighboring home along a minimum of fifty (50) percent of the new building's length. The "stepped- down" portion of the new building shall be a minimum of ten (10) feet in width and depth. This option is available only where the existing residential building is located along the property line adjacent to the new building; 2. Providing variations in the side building wall and/or roof form*

so that new structures have a comparable scale as neighboring homes along the shared property line; 3. Utilizing a roof pitch and overhang similar to that of the neighboring structures; and 4. Utilizing dormers and sloping roofs to accommodate upper stories.

Explain how your request will not result in incompatible development.

The height of Building C to the closest existing house is 11 feet 3 inches as measured from the midpoint of each roof. The proposed building and the existing building are offset by 22 feet to the east and have a total separation of 33 feet. This separation would be greater than most any situation in the immediate neighborhood where the setback is typically 5 feet on the side yard. The proposed building is sited 22 feet more easterly, effectively stepping the entire building away from the existing residence making them not adjacent. Landscape screening is included with mature coniferous trees (12 feet height) that will be placed between the two structures. To create neighborhood compatibility, the entire project is a 2-story plan rather than using the height of 40 feet as allowed in the zone district. The steepness of the grade east to west creates a site situation where the walk-out storage basement is used instead of retaining walls to make the site more usable and falls away from the existing house. The proposed roof design for building C sites the lowest portion of the building closest to the existing residence to visually diminish the difference in height of the two structures. The applicant believes that the offset, separation of the buildings, roof slope, landscape screen and the slope condition contribute to the reasons that the standard is met.

Explain how the adjustment will not result in, or how you have mitigated any adverse impact.

Any adverse visual impact will be mitigated by the landscape plan which includes the planting of conifer trees between Building C and the existing residence.

Explain how the adjustment is necessary to compensate for an unusual site condition.

The sloping topography requiring a walk-out basement solves the storage program commonly found where larger items are stored on balconies in the absence of any available space provided. The existing building and the proposed building are purposefully separated and offset large distances exceeding the zoning standard.

Explain how the adjustment is necessary to eliminate a minor inadvertent failure to comply with the municipal code.

The modules used in this Community Housing are well tested floor plans. They don't adapt well to the changes in the basis module and with panelized construction the modification to a single area has noticeable cost consequences to the overall pricing of the project. Therefore to meet the Community Housing goal, vertically stacking the units is an important goal in the design.

The adjustment requested will protect the transition to the neighborhood by maintaining a lower height profile, rather than building a higher structure as is allowed, enhancing the overall project, neighbor compatibility and the community perception.

3. Roof overhang encroachment into the side yard setback- Site Design Flexibility 070.045.080(C)

The normal roof overhang setback is 18 inches beyond the setback. The roof proposed would encroach 3 feet 9 inches into the setback. The site flexibility section specific allows for

consideration of a setback adjustment with approval. The building wall is compliance with the setback, but the roof covers the patio and entries of the building, providing a desirable weather protection. This design factor is what is related to the adjustment requested. causing the encroachment.

Explain how the adjustment will not result in incompatible development.

The area proposed for the overhang is located on the site adjacent to the highway side where other future developments will not occur. This will not affect other properties or create a public hazard or hardship. The covered entry is a desirable amenity for Community Housing and provides weather protection, shade on the outdoor space, shades the structures, and provides safety by presenting ice and snow on the stairways.

Explain how the adjustment will not result in, or how you have mitigated any adverse impact.

No adverse impacts are known for the encroachment.

Explain how the adjustment is necessary to protect a sensitive resource, natural feature, or community asset.

The site's shape is narrow for a multi-family design and doesn't allow for the flexibility to organize the parking, walkways, building and the tapering site boundary and still accommodate the roof. The desire to include solar collector on the roof requires the larger surface area to accommodate the collectors and the setbacks on the roof around the collectors.

Explain how the adjustment is necessary to eliminate a minor inadvertent failure to comply with the municipal Code.

The code does provide for this type of adjustment under section 070.045.080(C). The approval must be granted, and it appears that this allowance was created for Community Housing for the type of conditions found at 8th and Midland. In effect, the request would allow the improvement to the housing and a desired benefit for future residents.

Explain how the adjustment is necessary to compensate for an unusual site condition.

The narrow parcel and curving edge that is being created with the lot line adjustment creates the need for the request. Separation between the parking lot and the residential building is as close as workable to a quality living environment. Without the lot line benefit, there would be no reason to request this, but since the residential portion will now be smaller, this should be addressed.

Explain how the adjustment is necessary to protect a sensitive resource, natural feature, or community asset.

The community resource in the suitable land for Community Housing. The site is a parcel that with the site plan flexibility requested becomes more suitable for development.

Application Appendix of Plan Drawings

Geohazard Report

Soils Report

Traffic Report

Drainage Letter

Land Use Submission Plan Set

G000 Cover Sheet

G001 General Information

G002 Assemblies

Survey

Civil Plans

C1 Civil Cover Sheet

C2 Site Plan

C3 Grading, Drainage, and Erosion Control Plan

C4 Utility Plan

C5 Sewer and Water Line Plan and Profile

C6 Site Details

C7 Site Details

C8 Water and Sewer Details

C9 Ramp Details

C10 Electrical Details

Landscape Plans

L3 Preliminary Site Plan

L8 Preliminary Planting Plan

Architectural Plans

A101 Site Plan

A102 Site Elevations

A201A Building A Floor Plans

A202A Building A Roof Plan

A201B Building B Floor Plan

A202B Building B Floor Plan

A203B Building B Roof Plan

A201C Building C Floor Plan

A202C Building C Roof Plan

A300 Exterior Perspectives

A301A Building A Elevations

A301B Building B Elevations

A301C Building C Elevations

A310 Exterior Material Options

A601 Carport Plans

A602 Carport Elevations

Preliminary Subdivision Plat



HABITAT ROARING FORK 8TH STREET

8TH STREET & MIDLAND AVENUE
GLENWOOD SPRINGS, CO 81601



CITY OF GLENWOOD SPRINGS
LAND USE SUBMISSION
MAY 2, 2023

KEO
studioworks

PO BOX 3371 ASPEN, CO 81612
970-319-1229

DRAWING INDEX

GENERAL

- G000 COVER SHEET
G001 GENERAL INFORMATION
G002 ASSEMBILES SURVEY

CIVIL

- C1 CIVIL COVER SHEET
C2 SITE PLAN
C3 GRADING, DRAINAGE, AND EROSION CONTROL PLAN
C4 UTILITY PLAN
C5 SEWER AND WATER LINE PLAN AND PROFILE
C6 SITE DETAILS
C7 SITE DETAILS
C8 WATER AND SEWER DETAILS
C9 RAMP DETAILS
C10 ELECTRIC DETAILS

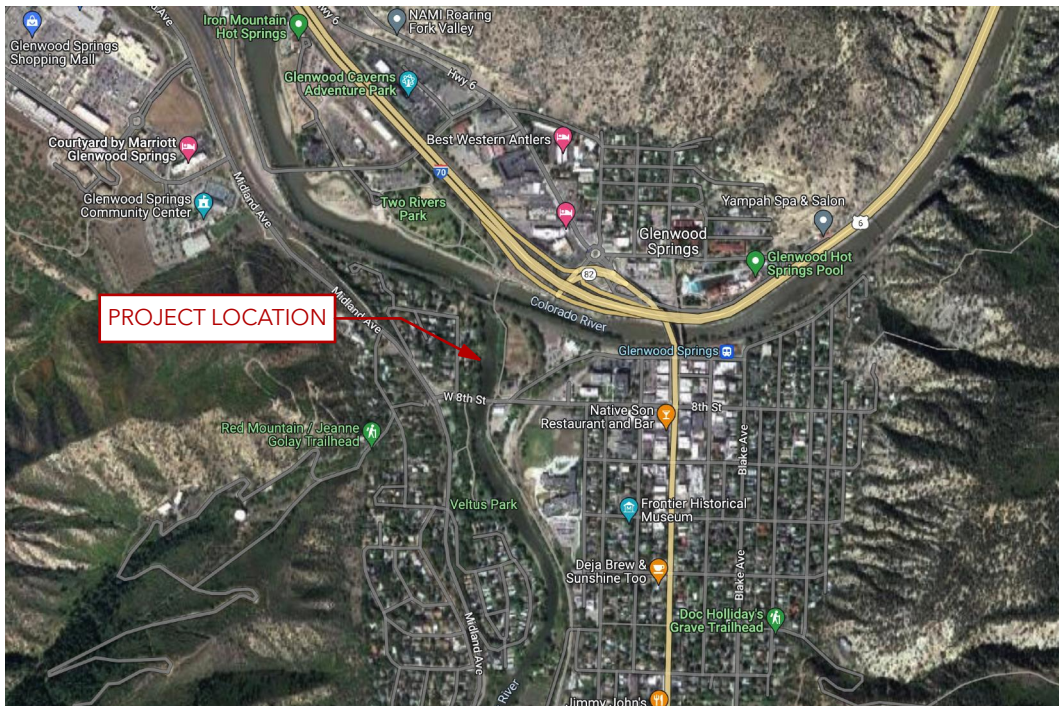
LANDSCAPE

- L3 PRELIMINARY SITE PLAN
L8 PRELIMINARY PLANTING PLAN

ARCHITECTURAL

- A101 SITE PLAN
A102 SITE ELEVATIONS
A201A BUILDING A FLOOR PLANS
A202A BUILDING A ROOF PLAN
A201B BUILDING B FLOOR PLAN
A202B BUILDING B FLOOR PLAN
A203B BUILDING B ROOF PLAN
A201C BUILDING C FLOOR PLANS
A202C BUILDING C FLOOR & ROOF PLAN
A300 EXTERIOR PERSPECTIVES
A301A BUILDING A ELEVATIONS
A301B BUILDING B ELEVATIONS
A301C BUILDING C ELEVATIONS
A310 EXTERIOR MATERIAL OPTIONS
A601 CARPORT PLANS
A602 CARPORT ELEVATIONS

VICINITY MAP



HABITAT ROARING FORK 8TH STREET
GLENWOOD SPRINGS, CO
LAND USE SUBMISSION 5/2/2023

PROJECT INFO

8TH STREET & MIDLAND AVENUE
GLENWOOD SPRINGS CO 81601 USA

JURISDICTION: CITY OF GLENWOOD SPRINGS

PARCEL ID: 218509300002

LEGAL DESC: SECTION: 9 TOWNSHIP: 6

CODE: 2021 INTERNATIONAL BUILDING CODE (IBC)
2021 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

ZONING: HR - HIGH DENSITY RESIDENTIAL

CLIMATE ZONE: 6A

HEIGHT LIMIT: 40'-0"



ABBREVIATIONS

AAD	ATTIC ACCESS DOOR	GALV	GALVANIZED	RM	ROOM
ADD	ADDENDUM	GC	GENERAL CONTRACTOR	RW	ROUGH OPENING
ADJ	ADJACENT	GL	GLASS	SAN	SANITARY
AOR	AREA OF REFUGE	GRI	GRADE	SECT	SECTION
AGG	AGGREGATE	GLB	LAMINATED WOOD BEAM	SEW	SEWER
AFF	ABOVE FINISHED FLOOR	GYP	GYPSPUM	SHT	SHEET
ALT	ALTERNATE	GWB	GYPSPUM WALLBOARD	SHV	SHELVES
ARCH	ARCHITECTURAL	HDW	HARDWARE	SHL	SIMILAR
BM	BEAM	HD	HEAD	SL	SLIDING
BRG	BEARING	HT	HEATING, VENTILATING, AND AIR CONDITIONING	SM	SHEET METAL
BET	BETWEEN	HT	HEIGHT	STC	SOUND-TRANSMISSION CLASS
BD	BOARD	HWY	HIGHWAY	SPEC	SPECIFICATION
BS	BOTH SIDES	HOR	HORIZONTAL	SO	SQUARE
BO	BOTTOM OF	ID	INSIDE DIAMETER	STD	STANDARD
BLDG	BUILDING	INT	INTERIOR	STL	STEEL
CAB	CABINET	IT	JOINT	STRUCT	STRUCTURAL (AL)
CL	CENTERLINE	JT	JOINT	SUB	SUBSTITUTE
CER	CERAMIC	LAM	LAMINATE	SUPPL	SUPPLEMENT (AL)
CLR	CLEAR	LAV	LAVATORY	SUSP	SUSPEND (ED)
CLOS	CLOSET	MFG	MANUFACTURER	TEL	TELEPHONE
CMU	CONCRETE MASONRY UNIT	MO	MASONRY OPENING	TV	TELEVISION
COL	COLUMN	MAX	MAXIMUM	TEMP	TEMPERED
CONC	CONCRETE	MC	MEDICINE CABINET	THK	THICK
CJ	CONSTRUCTION JOINT	MECH	MECHANICAL	THK	THICK
CONT	CONTINUOUS	MIN	MINIMUM	TPH	TOILET PAPER HOLDER
DP	DAMP-PROOFING	MISC	MISCELLANEOUS	T&G	TONGUE AND GROOVE
DET	DETAIL	NIC	NOT IN CONTRACT	T&B	TONGUE AND BOTTOM
DIA	DIAMETER	NA	NOT APPLICABLE	TO	TOP OF
DM	DIMENSION	NTS	NOT TO SCALE	T	TREAD
DW	DISHWASHER	ON	ON CENTER	TS	TUBE STEEL
DN	DOWN	OPG	OPENING	TYP	TYPICAL
DR	DRAIN	OPP	OPPOSITE	UG	UNDERGROUND
DS	DOWNSPOUT	OPH	OPPOSITE HAND	U.N.O.	UNLESS NOTED OTHERWISE
DRWG	DRAWING	OD	OUTSIDE DIAMETER	UNFN	UNFINISHED
EA	EACH	P	PENNY (NAILS, ETC.)	UBC	UNIFORM BUILDING CODE
EL	ELEVATION	PERF	PERFORATED (D)	USG	UNITED STATES GAGE
EQ	EQUAL	PFM	PREFINISHED SHEET METAL	VAR	VARIABLE
EXIST	EXISTING	PL	PLATE	VENT	VENTILATE
EJ	EXPANSION JOINT	PLY	PLYWOOD	VERF	VERIFY IN FIELD
EXT	EXTERIOR	R	RADIUS OR RISER	VERT	VERTICAL
FEC	FIRE EXTINGUISHER CABINET	PROD	PRODUCT	V	VOLTAGE
FOC	FACE OF CONCRETE	PROJ	PROJECT	WC	WATER CLOSET
FOS	FACE OF STUD	R	RADIUS OR RISER	WP	WATERPROOF
FIN	FINISH	REF	REFER	WT	WEIGHT
FP	FIREPROOF	REFR	REFRIGERATOR	WIN	WINDOW
FL	FLOOR	RENF	REFINISHED (D)	WI	WITH (COMB. FORM)
FD	FLOOR DRAIN	REQD	REQUIRED	W/O	WITHOUT
FTG	FOOTING	RHSM	ROUND HEAD	WID	WIDTH
FDN	FOUNDATION				
GA	GUAGE				

GENERAL NOTES

- A. THE AIA DOCUMENT 201, "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION", 2017, ARE HEREBY MADE A PART OF THESE CONTRACT DOCUMENTS. COPIES ARE ON FILE AND ARE AVAILABLE FOR INSPECTION AT THE OFFICES OF THE ARCHITECT.
- B. THE CONTRACT DOCUMENTS CONSIST OF THE AGREEMENT, THE GENERAL NOTES, THE SPECIFICATIONS, AND THE DRAWINGS, WHICH ARE COOPERATIVE AND CONTINUOUS. WORK INDICATED OR REASONABLY IMPLIED IN ANY ONE OF THE DOCUMENTS SHALL BE SUPPLIED AS THOUGH FULLY COVERED IN ALL. ANY DISCREPANCY BETWEEN THE DIFFERENT PARTS SHOULD BE REPORTED TO THE ARCHITECT IMMEDIATELY.
- C. ALL WORK SHALL COMPLY WITH ALL STATE AND LOCAL CODES AND ORDINANCES, AND SHALL BE PERFORMED TO THE HIGHEST STANDARDS OF CRAFTSMANSHIP BY JOURNEYMEN OF THE APPROPRIATE TRADES. GENERALLY, ALL MATERIALS TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE REGULATED OR SPECIFIED BY ARCHITECT OR GOVERNING BODIES
- D. THESE DOCUMENTS ARE INTENDED TO INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES REQUIRED TO COMPLETE ALL WORK DESCRIBED HEREIN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BRING TO THE ATTENTION OF THE ARCHITECT ANY CONDITIONS WHICH WILL NOT PERMIT CONSTRUCTION ACCORDING TO THE INTENTIONS OF THESE DOCUMENTS. IT IS THE RESPONSIBILITY OF THE ARCHITECT TO PROVIDE DETAILS AND/OR DIRECTIONS REGARDING DESIGN INTENT WHERE IT IS ALTERED BY EXISTING CONDITIONS OR WHERE NEGLECTED IN THE DOCUMENTS.
- E. ANY MATERIALS PROPOSED FOR SUBSTITUTION OF THOSE SPECIFIED OR CALLED OUT BY TRADE NAME IN THESE DOCUMENTS SHALL BE PRESENTED TO THE ARCHITECT FOR REVIEW. THE CONTRACTOR SHALL SUBMIT SAMPLES WHEN REQUIRED BY THE ARCHITECT. AND ALL SUCH SAMPLES SHALL BE REVIEWED BY THE ARCHITECT BEFORE THE WORK IS PERFORMED. WORK MUST CONFORM TO THE REVIEWED SAMPLES. ANY WORK WHICH DOES NOT CONFORM SHALL BE REMOVED AND REPLACED WITH WORK WHICH CONFORMS AT THE REQUESTS AND SAMPLES FOR REVIEW THROUGH THE GENERAL CONTRACTOR'S EXPENSE. SUBCONTRACTORS SHALL SUBMIT CONTRACTOR WHEN WORK IS LET THROUGH HIM OR HER. REQUIRED VERIFICATIONS AND SUBMITTALS TO BE MADE IN ADEQUATE TIME AS NOT TO DELAY WORK IN PROGRESS.
- F. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR HIS OR HER REVIEW WHERE CALLED FOR ANYWHERE IN THESE DOCUMENTS. REVIEW SHALL BE MADE BY THE ARCHITECT BEFORE WORK IS BEGUN, AND WORK SHALL CONFORM TO THE REVIEWED SHOP DRAWINGS, SUBJECT TO REPLACEMENT AS REQUIRED IN PARAGRAPH E, ABOVE.
- G. THE BUILDING INSPECTOR SHALL BE NOTIFIED BY THE CONTRACTOR WHEN THERE IS NEED OF INSPECTION AS REQUIRED BY THE UNIFORM BUILDING CODE OR ANY LOCAL CODE OR ORDINANCE.
- H. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY AND CARE OF ADJACENT PROPERTIES DURING CONSTRUCTION. FOR COMPLIANCE WITH FEDERAL AND STATE O.S.H.A. REGULATIONS, AND FOR THE PROTECTION OF ALL WORK UNTIL IT IS DELIVERED COMPLETED TO THE OWNER.
- I. ALL DIMENSIONS NOTED TAKE PRECEDENCE OVER SCALED. DIMENSIONS NOTED WITH "N.T.S." DENOTES NOT TO SCALE. DRAWINGS NOT TO BE SCALED, NOTIFY ARCHITECT OF ANY CONFLICTS OR OMISSIONS
- J. CONTRACTOR SHALL VERIFY AND COORDINATE ALL OPENINGS THROUGH FLOORS, CEILINGS, AND WALLS WITH ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS.
- K. CONTRACTOR WILL ASSUME RESPONSIBILITY OF ITEMS REQUIRING COORDINATION AND RESOLUTION DURING THE BIDDING PROCESS.

- NOTES:**
1. USE CEMENT BOARD IN ALL TILE AND WET LOCATIONS.
 2. UNVENTED ROOF ASSEMBLIES PER 2021 IBC R806.5.
 3. RE: HOME ENERGY RATING CERTIFICATE ASSEMBLY INSULATION REQUIREMENTS.

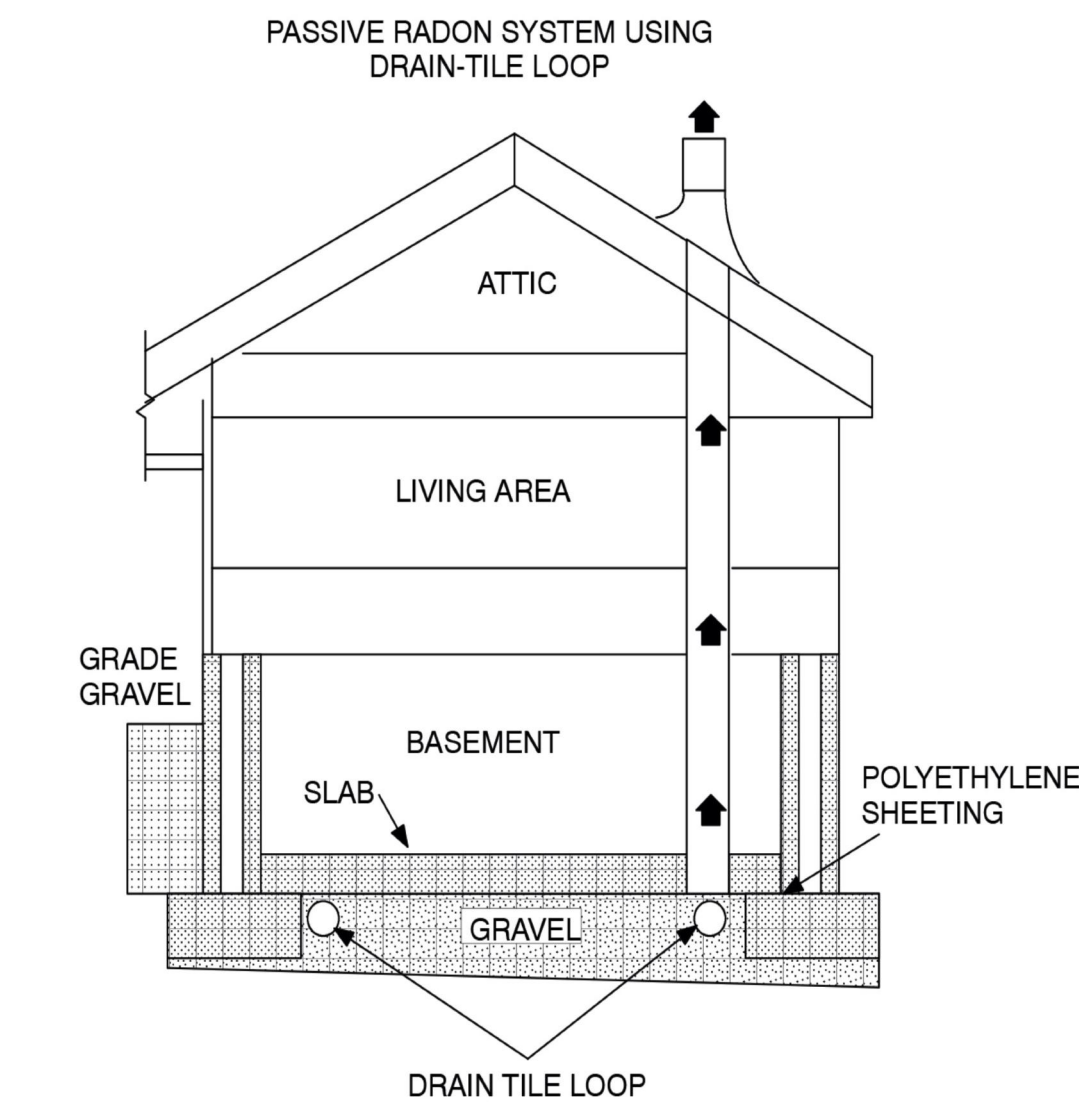
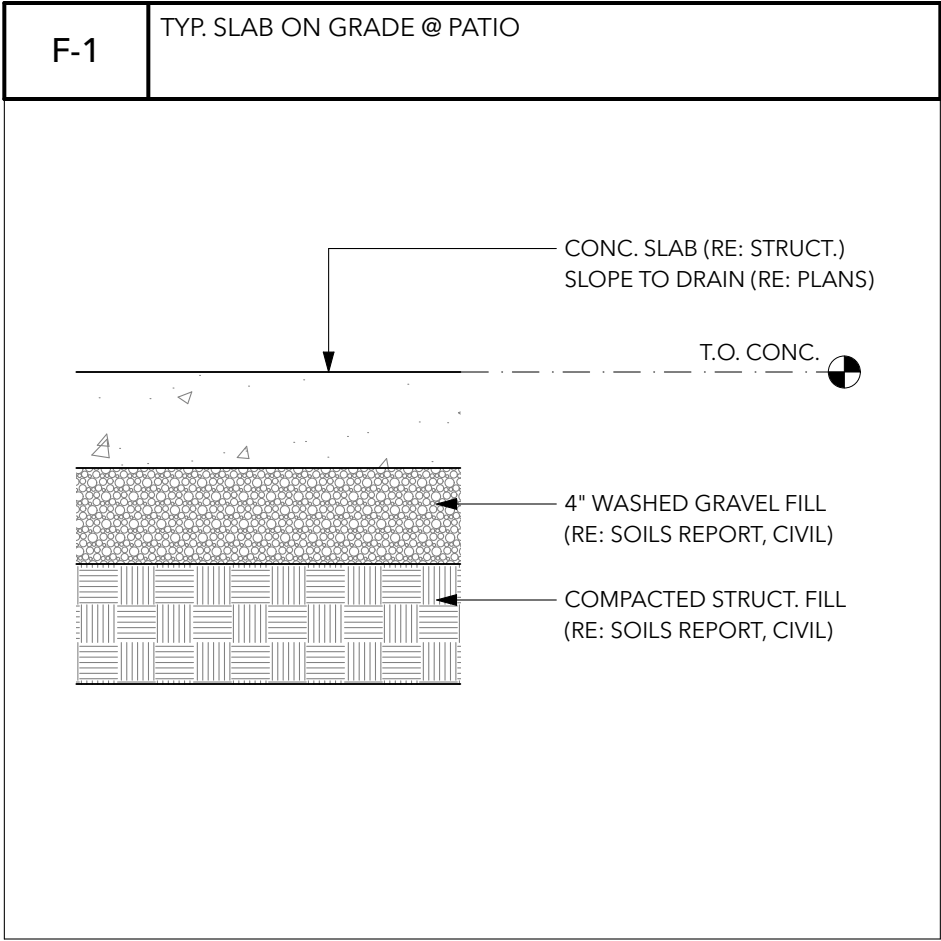
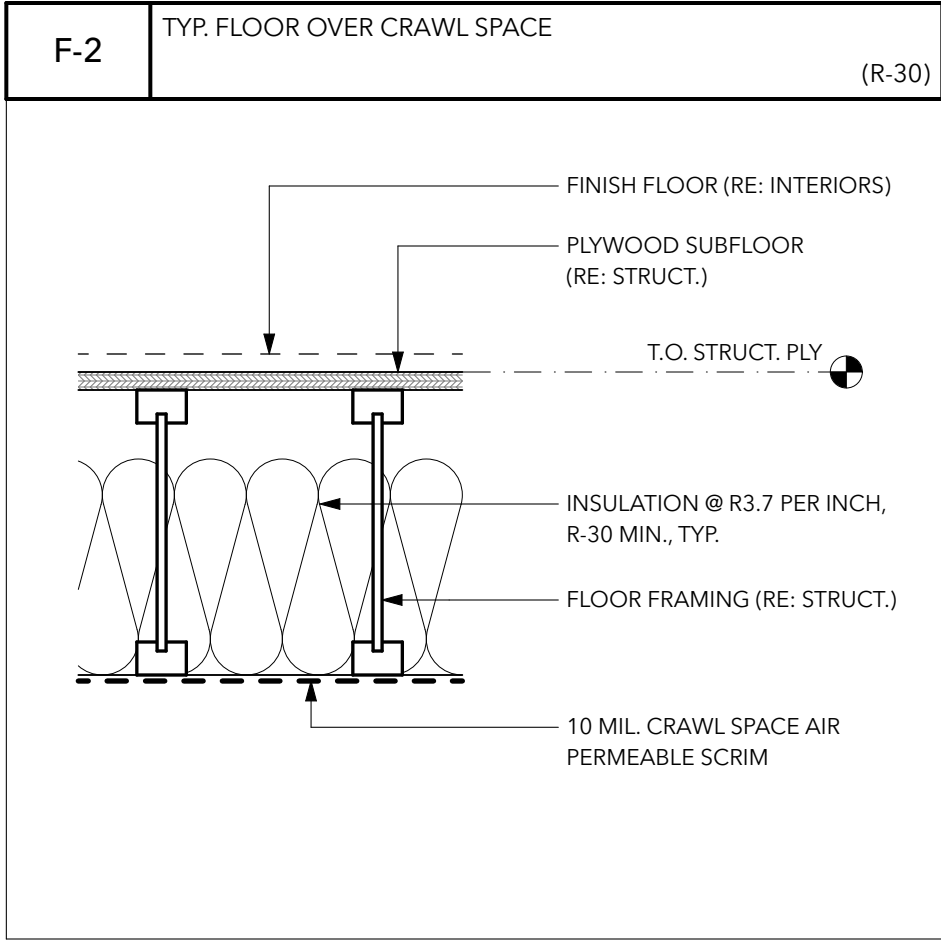
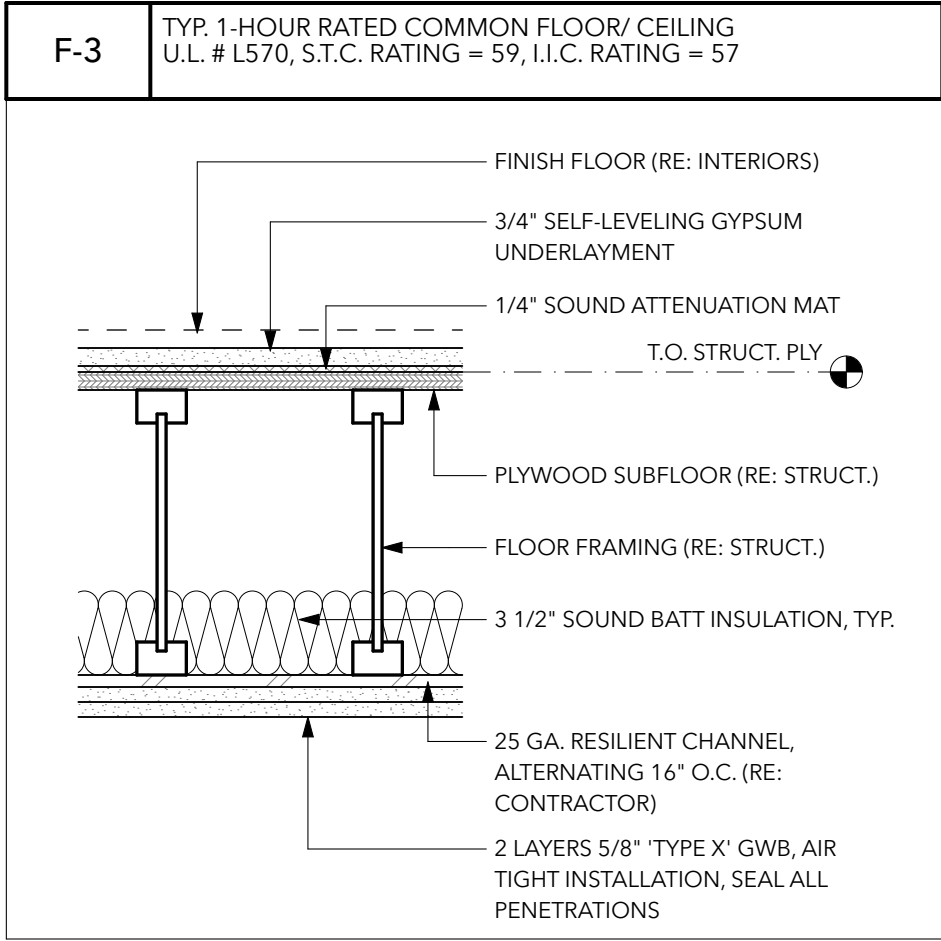
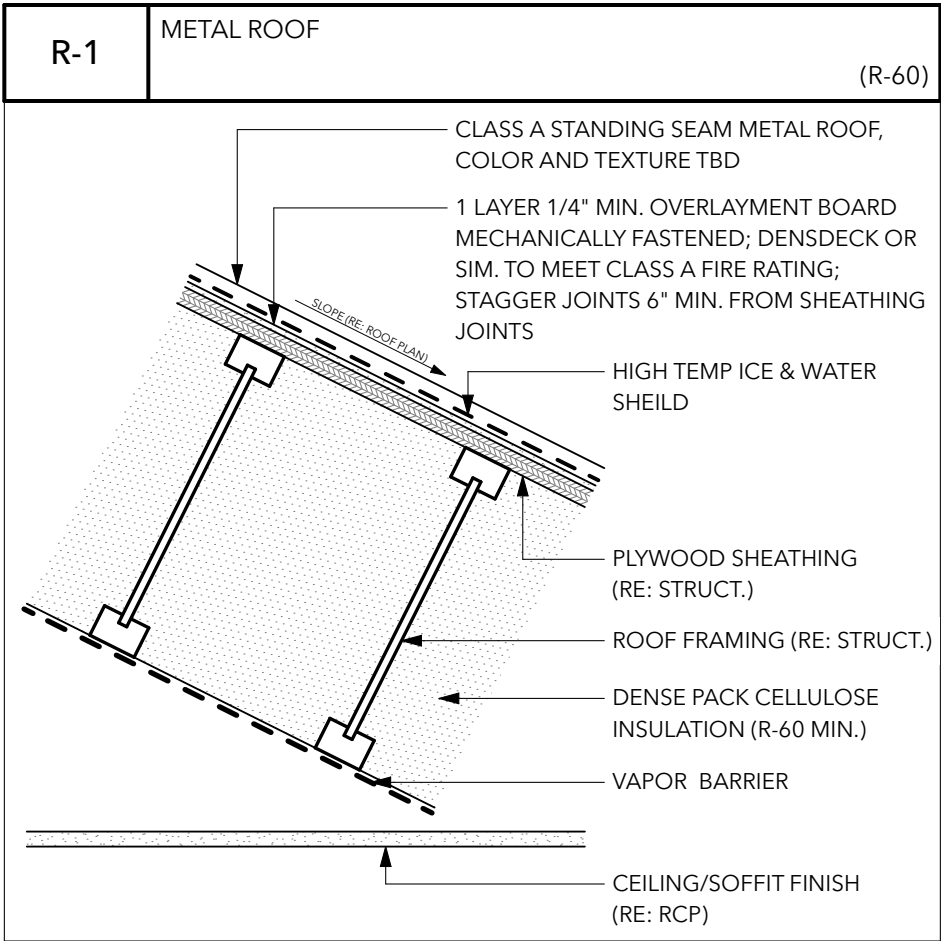
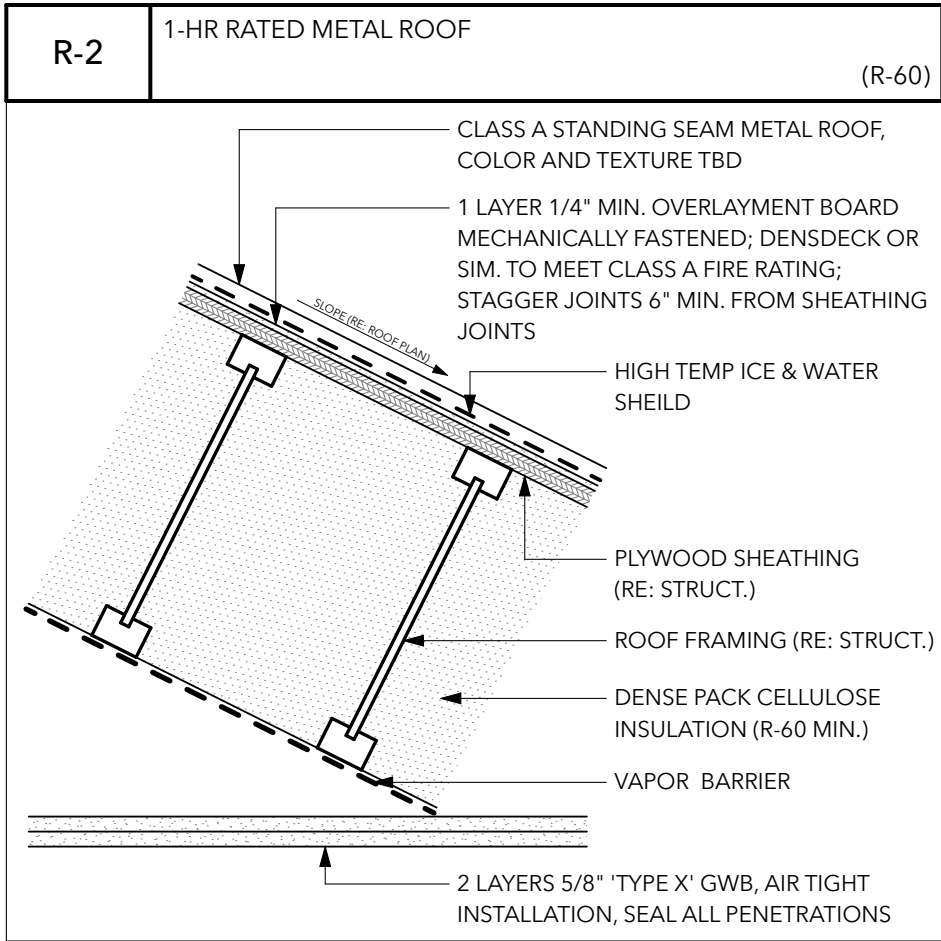
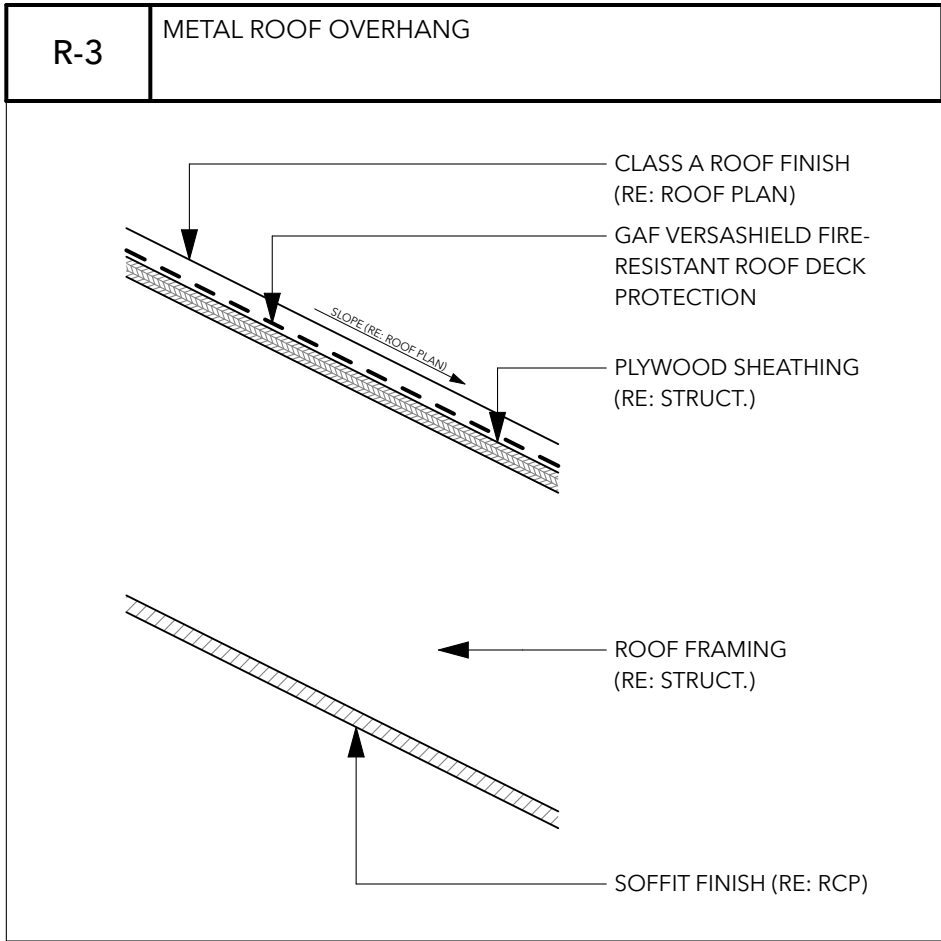
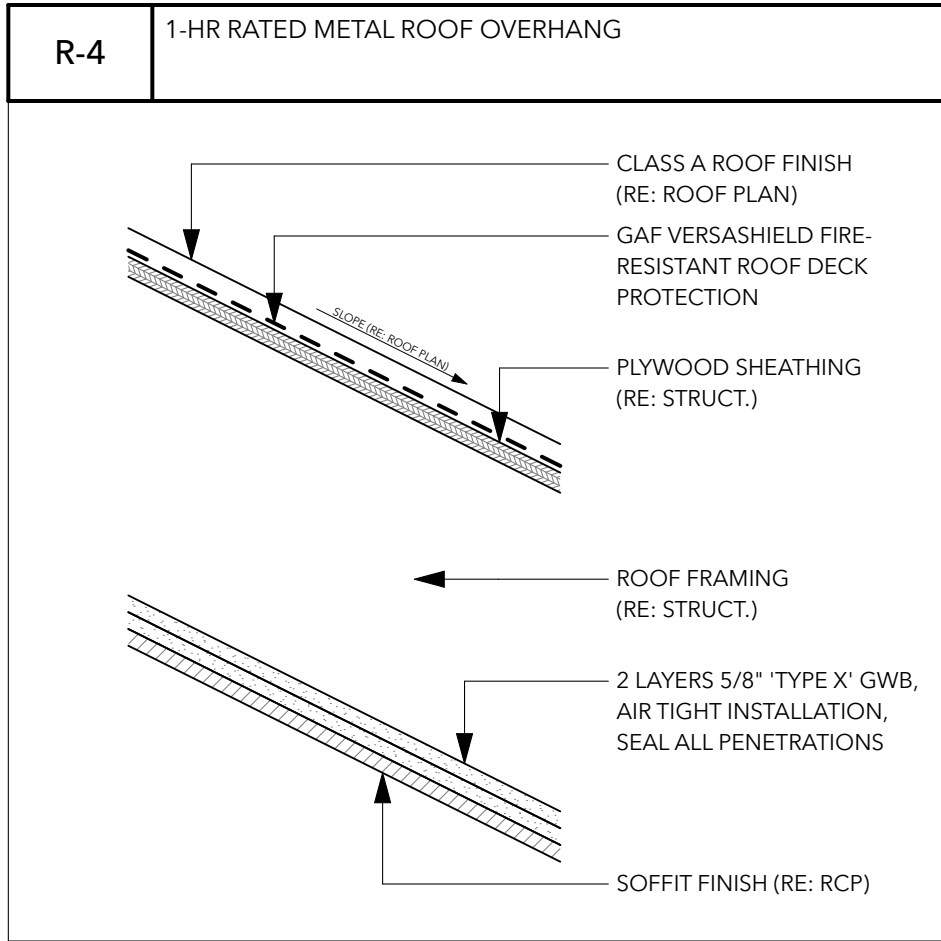
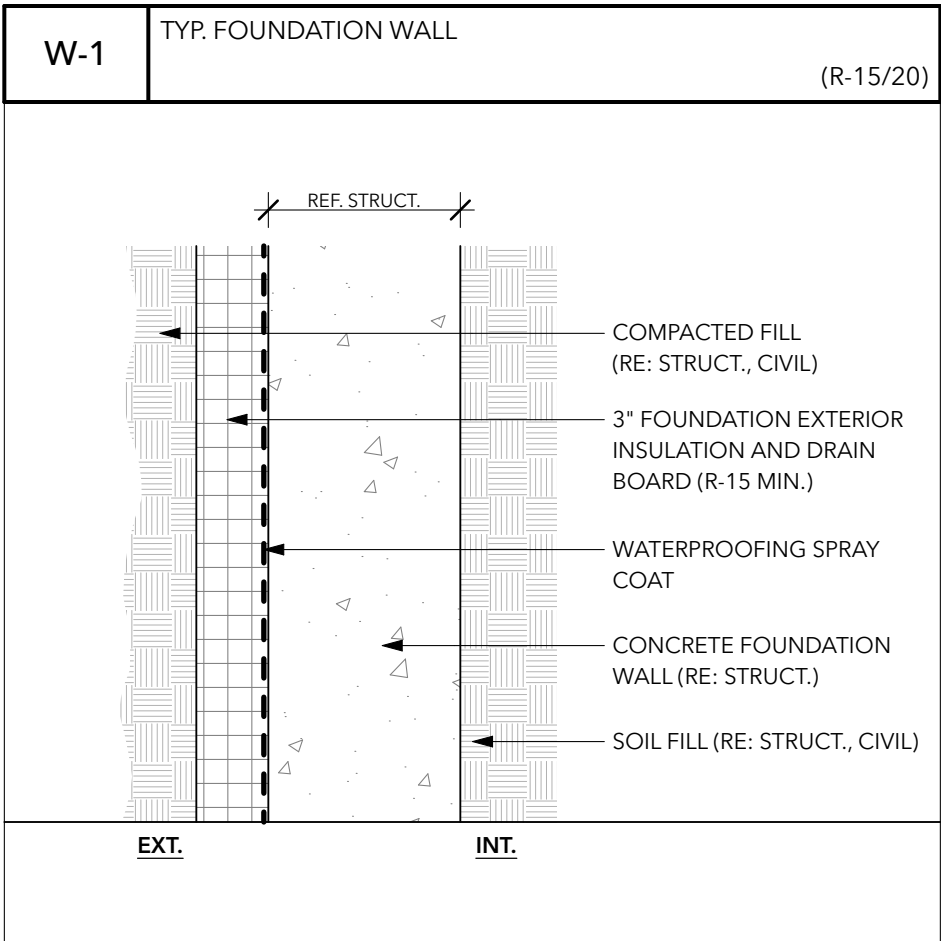
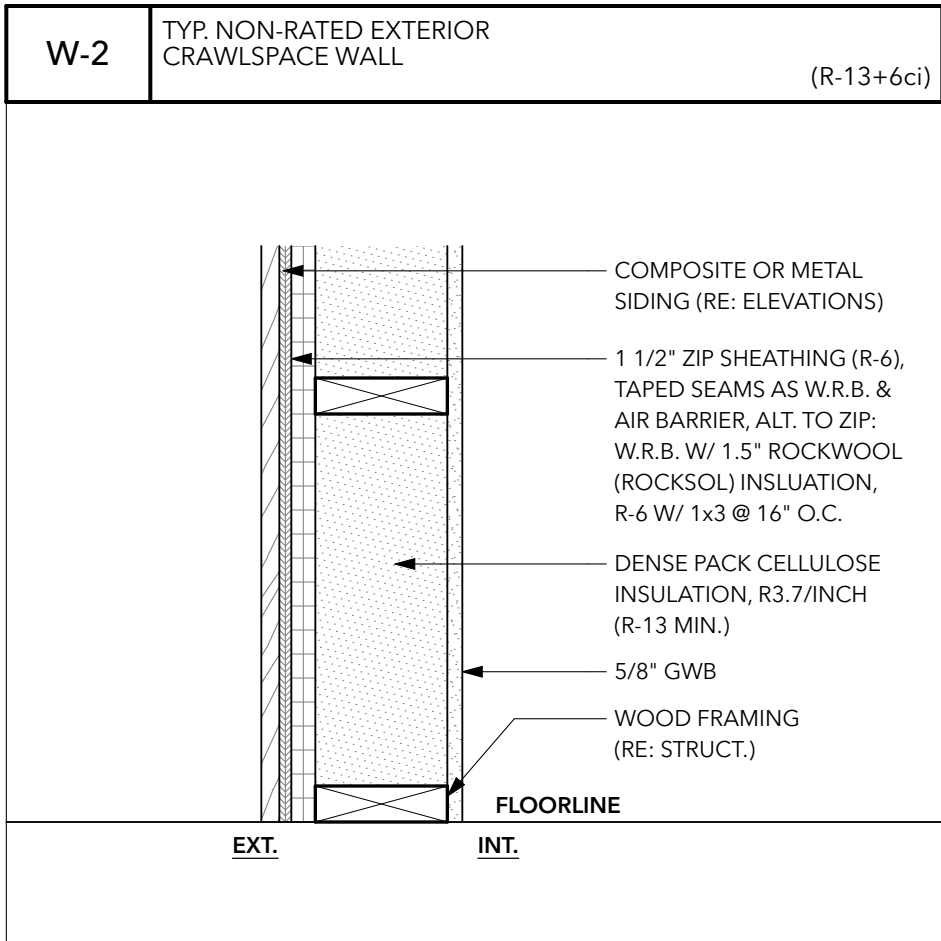
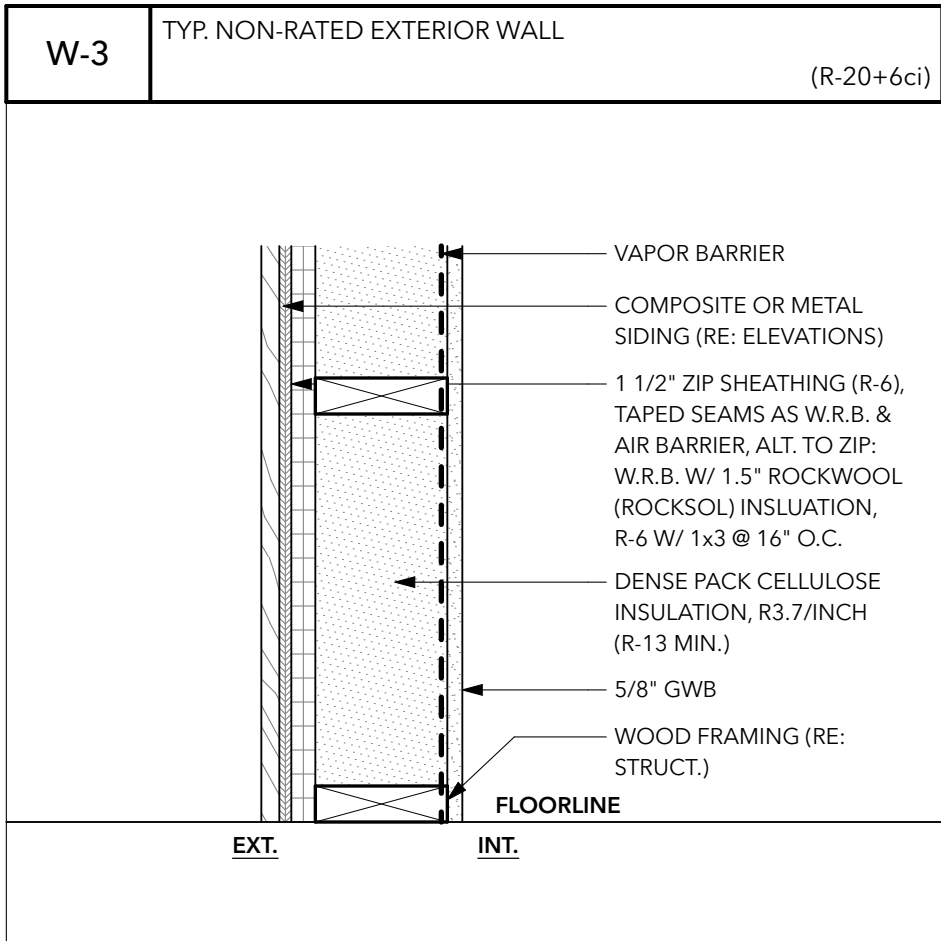
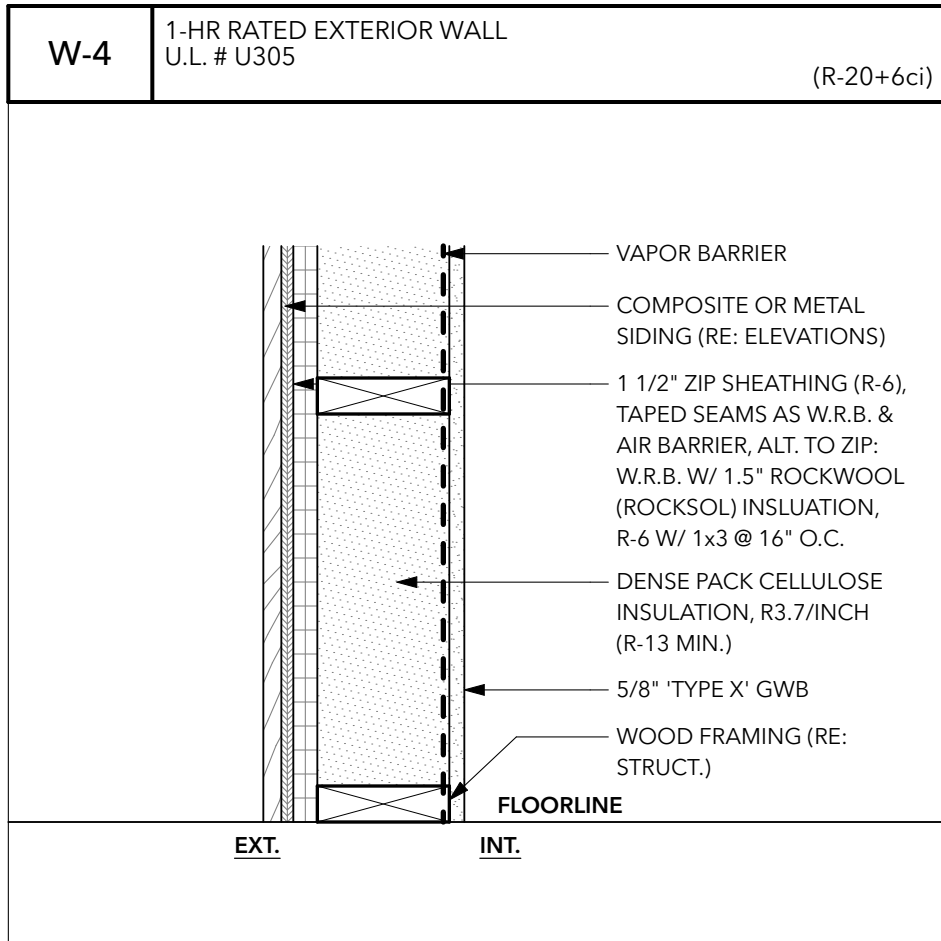
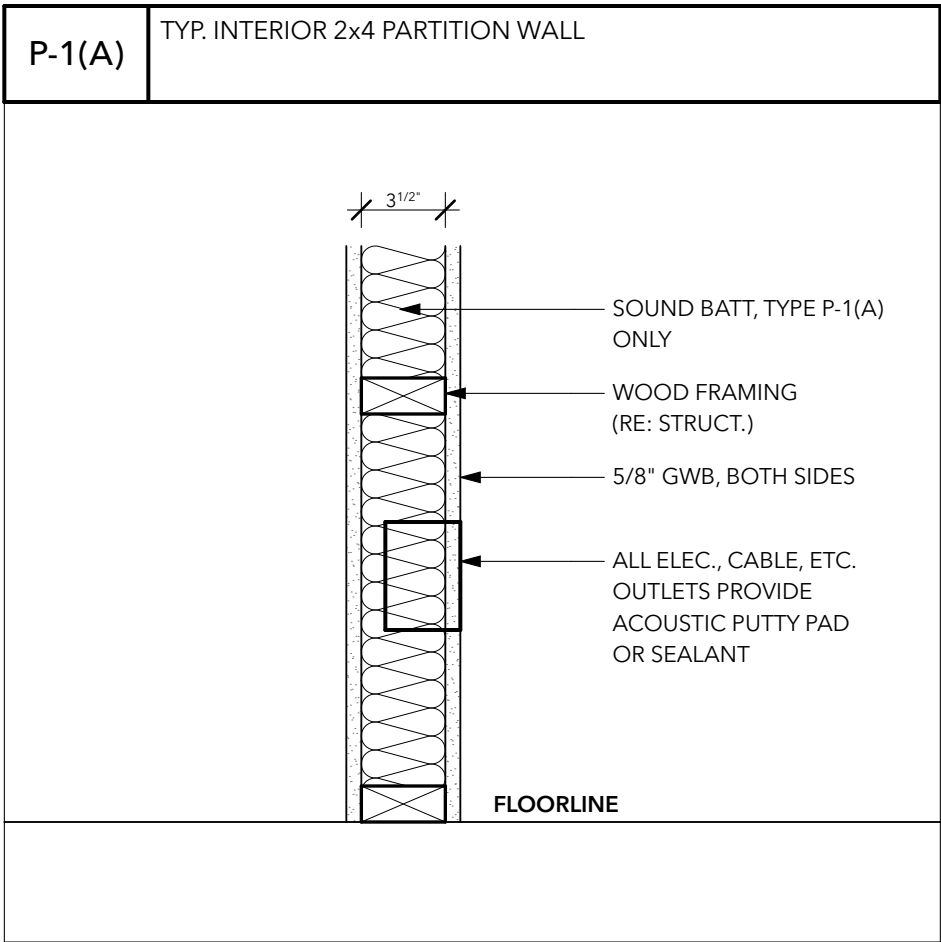
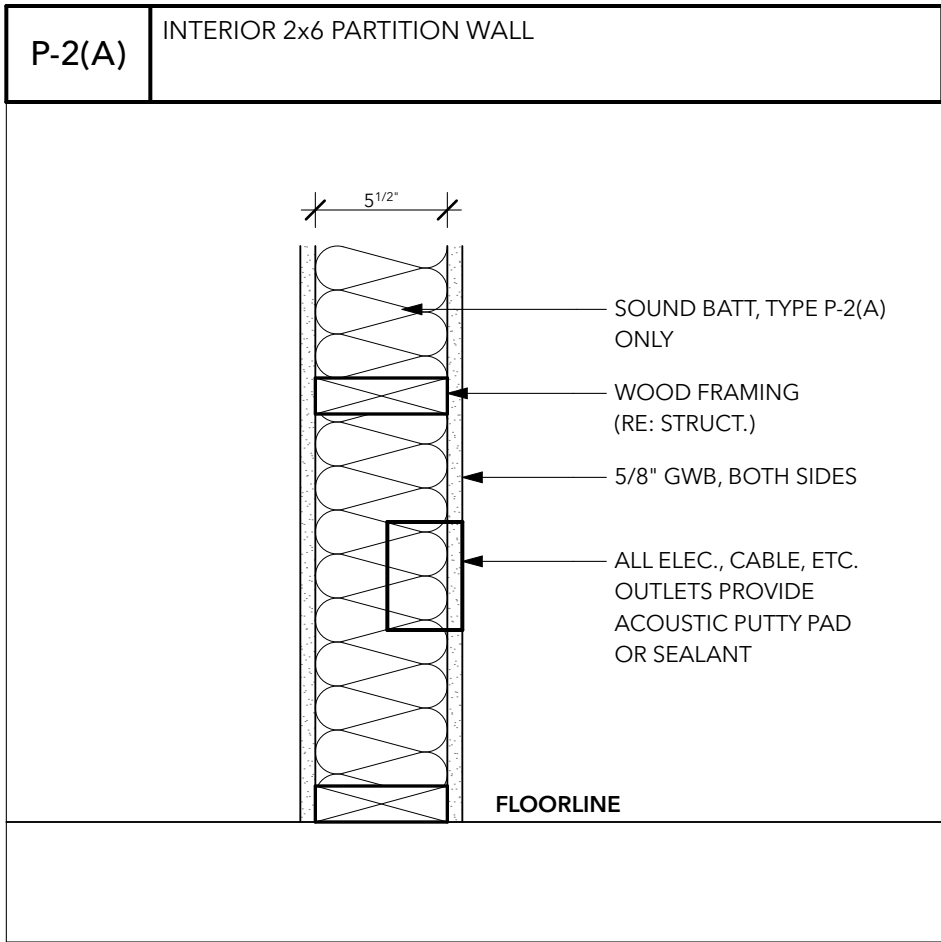
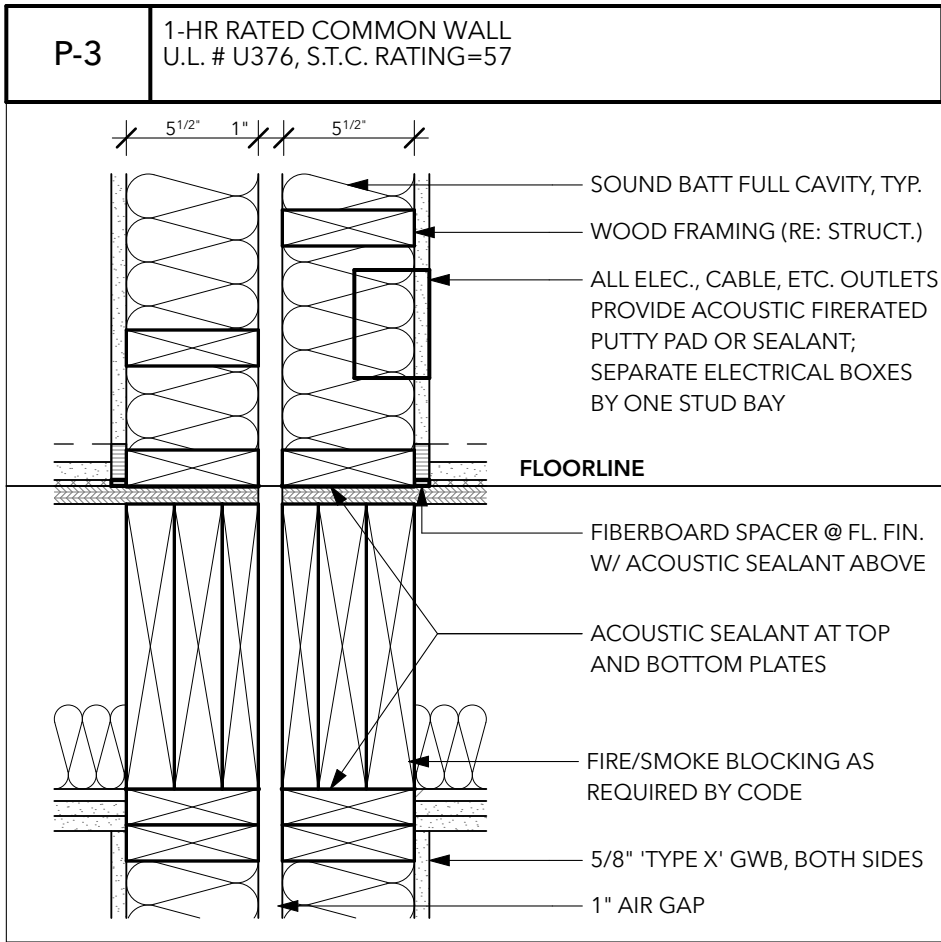
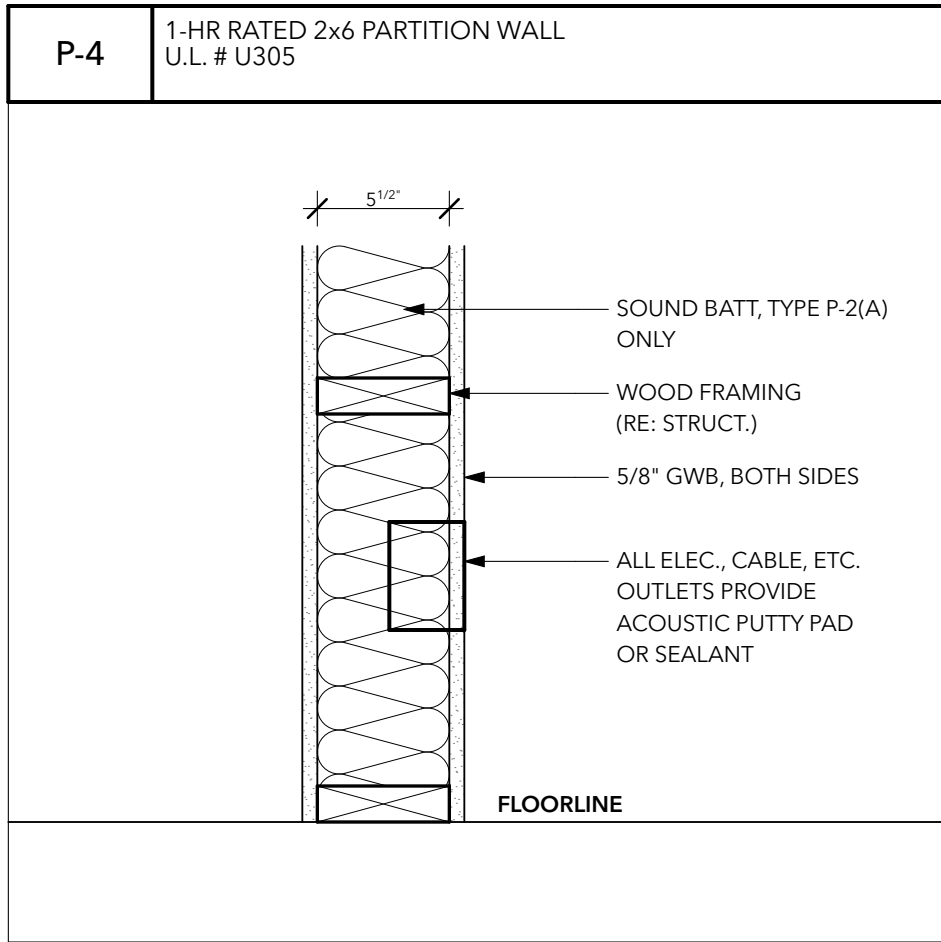
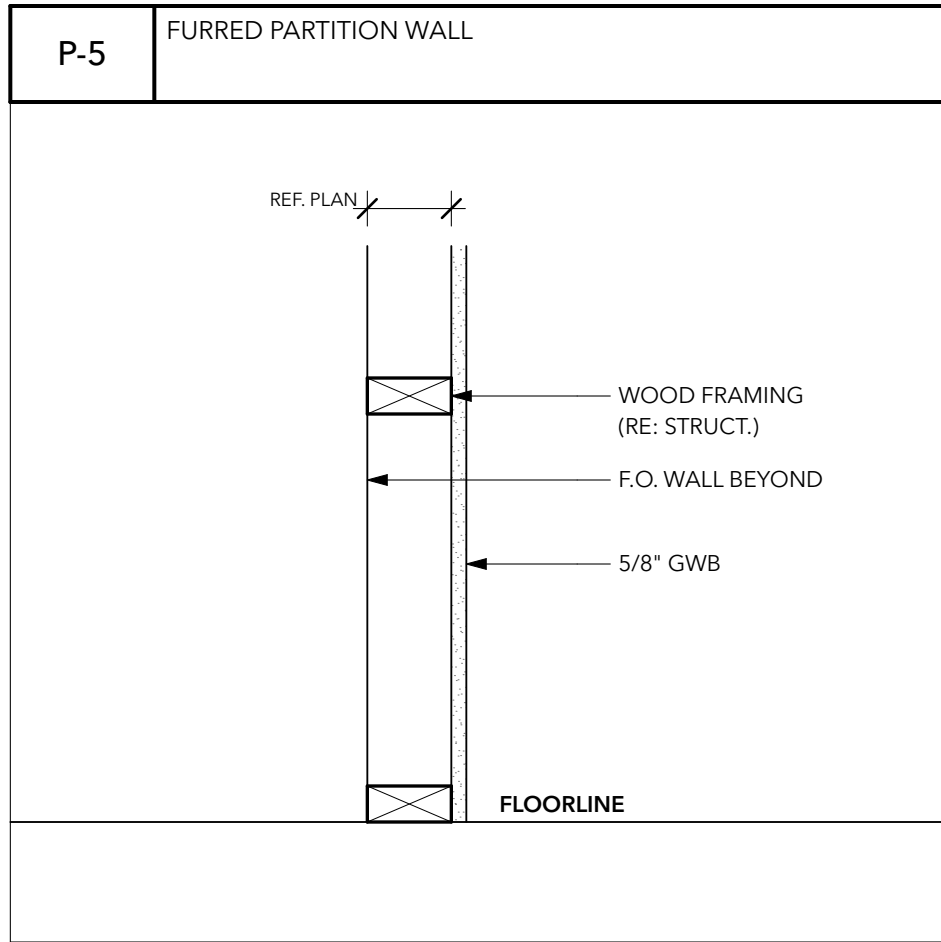
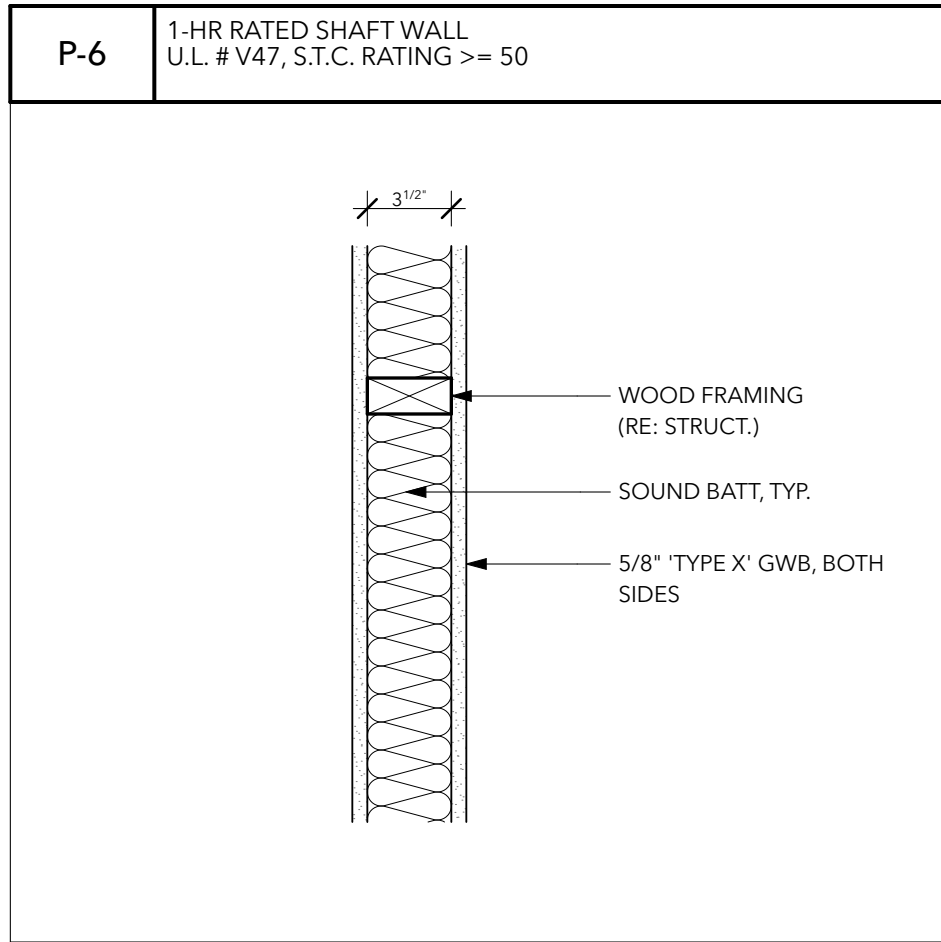
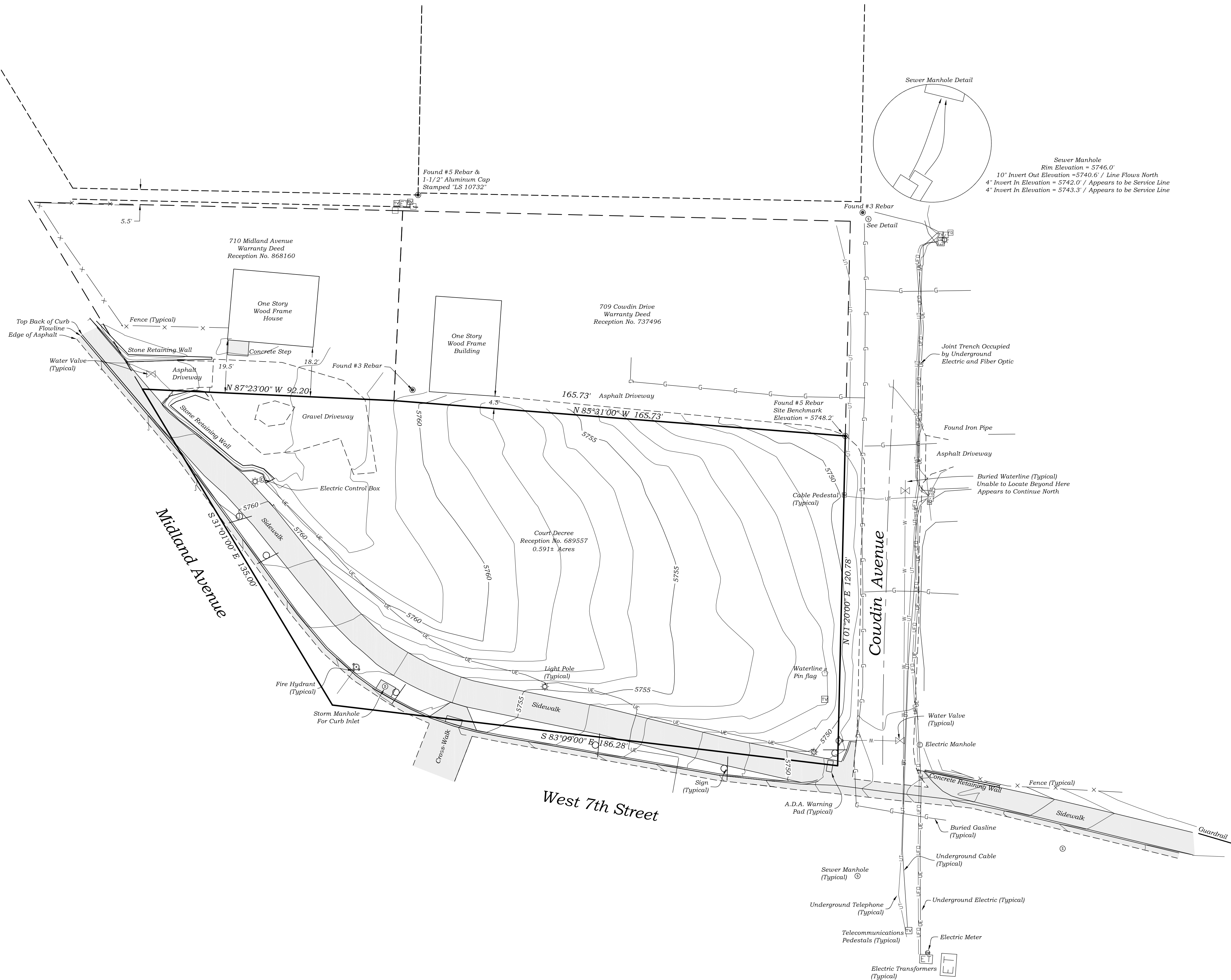


FIGURE AF102
RADON-RESISTANT CONSTRUCTION DETAIL



EXISTING CONDITIONS SURVEY

A TRACT OF LAND SITUATE IN THE NE1/4SW1/4 OF SECTION 9,
TOWNSHIP 6 SOUTH, RANGE 89 WEST OF THE 6TH P.M



PROPERTY DESCRIPTION

A TRACT OF LAND SITUATE IN THE NE1/4SW1/4 OF SECTION 9, TOWNSHIP 6 SOUTH, RANGE 89 WEST OF THE 6TH P.M; BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT WHEN THE SURVEY MONUMENT AT THE INTERSECTION, OF CENTERLINES OF EXTENSION OF EIGHTH STREET, AS SHOWN BY ROAD VIEWERS REPORT AND MAP ATTACHED THERETO, FILED APRIL 1, 1890, IN ROAD BOOK 1 AT PAGE 116 AS RECEPTION NO. 10214, AND MIDLAND AVE., IN THE CITY OF GLENWOOD SPRINGS, BEARS S09°38'57"E OF 81.45 FEET, ALSO WHEN THE MONUMENT AT THE NW CORNER OF SAID NE1/4SW1/4 BEARS N56°12'14"W, 622.56 FEET, WITH ALL BEARINGS CONTAINED HEREIN BEING RELATIVE TO A BEARING OF N88°28'W ON THE, CENTERLINE OF SAID EXTENSION OF EIGHTH STREET;
THENCE S83°09'00"E, 186.28 FEET TO THE WESTERLY LINE OF EXISTING COWDIN DRIVE;
THENCE N01°20'00"E, 120.78 FEET ALONG SAID WESTERLY LINE;
THENCE N85°31'00"W, 165.73 FEET;
THENCE N87°23'00"W, 92.20 FEET;
THENCE S31°01'00"E, 135.00 FEET TO THE POINT OF BEGINNING.

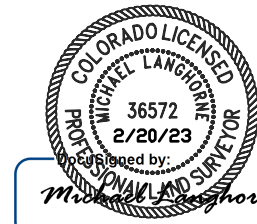
COUNTY OF GARFIELD, STATE OF COLORADO.

NOTES

- 1.) DATE OF SURVEY WAS JANUARY 06, 2023.
- 2.) CONTOUR INTERVAL FOR THIS SURVEY IS ONE FOOT.
- 3.) ELEVATION OF THE SITE BASED ON A GPS OBSERVATION USING THE MESA COUNTY RTVRN NETWORK AND THE HAE (HEIGHT ABOVE ELLIPSOID), EQUALS 5748.2 FEET ON THE SITE BENCHMARK, A #5 REBAR FOUND AT THE NORTHEAST CORNER OF THE SUBJECT PROPERTY AS SHOWN HEREON.
- 4.) BURIED UTILITY RECORD RESEARCH AND ON GROUND UTILITY MARKINGS WERE PERFORMED BY A PRIVATE UTILITY LOCATING COMPANY. THESE MARKINGS WERE SURVEYED BY BOOKCLIFF SURVEY SERVICES, INC. AND REPRESENT LEVELS B, C AND D OF THE ASCC STANDARD GUIDELINES. CALL 811 BEFORE YOU DIG.

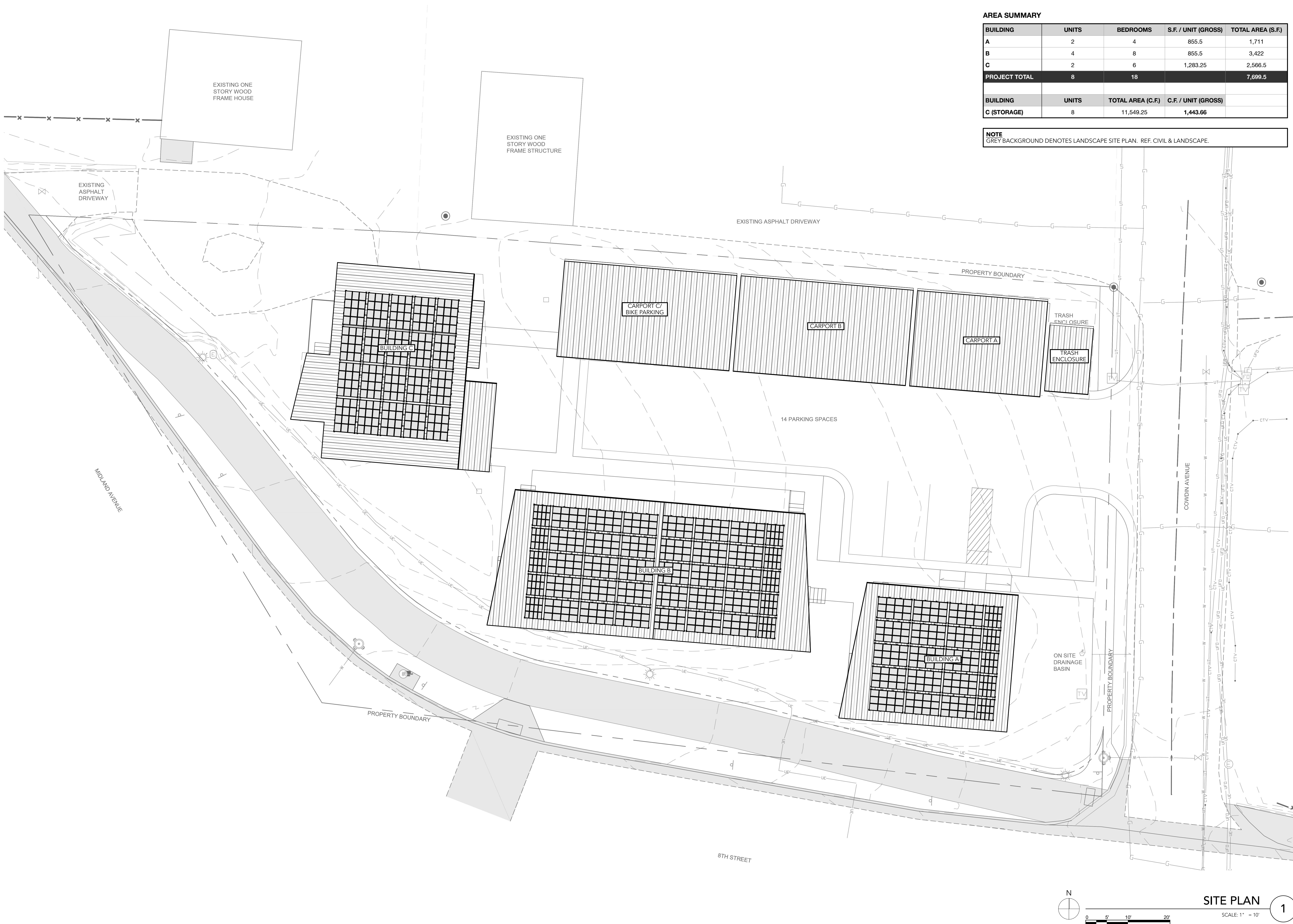
SURVEYOR'S STATEMENT

I, MICHAEL J. LANGHORNE, DO HEREBY CERTIFY THAT THE SURVEY SHOWN HEREON WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, IS BASED ON MY KNOWLEDGE, INFORMATION, BELIEF AND THAT THIS SURVEY IS A TRUE REPRESENTATION THEREOF. THIS CERTIFICATE IS NOT INTENDED TO BE AN EXPRESS OR IMPLIED WARRANTY OR GUARANTEE OF ANY MATTERS EXCEPT THOSE STATED IN THE PRECEDING SENTENCE.



MICHAEL J. LANGHORNE, COLORADO REGISTRATION NO. 36572
FOR AND ON BEHALF OF
BOOKCLIFF SURVEY SERVICES, INC.

REVISION	DESCRIPTION
EXISTING CONDITIONS SURVEY	
HABITAT FOR HUMANITY ROARING FORK VALLEY, INC., A COLORADO NON-PROFIT	
FILE:	EXC
DFT:	Y.J.L
CK:	M.J.L
DATE:	01/27/23
PROJECT NO.	22149
SHEET	1
OF	1



AREA SUMMARY

BUILDING	UNITS	BEDROOMS	S.F. / UNIT (GROSS)	TOTAL AREA (S.F.)
A	2	4	855.5	1,711
B	4	8	855.5	3,422
C	2	6	1,283.25	2,566.5
PROJECT TOTAL	8	18		7,699.5

BUILDING	UNITS	TOTAL AREA (C.F.)	C.F. / UNIT (GROSS)
C (STORAGE)	8	11,549.25	1,443.66

NOTE
GREY BACKGROUND DENOTES LANDSCAPE SITE PLAN. REF. CIVIL & LANDSCAPE.

HABITAT ROARING FORK 8TH STREET

8TH STREET & MIDLAND AVENUE
GLENWOOD SPRINGS, CO 81601

DATE

5/2/23

ISSUANCE

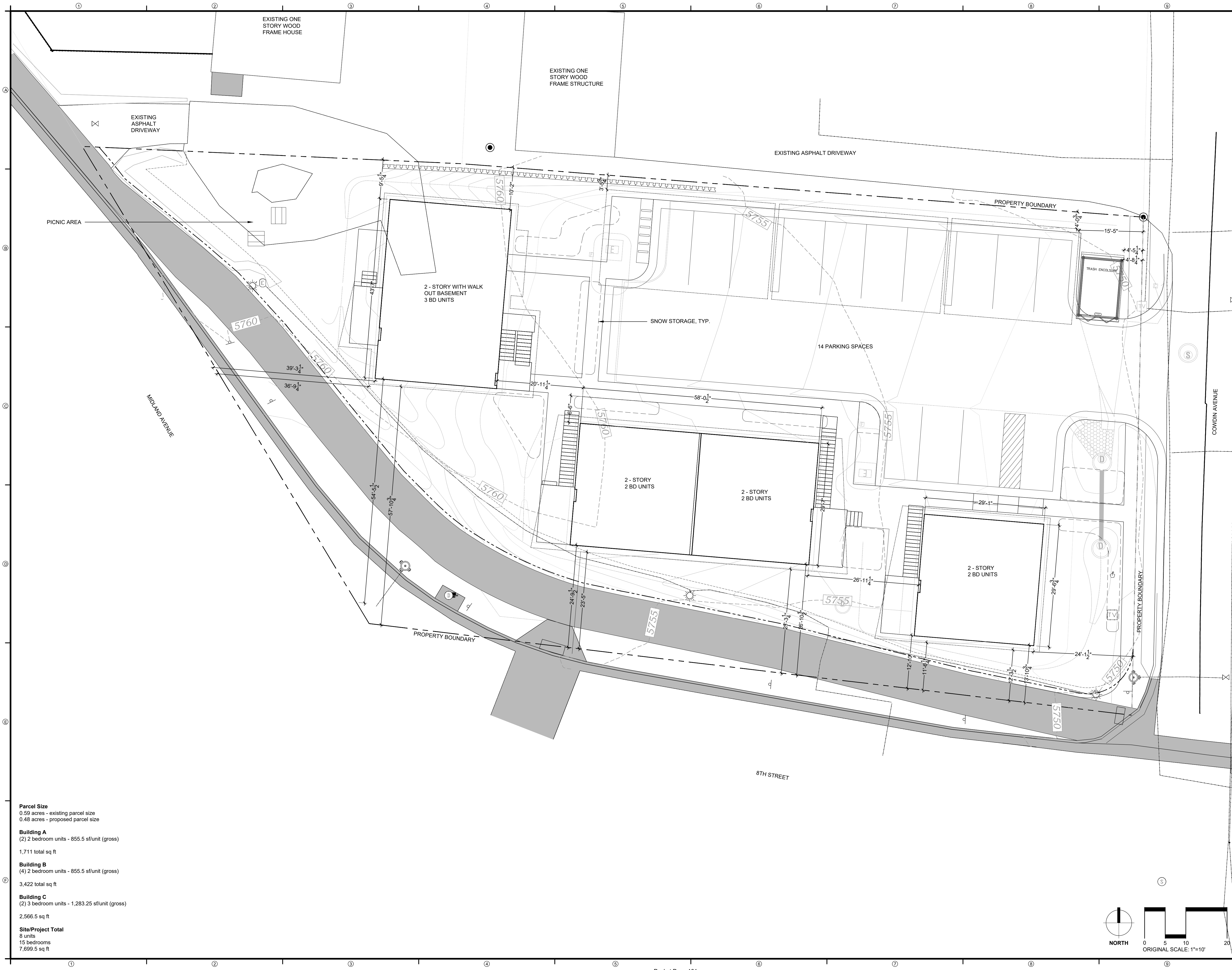
LAND USE SUBMISSION

SITE PLAN

SITE PLAN

1

A101



Parcel Size
0.59 acres - existing parcel size
0.48 acres - proposed parcel size

Building A
(2) 2 bedroom units - 855.5 sf/unit (gross)
1,711 total sq ft

Building B
(4) 2 bedroom units - 855.5 sf/unit (gross)
3,422 total sq ft

Building C
(2) 3 bedroom units - 1,263.25 sf/unit (gross)
2,566.5 sq ft

Site/Project Total
8 units
15 bedrooms
7,699.5 sq ft

DESIGNWORKSHOP

Landscape Architecture • Land Planning
Urban Design • Tourism Planning

Aspen • Austin • Chicago • Denver
Houston • Lake Tahoe • Los Angeles • Raleigh

22860 Two Rivers Road, Unit #1
Basalt, Colorado 81621
(970) 925-8354
(970) 920-1387

WWW.DESIGNWORKSHOP.COM

HABITAT ROARING FORK

8TH STREET & MIDLAND AVENUE

GLENWOOD SPRINGS, COLORADO 81601

ISSUE DATE: MAY 2, 2023

REVISIONS

#	DATE	DESCRIPTION

DRAWN: LS REVIEWED: RS

LAND USE SUBMISSION

PROJECT NUMBER: 6957

PRELIMINARY SITE PLAN

SHEET NUMBER

L3-01

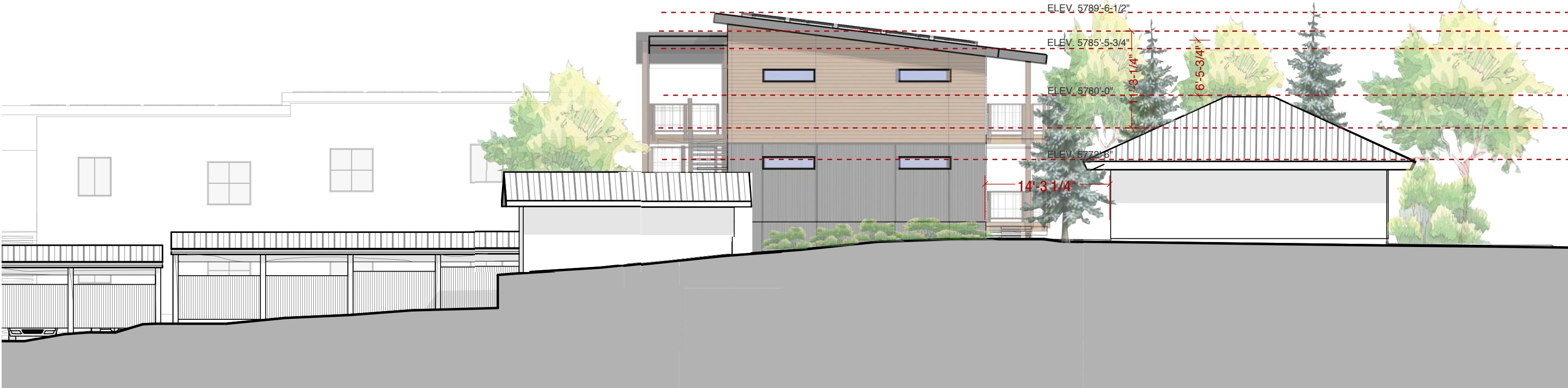
COPYRIGHT DESIGNWORKSHOP, INC.

HABITAT ROARING FORK 8TH STREET
8TH STREET & MIDLAND AVENUE
GLENWOOD SPRINGS, CO 81601



SITE ELEVATION WEST
0 5' 10' 20'
SCALE: 1" = 10'

2



SITE ELEVATION NORTH
0 5' 10' 20'
SCALE: 1" = 10'

1

DATE 5/2/23
ISSUANCE LAND USE SUBMISSION

SITE
ELEVATIONS

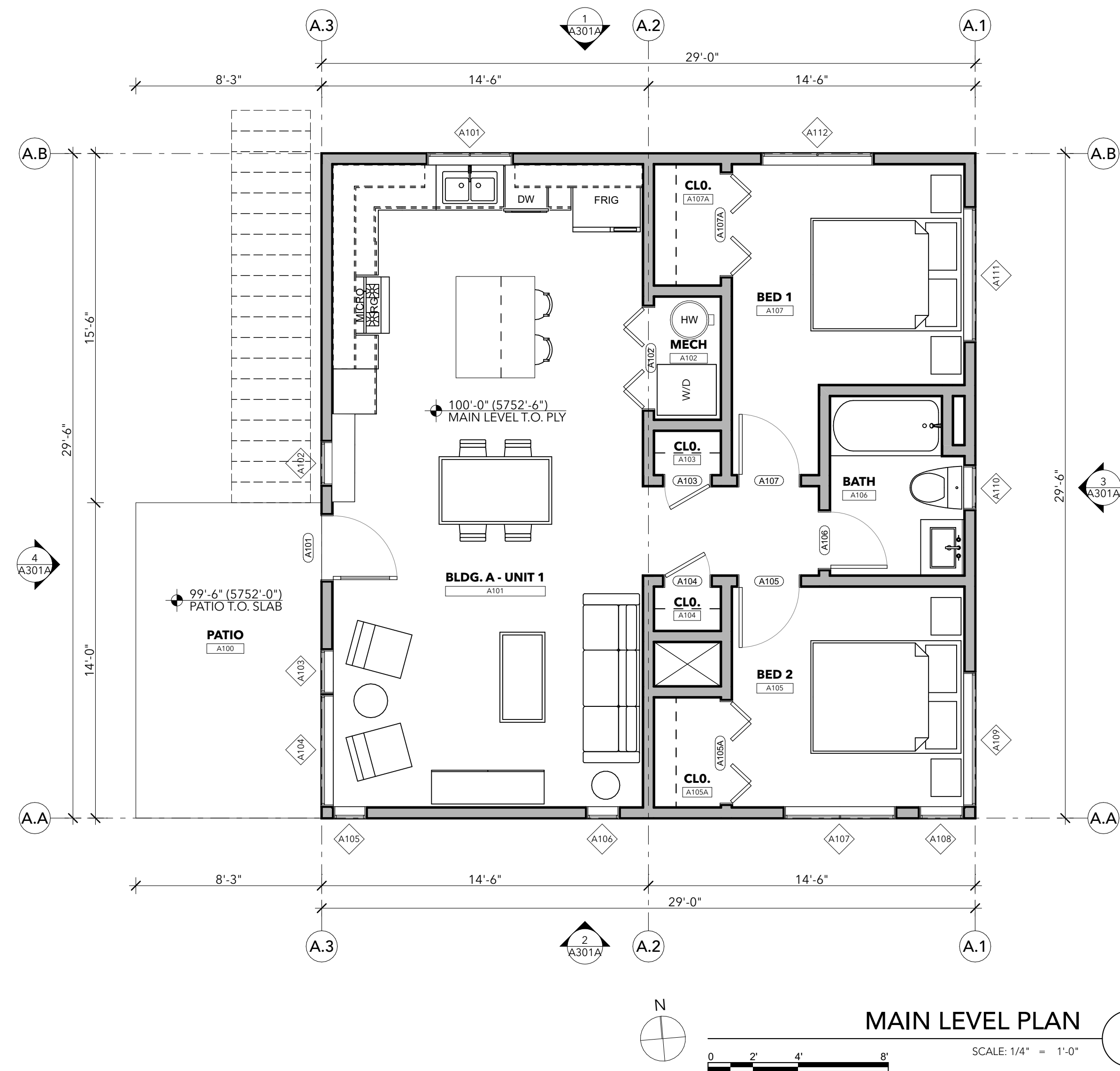
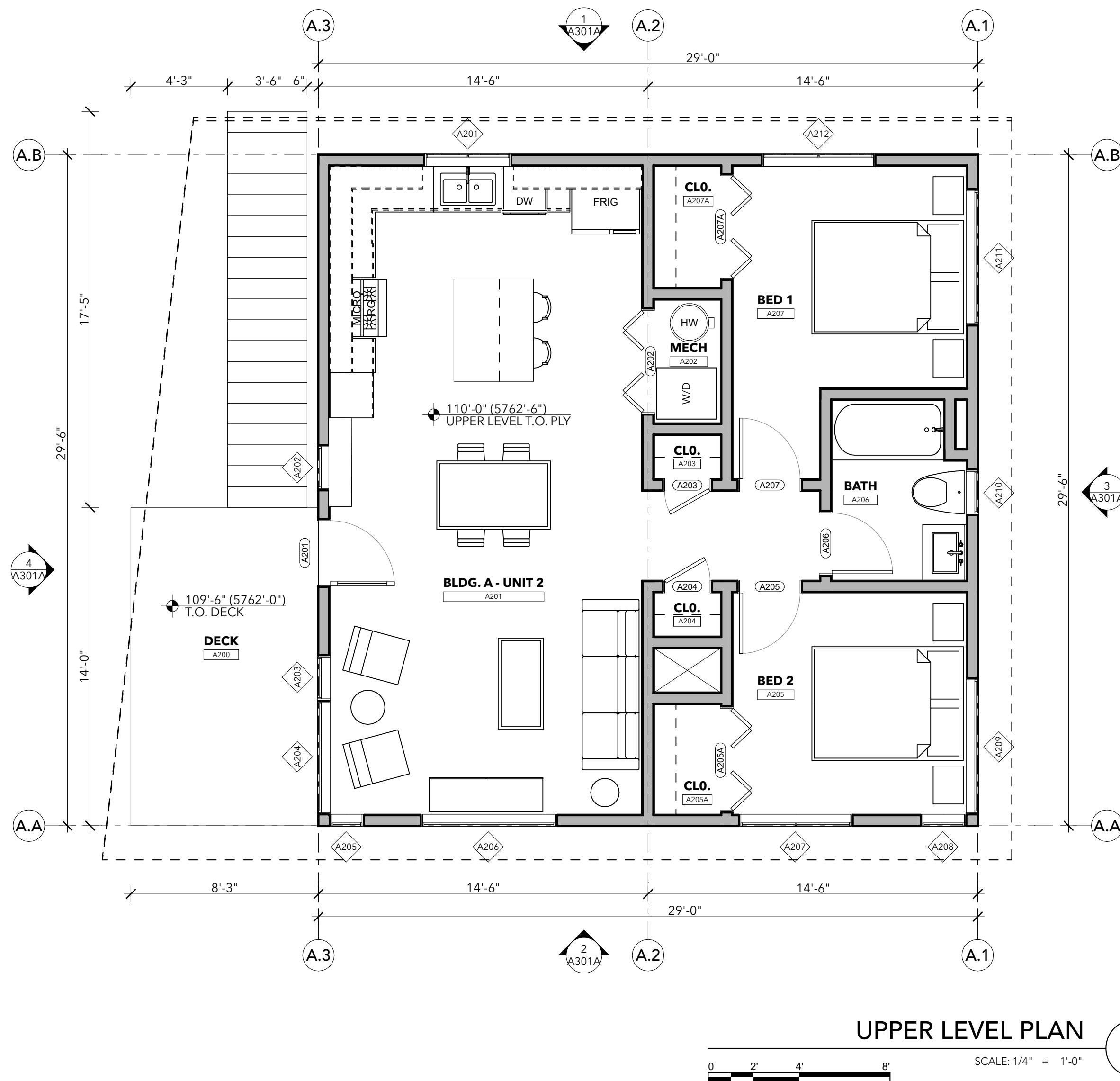
A102

HABITAT ROARING FORK 8TH STREET
8TH STREET & MIDLAND AVENUE
GLENWOOD SPRINGS, CO 81601

DATE 5/2/23
ISSUANCE LAND USE SUBMISSION

BUILDING A
FLOOR PLANS

A201A

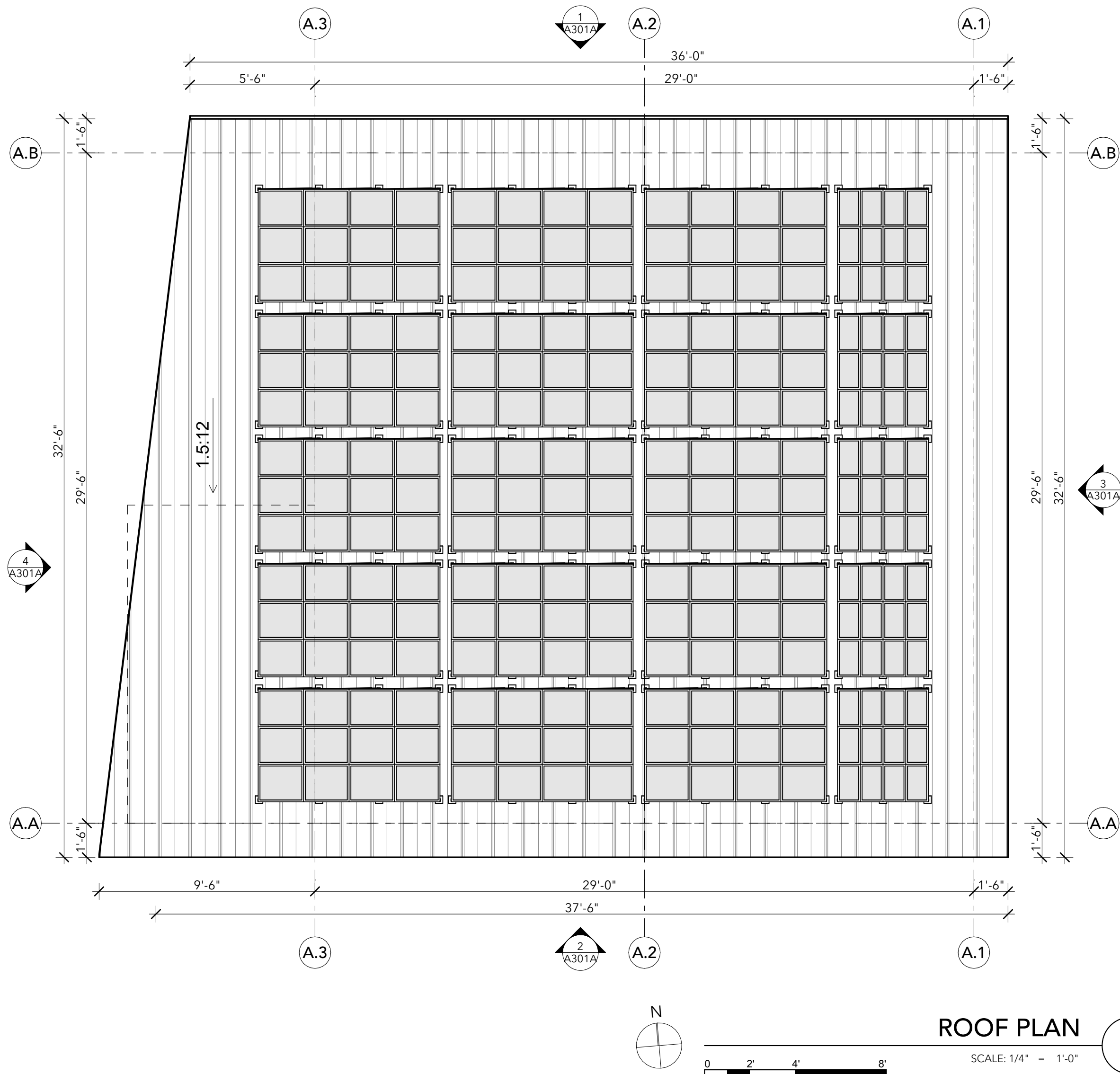


HABITAT ROARING FORK 8TH STREET
8TH STREET & MIDLAND AVENUE
GLENWOOD SPRINGS, CO 81601

DATE 5/2/23
ISSUANCE LAND USE SUBMISSION

BUILDING A
ROOF PLAN

A202A

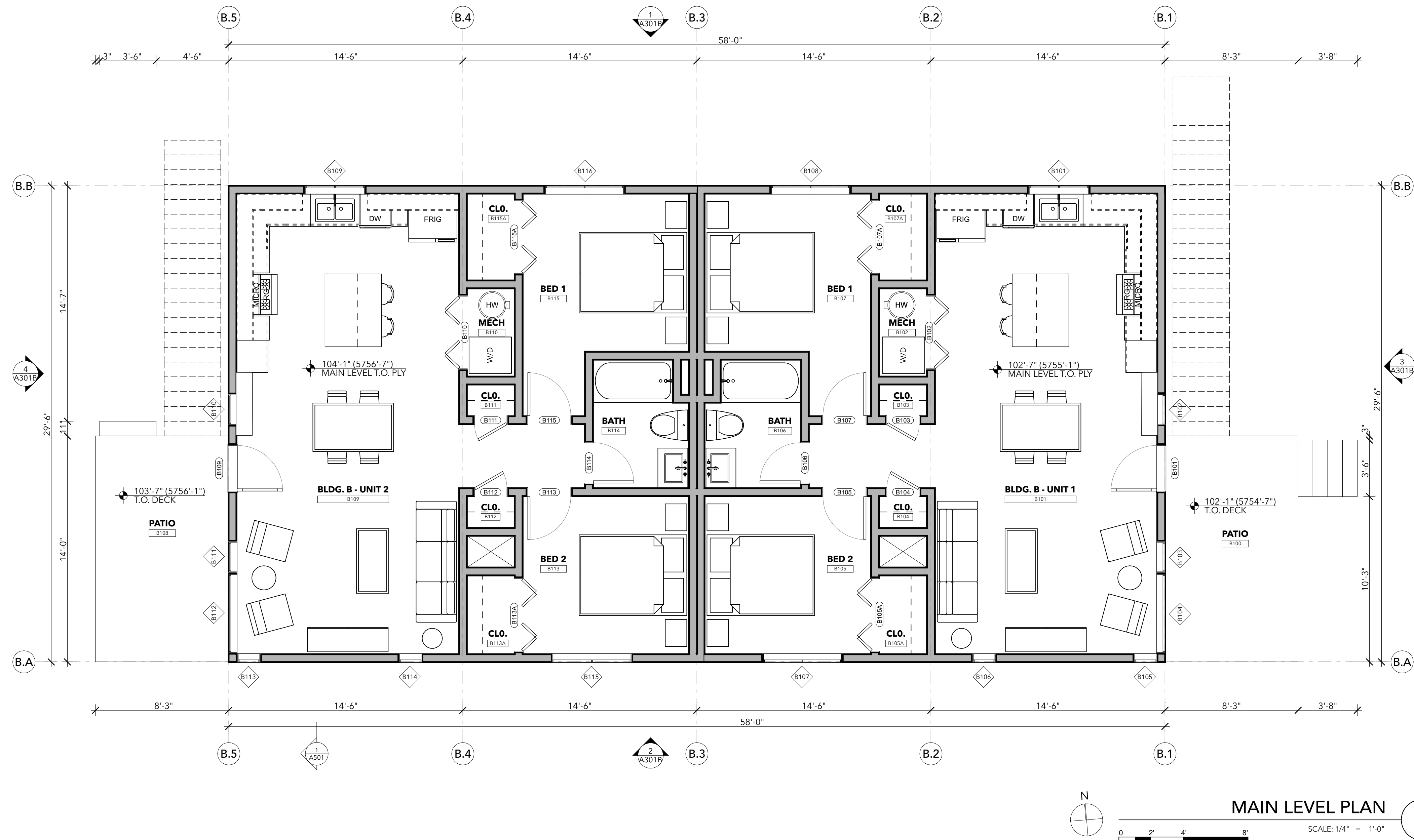


HABITAT ROARING FORK 8TH STREET
8TH STREET & MIDLAND AVENUE
GLENWOOD SPRINGS, CO 81601

DATE 5/2/23
ISSUANCE LAND USE SUBMISSION

BUILDING B
FLOOR PLAN

A201B



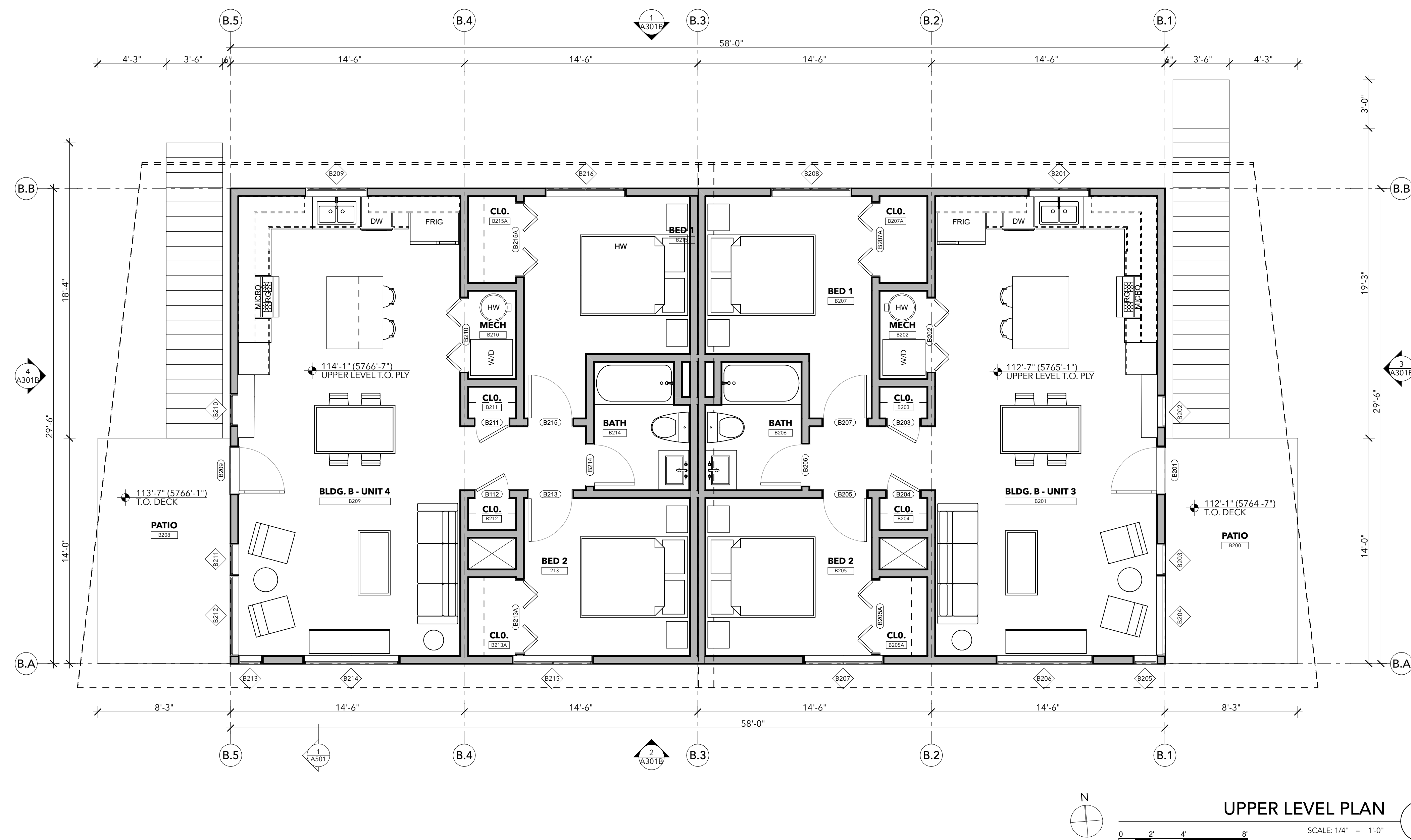
HABITAT ROARING FORK 8TH STREET

8TH STREET & MIDLAND AVENUE
GLENWOOD SPRINGS, CO 81601

<u>DATE</u>	<u>ISSUANCE</u>
5/2/23	LAND USE SUBMISSION

BUILDING B
FLOOR PLAN

A202B

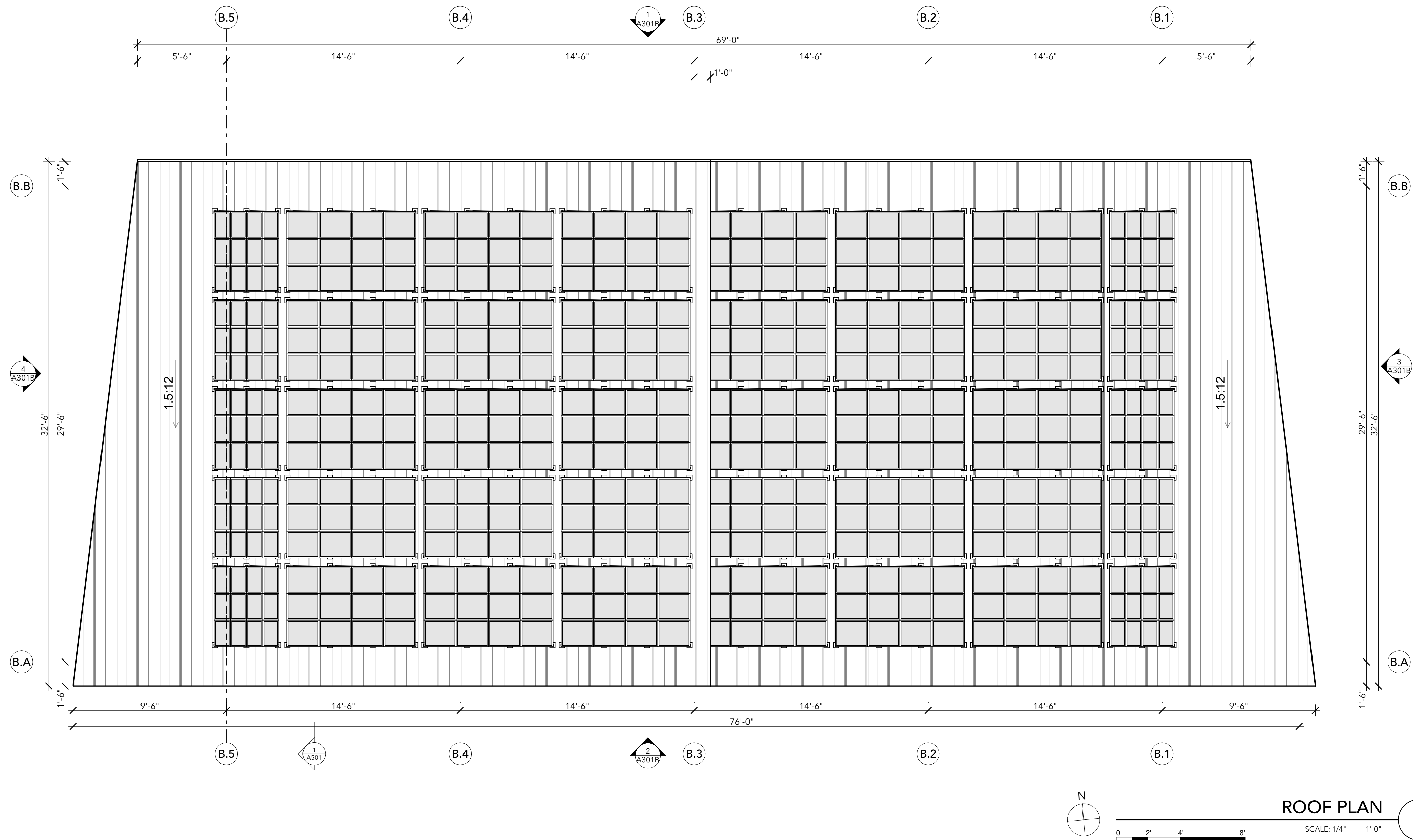


HABITAT ROARING FORK 8TH STREET
8TH STREET & MIDLAND AVENUE
GLENWOOD SPRINGS, CO 81601

DATE 5/2/23
ISSUANCE LAND USE SUBMISSION

BUILDING B
ROOF PLAN

A203B



8TH STREET & MIDLAND AVENUE
GLENWOOD SPRINGS, CO 81601

<u>DATE</u>	<u>ISSUANCE</u>
1/23	LAND USE SUBMISSION

BUILDING C FLOOR PLANS

A201C



8TH STREET & MIDLAND AVENUE
GLENWOOD SPRINGS, CO 81601

BUILDING C
FLOOR &
ROOF PLAN

A202C



HABITAT ROARING FORK 8TH STREET

8TH STREET & MIDLAND AVENUE

GLENWOOD SPRINGS, CO 81601

DATE

ISSUANCE

5/2/23

LAND USE SUBMISSION

EXTERIOR

PERSPECTIVES

A300



COMPOSITE SIDING

NICHIHA

COMPOSITE SIDING

NICHIHA

CORRIGATED MTL.

7/8" 24GA. BLACK

ZINC MATTE

DECK/ STAIR RAILING

2x4x1/8" GALV. WELDED

WIRE

4X4 CEDAR VERTICALS

& TIMBER STRUCTURE

2-COAT SEMI SOLID

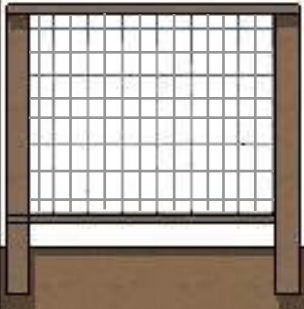
EXTERIOR FINISH LEGEND



COMPOSITE SIDING
NICHIA

COMPOSITE SIDING
NICHIA

CORRUGATED MTL.
7/8" 24GA. BLACK
ZINC MATTE



DECK/ STAIR RAILING
2x4x1/8" GALV. WELDED
WIRE
4X4 CEDAR VERTICALS
& TIMBER STRUCTURE
2-COAT SEMI SOLID



123'-10 1/2"
(5776'-4 1/2")
ROOF HIGH PT.

119'-0" (5771'-6")
T.O. PLATE

110'-0" (5762'-6")
UPPER LEVEL T.O. PLY

100'-0" (5752'-6")
MAIN LEVEL T.O. PLY

BLDG A ELEVATION WEST

0 4' 8' 12'

SCALE: 3/16" = 1'-0"

4



123'-10 1/2"
(5776'-4 1/2")
ROOF HIGH PT.

119'-0" (5771'-6")
T.O. PLATE

110'-0" (5762'-6")
UPPER LEVEL T.O. PLY

100'-0" (5752'-6")
MAIN LEVEL T.O. PLY

BLDG A ELEVATION SOUTH

0 4' 8' 12'

SCALE: 3/16" = 1'-0"

2



123'-10 1/2"
(5776'-4 1/2")
ROOF HIGH PT.

119'-0" (5771'-6")
T.O. PLATE

110'-0" (5762'-6")
UPPER LEVEL T.O. PLY

100'-0" (5752'-6")
MAIN LEVEL T.O. PLY

BLDG A ELEVATION EAST

0 4' 8' 12'

SCALE: 3/16" = 1'-0"

3



123'-10 1/2"
(5776'-4 1/2")
ROOF HIGH PT.

119'-0" (5771'-6")
T.O. PLATE

110'-0" (5762'-6")
UPPER LEVEL T.O. PLY

100'-0" (5752'-6")
MAIN LEVEL T.O. PLY

BLDG A ELEVATION NORTH

0 4' 8' 12'

SCALE: 3/16" = 1'-0"

1

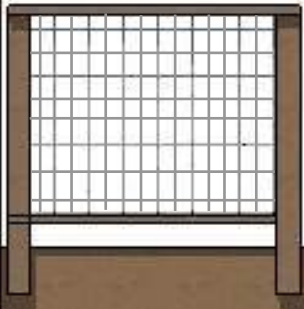
DATE 5/2/23
ISSUANCE LAND USE SUBMISSION

BUILDING A
ELEVATIONS

A301A

EXTERIOR FINISH LEGEND

- COMPOSITE SIDING
NICHHA
- COMPOSITE SIDING
NICHHA
- CORRIGATED MTL.
7/8" 24GA. BLACK
ZINC MATTE



DECK/ STAIR RAILING
2x4x1/8" GALV. WELDED
WIRE
4X4 CEDAR VERTICALS
& TIMBER STRUCTURE
2-COAT SEMI SOLID



BLDG B ELEVATION EAST

3

0 4' 8' 12'

SCALE: 3/16" = 1'-0"



BLDG B ELEVATION SOUTH

2

0 4' 8' 12'

SCALE: 3/16" = 1'-0"



BLDG B ELEVATION WEST

4

0 4' 8' 12'

SCALE: 3/16" = 1'-0"



BLDG B ELEVATION NORTH

1

0 4' 8' 12'

SCALE: 3/16" = 1'-0"

EXTERIOR FINISH LEGEND

- COMPOSITE SIDING
NICHHA
- COMPOSITE SIDING
NICHHA
- CORRIGATED MTL.
7/8" 24GA. BLACK
ZINC MATTE
- DECK/ STAIR RAILING
2x4x1/8" GALV. WELDED
WIRE
4X4 CEDAR VERTICALS
& TIMBER STRUCTURE
2-COAT SEMI SOLID



- 137'-1/2" (5789'-6 1/2")
ROOF HIGH PT.
- 132'-2" (5784'-8")
T.O. PLATE
- 123'-2" (5775'-8")
UPPER LEVEL T.O. PLY
- 113'-2" (5765'-8")
MAIN LEVEL T.O. PLY

BLDG C ELEVATION WEST

0 4' 8' 12'

SCALE: 3/16" = 1'-0"

4



- 137'-1/2" (5789'-6 1/2")
ROOF HIGH PT.
- 132'-2" (5784'-8")
T.O. PLATE
- 123'-2" (5775'-8")
UPPER LEVEL T.O. PLY
- 113'-2" (5765'-8")
MAIN LEVEL T.O. PLY
- 103'-2" (5755'-8")
LOWER LEVEL T.O. PLY

BLDG C ELEVATION SOUTH

0 4' 8' 12'

SCALE: 3/16" = 1'-0"

2



- 137'-1/2" (5789'-6 1/2")
ROOF HIGH PT.
- 132'-2" (5784'-8")
T.O. PLATE
- 123'-2" (5775'-8")
UPPER LEVEL T.O. PLY
- 113'-2" (5765'-8")
MAIN LEVEL T.O. PLY
- 103'-2" (5755'-8")
LOWER LEVEL T.O. PLY

BLDG C ELEVATION EAST

0 4' 8' 12'

SCALE: 3/16" = 1'-0"

3



- 137'-1/2" (5789'-6 1/2")
ROOF HIGH PT.
- 132'-2" (5784'-8")
T.O. PLATE
- 123'-2" (5775'-8")
UPPER LEVEL T.O. PLY
- 113'-2" (5765'-8")
MAIN LEVEL T.O. PLY

BLDG C ELEVATION NORTH

0 4' 8' 12'

SCALE: 3/16" = 1'-0"

1

DATE 5/2/23
ISSUANCE LAND USE SUBMISSION

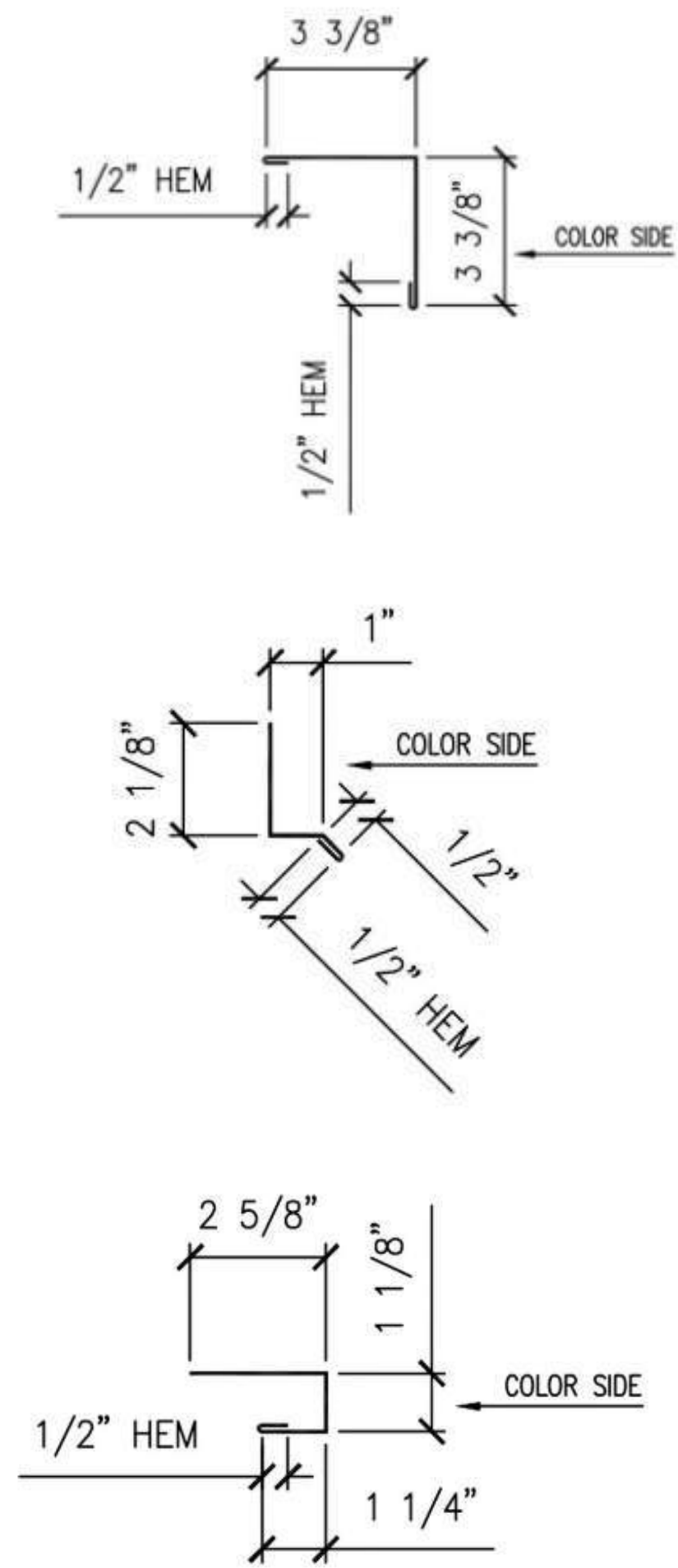
BUILDING C
ELEVATIONS

A301C

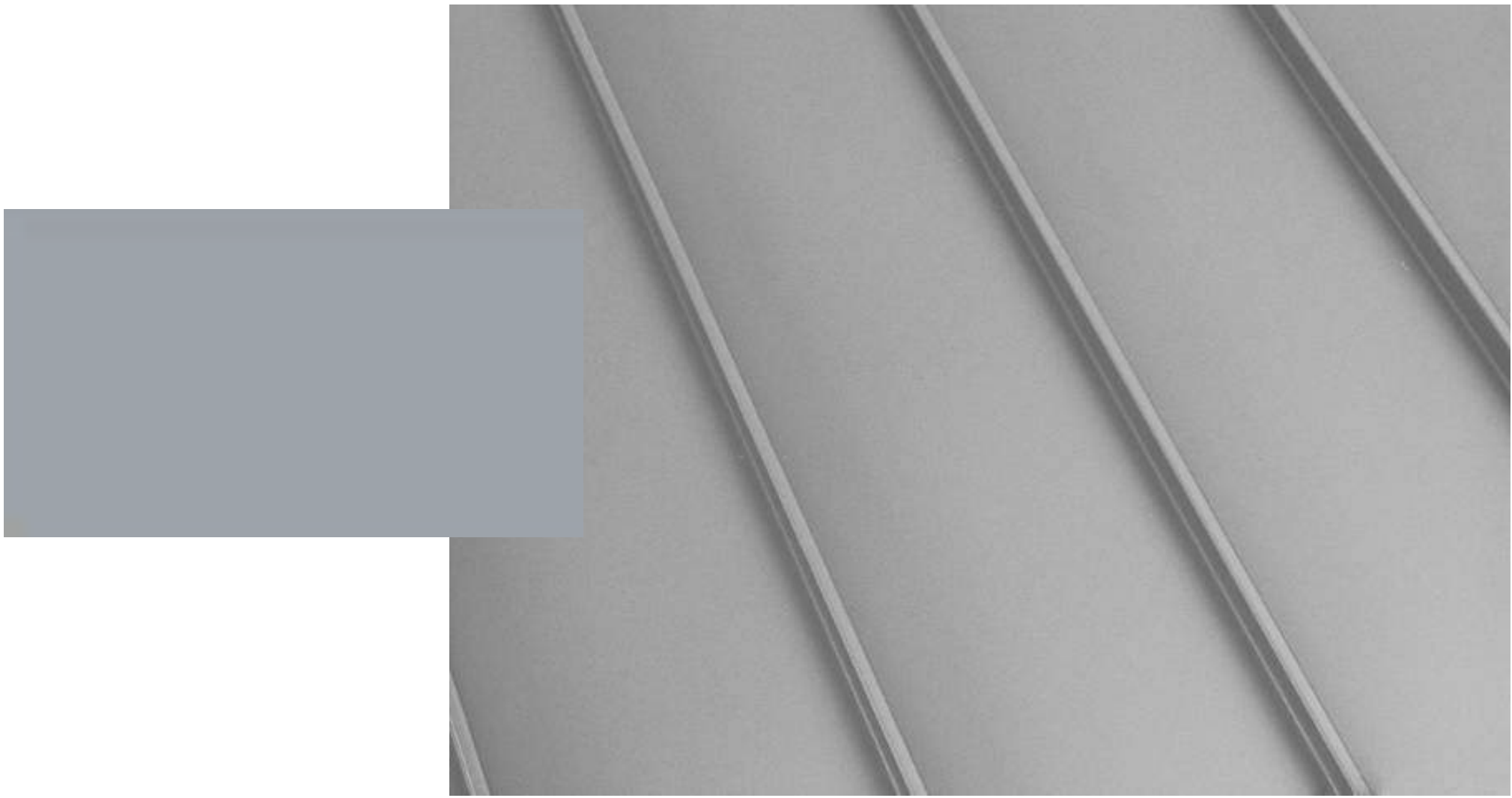


TIMBER STAIRS AND RAILINGS
w/ GALVANIZED STEEL MESH INFILL

DECK & STAIR MATERIALS



CORRIGATED MTL TRIM DETIALS



16" STANDING SEAM METAL ROOF PREFINISHED,
COLOR: LIGHT GRAY

ROOFING MATERIAL



7/8" CORRIGATED METAL SIDING: PREFINISHED, COLOR: CHARCOL GRAY



CORRIGATED SIDING



COMPOSITE SIDING



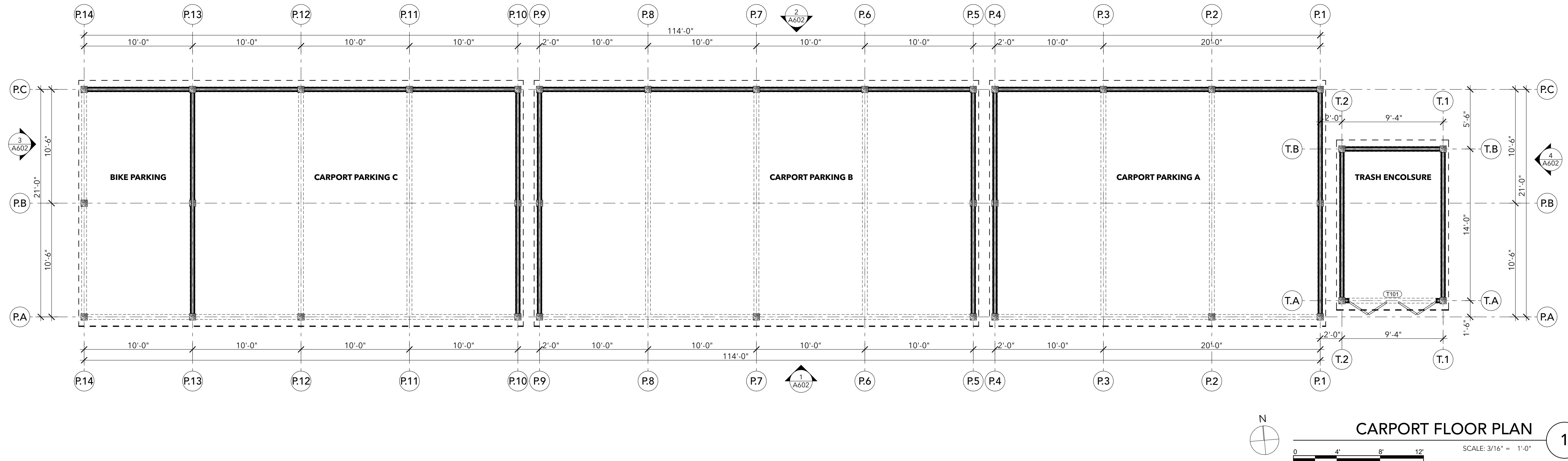
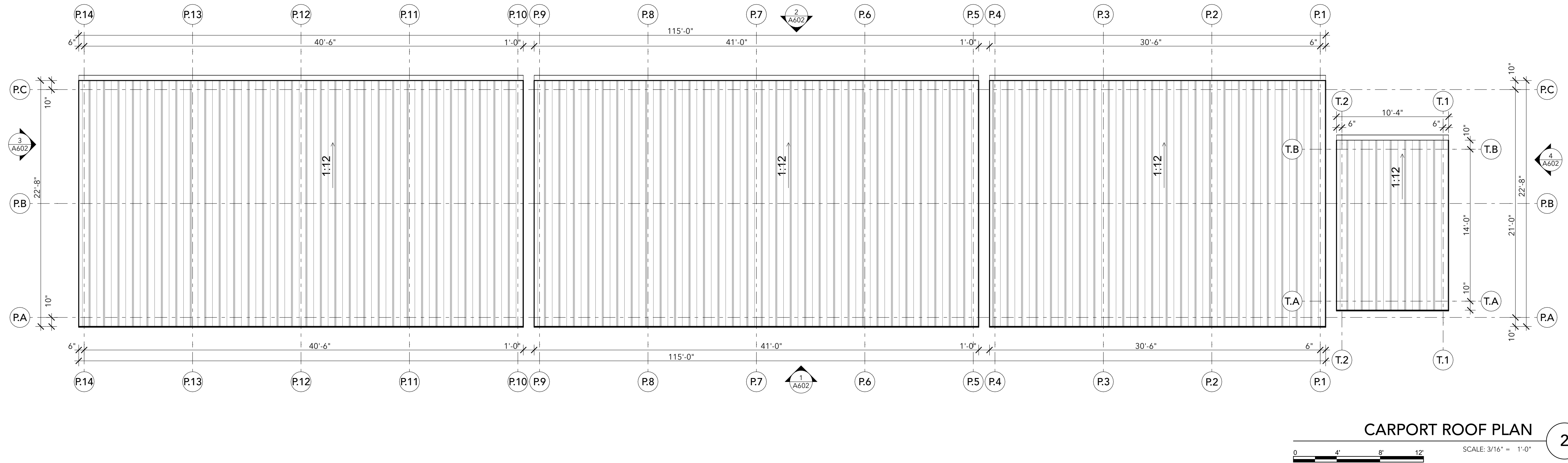
VINTAGEWOOD
Redwood



VINTAGEWOOD
Cedar

SIDING MATERIALS

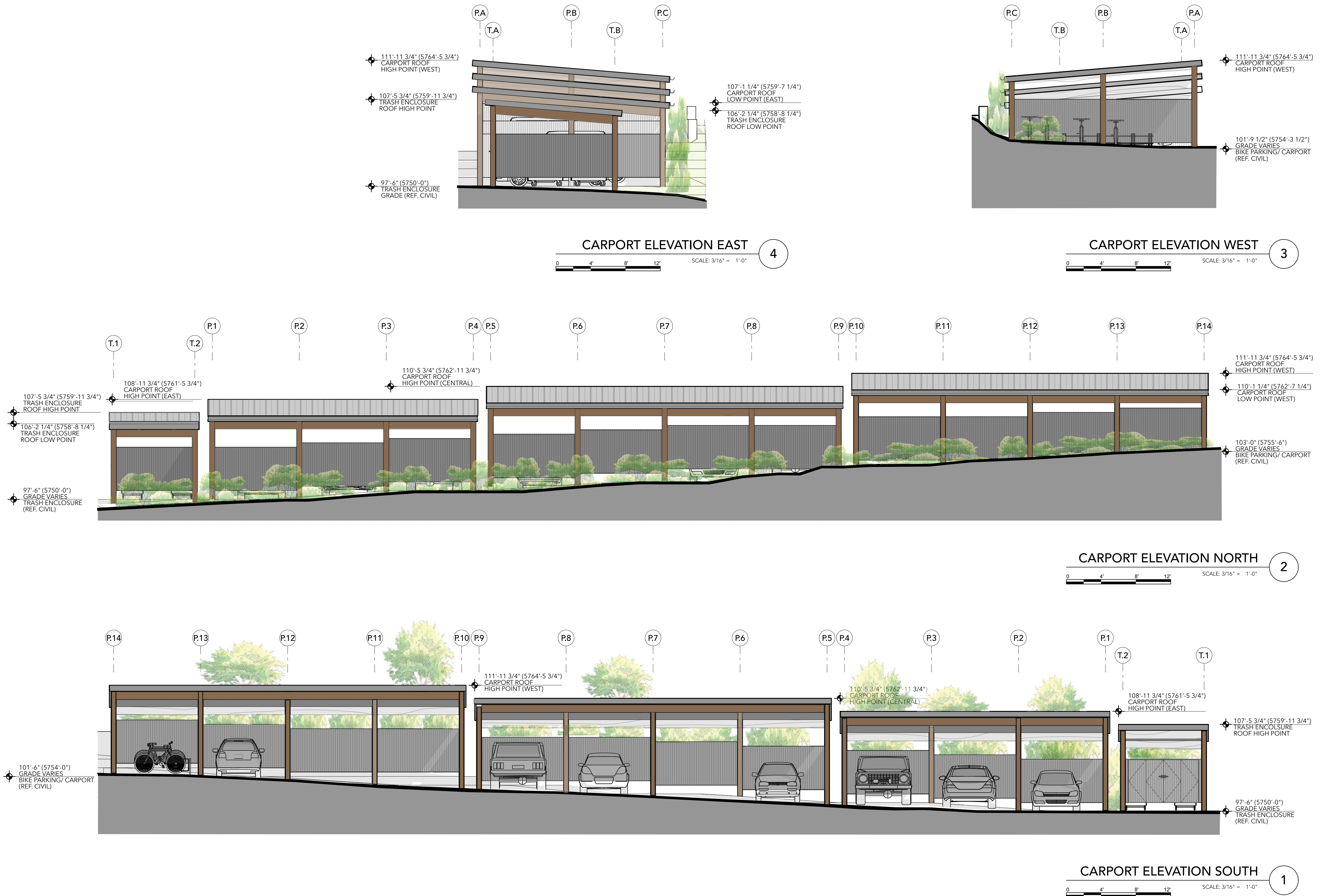
HABITAT ROARING FORK 8TH STREET
8TH STREET & MIDLAND AVENUE
GLENWOOD SPRINGS, CO 81601



DATE 5/2/23
ISSUANCE LAND USE SUBMISSION

CARPORT
PLANS

A601



HABITAT ROARING FORK
8TH STREET & MIDLAND AVENUE
GLENWOOD SPRINGS, COLORADO 81601

ISSUE DATE: MAY 2, 2023

REVISIONS

#	DATE	DESCRIPTION
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DRAWN: LS	REVIEWED: RS
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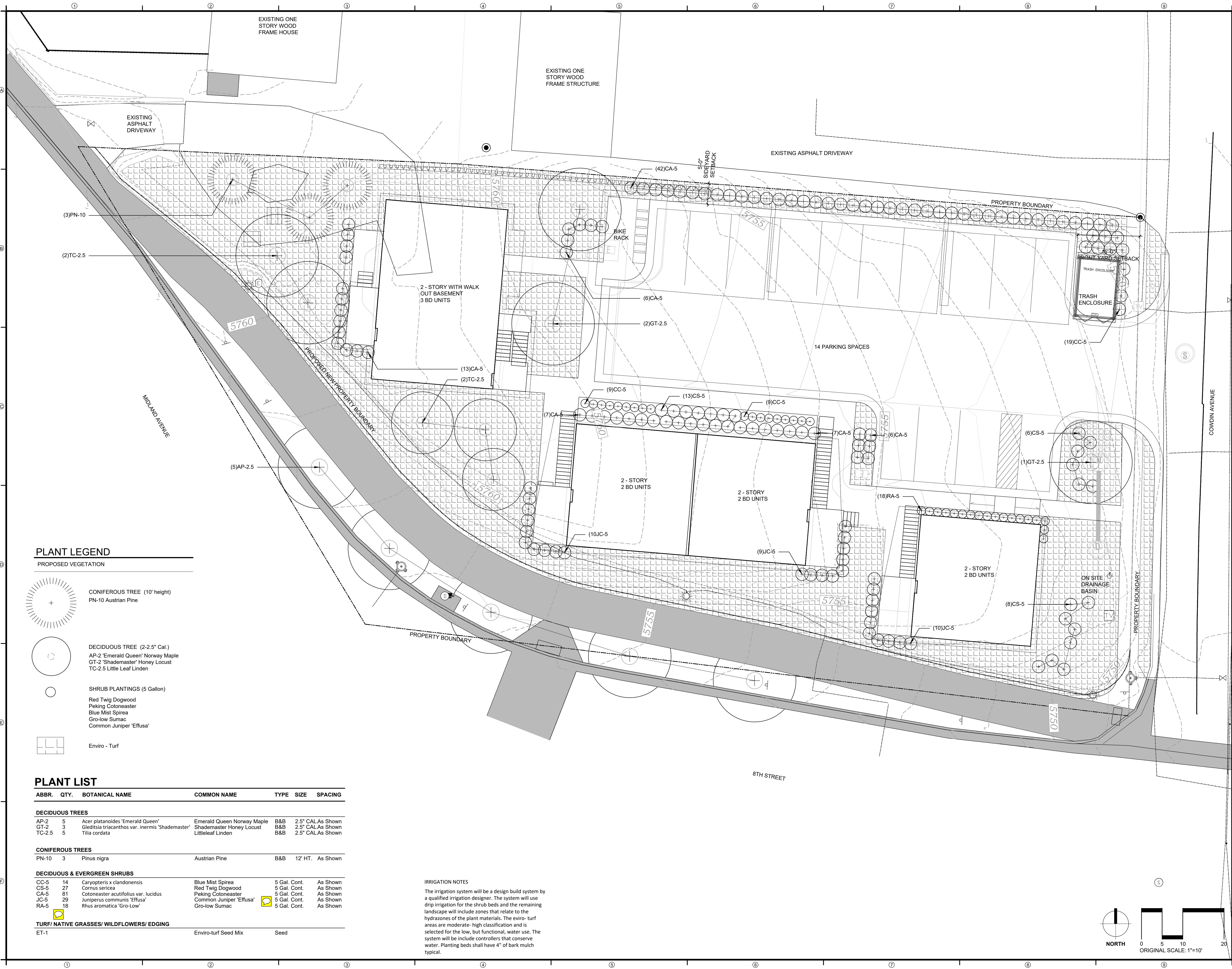
LAND USE
SUBMISSION

PROJECT NUMBER: 6957

PRELIMINARY
PLANTING PLAN

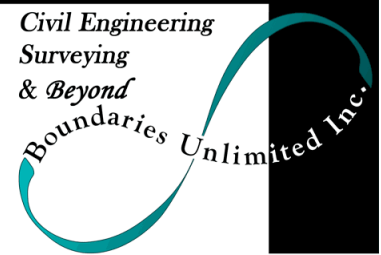
SHEET NUMBER

L8-01



April 24, 2023

Habitat for Humanity, Roaring Fork Valley
53 Calaway Court
Glenwood Springs, CO 81601



Re: Traffic Assessment (TA) for Habitat Roaring Fork-8th Street, Glenwood Springs, Colorado

To Whom It May Concern

The purpose of this letter is to provide a Traffic Assessment for the development of the parcel situated at the northeast corner of 8th Street and Midland Avenue in Glenwood Springs, Colorado (Garfield County PID#2185-093-00-002). The 0.59± acre vacant property is owned by the City of Glenwood Springs and is proposed for development by Habitat for Humanity-Roaring Fork Valley with eight (8) affordably housing units. The property is currently accessed from 8th Street via Cowdin Drive. The following Exhibit-1 provides an aerial view of the property and the adjacent roadways.



Exhibit 1 (Site & Existing Roadways)

Based on surveying information provided by Bookcliff Survey Services, Inc., Cowdin Drive is surfaced with two 11-foot +/- asphalt lanes and 12-inch +/- gravel shoulders. The posted speed limit is 15 mph, the intersection at 8th Street/Cowdin Drive is controlled by a stop sign on Cowdin Drive only, and there are no existing sidewalks on Cowdin Drive. The nearby intersection of Midland Avenue and 8th Street is controlled by a stop light. Sidewalks exist on the east side of Midland Avenue adjacent to the property and on both sides of 8th Street. Per the City of Glenwood Springs *Street Standards, Traffic*

Committee Report to Glenwood Springs City Council (July 7, 2005), the nearest street classification appears to be “Local Neighborhood Road with No Parking”.

The property was previously considered in the *Master Traffic Study – Glenwood Meadows*, by Kimley Horn dated January 2023 for development under the Institute of Traffic Engineers (ITE) Trip Generation Manual, 11th Edition classification 223-Affordable Housing (*Income Limits*) for 8 dwelling units, which is the same as is what is being proposed. Peak hour trips were estimated at 3 VTE in the AM and 4 VTE in the PM. Please see the attached trip generation calculations extracted from the Kimley Horn report.

The Kimley Horn report did not specifically reference the intersection of 8th Street/Cowdin Drive with regards to any necessary roadway improvements, but it did conclude no improvements were necessary for the nearby intersections at 8th Street/Pitkin Avenue or 8th Street/Colorado Ave.

Given that the proposed development matches the number of affordable housing units considered in the Kimley Horn report, it can be concluded that no lane improvements should be required for the proposed Habitat for Humanity – 8th Street affordable housing development.

Site development will include thirteen (13) standard parking spaces and one (1) accessible parking space for a total count of fourteen (14). Accessibility will be provided to the 8th Street via internal sidewalks and the extension of a public sidewalk along the west side of Cowdin Drive.

If you have any questions or need additional information, please feel free to contact me at 970.945.5252.

Sincerely,
BOUNDARIES UNLIMITED INC.

Deric J. Walter, PE

Enc.



Project Glenwood Meadows - 8th & Cowdin
 Subject Trip Generation for Affordable Housing (Income Limits)
 Designed by MAG Date November 17, 2022 Job No. 096798001
 Checked by _____ Sheet No. _____ of _____

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Affordable Housing (Income Limits) (ITE 223)

Independant Variable - Dwelling Units (X)

$$X = 8$$

T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (Page 342)

Average Weekday

$$T = 0.36 (X)$$

$$T = 0.36 * 8$$

Directional Distribution: 29% ent. 71% exit.

T = 3 Average Vehicle Trip Ends

1 entering 2 exiting

$$1 + 2 = 3$$

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (Page 343)

Average Weekday

$$(T) = 0.46 (X)$$

$$T = 0.46 * 8$$

Directional Distribution: 59% ent. 41% exit.

T = 4 Average Vehicle Trip Ends

2 entering 2 exiting

$$2 + 2 = 4$$

Weekday (Page 341)

Average Weekday

$$(T) = 4.81 (X)$$

$$T = 4.81 * 8$$

Directional Distribution: 50% ent. 50% exit.

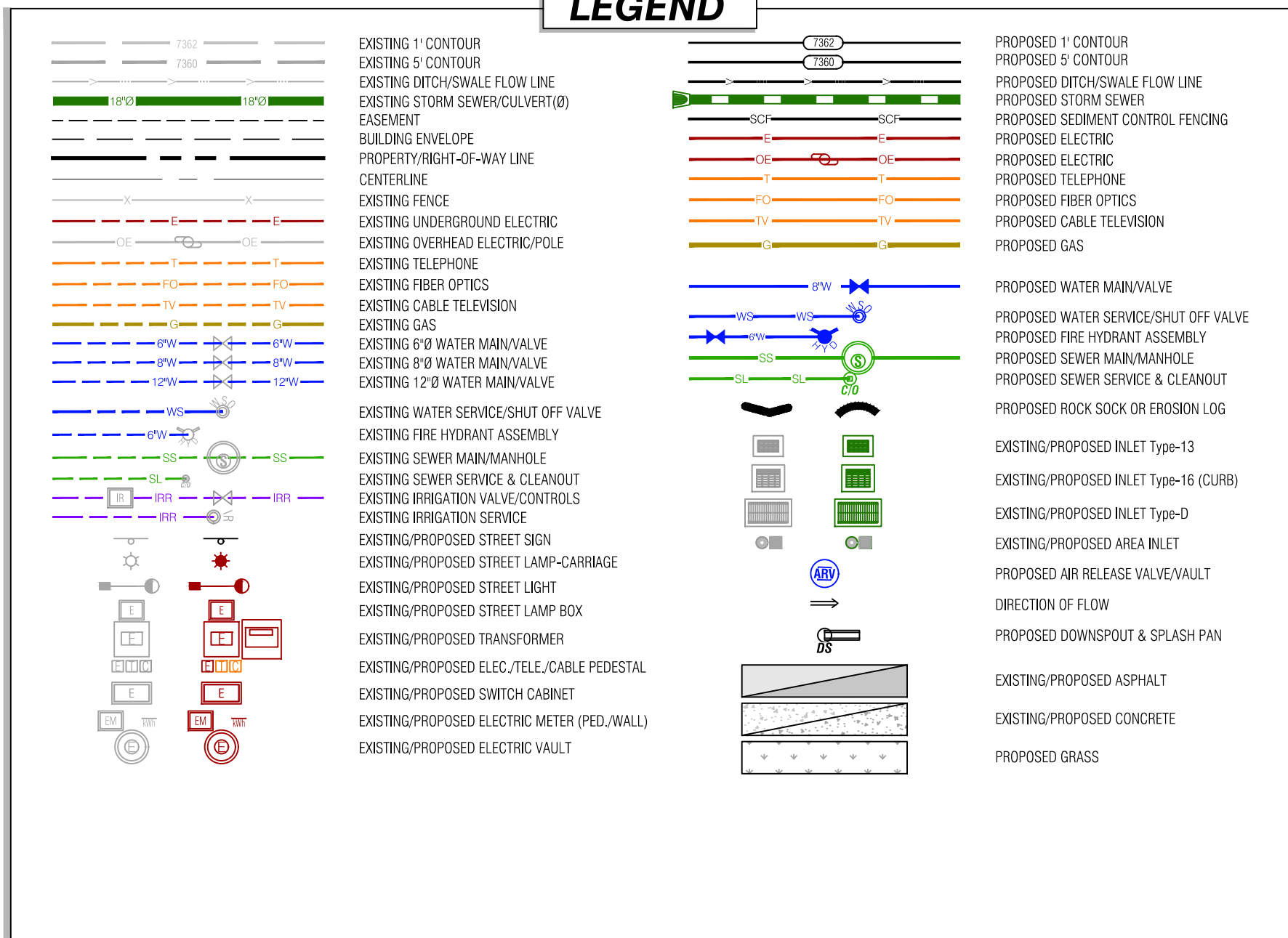
T = 40 Average Vehicle Trip Ends

20 entering 20 exiting

$$20 + 20 = 40$$

PRELIMINARY PLAN FOR THE
Habitat Roaring Fork, 8th. Street
GLENWOOD SPRINGS, COLORADO

ABBREVIATIONS			
APPROX	APPROXIMATE	GA	GAUGE
ARCH	ARCHITECT	GAL	GALLON
AVG	AVERAGE	GALV	GALVANIZED
B&B	BALLED AND BURLAPPED	GB	GRADE BREAK
BLDG	BUILDING	GC	GENERAL CONTRACTOR
BM	BENCHMARK	GPM	GALLON PER MINUTE
BOC	BACK OF CURB	HORIZ	HORIZONTAL
BOV	BLOW OFF VALVE	HP	HIGH POINT
BR	BOTTOM OF RAMP	HT	HEIGHT
BS	BOTTOM STEP	ID	INSIDE DIAMETER
BW	BOTTOM OF WALL	INV	INVERT ELEVATION
CAL	CALIPER	IN	INCHES
CF	CUBIC FEET	INCL	INCLUDED
CP	CAST-IN-PLACE	IRR	IRRIGATION
CJ	CONTROL JOINT	JT	JOINT(S)
CL	CENTERLINE	KL	KILO
CLR	CLEARANCE	LN	LINEAR
C/O	CLEANOUT	LP	LOW POINT
COMP	COMPACTED	LT	LIGHT
CONE	CONCRETE	MATL	MATERIAL
CONT	CONTINUOUS	MECH	MECHANICAL
CONTR	CONTRACTOR	MI	MANHOLE
CU	CUBIC	MIN	MINIMUM
		MISC	MISCELLANEOUS
DBL	DOUBLE	N/C	NOT IN CONTRACT
DEG	DEGREE	NOM	NOMINAL
DEMOL	DEMOLITION	NTS	NOT TO SCALE
DIA	DIAMETER	OC	ON CENTER(S)
DM	DIMENSION	OD	OUTSIDE DIAMETER
DN	DOWN	OPP	OPPOSITE
DTL	DETAIL	PA	PLANTING AREA
DWG	DRAWING	PC	POINT OF CURVATURE
EA	EACH	PERF	PERFORATED
EF	EACH FACE	PI	POINT OF INTERSECTION
ELEV	ELEVATION	PL	PROPERTY LINE
ELECT	ELECTRICAL	POB	POINT OF BEGINNING
ENG	ENGINEER	PSF	POUNDS PER SQUARE FOOT
EOP	END OF PAVEMENT	PSI	POUNDS PER SQUARE INCH
EQ	EQUAL	PT	POINT, POINT OF TANGENCY
EST	ESTIMATE	POLY	POLYMER
EW	EACH WAY	PVMT	PAVEMENT
EMST	EXISTING	PVR	PAVER(S)
FG	FINISHED GRADE		
FIN	FINISH		
FL	FLOW LINE		
FOD	FACE OF BUILDING		
FS	FINISH SURFACE		
FT	FOOT (FEET)		
FT	FOOTING		



GENERAL NOTES			
1.	BASIS OF BEARING AND BENCHMARKS: SEE THE EXISTING CONDITIONS SURVEY PREPARED BY BOOKCLIFF SURVEY SERVICES, PROJECT NO. 22149 DATED 1/27/2023.	32.	THE CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL NECESSARY TO COMPLETE THE WORK. ALL TRAFFIC CONTROL DEVICES AND METHODS OF CONTROLLING TRAFFIC THROUGH CONSTRUCTION ZONES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND ALL REVISIONS THERETO INCLUDING LOCAL AND STATE SUPPLEMENTS.
2.	BASED SOLELY UPON THE FLOOD INSURANCE RATE MAP (COMMUNITY PANEL NO. 0800711432C, DATED OCTOBER 15, 1985), PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, THE SUBJECT PROPERTY IS DESIGNATED AS BEING SITUATED IN ZONE C, "AREA OF MINIMAL FLOODING (NO SHADING)".	33.	FOR ANY CONSTRUCTION ACTIVITY WITHIN A RIGHT-OF-WAY, CONTRACTOR SHALL PROVIDE ALL WARNING LIGHTS, SIGNS, BARRICADES, FLAG MEN OR OTHER DEVICES NECESSARY TO PROVIDE FOR PUBLIC SAFETY IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CONSTRUCTION ZONE TRAFFIC CONTROL. A CONSTRUCTION TRAFFIC CONTROL PLAN MUST BE SUBMITTED FOR REVIEW AND APPROVAL TO THE TOWNSHIP AND PROJECT ENGINEER, 5 BUSINESS DAYS PRIOR TO COMMENCING CONSTRUCTION WITHIN A PUBLIC RIGHT-OF-WAY.
3.	GEOLOGIC HAZARDS DISCLOSURE - THIS PROJECT IS SUBJECT TO GEOLOGIC HAZARDS PER THE ADOPTED MAPPING BY THE CITY OF GLENWOOD SPRINGS AND OPEN-FILE REPORT 78-10, GEOLOGIC HAZARDS FOR THE GLENWOOD SPRINGS METROPOLITAN AREA - GARFIELD COUNTY, COLORADO, PREPARED BY LINCOLN - DEVORE ENGINEERS AND GEOLOGISTS, FOR THE COLORADO GEOLOGICAL SURVEY DEPARTMENT OF NATURAL RESOURCES, STATE OF COLORADO, DENVER, COLORADO, 1978. A SITE SPECIFIC GEOLOGIC HAZARD REPORT WAS PREPARED BY KUMAR & ASSOCIATES, INC. PROJECT NO. 22-7-181 DATED APRIL 7, 2023.	34.	CONTRACTOR SHALL DESIGNATE A CERTIFIED TRAFFIC CONTROL SUPERVISOR (TCS) TO MANAGE CONSTRUCTION SIGNAGE AND SAFETY OPERATIONS DURING ACTIVITIES WITHIN THE RIGHT OF WAY. A TRAFFIC CONTROL SUPERVISOR SHALL BE AVAILABLE WHENEVER WORK IS IN PROGRESS.
4.	THE WARRANTY PERIOD SHALL BE TWO (2) YEARS FROM THE DATE OF ACCEPTANCE.	35.	IF UNANTICIPATED HAZARDOUS MATERIALS OF ANY KIND ARE ENCOUNTERED IN THE WORK, THE CONTRACTOR SHALL IMMEDIATELY CEASE ALL CONSTRUCTION OPERATIONS AND NOTIFY THE PROJECT ENGINEER AND/OR OWNERS CONSTRUCTION PROJECT MANAGER FOR FURTHER DIRECTION.
5.	CONSTRUCTION WORK, ANY NOISE CREATED BY OPERATING OR CAUSING TO BE OPERATED ANY EQUIPMENT (MECHANICAL OR NON-MECHANICAL, SELF-PROPELLED OR MANUALLY MANIPULATED) USED IN CONSTRUCTION, REPAIR, ALTERATION OR DEMOLITION WORK ON BUILDINGS, STRUCTURES, STREETS, ALLEYS OR APPURTENANCES SHALL OCCUR WITHIN THE HOURS DEFINED BY THE CITY MUNICIPAL CODE.	36.	ALL DEBRIS RESULTING FROM CONSTRUCTION AND DEMOLITION SHALL BE HAULED OFF SITE AND DISPOSED OF PROPERLY AND LEGALLY AND SHALL BE CONSIDERED PART OF THE WORK.
6.	IN ORDER OF PRECEDENCE, ALL CONSTRUCTION SHALL MEET OR EXCEED THE PROJECT PLANS AND TECHNICAL SPECIFICATIONS, STANDARDS ESTABLISHED IN THE LATEST EDITIONS OF THE CITY PUBLIC WORKS MANUAL AND/OR ENGINEERING STANDARDS, AND CDDT SPECIFICATIONS, AS REFERENCED HEREIN, AND BE SUBJECT TO OBSERVATION BY THE PROJECT ENGINEER, TOWNSHIP AND CDDT, AS APPLICABLE.	37.	THE CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AWAY FROM ALL STRUCTURES IN ALL DIRECTIONS. DRAINAGE FACILITIES MAY NEED TO BE CONSTRUCTED & MAINTAINED AS NECESSARY TO PROTECT PUBLIC & PRIVATE PROPERTY.
7.	IN CASE OF A CONFLICT BETWEEN VARIATIONS SPECIFICATIONS, THE MOST STRINGENT SHALL APPLY.	38.	ALL CONSTRUCTION SHALL BE SUBJECT TO OBSERVATION AND REVIEW BY THE TOWNSHIP AND THE PROJECT ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF OBSERVATIONS AND REVIEW OF ALL INSTALLATIONS, OBSERVATIONS AND REVIEW OF CONSTRUCTION WORK IN PROGRESS ARE NOT TO BE CONSIDERED AS A GUARANTEE OR WARRANTY BY THE OBSERVER OF THE COMPLETED WORK. ALL GUARANTEES OR WARRANTIES REMAIN WITH THE CONTRACTOR.
8.	THE CONTRACTOR SHALL OBTAIN A COPY OF THE LATEST STANDARD SPECIFICATIONS AND DETAILS OF ALL AGENCIES EXERCISING JURISDICTION OVER THIS PROJECT. A COPY OF THESE SPECIFICATIONS AND DETAILS SHALL BE MAINTAINED ON THE JOBSITE AT ALL TIMES.	39.	ALL DISTURBED AREAS MUST BE RECLAIMED WITH VEGETATION AS DIRECTED BY THE PROJECT LANDSCAPE ARCHITECT OR OWNERS CONSTRUCTION PROJECT MANAGER.
9.	THE CONTRACTOR SHALL HAVE IN HIS POSSESSION AT ALL TIMES TWO (2) SIGNED COPIES OF THE LATEST PLANS, STANDARDS, AND SPECIFICATIONS AS APPROVED BY THE APPROPRIATE GOVERNING AGENCY AND PROJECT ENGINEER. THE CONTRACTOR SHALL NOT CHANGE OR DEVIATE FROM THESE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE OWNER, PROJECT ENGINEER, AND GOVERNING AGENCY.	40.	ALL PRODUCT INFORMATION SHOWN IS AS PROVIDED BY THE MANUFACTURER. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING AND COMPLYING WITH THE MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS FOR THE INSTALLATION OF ALL MATERIALS WITH SPECIAL ATTENTION TO PROPER SEALING OF MATING SURFACES. THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE ENGINEER IF ANY DISCREPANCIES ARE FOUND BETWEEN THE DELIVERED PRODUCTS AND THOSE SHOWN ON THE PLANS.
10.	THE CONTRACTOR SHALL AT ALL TIMES KEEP TWO (2) FULL SETS OF CONTRACT DRAWINGS MARKED UP TO INDICATE THE AS-BUILT LOCATION OF SUBSURFACE UTILITIES INSTALLED AND ENCOUNTERED. ALL INSTALLED AND ENCOUNTERED UTILITIES SHALL BE TOPOGRAPHICALLY SURVEYED BY A PROFESSIONAL LAND SURVEYOR AND ASBUILT DRAWINGS SHALL BE PROVIDED IN ELECTRONIC, DWG AND PDF FORM TO THE TOWNSHIP AND THE PROJECT ENGINEER UPON COMPLETION OF THE WORK. ALL SURVEY DATA SHALL BE ON TOWNSHIP COORDINATES AND DATUM.	41.	THE CONTRACTOR SHALL VERY EXISTING PIPE OR MANHOLE INVERTS/DEPTHS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER.
11.	ALL WORK SHALL CONFORM TO ALL LOCAL, STATE, AND FEDERAL APPLICABLE LAWS AND REGULATIONS.	42.	ALL PRODUCT INFORMATION SHOWN IS AS PROVIDED BY THE MANUFACTURER. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING AND COMPLYING WITH THE MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS FOR THE INSTALLATION OF ALL MATERIALS WITH SPECIAL ATTENTION TO PROPER SEALING OF MATING SURFACES. THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE ENGINEER IF ANY DISCREPANCIES ARE FOUND BETWEEN THE DELIVERED PRODUCTS AND THOSE SHOWN ON THE PLANS.
12.	THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL JOB SITE SAFETY ON THE PROJECT. THIS SHALL INCLUDE THE SAFETY OF HIS OWN PERSONNEL, SUBCONTRACTORS, ALL VISITORS TO THE SITE, AND THE GENERAL PUBLIC. ALL JOB SITE SAFETY SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS AND CODES, AND ENSURE COMPLIANCE INCLUDING, BUT NOT LIMITED TO, THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS, AND 48 USC 11403-1022-1087, FOR THE MARKING OF UNDETECTED UNDERGROUND UTILITIES. (www.osha-slc.org) A MINIMUM OF SEVENTY TWO (72) HOURS (EXCLUDING WEEKENDS AND HOLIDAYS) IN ADVANCE OF ANY EXCAVATION.	43.	THE CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS TO AFFECTED PROPERTY OWNERS AT ALL TIMES DURING CONSTRUCTION AT NO ADDITIONAL COST.
13.	THE CONTRACTOR SHALL CONTACT THE CITY OF COLORADO AT #311 (1-800-922-1987), FOR THE MARKING OF UNDETECTED UNDERGROUND UTILITIES. (www.osha-slc.org) A MINIMUM OF SEVENTY TWO (72) HOURS (EXCLUDING WEEKENDS AND HOLIDAYS) IN ADVANCE OF ANY EXCAVATION.	44.	ADDITIONAL NOTES ARE LOCATED THROUGHOUT THE CONSTRUCTION DOCUMENTS.
14.	EXISTING TOPOGRAPHY, STRUCTURES AND SUBSURFACE UTILITY ENGINEERING (SUE) MAPPING SHOWN ON THESE PLANS WERE PROVIDED BY OTHERS AND WERE NOT VERIFIED BY BOUNDARIES UNLIMITED INC. THEREFORE, BOUNDARIES UNLIMITED INC. ASSUMES NO RESPONSIBILITY FOR EXISTING TOPOGRAPHY, STRUCTURES OR UTILITIES.	DEMOLITION NOTES	
15.	ALL MATERIALS SHALL BE NEW UNLESS OTHERWISE INDICATED IN THE PLANS, AND SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE OWNER, PROJECT ENGINEER, TOWNSHIP AND CDDT, AS APPLICABLE.	1.	PRIOR TO BIDDING, CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS OF THE PROJECT AREA AND ANTICIPATED DEMOLITION REQUIREMENTS.
16.	LOCATIONS AND ELEVATIONS OF EXISTING IMPROVEMENTS TO BE MET (OR AVOIDED) BY THE PROPOSED WORK SHALL BE CONFIRMED BY THE CONTRACTOR THROUGH FIELD EXPLORATIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL REPORT TO THE PROJECT ENGINEER ANY DISCREPANCIES BETWEEN THESE PLANS AND FIELD CONDITIONS.	2.	CONTRACTOR TO PROTECT ALL UTILITY, PAVING, BUILDINGS, ETC. OUTSIDE OF LIMITS OF PROPOSED CONSTRUCTION DURING DEMOLITION OPERATIONS.
17.	THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES SHOWN IN THE PLANS AND/OR SPECIFICATIONS. THE CONTRACTOR SHALL NOT SCALE DRAWINGS FOR CONSTRUCTION PURPOSES. ANY MISSING DIMENSIONS OR DISCREPANCIES IN PLANS, FIELD FINDINGS, OR PHYSICAL FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT ENGINEER. IF THE CONTRACTOR PROCEEDS WITH THE WORK WITHOUT NOTIFYING THE PROJECT ENGINEER, HE DOES SO AT HIS OWN RISK.	3.	ALL EXISTING PAVEMENT AND CONCRETE WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED UNLESS OTHERWISE NOTED.
18.	ALL ESTIMATES OF QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR DETERMINING ACTUAL QUANTITIES, AND SHALL PROVIDE ALL WORK AND MATERIALS NECESSARY TO COMPLETE THE PROJECT IN ITS ENTIRETY.	4.	ALL EXISTING HERBACEOUS VEGETATION AND TOPSOIL SHALL BE STRIPPED TO A MINIMUM DEPTH OF 12" AND REMOVED FROM SITE OR STOCKPILED FOR LATER USE IN LANDSCAPED AREAS. TREES DESIGNATED FOR REMOVAL SHALL BE COMPLETELY REMOVED, INCLUDING STUMPS AND ROOT SYSTEMS.
19.	THE CONTRACTOR SHALL PROTECT ALL EXISTING IMPROVEMENTS NOT DESIGNATED FOR REMOVAL, AND THOSE IMPROVEMENTS THAT ARE OUTSIDE THE LIMITS OF THE PROPOSED CONSTRUCTION. CONTRACTOR SHALL TAKE CARE TO AVOID DAMAGE THERETO AND SHALL PROVIDE TEMPORARY FENCING, BARRICADES, SUPPORTS, RESTRAINTS, AND/OR BRACING WHERE REQUIRED TO PROTECT EXISTING IMPROVEMENTS. DAMAGE TO EXISTING IMPROVEMENTS SHALL BE REPAIRED AND/OR REPLACED TO EQUAL OR BETTER CONDITION AT THE CONTRACTORS DISPENSE.	5.	CONTRACTOR SHALL REFLECT DEMOLITION PLANS PLANS FOR DETAILS ON LIMITS OF DEMOLITION AND THE SITE AND/OR GRADING PLANS FOR PERMETER EROSION CONTROLS.
20.	ALL GRADING AND CONSTRUCTION ACTIVITIES SHALL BE CONFINED TO THE OWNERS' PROPERTY, PUBLIC RIGHT-OF-WAY, PERMANENT EASEMENTS, AND TEMPORARY CONSTRUCTION EASEMENTS. THE CONTRACTOR SHALL NOT OPERATE OUTSIDE THIS AREA WITHOUT THE PRIOR CONSENT OF THE PROPERTY OWNER INVOLVED. ANY DAMAGE TO PRIVATE PROPERTY SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE TO PRIVATE PROPERTY.	6.	PRIOR TO DEMOLITION WORK, EROSION CONTROL DEVICES ARE TO BE INSTALLED. EROSION CONTROL MEASURES SHALL BE ADJUSTED AS DEMOLITION AND CONSTRUCTION PROGRESS WARRANTS.
21.	THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS NECESSARY FOR THE WORK OR OWNERS REPRESENTATIVES, AND PAY ALL FEES AS REQUIRED BY THE CONSTRUCTION COVERED IN THESE PLANS.	7.	ALL DEMOLITION WORK ON THIS CONSTRUCTION SITE SHALL BE IN CONFORMANCE WITH LOCAL STANDARDS AND GUIDELINES.
22.	THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL PERMITS NECESSARY FOR STREET CLOSURES, OBSTRUCTIONS TO TRAFFIC, AND UTILITY SHUT-OFFS.	8.	THE DEMOLITION PLAN DEPICTS THE ANTICIPATED REMOVALS NECESSARY FOR CONSTRUCTION OF THE PROJECT. MISCELLANEOUS AND MINOR REMOVALS MAY NOT BE SHOWN IN DETAIL BUT ARE CONSIDERED OBLIGATORY TO THE PROJECT. ADDITIONAL REMOVALS MAY BE NECESSARY AND THE CONTRACTOR WILL BE REQUIRED TO REMOVE ALL EXISTING IMPROVEMENTS THAT ARE IN CONFLICT WITH THE PROPOSED CONSTRUCTION AND AS REQUIRED DIRECTED BY THE PROJECT ENGINEER OR OWNERS CONSTRUCTION PROJECT MANAGER.
23.	THE CONTRACTOR IS RESPONSIBLE FOR ALL SITE SECURITY AND SHALL PROPERLY PROTECT AND BARRICADE THE CONSTRUCTION SITE. UNSECURED SHALL BE SOLELY AT THE CONTRACTORS DISPENSE.	9.	CONTRACTOR SHALL COORDINATE DEMOLITION AND/OR RELOCATION OF EXISTING UTILITIES WITH THE APPROPRIATE UTILITY OWNER AND IN ACCORDANCE WITH THE UTILITY OWNERS REQUIREMENTS. INTERRUPTIONS IN SERVICE SHALL BE COORDINATED WITH THE UTILITY OWNER AND PROPERTY OWNER(S) IMPACTED. CONTRACTOR SHALL COORDINATE WITH THE RESPECTIVE UTILITY PROVIDER FOR PORTIONS OF THE WORK TO BE PERFORMED BY UTILITY COMPANY'S FORCES, AND PROVIDE ADEQUATE NOTICE FOR SCHEDULING. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES, UNLESS OTHERWISE PAID BY THE OWNER PRIOR TO CONSTRUCTION. UTILITY REMOVAL, TRENCHES SHALL BE BACKFILLED WITH APPROVED MATERIAL AND MEET COMPACTION REQUIREMENTS PER THE GEOTECHNICAL REPORT.
24.	PRIOR TO BEGINNING THE WORK, THE CONTRACTOR SHALL OBTAIN ANY WRITTEN AGREEMENTS FOR INGRESS AND EGRESS TO THE WORK FROM ADJACENT PRIVATE PROPERTY OWNERS. ACCESS TO ANY ADJACENT PRIVATE PROPERTY SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD, DURING ALL HOURS OF OPERATION FOR THE BUSINESS LOCATED ON THOSE PARCELS.	10.	THE SITE MAY CONTAIN EXISTING FOOTINGS OR OTHER UNDERGROUND STRUCTURES THAT ARE NOT DETECTED ON THIS PLAN. CONTRACTOR SHALL TAKE CARE TO REMOVE ALL NECESSARY STRUCTURES AND BACKFILL IN CONFORMANCE WITH THE GEOTECHNICAL REPORT. BOTTOM OF EXCAVATION SURVEYING SHALL BE INSPECTED BY THE GEOTECHNICAL TESTING ENGINEER AND APPROVED PRIOR TO ANY BACKFILL.
25.	FOR ANY CHANGES OR DEVIATIONS FROM THESE PLANS PROPOSED BY THE CONTRACTOR, SHOP DRAWINGS AND MATERIAL SPECIFICATIONS SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR REVIEW AND APPROVAL PRIOR TO PLACE ORDER FOR MATERIAL.	11.	ALL EXISTING PAVEMENT, UTILITIES, BURIED DEBRIS, RUBBLE, AND/OR STRUCTURES/FOUNDATIONS ENCOUNTERED WITHIN AREAS OF DISTURBANCE SHALL BE COMPLETELY REMOVED PRIOR TO OR DURING EARTHWORK OPERATIONS. WASTED MATERIAL SHALL NOT BE BURIED ON SITE WITHOUT THE PRIOR APPROVAL OF THE ENGINEER OR OWNERS REPRESENTATIVE.
26.	CONTRACTOR MUST COORDINATE ALL CONSTRUCTION WITH THE OWNERS DESIGNATED CONSTRUCTION PROJECT MANAGER OR THE PROJECT ENGINEER.	12.	ALL EXISTING UNDERGROUND SERVICE LINES FOR WATER AND WASTEWATER SHALL BE REMOVED PER LOCAL UTILITY COMPANY STANDARDS. ALL EXISTING UNUSED GAS, TELEPHONE, FIBER OR ELECTRIC LINE/SERVICE SHALL BE COORDINATED FOR REMOVAL WITH THE UTILITY PROVIDER.
27.	CONTRACTOR SHALL PROTECT AND PRESERVE ALL SURVEY CONTROL, AND PROPERTY MONUMENTATION. ANY DAMAGED MONUMENTS SHALL BE RESET BY A PROFESSIONAL LAND SURVEYOR LICENSED IN THE PROJECTS STATE AT THE CONTRACTORS DISPENSE.	13.	THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION, REMOVAL, AND DISPOSING IN A MANNER APPROVED BY ALL GOVERNING AUTHORITIES FOR ALL STRUCTURES, PAVES, WALLS, PANS, FOUNDATIONS, PAVEMENT, UTILITIES, ETC. TO BE DEMOLISHED, SUCH THAT THE IMPROVEMENTS SHOWN ON THE PLANS CAN BE CONSTRUCTED. DEMOLITION AND DISPOSAL PERMITS SHALL BE THE CONTRACTORS RESPONSIBILITY. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO APPROVED GRADE AND BROUGHT UP TO PROPOSED GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE GEOTECHNICAL REPORT.
28.	PRIOR TO BEGINNING THE WORK, THE CONTRACTOR SHALL OBTAIN ANY WRITTEN AGREEMENTS FOR INGRESS AND EGRESS TO THE WORK FROM ADJACENT PRIVATE PROPERTY OWNERS. ACCESS TO ANY ADJACENT PRIVATE PROPERTY SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD, DURING ALL HOURS OF OPERATION FOR THE BUSINESS LOCATED ON THOSE PARCELS.	14.	DURING DEMOLITION OPERATIONS, THE CONTRACTOR MUST PROTECT THE PUBLIC AT ALL TIMES USING MEANS OF THEIR CHOICE.
29.	TEMPORARY POWER, TELEPHONE, WATER, SANITARY SEWER AND WASTE DISPOSAL SERVICE FOR THE SITE IS THE CONTRACTORS RESPONSIBILITY UNLESS OTHERWISE SPECIFIED.	15.	CONTRACTOR SHALL PRESERVE ALL LANDSCAPING NOT TO BE REMOVED FOR CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ALL AREAS DISTURBED BY CONSTRUCTION.
30.	CONTRACTOR SHALL REFER TO OTHER DRAWINGS ISSUED BY ARCHITECT, STRUCTURAL, ELECTRICAL, AND MECHANICAL ENGINEERS. ENSURE COORDINATION OF EXISTING LOCATION AND DIMENSIONS OF BUILDINGS, EXITS, RAMPS, UTILITY ENTRANCE LOCATIONS AND GRADES AROUND THE BUILDING. IMMEDIATELY NOTIFY THE PROJECT ENGINEER IF THERE ARE ANY DISCREPANCIES.	16.	SAVOUT ALL ASPHALT AND CONCRETE TO BE REMOVED. SAVOUTS SHALL BE TO FULL DEPTH OF EXISTING PAVEMENT. CONCRETE PAVEMENT SHALL BE REMOVED TO THE NEAREST EXISTING JOINT WHEN LESS THAN 9" FROM A PROPOSED SAVOUT.
31.	NO BELOW GRADE WORK SHALL BE BACKFILLED INCLUDING BEDDING MATERIAL ABOVE THE SPRING LINE OF THE PIPE UNTIL THE CONSTRUCTION HAS BEEN INSPECTED AND APPROVED FOR BACKFILLING BY THE APPROPRIATE GOVERNING AGENCY, PROJECT ENGINEER AND/OR OWNERS CONSTRUCTION PROJECT MANAGER. INSPECTIONS SHALL BE SCHEDULED AT LEAST FORTY EIGHT (48) HOURS PRIOR.		

NOTES:
THIS PLAN SET IS INTENDED TO BE PLOTTED IN COLOR. FAILURE TO DO SO MAY RESULT IN MISSING DATA & INFORMATION CRITICAL TO THE PROJECT.

Boundaries Unlimited Inc.
Civil Engineering
Surveying
& Beyond
923 Cooper Ave., Ste. 201
Glenwood Springs, CO 81601
(770) 945.5252
www.bu-inc.com

Subsurface Utility Engineering (SUE)
Required Project: ###
If "Yes," SUE Certification by:
Firm: #####
Job #: #####
Date: #####

Engineer or Surveyor Seal

NOT FOR CONSTRUCTION

Client Information:
HABITAT FOR HUMANITY
53 CALWAY COURT
GLENWOOD SPRINGS, CO 81601
970.309.8179

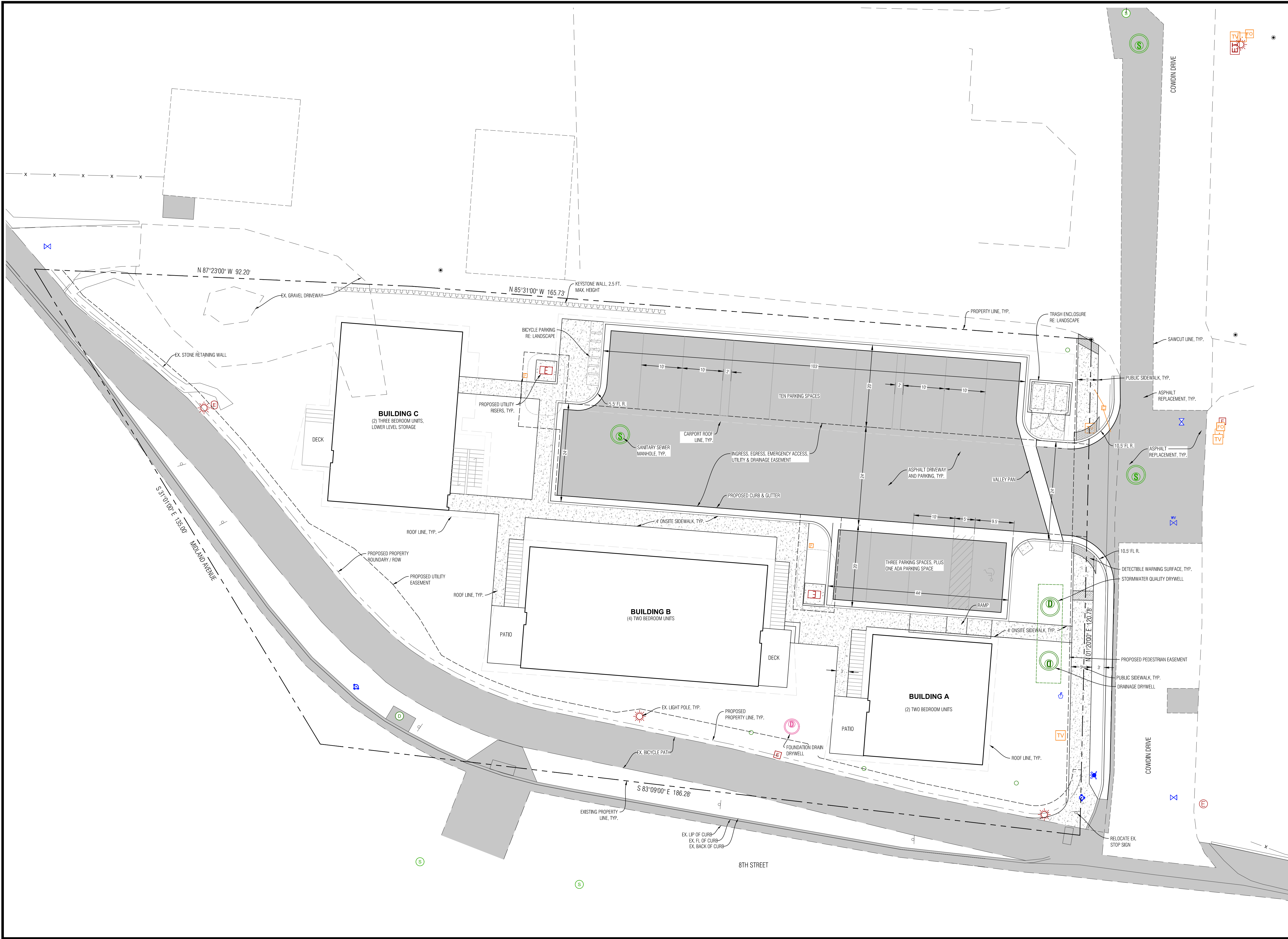
811
Know what's below.
Call before you dig.

811
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HABITAT ROARING FORK, 8TH. STREET
Civil Cover Sheet
Land Use Submission 4/27/23

CITY OF GLENWOOD SPRINGS, COLORADO			
NO.	1	2	3
DATE	4	5	6
BY	7	8	9
REVISION	10	11	12
PROJECT NO.	23010-8th Street Habitat Multi-Family.dwg		
DESIGNER	PAH		
DATE	4/27/23		
FILE NAME	23010 cover details.dwg		

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Civil Engineering
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Subsurface Utility Engineering (SUE)
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Engineer or Surveyor Seal

NOT FOR
Review
CONSTRUCTION

Client Information:
HABITAT FOR HUMANITY
53 CALAWAY COURT
GLENWOOD SPRINGS, CO 81601
970.309.8179

NORTH

0 10' 20'
Scale: 1" = 10'

811

Know what's below.
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CITY OF GLENWOOD SPRINGS, COLORADO

HABITAT ROARING FORK, 8TH. STREET

Site Plan

Land Use Submission 4/27/23

No.	Date	Revision	By
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7			
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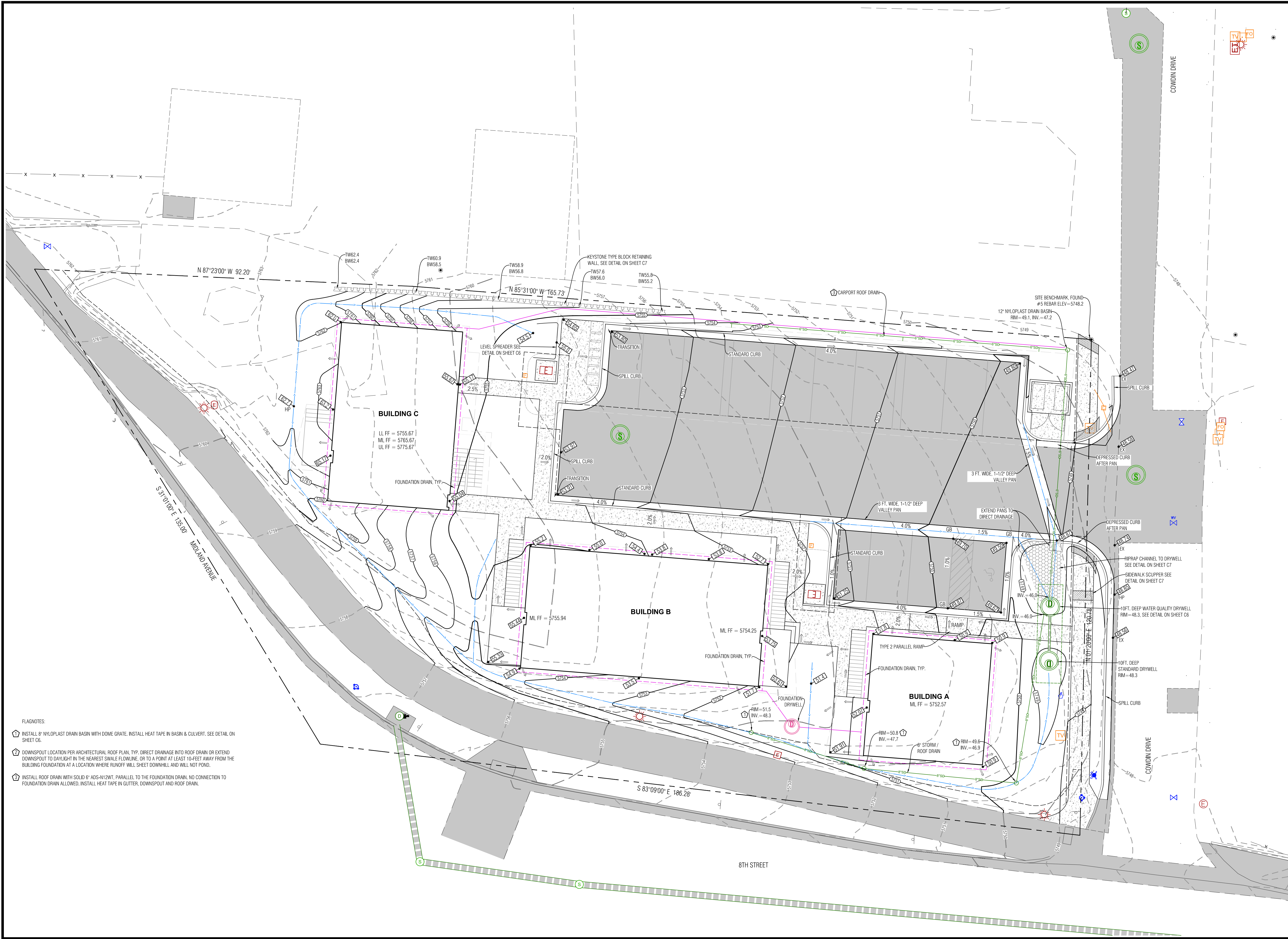
PROJECT NO.
23010
Designer:
PAH
Checker:
BUJ
Date:
4/27/23

Sheet
C2

File Name: 8th habitat 23010-sp-01.dwg

Packet Page 122

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Civil Engineering
Surveying
& Beyond

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Subsurface Utility Engineering (SUE)
Required Project: ###
If "Yes", SUE Certification by:
Firm: #####
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Engineer or Surveyor Seal

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HABITAT FOR HUMANITY
53 CALAWAY COURT
GLENWOOD SPRINGS, CO 81601
970.309.8179

NORTH

0 10' 20'

Scale: 1" = 10'

811

Know what's below.
Call before you dig.

CITY OF GLENWOOD SPRINGS, COLORADO

HABITAT ROARING FORK, 8TH. STREET

Grading, Drainage and Erosion Control Plan

Land Use Submission 4/27/23

No.	Date	Revision	By
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2			
3			
4			
5			
6			
7			
8			
9			

PROJECT NO.
23010

Designer:
PAH

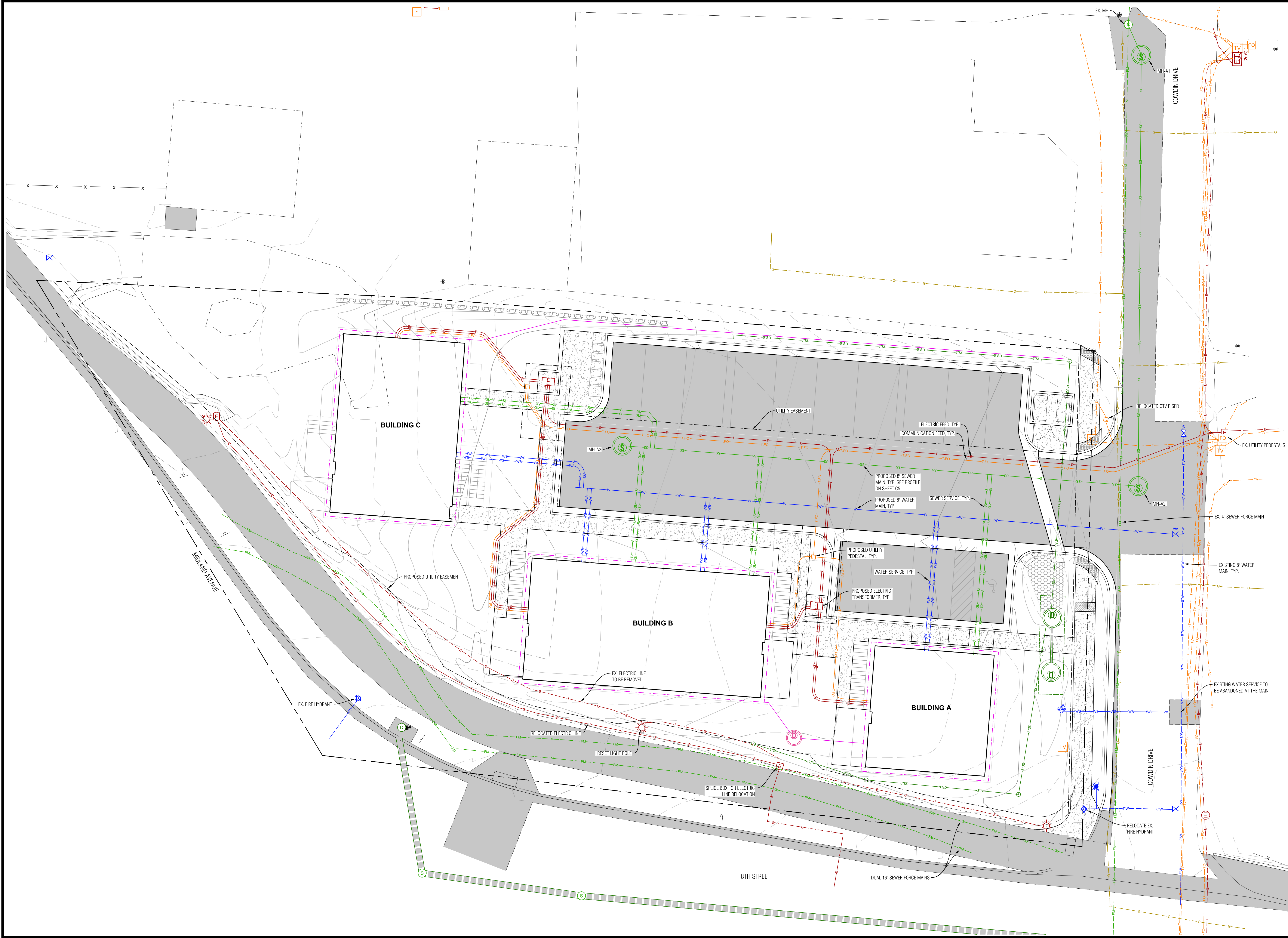
Checker:
BUJ

Date:
4/27/23

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File Name: 8th habitat 23010-sp-01.dwg

Packet Page 123



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Civil Engineering
Surveying
& Beyond

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Glenwood Springs, CO 81601
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Subsurface Utility Engineering (SUE)
Required Project: ###
If "Yes", SUE Certification by:
Firm: #####
Job #: #####
Date: #####

Engineer or Surveyor Seal

NOT FOR
CONSTRUCTION

Review

Client Information:
HABITAT FOR HUMANITY
53 CALAWAY COURT
GLENWOOD SPRINGS, CO 81601
970.309.8179

NORTH

0 10' 20'
Scale: 1" = 10'

811

Know what's below.
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CITY OF GLENWOOD SPRINGS, COLORADO

HABITAT ROARING FORK, 8TH. STREET

Utility Plan

Land Use Submission 4/27/23

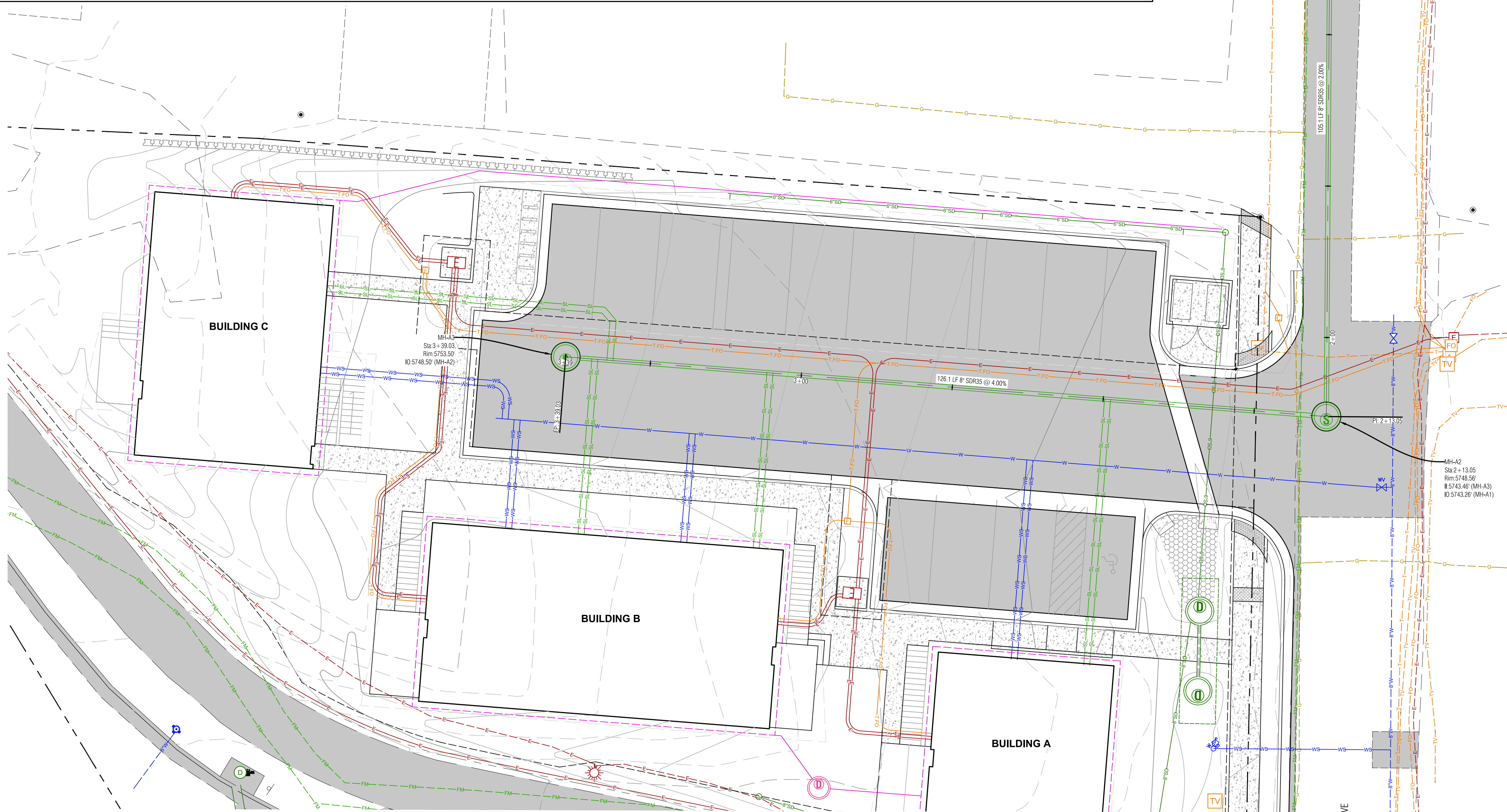
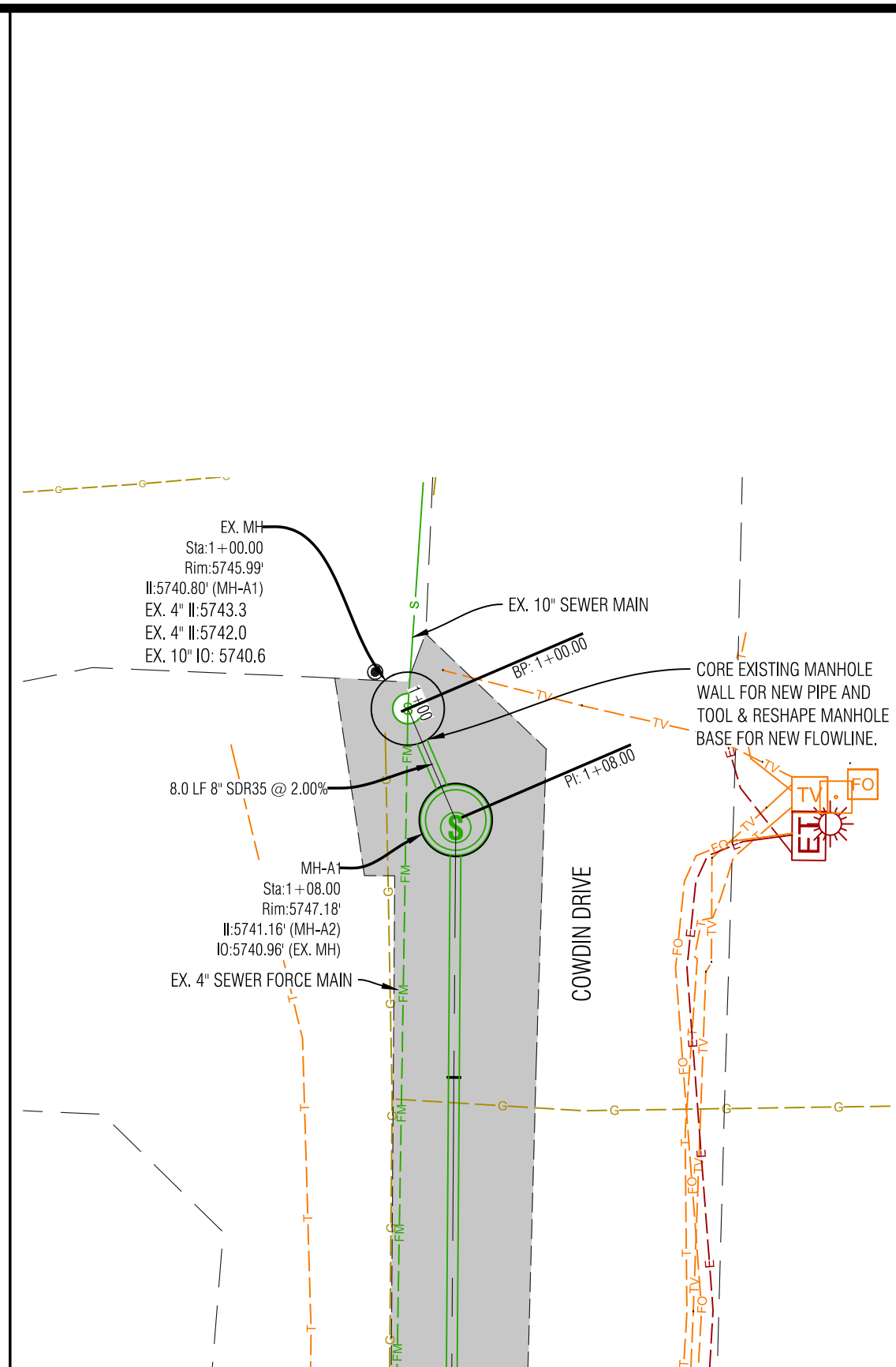
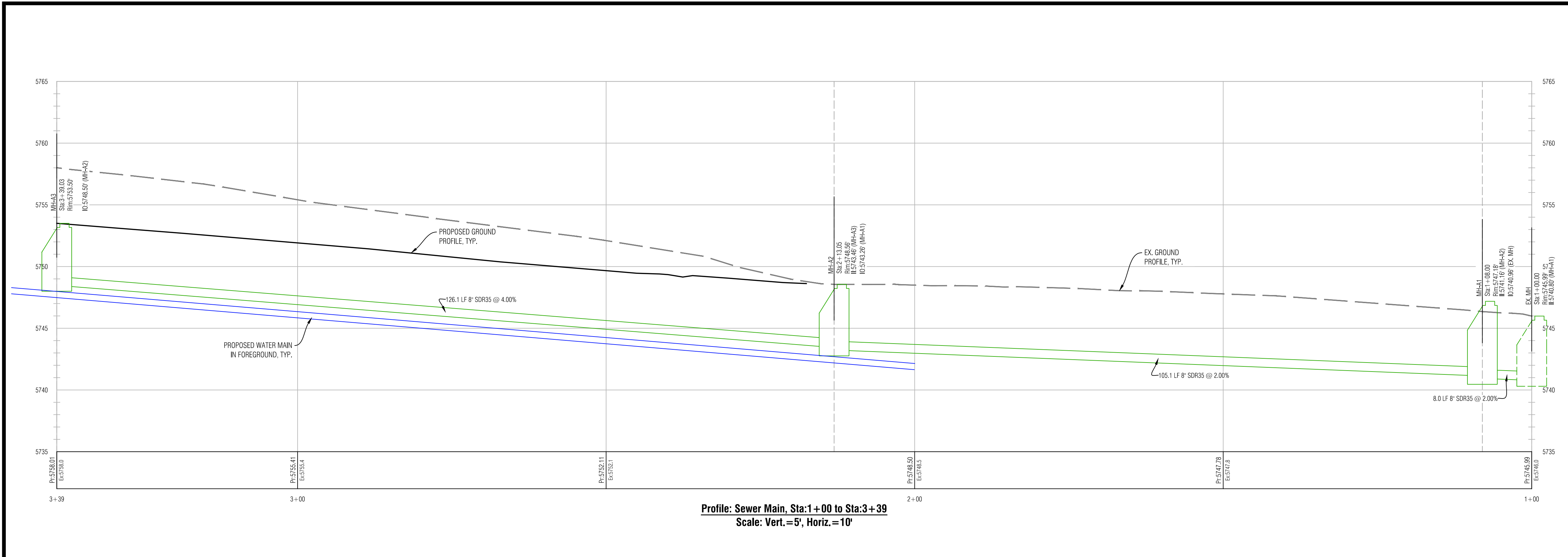
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PROJECT NO.
23010
Designer:
PAH
Checker:
BUJ
Date:
4/27/23

Sheet
C4

File Name: 8th habitat 23010-sp-01.dwg

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Surveying
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(T) 970.945.5252
www.bu-inc.com

Subsurface Utility Engineering (SUE)
Required Project: ###
If "Yes", SUE Certification by:
Firm: #####
Job #: #####
Date: #####

Engineer or Surveyor Seal

NOT FOR
CONSTRUCTION

Review

Client Information:
HABITAT FOR HUMANITY
53 CALAWAY COURT
GLENWOOD SPRINGS, CO 81601
970.309.8179

NORTH

0 10' 20'
Scale: 1" = 10'

811

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CITY OF GLENWOOD SPRINGS, COLORADO

HABITAT ROARING FORK, 8TH. STREET

Sewer and Water Line Plan and Profile

Land Use Submission 4/27/23

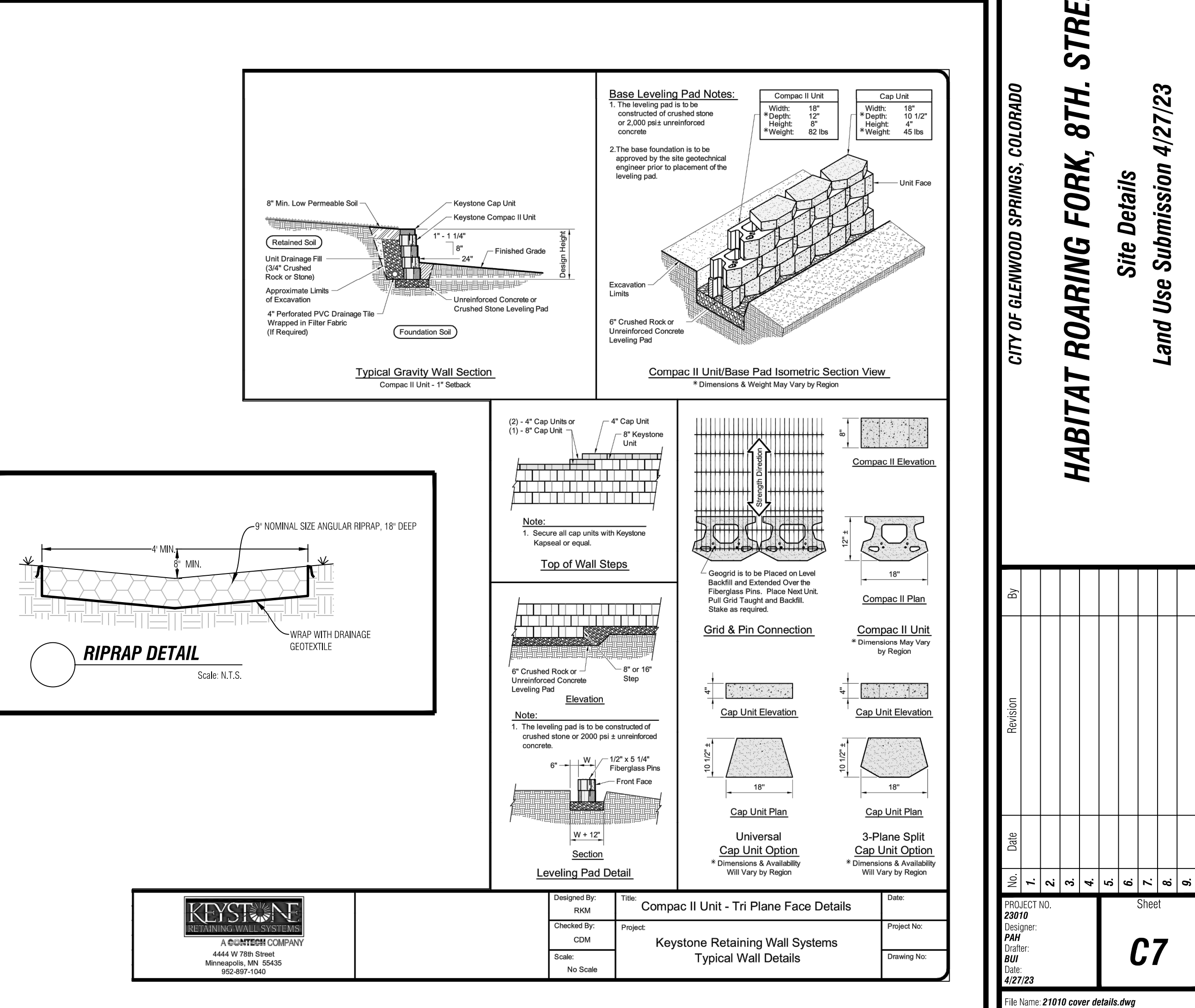
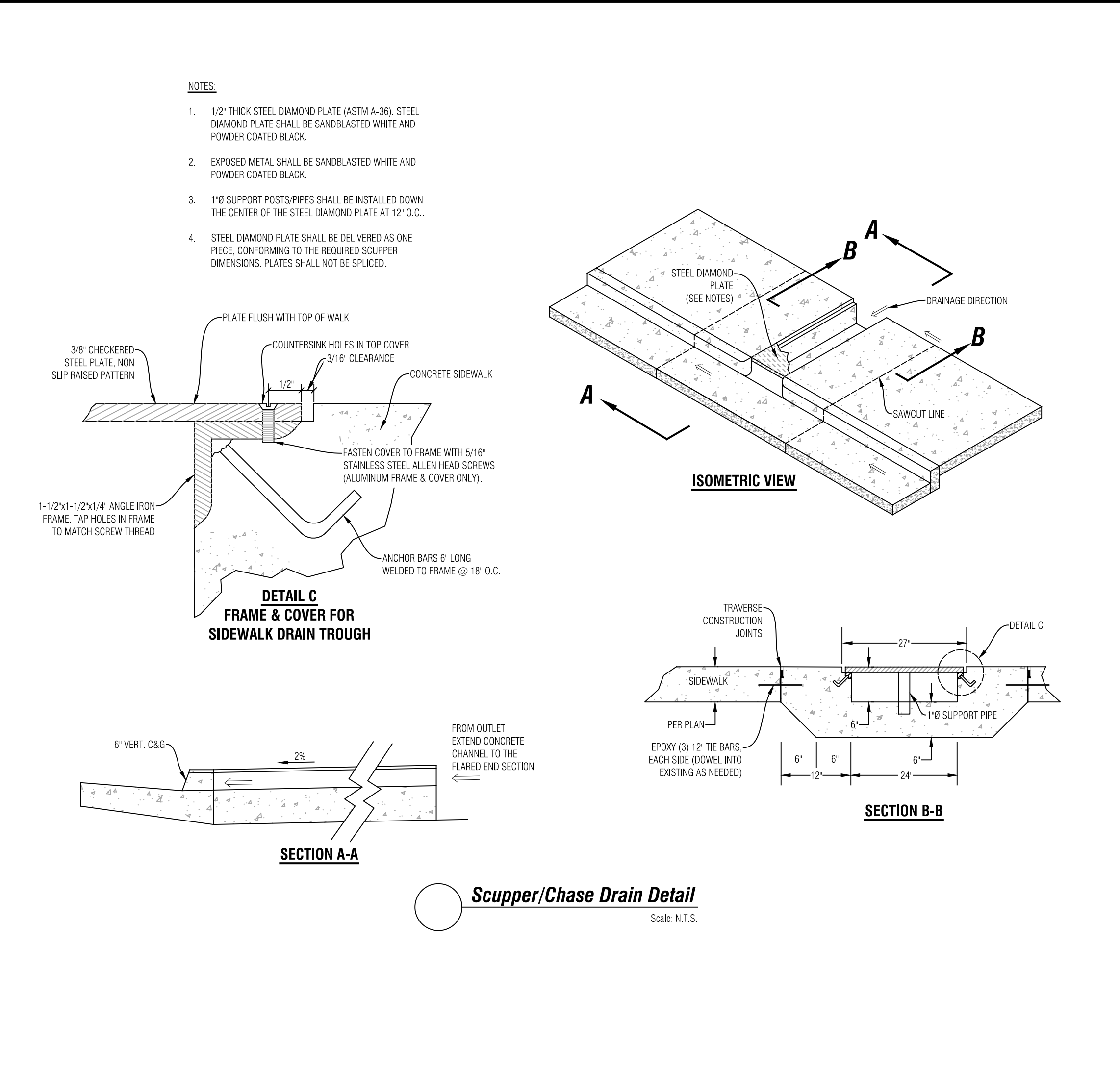
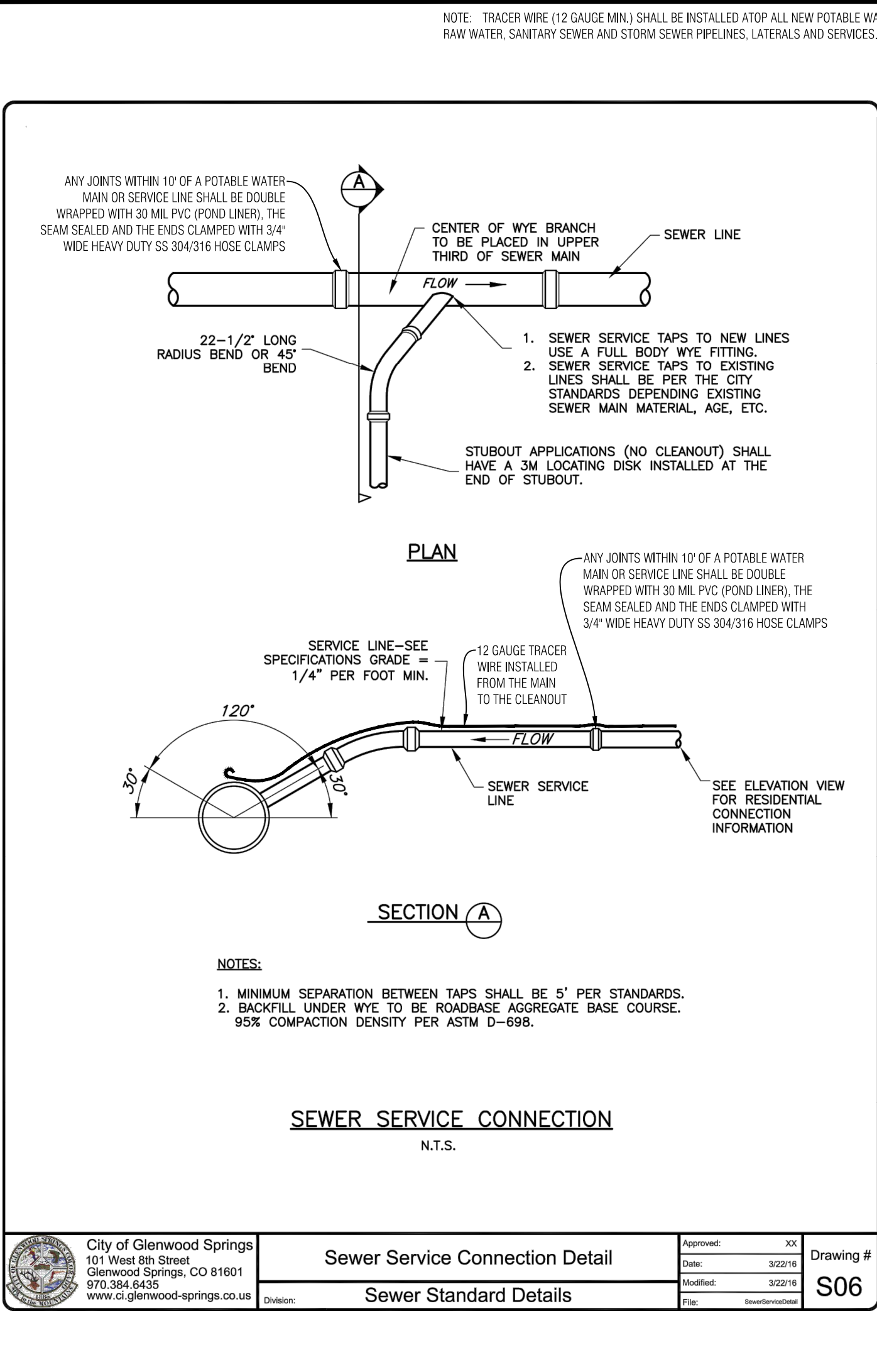
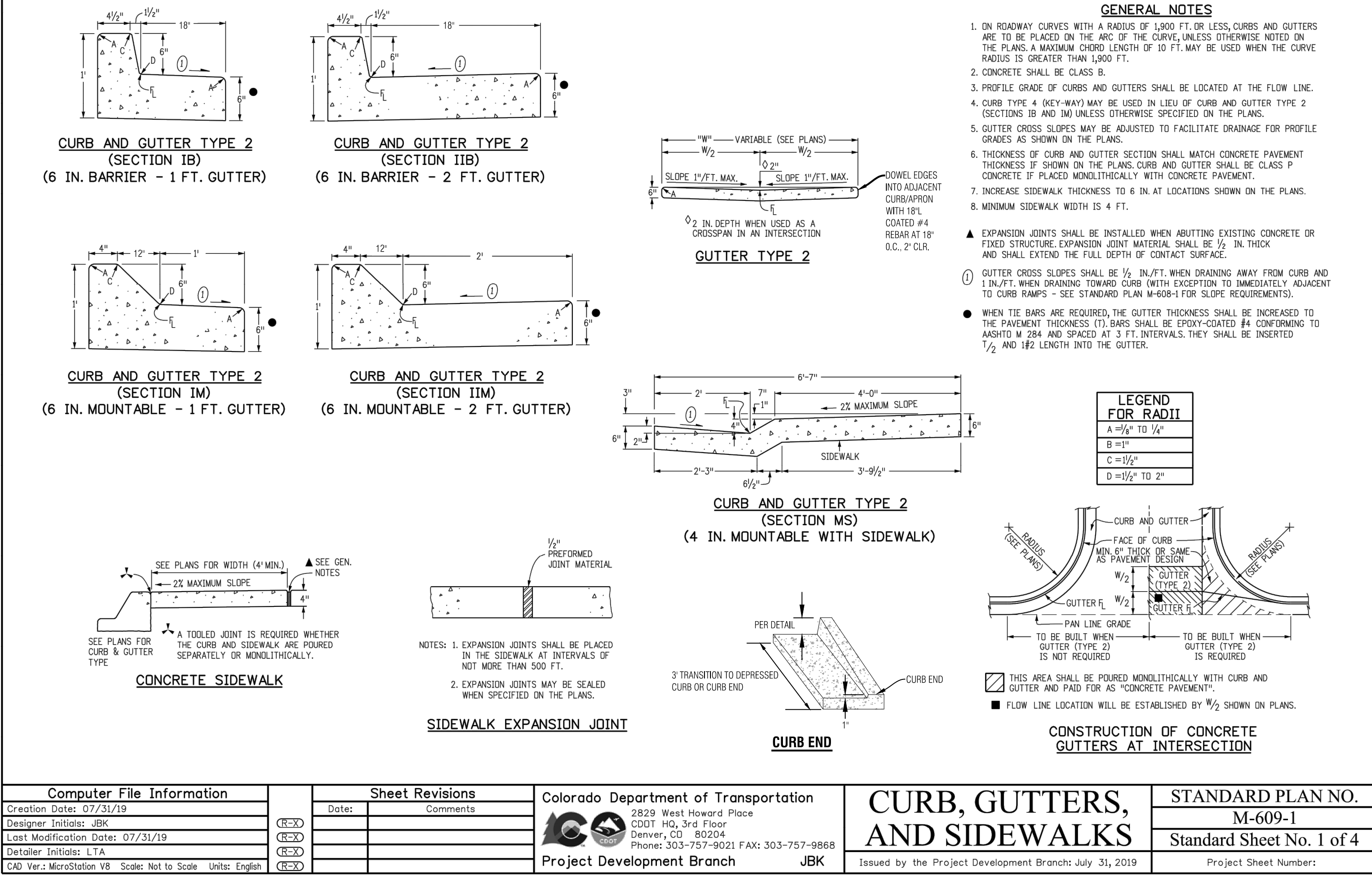
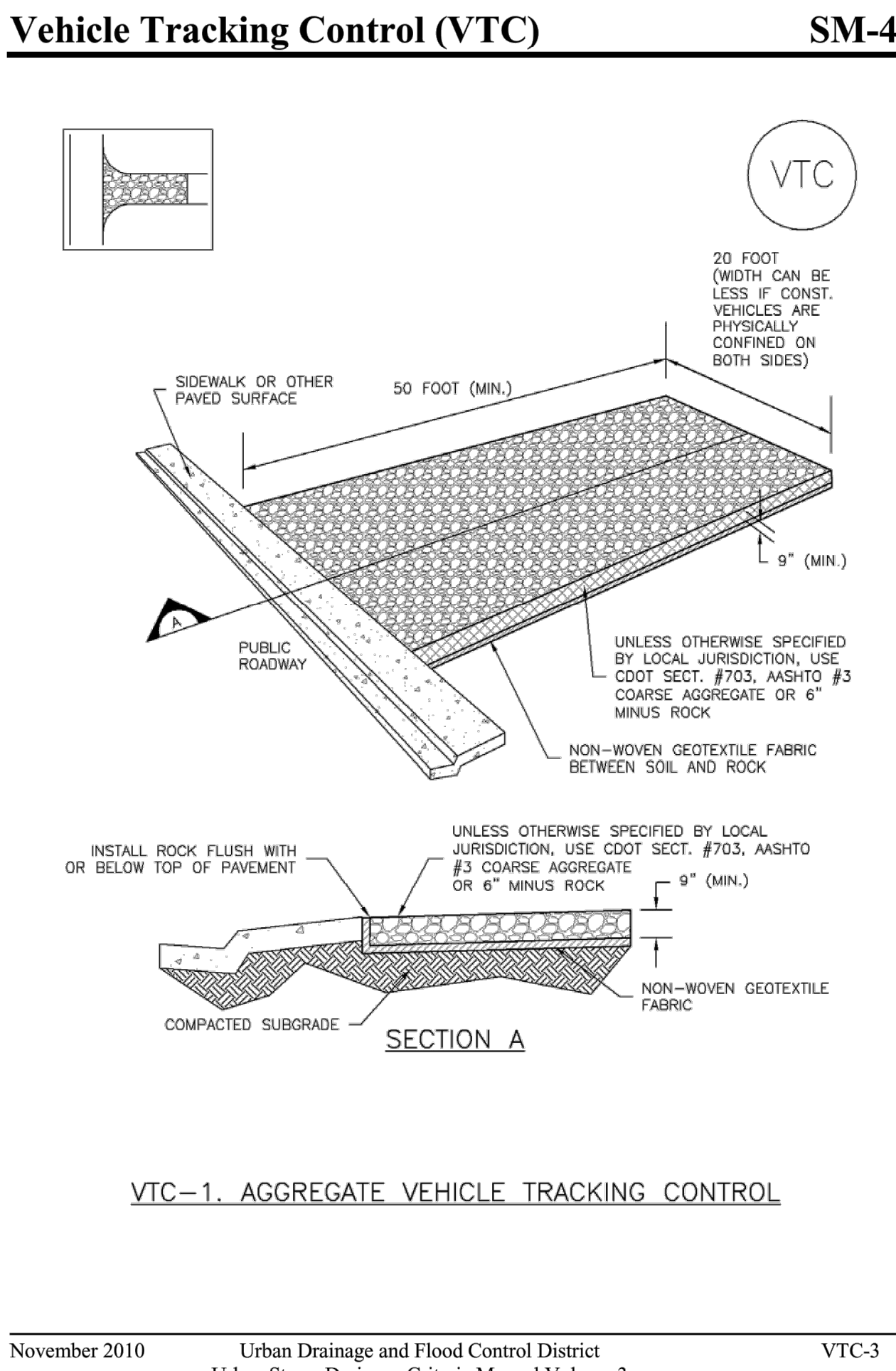
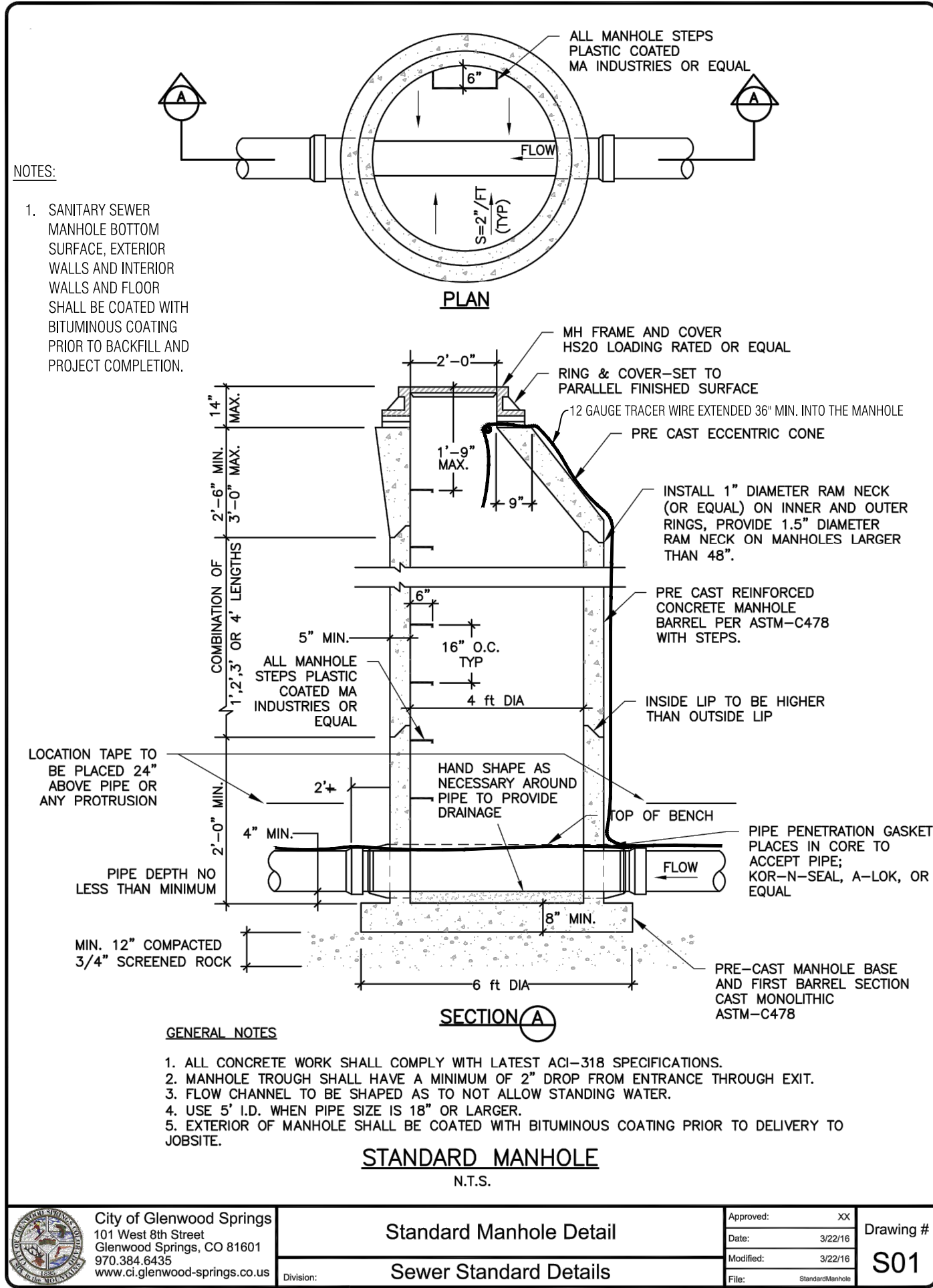
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PROJECT NO.
23010
Designer:
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File Name: 8th habitat 23010-sp-01.dwg

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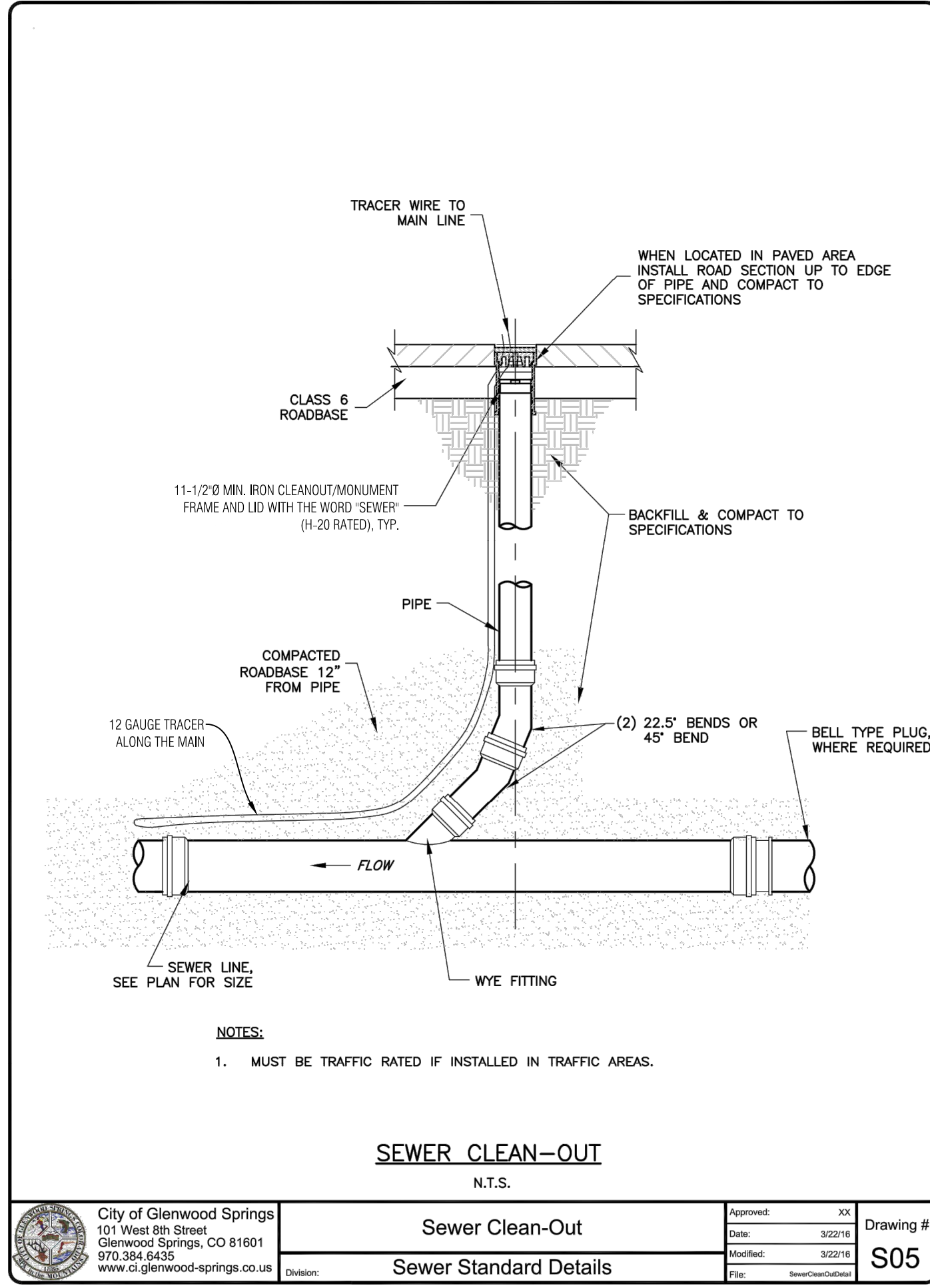
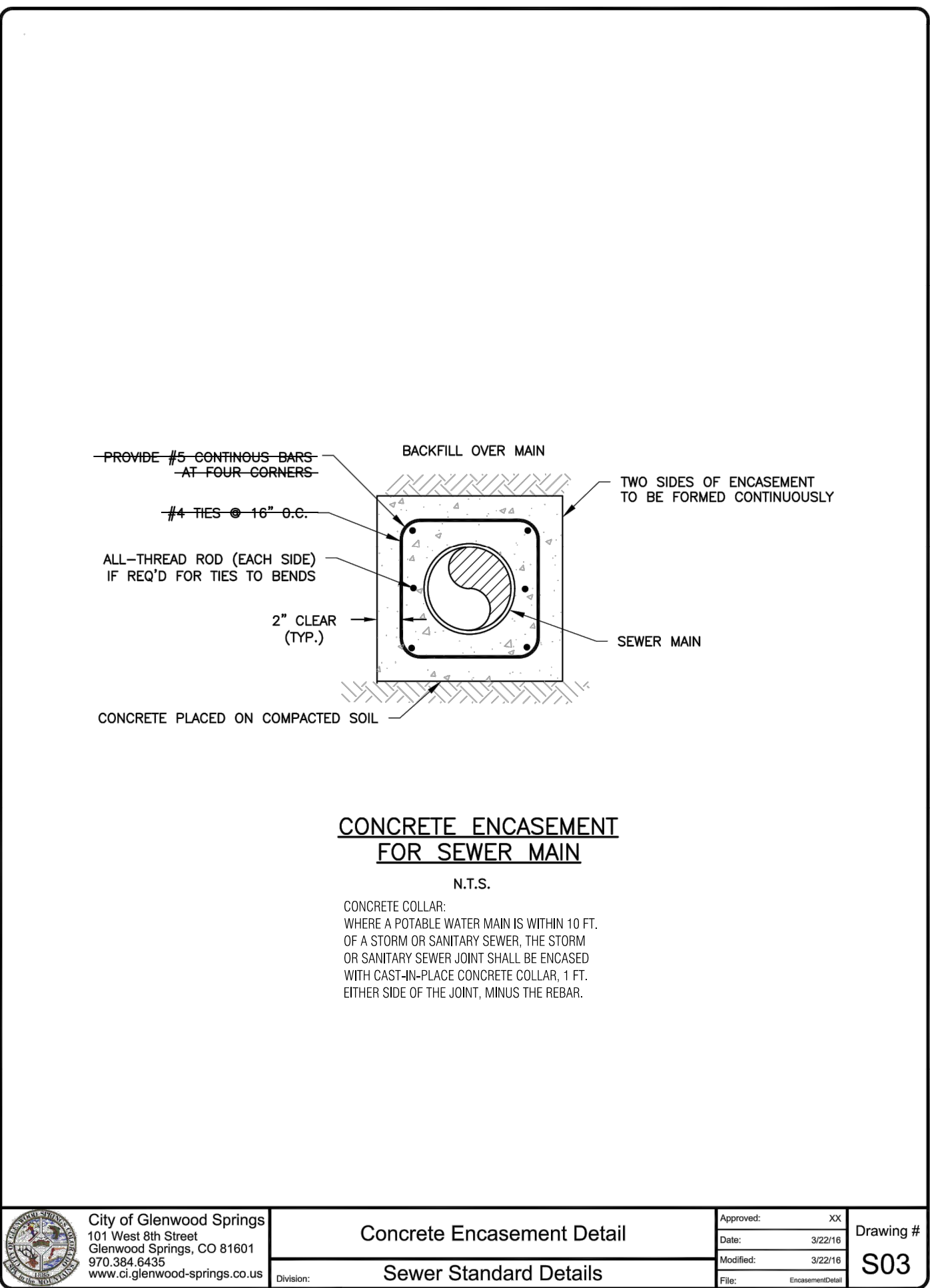
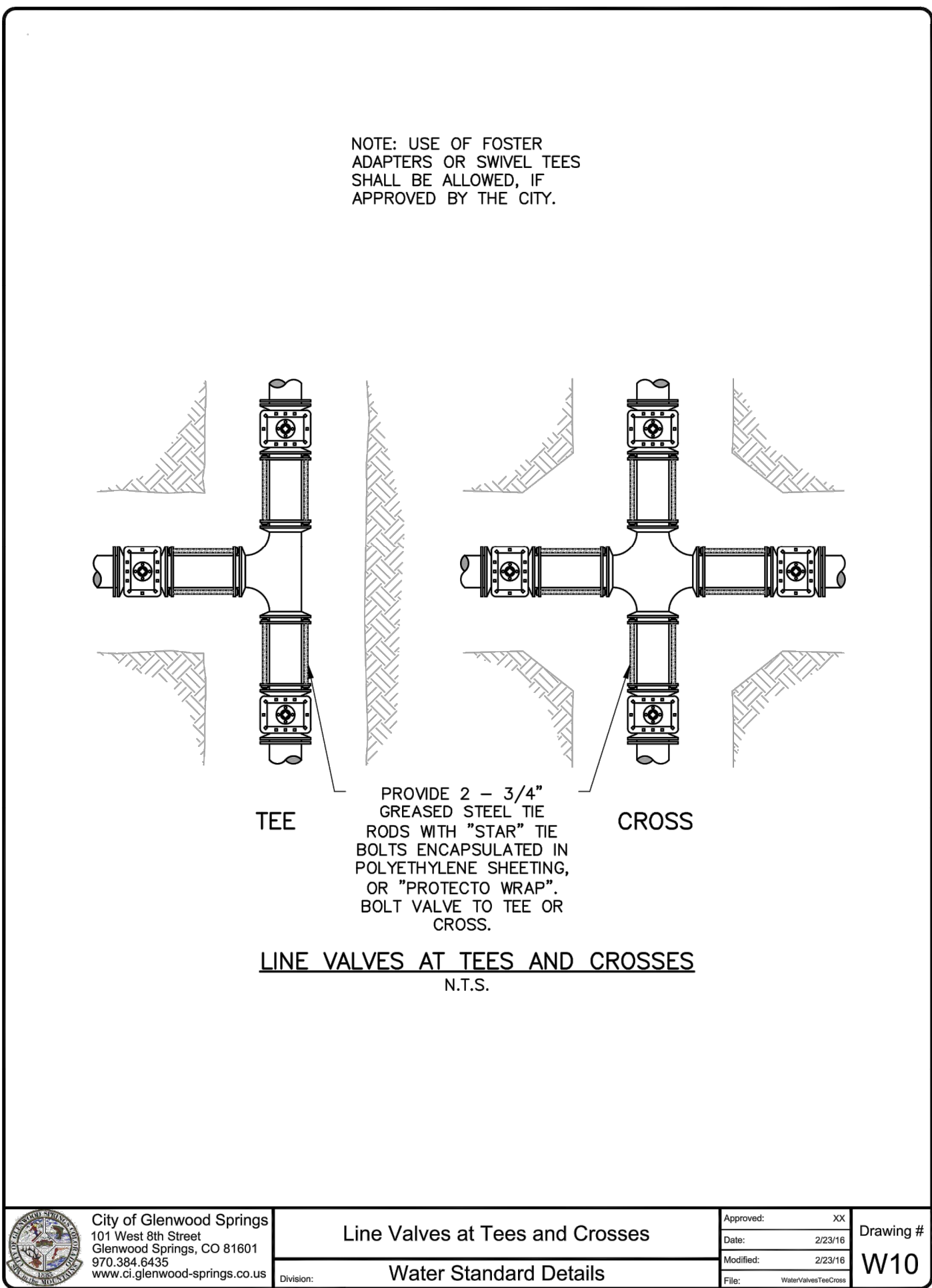
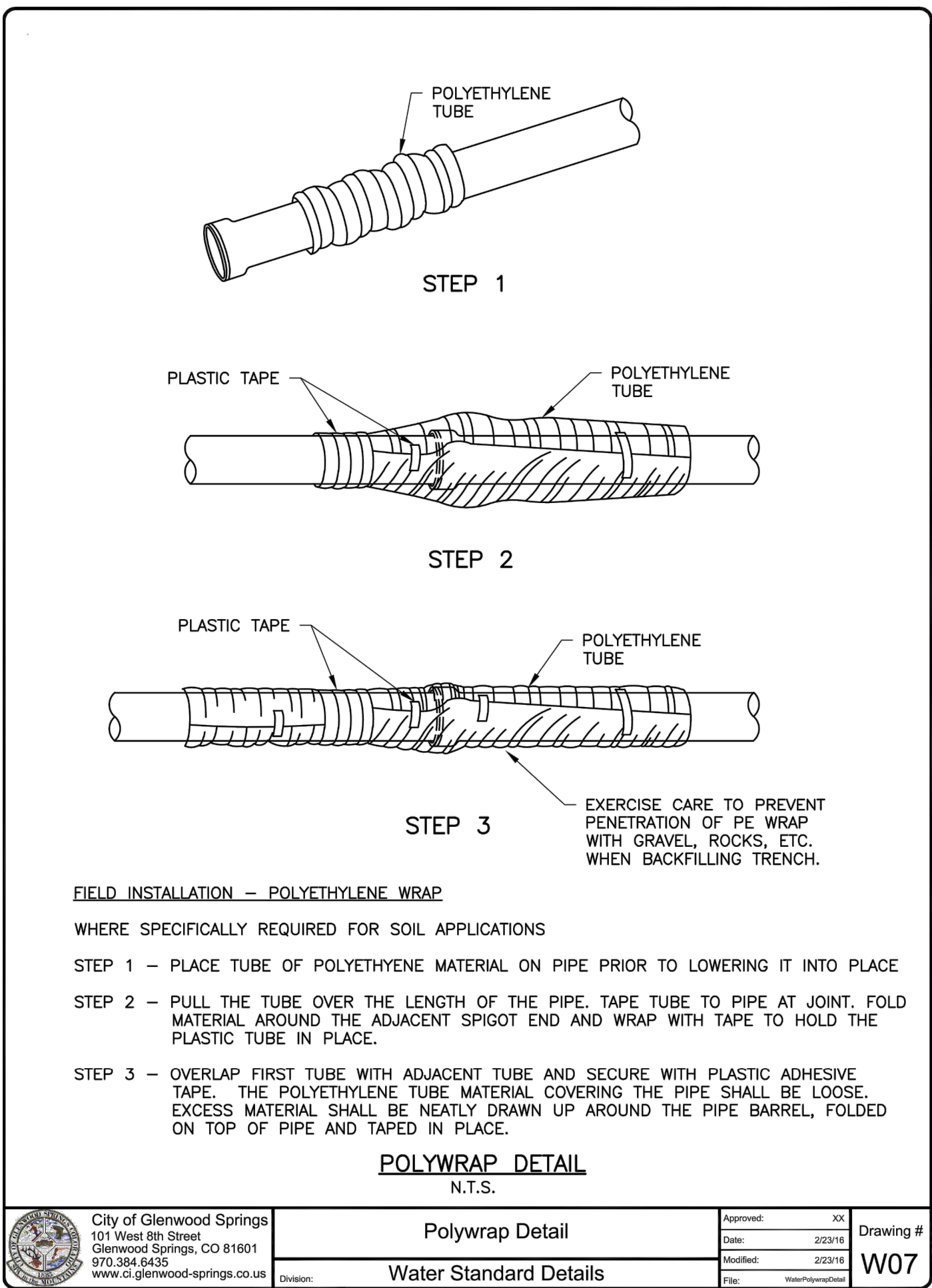
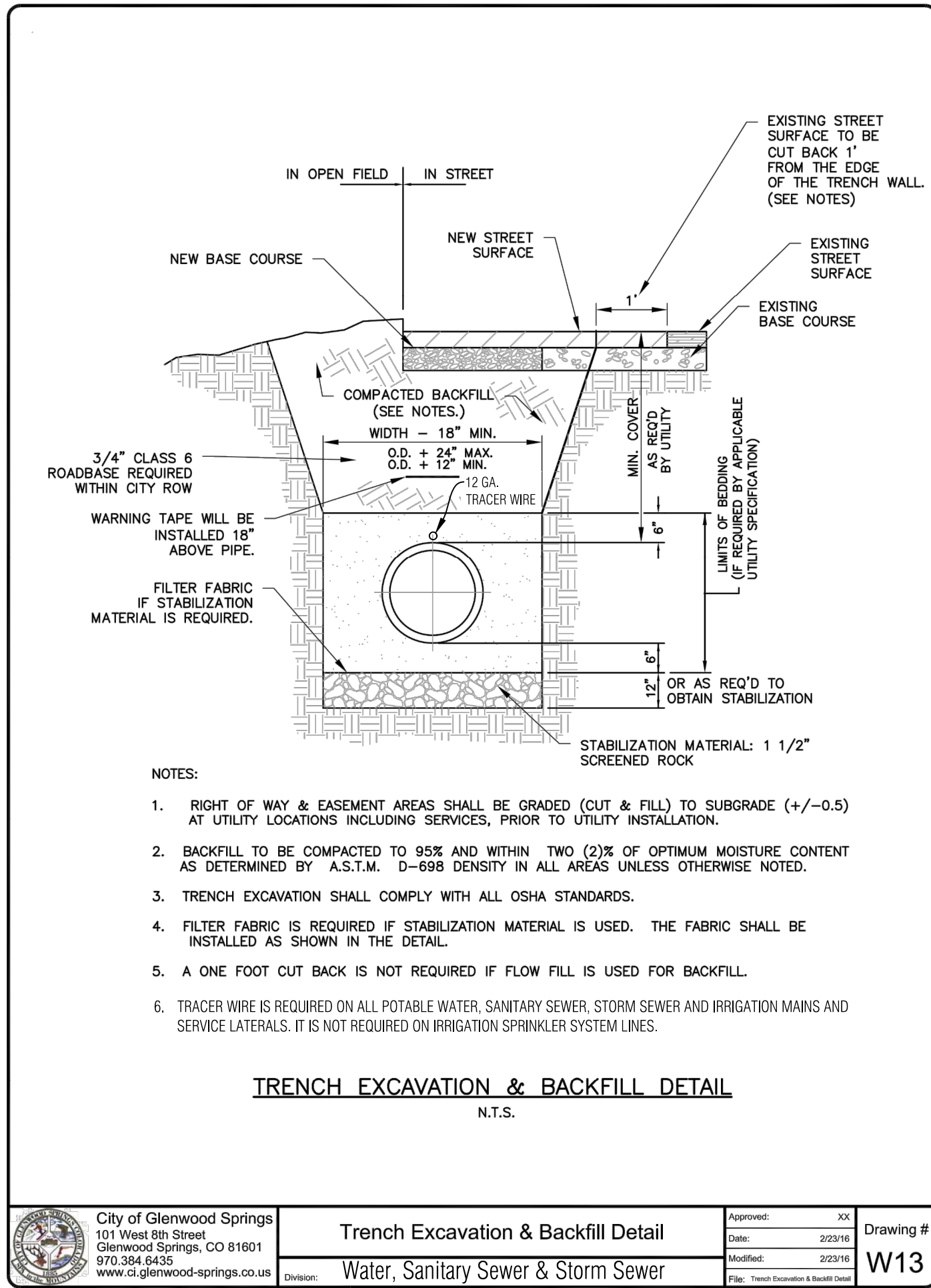
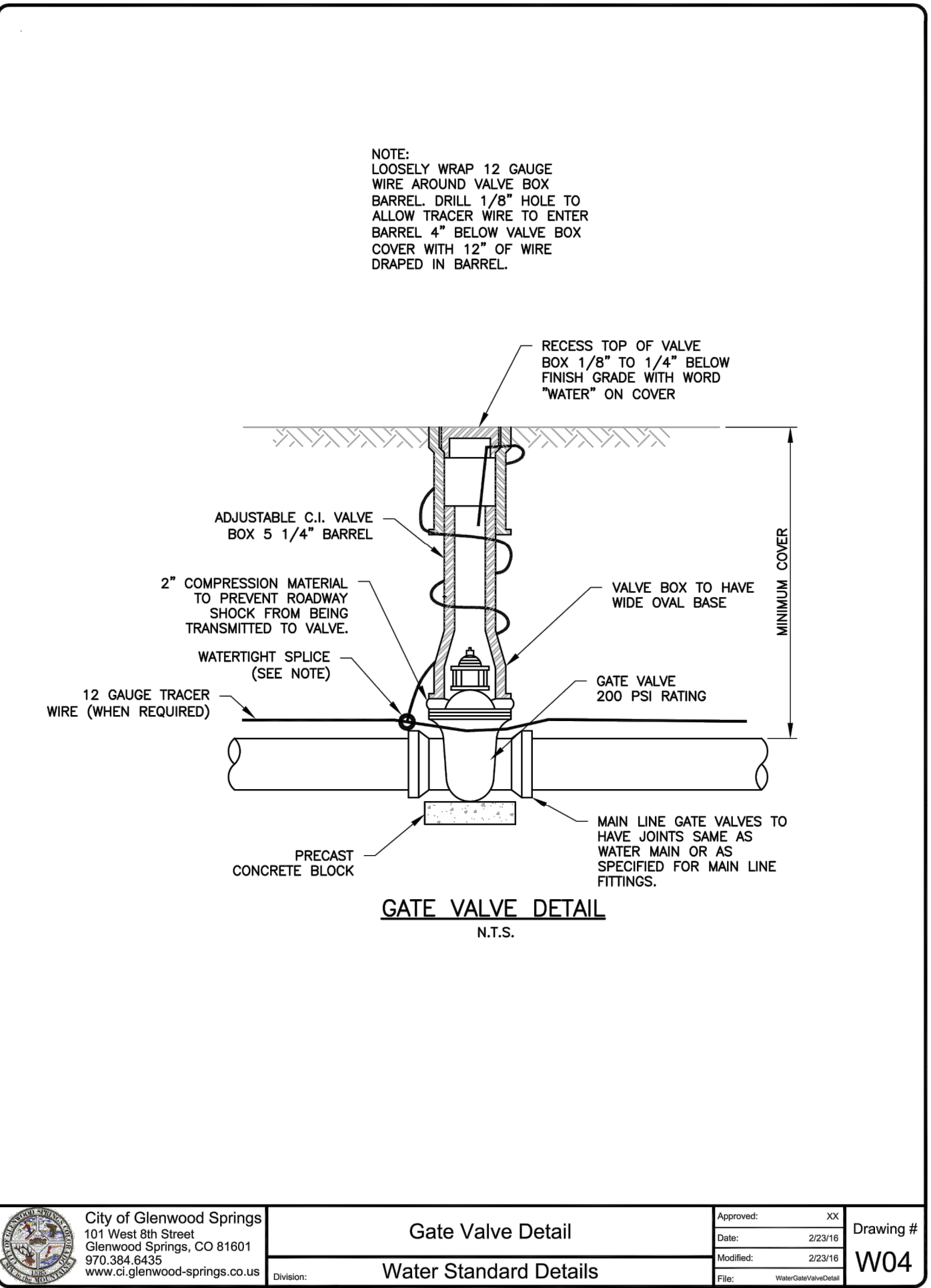
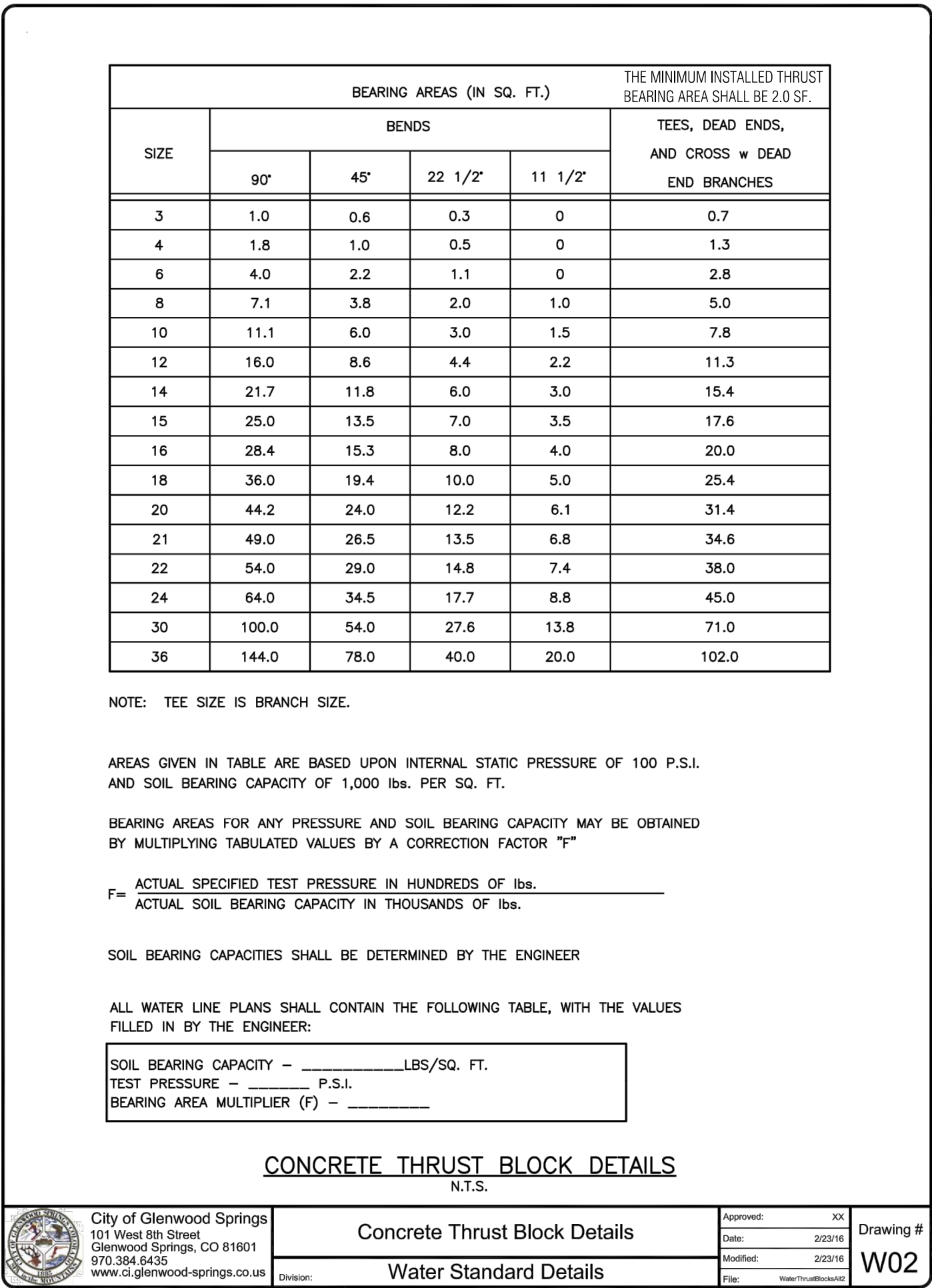
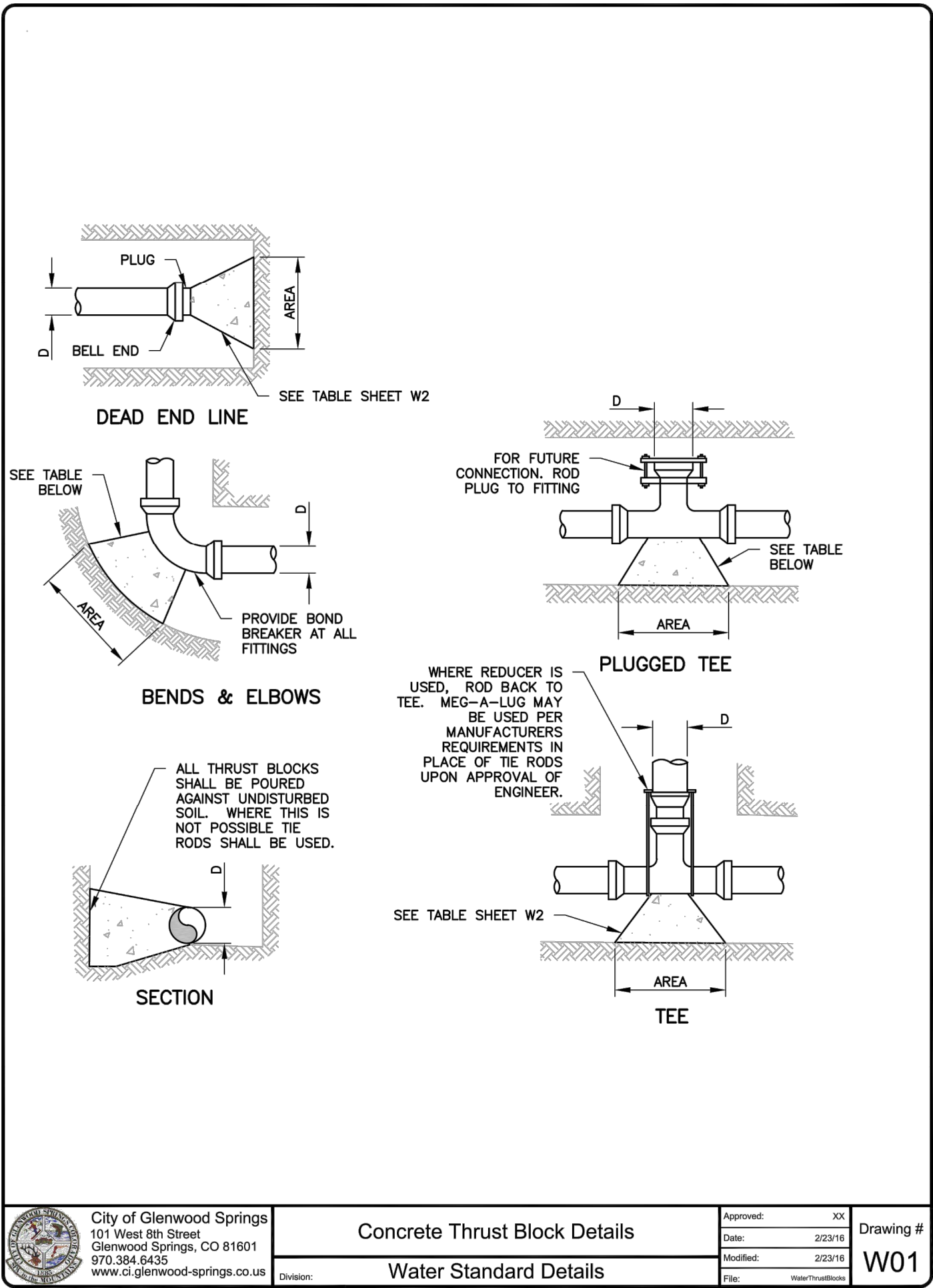
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HABITAT ROARING FORK, 8TH. STREET
Site Details
Land Use Submission 4/27/23

CITY OF GLENWOOD SPRINGS, COLORADO

PROJECT NO. 20010
Design: PAH
Drawn: BUI
Date: 4/27/23

Sheet C7



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If "Yes", SUE Certification by:
Firm: #####
Job #: #####
Date: #####
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CONSTRUCTION
Review Set

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NORTH

0 1 2
Scale: 1" = 1'

811

Know what's below.
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CITY OF GLENWOOD SPRINGS, COLORADO

HABITAT ROARING FORK, 8TH. STREET

Water & Sewer Details

Land Use Submission 4/27/23

By

Revision

Date

No.

1

2

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4

5

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8

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PROJECT NO.
20010

DESIGNER:
PAH

DRAWN:
BUI

DATE:
4/27/23

SHEET
C8

File Name: 21010 cover details.dwg

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Packet Page 128

IN NEW CONSTRUCTION OR FULL-DEPTH RECONSTRUCTION, PROVIDE A SEPARATE CURB RAMP FOR EACH MARKED OR UNMARKED PEDESTRIAN STREET CROSSING. CURB RAMPS SHALL BE CONTAINED WHOLLY WITHIN THE WIDTH OF THE PEDESTRIAN STREET CROSSING OR CROSSWALK THEY SERVE, OR AS SHOWN ON THE CONTRACT PLANS.

ALTERATIONS ARE DEFINED AS CHANGES TO AN EXISTING HIGHWAY THAT AFFECT PEDESTRIAN ACCESS, CIRCULATION, OR USE. ALTERATIONS INCLUDE, BUT ARE NOT LIMITED TO, RESURFACING, REHABILITATION, RECONSTRUCTION, CURB RAMP RETROFITS, HISTORIC RESTORATION, OR CHANGES OR REARRANGEMENT TO STRUCTURAL PARTS OR ELEMENTS OF A PEDESTRIAN FACILITY.

- IN ALTERATIONS, WHEN AN EXISTING PHYSICAL CONSTRAINT PREVENTS PROVIDING A SEPARATE CURB RAMP FOR EACH PEDESTRIAN STREET CROSSING, A SINGLE DIAGONAL RAMP (ON THE APEX SIDE) SHALL BE PERMITTED TO SERVE BOTH PEDESTRIAN STREET CROSSINGS. THE USE OF A SINGLE DIAGONAL RAMP SHALL BE REQUIRED BY THE ENGINEER PRIOR TO CONSTRUCTION. DIAGONAL RAMP ARE NOT ACCEPTABLE IN NEW CONSTRUCTION OR FULL-DEPTH RECONSTRUCTION.
- DETECTABLE WARNING SURFACES (DWS) ARE INTENDED TO INDICATE THE BOUNDARY BETWEEN A PEDESTRIAN ROUTE AND VEHICULAR ROUTE WHERE THERE IS A FLUSH RAMP OVER A CURB OR A CURB RAMP. DWS ARE NOT INTENDED TO PROVIDE WARNING. DWS SHALL BE PROVIDED AT THE FOLLOWING LOCATIONS;
1. CURB BLIND SPOTS AND DEPRESSION CORNERS AT PEDESTRIAN STREET CROSSINGS;
 2. PEDESTRIAN REFUGE ISLANDS (6 FEET IN WIDTH OR GREATER);
 3. BOARDING PLATFORMS AT TRANSIT STOPS WHERE THE EDGE OF THE PLATFORM IS NOT PROTECTED TO PEDESTRIAN CROSS TRAFFIC; AND
 4. CURB AREAS AT SIDEWALK OR STREET LEVEL TRANSIT STOPS WHERE THE AREA IS NOT PROTECTED TO PEDESTRIAN CROSS TRAFFIC.
- DETECTABLE WARNING SURFACES SHALL CONTRAST VISUALLY WITH THE ADJACENT CURB, HIGHWAY, OR PEDESTRIAN ACCESS ROUTE SURFACE, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT. FEDERAL YELLOW COLOR IS PREFERRED, HOWEVER, OTHER COLORS MAY BE USED IF APPROVED BY THE ENGINEER.
- IN ALTERATIONS, TO AVOID CHASING GRADE INDEFINITELY ON STEEP ROADWAYS, A CURB RAMP'S LENGTH IS NOT REQUIRED TO EXCEED 15 FEET REGARDLESS OF THE RESULTING RAMP RUNNING SLOPE.
- ALL SLOPES ARE MEASURED WITH RESPECT TO A LEVEL PLANE.
- DRAINAGE STRUCTURES, TRAFFIC SIGNAL BOXES, AND OTHER OBSTRUCTIONS SHALL NOT BE INSTALLED ON THE CURB RAMP, OR TURNING SPACE AREAS.
- IN NEW CONSTRUCTION, RAIL BOXES, METER BOXES, MAINTENANCE HOLE COVERS, VALVE LIDS, OR SIMILAR SHALL NOT BE CONSTRUCTED WITHIN ANY PART OF CURB RAMP OR TURNING SPACE. IN ALTERATIONS, WHERE THESE ITEMS CANNOT BE RELOCATED OUTSIDE OF THE CURB RAMP OR TURNING SPACE, THEY MUST NOT CREATE A VERTICAL DISCONTINUITY GREATER THAN 1/2 INCH. ANY VERTICAL DISCONTINUITY BETWEEN 1/4 INCH AND 1/2 INCH SHALL BE BEVELED WITH A SLOPE NOT STEEPER THAN 1/2 INCH. THE BEVEL SHALL BE INCLUDED ACROSS THE ENTIRE SURFACE DISCONTINUITY.
- CONSTRUCTION OF ANY REQUIRED PEDESTRIAN CURB RAMP SHALL BE APPLIED IN THE BID PRICE OF THE CONCRETE CURB RAMP AND WILL NOT BE PAID FOR SEPARATELY.
- ALL CURB RAMP JOINTS AND GRADE BREAKS SHALL BE FLUSH (0'-10"). THE JOINT BETWEEN THE ROADWAY SURFACE AND THE GUTTER PAN SHALL BE FLUSH.
- THE CONTRACTOR SHALL VERIFY REMOVAL LIMITS ARE SUFFICIENT TO PROVIDE POSITIVE DRAINAGE, MAINTAIN EXISTING DRAINAGE PATTERNS, AND AVOID FLOWING IN THE FINAL CONFIGURATION.
- FLARED SIDE SLOPES MAY EXCEED 10.0% ONLY WHERE THEY ABUT A NON-WALKABLE SURFACE, OR WHERE THE ADJACENT RAMP SURFACE IS BLOCKED TO PEDESTRIAN TRAFFIC.
- THE CHANGE IN GRADE AT THE BOTTOM OF THE CURB RAMP SHALL NOT EXCEED AN ALGEBRAIC DIFFERENCE OF 13.33% THE COUNTER SLOPE OF THE GUTTER AT THE FOOT OF A RAMP, TURNING SPACE, OR BLENDED TRANSITION SHALL NOT EXCEED 5.0%.
- GRADE BREAKS AT THE TOP AND BOTTOM OF RAMP RUNS SHALL BE PERPENDICULAR TO THE DIRECTION OF THE RAMP RUN. GRADE BREAKS SHALL NOT BE PERMITTED ON THE SURFACE OF THE RAMP RUN OR TURNING SPACE. SURFACE SLOPES THAT MEET AT GRADE BREAKS SHALL BE FLUSH.
- A BROOM FINISH, WITH SWEEP PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAFFIC, SHALL BE APPLIED TO ALL RAMP AND TURNING SPACE SURFACES.
- IN ALTERATIONS, WHERE A RAMP OR TURNING SPACE MUST TIE INTO AN EXISTING GRADE THAT CANNOT BE ALTERED, THE RAMP OR TURNING SPACE MAY BE WARPED TO TRANSITION TO THE REQUIRED CROSS SLOPE. THE TRANSITION TO THE REQUIRED CROSS SLOPE SHALL BE SPREAD EVENLY OVER THE LENGTH OF THE RAMP OR TURNING SPACE TO MINIMIZE THE DEGREE OF WARPING. THE RATE OF CHANGE ON A RAMP OR TURNING SPACE SHALL NOT EXCEED .3% PER LINEAR FOOT.
- DESIGN AND CONSTRUCT CURB RAMP, TURNING SPACES, AND FLARE SLOPES WITH THE FLATTEST SLOPES POSSIBLE. THE SLOPES INDICATED IN THESE DETAILS SHOW THE MAXIMUM SLOPES ALLOWABLE. PREFERRED VALUES TO BE USED DURING DESIGN, LAYOUT, AND CONSTRUCTION ARE:
- RAMP RUNNING SLOPE 7.5%
 - RAMP CROSS SLOPE 1.5%
 - TURNING SPACE RUNNING SLOPE 1.5%
 - TURNING SPACE CROSS SLOPE 1.5%
 - FLARE SLOPE 8.0-9.0%
- GENERAL NOTES & PAY AREAS**

TYPE 1

TYPE 2 - TWO RAMPS

TYPE 2 - ONE RAMP

TYPE 2 - DIRECTIONAL

BLENDED TRANSITION

DEPRESSED CORNER

COMBINATION

PERCENT SLOPE	1.0%	2.0%	5.0%	7.1%	8.3%	10.0%
EQUIVALENT RUN/RISE	100:1	50:1	20:1	14:1	12:1	10:1

SLOPE TABLE

GENERAL NOTES & PAY AREAS

Sheet Revisions	
Date:	Comments

CURB RAMPS

Issued by the Project Development Branch: July 31, 2019

Computer File Information		
Creation Date: 07/31/19		
Designer Initials: JBK		
Last Modification Date: 07/31/19		
Detailer Initials: LTA		
CAD Ver.: MicroStation V8	Scale: Not to Scale	Units: English

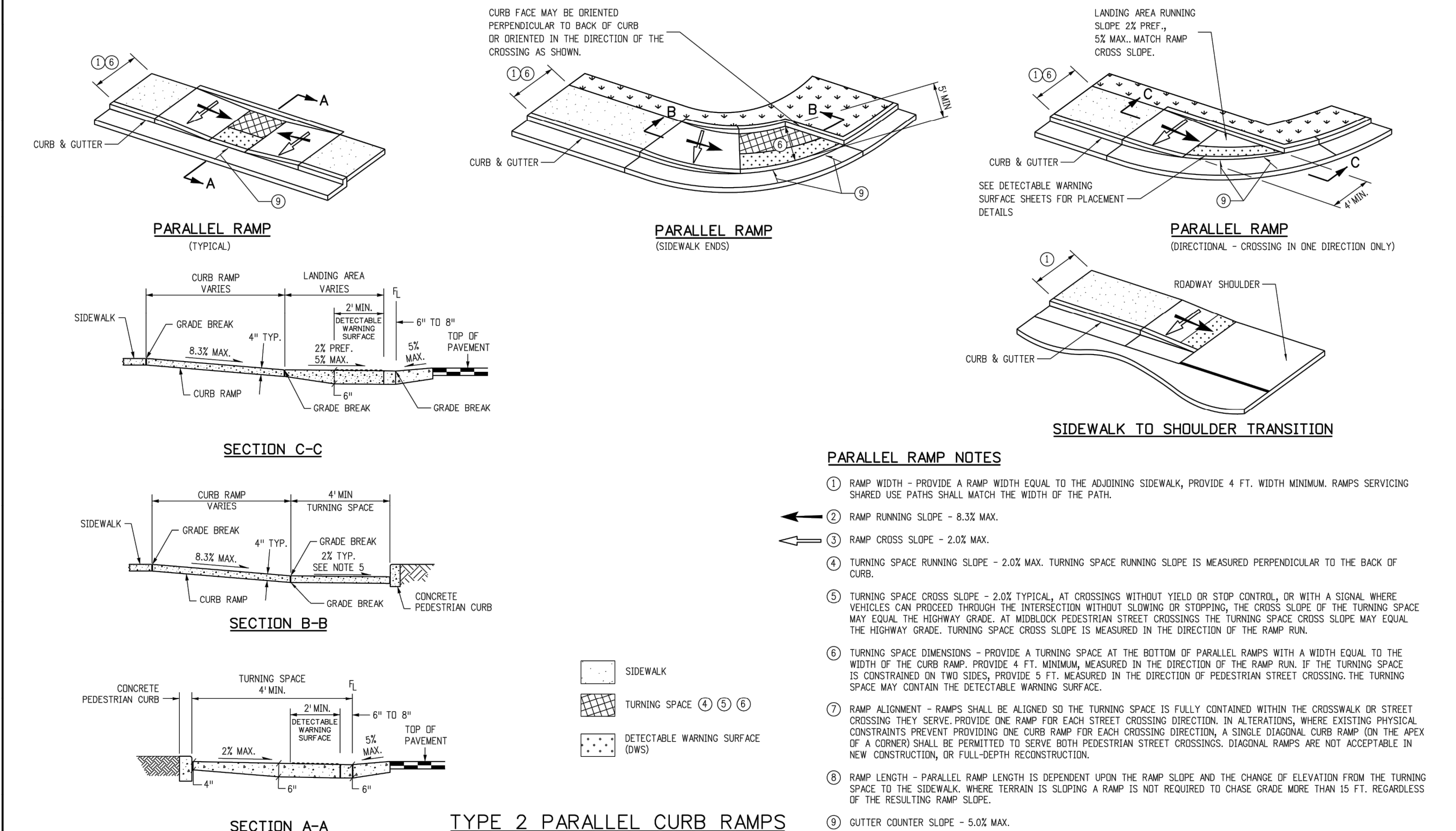
Sheet Revisions	
Date:	Comments

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 CDDT HQ, 3rd Floor
 Denver, CO 80204
 Phone: 303-757-9021 FAX: 303-757-9866
Project Development Branch **JBK**

CURB RAMPS

Issued by the Project Development Branch: July 3

STANDARD PLAN NO.
M-608-1
Standard Sheet No. 4 of 10
Project Sheet Number:



Computer File Information		
Creation Date: 07/31/19		
Designer Initials: JBK		
Last Modification Date: 07/31/19		
Detailer Initials: LTA		
CAD Ver.: MicroStation V8	Scale: Not to Scale	Units: English

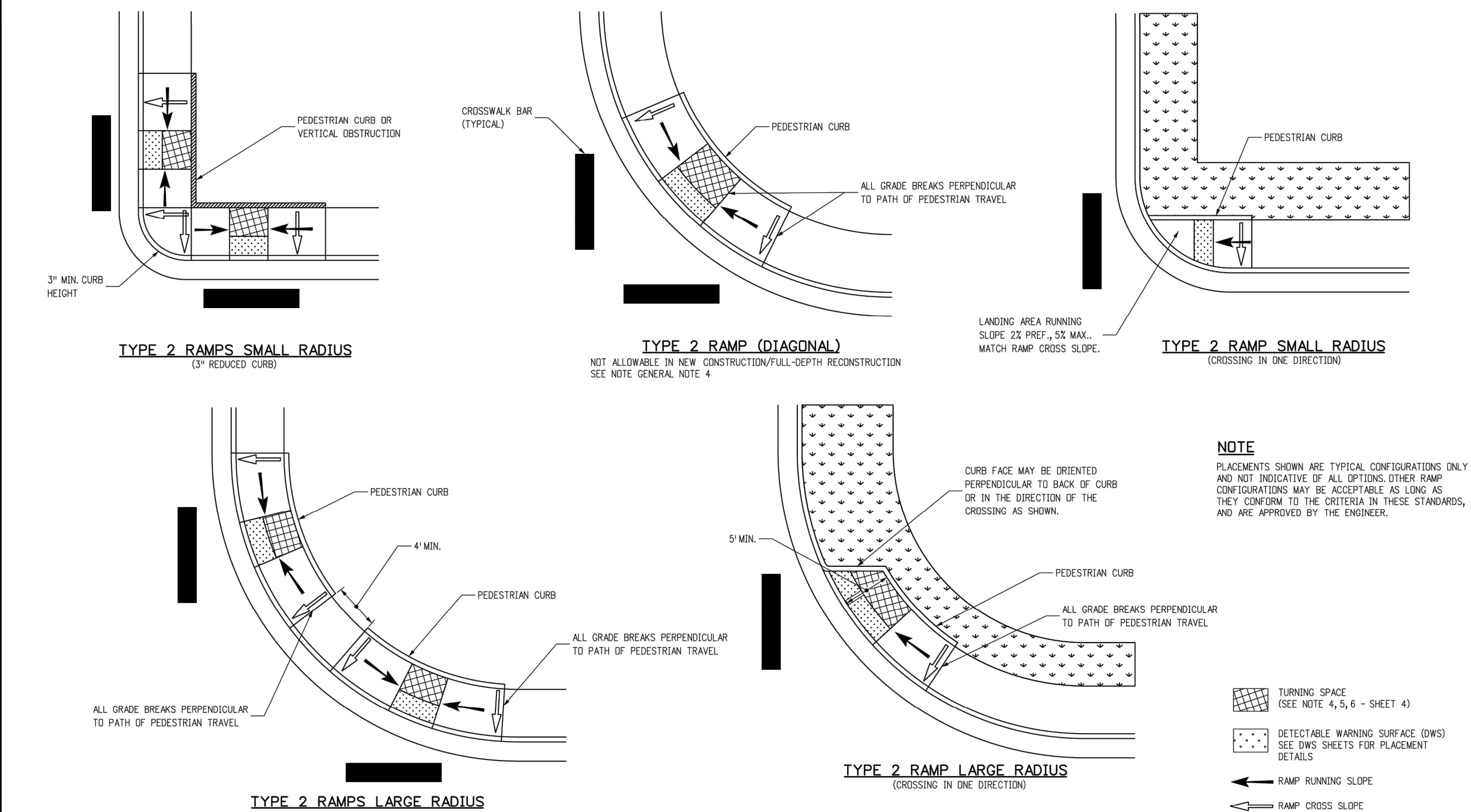
Sheet Revisions	
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STANDARD PLAN NO.
M-608-1
Standard Sheet No. 4 of 10
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Sheet Revisions	
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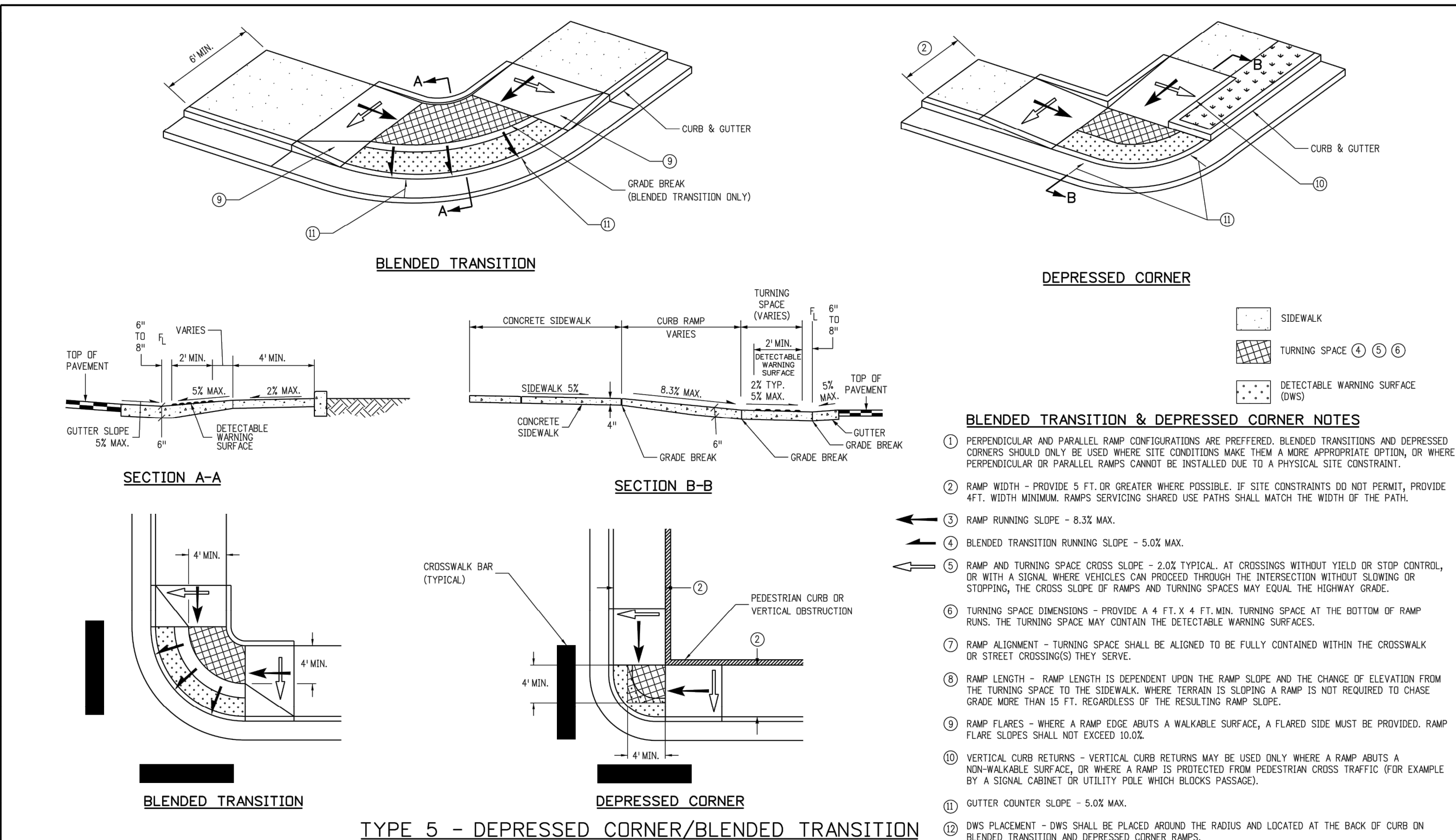
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Date:	Comments

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CURB RAMPS

Issued by the Project Development Branch: July 3

STANDARD PLAN NO.
M-608-1
Standard Sheet No. 7 of 10
Project Sheet Number:



Computer File Information		
Creation Date: 07/31/19		
Designer Initials: JBK		
Last Modification Date: 07/31/19		
Detailer Initials: LTA		
CAD Ver.: MicroStation V8	Scale: Not to Scale	Units: English

Sheet Revisions	
Date:	Comments

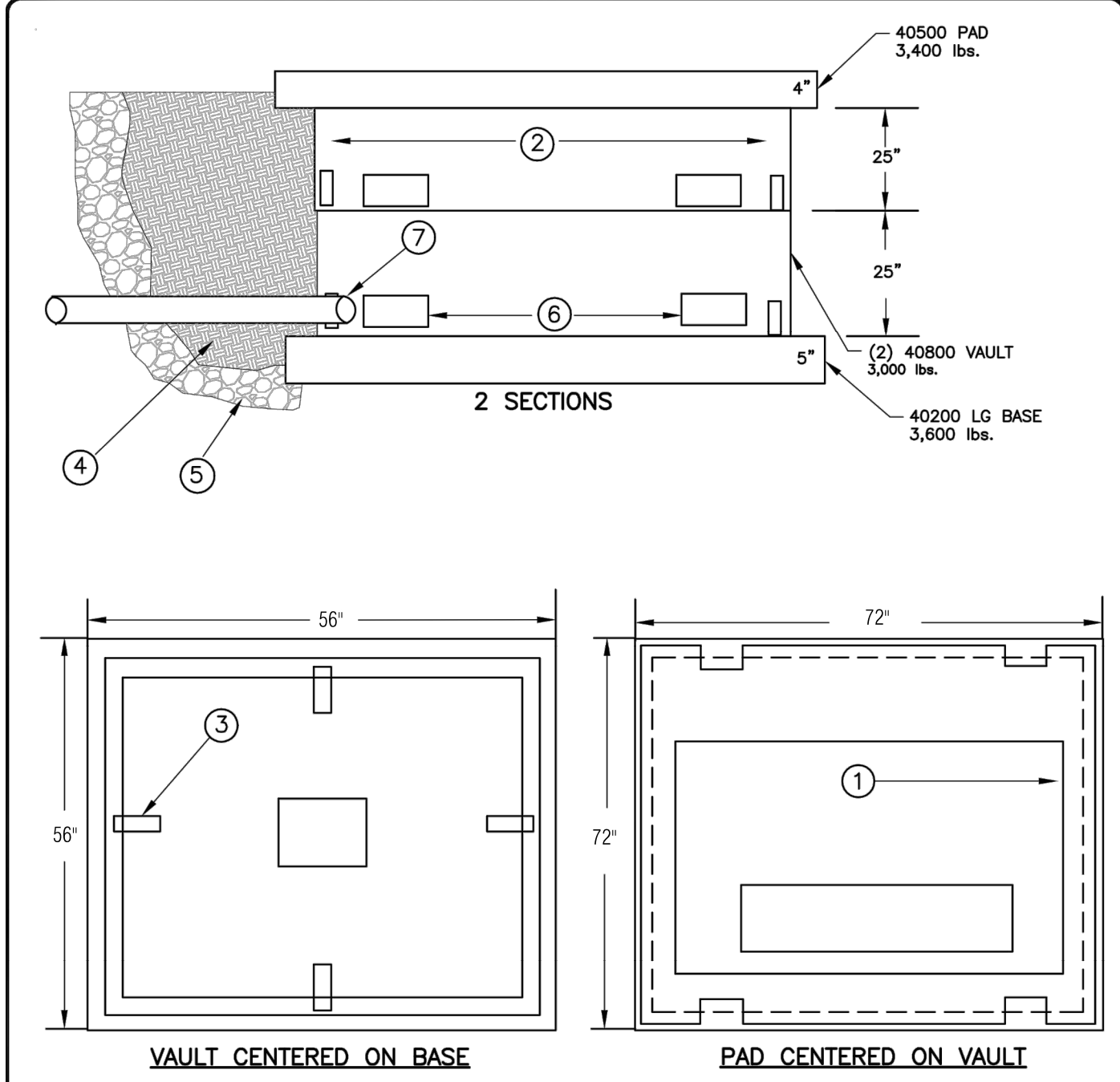
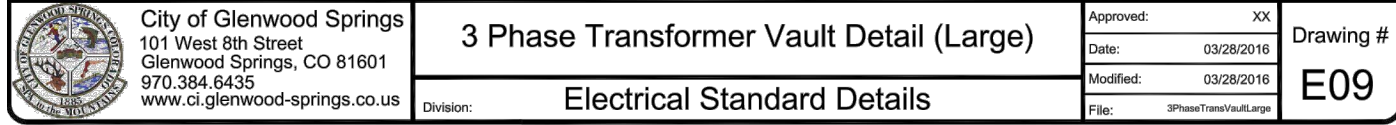
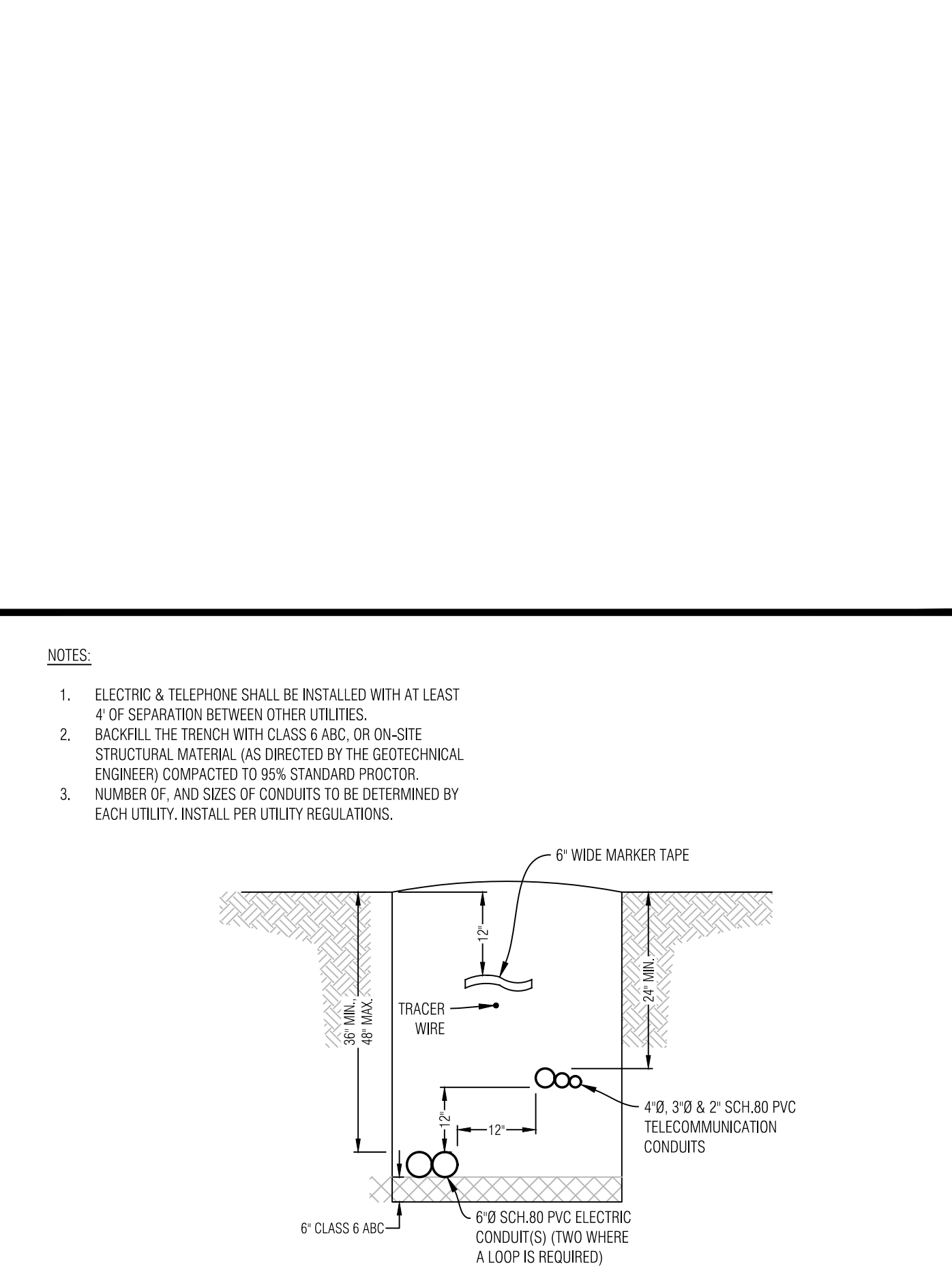
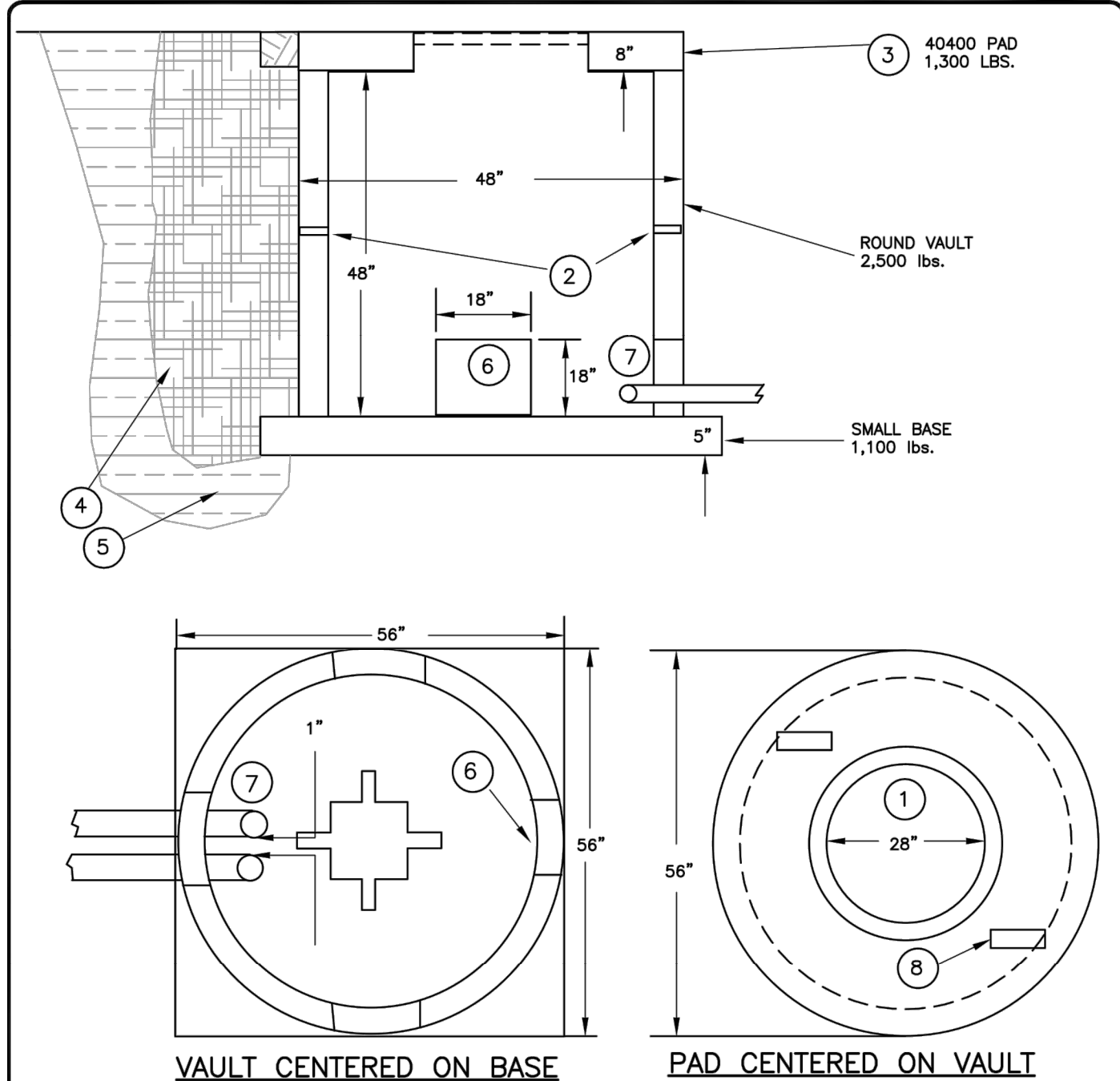
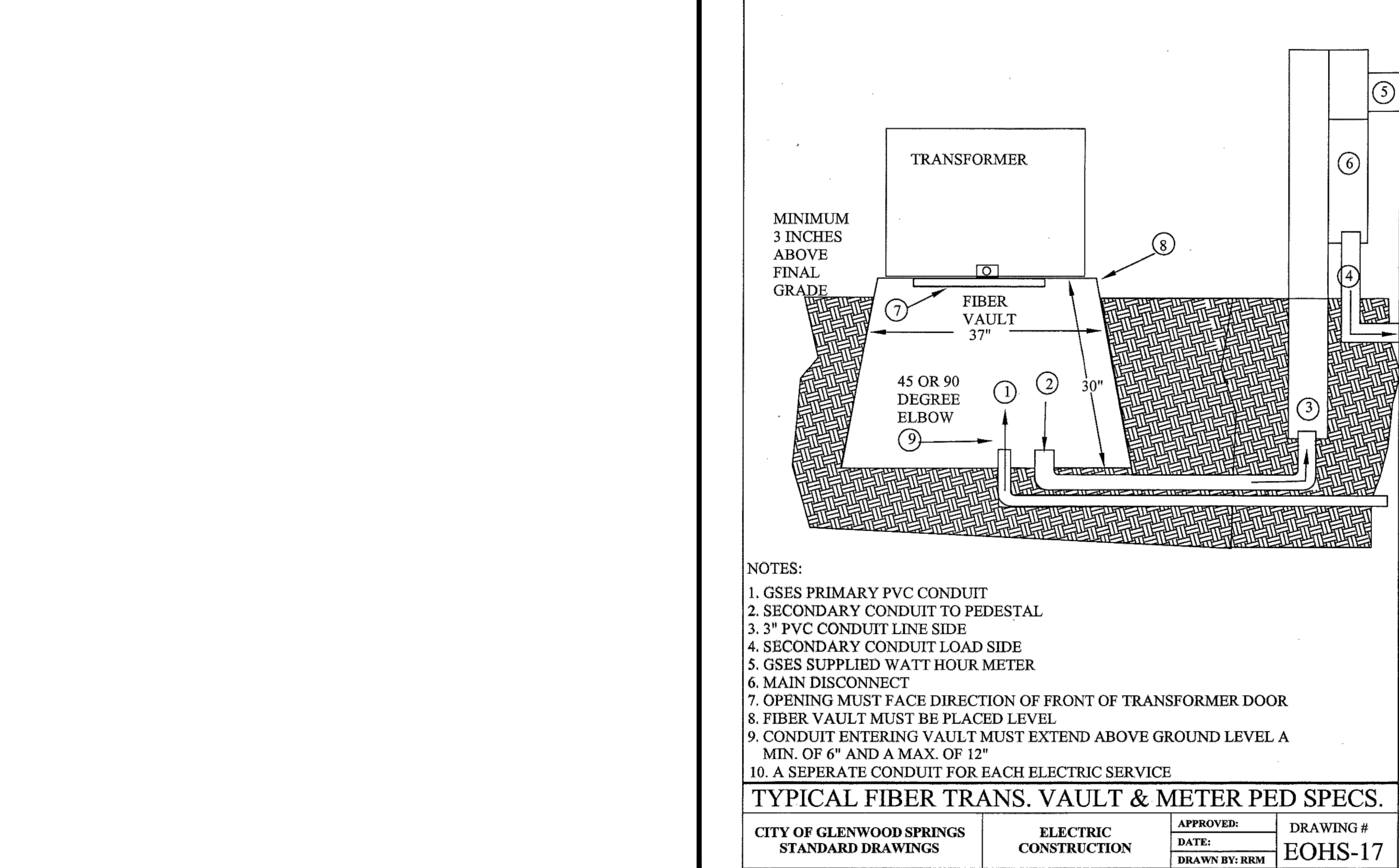
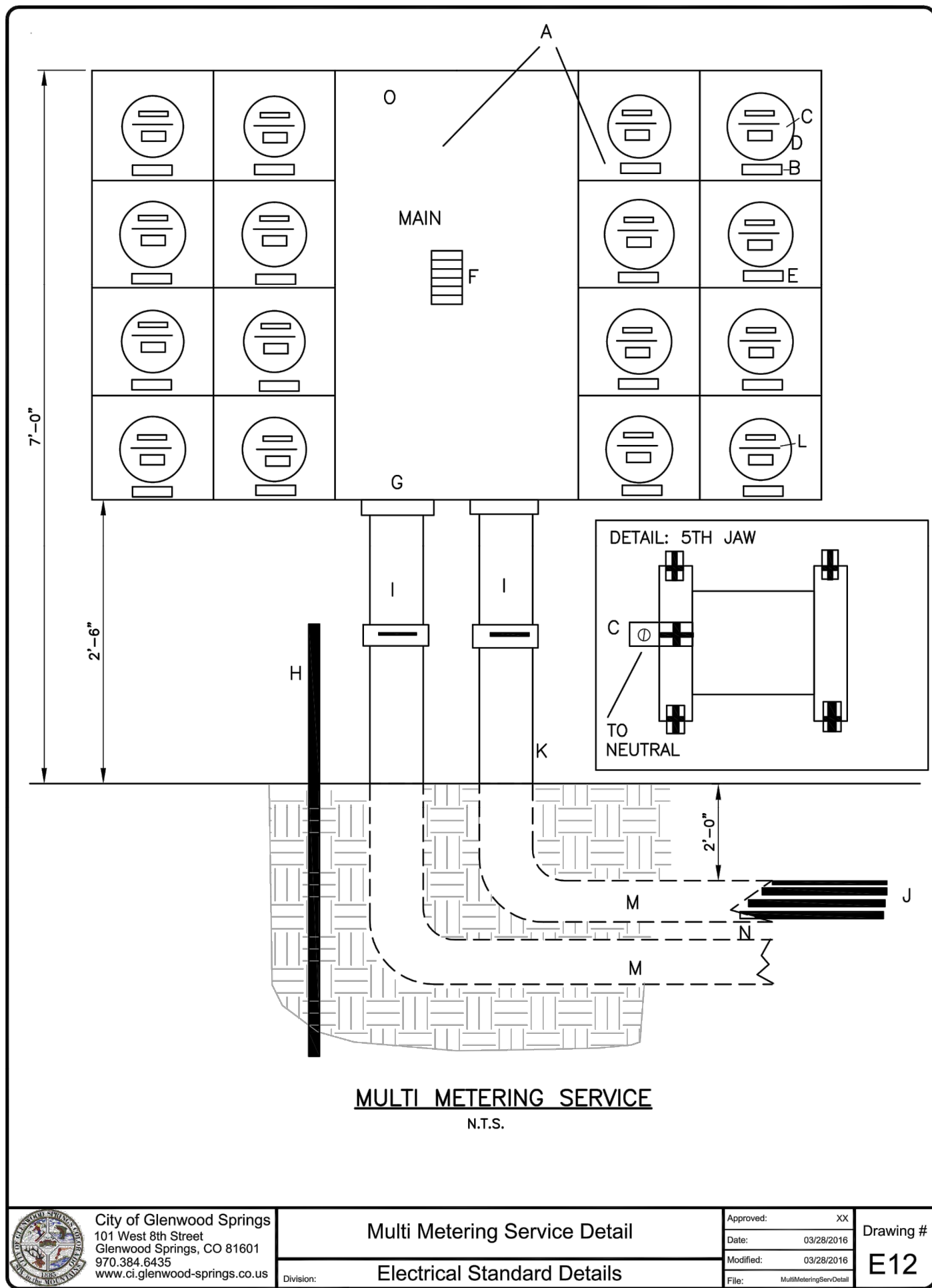
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CURB RAMPS

Issued by the Project Development Branch: July 3

STANDARD PLAN NO.
M-608-1
Standard Sheet No. 7 of 10
Project Sheet Number:

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CITY OF GLENWOOD SPRINGS, COLORADO

HABITAT ROARING FORK, 8TH. STREET

Electric Details

Land Use Submission 4/27/23

No.	1	2	3	4	5	6	7	8	9
By									
Revision									
Date									
Sheet									

PROJECT NO. 20010
PAH
Drafter: BUI
Date: 4/27/23

Sheet C10

File Name: 21010 cover details.dwg

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Subsurface Utility Engineering (SUE)
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Firm: #####
Job #: #####
Date: #####

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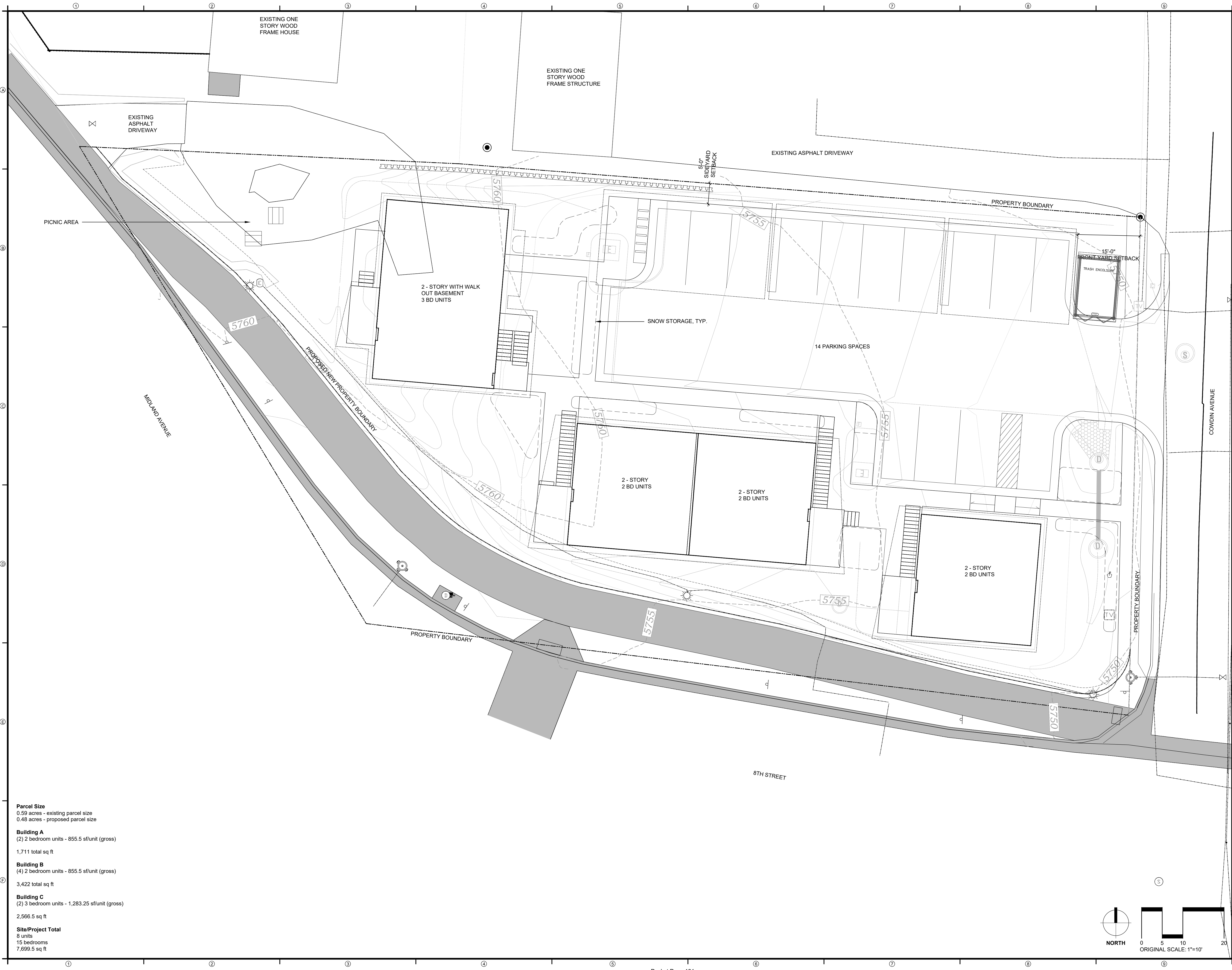
Client Information:
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NORTH

Scale: 1" = 1'

811

Know what's below.
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Parcel Size
0.59 acres - existing parcel size
0.48 acres - proposed parcel size

Building A
(2) 2 bedroom units - 855.5 sf/unit (gross)
1,711 total sq ft

Building B
(4) 2 bedroom units - 855.5 sf/unit (gross)
3,422 total sq ft

Building C
(2) 3 bedroom units - 1,263.25 sf/unit (gross)
2,566.5 sq ft

Site/Project Total
8 units
15 bedrooms
7,699.5 sq ft

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HABITAT ROARING FORK
8TH STREET & MIDLAND AVENUE
GLENWOOD SPRINGS, COLORADO 81601

ISSUE DATE: MAY 2, 2023

REVISIONS		
#	DATE	DESCRIPTION

DRAWN: LS REVIEWED: RS

LAND USE
SUBMISSION

PROJECT NUMBER: 6957

PRELIMINARY
SITE PLAN

SHEET NUMBER

L3-01

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HABITAT ROARING FORK
8TH STREET & MIDLAND AVENUE
GLENWOOD SPRINGS, COLORADO 81601

ISSUE DATE: MAY 2, 2023

REVISIONS

#	DATE	DESCRIPTION
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DRAWN: LS	REVIEWED: RS
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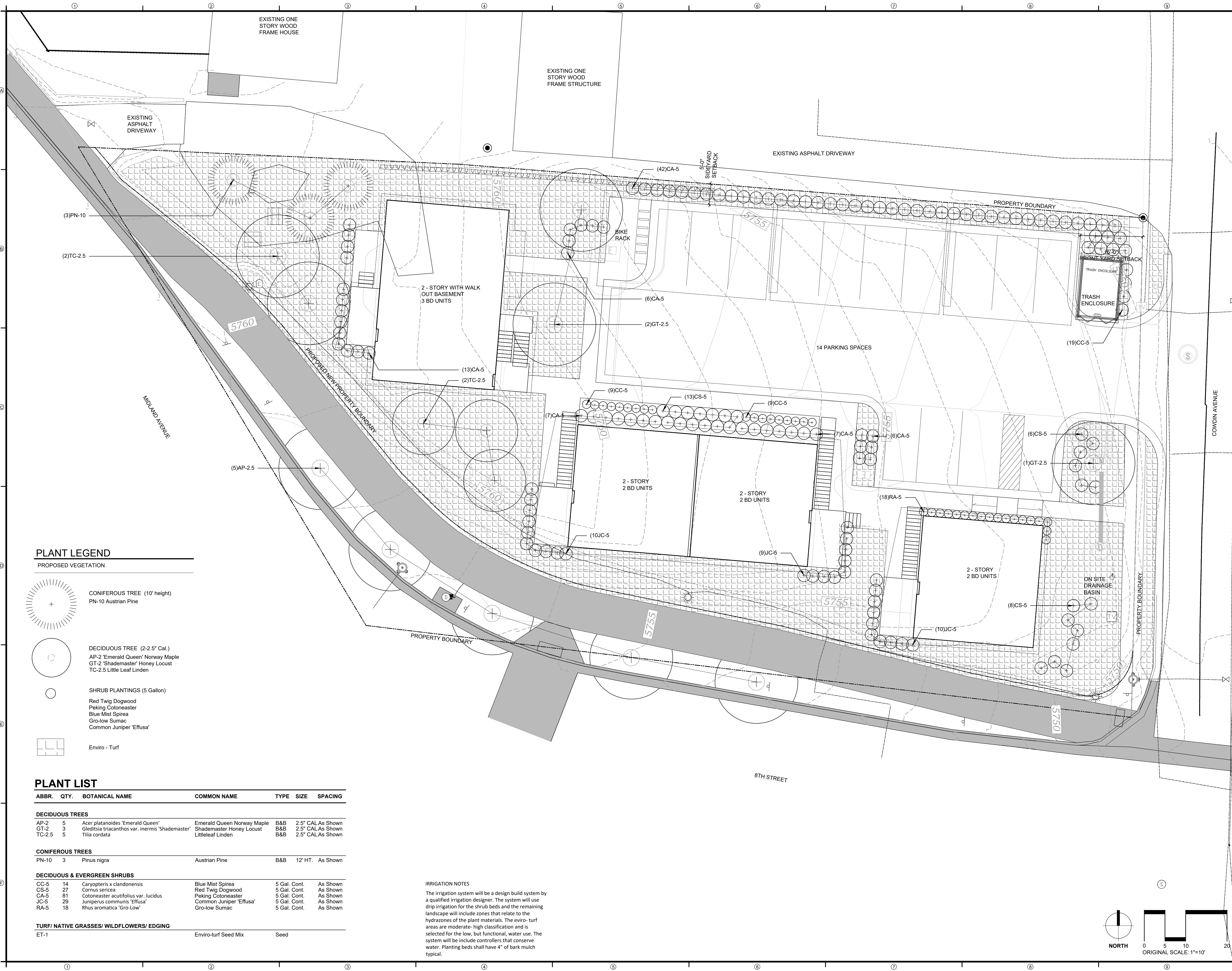
LAND USE
SUBMISSION

PROJECT NUMBER: 6957

PRELIMINARY
PLANTING PLAN

SHEET NUMBER

L8-01



PLANT LEGEND

PROPOSED VEGETATION

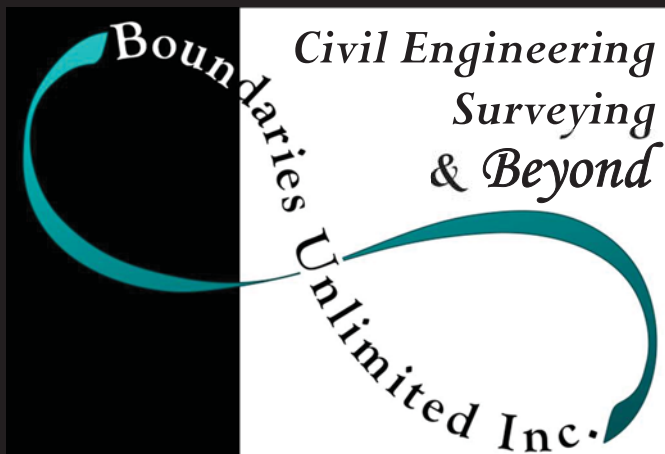
- CONIFEROUS TREE (10' height)
PN-10 Austrian Pine
- DECIDUOUS TREE (2-2.5" Cal.)
AP-2 'Emerald Queen' Norway Maple
GT-2 'Shademaster' Honey Locust
TC-2.5 Little Leaf Linden
- SHRUB PLANTINGS (5 Gallon)
Red Twig Dogwood
Peking Cotoneaster
Blue Mist Spirea
Gro-low Sumac
Common Juniper 'Effusa'
- Enviro - Turf

PLANT LIST

ABBR.	QTY.	BOTANICAL NAME	COMMON NAME	TYPE	SIZE	SPACING
DECIDUOUS TREES						
AP-2	5	Acer platanoides 'Emerald Queen'	Emerald Queen Norway Maple	B&B	2.5" CAL	As Shown
GT-2	3	Gleditsia triacanthos var. inermis 'Shademaster'	Shademaster Honey Locust	B&B	2.5" CAL	As Shown
TC-2.5	5	Tilia cordata	Littleleaf Linden	B&B	2.5" CAL	As Shown
CONIFEROUS TREES						
PN-10	3	Pinus nigra	Austrian Pine	B&B	12' HT.	As Shown
DECIDUOUS & EVERGREEN SHRUBS						
CC-5	14	Caryopteris x clandonensis	Blue Mist Spirea	5 Gal. Cont.	As Shown	As Shown
CS-5	27	Cornus sericea	Red Twig Dogwood	5 Gal. Cont.	As Shown	As Shown
CA-5	81	Cotoneaster acutifolius var. lucidus	Peking Cotoneaster	5 Gal. Cont.	As Shown	As Shown
JC-5	29	Juniperus communis 'Effusa'	Common Juniper 'Effusa'	5 Gal. Cont.	As Shown	As Shown
RA-5	18	Rhus aromatica 'Gro-Low'	Gro-low Sumac	5 Gal. Cont.	As Shown	As Shown
TURF/ NATIVE GRASSES/ WILDFLOWERS/ EDGING						
ET-1			Enviro-turf Seed Mix	Seed		

IRRIGATION NOTES

The irrigation system will be a design build system by a qualified irrigation designer. The system will use drip irrigation for the shrub beds and the remaining landscape will include zones that relate to the hydrazones of the plant materials. The eviro- turf areas are moderate- high classification and is selected for the low, but functional, water use. The system will be include controllers that conserve water. Planting beds shall have 4" of bark mulch typical.



Major Drainage Report

Habitat Roaring Fork 8th Street

April 26, 2023

BUI Project #23010.01



"I hereby affirm that this report and the accompanying plans for the Habitat Roaring Fork 8th Street was prepared by me (or under my supervision) for the owners thereof in accordance with the provisions of the City of Glenwood Springs Stormwater, Drainage, Water Quality and Erosion Control Chapter and approved variances and exceptions listed thereto. I understand that it is the policy of the City of Glenwood Springs that the City of Glenwood Springs does not and will not assume liability for drainage facilities designed by others."

License No. 37110
Licensed Professional Engineer, State of Colorado

(Seal)

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- Geotechnical Report
- Drainage Calculations
- Civil Engineering Plans (24"x36")

A. Introduction

The purpose of this report is to provide an outline and basis of design for the development of multi-story, multifamily residential apartments for Habitat Roaring Fork in Glenwood Springs, Colorado (situated within Section 9 of Township 6 South, Range 89 West of the Sixth Principal Meridian). The intent of the project is to construct three (3) multi-family buildings with associated roads/parking/sidewalks/landscaping, and to mitigate the drainage impacts resulting from the development.

B. Existing Conditions

The project area consists of a 0.59 acre undeveloped parcel of land. The project area is bounded by Midland Avenue to the west and W. 8th Street to the south, residential single-family homes to the north and Cowdin Drive to the east. In general, the topography within the property slopes from west to east with slopes ranging between 6%-8%. Site vegetation consists primarily of sagebrush and native grasses and mature trees. The USDA NRCS Web Soil Survey indicates that soils are Ascalon-Pena complex (Hydrologic Group B). A geotechnical investigation was performed by Kumar & Associates, Inc. (Job No. 22-7-761, dated February 8, 2023). The borings and test pits generally encountered stiff, sandy silty clay with medium dense silty to very silty sand and gravel. Groundwater was not encountered. The property consists of one (1) drainage basin. The basin flows from west to east and discharges onto Cowdin Drive where there are no existing stormwater management structures present. The estimated historic peak 25-yr, 1-hour runoff rate of the basin is 0.63 cfs and the 100-yr, 1-hour runoff rate of the basin is 0.82 cfs



Figure 1: Historic/Existing Onsite Drainage Basins

1. Historic/Existing Design Points

Midland Avenue, W 8th Street, Cowdin Drive and the adjacent properties to the north largely confine the overall drainage basin boundary inside the property boundary. There is one (1) primary topographic low point (outfalls/design point) at the northeast corner of the property where the runoff discharges onto Cowdin Drive.

C. Proposed Conditions

The proposed development will be multi-story multifamily residential apartments with the topographic low point (outfalls/design point) relocated slightly south to the middle of the easterly property line where a WQCV detention drywell system can more feasibly be constructed. The WQCV/detention drywell system will treat and infiltrate the WQCV and infiltrate a portion of the minor event (25-year) to reduce the peak discharge rate to the historic level.

In planning out the design, several stormwater management alternatives were considered, including: bioretention; WQCV Drywells; Extended Detention Basin (EDB); Underground Detention (UGD); hydrodynamic separators; level spreaders and conveyance structures. Per City requirements, the Project is required to treat runoff for the Water Quality Capture Volume (WQCV), manage runoff from the minor (25-year) and ensure conveyance of the 100-year storm event without adversely impacting downstream properties.

In preparing the design, it was determined that the soils were suitable for infiltration, the runoff volume created by the development was minimal compared to the historic volume and that there was sufficient area to install the WQCV Drywells to manage the runoff.

The Project has been designed to utilize curb & gutter, roof gutters, downspouts, a valley pan, an area inlet, a level spreader, swales and storm drain pipes for the capture and conveyance of the runoff to a WQCV drywell system located to the east of Building-A. The drywells will infiltrate the Water Quality Capture Volume (WQCV) and the 25-year 1-hour storm event, while the 100-year 1-hour storm event will overtop the drywell and flow into Cowdin Drive as it currently does. The WQCV drywells will treat the WQCV and 25-year event. The design also includes a level spreader along the northwest side of the parking lot near the bicycle parking. This level spreader will help redisperse the runoff more evenly into the parking lot. Construction details for the drywells and level spreader have been included in the Civil Engineering Plans. A detailed storm sewer analysis of this system has been performed using Autodesk Storm and Sanitary Sewer Analysis (SSA) v2022 software.

In general, runoff from the roofs will be collected by roof gutters and downspouts and will be directed to the nearest swale. Runoff from the roof of the carport will be collected by roof gutters and downspouts and will be piped directly into the WQCV drywell. Runoff from the parking area will flow along the curb and gutter to the valley pan near the entry of the parking area. Runoff from landscaped areas will be captured by swales and drainage pipes and will flow either directly to the drywells (south side of buildings) or will pass through a level spreader before flowing into the curb and gutter of the parking area (north side of buildings). Construction details for the discussed stormwater management structures have been included in the Civil Engineering Plans.

1. Basin A

The proposed drainage basin boundary (Basin A) is the same as the historic boundary (Hist-A). Basin A consists of the runoff which originates uphill near the northeast corner of the site and flows downhill to the east. Once the runoff reaches the back of Building C, it is diverted to either side of the building by a swale. The runoff which is directed to the north of the building exits the swale and is spread out through a level spreader before entering the parking area and continuing on to the new WQCV drywells via the curb and gutter and valley pan. The runoff which was directed to the south of Building C travels through the swale and drainage pipes behind buildings A & B and discharges into the WQCV drywell. These improvements adjust the low point of the basin to be further south than existing. Even so, the overflow of the drywell will continue to sheet flow through a scupper under the proposed sidewalk and across Cowdin Drive as it does currently. The estimated 100-year existing runoff rate at that existing low point for Basin A is 0.82 cfs. The estimated 100-year developed runoff rate at the proposed low point for Basin A is 0.77 cfs. During the analysis, a conservative exfiltration rate of 0.27 in/hr was used.



Figure 2: Proposed Drainage Basins

D. Low Impact Site Design

The landscaping strategy is to reduce impervious areas where possible, stabilize slopes with erosion fabric/vegetation and utilize low water demanding plants and grasses. Low Impact Site Design (LID) principals have been considered for implementation as follows:

Principle 1: Consider stormwater quality needs early in the design process

The need to manage and treat stormwater runoff was discussed during the design process affording the design team and owner an opportunity to discuss the options and evaluate their feasibility. The use of curb & gutter, roof gutters, downspouts, a valley pan, an area inlet, a level spreader, swales, storm drain pipes and WQCV Drywells will enable adequate site drainage, provide sediment fallout, and infiltrate the runoff from the basin.

Principle 2: Use the entire site when planning for stormwater quality treatment

The design was prepared with the intent of promoting sheet flow (level spreader, sidewalks and parking area) and treating runoff through WQCV Drywells. Much of the site was designed to reduce flow velocities and disturbed areas are planned to be revegetated with landscape grasses/plants/trees and other regional grasses.

Principle 3: Avoid unnecessary impervious area

This design focused on limiting the impervious area of the parking and sidewalks. Landscape area was maximized where possible in front of the buildings for aesthetics and outside of the buildings for pretreatment with swales.

Principle 4: Reduce runoff rates and volumes to more closely match natural conditions

The use of WQCV Drywells will provide ample treatment for the runoff from the site. Excess runoff will overtop the drywell and will flow into Cowdin Drive as it does currently. This overflow will produce a net effect of reducing the overall peak runoff rates from the basin during major storm events to less than the historic (natural conditions) and existing rates.

Principle 5: Integrate stormwater quality management and flood control

The WQCV Drywells will allow the runoff to infiltrate the WQCV and the excess will flow into Cowdin Drive as it does currently.

Principle 6: Develop stormwater quality facilities that enhance the site, the community and the environment

Grading, landscaping and the use of swales and level spreaders have been designed to better protect the building structures and the parking area. Treating and infiltrating the runoff will bolster the community and environment.

Principle 7: Use a treatment train approach

A train approach has been incorporated through the use of sheet flow across the grass lined swales, spreading out the flow with a level spreader which then leads to the WQCV/Detention drywells.

Principle 8: Design sustainable facilities that can be safely maintained

Swales have been kept shallow to enable grass trimming and landscape maintenance. The drywells are located where they can be accessed easily by a vacuum truck with a hose extension for sediment removal. The level spreader is near the east edge of the parking area and can be accessed by small excavation equipment when needed to remove large quantities of sediment.

Principle 9: Design and maintain facilities with public safety in mind

The property contains some steep slopes and will require the owner/tenants to exercise reasonable precautions to access the WQCV/Detention drywells and swales as he or she would to access other portions of the property.

E. Hydrologic Criteria

The stormwater management system has been designed to treat polluted runoff, infiltrate the 25-year, 1-hour storm runoff and allow the 100-year, 1-hour storm runoff to overflow the drywell at a rate less than that of the historic. Rainfall intensities are based on rainfall data contained in Chapter 4 of the City Engineering Design Standards. Runoff rates and volumes were estimated using Autodesk Storm and Sanitary Sewer Analysis (SSA) v2020 software and the Rational Method. Copies of these data sheets have been included in the Appendix.

F. Proposed Facilities

Erosion control measures and Best Management Practices (BMPS) should be followed during construction to ensure that the property and the adjacent streets are not impacted from sedimentation. This plan utilizes a combination of erosion control logs, a level spreader and sediment control fencing to minimize erosion and control runoff. The proposed location of BMPs has been provided on the Civil Plans.

The drywells will treat the WQCV for the site. Runoff from the minor and major storm events will be captured and infiltrated into the soils. Runoff that overtops the drywell will safely pass through the scupper onto Cowdin Drive. Downstream properties will receive a net benefit through the implementation of the level spreader, WQCV Drywells, outflow control structure and erosion control fabrics.

The following is the Stage-Storage Curve for the proposed WQCV Drywells (also in the Appendix):

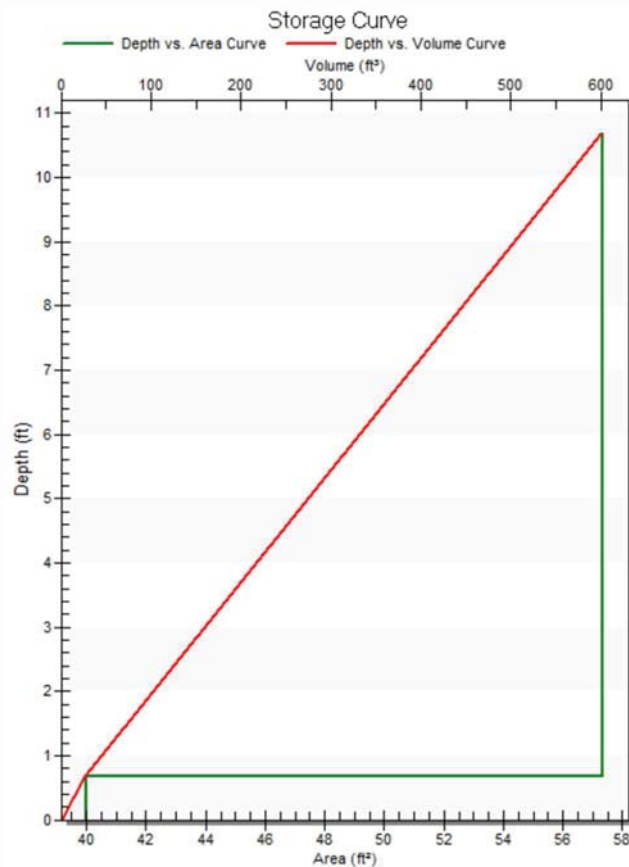


Figure 3: Bioretention Facility: Stage-Storage Curve (Volume & Area)

G. Operation and Maintenance

During construction activities and until vegetation can be established, temporary rock socks should be installed in the parking area curb and gutter. Temporary certified weed free hay bales, check dams, silt dikes, erosion control logs or sediment control fencing should be installed around and below all disturbances in accordance with Colorado Department of Transportation M-Standards. The Contractor shall be responsible for removing debris from the sediment structures after each storm event. The Contractor shall also repair any damaged erosion controls, remove accumulated sediment from the WQCV Drywells and from behind the level spreader/hay bales/check dams/silt dikes/erosion control logs/sediment control fence after each storm event. After construction, the property owner shall be responsible for removing debris and sediment on an as-needed basis.

Sediment and mud should be prevented from leaving the construction site by the immediate placement of a stabilized construction entrance. The Contractor should be responsible for cleaning and general upkeep of the site and adjacent roadways. As an effective dust control measure, water and weed-free straw may be utilized to minimize uprising of dust.

The level spreader and drainage swales require inspection after major storm events and accumulated sediment removed immediately to prevent damage to the surrounding areas.

The WQCV/Detention drywells must be inspected and maintained yearly to remove sediment and debris that is washed into it. Heat tape from the storm drain should be extended into the drywells and secured to the top step. The City of Aspen URMP (referral document) recommends the following minimum maintenance procedures:

- Inspect drywells annually and after every storm exceeding 0.5 inches.
- Dispose of sediment, debris/trash, and any other waste material removed from a drywell at suitable disposal sites and in compliance with local, state, and federal waste regulations.
- Routinely evaluate the drain-down time of the drywells to ensure the maximum time of 24 hours is not being exceeded. If drain-down times are exceeding the maximum, drain the drywells via pumping and clean out the percolation area (the percolation barrel may be jetted to remove sediment accumulated in perforations). Consider drilling additional perforations in the barrel. If slow drainage persists, the system may need to be replaced.

Good housekeeping BMPs should be followed throughout the entire life of the project. These include but are not limited to:

- refuge receptacles should be regularly emptied and equipped with lids;
- keeping machinery in good operating condition to prevent leakage;
- apply appropriate (not excessive) amounts of fertilizer to the landscaping;
- scheduled maintenance cleaning of any downstream curb and gutter, storm sewer inlets, culverts and ditches;
- general site cleanliness and proper training of employees;
- Grading must be performed (but not in excess) to ensure that drainage is directed away from all structures in all directions.

Once construction activities are completed, final stabilization of the disturbed areas should begin. Within one growing season of the project completion, uniform vegetative site coverage should be equal to or greater than 70% of the pre-disturbance levels, or equivalent permanent, physical erosion reduction methods should be employed. When the site is determined to have reached the final stabilization stage, erosion control structures can be removed.

H. Works Cited

City of Glenwood Springs. (2018, July). The Glenwood Springs Engineering Design Standards. Glenwood Springs, Colorado.

Mile High Flood District. (Aug. 2018). Urban Storm Drainage Criteria Manual, Vol. 1-3. Denver, CO.

National Oceanic and Atmospheric Administration. (n.d.). *Hydrometeorological Design Studies Center*. Retrieved April 2023, from Precipitation Frequency Data Server: <http://hdsc.nws.noaa.gov/hdsc/pfds/index.html>

Web Soil Survey. (n.d.). Retrieved April 2023, from United States Department of Agriculture, Natural Resources Conservation Service: <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

Appendix

- *Autodesk Storm and Sanitary Analysis Sheets (25-yr & 100-yr)*
- *NRCS Web Soil Survey*
- *NOAA Atlas 14 Data*
- *Geotechnical Report*
- *Drainage Calculations*
- *Civil Engineering Plans (24"x36")*



Project Description

File Name 23010-SSA-25yr.SPF

Project Options

Flow Units CFS
Elevation Type Elevation
Hydrology Method Modified Rational
Time of Concentration (TOC) Method User-Defined
Link Routing Method Hydrodynamic
Enable Overflow Ponding at Nodes YES
Skip Steady State Analysis Time Periods YES

Rainfall Details

Return Period..... 25 year(s)

**25-year 1-hour
Storm Event**

BUI#23010.01

Subbasin Summary

SN	Subbasin ID	Area	Weighted Runoff Coefficient	Total Rainfall	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
		(ac)		(in)	(in)	(ft ³)	(cfs)	(days hh:mm:ss)
1	Basin-A	48	0.700	0.42	0.30	518.9	1.71	0 00:05:00
2	Historic	48	0.370	0.65	0.24	425.6	0.63	0 00:11:06

25-year 1-hour
Storm Event

Node Summary

SN Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft ²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Time of Freeboard (ft)	Time of Peak Attained Flooding Occurrence (days hh:mm)	Total Flooded Volume (ft ³)	Total Time Flooded (min)
1 Outfall-A	Outfall	5748.72					0.000	5748.72					
2 Outfall-Historic	Outfall	5748.72					0.630	5748.72					
3 WQCV-Drywell	Storage Node	5738.30	5749.10	5738.30		0.00	1.710	5747.46				0.00	0.00

25-year 1-hour
Storm Event

Link Summary

SN Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Design Flow (cfs)	Flow Capacity (cfs)	Peak Flow/Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/Surcharged Total Depth Ratio	Total Time (min)
1	Scupper	Channel	WQCV-Drywe Outfall-A	5.00	5748.80	5748.72	1.6000	6.000	0.0130	0.000	2.87	0.00	0.00	0.00	0.00	0.00

Subbasin Hydrology

Subbasin : Basin-A

Input Data

Area (ft²) 21106
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (ft²)	Soil Group	Runoff Coeff.
Parking, 25 years or greater	13165.01	B (2-6%)	0.96
Open Space, 25 years or greater	7940.99	B (6%+)	0.26
Composite Area & Weighted Runoff Coeff.	21106		0.7

Subbasin Runoff Results

Total Rainfall (in) 0.42
Total Runoff (in) 0.3
Peak Runoff (cfs) 1.71
Rainfall Intensity 5.05
Weighted Runoff Coefficient 0.7
Time of Concentration (days hh:mm:ss) ... 0 00:05:00

Subbasin : Historic

Input Data

Area (ft²) 21106
Weighted Runoff Coefficient 0.37

Runoff Coefficient

Soil/Surface Description	Area (ft²)	Soil Group	Runoff Coeff.
Meadow, 25 years or greater	21106	B (6%+)	0.37
Composite Area & Weighted Runoff Coeff.	21106		0.37

Subbasin Runoff Results

Total Rainfall (in) 0.65
Total Runoff (in) 0.24
Peak Runoff (cfs) 0.63
Rainfall Intensity 3.509
Weighted Runoff Coefficient 0.37
Time of Concentration (days hh:mm:ss) ... 0 00:11:06

**25-year 1-hour
Storm Event**

BUI#23010.01

Channel Input

SN	Element ID	Length	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)
1	Scupper	5.00	5748.80	10.50	5748.72	0.00	0.08	1.6000	Rectangular	0.500	1.000	0.0130	0.5000	0.5000	0.0000	0.000

**25-year 1-hour
Storm Event**

BUI#23010.01

Channel Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Reported Surcharged Condition
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)
1 Scupper	0.000	0 00:00	2.870	0.00	0.00		0.00	0.00	0.00

Storage Nodes

Storage Node : WQCV-Drywell

Input Data

Invert Elevation (ft)	5738.3
Max (Rim) Elevation (ft)	5749.1
Max (Rim) Offset (ft)	10.8
Initial Water Elevation (ft)	5738.3
Initial Water Depth (ft)	0
Ponded Area (ft²)	0
Evaporation Loss	0

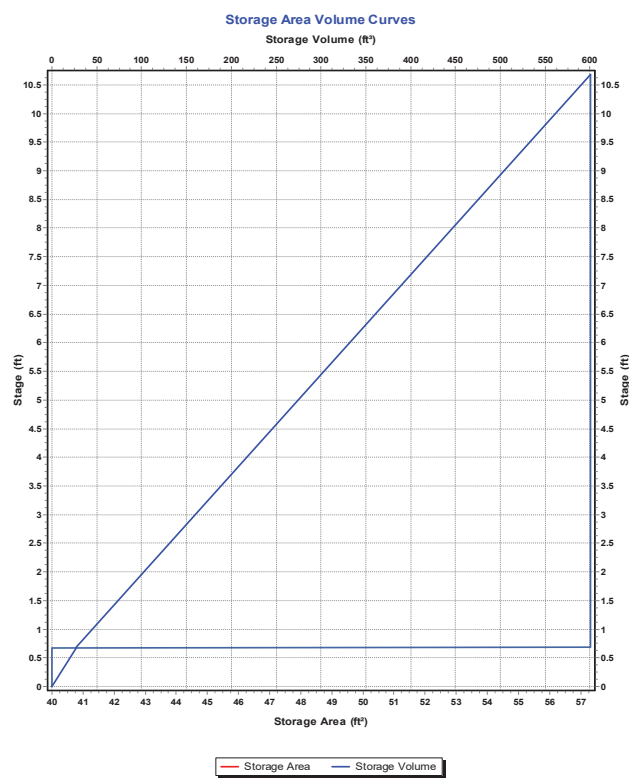
Infiltration/Exfiltration

Exfiltration Rate (in/hr)	0.27
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Storage Area Volume Curves

Storage Curve : Drywell

Stage (ft)	Storage Area (ft²)	Storage Volume (ft³)
0	40	0
0.67	40	26.8
0.68	57.32	27.29
10.68	57.32	600.49



Storage Node : WQCV-Drywell (continued)

Output Summary Results

Peak Inflow (cfs)	1.71
Peak Lateral Inflow (cfs)	1.71
Peak Outflow (cfs)	0
Peak Exfiltration Flow Rate (cfm)	0.02
Max HGL Elevation Attained (ft)	5747.46
Max HGL Depth Attained (ft)	9.16
Average HGL Elevation Attained (ft)	5747.17
Average HGL Depth Attained (ft)	8.87
Time of Max HGL Occurrence (days hh:mm)	0 00:10
Total Exfiltration Volume (1000-ft³)	0.031
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	86090.18

Project Description

File Name 23010-SSA-100yr.SPF

Project Options

Flow Units CFS
Elevation Type Elevation
Hydrology Method Modified Rational
Time of Concentration (TOC) Method User-Defined
Link Routing Method Hydrodynamic
Enable Overflow Ponding at Nodes YES
Skip Steady State Analysis Time Periods YES

Rainfall Details

Return Period..... 100 year(s)

**100-year 1-hour
Storm Event**

BUI#23010.01

Subbasin Summary

SN	Subbasin ID	Area	Weighted Runoff Coefficient	Total Rainfall	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
		(ac)		(in)	(in)	(ft ³)	(cfs)	(days hh:mm:ss)
1	Basin-A	0.485	0.700	0.55	0.38	673.6	2.23	0 00:05:00
2	Historic	0.485	0.370	0.85	0.31	552.3	0.82	0 00:11:06

100-year 1-hour
Storm Event

Node Summary

SN	Element ID	Element Type	Invert Elevation	Ground/Rim (Max) Elevation	Initial Water Elevation	Surcharge Elevation	Ponded Area	Peak Inflow	Max HGL Elevation Attained	Max Surge Depth Attained	Min Time of Freeboard Peak Attained	Occurrence	Total Flooded Volume	Total Time Flooded
			(ft)	(ft)	(ft)	(ft)	(ft ²)	(cfs)	(ft)	(ft)	(ft)	(days hh:mm)	(ft ³)	(min)
1	Outfall-A	Outfall	5748.72					0.770	5748.92					
2	Outfall-Historic	Outfall	5748.72					0.820	5748.72					
3	WQCV-Drywell	Storage Node	5738.30	5749.10	5738.30		0.00	2.220	5749.09				0.00	0.00

100-year 1-hour
Storm Event

Link Summary

SN Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Design Flow (cfs)	Capacity (cfs)	Peak Flow/Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/Total Depth Ratio	Total Time Surcharged (min)
1	Scupper	Channel	WQCV-Drywel Outfall-A	5.00	5748.80	5748.72	1.6000	6.000	0.0130	0.770	2.87	0.27	3.19	0.24	0.48	0.00

Subbasin Hydrology

Subbasin : Basin-A

Input Data

Area (ft²) 21106
Weighted Runoff Coefficient 0.7

Runoff Coefficient

Soil/Surface Description	Area (ft ²)	Soil Group	Runoff Coeff.
Parking, 25 years or greater	13165.01	B (2-6%)	0.96
Open Space, 25 years or greater	7940.99	B (6%+)	0.26
Composite Area & Weighted Runoff Coeff.	21106		0.7

Subbasin Runoff Results

Total Rainfall (in) 0.55
Total Runoff (in) 0.38
Peak Runoff (cfs) 2.23
Rainfall Intensity 6.56
Weighted Runoff Coefficient 0.7
Time of Concentration (days hh:mm:ss) .. 0 00:05:00

Subbasin : Historic

Input Data

Area (ft²) 21106
Weighted Runoff Coefficient 0.37

Runoff Coefficient

Soil/Surface Description	Area (ft ²)	Soil Group	Runoff Coeff.
Meadow, 25 years or greater	21106	B (6%+)	0.37
Composite Area & Weighted Runoff Coeff.	21106		0.37

Subbasin Runoff Results

Total Rainfall (in) 0.85
Total Runoff (in) 0.31
Peak Runoff (cfs) 0.82
Rainfall Intensity 4.56
Weighted Runoff Coefficient 0.37
Time of Concentration (days hh:mm:ss) .. 0 00:11:06

100-year 1-hour
Storm Event

BUI#23010.01

Channel Input

SN	Element ID	Length	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)
1	Scupper	5.00	5748.80	10.50	5748.72	0.00	0.08	1.6000	Rectangular	0.500	1.000	0.0130	0.5000	0.5000	0.0000	0.000

100-year 1-hour
Storm Event

BUI#23010.01

Channel Results

SN	Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)	
1	Scupper	0.770	0 00:08	2.870	0.27	3.19	0.03	0.24	0.48	0.00	

Storage Nodes

Storage Node : WQCV-Drywell

Input Data

Invert Elevation (ft) 5738.3
Max (Rim) Elevation (ft) 5749.1
Max (Rim) Offset (ft) 10.8
Initial Water Elevation (ft) 5738.3
Initial Water Depth (ft) 0
Ponded Area (ft²) 0
Evaporation Loss 0

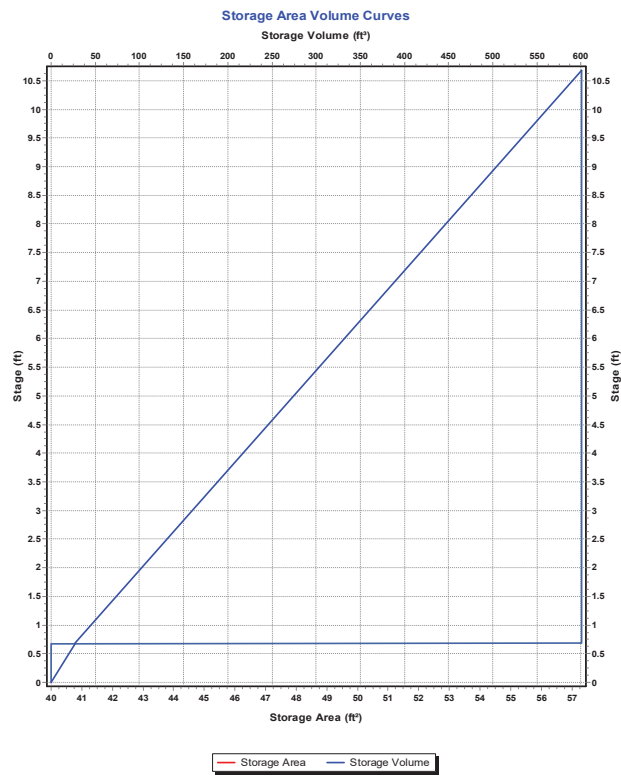
Infiltration/Exfiltration

Exfiltration Rate (in/hr) 0.27

Storage Area Volume Curves

Storage Curve : Drywell

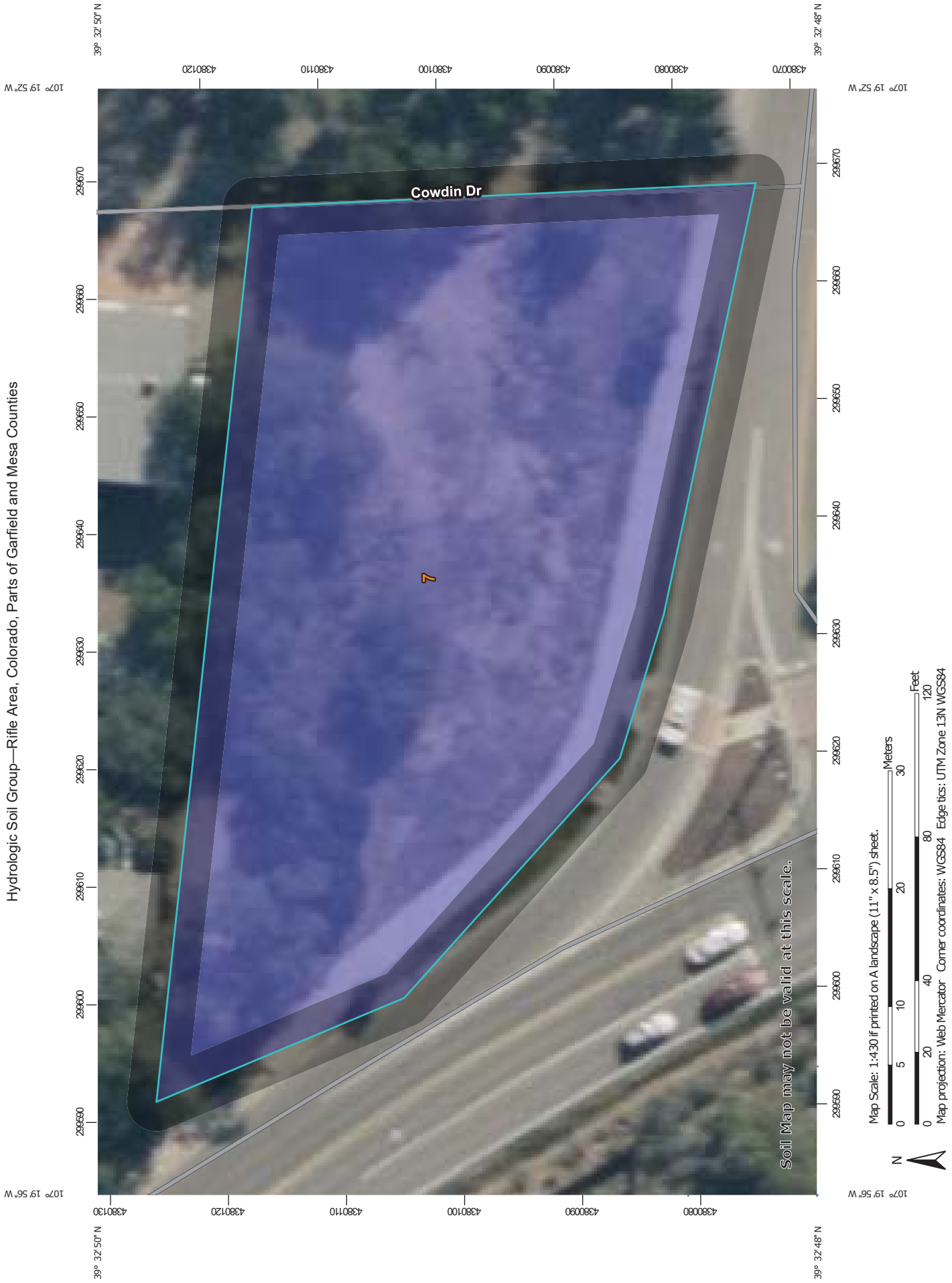
Stage	Storage Area	Storage Volume
(ft)	(ft ²)	(ft ³)
0	40	0
0.67	40	26.8
0.68	57.32	27.29
10.68	57.32	600.49



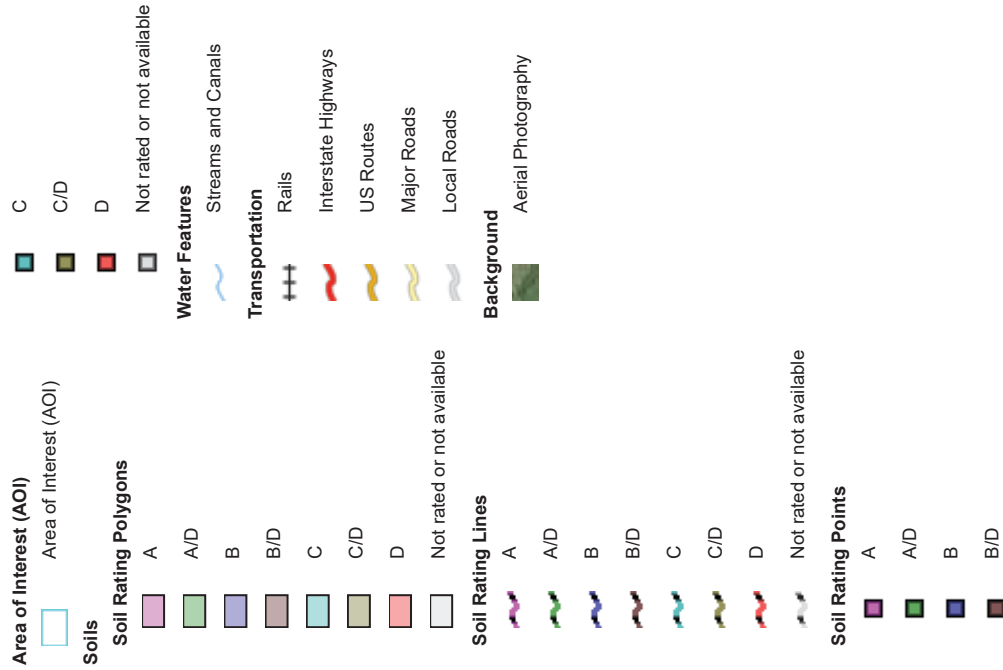
Storage Node : WQCV-Drywell (continued)

Output Summary Results

Peak Inflow (cfs)	2.22
Peak Lateral Inflow (cfs)	2.22
Peak Outflow (cfs)	0.77
Peak Exfiltration Flow Rate (cfm)	0.02
Max HGL Elevation Attained (ft)	5749.1
Max HGL Depth Attained (ft)	10.79
Average HGL Elevation Attained (ft)	5748.5
Average HGL Depth Attained (ft)	10.2
Time of Max HGL Occurrence (days hh:mm)	0 00:08
Total Exfiltration Volume (1000-ft ³)	0.031
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	86089



MAP LEGEND



MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rifle Area, Colorado, Parts of Garfield and Mesa Counties
Survey Area Data: Version 15, Sep 6, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 25, 2021—Sep 5, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
7	Ascalon-Pena complex, 6 to 25 percent slopes	B	0.6	100.0%
Totals for Area of Interest			0.6	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher



NOAA Atlas 14, Volume 8, Version 2
Location name: Glenwood Springs, Colorado,
USA*
Latitude: 39.5473°, Longitude: -107.3319°
Elevation: m/ft**
* source: ESRI Maps
** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES
Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Tryppaluk, Dale Unruh, Michael Yekta, Geoffrey Bonnin
NOAA, National Weather Service, Silver Spring, Maryland
[PF tabular](#) | [PF graphical](#) | [Maps & aerials](#)

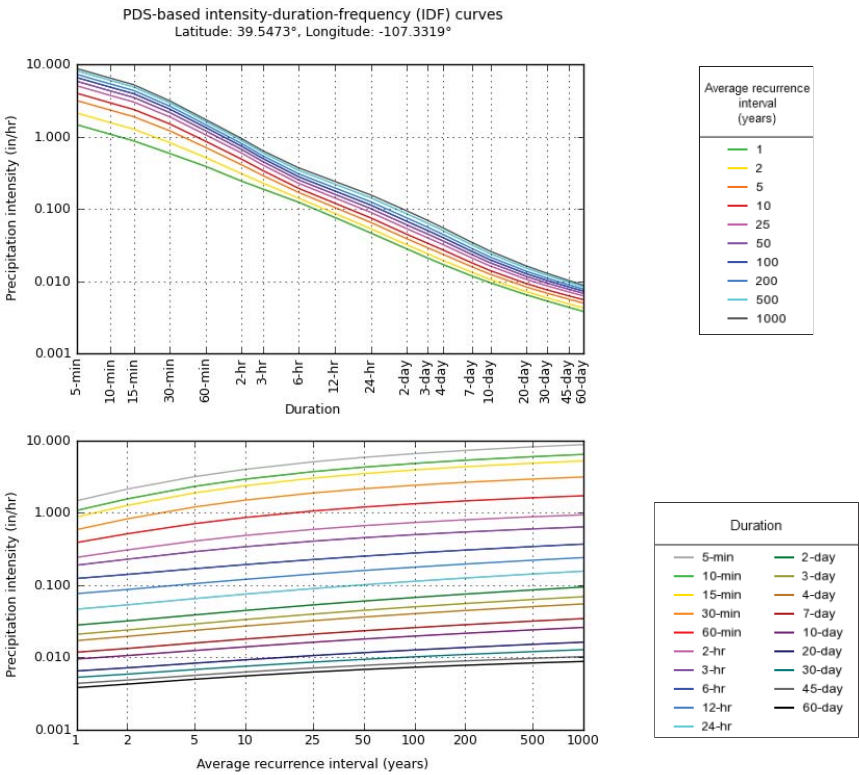
PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.46 (1.15-1.90)	2.12 (1.68-2.75)	3.16 (2.48-4.10)	3.98 (3.11-5.20)	5.05 (3.76-6.77)	5.83 (4.25-7.96)	6.56 (4.62-9.23)	7.27 (4.90-10.5)	8.15 (5.26-12.2)	8.75 (5.54-13.5)
10-min	1.07 (0.846-1.39)	1.55 (1.22-2.01)	2.32 (1.82-3.01)	2.92 (2.27-3.80)	3.70 (2.75-4.96)	4.27 (3.11-5.83)	4.81 (3.38-6.76)	5.32 (3.58-7.72)	5.96 (3.85-8.93)	6.41 (4.06-9.85)
15-min	0.872 (0.688-1.13)	1.26 (0.996-1.64)	1.88 (1.48-2.44)	2.37 (1.85-3.09)	3.00 (2.24-4.03)	3.47 (2.53-4.74)	3.91 (2.75-5.49)	4.33 (2.91-6.28)	4.85 (3.13-7.26)	5.21 (3.30-8.01)
30-min	0.584 (0.460-0.754)	0.824 (0.650-1.07)	1.20 (0.944-1.56)	1.50 (1.17-1.95)	1.87 (1.39-2.51)	2.15 (1.56-2.92)	2.40 (1.69-3.36)	2.64 (1.77-3.82)	2.92 (1.89-4.37)	3.12 (1.97-4.80)
60-min	0.387 (0.306-0.501)	0.512 (0.404-0.663)	0.707 (0.556-0.918)	0.860 (0.672-1.12)	1.06 (0.787-1.42)	1.20 (0.874-1.64)	1.33 (0.938-1.87)	1.46 (0.982-2.11)	1.61 (1.04-2.41)	1.72 (1.09-2.64)
2-hr	0.242 (0.193-0.308)	0.306 (0.244-0.390)	0.406 (0.324-0.520)	0.486 (0.384-0.626)	0.589 (0.444-0.777)	0.663 (0.490-0.892)	0.733 (0.522-1.01)	0.800 (0.544-1.14)	0.880 (0.576-1.30)	0.936 (0.599-1.42)
3-hr	0.188 (0.152-0.238)	0.228 (0.183-0.288)	0.290 (0.232-0.368)	0.339 (0.270-0.433)	0.405 (0.308-0.530)	0.452 (0.337-0.604)	0.498 (0.358-0.685)	0.542 (0.373-0.770)	0.598 (0.394-0.876)	0.637 (0.410-0.957)
6-hr	0.123 (0.101-0.154)	0.140 (0.114-0.175)	0.169 (0.137-0.211)	0.192 (0.155-0.242)	0.225 (0.175-0.294)	0.251 (0.191-0.333)	0.278 (0.203-0.379)	0.305 (0.213-0.429)	0.341 (0.228-0.495)	0.369 (0.240-0.546)
12-hr	0.076 (0.063-0.094)	0.087 (0.072-0.107)	0.105 (0.086-0.129)	0.120 (0.098-0.149)	0.142 (0.112-0.183)	0.159 (0.122-0.208)	0.177 (0.131-0.238)	0.195 (0.138-0.271)	0.221 (0.149-0.316)	0.240 (0.158-0.350)
24-hr	0.046 (0.039-0.056)	0.053 (0.045-0.065)	0.065 (0.054-0.079)	0.075 (0.062-0.092)	0.090 (0.071-0.114)	0.101 (0.079-0.130)	0.113 (0.084-0.150)	0.125 (0.090-0.172)	0.142 (0.097-0.201)	0.156 (0.103-0.224)
2-day	0.028 (0.024-0.033)	0.032 (0.027-0.038)	0.039 (0.033-0.046)	0.045 (0.037-0.054)	0.053 (0.043-0.067)	0.060 (0.047-0.077)	0.067 (0.051-0.088)	0.075 (0.054-0.101)	0.086 (0.059-0.119)	0.094 (0.063-0.133)
3-day	0.021 (0.018-0.025)	0.024 (0.020-0.028)	0.029 (0.025-0.034)	0.033 (0.028-0.040)	0.040 (0.032-0.049)	0.045 (0.036-0.056)	0.050 (0.038-0.065)	0.056 (0.040-0.074)	0.063 (0.044-0.087)	0.069 (0.047-0.097)
4-day	0.017 (0.015-0.020)	0.020 (0.017-0.023)	0.024 (0.020-0.028)	0.027 (0.023-0.032)	0.032 (0.026-0.040)	0.036 (0.029-0.045)	0.040 (0.031-0.052)	0.045 (0.033-0.059)	0.050 (0.035-0.069)	0.055 (0.037-0.076)
7-day	0.012 (0.010-0.014)	0.013 (0.012-0.015)	0.016 (0.014-0.018)	0.018 (0.015-0.021)	0.021 (0.017-0.025)	0.023 (0.019-0.029)	0.026 (0.020-0.033)	0.028 (0.021-0.037)	0.032 (0.022-0.043)	0.034 (0.024-0.047)
10-day	0.010 (0.008-0.011)	0.011 (0.009-0.012)	0.012 (0.011-0.014)	0.014 (0.012-0.016)	0.016 (0.013-0.019)	0.018 (0.015-0.022)	0.020 (0.015-0.025)	0.022 (0.016-0.028)	0.024 (0.017-0.032)	0.026 (0.018-0.035)
20-day	0.007 (0.006-0.007)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.009 (0.008-0.011)	0.011 (0.009-0.013)	0.012 (0.010-0.014)	0.013 (0.010-0.016)	0.014 (0.010-0.017)	0.015 (0.011-0.020)	0.016 (0.011-0.022)
30-day	0.005 (0.005-0.006)	0.006 (0.005-0.007)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.009 (0.007-0.010)	0.009 (0.008-0.011)	0.010 (0.008-0.012)	0.011 (0.008-0.014)	0.012 (0.009-0.016)	0.013 (0.009-0.017)
45-day	0.004 (0.004-0.005)	0.005 (0.004-0.005)	0.006 (0.005-0.006)	0.006 (0.006-0.007)	0.007 (0.006-0.008)	0.008 (0.006-0.009)	0.008 (0.007-0.010)	0.009 (0.007-0.011)	0.010 (0.007-0.012)	0.010 (0.007-0.013)
60-day	0.004 (0.003-0.004)	0.004 (0.004-0.005)	0.005 (0.004-0.006)	0.006 (0.005-0.006)	0.006 (0.005-0.007)	0.007 (0.006-0.008)	0.007 (0.006-0.009)	0.008 (0.006-0.010)	0.008 (0.006-0.011)	0.009 (0.006-0.011)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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PF graphical



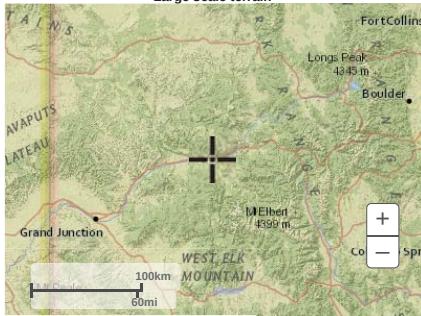
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Maps & aerals

Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



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April 7, 2023

Habitat for Humanity
Attn: Matthew Shmigelsky
P.O. Box 2
Glenwood Springs, Colorado 81602
matthews@habitatroaringfork.org

Project No. 22-7-761

Subject: Geohazards Report, Proposed Housing Project, West 8th Street and Midland Avenue, Glenwood Springs, Colorado

Gentlemen:

As requested, a representative of Kumar & Associates, Inc. observed the geologic conditions at the subject site on April 7, 2023 to evaluate potential geologic hazard impacts to the proposed development. The findings of our observations and recommendations for mitigation of the hazards as needed are presented in this report. We previously conducted a subsoil study for design of foundations at the site and presented our findings in a report dated February 8, 2023, Project No. 22-7-761.

The geology at the subject site consists of terrace alluvium of the Roaring Fork River that has been overlain by younger debris flow deposits. The steep slope to the west of and across Midland Avenue from the lot consists of shallow bedrock of the Pennsylvanian-age Eagle Valley Evaporite. The bedding dip of the Eagle Valley Evaporite in the project vicinity is about 30 degrees down to the southwest (partly into the hillside). The Eagle Valley Evaporite consists of gypsum, halite, and anhydrite that is interbedded with claystones, sandstones, and shales (Kirkham, and Others, 2009).

According to Colorado Geological Survey Open-File Report 78-10 prepared by Lincoln-Devore (1978), the subject site is in a moderate hazard debris flow area, a hydrocompressive soil area, and a potentially corrosive soil area. The potential debris flow hazard is due to the drainages that outlet to the west of the subject site. The potential hydrocompressive soil hazard is due to the typical type/structure of soil in the debris fan deposit that underlies the subject site. The potentially corrosive soils are due to the typical type of soil in the area derived from the Eagle Valley Evaporite.

The medium sized drainage to the west of the subject site has the potential to produce debris flow. Without long term observation or detailed fan specific stratigraphic studies it is not possible to evaluate the statistical recurrence probability of major debris flows at the project site with a high level of confidence. The main active channel of the debris fan is in the southern part

of the fan and angles toward the southeast, away from the subject site. Significant grading and development have taken place on the fan consisting of roadway, pedestrian trail and, single-family residential construction. The existing 8th Street appears that it will convey the majority of any significant flows from the debris basin in the event it overflows the current drainage channel. The proposed site elevation of the development is about 4 feet higher than the existing 8th Street grade on the west side. In our opinion, with proper surface drainage and grading, the risk of major damage to the proposed development due to debris flow is low. The deposition of mud and/or minor debris requiring clean up is possible and should be expected at this site. The grading should be designed to have positive drainage away from the proposed development. We have reviewed the proposed grading plan for the project provided by Matthew Shmigelsky of Habitat Roaring Fork dated March 2023. In our opinion, the proposed grading plan has positive drainage away from the proposed development and will not increase the debris flow hazard to other properties including the adjacent public and private properties.

The collapse potential of the subsoils was evaluated by the subsoil study for foundation design. Based on the physical properties of the samples tested, the soils have a low to moderate hydrocompression potential. Provided recommendations presented in our previous subsoil study for foundation design are followed, the hydrocompressive soil hazard in regard to the proposed development at the site should be mitigated to levels normally acceptable for the proposed type of project.

The silty soils at and in the vicinity of the subject site that are expected to be encountered at proposed foundation and utility excavation depths typically exhibit a low corrosion potential and should not present constraints that would make the proposed development infeasible. Concrete containing Type I/II cement and fly-ash should be used at this site and should be adequate to resist sulfate attack.

This study was conducted according to generally accepted engineering geology principles and practices in this area at this time. We make no warranty either express or implied. The conclusions and recommendations submitted in this report are based on our field observations, aerial photograph interpretations, published regional geology information, the current proposed development plan, and our experience in the area. This report has been prepared exclusively for our client and is an evaluation of the geologic constraints and their potential influence on the proposed development. We are not responsible for technical interpretations by others of our information.

If you have any questions or need further assistance, please call our office.

Sincerely,

Kumar & Associates, Inc.



Robert L. Duran, P. E.

Rev. by: SLP

RLD/kac

REFERENCES

Lincoln-Devore Engineers and Geologists, 1978, *Geologic Hazards of the Glenwood Springs Metropolitan Area – Garfield County, Colorado*: Colorado Geological Survey, Open File Report 78-10.

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.



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and Environmental Scientists

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**SUBSOIL STUDY
FOR FOUNDATION DESIGN
PROPOSED HOUSING PROJECT
WEST 7TH STREET AND MIDLAND AVENUE
GLENWOOD SPRINGS, COLORADO**

PROJECT NO. 22-7-761

FEBRUARY 8, 2023

PREPARED FOR:

**HABITAT FOR HUMANITY
ATTN: MATTHEW SHMIGELSKY
P.O. BOX 2
GLENWOOD SPRINGS, COLORADO 81602
matthews@habitatroaringfork.org**

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PURPOSE AND SCOPE OF STUDY

This report presents the results of a subsoil study for a proposed housing project to be located on the north side of West 8th (formerly West 7th) Street, east of Midland Avenue in Glenwood Springs, Colorado. The project site is shown on Figure 1. The purpose of the study was to develop recommendations for the foundation design. The study was conducted in accordance with our proposal for geotechnical engineering services to Habitat for Humanity dated December 1, 2022.

A field exploration program consisting of exploratory borings was conducted to obtain information on the subsurface conditions. Samples of the subsoils obtained during the field exploration were tested in the laboratory to determine their classification and other engineering characteristics. The results of the field exploration and laboratory testing were analyzed to develop recommendations for foundation types, depths and allowable pressures for the proposed building foundation. This report summarizes the data obtained during this study and presents our conclusions, design recommendations and other geotechnical engineering considerations based on the proposed construction and the subsurface conditions encountered.

PROPOSED CONSTRUCTION

The proposed housing project has not been designed but could be 2 to 3 story apartment buildings or townhomes over crawlspace or slab-on-grade ground floor. Grading for the structures is assumed to be relatively minor with cut depths between about 3 to 5 feet. We assume relatively light foundation loadings, typical of the proposed type of construction.

When building location, grading and loading information have been developed, we should be notified to re-evaluate the recommendations presented in this report.

SITE CONDITIONS

The site was vacant of structures and covered with about 1 foot of snow at the time of our field work. There is a low MSE retaining wall on the west side of the site. The lot slopes moderately down to the east at about 5 to 10 percent grade. Vegetation at the site consists of grass and weeds with small trees and brush in the middle northern part of the lot.

DEBRIS FLOW

The lot is located just north of a mapped debris flow which occurred in 1977 and flowed down the east-facing hillside across Red Mountain Drive and Midland Avenue and along the south side of 7th Street (now 8th Street) and down to the Roaring Fork River. It is likely that the debris flow was a “mud flood” by the time it neared the subject property.

FIELD EXPLORATION

The field exploration for the project was conducted on January 4, 2023. Three exploratory borings were drilled at the locations shown on Figure 1 to evaluate the subsurface conditions. The borings were advanced with 4 inch diameter continuous flight augers powered by a truck-mounted CME-45B drill rig. The borings were logged by a representative of Kumar & Associates, Inc.

Samples of the subsoils were taken with 1⅜ inch and 2-inch I.D. spoon samplers. The samplers were driven into the subsoils at various depths with blows from a 140 pound hammer falling 30 inches. This test is similar to the standard penetration test described by ASTM Method D-1586. The penetration resistance values are an indication of the relative density or consistency of the subsoils. Depths at which the samples were taken and the penetration resistance values are shown on the Logs of Exploratory Borings, Figure 2. The samples were returned to our laboratory for review by the project engineer and testing.

SUBSURFACE CONDITIONS

Graphic logs of the subsurface conditions encountered at the site are shown on Figure 2. The subsoils consist of about ½ foot of topsoil overlying 1½ to 3½ feet of stiff, sandy silty clay in Borings 1 and 3. Burned debris mixed with clay was encountered down to 4 feet deep in Boring 2. Below the clay and fill, medium dense silty to very silty sand and gravel was encountered in all three borings down to the drilled depth of about 20 feet. Boring 3, encountered refusal to drill augers at about 11 feet deep. We expect that some cobbles and boulders will be encountered in deeper excavations at this site.

Laboratory testing performed on samples obtained from the borings included natural moisture content and density and gradation analyses. Results of gradation analyses performed on small diameter drive samples (minus 1½-inch fraction) of the coarse granular subsoils are shown on Figures 4 and 5. The laboratory testing is summarized in Table 1.

No free water was encountered in the borings at the time of drilling and the subsoils were slightly moist to moist.

FOUNDATION BEARING CONDITIONS

New structures built on this site should be placed on spread footing foundations bearing on the relatively dense sand and gravel soils encountered at depths of 2 to 4 feet in the exploratory borings.

DESIGN RECOMMENDATIONS

FOUNDATIONS

Considering the subsurface conditions encountered in the exploratory borings and the nature of the anticipated construction, we recommend new structures be founded with spread footings bearing on the natural granular soils.

The design and construction criteria presented below should be observed for a spread footing foundation system.

- 1) Footings placed on the undisturbed natural granular soils should be designed for an allowable bearing pressure of 2,000 psf. Based on experience, we expect initial settlement of footings designed and constructed as discussed in this section will be about 1 inch or less with around 1 inch if the bearing soils are wetted.
- 2) The footings should have a minimum width of 16 inches for continuous walls and 2 feet for isolated pads.
- 3) Exterior footings and footings beneath unheated areas should be provided with adequate soil cover above their bearing elevation for frost protection. Placement of foundations at least 36 inches below exterior grade is typically used in this area.
- 4) Continuous foundation walls should be heavily reinforced top and bottom to span local anomalies such as by assuming an unsupported length of at least 12 feet. Foundation walls acting as retaining structures should also be designed to resist lateral earth pressures as discussed in the "Foundation and Retaining Walls" section of this report.
- 5) All existing fill, topsoil, clay soil and any loose or disturbed soils should be removed and the footing bearing level extended down to the relatively dense natural granular soils. The exposed soils in footing area should then be moistened and compacted.
- 6) A representative of the geotechnical engineer should observe all footing excavations prior to concrete placement to evaluate bearing conditions.

FOUNDATION AND RETAINING WALLS

Foundation walls and retaining structures which are laterally supported and can be expected to undergo only a slight amount of deflection should be designed for a lateral earth pressure computed on the basis of an equivalent fluid unit weight of at least 45 pcf for backfill consisting of the on-site granular soils or similar imported granular materials. Cantilevered retaining structures which are separate from the buildings and can be expected to deflect sufficiently to mobilize the full active earth pressure condition should be designed for a lateral earth pressure

computed on the basis of an equivalent fluid unit weight of at least 35 pcf for backfill consisting of the on-site granular soils or similar imported granular materials.

All foundation and retaining structures should be designed for appropriate hydrostatic and surcharge pressures such as adjacent footings, traffic, construction materials and equipment. The pressures recommended above assume drained conditions behind the walls and a horizontal backfill surface. The buildup of water behind a wall or an upward sloping backfill surface will increase the lateral pressure imposed on a foundation wall or retaining structure. An underdrain should be provided to prevent hydrostatic pressure buildup behind walls.

Backfill should be placed in uniform lifts and compacted to at least 90% of the maximum standard Proctor density at a moisture content near optimum. Backfill in pavement and walkway areas should be compacted to at least 95% of the maximum standard Proctor density. Care should be taken not to overcompact the backfill or use large equipment near the wall, since this could cause excessive lateral pressure on the wall. Some settlement of deep foundation wall backfill should be expected, even if the material is placed correctly, and could result in distress to facilities constructed on the backfill. Backfill should not contain organics, debris or rock larger than about 6 inches.

The lateral resistance of foundation or retaining wall footings will be a combination of the sliding resistance of the footing on the foundation materials and passive earth pressure against the side of the footing. Resistance to sliding at the bottoms of the footings can be calculated based on a coefficient of friction of 0.45. Passive pressure of compacted backfill against the sides of the footings can be calculated using an equivalent fluid unit weight of 325 pcf. The coefficient of friction and passive pressure values recommended above assume ultimate soil strength. Suitable factors of safety should be included in the design to limit the strain which will occur at the ultimate strength, particularly in the case of passive resistance. Fill placed against the sides of the footings to resist lateral loads should be compacted to at least 95% of the maximum standard Proctor density at a moisture content near optimum.

FLOOR SLABS

The natural on-site soils, exclusive of topsoil, are suitable to support lightly loaded slab-on-grade construction. To reduce the effects of some differential movement, floor slabs should be separated from all bearing walls and columns with expansion joints which allow unrestrained vertical movement. Floor slab control joints should be used to reduce damage due to shrinkage cracking. The requirements for joint spacing and slab reinforcement should be established by the designer based on experience and the intended slab use. A minimum 4 inch layer of free-draining gravel should be placed beneath basement level slabs to facilitate drainage. This

material should consist of minus 2-inch aggregate with at least 50% retained on the No. 4 sieve and less than 2% passing the No. 200 sieve.

All fill materials for support of floor slabs should be compacted to at least 95% of maximum standard Proctor density at a moisture content near optimum. Required fill can consist of the on-site granular soils devoid of vegetation, topsoil and oversized rock.

UNDERDRAIN SYSTEM

Although free water was not encountered during our exploration, it has been our experience in the area that local perched groundwater can develop during times of heavy precipitation or seasonal runoff. Frozen ground during spring runoff can create a perched condition. We recommend below-grade construction, such as retaining walls and basement areas, be protected from wetting and hydrostatic pressure buildup by an underdrain system. Shallow crawlspace (less than 4 feet deep) should not need to be protected by an underdrain.

The drains should consist of drainpipe placed in the bottom of the wall backfill surrounded above the invert level with free-draining granular material. The drain should be placed at each level of excavation and at least 1 foot below lowest adjacent finish grade and sloped at a minimum 1% to a suitable gravity outlet. Free-draining granular material used in the underdrain system should contain less than 2% passing the No. 200 sieve, less than 50% passing the No. 4 sieve and have a maximum size of 2 inches. The drain gravel backfill should be at least 1½ feet deep. An impervious membrane such as 20 mil PVC should be placed beneath the drain gravel in a trough shape and attached to the foundation wall with mastic to prevent wetting of the bearing soils.

SURFACE DRAINAGE

The following drainage precautions should be observed during construction and maintained at all times after the buildings have been completed:

- 1) Inundation of the foundation excavations and underslab areas should be avoided during construction.
- 2) Exterior backfill should be adjusted to near optimum moisture and compacted to at least 95% of the maximum standard Proctor density in pavement and slab areas and to at least 90% of the maximum standard Proctor density in landscape areas.
- 3) The ground surface surrounding the exterior of the building should be sloped to drain away from the foundation in all directions. We recommend a minimum slope of 6 inches in the first 10 feet in unpaved areas and a minimum slope of 2½ inches in the first 10 feet in paved areas. Free-draining wall backfill should be covered with filter fabric and capped with about 2 feet of the on-site soils to reduce surface water infiltration.

- 4) Roof downspouts and drains should discharge well beyond the limits of all backfill to at least 5 feet beyond the building foundation.

LIMITATIONS

This study has been conducted in accordance with generally accepted geotechnical engineering principles and practices in this area at this time. We make no warranty either express or implied. The conclusions and recommendations submitted in this report are based upon the data obtained from the exploratory borings drilled at the locations indicated on Figure 1, the proposed type of construction and our experience in the area. Our services do not include determining the presence, prevention or possibility of mold or other biological contaminants (MOBC) developing in the future. If the client is concerned about MOBC, then a professional in this special field of practice should be consulted. Our findings include interpolation and extrapolation of the subsurface conditions identified at the exploratory borings and variations in the subsurface conditions may not become evident until excavation is performed. If conditions encountered during construction appear different from those described in this report, we should be notified so that re-evaluation of the recommendations may be made.

This report has been prepared for the exclusive use by our client for design purposes. We are not responsible for technical interpretations by others of our information. As the project evolves, we should provide continued consultation and field services during construction to review and monitor the implementation of our recommendations, and to verify that the recommendations have been appropriately interpreted. Significant design changes may require additional analysis or modifications to the recommendations presented herein. We recommend on-site observation of excavations and foundation bearing strata and testing of structural fill by a representative of the geotechnical engineer.

Respectfully Submitted,

Kumar & Associates, Inc


Daniel E. Hardin, P.E.

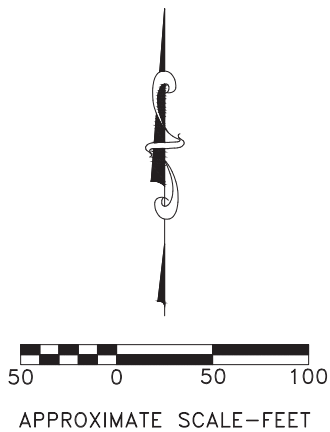
Reviewed by:

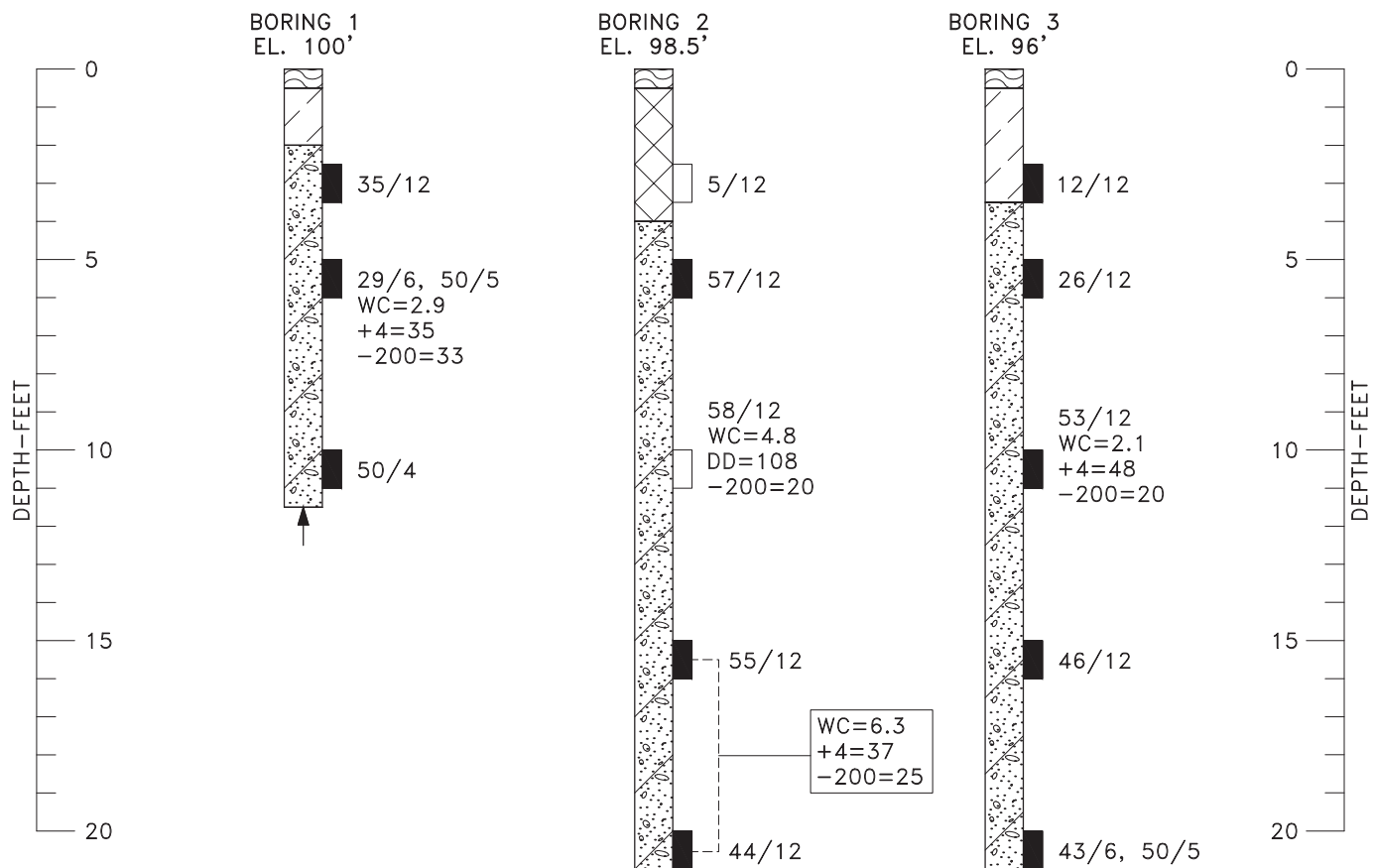


Steven L. Pawlak, P.E.

DEH/kac







LEGEND



TOPOSIL; ORGANIC SANDY SILT AND CLAY, FIRM, MOIST, DARK BROWN.



FILL: BURNT DEBRIS WITH SANDY CLAY, LOOSE, SLIGHTLY MOIST, BLACK AND BROWN.



CLAY (CL); SILTY, SANDY, STIFF, MOIST, BROWN.



SAND AND GRAVEL (SM-GM), SILTY TO VERY SILTY, MEDIUM DENSE, SLIGHTLY MOIST, BROWN.



DRIVE SAMPLE, 2-INCH I.D. CALIFORNIA LINER SAMPLE.

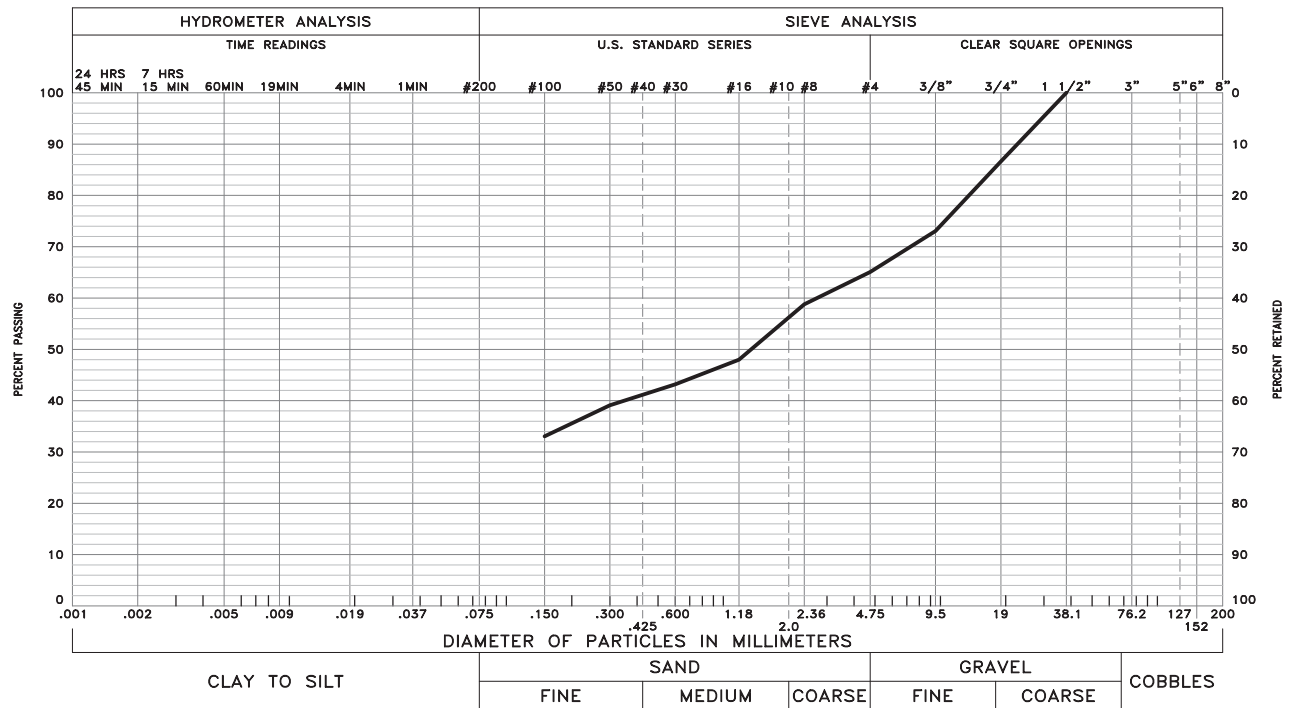


DRIVE SAMPLE, 1 3/8-INCH I.D. SPLIT SPOON STANDARD PENETRATION TEST.

35/12 DRIVE SAMPLE BLOW COUNT. INDICATES THAT 35 BLOWS OF A 140-POUND HAMMER FALLING 30 INCHES WERE REQUIRED TO DRIVE THE SAMPLER 12 INCHES.

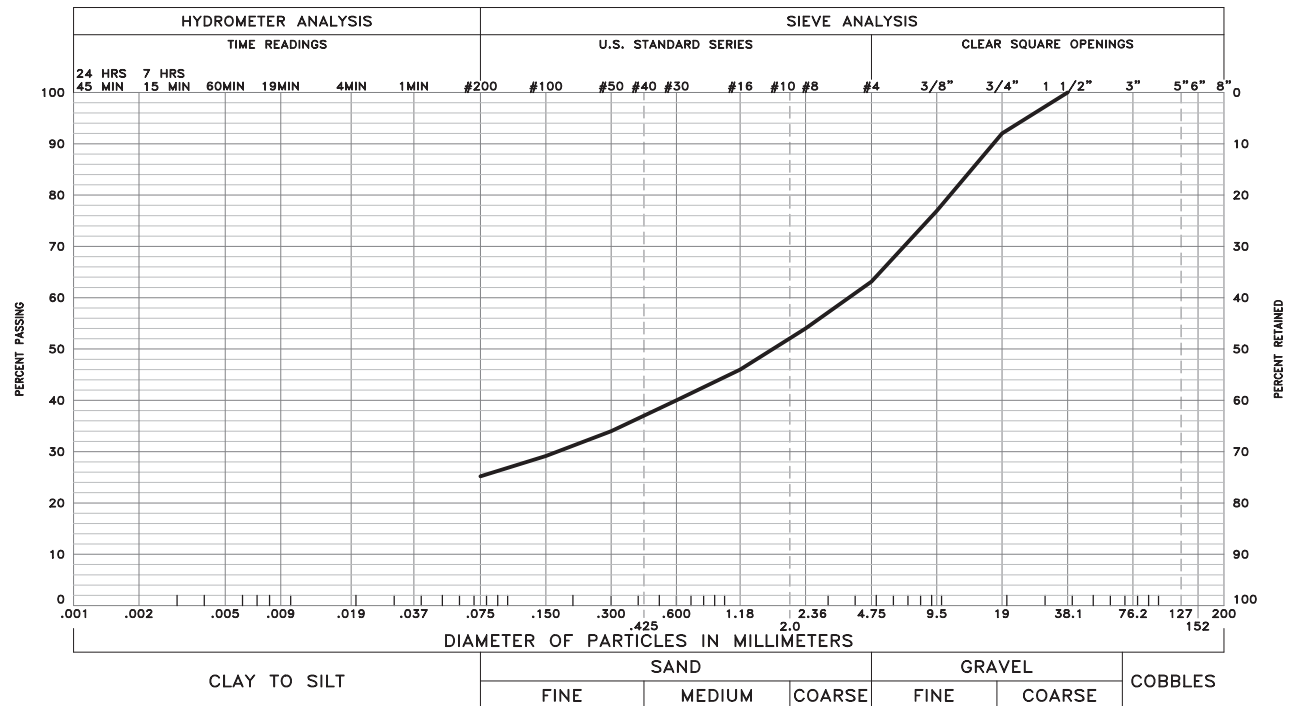
NOTES

1. THE EXPLORATORY BORINGS WERE DRILLED ON JANUARY 4, 2023 WITH A 4-INCH-DIAMETER CONTINUOUS-FLIGHT POWER AUGER.
2. THE LOCATIONS OF THE EXPLORATORY BORINGS WERE MEASURED APPROXIMATELY BY PACING FROM FEATURES SHOWN ON THE SITE PLAN PROVIDED.
3. THE ELEVATIONS OF THE EXPLORATORY BORINGS WERE MEASURED BY HAND LEVEL AND REFER TO BORING 1 AS 100' ASSUMED.
4. THE EXPLORATORY BORING LOCATIONS AND ELEVATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.
5. THE LINES BETWEEN MATERIALS SHOWN ON THE EXPLORATORY BORING LOGS REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN MATERIAL TYPES AND THE TRANSITIONS MAY BE GRADUAL.
6. GROUNDWATER WAS NOT ENCOUNTERED IN THE BORINGS AT THE TIME OF DRILLING.
7. LABORATORY TEST RESULTS:
 WC = WATER CONTENT (%) (ASTM D2216);
 DD = DRY DENSITY (pcf) (ASTM D2216);
 +4 = PERCENTAGE RETAINED ON NO. 4 SIEVE (ASTM D6913);
 -200 = PERCENTAGE PASSING NO. 200 SIEVE (ASTM D1140).



LIQUID LIMIT - PLASTICITY INDEX -

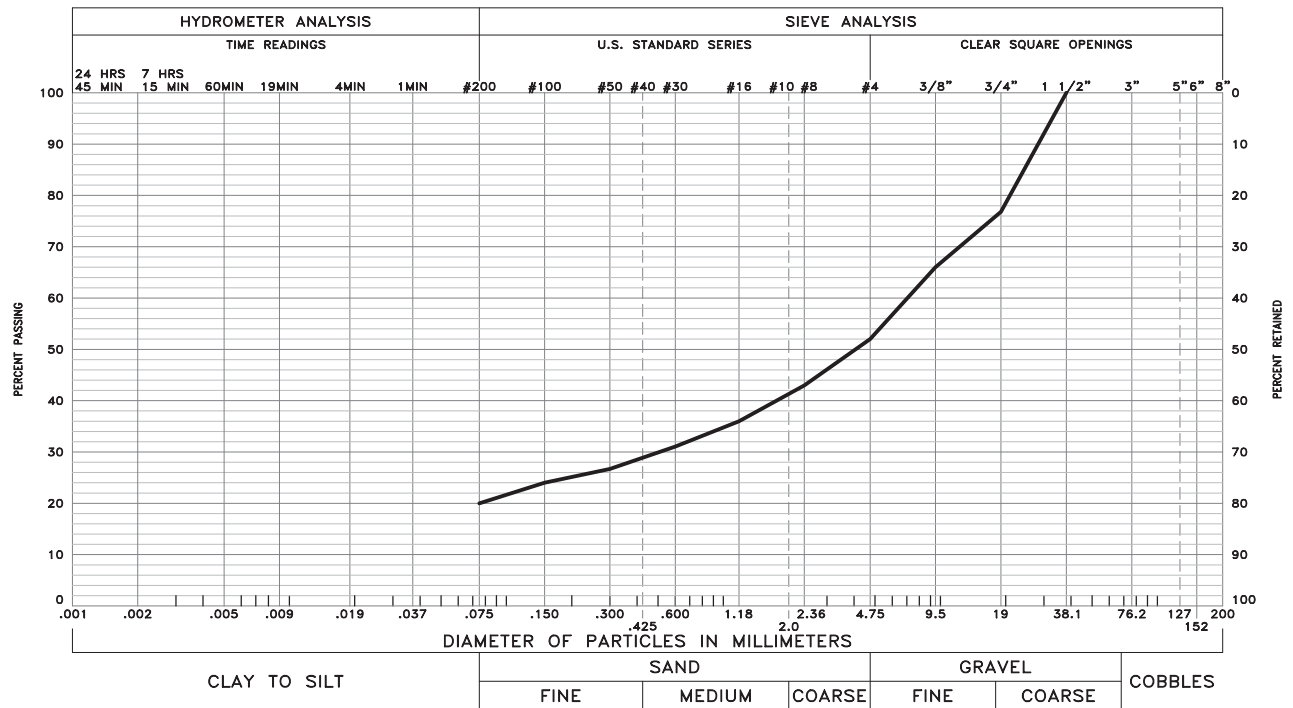
SAMPLE OF: Silty Sand and Gravel FROM: Boring 1 @ 5'



LIQUID LIMIT - PLASTICITY INDEX -

SAMPLE OF: Silty Sand and Gravel FROM: Boring 2 @ 15' and 20' Combined

These test results apply only to the samples which were tested. The testing report shall not be reproduced, except in full, without the written approval of Kumar & Associates, Inc. Sieve analysis testing is performed in accordance with ASTM D6913, ASTM D7928, ASTM C136 and/or ASTM D1140.



LIQUID LIMIT - PLASTICITY INDEX -

SAMPLE OF: Silty Sandy Gravel FROM: Boring 3 @ 10'

These test results apply only to the samples which were tested. The testing report shall not be reproduced, except in full, without the written approval of Kumar & Associates, Inc. Sieve analysis testing is performed in accordance with ASTM D6913, ASTM D7928, ASTM C136 and/or ASTM D1140.



TABLE 1

Project No. 22-7-761

[illegible]



An Employee Owned Company

Office Locations: Denver (HQ), Parker, Colorado Springs, Fort Collins, Glenwood Springs, and Summit County, Colorado

April 7, 2023

Habitat for Humanity
Attn: Matthew Shmigelsky
P.O. Box 2
Glenwood Springs, Colorado 81602
matthews@habitatroaringfork.org

Project No. 22-7-761

Subject: Geohazards Report, Proposed Housing Project, West 8th Street and Midland Avenue, Glenwood Springs, Colorado

Gentlemen:

As requested, a representative of Kumar & Associates, Inc. observed the geologic conditions at the subject site on April 7, 2023 to evaluate potential geologic hazard impacts to the proposed development. The findings of our observations and recommendations for mitigation of the hazards as needed are presented in this report. We previously conducted a subsoil study for design of foundations at the site and presented our findings in a report dated February 8, 2023, Project No. 22-7-761.

The geology at the subject site consists of terrace alluvium of the Roaring Fork River that has been overlain by younger debris flow deposits. The steep slope to the west of and across Midland Avenue from the lot consists of shallow bedrock of the Pennsylvanian-age Eagle Valley Evaporite. The bedding dip of the Eagle Valley Evaporite in the project vicinity is about 30 degrees down to the southwest (partly into the hillside). The Eagle Valley Evaporite consists of gypsum, halite, and anhydrite that is interbedded with claystones, sandstones, and shales (Kirkham, and Others, 2009).

According to Colorado Geological Survey Open-File Report 78-10 prepared by Lincoln-Devore (1978), the subject site is in a moderate hazard debris flow area, a hydrocompressive soil area, and a potentially corrosive soil area. The potential debris flow hazard is due to the drainages that outlet to the west of the subject site. The potential hydrocompressive soil hazard is due to the typical type/structure of soil in the debris fan deposit that underlies the subject site. The potentially corrosive soils are due to the typical type of soil in the area derived from the Eagle Valley Evaporite.

The medium sized drainage to the west of the subject site has the potential to produce debris flow. Without long term observation or detailed fan specific stratigraphic studies it is not possible to evaluate the statistical recurrence probability of major debris flows at the project site with a high level of confidence. The main active channel of the debris fan is in the southern part

of the fan and angles toward the southeast, away from the subject site. Significant grading and development have taken place on the fan consisting of roadway, pedestrian trail and, single-family residential construction. The existing 8th Street appears that it will convey the majority of any significant flows from the debris basin in the event it overflows the current drainage channel. The proposed site elevation of the development is about 4 feet higher than the existing 8th Street grade on the west side. In our opinion, with proper surface drainage and grading, the risk of major damage to the proposed development due to debris flow is low. The deposition of mud and/or minor debris requiring clean up is possible and should be expected at this site. The grading should be designed to have positive drainage away from the proposed development. We have reviewed the proposed grading plan for the project provided by Matthew Shmigelsky of Habitat Roaring Fork dated March 2023. In our opinion, the proposed grading plan has positive drainage away from the proposed development and will not increase the debris flow hazard to other properties including the adjacent public and private properties.

The collapse potential of the subsoils was evaluated by the subsoil study for foundation design. Based on the physical properties of the samples tested, the soils have a low to moderate hydrocompression potential. Provided recommendations presented in our previous subsoil study for foundation design are followed, the hydrocompressive soil hazard in regard to the proposed development at the site should be mitigated to levels normally acceptable for the proposed type of project.

The silty soils at and in the vicinity of the subject site that are expected to be encountered at proposed foundation and utility excavation depths typically exhibit a low corrosion potential and should not present constraints that would make the proposed development infeasible. Concrete containing Type I/II cement and fly-ash should be used at this site and should be adequate to resist sulfate attack.

This study was conducted according to generally accepted engineering geology principles and practices in this area at this time. We make no warranty either express or implied. The conclusions and recommendations submitted in this report are based on our field observations, aerial photograph interpretations, published regional geology information, the current proposed development plan, and our experience in the area. This report has been prepared exclusively for our client and is an evaluation of the geologic constraints and their potential influence on the proposed development. We are not responsible for technical interpretations by others of our information.

If you have any questions or need further assistance, please call our office.

Sincerely,

Kumar & Associates, Inc.



Robert L. Duran, P. E.

Rev. by: SLP

RLD/kac

REFERENCES

Lincoln-Devore Engineers and Geologists, 1978, *Geologic Hazards of the Glenwood Springs Metropolitan Area – Garfield County, Colorado*: Colorado Geological Survey, Open File Report 78-10.

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.

Engineering
Department
Ryan Gordon,
City Engineer

Date: 6/5/2023

To: Community Development

Re: Midland Habitat for Humanity

Please see the following engineering comments for the **Midland Habitat for Humanity Development**. These comments are not inclusive of comments from other departments, including Public Works, Building, etc. It is up to the applicant to verify that the appropriate reviews have been completed by these departments. City of Glenwood Springs Engineering reserves the right to make additional comments throughout the application process, especially if significant modifications are made. It is in the applicant's best interest to address all comments holistically to reduce the number of reviews necessary for approvals.

Engineering will not review a revised submittal until the applicant provides a written response to these comments.

Drainage Report Comments:

1. Drainage Report needs to be stamped and signed by a qualified State of Colorado licensed Professional Engineer.
2. Section C states that the soils are suitable for infiltration. Provide additional information and documentation to validate this statement.

Geotechnical Report Comments:

1. Infiltration and/or stormwater considerations were not addressed. Provide additional information to address stormwater.

General Comments

1. Any work taking place within an adjacent property required an easement (temporary or permanent).
2. Any work taking place within the City of Glenwood Springs Right of Way requires a [Right of Way Permit](#).
 - a. Provide S.U.E. plan per Colorado Law CRS 9-1.5-102 requirements or provide a stamped letter determining why this is not a Subsurface Utility Engineering-Required Project.
3. Any permanent facilities within the City of Glenwood Springs Right of Way requires a **License to Encroach**. See Community Development for further information.
4. Identify potential variance requests and indicate potential of approval or denial.

5. If the disturbance of this project is greater than one (1) acre, a Colorado Department of Health and Environment (CDPHE) [Construction Stormwater Discharges Permit](#). This includes phased projects or common developments, regardless of timeline. CDPHE defines a common development as a development that is contiguous in nature or related developments. This could be a development a part of a PUD or other subdivision and/or a development within a ¼ mile distance with the same owner/developer.
6. Review the requirements for ADA accessibility adjacent to or within the proposed development.
 - a. [Rocky Mountain ADA](#) has been very helpful in providing guidance and review of local project and defining the applicability of the Accessible Design Standards as well as the guidance provided in the Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG).

Drawing Specific Comments

1. Provide an existing conditions map that shows topography, utilities, vegetation, structures and surface elements at the site prior to development. The existing conditions map shall also show all property lines, easements and ROW lines.
2. The shading needs to be modified to clearly differentiate between concrete and asphalt surfaces.
3. Sheet C3: Suggest routing the foundation drain from Building C to the foundation drain dry well.
4. Sheet C3: The overflow from the dry wells is proposed to spill through the scupper and flow across Cowdin Drive. Could you change the curb from a spill curb to a catch curb and route stormwater to 8th Street?
5. Sheet C3: Suggest upsizing the storm drain piping to 8" from 6" between the dry wells and the incoming pipe from the north.

Comments to be addressed prior to Grading Permit Approval:

6. A [Grading Permit](#) shall be submitted along with the following documentation:
 - a. No work for this project will be allowed to commence until **all** work easements (temporary or permanent), on or off site, are in place for the development of property.
 - b. Final Stamped Reports (Geotechnical, Drainage, Traffic Geologic Hazards, etc).
 - c. Final Stamped Construction Documents.
 - d. The Stormwater Management Plan, along with any applicable approved state permits, including a [Construction Stormwater Discharges Permit](#) or [Dewatering Permit](#).
 - e. Approved Letter of Map Revision or No-Rise Certification shall be completed by a qualified State of Colorado licensed Professional Engineer.
7. Any additional permitting necessary for the project should be submitted, including Building and/or Right of Way Permits.

Comments to be addressed prior to Certificate of Occupancy:

8. The city will require a **maintenance plan and agreement** with the development for the detention and debris system/s. If the system/s are not being maintained properly and having a negative effect on downstream facilities, the City will need access to perform the maintenance and back charge the facility owner. See Community Development for further information.
9. All drainage, retaining walls, and/or other site improvements require a **stamped/signed certification letter** from the engineer of record that verifies that all improvements were constructed per plan.
 - a. If not constructed per plan, an explanation for the changes and any calculations/certifications should be submitted to verify that it meets the plan requirements.
10. **Record drawings (As-Built)/Improvement Survey Plat (ISP)** will be required to be submitted to the city along with electronic drawings (CAD) as described in the Engineering Standards.
 - a. Critical improvements should be identified including, but not limited to:
 - i. Utility improvements, identify:
 1. Structures
 2. Pipes
 3. Inverts
 4. Service locations
 5. Ownership demarcation points
 6. As-built plan and profile for any utility mains (private or public)
 - ii. Stormwater improvements, include
 1. Verified detention capacity and/or verified infiltration rates
 - iii. Retaining walls, identify:
 1. Locations
 2. Height, i.e. top of wall (TOW) and bottom of wall (BOW)
 - b. Any approved **Licenses to Encroach** may require amending if the as-built conditions vary from the approved licensing locations.
 - c. **Utility Easements** shall be recorded for any City of Glenwood Springs main lines, hydrants, or transformers not in the City right of way.



**City of Glenwood Springs
Police Department**
101 W. 8th Street
Glenwood Springs, CO 81601

Telephone (970) 384-6500
<https://glenwoodpolice.com>

Joseph H. Deras
CHIEF OF POLICE

May 24, 2023

Mr. Watkins Fulk-Gray, Sr. Planner
C/O City of Glenwood Springs
101 W. 8th Street
Glenwood Springs, CO 81601

RE: Planning item 27-23; Parcel 218509300002

Mr. Fulk-Gray,

Please accept this letter as the police department's response to the proposed project identified above. We have no objections to the project. We do have concerns which we feel need to be considered without variances. Specifically, the required parking spaces are listed at 14. This meets the city's requirement and we do not believe any variances which may add parking throughout the approval process is detrimental to the quality of life and impacts the ability of first responders to provide effective public safety services. I recognize that variances are oftentimes requested to reduce the required spaces. That would be helpful but may create an overflow issue described below.

That general area has sustained scrutiny as the dense parking conditions in the neighborhood severely limit our ability to move necessary vehicles, equipment and apparatus into an optimal workspace in the event of an emergency. In fact, there is an agenda item scheduled before the Council to review/amend the parking regulations and practices as a direct result of the limitations in various neighborhoods throughout our city which were initiated by the prevalent conditions in that neighborhood.

We also believe this project and the limited available parking may create a situation where residents and their guests choose to park in the Veltus Park overflow lot located on the southeast corner of Eighth St and Midland Ave. That space is not designed to facilitate parking for area residents, but rather for patrons of the city park and adjacent amenities. It is currently posted as no overnight parking permitted. We will consider amending that to include stiff sanctions for vehicles parked in that lot in violation of a limited (timed) basis.

While these observations may be premature and are not reflected in the application materials, these are concerns we wanted to bring to your attention. We are happy to provide clarity or answer questions if needed and thank you for including this document in the review package.

Respectfully,

Joseph H. Deras

Chief of Police

Planning Item: 27-23
Applicant: Habitat for Humanity
Owner: Habitat for Humanity
Location: 8th and Midland Intersection
Parcel: 2185-09-300-002
Date of Comments: 6-8-2023

The following are W/WW, Electric, and Public Works comments based on the application civil set cover sheet dated 4-27-23 from Boundaries Unlimited.

W/WW Department Comments

- All sanitary sewer, sewer laterals, water mains and water services shall have a tracer wire installed.
- The water, sewer and electric details need to follow city standards details at the City of Glenwood Springs Engineering Department website, Engineering Standards.
- All services that are to be used for combined fire sprinkler/domestic water must be designed and constructed to NFPA24 requirements and will be considered private. Design needs to show in detail thrust blocks and calculations, restraints, etc. This must be noted on the plans.
- Are the water services to be run to one main mechanical room in each building and split there, or will they be run to each unit individually? There are no mechanical rooms of any substantial sized called out, nor panel locations. Please add to the next plan review process set.
- What size water services will be utilized?
- Will each unit be individual metered or a single meter for the complex? Meters will be internal to the building in a mechanical room not in a meter pit.
- Please determine what size sewer services will be utilized on the plans.
- Will need to see a detail for the fire riser room that shows fire/domestic services, meter, and backflow installation. Do you plan to combine fire flow and the domestic line into one, this is preferable.
- Does the Fire Department want a hydrant located on the site or is the one located on Cowdin and 8th appropriate for their requirements.
- Please add the existing force main location to the sanitary sewer and water main profile.
- Please add a dimension that shows the sewer line and water line will have 10' of separation onsite.

W/WW Department Contact Information:

- Matthew Langhorst – 970-384-6438 Public Works Director

- Utility Billing – 970-384-6400 (Account setup; Water Meter Purchase)
- Community Development Department – 970-384-6411 (Improvements Fees)

Electric Department Comments

- Owner will be responsible for cost associated with line extensions and or relocations 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.
- 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 will be paid in full prior to any work commencing. 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.
- Please verify that the relocation of the telephone pedestal encroaching into the sidewalk has been coordinated with Lumen.
- Developer to supply a Load Calculation form to the City of Glenwood Springs Electric Department for the building and supply it as part of the submittal packet to Comm Dev.
- The site plan show a significant amount of solar on the site, please clarify what the power load will be for the panels and if the project intends to add battery storage to the site.

Electric Department Contact Information:

- Doug Hazzard – 970-384-6353 (Electric Superintendent)
- CBN – 970-384-4800 (CBN Main Office)
- Utility Billing – 970-384-6400 (Account setup)

PW Department Comments

- Would it be simpler and less maintenance to run Building C foundation drain to the same drywell as Buildings A and B?
- The street cuts and repairs need to be city standard. The large cut and replacement for the sewer system should be to the middle of the asphalt roadway.
- The engineer should add more Cowdin/8th Street valley pan elevation data and curb data to explain why a spill curb is needed in this area. Can the flow not make it to the 8th Street drainage system without flowing across Cowdin?
- It appears that there is a sidewalk scupper planned for a eventual drywells overtopping situation, this scupper will be the responsibility of the property owner to maintain.
- The hatching for the roadway cuts and the existing concrete is the same on the pages, please differentiate them on the plans.

- Is the 6" storm drain on the north side of the property for collecting covered parking down spouts? If so, will the units themselves have an underground collection system to the drywells also? Will these lines be deep or shallow and require heat tape for winter drainage?
- The geotechnical report did not evaluate landscaping and irrigation systems adjacent to the foundations and there appears to be a significant number of plants adjacent to the buildings. Can you have the geotech confirm that they agree with the planting plan as presented.

Public Works Contact Information:

- Matthew Langhorst – 970-384-6438 (PW Director)