

Ouray Planning Commission Special  
Meeting  
Tuesday, May 23, 2023 6:00 PM

San Juan Room | Zoom:  
<https://zoom.us/j/96355554822> Password:  
881162  
320 6th Ave  
Ouray, CO 81427

## **Agenda**

1. ADMINISTRATIVE
  - 1.a. Call to Order
  - 1.b. Roll Call
  - 1.c. Appoint Planning Commission Chair and Vice Chair
  - 1.d. Review of Minutes from the Planning Commission special meeting on March 21, 2023
2. CITIZENS' COMMUNICATION
  - 2.a. Public invited to speak on matters not on the agenda
3. PUBLIC HEARINGS
  - 3.a. PUD Preliminary Plat Application for property legally described as:  
Subd: Ouray Waterview Subdivision Lot 2 Lot Split Lot: 2A S: 25 T: 44 R: 8; and  
Subd: Ouray Waterview Subdivision Lot 2 Lot Split Lot: 2B S: 25 T: 44 R: 8;  
commonly referred to as the "Waterview PUD" at 250 Uncompahgre Street; Parcel  
Numbers 451725113001 and 451725113002
4. ACTION ITEMS
  - 4.a. Consideration of the Waterview PUD Preliminary Plat Application (legal  
description in Public Hearing above)
5. DISCUSSION
  - 5.a. Staff resignation
  - 5.b. Future Discussion Items
6. ADJOURNMENT

## **Ouray Planning Commission Regular Meeting**

Tuesday, March 21, 2023 4:00 PM

Massard Auditorium | Zoom: <https://zoom.us/j/96355554822> Password: 881162, 320 6th Ave, Ouray, CO 81427

### **CALL TO ORDER**

Chairman Jeff Skoloda called the meeting to order at 4:05 pm.

### **ROLL CALL**

Planning Commissioners present for roll call were Chairman Skoloda, Vice Chair J. Gary Dunn, Commissioner Mike Fedel, Commissioner Glenn Boyd and Commissioner Mike Hakola.

Present on behalf of the City of Ouray were Director of Community Development Lily Oswald and Deputy Clerk/Treasurer Beverly Martensen.

### **MINUTES**

Commissioner Fedel moved and Commissioner Boyd seconded the motion to approve the minutes of the January 10th Regular Planning Commission meeting as written. The motion passed on unanimous vote.

### **CITIZENS COMMUNICATION**

None.

### **PUBLIC HEARINGS**

PUD Amended Sketch Plan Application for property legally described as: Subd: Ouray Waterview Subdivision Lot 2 Lot Split Lot: 2A S: 25 T: 44 R: 8; and Subd: Ouray Waterview Subdivision Lot 2 Lot Split Lot: 2B S: 25 T: 44 R: 8; commonly referred to as the "Waterview PUD" at 250 Uncompahgre Street; Parcel Numbers 451725113001 and 451725113002

Director of Community Development Lily Oswald presented the Staff memo for the amended project, stating the general intent of the PUD remains the same consisting of the development of 65-70 affordable, owner-occupied residential units, via single-family homes, duplexes and triplexes on 9.21 acres north of the Biota Building. Oswald described the amendments to the sketch plan, which include changed alignment of internal streets, layout of residential and updated landscape connections.

Applicant David Bruce, on behalf of Ouray Homes LLC, presented the Amended Sketch PUD plan, noting changes to the access road alignment eliminates the need for a retaining wall along

the river. He also noted larger lot sizes and that houses along 550 are now facing the highway instead of garages facing, and noted that Phase 1 will now include three home-based childcare facilities. Bruce indicated that a landscape plan will be provided as part of Preliminary PUD Plan.

At 4:37 pm Chairman Skoloda opened the hearing to public comment.

John Hart, 1701 Oak – Questioned the structures on west edge of lot. Bruce responded that some of these structures are storage buildings and one of them is home-based childcare.

Jenny Hart, 909 Potosi Place – Asked about the sustainability of the childcare units and how they will be maintained and managed. Bruce stated this is currently under research.

Todd Lokey, 305 Queen Street- Spoke in support of the project, noting child drop off, childcare facilities and possible transit hub.

Peter O’Neill, 163 County Rd 12A, Manager of Ice Park – Spoke in favor of the project, citing that housing is the greatest challenge he faces as manager of the Ice Park, trying to attract and retain quality Ice Park team members. Recommends approval of the project.

Dee Williams, 708 Main Street – Asked how many 2-bedroom vs 3-bedroom residences. Bruce answered Phase 1 is currently at eleven 2-bedroom units, six 3-bedroom units, and 3 childcare units.

John Hart, 1701 Oak St – Spoke in favor of project, but expressed concerns about view protection. Would like to see something in terms of a visual barrier on the west side of the development.

At 4:53 pm, Vice Chair moved and Commissioner Fedel seconded the motion to close the hearing to public comment.

#### Planning Commission Discussion

Commissioner Fedel spoke in favor of changes and resulting improvements.

Commissioner Hakola spoke in favor of amendments.

Vice Chair Dunn spoke in favor of amendments, stating that these are strong improvements.

Commissioner Boyd spoke in favor of the amended project.

Chairman Skoloda spoke in favor of changes, likes that residences now face 550 with garages inside development.

Commissioner Fedel moved and Vice Chair Dunn seconded the motion to approve the Amended Waterview PUD Sketch Plan application. The motion passed on unanimous roll call vote.

**ADJOURNMENT**

At 5:10 pm Commissioner Boyd moved and Commissioner Fedel seconded the motion to adjourn. The motion passed on unanimous vote.

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Jeff Skoloda, Chairman

ATTEST:

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Beverly Martensen, Deputy City Clerk

CERTIFICATION

I, Beverly Martensen, do hereby certify that I am the Deputy City Clerk of the City of Ouray, Ouray County, State of Colorado, and that the above minutes are a true and correct summary of the meeting of the Ouray Planning Commission held on Tuesday, March 21, 2023. I further certify that the meeting was duly called and held, and that a quorum was present.

Dated this Tuesday, March 21, 2023.



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Beverly Martensen, Deputy City Clerk

320 6<sup>th</sup> Avenue  
 PO Box 468  
 Ouray, Colorado 81427



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**TO:** Ouray Planning Commission  
**FROM:** Lily Oswald, Community Development Director  
**FOR:** May 23, 2023  
**SUBJECT:** Waterview PUD – Preliminary Plat Application Staff Report

**PROJECT GEOGRAPHY**

**Table 1. Project Geography**

<b>Application Summary</b>	This Preliminary Plat Planned Unit Development (PUD) is for residential development on two (2) vacant lots north of the Biota Building. The general intent of the PUD is to develop 65 affordable, owner-occupied residential units via single-family homes, duplexes, and triplexes with (3) in-unit home childcare opportunities in the first phase. <i>This PUD is proposed in two (2) phases of development to align with the City’s Waste Water Treatment Facility upgrade – both phases are included in the Sketch Plan application. This application is proposed from Rural Homes, LLC, and refers to this project as the “Waterview PUD.”</i>	
<b>Address</b>	250 Uncompahgre Street	
<b>Parcel Number(s)</b>	451725113001 and 451725113002	
<b>Legal Description</b>	Subd: Ouray Waterview Subdivision Lot 2 Lot Split Lot: 2A S: 25 T: 44 R: 8; and Subd: Ouray Waterview Subdivision Lot 2 Lot Split Lot: 2B S: 25 T: 44 R: 8	
<b>Applicant/Owner</b>	Paul Major (on behalf of Ouray Homes LLC)	
<b>Zoning</b>	C-2 – Commercial Industrial (north of Skyrocket)	
<b>Existing Use</b>	Vacant	
<b>Proposed Use</b>	New construction of various dwelling unit types in two phases via PUD	
<b>Site Size</b>	9.21 acres	
<b>Adjacent Land Uses</b>		
North:	R-2; Single-Family Residential (Chautauqua Lane)	
South:	C-2; Industrial (Biota Building)	
East:	C-2; Vacant	
West:	Uncompahgre River	
<b>Located Within National or Local Historic District Boundary</b>	No	
<b>Located Within Commercial Historic Boundary</b>	No	

**Table 2. Zone District Dimensional Requirements (C-2, north of Skyrocket Creek)**

Requirement	Zone District Standards	Proposed/Existing
Minimum Lot Area	7,100 sq.ft.	<b>See Exhibit C of lot sizes by unit type</b> Average proposed lot: 3,833 sq.ft.
Maximum Density	3,550 sq.ft./D.U., 1,183 sq.ft./L.U.	Total lot size: 401,188 sq. ft./3,550 = 113 total dwelling units <b>allowed</b> Proposed: 65 dwelling units (roughly 7 DUs/acre)
Minimum Setbacks		<i>TBD with Building Permit</i>
Maximum Floor Area	15,000 sq.ft.	<i>TBD with Building Permit</i> See Exhibit C for Unit Type by Square Feet for both phases = Avg. floor area: 1,299 sq.ft.
Maximum Site Coverage	40% for residential use 50% for mixed use 60% for commercial use	Will not exceed 40%
Maximum Building Impervious Surface Site Coverage	80% for any use	Will not exceed 80%
Maximum Height	35 ft.	27' 6"
Parking	Two (2) Spaces per Residential Unit	Two (2) Spaces per Single-Family Dwelling Units, Duplex Units, and "end" Triplex Units Three (3) Spaces per Single-Family Dwelling Unit with in-unit childcare One (1) Space per "middle" Triplex Units Twenty-four (24) additional on-street parking spaces provided
PUD Open Space Coverage	20%	23% (See Exhibit F)

**BACKGROUND**

The Applicant received Sketch Plan approval for the property at a Planning Commission meeting on March 21, 2023. The Applicant submitted a Preliminary Plat application for the Planned Unit Development (PUD) per Ouray Municipal Code process. This PUD is for residential development on two (2) vacant lots north of the Biota Building. The general intent of the PUD is to develop 65 affordable, owner-occupied residential units via single-family homes, duplexes, and triplexes with (3) in-unit home childcare opportunities in the Phase 1 (see Exhibits G, I & J). The Preliminary Plat application proposes a new internal road to access the northernmost proposed lots and landscaped connections to the existing River Trail (located in Phase 1 and Phase 2) as well as Open Space tracts dedicated to the City.

*The goals, timeline, design and intent remains the same as the Waterview PUD Sketch Plan application as presented during the January 10, 2023 and March 21, 2023 Planning Commission hearings.*

The Ouray City Council has supported the pursuit of grant funding through HB21-1271 (administered through the Colorado Department of Local Affairs) to fund public infrastructure and to keep this project as affordable as possible. The City was notified of a grant award of \$1,050,000 to help fund infrastructure for this project. This funding must be used by April of 2024.

## Foundation to PUD Variations

The Planned Unit Development (“PUD”) regulations in the Ouray Municipal Code (“OMC”) §7-8 establish the following Statement of Objectives of Development (“PUD Objective”):

*“The intent of this section is to promote the Planned Unit Development Act of 1972 and encourage innovative developments with unique and valued community attributes. PUDs allow for consideration of development proposals that differ from required development improvements identified in the OMC. PUDs offer different options to the applicant when planning and obtaining City approval for their development. PUDs allow flexibility with respect to dimensional requirements and increased densities under certain conditions or circumstances. PUDs encourage conservation of a site’s natural characteristics, innovative residential, commercial and industrial development plans which will result in a more efficient use of open space and provide affordable housing for year around residents.”*

## OMC §7-8-D establishes the following applicable dimensional requirements and densities:

The dimensional requirements for various PUD items may differ from what is required in the OMC if the Planning Commission determines such deviations will promote the public health, safety and welfare.

The proposed variations to the code as a result of this PUD are summarized in Table 3 below:

**Table 3. Requested PUD Variations**

OMC Section	OMC Standard Requirement	Requested PUD Variation
7-5-E-4-d-iii-1	<i>Single Family Dwellings shall be not less than 24 feet in width and 32 feet in length.</i>	Some units proposed: Width: <b>16 feet</b> per specifications of factory partner (compliant with building codes)
7-5-E-4-f-i	<i>Two off-street parking spaces per dwelling unit.</i>	Proposed: <b>2</b> parking spaces per single-family dwelling unit, duplex unit, and end-triplex unit; <b>3</b> parking spaces per in-unit childcare single-family dwelling unit; <b>1</b> parking space per middle-triplex unit; <b>24</b> additional off-street parking spaces in proposed internal road.
7-5-D	<i>Minimum Lot Area - (C-2) north of Skyrocket: 7,100 square feet</i>	(See Exhibit C for proposed lots and sizes) Average proposed lot size: <b>3,833</b> square feet
7-5-D	<i>Minimum Side Setback - (C-2) north of Skyrocket: 5 feet</i>	Duplex and Triplex dwelling units will have proper fire separation to meet state and local building codes; however, these shared party walls will result in <b>0-foot</b> side setbacks in these lots.

## Process to Create a PUD

The Planning Commission is a recommending body for the Preliminary Plat phase of PUD applications. The City Council must make final PUD decision(s) during the consideration of Preliminary and Final Plat phases.

OMC §7-8-E: Procedures, states “PUDs shall be reviewed in accordance with the same procedures for review of subdivisions as found in Subsection 7-7-C” and “preliminary and final PUD plan shall comply with all requirements for a preliminary and final subdivision plat, **to the extent applicable.**”

The procedures for reviewing a PUD include the following Subdivision steps:

1. **Sketch PUD** with Planning Commission review and determination pursuant to the Subdivision Sketch Plan in OMC §7-7-C-2.
2. **Preliminary PUD** with Planning Commission review and recommendation to the City Council for determination pursuant to the Subdivision Preliminary Plat in OMC §7-7-C-3.
3. **Final PUD** with Planning Commission review and recommendation to the City Council for determination pursuant to the Subdivision Final Plat in OMC §7-7-C-4.

## CRITERIA FOR DECISION

1. OMC §7-8-B establishes the following primary PUD criteria for decision:
  - A. A PUD shall be in general conformity with the City Community Plan
  - B. A PUD shall be consistent with the PUD Objective
  - C. Compliance with the Colorado Planned Unit Development Act of 1972
  - D. A PUD shall have a minimum of 1 unit or lot
2. OMC §7-7-D-2 establishes the Requirements and Data on Preliminary Plats.
3. OMC §7-7-E establishes typical Subdivision Design Standards.

## STAFF ANALYSIS: PUD CRITERIA FOR DECISION

### 1. A. General Conformity with the Ouray Community Plan

Staff finds this PUD proposal aligns with numerous goals and strategies of the Ouray Community Plan 2021. The proposed development aims to provide homes for affordable housing AMI levels appropriate to serve the greater Ouray community and to diversify the housing available in Ouray as well as provide attainable housing solutions for year-round local residents and employees. Some applicable goals and strategies from the Community Plan are outlined below.

- Housing Goal H-1-A: “assure attainable housing is permanently affordable utilizing deed restrictions or other available tools” (Ouray Community Plan, pg. 16).
- Housing Goal H-1-B: “consider amending the LUC and the city adopted building regulations to provide robust incentives for the development of attainable housing in the community” (pg. 16).
- Housing Goal H-1-B-vi: “allowing for homes with a high density on one or more lots, including reducing lot sizes, frontages and setbacks to facilitate small home development” (pg. 16).
- Housing Goal H-1-E: “support and encourage attainable rental and for-sale housing throughout the community in a variety of unit types and densities in all the city zoning districts, live-work units, small homes, multi-family developments, dormitory or ‘POD’ style units, and other unit types that provide for attainable housing” (pg. 17).
- Housing Goal H-1-G: “explore public/private partnerships to provide attainable housing” (pg. 17).
- Housing Goal H-1-I: “support, encourage and require new development to provide a variety of bedroom mixes, unit sizes, dwelling types, rental and ownership structures, and attainability limits that are based on an updated community housing needs assessment” (pg. 17).
- Housing Goal H-1-Q: “strive to provide attainable housing for 50% of the local workforce in the city” (pg. 18).
- Housing Goal H-1-R: “evaluate annexations and PUDs to provide attainable housing” (pg. 18).
- Housing Goal H-2: “cooperate and work with the Town of Ridgway, Ouray County, DOLA, the development community, and other entities to plan and develop attainable housing” (pg. 18).
- Housing Goal H-3-D: “promote energy efficient and ‘green building’ techniques to reduce household energy consumption, utility bills, and help maintain long-term affordability in new housing” (pg. 19).
- Housing Goal H-3-F: “strive to provide housing located in close proximity to existing or planned infrastructure, services, intermodal transit connections, sidewalks, trails and employment” (pg. 19).
- Life Long Learning Goal LL-3-A: “support incentives or programs to provide affordable daycare facilities throughout the city, such as land donations, fee and tap waivers, streamlined review processes, zoning allowances, or the formation or expansion of non-profits that provide childcare” (pg. 21).
- Community Health Goal CH-1-C: “promote, develop, improve and maintain city recreational assets for active living, such as hiking at Box Canyon Park, walking the Uncompahgre River Walk Trail, hiking on the Perimeter Trail or swimming, water aerobics and the gym at the Hot Springs Pool” (pg. 26).
- Land Use Goal LU-1-A-iv-b: “consider allowing for the reduced lot size only if a primary dwelling unit or an ADU is provided that is deed restricted to provide housing to employees working within the geographic boundary of Ouray County” (pg. 32).
- Land Use Goal LU-1-A-xv: “encourage attainable housing to be provided in existing RV parks, light industrial, commercial and other properties through LUC and other incentives” (pg. 34).
- Economic Development Goal ED-2-L: “encourage and incentivize the provision of attainable housing; childcare; desired community amenities; connectivity and a high quality of life to drive economic resiliency” (pg. 51).
- Energy Goal RE-6: “encourage and support other alternative energy uses in the city, including solar, wind,

ground source heat pumps and biomass energy production” (pg. 74).

- The Future Land Use Map illustrates this site as **Mixed Land Use** (pg. 40). Mixed Land Use is oriented for “multi-family dwellings with limited commercial uses, to be determined” (pg. 42). Description/Character include:
  - Provide incentives to maximize housing units, such as height increases via PUD, increases in density, scale and mass, and site coverage, and reduced parking.
  - Consider requiring a certain percentage of deed restricted housing units in exchange for incentives to ensure long-term affordability.
  - Allow limited and service commercial uses provided significant housing is provided.
  - Enhance and embrace River Park corridor and overall trail connectivity (pg. 42).

### 1. B. Consistency with the PUD Objective

Key elements of the PUD objective include:

- Encourage innovative developments with unique and valued community attributes.
- Allow for consideration of development proposals that differ from required development improvements identified in the OMC.
- Offer different options to the applicant when planning and obtaining City approval for their development.
- Allow flexibility with respect to dimensional requirements and increased densities under certain conditions or circumstances.

“PUDs encourage conservation of a site’s natural characteristics, innovative residential, commercial and industrial development plans which will result in a more efficient use of open space and provide affordable housing for year-round residents” (OMC §7-8-A). Staff finds the Applicant is seeking to create an innovative use of space as a PUD on the currently vacant lot. The PUD process provides an opportunity for the Applicant to seek flexibility with the dimensional standards in order to provide long-term attainable housing solutions and effective use of space, both of which are primary goals of the community under the adopted Plan.

### 1. C. Compliance with the Colorado PUD Act

The key requirements of the Colorado PUD Act have been incorporated into the PUD section of the OMC. A development improvements agreement will be drafted by the Applicant and executed by the City as part of the Building Permit process and prior to the Final Plat phase of the PUD to ensure infrastructure installation, maintenance, building standards, engineering standards, etc. are met and coordinated throughout the development process. This document will additionally ensure the infrastructure development remains compliant with the Colorado PUD Act.

### 1. D. Minimum Density

The minimum density of one unit or lot has been met.

### **STAFF ANALYSIS: REQUIRED DATA ON PRELIMINARY PLATS (OMC §7-7-D-2)**

The data and information outlined in §7-7-D-2 for Preliminary Plats has been met for this application among the various items submitted (see Exhibits A, D, E, & F). The information contained in this section ranges from a scale, north arrow, location of lot lines, elevation contours, and utility plans.

*The final site grading plan, proposed sewer and water lines connections, storm drainage systems, the location, pipe sizes, valves, discharge points, and access points will be coordinated with the City’s Public Works Department at a preconstruction meeting prior to the Final Plat application.*

### **STAFF ANALYSIS: TYPICAL SUBDIVISION DESIGN STANDARDS (OMC §7-7-E)**

#### **General Design Standards:**

As discussed above, this project is in general conformance with the goals and strategies identified in the 2021 Ouray Community Plan and the future land use map contained in the Community Plan. This project is designed as a phased approach in an effort to not over-burden the City’s infrastructure capacity. This project was designed with phased density to complement the surrounding subdivision/land uses and surrounding open spaces. This project maintains access, layout, and terms identified for the variety of berm/utility/ditch easements located on the site. This project gives consideration to the preservation and connection of open spaces and the Uncompahgre River and trail.

***Streets and Circulation:***

The prior-plotted Uncompahgre Street will serve as immediate access from Highway 550 to this site. The Applicant proposes improving a section of Uncompahgre Street to match the improvement of the proposed new internal street for the project and will work with the City on this improvement. The continuation of Uncompahgre Street west of what is proposed in this project will be a future discussion for the City Council.

The new, proposed internal street, “Waterview Street” features 2 driving lanes, a parallel parking area adjacent to Lots 3 through 21, curbs, and 5-foot sidewalks on both sides (see Exhibit D).

The proposed internal street meets City Infrastructure Standards and has been coordinated with the City Public Works, County EMS, Fire Department, and School District to ensure proper access and width.

There is an additional emergency access identified between Lots 43 and 44 (“Tract G”) which will be closed to public use, but available to the City Public Works Department, Fire Department, and County EMS for emergency access.

*Staff note: “Waterview Street” may have to be renamed in future submittals and as a condition of this preliminary plat (see Exhibit B).*

***Lots:***

The project proposes 65 lots for residential unit development and various tracts for dedication to the City and easement holders. The depth and width of the proposed lots range in size, and provide for off-street parking and multi-family dwelling unit access where applicable (see Exhibit A). All of the proposed lots are considered accessible and developable. Phase 2 lots feature northern lots larger in size, with greater rear setbacks to provide a landscape buffer between the Waterview PUD and the Chautauqua subdivision.

***Water, Fire Protection and Sewer Systems:***

Utility infrastructure is available and present. The project proposes connections to the existing water and sewer lines to meet code requirements and infrastructure standards. *Water and sewer connections will continue to be coordinated with the Public Works Department.* Unless otherwise agreed upon by the City Council, the applicant shall also be required to pay tap investment fees for all water and sewer tap connections as proposed in the preliminary plat.

The Preliminary Plat documents were distributed to the Ouray County EMS, Ouray Fire Department, Public Works Department, and Ouray School for review and consideration of proposed connections, easements, fire hydrants, and drainage. Comments received have been compiled in Exhibit K.

***Drainage, Hazard Mitigation, and Snow Storage:***

This site has minimal slope and existing hazards. This site is not directly located within an identified Flood Hazard Area. Although hazard mitigation drainage will be minimal for this project, the Applicant had a Geotechnical Engineering Study completed for the proposed development to help guide foundation setting, grading, retention areas, and drainage to best serve the future residents of this PUD (see Exhibit L).

*Since this project does include additional paved roads and infrastructure, snow storage areas will be coordinated with the Public Works department to ensure the open space tracts and remainder of Uncompahgre Street area can host the snow accumulation for the PUD.*

***Plat Notes and Monuments:***

Final Plat notes shall be reviewed and revised as necessary by City Council and the Planning Commission during the Final Plat phase. Monuments are present from the original Waterview Subdivision plat (Reception No. 211406, see Exhibit H). Additional monuments will be placed according to code as part of this project’s infrastructure.

*The dedicated Tracts and areas as shown on the submitted Preliminary Plat documents will be considered by the City Council and applicable agencies to ensure proper mitigation and responsibilities are coordinated and agreed upon.*

***Parks, Trails, Open Space, Recreation Facilities, Common Areas:***

This project proposes areas for public open space and connections to the Uncompahgre River Trail (see Exhibit E).

The common areas and open spaces included in this application are dedicated to the City of Ouray, which will have to be discussed further by the City Council.

The Applicant amended the original Sketch Plan application of this project to enhance the landscape corridor of the eastern side of the lot, near Highway 550, as recommended by the Planning Commission.

This project proposes 5-foot wide, ADA-compliant sidewalks within the PUD as part of the greater ROW design.

The park dedication requirement per subsection 14-g. is less than 2 acres, which does not meet the minimum area for a city park. Therefore, the code would require the applicant to pay a fee-in-lieu of \$1,203.00 per new lot (65 new lots proposed x \$1,203 = \$78,195) prior to the recording the Final Plat. *Staff recommends waiving the public park fee-in-lieu as permitted by section 14.i.ii. of the code due to the goals of this affordable housing project, the PUD meets the Open Space coverage requirements of the code, and because the project proposes installation of connections to recreational areas and public park areas. This fee may be reduced by City Council consideration and approval.*

## **PUBLIC NOTICE**

Public noticing requirements per the OMC have been met for this Preliminary Plat application. Public notice was posted at City Hall on May 3, 2023, published in the Plaindealer on May 4, 2023, and posted on the property on May 3, 2023. No public comments directed to the Planning Commission have been received by staff for the Preliminary Plat application.

## **STAFF RECOMMENDATION**

### **OMC §7-7-C-3 establishes the following Subdivision Process for Preliminary Plats:**

“d. City staff will prepare a report detailing their review findings and include any reports from review professionals. The report shall provide development information and detail compliance with all applicable City requirements, regulations or standards.

e. At a public hearing, the Planning Commission shall review the preliminary plat, supporting documentation and City staff report and determine whether the plat complies with all City requirements, regulations and standards. The Planning Commission may continue the public hearing as it deems necessary.”

The Waterview PUD Preliminary Plat was reviewed with the City’s adopted municipal code, applicable community adopted plans and ordinances, the Ouray Community Plan, Public Works Department, Ouray County EMS, and Ouray Fire Department. As outlined in the above Staff Analyses, this application meets the standard design and plat requirements for the Preliminary Plat phase.

Staff recommends the Planning Commission carefully consider the attached Exhibits, the project’s goals, and this staff report. After hearing the staff report and any testimony at the hearing, the Commission should discuss the PUD and Preliminary Plat Criteria for Decision and general conformance with the Community Plan. Staff finds this project meets many goals and actions outlined in the Ouray Community Plan, meets the goals set forth in the OMC, and has met the standards set out by the OMC while requesting deviations from the C-2 dimensional standards, as anticipated as part of the PUD process.

### **Staff recommends the Planning Commission recommend approval of the Waterview PUD Preliminary Plat with the following conditions of approval:**

- Approve the deviations to the OMC standards outlined in Table 3 of this report
- Satisfy the comments outlined in the Staff Comment Memo prior to filing a Final Plat (Exhibit B)

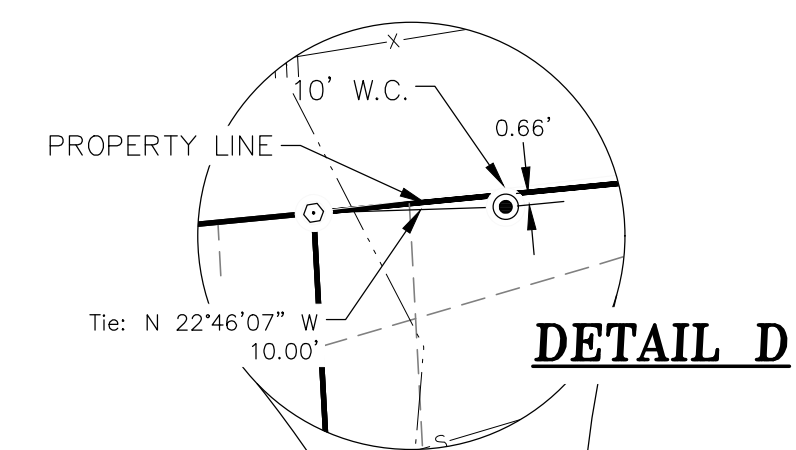
### **Attachments:**

Exhibit A:	Waterview Affordable Housing Subdivision – Preliminary Plat Draft
Exhibit B:	Preliminary Plat Staff Comment Memorandum
Exhibit C:	Waterview PUD – Lot & Unit Summary Tables
Exhibit D:	Waterview PUD – Engineered Plans
Exhibit E:	Waterview PUD – Landscape Plan
Exhibit F:	Waterview PUD – Example Land Use & Coverage (Phase 1)
Exhibit G:	Ouray County 2023 AMI Levels (60% - 120% AMI) by Household Size
Exhibit H:	Waterview Lot 2 Lot Split Plat (Reception No. 211406)
Exhibit I:	Waterview PUD – Updated Sketch Plan Application Narrative
Exhibit J:	Waterview PUD – Original Applicant Narrative and Project Information
Exhibit K:	Interdepartmental Comments Received
Exhibit L:	Geotechnical Engineering Study Proposed Waterview Development (Lambert)



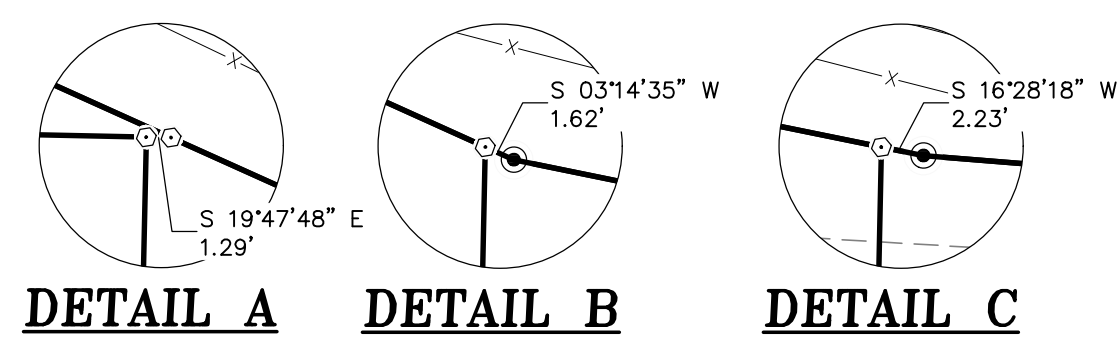
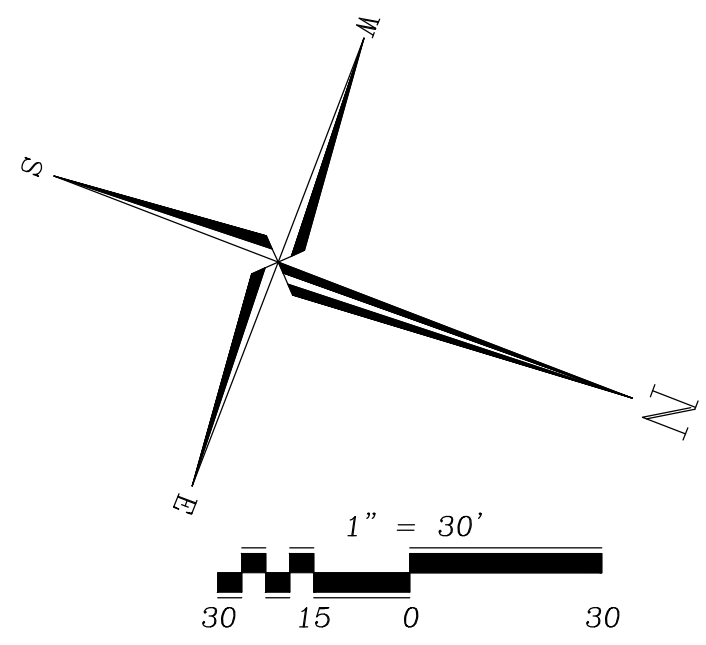
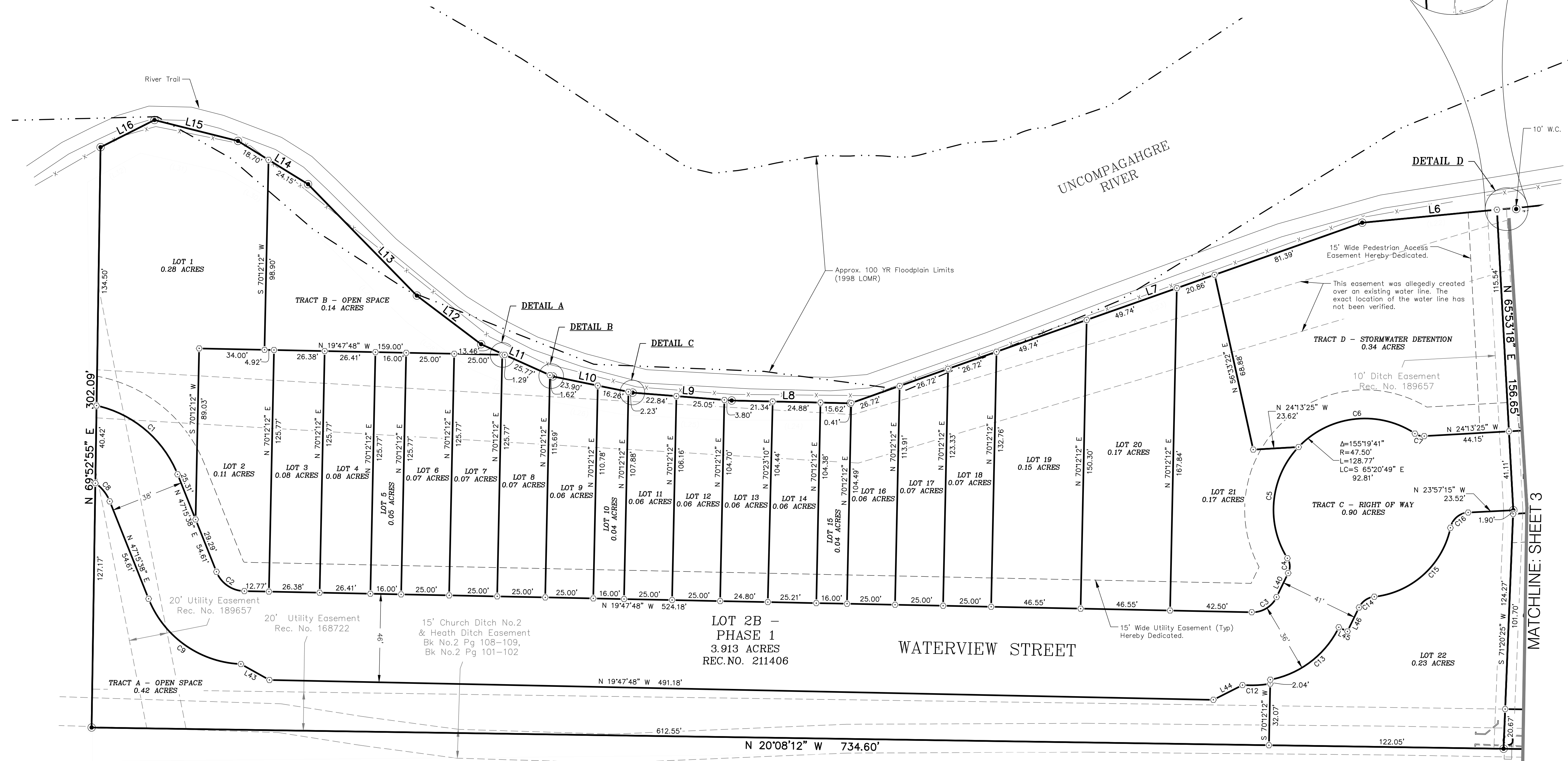
# WATERVIEW AFFORDABLE HOUSING SUBDIVISION OF LOT 2A & 2B OF OURAY WATERVIEW SUBDIVISION LOT 2 LOT SPLIT

LOCATED IN THE CITY OF OURAY, COLORADO



LINE	BEARING	LENGTH
L6	S 26°31'41" E	70.43'
L7	S 40°26'50" E	282.29'
L8	S 19°40'08" E	61.84'
L9	S 16°28'18" E	51.69'
L10	S 09°30'25" E	42.39'
L11	S 03°14'35" W	40.85'
L12	S 16°05'14" W	41.95'
L13	S 24°42'22" W	81.04'
L14	S 10°39'07" W	42.85'
L15	S 06°55'10" E	44.78'
L16	S 47°43'14" E	31.39'
L40	N 85°07'12" W	13.88'
L43	N 08°16'33" E	17.02'
L44	N 47°52'09" W	17.00'
L45	N 04°52'48" E	5.00'
L46	N 85°07'12" W	13.88'

CURVE	DELTA	RADIUS	LENGTH	CHORD	LENGTH
C1	55°28'06"	59.39	57.50	S 19°19'29" W	55.28'
C2	67°03'26"	16.00	18.73	N 13°43'55" E	17.68'
C3	65°19'24"	14.00	15.96	N 52°27'30" W	15.11'
C4	57°53'28"	8.00	8.08	S 65°56'04" W	7.74'
C5	75°31'30"	47.50	62.61	N 74°45'06" E	58.18'
C6	79°48'11"	47.50	66.16	N 27°35'04" W	60.94'
C7	36°32'27"	8.00	5.10	N 5°57'11" W	5.02'
C8	33°17'29"	21.00	12.20	N 30°36'54" E	12.03'
C9	65°58'38"	54.00	62.18	N 14°16'20" E	58.80'
C12	11°31'53"	52.00	10.47	N 25°33'44" W	10.45'
C13	53°19'27"	50.00	46.53	N 58°27'28" W	44.87'
C14	57°53'28"	10.00	10.10	S 56°10'28" E	9.68'
C15	71°56'48"	45.50	57.13	N 63°12'08" W	53.45'
C16	74°57'07"	10.00	13.08	S 61°41'58" E	12.17'



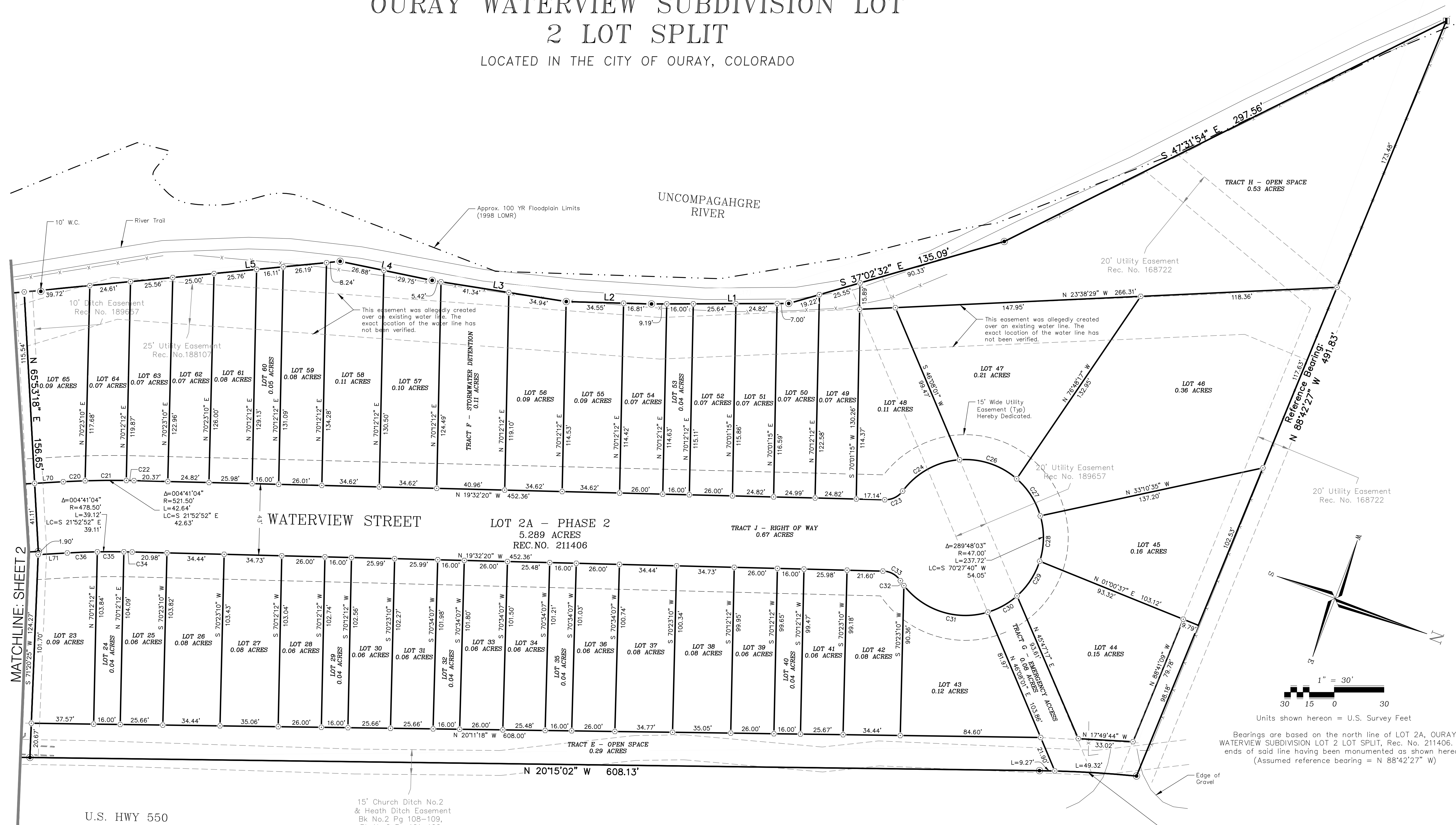
Bearings are based on the north line of LOT 2A, OURAY WATERVIEW SUBDIVISION LOT 2 LOT SPLIT, Rec. No. 211406. The ends of said line having been monumented as shown hereon. (Assumed reference bearing = N 88°42'27" W)

 126 ROCK POINT DRIVE PO BOX 97 DURANGO, COLORADO 81302 970.247.1705	WATERVIEW AFFORDABLE HOUSING SUBDIVISION PHASE 1 PLAT		SHEET <b>2</b> OF <b>3</b>
	CITY OF OURAY, COLORADO		
	PREPARED BY: RA PROJECT NO. 21-116	CHECKED BY: RT SCALE: AS SHOWN	DATE: 5/9/2023

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# WATERVIEW AFFORDABLE HOUSING SUBDIVISION OF LOT 2A & 2B OF OURAY WATERVIEW SUBDIVISION LOT 2 LOT SPLIT

LOCATED IN THE CITY OF OURAY, COLORADO



MATCHLINE: SHEET 2

U.S. HWY 550

15' Church Ditch No.2 & Heath Ditch Easement  
Bk. No.2 Pg 108-109,  
Bk. No.2 Pg 101-102

$\Delta=004^{\circ}50'35''$   
 $R=693.21'$   
 $L=58.59'$   
 $LC=N 17^{\circ}49'44'' W$   
 $58.58'$

LINE	BEARING	LENGTH
L1	S 21°13'26" E	82.66'
L2	S 19°21'34" E	51.36'
L3	S 12°02'10" E	81.76'
L4	S 09°17'05" E	56.63'
L5	S 26°31'41" E	191.18'
L70	N 24°13'25" W	17.26'
L71	N 24°13'25" W	17.52'

CURVE	DELTA	RADIUS	LENGTH	CHORD	LENGTH
C20	1°26'58"	521.50	13.19	S 23°29'56" E	23.39'
C21	2°43'39"	521.50	24.82	S 21°24'37" E	24.82'
C22	0°30'28"	521.50	4.62	S 19°47'34" E	19.86'
C23	54°54'01"	13.00	12.46	N 46°59'21" W	11.99'
C24	49°11'49"	47.00	40.36	S 49°50'27" E	39.13'
C26	45°25'15"	47.00	37.26	S 2°31'55" E	36.29'
C27	32°44'35"	47.00	26.86	S 36°33'00" W	26.50'
C28	33°45'07"	47.00	27.69	S 69°47'52" W	27.29'
C29	30°49'07"	47.00	25.28	N 77°55'01" W	24.98'

CURVE	DELTA	RADIUS	LENGTH	CHORD	LENGTH
C30	24°44'11"	47.00	20.29	N 50°08'22" W	20.13'
C31	68°40'36"	47.00	56.34	N 3°25'59" W	53.02"
C32	4°27'21"	47.00	3.66	N 33°08'00" E	3.65'
C33	55°28'55"	12.87	12.47	S 7°54'40" W	11.99'
C34	0°35'58"	478.50	5.01	S 19°50'19" E	5.01'
C35	1°54'59"	478.50	16.00	S 21°05'47" E	16.00'
C36	2°10'08"	478.50	18.11	S 23°08'21" E	18.11'

**GOFF**  
ENGINEERING + SURVEYING INC.  
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DURANGO, COLORADO 81302  
970.247.1705

WATERVIEW AFFORDABLE HOUSING SUBDIVISION PHASE 2 PLAT

CITY OF OURAY, COLORADO

PREPARED BY: RA CHECKED BY: RT  
PROJECT NO. 21-116 SCALE: AS SHOWN DATE: 5/9/2023

SHEET  
3  
OF  
3

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## MEMORANDUM

**TO:** Paul Major, on behalf of Ouray Homes LLC (“Applicant”)  
**FROM:** Lily Oswald, City of Ouray Community Development Director (“Staff”)  
**DATE:** May 18, 2023  
**SUBJECT:** Waterview PUD – Preliminary Plat Application Staff Review Comments

This memorandum provides initial staff comments to the Waterview PUD Preliminary Plat application, received by the City of Ouray on May 1, 2023. This memorandum serves as initial comments to the submitted materials for the Waterview Preliminary Plat PUD and does not represent exhaustive City comments or conditions to this application.

1. Ouray County has a Waterview Lane, Waterview Court, and Waterview Cove. Staff has coordinated with the County’s Road and Bridge Department and EMS and has concerns of the duplicative nature of the proposed “Waterview Street” and recommends changing this street name.
  - a. *Applicant must coordinate final proposed street name prior to final plat filing, installation of street signage, or official addressing.*
  - b. *If amended, all construction documents, plats, and related materials must reflect the updated street name.*
2. Correct all titles of documents to reflect “City of Ouray” not “Town of Ouray.”
  - a. *Example: engineered construction cover sheet.*
3. Correct all documents to reflect “Uncompahgre Street” and “Uncompahgre River” where mislabeled.
  - a. *Example: engineered construction sheets.*
4. All construction document and future submittals must match layout and design of the submitted “Waterview Affordable Housing Subdivision” Preliminary Plat.
  - a. *Phase 2 lot numbers must be corrected in future submittals. Example: engineered construction documents display incorrect phase 2 lot numbers.*
5. Applicant must coordinate a preconstruction meeting with the City of Ouray Public Works Department, City Administrator, Community Development Department, and Fire Department to ensure installation of infrastructure is a concerted effort which aligns with all departmental timelines, capacities, and standards.
  - a. *Access to City and private utilities along the west side of proposed lots 49 through 65 must be maintained with no structures developed along the 25-foot utility easement as shown (Reception No. 188107 and 211406).*
6. Applicant must draft a Development Improvements Agreement for the associated infrastructure, standards, timelines, and improvements for this project.
  - a. *Agreement must be approved by the City Attorney, City Administrator and associated bodies and executed accordingly.*
  - b. *Agreement must be mutually-executed prior to filing a Final Plat as part of the Building Permit process once proposed infrastructure is finalized.*

7. Applicant must receive written approval or an access permit from the Colorado Department of Transportation for any access to Highway 550 directly from subject lot and for any new street serving the subdivision that intersects said highway prior to filing a Final Plat application.
8. Final Plat must reiterate the plat notes and easement descriptions included in the Waterview Lot 2 Lot Split Plat (Reception No. 211406) by reference.
9. Once preliminary plat approval has been granted from the Ouray City Council, the Applicant must work with the City to coordinate a joint meeting with the City Council, City Attorney, City Administrator, and Planning Commission to discuss terms and responsibility of the deed restrictions associated with this project.

Ouray Waterview Unit Mix - Phase 1

By Lot

Lot #	Home Type	Bedrooms and Baths	Configure	Garage, Shed or Home Childcare	Home Sq. Footage	Garage Sq. Footage	Parking Spaces	Lot Size
1	Torrey	3 bdr/3 bth	Single Family	Home Childcare	1,984	-	3	12,251
2	Antero	2 bdr/2 bth	Duplex	Shed	1,024	-	2	4,590
3	Shavano	3 bdr/2 bth	Duplex	Shed	1,216	-	2	3,318
4	Shavano	3 bdr/2 bth	Triplex	Shed	1,216	-	2	3,321
5	Antero	2 bdr/2 bth	Triplex	Shed	1,024	-	1	2,012
6	Shavano	3 bdr/2 bth	Triplex	Shed	1,216	-	2	3,144
7	Shavano	3 bdr/2 bth	Duplex	Shed	1,216	-	2	3,145
8	Shavano	3 bdr/2 bth	Duplex	-	1,216	-	2	3,025
9	Shavano	3 bdr/2 bth	Triplex	-	1,216	-	2	2,827
10	Antero	2 bdr/2 bth	Triplex	-	1,024	-	1	1,749
11	Shavano	3 bdr/2 bth	Triplex	-	1,216	-	2	2,672
12	Shavano	3 bdr/2 bth	Duplex	-	1,216	-	2	2,636
13	Shavano	3 bdr/2 bth	Duplex	-	1,216	-	2	2,609
14	Shavano	3 bdr/2 bth	Triplex	-	1,216	-	2	2,615
15	Antero	2 bdr/2 bth	Triplex	-	1,024	-	1	1,670
16	Shavano	3 bdr/2 bth	Triplex	-	1,216	-	2	2,730
17	Antero	2 bdr/2 bth	Duplex	-	1,024	-	2	2,966
18	Shavano	3 bdr/2 bth	Duplex	Shed	1,216	-	2	3,201
19	Torrey	3 bdr/3 bth	Single Family	Garage	1,600	384	2	6,587
20	Torrey	3 bdr/3 bth	Single Family	Garage	1,600	384	2	7,404
21	Torrey	3 bdr/3 bth	Single Family	Home Childcare	1,984	-	3	7,465
22	Torrey	3 bdr/3 bth	Single Family	Home Childcare	1,984	-	3	9,962
Total				<b>Total:</b>	<b>28,864</b>	<b>768</b>	<b>44</b>	<b>91,899</b>
				<b>Average:</b>	<b>1,312</b>		<b>Average:</b>	<b>4,177</b>

Ouray Waterview Unit Mix - Phase 2

By Lot

Lot #	Home Type	Bedrooms and Baths	Configure	Garage, Shed or Home Childcare	Home Sq. Footage	Garage Sq. Ft.	Parking Spaces	Lot Size
65	Shavano	3 bdr/2 bth	Duplex	Shed	1,216		2	4,077
64	Antero	2 bdr/2 bth	Duplex	Shed	1,024		2	2,922
63	Antero	2 bdr/2 bth	Duplex	Shed	1,024		2	3,058
62	Shavano	3 bdr/2 bth	Duplex	Shed	1,216		2	3,089
61	Shavano	3 bdr/2 bth	Triplex	Shed	1,216		2	3,271
60	Antero	2 bdr/2 bth	Triplex	Shed	1,024		1	2,118
59	Shavano	3 bdr/2 bth	Triplex	Shed	1,216		2	3,433
58	Torrey	3 bdr/3 bth	Single Family	Shed	1,600		2	4,616
57	Torrey	3 bdr/3 bth	Single Family	Shed	1,600		2	4,410
56	Torrey	3 bdr/3 bth	Single Family	Shed	1,600		2	4,044
55	Torrey	3 bdr/3 bth	Single Family	Shed	1,600		2	3,963
54	Shavano	3 bdr/2 bth	Triplex	Shed	1,216		2	2,956
53	Antero	2 bdr/2 bth	Triplex	Shed	1,024		1	1,875
52	Shavano	3 bdr/2 bth	Triplex	Shed	1,216		2	2,962
51	Shavano	3 bdr/2 bth	Duplex	Shed	1,216		2	2,884
50	Antero	2 bdr/2 bth	Duplex	Shed	1,024		2	2,992
49	Antero	2 bdr/2 bth	Duplex	Shed	1,024		2	3,112
48	Shavano	3 bdr/2 bth	Duplex	Shed	1,216		2	4,663
47	Torrey	3 bdr/3 bth	Single Family	Garage	1,600	384	2	9,138
46	Torrey	3 bdr/3 bth	Single Family	Garage	1,600	384	2	15,905
45	Torrey	3 bdr/3 bth	Single Family	Garage	1,600	384	2	7,079
44	Torrey	3 bdr/3 bth	Single Family	Garage	1,600	384	2	6,409
43	Torrey	3 bdr/3 bth	Single Family	Garage	1,600	384	2	5,181
42	Torrey	3 bdr/3 bth	Single Family	Shed	1,600		2	3,376
41	Shavano	3 bdr/2 bth	Triplex	Shed	1,216		2	2,547
40	Antero	2 bdr/2 bth	Triplex	Shed	1,024		1	1,629
39	Shavano	3 bdr/2 bth	Triplex	Shed	1,216		2	2,577
38	Torrey	3 bdr/3 bth	Single Family	Shed	1,600		2	3,494
37	Torrey	3 bdr/3 bth	Single Family	Shed	1,600		2	3,479
36	Shavano	3 bdr/2 bth	Triplex	Shed	1,216		2	2,623
35	Antero	2 bdr/2 bth	Triplex	Shed	1,024		1	1,618
34	Shavano	3 bdr/2 bth	Triplex	Shed	1,216		2	2,583
33	Shavano	3 bdr/2 bth	Triplex	Shed	1,216		2	2,643
32	Antero	2 bdr/2 bth	Triplex	Shed	1,024		1	1,630
31	Shavano	3 bdr/2 bth	Triplex	Shed	1,216		2	2,637
30	Shavano	3 bdr/2 bth	Triplex	Shed	1,216		2	2,645
29	Antero	2 bdr/2 bth	Triplex	Shed	1,024		1	1,642
28	Shavano	3 bdr/2 bth	Triplex	Shed	1,216		2	2,675
27	Torrey	3 bdr/3 bth	Single Family	Shed	1,600		2	3,602
26	Torrey	3 bdr/3 bth	Single Family	Shed	1,600		2	3,569
25	Shavano	3 bdr/2 bth	Triplex	Shed	1,216		2	2,666
24	Antero	2 bdr/2 bth	Triplex	Shed	1,024		1	1,702
23	Shavano	3 bdr/2 bth	Triplex	Shed	1,216		2	3,741
<b>Total</b>				<b>Total:</b>	<b>55,552</b>	<b>1,920</b>	<b>79</b>	<b>157,235</b>
				<b>Average:</b>	<b>1,292</b>		<b>Average:</b>	<b>3,657</b>
<b>Both Phases:</b>								
				<b>Average:</b>	<b>1,299</b>		<b>Average:</b>	<b>3,833</b>

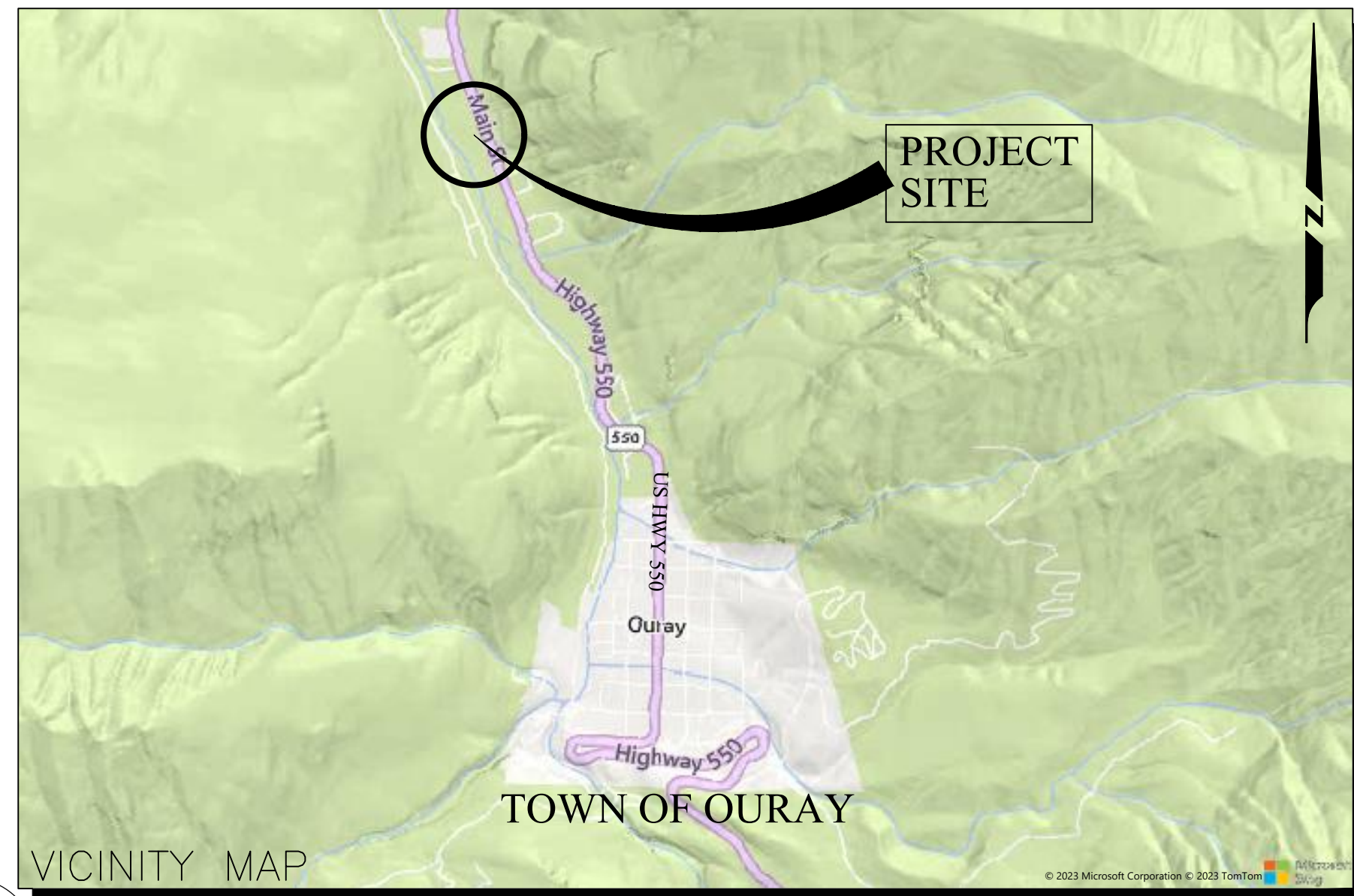
# WATERVIEW AFFORDABLE HOUSING SUBDIVISION TOWN OF OURAY, COLORADO

PROJECT CONTACT LIST				
AGENCY	ROLE	NAME	PHONE	EMAIL
OURAY HOMES, LLC	OWNERS REPRESENTATIVE	PAUL MAJOR	(970) 209-2880	paul@ruralhomesproject.co
GOFF ENGINEERING	PROJECT ENGINEER	ROB HARRIES	(970) 247-1705	rharries@goffengineering.com
TOWN OF OURAY	PUBLIC WORKS DIRECTOR			
	INSPECTOR			
SAN MIGUEL POWER AUTHORITY (SMPA)	ELECTRIC UTILITY			
BLACK HILLS ENERGY	GAS UTILITY			
	TELECOMM UTILITY			
CONTRACTOR	PROJECT SUPERINTENDENT			
CONTRACTOR	PROJECT MANAGER			

Sheet List Table	
Sheet #	Sheet Title
G1.01	COVER SHEET
G1.02	CONSTRUCTION NOTES
G2.01	TYPICAL ROADWAY SECTIONS
RD1.00	EX. CONDITIONS
RD1.01	OVERALL SITE PLAN
RD1.02	PHASE 1 SITE PLAN
RD1.03	PHASE 2 SITE PLAN
RD2.01	UNCOMPAGHRE ST. PLAN & PROFILE
RD2.02	WATERVIEW ST. PHASE 1 PLAN & PROFILE
RD2.03	WATERVIEW ST. PHASE 1 CDS PLAN & PROFILE
RD2.04	WATERVIEW ST. PHASE 2 PLAN & PROFILE
RD2.05	WATERVIEW ST. PHASE 2 CDS PLAN & PROFILE
RD3.01	UNCOMPAGHRE ST. CROSS SECTION
RD3.02	WATERVIEW ST. PHASE 1 CROSS SECTION
RD3.03	WATERVIEW ST. PHASE 1 CROSS SECTION
RD3.04	WATERVIEW ST. PHASE 2 CROSS SECTION
RD3.05	WATERVIEW ST. PHASE 2 CROSS SECTION
SS1.01	SEWER A PLAN & PROFILE
W1.01	WATER A PLAN & PROFILE
W1.02	WATER B PLAN & PROFILE
SD1.01	STORM DRAIN A PLAN & PROFILE
SD1.02	IRRIGATION CULVERT PLAN & PROFILE
SD1.03	STORM DRAIN B PLAN & PROFILE
DU1.01	PHASE 1 DRY UTILITIES

### ABBREVIATION LEGEND

<p>ABC AGGREGATE BASE COURSE BOW FINISH GROUND AT BASE OF WALL BVCE BEGINNING VERTICAL CURVE ELEVATION BVCS BEGINNING VERTICAL CURVE STATION CDOT COLORADO DEPARTMENT OF TRANSPORTATION CEN CENTER CL CENTERLINE CMP CORRUGATED METAL PIPE CP CONTROL POINT DIA DIAMETER DIP DUCTILE IRON PIPE DMH DRAINAGE MANHOLE dso MEDIAN STONE SIZE E EASTING EG EXISTING GROUND ELEV ELEVATION EOC EDGE OF CONCRETE EOP EDGE OF PAVEMENT ESMT EASEMENT EVCE ENDING VERTICAL CURVE ELEVATION EVCS ENDING VERTICAL CURVE STATION EX EXISTING FES FLARED END SECTION FG FINISHED GROUND FL FLOW LINE FO FIBER OPTIC FS FINISHED SURFACE GB GRADE BREAK HMA HOT MIX ASPHALT HP HIGH POINT INV INVERT LC LONG CHORD</p>	<p>L LEFT LP LOW POINT LPEA LA PLATA ELECTRIC ASSOCIATION LVC LENGTH OF VERTICAL CURVE MAX MAXIMUM MIN MINIMUM MUTCD MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES N NORTHING PC POINT OF CURVATURE PE POLYETHYLENE PGL PROFILE GRADE LINE PI POINT OF INTERSECTION PT POINT OF TANGENCY PVI POINT OF VERTICAL INTERSECTION R RADIUS RT RIGHT RCP REINFORCED CONCRETE PIPE R/W RIGHT-OF-WAY SD STORM DRAIN SMPA SAN MIGUEL POWER AUTHORITY SMH SANITARY SEWER MANHOLE SS SANITARY SEWER STA STATION TB THURST BLOCKING TBOC TOP BACK OF CURB TEMP TEMPORARY TOR TOWN OF RIDGWAY TOW TOP OF WALL RETAINING (TYP) TYPICAL W/ WITH</p>	<p>APPROXIMATE CENTERLINE INTERIOR ANGLE DIAMETER</p>
---	---	---



### Legend of Civil Features

LINETYPES		Existing Features	
---SW---	WATER MAIN (SIZE NOTED)	⊕	STRUCTURE CATEGORY
---10S---	SEWER MAIN (SIZE NOTED)	⊕	BRIDGE DRAIN/COLUMN
—FM—	SEWER FORCEMAIN	⊕	TELECOMMUNICATION CATEGORY
---24D---	STORM CULVERT (SIZE NOTED)	⊕	TELECOMM RISER
—IRR—	IRRIGATION	⊕	TELECOMM MANHOLE/VAULT
—P—	UNDERGROUND POWER	⊕	ANTENNAE
—OHP—	OVERHEAD POWER	⊕	SIGN CATEGORY
—FO—	UNDERGROUND FIBER OPTIC	⊕	SIGN (GENERAL)
—T—	UNDERGROUND TELECOMM	⊕	SIGN (CLASS 1 OR 2)
—OHT---	OVERHEAD TV/TELE	⊕	SIGN (CLASS 3)
—G—	UNDERGROUND GAS	⊕	BILLBOARD
—X—X—	FENCE/GEOTEXTILE FABRIC	⊕	DELINEATOR
—P—P—	PAVEMENT EDGE	⊕	SIGN W/ BEACON
—G—G—	GRAVEL/DIRT ROAD	⊕	SURVEY CATEGORY
—R—R—	RAILROAD TRACK	⊕	RIGHT OF WAY MARKER
—G—G—	GUARDRAIL	⊕	AERIAL PANEL POINT
—R—R—	ROCK WALL	⊕	CONTROL MONUMENT (HARN)
—R—R—	STRUCTURAL RETAINING WALL	⊕	BENCHMARK
—R—R—	SAWCUT LINE	⊕	SECTION CORNER
—R—R—	STORM DRAIN CATEGORY	⊕	PROPERTY PIN
—R—R—	CULVERT END SECTION	⊕	USGS MARKER
—R—R—	INLET TYPE 'R'	⊕	NOAA MARKER
—R—R—	INLET GENERAL/AREA DRAIN	⊕	BLM MARKER
—R—R—	INLET TYPE 'D'/TYPE 'C'	⊕	WITNESS CORNER
—R—R—	STORMDRAIN MANHOLE	⊕	TOWNSHIP CORNER
—R—R—	ELECTRIC CATEGORY	⊕	CONTROL MONUMENT FEDERAL
—R—R—	ELECTRIC TRANSMISSION TOWER	⊕	CONTROL MONUMENT LOCAL/PLSS
—R—R—	TRANSFORMER	⊕	TRACT CORNER
—R—R—	ELECTRIC PEDESTAL/VAULT	⊕	
—R—R—	POWER MANHOLE	⊕	
—R—R—	ELECTRIC METER	⊕	
—R—R—	ELECTRIC OUTLET	⊕	
—R—R—	TRANSFORMER ON POLE	⊕	
—R—R—	POLE MOUNTED STREET LIGHT	⊕	
—R—R—	HIGH MAST LIGHT	⊕	
—R—R—	LUMINAIRE (MISC)	⊕	
—R—R—	UTILITY POLE	⊕	
—R—R—	UTILITY POLE ANCHOR	⊕	
—R—R—	TRAFFIC SIGNAL CATEGORY	⊕	
—R—R—	TRAFFIC SIGNAL POLE W/ MAST ARM	⊕	
—R—R—	TRAFFIC SIGNAL CONTROL PANEL	⊕	
—R—R—	PEDESTRIAN POLE	⊕	
—R—R—	GAS/OIL CATEGORY	⊕	
—R—R—	GAS WELLHEAD	⊕	
—R—R—	GAS VALVE	⊕	
—R—R—	GAS METER	⊕	
—R—R—	GAS VAULT/RISER	⊕	
—R—R—	PROPANE TANK	⊕	
		⊕	WATER CATEGORY
		⊕	WATER MANHOLE - WELLHEAD
		⊕	BLOW OFF ASSEMBLY
		⊕	WATER METER
		⊕	FIRE HYDRANT
		⊕	WATER VALVE
		⊕	HOSE BIB / YARD HYDRANT
		⊕	PUMP
		⊕	SANITARY SEWER CATEGORY
		⊕	SEWER MANHOLE
		⊕	SEWER CLEANOUT
		⊕	SEPTIC TANK
		⊕	DITCH/WATERWAY CATEGORY
		⊕	CHECK DAM
		⊕	DIVERSION BOX
		⊕	FLUME
		⊕	FLOW GAUGE
		⊕	HEADGATE
		⊕	SPRING
		⊕	WETLAND AREA
		⊕	WATERWAY MISC (SEE NOTE)
		⊕	FENCE CATEGORY
		⊕	POST/BOLLARD
		⊕	FENCE GATE
		⊕	GEOLOGY CATEGORY
		⊕	TEST HOLE
		⊕	BOULDER
		⊕	MINE SHAFT
		⊕	ROADWAY CATEGORY
		⊕	GUARDRAIL END SECTION
		⊕	LANDSCAPE/CAMPING CATEGORY
		⊕	CONIFEROUS TREE (DIA. NOTED)
		⊕	DECIDUOUS TREE (DIA. NOTED)
		⊕	SHRUB/VEGETATION LIMIT
		⊕	SWING SET
		⊕	TEETER TOTTER
		⊕	JUNGLE GYM
		⊕	BENCH/TABLE
		⊕	GRILL/FIRE RING
		⊕	SPRINKLER HEAD
		⊕	IRRIGATION VALVE
		⊕	MISCELLANEOUS TOPO CATEGORY
		⊕	WASTE SITE/GRAVE
		⊕	ARCH SITE/AREA OF CONCERN
		⊕	MISC.POINT (SEE DESCRIPTION)
		⊕	CAMPSITE
		⊕	MAILBOX
		⊕	RAILROAD CATEGORY
		⊕	RR SIGN/SIGNAL/SWITCH

PROPOSED FEATURES			
	ASPHALT SURFACING		WATER METER
	CONCRETE SURFACING		FIRE HYDRANT
	GRAVEL SURFACING		WATER VALVE
	RIP-RAP SURFACING		BEND FITTING & THRUST BLOCK
	SEWER MAIN (SIZE NOTED)		CURB STOP
	STORM DRAIN CULVERT		FINISHED GRADE
	WATER MAIN		STREET SIGN
	SEWER FORCEMAIN		STORM MANHOLE
	GAS LINE		CLEANOUT
	LIMITS OF GRADING		SEWER MANHOLE
			DETAIL #
			SHEET #

Existing Features	Proposed Features	SURVEY LINE TYPES
— — — — —	— — — — —	— — — — — CENTERLINE
— — — — —	— — — — —	— — — — — LOTLINE
— — — — —	— — — — —	— — — — — RIGHT OF WAY
— — — — —	— — — — —	— — — — — EASEMENT
— — — — —	— — — — —	— — — — — PARCEL BOUNDARY

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WATERVIEW AFFORDABLE HOUSING SUBDIVISION  
OURAY, COLORADO

Issue Record:  
SCHEMATIC 05-05-2023

Revisions:

Project Number: 21-116  
Drawn By: JAE  
Designed by: RSH  
Checked By: RSH

Sheet  
**G1.01**  
COVER SHEET

9/1/2023 2:11:16 ouray\_affordable\_housing\cadd\sheets\g1.01\_cover\_schematic.dwg DATE: 5/9/2023 2:35 PM USER: ENGLISH PLOT SCALE: 1:1

**PROJECT GENERAL NOTES:**

1. ALL CONSTRUCTION SHALL BE PER CITY OF OURAY SPECIFICATIONS AND DESIGN STANDARDS FOR INFRASTRUCTURE CONSTRUCTION – FEBRUARY 9, 2023, WITH ANY ADDENDA ADOPTED THEREAFTER TO DATE OF PRELIMINARY PLAT APPROVAL. (HEREAFTER OURAY'S INFRASTRUCTURE STANDARDS, UNLESS OTHERWISE SPECIFIED).
2. LOCATION AND DEPTH OF SEWER AND WATER LINES ARE APPROXIMATE AND BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR IS REQUIRED TO FIELD VERIFY PRECISE LOCATION AND DEPTH PRIOR TO CONSTRUCTION.

**GENERAL WATER NOTES:**

1. ALL EQUIPMENT, MATERIALS, INSTALLATION, TESTING, AND INSPECTIONS SHALL BE IN ACCORDANCE TO THESE PLANS, OURAY'S INFRASTRUCTURE STANDARDS (STANDARD SPECIFICATIONS – WATER LINE CONSTRUCTION, WATER DISTRIBUTION SYSTEM – MINIMUM DESIGN STANDARDS & STANDARD SPECIFICATIONS – WATER SERVICE CONNECTIONS), AS WELL AS COLORADO DEPARTMENT OF HEALTH STANDARDS.
2. ALL FITTINGS SHALL BE FLANGE END.
3. ALL GATE VALES SHALL BE FLANGE BY MECHANICAL JOINT.

**GENERAL SEWER NOTES:**

1. ALL EQUIPMENT, MATERIALS, INSTALLATION, TESTING, AND INSPECTIONS SHALL BE IN ACCORDANCE TO THESE PLANS, OURAY'S INFRASTRUCTURE STANDARD (SEWER MAINS – STANDARD SPECIFICATIONS & SEWER SYSTEM SPECIFICATIONS – MINIMUM DESIGN STANDARDS) AS WELL AS COLORADO DEPARTMENT OF HEALTH STANDARDS.

**GENERAL DRY UTILITIES NOTES:**

1. POWER, GAS AND TELECOMMUNICATION INFRASTRUCTURE HAS BEEN DIAGRAMMATICALLY DEPICTED ON THE DRY UTILITY PLANS WITHIN THIS PLAN SET.

**GRADING AND SITE PREPARATION**

1. ALL EQUIPMENT, MATERIALS, INSTALLATION, TESTING, AND INSPECTIONS SHALL BE IN ACCORDANCE WITH THESE PLANS, OURAY'S INFRASTRUCTURE STANDARD (STANDARD SPECIFICATIONS –EXCAVATION, BACKFILL, AND COMPACTION).

**STORM WATER MANAGEMENT NOTES:**

1. ALL EQUIPMENT, MATERIALS, INSTALLATION, TESTING, AND INSPECTIONS SHALL BE IN ACCORDANCE WITH OURAY'S INFRASTRUCTURE STANDARDS AND THE DRAINAGE MASTER PLAN, AS AMENDED.
2. STORM CULVERTS TO BE ADS-N12 O.A.E.

**ROADWAY SURFACING NOTES:**

1. THE FOLLOWING APPLICATION RATES WERE USED FOR DEVELOPING THE APPROXIMATE PLAN QUANTITIES:  
AGGREGATE BASE COURSE (ABC) – 133 POUNDS PER CUBIC FOOT

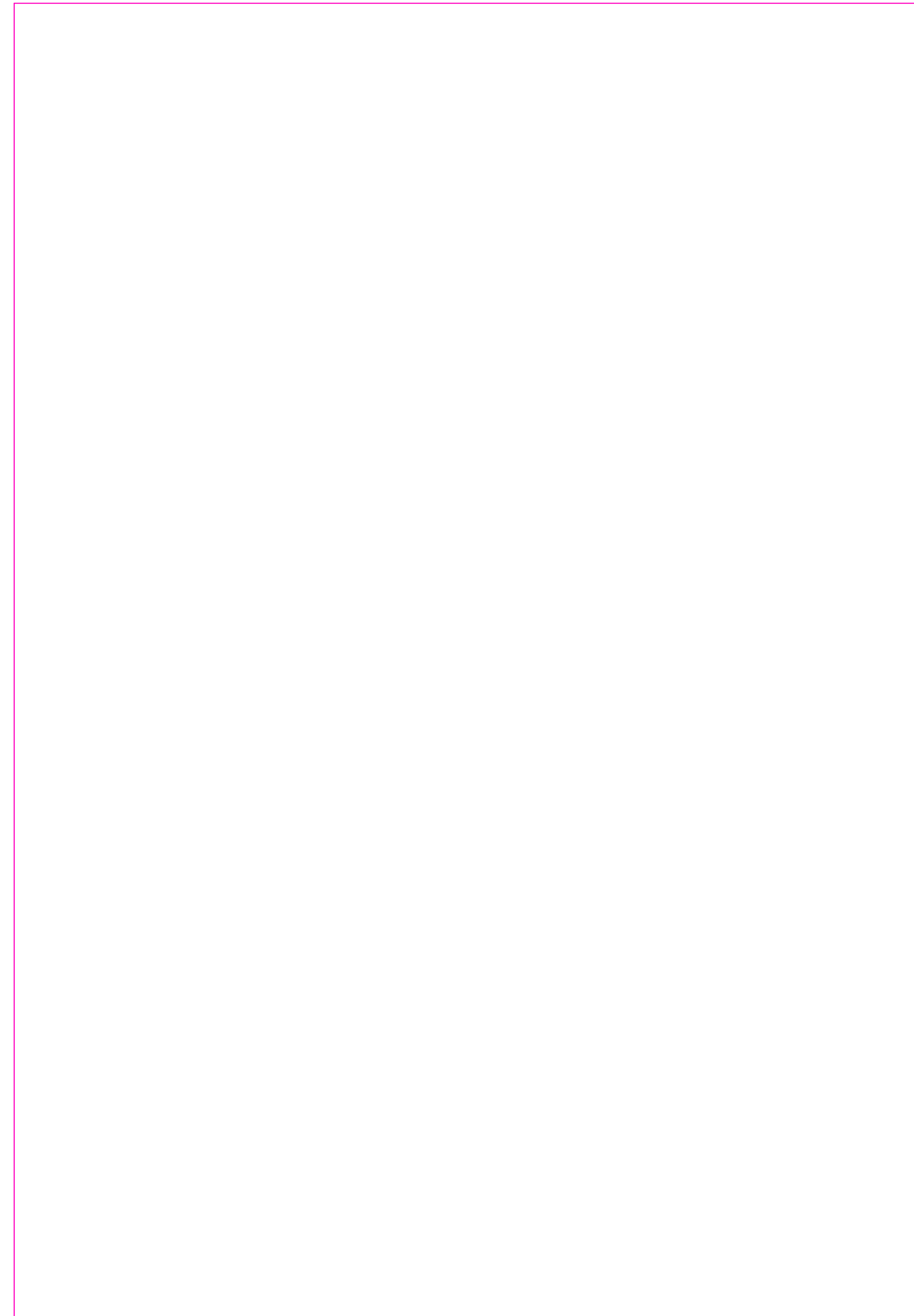
**TESTING AND INSPECTION REQUIREMENTS**

1. ALL TESTING AND INSPECTIONS SHALL BE IN ACCORDANCE WITH OURAY'S INFRASTRUCTURE STANDARDS.

**GEOTECHNICAL**

1. "GEOTECHNICAL ENGINEERING STUDY PROPOSED WATERVIEW DEVELOPMENT OURAY, COLORADO" BY LAMBERT AND ASSOCIATES, FEBRUARY 3, 2023 IS CONSIDERED A PART OF THE PROJECT CONSTRUCTION DOCUMENTS. CONTRACTOR SHALL REVIEW AND ADHERE TO ALL CONDITIONS AND REQUIREMENTS CONTAINED THEREIN.

SUMMARY OF APPROXIMATE QUANTITIES

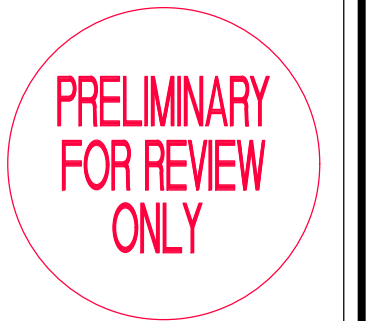


**MATERIAL QUANTITY NOTES:**

1. SUMMARY OF APPROXIMATE QUANTITIES IS FURNISHED FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR REVIEWING CONTRACT DOCUMENTS AND DEVELOPING MATERIAL QUANTITIES AS A BASIS FOR BID PRICING.
2. AUTOCAD DRAWINGS AND DIGITAL TERRAIN MODELS WILL BE FURNISHED TO CONTRACTOR AS REQUESTED TO FACILITATE DEVELOPING MATERIAL QUANTITY TAKEOFF AND SURVEY LAYOUT



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WATERVIEW AFFORDABLE HOUSING SUBDIVISION  
OURAY, COLORADO

Issue Record:  
SCHEMATIC 05-05-2023

Revisions:

Project Number: 21-116  
Drawn By: JAE  
Designed by: RSH  
Checked By: RSH

Sheet  
**G1.02**

CONSTRUCTION NOTES

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WATERVIEW AFFORDABLE HOUSING SUBDIVISION

OURAY, COLORADO

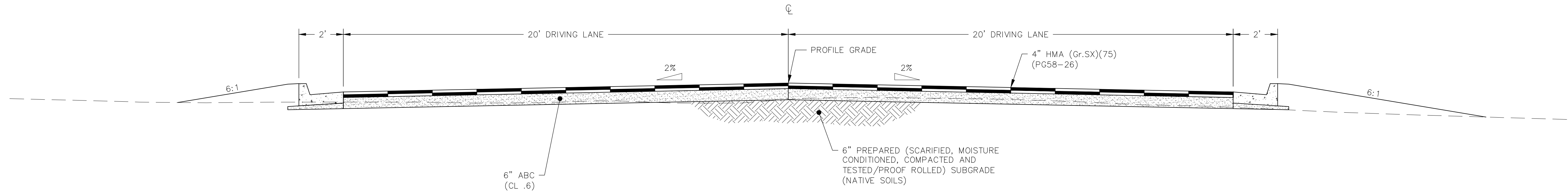
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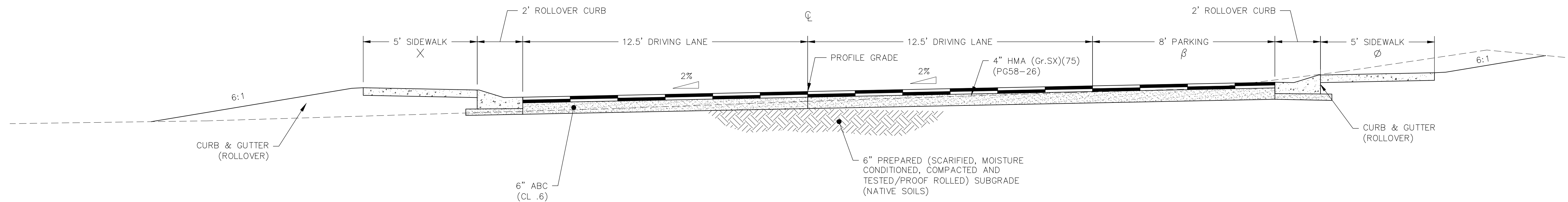
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**G2.01**  
TYPICAL ROADWAY SECTIONS

**UNCOMPAHGRE STREET SECTION**



**TYPICAL STREET SECTION**



NOTES:  
1. STATIONING REFERENCES LIP OF GUTTER (L.O.G.) 2% CROSS SLOPE

TABULATION OF VARYING WIDTHS FOR WATERVIEW STREET, PHASE 1

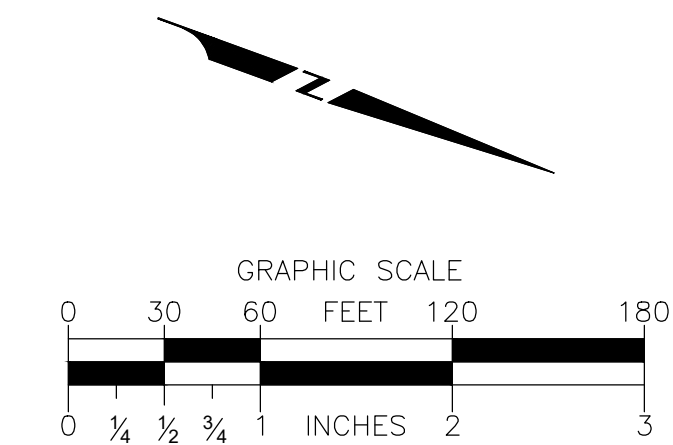
STATION	DESCRIPTION	X	$\beta$	$\phi$
0+35.04	BOP	5'	0'	0'
1+77.68	BEGIN LANE TRANSITION	5'	0'	0'
1+92.68	END LANE TRANSITION	5'	8'	0'
6+81.86	BEGIN LANE TRANSITION	5'	8'	0'
6+96.86	END LANE TRANSITION	5'	0'	0'
7+42.37	START RIGHT SIDEWALK	5'	0'	5'
7+55.93	REFER TO CDS PLAN & PROFILE	-	-	-

**ROADWAY DESIGN CRITERIA**

Reference manuals:  
1. AASHTO "A Policy on Geometric Design of Highways"  
2. City of Ouray, "Specifications and Design Standards for Infrastructure Construction"  
CLASS=LOW SPEED URBAN RESIDENTIAL STREET  
DESIGN VOLUME = < 400 VEH/DAY  
DESIGN SPEED = 25 MPH  
MIN. CL CURVE RADIUS=107 FT (Table 3-13b)  
MIN. STOPPING SIGHT DISTANCE=155 FT (table 3-34)  
K(min)=12 (through roads)  
MINIMUM vertical curve length=100 feet (per COD) for STOP controlled intersections.

**EXISTING CONDITIONS:**

1. OVERHEAD POWER.
2. FIRE HYDRANT.
3. IRRIGATION CULVERT.
4. SANITARY SEWER MAIN.
5. WATERMAIN.
6. IRRIGATION DITCH.
7. HEADGATE STRUCTURE.
8. TELCOMM.
9. EMERGENCY ACCESS ENTRANCE AND EGRESS, TO REMAIN.
10. CDOT SIGN
11. VEHICLE CHAINING/PARKING AREA.
12. ACCELERATION LANE.
13. DECELERATION LANE.

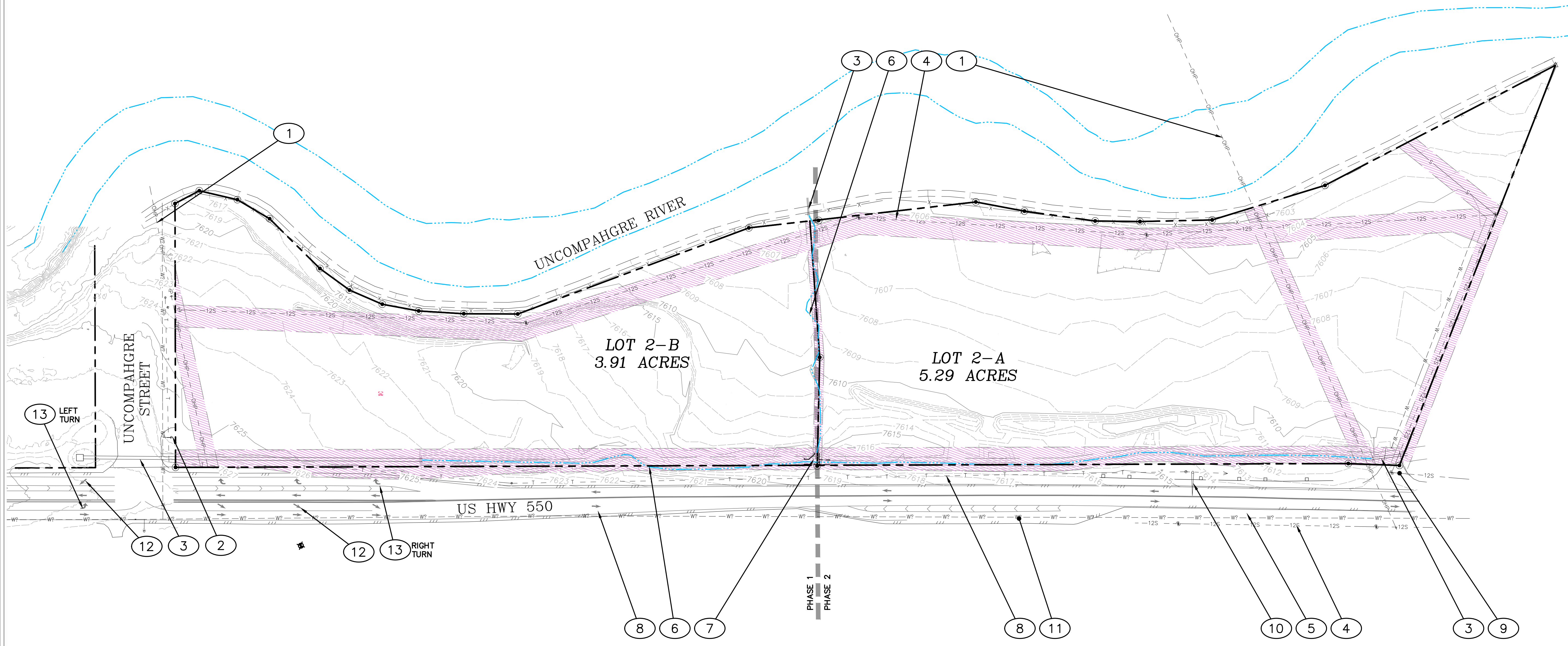


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**WATERVIEW AFFORDABLE HOUSING SUBDIVISION**  
OURAY, COLORADO

Issue Record:  
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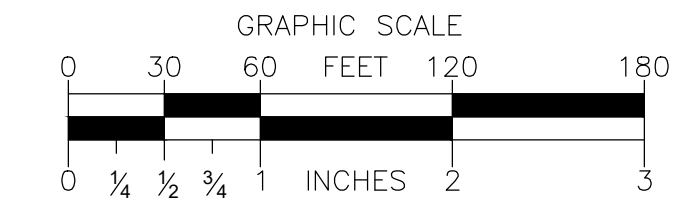
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**RD1.00**

EX. CONDITIONS

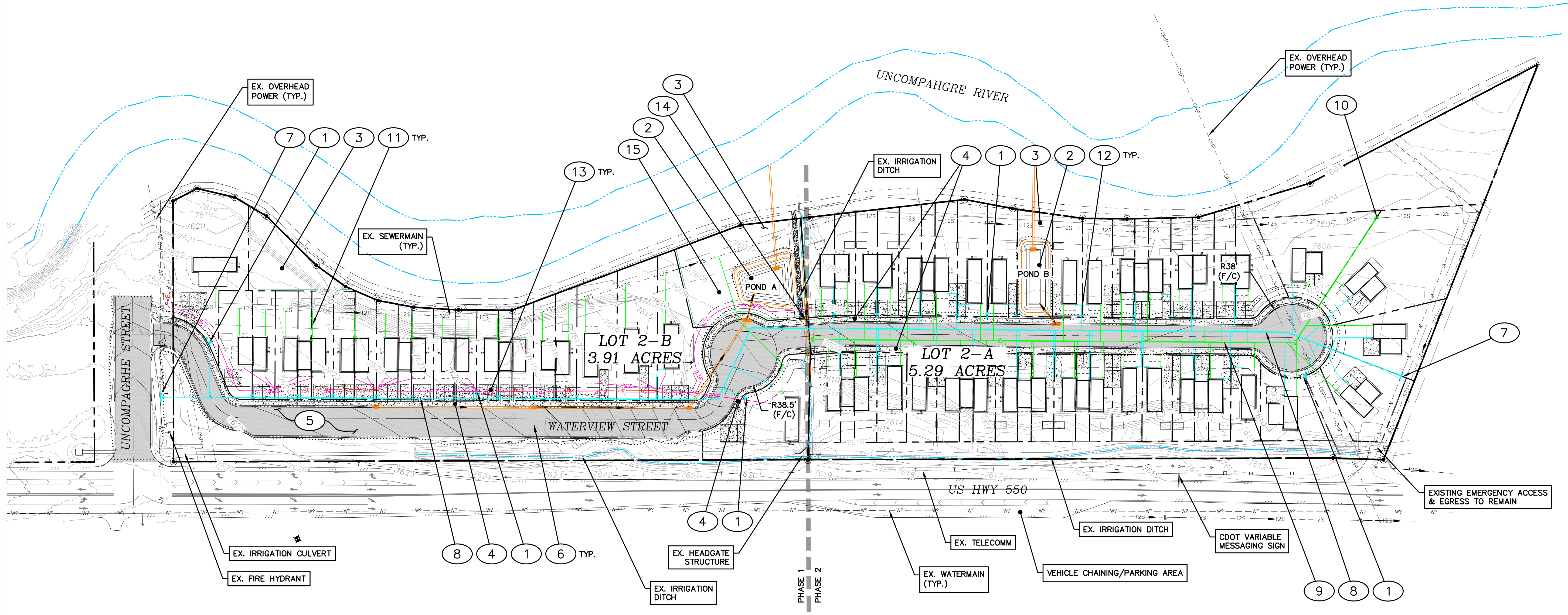
**CONSTRUCTION KEYNOTES:**

1. PROPOSED FIRE HYDRANT
2. PROPOSED STORMWATER TREATMENT FACILITY
3. PROPOSED LANDSCAPE PUBLIC AREA TO RIVER TRAIL
4. PROPOSED 5FT CONCRETE SIDEWALK
5. PROPOSED ROADWAY
6. PROPOSED STORM DRAIN
7. 8" WATERMAIN CONNECTION TO EXISTING WATERMAIN
8. PROPOSED 8" WATERMAIN
9. PROPOSED 8" SEWER MAIN
10. SANITARY SEWER MANHOLE CONNECTION TO EX. 12" SEWER MAIN
11. NEW SEWER SERVICE, TWO-WAY CLEANOUT WITHIN 5FT OF FOUNDATION
12. NEW WATER SERVICE
13. CONCRETE DRIVEWAY AREA PER DETAIL
14. PROPOSED IRRIGATION DITCH CULVERT WITH HEADWALLS PER DETAIL
15. RIVER WALK ACCESS



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OVERALL SITE PLAN

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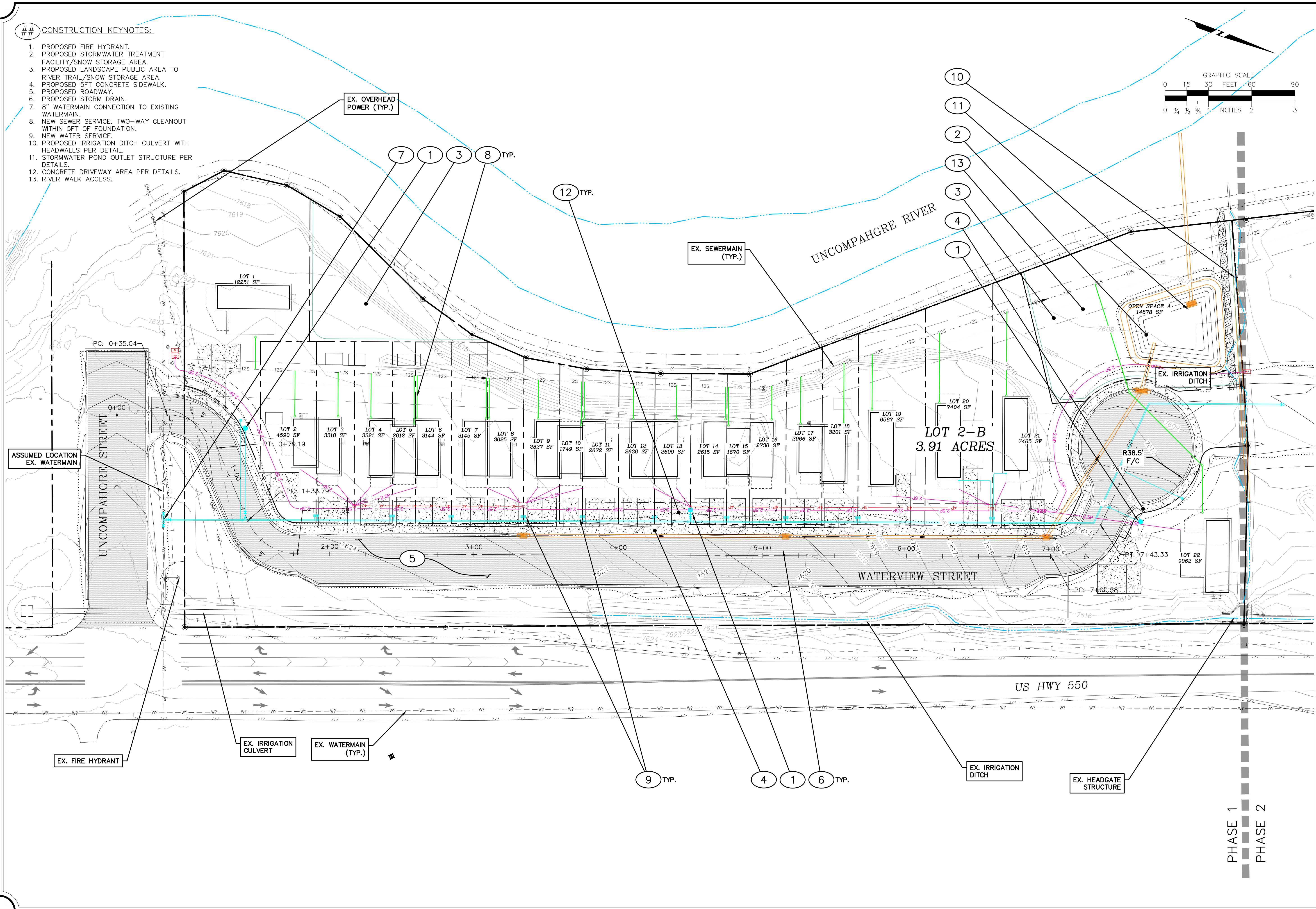
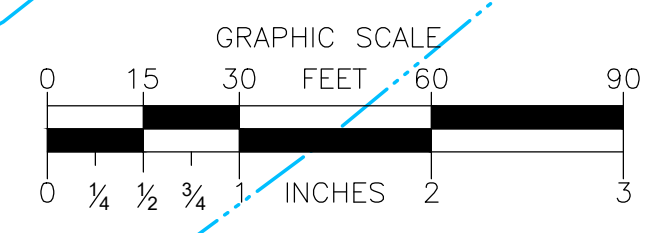
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**RD1.02**  
PHASE 1 SITE PLAN

**## CONSTRUCTION KEYNOTES:**

1. PROPOSED FIRE HYDRANT.
2. PROPOSED STORMWATER TREATMENT FACILITY/SNOW STORAGE AREA.
3. PROPOSED LANDSCAPE PUBLIC AREA TO RIVER TRAIL/SNOW STORAGE AREA.
4. PROPOSED 5FT CONCRETE SIDEWALK.
5. PROPOSED ROADWAY.
6. PROPOSED STORM DRAIN.
7. 8" WATERMAIN CONNECTION TO EXISTING WATERMAIN.
8. NEW SEWER SERVICE. TWO-WAY CLEANOUT WITHIN 5FT OF FOUNDATION.
9. NEW WATER SERVICE.
10. PROPOSED IRRIGATION DITCH CULVERT WITH HEADWALLS PER DETAIL.
11. STORMWATER POND OUTLET STRUCTURE PER DETAILS.
12. CONCRETE DRIVEWAY AREA PER DETAILS.
13. RIVER WALK ACCESS.



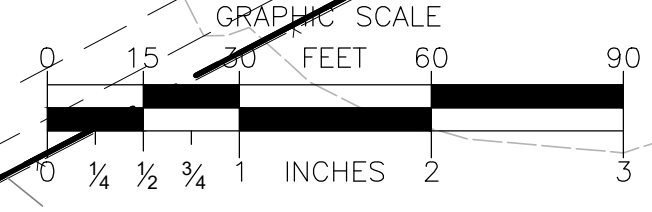
PHASE 1  
PHASE 2

CONSTRUCTION KEYNOTES:

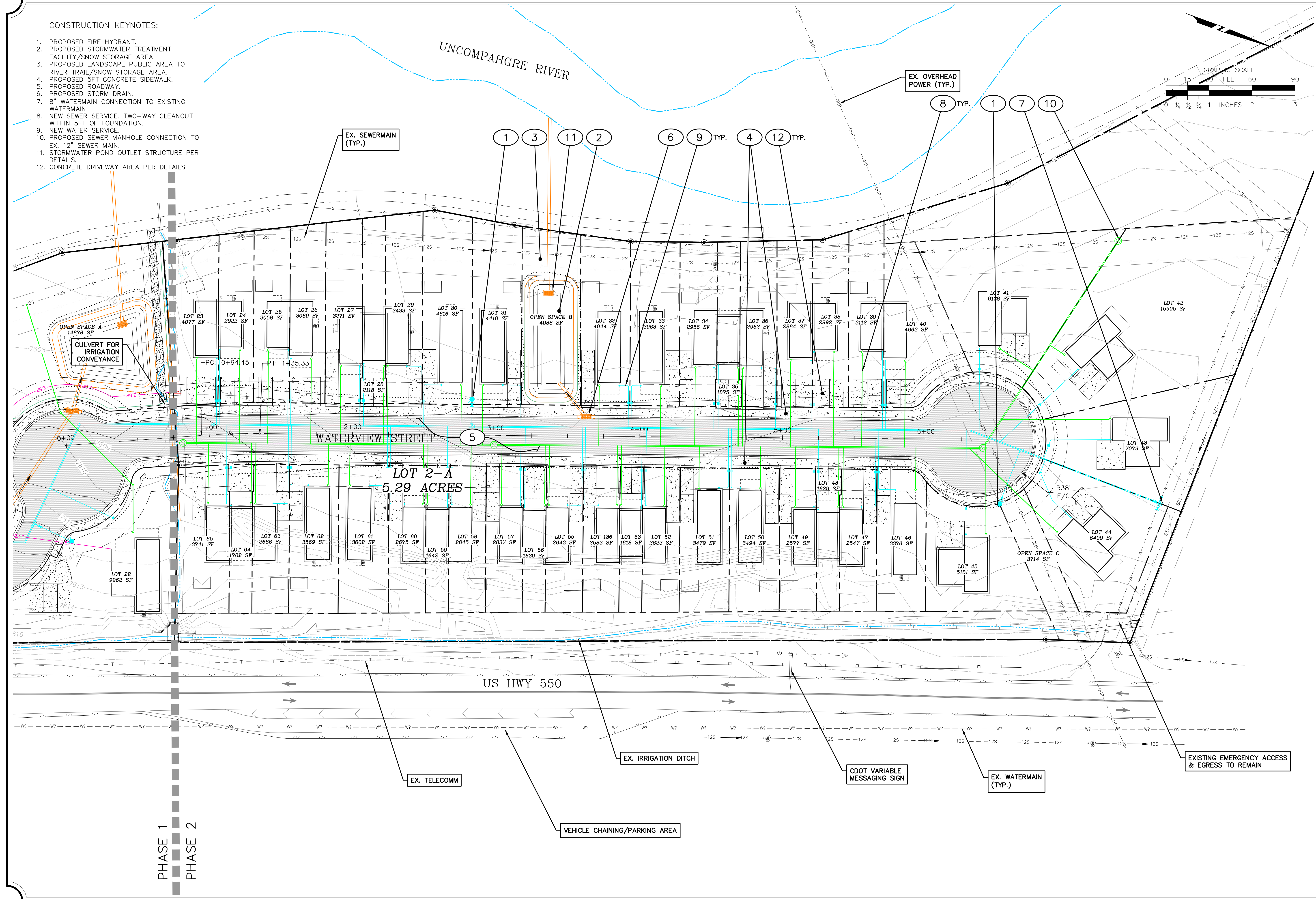
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2. PROPOSED STORMWATER TREATMENT FACILITY/SNOW STORAGE AREA.
3. PROPOSED LANDSCAPE PUBLIC AREA TO RIVER TRAIL/SNOW STORAGE AREA.
4. PROPOSED 5FT CONCRETE SIDEWALK.
5. PROPOSED ROADWAY.
6. PROPOSED STORM DRAIN.
7. 8" WATERMAIN CONNECTION TO EXISTING WATERMAIN.
8. NEW SEWER SERVICE. TWO-WAY CLEANOUT WITHIN 5FT OF FOUNDATION.
9. NEW WATER SERVICE.
10. PROPOSED SEWER MANHOLE CONNECTION TO EX. 12" SEWER MAIN.
11. STORMWATER POND OUTLET STRUCTURE PER DETAILS.
12. CONCRETE DRIVEWAY AREA PER DETAILS.

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UNCOMPAHGRE RIVER



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**WATERVIEW AFFORDABLE HOUSING SUBDIVISION**  
OURAY, COLORADO

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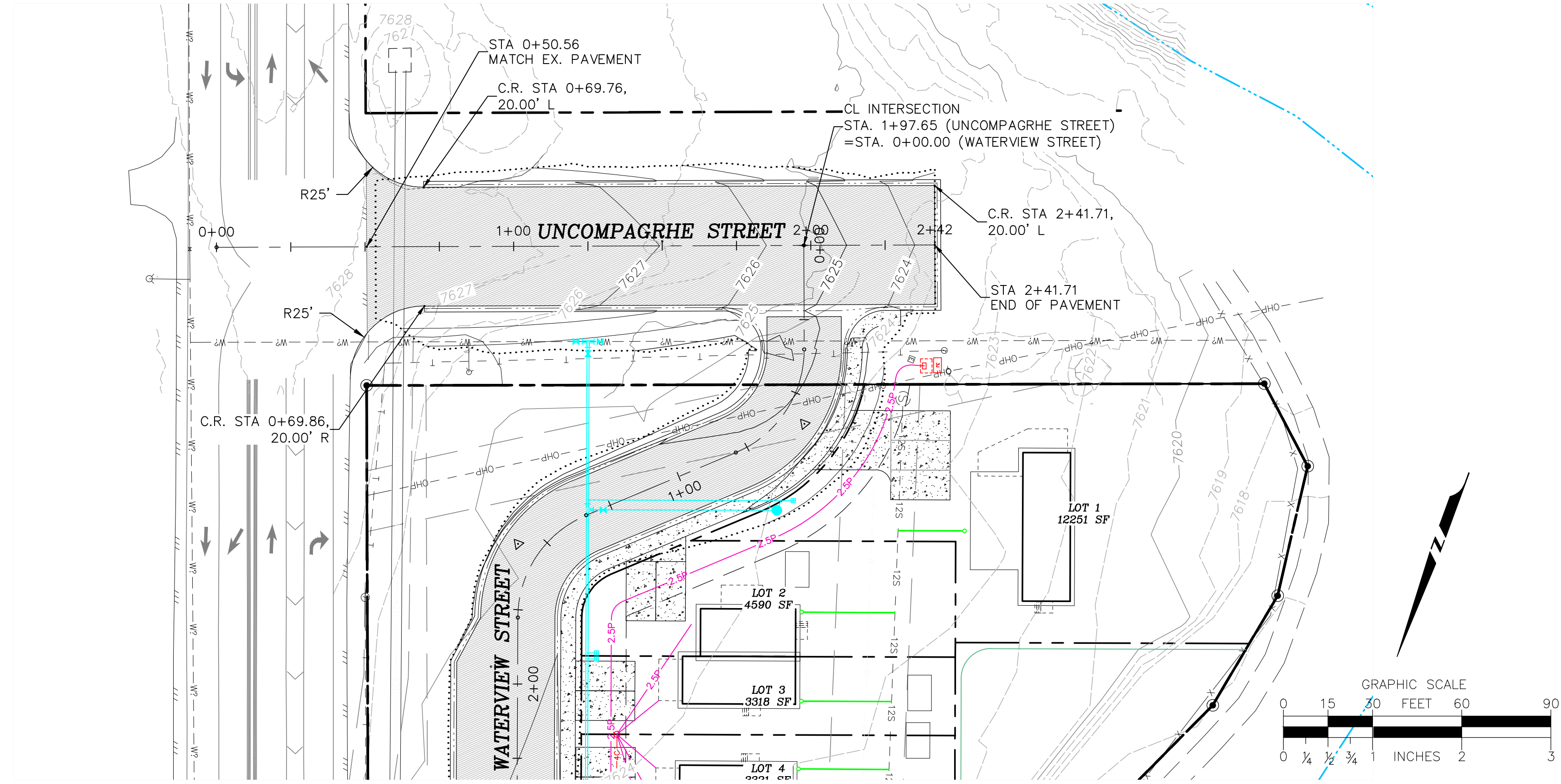
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Checked By: RSH

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PHASE 2 SITE PLAN

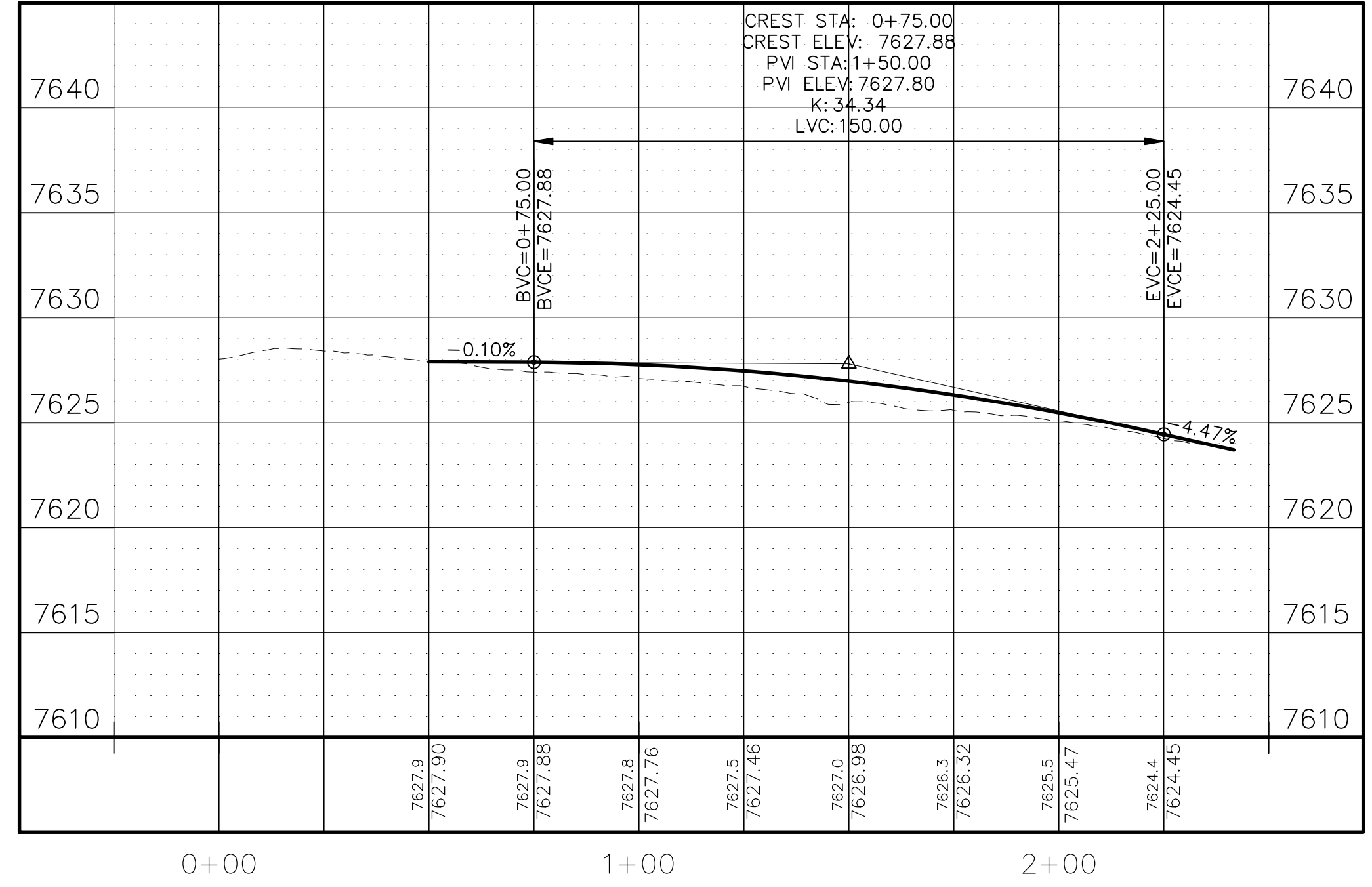
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PHASE 2

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7645 UNCOMPAGRHE STREET PROFILE SCALE: 1"=30' H, 1"=6' V 7645



WATERVIEW AFFORDABLE HOUSING SUBDIVISION  
OURAY, COLORADO

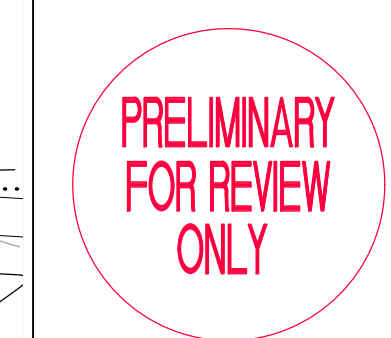
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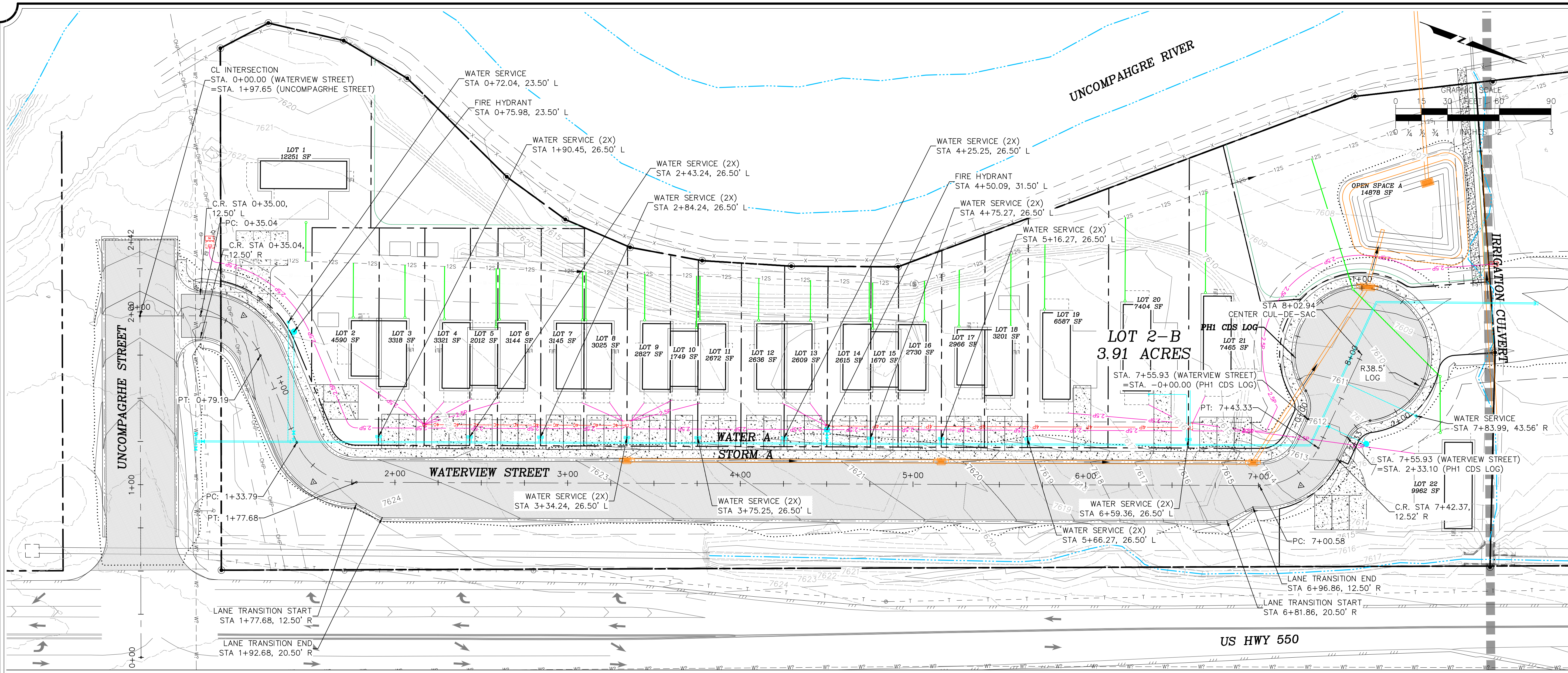
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UNCOMPAGRHE ST.  
PLAN & PROFILE

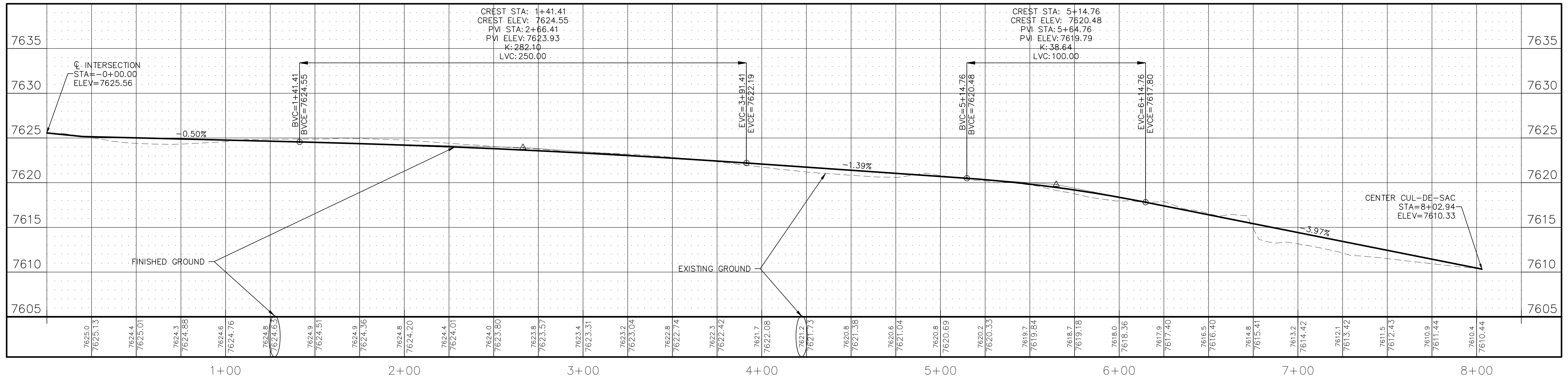


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**WATERVIEW AFFORDABLE HOUSING SUBDIVISION**  
DURANGO, COLORADO



WATERVIEW STREET PROFILE SCALE: 1"=30' H, 1"=6' V



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**RD2.02**  
WATERVIEW ST.  
PHASE 1 PLAN & PROFILE

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WATERVIEW AFFORDABLE HOUSING SUBDIVISION

OURAY, COLORADO

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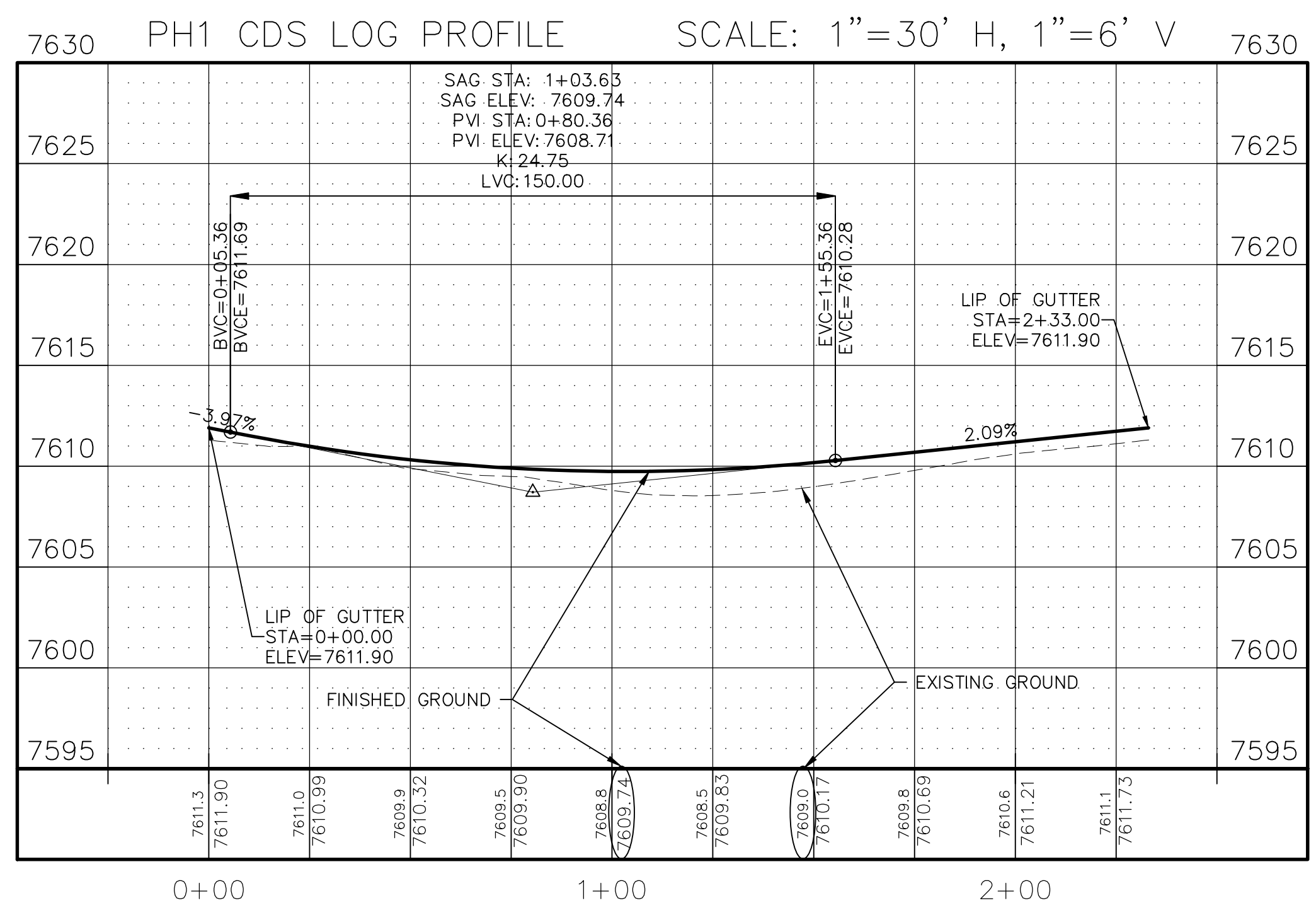
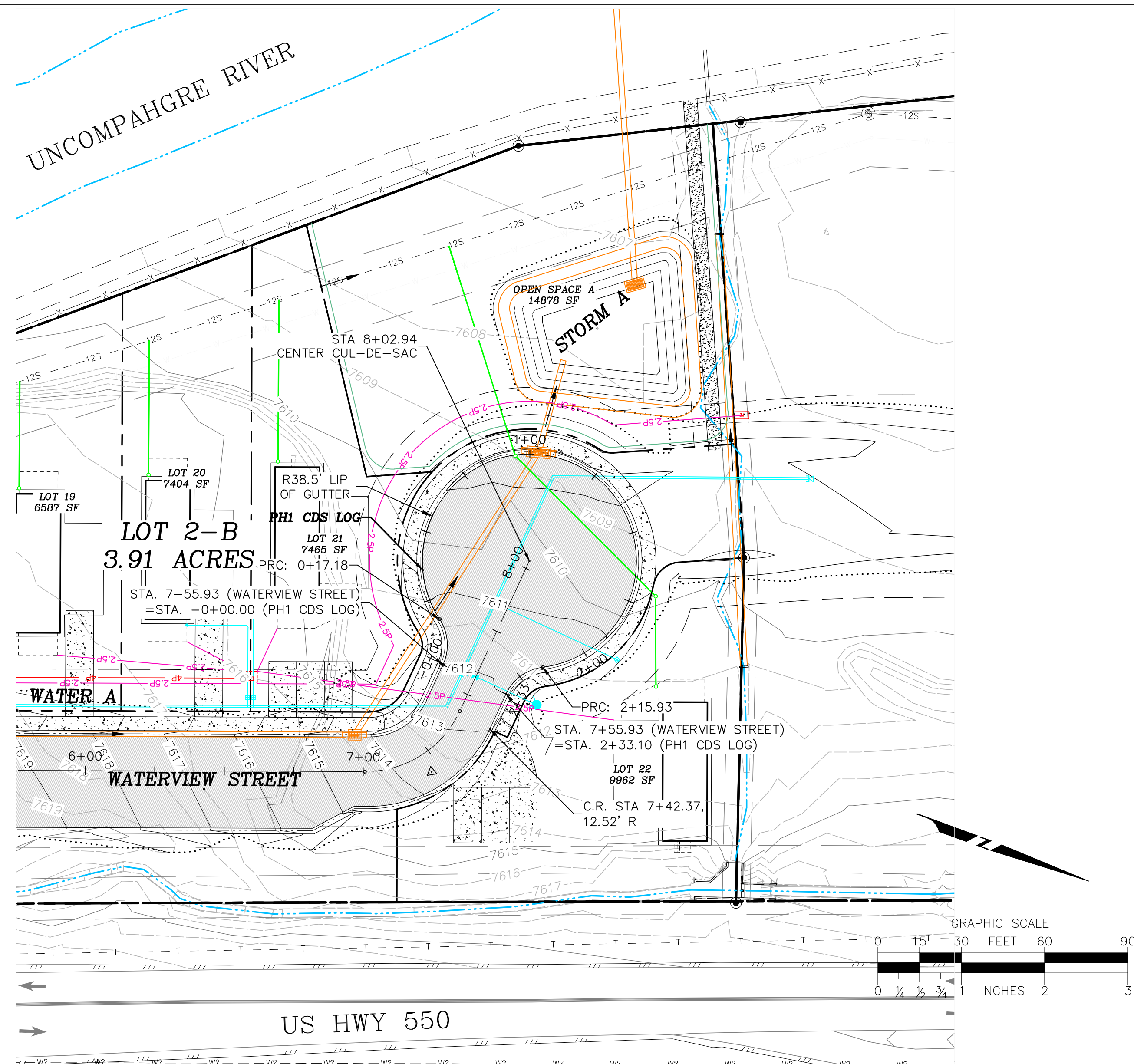
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**RD2.03**

WATERVIEW ST.  
PHASE 1 CDS  
PLAN & PROFILE







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**WATERVIEW AFFORDABLE HOUSING SUBDIVISION**  
OURAY, COLORADO

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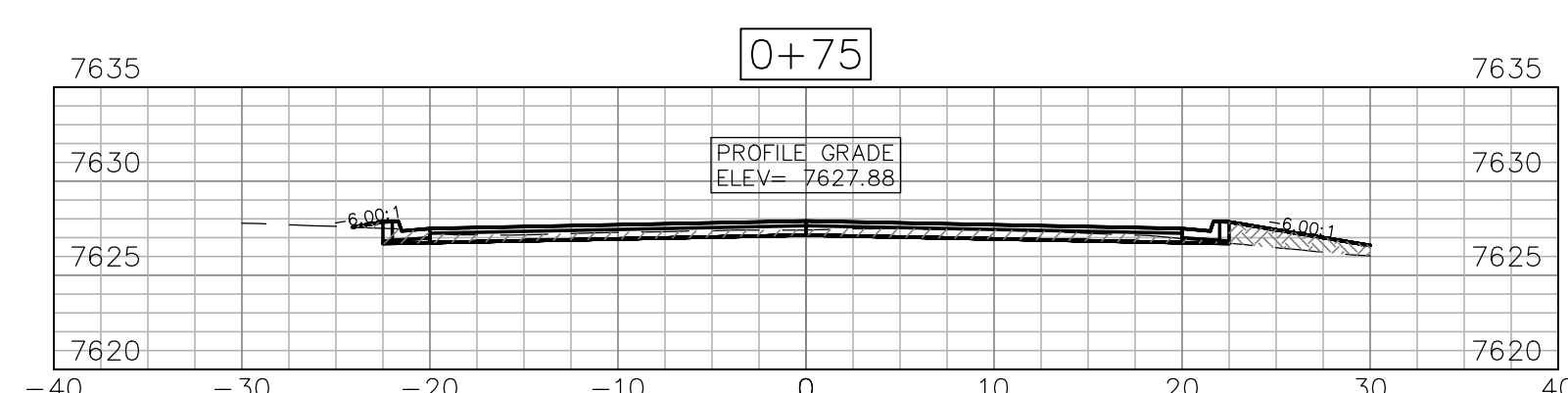
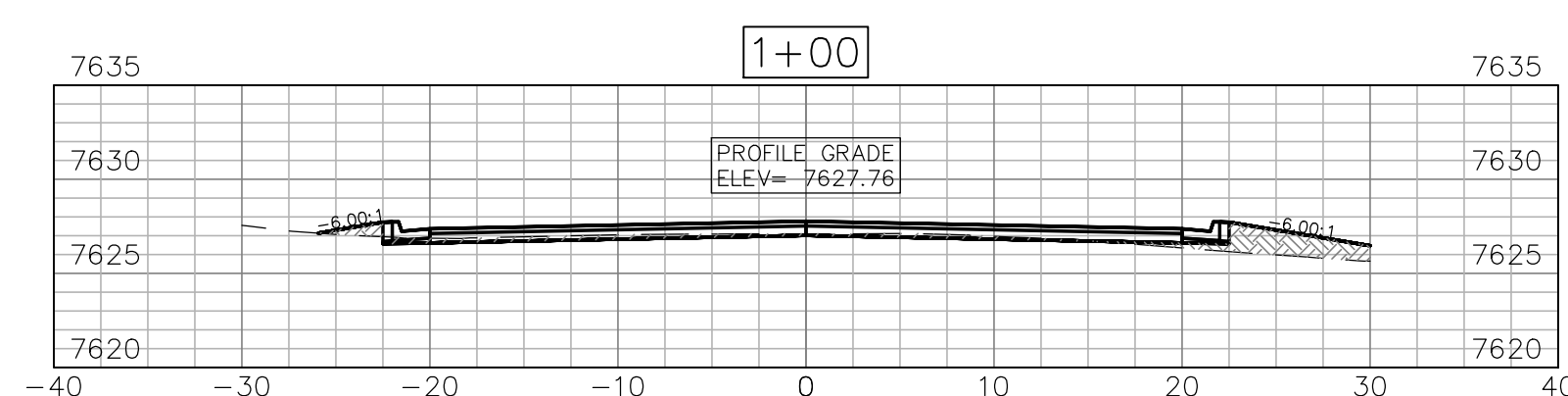
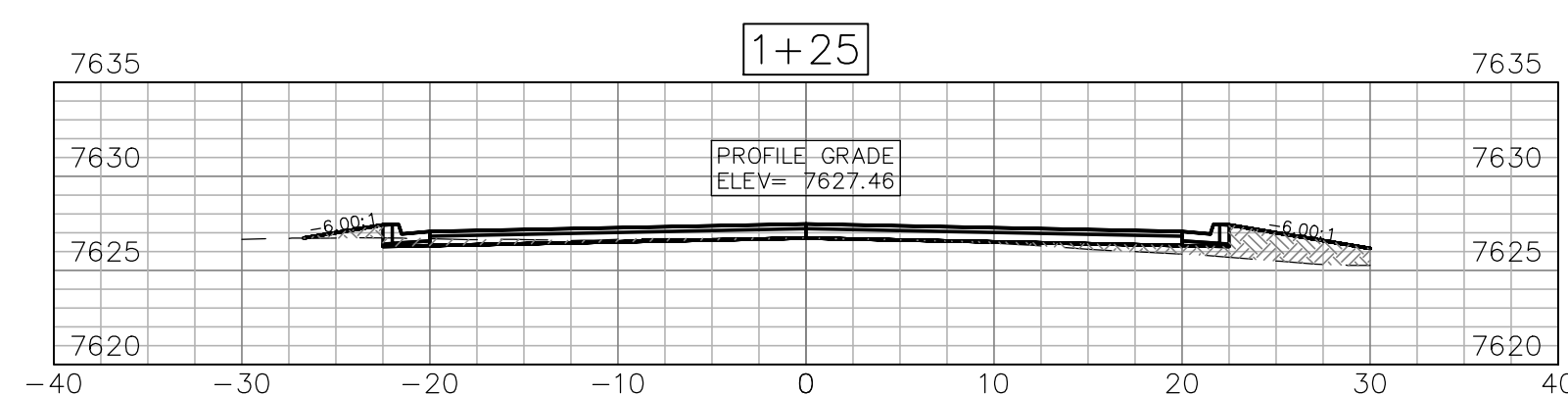
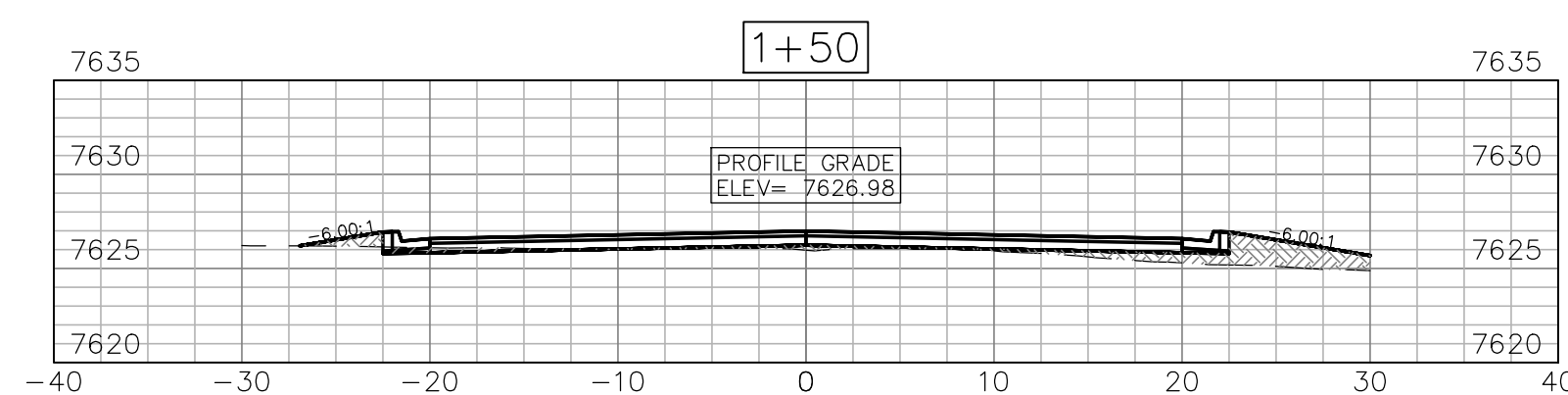
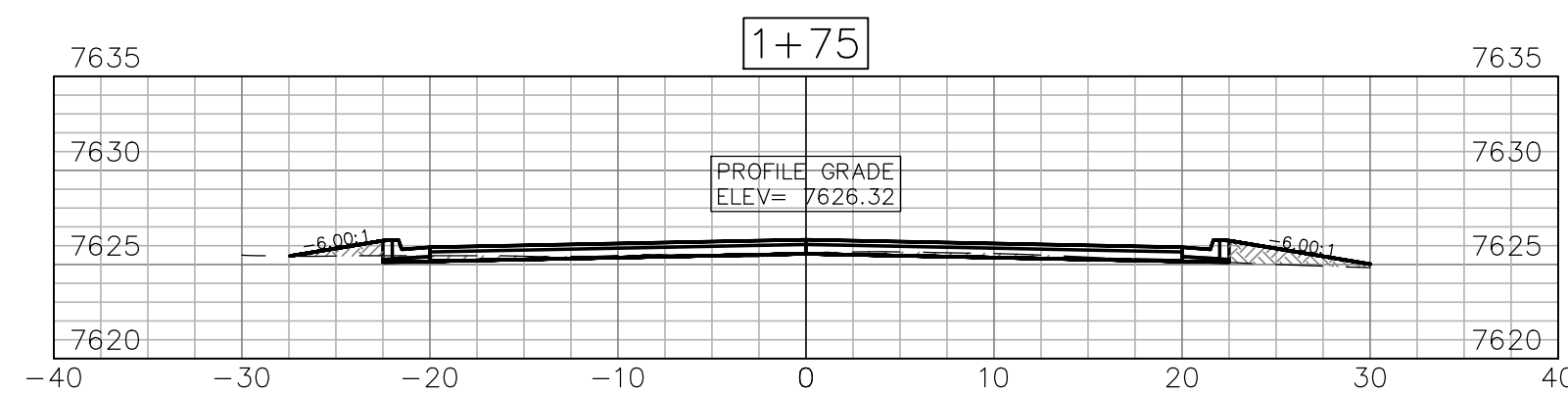
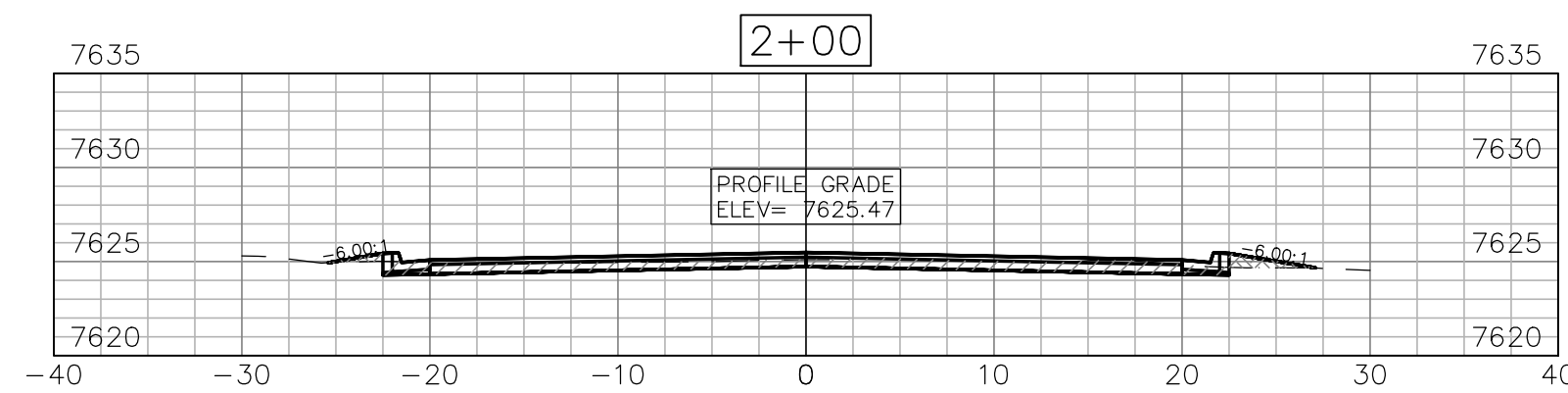
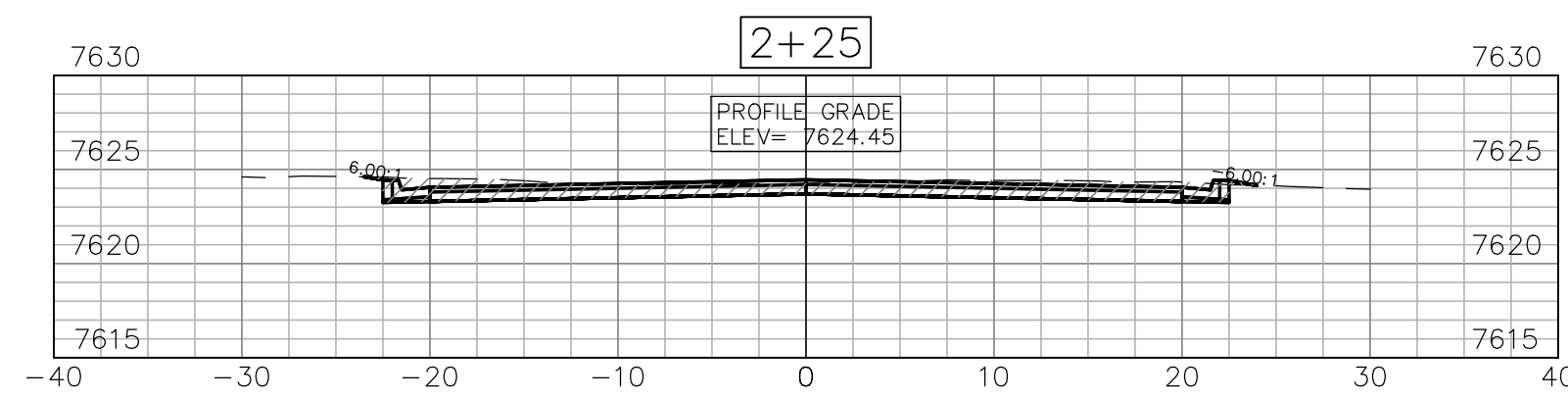
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UNCOMPAGHRE ST.  
CROSS SECTION

UNCOMPAGHRE STREET EARTHWORK TABULATION						
Station	Fill Area (SF)	Cut Area (SF)	Fill Volume (CY)	Cut Volume (CY)	Cumulative Fill Vol (CY)	Cumulative Cut Vol (CY)
0+75.00	6.67	17.05	0.00	0.00	0.00	0.00
1+00.00	11.75	6.96	8.53	11.12	8.53	11.12
1+25.00	15.64	4.09	12.68	5.12	21.21	16.23
1+50.00	17.93	2.09	15.54	2.86	36.75	19.10
1+75.00	7.50	6.02	11.77	3.76	48.53	22.85
2+00.00	2.31	21.87	4.54	12.91	53.07	35.77
2+25.00	0.16	39.24	1.14	28.29	54.21	64.06



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OURAY, COLORADO

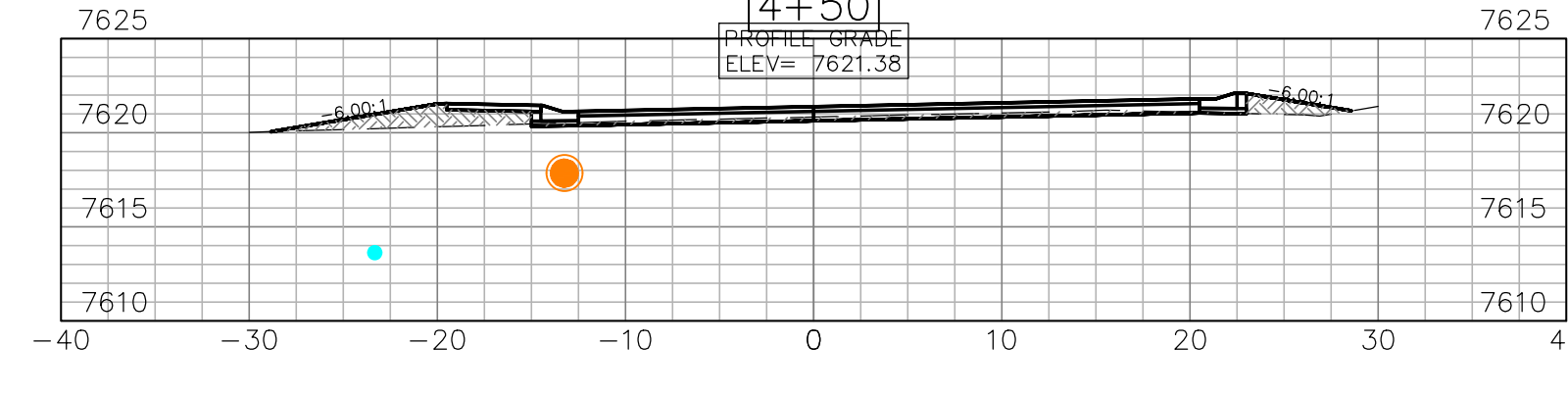
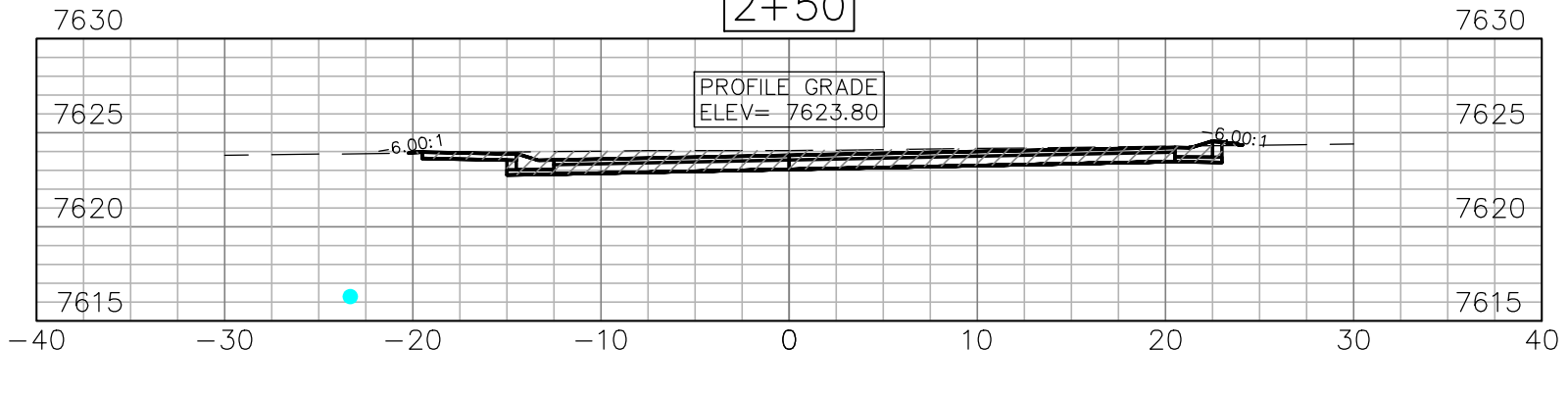
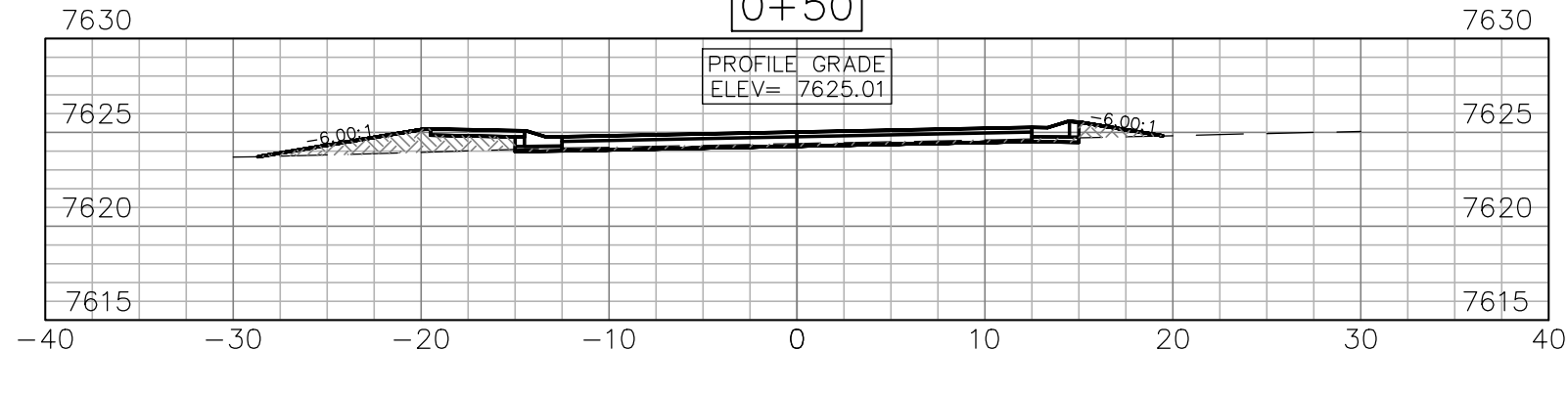
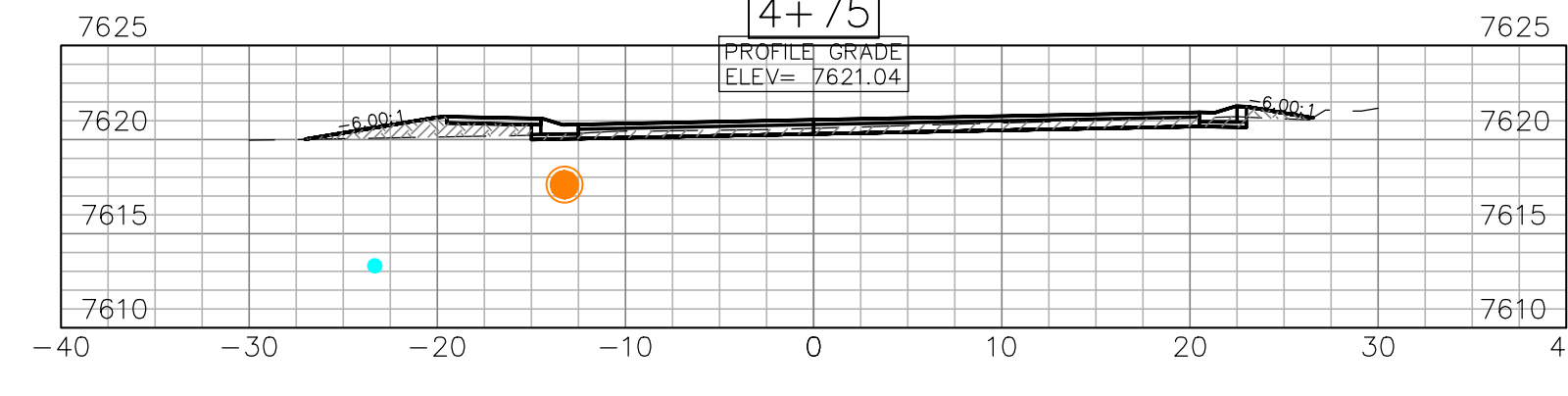
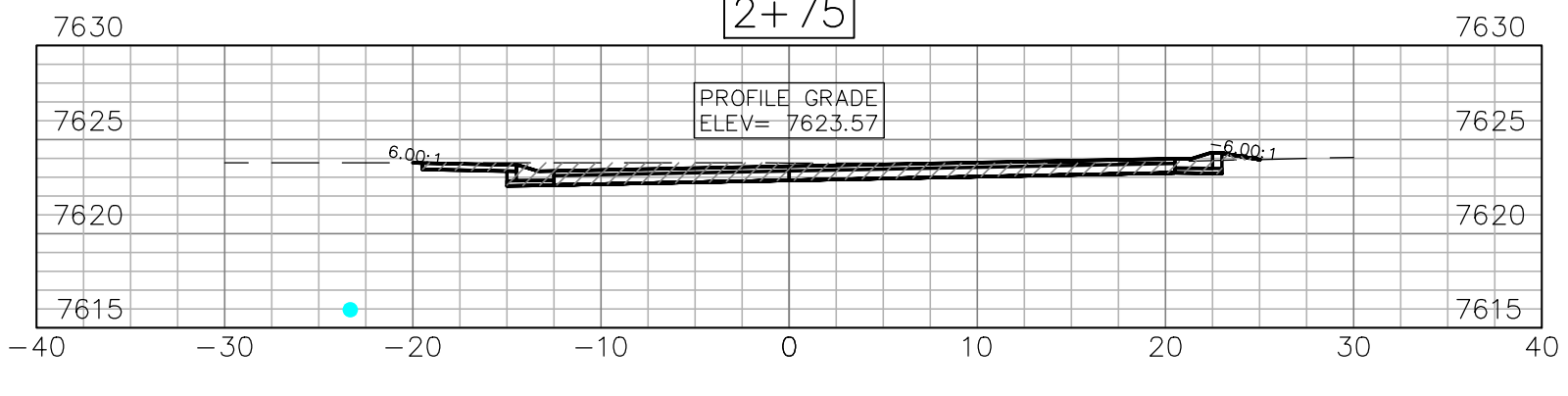
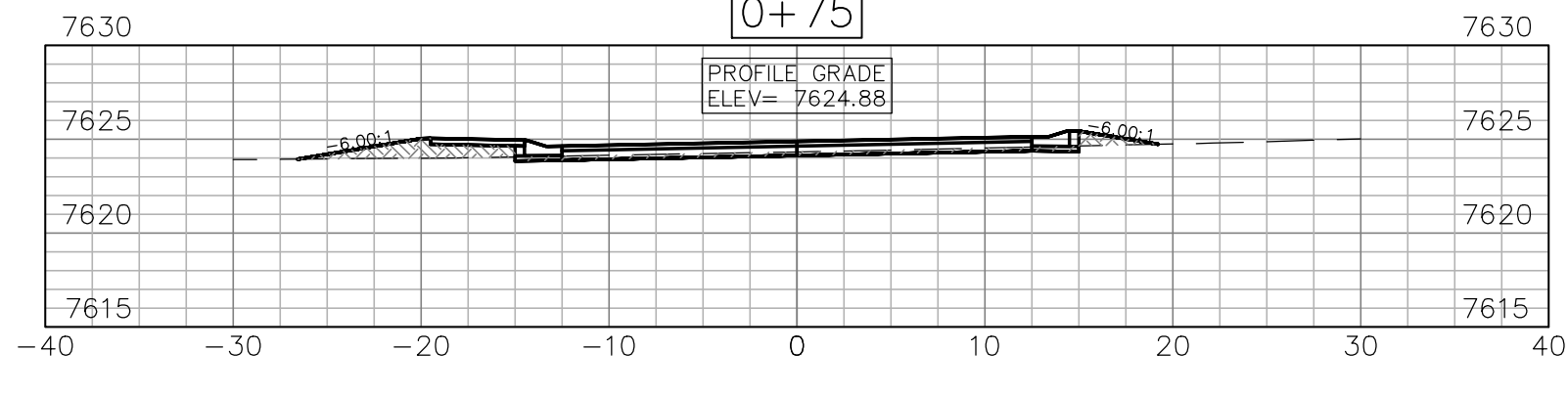
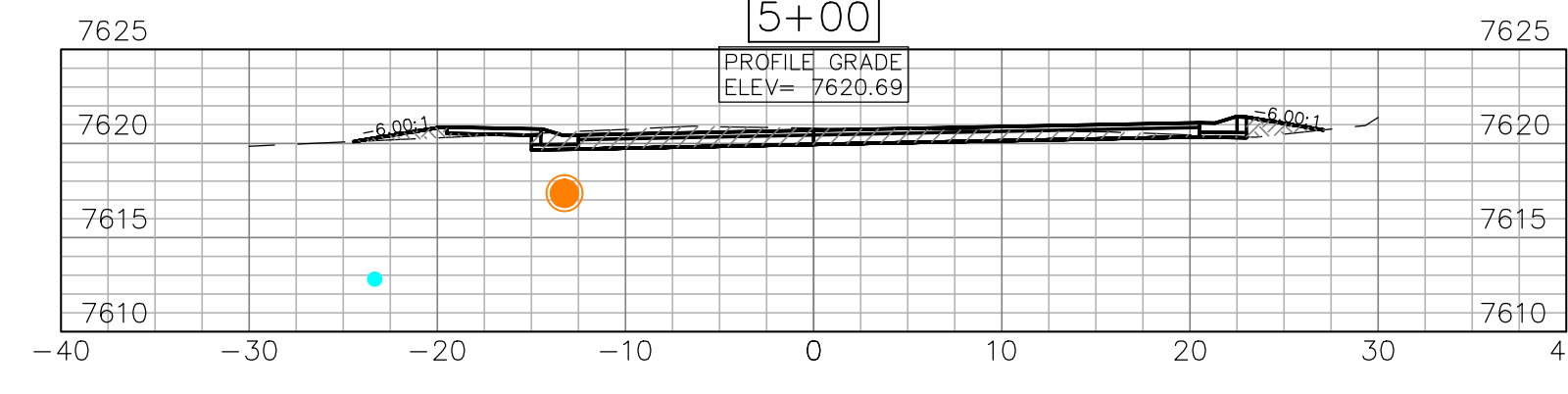
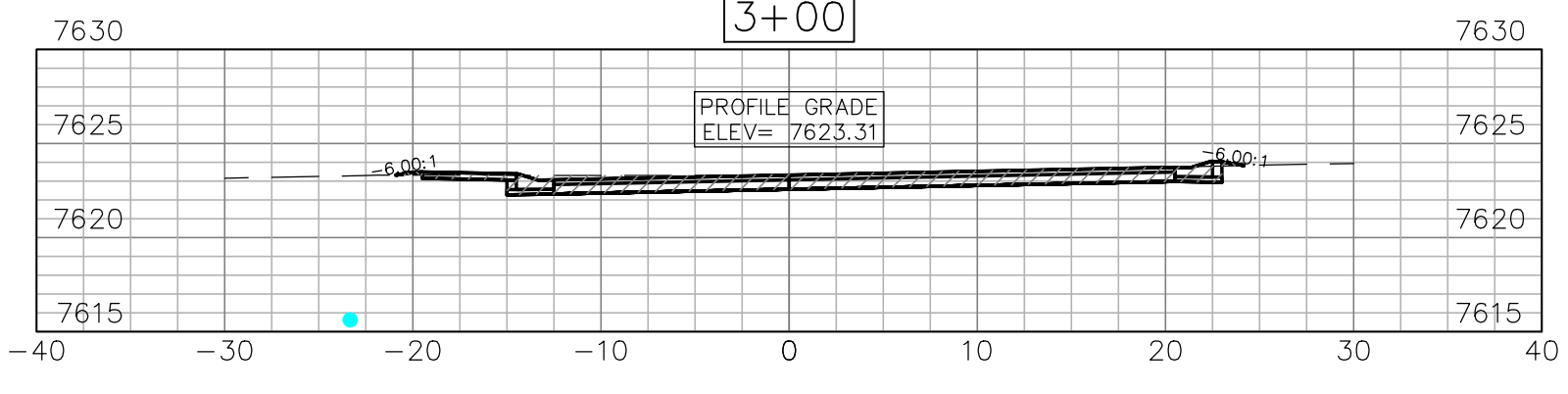
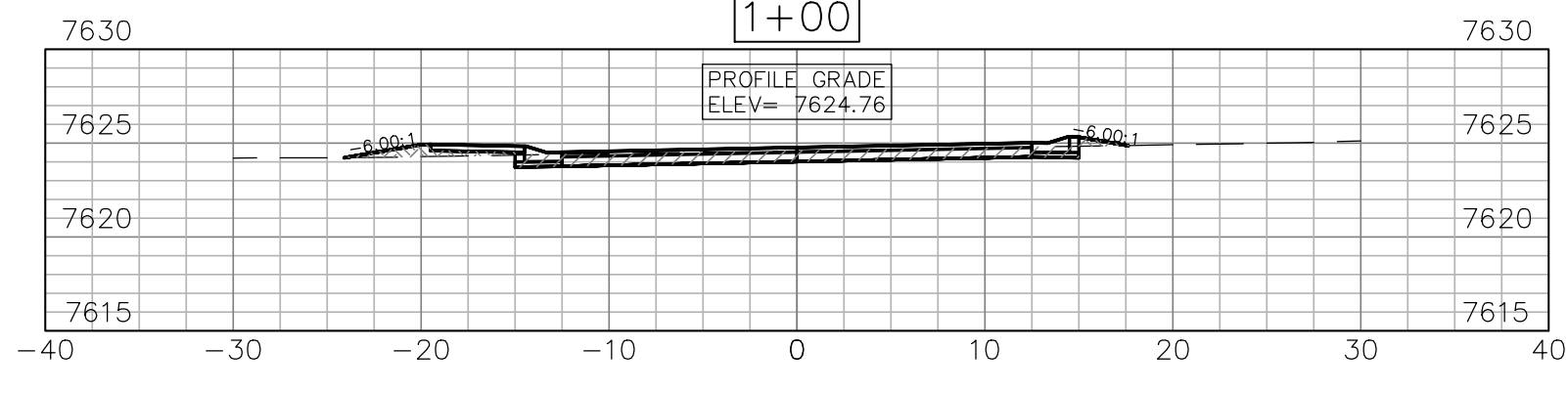
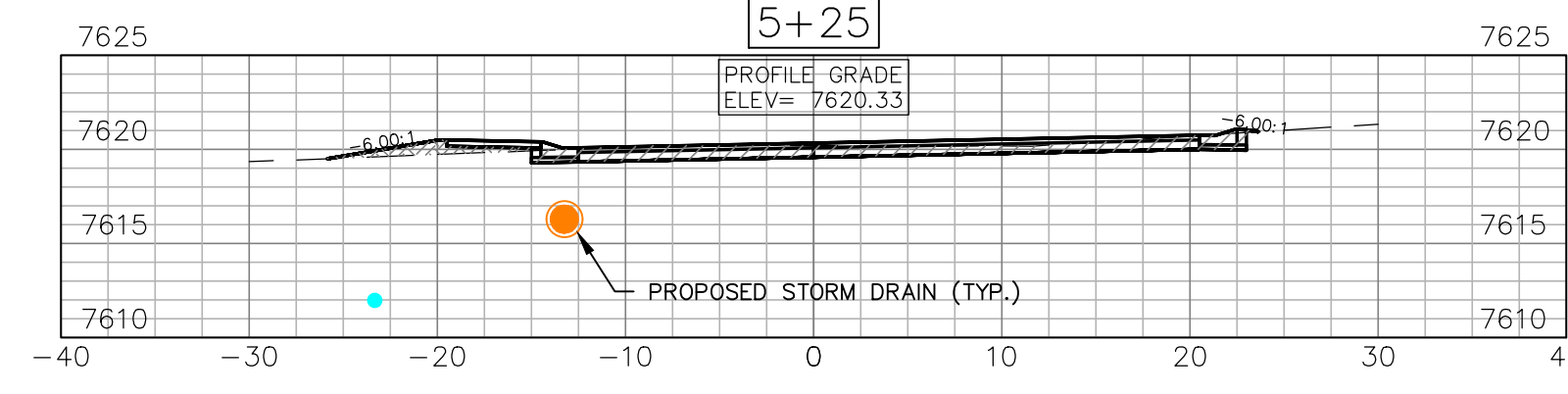
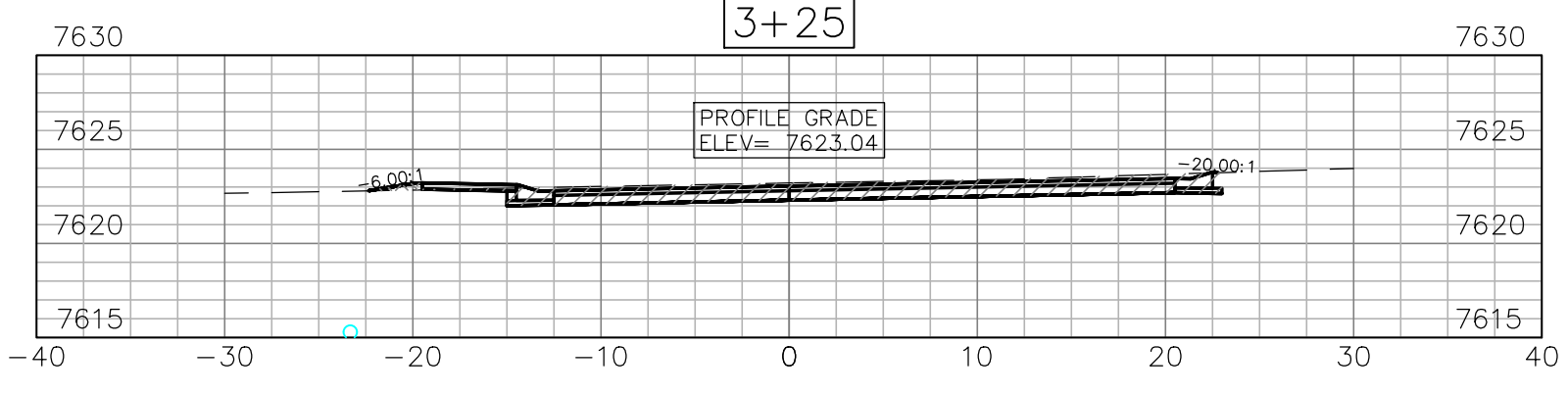
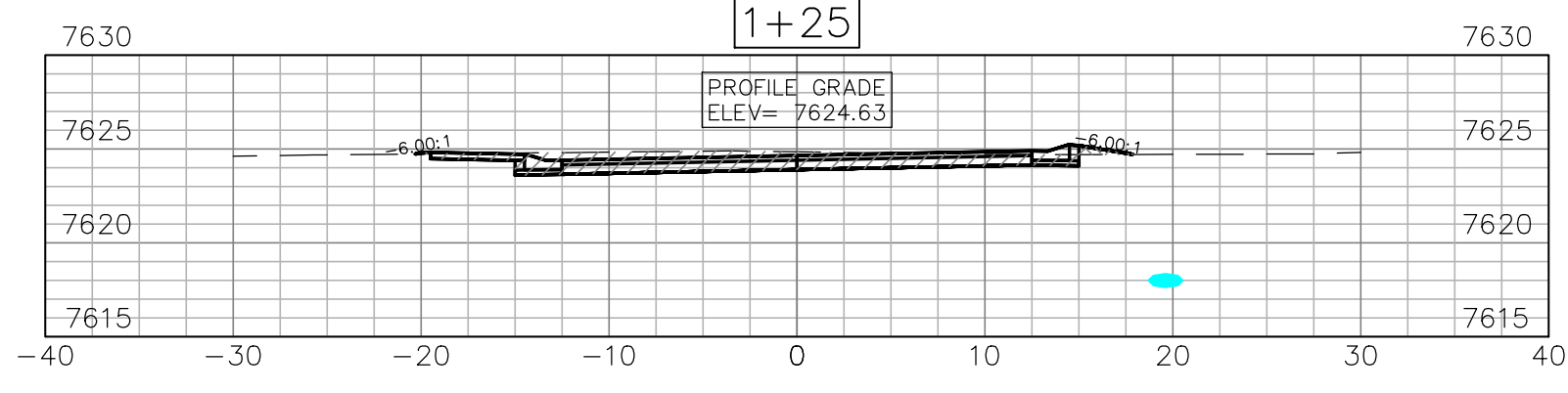
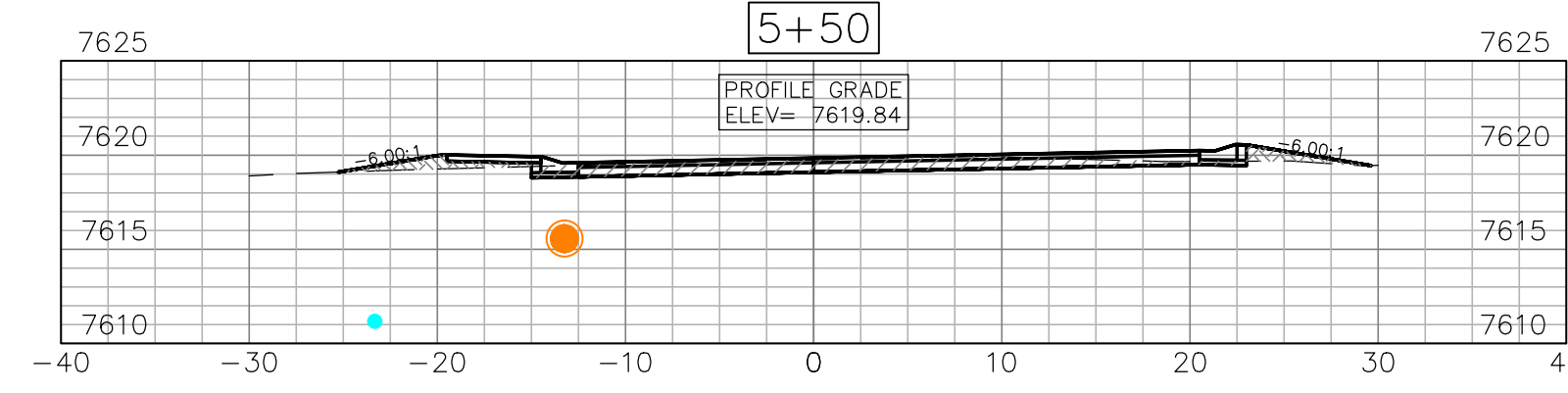
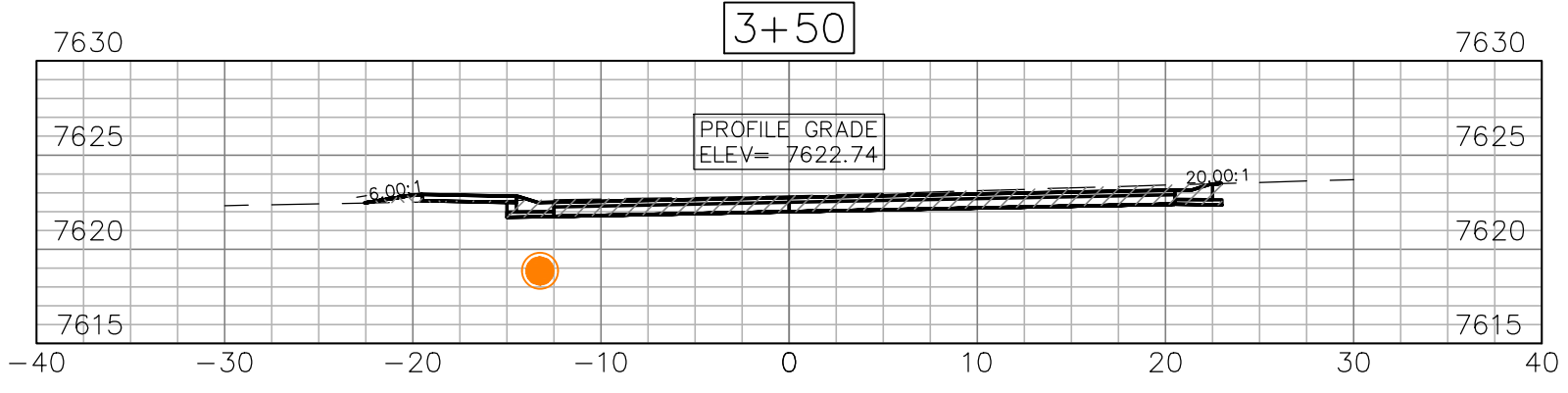
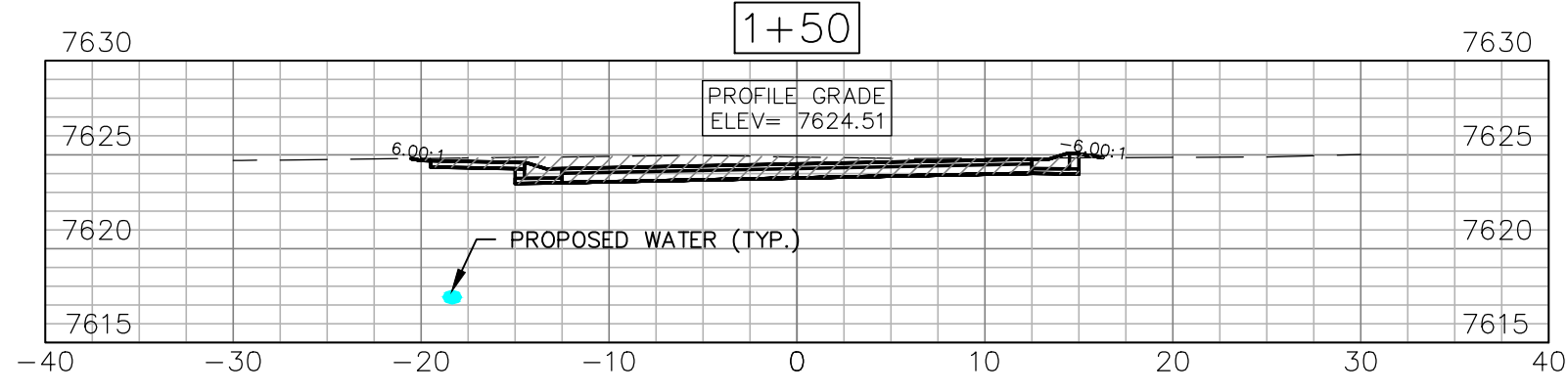
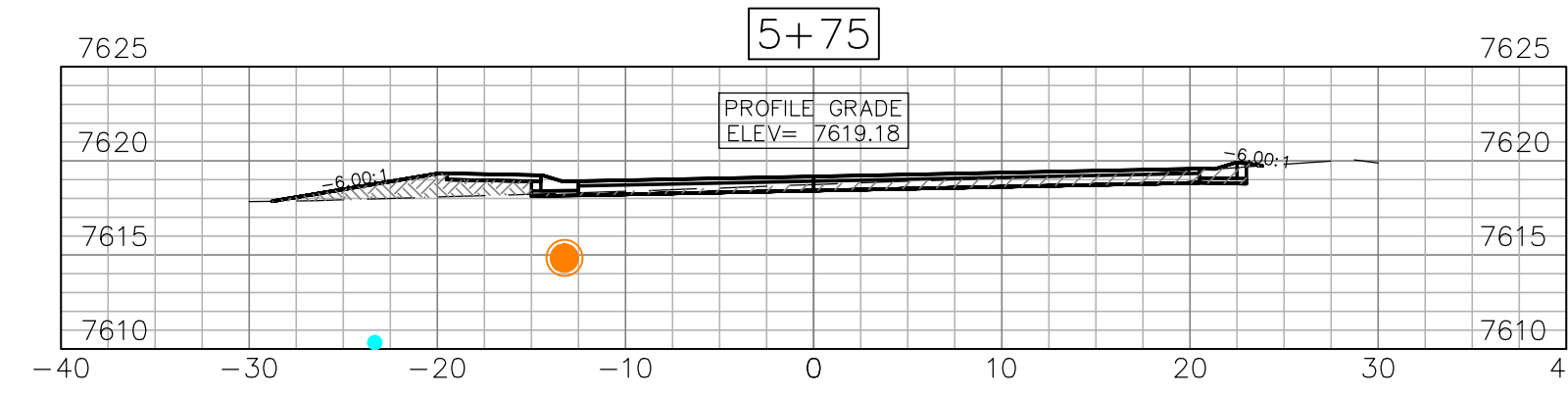
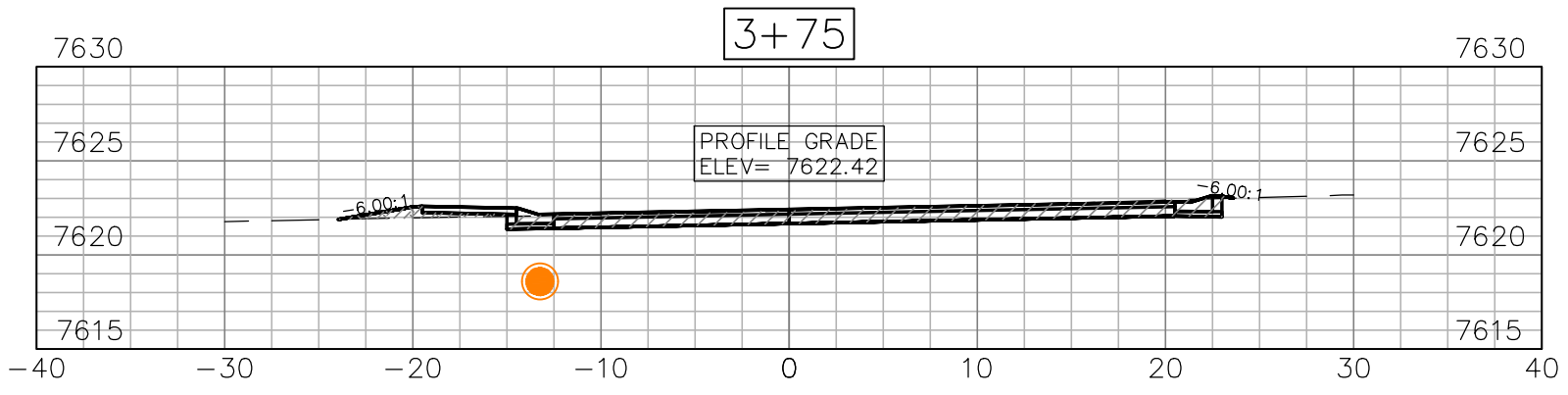
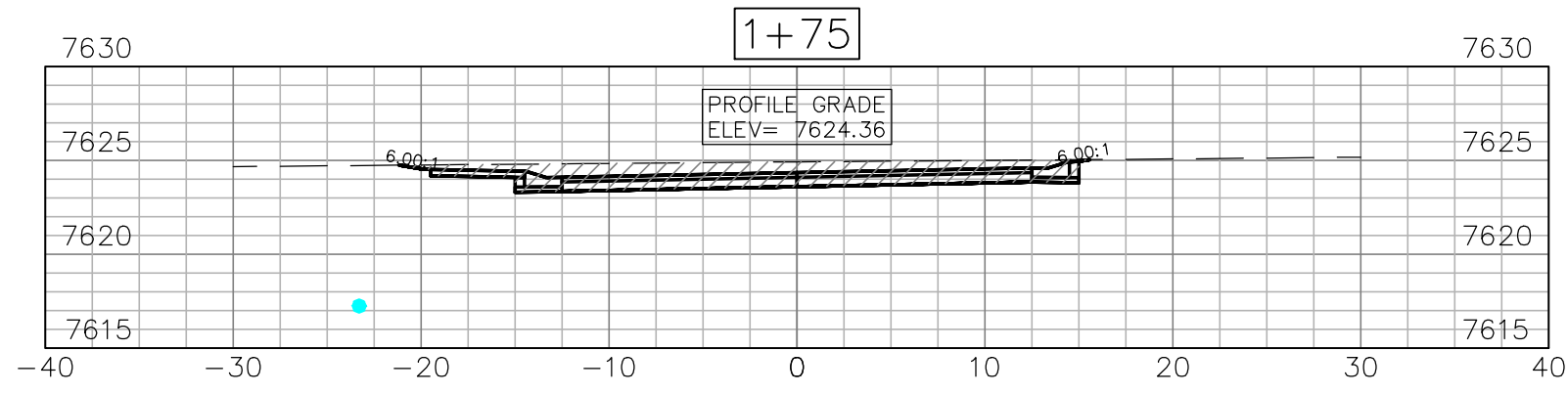
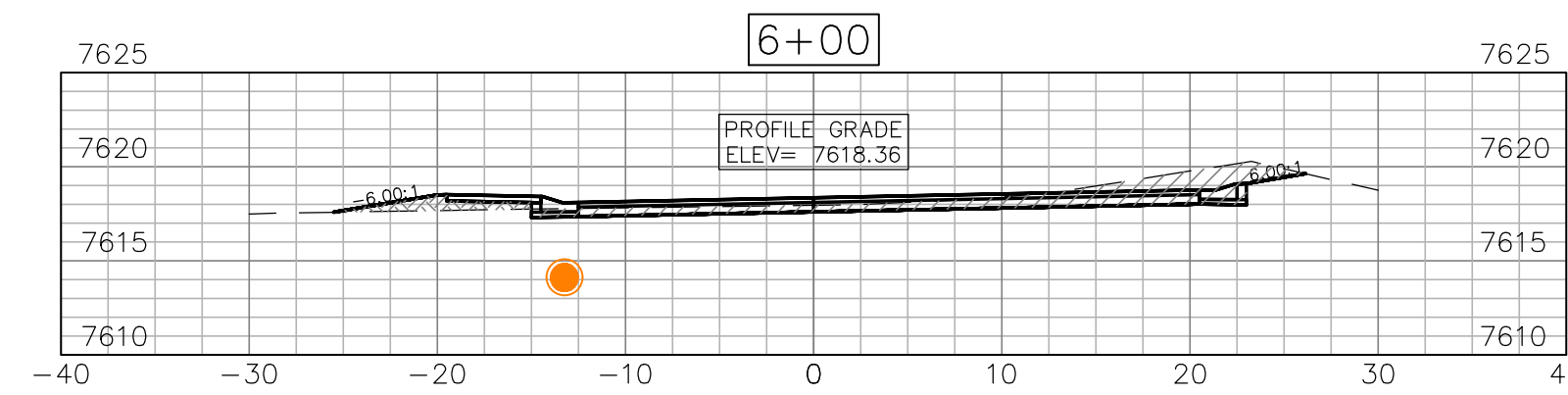
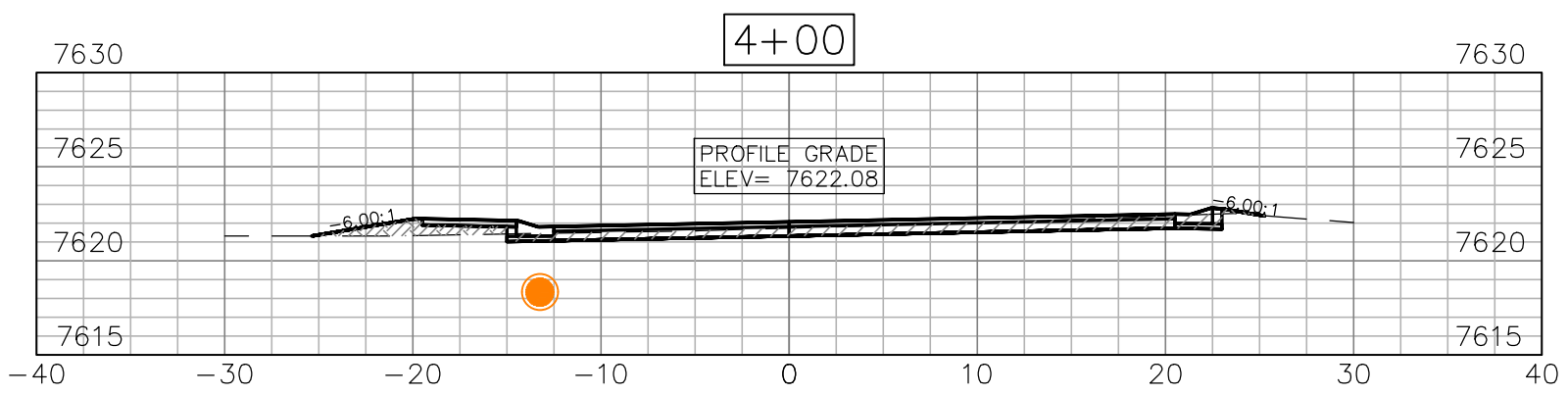
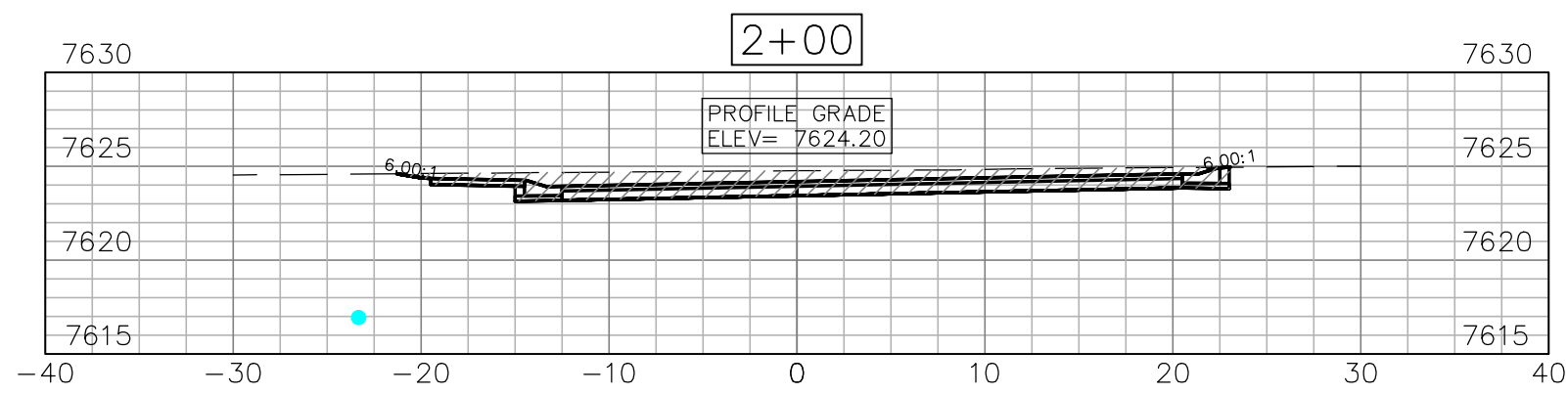
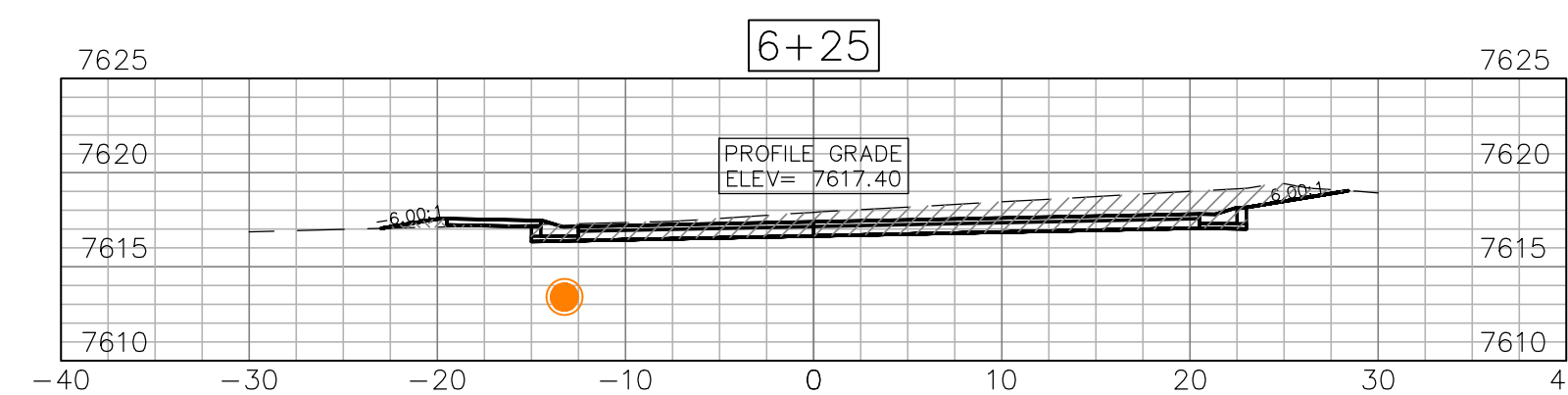
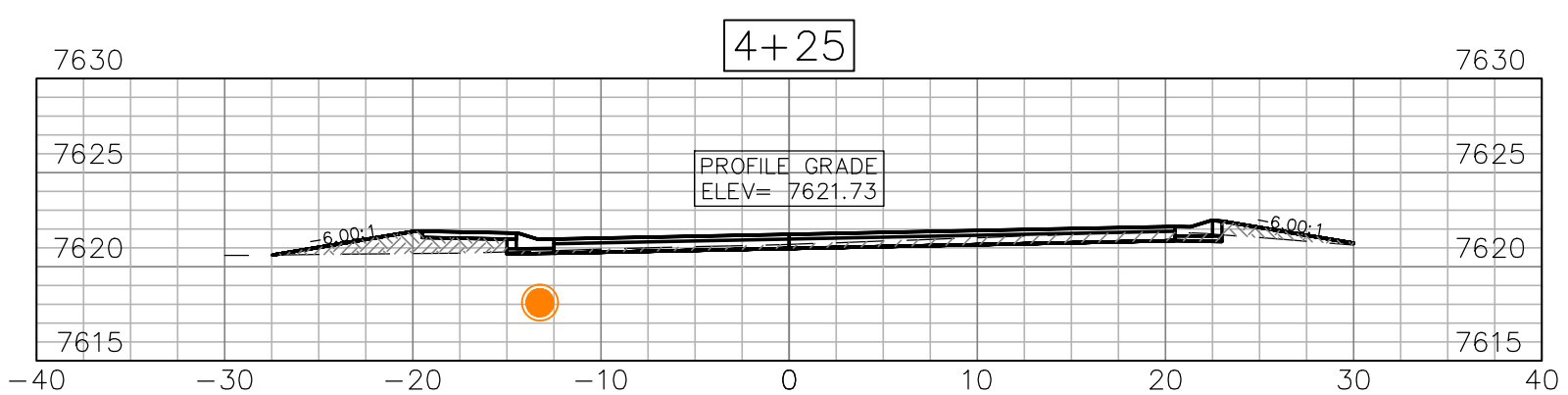
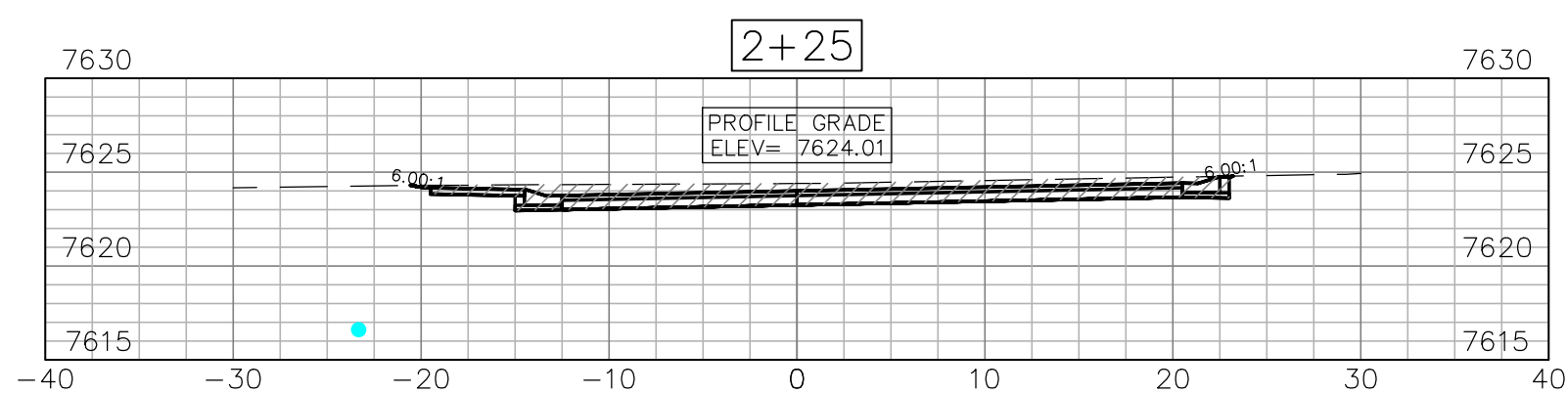
Issue Record:  
SCHEMATIC 05-05-2023

Revisions:

Project Number: 21-116  
Drawn By: JAE  
Designed by: RSH  
Checked By: RSH

Sheet  
**RD3.02**

WATERVIEW ST.  
PHASE 1 CROSS SECTION



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WATERVIEW AFFORDABLE HOUSING SUBDIVISION  
OURAY, COLORADO

Issue Record:  
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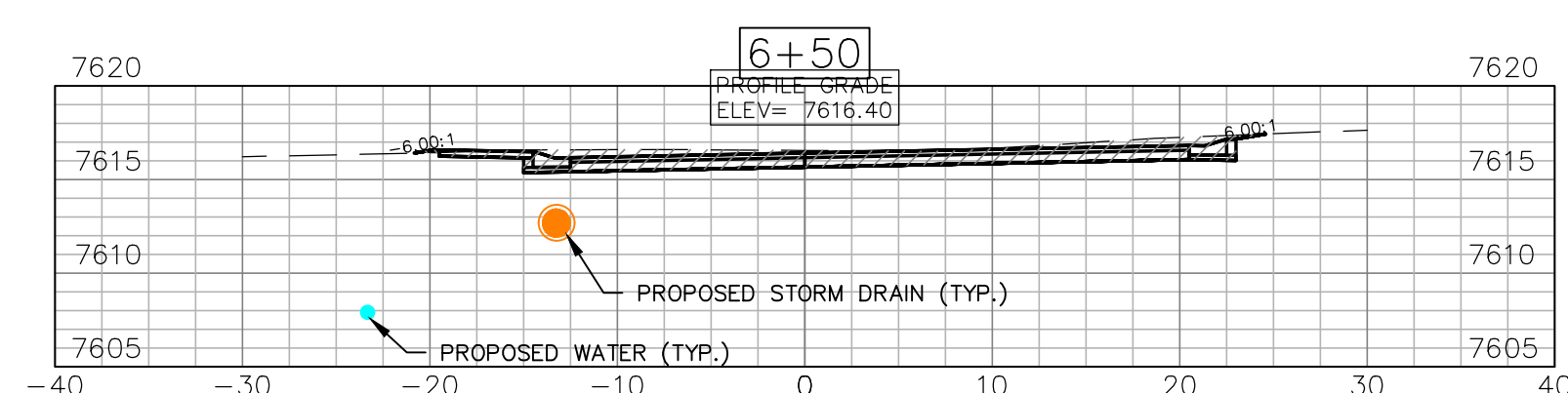
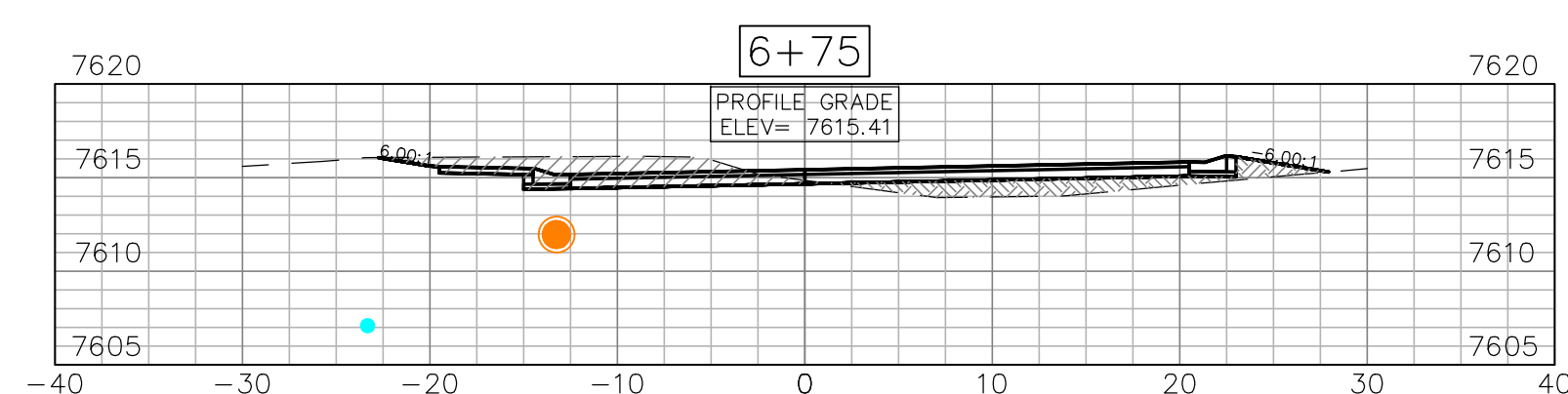
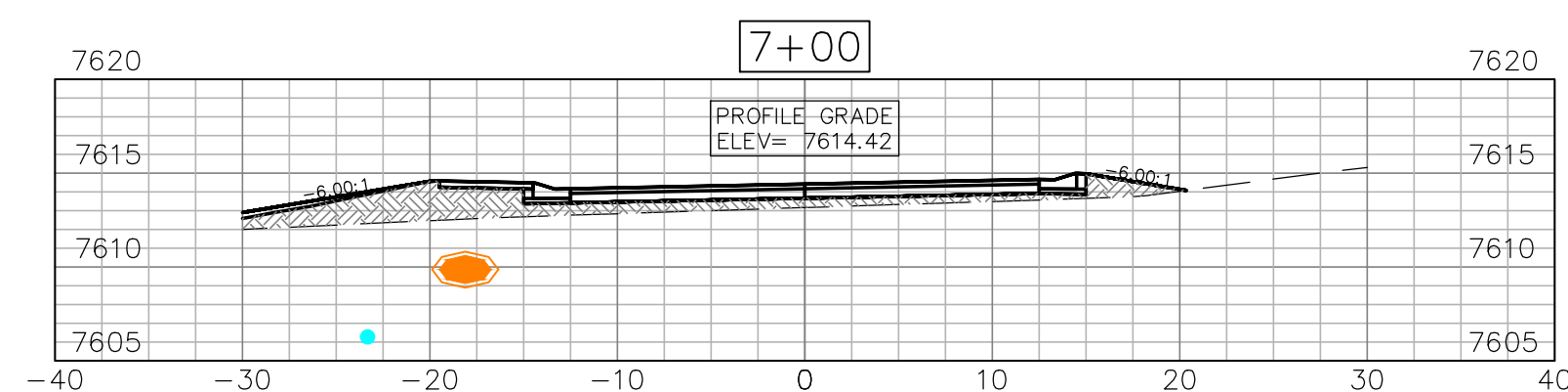
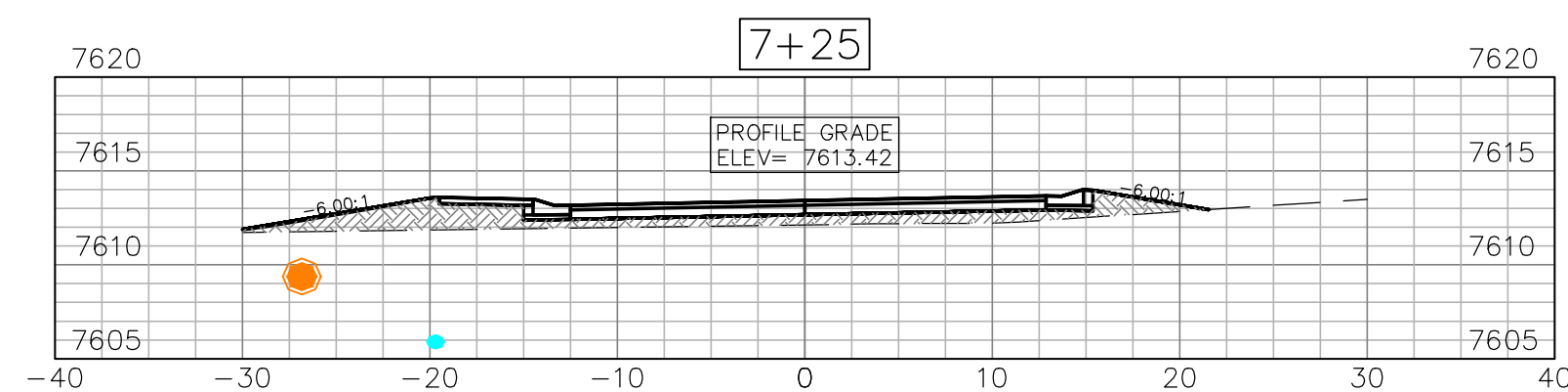
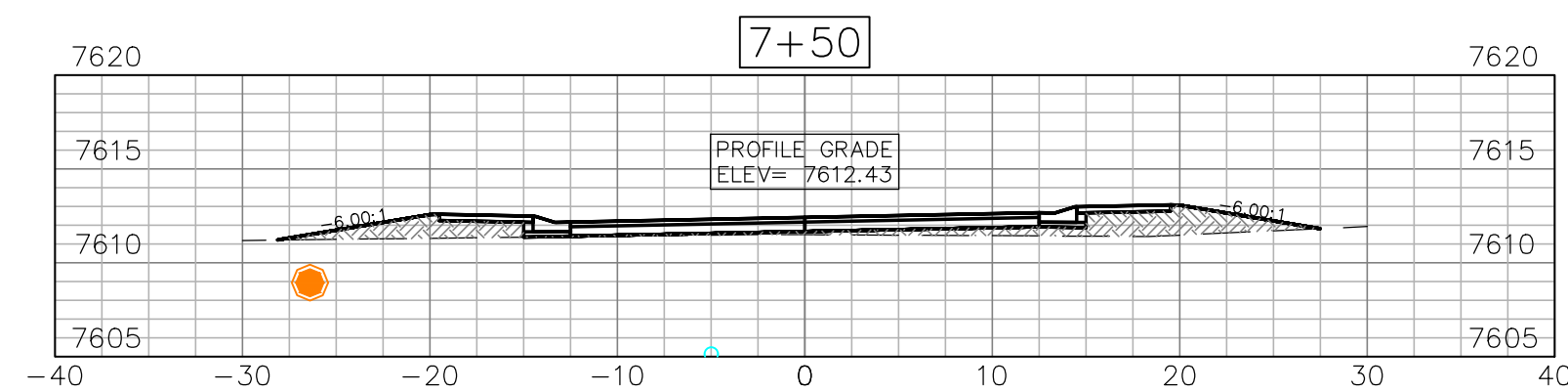
Revisions:

Project Number: 21-116  
Drawn By: JAE  
Designed by: RSH  
Checked By: RSH

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**RD3.03**

WATERVIEW ST.  
PHASE 1 CROSS SECTION

WATERVIEW STREET EARTHWORK TABULATION						
Station	Fill Area (SF)	Cut Area (SF)	Fill Volume (CY)	Cut Volume (CY)	Cumulative Fill Vol (CY)	Cumulative Cut Vol (CY)
0+50.00	11.41	4.23	0.00	0.00	0.00	0.00
0+75.00	8.61	5.82	12.67	4.64	12.67	4.64
1+00.00	3.32	17.36	5.84	10.75	18.51	15.39
1+25.00	0.73	28.88	1.87	21.40	20.38	36.79
1+50.00	0.14	35.89	0.50	28.58	20.88	65.37
1+75.00	0.00	42.59	0.09	34.18	20.97	99.55
2+00.00	0.00	51.76	0.00	43.69	20.97	143.24
2+25.00	0.00	46.54	0.00	45.51	20.97	188.75
2+50.00	0.13	38.98	0.06	39.59	21.03	228.34
2+75.00	0.38	34.74	0.24	34.13	21.27	262.47
3+00.00	0.28	32.43	0.31	31.10	21.58	293.57
3+25.00	0.60	35.49	0.41	31.45	21.99	325.02
3+50.00	0.75	34.76	0.63	32.52	22.61	357.54
3+75.00	2.32	28.09	1.42	29.10	24.03	386.64
4+00.00	5.22	18.41	3.49	21.53	27.52	408.16
4+25.00	11.36	11.09	7.67	13.66	35.20	421.82
4+50.00	13.07	6.61	11.31	8.20	46.51	430.02
4+75.00	8.28	13.87	9.89	9.49	56.39	439.50
5+00.00	4.07	25.54	5.72	18.25	62.11	457.75
5+25.00	3.93	23.11	3.70	22.52	65.82	480.27
5+50.00	6.20	20.55	4.69	20.21	70.50	500.48
5+75.00	9.88	14.35	7.44	16.16	77.95	516.64
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7+50.00	28.90	0.00	28.82	0.00	178.63	662.13



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WATERVIEW AFFORDABLE HOUSING SUBDIVISION

OURAY, COLORADO

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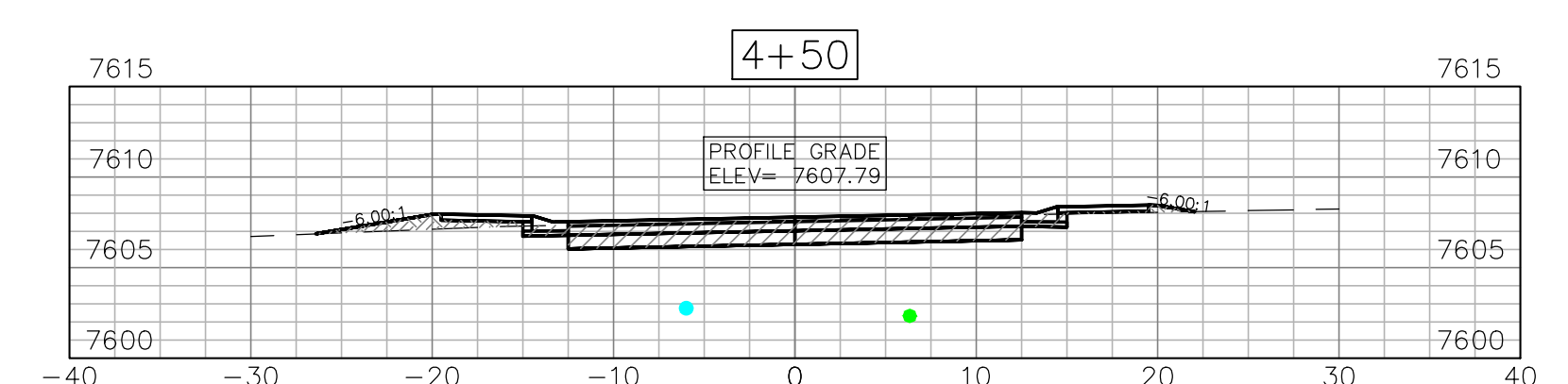
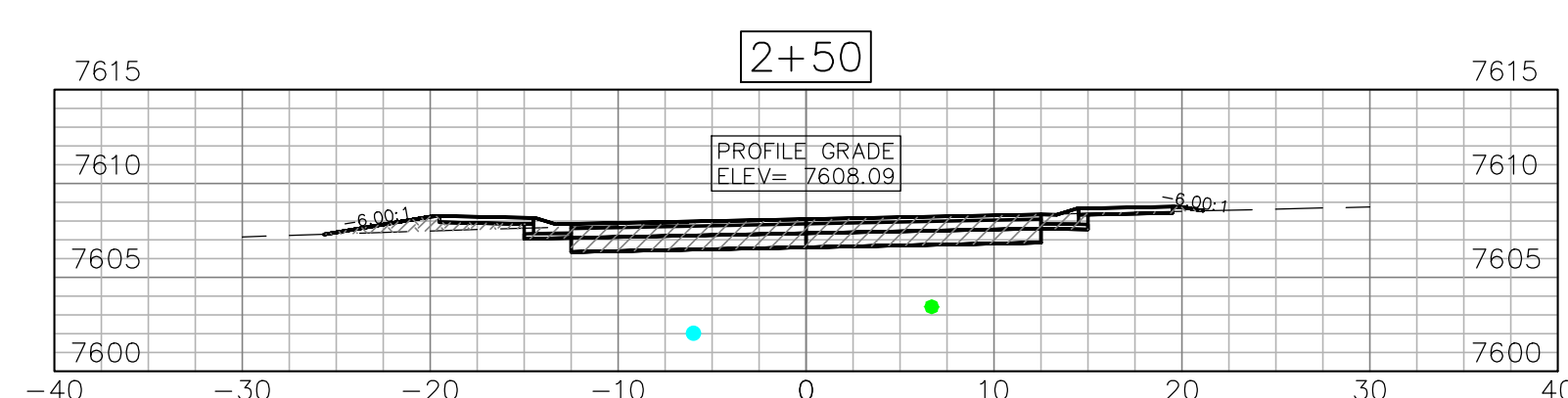
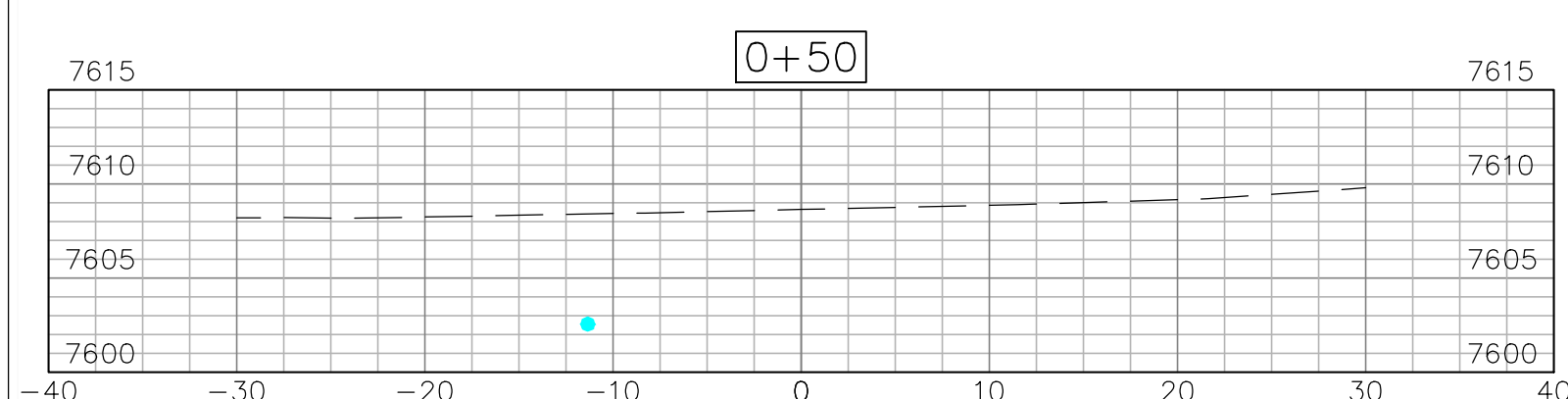
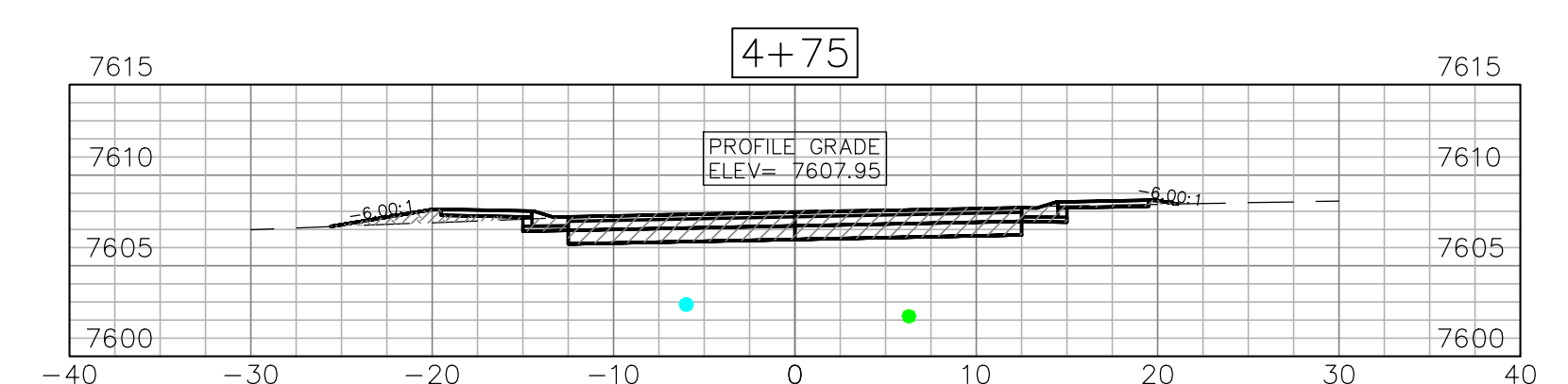
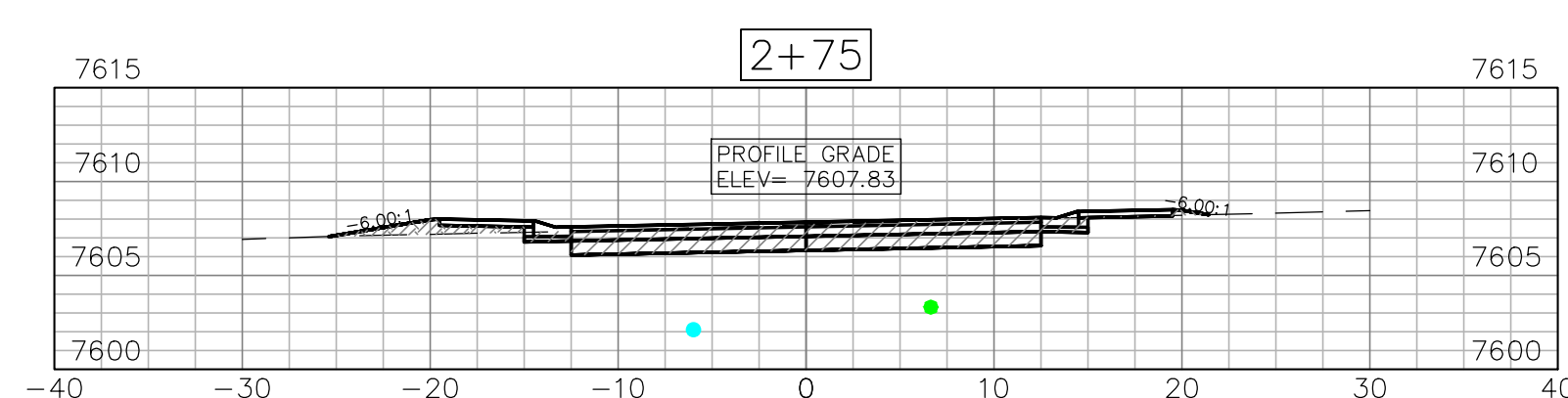
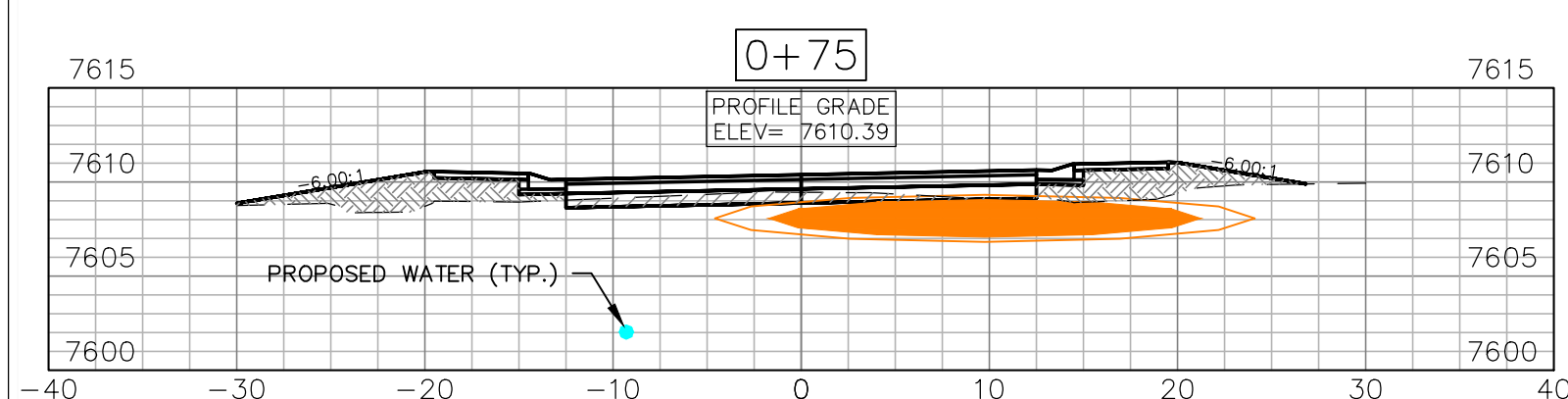
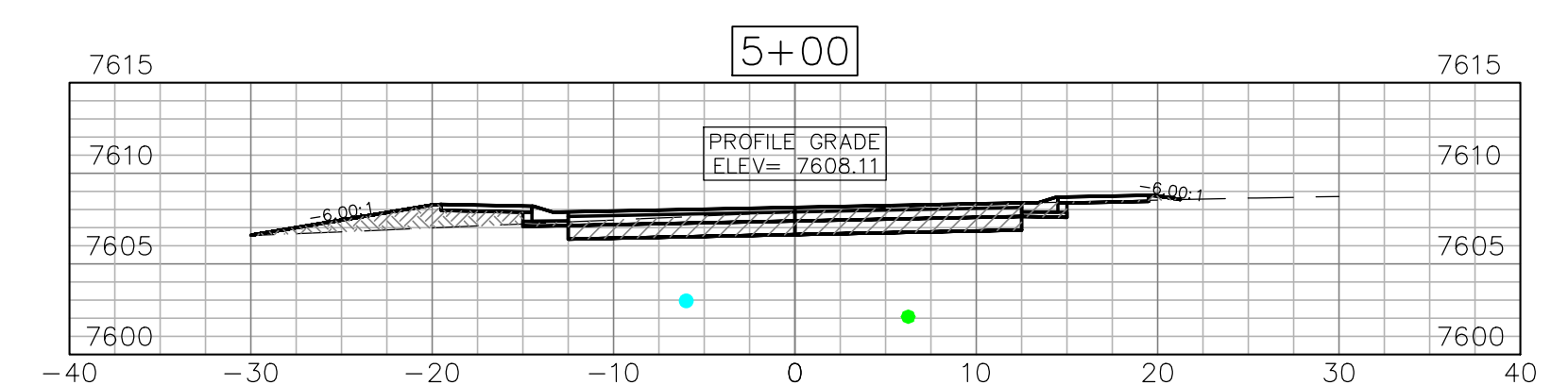
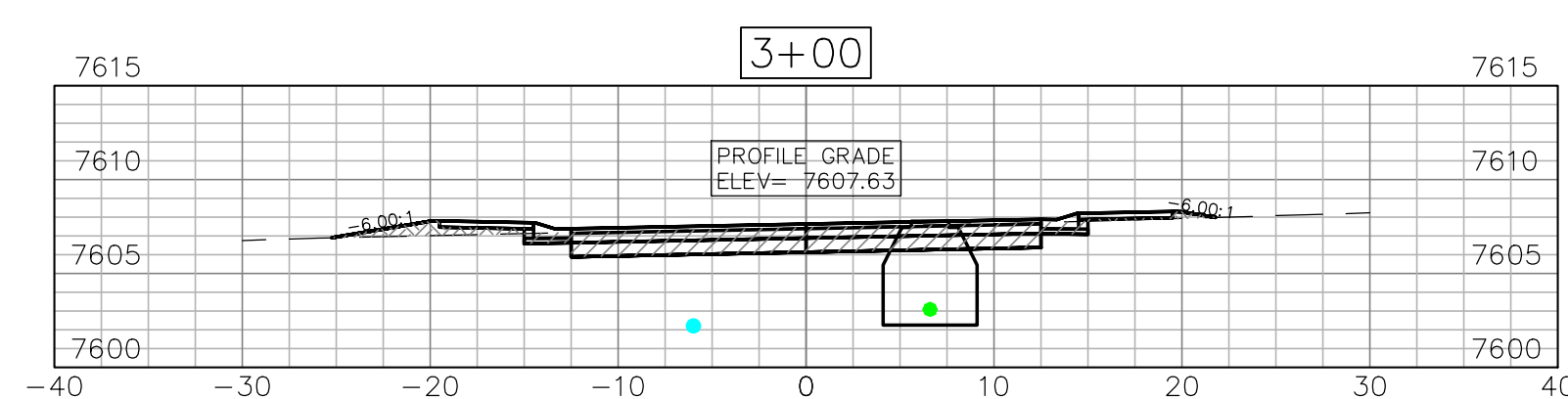
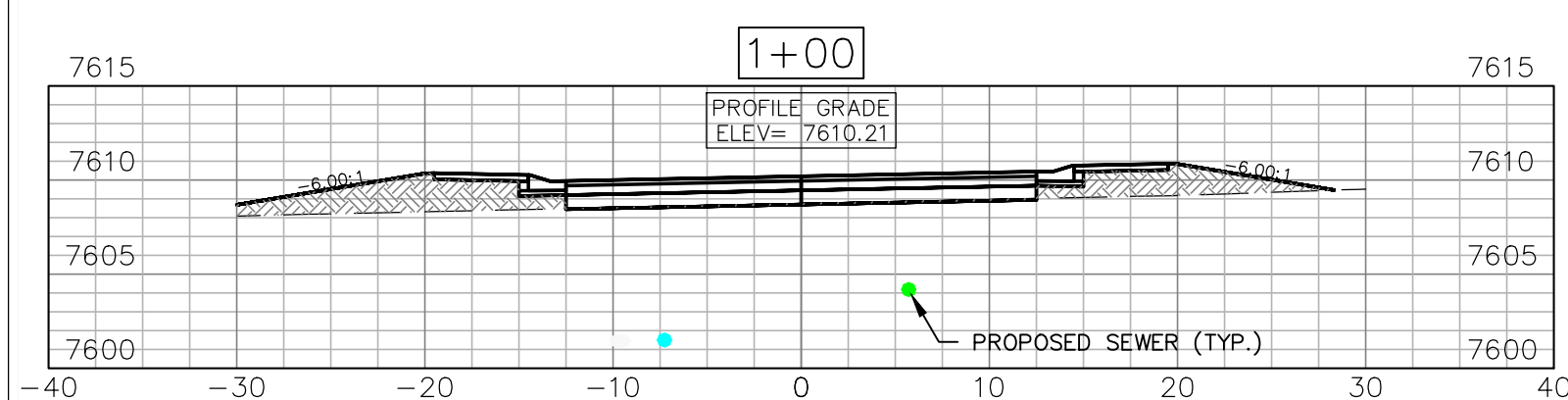
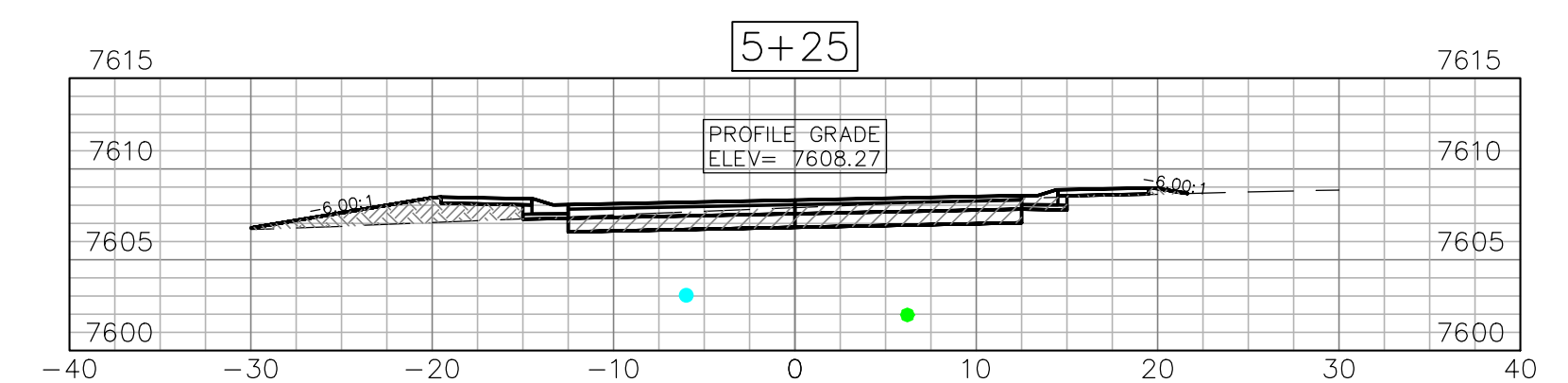
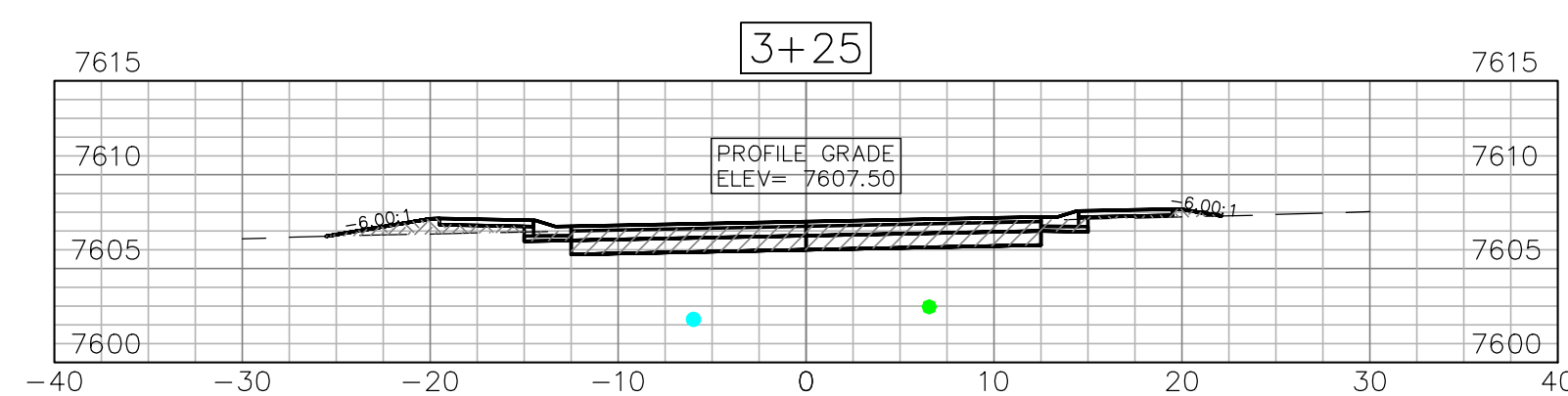
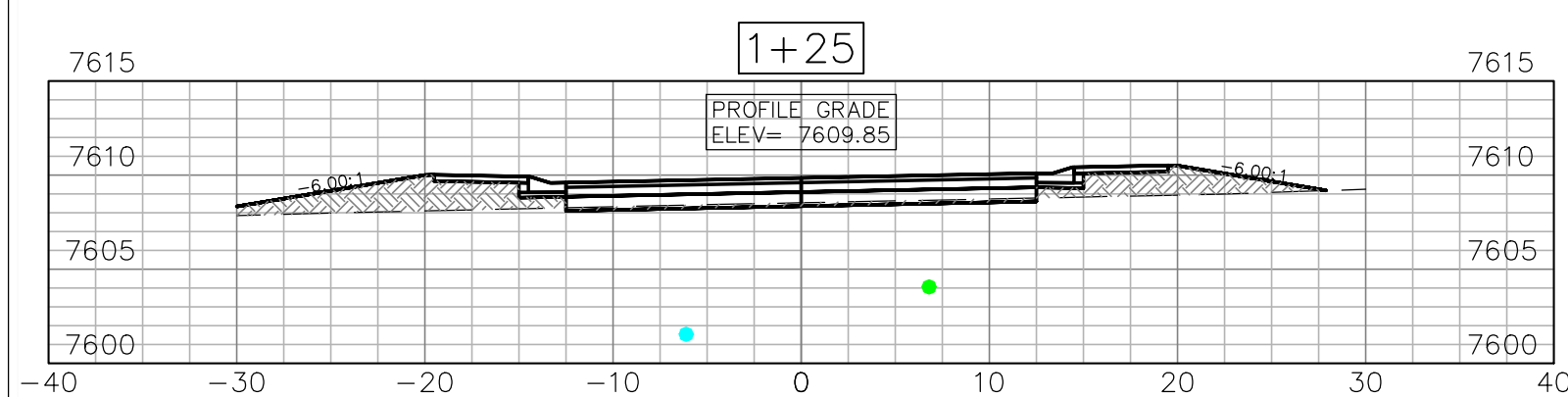
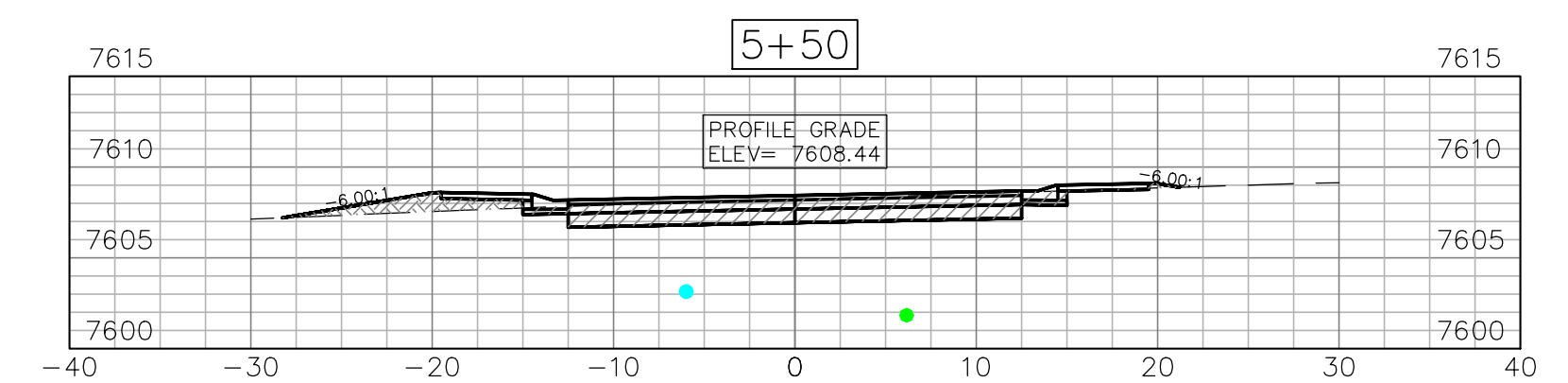
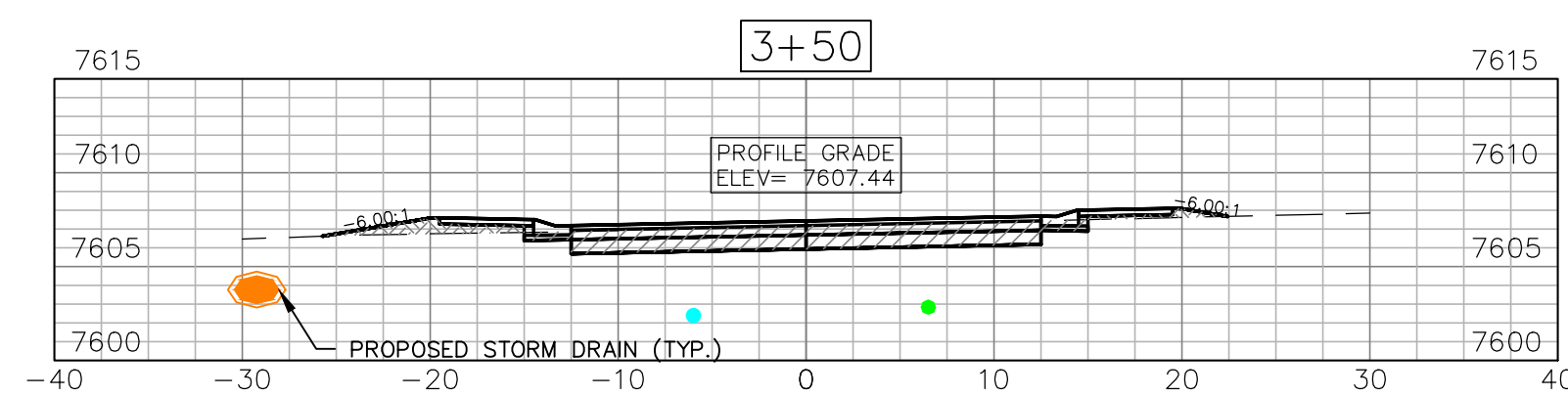
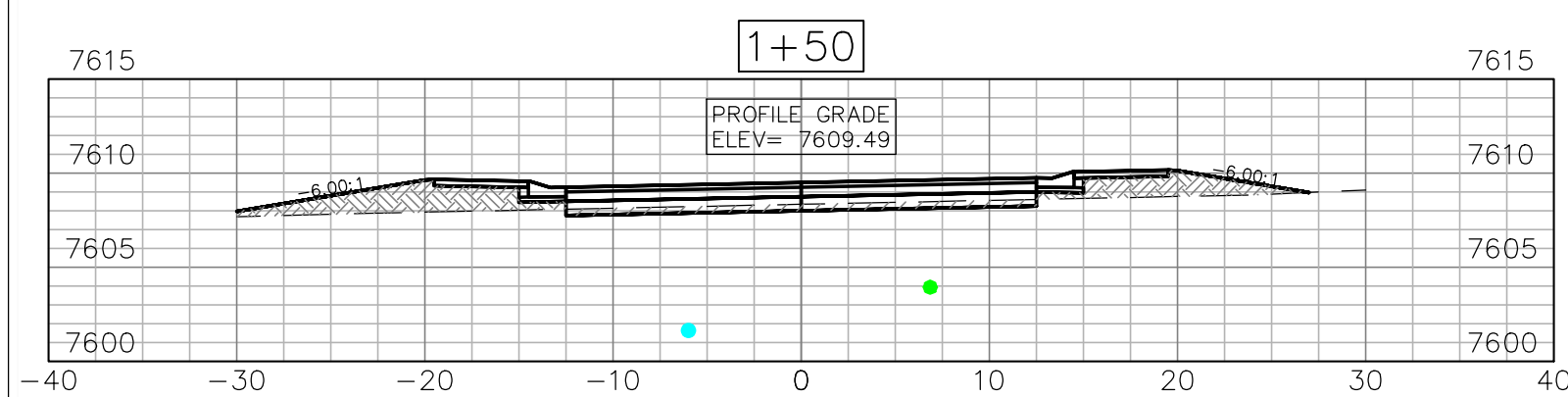
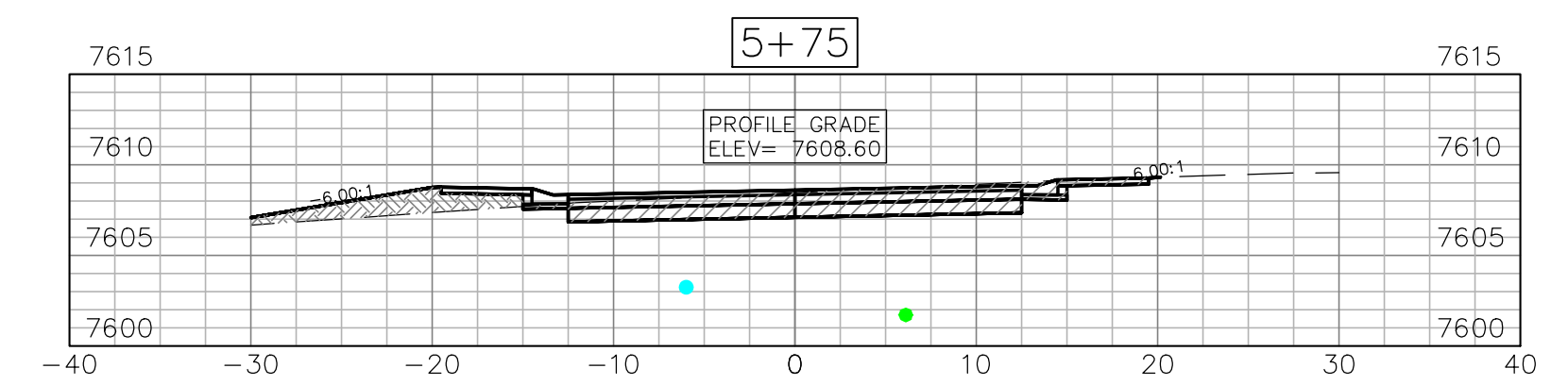
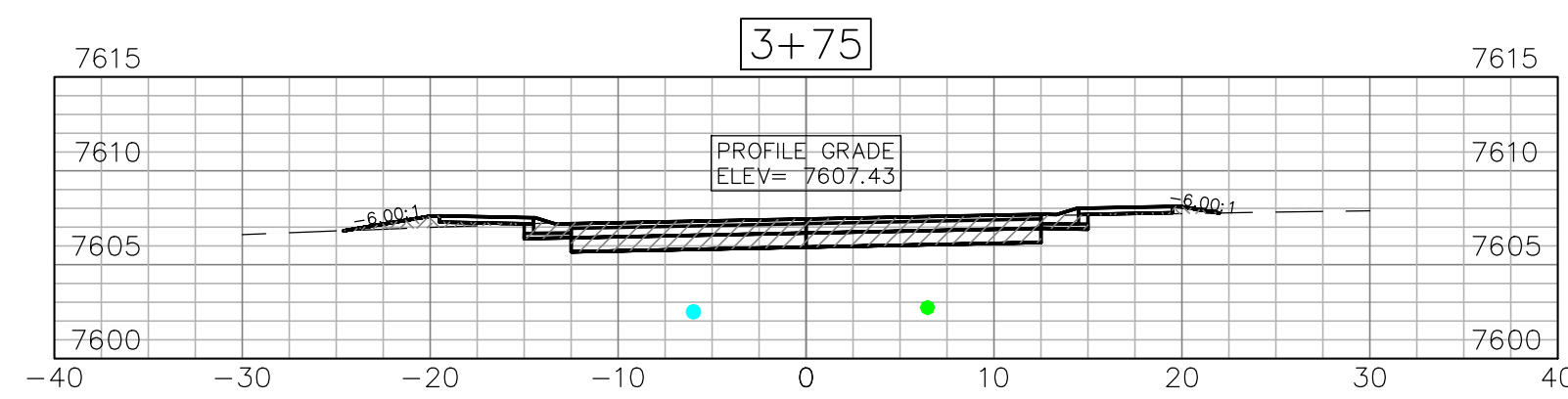
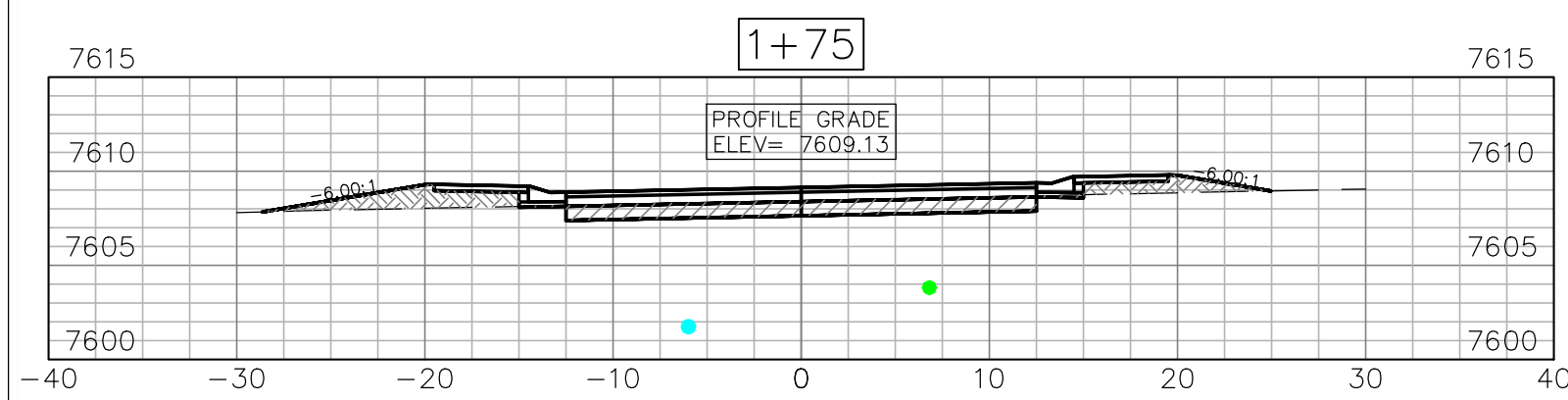
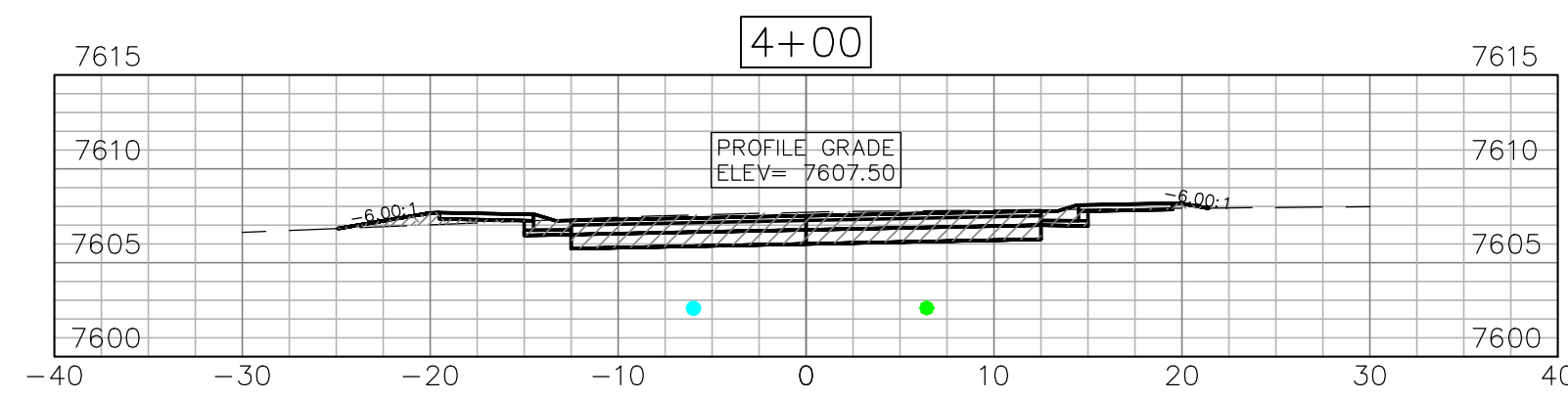
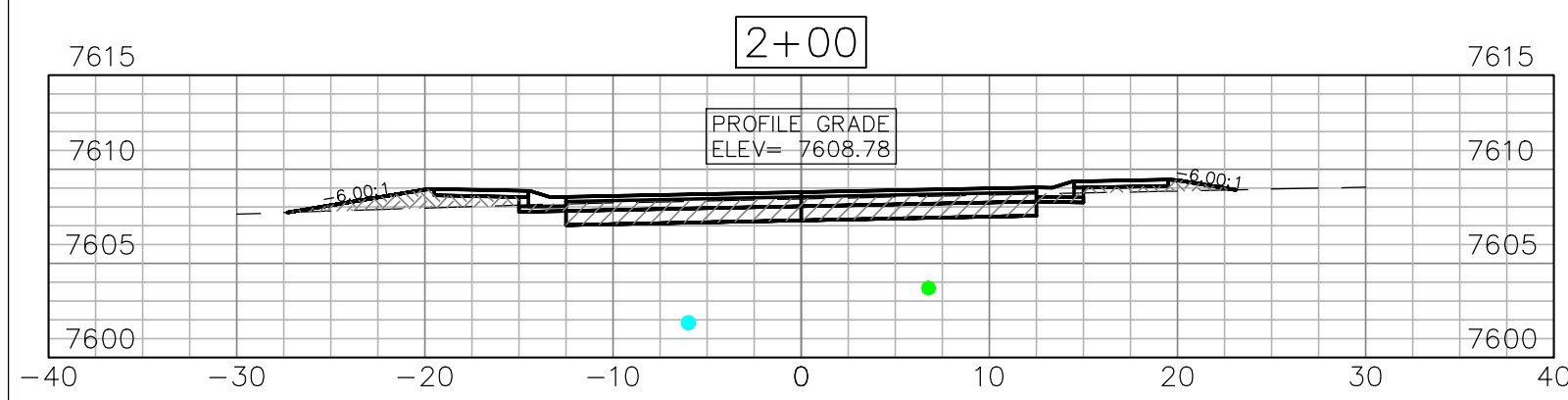
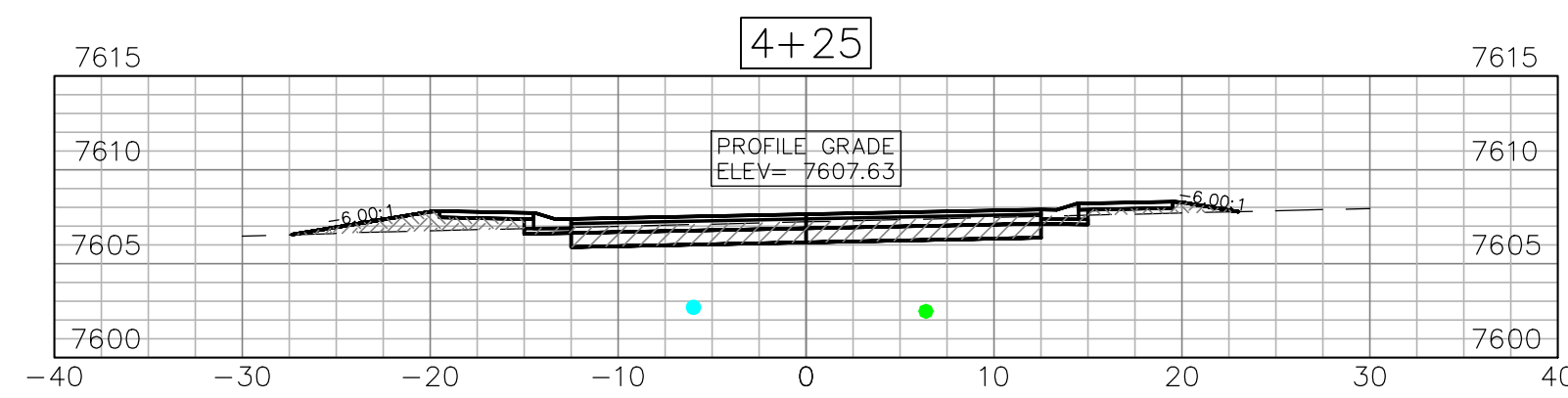
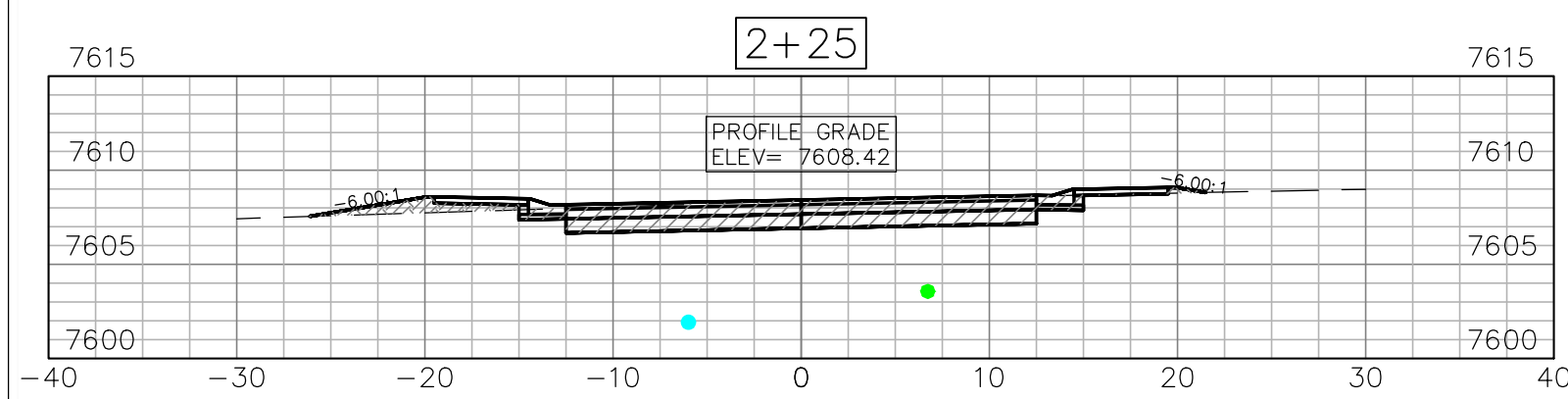
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Project Number: 21-116  
Drawn By: JAE  
Designed by: RSH  
Checked By: RSH

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**RD3.04**

WATERVIEW ST.  
PHASE 2 CROSS SECTION



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WATERVIEW AFFORDABLE HOUSING SUBDIVISION  
OURAY, COLORADO

Issue Record:  
SCHEMATIC 05-05-2023

Revisions:

Project Number: 21-116  
Drawn By: JAE  
Designed by: RSH  
Checked By: RSH

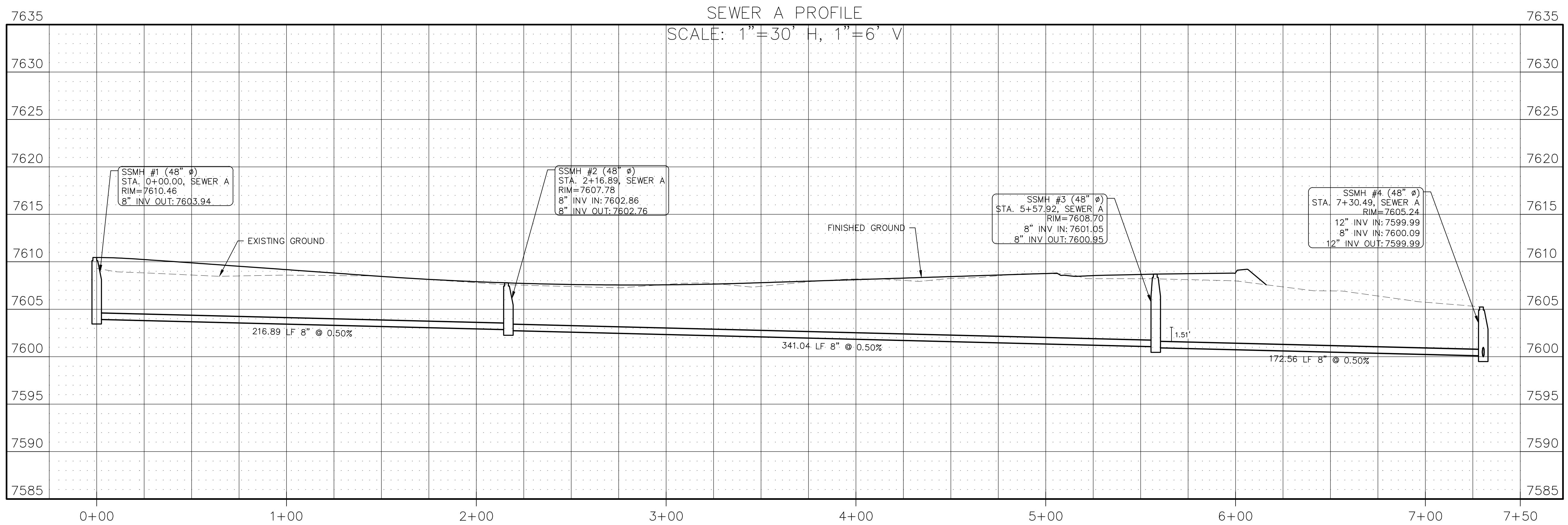
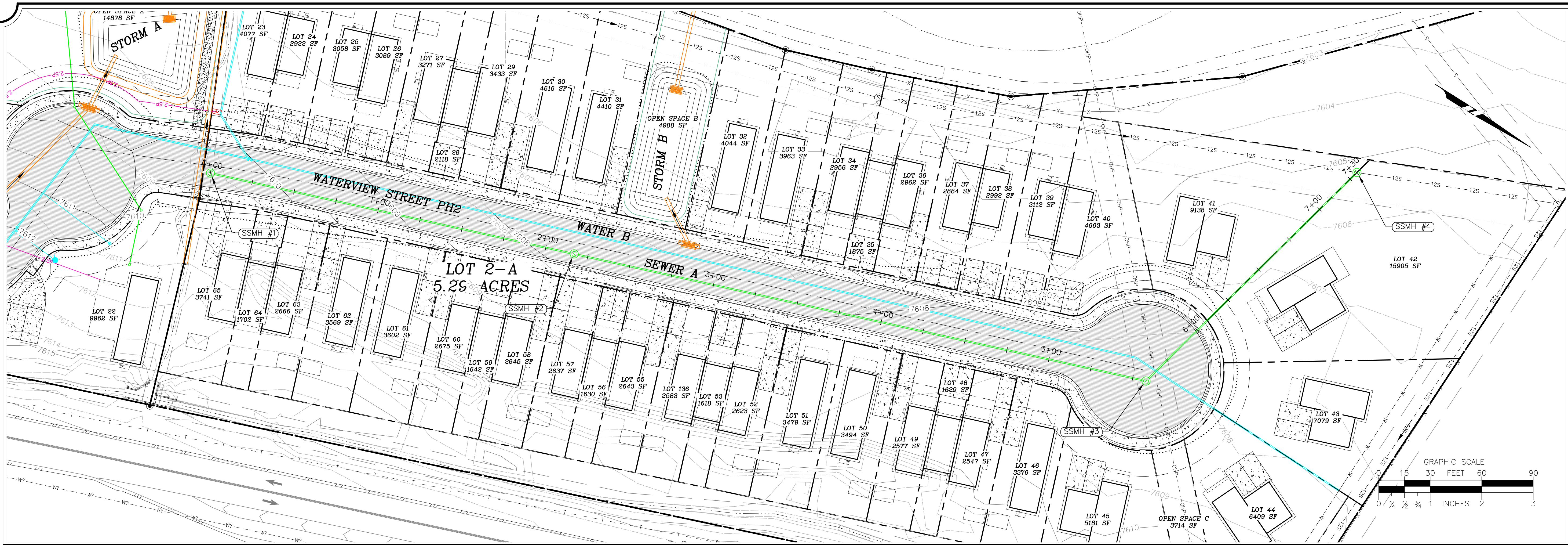
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WATERVIEW ST.  
PHASE 2 CROSS SECTION

WATERVIEW STREET PH2 EARTHWORK TABULATION						
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0+75.00	32.92	10.11	15.24	4.68	15.24	4.68
1+00.00	38.81	1.17	33.21	5.22	48.45	9.90
1+25.00	34.91	4.45	34.46	2.60	82.90	12.50
1+50.00	28.96	8.78	29.69	6.12	112.60	18.63
1+75.00	15.37	20.49	20.52	13.55	133.12	32.18
2+00.00	9.05	30.58	11.31	23.64	144.43	55.82
2+25.00	5.04	38.74	6.52	32.09	150.95	87.91
2+50.00	4.28	39.77	4.32	36.35	155.27	124.26
2+75.00	4.51	37.46	4.07	35.76	159.34	160.02
3+00.00	4.81	35.63	4.32	33.84	163.65	193.86
3+25.00	5.54	34.78	4.79	32.60	168.45	226.45
3+50.00	6.34	32.77	5.50	31.27	173.94	257.73
3+75.00	3.11	40.84	4.38	34.08	178.32	291.81
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4+75.00	3.78	43.38	4.31	36.93	197.97	433.82
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**WATERVIEW AFFORDABLE  
HOUSING SUBDIVISION**

OURAY, COLORADO

Issue Record:  
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Revisions:

Project Number: 21-116  
Drawn By: JAE  
Designed by: RSH  
Checked By: RSH

Sheet  
**SS1.01**

SEWER A PLAN & PROFILE

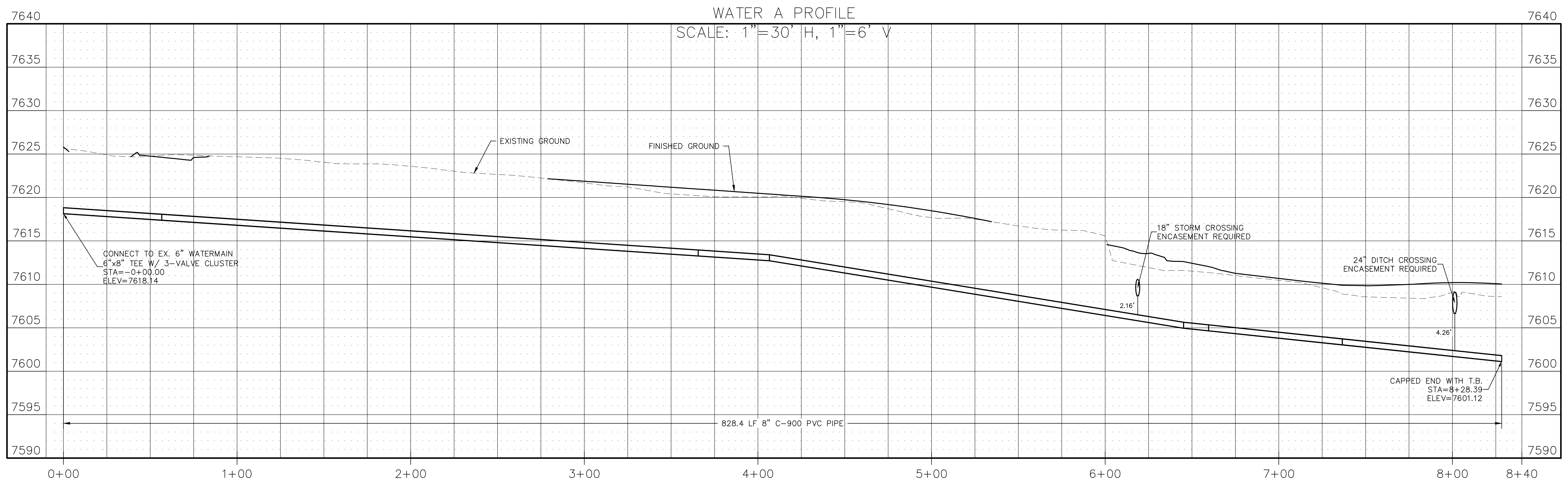
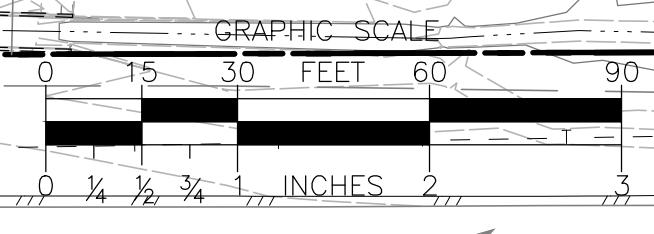
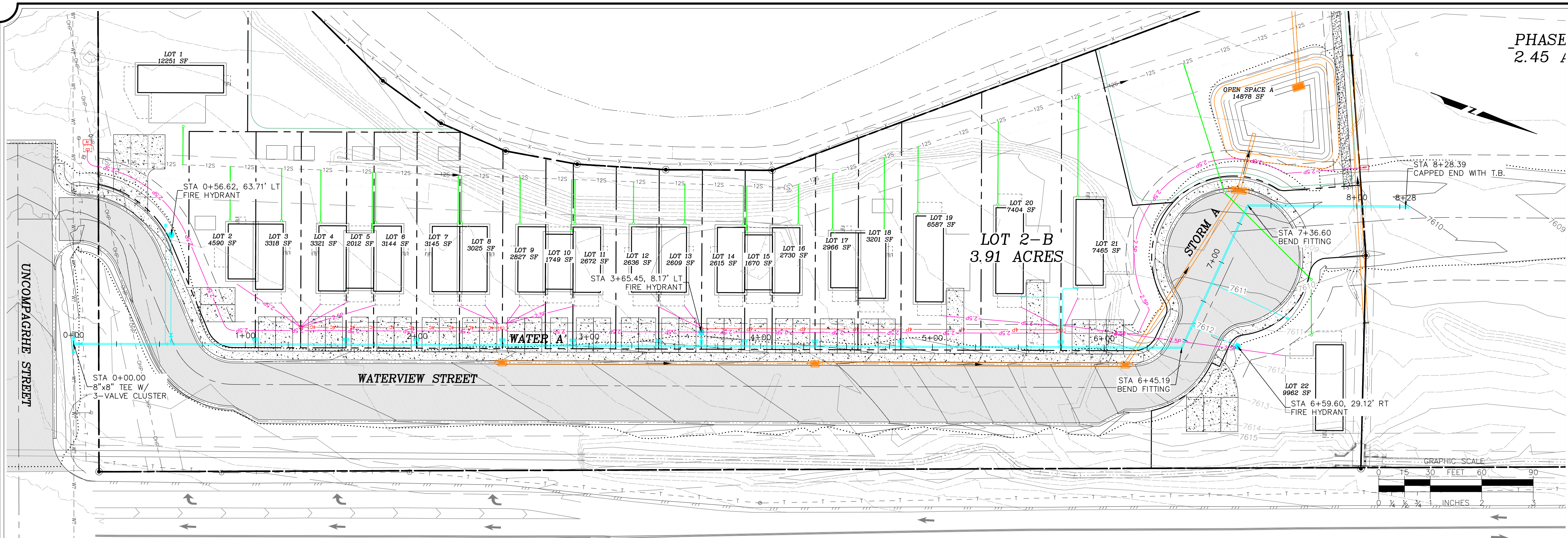
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**WATERVIEW AFFORDABLE HOUSING SUBDIVISION**  
 OURAY, COLORADO

Issue Record:  
SCHEMATIC 05-05-2023

Revisions:

Project Number: 21-116  
 Drawn By: JAE  
 Designed by: RSH  
 Checked By: RSH

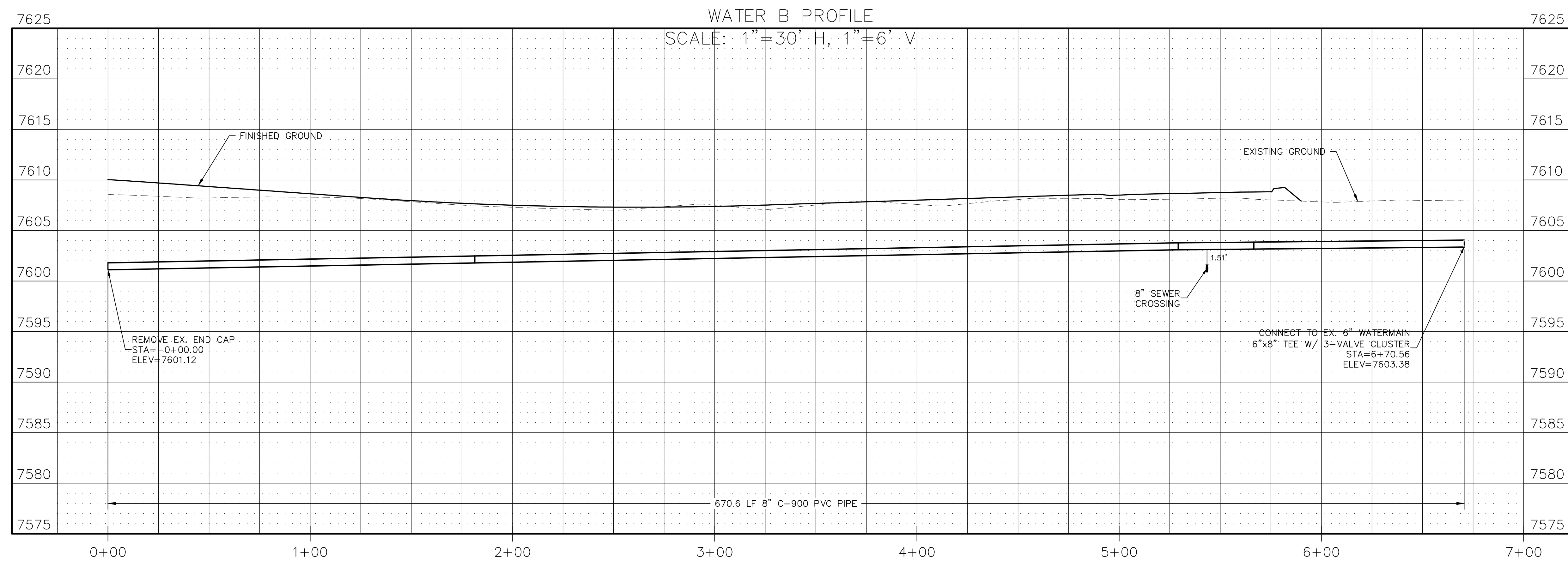
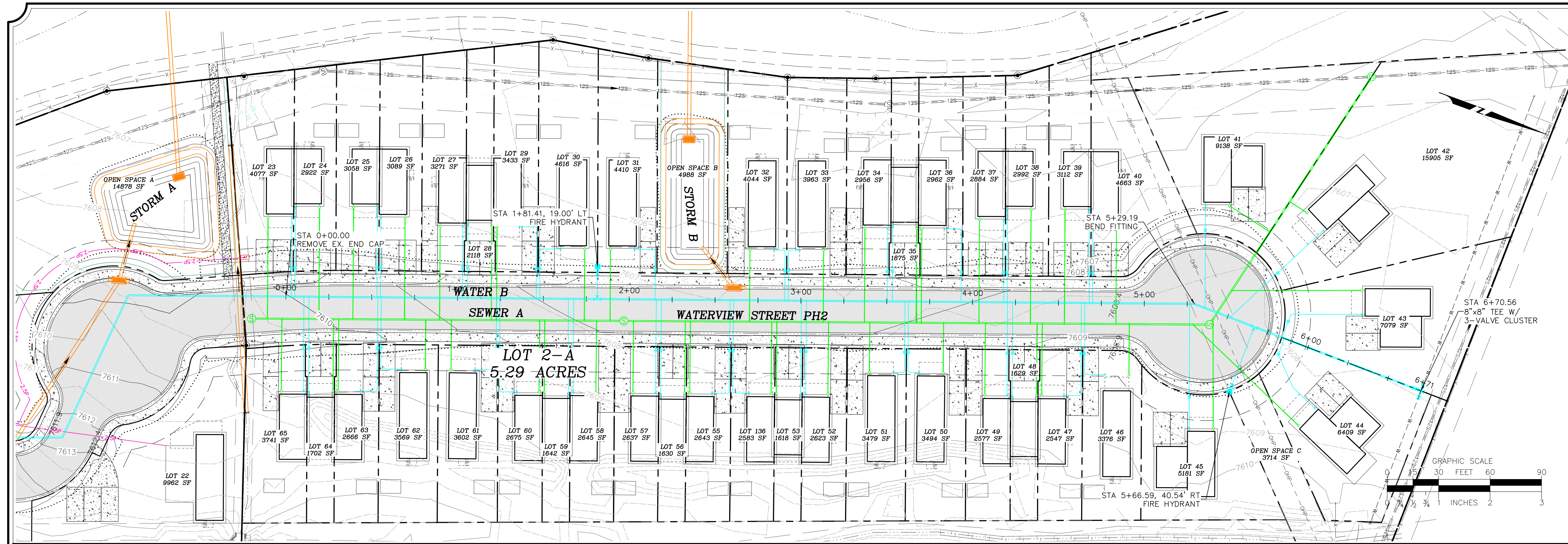
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WATER A PLAN & PROFILE

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Issue Record:  
SCHEMATIC 05-05-2023

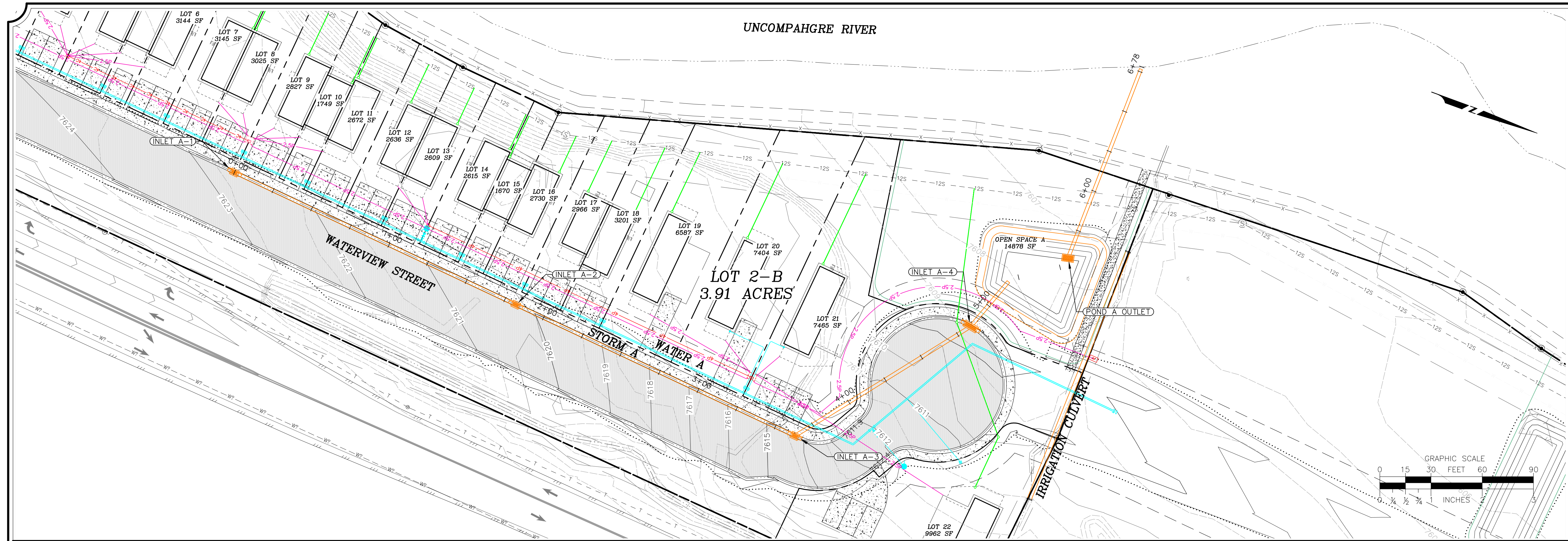
Revisions:

Project Number: 21-116  
Drawn By: JAE  
Designed by: RSH  
Checked By: RSH

Sheet  
**W1.02**

WATER B PLAN & PROFILE

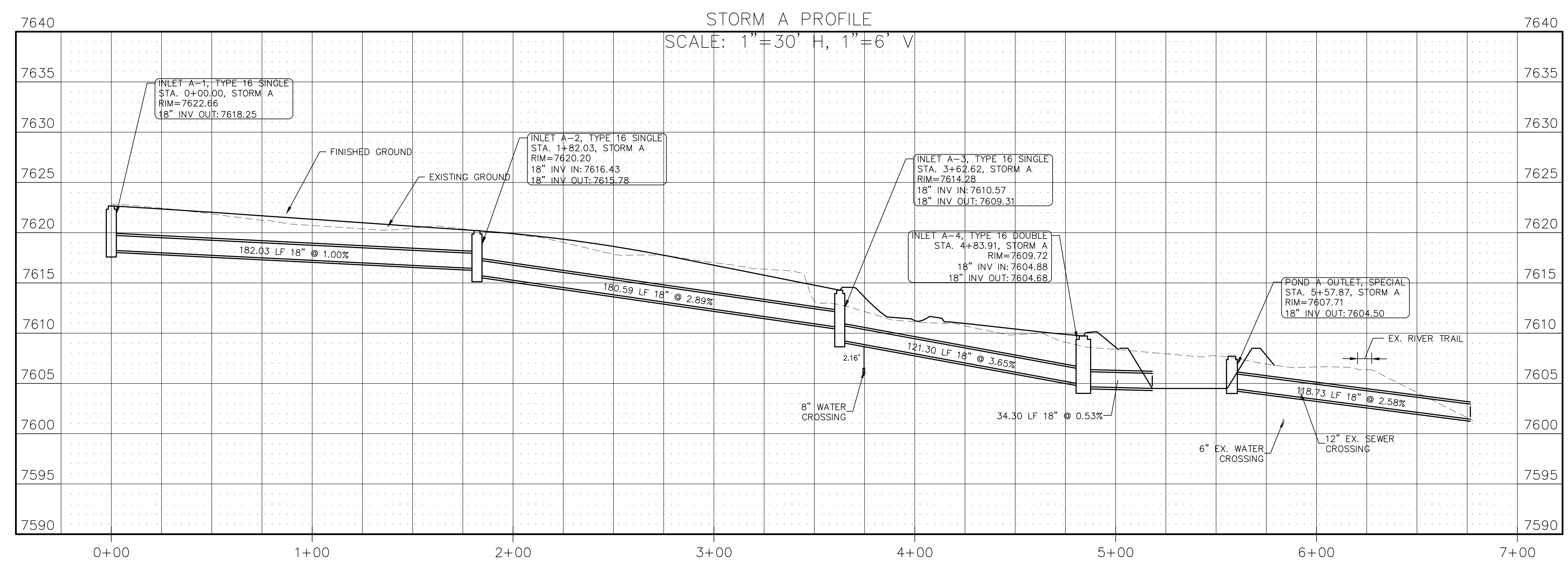
P:\2023\21-116\_Affordable\_Housing\work\plans\w1.02\_water\_b\_plan & profile.dwg DATE: 5/9/2023 USER: ENG\JAE PLOT SCALE: 1:1



PRELIMINARY  
FOR REVIEW  
ONLY

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**WATERVIEW AFFORDABLE HOUSING SUBDIVISION**  
**OURAY, COLORADO**



Issue Record:

SCHEMATIC	05-05-2023
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Revisions:

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Project Number: 21-116  
 Drawn By: JAE  
 Designed by: RSH  
 Checked By: RSH

Sheet  
**SD1.01**

**STORM DRAIN A  
PLAN & PROFILE**

P:\2023\21-116\_ouray\_affordable\_housing\work\plans\sheet\01 Storm Drain A Plan & Profile.dwg DATE: 5/5/2023 USER: E:\G\JSH E:\G\JSH PLOT SCALE=1:1

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WATERVIEW AFFORDABLE HOUSING SUBDIVISION

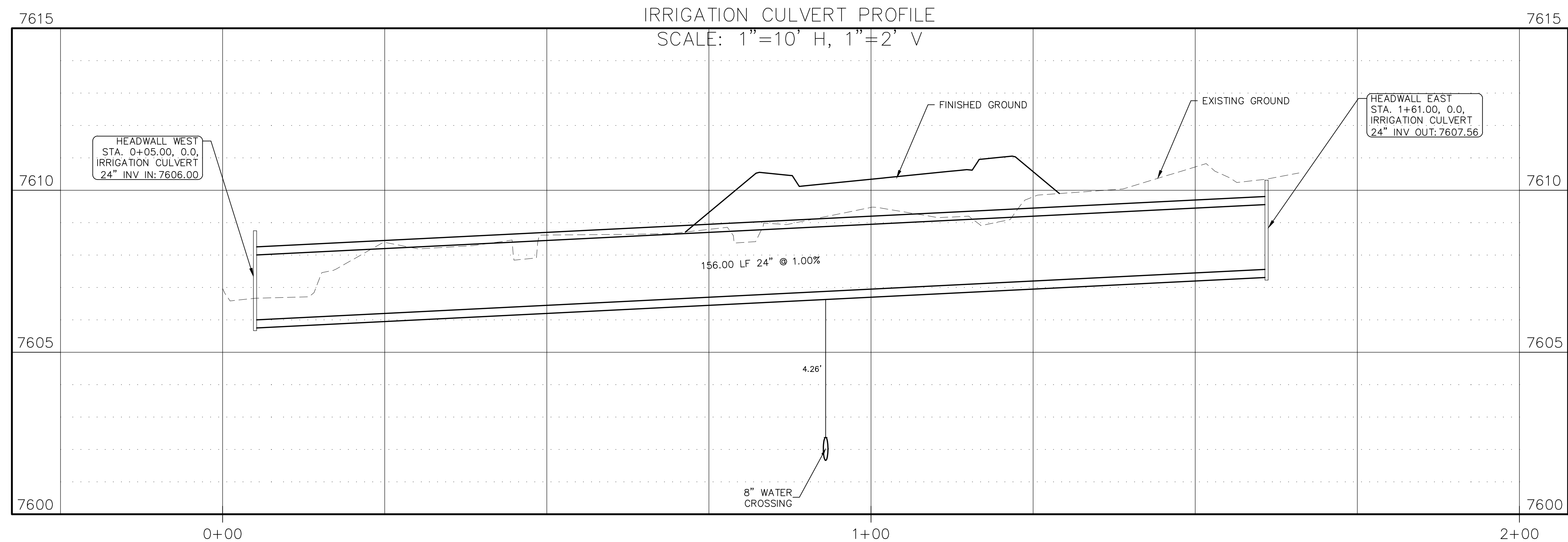
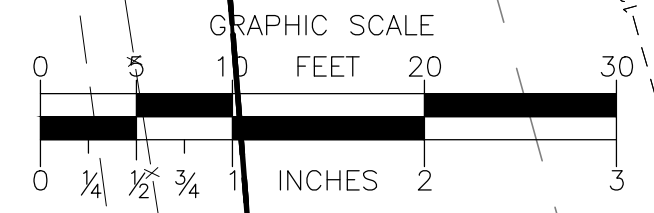
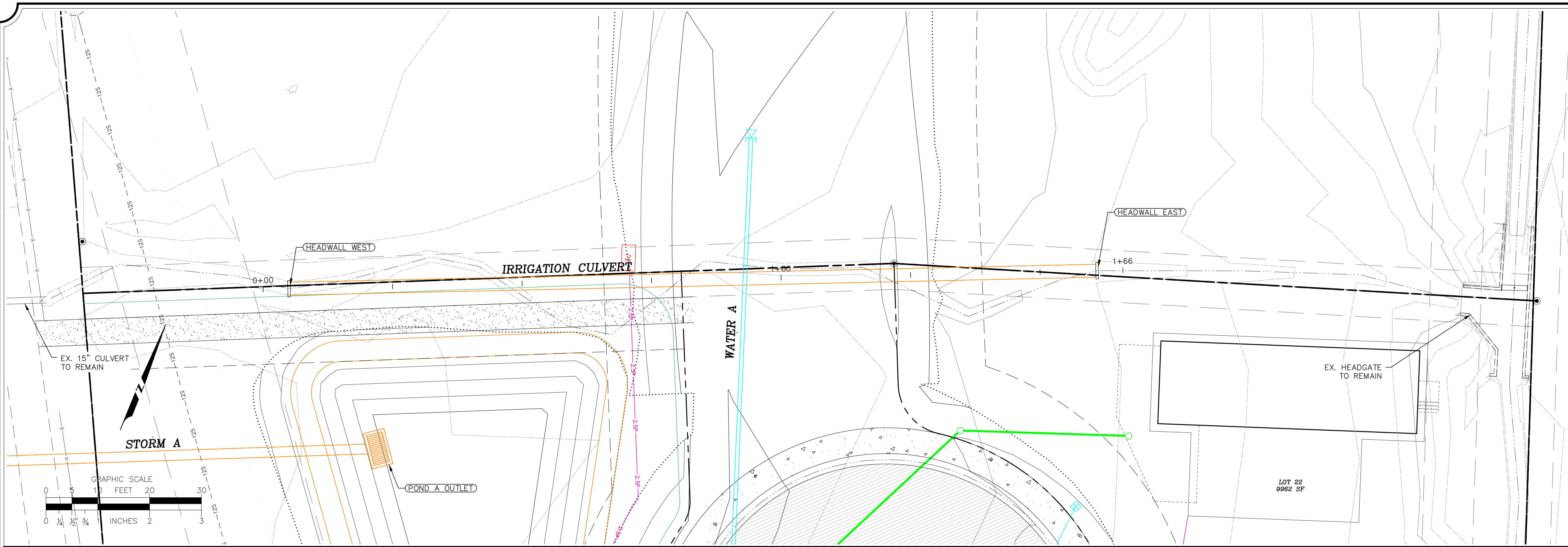
OURAY, COLORADO

Issue Record:  
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Revisions:

Project Number: 21-116  
Drawn By: JAE  
Designed by: RSH  
Checked By: RSH

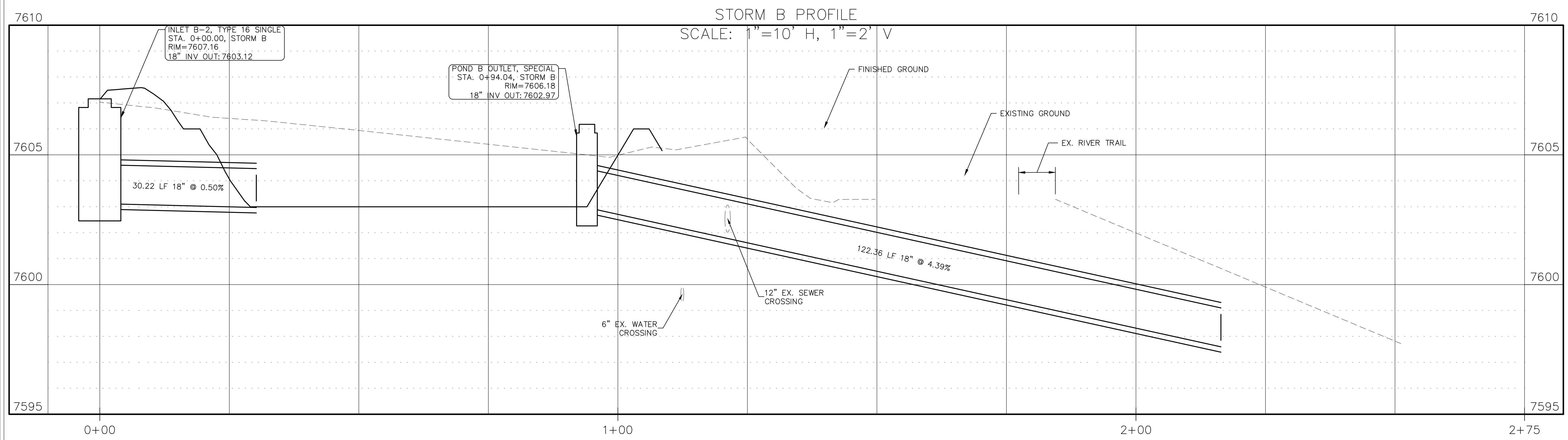
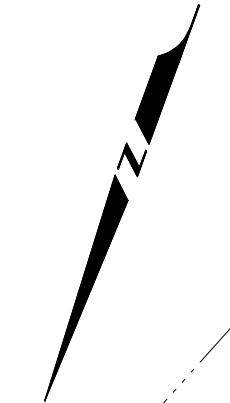
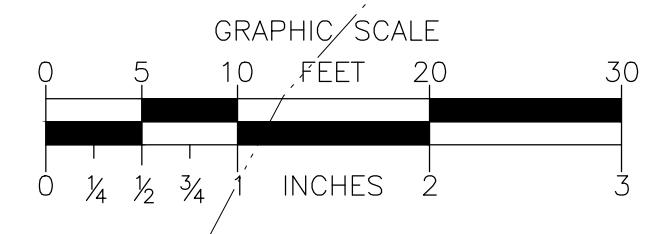
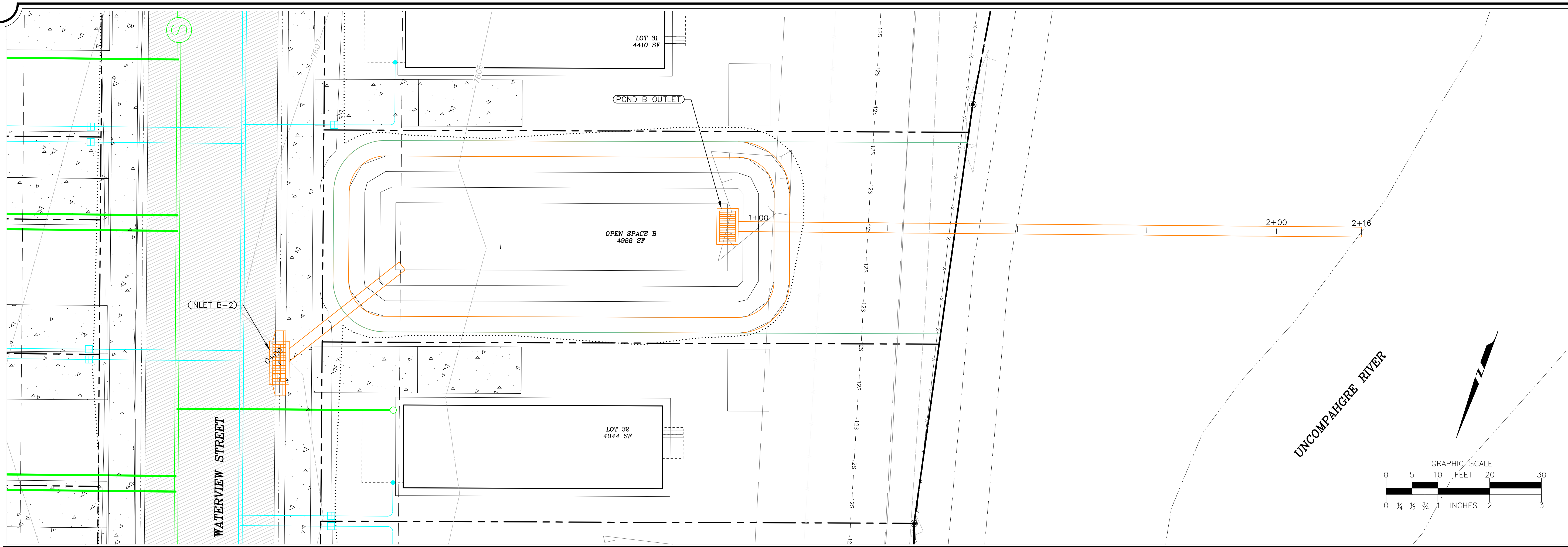
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**SD1.02**  
IRRIGATION CULVERT PLAN & PROFILE



F:\2023\21-116\_ouray\_affordable\_housing\workbooks\cvt\22\_ irrigation\_culvert\_plan & profile.dwg DATE: 5/9/2023 USER: RND\JAE PLT SCALE: 1:1

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**WATERVIEW AFFORDABLE HOUSING SUBDIVISION**  
OURAY, COLORADO

Issue Record:  
SCHEMATIC 05-05-2023

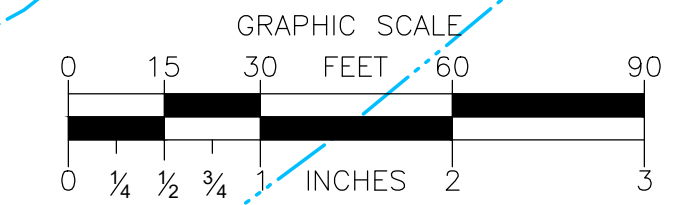
Revisions:

Project Number: 21-116  
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Designed by: RSH  
Checked By: RSH

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**SD1.03**

STORM DRAIN B  
PLAN & PROFILE

C:\2023\21-116\_ouray\_affordable\_housing\work\plans\sheet\_103\_storm\_drain\_b\_plan & profile.dwg DATE: 5/9/2023 10:55:42 AM PLOT SCALE=1:1



PRELIMINARY  
FOR REVIEW  
ONLY

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**WATERVIEW AFFORDABLE HOUSING SUBDIVISION**

OURAY, COLORADO

Issue Record:  
SCHEMATIC 05-05-2023

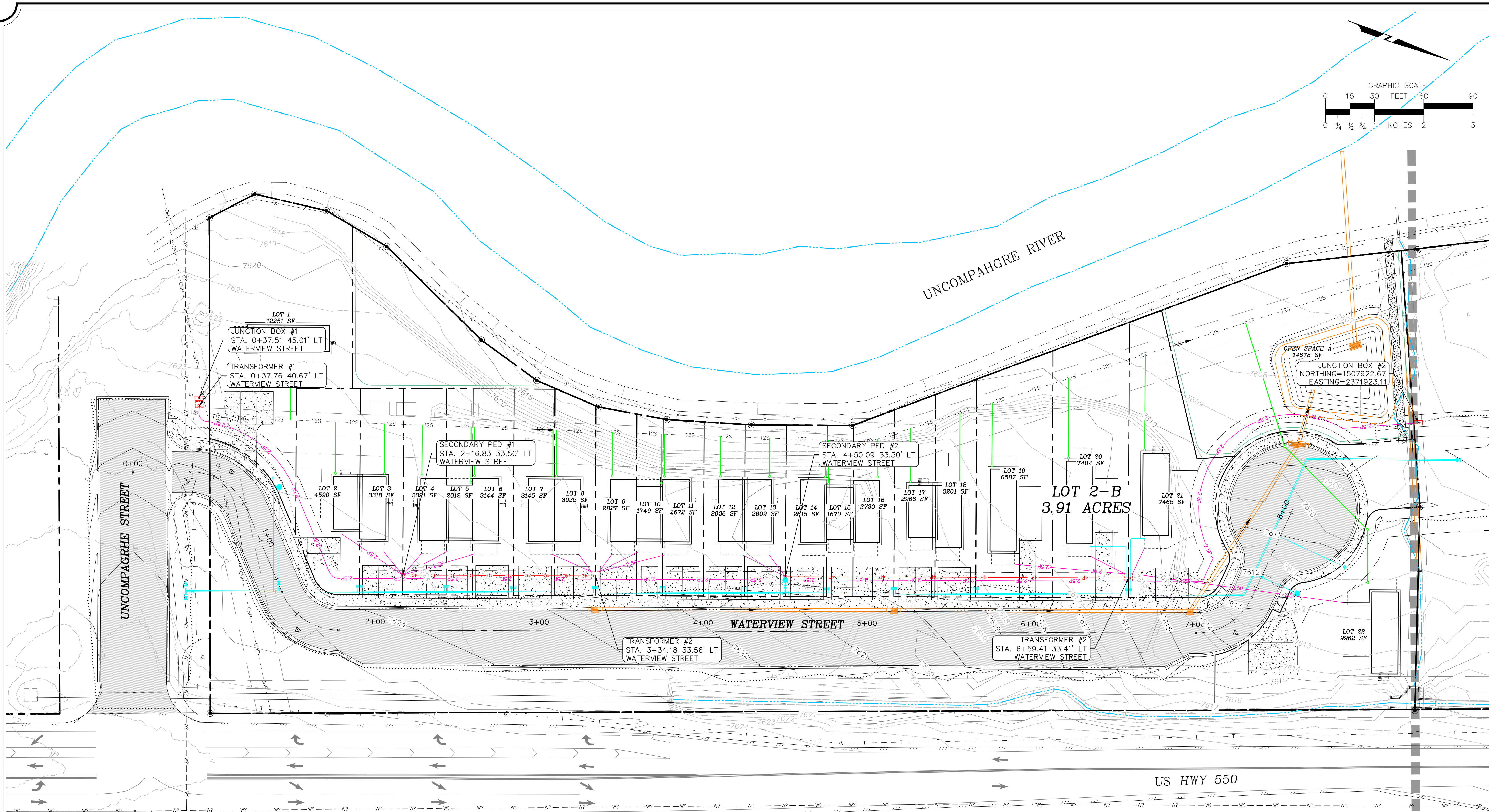
Revisions:

Project Number: 21-116  
Drawn By: JAE  
Designed by: RSH  
Checked By: RSH

Sheet

**DU1.01**

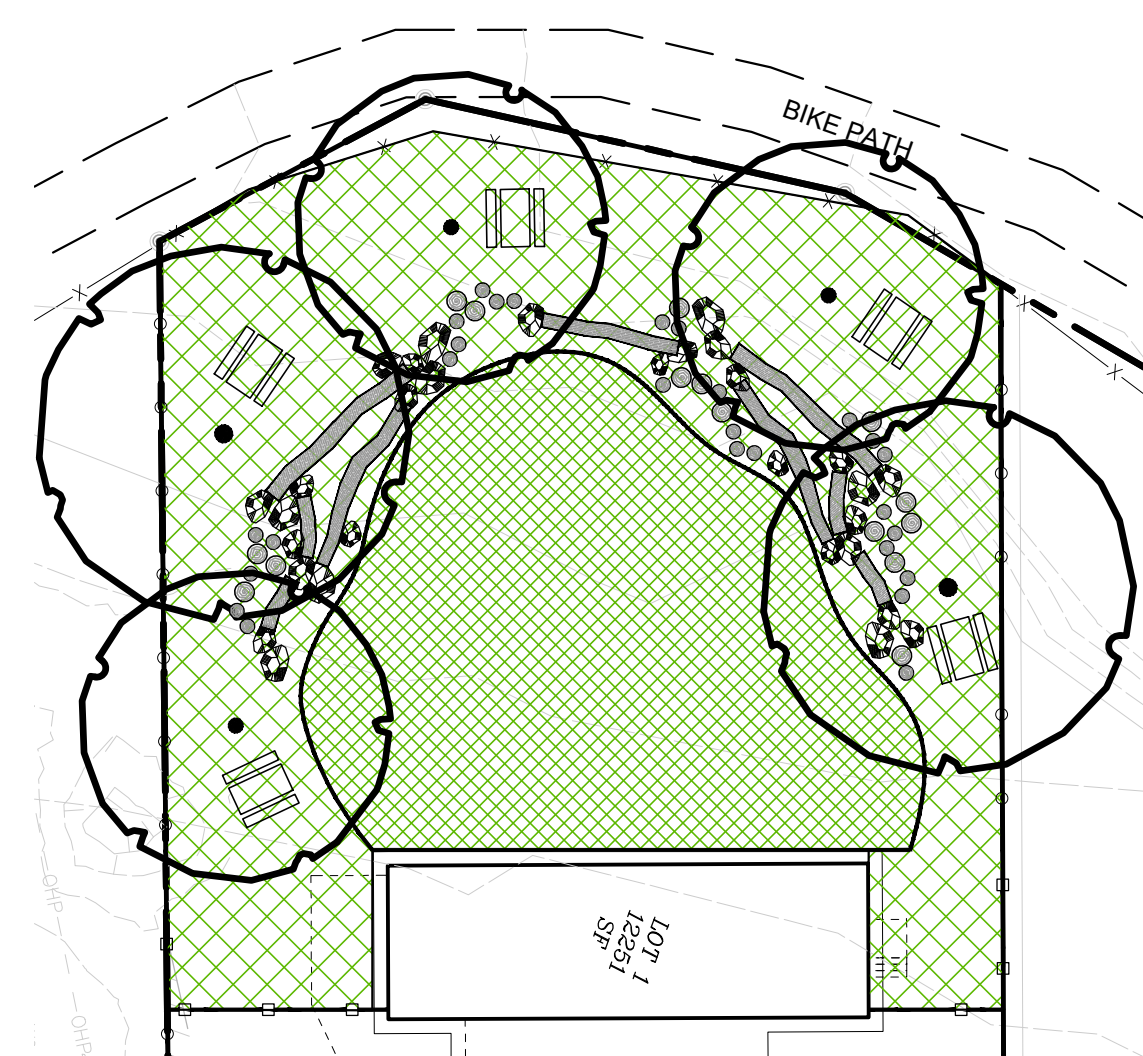
PHASE 1 DRY UTILITIES



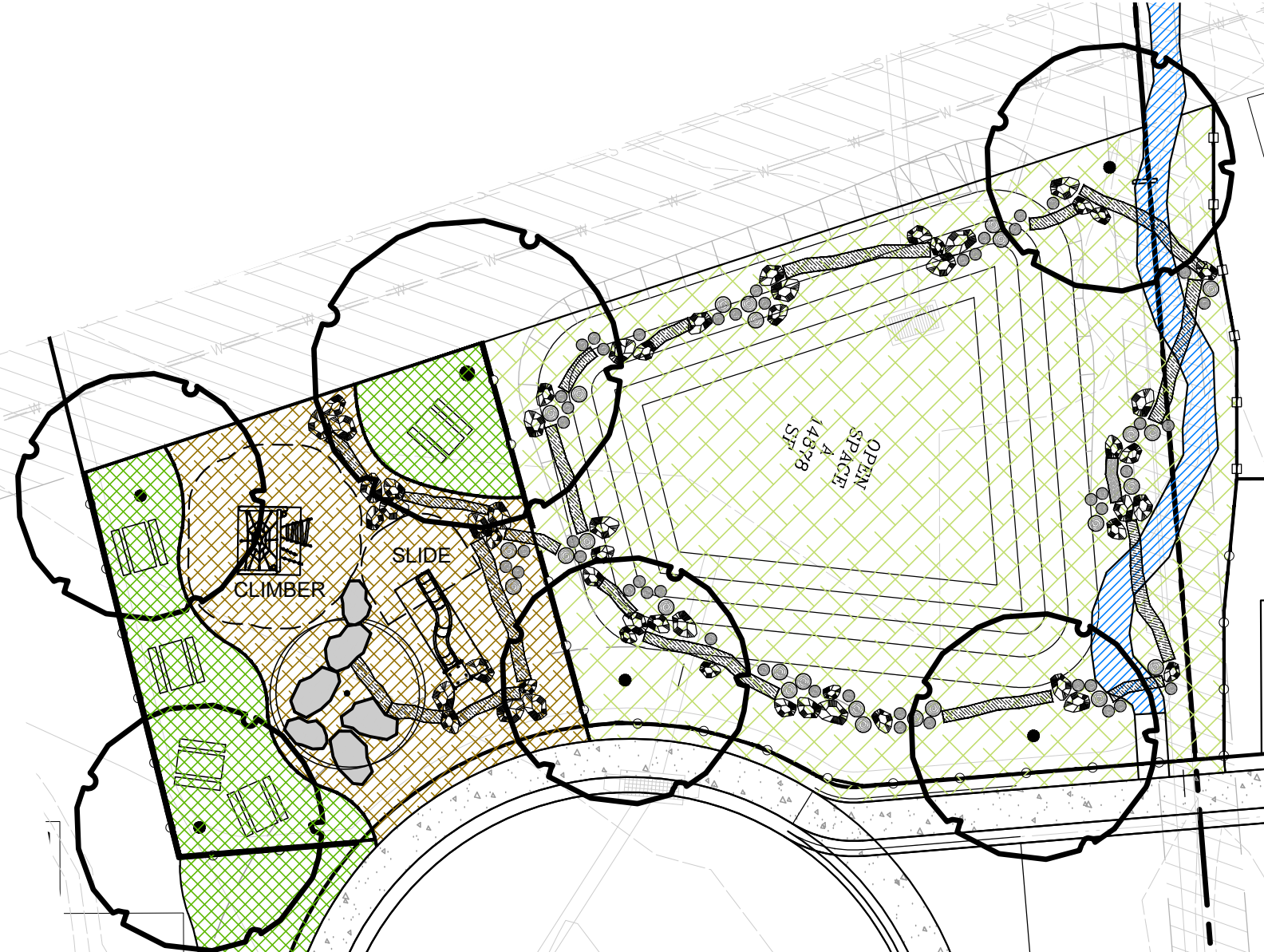
**DRY UTILITY LEGEND**

**ELECTRICAL LEGEND**

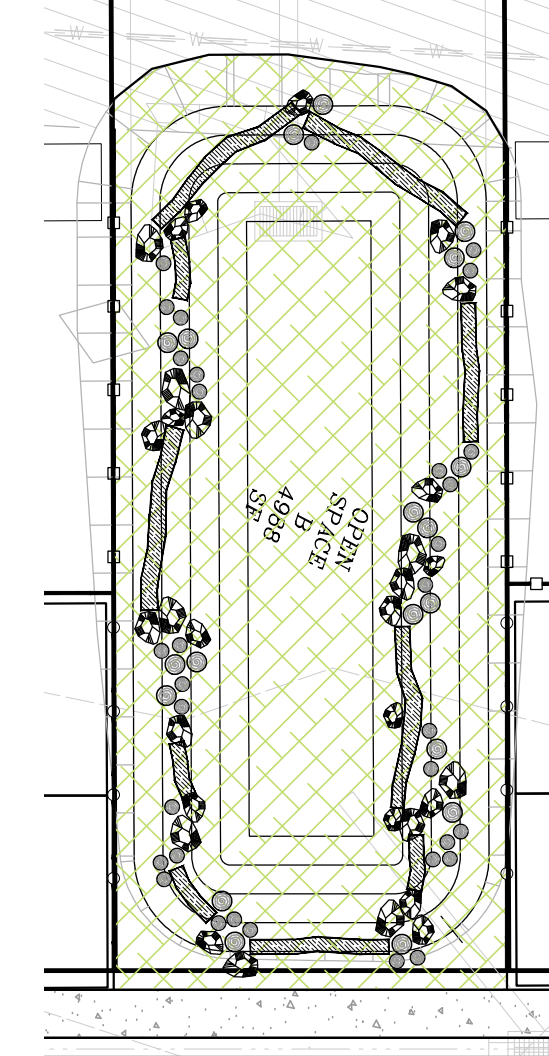
- STREETLIGHT
- TRAIL LIGHT
- TRANSFORMER
- JUNCTION BOX (1-PH 200 A)
- JUNCTION BOX (3-PH 200A)
- JUNCTION BOX (3-PH 600A)
- SWITCH CABINET (600A)
- 3 PHASE PRIMARY POWER  
IN 6" SCH 40 PVC CONDUIT
- 1 PHASE PRIMARY POWER  
IN 4" SCH. 40 PVC CONDUIT
- 2" SCH 40 PVC POWER CONDUIT  
(FOR SERVICES)



**A** Lot 1 Play Area  
1" = 20'



**B** Open Space A Play Area  
1" = 20'



**C** Open Space B Play Area  
1" = 20'

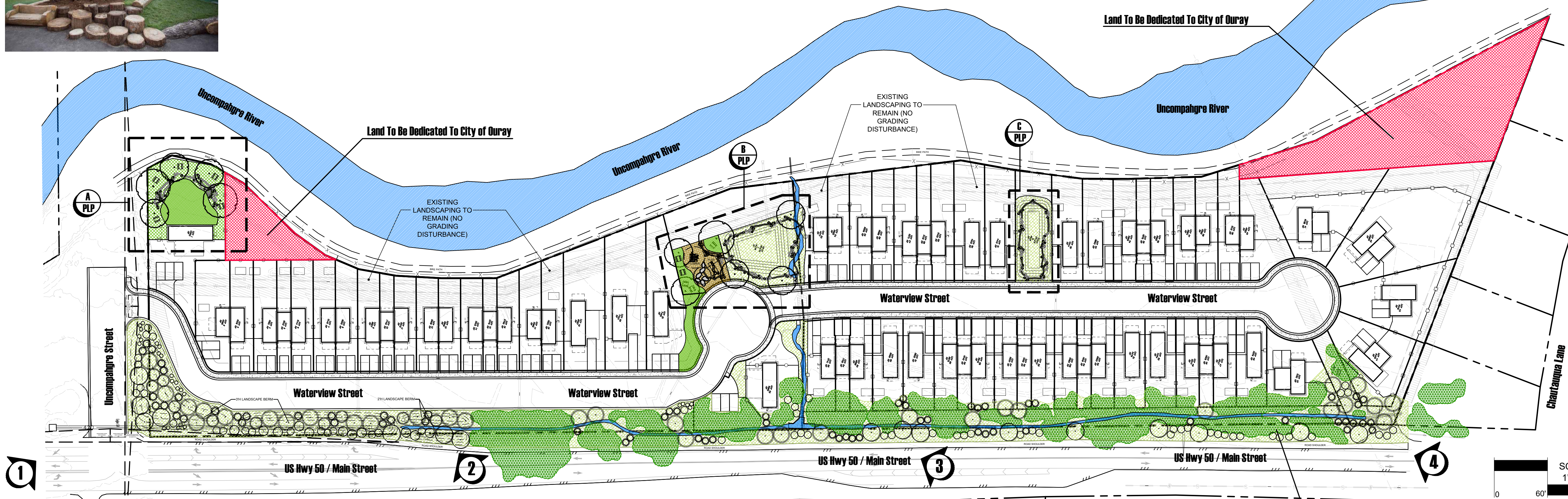
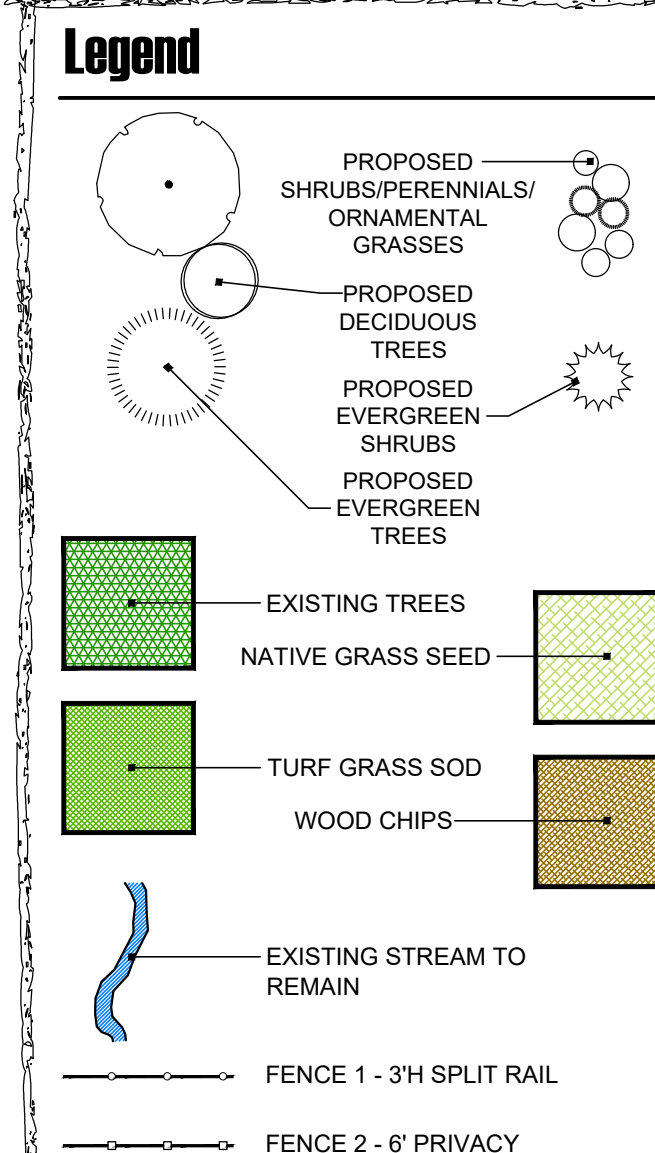


Project Name:  
**Ouray Waterview**  
Ouray, Colorado

Client:  
Paul Major  
Ouray Homes, LLC  
PO Box 4222  
Telluride, CO 81435  
970-209-2880  
paul@ruralhomesproject.co

Landscape Architect:  
**NVISION DESIGN STUDIO, INC.**  
677 25 Road Grand Junction, CO 81505  
Phone: 970.210.2155 Email: rb@nviz.biz  
Web: www.nviz.biz  
Landscape Architecture | Visual Simulation | Graphic Design

Registration:  
**Robert A. Breeden**  
LA 462  
03/31/2008  
State of Colorado  
LICENSED LANDSCAPE ARCHITECT



**Landscape Buffer**

MUCH OF THE EXISTING LANDSCAPE ALONG THE HIGHWAY IS IN HEALTHY CONDITION AND PROVIDES AN EXCELLENT BASIS FOR BUFFERING THE VISUAL IMPACTS OF THE DEVELOPMENT. SOME DEAD TREES AND SHRUBS DO EXIST AND WILL BE REMOVED AS PART OF THE INITIAL LANDSCAPE TREATMENT. WHERE VOIDS ARE CREATED FROM THIS DEAD WOOD REMOVAL, NEW PLANTS WILL BE ADDED. THE PROPOSED LANDSCAPE PLAN IS TO SUPPLEMENT THE EXISTING PLANT MATERIAL WITH NEW PLANTS THAT WILL ACHIEVE AN EFFECTIVE LANDSCAPE BUFFER. THE FOLLOWING EXISTING PLANT SPECIES HAVE BEEN OBSERVED AND ALL HEALTHY PLANTS SHALL REMAIN UNDISTURBED:

COMMON NAME	BOTANICAL NAME
WILLOW	SALIX
OAK	QUERCUS
BIRCH	BETULA
COTTONWOOD	POPULUS
PINE	PINUS
MAPLE, BOXELDER	ACER
BLACKBERRY/ DEWBERRY	RUBUS
RASPBERRY	RUBUS
SPRUCE	PICEA
FIR	ABIES
SERVICEBERRY	AMELANCHIER
JERSEY TEA	CEANOTHUS
DOGWOOD	CORNUS
JUNIPER, RED CEDAR	JUNIPERUS
ELDERBERRY	SAMBUCUS

**IN PROGRESS**  
FOR INTERNAL REVIEW ONLY

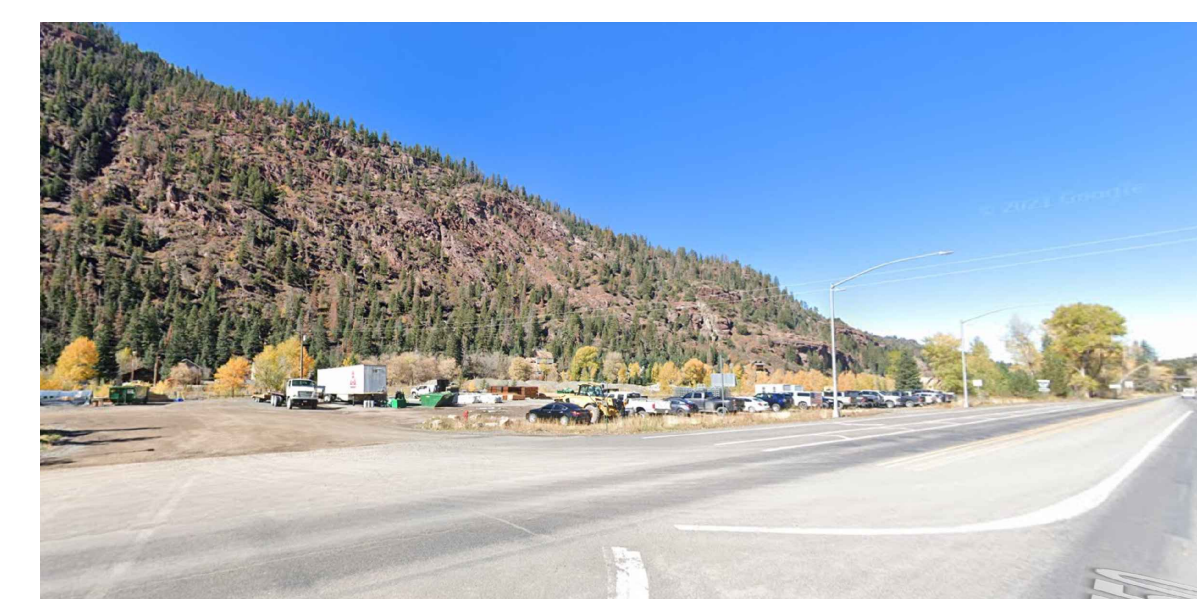
ACCEPTANCE BLOCK  
THE CITY OF OURAY REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS SUBJECT TO THEIR PLANS BEING READED, BIDDING AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD. CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY PLANNER \_\_\_\_\_ DATE \_\_\_\_\_

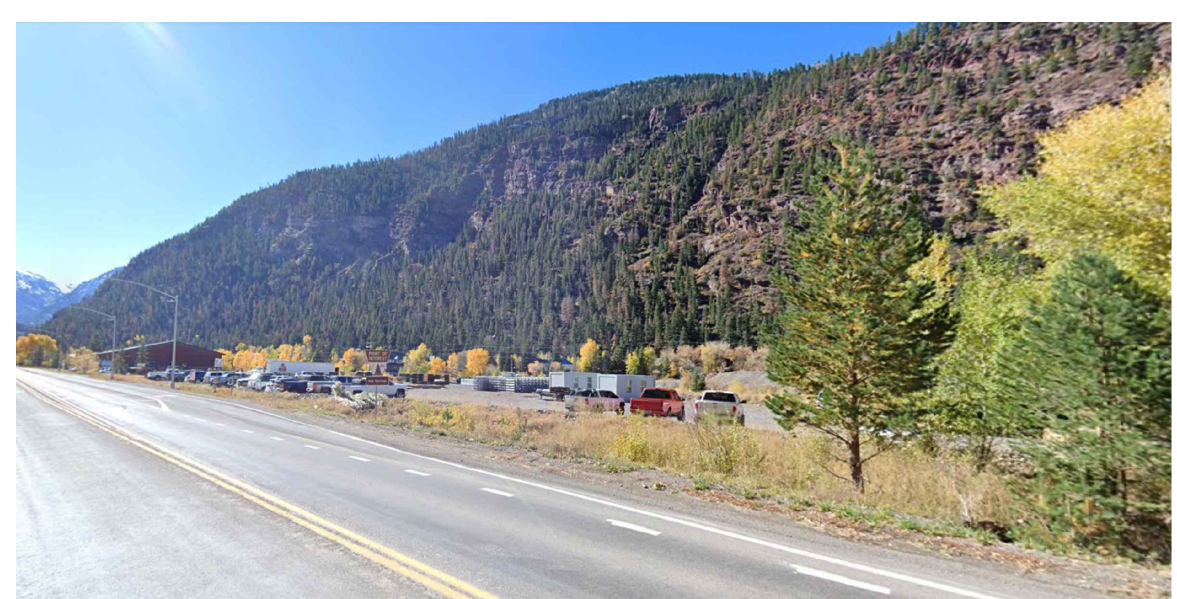
**Preliminary Landscape Plan**

Project: Ouray Waterview  
Date: May 15, 2023  
Scale: 1" = 60'

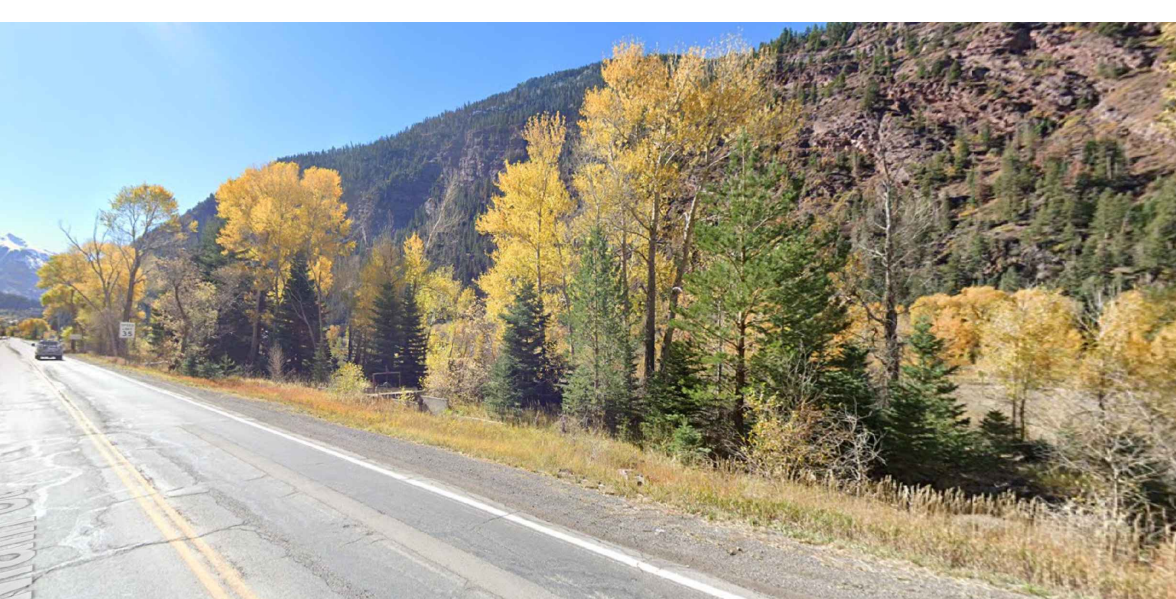
**Preliminary**  
Not For Construction



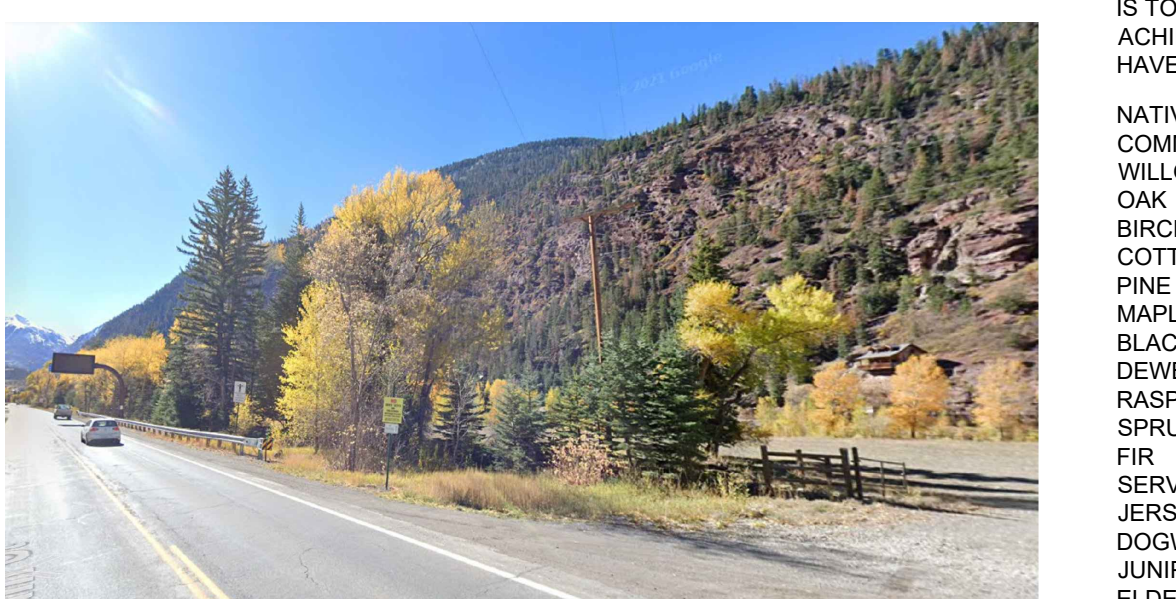
**1** View 1 - Existing Condition



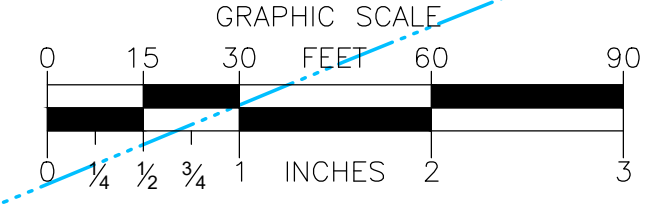
**2** View 2 - Existing Condition



**3** View 3 - Existing Condition



**4** View 4 - Existing Condition

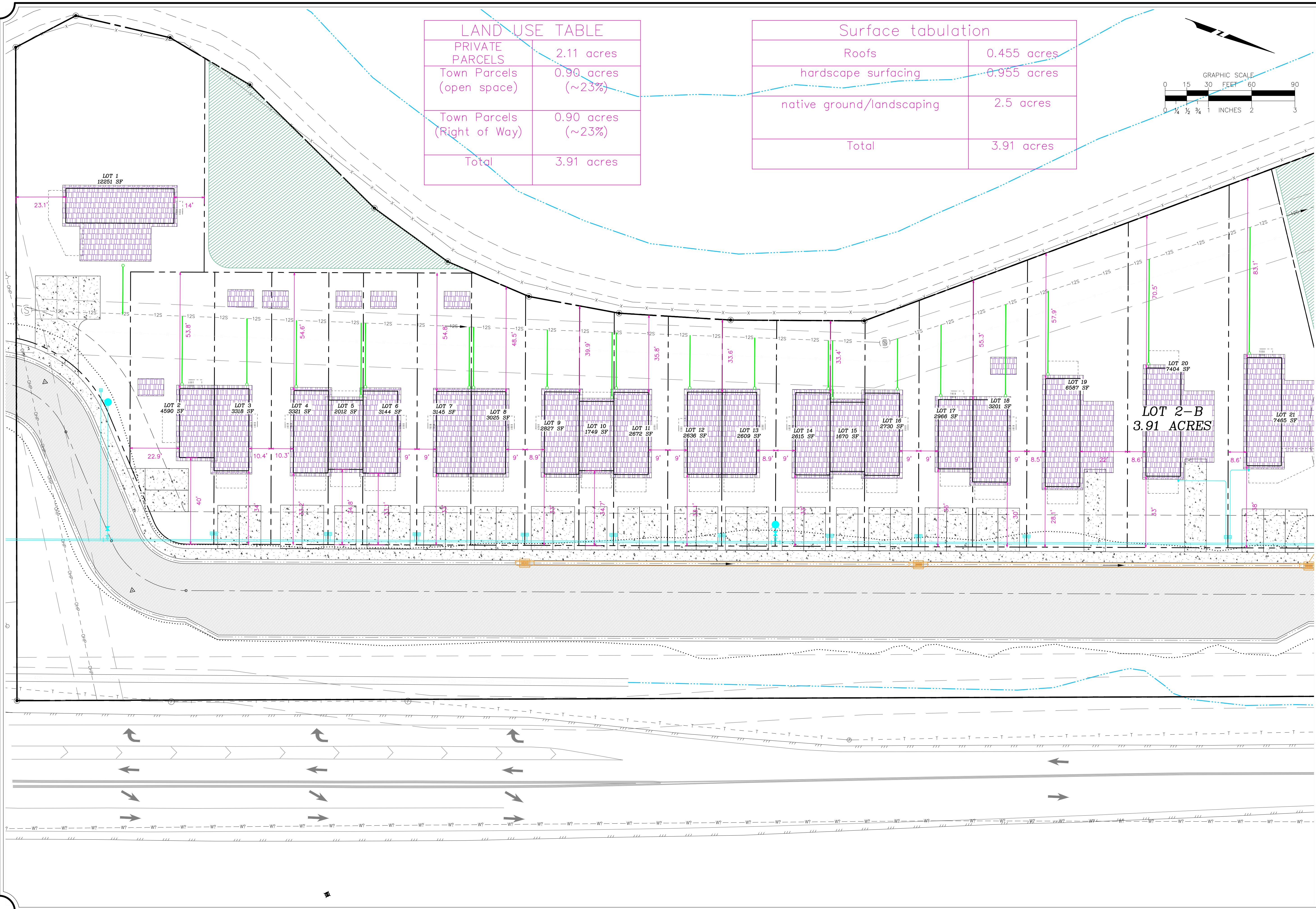


LAND USE TABLE	
PRIVATE PARCELS	2.11 acres
Town Parcels (open space)	0.90 acres (~23%)
Town Parcels (Right of Way)	0.90 acres (~23%)
Total	3.91 acres

Surface tabulation	
Roofs	0.455 acres
hardscape surfacing	0.955 acres
native ground/landscaping	2.5 acres
Total	3.91 acres

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**WATERVIEW AFFORDABLE HOUSING SUBDIVISION**  
OURAY, COLORADO

Issue Record:  
SCHEMATIC 09-09-2023

Revisions:

Project Number: 21-116  
Drawn By: JAE  
Designed by: RSH  
Checked By: RSH

Sheet  
**RD1.02**

PHASE 1 SITE PLAN

## Ouray County

### Home Purchasing Price Based on Mortgage (Examples)

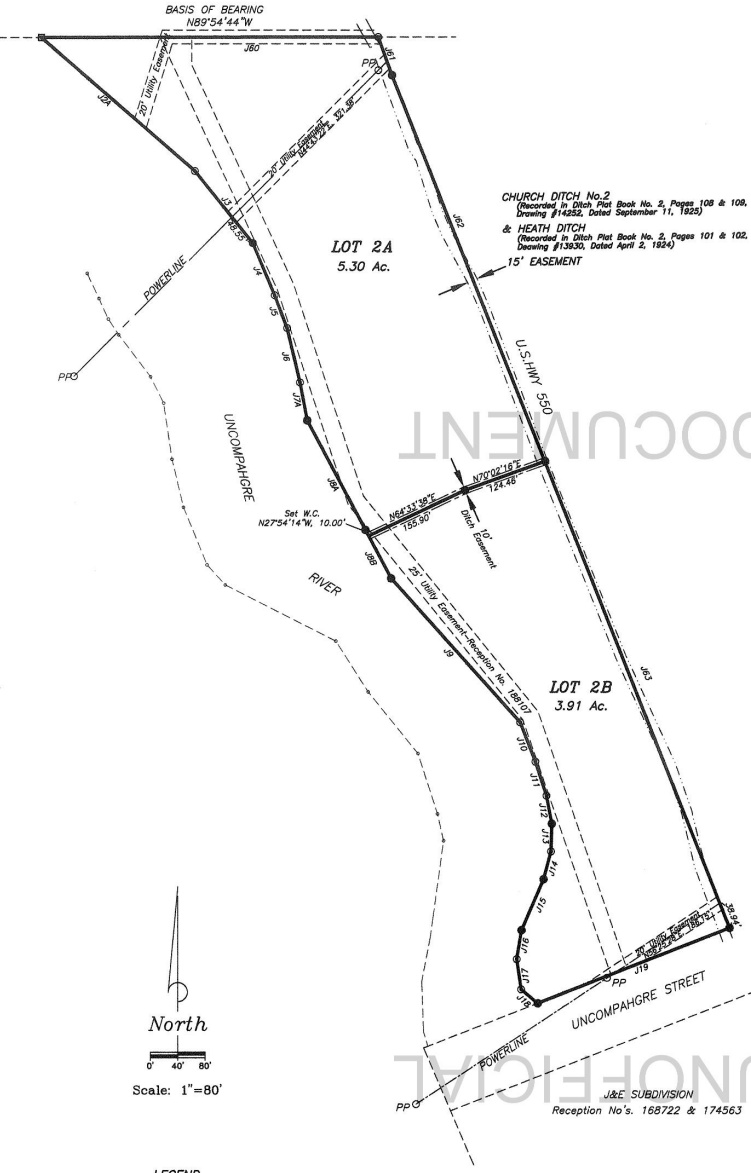
Household Area Median Income (AMI)	Household Size (Persons)	Household Income (Maximum)	Ouray Homes Preferred Lender - 5.5% interest rate; 30 year fixed amortized; buyers pays 10% down payment cost	
120 -100%	1	\$ 78,225	\$	333,494
	3	\$ 100,575	\$	428,777
	5	\$ 120,750	\$	514,785
Area Median Income (AMI)	Household Size (Persons)	Household Income (1) (Maximum)	Ouray Homes Preferred Lender - 4.9% interest rate; 30 year fixed amortized; buyers receives 10% down payment assistance	
100-81%	1	\$ 65,188	\$	277,912
	3	\$ 83,813	\$	357,314
	5	\$ 100,625	\$	428,988
Area Median Income (AMI)	Household Size (Persons)	Household Income (1) (Maximum)	Ouray Homes Preferred Homes - 2.5% interest rate; 30 year fixed amortized; buyers receives \$25,000 down payment assistance	
80% and less	1	\$ 52,150	\$	320,180
	3	\$ 67,050	\$	411,659
	5	\$ 80,500	\$	494,234

**For Illustrative Purposes Only**

# OURAY WATERVIEW SUBDIVISION LOT 2 LOT SPLIT

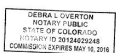
Also being a Lot Split of East Part of Lot 3, J&E Subdivision  
City of Ouray, Colorado

Chautauqua at Ouray Subdivision  
Reception No. 190634



**CERTIFICATE OF OWNERSHIP AND DEDICATION:**  
KNOW ALL MEN BY THESE PRESENTS, that the undersigned owners of said property, located in the City of Ouray, State of Colorado, being described as Lot 2 of the Ouray Waterview Subdivision per Reception No. 190637 in the office of the Ouray County Clerk and Recorder,  
HAVE BY THESE PRESENTS, caused to be laid out, platted and subdivided the above described into lots, as shown on this plat, under the name and style of Ouray Waterview Subdivision Lot 2 Lot Split and do hereby grant, dedicate and convey to the City of Ouray, State of Colorado, perpetual utility easements as shown hereon, across Lots 2A & 2B. We do hereby grant, dedicate and convey the 15' Irrigation Easement and the 10' Ditch Easement, as shown hereon, for the purposes of installation, maintenance, repair & replacement of water pipelines, transmission and related structures and facilities, together with all rights of reasonable access for such purposes, to the benefit of Richard P. Jossi, successors, heirs and assigns.

Owners: J&E Investment Corporation, A Colorado Corporation  
By: Richard P. Jossi, President  
STATE OF Colorado as  
COUNTY OF Ouray  
The foregoing signature was acknowledged before me this 11 day of October A.D. 2013, by Richard Jossi  
My commission expires May 10 2011  
Witness my hand and seal [Signature]  
Notary Public



**CERTIFICATE OF LIEN HOLDERS:**  
The undersigned holders of mortgages, which encumber the land subdivided, hereby agree to the subdivision and dedications.  
1st Mortgage \_\_\_\_\_  
2nd Mortgage \_\_\_\_\_  
by \_\_\_\_\_  
STATE OF \_\_\_\_\_ as  
COUNTY OF \_\_\_\_\_  
The foregoing signature was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_ A.D. 20\_\_\_\_ by \_\_\_\_\_  
My commission expires \_\_\_\_\_  
Witness my hand and seal \_\_\_\_\_  
Notary Public  
*no lien holders*

**ATTORNEY'S CERTIFICATE:**  
I certify that I have examined the title to the platted property and that the record owners and holders of encumbrances affecting the property have executed this plat and joined in the subdivision and reservation of easements.  
[Signature]  
Attorney at Law Registration No. \_\_\_\_\_ Date \_\_\_\_\_

**APPROVAL OF PLANNING COMMISSION:**  
Approved by the City of Ouray Planning Commission this 7th day of October A.D. 2013  
[Signature] Chairman

**APPROVAL OF CITY COUNCIL:**  
Approved by the Ouray City Council this 10th day of October A.D. 2013  
[Signature] Mayor

**APPROVAL OF CITY ATTORNEY:**  
Approved by the City Attorney this 7th day of December A.D. 2013 by [Signature] City Attorney.  
[Signature] Attorney at Law Registration No. \_\_\_\_\_ Date \_\_\_\_\_

**BASIS OF BEARING:**  
The bearing between the northeast corner of Lot 2, Ouray Waterview Subdivision, defined by a rebar & cap, LS 31160 and the northwest corner of said Lot 2, defined by a rebar & cap, LS 31160, is assumed to be N89°54'44"W as shown on the Ouray Waterview Subdivision Plat recorded at Reception No. 168722 in the records of the Ouray County Clerk & Recorder.

**SURVEYOR'S CERTIFICATE:**  
I, Robert A. Larson, a Registered Land Surveyor in the State of Colorado, do hereby certify that this plat accurately represents to the best of my knowledge and information the survey made by me or under my direct supervision, and that said survey conforms to all State laws and standards for property boundaries.  
[Signature]  
Robert A. Larson LS 31160 Date \_\_\_\_\_ SEAL

**RECORDER'S CERTIFICATE:**  
This plat was filed for record in the office of the Clerk and Recorder of Ouray County at Ouray, on the 11th day of October A.D. 2013, in Book \_\_\_\_\_ Page \_\_\_\_\_ Reception No. 211000  
[Signature]  
Dep. County Clerk and Recorder

**NOTICE:** According to Colorado Law you must commence any legal action upon any defect in this survey within three years after you first discovered such defect. In no event, may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon.

- LEGEND**
- Found #5 Rebar & 1.5" Aluminum Survey Cap - LS 10738
  - Found #5 Rebar & 2" Aluminum Survey Cap - LS 31160
  - Set #5 Rebar & 2" Aluminum Survey Cap - LS 31160

Line	Bearing	Distance
J2A	S46°31'41"E	297.22'
J3	S32°33'24"E	130.34'
J4	S22°39'39"E	82.71'
J5	S20°42'17"E	51.33'
J6	S13°19'50"E	81.80'
J7A	S10°44'19"E	56.48'
J8A	S27°54'14"E	101.32'
J8B	S37°54'14"E	70.30'
J9	S41°47'36"E	282.57'
J10	S21°03'43"E	61.53'
J11	S17°54'50"E	52.32'
J12	S10°43'03"E	41.79'
J13	S01°43'43"W	40.66'
J14	S14°20'16"W	42.15'
J15	S32°21'15"W	81.17'
J16	S02°21'24"W	42.88'
J17	S08°18'18"E	46.77'
J18	S48°46'10"E	31.40'
J19	N88°30'00"E	301.39'
J60	N89°54'44"W	490.27'
J61	Δ=1°11'01" R=2905.00' L=60.01'	
J62	S21°33'07"E	608.11'
J63	S21°33'07"E	734.06'

**PLAT NOTE:**  
Access to Highway 550 from Lot 2A is subject to State Highway Access Code.

SURVEYED BY		DATE	SCALE	MONADNOCK MINERAL SERVICES
R.A.L.		10/11/13	1"=80'	542-7722 Am. - P.O. Box 88, Ouray, Colorado 81427
DRAWN BY		SCALE	ACRYL. NO.	
T.A.P.		1"=80'	J13027	SHEET 1 of 1

Dear City of Ouray Planning & Zoning Commission,

I am writing to request an amendment to the approved Sketch Plan that was presented to the Commission Tuesday January 10, 2023. The amended Waterview Subdivision Sketch Plan remains substantially similar to the approved Sketch Plan in terms of project density, unit type, and overall intent and mission of the PUD.

In fact, this amended plan is better aligned with our goal to build affordable and attainable housing for the workforce, as it eliminates some major cost components of the horizontal development plan and responds to the feedback provided by the P&Z on January 10. The updated scheme eliminates the need to introduce new water and sewer mains into Phase 1. Additionally, it eliminates the need to construct a retaining wall where the previous layout of the road interfaced with topography on the western property boundary. The next paragraph of this letter outlines the specific changes that I would like the commission to consider. I would like to highlight that the updated plan provides space to incorporate the feedback that we heard from the Commission in the January hearing, in that it provides space to include a vegetative buffer between the project and the highway.

The most substantial change in the amended Sketch Plan before you is the layout of the primary subdivision access road in Phase 1 that is designed to be built in the southern portion of the property. In the new plan, you will notice a chicane, serpentine curve, in the road that runs from the southern property boundary on Uncompahgre Street northeast into the subdivision. This alternative road layout has a number of benefits. Primarily, the road eliminates the need to construct an alley. In the initial sketch plan, the alley was proposed to be a reduced width of 12 feet and function only as a one-way alley. As we developed the engineering, we discovered that we did not have enough space in the project site to include an alley, as it would need to be built over the existing ditch easement and we would need to culvert the ditch, which must remain exposed to daylight. The chicane road creates space to place residential units on the western side of the property.

This new layout has a number of benefits. The homes' front facades face the highway, which would give a more 'friendly' first impression of the project. As opposed to having off-street parking being the primary view of the subdivision from the highway, now there is room to build a vegetative screen, a public street and right of way, and the view of the homes will be inviting, with front porches and more dynamic front facades. Secondly, the chicane road will keep traffic moving slowly. The green hatch on the site plan shows the travel path of a fire truck, built to state and federal standards.

In terms of reducing the overall project's infrastructure cost, which in turn reduces the per-unit cost of each home, there is now no need to construct extensions of water and sewer mains for Phase 1. The easement will run in the rear of the phase 1 lots and we can run shorter laterals directly from that easement. Additionally, there is no need to design a retaining wall, as notated in the January sketch plan.

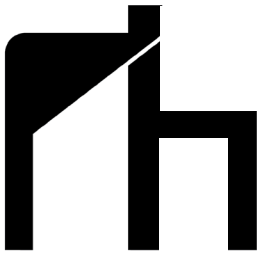
There are minor changes to the number of units and project density. Phase 1 of Waterview will now include three home-based childcare units. Two of those units will be located around the central roundabout and a third will face Uncompahgre Street where we can design a turnaround and drop off. Situating the home care units near these roundabouts and central nodes of the PUD would be a great benefit for maintaining proper traffic flow and providing areas for pick-up and drop off.

Before proceeding with our Preliminary Plat application, we felt that it was important to discuss these changes with the Planning & Zoning Commission. We look forward to continuing to develop this project. Finally, we are excited to have the support of the City through the HB1271 IHOI Affordable Housing Incentives Grant Program. The City has been awarded \$1,050,000 which will go a long way towards helping us achieve our mission of building affordable housing for the Ouray County workforce. This is a big win for the City of Ouray.

Thank you and I look forward to discussing these changes with you next Tuesday March 21 at the P&Z meeting.

Sincerely,

David Bruce  
Project Manager  
Rural Homes: For Sale, For Locals  
Waterview PUD



**Rural Homes**      Sketch Plan  
Ouray Waterview      Application

to: Lily Oswald, Ouray Community Development Director  
Silas Clark, Ouray City Administrator  
from: David Bruce, Project Manager Rural Homes LLC

# Table of Contents

p3	Mission Statement
p4-5	What is the Rural Homes Model?
p6-9	Rural Homes Project Portfolio
p10	Fading West
p11	All-electric & solar photo-voltaic program
p12	Sketch Plan Application

## Supporting Documentation:

Deed of Ownership -

*"1\_31734\_Ouray Waterview\_CHIFO Deed of Trust signed"*

*"85007577\_Ouray Land Closing documents"*

Existing Conditions Survey -

*"220829\_Existing Conditions Map"*

Sketch Plan - Schematic Design Document -

*"Waterview SD 10-20-2022"*

## Mission Statement

There is a lack of affordable housing in mountain communities across Colorado. According to the Mountain Migration Report conducted across six counties with tourism-driven economies, the pandemic led to record-high home purchase and rent prices, accompanied by a sharp decrease in unit availability.

Ouray is not immune to these trends. Small business owners, the school district, and local government (all of whom have representatives on the *Rural Homes Ouray Committee*) all struggle to find employees. They cite a lack of housing options as the primary reason. Without the development of new housing options priced for the local workforce, the community of Ouray will struggle to keep businesses open and provide key services. Multiple *Rural Homes Ouray Committee* members have noted that they currently spend an unsustainable amount of time trying to locate housing for prospective and current employees, and this is one of the main reasons they wanted to become part of the Committee. The problem is apparent throughout Colorado, but magnified in land-constrained and desirable locations such as Ouray, which is why it is a perfect location for a project spearheaded by Rural Homes.

# What is the Rural Homes Model?

There is a gap between what a teacher earns, what a teacher can afford, and the prices of homes that are available in the market (see graph below). Teachers are not alone, countless essential workers across Colorado face this dilemma. **Rural Homes aims to reduce the cost to build rural housing.**

By integrating donated land, factory-manufactured construction, and low-cost construction finance into a toolkit, we are restructuring the way affordable housing can be built for our region's essential workforce: teachers, medical professionals, immigrants, federal employees that earn between 60-120% of Area Median Income (AMI). Our ambition is to inform and refine a model that minimizes the cost of building single-family homes so that it can be replicated and scaled across rural Colorado. By adding new building stock to a housing market that is saturated with old, dilapidated homes or inflated by vacation markets, we are addressing key determinants of public health and long-term economic sustainability in the region.



Our approach tries to whittle down the cost of construction by combining pre-fabricated off-site home building, low-interest construction finance, offsetting the cost of land, and connecting qualified home buyers with low-interest lenders and down payment assistance.

# What is the Rural Homes Model? *Continued*

## Cost of Capital

Partners across Colorado's community organizations and philanthropic entities are interested in new approaches to building affordable housing. We've raised construction finance loans with 0.5% interest and below by working with philanthropic funders such as: The Colorado Health Foundation, El Pomar Foundation, Donnell Kay Foundation, Kenneth King Foundation, Caring for Colorado, Dakota Foundation and Boettcher Foundation.

Furthermore, the Department of Local Affairs and The Division of Housing have matched the philanthropic dollars donated to the projects. We are also pursuing additional "gap financing" funding to subsidize additional costs such as infrastructural improvements related to the project with the goal of reducing the final price of each unit built.

## Cost of Land

We can reduce the overall property values of our homes by securing land donations from municipal entities like towns or counties, or by securing funding to purchase land from private donors and state organizations. San Miguel County has donated land for development in Norwood, and philanthropic funding has been offered for land in Ridgway. Here in Ouray, we have taken advantage of the opportunity to buy one of the last major parcels in the City and are searching for avenues to off-set the cost of purchase. The ideal site has strict criteria in order to control the per-unit costs of building the homes. They are flat, infill, and adjacent to existing civic infrastructure in order to minimize grading, new street construction, or the extension of water and sewer lines.

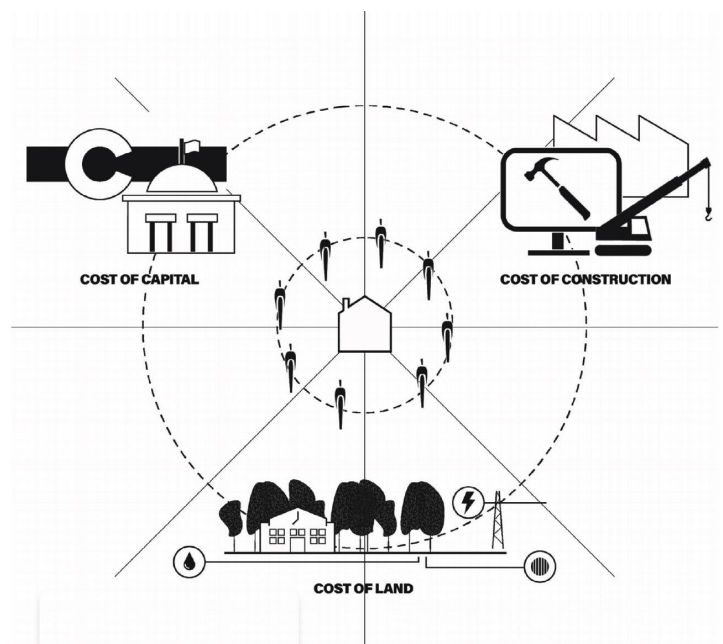
## Cost of Construction

Standard stick-built construction is expensive and wasteful: on average, 30% of the material purchased for home construction ends up in a dumpster. In addition to this, the local labor force is (mostly) involved in high-end home construction, so even if subcontractors are compelled to work on affordable housing, the market sets a price of labor too expensive to build affordably.

By partnering with innovative Colorado companies such as Fading West (modular construction) and Simple Homes (panelized construction), we can significantly lower these on-site construction costs. For instance, Fading West builds 85% of the homes in their factory and ships them to the site in parts, allowing us to not only lock in prices on 85% of the house 8 months before construction, but also to save money on subcontractors by reducing the time it takes to assemble the house.

## Community Led Process

Each project is guided by a community design process that integrates the strength of each community to build new neighborhoods that improve economic, social, cultural, health, and environmental outcomes. Networks of residents, local governments, affordable housing advocates, business owners and government officials are all required to build places that reflect the desires of the community.



# RH Portfolio:

# Wetterhorn Homes Ridgway

Under Construction - 14 Townhomes  
Expected move-in April 2023



# RH Portfolio:

# Wetterhorn Homes Ridgway

Under Construction - 14 Townhomes  
Expected move-in April 2023



# RH Portfolio:

# Pinion Park Norwood

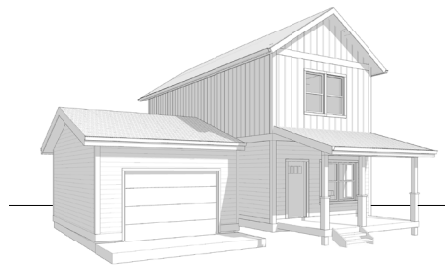
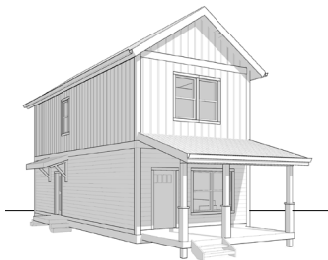
Under Construction - 10 Townhomes, 14 Single-Family Detached Homes  
Expected move-in January 2022



# RH Portfolio:

# Pinion Park Norwood

Under Construction - 10 Townhomes, 14 Single-Family Detached Homes  
 Expected move-in January 2022



### The Wilson

Farmhouse Gable  
 3 Bedrooms  
 3 Bathrooms  
 Detached  
 1216 square feet  
 8' x 12' shed  
 Rooftop Solar  
 Air Conditioning  
 Electric Vehicle-ready  
 Raw water tap  
 GE appliances  
 Fiber internet

### The Hastings

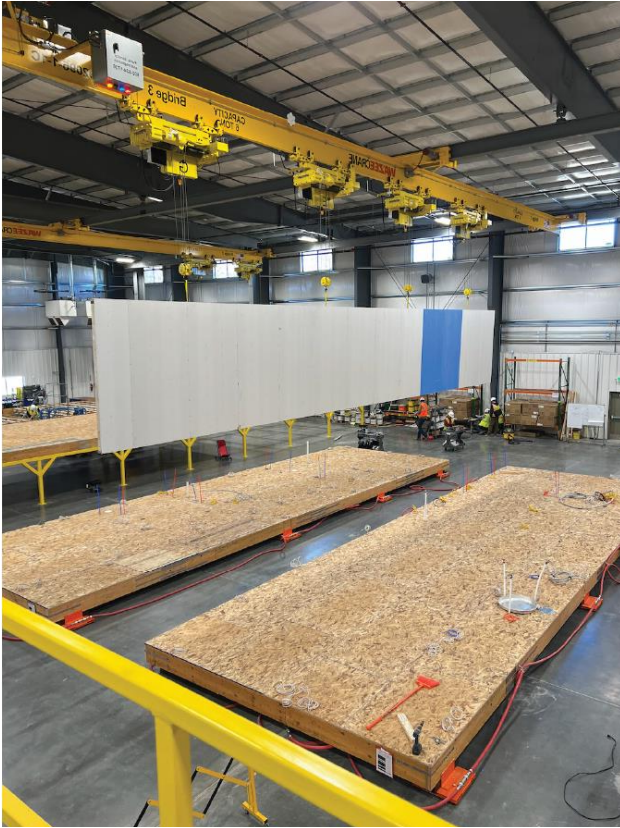
Farmhouse Gable  
 3 Bedrooms  
 3 Bathrooms  
 Detached  
 1648 square feet  
 18' x 24' garage  
 Rooftop Solar  
 Air Conditioning  
 Electric Vehicle-ready  
 Raw water tap  
 GE appliances  
 Fiber internet

### The Sunshine

Mountain Modern  
 2 Bedrooms  
 2 Bathrooms  
 Attached  
 1024 square feet  
 10' x 16' shed  
 Rooftop Solar  
 Air Conditioning  
 Electric Vehicle-ready  
 Raw water tap  
 GE appliances  
 Fiber internet

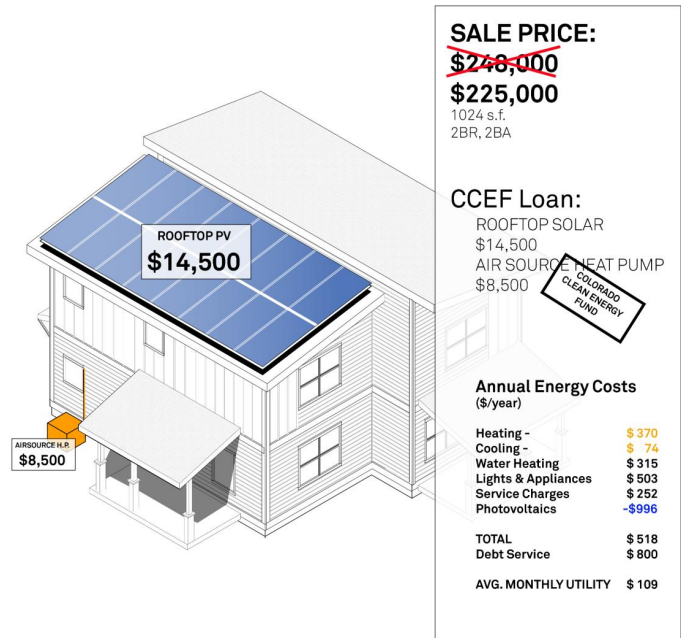
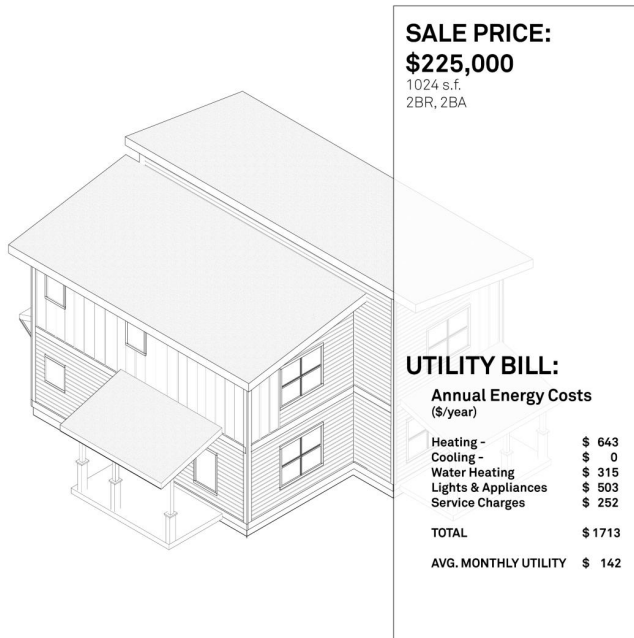
### The McKee

Mountain Modern  
 3 Bedrooms  
 3 Bathrooms  
 Attached  
 1216 square feet  
 10' x 20' shed  
 Rooftop Solar  
 Air Conditioning  
 Electric Vehicle-ready  
 Raw water tap  
 GE appliances  
 Fiber internet



# Strategic Partner

# Colorado Clean Energy Fund



## Pinion Park Pilots Tariff On-Bill Financing for Solar & Air Source Heat Pumps

Rooftop solar provides direct benefits to homeowners, including reduced utility bills, increased property values, and lower carbon footprints. However, the benefits of rooftop solar are only realized by middle- and higher-income homeowners due to the additional upfront costs of purchasing and installing a system. Homeowners at all income levels deserve access to the benefits of rooftop solar. Eliminating the financing hurdle is the key to extending the benefits of solar to lower income homeowners.

Tariff On-Bill Financing (TOBF) provides an opportunity to integrate solar into for-sale construction that is priced for affordable and workforce markets. TOBF can realize the benefits of rooftop solar without requiring lower income families to take on an additional loan to finance the system. In concept, with TOBF, a homeowner pays off the cost of the solar system through their utility bill payments and sees a reduced electrical bill because of rooftop solar power generation. All homeowners pay electric bills. The key is to finance the system at a rate and term that ensures the monthly utility bill is lower than the alternative without the system.

Rural Homes (RH) is developing a proposal with the Colorado Clean Energy Fund (CCEF) and Elemental Energy (EE) to install solar on Pinion Park homes. The program will achieve homeowner savings on their monthly utility bills by up to 25%. In some cases that could be \$100 or more per month in electric utility bills savings. Once the loan is paid in full and the TOBF payments are expired (well before the usable end of life for the system) then the homeowner's savings increase further.

This program proposes to pilot a TOBF approach in partnership with San Miguel Power Association for the Norwood Pinion Park affordable housing project. Pinion Park broke ground on the construction of for-sale single family and townhouse homes in March 2022, and homeowners will move-in September 2022.

Every Pinion Park home is designed to be constructed as all-electric and will be wired for electric vehicle charging. The spirit of this development is to provide ownership pathways to working community members. Providing equitable access to energy efficiency, solar and other bill savings is imperative to every income homeowner.

The Pinion Park rooftop photo-voltaic (PV) solar systems will be financed by the Colorado Clean Energy Fund, with loan payments administered via a surcharge on the homeowner's monthly utility bill. The system design will be done by Elemental Energy. Installation will be done by CAM Electronic a sub-contractor of Stryker Construction, the general contractor for Pinion Park. Both the installation and financing of the solar system will be seamless does not require the homeowner take on any additional financing. Roof orientations at Pinion Park will allow for up to 7-10kW per home.

Every homeowner deserves equitable access to lower utility bills and clean energy.

# **Ouray Waterview**

## Sketch Plan

## Deed of Ownership:

Please refer to the attached documents:

- 85007577\_Ouray Land Closing documents
- 1\_31734\_Ouray Waterview\_CHIFO Deed of Trust signed

## Total Acreage of Property:

9.21 acres

## Uses & Project Program:

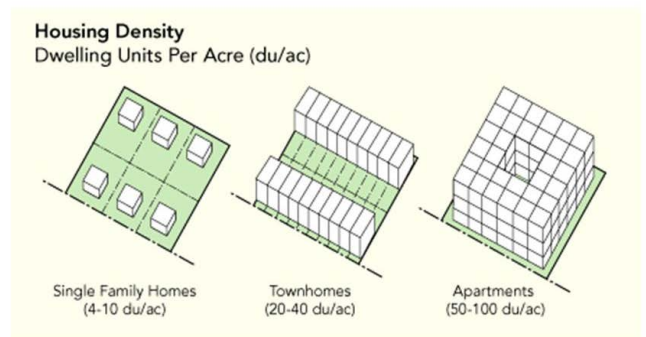
The Ouray Waterview Subdivision Sketch Plan proposes 67 units. Units will include Single Family Dwellings and Townhomes. Townhomes will not exceed clusters of three units (duplexes & triplexes). Unit uses will also include in-unit home-childcare. Additionally, the site will be programmed with streets that contain on-street parking and alleys in a Right of Way. We intend to dedicate the Right of Way to the City of Ouray for ownership and maintenance upon successful and accepted completion of the horizontal development. Finally, the proposal includes recreational green space, planted open space, and storm water detention ponds that will be programmed as landscape spaces. These green spaces will occur on the western fringe of the lot with a direct adjacency to the existing river trail in order to provide future residents with a direct connection to the trail. We intend to dedicate all green space to Ouray Parks & Recreation for long term ownership & maintenance.

## Current Zoning; Future Zoning:

Current: C-2 Commercial-Industrial; Future: Planned Unit Development within C-2 Commercial Industrial

## Density:

7.27 Dwelling Units/Acre



## Existing Conditions Survey:

Please see [Appendix 1: 220829\\_Existing Conditions Map](#) for existing utility easements & infrastructure

## Utilities:

**Water:** We will request to tap into Ouray's municipal water service. Typical maximum daily water demand per single family homes is 350 gallons per day per unit during the summer season. This estimate includes 50 GPD for outside irrigation. These volumes are typically 100 GDP higher than actual measured flows and are used for planning purposes. Given this 350 GDP figure, the Waterview Subdivision would generate a demand of 23,450 gallons per day of water.

**Sewer:** We understand that there are planned service upgrades to the City's sewer treatment plant and that may cause limitations to project timing, or a project delivery in two phases. Once the capacity of the sewer treatment plant can handle the project, we will request to tap into Ouray's municipal sewer service. We estimate that these units will generate 300 gallons of sewage per day.

**Electric:** There appears to be available overhead power lines to tap into electric service. We have not yet engages SMPA for a service engineering request.

**Natural gas:** The subdivision's units will not require natural gas services. Homes will be all-electric and provided with air-source heat pumps.

**Fiber:** The project will be connected to broadband Internet. The provider is currently unknown.

**Ditch:** We have reached out to the owner of the ditch company and have the support to drop a culvert in the ditch that runs east-west between Lots 2A & 2B in order to cross the ditch with our road that runs north-south

## Ouray Zoning Map

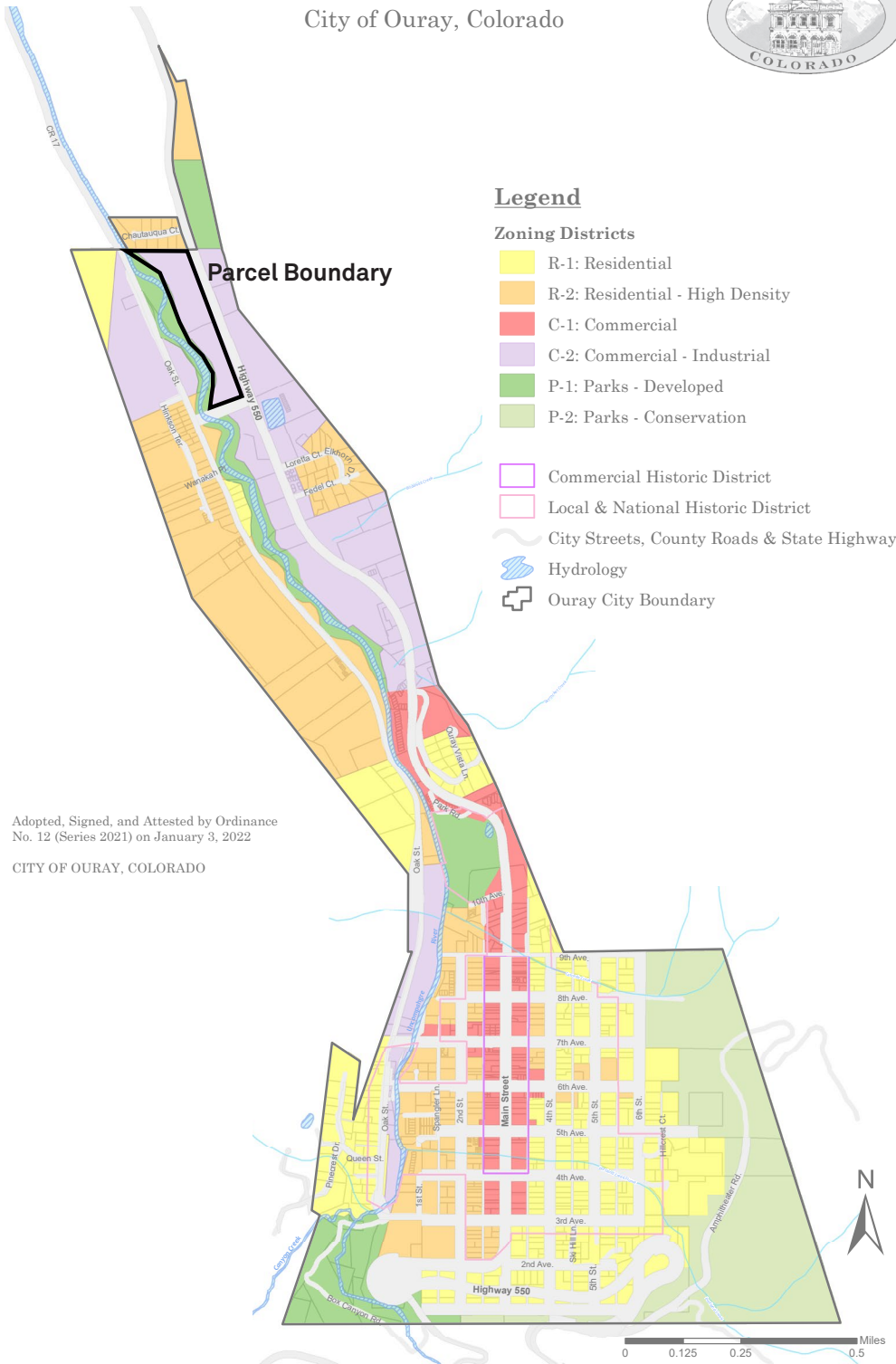
City of Ouray, Colorado



### Legend

#### Zoning Districts

- R-1: Residential
- R-2: Residential - High Density
- C-1: Commercial
- C-2: Commercial - Industrial
- P-1: Parks - Developed
- P-2: Parks - Conservation
- Commercial Historic District
- Local & National Historic District
- City Streets, County Roads & State Highway
- Hydrology
- Ouray City Boundary



Adopted, Signed, and Attested by Ordinance No. 12 (Series 2021) on January 3, 2022

CITY OF OURAY, COLORADO

Current zoning district is **C-2 Commercial-Industrial**. Zoning will remain C-2 Commercial-Industrial but we will pursue a Planned Unit Development (PUD) pursuant to Ouray Land Use Code section (7-8). Please see the next page for 7-8 excerpts.

7-8 Planned Unit Developments (PUD)

A. Statement of Objectives of Development

The intent of this section is to promote the Planned Unit Development Act of 1972 and **encourage innovative developments with unique and valued community attributes.** PUD's allow for consideration of development proposals that differ from required development improvements identified in the OLUC. PUD's offer different options to the applicant when planning and obtaining City approval for their development. PUD's allow flexibility with respect to dimensional requirements and increased densities under certain conditions or circumstances. PUD's encourage conservation of a site's natural characteristics, innovative residential, commercial and industrial development plans which will result in a more efficient use of open space and provide affordable housing for year around residents.

B. Criteria for a Planned Unit Development (PUD)

1. A PUD shall be in general conformity with the City Community Plan and consistent with the objectives as stated in Subsection A above.
2. Compliance with the Colorado Planned Unit Development Act of 1972.
3. A PUD shall have a minimum of 1 unit or lot.

C. Permitted Uses

1. Recreational Facilities and "permitted" and "conditional uses" in the zone or zones in which the PUD is located shall be permitted when approved as part of the Planned Unit Development.

**Permitted uses in C-2 include: "Any use allowed in R-1, R-2 or C-1 Districts" "Multi-Family Dwellings" "Duplexes" "Single-family dwellings"**

2. Residences may be clustered into duplexes or multi-family residences.

D. Dimensional Requirements and Densities

1. The dimensional requirements for various PUD items may differ from what is required in the OLUC if the Planning Commission determines that such deviations will promote the public health, safety and welfare.
2. Residential PUD's may have additional residential units for each acre in the PUD, above what would be allowed otherwise in the zoning district or districts involved.
3. A minimum of 20% of the gross area of the PUD must be preserved as parks or open space.

E. Procedures

1. Planned Unit Developments (PUD) shall be reviewed in accordance with the same procedures for review of subdivisions as found in Subsection 7-7-C.
2. The preliminary and final PUD plan shall comply with all requirements for a preliminary and final subdivision plat, to the extent applicable.
3. A public notice of the hearing on the preliminary planned development plan and any substantial amendments thereto, shall be given by publishing a notice and posting a notice on the property at least 15 days prior to the hearing.

F. Required Improvements and Standards

1. PUD plans shall comply with design standards in Subsection 7-7-E and provide construction improvements as required for subdivisions in Subsection 7-7-F, unless granted otherwise by the Planning Commission.
2. PUD development improvement agreements and required securities must comply with Subsection 7-7-F-2.

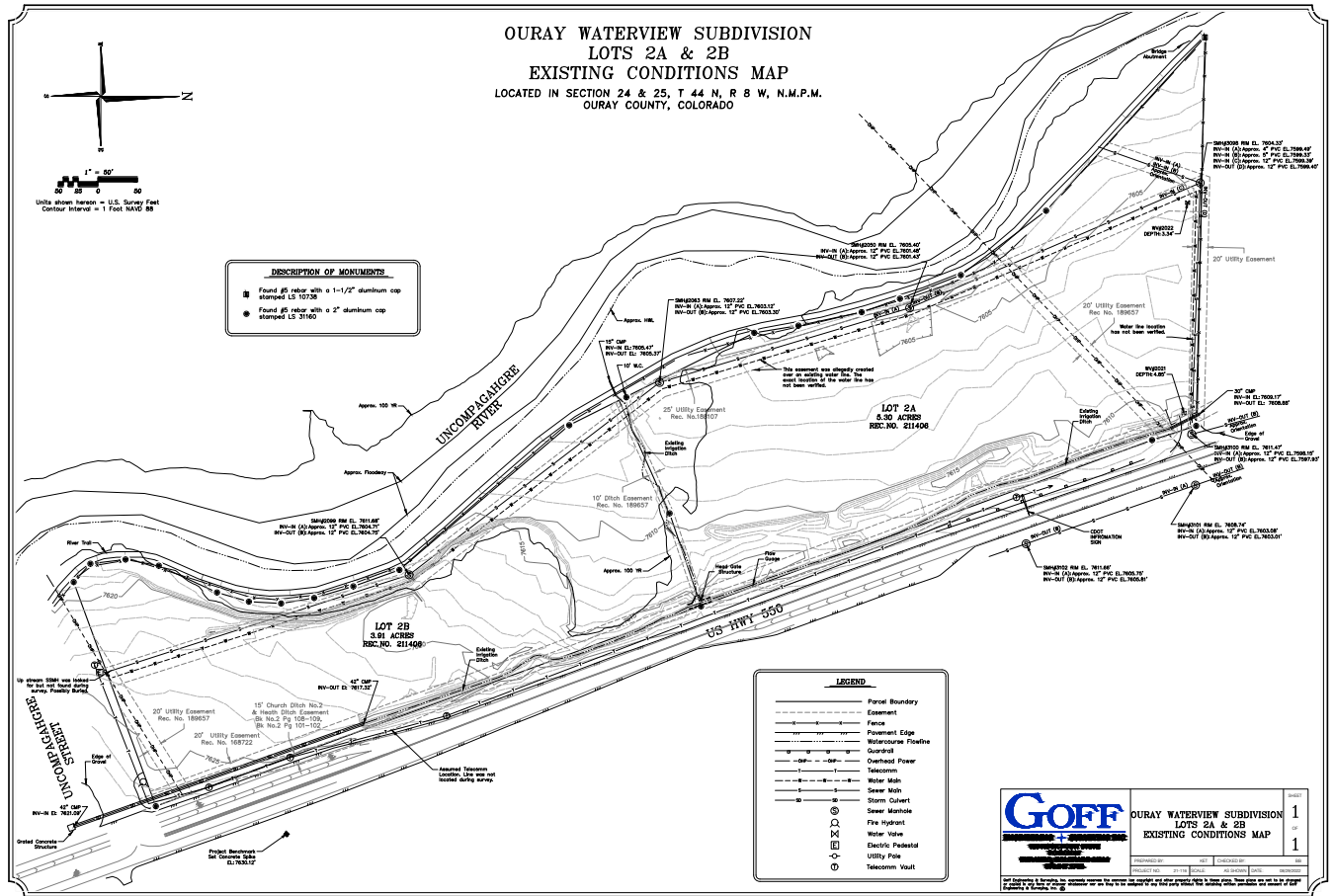
G. Additional Requirements:

1. Other information necessary to show compliance with the requirements of this subsection shall also be submitted with the Planned Unit Development plan. Where appropriate, parameters, limits or specifications may be approved in lieu of exact locations, numbers and sizes.

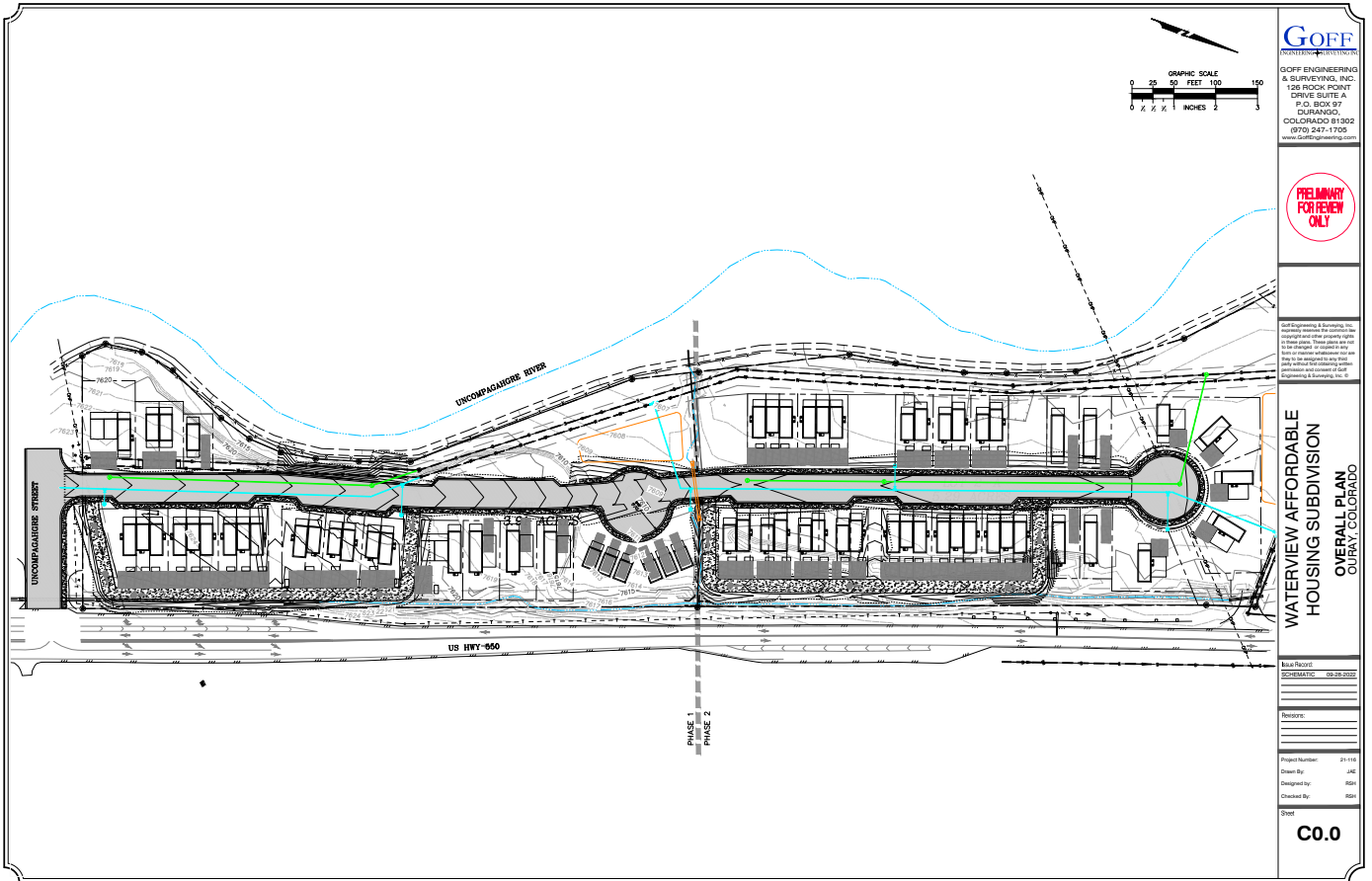
2. The PUD plan may be also enforced in accordance with and in the same manner as the provisions of the Planned Unit Development Act of 1972, as amended. C.R.S. 24-67-101, et. seq.

3. Approval of a PUD by the City is purely discretionary. If the City and applicant do not agree on all required conditions and the plan, the City may deny approval, or the City may unilaterally impose conditions. If the applicant does not accept all conditions, that development must adhere to standard subdivision and zoning requirements.





Please refer to the attachment "220829\_Existing Conditions Map"



Please refer to the attachment **“Waterview SD 10-20-2022”**

The attachment is a four page document that shows the schematic proposal in detail.

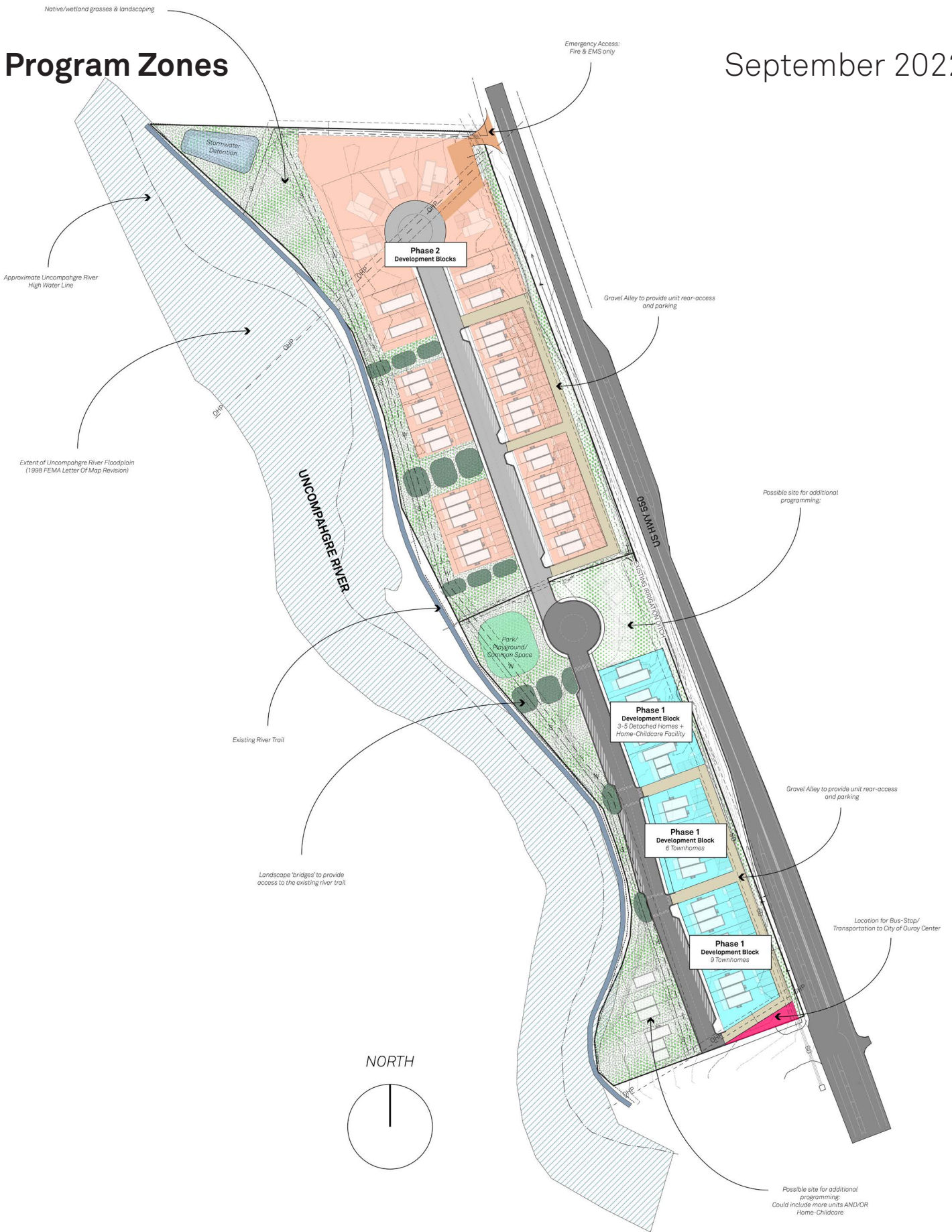
Street name: We do not currently have a proposed street name. We will put this question to the Ouray Housing Committee.

Street dimensions: The proposed street section will include two 12’ drive lanes and one 8’ on-street parking lane. All units have been provided with 2 off-street parking stalls dimensioning 10’x20’. The alley is proposed as a one-way at 14’ wide.

A school bus stop could be located in the center of the site at the first round-about or at the southern end of the site between the alley and Uncompahgre Street.

# Program Zones

September 2022



Green denotes open green space, blue is a possible phase 1, orange is a possible phase 2. Note that detention ponds have moved from this diagram to the SD set. The SD set is the latest plan set and is what our civil engineer has proposed.

Before



After





Lily Oswald &lt;loswald@cityofouray.com&gt;

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## Waterview PUD Preliminary Plat Review // Comments

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**Ruth Stewart** <rstewart.ocems@gmail.com>  
Reply-To: rstewart@ouraycountyco.gov  
To: Lily Oswald <loswald@cityofouray.com>

Thu, May 18, 2023 at 9:37 AM

Hi Lily,

While understanding that my boss, Kim would be the one to provide any official feedback from EMS, she is currently out of the country and won't be back prior to your meeting so I'll pass on the couple thoughts I have but also encourage you to follow up with her after her return on May 29th.

The three things that I can see on the plans or would like to mention simply from experience are these:

- 1) I would encourage a different name for 'Uncompahgre street' as there is an 'Uncompahgre court' in Dallas Meadows and unfortunately having very similarly names streets in entirely different areas of the county has caused problems in the past. So if possible, I would love to see a name that isn't fundamentally the same as another one in the area.
- 2) The plans don't make it clear to me whether any on-street parking is allowed or not but I would just like to make sure that the cul-de-sacs are large enough for an ambulance to turn around regardless of the parking situation. Obviously this means that if parking is allowed in the cul-de-sacs then they would need to be larger. If there is always through access to the emergency egress road this would be less important though still potentially quite helpful.
- 3) And this one is purely from experience but please plan any address markers to be visible AT NIGHT with nothing more than headlights on a car or possibly a porch light. All too many buildings have addresses that are difficult to see even during daylight or if visible during daylight are in an entirely unlit area at night making locating a specific home quite difficult.

Those would be my few thoughts, feel free to reach out with any further questions or for clarification.

Regards,

—Ruth

**Ruth Stewart**  
Paramedic  
Ouray County Emergency Medical Services  
P.O.Box 124  
[251 Railroad street](#)  
[Ridgway, CO 81432](#)  
Office: 970-325-7275  
Fax: 970-325-9967

[Quoted text hidden]

# Lambert and Associates

CONSULTING GEOTECHNICAL ENGINEERS AND MATERIAL TESTING

GEOTECHNICAL ENGINEERING STUDY  
PROPOSED WATERVIEW DEVELOPMENT  
OURAY, COLORADO

Prepared for:

OURAY HOMES LLC

PROJECT NUMBER: M22059GE

FEBRUARY 3, 2023

# Lambert and Associates

CONSULTING GEOTECHNICAL ENGINEERS AND MATERIAL TESTING

February 3, 2023

Ouray Homes LLC  
P.O. Box 4222  
Telluride, Colorado

Attention: Mr. Paul Major

PN: M22059GE

Subject: Geotechnical Engineering Study for the  
Proposed Waterview Development  
Ouray, Colorado

Mr. Major:

Lambert and Associates is pleased to present our geotechnical engineering study for the subject project. The field study was completed on October 10, 2022. The laboratory study was completed on December 1, 2022. The analysis was performed and the report prepared from December 1, 2022 through February 3, 2023. Our geotechnical engineering report is attached.

We are available to provide material testing services for soil and concrete and provide foundation excavation observations during construction. We recommend that Lambert and Associates, the geotechnical engineer, for the project provide material testing services to maintain continuity between design and construction phases.

If you have any questions concerning the geotechnical engineering aspects of your project please contact us. Thank you for the opportunity to perform this study for you.

Respectfully submitted,

LAMBERT AND ASSOCIATES

Daniel R. Lambert, P.E.

P.O. Box 3986  
Grand Junction, CO 81502  
(970) 245 6506

P.O. Box 45  
Montrose, CO 81402  
(970) 249 2154

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## 1.0 INTRODUCTION

This report presents the results of the geotechnical engineering study we conducted for the proposed Waterview Development. The study was conducted at the request of Mr. Paul Major, Ouray Homes LLC, in general accordance with our proposal for geotechnical engineering services dated August 13, 2022.

The conclusions, suggestions and recommendations presented in this report are based on the data gathered during our site and laboratory study and on our experience with similar soil conditions. Factual data gathered during the field and laboratory work are summarized in Appendices A and B.

### 1.1 Proposed Construction

It is our understanding the proposed construction is to include residential structures, associated paved parking and drive areas and associated utilities.

### 1.2 Scope of Services

Our services included geotechnical engineering field and laboratory studies, analysis of the acquired data and report preparation for the proposed site. The scope of our services is outlined below.

- The field study consisted of describing and sampling the soil materials encountered in six (6) small diameter continuous flight auger advanced test borings.
- The materials encountered in the test borings were described and samples retrieved for the subsequent laboratory study.
- The laboratory study included tests of select soil samples obtained during the field study to help assess:
  - . the soil strength potential (internal friction angle and cohesion) of samples tested,
  - . the swell and expansion potential of the samples tested,
  - . the settlement/consolidation potential of the samples tested,
  - . the moisture content and density of samples tested,
  - . the moisture content-dry density relationship (Proctor) test of the subgrade support soil

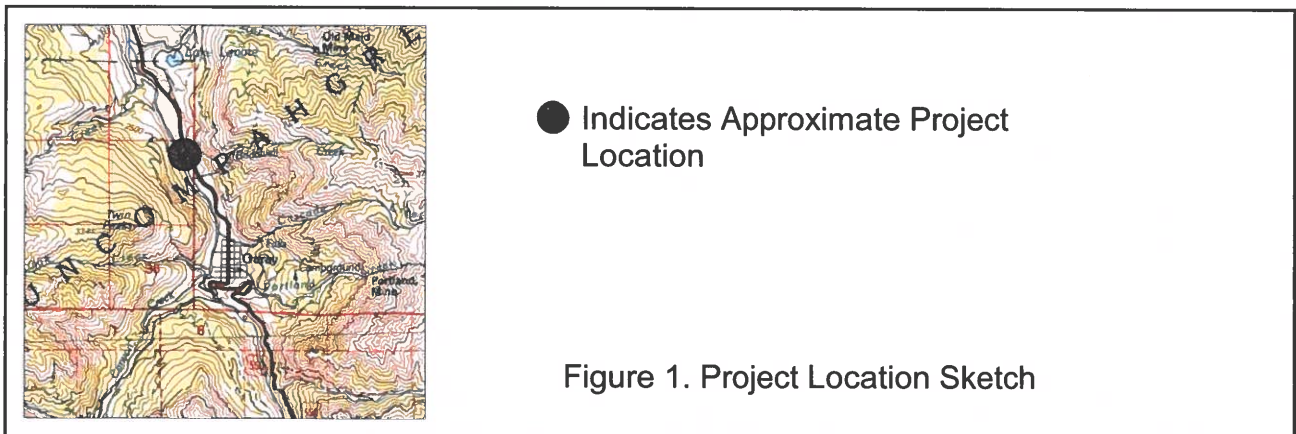
- sample tested,
- . the soil support characteristics of pavement subgrade material samples.
  
- This report presents our geotechnical engineering comments, suggestions and recommendations for planning and design of site development including:
  - . viable foundation types for the conditions encountered,
  - . allowable bearing pressures for the foundation types,
  - . lateral earth pressure recommendations for design of laterally loaded walls,
  - . geotechnical engineering considerations and recommendations for concrete slab on grade floors,
  - . geotechnical engineering considerations and recommendations for compacted structural fill and
  - . several roadway pavement section thickness alternatives.
  
- Our comments, suggestions and recommendations are based on the subsurface soil and ground water conditions encountered during our site and laboratory studies.
  
- Our study did not include any environmental or geologic hazard issues.

## 2.0 SITE CHARACTERISTICS

Site characteristics include observed existing and pre-existing site conditions that may influence the geotechnical engineering aspects of the proposed site development.

### 2.1 Site Location

The site is located west of U.S. Hwy 550, north of Uncompahgre Street, east of the Uncompahgre River, Ouray, Colorado.

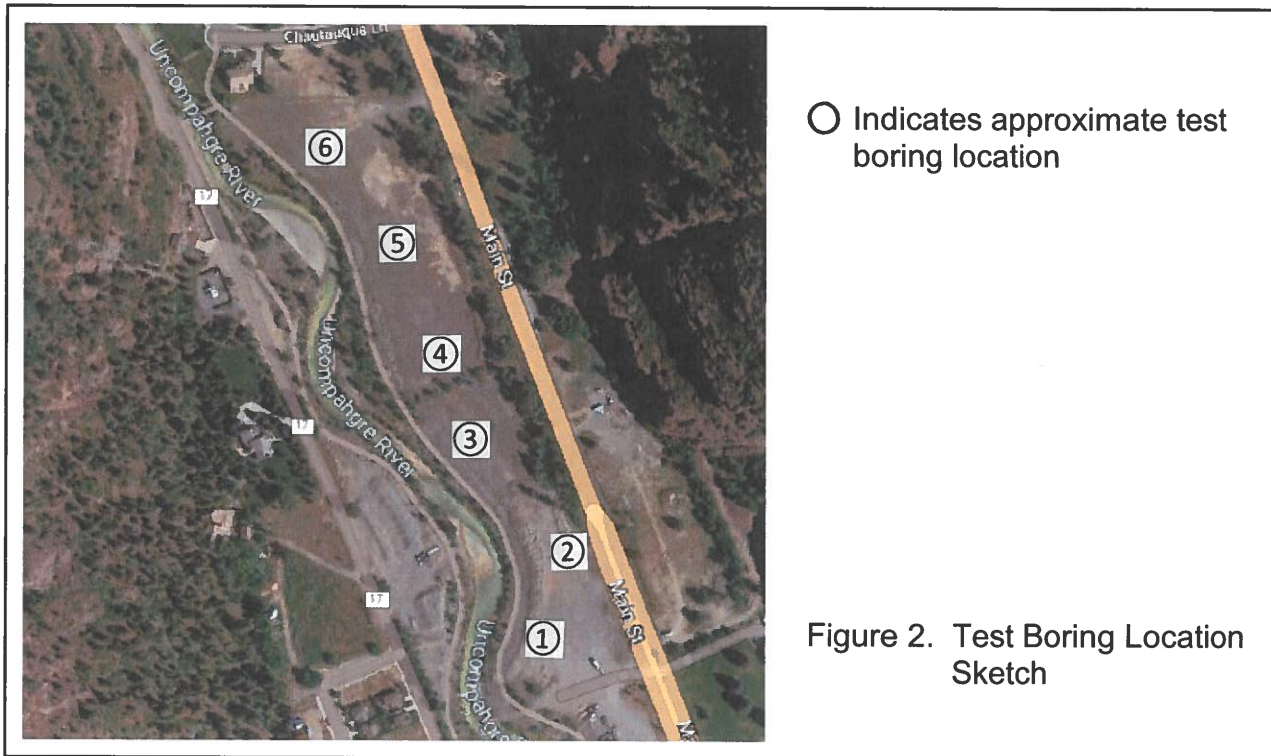


## 2.2 Site Conditions

The site is currently undeveloped. The site is relatively flat exhibiting positive surface drainage in the north and west directions. The site is bordered to the west by the Uncompahgre River, to the east by U.S. Hwy 550. The southern portion of the site has been elevated with fill material.

## 2.3 Subsurface Conditions

The subsurface exploration consisted of observing, describing and sampling the soil materials encountered in six (6) small diameter auger advanced test borings. The approximate locations of the test borings are shown on Figure 2.



The logs describing the soil materials encountered in the test borings are presented in Appendix A.

The soil materials encountered within the test borings generally consisted of granular fill material underlain by silty sands and gravels with cobbles. Approximately four (4) to six and one half (6-1/2) feet of fill material was encountered on the southern portion of the site. Increased moisture contents were observed at approximate depths of twelve and one half (12-

1/2) to thirteen (13) feet below existing site grades.

At the time of our field study the proposed development site was not irrigated. It has been our experience that after the site is developed and once landscape irrigation begins the free subsurface water level may tend to rise. In some cases the free subsurface water level rise, as a result of landscape irrigation and other development influences, can be fairly dramatic and the water level may become shallow.

It is difficult to predict if unexpected subsurface conditions will be encountered during construction. Since such conditions may be found, we suggest that the owner and the contractor make provisions in their budget and construction schedule to accommodate unexpected subsurface conditions.

#### 2.4 Site Geology

A brief discussion of the general geology of the area near the site is presented in Appendix C. The surface geology of the site was determined by observation of the surface conditions at the site and observing the soils encountered in the test borings on the site.

#### 2.5 Seismicity

According to the International Building Code, 2018 Edition, and based on the subsurface conditions encountered and the assumption that the soils described in the test borings are likely representative of the top 100 feet of the soil profile, we recommend that the site soil profile be  $S_C$ , Very dense soil and soft rock.

### 3.0 PLANNING AND DESIGN CONSIDERATIONS

A geologic hazard study was not requested as part of the scope of this report.

All of the suggestions and design parameters presented in this report are based on high quality craftsmanship, care during construction and post construction cognizance of the potential for swell or settlement of the site support materials and appropriate post construction maintenance.

All construction excavations should be sloped to prevent excavation wall collapse. We suggest that as a minimum the excavation walls should be sloped at an inclination of one-and-one-half (1-1/2) to one (1) (horizontal to vertical) or flatter. The area above the foundation

excavations should be observed at least daily for evidence of slope movement during construction. If evidence of slope movement is observed we should be contacted immediately.

We anticipate that excavation and fill placement operations may be associated with the proposed site development. Excavations in the area which generate vertical or sloped exposures should be kept to a minimum.

Excavations which result in cut slopes with a vertical height greater than about four (4) feet or with a slope or structure above should be analyzed on a site specific basis. Temporary excavation cut slopes in competent material should not exceed a one-and-one-half to one (1 -1/2 to 1) (horizontal to vertical) inclination. All construction excavations should conform to Occupational Safety and Health Administration (OSHA) standards or safer. All permanent slopes should be constructed with inclinations of three to one or flatter.

Generally, fill material placed on a site surface which will be used to support structures or additional fill material should be placed so that the contact between the existing site surface and the added fill material will be strong enough to support the added load. This should be addressed on a site and fill area specific basis. The technique recommended will be based on the site configuration, the finished fill configuration the actual material to be used for the fill material and the size of the area thus constructed. Frequently the preparation of the site area to receive fill material will include removing organic and loose near surface native material in the area to receive fill material, placing the material in thin horizontal lifts which are compacted at the appropriate moisture content. Some fill areas could benefit from the installation of a subsurface drain system at the fill material/natural material contact. We are available to, and recommend that, we discuss this with you and provide site and fill specific recommendations when this portion of your development plan merits the additional study.

#### 4.0 ON-SITE DEVELOPMENT CONSIDERATIONS

We anticipate that the subsurface water elevation may fluctuate with seasonal and other varying conditions. Excavations may encounter subsurface water and soils that tend to cave or yield. If water is encountered it may be necessary to dewater construction excavations to provide more suitable working conditions. Excavations should be well braced or sloped to prevent wall collapse. Federal, state and local safety codes should be observed. All construction excavations should conform to Occupational Safety and Health Administration (OSHA) standards or safer.

The site construction surface should be graded to drain surface water away from the site

excavations. Surface water should not be allowed to accumulate in excavations during construction. Accumulated water could negatively influence the site soil conditions. Construction surface drainage should include swales, if necessary to divert surface water away from the construction excavations.

Organic soil materials in areas to receive fill material or structure components should be removed. The organic soil materials are not suitable for support of the structure or structural components.

Man placed fill material may exist on site. The quality of any man placed fill encountered appears to be suitable to support structures, however, unknown portions of the fill material may not be suitable for support of the structure or structural components. The man placed fill material should be observed in each excavation prior to the placement of additional fill material or structural components. Fill material that is not suitable for use should be removed and replaced with compacted structural fill prior to supporting building or building components on the fill.

The soil materials exposed in the bottom of the excavations may be moist and may become yielding under construction traffic during construction. It may be necessary to use techniques for placement of fill material or foundation concrete which limits construction traffic in the vicinity of the very moist soil material. If yielding should occur during construction it may be necessary to construct a subgrade stabilization fill blanket or similar to provide construction traffic access. The subgrade stabilization blanket may include over excavating the subgrade soils one (1) to several feet and replacing with aggregate subbase course type material. The stabilization blanket may also include geotextile stabilization fabric at the bottom of the excavation prior to placement of aggregate subbase course stabilization fill. Other subgrade stabilization techniques may be available. We are available to discuss this with you.

It has been our experience that sites in developed areas may contain existing subterranean structures or poor quality man placed fill. If subterranean structures or poor quality man placed fill are suspected or encountered, they should be removed and replaced with compacted structural fill as discussed under COMPACTED STRUCTURAL FILL below.

## 5.0 FOUNDATION RECOMMENDATIONS

Geotechnical engineering considerations which influence the foundation design and construction recommendations presented below are discussed in Appendix D.

We have analyzed spread footing foundations as potential foundation systems for the proposed residential structures. These are discussed below. Due to the number of possible foundation types available and design and construction techniques there may be design alternatives which we have not presented in this report. We are available to discuss other foundation types.

We recommend that each entire structure be supported on only one foundation type. Combining foundation types will result in differential and unpredictable foundation performance between the varying foundation types. We recommend that the structure footprint not be traversed by the cut/fill contact which would result in a portion of the structure underlain by fill material and part of the structure underlain by materials exposed by excavated cut. If this condition will exist please contact us so that we can revise our recommendations to accommodate the cut/fill contact scenario.

All of the design parameters presented below are based on techniques performed by an experienced competent contractor and high quality craftsmanship and care during construction. We recommend post construction cognizance of the volume change potential of the near surface soil materials and the need for appropriate post construction maintenance.

The spread footing recommendations include recommended design and construction techniques to reduce the influence of movement of the soil materials supporting the foundation but should not be interpreted as solutions for completely mitigating the potential for movement from the support soil material volume change.

Exterior column supports should be supported by foundations incorporated into the foundation system of the structure not supported on flatwork. Column supports placed on exterior concrete flatwork may move if the support soils below the concrete slab on grade become wetted and swell or freeze and raise or settle. Differential movement of the exterior columns may cause stress to accumulate in the supported structure and translate into other portions of the structure.

### 5.1 Spread Footing Foundations

In our analysis it was necessary to assume that the material encountered in the test borings extended throughout the building site and to a depth below the maximum depth of the influence of the foundations. We should be contacted to observe the soil materials exposed in the foundation excavations prior to placement of foundations to verify the assumptions made during our analysis.

The bottom of the foundation excavations should be thoroughly cleaned and observed when excavated. Any loose or disturbed material exposed in the foundation excavation should be removed or compacted prior to placing foundation concrete.

The bottom of the foundation excavations should be compacted prior to placing compacted structural fill or foundation concrete. We suggest the materials exposed be compacted to at least ninety (90) percent of the materials moisture content-dry density relationship (Proctor) test, ASTM D1557. Excavation compaction is to help reduce the influence of any disturbance that may occur during the excavation operations. Any areas of loose, low density or yielding soils evidenced during the excavation compaction operation should be removed and replaced with compacted structural fill. Caution should be exercised during the excavation compaction operations. Excess rolling or compacting may increase pore pressure of the subgrade soil material and degrade the integrity of the support soils. Loose or disturbed material in the bottom of the foundation excavations which are intended to support structural members will likely result in large and unpredictable amounts of settlement, if the loose or disturbed material is not removed or compacted.

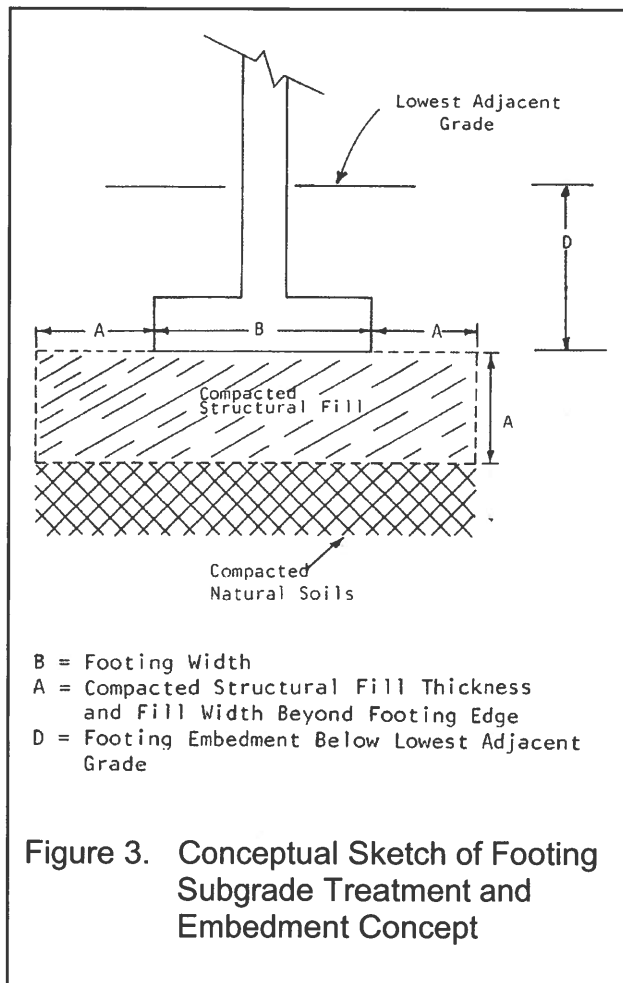


Figure 3. Conceptual Sketch of Footing Subgrade Treatment and Embedment Concept

The bottom of any footings exposed to freezing temperatures should be placed below the maximum depth of frost penetration for the area. Refer to the local building code for details.

All footings should be appropriately proportioned to reduce the post construction differential settlement. Footings for large localized loads should be designed for bearing pressures and footing dimensions in the range of adjacent footings to reduce the potential for differential settlement. We are available to discuss this with you.

Foundation walls should be reinforced for geotechnical engineering purposes. The structural engineer should be consulted for foundation design. The structural engineering reinforcing design tailored for this project will be more appropriate than the suggestions

presented above.

The structure may be founded on spread footings. We recommend the use of a blanket of structure fill material beneath the spread footing foundation members. Spread footings may be placed either on the natural undisturbed soils or on a blanket of compacted structural fill. The blanket of compacted structural fill is to help provide uniform support for the footings and to help reduce the theoretical calculated post construction settlement. The theoretical calculated post construction settlement and associated fill thickness supporting the footings are presented below.

We suggest that you consider the foundation be supported on a blanket of compacted structural fill. The blanket of compacted structural fill should be approximately one (1) foot thick to help mask the influence of volume change soil materials supporting the footings. The blanket of compacted structural fill will not prevent movement of the footings from volume change in the support soil materials but will mask the influence of volume changes of the soils supporting the footings. If the footings are supported on a blanket of compacted structural fill the blanket of compacted structural fill should extend beyond each edge of each footing a distance at least equal to the fill thickness. This concept is shown on Figure 3. Geotechnical engineering recommendations for constructing compacted structural fill are presented below.

Fill sections below foundation members may benefit from the inclusion of a subgrade stabilization fabric such as a Mirafi 500X or similar placed on prepared subgrade material prior to the placement of the compacted fill materials

All footings should have a minimum depth of embedment of at least one (1) foot below the lowest adjacent grade when placed either on the natural undisturbed soils or a blanket of compacted structural fill. Deeper embedment will be needed for footings exposed to exterior climate. Other characteristics may influence embedment. The embedment concept is shown on Figure 3.

**We suggest the continuous spread footing members with widths of two (2) feet or less and a minimum one (1) foot embedment be designed using an allowable bearing capacity of 1,975 pounds per square foot.**

**We suggest the isolated spread footing members with widths of three (3) feet or less and a minimum one (1) foot embedment be designed using an allowable bearing capacity of 1,750 pounds per square foot.**

The bearing capacity will depend on the minimum depth of embedment of the bottom of the footings below the lowest adjacent grade and the support characteristics of the soils supporting the foundation.

The bearing capacity may be increased by twenty (20) percent for transient loads such as wind and seismic loads.

It is our opinion that footings exposed to frost or freezing ground influences and all exterior footings should be embedded to frost depth or deeper. Interior footings should have a minimum depth of embedment of at least one (1) foot on all sides to provide a more predictable long term performance of the footing. We understand that construction techniques typically used in the area may result in some of the footings in the crawl space constructed without significant embedment of the bottom of the footing below the lowest adjacent grade. For this reason we have provided design values for footings constructed with little or no embedment. It is our opinion that the performance of footing constructed without embedment may be influenced by erosion, temperature changes, moisture content changes, swell potential of the soil supporting the footings and weathering of the soils supporting the footings and will have a less predictable settlement response than footings with embedment.

Exterior footings and footings with uneven backfill may result in movement of the footings. Embedment of the footings on all sides will help reduce the potential for movement of footings with uneven backfill. We do not recommend exterior footings or footings with uneven backfill be constructed without a minimum depth of embedment of the bottom of the footing below the lowest adjacent grade of at least one (1) foot on all sides of the interior footings and frost depth for exterior footings.

The minimum depth of embedment is sufficient only to develop the bearing capacity for design purposes and does not account for frost influences. Actual design and construction should result in interior footings with one (1) foot or more embedment and exterior footings with frost depth or more embedment. Typically deeper embedment will increase bearing capacity and decrease post construction settlement and decrease the influence of expansive soils.

The soil samples tested had measured swell pressures of less than 100 to approximately 400 pounds per square foot, however, the actual swell pressure of the support materials could be greater. When wetted the site soil materials may have the ability to raise supported foundation members with loads less than the swell pressure. The foundation design should be as rigid as possible with as high of a dead load as can be available. The greater the dead load on the footings the less the potential for movement from the foundation soils should they become wetted. If the soils become wetted they will swell and will raise the foundation portions

supported on the wetted soils. If the structure is supported on spread footings the owner must realize that post construction movement of the footings is likely. We are available to discuss the implications of supporting foundations on swelling soils.

Interior column loads supported on spread footings which are structurally connected to the other foundation members will provide more uniform performance of the interior footings with respect to the other foundation members and will help reduce the potential differential settlement between interior and exterior foundation members. The foundation walls should be designed to act as beams to distribute stresses associated with the swelling volume changes of soils. The beam design should be addressed by the project structural engineer.

Exterior column supports should be supported by foundations incorporated into the foundation system of the structure not supported on flatwork. Column supports placed on exterior concrete flatwork may move if the support soils below the concrete slab on grade become wetted and swell or freeze and raise or settle. Differential movement of the exterior columns may cause stress to accumulate in the supported structure and translate into other portions of the structure.

The calculated theoretical estimated post construction settlement and swell potential may be reduced by placing the footings on a blanket of compacted structural fill. The calculated theoretical estimated post construction settlement and associated thickness of compacted structural fill are presented below.

<u>THICKNESS OF COMPACTED STRUCTURAL FILL SUPPORTING FOOTINGS</u>	<u>CALCULATED THEORETICAL ESTIMATED POST CONSTRUCTION SETTLEMENT FOR CONTINUOUS SPREAD FOOTINGS (INCHES)</u>
0 feet	7/8 to 1-1/8
1 foot	1/2 to 3/4
2 feet	3/8 to 1/2

<u>THICKNESS OF COMPACTED STRUCTURAL FILL SUPPORTING FOOTINGS</u>	<u>CALCULATED THEORETICAL ESTIMATED POST CONSTRUCTION SETTLEMENT FOR ISOLATED SPREAD FOOTINGS (INCHES)</u>
0 feet	7/8 to 1-1/8
1 foot	5/8 to 7/8
2 feet	3/8 to 5/8

The calculated theoretical settlement estimated values above are appropriate for continuous spread footings with a width of about two (2) feet or less and isolated spread footings with a width of about three (3) feet or less. Larger footings should be analyzed on a footing, load and width specific basis.

Footings should be sized so that each footing is in a similar size and load range as nearby footings to encourage similar performance. Very large footings or heavily loaded footings will influence the support soil materials to a deeper depth than small or lightly loaded footings and therefore will have different post construction performance characteristics.

The calculated settlement estimates are theoretical only. Actual settlement could vary throughout the site and with time.

If the footings are supported on a blanket of compacted structural fill, the blanket of compacted structural fill should extend beyond each edge of each footing a distance at least equal to the fill thickness. This concept is shown on Figure 3. Compacted Structural Fill is discussed in Section 8.0 below.

The site soil samples tested have measured swell pressures of less than 100 to approximately 400 pounds per square foot, however, the actual swell pressure of the support material could be greater. This swell pressure was measured for soils at the initial moisture content of the soil sample tested. The swell potential of the site soil materials could vary significantly and could be greater than that measured. The measured swell pressure may be influenced by disturbance of the sample during the sampling operation and the soil suction potential and initial moisture content.

Changes in the initial moisture content will significantly influence the swell pressure of the site soils. If the initial moisture content of the foundation soils is less than that of the test sample the actual swell pressures will likely be significantly higher than measured. If the initial moisture content of the foundation soils is greater than that of the test sample the actual swell pressures may be less than measured.

The bottom of the foundation excavations should be thoroughly cleaned and observed by the project Geotechnical Engineer or his representative when excavated. Any loose or disturbed material exposed in the foundation excavation should be removed or remedied prior to additional construction.

We recommend that we be contacted to observe the foundation excavations and backfill operations during construction to verify the soil support conditions and our assumptions upon

which our recommendations are based. If necessary we may revise our recommendations based on our observations. We are available to provide material testing services during the construction phase of the project.

If lightly loaded structure members are supported on spread footings on expansive soil material then the owner must realize that post construction movement of the footings is likely. These lightly loaded areas of the footing should be designed with sufficient structural integrity to resist the forces from swelling soils.

Foundation members that will have significantly small or low dead loads, such as foundations beneath wall openings such as doorways, may be provided with a strengthened grade beam and/or positive separation between the foundation concrete and the underlying soil materials. That separation may be provided by using commercial void form material. We recommend that the structural engineer be consulted concerning the void form design concept.

If the void form design concept is part of the foundation design we suggest that the foundation design may consider including a four (4) to six (6) inch corrugated paper void form material beneath the footings in the lightly loaded portions of the foundation. The corrugated paper void forms provide temporary support for foundation concrete during construction. The low strength of the void form material is intended to allow the underlying soil materials to expand into the void form thereby exerting less or no uplift pressure on the foundation in the areas it is used. We are available to discuss the implications of supporting foundations on swelling soils.

## 6.0 INTERIOR FLOOR SLAB DISCUSSION

It is our understanding that, as currently planned, the floor may be either a concrete slab on grade or a supported structural floor. The natural soils that will support interior floor slabs are stable at their natural moisture content. However, the owner should realize that when wetted, the site soils may experience volume changes. The site soil samples tested had measured swell pressures of less than 100 to approximately 400 pounds per square foot and associated magnitudes of up to 0.3 percent of the wetted soil volume at a surcharge load of 100 pounds per square foot and the actual swell pressure could be greater.

The recommendations in this report do not address a monolithic floor slab/footing combination. The design and construction characteristics of the monolithic floor slab need geotechnical engineering design parameters tailored specifically for a monolithic slab and integral footing. Generally this type foundation/floor combination in this area with these site conditions does not perform as well as other choices.

Conditions which vary from those encountered during our field study may become apparent during excavation. We should be contacted to observe the conditions exposed at concrete slab on grade subgrade elevation to verify the assumptions made during the preparation of this report and to provide additional geotechnical engineering suggestions and recommendations as needed.

Engineering design dealing with swelling soils is an art which is still developing. The owner is cautioned that the soils on this site may have swelling potential and concrete slab on grade floors and other lightly loaded members may experience movement when the supporting soils become wetted. We suggest you consider floors suspended from the foundation systems as structural floors or a similar design that will not be influenced by subgrade volume changes. If the owner is willing to accept the risk of possible damage from swelling soils supporting concrete slab on grade floors, the following recommendations to help reduce the damage from swelling soils should be followed. These recommendations are based on generally accepted design and construction procedures for construction on soils that tend to experience volume changes when wetted and are intended to help reduce the damage caused by swelling soil materials. Lambert and Associates does not intend that the owner, or the owner's consultants should interpret these recommendations as a solution to the problems of swelling soils, but as measures to reduce the influence of swelling soils.

The shallow soil materials tested have a low to moderate volume change potential under light loading conditions. Concrete slab on grade floors may experience movement when supported by the natural onsite soils. Concrete slab on grade floors will perform best if designed to tolerate movement introduced by the subgrade soil materials.

Concrete flatwork, such as concrete slab on grade floors, should be underlain by compacted structural fill. The layer of compacted fill should be at least one (1) foot thick or thicker and constructed as discussed under COMPACTED STRUCTURAL FILL below. A one (1) foot thick or thicker blanket of structural fill material beneath the concrete flatwork is not sufficient to entirely mask the settlement or swell potential of the subgrade soil material but will only provide better subgrade conditions for construction. The concrete slab on grade should be designed by a structural engineer to be compatible with the site soil conditions.

The natural soil materials exposed in the areas supporting concrete slab on grade floors should be kept very moist during construction prior to placement of concrete slab on grade floors. This is to help increase the moisture regime of the potentially expansive soils supporting floor slabs and help reduce the expansion potential of the soils. We are available to discuss this concept with you.

Concrete slab on grade floors should be provided with a positive separation, such as a slip joint, from all bearing members and utility lines to allow their independent movements and to help reduce possible damage that could be caused by movement of soils supporting interior slabs. The floor slab should be constructed as a floating slab. All water and sewer pipe lines should be isolated from the slab. Any equipment placed on the floating floor slab should be constructed with flexible joints to accommodate future movement of the floor slab with respect to the structure. We suggest partitions constructed on the concrete slab on grade floors be provided with a void space above or below the partitions to relieve stresses induced by elevation changes in the floor slab.

Floor slabs should not contact/extend directly over foundations or foundation members. Floor slabs which directly contact foundations or foundation members will likely experience post construction movement as a result of foundation movements. We are available to discuss this with you.

The concrete slabs should be scored or jointed to help define the locations of any cracking. We recommend that joint spacing be designed as outlined in ACI 224R. In addition joints should be scored in the floors a distance of about three (3) feet from, and parallel to, the walls.

It should be noted that when curing fresh concrete experiences shrinkage. This shrinkage almost always results in some cracks in the finished concrete. The actual shrinkage depends on the configuration and strength of the concrete and placing and finishing techniques. The recommended joints discussed above are intended to help define the location of the cracks but should not be interpreted as a solution to shrinkage cracks. The owner must understand that concrete flatwork will contain shrinkage cracks after curing and that all of the shrinkage cracks may not be located in control joints. Some cracking at random locations may occur.

If moisture migration through the concrete slab on grade floors will adversely influence the performance of the floor or floor coverings we suggest that a moisture barrier may be installed beneath the floor slab to help discourage capillary and vapor moisture rise through the floor slab. The moisture barrier may consist of a heavy plastic membrane, six (6) mil or greater, protected on the top and bottom by clean sand. The clean sand will help to protect the plastic from puncture. The layer of clean sand on the top of the plastic membrane will help the overlying concrete slab cure properly. According to the American Concrete Institute, proper curing requires at least three (3) to six (6) inches of clean sand between the plastic membrane and the bottom of the concrete. The plastic membrane should be lapped and taped or glued and protected from punctures during construction.

If the moisture content of the slab on grade floor will be influential to the performance of the

future floor coverings then the moisture content of the slab can be measured. We are available to monitor the floor slab moisture content prior to the installation of the floor covering. If this service is needed please contact us during the construction phase of the project.

The Portland Cement Association suggests that welded wire reinforcing mesh is not necessary in concrete slab on grade floors when properly jointed. It is our opinion that welded wire mesh may help improve the integrity of the slab on grade floors. We suggest that concrete slab on grade floors should be reinforced, for geotechnical purposes, with at least 6 x 6 - W2.9 x W2.9 (6 x 6 - 6 x 6) welded wire mesh positioned midway in the slab. The structural engineer should be contacted for structural design of floor slabs.

## 7.0 PAVEMENT SECTION DESIGN RECOMMENDATIONS

It is our understanding that the proposed development will include paved parking and drive areas. The paved areas will include asphalt paved parking areas, concrete paved aprons and concrete sidewalks. Our pavement section analysis was based on estimated traffic volumes, laboratory test results of the soils sampled during our field study, and on our experience on similar projects. The traffic volume used in our analysis assumed 18,000 pound equivalent single axle loads (ESALs) of 100,000 and 200,000 repetitions for a twenty (20) year life. Our analysis included pavement sections based on dynamic loading as discussed in the Colorado Department of Transportation 2014 Pavement Design Manual.

### 7.1 Subgrade Preparation

Proper performance of the subgrade support soils requires surface preparation, scarification and moisture conditioning, compaction, and surface and subsurface drainage during construction prior to placement of the overlying pavement section materials.

Subgrade preparation may result in areas which yield under construction traffic. If yielding areas are encountered during subgrade preparation in the paved areas, the subgrade material may be overexcavated to a depth of about one foot below the subgrade elevation or more if needed and backfilled with a compacted structural fill. The structural fill material may aid in construction of the paved areas subgrade. The structural fill material should be an aggregate subbase course or aggregate base course type material placed and compacted as discussed below.

All organic and other deleterious material should be removed from the areas proposed for pavement section construction. The soils exposed by the removal of the organic materials should be scarified to a depth of about twelve (12) inches, moisture conditioned to

approximately three (3) to six (6) percent above optimum moisture content, and compacted to at least ninety (90) percent of maximum dry density as defined by ASTM D1557, modified moisture content-dry density relationship (Proctor) test. The moisture conditioning may require addition of water, or air drying if the soil is too moist, in either case, the material should be sufficiently mixed to promote a uniform soil moisture content. The soils should be compacted using machinery designed for soil compaction. Wheel rolling with loaded equipment and other techniques may not provide a uniform, properly compacted roadway subgrade.

Utility trench backfill in areas supporting pavement or other structural components should be placed in thin lifts and compacted to at least ninety (90) percent of the maximum dry density as defined by ASTM D1557 to subgrade elevation.

After the subgrade soils have been prepared the surface should be crowned or surface graded in the same orientation as the proposed final surface of the asphalt pavement. The reason for this is to promote water migration away from the roadway more readily. If the subgrade soil surface is not graded to properly drain, water may accumulate within the pavement section soils. The increased moisture content and subsequent soil strength decrease may promote pavement section support degradation. If a full section asphalt concrete design is used, the subgrade soils should be graded parallel the final asphalt concrete surface for drainage so that a uniform asphalt concrete thickness exists.

## 7.2 Aggregate Sub-Base and Base Course Material Characteristics and Placement

Specific aggregate types and sources for potential use on the project were not known at the time of the preparation of this report. Our analysis assumed that the proposed aggregate base course would consist of a Class 6 type material, and the aggregate sub-base course would consist of a Class 2 type material, as designated in the "Colorado Department of Highways Standard Specification for Road and Bridge Construction", 1991. If it is desirable to use material which does not meet these criteria we should be contacted to assess the specific material characteristics of the proposed road base and provide additional pavement design sections for differing materials.

The aggregate sub-base and base course materials should be placed on the prepared subgrade soils as soon as possible after the subgrade soils are compacted and graded to drain. Placement of the aggregate materials will help limit the influence of construction and other traffic on the subgrade soil conditions.

The aggregate materials should not be allowed to become segregated either at the source, prior to hauling to the project site, or during the placement of the materials. The coarser

aggregate sub-base soils have a greater tendency to become segregated, particularly during the grading and placement operations. Segregated sub-base and base course do not provide as uniform support as well blended materials.

The sub-base and base course materials should be moisture conditioned and compacted to at least ninety-five (95) percent of maximum dry density as defined by ASTM D1557, modified moisture-content-dry density relationship (Proctor) test.

### 7.3 Asphalt Concrete Materials and Placement

The asphalt concrete should be prepared using a mix design which has been prepared by a professional engineer experienced in asphalt concrete materials. The mix design should establish, as a minimum, the quality of the aggregates used, asphalt concrete material properties, asphalt cement content, mix and lay down temperatures. Either the Marshall Method or Hveem Stabilometer method of mix design may be used for the mix design preparation. We suggest that the asphalt concrete be compacted to between ninety-two (92) and ninety-six (96) percent of the maximum mix design density.

Aggregate shape maximum size and particle size distribution are important factors influencing the performance of an asphalt concrete mix. Crushed aggregate with fractured faces and angular shapes tend to interlock and provide an asphalt concrete with high strength and limited flexibility. Natural aggregates with rounded shapes tend to provide an asphalt concrete which is more flexible and may have lower strengths than mixes produced with angular shaped aggregates. Incorrect particle or grain size distribution of the aggregate used to manufacture the asphalt concrete can result in poor performance of the in-place asphalt mix. The grain size distribution of the mix aggregate will influence the size and volume of voids and the stability of the asphalt mix. Verification of the asphalt mix design aggregate properties and the asphalt concrete mix should be performed by testing prior to and during the paving operation.

### 7.4 Flexible Pavement Design Sections

Based upon the soil materials encountered during the drilling operations, a "CBR" value of 10 was used in our analysis. Alternative pavement sections are presented below. The pavement thickness sections below are based on the Design Nomograph for Flexible Pavements as recommended in the Colorado Department of Transportation 2014 pavement Design Manual.

Construction traffic may have a greater influence on the performance of the pavement section than the commercial use after construction. The design recommendations presented below are based on typical post construction commercial use and do not include accommodation for

heavy loading as a result of construction traffic. It may be beneficial to consider partial pavement section construction for use during on-site development construction with the section repaired and completed after the heavy construction traffic use has ended. This technique may provide a more serviceable and structurally acceptable pavement for the completed project.

#### PAVEMENT THICKNESS DESIGN SECTIONS

\*ESAL = 100,000

Asphalt Concrete (inches)	Aggregate Base Course Class 6 or Similar (inches)	Aggregate Subbase Course Class 2 or Similar (inches)	Reconditioned Subgrade (inches)
3	4	4	12
3	7	0	12

#### PAVEMENT THICKNESS DESIGN SECTIONS

\*ESAL = 200,000

Asphalt Concrete (inches)	Aggregate Base Course Class 6 or Similar (inches)	Aggregate Subbase Course Class 2 or Similar (inches)	Reconditioned Subgrade (inches)
3	4	7	12
3	9-1/2	0	12
4	6	0	12

\* Equivalent 18,000 pounds single axle load

Pavement thickness design section of less than three (3) inches of asphalt over aggregate base course may be used, although, because of the shorter life before maintenance and the relatively poor long term performance, we suggest that this be considered as an intermediate design section only. If a lesser design section is used we suggest you consider a later asphalt overlay of appropriate thickness to extend the life of the pavement section. The overlay should be constructed prior to any visible distress occurring in the pavement.

The asphalt concrete pavement should be placed on the prepared support section as soon as possible so that interim traffic does not decrease the integrity of the support section.

### 7.5 Rigid Pavement Thickness Design Recommendations

Our pavement thickness recommendations for rigid Portland cement concrete pavement are based on an assumed traffic volume, a modulus of rupture of 650 psi and a modulus of subgrade reaction obtained from the California Bearing Ratio test performed on the subgrade soil sample obtained during our field study. A modulus of subgrade reaction of 170 psi/inch was used in our analysis.

The rigid pavement may be designed using a concrete thickness of four and one half (4-1/2) inches for an estimated 18,000 pounds equivalent single axle load (ESAL) less than 100,000.

Concrete sidewalks should have a nominal thickness of four (4) inches if no vehicle traffic will be allowed on them. The concrete sidewalks and aprons may be placed on a leveling course of aggregate base course material. The leveling course should be at least four (4) inches thick and compacted as discussed above for aggregate base course. We suggest the use of rigid pavement in areas where heavy vehicles will be accelerating, decelerating or turning sharply, such as the aprons for the trash dumpster enclosures and any areas in the bus drop off/pick up areas where the buses will be turning.

The concrete should be supported on prepared subgrade which is at least twelve (12) inches thick. The prepared subgrade should consist of either compacted structural fill to establish subgrade elevation or natural soils which are scarified to a depth of twelve (12) inches, moisture conditioned to approximately two (2) to four (4) percent above optimum moisture content and recompact to at least ninety (90) percent of the maximum dry density as defined by ASTM D1557, modified moisture content-dry density relationship test. If during subgrade preparation any loose or yielding area or any areas of poorly constructed man-placed fill are encountered they should be removed and replaced with compacted structural fill. Suggestions for constructing compacted structural fill are presented below.

The Portland cement concrete should be from an approved concrete mix design stating the proportions and mixtures of the mix. We recommend verification of the mix design prior to paving. The coarse and fine aggregate used in the concrete mix should be tested for their suitability for use as concrete aggregate.

The concrete pavement should be appropriately jointed and structurally reinforced to help control the location of cracking. The structural engineer should be contacted to provide

structural design recommendations or structural reinforcement and joint design of the concrete pavement.

## 8.0 COMPACTED STRUCTURAL FILL

Material characteristics desirable for compacted structural fill are discussed in Appendix D. Areas that are over excavated or slightly below grade should be backfilled to grade with properly compacted structural fill or concrete, not loose fill material. If backfilled with other than compacted structural fill material or concrete there will be significant post construction settlement proportional to the amount of loose material.

If the on site granular soil materials are used as compacted structural fill the soils should be moisture conditioned to within approximately two (2) percent of optimum moisture content and compacted to at least ninety (90) percent of the maximum dry density as defined by ASTM D1557, modified moisture-density relationship (Proctor) test. The soil materials should be placed in thin lifts about six (6) inches in compacted thickness and compacted. Care should be taken so that areas of the natural on site soils which have appreciable expansive fine grained portions are not used for compacted structural fill material.

All areas to receive compacted structural fill should be properly prepared prior to fill placement. The preparation should include removal of all organic or deleterious material. The areas to receive fill material should be compacted after the organic deleterious material has been removed prior to placing the fill material. The area may need to be moisture conditioned for compaction. Any areas of soft, yielding, or low density soil, evidenced during the excavation compaction operation should be removed. The area excavated to receive fill should be moisture conditioned to wet of optimum moisture content as part of the preparation to receive fill. Fill should be moisture conditioned, placed in thin lifts not exceeding six (6) inches in compacted thickness and compacted to at least ninety (90) percent of maximum dry density as defined by ASTM D1557, modified moisture content-dry density (Proctor) test.

After placement of the structural fill the surface should not be allowed to dry prior to placing concrete or additional fill material. This may be achieved by periodically moistening the surface of the compacted structural fill as needed to prevent drying of the structural fill. We are available to discuss this with you.

The soil materials exposed in the bottom of the excavation may be very moist and may become yielding under construction traffic during construction. It may be necessary to use techniques for placement of fill materials or foundation concrete which limit construction traffic

in the very moist soil materials. If yielding should occur during construction it may be necessary to construct a subgrade stabilization fill blanket or similar to provide construction traffic access. We are available to discuss this with you.

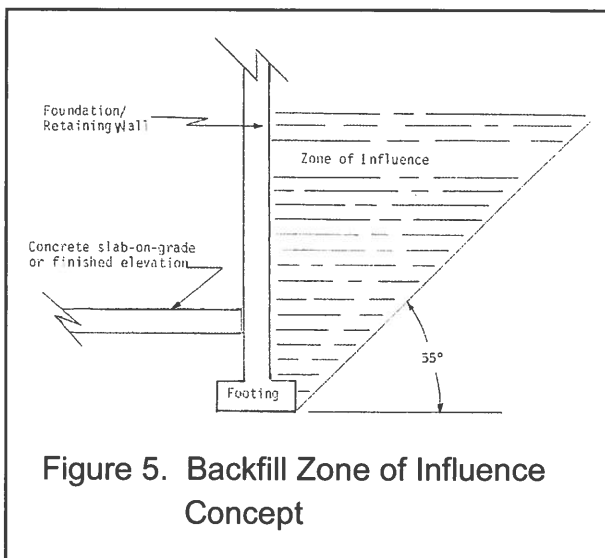
We recommend that the geotechnical engineer or his representative be present during the excavation compaction and fill placement operations to observe and test the material.

### 9.0 LATERAL EARTH PRESSURES

Laterally loaded walls supporting soil, such as basement walls, will act as retaining walls and should be designed as such. Walls that are designed to deflect and mobilize the internal soil strength should be designed for active earth pressures. Walls that are restrained so that they are not able to deflect to mobilize internal soil strength should be designed for at-rest earth pressures. The values for the lateral earth pressures will depend on the type of soil retained by the wall, backfill configuration and construction technique. If the backfill is not compacted the lateral earth pressures will be very different from those noted below.

Lateral earth pressure (L.E.P.) values are presented below:

	Level Backfill with on-site soils <u>(pounds per cubic foot per foot of depth)</u>
Active L.E.P.	68
At-rest L.E.P.	88
Passive L.E.P.	228



The soil samples tested had measured swell pressures of less than 100 to approximately 400 pounds per square foot however the actual swell pressure of the backfill material could be greater. If the retained soils should become moistened after construction the soil may swell against retaining walls. The walls should be designed to resist the swell pressure of the soil materials if these are used as part of the backfill within the zone of influence. The zone of influence concept is presented on Figure 5.

The above lateral earth pressures may be

reduced by overexcavating the wall backfill area beyond the zone of influence and backfilling with crushed rock type material. The zone of influence concept is presented below.

The lateral earth pressure design parameters may change significantly if the area near the wall is loaded or surcharged or is sloped. If any of these conditions occur we should be contacted for additional design parameters tailored to the specific site and structure conditions.

Suggested lateral earth pressure (L.E.P.) values if the backfill is overexcavated beyond the zone of influence and backfilled with crushed rock are presented below.

	Level Backfill with crushed rock material (pounds per cubic foot per foot of depth)
Active L.E.P.	25
At-rest L.E.P.	40

If the area behind a wall retaining soil material is sloped we should be contacted to provide lateral earth pressure design values tailored for the site specific sloped conditions.

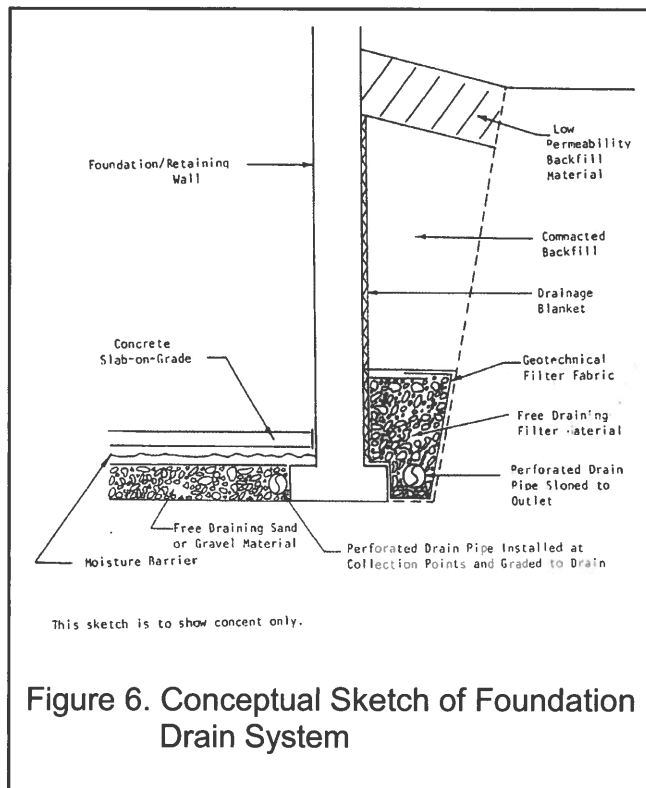
Resistant forces used in the design of the walls will depend on the type of soil that tends to resist movement. We suggest that you consider a coefficient of friction of 0.20 for the on site soil.

The lateral earth pressure values provided above, for design purposes, should be treated as equivalent fluid pressures. The lateral earth pressures provided above are for level well drained backfill and do not include surcharge loads or additional loading as a result of compaction of the backfill. Unlevel or non-horizontal backfill either in front of or behind walls retaining soils will significantly influence the lateral earth pressure values. Care should be taken during construction to prevent construction and backfill techniques from overstressing the walls retaining soils. Backfill should be placed in thin lifts and compacted, as discussed in this report to realize the lateral earth pressure values.

Walls retaining soil should be designed and constructed so that hydrostatic pressure will not accumulate or will not affect the integrity of the walls. Drainage plans should include a subdrain behind the wall at the bottom of the backfill to provide positive drainage. Exterior retaining walls should be provided with perimeter drain or weep holes to help provide an outlet for collected water behind the wall. The ground surface adjacent to the wall should be sloped to permit rapid drainage of rain, snow melt and irrigation water away from the wall backfill. Sprinkler systems should not be installed directly adjacent to retaining or basement walls.

## 10.0 DRAIN SYSTEM

A drain system should be provided around building spaces below the finished grade and behind any walls retaining soil. The drain systems are to help reduce the potential for hydrostatic pressure to develop behind retaining walls. A sketch of the drain system is shown below.



Subdrains should consist of a three (3) or four (4) inch diameter perforated rigid pipe surrounded by a filter. The filter should consist of a filter fabric or a graded material such as washed concrete sand or pea gravel. If sand or gravel is chosen the pipe should be placed in the middle of about four (4) cubic feet of aggregate per linear foot of pipe. The drain system should be sloped to positive gravity outlets. If the drains are daylighted the drains should be provided with all weather outlets and the outlets should be maintained to prevent them from being plugged or frozen. We do not recommend that the drains be discharged to dry well type structures. Dry well structures may tend to fail if the surrounding soil material becomes wetted and swells or if the ground water rises to a elevation of or

above the discharge elevation in the dry well. We should be called to observe the soil exposed in the excavations and to verify the details of the drain system.

## 11.0 CRAWL SPACE CONSIDERATIONS

We anticipate that moist conditions may exist in crawl space areas during wetter seasons. We suggest that if it is desired to reduce the influence of water in the crawl space area a foundation drain should be installed as discussed above.

The surface of the crawl space may be provided with a layer of about six (6) inches of clean washed gravel or an impervious geotextile fabric to reduce the inconvenience of very moist or muddy crawl space conditions if these should occur. The crawl space should be adequately vented to reduce the potential for humidity to accumulate in the crawl space area.

## 12.0 BACKFILL

Backfill areas and utility trench backfill should be constructed such that the backfill will not settle after completion of construction, and that the backfill is relatively impervious for the upper few feet. The backfill material should be free of trash and other deleterious material. It should be moisture conditioned and compacted to at least ninety (90) percent relative compaction using a modified moisture content-dry density (Proctor) relationship test (ASTM D1557). Only enough water should be added to the backfill material to allow proper compaction. Do not pond, puddle, float or jet backfill soil materials.

Improperly placed backfill material will allow water migration more easily than properly recompacted fill. Improperly compacted fill is likely to settle, creating a low surface area which further enhances water accumulation and subsequent migration to the foundation soils.

Improperly placed backfill will allow water to migrate along the utility trench or backfill areas to gain access to the subgrade support soils with subsequent mobilization of the swell or settlement mechanism resulting in movement of the supported structure. Moisture migration could also result in the inconvenience of free water in the crawl space.

Backfill placement techniques should not jeopardize the integrity of existing structural members. We recommend recently constructed concrete structural members be appropriately cured prior to adjacent backfilling.

## 13.0 SURFACE DRAINAGE

The foundation soil materials should be prevented from becoming wetted after construction. Post construction wetting of the soil support soil materials can initiate swell potential or settlement potential as well as decrease the bearing capacity of the support soil materials. Protecting the foundation from wetting can be aided by providing positive and rapid drainage of surface water away from the structure.

The final grade of the ground surface adjacent to the structure should have a well defined slope away from the foundation walls on all sides. The ability to establish proper site surface drainage away from the structure foundation system may be influenced by the existing topography, existing structure elevations and the grades and elevations of the ground surface adjacent to the proposed structure. We suggest where possible a minimum fall of the surface grade away from the structure be that which will accommodate other project grading constraints and provide rapid drainage of surface water away from the structure. If there are no other project constraints we suggest a fall of about one (1) foot in the first ten (10) feet

away from the structure foundation. Appropriate surface drainage should be maintained for the life of the project. Future landscaping plans should include care and attention to the potential influence on the long term performance of the foundation and/or crawl space if improper surface drainage is not maintained.

Roof runoff should be collected in appropriate roof drainage collection devices, such as eave gutters or similar, and directed to discharge in appropriate roof drainage systems. Roof runoff should not be allowed to fall on or near foundations, backfill areas, flatwork, paved areas or other structural members. Downspouts and faucets should discharge onto splash blocks that extend beyond the limits of the backfill areas. Splash blocks should be sloped away from the foundation walls. Snow storage areas should not be located next to the structure. Proper surface drainage should be maintained from the onset of construction through the proposed project life.

If significant water concentration and velocity occurs erosion may occur. Erosion protection may be considered to reduce soil erosion potential. A landscape specialist or civil engineer should be consulted for surface drainage design, erosion protection and landscaping considerations.

#### 14.0 LANDSCAPE IRRIGATION

An irrigation system should not be installed next to foundations, concrete flatwork or paved areas. If an irrigation system is installed, the system should be placed so that the irrigation water does not fall or flow near foundations, flatwork or pavements. The amount of irrigation water should be controlled.

We recommend that wherever possible xeriscaping concepts be used. Generally, the xeriscape includes planning and design concepts which will reduce irrigation water. The reason we suggest xeriscape concepts for landscaping is because the reduced landscape water will decrease the potential for water to influence the long term performance of the structure foundations and flatwork. Many publications are available which discuss xeriscape. Colorado State University Cooperative Extension has several useful publications and most landscape architects are familiar with the subject. Montrose Botanical Society has a Botanical Garden, 1800 Pavilion Drive, south of Niagara Drive, Montrose, Colorado, that has a very good exhibit with examples and information regarding successful xeriscape concepts.

Due to the expansive nature of the soils tested we suggest that the owner consider landscaping with only native vegetation which requires only natural precipitation to survive. Additional irrigation water will greatly increase the likelihood of damage to the structure as a

result of volume changes of the material supporting the structure.

Impervious geotextile material may be incorporated into the project landscape design to reduce the potential for irrigation water to influence the foundation soils.

## 15.0 SOIL CORROSIVITY TO CONCRETE

Our scope of services did not include performing chemical tests to help identify the potential for soil corrosivity to concrete.

It has been our experience that much of the soils in the area contain sufficient water soluble sulfate content to be corrosive to concrete. We suggest sulfate resistant cement be used in concrete which will be in contact with the on-site soils. American Concrete Institute recommendations for sulfate resistant cement based on the water soluble sulfate content should be used.

## 16.0 RADON CONSIDERATIONS

Our experience indicates that many of the soils in western Colorado produce small quantities of radon gas. Radon gas may tend to collect in closed poorly ventilated structures. Radon considerations are presented in Appendix D.

## 17.0 POST DESIGN CONSIDERATIONS

The project geotechnical engineer should be consulted during construction of the project to observe site conditions and open excavations during construction and to provide materials testing of soil and concrete.

This subsurface soil and foundation condition study is based on limited sampling; therefore, it is necessary to assume that the subsurface conditions do not vary greatly from those encountered in the field study. Our experience has shown that significant variations are likely to exist and can become apparent only during additional on site excavation. For this reason, and because of our familiarity with the project, Lambert and Associates should be retained to observe foundation excavations prior to foundation construction, to observe the geotechnical engineering aspects of the construction and to be available in the event any unusual or unexpected conditions are encountered. The cost of the geotechnical engineering observations and material testing during construction or additional engineering consultation is not included in the fee for this report. We recommend that your construction budget include site visits early during construction schedule for the project geotechnical engineer to observe

foundation excavations and for additional site visits to test compacted soil.

We recommend that the observation and material testing services during construction be retained by the owner or the owner's engineer or architect, not the contractor, to maintain third party credibility. We are experienced and available to provide material testing services. We have included a copy of a report prepared by Van Gilder Insurance which discusses testing services during construction. It is our opinion that the owner, architect and engineer be familiar with the information. If you have any questions regarding this concept please contact us.

We suggest that your construction plans and schedule include provisions for geotechnical engineering observations and material testing during construction and your budget reflect these provisions.

It is difficult to predict if unexpected subsurface conditions will be encountered during construction. Since such conditions may be found, we suggest that the owner and the contractor make provisions in their budget and construction schedule to accommodate unexpected subsurface conditions.

### 17.1 Structural Fill Quality

It is our understanding that the proposed development may include compacted structural fill. The quality of compacted structural fill will depend on the type of material used as structural fill, fill lift thickness, fill moisture condition and compactive effort used during construction of the structural fill. Engineering observation and testing of structural fill is essential as an aid to safeguard the quality and performance of the structural fill.

Fill materials placed on sloped areas require special placement techniques that key the fill materials unto the underlying support materials. These techniques include a toe key at the toe contact of the slope fill and benching the fill/natural contact up the slope into the competent natural material. The placing technique will also include subdrains at several locations to intercept subsurface water and route it away from the fill materials. We are available to discuss these techniques with you and your earthwork contractor.

Testing of the structural fill normally includes tests to determine the grain size distribution, swell potential and moisture-density relationship of the fill material to verify the material suitability for use as structural fill. As the material is placed the in-place moisture content and dry density are tested to indicate the relative compaction of the placed structural fill. We recommend that your budget include provisions for observation and testing of structural fill

during construction.

Testing of the compacted fill material should include tests of the moisture content and density of the fill material placed and compacted prior to placement of additional fill material. We suggest that a reasonable number of density tests of the fill material can best be determined on a site, material and construction basis although as a guideline we suggest one test per about each 300 to 500 square feet of each lift of fill material. Utility trench backfill may need to be tested about every 100 linear feet of lift of backfill.

## 17.2 Concrete Quality

It is our understanding current plans include reinforced structural concrete for foundations and walls and may include concrete slabs on grade and pavement. To insure concrete members perform as intended, the structural engineer should be consulted and should address factors such as design loadings, anticipated movement and deformations.

The quality of concrete is influenced by proportioning of the concrete mix, placement, consolidation and curing. Desirable qualities of concrete include compressive strength, water tightness and resistance to weathering. Engineering observations and testing of concrete during construction is essential as an aid to safeguard the quality of the completed concrete.

Testing of the concrete is normally performed to determine compressive strength, entrained air content, slump and temperature. We recommend that your budget include provisions for testing of concrete during construction. We suggest that a reasonable frequency of concrete tests can best be determined on a site, materials and construction specific basis although as a guideline American Concrete Institute, ACI, suggests one test per about each fifty (50) cubic yards or portion thereof per day of concrete material placed.

## 18.0 LIMITATIONS

It is the owner's and the owner's representatives' responsibility to read this report and become familiar with the recommendations and suggestions presented. We should be contacted if any questions arise concerning the geotechnical engineering aspects of this project as a result of the information presented in this report.

The scope of services for this study does not include either specifically or by implication any environmental or biological (such as mold, fungi, bacteria, etc.) Assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be

performed.

The recommendations outlined above are based on our understanding of the currently proposed construction. We are available to discuss the details of our recommendations with you and revise them where necessary. This geotechnical engineering report is based on the proposed site development and scope of services as provided to us by Mr. Paul Major, Ouray Homes LLC, the type of construction planned, existing site conditions at the time of the field study, and on our findings. Should the planned, proposed use of the site be altered, Lambert and Associates must be contacted, since any such changes may make our suggestions and recommendations inappropriate. This report should be used ONLY for the planned development for which this report was tailored and prepared, and ONLY to meet information needs of the owner and the owner's representatives. In the event that any changes in the future design or location of the building are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and conclusions of this report are modified or verified in writing. It is recommended that the geotechnical engineer be provided the opportunity for a general review of the final project design and specifications in order that the earthwork and foundation recommendations may be properly interpreted and implemented in the design and specifications.

This report does not provide earthwork specifications. We can provide guidelines for your use in preparing project specific earthwork specifications. Please contact us if you need these for your project.

This report presents both suggestions and recommendations. The suggestions are presented so that the owner and the owner's representatives may compare the cost to the potential risk or benefit for the suggested procedures.

This report contains suggestions and recommendations which are intended to work in concert with recommendations provided by the other design team members to provide somewhat predictable foundation performance. If any of the recommendations are not included in the design and construction of the project it may result in unpredictable foundation performance or performance different than anticipated. We recommend that we be requested to provide geotechnical engineering observation and materials testing during the construction phase of the project as discussed in this report. The purpose for on site observation and testing by us during construction is to help provide continuity of service from the planning of the project through the construction of the project. This service will also allow us to revise our recommendations if conditions occur or are discovered during construction that were not evidenced during the initial study. We suggest that the owner and the contractor make provisions in their construction budget and construction schedule to accommodate unexpected

subsurface conditions.

We represent that our services were performed within the limits prescribed by you and with the usual thoroughness and competence of the current accepted practice of the geotechnical engineering profession in the area. No warranty or representation either expressed or implied is included or intended in this report or our contract. We are available to discuss our findings with you. If you have any questions please contact us. The supporting data for this report is included in the accompanying figures and appendices.

This report is a product of Lambert and Associates. Excerpts from this report used in other documents may not convey the intent or proper concepts when taken out of context, or they may be misinterpreted or used incorrectly. Reproduction, in part or whole, of this document without prior written consent of Lambert and Associates is prohibited.

This report and information presented can be used only for this site, for this proposed development, and only for the client for whom our work was performed. Any other circumstances are not appropriate applications of this information. Other development plans will require project specific review by us.

Please call when further consultation or observations and tests are required.

If you have any questions concerning this report or if we may be of further assistance, please contact us.

Respectfully submitted:

LAMBERT AND ASSOCIATES

Daniel R. Lambert, P.E.  
Project Engineer



## APPENDIX A

The field study was performed on October 10, 2022. The field study consisted of logging and sampling the soils encountered in six (6) test borings. The approximate locations of the test borings are shown on Figure 2. The log of the soils encountered in the test borings are presented on Figures A2 through A7.

The test borings were logged by Lambert and Associates and samples of significant soil types were obtained.

The engineering field description and major soil classification are based on our interpretation of the materials encountered and are prepared according to the Unified Soil Classification System, ASTM D2488. The description and classification which appear on the test boring log is intended to be that which most accurately describes a given interval of the test boring (frequently an interval of several feet). Occasionally discrepancies occur in the Unified Soil Classification System nomenclature between an interval of the soil log and a particular sample in the interval. For example, an interval on the test boring log may be identified as a silty sand (SM) while one sample taken within the interval may have individually been identified as a sandy silt (ML). This discrepancy is frequently allowed to remain to emphasize the occurrence of local textural variations in the interval.

The stratification lines presented on the logs are intended to present our interpretation of the subsurface conditions encountered in the test boring. The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

# KEY TO LOG OF TEST BORING

Date Drilled:

Field Engineer:

Boring Number:

Location:

Elevation:

Diameter:

Total Depth:

Depth to Water at Time of Drilling:

Symbol	Depth	Sample		Soil Description	Laboratory Test Results
		Type	N		
0				Sand, silty, medium dense, moist, tan (SM)	<p>Notes in this column indicate tests performed and test results if not plotted.</p> <p>DD: Indicates dry density in pounds per cubic foot</p> <p>MC: Indicates moisture content as percent of dry unit weight</p> <p>LL: Indicates Liquid Limit</p> <p>PL: Indicates Plastic Limit</p> <p>PI: Indicates Plasticity Index</p>
				Unified Soil Classification	
				Indicates Bulk Bag Sample	
				Indicates Drive Sample	
				Indicates Sampler Type:	
				C - Modified California	
				SS - Standard Split Spoon	
				H - Hand Sampler	
			7/6	Indicates seven blows required to drive the sampler six (6) inches with a hammer that weighs one hundred forty pounds and is dropped thirty inches.	
				BOUNCE: Indicates no further penetration occurred with additional blows with the hammer	
				NR: Indicates no sample recovered	
				CAVED: Indicates depth the test boring caved after drilling	
				▼ Indicates the location of free subsurface water when measured	
				CLAY      Note: Symbols are often used only to help visually identify the described information presented on the log.	
				SILT	
				SAND	
				GRAVEL	
				FORMATION	
				SANDSTONE	
	20				
	25				

Project Name: Waterview Development - Ouray

Project Number: M22059GE

Figure: A1

## Lambert and Associates

CONSULTING GEOTECHNICAL ENGINEERS AND MATERIAL TESTING

# LOG OF TEST BORING

**Date Drilled:** October 10, 2022    **Field Engineer:** DRL    **Boring Number:** 1  
**Location:** See test boring location diagram    **Elevation:**  
**Diameter:** 4 inches    **Total Depth:** 15 feet    **Depth to Water at Time of Drilling:** None Encountered

Symbol	Depth	Sample		Soil Description	Laboratory Test Results
		Type	N		
X	0			Fill Material - Gravel, sand, cobbles * Intermittent Clayey Sand Lenses	
	5	Bulk	□		Swell/Consolidation Test: DD: 123 pcf      MC: 5.6%
.				Sand, clayey, gravels, dense, moist, brown, gray * Increased Cobble * Increased Moisture Observed	
	10	Bulk	□		
	15			Bottom of Test Boring at 15 feet	
	20				
	25				

**Project Name:** Waterview Development - Ouray    **Project Number:** M22059GE    **Figure:** A2

# LOG OF TEST BORING

**Date Drilled:** October 10, 2022    **Field Engineer:** DRL    **Boring Number:** 2  
**Location:** See test boring location diagram    **Elevation:**  
**Diameter:** 4 inches    **Total Depth:** 9 feet    **Depth to Water at Time of Drilling:** None Encountered

Symbol	Depth	Sample		Soil Description	Laboratory Test Results
		Type	N		
Boring Log Header					
0	1			Fill Material - Gravel, sand, cobbles * Intermittent Clayey Sand Lenses	
5	5	Bulk		Sand, clayey, gravels, dense, moist, brown, gray * Increased Cobble	Direct Shear Test: DD: 114 pcf      MC: 14.0%
10	10			Auger Refusal at 9 feet	
15	15				
20	20				
25	25				

**Project Name:** Waterview Development - Ouray    **Project Number:** M22059GE    **Figure:** A3

# LOG OF TEST BORING

**Date Drilled:** October 10, 2022    **Field Engineer:** DRL    **Boring Number:** 3  
**Location:** See test boring location diagram    **Elevation:**  
**Diameter:** 4 inches    **Total Depth:** 10-1/2 feet    **Depth to Water at Time of Drilling:** None Encountered

Symbol	Depth	Sample		Soil Description	Laboratory Test Results
		Type	N		
Boring Log					
0	1			Fill Material - Gravel, sand, cobbles * Intermittent Clayey Sand Lenses	
5				Sand, clayey, gravels, dense, moist, brown, gray * Increased Cobble	
10				Auger Refusal at 10-1/2 feet	
15					
20					
25					

**Project Name:** Waterview Development - Ouray    **Project Number:** M22059GE    **Figure:** A4

# LOG OF TEST BORING

**Date Drilled:** October 10, 2022    **Field Engineer:** DRL    **Boring Number:** 4  
**Location:** See test boring location diagram    **Elevation:**  
**Diameter:** 4 inches    **Total Depth:** 15 feet    **Depth to Water at Time of Drilling:** None Encountered

Symbol	Depth	Sample		Soil Description	Laboratory Test Results
		Type	N		
	0			Sand, clayey, gravels, dense, moist, brown, gray  * Increased Cobble	
	5	Bulk	□		Swell/Consolidation Test: DD: 124 pcf      MC: 6.3%
	10	Bulk	□		Swell/Consolidation Test: DD: 126 pcf      MC: 5.9%  * Increased Moisture Observed
	15			Bottom of Test Boring at 15 feet	
	20				
	25				

**Project Name:** Waterview Development - Ouray    **Project Number:** M22059GE    **Figure:** A5

## LOG OF TEST BORING

**Date Drilled:** October 10, 2022    **Field Engineer:** DRL    **Boring Number:** 5  
**Location:** See test boring location diagram    **Elevation:**  
**Diameter:** 4 inches    **Total Depth:** 5 feet    **Depth to Water at Time of Drilling:** None Encountered

Symbol	Depth	Sample		Soil Description	Laboratory Test Results
		Type	N		
	0				
	1				
	2				
	3				
	4				
	5			Sand, clayey, gravels, dense, moist, brown, gray  * Increased Cobble	
	6			Auger Refusal at 5 feet	
	7				
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				
	21				
	22				
	23				
	24				
	25				

**Project Name:** Waterview Development - Ouray    **Project Number:** M22059GE    **Figure:** A6

# LOG OF TEST BORING

**Date Drilled:** October 10, 2022    **Field Engineer:** DRL    **Boring Number:** 6  
**Location:** See test boring location diagram    **Elevation:**  
**Diameter:** 4 inches    **Total Depth:** 15 feet    **Depth to Water at Time of Drilling:** None Encountered

Symbol	Depth	Sample		Soil Description	Laboratory Test Results
		Type	N		
	0				
	1			Sand, clayey, gravels, dense, moist, brown, gray	
	5	Bulk		* Increased Cobble	Swell/Consolidation Test: DD: 125 pcf      MC: 6.1%
	10			* Increased Moisture Observed	
	15			* Intermittent Silty Sand Lense	
	20			Bottom of Test Boring at 15 feet	
	25				

**Project Name:** Waterview Development - Ouray    **Project Number:** M22059GE    **Figure:** A7

## APPENDIX B

The laboratory study consisted of performing:

- . Moisture content and dry density tests,
- . Swell-consolidation tests, and
- . Direct Shear Strength tests.

It should be noted that samples obtained did experience some disturbance during the sampling operations. The test results obtained using these samples are used only as indicators of the in situ soil characteristics.

### TESTING

#### Moisture Content and Dry Density

Moisture content and dry density were determined for each sample tested of the samples obtained. The moisture content was determined according to ASTM Test Method D2216 by obtaining the moisture sample from the drive sleeve. The dry density of the sample was determined by using the wet weight of the entire sample tested. The results of the moisture and dry density determinations are presented on the logs of borings, Figures A2 through A7.

#### Swell Tests

Loaded swell tests were performed on drive samples obtained during the field study. These tests are performed in general accordance with ASTM Test Method D2435 to the extent that the same equipment and sample dimensions used for consolidation testing are used for the determination of expansion. A sample is subjected to static surcharge, water is introduced to produce saturation, and volume change is measured as in ASTM Test Method D2435. Results are reported as percent change in sample height.

#### Consolidation Tests

One dimensional consolidation properties of drive samples were evaluated according to the provisions of ASTM Test Method D2435. Water was added in all cases during the test. Exclusive of special readings during consolidation rate tests, readings during an increment of load were taken regularly until the change in sample height was less than 0.001 inch over a two hour period. The results of the swell-consolidation load test are summarized on Figures B1 through B4, swell-consolidation tests.

It should be noted that the graphic presentation of consolidation data is a presentation of volume change with change in axial load. As a result, both expansion and consolidation can be illustrated.

### Direct Shear Strength Tests

Direct shear strength properties of drive samples were evaluated in general accordance with testing procedures defined by ASTM Test Method D3080. The results of the direct shear strength test are summarized on Figure B5, direct shear test.





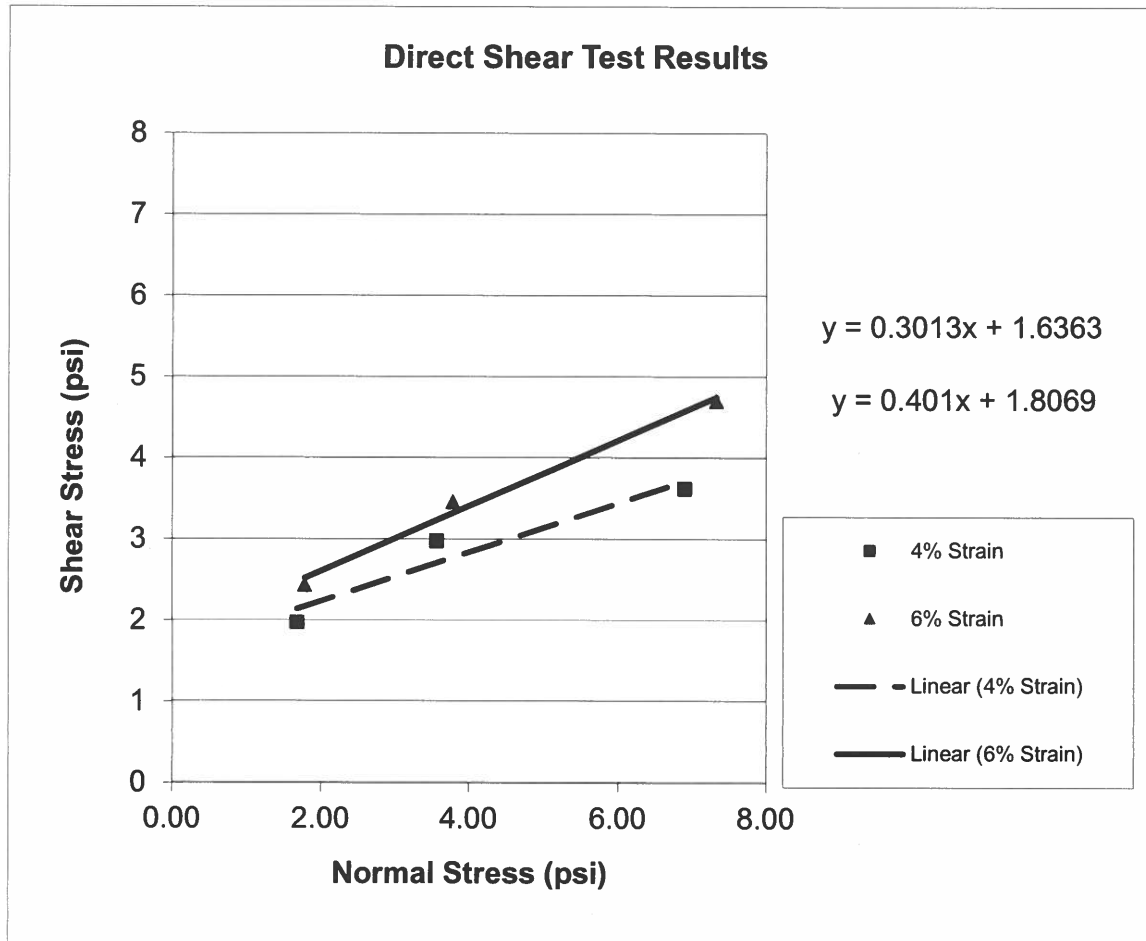




# Lambert and Associates

CONSULTING GEOTECHNICAL ENGINEERS AND MATERIAL TESTING

Project: Waterview Development	Project Number: M22059GE	Date Sampled: 10/10/2022
Location: Ouray, CO	Sample Source: TB 2 @ 5 ft	Lab Sample #: 4343
Sample Description: Sand, gravel, clayey, brown	Date Tested: 11/16/2022	Tested By: AC



% Strain	Cohesion (psf)	Friction Angle (deg)
4	236	17
6	260	22

Project No.:	M22059GE
Date:	February 3, 2023
Figure:	B5

## APPENDIX C

GEOLOGY DISCUSSION  
SOUTHWEST COLORADO GEOLOGY

Southwest Colorado exhibits many geologic features formed by a multitude of geologic processes. Regional inundation, uplift, volcanism and glaciation are responsible for some of the complex geology of the region. Many theories and speculations concerning the mode of occurrence of the regions's geology have been presented over the years. This cursory discussion of the geology of southwest Colorado presents some theories accepted by the geologic community, but is only intended to introduce the basic concepts and restraints that arise due to geologic activity.

Prior to the formation of the Rocky Mountains southwest Colorado was a primarily a flat lying region with little topographic expression. The North American continent was experiencing many episodes of deposition. The Transcontinental Sea was transgressing and regressing across the continent, these transgressions and regressions are the cause for such diverse rock types. The stratigraphic column in southwestern Colorado expresses rock types from variable depositional environments. Limestones are formed in deeper water, sandstones are formed in beach and tidal flat environments, while arkosic sandstone and conglomerates are formed in alluvial plains and fans. Particle size and mineralogic content in rock units are related to the depositional environment. A sandstone or conglomerate would not be likely to form in a deep sea environment because there would not be enough energy to carry such large particles a great distance from the source lands. As one observes the stratigraphic column of southwest Colorado a siltstone may be overlain by a sandstone which is in turn overlain by a siltstone. This represents a regressional then transgressional sequence. Many such sequences or combinations of other rock units are exhibited throughout southwest Colorado.

The final regression of the sea may have been caused by orogenic activity and uplift. This uplift was not confined to Colorado, it was a regional uplift that occurred in many stages. The uplift is what caused the formation of the ancestral rockies. The Larimide Orogenic episode is responsible for the formation of the San Juan dome. (Note: The San Juan dome theory is not accepted by the entire geologic community. It is used here for descriptive purposes). The San Juan dome was essentially an upwarp of the stratigraphy formed by sedimentation during the Transcontinental Sea. An actual dome probably never

existed due to erosion during the uplift. The idea being that a dome of sediments and rock units would have existed had erosion and diastrophism not taken place. The orientation of bedding planes forms a radial pattern around the San Juan region which seems to vindicate this theory.

The stresses need to "upwarp" this large area were obviously tremendous. Locally occurring stresses may not be sufficient to move this quantity of material, global tectonics, directly or indirectly, may have been involved. Compression of the entire North American plate could have occurred. The magnitude of the stresses and the deep seated origin of these stresses also have caused extensive volcanism. Colorado has many large remnants of Calderas that were active during the orogenic activity. The Silverton and Lake City Calderas are the largest in the San Juan region. Activity in the Silverton Caldera has been estimated (radiometrically) to have occurred 22 million years ago. Calderas of this magnitude are believed to have formed by the collapse of epierogenic magma chambers. Volcanic and metamorphic rock bodies are common in the San Juan region, many of these units are related to the orogenic activity in the region.

Faults associated with local orogenic activity are another common geologic feature found in southwestern Colorado. As stated previously, extreme stresses were probably associated with the formation of the San Juan Mountains and may be responsible for deep-seated volcanic and metamorphic processes. These stresses had to be released, the geologic mode for stress release is faulting. Diastrophic activity in the area today is quite low, the lack of seismic activity indicates that stresses are not currently being released. An explanation for the loss of stresses is through faulting.

The last episode of regional geologic activity in the area was glaciation. The most recent period of glacial activity ended approximately 10,000 years ago. Glacial activity is responsible for much of the topographic expression in the area. "U-Shaped" valleys, moraine deposits, tarns, (glacial formed lakes), and rock glaciers are the most prominent features which are found in southwestern Colorado as a result of glacial activity. The valley configurations are a result of the erosional activity of the glaciers. Moraine deposits developed during the glacial activity. Rock glaciers are moving masses of rock which are thought to have an ice core which may be the last remnant of glacial ice. As the subsurface ice core moves and melts, the overlying mass of rock also moves.

## APPENDIX D

### GENERAL GEOTECHNICAL ENGINEERING CONSIDERATIONS

#### D1.0 INTRODUCTION

Appendix D presents general geotechnical engineering considerations for design and construction of structures which will be in contact with soils. The discussion presented in this appendix are referred to in the text of the report and are intended as tutorial and supplemental information to the appropriate sections of the text of the report.

#### D2.0 FOUNDATION RECOMMENDATIONS

Two criteria for any foundation which must be satisfied for satisfactory foundation performance are:

- contact stresses must be low enough to preclude shear failure of the foundation soils which would result in lateral movement of the soils from beneath the foundation, and
- settlement or heave of the foundation must be within amounts tolerable to the superstructure.

The soils encountered during our field study have varying engineering characteristics that may influence the design and construction considerations of the foundations. The characteristics include swell potential, settlement potential, bearing capacity and the bearing conditions of the soils supporting the foundations. The general discussion below is intended to increase the readers familiarity with characteristics that can influence any structure.

##### D2.1 Swell Potential

Some of the materials encountered during our field study at the anticipated foundation depth may have swell potential. Swell potential is the tendency of the soil to increase in volume when it becomes wetted. The volume change occurs as moisture is absorbed into the soil and water molecules become attached to or adsorbed by the individual clay platlets. Associated with the process of volume change is swell pressure. The swell pressure is the force the soil applies on its surroundings when moisture is absorbed into the soil. Foundation design considerations concerning swelling soils include structure tolerance to movement and dead load pressures to help restrict uplift. The structure's tolerance to movement should be addressed by the structural engineer and is dependent upon many facets of the design including the overall structural concept and the building material. The uplift forces or pressure due to wetted clay soils can be addressed by designing the foundations with a minimum dead load and/or placing the foundations on a blanket of compacted structural fill. The compacted structural fill blanket will increase the dead load on the swelling foundations soils and will increase the separation of the foundation from the swelling soils. Suggestions and

recommendations for design dead load and compacted structural fill blanket are presented below. Compacted structural fill recommendations are presented under COMPACTED STRUCTURAL FILL below.

## D2.2 Settlement Potential

Settlement potential of a soil is the tendency for the soil to experience volume change when subjected to a load. Settlement is characterized by downward movement of all or a portion of the supported structure as the soil particles move closer together resulting in decreased soil volume. Settlement potential is a function of;

- . foundation loads,
- . depth of footing embedment,
- . the width of the footing, and
- . the settlement potential or compressibility of the influenced soil.

Foundation design considerations concerning settlement potential include the amount of movement tolerable to the structure and the design and construction concepts to help reduce the potential movement. The settlement potential of the foundation can be reduced by reducing foundation pressures and/or by placing the foundations on a blanket of compacted structural fill. The anticipated post construction settlement potential and suggested compacted fill thickness recommendations are based on site specific soil conditions and are presented in the text of the report.

## D2.3 Soil Support Characteristics

The soil bearing capacity is a function of;

- . the engineering properties of the soil material supporting the foundations,
- . the foundation width,
- . the depth of embedment of the bottom of the foundation below the
- . lowest adjacent grade,
- . the influence of the ground water, and
- . the amount of settlement tolerable to the structure.

Soil bearing capacity and associated minimum depth of embedment are presented in the text of the report.

The foundation for the structure should be placed on relatively uniform bearing conditions. Varying support characteristics of the soils supporting the foundation may result in nonuniform or differential performance of the foundation. Soils encountered at foundation depths may contain cobbles and boulders. The cobbles and boulders encountered at foundation depths may apply point loads on the foundation resulting in nonuniform bearing conditions. The

surface of the formational material may undulate throughout the building site. If this is the case it may result in a portion of the foundation for the structure being placed on the formational material and a portion of the foundation being placed on the overlying soils. Varying support material will result in nonuniform bearing conditions. The influence of nonuniform bearing conditions may be reduced by placing the foundation members on a blanket of compacted structural fill. Suggestions and recommendations for constructing compacted structural fill are presented under COMPACTED STRUCTURAL FILL below and in the text of the report.

### D3.0 COMPACTED STRUCTURAL FILL

Compacted structural fill is typically a material which is constructed for direct support of structures or structural components.

There are several material characteristics which should be examined before choosing a material for potential use as compacted structural fill. These characteristics include;

- . the size of the larger particles,
- . the engineering characteristics of the fine grained portion of material matrix,
- . the moisture content that the material will need to be for compaction with respect to the existing initial moisture content,
- . the organic content of the material, and
- . the items that influence the cost to use the material.

Compacted fill should be a non-expansive material with the maximum aggregate size less than about two (2) inches and less than about twenty five (25) percent coarser than three quarter (3/4) inch size.

The reason for the maximum size is that larger sizes may have too great an influence on the compaction characteristics of the material and may also impose point loads on the footings or floor slabs that are in contact with the material. Frequently pit-run material or crushed aggregate material is used for structural fill material. Pit-run material may be satisfactory, however crushed aggregate material with angular grains is preferable. Angular particles tend to interlock with each other better than rounded particles.

The fine grained portion of the fill material will have a significant influence on the performance of the fill. Material which has a fine grained matrix composed of silt and/or clay which exhibits expansive characteristics should be avoided for use as structural fill. The moisture content of the material should be monitored during construction and maintained near optimum moisture content for compaction of the material.

Soil with an appreciable organic content may not perform adequately for use as structural fill material due to the compressibility of the material and ultimately due to the decay of the

organic portion of the material.

#### D4.0 RADON CONSIDERATIONS

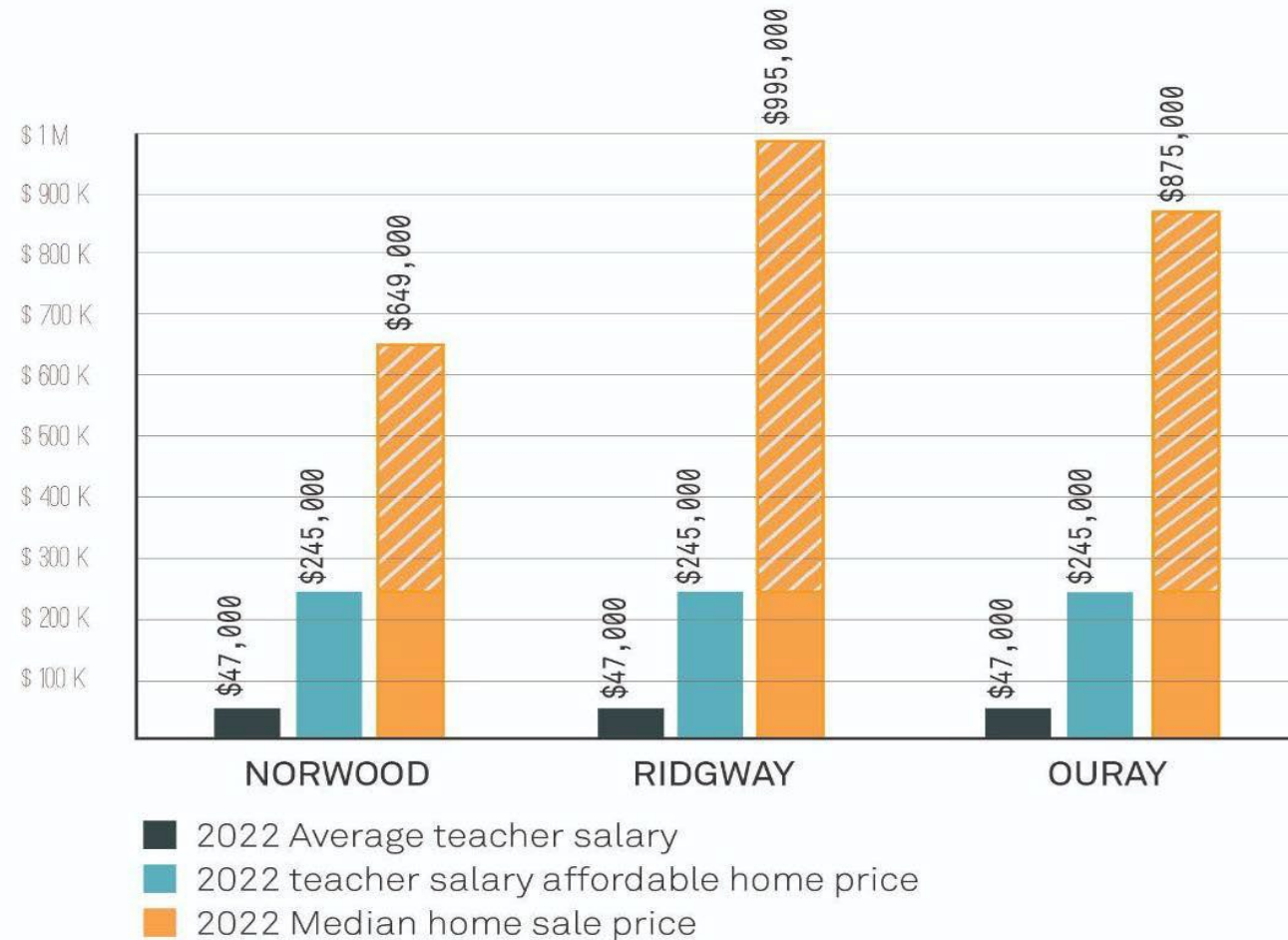
Information presented in "Radon Reduction in New Construction, An Interim Guide: OPA-87-009 by the Environmental Protection Agency dated August 1987 indicates that currently there are no standard soil tests or specific standards for correlating the results of soil tests at a building site with subsequent indoor radon levels. Actual indoor levels can be affected by construction techniques and may vary greatly from soil radon test results. Therefore it is recommended that radon tests be conducted in the structure after construction is complete to verify the actual radon levels in the home.

We suggest that you consider incorporating construction techniques into the development to reduce radon levels in the residential structures and provide for retrofitting equipment for radon gas removal if it becomes necessary.

Measures to reduce radon levels in structures include vented crawl spaces with vapor barrier at the surface of the crawl space to restrict radon gas flow into the structure or a vented gravel layer with a vapor barrier beneath a concrete slab-on-grade floor to allow venting of radon gas collected beneath the floor and to restrict radon gas flow through the slab-on-grade floor into the structure. These concepts are shown on Figure D1.

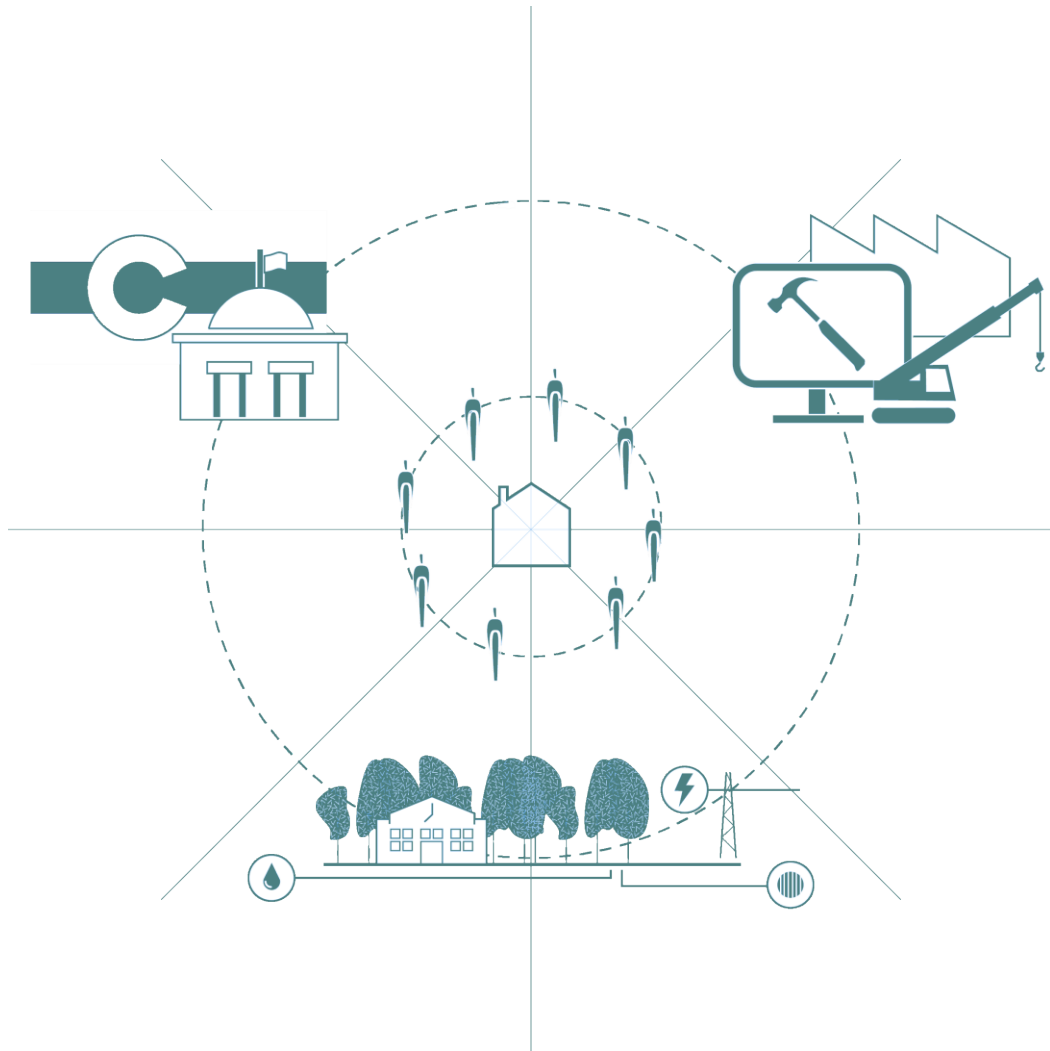
If you have any questions or would like more information about radon, please contact us or the State Health Department at 303-692-3030.

# Mismatch Between Home Affordability & Market Prices



# Rural Homes Approach

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- 1) Community Driven
- 2) Donated Land (in-fill)
- 3) Low-Cost Construction Finance + Grants – Colorado Foundations & DOH
- 4) Construction Expertise – Entitlements, GC, Prof. Subs
- 5) Factory Built Homes – Fading West
- 6) Homebuyer Lending Assistance



SITE INFRASTRUCTURE & UTILITIES



FADINGWEST MODULAR CONSTRUCTION



HOMES COMPLETED AND READY FOR FOUNDATIONS!!



SHIPPING – FALL 2022



SETTING & STITCHING — DECEMBER 2022

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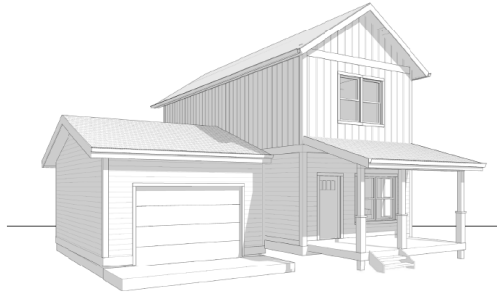
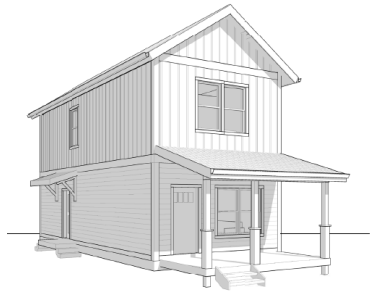
**Ouray - Site Context**



# Ouray Waterview Timeline

- 2022-2023 Community Advisory member meetings (14+ include site visit to Norwood)
- January 2023 Colorado State Housing Board project funding approval
- January 2023 City of Ouray Planning Commission Sketch plan approval
- March 2023 Ouray Waterview General Contractors secured
- May 2023 City of Ouray Planning Commission review
- May 2023 Fading West supply agreement executed
- June 2023 Land development construction start
- September 2023 Fading West home modulars completed
- October 2023 Home foundations completed and homes set & stitch onto homes foundations
- October 2023 Homeowner lottery application and drawing
- December 2023 Home vertical construction completed
- December 2023 State oversight inspections and Certificate of Occupancy issued
- January 2024 Homeowner move-in





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# WATERVIEW UNIT TYPES

# DEED RESTRICTIONS

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- Restrictions
  - Household Income (60-120% AMI)
  - Working households
  - Owner occupied
  - Re-sale appreciation cap of 3%
  - 100-year term, resets upon sale
- Managed by a Housing Authority (Impact Development Services)







# Immense value of a local COMMITMENT



# Ouray County 2023 AMI's

Ouray County 2023 AMI		Household Size					
AMI	1	2	3	4	5	6	
120	\$ 78,225	\$ 89,400	\$ 100,575	\$ 111,750	\$ 120,750	\$ 129,675	
100	\$ 65,188	\$ 74,500	\$ 83,813	\$ 93,125	\$ 100,625	\$ 108,063	
80	\$ 52,150	\$ 59,600	\$ 67,050	\$ 74,500	\$ 80,500	\$ 86,450	
60	\$ 39,113	\$ 44,700	\$ 50,288	\$ 55,875	\$ 60,375	\$ 64,838	
2022-2023 Change	5%	5%	5%	5%	5%	5%	

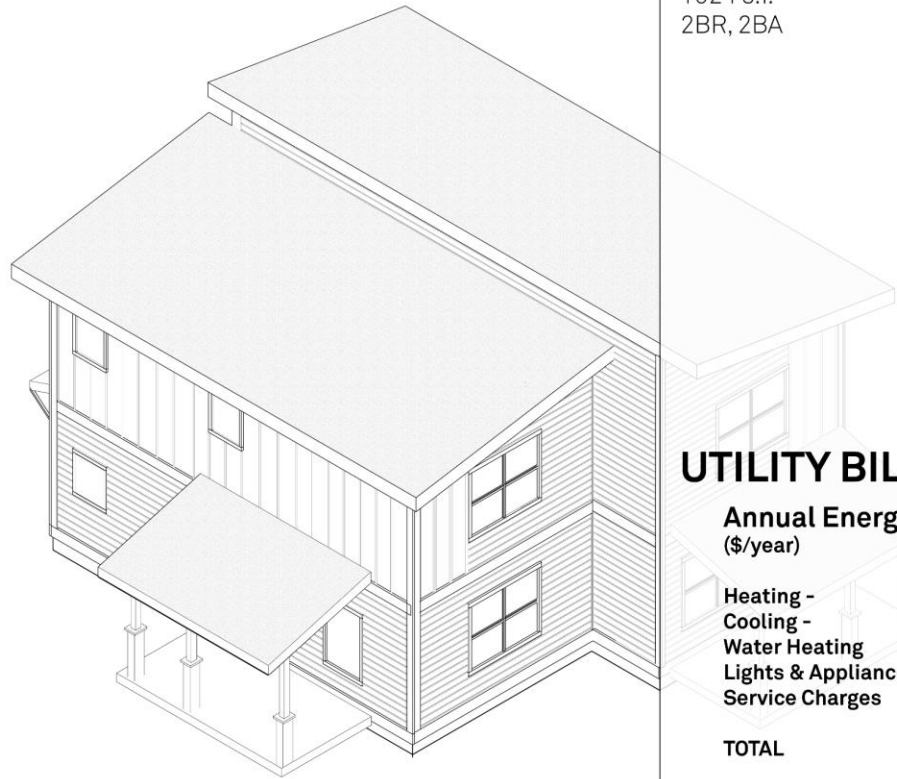
# **MORTGAGES & DOWN PAYMENT ASSISTANCE**

- Impact Development Fund (IDF)/First Southwest Bank (FSWB) partnership
  - IDF
    - Mortgage origination and underwriting
    - Down payment assistance (DPA) – 10% for households 100% AMI and below
  - FSWB purchases mortgages
    - 80% AMI and below – 2.5% interest rate, 30 year fixed
    - 80-100% AMI – Five Year Treasury +1%, 30 year fixed
    - 100-120% AMI – Five Year Treasury +2% 30 year fixed
    - ITIN lending allowed (no SS number) and UTR credit scoring
- Conventional & other lenders
  - Community Banks
  - USDA 502
  - CHFA

# Ouray County AMI and Home Price Affordability

Household Area Median Income (AMI)	Household Size (Persons)	Household Income (Maximum)	Ouray Homes Preferred Lender - 5.5% interest rate; 30 year fixed amortized; buyers pays 10% down payment cost
120 -100%	1	\$ 78,225	\$ 333,494
	3	\$ 100,575	\$ 428,777
	5	\$ 120,750	\$ 514,785
Area Median Income (AMI)	Household Size (Persons)	Household Income (1) (Maximum)	Ouray Homes Preferred Lender - 4.9% interest rate; 30 year fixed amortized; buyers receives 10% down payment assistance
100-81%	1	\$ 65,188	\$ 277,912
	3	\$ 83,813	\$ 357,314
	5	\$ 100,625	\$ 428,988
Area Median Income (AMI)	Household Size (Persons)	Household Income (1) (Maximum)	Ouray Homes Preferred Homes - 2.5% interest rate; 30 year fixed amortized; buyers receives \$25,000 down payment assistance
80% and less	1	\$ 52,150	\$ 320,180
	3	\$ 67,050	\$ 411,659
	5	\$ 80,500	\$ 494,234
<b><u>For Illustrative Purposes Only</u></b>			

# TARIFF ON BILL FINANCING – WITH CCEF



**SALE PRICE:**  
**\$225,000**

1024 s.f.  
2BR, 2BA

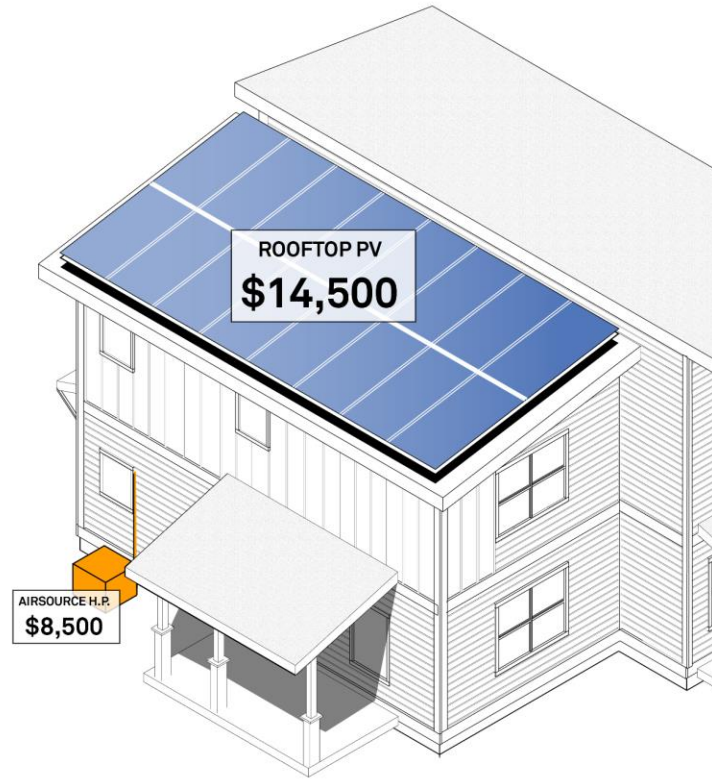
**UTILITY BILL:**

**Annual Energy Costs**  
(\$/year)

Heating -	\$ 643
Cooling -	\$ 0
Water Heating	\$ 315
Lights & Appliances	\$ 503
Service Charges	\$ 252

**TOTAL** \$ 1713

**AVG. MONTHLY UTILITY** \$ 142



**SALE PRICE:**  
~~**\$248,000**~~

**\$225,000**  
1024 s.f.  
2BR, 2BA

**CCEF Loan:**

ROOFTOP SOLAR  
\$14,500  
AIR SOURCE HEAT PUMP  
\$8,500



AIRSOURCE H.P.  
**\$8,500**

ROOFTOP PV  
**\$14,500**

**Annual Energy Costs**  
(\$/year)

Heating -	\$ 370
Cooling -	\$ 74
Water Heating	\$ 315
Lights & Appliances	\$ 503
Service Charges	\$ 252
Photovoltaics	<b>-\$996</b>

**TOTAL** \$ 518  
Debt Service \$ 800

**AVG. MONTHLY UTILITY** \$ 109

# Home Based Childcare Home

