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Town of New Castle
450 W. Main Street
PO Box 90
New Castle, CO 81647

Administration Department
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Agenda

New Castle Planning and Zoning Commission Regular Meeting

Wednesday, November 13, 2024, 7:00 PM

Full packets of P&Z meetings are available online by visiting
https://www.newcastlecolorado.org/meetings
or by scanning the **QR code** below.

Virtual Meetings are subject to internet and technical capabilities.
To join by computer, smart phone or tablet:
https://us02web.zoom.us/j/7096588400
Meeting ID: 709 658 8400

If you prefer to telephone in, please call: 1-346-248-7799
Be sure to set your phone to mute until called on.

Call to Order, Roll Call, Meeting Notice

Conflicts of Interest

Citizen Comments on Items NOT on Agenda

Public Hearing

A. Consider Resolution PZ 2024-6, A Resolution of the New Castle Planning and Zoning Commission Recommending Conditional Approval of a Final PUD Development Plan and a Final Subdivision Plat for Castle Valley Ranch PUD Filing 13 (9 N Wild Horse Dr)

Comments/Reports
-Items for Next Planning and Zoning Agenda
-Commission Comments/Reports
-Staff Reports

Review Minutes of Previous Meetings

B. Draft Minutes of July 24, 2024

Adjournment

Town of New Castle
450 W. Main Street
PO Box 90
New Castle, CO 81647

Planning & Code Administration Department
Phone: (970) 984-2311
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Staff Report

9 North Wild Horse
Castle Valley Ranch PA8 & PA9 Final Plan, Filing 13
Resolution PZ #2024-06
Planning & Zoning Commission (P&Z) – November 13th, 2024

Report Compiled: 11/7/2024

Project Information

Name of Applicant:	R2 Partners
Applicant's Mailing Address:	1009 Delta Avenue Cincinnati, OH 45208
Phone/Email:	614-266-7629/b.rosenberg@r2partners
Property Owner:	CTS Investments, LLC
Owner Mailing Address	343 Dakota Blvd. Boulder, CO 90304
Proposed Use:	130 rental townhomes/apartments in 16 buildings
Approximate Residents:	~ 310-340
Bulk Density:	2.73 units/acre
Open Space:	34 acres passive open space; 9.6 acres developed open space;
Proposed Zoning:	MF-2 per the Castle Valley Ranch PUD
Surrounding Zoning:	Single family residential homes (N Wild Horse Dr.) Open Space (VIX Park, LCR Golf Course) Mixed Use/Commercial zoning (TC Midwest, LLC) Residential zoning (CVRI & LCR)

I Introductory Summary

R2 Partners has been both a developer and owner of multifamily rental projects for over the past 60 years. Based in Cincinnati and serving various areas in Colorado, R2 is rethinking multifamily residential living. Their current application in Castle Valley Ranch (CVR), Planning Areas 8 & 9, embraces the quality of life prized by all New Castle residents. The proposal contemplates 130 multi-family rental units with three distinct floorplans:

- Model 1: "Empty-nester" targets retirees valuing convenience and practicality (~770-1,470sf);
- Model 2: "Live/Work" focuses on professionals looking for adaptive designs and multi-functional space focused on a work-from-home end user (~680-960sf);
- Model 3: "Townhomes" are conventional urban/suburban concepts available for starters or those looking to downsize (~1,420sf);

Dispersed over approximately 47.6 total acres, the proposal contemplates 43.6 acres of passive & active open space (91.6% of total acreage) and includes the completion of the N Wild Horse Dr. connector with updated VIX parking. The Applicant will maintain public access to several existing single track trails that traverse the property from VIX park to the BLM. Prior to the current preliminary hearing, the Applicant convened for public meetings on the following dates:

- October 25th, 2023 – P&Z Sketch Plan
- November 7th, 2023 – Council Sketch Plan
- December 7th, 2023 – Community Open House Meeting
- January 24th, 2024 – P&Z Sketch Plan Revised Site Plan
- June 26th, 2024 – P&Z Preliminary Plan

The final plan submittal was deemed complete on September 30th, 2024. As the final of three application steps for new planned unit developments ("PUD") & subdivisions, final PUD reviews assess zoning conformance, compliance with Public Works requirements, the suitability of utilities and infrastructure, compatibility with the comprehensive plan, and address any adverse impacts to the town. By final approval, all civil drawings should attain construction level readiness.

Within thirty (30) days after the close of the public hearing, or within such time as is mutually agreed by the P&Z and the Applicant, the commission shall make one (1) of three (3) recommendations to Town Council regarding the application: 1) approve the application unconditionally; 2) approve the application with conditions; 3) deny the application. The commission's decision will be made by written resolution. A continuance may be granted pursuant to Section 16.08.040(G) of this title.

Within sixty (60) days from the date of the P&Z's written recommendation on the application, or within such time as is mutually agreed by the Town Council and the Applicant, the Town Council shall approve the application, with or without conditions, or deny the application. Town Council's decision will be made by ordinance which shall be introduced twice at a Town Council meeting and, if approved, shall take effect 14 days after final publication pursuant to Article IV of the New Castle municipal code.

II Changes from June, 2024 Preliminary Plan

At the June 26th hearing, the Commission unanimously approved the application with the conditions listed in Resolution PZ #2024-05. Though the general site plan remains consistent with the preliminary application, a few key changes are identified below:

Preliminary Plan	Final Plan
• 130 residential rental units: 26twnh, 80 apartments, 24 empty nesters	• No change
• 2.73 units/acre	• No change
• 91.6% gross area open space	• No change
• 229 off-street residential parking spaces	• No change
• Netzero construction: discussed	• 5%-15% reduction in energy use
• 16 total buildings	• No change
• 4 apartment bldgs.; 10 townhome bldgs.	• No change
• Apartments B-3 & B-4 are three story	• No change
• Passive open space with courtyards	• No change
• MF-2 zoning: 40 building height limit	• No change
• Tallest building: B3/B4 (Live/Work) @ 38.8'	• Tallest building: B3/B4 (Live/Work) ~ 46'
• 1,600sf min lot area	• No change
• Snow Storage: 20.5% of road area	• 18.7% of road area;
• Live/Work units balconies removed	• No change
• Open space: Applicant owned	• No change
• Pull-in parking included on west side of N Wild Horse for VIX Park users	• Cost share requested
• Townhomes: two-story duplexes and tri-plexes	• No change
• Workforce housing: 5 live/work @ 75% FMV	• No change
• Vista Loop: Town owned and maintained	• No change
• Chapman & Medaris Loops: Owner maintained	• No change
• EV charging capacity: Discussed	• EV charging capacity: Complies with state requirements
• Temporary construction easement: Considered	• Temporary construction easement: Concept proposed

II Staff Review:

Throughout the application process, application documents will be reviewed pursuant to the criteria outlined in the Municipal Code (*MC*) for planned unit developments (PUDs) and subdivisions. At the final plan stage, an application shall show conformity to the following criteria (*MC* 17.100.050(H)):

1. Consistency with the comprehensive plan;
2. Compliance with zoning and density requirements;
3. Compatibility to neighboring land uses;
4. Availability of town services from public works (including water and sewer services), fire, and police;
5. Adequacy of off-street parking and vehicle, bicycle, and pedestrian circulation;

6. The extent to which any required open space or parks are designed for active or passive use by residents of the subdivision or the public; and
7. Development is consistent with the natural character, contours, and viewsheds of the land.

1) Is the proposal consistent with the comprehensive plan?

Applicants are expected to demonstrate substantial conformity with the CP in all applications (**Policy CG-1B**). The checklist below, though not exhaustive, provides a tool for reviewers to assess conformance with the CP:

- Foster distinctive, attractive communities with a strong sense of place and quality of life.
- Demonstrate that individual project fits into a fully-balanced community land use structure.
- Ensure a mix of uses that complement the existing New Castle land-use patterns.
- Create walkable communities with non-vehicular interconnection between use areas.
- Guarantee a balance of housing types that support a range of affordability.
- Preserve open space, farmland, natural beauty, critical environmental areas, and wildlife habitat.
- Encourage economic development and supporting hard & soft infrastructure.
- Concentrate development in ways which provide efficient and cost-effective services.

Quality of Life: According to the application packet (**Exhibit A, page 3**), the proposal aligns with numerous New Castle goals and values favorable for Smart Growth and a high standard of living (**Goal CG-5**). The proposal focuses on conservation of the natural environment (**Goals EN-1 thru EN-8**), sensitivity to architectural aesthetics, and an active lifestyle (**Goal RT-1**) that together support community and sustainability.

As part of a Smart Growth strategy, policy **Goal CG-4** expects large residential development (greater than 50 units) to integrate commercial services and conveniences. Though not included with this application, commercial development is anticipated on the vacant parcel south of VIX Park. To meet Smart Growth objectives, P&Z should consider the adjoining commercial parcel owned by TC Midwest, LLC in its evaluation. Though independently owned, the two developments may mutually complement each other and resonate with the CVR Master Plan.

Trails/Open Space/Recreation: The trails shown on **Exhibit A, page 7,** align with currently existing use-trails and trail agreements. Two trails will originate from VIX Park and lead east towards the locally dubbed “Sunset Trail” that terminates with public lands to the north. The goal is for a seamless trail experience connecting routes already prized by residents (**Goal POST-3**). Preservation of these trail corridors should also be supportive of existing wildlife habitat (**Goal POST-4**). Other walking trails are dispersed internal to the development. Altogether the trail network will be conducive to recreational opportunities and non-vehicular access to adjoining developments.

Environmental Impact: New Castle is committed to stewardship of the natural environment and therefore is careful to consider potential negative impacts of new development. The Town partners with Colorado Parks and Wildlife (CPW) to identify and protect critical environmental resources (**Goal EN-1**). CPW has provided referral comment and Jake Stanton, the District Wildlife Manger, recommends the following best management practices:

1. Bear-resistant trash containers with regular trash disposal during construction;
2. Bear-resistant dumpsters and/or trash bins for all resident refuse;
3. Wildlife friendly fencing per CPW specifications;
4. Use of non-fruiting trees, shrubs, and flowers for landscaping;
5. Prohibition of at-large and outdoor feeding of pets;
6. Prohibition of feeding wildlife;

For its part, the Town regulates off-leash dogs, excessive light trespass, preservation of native vegetation, and/or limiting fences in certain areas. In some development applications, the Town has encouraged additional landscape buffers to neutralize the effects of an urban setting on wildlife habitat.

New Castle has also made progress in terms of energy conservation. The current building codes require sustainable building practices, that reduce fuel consumption and promote use of renewable energy (**Goal EN-7**). All buildings will comply with the state of Colorado's solar and electrical readiness provisions. Moreover, the Applicant is committed in the direction of Netzero construction. A Netzero building is one that is optimally efficient and generates energy onsite using clean renewable resources in a quantity equal to or greater than the total amount of energy consumed. Net-zero/all-electric appliances pared with solar PV or ground source heating are feasible methods to exploit especially considering local, state, and federal incentives currently available. At this time, fully functioning solar array is not being considered at initial build, but the Applicant maintains that the efficiency steps already being proposed (**Exhibit A-Appendix, page 183**) will reduce consumption by 5-15%.

The Applicant has also proposed raw water as the means to irrigate landscaping. Raw water is non-potable water which bypasses the town's treatment facility thereby eliminating the processing step. The Applicant also receives a 25% reduction in water tap fees as a result of implementation. Opting for raw water is ultimately an economical and sustainability win for all.

Affordability: The rental aspect of the proposal is unique. Rental communities provide a fully managed property for tenants who do not have the time nor inclination to fuss with general repairs and upkeep. Rental communities also provide a way for retirees to downsize in communities dominated by larger single-family homes and a way for younger families to participate in communities in which they may otherwise be priced-out. The proposal also offers units for professionals seeking adaptable spaces serving dual purposed living area plus functional office space. In sum, the diversity of housing modalities works to stratify rent prices making housing attainable to varying income levels.

9 North Wild Horse offers a community promoting quality of life. Quality of life is potentially disadvantaged when a disproportionate share of household income is dedicated to housing costs. The Applicant has been committed to rent rates that are sensible for New Castle. Prices will vary with unit type and should track with those in New Castle and Glenwood Springs. Of the 130 total units (**Exhibit A-Application, page 33**), the types include 80 live/work units; 24 empty nester units, and 26 conventional townhome units. Live/work & Empty Nester units will consist of 1-2 bedroom units with the townhomes all at 3-bedroom. For context, Garfield County "Fair Market Rent" for 2023 is $1,357 for 1-bedroom, $1,861 for 2-bedroom, and $2,275 for 3-bedroom. Locally, a Staff search has found asking prices ranging from $1,650 (850sf) to $4,000 (2,000sf) with an average two-

bedroom going for $2,600.

Discussions about affordable housing in New Castle are bracketed by several features: 1) Per vested rights, there are currently no price caps on rent (or sales) prices; 2) the CP indicates that the town will create and preserve affordable housing merely as an *element* of all new development (**Goal HO-2**); 3) the CP does not define "affordability" though the US Department of Housing and Urban Development (HUD) maintains that monthly housing expenses should not exceed 30% of household income. This discussion aside, the Applicant has generously offered the town five, one-bedroom live/work units at 25% off the then-current market rate on a rolling availability (**Exhibit A-Appendix, page 174**). Additionally, the Applicant has made significant adjustments to the site plan and building architecture to address these economic impacts.

Fiscal Impact: A fiscal impact study was performed (Triple Point Strategic Consulting) comparing estimated revenues with costs associated with the new development. The study helps determine whether the Town can meet the new demand on services (**Policy CG-7B, CP pg. 54**). The analysis projects a population increase of 2,004 for the entire town of New Castle with approximately 313 associated specifically with the new development. The analysis then projects revenues and costs based on the Town's budget averaged between the tax years of 2021 and 2024. The results show a yearly net benefit to the town of $190,177. The cumulative net benefit by 2045 is estimated to be $7 million with $3.2 million coming in the initial two years of construction. The Town's finance department has reviewed the assumptions and projected outcomes separately with comparable results.

2) ***Does the proposal demonstrate compliance with zoning and density requirements?***

Zoning: The Applicant has elected Castle Valley Ranch *MF-2* zoning criteria. According to *MC* 17.104.080 MF-2 is a "multifamily district allowing higher density including apartments." The following land uses are those permitted by right:

- Attached dwelling units in structures containing more than two units;
- Public parks, playgrounds and related accessory structures 5,000 sq. ft. or less;
- Parking facilities;
- Recreation facilities including, but not limited to health facilities, hobby rooms, activity rooms, meeting rooms, pools, gymnasiums, ball fields, tennis or basketball courts, volleyball courts, and any building of fields or play surfaces;
- Pedestrian and bicycle trails;
- Open space and parks

The main differences between MF-1 and MF-2 is that the former allows detached dwelling units, slightly lower density, and lower maximum building height (35'). All proposed uses are permitted by right.

The Master PUD allows for the following density standards:

- Minimum lot area of 2,200sf;
- Minimum lot area per dwelling unit of 1,600sf or 27.2 units per acre;
- Maximum building height of 40';
- Minimum front yard setback 18';
- Minimum side yard setback of 0';

- Minimum rear yard setback of 10';
- Minimum distance between buildings of 10';

Density: As shown in the submittal packet (**Exhibit A-Application, page 8**) overall bulk density reaches 2.73 units per acre which is far below the 27.2 units per acre allowed. The live/work units have the highest localized density within the overall 46.7 acres. However, the live/work density is no more than 12.3 units/acre which is one unit/acre less than Eagle's Ridge Ranch and five units/acre less than the Senior Housing. Setbacks for each building lot will be finalized at final application.

Building Height: As architectural designs became refined, the maximum building height for the three story live/work buildings (Buildings B3 & B4 **Exhibit A-Application, page 18**) was reexamined in relation to the building height definition in Section 17.04.050. At the preliminary hearing the building height was shown as 38.8' measured from the bottom slab to the top ridge as shown below:

:



Preliminary Plan

The current final plan variation (**Exhibit A-Application, page 18**) shows a slightly increased height from slab of 39.9' (though not the uppermost part of the roof):



Final Plan

However, per the code, the initial point of reference for height

measurements is not the bottom floor slab. Rather, the building height is defined as follows:

> *"Building height" means the vertical distance measured from the lowest point of the natural grade on the lot within twenty-five (25) feet of the tallest side of the building to the uppermost point of the roof of the building; provided, however, that if the lot upon which a building is to be built has a slope greater than fifteen (15) percent, building height shall be defined as the vertical distance measured from the average existing grade within the building setback envelope to the uppermost point of the roof of the building.*

Taking into account the code's definition renders the building height at approximately 46' or 6' above the 40' zoning maximum (See also 41.5' for B;1 43.8' for B2, Exhibit A-Application, page 19):



Final Plan per Section 17.04.050

The Town has allowed deviations to height limits in the past. Most recently the Town granted a 9' exception for a single building in the Lakota Canyon Ranch Longview application. In that instance, certain factors informed P&Z's decision. For one, the Longview building was closely situated to other buildings that also exceeded their respective height maximums (i.e. Shibui, CRFR Firehouse, and the Senior Housing). At that time, P&Z was also generally persuaded by the fact that the building's excess height would be obscured by two-story structures immediately adjacent. Story ballons were erected on site to demonstrate this idea.

At the June preliminary hearing, P&Z expressed concern with the visual impacts of adding a third level to Buildings B3 & B4. At least two methods to mitigate were explored: 1) obscure east elevations using the 2-story Buildings B-1 & B-2. In this way building mass will step gradually with the grade from N Wild Horse to the east; 2) Blunting of roof pitches (compare Live/Work gables with sketch plan exhibits). With massing alternatives, structure orientation, and roof articulation, the Applicant felt the concerns with increased building



Sketch Plan Live/Work Massing

height on the surrounding views would be relieved. Staff has suggested returning to stepped structures as illustrated in the original sketch plan (see above) to better approximate the appearance of surrounding single family and multi-family homes. Alternatively, the structures could be modestly sunken into the topography, effectively lowering the building height. This precedent was also set during the Longview application.

For the Applicant to move forward with these alternatives, P&Z would have to be equally convinced as before that Buildings B1-B4 fit the surrounding residential neighborhood currently comprised of SF homes and triplexes. P&Z would also need to be mindful that the precedent set with this height exception may prompt other future developers in the area to do the same. Overall, P&Z should come away from the decision with the confidence that consistency with the surroundings is preserved no matter what height is decided.

3) Does the proposal demonstrate compatibility to neighboring land uses?

The parcel lies in the vicinity of various land uses within CVR: larger SF homes on N Wild Horse Dr, Buckskin Cir. & TBD Filing 12 to the south, VIX Park to the west, a commercial parcel (TC Midwest, LLC) to the southwest and two Garfield RE-2 schools within walking distance. BLM land and the Lakota Links Golf Course lie directly north of the parcel.

P&Z and Council have generally understood compatibility in terms of style and function. A use is considered more or less compatible in *style* to the degree it is similar in architecture, landscaping, and site planning (e.g. roads, trails, open space). A use is considered compatible in *function* to the degree its purpose serves the community similarly to surrounding uses. At times when compatibility is questionable, P&Z and Council have been hospitable to adding transitional features between developments to mute perceived incongruities in style or function. In such cases "buffering", for example landscape screening and open space, can soften the juxtaposition between two architecturally dissimilar developments. Likewise, small scale retail, professional services uses, and open space can function to temper alleged incompatibility between a SF development and, say, an industrial zone.

9 North Wild Horse is a multifamily rental property located within a rural residential setting. As a higher density product, building structures will naturally have more mass and height than those surrounding it. In anticipation of this, the Applicant includes open space buffering (~150' separation) adjacent to homes along Buckskin Dr. Greater distancing is expected to the east and south near future Silverado Dr. and N Wild Horse homes. Architectural features derive articulation and texturing from neighboring residential designs. Townhomes units will have horizontal and vertical displacement (stepping) to better resemble the SF home context. As noted elsewhere, live/work and empty nester buildings (**Exhibit A-Application, pages 18-26**) exhibit less vertical displacement than surrounding structures and adjoining topography. This style might be deemed less compatible than what was viewed originally at sketch plan. Feedback from P&Z, Council, and the community has been mixed with respect to the more urban, block style multifamily buildings characteristic of developments in Denver, Vail Valley, and the Roaring Fork mid-valley. Therefore, P&Z will need to consider whether the current architectural signatures (i.e. roof pitches, elimination of balconies, taller windows) are an adequate tradeoff.

On the other hand, with a more conventionally urban approach the Applicant successfully minimizes sprawl which is supportive of the idyllic areas of CVR. Parking for the live/work lots is nested within the interior of the building site plan while Empty-Nester

units obscure vehicle volume with covered parking spaces (**Exhibit A-Application, page 7**). Parking is also restricted to one side of the street on Vista Loop to reduce on-street congestion. Landscaping will be used sparsely to minimize disruption to otherwise unspoiled terrain. All things considered, the Applicant has made efforts to preserve the overarching feel and function of CVR at N Wild Horse Dr. and attempts transitioning features to address instances where compatibility may be questionable.

4) Is there availability of town services from public works (including water and sewer services), fire, and police?

Police: At Sketch Plan, the Applicant anticipated an increase of approximately 338 new residents at build-out. The Police Department currently consists of eleven FTEs which is ideal for a town the size of New Castle. Generally, additional FTEs are considered for every increase of 500 residents. Therefore, the Police Chief concludes that there would be no compromise with police service as a result of the expected population increase.

Fire: In light of the current multi-year drought and the ongoing expansion of the wildland-urban interface, Colorado River Fire Rescue now stresses improving the resiliency of structures and expanding the surrounding defensible space (**Goal EN-8**). Replacing conventional materials with those of more robust fire resistance, particularly in buildings along the perimeter of the development, buys time for firefighters during a wildland fire incident and inhibits fires from spreading from the source. In 2024, the Town adopted standards for the requirement of fire resistant materials and improved defendable space requirements for new structures. To extend their firefighting potential, CRFR requests two-track roads for fire apparatus be designed along the periphery of the outer structures and a singular vehicle route extending towards the Lakota Links property, **Exhibit C**. The Applicant has updated the site plan to address this concern (**Exhibit A-Application, page 7**). It is important that these routes be improved sufficiently enough to carrier the weight of the necessary fire apparatus. These routes should also be permanently signed “Emergency Access Only”.

Public Works: The CVR PUD is approved for 1,400 residential units and 100,000sf of commercial space. These totals were primarily the result of calculations performed on the basis of water dedicated from Elk Creek. At present the PUD has approximately 895 built units and no commercial development. With 130 proposed units in this Application, the PUD remains well short of the 1,400 total rooftops allocated for CVR. The current sewer treatment plant is also sufficiently sized to process the full build-out of both CVR and Lakota.

Streets: The Town contemplates maintenance of Vista Loop and the N. Wild Horse connector once all public improvements are accepted. Remaining streets will be private. Public Works agrees that speed, safety, and costs are priorities in road design. On-street parking serves to accommodate overflow vehicle parking for guests, deliveries, trash collection, extra resident vehicles, and emergency vehicles. Staff and the Applicant have worked closely to provide street designs that satisfy all these concerns. **Exhibit A-Application, page 45** shows the agreed upon designs.

Snow Storage: Snow removal is located on the site plan (**Exhibit A-Application, page 12**). 17.8% of total roadway area has been designated for snow storage which is 2.8% more than required. Ample snow storage is demonstrated on all separated sidewalks, Staff’s preferred storage location.

Raw Water: Raw water is available at the north end of VIX Park and is expected to irrigate all common landscaping areas within the new PUD. The raw water infrastructure will need to be extended and looped with the installation of the N Wild Horse road connection.

5) Is there adequate off-street parking and vehicle, bicycle, and pedestrian circulation?

Parking: The purpose of off-street parking in the PUD "is to ensure that safe and convenient off-street parking is provided to serve the requirements of all land uses in the Castle Valley Ranch PUD and to avoid congestion in the streets" (MC 17.104.100). As shown on **Exhibit A-Application, page 9**, the following Town standards apply:

- Duplex, tri-plex or four-plex – Two spaces per dwelling unit;
- Five or more dwelling units in one structure – One and one-half spaces per dwelling unit + 1 recreational vehicle parking space for every 5 units in a 5-plex or greater;

Off-Street Parking: Per the standards, required off-street parking totals 229 spaces. The distribution is as follows: The *Townhome* models provide for a mix of one and two car garages. Regardless of garage size, all units will include two-car driveways (**Exhibit A, page 11**), or 3-4 off-street parking spaces where only two are required. This provision solves for issues related to garages used as miscellaneous storage rather than vehicles. The Code reduces parking to 1.5 spaces per unit for *Empty Nester* and *Live/Work* models. The Applicant, familiar with the complications of high density residential parking, has offered at least two spaces per unit for the *Empty Nester* models and has exceeded the parking for the *Live/Work* units. Based on P&Z input, no differentiation will be made between seasonal/RV parking and other parking, but seasonal spaces will be included in the over parking count.

One dilemma to the parking total will be the requirements for EV charging equipment. Approximately 10 spaces will require EV ready equipment, designated solely for EV use per state statute. These spaces may only be occupied by electric vehicles which may result in less overall parking for non-EV owners. The Applicant has therefore planned to install two fully equipped EV parking spaces at VIX park. The Applicant has added a parking site plan since the preliminary (**Exhibit A-Application, page 10**). Staff also recommend a parking management plan be added to the covenants prior to final approval with provisions for reserved parking in shared lots and prohibitions on overnight parking along N Wild Horse Dr. adjacent to VIX park.

Vehicular Circulation: Road, sidewalk, and trail design is a critical component to any new development in New Castle. To optimize circulation, the Applicant is committed to connecting N Wild Horse Dr. completing the underdeveloped section between Alder Ave. and Castle Valley Blvd. Of note, nearly 1/5th of this new road section is outside the Applicant's property boundary. However, because of the importance of circulation and public safety, the Applicant has agreed to work with the neighboring property owners, particularly CVR Investors, to complete this link. Staff anticipates that the connector will match the Town standard ROW, including detached sidewalks with landscaping.

Nonvehicular Circulation: The Applicant has made a point not to disrupt the general

trail alignment between VIX Park and the BLM land. Separated sidewalks allow easy circulation to all inhabited portions of the property with additional soft trails extending to the periphery for easier interface with surrounding neighborhoods (**Exhibit A-Application, page 7**). To meet pedestrian safety concerns, high visibility crosswalks with bump outs were added per P&Z request.

6) Are the required open space or parks designed for active or passive use by residents of the subdivision or the public?

As previously discussed, 91.6% of the property will remain as open space. Within that area, the Applicant has preserved existing public use trails with various connecting trails added (**Exhibit A-Application, page 7**). To reduce the overall development footprint, small, active parks have been replaced with passive open space and two small sitting areas (**Exhibit A-Application, pages 79-81**). Since the open space requirements for CVR have already been met, no open space will be dedicated to the Town. However, the Applicant contemplates ongoing public access to all residents with an easement agreement.

7) Is the development consistent with the natural character, contours, and viewsheds of the land?

The site plan (**Exhibit A-Application, page 48**) follows the sloping topography downhill from northeast to southwest. Each building generally terraces with the existing slope (**Exhibit A-Application, pages 44-52**). Terracing of structures limits cut-and-fill and reduces the need for unsightly landscape retention. The approach also softens the blunt, "blocky" appearance, that may otherwise disrupt the undulating, natural landscape. The Live/Work units and the Empty Nesters are formidable in size, stretching approximately 150'. As the architecture is being finalized Staff recommends revisiting the massing particularly of the live/work units. Since roof step-downs at the stair corridors were eliminated, there is concern that an uninterrupted roof ridge for the entire length of the building conflicts with the contours of surrounding topography. And, per **Policy EN-6B** of the CP, visual access to the ridgeline is expected. The Applicant, in **Exhibit A-Application, page 37**, has contemplated modestly sized berms and drought resistant trees or shrubs partially as a screening strategy to mitigate building mass. Ultimately, P&Z should consider whether these structures, coupled with screening, is enough to maintain consistency with the natural character of the land.

To conserve water and limit landscape maintenance such as mowing, Staff requests the Applicant consider drought resistant vegetation and seeding with native grasses to restore disturbed areas to their original state. Sod and landscape irrigation, likewise, should be used sparingly to limit the need for landscape maintenance. Modestly mowed buffers and borders can provide a satisfying manicured look needing little maintenance.



V Staff Recommendations

Staff offer the following recommendations to the final PUD application:

A. The maximum building height of Buildings B1, B2, B3, & B4 shall not exceed the building elevations presented in **Exhibit A-Application, pages 18-26**. *Alternatively*, the Applicant shall consider height reductions, additional screening, architectural modifications, or any combination of these to these structures to optimize consistency with the natural character of the land. All other structures shall comply with the building height requirements specified in Section 17.04.050.

B. All site specific development applications subject to the provisions of the International Fire Code or matters requiring fire alarms and/or fire suppression shall be submitted to the Fire Marshal for review and comment.

C. The Applicant shall comply with all recommendations of the Town Engineer, Town Public Works Director, and Town Attorney provided in response to review of the Application, **Exhibits C, D, & E**.

D. All exterior lighting to be dark-sky compliant per the comprehensive plan. Demonstrate that all exterior lighting will limit trespass. Parking lot lighting should be on timers to reduce the light duration at night while maintaining security lighting as needed.

E. The location and manufacturer of any electric vehicle supply equipment install within the public right of way shall be at the discretion of Public Works.

F. Fire Access roads illustrated in **Exhibit A-Application, page 7** shall be signed "Emergency Access Only", per fire marshal referral in **Exhibit B**.

G. A temporary construction easement, generally conforming to that depicted in **Exhibit F**, shall be constructed to accommodate construction vehicle circulation for the buildout of PA 8 & 9 (R2 Partners LLC) and PA 12 (TC Midwest, LLC) until the completion of either PA 12 or PAs 8 & 9, whichever is first. The easement shall consist of a semi-impervious surface, a track pad at the intersection with Castle Valley Blvd. and include safety fencing along the hazardous to the public. Any damage to public infrastructure, including but not limited to asphalt bike paths, landscape irrigation, underground utilities, landscaping shall be the responsibility of the Applicant.

H. All trash dumpsters shall be located within an approved trash enclosure that extends six feet high and includes a bear resistant latching mechanism. Trash receptacles for townhomes shall be of a bear resistant type and stored inside.

I. A declaration of covenants for the common interest community that are to the satisfaction of the Town Attorney. The form of the declaration of covenants shall be finalized before consideration of the Final Plat by the town council. Recordation of the declaration of covenants shall be accomplished at or before recording of the Final Plat.

J. A parking management plan shall be added to the covenants prior to final approval with provisions for reserved parking in shared lots as necessary. Signage on both sides of N Wild Horse Dr adjacent to VIX park shall read "No Overnight Parking".

K. A subdivision improvements agreement ("SIA") containing an engineer's stamped cost estimate of public improvements, to the satisfaction of the Town Attorney. The form of the SIA shall be finalized before consideration of the Final Plat by the town council. Recordation of the SIA shall be accomplished at or before recording of the Final Plat.

L. Provide a construction phasing plan for inclusion in a subdivision improvements agreement. Identify, at minimum, each of the following components:

- Buildout phases if necessary;
- Schedule that identifies the sequencing of construction, sequencing of occupancy, traffic flow, and traffic control plans during construction;
- Storage and staging areas for construction equipment and materials;
- Illustrate drainage and erosion control best management practices (BMP's);
- Conformance to all requirements and specifications approved by the fire marshal concerning temporary access to the project;

M. Landscaping shall incorporate native grasses and plants that minimize maintenance, mowing, and irrigating. The PUD landscaping plan shall be approved by Public Works. Plans submitted for building permit for any building shall demonstrate no more than 2,500 square feet of sod per dwelling unit as specified in 13.20.060 of the Municipal Code.

N. All disturbed areas in the project shall be revegetated and maintained in a predominantly weed free condition.

O. All representations of the Applicant made verbally or in written submittals presented to the Town in conjunction with the Application before the Commission or Town Council shall be considered part of the Application and binding on the Applicant.

P. The Applicant shall reimburse the Town for any and all expenses incurred by the Town regarding this approval, including, without limitation, all costs incurred by the Town's outside consultants such as legal and engineering costs.

Q. The sale of individual lots, parcels or units may not occur until a plat creating the lot, parcel or unit is recorded with Garfield County and security for the public improvements has been received by the Town.

R. The Applicant and Town reach final agreement on the form of an affordable housing covenant that includes definition of the number of restricted units, the calculation of below market rents, the workforce that qualify to live in the units, and the term for which the affordable housing covenant shall be in force. The affordable housing covenant shall be finalized before consideration of the Final Plat by the town council. Recordation of the affordable housing covenant shall be accomplished at or before recording of the Final Plat.

S. Finalization of water rights dedication requirements for the project. Calculation of irrigated areas and finalization of EQR dedication requirements. A warranty deed conveying the required water rights in the Coryell Ditch shall be executed and recorded together with the final plat.

T. Vested rights be granted for a period of __ years.

VI Final Plan Exhibits:

A. Applicant Final Plan Application & Appendix – September 30, 2024
B. CRFR Fire Marshal Referral, Orrin Moon – October 18, 2024
C. Town Engineer Comments, Jefferey Simonson – October 18, 2024
D. Town Public Works Director Comments, John Wenzel – October 21, 2024
E. Town Attorney Comments, Michael Sawyer – November 5, 2024
F. Temporary Easement Access Referral, TC Midwest, LLC – October 28, 2024
G. Public Hearing Notice, with Legal Description for Final Plan P&Z – November 13, 2024
H. Notarized Affidavit of Public Hearing Notice – November 5, 2024
I. List of Adjacent Property Owners within 250 Feet

Planning Department
(970) 984-2311
Email:
psmith@newcastlecolorado.org

LAND DEVELOPMENT APPLICATION

Town of New Castle
PO Box 90
450 W. Main Street
New Castle, CO 81647

Note: All land use applications must be filed with the Town Clerk. Please consult the Town Planner for codes specific to the Land Development Application. All application materials are subject to the Colorado Open Records Act (CORA), C.R.S. §24-72-201 to 207.

Applicant: R2 Partners	
Address: 1009 Delta Ave, Cincinnati OH 45208	**Phone:** 614-266-7629 **E-mail:** Barry Rosenberg: b.rosenberg@r2partners.co
Property Owner: CTS Investments, LLC	
Address: 343 Dakota Boulevard, Boulder CO 90304	**Phone:** 720-626-2410 **E-mail:** Steve Craven: nowintomesee@me.com
Contact Person: Jason Jaynes, DHM Design	
Address: 225 Main Street, Suite 201	**Phone:** 970-963-6520 **E-mail:** jjaynes@dhmdesign.com
Property Location/Address: Castle Valley Ranch PUD	
Legal Description: Garfield County Parcel Number 212329300194	**Acres:** 59.07

Existing Zone (e.g., Residential R-1, Commercial C-1): Residential R-MF1	**Existing Land Use:** Vacant Lot (PUD)

TYPE(S) OF LAND USE(S) REQUESTED

- ☐ **Pre-Annexation Agreement**
- ☐ **Annexation**
- ☐ **Subdivision (including Minor and Major Subdivisions, Lot Splits, Sketch Plans, Subdivision Preliminary Plans, Subdivision Final Plans, & Condominiumizations)**
- ☐ **Amended Plat**
- ■ **Planned Unit Development (including PUD Sketch Plans, Preliminary PUD Development Plans, PUD Master Plans and Final PUD Development Plans)**
- ☐ **Master Plan Amendment**
- ☐ **Conditional Use Permit or Special Review Use Permit**
- ☐ **Lot Line Adjustment or Dissolution**
- ☐ **Site Specific Development Plan/Vested Rights**
- ☐ **Variance**
- ☐ **Zoning**
- ☐ **Zoning Amendment**
- ☐ **Re-zoning**
- ☐ **Watershed Permit**

Applicant Signature 03-21-24 **Date**

AGREEMENT TO PAY CONSULTING AND ADMINISTRATIVE COSTS

Pursuant to municipal code section 16.08.070, for any land use application, the applicant shall pay all costs incurred by the town for the preparation of plats, plans, other required data and documents, recording fees, publication costs, legal and engineering review and advice, planning review and advice, inspections and all other out-of-pocket costs incurred by the town in connection with the land use application. In the case of withdrawal or denial of a land use application, the applicant shall be responsible for all costs actually incurred by the town in connection with such application regardless of the state of the review process at which the application is withdrawn or denied.

To secure payment of costs incurred by the town, the owner of the land proposed for development (and the applicant, if different) shall be required to sign the following agreement:

By signing below, the applicant and property owner hereby agree to reimburse the Town the actual costs to the Town for engineering, planning, surveying, legal services, and all other costs incurred by the Town in connection with the review and approval of the land use application. I also agree to reimburse the Town for the cost of making any correction or additions to the master copy of the official Town map and for any fees for recording any plats and accompanying documents with the County Clerk and Recorder of Garfield County. I agree that interest shall be imposed at the rate of 1.5% per month on all balances not paid within thirty (30) days of a statement. In the event the Town pursues collection of any amounts due and unpaid, the Town shall be entitled to collect attorney's fees and costs. In addition to all other remedies allowable by law, I agree that in the event any amounts remain due and unpaid for sixty (60) days the Town shall have the power and authority to certify such amounts, plus a ten percent penalty, to Garfield County to be imposed as a tax lien against the real property subject to the development application.

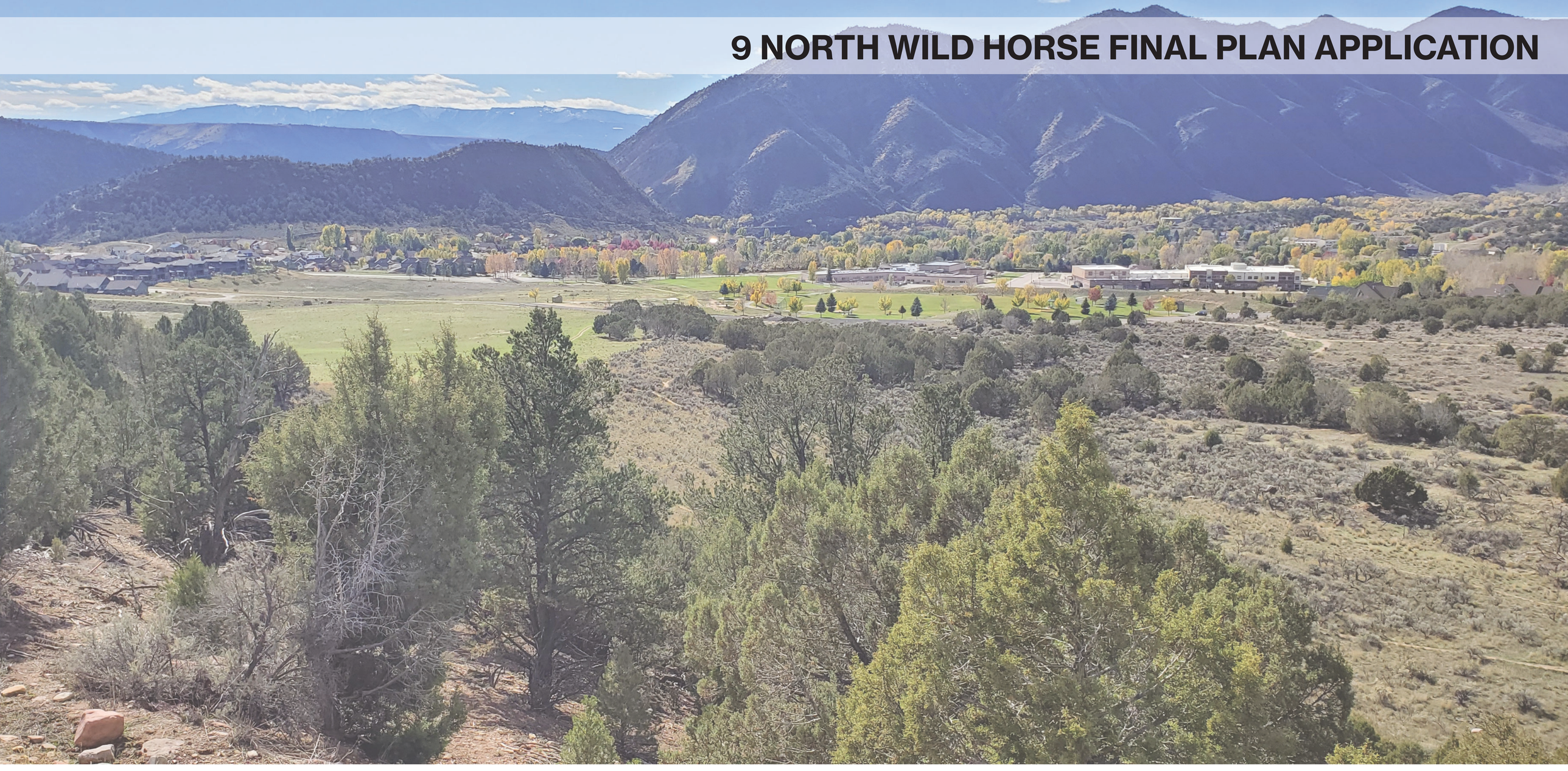
SO AGREED this 10 day of September, 2024

Barry Rosenberg	
Applicant (Print Name)	Signature of Applicant
614-266-7629	1055 Saint Paul Place, Cincinnati OH 45202
Telephone Number	Mailing Address of Applicant
b.rosenberg@r2partners.co	b.rosenberg@r2partners.co
Email	Email Address of Applicant
Steve Craven	
Property Owner	Signature of Property Owner
Seller to Buyer	343 Dakota Boulevard, Boulder CO 90304
Relationship of Owner to Applicant	Owner Mailing Address

Type of application: PUD Final Plan

Property description: Vacant land in CVR PUD, Garfield County Parcel Number 212329300194

9 NORTH WILD HORSE FINAL PLAN APPLICATION



DHM DESIGN LANDSCAPE ARCHITECTURE URBAN DESIGN + LAND PLANNING ECOLOGICAL PLANNING

SOPRIS ENGINEERING LLC

Land+Shelter ARCHITECTURE AND PLANNING

ma design

JVAM

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PROJECT NARRATIVE

The following documents constitute the Final Plan Application for Castle Valley Ranch Multi-Family Housing. The Applicant has selected “9 North Wild Horse” as the name of the proposed neighborhood within the Castle Valley Ranch PUD.
The subject Parcel is located in the northeast corner of the Castle Valley Ranch (CVR) PUD subdivision. The property adjoins the Lakota Links golf course (holes 8 and 9, and the maintenance facility) to the east, vacant land to the north (zoned R/L), single family residential and VIX Park to the west, and vacant land to the south (zoned R and M/U1). Access will be via the planned extension of North Wild Horse Drive; utility services will also be via connection to/extension of existing services in North Wild Horse Drive and connection to Tank 3 water storage operating a looped system per existing agreements.

The existing Parcel is approximately 59.1 acres in total. The seller will retain approximately 12.26 acres, making the project development site 47.6 acres, more or less. See the Acreage and Subdivision Schedule for how the Parcel is proposed to be divided.

Existing Conditions
The site generally consists of gently sloping sage, pinon/juniper, and open meadow/pasture. At the northwest corner of the property there is a steep hillside and a natural drainage channel bisects the property from the northeast to the southwest. This drainage is connected to the larger Castle Valley Ranch drainage system, connecting at the north to a detention structure on Lakota subdivision property, and continuing southwest off of the subject property through culverts and open channels to existing conveyances at Castle Valley Boulevard.

A number of natural-surface recreational trails crisscross the site, connecting to trails north, east, and south of the property. Several of these trails are mapped and connected to a trailhead on the property near VIX Park. The property is otherwise undeveloped.

The property is currently designated as “R” (Residential) overlay within the CVR PUD. The approved CVR zone district MF-2 is applied to this project. The Applicant is pursuing MF-2 zoning in order to consolidate the development area, set aside a significant portion of open space, and also reduce the length of public roadway to be maintained by the Town.

The proposed project conforms with the underlying zoning codes, the approved PUD, and the comprehensive plan.

Proposed Development
The proposed residential development includes a mix of 130 townhouse-style and apartment homes clustered within the center/west portion of the property. Of the 130 proposed units, 26 are townhomes in duplex and triplex configurations, and 104 are apartments. For the apartments, 80 are “live/work” residences in (2) two-story and (2) three-story buildings and the remaining 24 apartment residences are “empty nester” units in (2) two-story buildings. The land to the north and south of the development area is designated as developer-retained open space with limited public access. The seller retained portion is located on the east side of the Parcel. Specific priorities/highlights of the development include:
- Increase the range of housing within CVR by providing a variety of rental units, including townhomes and two distinct apartment types
- Cluster development to preserve areas of contiguous open space and provide separation from neighboring properties
- Ensure the site design and road layout are responsive to existing topography, minimizing disturbance to the existing landscape
- Provide public connections to the existing trail network to the north and east of the property
- Provide private walking trails and passive open space for residents

The Plat Map illustrates how the Parcel is to be divided. There are four distinct boundary types proposed:
- Lots 1-3, which encompass residential building lots and private roads and parking
- Parcels 1 & 2 which encompass the private and public access open space
- Street Rights-of-Way to be dedicated to the public
- Lot 4, which is the seller retained land

The proposed public right-of-way and the development area combined account for 15.68 +/-acres, or 33 % of the proposed development site, leaving 31.92 +/- acres, or 67 % of the site as dedicated open space. The 12.26 acre seller retained land is excluded from all development calculations.

Conformity with Castle Valley Ranch PUD
The proposed project conforms with the underlying zoning codes as well as the Castle Valley Ranch PUD.



According to Town Code Section 17.16.30, the “R” zone districts “...are established to accommodate a variety of residential neighborhoods ranging from a low density single-family to a high density multifamily.”

The MF-2 zone district established by the updated master plan for the CVR PUD permits the following land uses*:
- Attached dwelling units with rear yards
- Attached dwelling units in structures containing more than two units
- Parking facilities
- Pedestrian and bicycle trails
- Open space and parks

The development plan includes residential townhome and apartment units, private parking areas, open space, and trails, all conforming uses in the MF-2 district.

**See the Schedule of Permitted Land Uses for Castle Valley Ranch (Town Code Section 17.104.080) for a complete list of allowable uses.*

Consistency with the Comprehensive Plan
The Comprehensive Plan contains guidance for development; the following represent extracted highlights from the Comp Plan, with Applicant responses in italics, below.

Foster distinctive, attractive communities with a strong sense of place and quality of life
The site location provides many opportunities for outdoor recreation, with connections to trail networks, public parks, and open space. Internal to the project, a series of interconnected open space areas encourage community gathering and physical activity. The project is designed to respond to existing site conditions, preserving existing pinon-juniper hillsides, the route of existing drainage channel, and adjacent vegetation as features of the project. The architecture is envisioned as contemporary expressions of the regional verncaular, with outdoor spaces (patios and balconies) connected to common open areas and generous views.

Demonstrate that individual project fits into a fully-balanced community land use structure
The proposed development is consistent with the intent and approvals of the CVR PUD.

Ensure a mix of uses that complement the existing New Castle land-use patterns
As a part of a master-planned development, the proposed development supports the intended land use types and patterns as identified in the Future Land Use Map and approved CVR PUD.

Create walkable communities with non-vehicular interconnection between use areas
The proposed plan integrates with the existing CVR street and sidewalk system, with easy access to the multi-use trail system at VIX Park. Recreational trail connectivity is provided within the project and to existing natural-surface trails to the north, east, and south of the subject property.

Guarantee a balance of housing types that support a range of affordability
The mix of unit type allows for a variety of lifestyle and income demographics.

Preserve open space, farmland, natural beauty, critical environmental areas, and wildlife habitat
The development plan preserves approximately 67% of the site area as open space and largely undisturbed (except for natural-surface, recreational trails); the development is clustered at the lower-elevation portion of the site, limiting impact to off-site views and preserving visual connectivity to public lands to the north.

Encourage economic development and supporting hard and soft infrastructure
The proposed development completes the planned connection of North Wild Horse Drive and advances the comprehensively-planned CVR neighborhood.

Concentrate development in ways which provide efficient and cost-effective services
The clustered plan is sited to connect efficiently to existing infrastructure within the CVR subdivision; the connection to - and completion of - North Wild Horse Drive provides access to the development and increases connectivity within the surrounding neighborhood without adding unnecessarily complex or extensive infrastructure to the existing systems.

The attached technical plans and reports constitute the bulk of the Final Plan application.

PARTIAL EXISTING CONDITIONS AND TOPOGRAPHICAL MAP OF:

A PORTION OF THE 'OPTION PROPERTY', AND BEING SITUATED IN THE SW1/4 OF SECTION 29, SE1/4 OF SECTION 30, THE NE1/4 OF SECTION 31, AND THE NW1/4 OF SECTION 32, TOWNSHIP 5 SOUTH, RANGE 90 WEST OF THE 6TH P.M. TOWN OF NEW CASTLE, COLORADO

PROPERTY DESCRIPTION

A parcel of land being a portion of the 'Option Property', as described in that Quit Claim Deed, recorded September 21, 2009 as Reception No. 775392, and being situated in the SW1/4 of Section 29, SE1/4 of Section 30, the NE1/4 of Section 31, and the NW1/4 of SECTION 32, Township 5 South, Range 90 West of the 6TH P.M., County of Garfield, State of Colorado, said parcel of land being more particularly described as follows:

Beginning at the 1/4 corner, between said sections 29 and 30, a 3.25" brass cap on 2" iron pipe stamped "1/4 S30/29 BLM 1988", thence N 89° 36' 48" E the assumed Basis of Bearings along the southerly line of the 2nd Amended Exemption Plat of Lakota Canyon Ranch, recorded February 4, 2008 as Reception No. 742257, a distance of 1308.59 feet to the Northeast corner of said 'Option Property', being a #5 rebar & 1.25" yellow plastic cap stamped "CLAYCOMB ENG L.S. 3174", said corner being coincidental with Westerly and Southerly lines of Reception No. 742257;

Thence S 00°55'44" E, along Easterly line of said 'Option Property', and the said coincidental Westerly line of Reception No. 742257, a distance of 1002.40 feet, to a point on the Northerly line of that parcel of land described in the Special Warranty Deed, recorded April 15, 2010 as Reception No. 784749;

Thence the following twenty-one (21) courses along the Northerly, Westerly, Easterly and Northerly lines of said Reception No. 784749;

1. N 89°54'27" W a distance of 116.87 feet;
2. S 54°50'38" W a distance of 173.10 feet;
3. S 00°02'34" E a distance of 167.50 feet;
4. S 32°41'48" E a distance of 88.46 feet;
5. S 00°55'44" E a distance of 289.40 feet;
6. S 14°00'12" W a distance of 22.45 feet;
7. S 28°56'08" W a distance of 541.68 feet;
8. 122.69 feet along a curve to the right, having a radius of 219.00 feet, a central angle of 32°05'54", the chord of which bears S 44°59'05" W, a distance of 121.09 feet;
9. 102.92 feet along a non-tangent curve to the left, having a radius of 481.00 feet, a central angle of 12°15'33", the chord of which bears S 54°54'14" W a distance of 102.72 feet;
10. N 51°02'22" W a distance of 247.25 feet;
11. 30.23 feet along a non-tangent curve to the right, having a radius of 275.00 feet, a central angle of 6°17'51", the chord of which bears S 42°06'34" W a distance of 30.21 feet;
12. N 44°48'48" W a distance of 174.82 feet;
13. N 56°40'07" W a distance of 55.13 feet;
14. N 63°30'38" W a distance of 55.33 feet;
15. N 71°43'03" W a distance of 57.57 feet;
16. 104.09 feet along a non-tangent curve to the right, having a radius of 970.00 feet, a central angle of 6°08'54", the chord of which bears N 11°34'51" E a distance of 104.04 feet;
17. N 16°07'55" E a distance of 50.00 feet;
18. N 18°54'59" E a distance of 221.52 feet;
19. N 30°00'58" E a distance of 50.41 feet;
20. N 67°17'36" W a distance of 131.42 feet;
21. 104.00 feet along a curve to the left, having a radius of 250.00 feet, a central angle of 23°50'05", the chord of which bears N 79°12'39" W, a distance of 103.25 feet, to a point on the Northeasterly line of North Wild Horse Road, as described in that Special Warranty Deed recorded September 25, 2007 at Reception No. 733780;

Thence the following four (4) courses along said Northeasterly line of North Wild Horse Road, being situated parallel to and 67.50 feet Northeasterly of the westerly line of said 'Option Property', also a coincidental line with the North Park Parcel recorded April 17, 2007 at Reception No. 721291;

1. 38.30 feet along a non-tangent curve to the left, having a radius of 491.25 feet, a central angle of 4°28'00", the chord of which bears N 04°02'01" W a distance of 38.29 feet;
2. N 06°16'01" W a distance of 314.42 feet;
3. 263.68 feet along a curve to the left, having a radius of 281.25 feet, a central angle of 53°43'01", the chord of which bears N 33°07'31" W, a distance of 254.13 feet;
4. N 59°59'02" W a distance of 338.00 feet, to a point on the westerly line of said 'Option Property';

Thence the following three (3) courses along the westerly lines of said 'Option Property';
1. N 21°44'01" E a distance of 132.03 feet;
2. N 02°06'39" E a distance of 226.38 feet;
3. N 00°23'12" W a distance of 381.09 feet, to a point on the North line of the TO A SW1/4 of Section 30,

Thence S 89°47'18" E along said North line SW1/4 of Section 30, a distance of 308.87 feet,
To the Point of Beginning,
County of Garfield, State of Colorado.

Address:
New Castle Vacant Land, New Castle, Colorado, 81647

GRAPHIC SCALE

150 0 75 150 300 600

(IN U.S. SURVEY FEET)
1 inch = 150 ft.

SURVEYOR'S STATEMENT

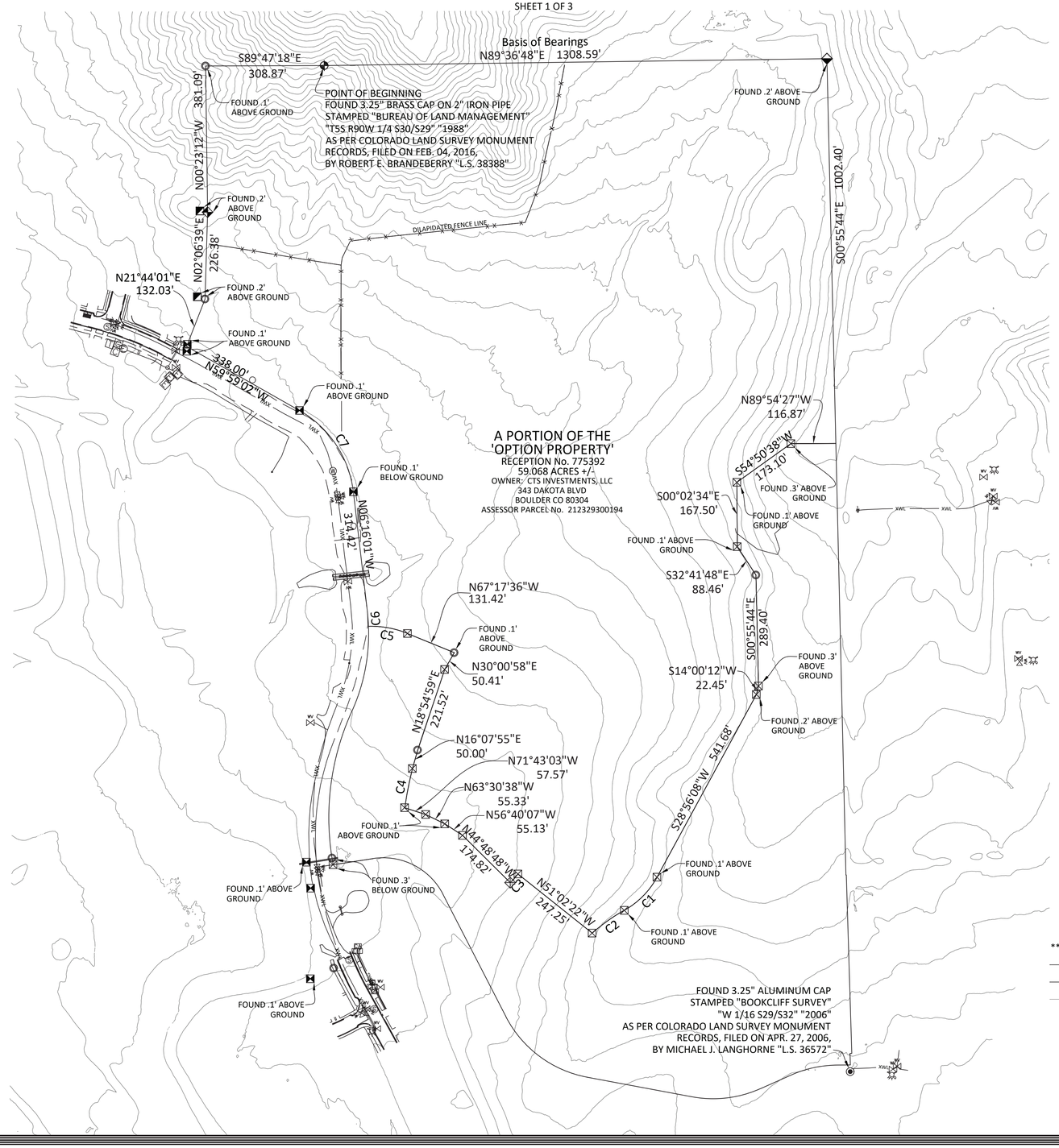
I, Mark S. Beckler, do hereby state that this survey was prepared by Sopris Engineering, LLC for CTS Investments, LLC, A Colorado Limited Liability Company and that it is true and correct to the best of my knowledge and belief.

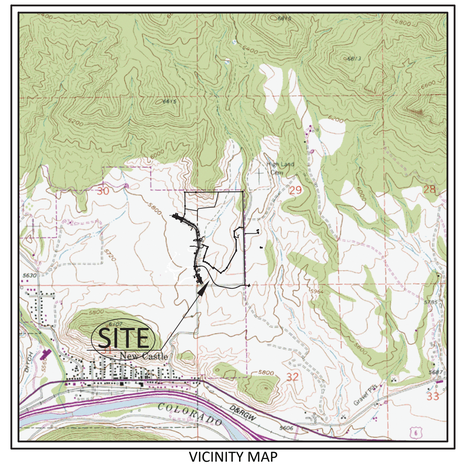
28643

Mark S. Beckler, L.S. No. 28643

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3 • CARBONDALE CO 81623
(970) 704 0311 • soprisengineering.com

NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER 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 CERTIFICATION SHOWN HEREON.





VICINITY MAP
SCALE: 1" = 2000'

SURVEY NOTES

1) Date of Survey: December 5-6 & 18-21, 2023.

2) Date of Preparation: March 6-11, 2024.

3) Linear Units: The linear unit used in the preparation of this plat is the U.S. Survey Foot as defined by the United States Department of Commerce, National Institute of Standards and Technology.

4) Basis of Bearing: Bearings shown hereon are based on an assumed bearing of N89°36'48"E, between found monuments for the 1/4 corner common to said Section 30 and Section 29 being a 3.25" brass cap on 2" iron pipe, stamped "1/4 S30/29 BLM 1988" and the Northeast corner of the option parcel being a #5 rebar & 1.25" yellow plastic cap, stamped "CLAYCOMB ENG L.S. 3174".

5) This survey does not constitute a title search by Sopris Engineering, LLC (SE) to determine ownership or easements of record. No title commitment was used in the preparation of this survey.

6) Basis of elevation: Basis of Elevation: Project based on Global Position System (GPS) observations from the Continuous Operating Reference Station (CORS) GSC1 utilizing the Continental United States 2012 Geoid Model (GEOID 18) CONUS and based the 1988 North American Vertical Datum (NAVD88) and a vertical shift of -4.01 feet as calculated by the North American Vertical Datum Conversion (VERTCON) an online service provided by a subsidy of the National Oceanic Atmospheric Administration (NOAA). This established a site benchmark elevation of 5851.39'. See sheets 2 & 3.

7) Contours shown hereon generated from classified 2016 LiDAR Data aquired through the Colorado Governor's Office of Information Technology, topography based on The North American Vertical Datum of 1988 (NAVD 88); contour interval ten (10') feet.

EXISTING CONDITIONS LEGEND

- CABLE LINE LOCATION
- COMCAST PEDESTAL
- TELEPHONE PEDESTAL
- SEWER MANHOLE
- STORM MANHOLE
- STORM INLET
- ELECTRIC TRANSFORMER
- ELECTRIC RISER
- LIGHT POLE
- EXISTING FIRE HYDRANT
- WATER VALVE
- FOUND BRASS CAP
- FOUND ALUMINUM CAP
- FOUND #5 REBAR
- FOUND #4 REBAR & YELLOW PLASTIC CAP STAMPED "L.S. 13501"
- FOUND #4 REBAR & YELLOW PLASTIC CAP STAMPED "L.S. 3174"
- FOUND #5 REBAR & ORANGE PLASTIC CAP STAMPED "L.S. 36572"
- FOUND #5 REBAR & ORANGE PLASTIC CAP STAMPED "L.S. 38182"
- FOUND #5 REBAR & RED PLASTIC CAP STAMPED "L.S. 20133"
- FOUND #5 REBAR & ORANGE PLASTIC CAP STAMPED "L.S. 28643"

MONUMENTS WERE FOUND FLUSH WITH THE GROUND UNLESS OTHERWISE STATED

- XEL — XEL — UNDERGROUND ELECTRIC
- XWL — XWL — WATER LINE
- X — X — WIRE FENCE

Property Boundary Curve Table

Curve #	Length	Radius	Tangent	Delta	Chord Direction	Chord
C1	122.69'	219.00'	63.00'	32°05'54"	S44° 59' 05"W	121.09'
C2	102.92'	481.00'	51.66'	12°15'33"	S54° 54' 14"W	102.72'
C3	30.23'	275.00'	15.13'	6°17'51"	S42° 06' 34"W	30.21'
C4	104.09'	970.00'	52.09'	6°08'54"	N11° 34' 51"E	104.04'
C5	104.00'	250.00'	52.76'	23°50'05"	N79° 12' 39"W	103.25'
C6	38.30'	491.25'	19.16'	4°28'00"	N04° 02' 01"W	38.29'
C7	263.68'	281.25'	142.43'	53°43'01"	N33° 07' 31"W	254.13'

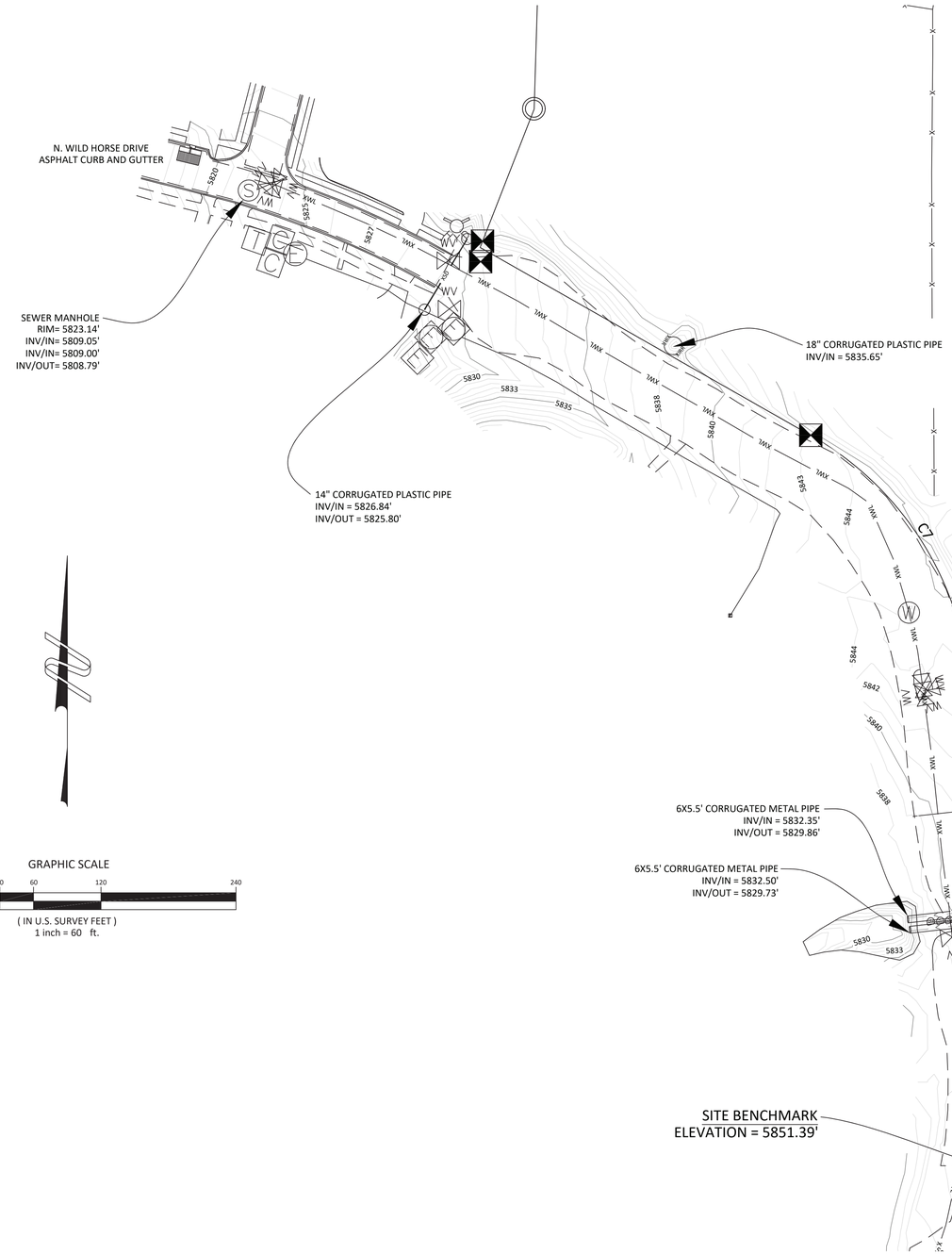
GENERAL UTILITY NOTES:

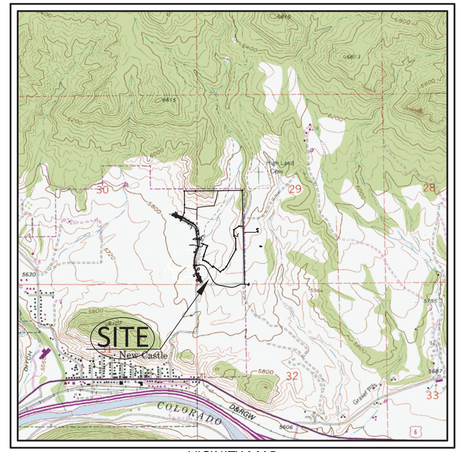
The locations of underground utilities have been plotted based on utility maps, construction/design plans, other information provided by utility companies and actual field locations in some instances. These utilities, as shown, may not represent actual field conditions. It is the responsibility of the contractor to contact all utility companies for field location of utilities prior to construction.

PARTIAL EXISTING CONDITIONS AND TOPOGRAPHICAL MAP OF:

A PORTION OF THE 'OPTION PROPERTY', AND BEING SITUATED IN THE SW1/4 OF SECTION 29, SE1/4 OF SECTION 30, THE NE1/4 OF SECTION 31, AND THE NW1/4 OF SECTION 32, TOWNSHIP 5 SOUTH, RANGE 90 WEST OF THE 6TH P.M. TOWN OF NEW CASTLE, COLORADO

SHEET 2 OF 3





VICINITY MAP
SCALE: 1" = 2000'

SURVEY NOTES

1)Date of Survey: December 5-6 & 18-21, 2023.

2)Date of Preparation: March 6-11, 2024.

3)Linear Units: The linear unit used in the preparation of this plat is the U.S. Survey Foot as defined by the United States Department of Commerce, National Institute of Standards and Technology.

4)Basis of Bearing: Bearings shown hereon are based on an assumed bearing of N89°36'48"E, between found monuments for the 1/4 corner common to said Section 30 and Section 29 being a 3.25" brass cap on 2" iron pipe, stamped "1/4 S30/29 BLM 1988" and the Northeast corner of the option parcel being a #5 rebar & 1.25" yellow plastic cap, stamped "CLAYCOMB ENG L.S. 3174".

5)This survey does not constitute a title search by Sopris Engineering, LLC (SE) to determine ownership or easements of record. No title commitment was used in the preparation of this survey.

6)Basis of elevation: Basis of Elevation: Project based on Global Position System (GPS) observations from the Continuous Operating Reference Station (CORS) GSC1 utilizing the Continental United States 2012 Geoid Model (GEOID 18) CONUS and based the 1988 North American Vertical Datum (NAVD88) and a vertical shift of -4.01 feet as calculated by the North American Vertical Datum Conversion (VERTCON) an online service provided by a subsidy of the National Oceanic Atmospheric Administration (NOAA). This established a site benchmark elevation of 5851.39'. See sheets 2 & 3.

7)Contour interval one (1') foot.

EXISTING CONDITIONS LEGEND

- CABLE LINE LOCATION
- COMCAST PEDESTAL
- TELEPHONE PEDESTAL
- SEWER MANHOLE
- STORM MANHOLE
- STORM INLET
- ELECTRIC TRANSFORMER
- ELECTRIC RISER
- LIGHT POLE
- EXISTING FIRE HYDRANT
- WATER VALVE
- FOUND BRASS CAP
- FOUND ALUMINUM CAP
- FOUND #5 REBAR
- FOUND #4 REBAR & YELLOW PLASTIC CAP STAMPED "L.S. 13501"
- FOUND #4 REBAR & YELLOW PLASTIC CAP STAMPED "L.S. 3174"
- FOUND #5 REBAR & ORANGE PLASTIC CAP STAMPED "L.S. 36572"
- FOUND #5 REBAR & ORANGE PLASTIC CAP STAMPED "L.S. 38182"
- FOUND #5 REBAR & RED PLASTIC CAP STAMPED "L.S. 20133"
- FOUND #5 REBAR & ORANGE PLASTIC CAP STAMPED "L.S. 28643"

MONUMENTS WERE FOUND FLUSH WITH THE GROUND UNLESS OTHERWISE STATED

- UNDERGROUND ELECTRIC
- WATER LINE
- WIRE FENCE

GENERAL UTILITY NOTES:

The locations of underground utilities have been plotted based on utility maps, construction/design plans, other information provided by utility companies and actual field locations in some instances. These utilities, as shown, may not represent actual field conditions. It is the responsibility of the contractor to contact all utility companies for field location of utilities prior to construction.

GRAPHIC SCALE

60 0 30 60 120 240

(IN U.S. SURVEY FEET)
1 inch = 60 ft.

SURVEYOR'S STATEMENT

I, Mark S. Beckler, do hereby state that this survey was prepared by Sopris Engineering, LLC for CTS Investments, LLC, A Colorado Limited Liability Company, and that it is true and correct to the best of my knowledge and belief.

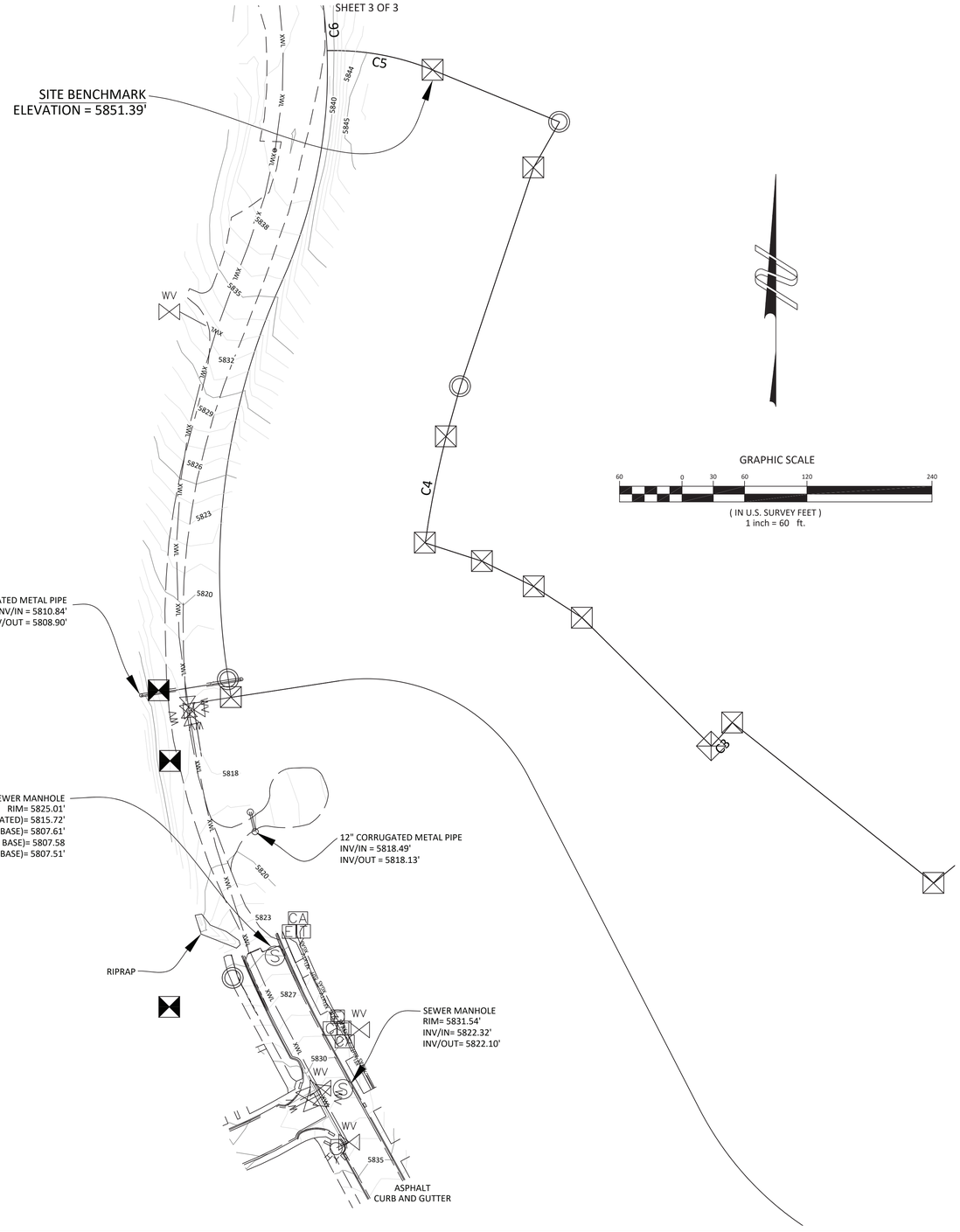
Mark S. Beckler L.S. No. 28643

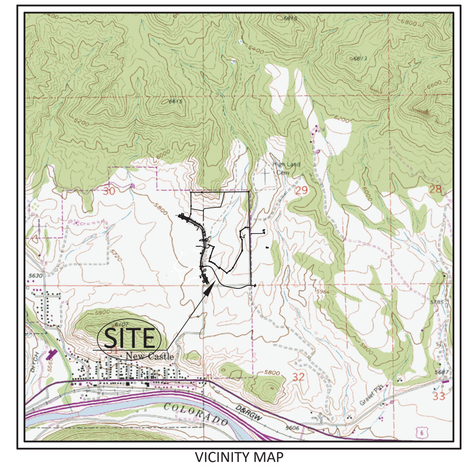
SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3 • CARBONDALE CO 81623
(970) 704 0311 • soprisengineering.com

NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER 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 CERTIFICATION SHOWN HEREON.

PARTIAL EXISTING CONDITIONS AND TOPOGRAPHICAL MAP OF:

A PORTION OF THE 'OPTION PROPERTY', AND BEING SITUATED IN THE SW1/4 OF SECTION 29, SE1/4 OF SECTION 30, THE NE1/4 OF SECTION 31, AND THE NW1/4 OF SECTION 32, TOWNSHIP 5 SOUTH, RANGE 90 WEST OF THE 6TH P.M. TOWN OF NEW CASTLE, COLORADO





VICINITY MAP
SCALE: 1" = 2000'

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(IN U.S. SURVEY FEET)
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7)Contour interval one (1') foot.

EXISTING CONDITIONS LEGEND

- CA — CABLE LINE LOCATION
- C — COMCAST PEDESTAL
- T — TELEPHONE PEDESTAL
- S — SEWER MANHOLE
- W — STORM MANHOLE
- STORM INLET
- E — ELECTRIC TRANSFORMER
- E — ELECTRIC RISER
- LIGHT POLE
- EXISTING FIRE HYDRANT
- WV — WATER VALVE
- FOUND BRASS CAP
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MONUMENTS WERE FOUND FLUSH WITH THE GROUND UNLESS OTHERWISE STATED

- XEL — UNDERGROUND ELECTRIC
- XWL — WATER LINE
- X — WIRE FENCE

GENERAL UTILITY NOTES:

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SURVEYOR'S STATEMENT

I, Mark S. Beckler, do hereby state that this survey was prepared by Sopris Engineering, LLC for CTS Investments, LLC, A Colorado Limited Liability Company and that it is true and correct to the best of my knowledge and belief.

Mark S. Beckler L.S. No. 28643

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3 • CARBONDALE CO 81623
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ILLUSTRATIVE SITE PLAN

LEGEND

1. TOWNHOMES
   10 BUILDINGS - 26 UNITS
2. LIVE/WORK APARTMENTS
   4 BUILDINGS - 80 UNITS
3. EMPTY-NESTERS APARTMENTS
   2 BUILDINGS - 24 UNITS
4. PAVED PATHS & SIDEWALKS
5. GATHERING AND BBQ AREA
6. SOFT SURFACE TRAILS
7. EXISTING TRAILS
8. FIRE ACCESS
9. NORTH WILD HORSE DRIVE EXTENSION
10. VIX PARK
11. LAKOTA PUD
12. FUTURE DEVELOPMENT
13. SELLER RETAINED LAND (WITH NEW LOT LINE: 12.3 ACRES)
14. EXISTING RESIDENTIAL DEVELOPMENT

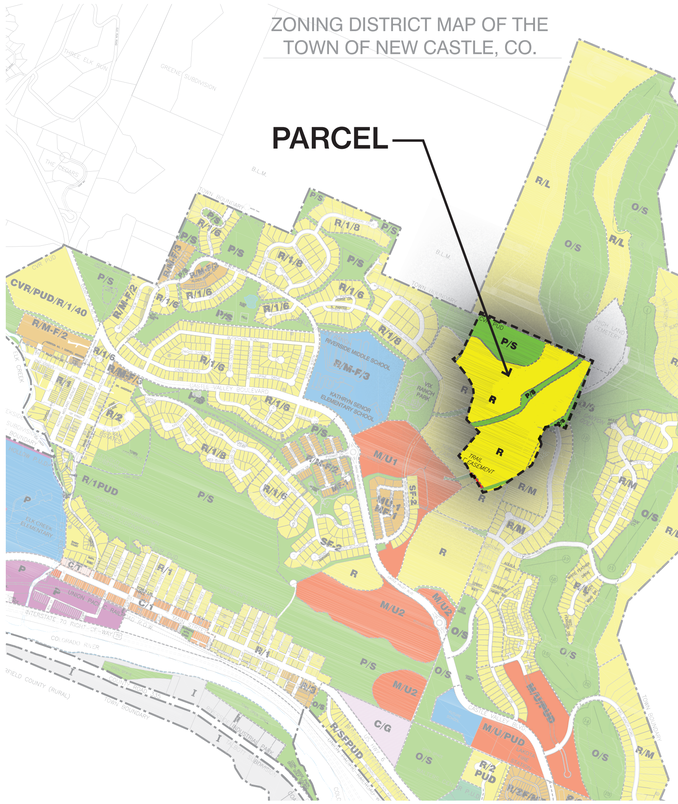


DHM DESIGN
LANDSCAPE ARCHITECTURE
ECOLOGICAL PLANNING
LAND PLANNING + URBAN DESIGN

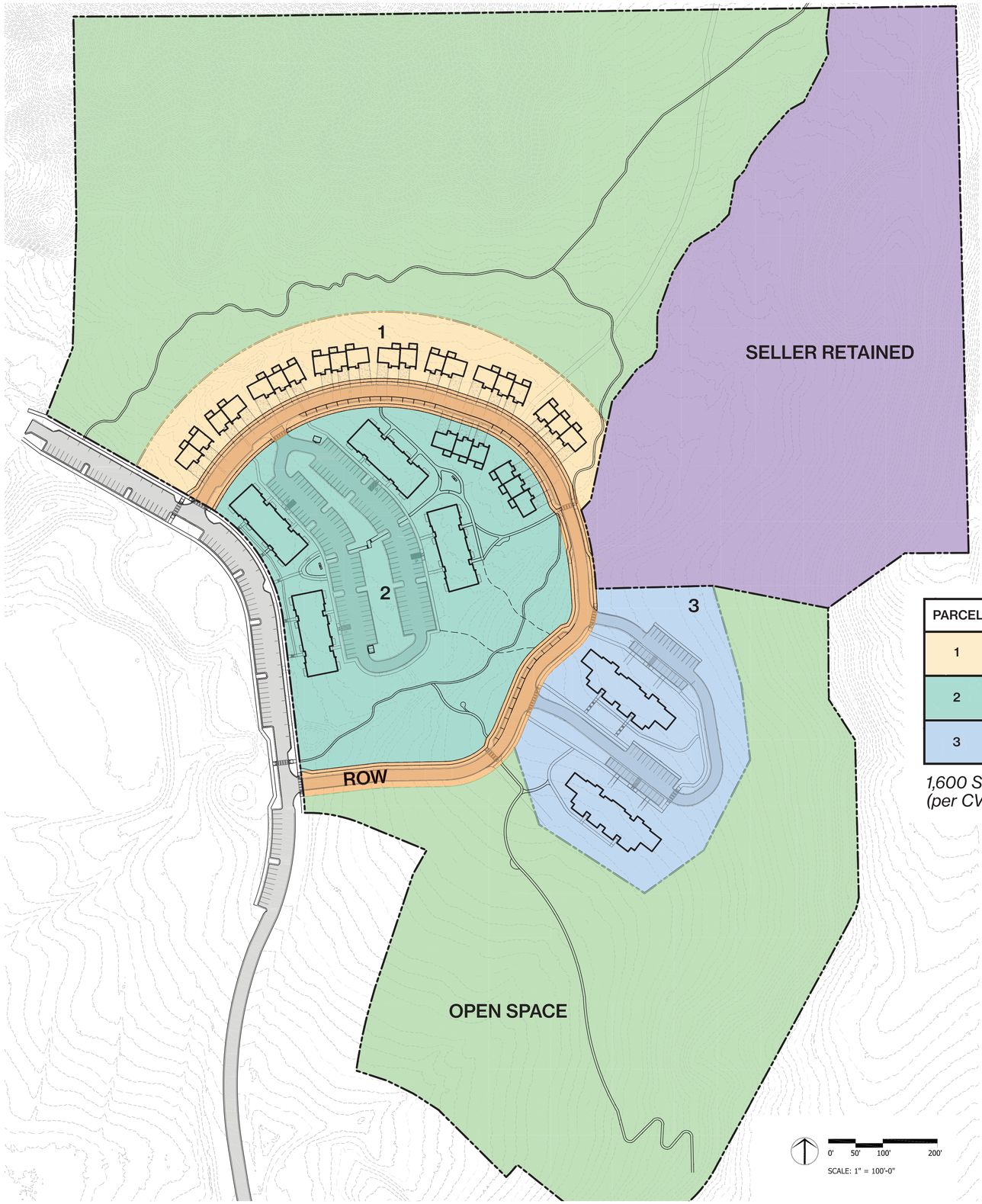
50' 100' 200'

N

PARCEL ZONING: CVR PUD MF-2



DEVELOPMENT SUMMARY:



LEGEND

- PARCEL 1 - 20 UNITS
  114,768 sq ft TOTAL (2.63 ac)
  5,738 sq ft PER UNIT (0.13 ac)
- PARCEL 2 - 86 UNITS
  304,463 sq ft TOTAL (6.99 ac)
  3,540 sq ft PER UNIT (0.08 ac)
- PARCEL 3 - 24 UNITS
  170,239 sq ft TOTAL (3.9 ac)
  7,093 sq ft PER UNIT (0.16 ac)
- ROW PARCEL
  85,607 sq ft TOTAL (1.96 ac)
- PASSIVE OPEN SPACE
  1,365,480 sq ft TOTAL (31.35 ac)

= 46.8 TOTAL DEVELOPMENT ACREAGE

- SELLER RETAINED PARCEL
  534,275 sq ft TOTAL (12.27 ac)

= 59.1 TOTAL PARCEL ACREAGE

**SELLER RETAINED LOT LINE TO BE ADJUSTED AT FINAL PLAN SUBMITTAL. UPDATED LOT LINE TO INCLUDE MAIN DRAINAGE. RESULTING ACREAGE OF SELLER RETAINED LOT TO BE 12.3 ACRES.

PARCEL	AREA (in s.f.)	# OF UNITS	DENSITY (dwelling unit per acre)
1	114,768 SF	20	+/- 7.6
2	305,681 SF	86	+/- 12.3
3	170,239 SF	24	+/- 6.2

1,600 SF lot area per unit (27.2 du/ac) max density (per CVR MF-2 Zone District)

PARKING SUMMARY:

Parking:

required	proposed
'general parking' buildings 1-4 units = 2 spaces/du buildings 5+ units = 1.5 spaces/du required total: 208 spaces *per code 17.104.100*	
'seasonal + recreational vehicle parking' (1) space for every 5 units of 5-plex or greater required: 21 *per code 17.104.100*	TOTAL PROPOSED SPACES: 282 (including garage, off-street, driveway)
TOTAL REQUIRED SPACES: 229	

TOTAL PARALLEL PARKING PROPOSED WITHIN VISTA LOOP ROAD ROW = 31 SPACES

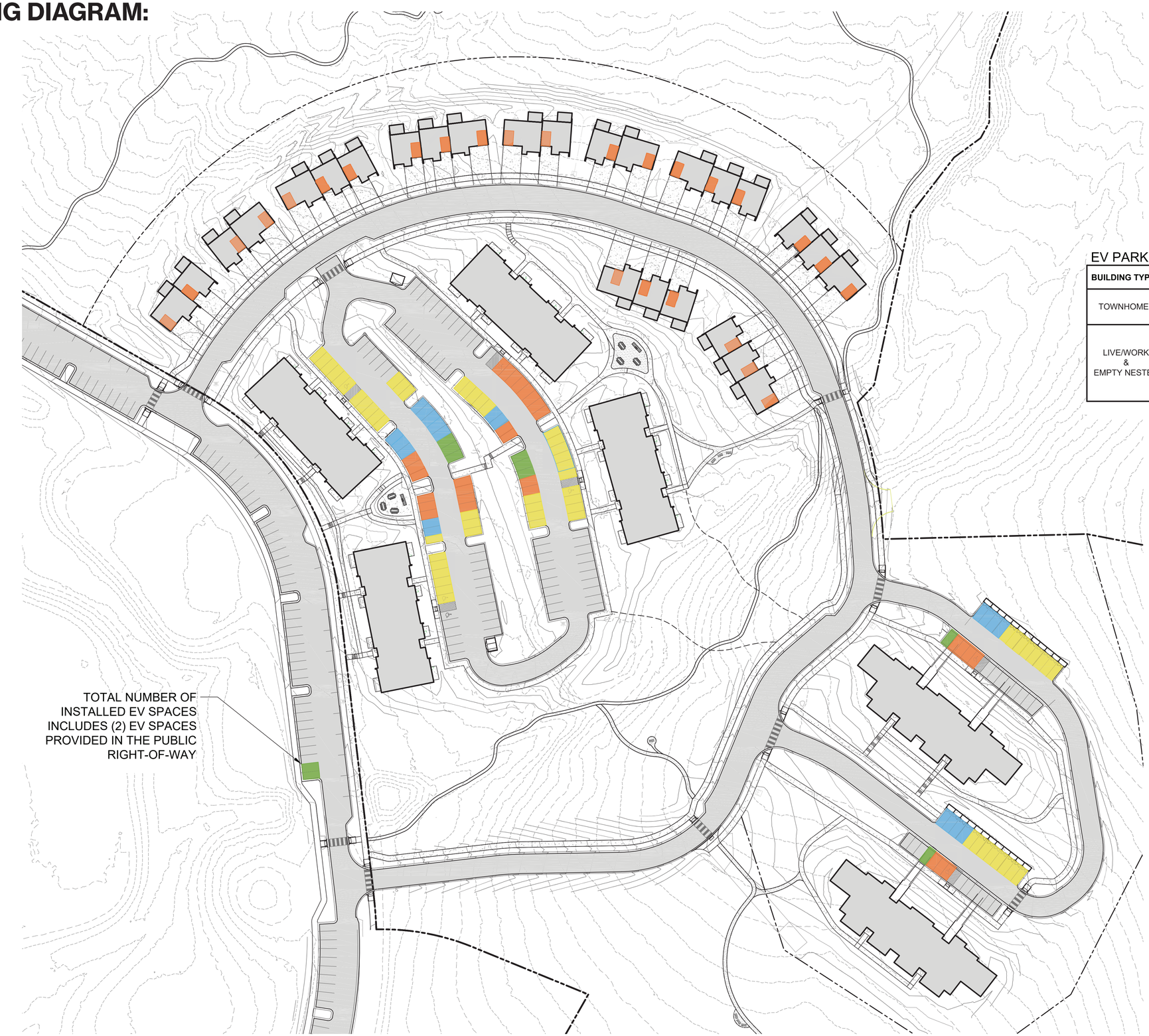
TOTAL PARKING PROPOSED WITHIN NORTH WILD HORSE ROW = 115 SPACES

TOTAL ADDED PARKING (development off-street + development on-street + N Wild Horse on-street - existing N Wild Horse on-street) = **361 NET SPACES**

PARKING BY BUILDING TYPE:



EV PARKING DIAGRAM:



LEGEND

- EV INSTALLED SPACES
  5% of parking spaces (10 TOTAL)
- EV READY SPACES
  15% of parking spaces (30 TOTAL)
- EV CAPABLE SPACES
  10% of parking spaces (26 TOTAL)
- EV CAPABLE LIGHT SPACES
  30% of parking spaces (59 TOTAL)

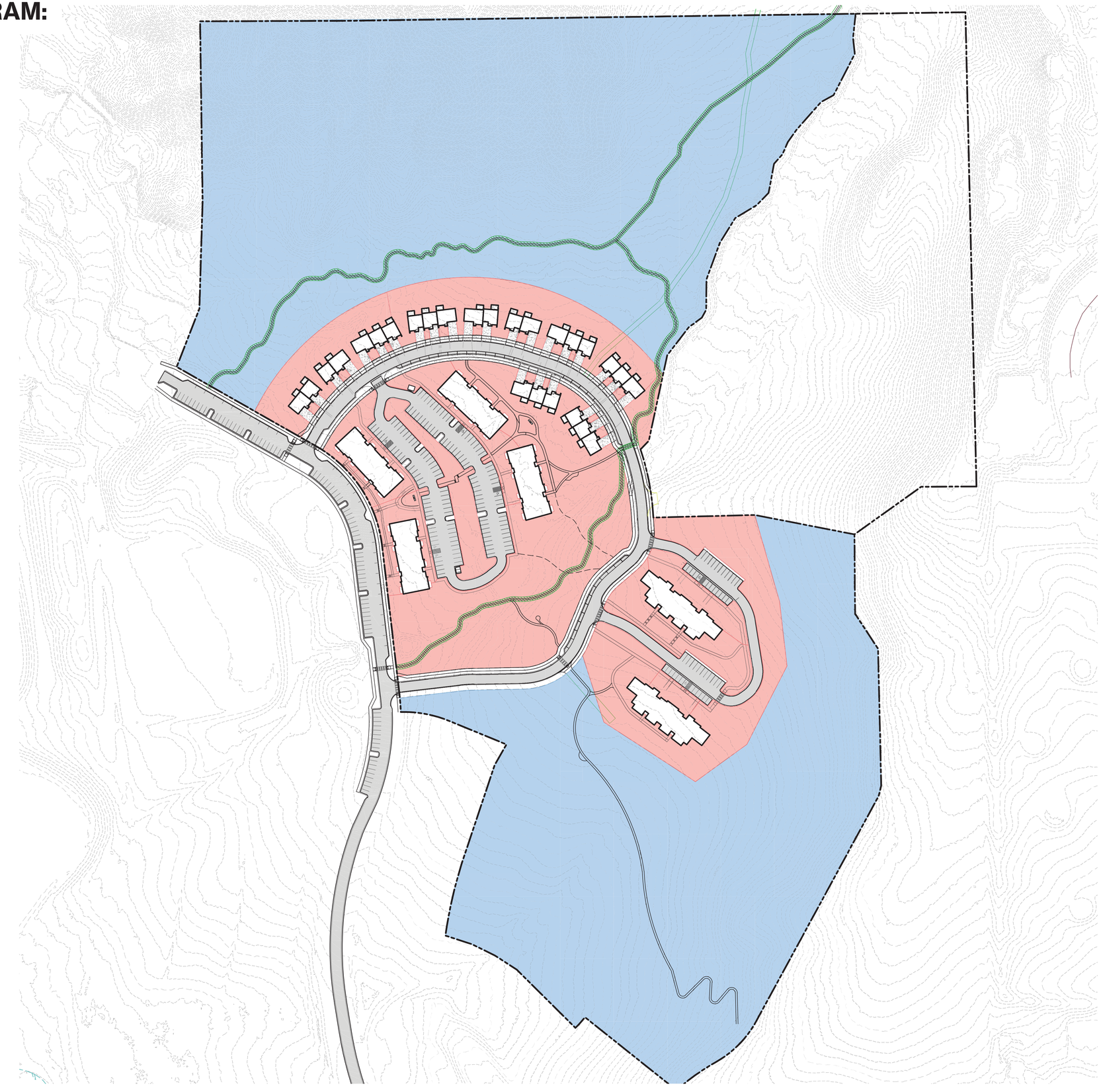
EV PARKING SPACE TABLE

BUILDING TYPE	PARKING SPACES PROVIDED	STATE EV CODE REQUIREMENT	EV SPACES REQUIRED	EV SPACES PROVIDED
TOWNHOMES	N/A (26 UNITS)	1 EV READY SPACE PER UNIT	26 (ALL EV READY)	26 (ALL EV READY)
LIVE/WORK & EMPTY NESTER	194	R-2 OCCUPANCIES WITH >10 PARKING SPACES: EV INSTALLED = 5% EV READY = 15% EV CAPABLE = 10% EV CAPABLE LIGHT = 30%	10 INSTALLED 29 READY 20 CAPABLE 59 LIGHT	10 INSTALLED 29 READY 20 CAPABLE 59 LIGHT

0' 25' 50' 100'

SCALE: 1" = 50'-0"

OPEN SPACE DIAGRAM:



LEGEND

PASSIVE OPEN SPACE
OWNED BY HOA / CIC
1,365,480 sq ft (31.3 acres) TOTAL

DEVELOPMENT OPEN SPACE
OWNED BY HOA / CIC
405,761 sq ft (9.3 acres) TOTAL

PUBLIC ACCESS TRAIL EASEMENT

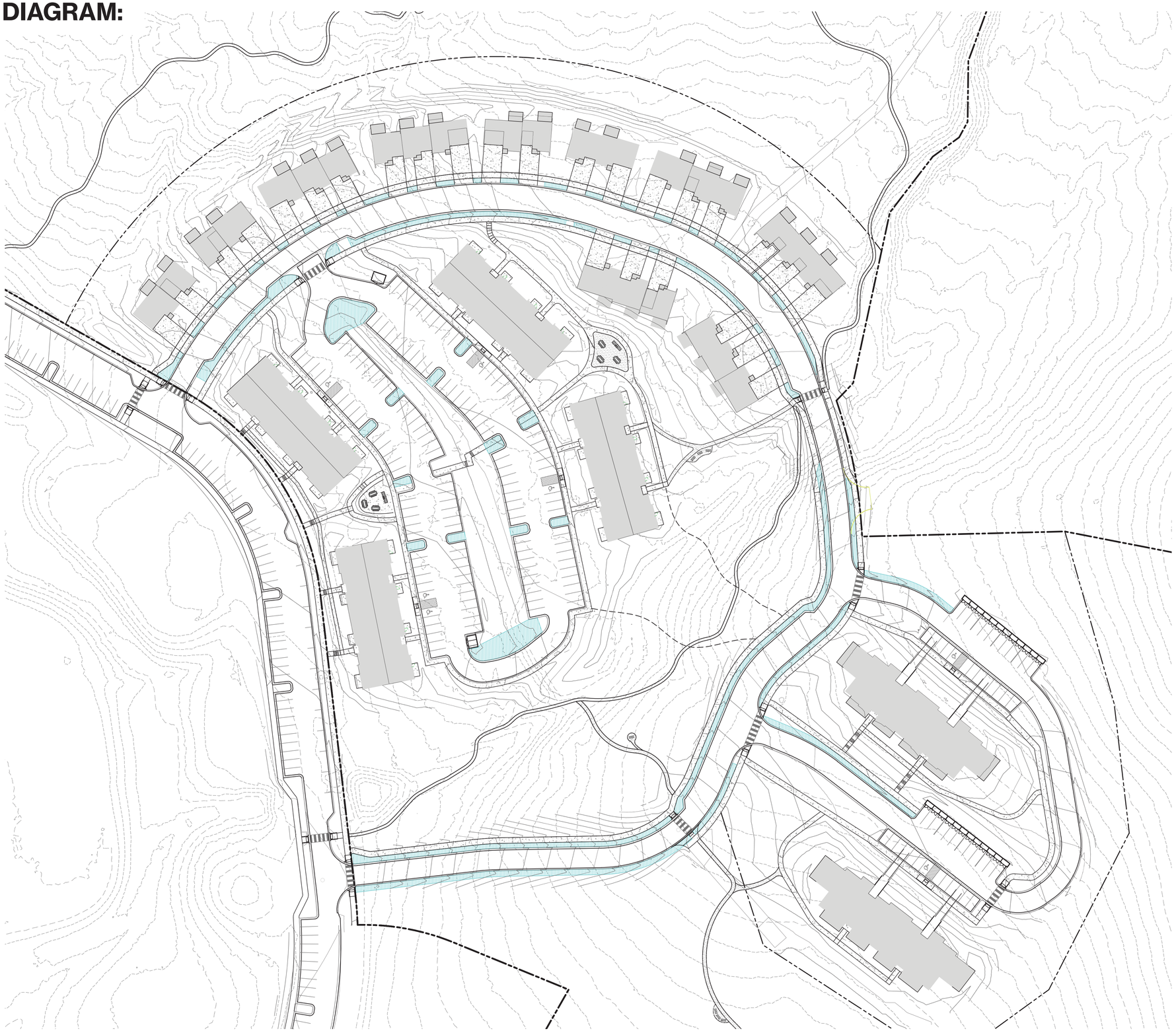
NOTES

1. PASSIVE OPEN SPACE TO INCLUDE UNDISTURBED ACREAGE AND TRAILS OUTSIDE OF THE AREA OF DEVELOPMENT. PUBLIC ACCESS EASEMENTS TO BE DEFINED FOR TRAIL USAGE.
2. DEVELOPMENT OPEN SPACE TO INCLUDE OPEN SPACE SUCH AS LAWNS, LANDSCAPED AREAS, NATURAL AREAS, RECREATION AREAS AND TRAILS WITHIN THE AREA OF DEVELOPMENT. DEVELOPMENT OPEN SPACE MAY INCLUDE TRAIL EASEMENTS FOR PUBLIC USE.

0' 50' 100' 200'

SCALE: 1" = 100'-0"

SNOW STORAGE DIAGRAM:



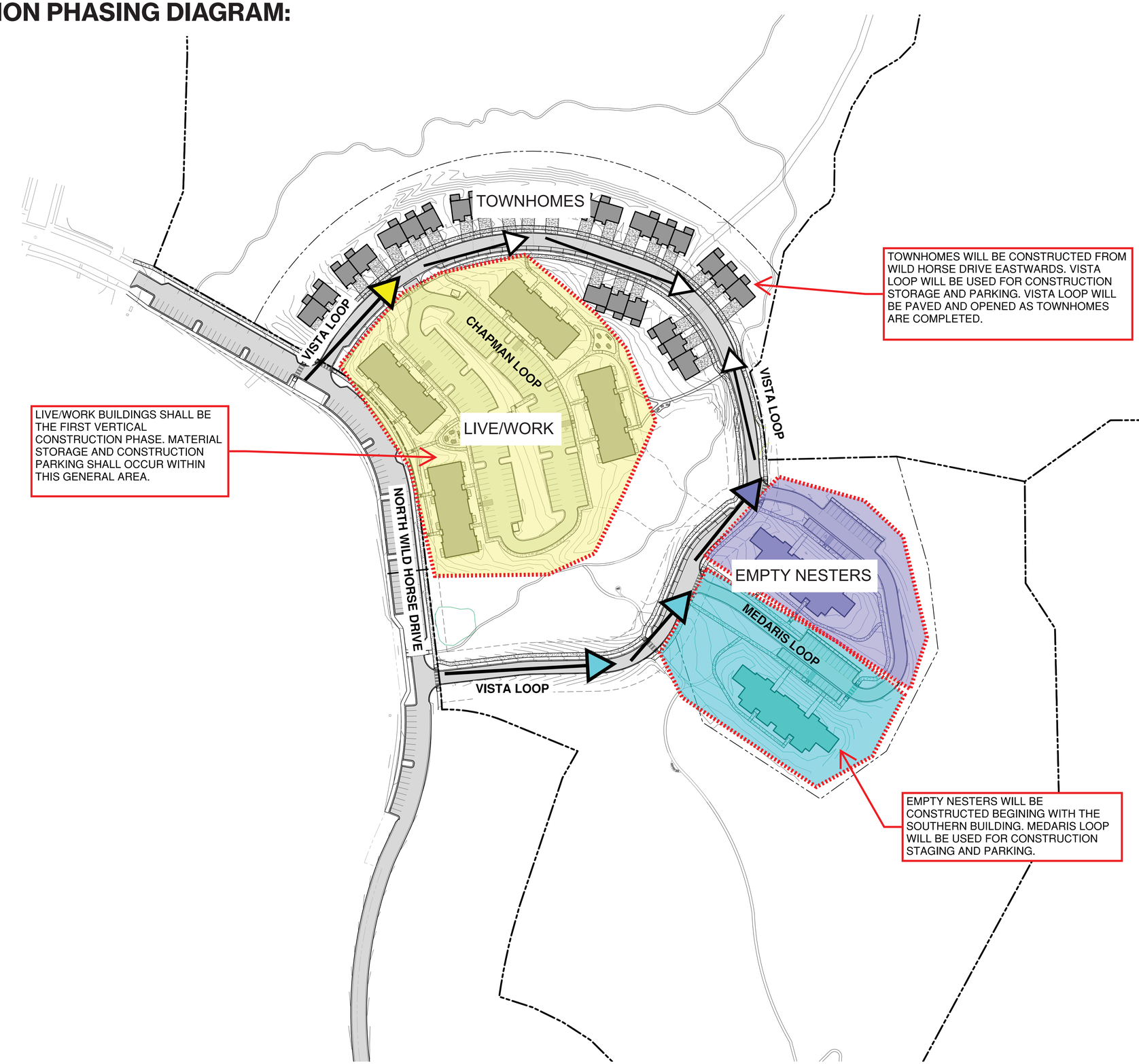
LEGEND

SNOW STORAGE AREAS
TOTAL SNOW STORAGE = 19,693 SQ FT
17.8% OF TOTAL ROADWAY AREA

0' 25' 50' 100'

SCALE: 1" = 50'-0"

CONSTRUCTION PHASING DIAGRAM:



CONSTRUCTION PHASING NOTES

It is envisioned that construction shall proceed in a continuous phase, generally from west to east. Sequenced as follows:

1. Vista Loop rough grading.
2. Installation of site utilities.
3. Construction of Live/Work buildings, Chapman Loop and parking; Vista Loop paving and sidewalks to Chapman intersection.
4. Construction of North Wild Horse Drive and parking.
5. Construction of Empty Nester buildings beginning with the southern building. Vista Loop paving and sidewalks to Medaris Loop.
6. Townhomes shall be constructed from west to east along Vista Loop.
7. Paving, sidewalks and opening of Vista Loop as townhomes are completed.
8. Landscaping and irrigation shall be installed seasonally as buildings are completed.

GENERAL NOTES

1. Contractor shall perform dust control measures throughout construction. These measures shall comply with the dust suppression specifications in the Town of New Castle Public Works Manual, Section 2150.
2. Contractor shall maintain temporary erosion controls throughout construction per Civil Engineer's drawings.
3. Contractor shall suppress weed growth throughout construction.
4. Areas to be seeded temporarily for erosion control or dust suppression during construction shall utilize the "Transitional" or "Native" seed mixes shown on the Landscape Plans. Contractor shall not use any other seed mixes without approval from project Landscape Architect.
5. Temporary emergency access routes shall be maintained as required by the Fire Department throughout construction.

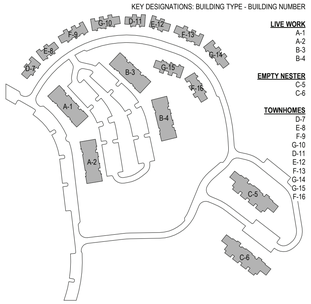
0' 40' 80' 160'

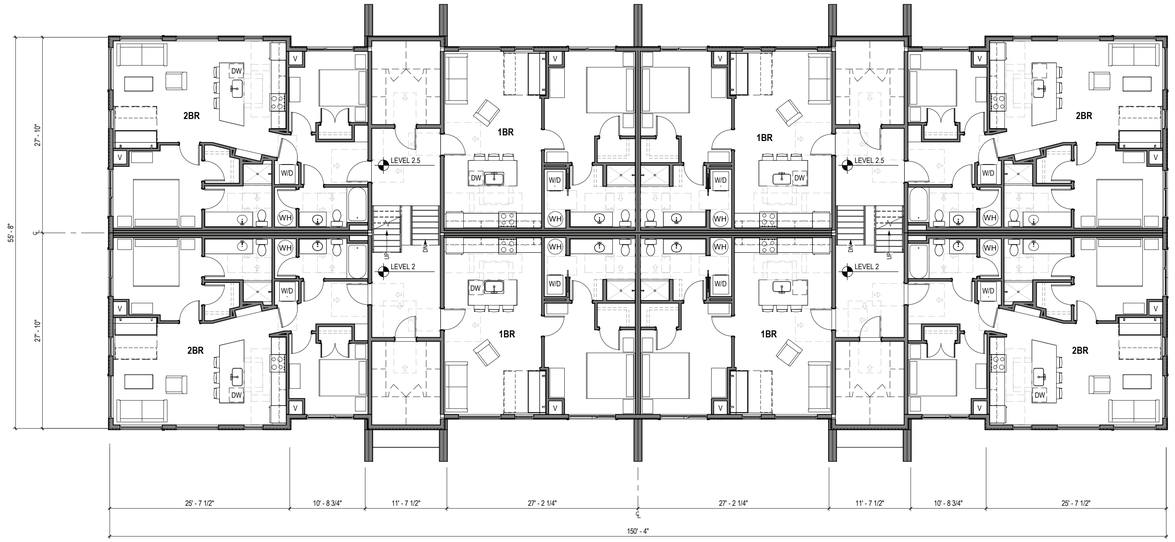
SCALE: 1" = 80'-0"

UNIT MIX SUMMARY

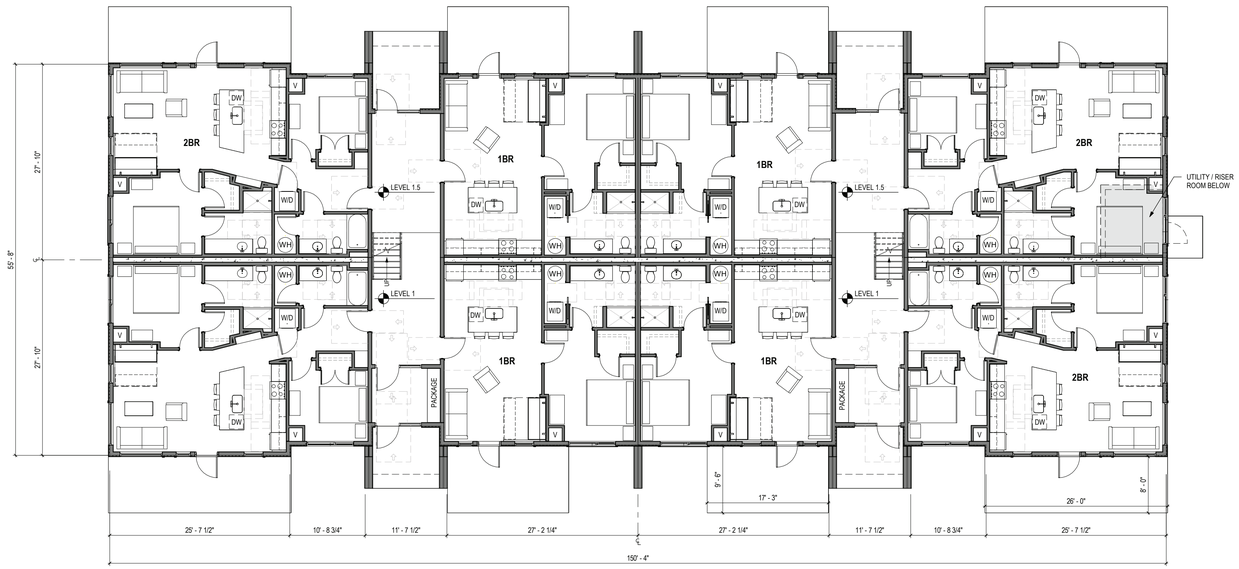
Building Type:	Number of Buildings:	Total Units:	Units/building:	Bedrooms/unit:
Live/Work	4	80	16 or 24	1-2
Empty Nester	2	24	12	1-2
Townhouse	10	26	2-3	3
Totals:	15	130		238







live work - 2 & 2.5 floor plan
NOT TO SCALE



live work - 1 & 1.5 floor plan
NOT TO SCALE

ma design
1410 Race Street
Cincinnati, OH 45202
p 513 407 8260
www.designwithma.com

NEW CASTLE RESIDENTIAL - LIVE WORK

9 NORTH WILDHORSE DRIVE | NEW CASTLE, CO 81647 |

STATUS:

PRELIMINARY
NOT FOR CONSTRUCTION

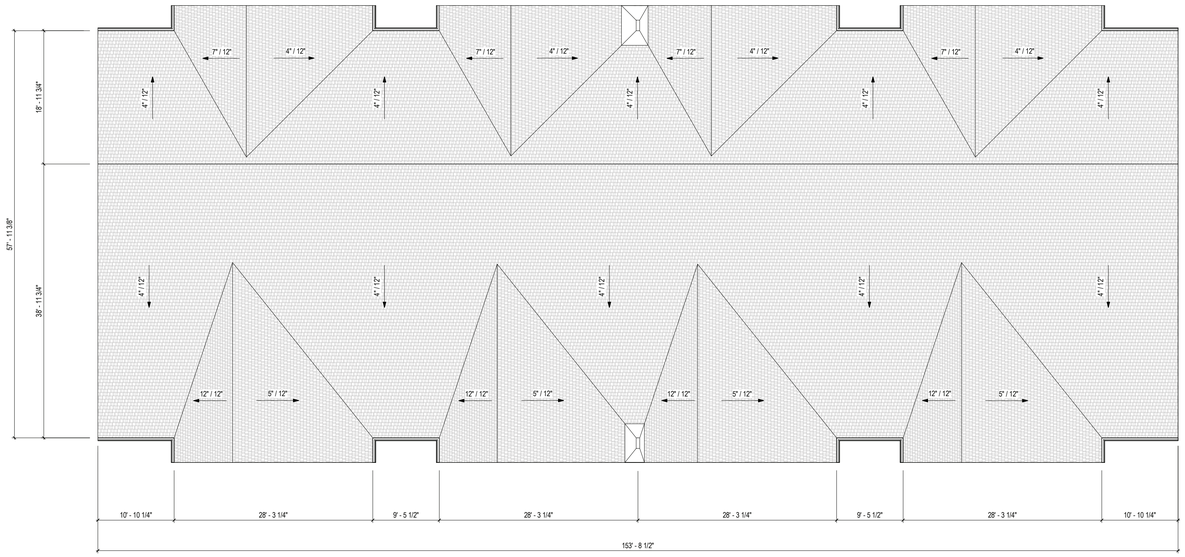
REVISION:

PROJECT NUMBER:
23192

DATE:
13 SEPTEMBER 2024

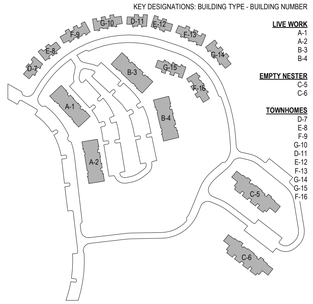
SHEET NAME:
LIVE/WORK BLDG 4 - FLOOR PLANS

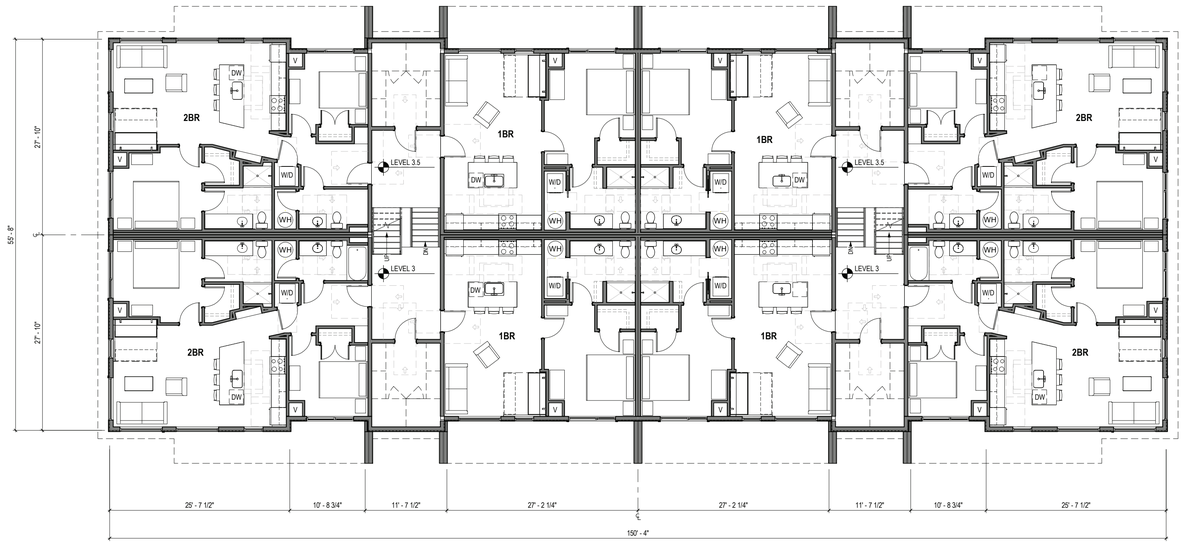
SHEET NUMBER:
A2.0



live/work 4 - Roof Plan

NOT TO SCALE





live work - 3 & 3.5 floor plan

NOT TO SCALE

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NEW CASTLE RESIDENTIAL - LIVE WORK

9 NORTH WILDHORSE DRIVE | NEW CASTLE, CO 81647 |

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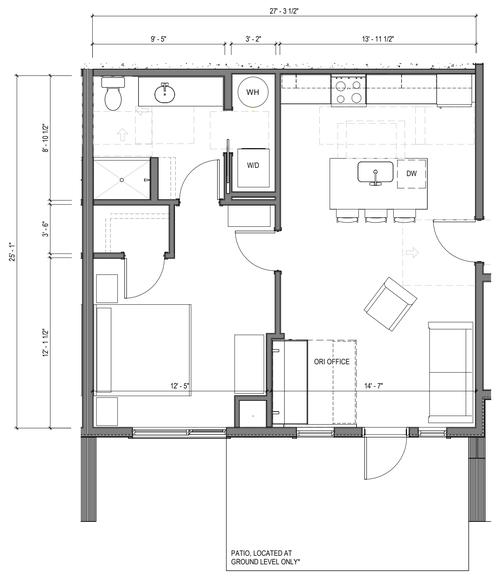
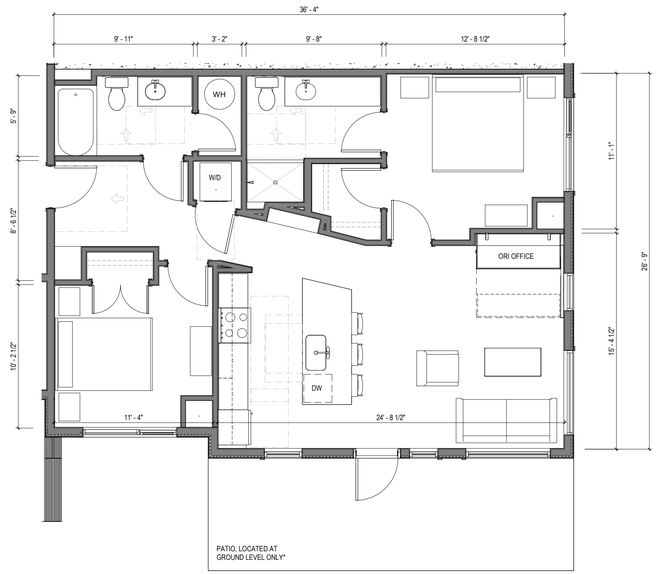
A2.1



live / work 1 bed unit - 680 SF

NOT TO SCALE



live / work 2 bed unit - 960 SF

NOT TO SCALE

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Cincinnati, OH 45202
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NEW CASTLE RESIDENTIAL - LIVE WORK

9 NORTH WILDHORSE DRIVE | NEW CASTLE, CO 81647 |

STATUS:

PRELIMINARY
NOT FOR CONSTRUCTION

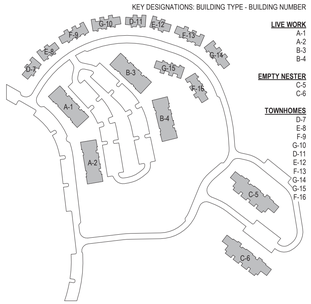
REVISION:

PROJECT NUMBER:
23192

DATE:
13 SEPTEMBER 2024

SHEET NAME:
LIVE/WORK - UNIT PLANS

SHEET NUMBER:
A2.2



COLOR LEGEND

Natural Linen	Secret Garden
Woven Wicker	Tricorn Black (Accents)
Clary Sage	Truepenny / Trinket (Accents)

*Or Equivalent Tone

MATERIAL LEGEND

ELEVATION

NATURAL FIBER CEMENT BOARD SIDING

TO BE MINIMUM 1 HR RATED OR AS APPROVED AS NON COMBUSTIBLE MATERIAL



FIBER CEMENT SHIPLAP SOFFIT

TO BE MINIMUM 1 HR RATED



ASPHALT SHINGLE ROOFING

TO BE MINIMUM CLASS A RATED



NATURAL FIBER CEMENT BOARD SIDING (UNPAINTED)

TO BE MINIMUM 1 HR RATED OR AS APPROVED AS NON COMBUSTIBLE MATERIAL



FIRE TREATED WOOD ACCENTS

TO BE MINIMUM 1 HR RATED TO MEET THE REQ. OF SECTION 2303.2 OF IBC



FIBER CEMENT SOFFIT

TO BE MINIMUM 1 HR RATED



PAINTED FIBER CEMENT BOARD SIDING

TO BE MINIMUM 1 HR RATED OR AS APPROVED AS NON COMBUSTIBLE MATERIAL



METAL ROOFING

TO BE MINIMUM CLASS A RATED



WINDOWS

TO BE TEMPERED





live work 3-story - left elevation

NOT TO SCALE



live work 3-story - rear elevation

NOT TO SCALE



live work 3-story - right elevation

NOT TO SCALE



live work 3-story - front elevation

NOT TO SCALE

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Cincinnati, OH 45202
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NEW CASTLE RESIDENTIAL - LIVE WORK

9 NORTH WILDHORSE DRIVE | NEW CASTLE, CO 81647 |

STATUS:

PRELIMINARY
NOT FOR CONSTRUCTION

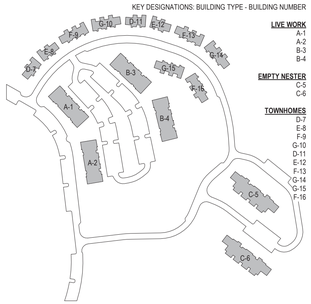
REVISION:

PROJECT NUMBER:
23192

DATE:
31 OCTOBER 2024

SHEET NAME:
LIVE WORK 3-STORY - BUILDING ELEVATIONS

SHEET NUMBER:
A2.3



COLOR LEGEND

- Natural Linen
- Secret Garden
- Woven Wicker
- Tricorn Black (Accents)
- Clary Sage
- Truepenny / Trinket (Accents)

*Or Equivalent Tone

MATERIAL LEGEND

ELEVATION

NATURAL FIBER CEMENT BOARD SIDING

TO BE MINIMUM 1 HR RATED OR AS APPROVED AS NON COMBUSTIBLE MATERIAL



FIBER CEMENT SHIPLAP SOFFIT

TO BE MINIMUM 1 HR RATED



ASPHALT SHINGLE ROOFING

TO BE MINIMUM CLASS A RATED



NATURAL FIBER CEMENT BOARD SIDING (UNPAINTED)

TO BE MINIMUM 1 HR RATED OR AS APPROVED AS NON COMBUSTIBLE MATERIAL



FIRE TREATED WOOD ACCENTS

TO BE MINIMUM 1 HR RATED TO MEET THE REQ. OF SECTION 2303.2 OF IBC



FIBER CEMENT SOFFIT

TO BE MINIMUM 1 HR RATED



PAINTED FIBER CEMENT BOARD SIDING

TO BE MINIMUM 1 HR RATED OR AS APPROVED AS NON COMBUSTIBLE MATERIAL



METAL ROOFING

TO BE MINIMUM CLASS A RATED



WINDOWS

TO BE TEMPERED





live work 2-story - left elevation

NOT TO SCALE



live work 2-story - rear elevation

NOT TO SCALE



live work 2-story - right elevation

NOT TO SCALE



live work 2-story - front elevation

NOT TO SCALE

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NEW CASTLE RESIDENTIAL - LIVE WORK

9 NORTH WILDHORSE DRIVE | NEW CASTLE, CO 81647 |

STATUS:

PRELIMINARY
NOT FOR CONSTRUCTION

REVISION:

PROJECT NUMBER:
23192

DATE:
31 OCTOBER 2024

SHEET NAME:
LIVE WORK 2 -STORY - BUILDING ELEVATIONS

SHEET NUMBER:
A2.4



lw4 - 3d view looking se



lw4 - 3d view looking ne

lw4 - 3d view looking nw

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STATUS:

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NOT FOR CONSTRUCTION

REVISION:

PROJECT NUMBER:
23192

DATE:
13 SEPTEMBER 2024

SHEET NAME:
LIVE/WORK BLDG 4 - 3D VIEWS

SHEET NUMBER:
A2.5



lw1 - 3d view looking se



lw1 - 3d view looking nw



lw1 -3d view looking ne

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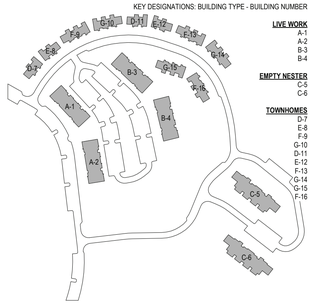
REVISION:

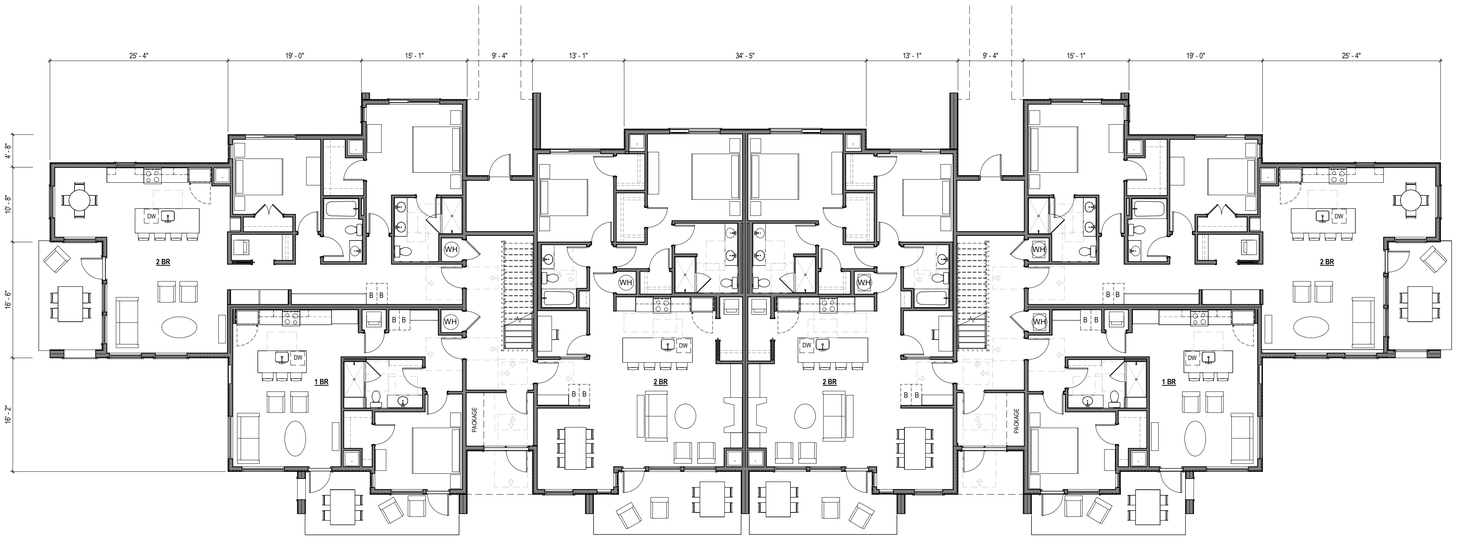
PROJECT NUMBER:
23192

DATE:
13 SEPTEMBER 2024

SHEET NAME:
LIVE/WORK BLDG 1 - 3D VIEWS

SHEET NUMBER:
A2.6





empty nester - floor 1

NOT TO SCALE

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NEW CASTLE RESIDENTIAL - EMPTY NESTER

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STATUS:

PRELIMINARY
NOT FOR CONSTRUCTION

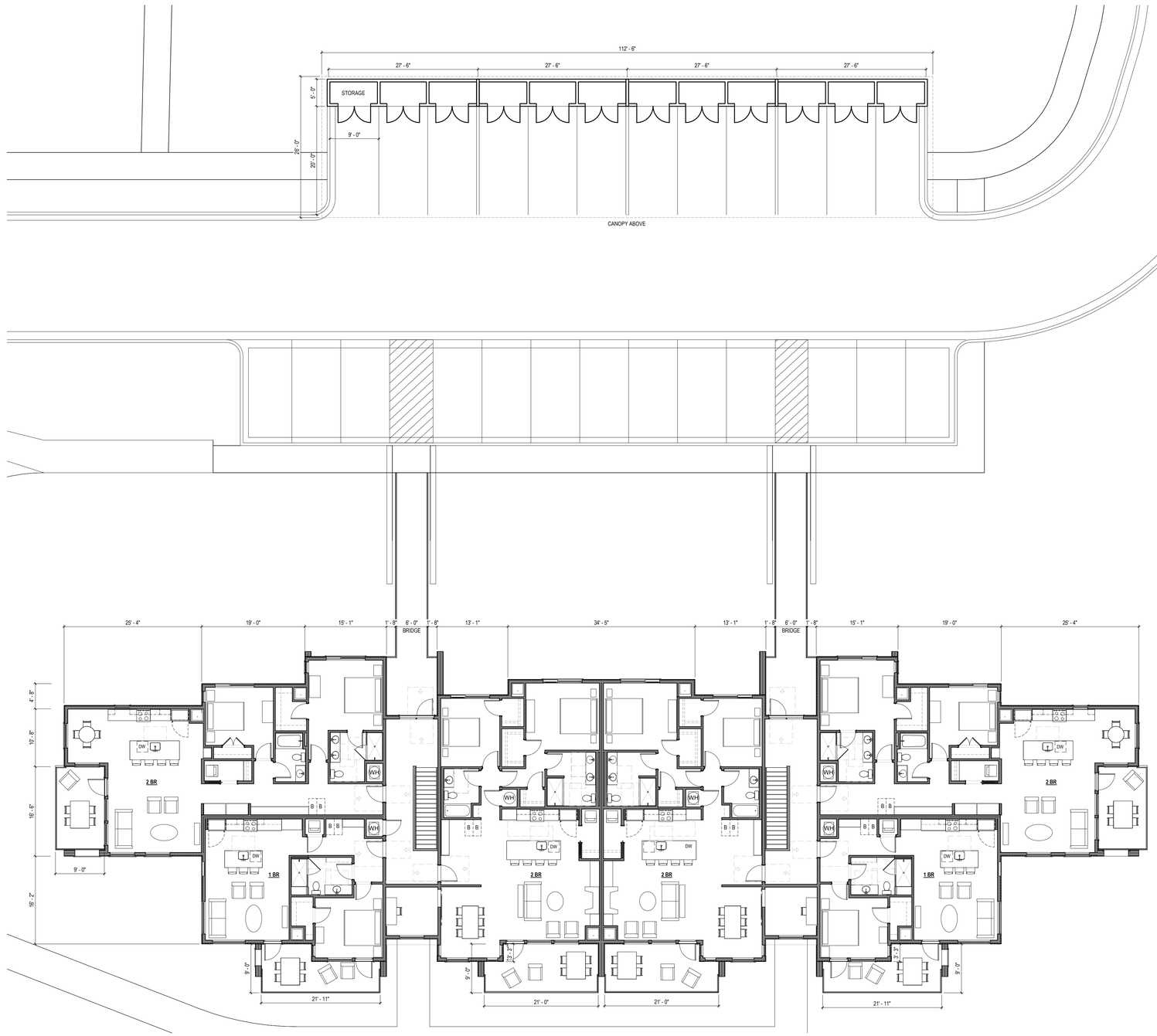
REVISION:

PROJECT NUMBER:
23192

DATE:
13 SEPTEMBER 2024

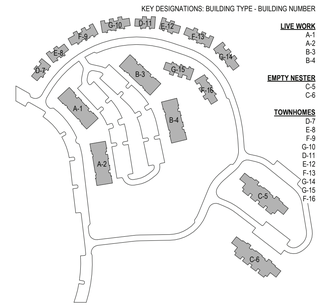
SHEET NAME:
EMPTY NESTER BLDG 2 - FLOOR PLANS

SHEET NUMBER:
A3.0



empty nester - floor 2

NOT TO SCALE



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9 NORTH WILDHORSE DRIVE | NEW CASTLE, CO 81647 |

STATUS:

PRELIMINARY
NOT FOR CONSTRUCTION

REVISION:

PROJECT NUMBER:
23192

DATE:
13 SEPTEMBER 2024

SHEET NAME:
EMPTY NESTER BLDG 2 - FLOOR PLANS

SHEET NUMBER:
A3.1

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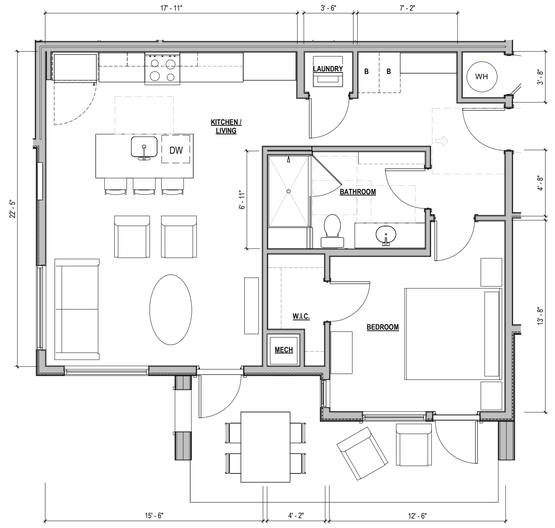
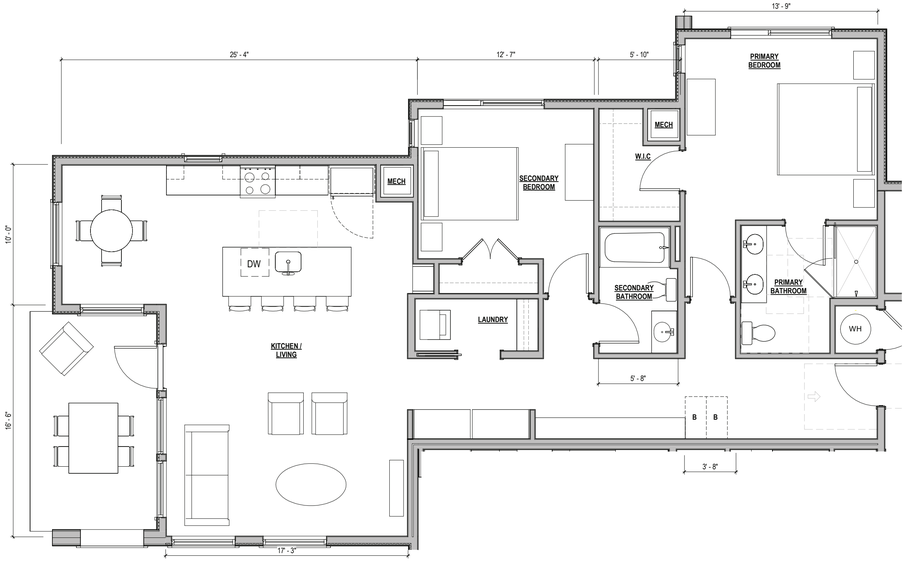


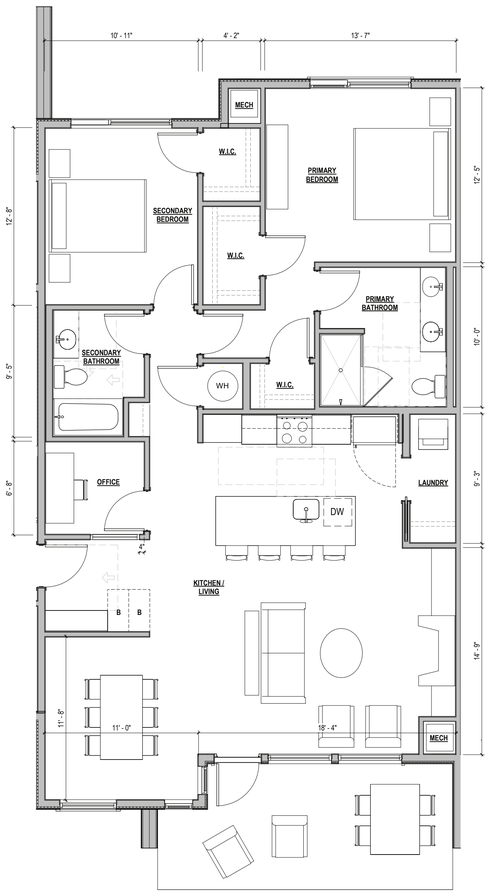
EN - 1 Bed Unit - 770 SF

NOT TO SCALE



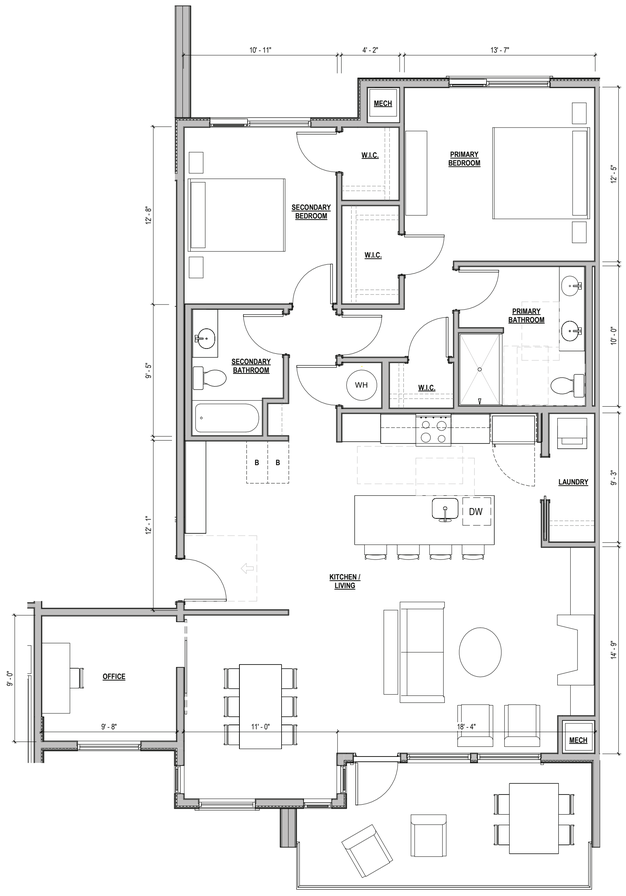
EN - 2 Bed Corner Unit - 1375 SF

NOT TO SCALE



EN - 2 Bed Unit - 1380 SF

NOT TO SCALE



EN - 2 Bed Unit 2nd Floor - 1470 SF

NOT TO SCALE

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9 NORTH WILDHORSE DRIVE | NEW CASTLE, CO 81647 |

STATUS:

PRELIMINARY
NOT FOR CONSTRUCTION

REVISION:

PROJECT NUMBER:
23192

DATE:
13 SEPTEMBER 2024

SHEET NAME:
EMPTY NESTER - UNIT PLANS

SHEET NUMBER:
A3.2



EN2 - LEFT ELEVATION

NOT TO SCALE



EN2 - RIGHT ELEVATION

NOT TO SCALE

MATERIAL LEGEND

ELEVATION

NATURAL FIBER CEMENT BOARD SIDING

TO BE MINIMUM 1 HR RATED OR AS APPROVED AS NON COMBUSTIBLE MATERIAL



FIBER CEMENT SHIPLAP SOFFIT

TO BE MINIMUM 1 HR RATED



ASPHALT SHINGLE ROOFING

TO BE MINIMUM CLASS A RATED



NATURAL FIBER CEMENT BOARD SIDING (UNPAINTED)

TO BE MINIMUM 1 HR RATED OR AS APPROVED AS NON COMBUSTIBLE MATERIAL



FIRE TREATED WOOD ACCENTS

TO BE MINIMUM 1 HR RATED TO MEET THE REQ. OF SECTION 2303.2 OF IBC



FIBER CEMENT SOFFIT

TO BE MINIMUM 1 HR RATED



PAINTED FIBER CEMENT BOARD SIDING

TO BE MINIMUM 1 HR RATED OR AS APPROVED AS NON COMBUSTIBLE MATERIAL



METAL ROOFING

TO BE MINIMUM CLASS A RATED



WINDOWS

TO BE TEMPERED





EN2 - FRONT ELEVATION

NOT TO SCALE



EN2 - REAR ELEVATION **NOT TO SCALE**

COLOR LEGEND

- Natural Linen
- Woven Wicker
- Clary Sage
- Secret Garden
- Tricorn Black (Accents)
- Truepenny / Trinket (Accents)

*Or Equivalent Tone

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9 NORTH WILDHORSE DRIVE | NEW CASTLE, CO 81647 |

STATUS:

PRELIMINARY NOT FOR CONSTRUCTION

REVISION:

PROJECT NUMBER: 23192

DATE: 31 OCTOBER 2024

SHEET NAME: EMPTY NESTER BLDG 2 - BUILDING ELEVATIONS

SHEET NUMBER: A3.3



EN2 - 3d view looking se



EN2 - 3d view looking ne



EN2 - 3d view looking nw

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STATUS:

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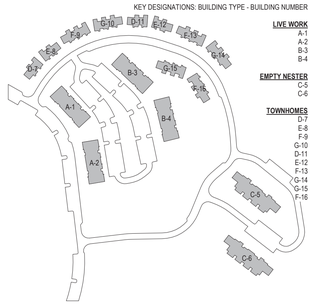
REVISION:

PROJECT NUMBER:
23192

DATE:
13 SEPTEMBER 2024

SHEET NAME:
EMPTY NESTER BLDG 2 - 3D VIEWS

SHEET NUMBER:
A3.4



COLOR LEGEND

- Natural Linen
- Woven Wicker
- Clary Sage
- Secret Garden
- Tricorn Black (Accents)
- Truepenny / Trinket (Accents)

*Or Equivalent Tone

* COLORS SHOWN ON ELEVATION BELOW ARE EXAMPLES OF POSSIBLE CONFIGURATIONS. FACADE COLORS TO ALTERNATE BETWEEN SHADES OF BROWN AND GREEN BETWEEN TRIPLEX AND DUPLEX GROUPINGS

MATERIAL LEGEND

ELEVATION

NATURAL FIBER CEMENT BOARD SIDING

TO BE MINIMUM 1 HR RATED OR AS APPROVED AS NON COMBUSTIBLE MATERIAL



FIBER CEMENT SHIPLAP SOFFIT

TO BE MINIMUM 1 HR RATED



ASPHALT SHINGLE ROOFING

TO BE MINIMUM CLASS A RATED



NATURAL FIBER CEMENT BOARD SIDING (UNPAINTED)

TO BE MINIMUM 1 HR RATED OR AS APPROVED AS NON COMBUSTIBLE MATERIAL



FIRE TREATED WOOD ACCENTS

TO BE MINIMUM 1 HR RATED TO MEET THE REQ. OF SECTION 2303.2 OF IBC



FIBER CEMENT SOFFIT

TO BE MINIMUM 1 HR RATED



PAINTED FIBER CEMENT BOARD SIDING

TO BE MINIMUM 1 HR RATED OR AS APPROVED AS NON COMBUSTIBLE MATERIAL



METAL ROOFING

TO BE MINIMUM CLASS A RATED



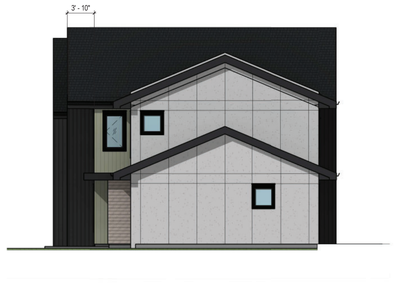
WINDOWS

TO BE TEMPERED





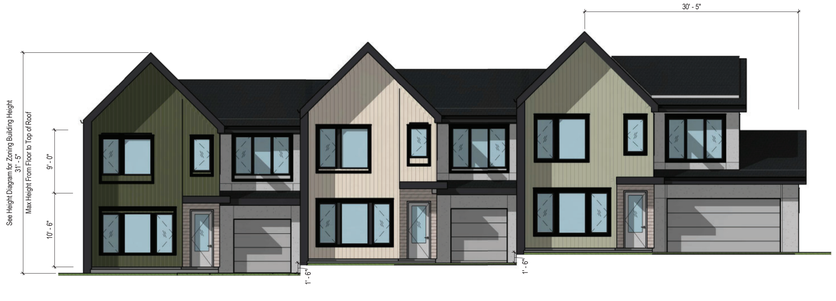
townhome triplex back elevation
NOT TO SCALE



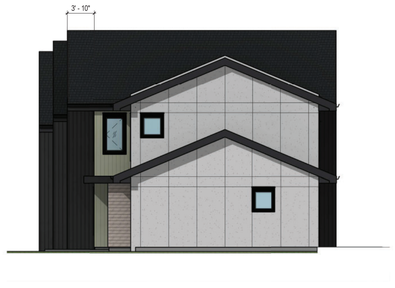
townhome duplex side elevation
NOT TO SCALE



townhome duplex back elevation
NOT TO SCALE



townhome triplex front elevation
NOT TO SCALE



townhome triplex side elevation
NOT TO SCALE



townhome duplex front elevation
NOT TO SCALE

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NEW CASTLE RESIDENTIAL - TOWNHOMES

9 NORTH WILDHORSE DRIVE | NEW CASTLE, CO 81647 |

STATUS:

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NOT FOR CONSTRUCTION

REVISION:

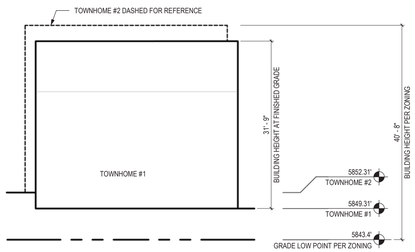
PROJECT NUMBER:
23192

DATE:
31 OCTOBER 2024

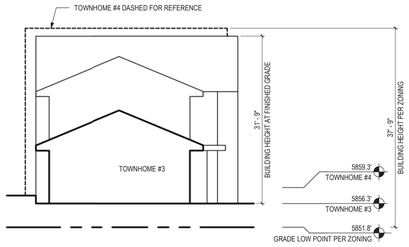
SHEET NAME:
TOWNHOME ELEVATIONS

SHEET NUMBER:
A4.0

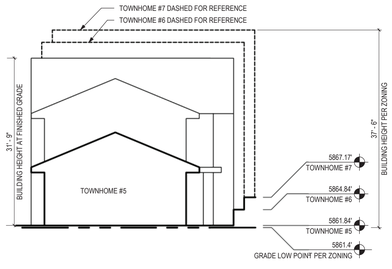
TOWNHOME CLUSTER (D-7) - DUPLEX



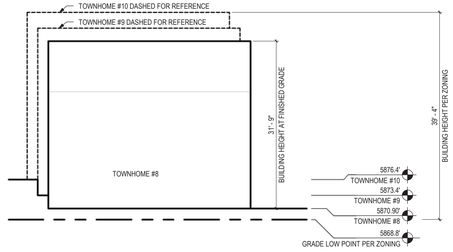
TOWNHOME CLUSTER (E-8) - DUPLEX



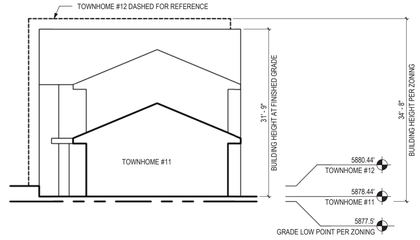
TOWNHOME CLUSTER (F-9) - TRIPLEX



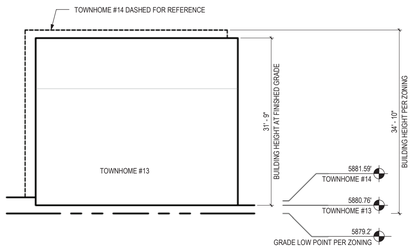
TOWNHOME CLUSTER (G-10) - TRIPLEX



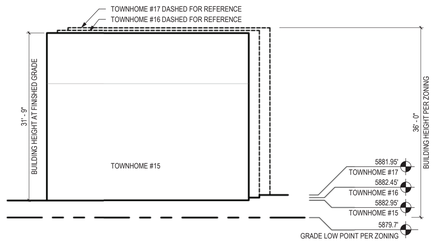
TOWNHOME CLUSTER (D-11) - DUPLEX



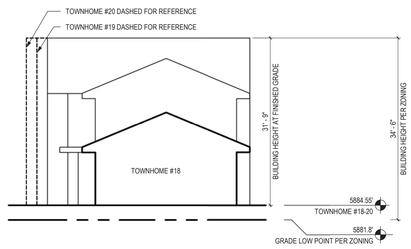
TOWNHOME CLUSTER (E-12) - DUPLEX



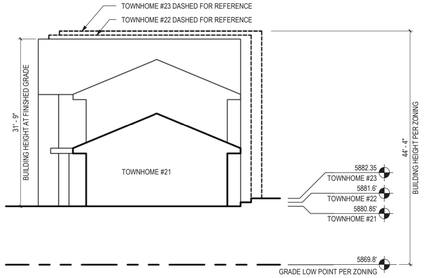
TOWNHOME CLUSTER (F-13) - TRIPLEX



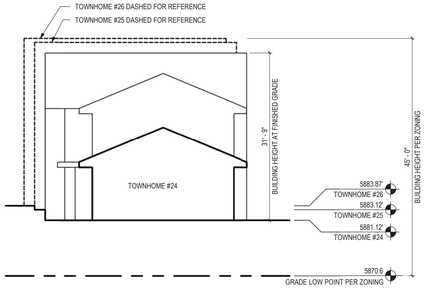
TOWNHOME CLUSTER (G-14) - TRIPLEX

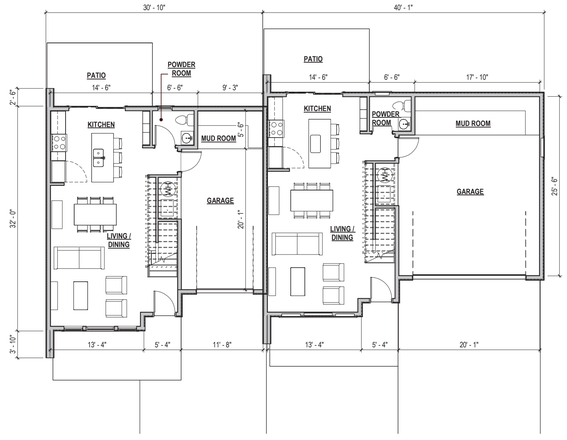


TOWNHOME CLUSTER (G-15) - TRIPLEX



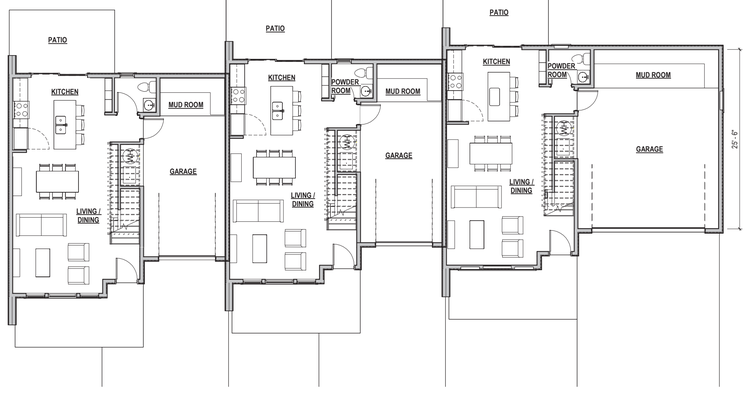
TOWNHOME CLUSTER (F-16) - TRIPLEX





townhome duplex 1st floor

NOT TO SCALE

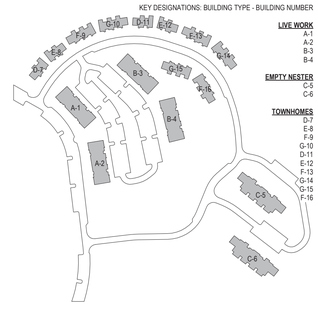


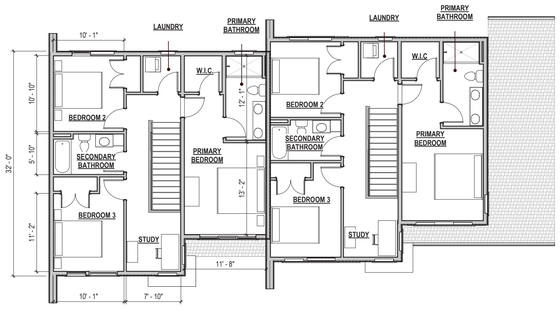
townhome triplex 1st floor

NOT TO SCALE

townhome zoning heights

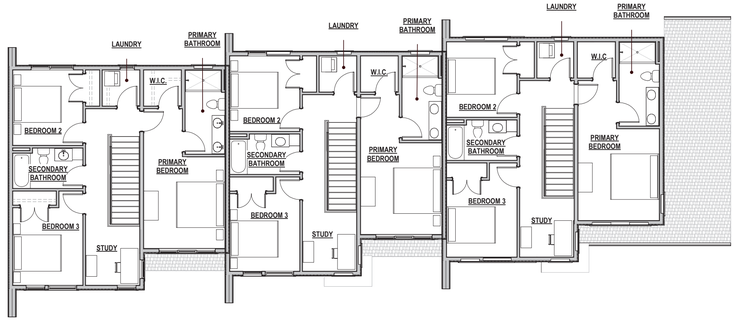
3/32" = 1'-0"





townhouse duplex 2nd floor

NOT TO SCALE



townhouse triplex 2nd floor

NOT TO SCALE

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NEW CASTLE RESIDENTIAL - TOWNHOMES

9 NORTH WILDHORSE DRIVE | NEW CASTLE, CO 81647 |

STATUS:

PRELIMINARY
NOT FOR CONSTRUCTION

REVISION:

PROJECT NUMBER:
23192

DATE:
31 OCTOBER 2024

SHEET NAME:
TOWNHOME PLANS

SHEET NUMBER:
A4.1

Empty Nesters Comparisons - Elevations

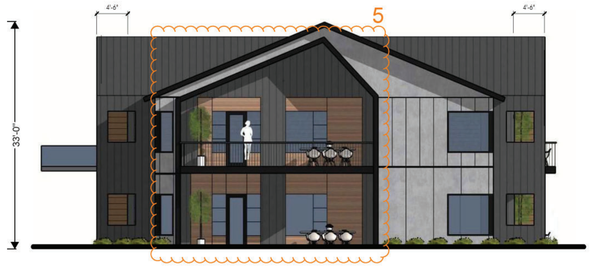
Front Elevation

Preliminary Application



Side Elevation

Preliminary Application



Final Application



Final Application

Back Elevation

Preliminary Application



Final Application

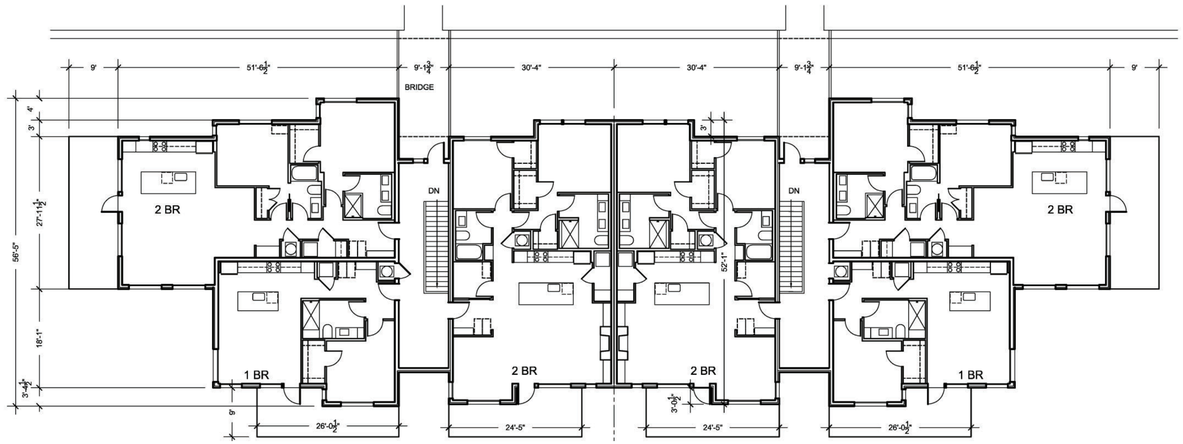


General Changes:
1. Window sizes and groupings changed to more accurately reflect available materials
2. Cut outs added in extended gable roof forms to allow for more views from units.
3. Fiber Cement siding colors updated (see color legend on re-submitted Elevation pages)

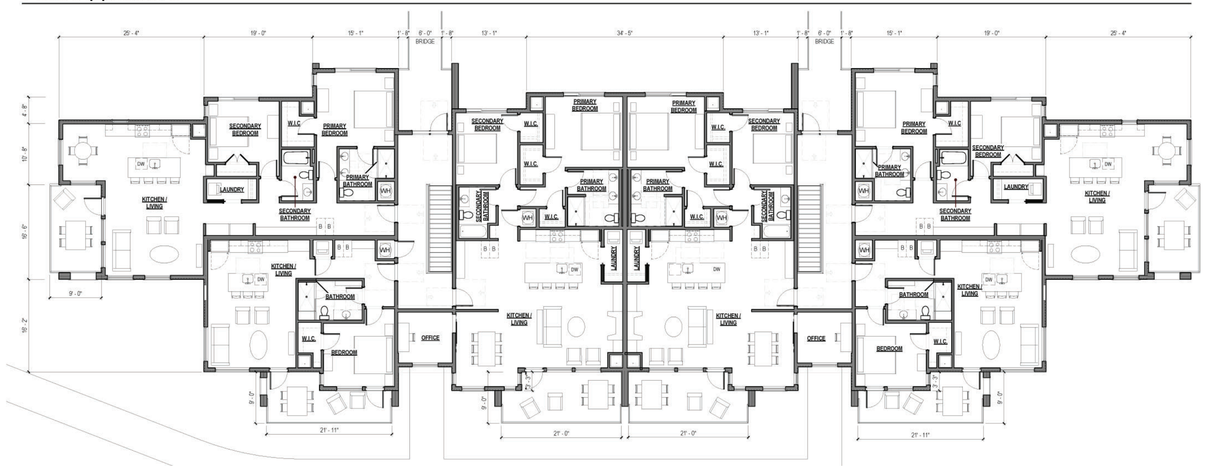
Specific Changes:
1. Zoning Roof Heights requirements shown
2. Gable locations changed to offer better views from inside the living rooms, but retain the spirit of the design
3. Gable locations changed to better align with the entrance to the building on the back elevation to allow coverage from weather and align better with the floor plan
4. Building Entrances given more color to delineate Unit from Building Entrance
5. In the 2 bedroom End Unit (see re-submitted Unit plans) the balcony was adjusted to allow for a breakfast nook. The exterior wall is now in line with the balcony as seen on the side elevation.
6. Material Change - Vertical Fiber Cement siding to be used on the wall, original proposed standing seam roof to stay

Empty Nesters Comparisons - 2nd Floor Plan

Preliminary Application

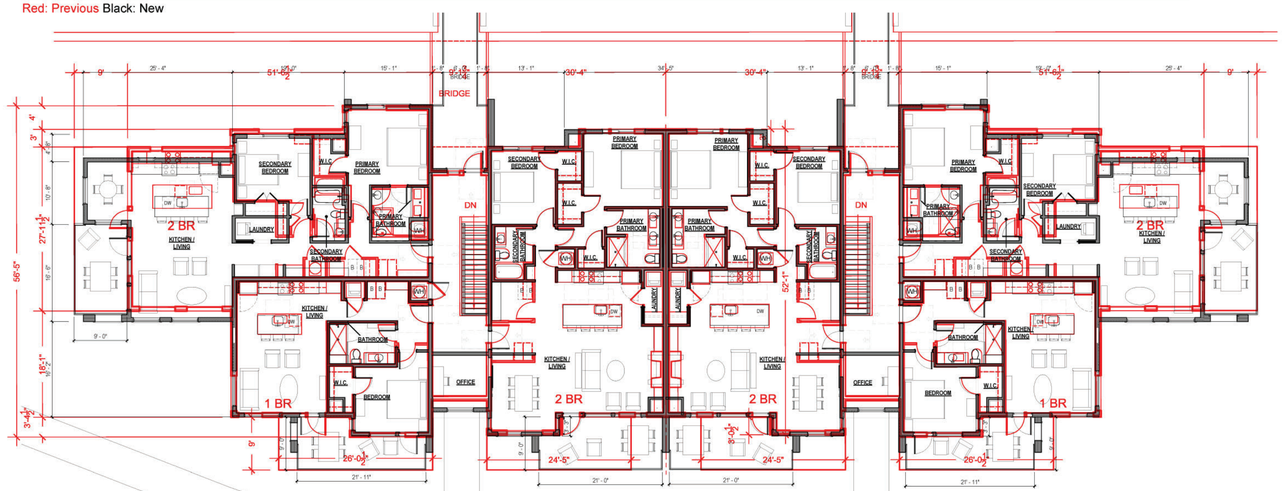


Final Application



Comparison

Red: Previous Black: New



Changes:
1. End 2 Bedroom Unit - adjusted exterior wall locations and interior layout (see re-submitted unit plans) added square footage for additional breakfast nook
2. Balcony locations adjusted to align better with units and views (see re-submitted elevations)
3. Central 2 bedroom units expanded to capture extra room in the hallway on second floor only. This space to be used as an office (see re-submitted unit plans) original office space to be used for additional outdoor gear storage space.

*Changes are similar on first floor

Live Work Comparisons 2 Story - Elevations

Front Elevation

Preliminary Application



Final Application



Back Elevation

Preliminary Application



Final Application



Side Elevation

Preliminary Application



Final Application



General Changes:
1. Window sizes and groupings changed to more accurately reflect available materials
2. Material Change - all roofs will be asphalt shingle
3. Fiber Cement siding colors updated (see color legend on re-submitted Elevation pages)

Specific Changes:
1. Adjusted Overall roof height
2. Gable locations changed to offer better views from inside the living rooms, but retain the spirit of the design
4. Building Entrances given more color to delineate Unit from Building Entrance

Live Work Comparisons 3 Story - Elevations

Front Elevation

Preliminary Application



Final Application



Back Elevation

Preliminary Application



Final Application



Side Elevation

Preliminary Application



Final Application



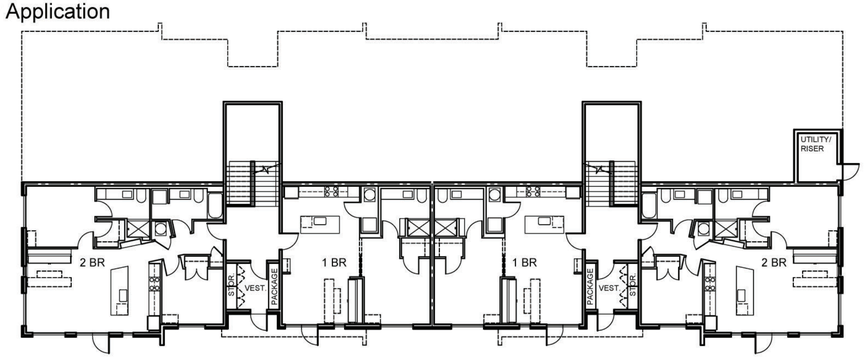
live work 3-story - left elevation

General Changes:
1. Window sizes and groupings changed to more accurately reflect available materials
2. Material Change - all roofs will be asphalt shingle
3. Fiber Cement siding colors updated (see color legend on re-submitted Elevation pages)

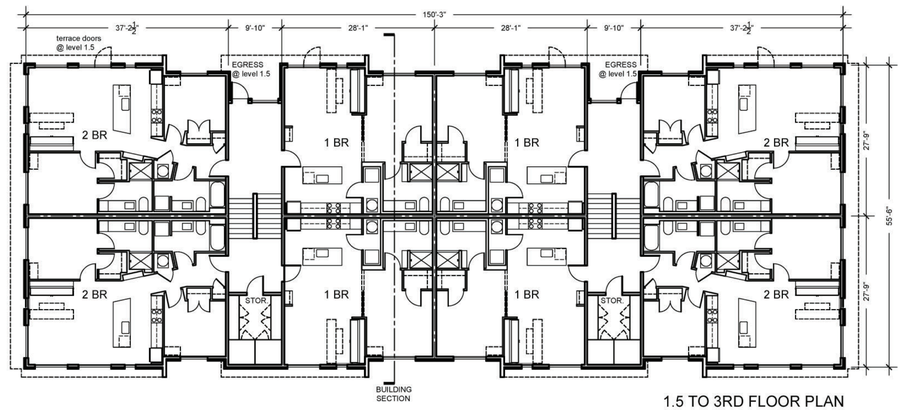
Specific Changes:
1. Zoning Roof Heights requirements shown, Roof heights adjusted
2. Gable locations changed to offer better views from inside the living rooms, but retain the spirit of the design
4. Building Entrances given more color to delineate Unit from Building Entrance

Live Work Comparisons - Plans

Preliminary Application

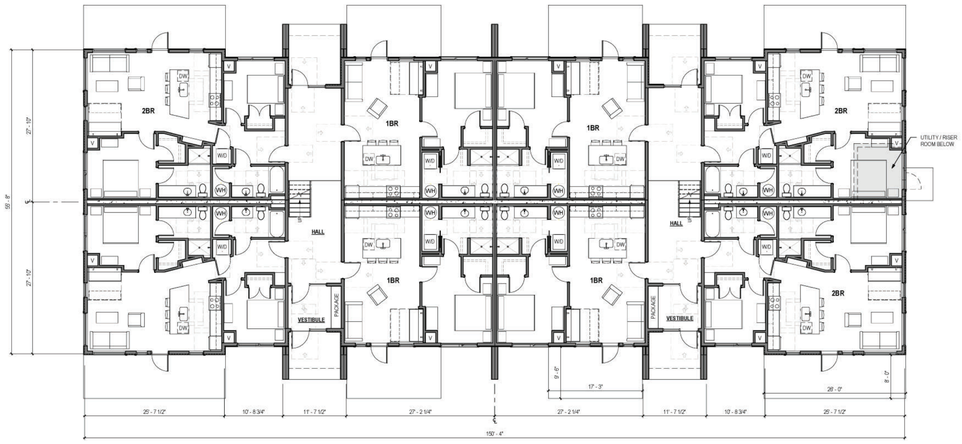


Floor 1 - Floor Plan

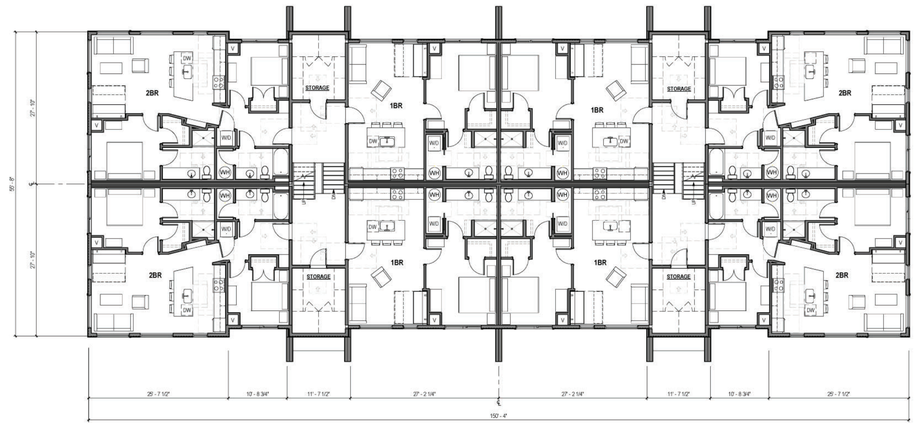


1.5 TO 3RD FLOOR PLAN

Final Application



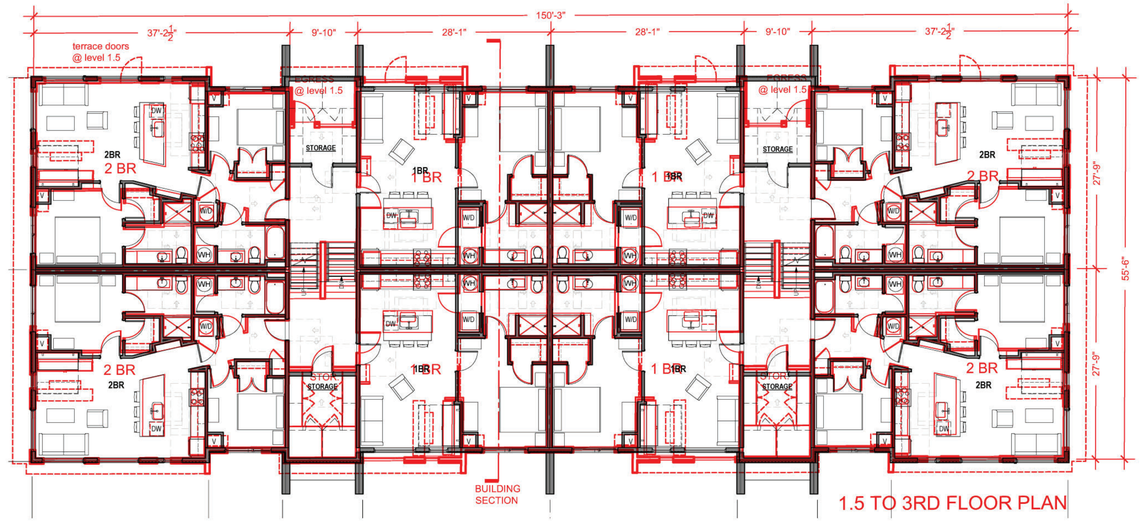
live work - 1 & 1.5 floor plan



live work - 2 & 2.5 floor plan

Comparison

Red: Previous Black: New



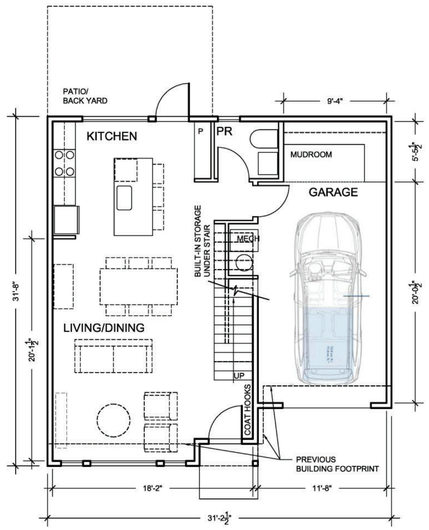
1.5 TO 3RD FLOOR PLAN

Changes:
1. All unit layouts revised to include 6' ORI Pocket Office System in place of 8' ORI Pocket Office System.
2. All unit layouts revised to include VTAC mechanical units in bedrooms.
3. Interior bike storage removed from all units.
3. End 2 bedroom unit plans revised to incorporate kitchen, bathroom and door clearances.
4. End 2 bedroom unit plans revised to show switched locations of Washer / Dryer and unit Water Heater.
5. Central 1 bedroom units exterior bedroom wall pushed in 1'6" to align with walls above.
6. Central 1 bedroom unit plans revised to incorporate kitchen, bathroom and door clearances.
7. Central 1 bedroom unit plans revised to have Mechanical / Laundry access from unit bathroom.
8. Minor window location adjustments throughout.

*Changes are similar on all floors.

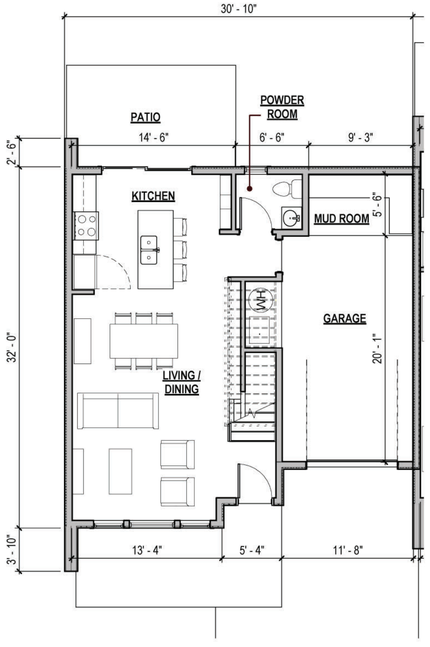
Town home Comparisons - Plans

Preliminary Application



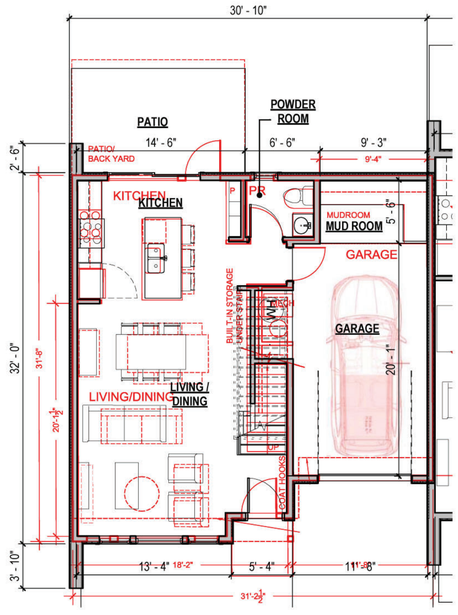
1ST FLOOR PLAN
550 nsf without garage

Final Application



Comparison

Red: Previous Black: New



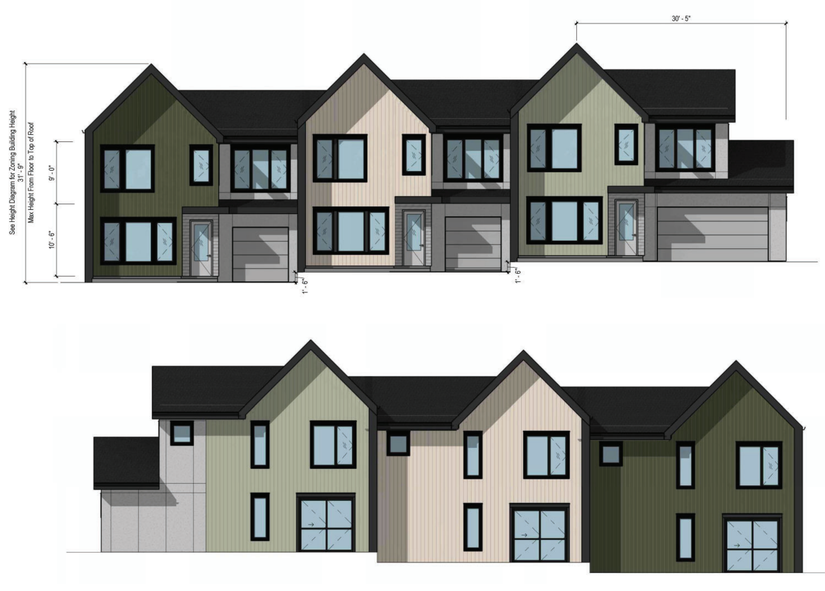
Changes:
1. Door to backyard patio changed to a sliding door
2. Living Room Windows adjusted (see elevations)

Town home Comparisons - Elevations

Preliminary Application

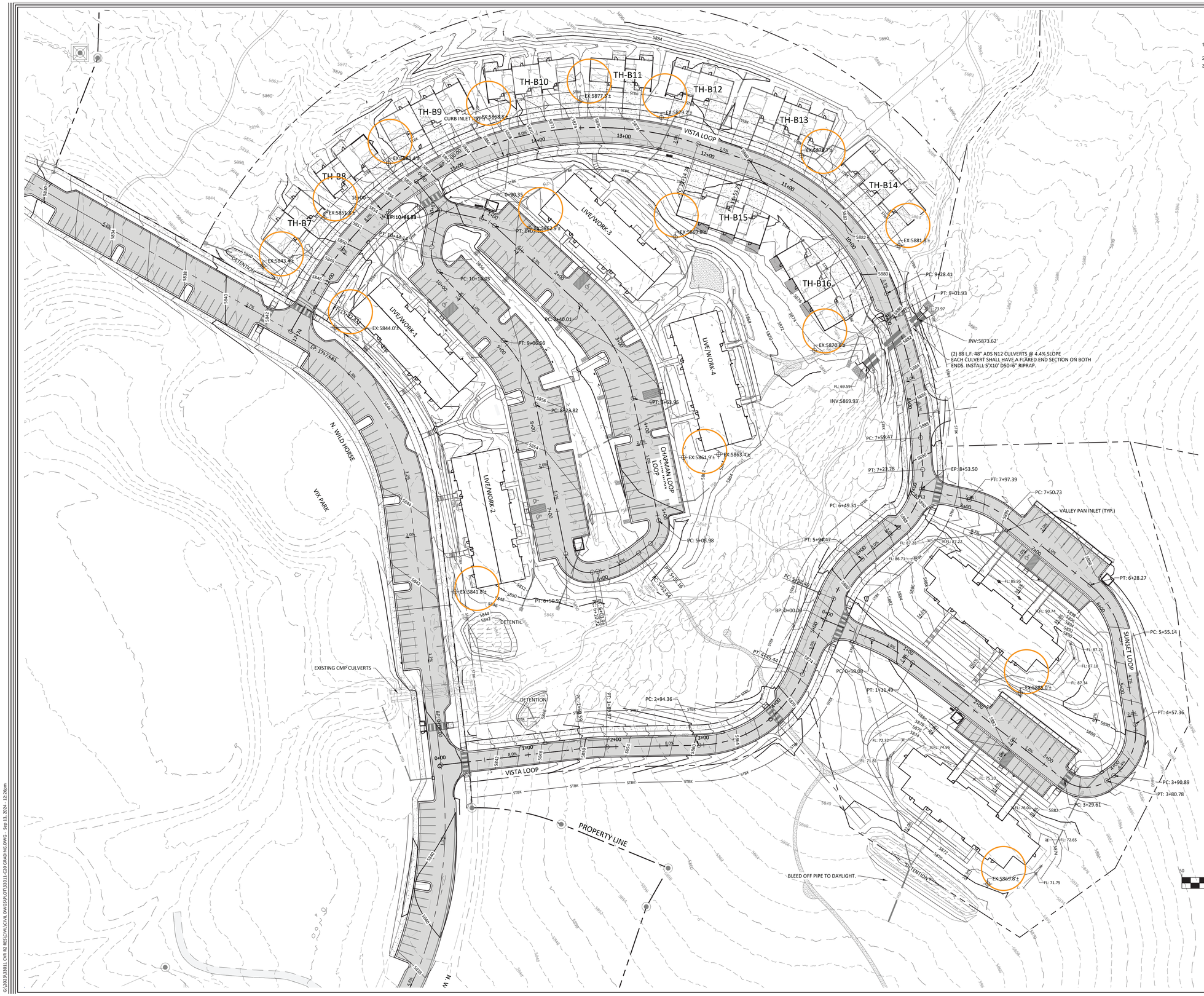


Final Application



Comparison

Changes:
1. Window sizes and groupings changed to more accurately reflect available materials
2. Color Palette changed, each home gets designated color from a range of 4 colors (see color legend on re-submitted sheets)
3. Roof alignment adjusted for ease of waterproofing and construction
4. Overall roof height changed from 28'-3" to 31'-9"
5. Back elevations to reflect front elevations color. All the same material with the exception of the 2 car garage, where the Fiber Cement panel wraps to the back elevation



GENERAL GRADING NOTES:

1. THE EXISTING CONTOUR INTERVAL IS TWO (2) FEET (DASHED) FROM A SURVEY PERFORMED BY SOPRIS ENGINEERING, LLC.
2. THE PROPOSED CONTOUR INTERVAL IS TWO (2) FEET.
3. ALL GEOTECHNICAL ENGINEERING RECOMMENDATIONS SHALL BE ADHERED TO.

PROPOSED LEGEND

- PROPERTY LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- STBK — PROPOSED SETBACK
- PROPOSED LOT LINE
- PROPOSED CENTERLINE

GRADING LEGEND:

- PROPOSED 1' CONTOUR
- 7900 — PROPOSED 5' CONTOUR
- EXISTING CONTOUR
- 7900 — EXISTING CONTOUR INTERVAL
- 2.0% — PROPOSED SLOPE
- × FL: 32.0 — PROPOSED SPOT ELEVATION
- PSD — PSD — PROPOSED STORM SEWER
- PROPOSED STORM INLET

SPOT ELEVATION LEGEND

BOW = BOTTOM OF WALL
EOA = EDGE OF ASPHALT
EX = EXISTING GRADE
FFE = FINISHED FLOOR ELEVATION
FG = FINISHED GRADE
FL = FLOW LINE
HP = HIGH POINT
LP = LOW POINT
ME = MATCH EXISTING
RIM = RIM ELEVATION
TBC = TOP BACK OF CURB
TOC = TOP OF CONCRETE

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

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

CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3•CARBONDALE CO 81623
(970) 704•0311• soprisengineering.com

DATE:	09-13-2024
JOB NO.	33011.01
DESIGNED BY	JPP
DRAWN BY	JPP
CHECKED BY	YTN

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

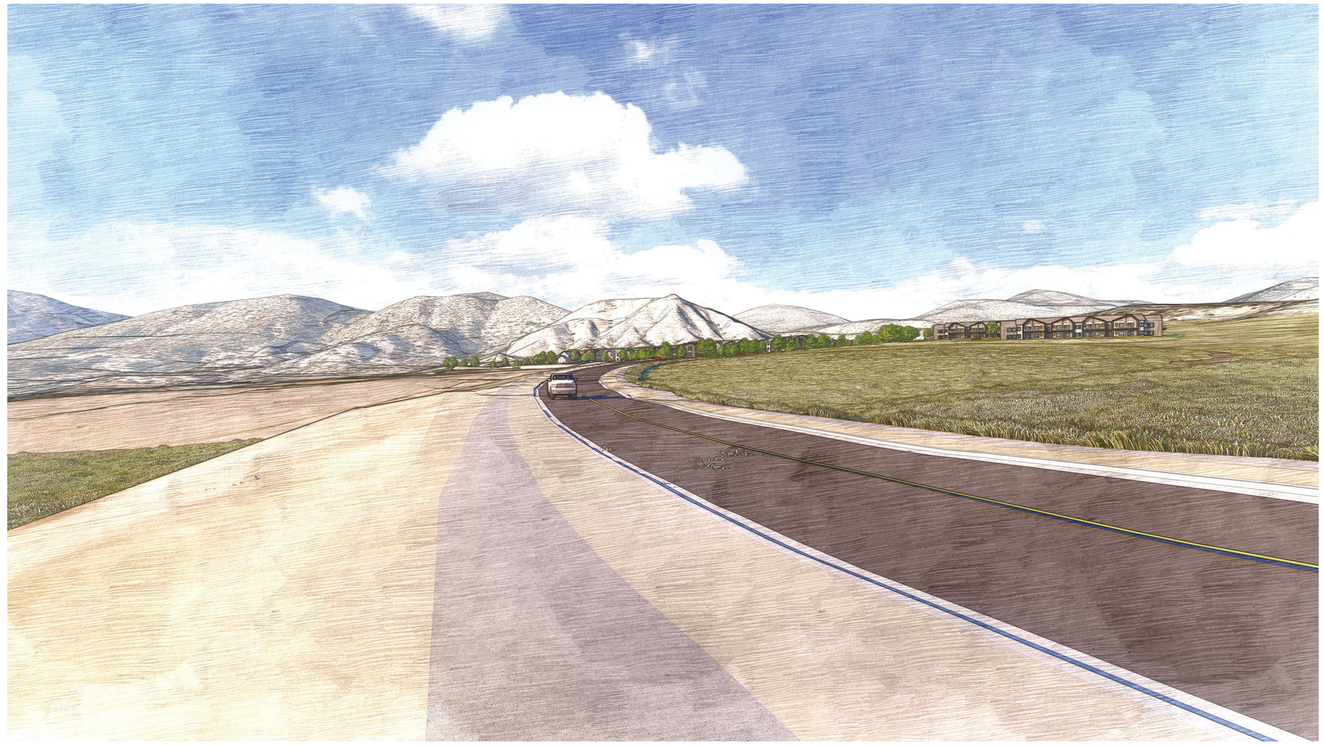
DATE	REVISION

TITLE
GRADING PLAN - EX SPOTS

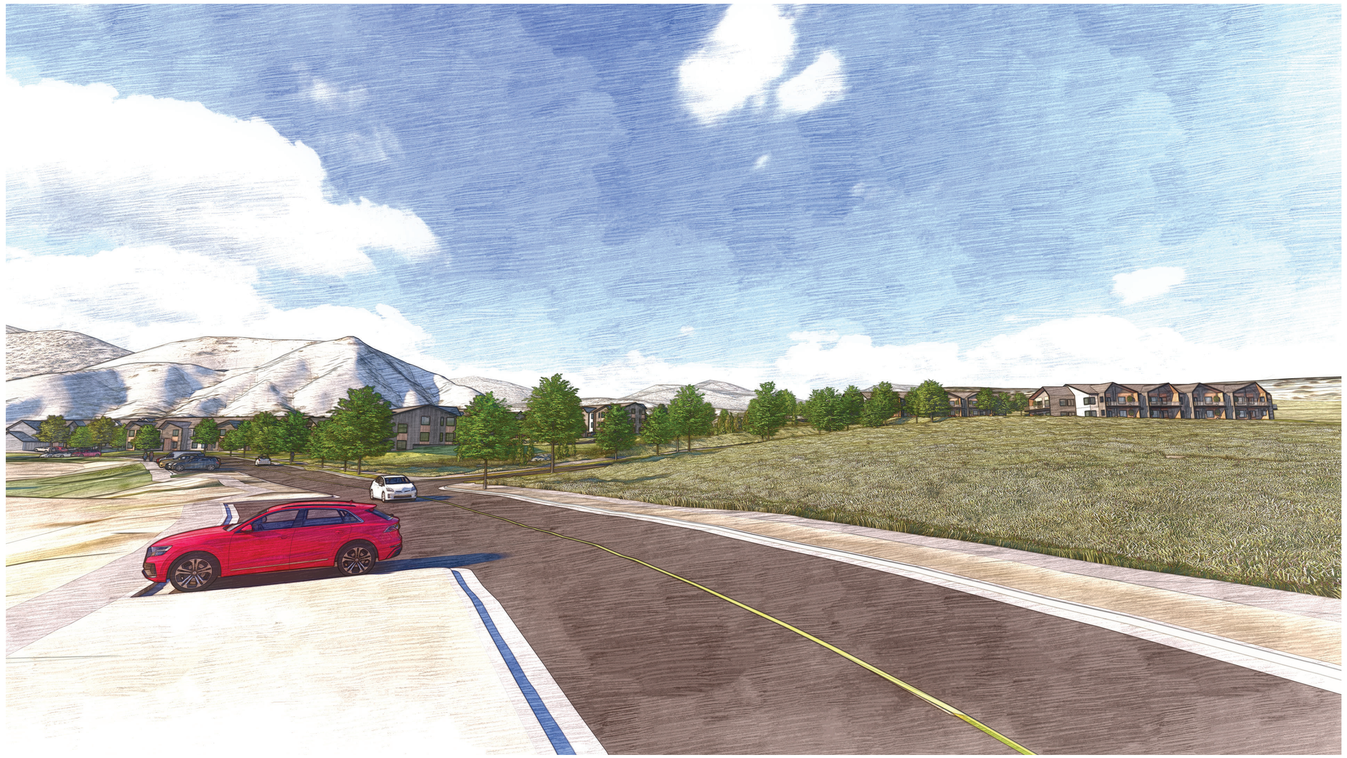
DRAWING NO.
C-2.10

G:\2023\33011 CVR R2 RES\CIVIL\CIVIL DWGS\PLOT\33011-C20 GRADING.DWG - Sep 13, 2024 - 12:26pm

VIEWSHED RENDERINGS



DISTANT VIEW APPROACHING FROM THE SOUTH ALONG WILD HORSE DRIVE



VIEW APPROACHING FROM THE SOUTH ALONG WILD HORSE DRIVE

VIEWSHED RENDERINGS



DISTANT VIEW FROM INTERIOR OF VIX PARK



VIEW FROM INTERIOR OF VIX PARK

FINAL PLAT OF:

CASTLE VALLEY RANCH FILING 13, PA 8 & PA 9

A PORTION OF THE 'OPTION PROPERTY' BEING SITUATED IN THE SW1/4 OF SECTION 29, SE1/4 OF SECTION 30, THE NE1/4 OF SECTION 31, AND THE NW1/4 OF SECTION 32, TOWNSHIP 5 SOUTH, RANGE 90 WEST OF THE 6TH P.M.
TOWN OF NEW CASTLE, COLORADO

SHEET 1 OF 4
SHEET 1 - SUBJECT PROPERTY DESCRIPTION, CERTIFICATES AND NOTES, AND MONUMENT CONTROL
SHEET 2 - THE PUD SUBDIVISION BOUNDARY, PROPOSED LOTS, RIGHTS-OF-WAY AND PARCELS
SHEETS 3 & 4 - PROPOSED LOTS, RIGHTS-OF-WAY AND PARCELS, AND EASEMENTS

CERTIFICATE OF DEDICATION AND OWNERSHIP

KNOW ALL MEN BY THESE PRESENTS THAT CTS INVESTMENTS, LLC, A COLORADO LIMITED LIABILITY COMPANY, LLC BEING SOLE OWNER IN FEE SIMPLE OF ALL THAT REAL PROPERTY DESCRIBED AS FOLLOWS:

A PARCEL OF LAND BEING A PORTION OF THE 'OPTION PROPERTY', AS DESCRIBED IN THAT QUIT CLAIM DEED, RECORDED SEPTEMBER 21, 2009 AS RECEPTION NO. 775392, AND BEING SITUATED IN THE SW1/4 OF SECTION 29, SE1/4 OF SECTION 30, THE NE1/4 OF SECTION 31, AND THE NW1/4 OF SECTION 32, TOWNSHIP 5 SOUTH, RANGE 90 WEST OF THE 6TH P.M., COUNTY OF GARFIELD, STATE OF COLORADO, SAID PARCEL OF LAND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE 1/4 CORNER, BETWEEN SAID SECTIONS 29 AND 30, A 3.25" BRASS CAP ON 2" IRON PIPE STAMPED "1/4 S30/29 BLM 1988", THENCE N 89° 36' 48" E THE ASSUMED BASIS OF BEARINGS ALONG THE SOUTHERLY LINE OF THE 2ND AMENDED EXEMPTION PLAT OF LAKOTA CANYON RANCH, RECORDED FEBRUARY 4, 2008 AS RECEPTION NO. 742257, A DISTANCE OF 1308.59 FEET TO THE NORTHEAST CORNER OF SAID 'OPTION PROPERTY', BEING A #5 REBAR & 1.25" YELLOW PLASTIC CAP STAMPED "CLAYCOMB ENG L.S. 3174", SAID CORNER BEING COINCIDENTAL WITH WESTERLY AND SOUTHERLY LINES OF RECEPTION NO. 742257;

THENCE S 00°55'44" E, ALONG EASTERLY LINE OF SAID 'OPTION PROPERTY', AND THE SAID COINCIDENTAL WESTERLY LINE OF RECEPTION NO. 742257, A DISTANCE OF 1002.40 FEET, TO A POINT ON THE NORTHERLY LINE OF THAT PARCEL OF LAND DESCRIBED IN THE SPECIAL WARRANTY DEED, RECORDED APRIL 15, 2010 AS RECEPTION NO. 784749;

THENCE THE FOLLOWING TWENTY-ONE (21) COURSES ALONG THE NORTHERLY, WESTERLY, EASTERLY AND NORTHERLY LINES OF SAID RECEPTION NO. 784749;

1. N 89°54'27" W A DISTANCE OF 116.87 FEET;
2. S 54°50'38" W A DISTANCE OF 173.10 FEET;
3. S 00°02'34" E A DISTANCE OF 167.50 FEET;
4. S 32°41'48" E A DISTANCE OF 88.46 FEET;
5. S 00°55'44" E A DISTANCE OF 289.40 FEET;
6. S 14°00'12" W A DISTANCE OF 22.45 FEET;
7. S 28°56'08" W A DISTANCE OF 541.68 FEET;
8. 122.69 FEET ALONG A CURVE TO THE RIGHT, HAVING A RADIUS OF 219.00 FEET, A CENTRAL ANGLE OF 32°05'54", THE CHORD OF WHICH BEARS S 44°59'05" W, A DISTANCE OF 121.09 FEET;
9. 102.92 FEET ALONG A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 481.00 FEET, A CENTRAL ANGLE OF 12°15'33", THE CHORD OF WHICH BEARS S 54°54'14" W A DISTANCE OF 102.72 FEET;
10. N 51°02'22" W A DISTANCE OF 247.25 FEET;
11. 30.23 FEET ALONG A NON-TANGENT CURVE TO THE RIGHT, HAVING A RADIUS OF 275.00 FEET, A CENTRAL ANGLE OF 6°17'51", THE CHORD OF WHICH BEARS S 42°06'34" W A DISTANCE OF 30.21 FEET;
12. N 44°48'48" W A DISTANCE OF 174.82 FEET;
13. N 56°40'07" W A DISTANCE OF 55.13 FEET;
14. N 63°30'38" W A DISTANCE OF 55.33 FEET;
15. N 71°43'03" W A DISTANCE OF 57.57 FEET;
16. 104.09 FEET ALONG A NON-TANGENT CURVE TO THE RIGHT, HAVING A RADIUS OF 970.00 FEET, A CENTRAL ANGLE OF 6°08'54", THE CHORD OF WHICH BEARS N 11°34'51" E A DISTANCE OF 104.04 FEET;
17. N 16°07'55" E A DISTANCE OF 50.00 FEET;
18. N 18°54'59" E A DISTANCE OF 221.52 FEET;
19. N 30°00'58" E A DISTANCE OF 50.41 FEET;
20. N 67°17'36" W A DISTANCE OF 131.42 FEET;
21. 104.00 FEET ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 250.00 FEET, A CENTRAL ANGLE OF 23°50'05", THE CHORD OF WHICH BEARS N 79°12'39" W, A DISTANCE OF 103.25 FEET, TO A POINT ON THE NORTHEASTERLY LINE OF NORTH WILD HORSE ROAD, AS DESCRIBED IN THAT SPECIAL WARRANTY DEED RECORDED SEPTEMBER 25, 2007 AT RECEPTION NO. 733780;

THENCE THE FOLLOWING FOUR (4) COURSES ALONG SAID NORTHEASTERLY LINE OF NORTH WILD HORSE ROAD, BEING SITUATED PARALLEL TO AND 67.50 FEET NORTHEASTERLY OF THE WESTERLY LINE OF SAID 'OPTION PROPERTY', ALSO A COINCIDENTAL LINE WITH THE NORTH PARK PARCEL RECORDED APRIL 17, 2007 AT RECEPTION NO. 721291;

1. 38.30 FEET ALONG A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 491.25 FEET, A CENTRAL ANGLE OF 4°28'00", THE CHORD OF WHICH BEARS N 04°02'01" W A DISTANCE OF 38.29 FEET;
2. N 06°16'01" W A DISTANCE OF 314.42 FEET;
3. 263.68 FEET ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 281.25 FEET, A CENTRAL ANGLE OF 53°43'01", THE CHORD OF WHICH BEARS N 33°07'31" W, A DISTANCE OF 254.13 FEET;
4. N 59°59'02" W A DISTANCE OF 338.00 FEET, TO A POINT ON THE WESTERLY LINE OF SAID 'OPTION PROPERTY';

THENCE THE FOLLOWING THREE (3) COURSES ALONG THE WESTERLY LINES OF SAID 'OPTION PROPERTY';

1. N 21°44'01" E A DISTANCE OF 132.03 FEET;
2. N 02°06'39" E A DISTANCE OF 226.38 FEET;
3. N 00°23'12" W A DISTANCE OF 381.09 FEET, TO A POINT ON THE NORTH LINE OF THE TO A SW1/4 OF SECTION 30;

THENCE S 89°47'18" E ALONG SAID NORTH LINE SW1/4 OF SECTION 30, A DISTANCE OF 308.87 FEET, TO THE POINT OF BEGINNING,

COUNTY OF GARFIELD, STATE OF COLORADO.

AND CONTAINING 59.066 ACRES, MORE OR LESS; HAVE BY THESE PRESENTS LAID OUT, PLATTED AND SUBDIVIDED THE SAME INTO LOTS AND BLOCKS AS SHOWN HEREON AND DESIGNATE THE SAME AS 9 N WILD HORSE PUD SUBDIVISION IN THE TOWN OF NEW CASTLE, COUNTY OF GARFIELD, STATE OF COLORADO; AND DO HEREBY GRANT TO THE TOWN OF NEW CASTLE, COUNTY OF GARFIELD, COLORADO, FOR PUBLIC USE THE STREETS SHOWN HEREON, INCLUDING AVENUES, DRIVES, COURTS, PLACES AND ALLEYS, AND THE UTILITY AND DRAINAGE EASEMENTS SHOWN HEREON FOR UTILITY AND DRAINAGE PURPOSES ONLY; AND SO FURTHER STATE THAT THIS SUBDIVISION SHALL BE SUBJECT TO THE PROTECTIVE COVENANTS FILED AND RECORDED FOR THIS SUBDIVISION IN THE OFFICE OF THE CLERK AND RECORDER OF GARFIELD COUNTY, COLORADO AS DOCUMENT NO._____.

EXECUTED THIS ___ DAY OF _____, A.D. 2024.

OWNER CTS INVESTMENTS, LLC, A COLORADO LIMITED LIABILITY COMPANY, LLC

BY:_____
AS:_____

STATE OF COLORADO)
COUNTY OF GARFIELD) SS.
TOWN OF NEW CASTLE)

THE FOREGOING DEDICATION WAS ACKNOWLEDGED BEFORE ME THIS ___ DAY OF ___, A.D. 2024 BY _____, AS _____ OF CTS INVESTMENTS, LLC, A COLORADO LIMITED LIABILITY COMPANY, LLC.

WITNESS MY HAND AND SEAL
_____
NOTARY PUBLIC

TOWN COUNCIL CERTIFICATE

THIS PLAT APPROVED BY THE TOWN COUNCIL OF THE TOWN OF NEW CASTLE, GARFIELD COUNTY, COLORADO, THIS ___ DAY OF _____, A.D. 2024, FOR FILING WITH THE CLERK AND RECORDER OF GARFIELD COUNTY AND FOR CONVEYANCE TO THE TOWN OF THE PUBLIC DEDICATIONS SHOWN HEREON, SUBJECT TO THE PROVISION THAT APPROVAL IN NO WAY OBLIGATES THE TOWN OF NEW CASTLE FOR FINANCING OR CONSTRUCTING OF IMPROVEMENTS ON LAND, STREETS OR EASEMENTS DEDICATED TO THE PUBLIC EXCEPT AS SPECIFICALLY AGREED TO BY THE TOWN COUNCIL. CASTLE VALLEY RANCH FILING 13, PA 8 & PA 9 IS SUBJECT TO THE TERMS AND CONDITIONS OF TOWN OF NEW CASTLE ORDINANCE NO. 2024 - ___ (THE "APPROVAL ORDINANCE")

_____
MAYOR

WITNESS MY HAND AND THE SEAL OF THE TOWN OF NEW CASTLE.

ATTEST:

_____
TOWN CLERK

TITLE INSURANCE COMPANY CERTIFICATE

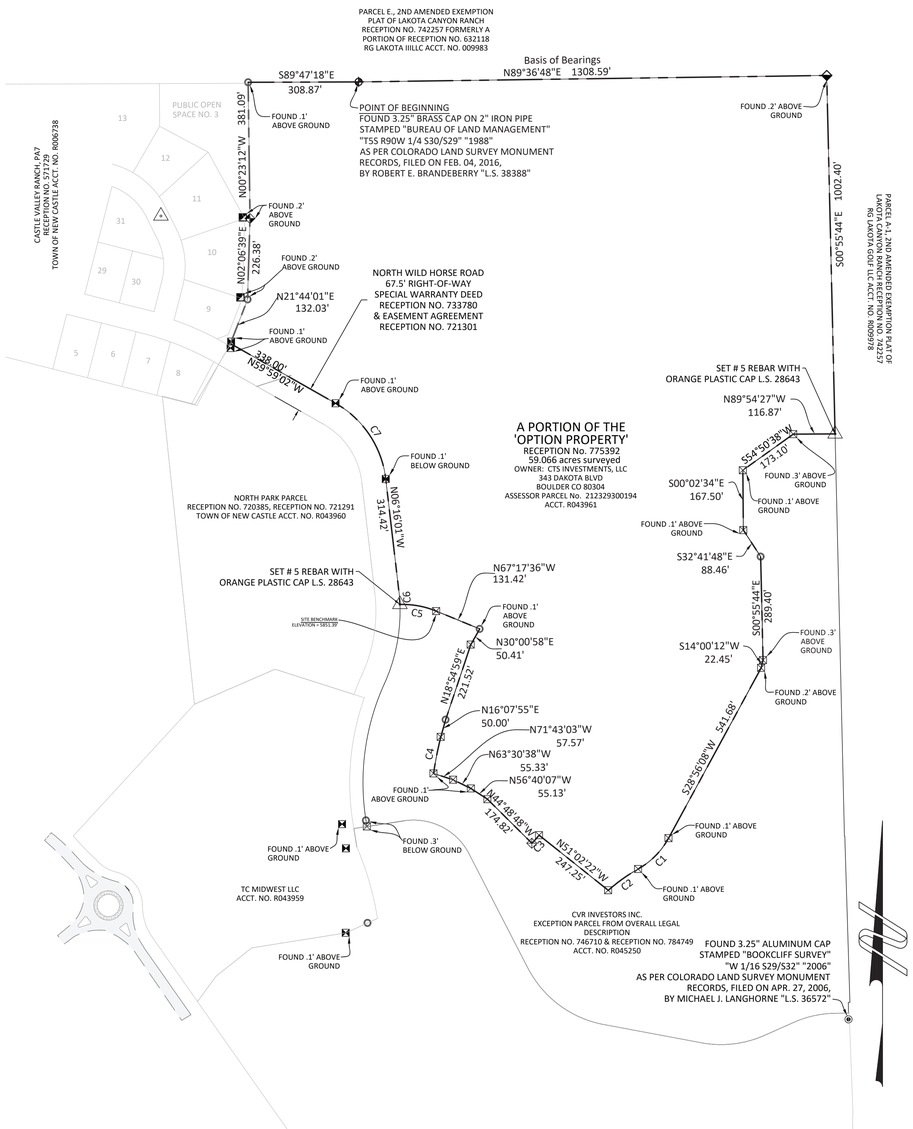
LAND TITLE GUARANTEE COMPANY DOES HEREBY CERTIFY THAT _____ HAS EXAMINED THE TITLE TO ALL LANDS DEDICATED AND SHOWN UPON THIS PLAT, AND TITLE TO SUCH LANDS IS IN THE DEDICATOR FREE AND CLEAR OF ALL LIENS, TAXES, AND ENCUMBRANCES EXCEPT AS FOLLOWS:

_____
_____
_____
_____

BY: _____
AS: _____ OF LAND TITLE GUARANTEE COMPANY

Property Boundary Curve Table						
Curve #	Length	Radius	Tangent	Delta	Chord Direction	Chord
C1	122.69'	219.00'	63.00'	32°05'54"	S44° 59' 05"W	121.09'
C2	102.92'	481.00'	51.66'	12°15'33"	S54° 54' 14"W	102.72'
C3	30.23'	275.00'	15.13'	6°17'51"	S42° 06' 34"W	30.21'
C4	104.09'	970.00'	52.09'	6°08'54"	N11° 34' 51"E	104.04'
C5	104.00'	250.00'	52.76'	23°50'05"	N79° 12' 39"W	103.25'
C6	38.30'	491.25'	19.16'	4°28'00"	N04° 02' 01"W	38.29'
C7	263.68'	281.25'	142.43'	53°43'01"	N33° 07' 31"W	254.13'

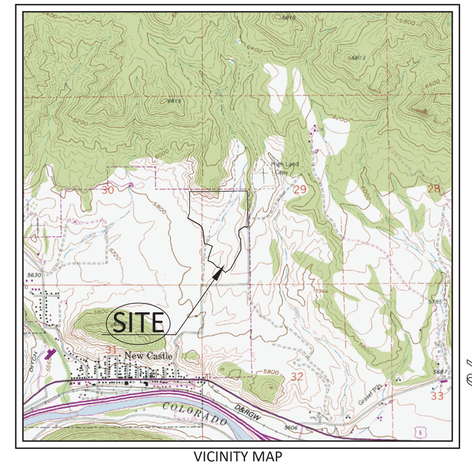
NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF CERTIFICATION SHOWN HEREON.



GRAPHIC SCALE

200 0 100 200 400 800

(IN U.S. SURVEY FEET)
1 inch = 200 ft.



VICINITY MAP
SCALE: 1" = 2000'

MONUMENT LEGEND

- FOUND BRASS CAP
- FOUND ALUMINUM CAP
- FOUND #5 REBAR
- FOUND #4 REBAR & YELLOW PLASTIC CAP STAMPED "L.S. 13501"
- FOUND #4 REBAR & YELLOW PLASTIC CAP STAMPED "L.S. 3174"
- FOUND #5 REBAR & ORANGE PLASTIC CAP STAMPED "L.S. 36572"
- FOUND #5 REBAR & ORANGE PLASTIC CAP STAMPED "L.S. 38182"
- FOUND #5 REBAR & RED PLASTIC CAP STAMPED "L.S. 20133"
- FOUND #5 REBAR & ORANGE PLASTIC CAP STAMPED "L.S. 28643"
- SET MONUMENT-L.S. 28643

MONUMENTS WERE FOUND FLUSH WITH THE GROUND UNLESS OTHERWISE STATED

SURVEY/PLAT NOTES

1. DATE OF FIELD WORK: DECEMBER 5 - 6 AND 18 - 21, 2023.
2. DATE OF PREPARATION: MARCH - OCTOBER, 2024.
3. LINEAR UNITS: THE LINEAR UNIT USED IN THE PREPARATION OF THIS PLAT IS THE U.S. SURVEY FOOT AS DEFINED BY THE UNITED STATES DEPARTMENT OF COMMERCE, NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY.
4. BASIS OF BEARING: BEARINGS SHOWN HEREON ARE BASED ON AN ASSUMED BEARING OF N89°36'48"E, BETWEEN FOUND MONUMENTS FOR THE 1/4 CORNER COMMON TO SAID SECTION 30 AND SECTION 29 BEING A 3.25" BRASS CAP ON 2" IRON PIPE, STAMPED "1/4 S30/29 BLM 1988" AND THE NORTHEAST CORNER OF THE OPTION PARCEL BEING A #5 REBAR & 1.25" YELLOW PLASTIC CAP, STAMPED "CLAYCOMB ENG L.S. 3174".
5. BASIS OF SURVEY: FINAL PLAT OF CASTLE VALLEY RANCH SUBDIVISION EXEMPTION MAP AND ALTA/ACSM LAND SURVEY PLAT RECORDED AS RECEPTION NUMBER 721291, ALTA NSPS LAND TITLE SURVEY OF THE SUBJECT PROPERTY PREPARED BY SGM DATED NOVEMBER 5, 2021, 2ND AMENDED EXEMPTION PLAT OF LAKOTA CANYON RANCH RECEPTION NUMBER 742257, CASTLE VALLEY RANCH, PA7 RECEPTION NUMBER 571729 AND VARIOUS DOCUMENTS OF RECORD.
6. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY SOPRIS ENGINEERING, LLC (SE) TO DETERMINE OWNERSHIP OR EASEMENTS OF RECORD. FOR ALL INFORMATION REGARDING EASEMENTS, RIGHTS OF WAY, AND/OR TITLE OF RECORD SE RELIED UPON THE ITEMS LISTED IN NOTE 5 AND THE TITLE COMMITMENT PREPARED BY LAND TITLE GUARANTEE COMPANY ORDER NUMBER ABS63019458 WITH AN EFFECTIVE DATE OF 03-31-2023.
7. ALL RECEPTION NUMBERS REFERENCED HEREON REFER TO THE RECORDS OF GARFIELD COUNTY CLERK AND RECORDER'S OFFICE.
8. THE PROPERTY IS LOCATED WITHIN PA 8 AND PA 9 OF THE CASTLE VALLEY RANCH PUD AND IS ZONED RESIDENTIAL / MF-2.
9. THE 10' TRAIL EASEMENT SHOWN ON SHEET 3 IS FURTHER DEFINED IN THAT CERTAIN TRAIL EASEMENT RECORDED AS RECEPTION NO. _____.

SURVEYOR'S CERTIFICATE

I, MARK S. BECKLER, DO HEREBY CERTIFY THAT I AM A REGISTERED LAND SURVEYOR LICENSED UNDER THE LAWS OF THE STATE OF COLORADO, THAT THIS PLAT IS A TRUE, CORRECT AND COMPLETE PLAT OF THE 9 NORTH WILDHORSE PUD SUBDIVISION AS LAID OUT, PLATTED, DEDICATED AND SHOWN HEREON, THAT SUCH PLAT WAS MADE FROM AN ACCURATE SURVEY OF SAID PROPERTY BY ME AND UNDER MY SUPERVISION AND CORRECTLY SHOWS THE LOCATION AND DIMENSIONS OF THE LOTS, EASEMENTS AND STREETS OF SAID SUBDIVISION AS THE SAME ARE STAKED UPON THE GROUND IN COMPLIANCE WITH _____ REGULATIONS GOVERNING THE SUBDIVISION OF LAND.

IN WITNESS WHEREOF, I HAVE SET MY HAND AND SEAL THIS ___ DAY OF ___, AD. 2024.

DRAFT

_____
MARK S. BECKLER
REGISTERED LAND SURVEYOR #28643

CLERK AND RECORDER'S CERTIFICATE

THIS PLAT WAS FILED FOR RECORD IN THE OFFICE OF THE CLERK AND RECORDER AT ___ O'CLOCK ___. M., _____, 2024, AND IS DULY RECORDED IN BOOK ___, PAGE NO.___ AS RECEPTION NUMBER _____.

_____
CLERK AND RECORDER
BY: _____
DEPUTY

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3 • CARBONDALE CO 81623
(970) 704 0311 • soprisengineering.com

G:\2021\21013\1 CVR N WILDHORSE\SURVEY\DWGS\SURVEY PLOTS\21013 PLAT.DWG - Nov 05, 2024 - 9:12am

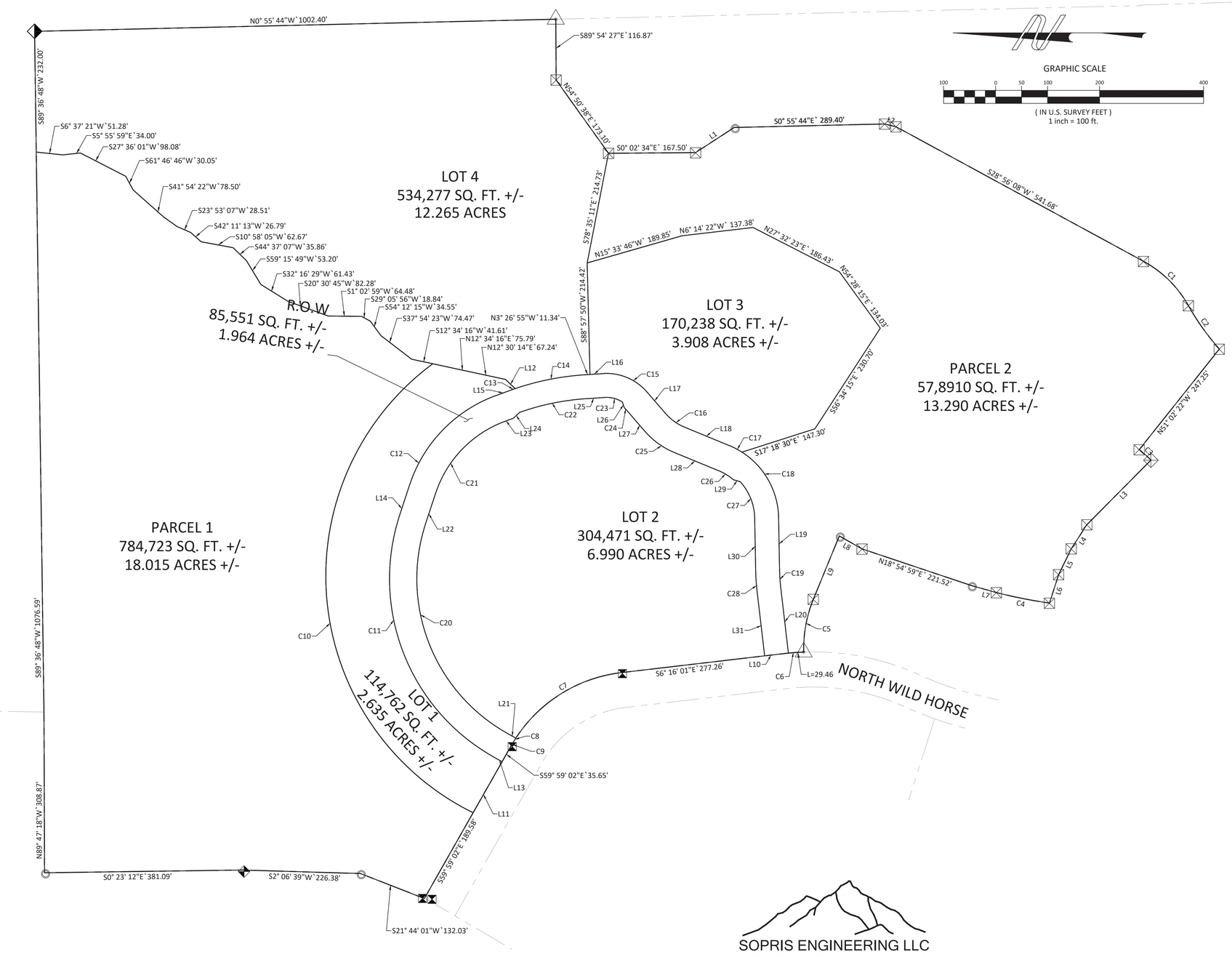
PRELIMINARY PLAT OF:

CASTLE VALLEY RANCH FILING 13, PA 8 & PA 9

A PORTION OF THE 'OPTION PROPERTY' BEING SITUATED IN THE SW1/4 OF SECTION 29, SE1/4 OF SECTION 30, THE NE1/4 OF SECTION 31, AND THE NW1/4 OF SECTION 32, TOWNSHIP 5 SOUTH, RANGE 90 WEST OF THE 6TH P.M.
TOWN OF NEW CASTLE, COLORADO

SHEET 2 OF 4

THE PUD SUBDIVISION BOUNDARY, LOTS, RIGHTS-OF-WAY AND PARCELS



GRAPHIC SCALE

100 0 50 100 200 400

(IN U.S. SURVEY FEET)
1 inch = 100 ft.

MONUMENT LEGEND

- FOUND BRASS CAP
- FOUND ALUMINUM CAP
- FOUND #5 REBAR
- FOUND #4 REBAR & YELLOW PLASTIC CAP STAMPED "L.S. 13501"
- FOUND #4 REBAR & YELLOW PLASTIC CAP STAMPED "L.S. 3174"
- FOUND #5 REBAR & ORANGE PLASTIC CAP STAMPED "L.S. 36572"
- FOUND #5 REBAR & ORANGE PLASTIC CAP STAMPED "L.S. 38182"
- FOUND #5 REBAR & RED PLASTIC CAP STAMPED "L.S. 20133"
- FOUND #5 REBAR & ORANGE PLASTIC CAP STAMPED "L.S. 28643"
- SET MONUMENT-L.S. 28643

MONUMENTS WERE FOUND FLUSH WITH THE GROUND UNLESS OTHERWISE STATED

LAND AREA SUMMARY

FATHERING PARCEL	SQ. FT±	ACRES ±
9 NORTH WILDHORSE.	2,572,932	59.066

9 NORTH WILDHORSE PUD SUB DIVISION

LOT #	SQ. FT±	ACRES ±
1	114,762	2.635
2	304,471	6.990
3	170,238	3.908
4	534,277	12.265
ROW	85,551	1.964
PARCEL 1	784,723	18.015
PARCEL 2	578,910	13.290
	2,572,932	59.066

Curve Table						
Curve #	Length	Radius	Tangent	Delta	Chord Direction	Chord
C1	122.69'	219.00'	63.00'	32°05'54"	S44° 59' 05"W`	121.09'
C2	102.92'	481.00'	51.66'	12°15'33"	S54° 54' 14"W`	102.72'
C3	30.23'	275.00'	15.13'	6°17'51"	S42° 06' 34"W`	30.21'
C4	104.09'	970.00'	52.09'	6°08'54"	N11° 34' 51"E`	104.04'
C5	104.00'	250.00'	52.76'	23°50'05"	N79° 12' 39"W`	103.25'
C6	29.46'	491.25'	14.74'	3°26'12"	N3° 31' 08"W`	29.46'
C7	246.82'	281.25'	131.99'	50°16'56"	S31° 24' 30"E`	238.98'
C8	6.51'	277.83'	3.25'	1°20'30"	S57° 32' 44"E`	6.51'
C9	10.35'	281.25'	5.18'	2°06'32"	S58° 55' 46"E`	10.35'
C10	1038.68'	507.31'	832.89'	117°18'33"	S85° 16' 20"W`	866.53'
C11	539.67'	393.00'	322.12'	78°40'44"	S69° 21' 20"W`	498.26'
C12	245.54'	273.00'	131.77'	51°31'56"	N45° 32' 20"W`	237.35'
C13	13.47'	523.00'	6.74'	1°28'32"	N19° 02' 06"W`	13.47'
C14	135.54'	523.00'	68.15'	14°50'55"	N10° 52' 22"W`	135.16'
C15	95.24'	103.00'	51.33'	52°58'38"	S23° 02' 24"W`	91.88'
C16	45.32'	97.00'	23.08'	26°46'19"	S36° 08' 34"W`	44.91'
C17	27.30'	153.00'	13.68'	10°13'18"	S27° 52' 04"W`	27.26'
C18	150.52'	153.00'	81.98'	56°21'55"	N61° 09' 40"E`	144.52'
C19	27.13'	277.00'	13.57'	5°36'39"	N86° 32' 18"E`	27.12'
C20	467.58'	340.50'	279.09'	78°40'44"	S69° 21' 20"W`	431.70'
C21	198.32'	220.50'	106.43'	51°31'56"	N45° 32' 20"W`	191.70'
C22	129.96'	477.00'	65.38'	15°36'36"	N11° 15' 13"W`	129.55'
C23	36.13'	57.00'	18.70'	36°19'12"	N14° 42' 41"E`	35.53'
C24	5.67'	50.50'	2.84'	6°25'44"	N46° 18' 51"E`	5.66'
C25	69.85'	149.50'	35.58'	26°46'19"	N36° 08' 34"E`	69.22'
C26	32.62'	100.50'	16.45'	18°35'48"	N32° 03' 18"E`	32.48'
C27	77.31'	107.00'	40.43'	41°23'47"	N68° 38' 44"E`	75.64'
C28	31.63'	323.00'	15.83'	5°36'39"	N86° 32' 18"E`	31.62'

Line Table			Line Table		
Line #	Direction	Length	Line #	Direction	Length
L1	S32° 41' 48"E`	88.46'	L21	S30° 00' 58"W`	20.85'
L2	S14° 00' 12"W`	22.45'	L22	N71° 18' 18"W`	61.12'
L3	N44° 48' 48"W`	174.82'	L23	N19° 46' 22"W`	16.82'
L4	N56° 40' 07"W`	55.13'	L24	N42° 16' 22"W`	16.89'
L5	N63° 30' 38"W`	55.33'	L25	N3° 26' 55"W`	36.20'
L6	N71° 43' 03"W`	57.57'	L26	N72° 01' 43"E`	11.56'
L7	N16° 07' 55"E`	50.00'	L27	N49° 31' 43"E`	54.84'
L8	N30° 00' 58"E`	50.41'	L28	N22° 45' 24"E`	92.96'
L9	N67° 17' 36"W`	131.42'	L29	N16° 06' 51"E`	13.58'
L10	S6° 16' 01"E`	37.17'	L30	N89° 20' 38"E`	104.39'
L11	S59° 59' 02"E`	112.77'	L31	N83° 43' 59"E`	129.59'
L12	N44° 00' 51"E`	25.61'			
L13	S30° 00' 58"W`	20.34'			
L14	N71° 18' 18"W`	61.12'			
L15	N19° 46' 22"W`	26.48'			
L16	S3° 26' 55"E`	24.86'			
L17	S49° 31' 43"W`	54.84'			
L18	S22° 45' 24"W`	92.96'			
L19	N89° 20' 38"E`	104.39'			
L20	N83° 43' 59"E`	129.67'			

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MARK S. BECKLER
REGISTERED LAND SURVEYOR #28643

G:\2023\23011\23011.CVR.R.RES\SURVEY\SURVEY DWGS\SURVEY PLOTS\23011-PLAT-SHT2.DWG - Nov 05, 2024 - 9:17am

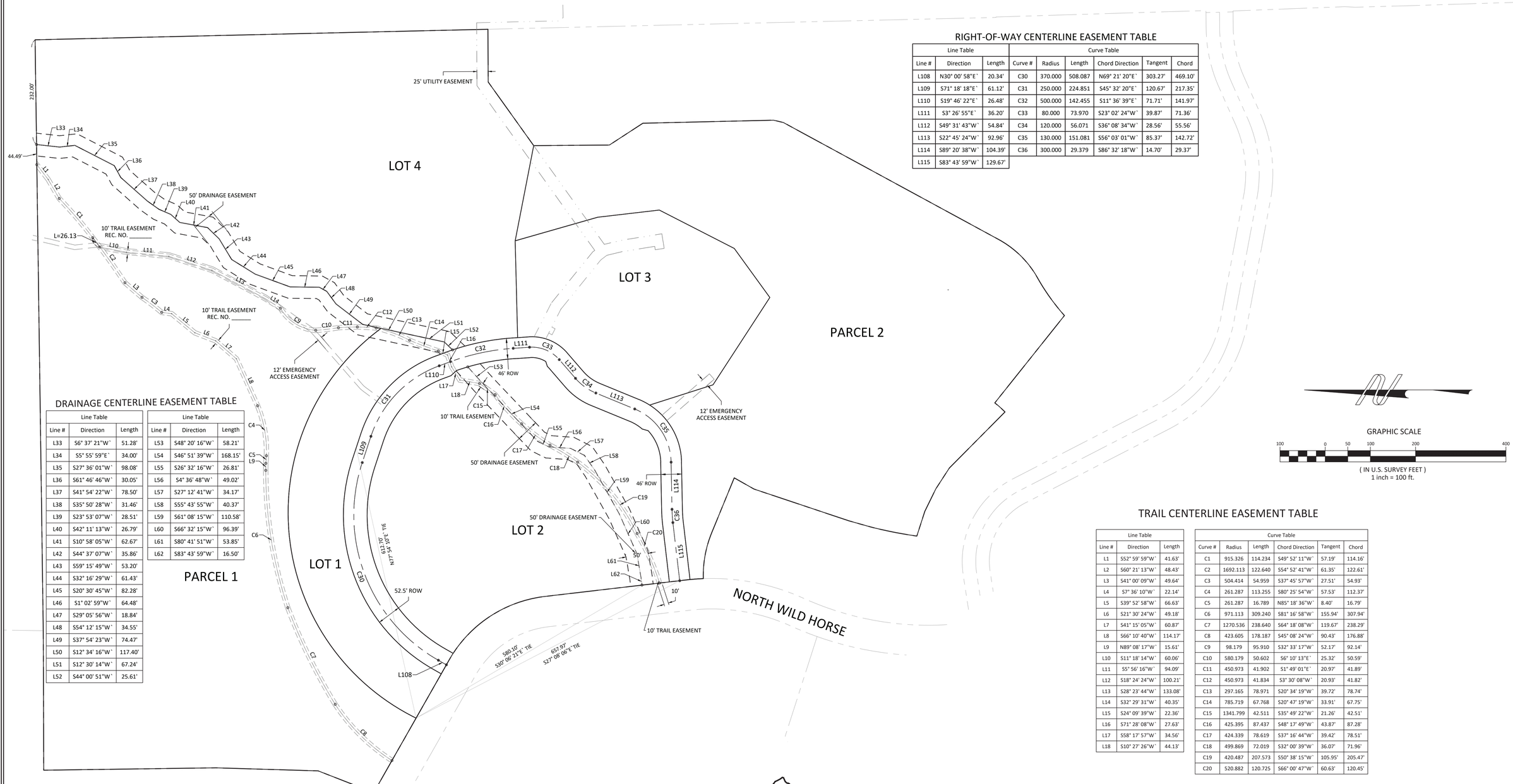
FINAL PLAT OF:

CASTLE VALLEY RANCH FILING 13, PA 8 & PA 9

A PORTION OF THE 'OPTION PROPERTY' BEING SITUATED IN THE SW1/4 OF SECTION 29, SE1/4 OF SECTION 30, THE NE1/4 OF SECTION 31,
AND THE NW1/4 OF SECTION 32, TOWNSHIP 5 SOUTH, RANGE 90 WEST OF THE 6TH P.M.
TOWN OF NEW CASTLE, COLORADO

SHEET 3 OF 4

LOTS, RIGHTS-OF-WAY AND PARCELS, AND EASEMENTS



RIGHT-OF-WAY CENTERLINE EASEMENT TABLE

Line Table			Curve Table					
Line #	Direction	Length	Curve #	Radius	Length	Chord Direction	Tangent	Chord
L108	N30° 00' 58"E`	20.34'	C30	370.000	508.087	N69° 21' 20"E`	303.27'	469.10'
L109	S71° 18' 18"E`	61.12'	C31	250.000	224.851	S45° 32' 20"E`	120.67'	217.35'
L110	S19° 46' 22"E`	26.48'	C32	500.000	142.455	S11° 36' 39"E`	71.71'	141.97'
L111	S3° 26' 55"E`	36.20'	C33	80.000	73.970	S23° 02' 24"W`	39.87'	71.36'
L112	S49° 31' 43"W`	54.84'	C34	120.000	56.071	S36° 08' 34"W`	28.56'	55.56'
L113	S22° 45' 24"W`	92.96'	C35	130.000	151.081	S56° 03' 01"W`	85.37'	142.72'
L114	S89° 20' 38"W`	104.39'	C36	300.000	29.379	S86° 32' 18"W`	14.70'	29.37'
L115	S83° 43' 59"W`	129.67'						

DRAINAGE CENTERLINE EASEMENT TABLE

Line Table		
Line #	Direction	Length
L33	S6° 37' 21"W`	51.28'
L34	S5° 55' 59"E`	34.00'
L35	S27° 36' 01"W`	98.08'
L36	S61° 46' 46"W`	30.05'
L37	S41° 54' 22"W`	78.50'
L38	S35° 50' 28"W`	31.46'
L39	S23° 53' 07"W`	28.51'
L40	S42° 11' 13"W`	26.79'
L41	S10° 58' 05"W`	62.67'
L42	S44° 37' 07"W`	35.86'
L43	S59° 15' 49"W`	53.20'
L44	S32° 16' 29"W`	61.43'
L45	S20° 30' 45"W`	82.28'
L46	S1° 02' 59"W`	64.48'
L47	S29° 05' 56"W`	18.84'
L48	S54° 12' 15"W`	34.55'
L49	S37° 54' 23"W`	74.47'
L50	S12° 34' 16"W`	117.40'
L51	S12° 30' 14"W`	67.24'
L52	S44° 00' 51"W`	25.61'

Line Table		
Line #	Direction	Length
L53	S48° 20' 16"W`	58.21'
L54	S46° 51' 39"W`	168.15'
L55	S26° 32' 16"W`	26.81'
L56	S4° 36' 48"W`	49.02'
L57	S27° 12' 41"W`	34.17'
L58	S55° 43' 55"W`	40.37'
L59	S61° 08' 15"W`	110.58'
L60	S66° 32' 15"W`	96.39'
L61	S80° 41' 51"W`	53.85'
L62	S83° 43' 59"W`	16.50'

TRAIL CENTERLINE EASEMENT TABLE

Line Table		
Line #	Direction	Length
L1	S52° 59' 59"W`	41.63'
L2	S60° 21' 13"W`	48.43'
L3	S41° 00' 09"W`	49.64'
L4	S7° 36' 10"W`	22.14'
L5	S39° 52' 58"W`	66.63'
L6	S21° 30' 24"W`	49.18'
L7	S41° 15' 05"W`	60.87'
L8	S66° 10' 40"W`	114.17'
L9	N89° 08' 17"W`	15.61'
L10	S11° 18' 14"W`	60.06'
L11	S5° 56' 16"W`	94.09'
L12	S18° 24' 24"W`	100.21'
L13	S28° 23' 44"W`	133.08'
L14	S32° 29' 31"W`	40.35'
L15	S24° 09' 39"W`	22.36'
L16	S71° 28' 08"W`	27.63'
L17	S58° 17' 57"W`	34.56'
L18	S10° 27' 26"W`	44.13'

Curve Table					
Curve #	Radius	Length	Chord Direction	Tangent	Chord
C1	915.326	114.234	S49° 52' 11"W`	57.19'	114.16'
C2	1692.113	122.640	S54° 52' 41"W`	61.35'	122.61'
C3	504.414	54.959	S37° 45' 57"W`	27.51'	54.93'
C4	261.287	113.255	S80° 25' 54"W`	57.53'	112.37'
C5	261.287	16.789	N85° 18' 36"W`	8.40'	16.79'
C6	971.113	309.240	S81° 16' 58"W`	155.94'	307.94'
C7	1270.536	238.640	S64° 18' 08"W`	119.67'	238.29'
C8	423.605	178.187	S45° 08' 24"W`	90.43'	176.88'
C9	98.179	95.910	S32° 33' 17"W`	52.17'	92.14'
C10	580.179	50.602	S6° 10' 13"E`	25.32'	50.59'
C11	450.973	41.902	S1° 49' 01"E`	20.97'	41.89'
C12	450.973	41.834	S3° 30' 08"W`	20.93'	41.82'
C13	297.165	78.971	S20° 34' 19"W`	39.72'	78.74'
C14	785.719	67.768	S20° 47' 19"W`	33.91'	67.75'
C15	1341.799	42.511	S35° 49' 22"W`	21.26'	42.51'
C16	425.395	87.437	S48° 17' 49"W`	43.87'	87.28'
C17	424.339	78.619	S37° 16' 44"W`	39.42'	78.51'
C18	499.869	72.019	S32° 00' 39"W`	36.07'	71.96'
C19	420.487	207.573	S50° 38' 15"W`	105.95'	205.47'
C20	520.882	120.725	S66° 00' 47"W`	60.63'	120.45'

GRAPHIC SCALE

100 0 50 100 200 400

(IN U.S. SURVEY FEET)
1 inch = 100 ft.

SOPRIS ENGINEERING LLC
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MARK S. BECKER
REGISTERED LAND SURVEYOR #28643

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FINAL PLAT OF:

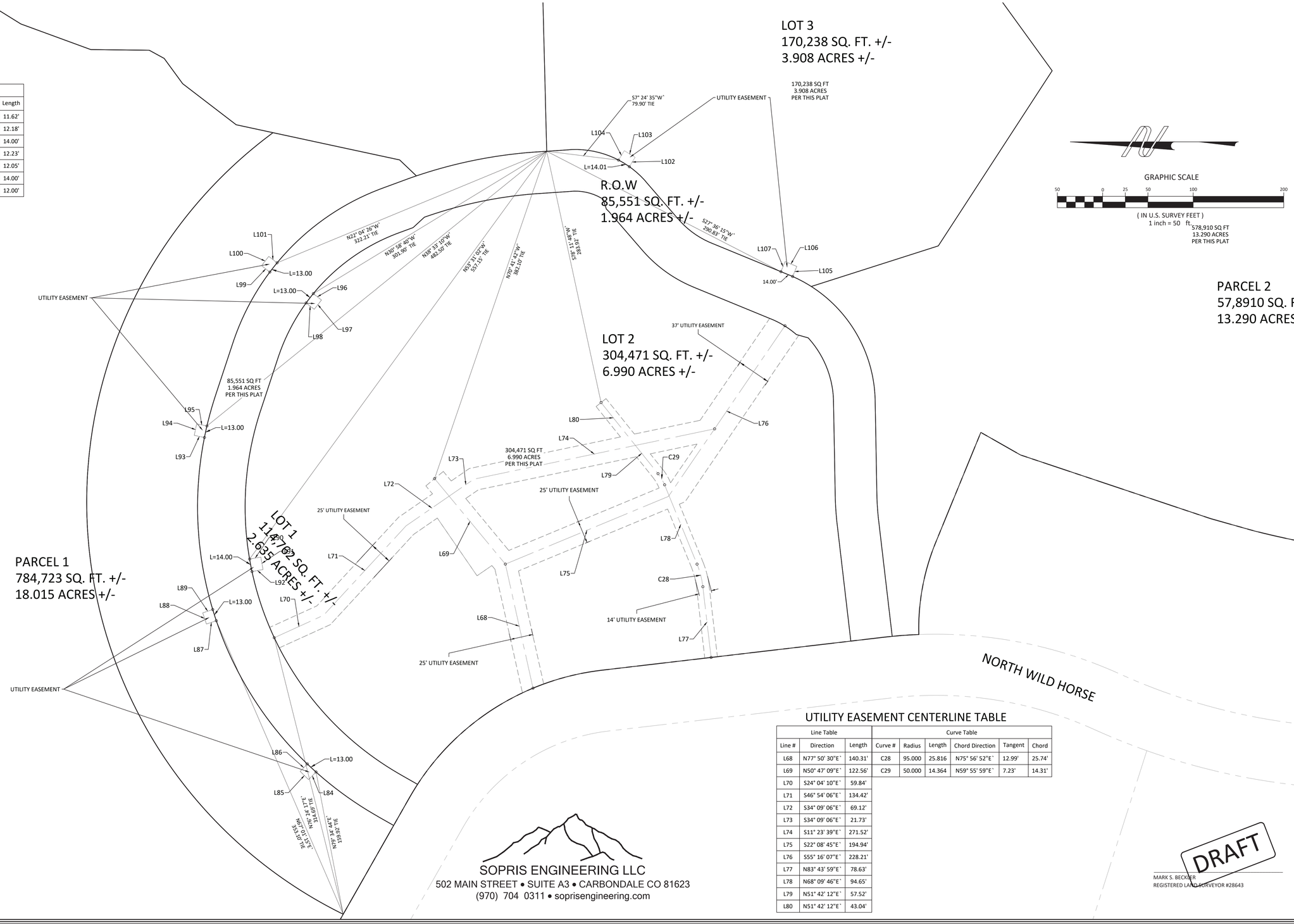
CASTLE VALLEY RANCH FILING 13, PA 8 & PA 9

A PORTION OF THE 'OPTION PROPERTY' BEING SITUATED IN THE SW1/4 OF SECTION 29, SE1/4 OF SECTION 30, THE NE1/4 OF SECTION 31, AND THE NW1/4 OF SECTION 32, TOWNSHIP 5 SOUTH, RANGE 90 WEST OF THE 6TH P.M.
TOWN OF NEW CASTLE, COLORADO

LOTS, RIGHTS-OF-WAY AND PARCELS, AND EASEMENTS

UTILITY EASEMENT TABLE

Line Table			Line Table		
Line #	Direction	Length	Line #	Direction	Length
L81	N54° 31' 27"W`	11.91'	L101	S38° 15' 47"W`	11.62'
L82	N35° 28' 33"E`	14.00'	L102	S57° 59' 44"E`	12.18'
L83	S54° 31' 27"E`	11.95'	L103	N32° 00' 16"E`	14.00'
L84	N45° 21' 15"W`	11.72'	L104	N57° 59' 44"W`	12.23'
L85	N44° 38' 45"E`	13.00'	L105	S67° 14' 36"E`	12.05'
L86	S45° 21' 15"E`	11.39'	L106	N22° 45' 24"E`	14.00'
L87	N18° 03' 37"W`	11.47'	L107	N67° 14' 36"W`	12.00'
L88	N71° 56' 23"E`	13.00'			
L89	S18° 03' 37"E`	11.64'			
L90	N9° 36' 35"W`	12.58'			
L91	N80° 23' 25"E`	14.00'			
L92	S9° 36' 35"E`	12.37'			
L93	N12° 15' 15"E`	11.51'			
L94	S77° 44' 45"E`	13.00'			
L95	S12° 15' 15"W`	11.59'			
L96	N38° 22' 10"E`	11.44'			
L97	S51° 37' 50"E`	13.00'			
L98	S38° 22' 10"W`	11.37'			
L99	N38° 15' 47"E`	11.54'			
L100	S51° 44' 13"E`	13.00'			



UTILITY EASEMENT CENTERLINE TABLE

Line Table			Curve Table					
Line #	Direction	Length	Curve #	Radius	Length	Chord Direction	Tangent	Chord
L68	N77° 50' 30"E`	140.31'	C28	95.000	25.816	N75° 56' 52"E`	12.99'	25.74'
L69	N50° 47' 09"E`	122.56'	C29	50.000	14.364	N59° 55' 59"E`	7.23'	14.31'
L70	S24° 04' 10"E`	59.84'						
L71	S46° 54' 06"E`	134.42'						
L72	S34° 09' 06"E`	69.12'						
L73	S34° 09' 06"E`	21.73'						
L74	S11° 23' 39"E`	271.52'						
L75	S22° 08' 45"E`	194.94'						
L76	S55° 16' 07"E`	228.21'						
L77	N83° 43' 59"E`	78.63'						
L78	N68° 09' 46"E`	94.65'						
L79	N51° 42' 12"E`	57.52'						
L80	N51° 42' 12"E`	43.04'						

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MARK S. BECKER
REGISTERED LAND SURVEYOR #28643

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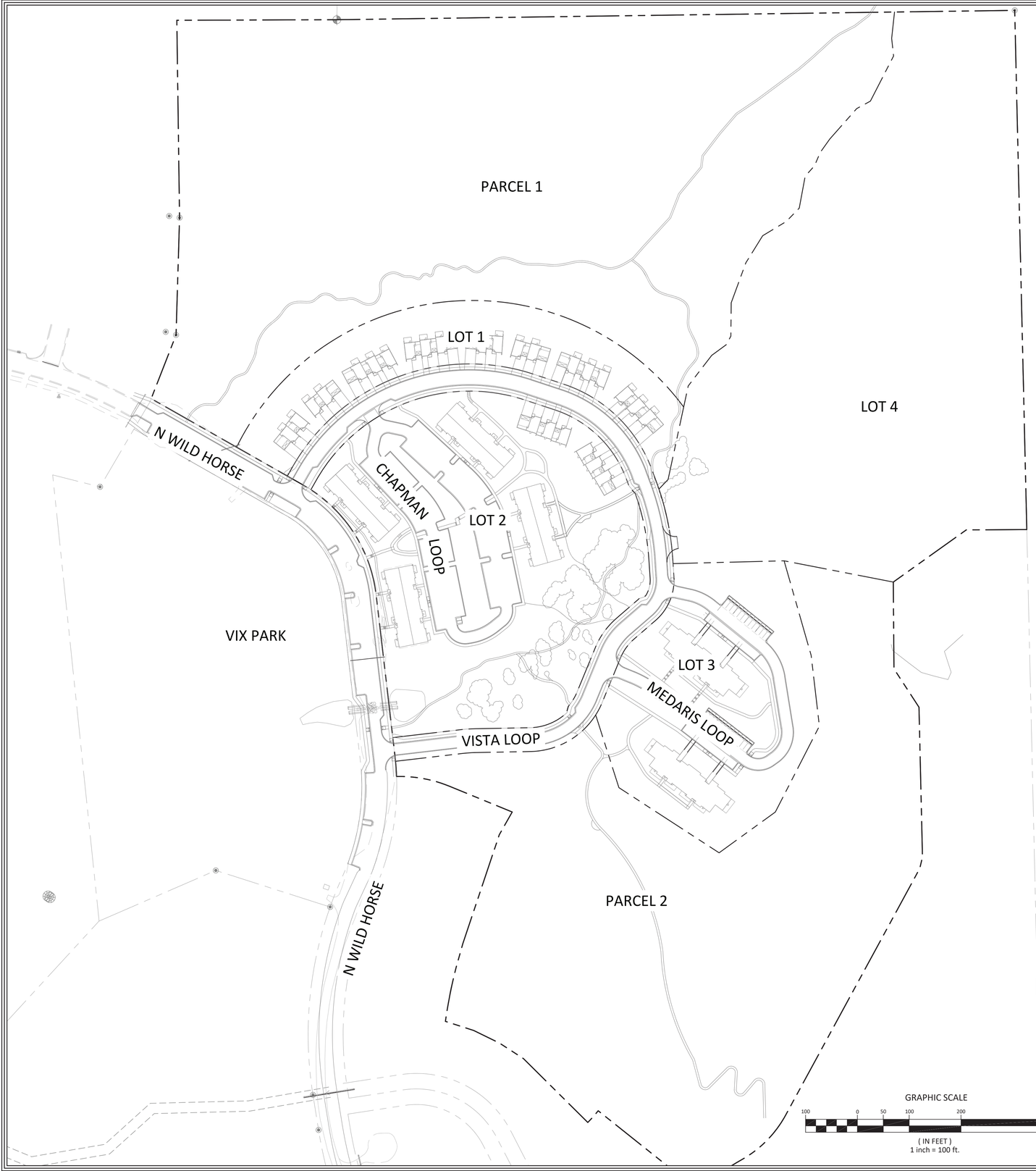



VICINITY MAP
SCALE: 1" = 500'

SHEET INDEX

C0.0 - COVER SHEET
C0.1 - NOTES
C1.0 - SITE PLAN
C1.1 - SITE PLAN SECTIONS
C1.2 - SIGNAGE AND STRIPING PLAN
C1.3 - EROSION CONTROL PLAN
C2.0 - OVERALL GRADING PLAN
C2.1 - VISTA LOOP PLAN/PROFILE
C2.2 - MEDARIS LOOP PLAN/PROFILE
C2.3 - CHAPMAN LOOP PLAN/PROFILE
C2.4 - N. WILD HORSE PLAN/PROFILE
C2.5 - NORTH WEST GRADING
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C2.8 - EAST GRADING
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C4.0 - STORM PLAN A, B, & C
C4.1 - STORM PROFILES A, B, & C
C4.2 - STORM PLAN D, E, & F
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C4.6 - STORM PLAN K & L
C4.7 - STORM PROFILES K & L
C5.0 - SITE DETAILS
C5.1 - GRADING DETAILS
C5.2 - SIGNAGE DETAILS
C6.0 - EXISTING DRAINAGE EXHIBIT
C6.1 - PROPOSED DRAINAGE EXHIBIT
C6.2 - SITE DRAINAGE EXHIBIT

Know what's below. Call before you dig.
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3•CARBONDALE CO 81623
(970) 704•0311• soprisengineering.com

DATE:	09-16-2024	
JOB NO.	33011.01	
DESIGNED BY	AKC	
DRAWN BY	JPP	
CHECKED BY	YTN	

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
COVER SHEET

DRAWING NO.
C-0.0

G:\2023\33011 CVR RZ RES\CIVIL\CIVIL DWGS\PLAN\33011-COV-COVER.DWG - Sep 16, 2024 - 4:24pm

GENERAL CONSTRUCTION NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST DESIGN STANDARDS OF TOWN OF NEW CASTLE AND THE RESPECTIVE UTILITY COMPANY UNLESS OTHERWISE NOTED.
2. THE EXISTING CONTOUR INTERVAL IS TWO (2) FEET (DASHED). EXISTING CONDITIONS ARE BASED ON AN IMPROVEMENT SURVEY PERFORMED BY SOPRIS ENGINEERING, LLC.
3. ALL EXISTING UTILITIES EITHER UNDERGROUND OR OVERHEAD, SHALL BE MAINTAINED IN CONTINUOUS SERVICE THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL BE RESPONSIBLE AND LIABLE FOR ANY DAMAGE TO, OR INTERRUPTION OF SERVICES CAUSED BY THE CONSTRUCTION.
4. ALL CONTRACTORS AND SUBCONTRACTORS SHALL HAVE A SET OF APPROVED CONSTRUCTION DOCUMENTS ON SITE AT ALL TIMES.
5. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING CONDITIONS OUTSIDE THE DESIGNATED IMPROVEMENT AREA FROM DAMAGE. ANY DAMAGE TO EXISTING AREAS OUTSIDE THE DESIGNATED IMPROVEMENT AREA DURING CONSTRUCTION SHALL, AT A MINIMUM, BE RESTORED TO A STATE EQUAL TO ITS PRE CONSTRUCTION STATE.
6. THE GENERAL CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS TO COMPLETE WORK, AND SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS. IDENTIFYING THE NEED FOR A PERMIT, PREPARING THE APPLICATION, AND PAYING THE SUBMITTAL AND REVIEW FEES NECESSARY TO SECURE PERMITS WILL BE THE TOTAL RESPONSIBILITY OF THE GENERAL CONTRACTOR. A COPY OF ALL PERMITS MUST BE POSTED AND WEATHER PROOFED ON SITE AT ALL TIMES.
7. THE GENERAL CONTRACTOR SHALL PERFORM THE WORK ACCORDING TO ALL LOCAL GOVERNMENT, COUNTY, STATE, AND FEDERAL SAFETY AND HEALTH REGULATIONS. IN PARTICULAR, THE "TRENCHING" AND "OPEN EXCAVATION" OPERATIONS SHALL COMPLY WITH ALL CURRENT O.S.H.A. REGULATORY REQUIREMENTS.
8. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING THEIR OWN DISPOSAL SITE FOR ALL DISPOSED MATERIALS.
9. COORDINATION WITH OTHER AGENCIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING INSPECTIONS PERFORMED BY OTHER GOVERNMENTAL AGENCIES, AND THE ENGINEER OF RECORD, AS PRESCRIBED IN THEIR PERMITS AND APPROVALS.
10. MAINTAIN TRAFFIC CONTROL DEVICES: THE CONTRACTOR SHALL INSTALL AND MAINTAIN FENCES, BARRIERS, LIGHTS AND SIGNS THAT ARE NECESSARY TO GIVE ADEQUATE WARNING TO THE PUBLIC AND TRAVELING MOTORISTS AT ALL TIMES.
11. NO MATERIAL OR EQUIPMENT SHALL BE STORED IN THE PUBLIC RIGHT-OF-WAY WITHOUT PRIOR APPROVAL FROM THE TOWN OF NEW CASTLE.
12. NOTIFY UTILITY OWNERS: CONTRACTOR SHALL NOTIFY ALL PUBLIC OR PRIVATE UTILITY OWNERS FORTY-EIGHT HOURS (OR AS REQUIRED BY UTILITY COMPANIES) PRIOR TO COMMENCEMENT OF WORK ADJACENT TO THE UTILITY.
13. IT IS THE CONTRACTORS RESPONSIBILITY TO SCHEDULE INSTALLATION INSPECTIONS AND SCHEDULE/OBTAIN AS-BUILT SURVEY DATA DURING CONSTRUCTION OF ALL IMPROVEMENTS TO INCLUDE, BUT NOT LIMITED TO, STORM PIPE INVERTS AT ALL BENDS, INLETS, OUTFALLS, AND UTILITY INFRASTRUCTURE.
14. COORDINATION WITH OTHER CONTRACTORS: WHERE TWO OR MORE CONTRACTORS ARE WORKING IN THE SAME AREA, EACH SHALL CONDUCT THEIR OPERATIONS IN SUCH A MANNER AS NOT TO CAUSE ANY UNNECESSARY DELAY OR HINDRANCE TO THE OTHER. WHERE CONFLICTS CANNOT BE AVOIDED, THE LOCAL GOVERNMENT WILL DETERMINE WHICH CONTRACTOR(S) HAVE CONSTRUCTION PRIORITY OVER THE OTHER CONTRACTORS AND THE TERMS OF SUCH CONSTRUCTION PRIORITY.
15. THE CONTRACTOR AND SUB-CONTRACTOR MUST MAKE EVERY ATTEMPT TO PREVENT DAMAGE TO EXISTING TREES AND ASSOCIATED ROOTS IN AND AROUND THE WORK AREA.

CONCRETE FLATWORK SPECIFICATIONS

1. CONCRETE MATERIAL AND PLACEMENT SHALL BE CDOT CLASS D MIX, WITH 4000 PSI COMPRESSIVE STRENGTH.
2. WEATHER PROTECTION SHALL BE PROVIDED IN COMPLIANCE WITH CDOT STANDARD SPECIFICATIONS (LATEST STANDARDS) SECTION 412 & 601.
3. PERMITTEE SHALL SCHEDULE A FORM INSPECTION AND OBTAIN APPROVAL PRIOR TO POURING WITHIN TOWN OF NEW CASTLE RIGHT-OF-WAY.
4. DAMAGED CONCRETE PAVEMENT SHALL BE REMOVED AND REPLACED AS A FULL PANEL SECTION WITH DOWELS SET INTO ADJACENT PANELS IN COMPLIANCE WITH CDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION AND M&S STANDARDS (LATEST EDITION).
5. DAMAGED FLATWORK AND CURB AND GUTTER SHALL BE REPLACED IN FULL SECTIONS FROM EXISTING CONTRACTION JOINTS. PARTIAL SECTION REPLACEMENT SHALL NOT BE PERMITTED.
6. CONCRETE REMOVED ADJACENT TO ASPHALT PAVEMENTS SHALL BE SAWCUT A MINIMUM OF 2' STRIP ALONG THE ABUTTING EDGE PRIOR TO REMOVAL IN ORDER TO REMOVE WITHOUT DAMAGE TO THE ASPHALT PAVEMENT. THE SAWCUT EDGE SHALL NOT BE USED AS A FORM FOR THE NEW CONCRETE. TEMPORARY FORMWORK SHALL BE PLACED ALONG THE SAWCUT EDGE IN THE DESIRED ALIGNMENT. THE TOP EDGE OF THE REPLACED CONCRETE SECTION (CONC. LIP) SHALL BE STRAIGHT AND TRUE WITHOUT WARPING OR IRREGULARITY. AFTER THE FORMWORK IS REMOVED, THE GAP SHALL BE RE-PAVED WITH ASPHALT. DAMAGE CAUSED TO THE EDGE OF THE ASPHALT PAVEMENT SHALL RESULT IN THE ASSESSMENT OF A RESTORATION FOR ASPHALT RESURFACING.
7. SUBGRADE ELEVATION SHALL BE BROUGHT UP TO +/- 0.05 FOOT OF FINAL GRADE PER PLANS, WITH APPROVED MATERIALS PRIOR TO PLACING FORMS.
8. NO WATER SHALL BE PLACED ON CONCRETE SURFACE TO ASSIST FINISHING.
9. VARIATIONS OF CONCRETE SURFACE SHALL NOT EXCEED $\frac{1}{8}$ INCH IN TEN FEET (10') IN ALL DIRECTIONS.
10. LIQUID MEMBRANE CURING COMPOUND SHALL BE PLACED IN COMPLIANCE WITH CDOT STANDARD SPECIFICATIONS (LATEST EDITION) SECTION 601.13.36 AT A RATE TO COMPLETELY COAT ALL EXPOSED SURFACES.
11. PERMITTEE SHALL BE RESPONSIBLE FOR REPAIRING SIDEWALK, CURB, OR GUTTER DAMAGED FROM WORK ACTIVITIES OF PERMITTEE.
12. PERMITTEE SHALL BE RESPONSIBLE FOR INSTALLATION OF NEW SIDEWALK, CURB AND GUTTER PER TOWN OF NEW CASTLE CODE, AND FOR REPAIR OF SIDEWALK, CURB AND GUTTER PER TOWN OF NEW CASTLE CODE.
13. ALL CONTRACTION JOINTS SHALL BE SAWN JOINTS AND MUST BE CUT WITHIN 12 HOURS OF PLACEMENT. SAWN JOINTS SHALL BE STRAIGHT AND TRUE AND 1/8 IN WIDTH AND 1/3 OF CONCRETE THICKNESS AND CUT AT INTERVALS EQUAL TO THE WIDTH OF SIDEWALK.
14. BASE FOR FLATWORK SHALL BE AT LEAST 6" OF CDOT CLASS 6 ABC COMPACTED TO 95% OF STANDARD PROCTOR DENSITY WITHIN 2% OF OPTIMUM MOISTURE.
15. COARSE BROOM FINISH SHALL BE PROVIDED PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAVEL ON SIDEWALK AND RAMPS AND PERPENDICULAR TO THE DIRECTION OF WATER FLOW ON CURB AND GUTTER.

EROSION CONTROL NOTES:

1. CONTRACTOR MUST UTILIZE "BEST MANAGEMENT PRACTICES" (BMP), TO CONTROL EROSION AND SEDIMENTATION DURING CONSTRUCTION, TO INCLUDE THE INSTALLATION OF INLET PROTECTION AROUND THE NEAREST DOWNSTREAM RECEIVING INLET LOCATED WITHIN THE TOWN OF NEW CASTLE'S ROW.
2. CONTRACTOR IS RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ALL TEMPORARY EROSION CONTROL MEASURES.
3. DUST CAUSED BY EXCAVATION, TOPSOIL REMOVAL OPERATIONS, OR ROAD BASE PLACEMENT SHALL BE CONTROLLED BY THE CONTRACTOR AT HIS EXPENSE. THE ENGINEER OR TOWN OF NEW CASTLE MAY REQUIRE THE CONTRACTOR AT ANY TIME TO DISCONTINUE CONSTRUCTION ACTIVITIES UNTIL DUST CONDITIONS ARE REDUCED TO THE TOWN OF NEW CASTLE'S SATISFACTION.
4. THE CONTRACTOR WILL BE REQUIRED TO FURNISH AND APPLY A DUST PALLIATIVE ON THE SITE AS DIRECTED BY THE TOWN OF NEW CASTLE. DUST PALLIATIVE MAY CONSIST OF WATER OR A NON-POLLUTING SOLUTION. SPREADING OF WATER OR WATER MIXTURE SHALL BE DONE WITH ACCEPTABLE SPRINKLING EQUIPMENT. ALL DUST CONTROL SHALL EXTEND BEYOND THE CONSTRUCTION AREA PROPER TO THE SIDE STREETS ENTERING AND EXISTING THE PROJECT, WHERE MUD AND DIRT FROM CONSTRUCTION EQUIPMENT, AS WELL AS LOCAL TRAFFIC, MAY GET ONTO THE SIDE STREETS. CLEANUP OF THESE AREAS WILL BE REQUIRED AS NECESSARY OR AS DIRECTED BY THE TOWN OF NEW CASTLE/OWNER/ENGINEER.
5. MAINTENANCE OF PROPER DRAINAGE AND CLEANING TEMPORARY SEDIMENT CONTAINMENT DURING THE PROGRESS OF THE CONTRACT IS ESSENTIAL. ANY DAMAGE DUE TO IMPROPER MAINTENANCE OF SAID DRAINAGE PRIOR TO FINAL ACCEPTANCE OF THE PROJECT WILL BE THE CONTRACTOR'S RESPONSIBILITY.
6. BMP'S SHALL BE INSTALLED BEFORE ANY EARTH DISTURBING ACTIVITIES COMMENCE.
7. STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES SHALL NOT CAUSE, HAVE THE REASONABLE POTENTIAL TO CAUSE, OR MEASURABLY CONTRIBUTE TO AN EXCEEDANCE OF ANY WATER QUALITY STANDARD.
8. CONSTRUCTION SHALL BE PHASED IN A MANNER TO LIMIT EARTH DISTURBING ACTIVITIES (I.E. THE ENTIRE PROJECT SITE SHOULD NOT BE DISTURBED IF CONSTRUCTION WILL ONLY BE OCCURRING IN ONE PARTICULAR SECTION).
9. SEDIMENT CAUSED BY ACCELERATED SOIL EROSION SHALL BE REMOVED FROM RUNOFF WATER BEFORE IT LEAVES THE CONSTRUCTION SITE.
10. BULK STORAGE STRUCTURES FOR PETROLEUM PRODUCTS AND ANY OTHER CHEMICALS SHALL HAVE SECONDARY CONTAINMENT OR EQUIVALENT PROTECTION TO CONTAIN ALL SPILLS AND PREVENT ANY SPILLED MATERIAL FROM ENTERING STATE WATERS.
11. THE EROSION CONTROL PLAN SHALL BE CONTINUOUSLY UPDATED TO REFLECT NEW OR REVISED BEST MANAGEMENT PRACTICES (BMP'S) DUE TO CHANGES IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE OF THE CONSTRUCTION SITE. UPDATES MUST BE MADE WITHIN 72 HOURS FOLLOWING THE CHANGE IN BMP'S.
12. THE CONTRACTOR SHALL INSPECT THE CONSTRUCTION SITE (INCLUDING ALL BMP'S, STORAGE CONTAINERS, AND CONSTRUCTION EQUIPMENT) A MINIMUM OF EVERY 14 CALENDAR DAYS AND WITHIN 24 HOURS AFTER A PRECIPITATION EVENT OR SNOW MELT THAT MAY CAUSE SURFACE EROSION.
13. THE CONTRACTOR SHALL KEEP A RECORD OF ALL INSPECTIONS ON SITE AND AVAILABLE FOR REVIEW BY TOWN OF NEW CASTLE STAFF. INSPECTION REPORTS MUST IDENTIFY ANY INCIDENTS OF NON-COMPLIANCE WITH THE TERMS AND CONDITIONS OF THE PERMIT.
14. STRAW BALES SHALL NOT BE USED FOR PRIMARY EROSION OR SEDIMENT CONTROL (I.E. STRAW BALES MAY BE USED FOR REINFORCEMENT BEHIND ANOTHER BMP SUCH AS SILT FENCE).
15. BMP'S INTENDED FOR SHEET FLOW SEDIMENT RUNOFF SHALL BE PLACED PARALLEL TO THE SLOPE.
16. ALL BMP'S SHALL BE CLEANED WHEN SEDIMENT LEVELS ACCUMULATE TO HALF THE DESIGN OF THE BMP UNLESS OTHERWISE SPECIFIED.
17. A VEHICLE TRACKING PAD (VTP) SHALL BE PLACED AT ALL EXITS FROM THE SITE TO PREVENT TRACK-OUT ONTO TOWN OF NEW CASTLE STREETS. IF TRACK-OUT DOES OCCUR, THE CONTRACTOR SHALL IMMEDIATELY SWEEP THE STREET OF DEBRIS.
18. ALL PORTA-POTTY STRUCTURES MUST BE FIRMLY SECURED WITH #4 REBAR ANCHORS OR EQUAL. MUST BE PLACED AWAY FROM FLOW LINES OF STREET, SWALES, RAIN GARDENS & AWAY FROM INLETS.
19. A CONCRETE WASHOUT AREA (CWA) MUST BE PROVIDED AND ROUTINELY MAINTAINED. NO WASHING OUT OF CONCRETE TRUCKS OR WASHING OF SWEEPINGS FROM EXPOSED AGGREGATE CONCRETE INTO STORM DRAINS, OPEN DITCHES, STREETS OR STREAMS IS ALLOWED.
20. EXCESS CONCRETE IS NOT ALLOWED TO BE DUMPED ON-SITE, EXCEPT IN DESIGNATED TEMPORARY CONCRETE WASHOUT AREAS (CWA).
21. ON-SITE TEMPORARY CONCRETE WASHOUT FACILITIES WILL BE CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS AND MUST BE CLEANED OUT OR REPLACED BEFORE THE WASHOUT IS 75% FULL.
22. STOCKPILES OF SOIL OR OTHER ERODABLE MATERIALS MUST BE MANAGED SO THAT STORMWATER DOES NOT COME IN CONTACT WITH THE PILE AND POTENTIALLY WASH POLLUTANTS OFFSITE. AT A MINIMUM STOCKPILES SHALL BE ROUTINELY WETTED AND/OR BLANKETED AS WELL AS INCLUDE AN EROSION SOCK PERIMETER BARRIER TO PREVENT WIND EROSION AND SEDIMENT TRANSPORT OFFSITE. STOCKPILES THAT ARE INACTIVE FOR MORE THAN 7 DAYS WILL REQUIRE SOIL BINDER OR HAVE MUCLH/MULCH TACKIFIER APPLIED.
23. EROSION CONTROL BLANKETS SHALL BE INSTALLED ON ALL SLOPES EXCEEDING 3:1.

POTABLE WATER INSTALLATION SPECIFICATIONS:

1. ALL WATER MAIN CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE TOWN OF NEW CASTLE PUBLIC WORKS MANUAL DETAILS AND SPECIFICATIONS. CONTRACTOR SHALL PROVIDE MATERIAL SUBMITTAL FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
2. POTABLE WATER MAIN AND WATER SERVICES LARGER THAN 4" SHALL BE GASKETED C900 PVC DR14 OR APPROVED EQUAL.
3. WATER SERVICES SMALLER THAN 4" SHALL BE AWWA PURE CORE OR APPROVED EQUAL.
4. THE PIPE BEDDING MATERIAL SHALL BE $\frac{3}{4}$" INCH CRUSHED SCREENED ROCK HAULED IN FOR BEDDING AND NOT NATIVE EXCAVATED MATERIAL.
5. THE BACKFILL MATERIAL FROM 12 INCHES ABOVE THE TOP OF THE PIPE TO THE TOP OF THE TRENCH SHALL BE CLASS 6 AGGREGATE BASE COURSE MATERIAL.
6. MINIMUM COVER OF WATER MAINS AND SERVICE LINES SHALL BE 5.5 FEET DEEP FROM TOP OF PIPE TO FINISHED GRADE.
7. ALL FITTINGS MUST HAVE MEGA LUG FITTINGS IN ADDITION TO CONCRETE THRUST BLOCKS.
8. FIRE HYDRANTS SHALL BE KENNEDY, INSTALLED PER LATEST DETAIL AND SPECIFICATIONS IN THE TOWN PUBLIC WORKS MANUAL
9. VALVES: GATE VALVES SHALL BE INSTALLED FOR ALL VALVES 12" AND SMALLER AND SHALL BE A MUELLER OR PRE APPROVED EQUIVALENT RESILIENT SEAT, EPOXY COATED MECHANICAL JOINT, NON-RISING VALVE STEM AND SHALL OPEN BY TURNING TO THE LEFT, COUNTER-CLOCKWISE. VALVES SHALL CONFORM TO AWWA SPECIFICATIONS C-509; OR THE LATEST REVISION THEREOF; IN ZONES WHICH HAVE STATIC PRESSURES GREATER THAN 80 PSI THE VALVE APPLICATION WILL BE A CLASS 250 BUTTERFLY VALVE OF THE ABOVE MENTIONED MANUFACTURERS WITH EPOXY INTERIOR AND EXTERIOR COATINGS. AT INTERSECTIONS, GATE VALVES SHALL BE INSTALLED WITHIN 3' OF A TEE, CROSS, OR BEND, ALL CONNECTIONS SHALL HAVE MEGA-LUGS ON THE FITTINGS EXCEPT WHERE THE TEE BRANCH AND BRANCH VALVE ARE FLANGED. ALL MECHANICAL JOINT FITTINGS WILL HAVE MEGA-LUG FITTINGS, AND CONCRETE THRUST BLOCKS. TIE RODS MAY BE USED ONLY WERE APPROVED.
10. PRESSURE REDUCING VALVE SHALL BE CLAY-VAL OR APPROVED EQUAL.
11. ALL WATER MAIN CONSTRUCTION SHALL BE OBSERVED AND COORDINATED WITH THE TOWN OF NEW CASTLE OR AUTHORIZED REPRESENTATIVE.
12. A PRE-CONSTRUCTION MEETING IS REQUIRED PRIOR TO COMMENCING ANY WORK.

IRRIGATION RAW WATER INSTALLATION SPECIFICATIONS:

1. BURY DEPTH SHALL BE MINIMIZED WHERE POSSIBLE. MINIMUM BURY DEPTH IS 2 FEET.
2. IRRIGATION MAIN LINES SHALL HAVE GRAVITY DRAINS FOR WINTERIZATION, LOCATED AT ELEVATION LOW POINTS.
3. IRRIGATION MAIN LINES SHALL BE 4" GASKETED BELL C900 DR 18, PURPLE IN COLOR. 14 GUAGE TRACER WIRE REQUIRED ON ALL IRRIGATION MAINS.
4. RAW WATER MAIN LINES SHALL BE CONSTRUCTED WITH MECHANICAL JOINTS AND A THRUST BLOCK, OR MECHANICAL JOINTS WITH MEGA LUG CONNECTIONS.
5. RAW WATER SERVICE TAPS SHALL INCLUDE A WEEPING CURB STOP AND GRAVEL DRAINAGE PIT.

PAVING SPECIFICATIONS:

PAVEMENT REMOVAL:

1. ALL ASPHALT PAVEMENT CUTS SHALL BE IN STRAIGHT NEAT LINES. IRREGULAR SHAPED CUTS WITH MORE THAN FOUR (4) SIDES OR CUTS WITHIN EXISTING PATCHES SHALL NOT BE ALLOWED. ALL CUTS SHALL BE RECTANGULAR IN SHAPE, AND EDGES SHALL BE PARALLEL OR PERPENDICULAR TO THE FLOW OF TRAFFIC.
2. IN ORDER TO PROVIDE STRAIGHT EDGES, ALL ASPHALT PAVEMENT CUTS SHALL BE CUT BY A MECHANICAL SAW CUTTING EQUIPMENT, ROTOMILLING, OR OTHER APPROVED METHOD WHICH ASSURES A NEAT STRAIGHT EDGE FOR THE REQUIRED DEPTH OF THE CUT.
3. ASPHALT PAVEMENT CUTS SHALL BE SUCH THAT NO LONGITUDINAL JOINT LIES WITHIN THE WHEEL TRACK; ANY PATCH WHICH PENETRATES A WHEEL PATH MUST BE EXTENDED TO FULL LANE WIDTH.
4. CONCRETE PAVEMENT SHALL BE REMOVED AND REPLACED FROM EXISTING PANEL JOINTS ONLY.
5. STRESS CRACKING OF EXISTING PAVEMENT MAY OCCUR DURING EXCAVATION FOR A VARIETY OF REASONS. IF THIS OCCURS, THE CONTRACTOR MUST SAWCUT AT LEAST 12" BEYOND THE LIMIT OF VISIBLE CRACKS AND REMOVE ALL STRESSED PAVEMENT.

ASPHALT PAVEMENTS:

6. THE MINIMUM PATCH DIMENSIONS SHALL BE TWELVE INCHES (12" MIN.) BEYOND EACH SIDE OF THE TRENCH OR EXCAVATION; REFER TO DETAILS AND TOWN OF NEW CASTLE'S LATEST DESIGN STANDARDS.
7. THE LONGITUDINAL EDGES OF THE PATCH SHALL NOT FALL WITHIN THE EXISTING WHEEL TRACKS WHENEVER POSSIBLE.
8. PRIOR TO PLACING THE PERMANENT PATCH, THE EXISTING PAVEMENT SHALL BE SAWCUT TO A NEAT STRAIGHT-LINE, SQUARE TO THE TRAVEL LANE.
9. ASPHALT MIX SHALL BE CDOT, S-MIX ($\frac{3}{4}$"). PATCH BACK AREAS GREATER THAN ONE HUNDRED TWENTY SQUARE FEET (120 S.F.) SHALL REQUIRE THE SUBMITTAL AND APPROVAL OF A MIX DESIGN TO THE ENGINEER PRIOR TO PLACEMENT.
10. COMPACTION SHALL BE AT LEAST 95% OF MAX. DENSITY WITHIN 2% OPTIMUM MOISTURE AS DEFINED BY ASTM 1557 METHOD "C".
11. COMPACTION EQUIPMENT SHALL BE CAPABLE OF COMPACTING CORNERS AND EDGES OF PATCH.
12. HOT BITUMINOUS PATCHES SHALL BE PLACED A MIN. OF 5-INCHES OR MATCH EXISTING DEPTH, WHICHEVER IS GREATER. PLACEMENT SHALL BE PERFORMED IN A MIN. OF 2 LIFTS. THE BOTTOM COURSE SHALL BE 3-INCHES AND THE TOP SHALL BE 2-INCHES.
13. PATCHES SHALL ALSO HAVE A CROSS SLOPE SECTION CONSISTENT WITH THE DESIGN OF THE EXISTING ROADWAY.
14. TEMPORARY OR PERMANENT ASPHALT PATCHES SHALL BE PLACED WITHIN TWENTY FOUR (24) HOURS OF TRENCH BACKFILLING. WHENEVER PERMANENT PATCHES ARE NOT CONSTRUCTED WITHIN TWENTY FOUR (24) HOURS FOLLOWING TRENCH BACKFILLING OPERATIONS, TEMPORARY PAVEMENT PATCHES CONSISTING OF A MINIMUM OF THREE INCHES (3") OF HOT OR COLD PLANT MIX OR STEEL PLATES MUST BE PLACED TO PROVIDE THE REQUIRED NUMBER OF PAVED TRAVEL LANES. TEMPORARY PAVEMENT PATCHES MAY BE LEFT IN PLACE FOR A MAX. OF FIVE (5) WORKING DAYS FOLLOWING COMPLETION OF BACKFILLING OPERATIONS UNLESS OTHERWISE APPROVED BY THE ENGINEER OF RECORD OR THE TOWN OF NEW CASTLE PAVING INSPECTOR .
15. THE PERMITTEE SHALL MONITOR TEMPORARY PATCHES ON A DAILY BASIS AND TEMPORARY PATCHES EXHIBITING RUTS, HUMPS, OR DEPRESSIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.
16. A PERMANENT HOT PATCH SHALL BE MADE WITHIN FIVE (5) DAYS AFTER THE AREA IS OPEN TO TRAFFIC, WEATHER PERMITTING.
17. IF FINAL PATCHING IS NOT COMPLETED WITHIN THE SPECIFIED TIME, NO NON-EMERGENCY PERMITS SHALL BE GRANTED TO THE PERMITTEE UNTIL ALL OUTSTANDING WORK IS COMPLETED.
18. UPON COMPLETION OF THE PERMANENT PATCH, THE SURFACE SHALL BE THOROUGHLY COMPACTED, SMOOTH AND FREE FROM RUTS, HUMPS, DEPRESSIONS, OR IRREGULARITIES. WHEN A STRAIGHTEDGE TEN FEET (10') LONG IS LAID ACROSS THE PERMANENT PATCH PARALLEL TO THE CENTERLINE, THE SURFACE SHALL NOT VARY MORE THAN $\frac{1}{4}$" FROM THE LOWER EDGE OF THE STRAIGHT EDGE. PATCHES EXHIBITING DEVIATIONS GREATER THAN $\frac{1}{4}$" SHALL BE REPLACED PRIOR TO ACCEPTANCE OF PATCH. IF THE EXISTING STREET EXCEEDS THE ABOVE TOLERANCES, THEN THE PATCH SHALL BE EQUAL OR BETTER THAN THE CONDITION OF THE SURROUNDING PAVEMENT. IN MOST CASES, AND PARTICULARLY IN THE CASES OF EXTENSIVE EXCAVATION AND REPAIRS, IT IS DESIRABLE TO SURVEY THE EXISTING PAVEMENT CONDITIONS WITH A REPRESENTATIVE OF THE TOWN OF NEW CASTLE PRIOR TO THE WORK. AFTER COMPLETION OF THE WORK, SURVEY THE PAVEMENT CONDITION AGAIN TO VERIFY THAT THE PAVEMENT CONDITION HAS BEEN MAINTAINED OR IMPROVED. IN THE CASE OF MINOR REPAIRS, THESE PAVEMENT SURVEYS CAN BE MADE BY VISUAL OBSERVATION.

PUBLIC IMPROVEMENTS NOTE:

1. PUBLIC IMPROVEMENTS SHALL BE IN COMPLIANCE WITH THE TOWN OF NEW CASTLE ENGINEERING STANDARDS AND TOWN OF NEW CASTLE ROW STANDARDS. PUBLIC IMPROVEMENTS IN THE ROW MUST MEET THE TOWN OF NEW CASTLE'S CONSTRUCTION AND EXCAVATION STANDARDS.

GRAVITY SANITARY SEWER SERVICE LINE INSTALLATION SPECIFICATIONS:

1. ALL SANITARY SEWER MAIN CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE TOWN OF NEW CASTLE PUBLIC WORKS MANUAL DETAILS AND SPECIFICATIONS. CONTRACTOR SHALL PROVIDE MATERIAL SUBMITTAL FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
2. ALL SEWER SERVICES SHALL BE PVC CLASS-SDR 35.
3. FITTINGS: PVC PUSH JOINT-ASTM D1784.
4. CLEAN ALL PIPE, FITTINGS AND RELATED MATERIALS THOROUGHLY OF ALL FOREIGN MATERIAL AND INSPECT FOR CRACKS, EXCESSIVE DEFLECTION FLAWS OR OTHER DEFECTS PRIOR TO AND AFTER INSTALLATION.
5. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT ANY CONSTRUCTION DEBRIS FROM ENTERING THE SEWER LINES DURING CONSTRUCTION. IF THIS DEBRIS SHOULD ENTER THE PIPE LINE SYSTEM, THE CONTRACTOR SHALL FURNISH ALL LABOR AND MATERIALS NECESSARY TO CLEAN THE SYSTEM. UNDER NO CIRCUMSTANCES WILL THE CONTRACTOR FLUSH THE DEBRIS INTO AN EXISTING SANITARY SEWER SYSTEM.
6. ALL PIPES MUST BE INSTALLED WITH A LASER. IF BENDING OF THE BEAM DUE TO AIR TEMPERATURE VARIATIONS BECOMES APPARENT WITH "IN PIPE" UNITS, A FAN SHALL BE PROVIDED TO CIRCULATE AIR IN THE PIPE. AIR VELOCITY SHALL NOT BE SO EXCESSIVE AS TO CAUSE PULSATING OR VIBRATING OF THE BEAM. IF, IN THE OPINION OF THE ENGINEER, THE BEAM CANNOT BE ACCURATELY CONTROLLED, THIS METHOD OF SETTING LINE AND GRADE SHALL BE ABANDONED.
7. PIPE SHALL BE LAID TRUE TO LINE AND GRADE, IN AN UPHILL DIRECTION, WITH BELL ENDS FACING IN THE DIRECTION OF LAYING. WHEN PIPE LAYING IS NOT IN PROGRESS, THE OPEN END OF PIPE SHALL BE CLOSED BY A WATERTIGHT PLUG.
8. MANHOLES & CLEANOUTS SHALL BE FURNISHED AND INSTALLED TO DEPTHS AND DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS AND/OR STAKED IN THE FIELD. MANHOLES SHALL BE CONSTRUCTED OF CAST-IN-PLACE OR PRECAST CONCRETE IN ACCORDANCE WITH DETAILS SHOWN ON THE CONSTRUCTION DRAWINGS.
9. CONNECTIONS TO EXISTING SEWER FACILITIES WHERE LIVE FLOWS EXIST SHALL BE MADE ONLY AFTER PRIOR CONSULTATION WITH AND RECEIPT OF WRITTEN PERMISSION FROM THE ENGINEER. NO BYPASS OF SEWAGE TO THE SURFACE WILL BE ALLOWED IN THE COMPLETION OF THIS CONNECTION. CONNECTIONS SHALL BE MADE AS SHOWN ON THE DRAWINGS. ALL CONNECTIONS BETWEEN PIPES OF DIFFERENT MATERIALS SHALL BE MADE WITH APPROVED MANUFACTURED CONNECTORS.
10. THE CONTRACTOR IS REQUIRED TO PROVIDE AS-BUILTS AND CCTV THE INSTALLED SEWER SERVICE MAIN LINES AFTER CONSTRUCTION.

CONTACTS:
DESIGN ENGINEER-SOPRIS ENGINEERING: CONTACT JOHN PETAISTO, PE AT 970-316-5212

NEW CASTLE PUBLIC WORKS: (POTABLE WATER, IRRIGATION, SANITARY SEWER), JOHN WENZEL, 970-984-0669
ELECTRIC & NATURAL GAS: XCEL ENERGY, SAMANTHA WAKEFIELD, 970-201-4860
TELEPHONE- LUMEN: JASON SHARPE, 970-328-8290
CABLE- COMCAST: KODY DAVIS, 970-618-0483

COLORADO RIVER FIRE RESCUE: 970-625-1243

NOTE:
CONTRACTOR MUST NOTIFY ALL UTILITY COMPANIES, APPROPRIATE TOWN OF NEW CASTLE PERSONNEL AND ENGINEER AS NOTED ABOVE, PRIOR TO DEMOLITION WORK.

811 Know what's **below.** **Call** before you dig.
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3•CARBONDALE CO 81623
(970) 704•0311• soprisengineering.com

DATE:	09-16-2024	
JOB NO.	33011.01	
DESIGNED BY	AKC	
DRAWN BY	JPP	
CHECKED BY	YTN	

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
NOTES

DRAWING NO.
C-0.1

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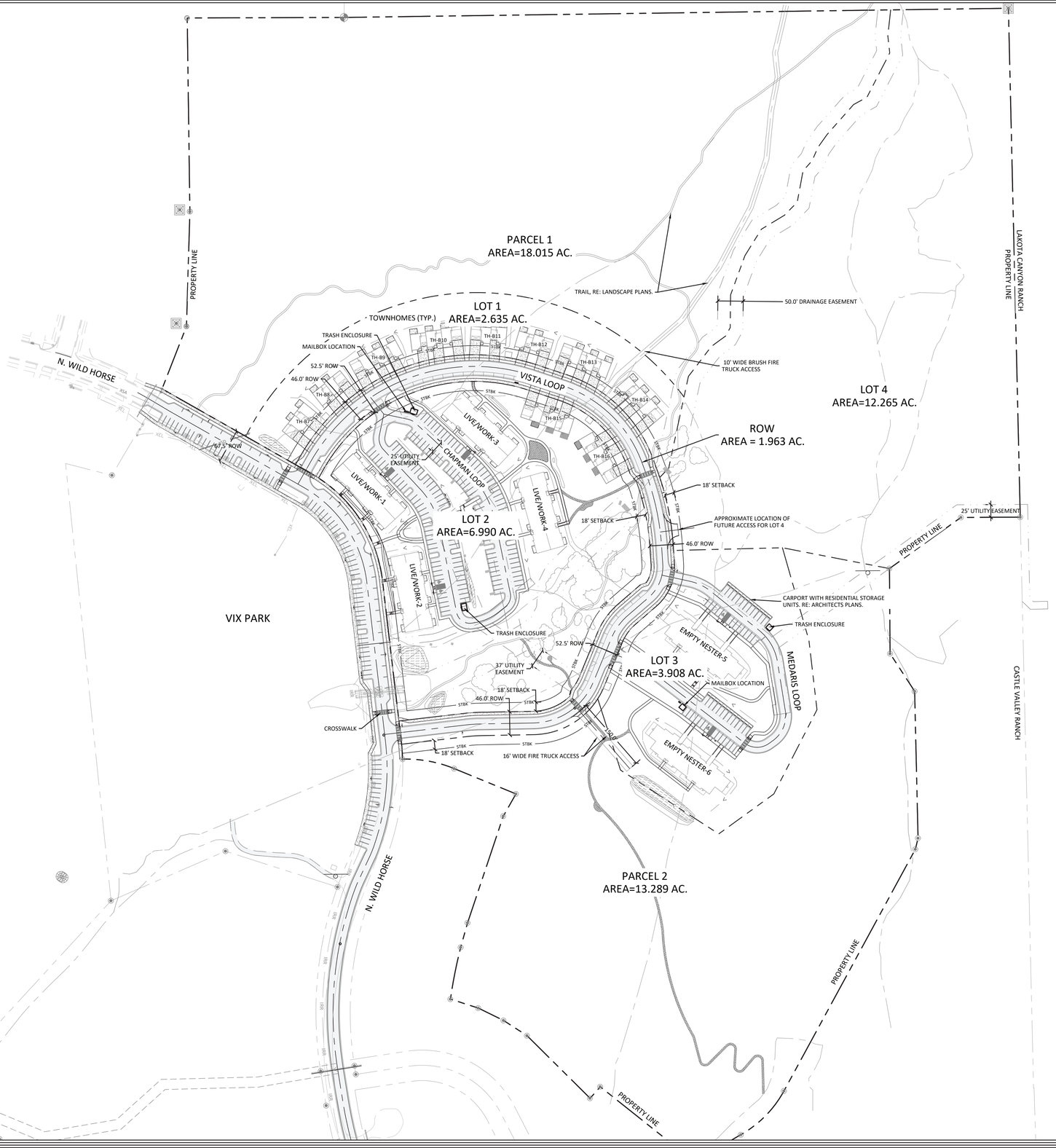


SITE NOTES:

1. THE EXISTING BOUNDARY AND TOPOGRAPHIC SURVEY WAS PERFORMED BY SOPRIS ENGINEERING, LLC, BASED ON THE ALTA SURVEY PERFORMED BY SGM INC.
2. THE EASEMENTS SHOWN HERE ON FOR SITE PLAN REFERENCE. REFER TO THE PRELIMINARY PLAT FOR FINAL RIGHT-OF-WAY AND EASEMENT DEDICATIONS.
3. REFER TO THE ARCHITECT'S PLANS FOR BUILDING INFORMATION.
4. REFER TO THE LANDSCAPE ARCHITECT'S PLANS REGARDING THE SITE LANDSCAPE IMPROVEMENTS.
5. ALL GEOTECHNICAL ENGINEERING RECOMMENDATIONS SHALL BE ADHERED TO.

PROPOSED LEGEND

- PROPERTY LINE
- EASEMENT
- SETBACK
- LOT LINE
- CENTERLINE
- STORM SEWER
- DRAINAGE DRY-WELL
- FIRE HYDRANT
- SIGN
- STORM INLET
- ASPHALT PAVEMENT
- CONCRETE/SIDEWALK
- SNOW STORAGE

EXISTING LEGEND

- EXISTING CONTOUR
- EXISTING CONTOUR INTERVAL
- EXISTING WATER MAIN
- EXISTING SANITARY SEWER MAIN
- EXISTING GAS
- EXISTING TELEPHONE
- EXISTING UNDERGROUND ELECTRIC
- EXISTING CABLE
- EXISTING EASEMENT
- EXISTING PROPERTY LINE
- EXISTING WIRE FENCE
- EXISTING SEWER MANHOLE
- EXISTING GUY WIRE
- EXISTING POWER POLE
- EXISTING GAS METER
- EXISTING ELECTRIC TRANSFORMER
- EXISTING ELECTRIC METER
- EXISTING TELEPHONE PEDESTAL
- EXISTING CATV PEDESTAL
- EXISTING LIGHT POLE

NORTH

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3 • CARBONDALE CO 81623
(970) 704•0311 • soprisengineering.com

DATE:	09-16-2024
JOB NO.	33011.01
DESIGNED BY	AKC
DRAWN BY	JPP
CHECKED BY	YTN

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

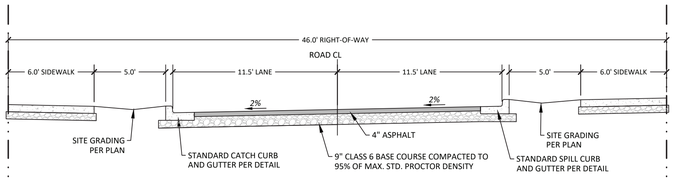
DATE	REVISION

TITLE
SITE PLAN

DRAWING NO.
C-1.0

Know what's **below.**
Call before you dig.
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

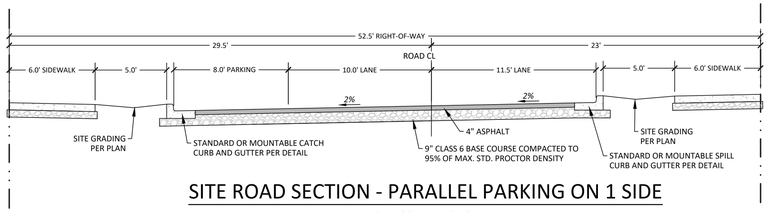
G:\2023\33011 CVW R2 RESUVN\CIVIL\DWGS\PLOT\33011-C10 SITE.DWG - Sep 16, 2024 - 4:46pm



SITE ROAD SECTION - NO PARKING

PUBLIC: VISTA LOOP,
PRIVATE: SUNSET LOOP, LIVE/WORK LOOP ROADS
N.T.S.

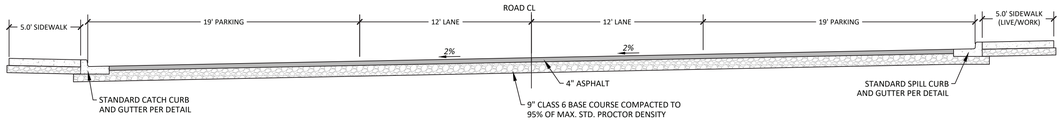
NOTES:
1. REDUNDANT SIDEWALK MAY BE REMOVED. REFER TO SITE PLAN FOR SIDEWALK LOCATION AND EXTENTS.
2. STRIP ALL TOPSOIL SCARIFY AND RECOMPACT SUBGRADE A MINIMUM OF 8" DEPTH TO 95% STANDARD PROCTOR.
3. CONFIRM FILL SOILS (WHERE APPLICABLE) AND ROAD SECTION WITH SOILS ENGINEER PRIOR TO CONSTRUCTION



SITE ROAD SECTION - PARALLEL PARKING ON 1 SIDE

VISTA LOOP PUBLIC ROAD
N.T.S.

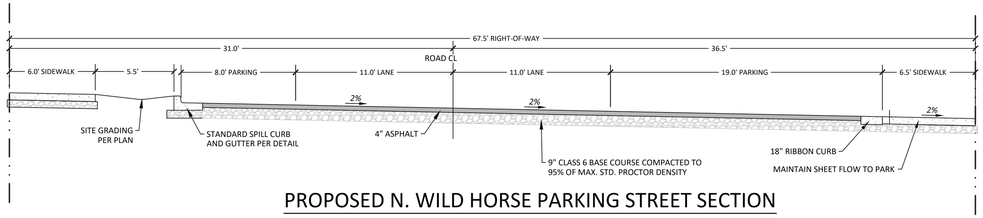
NOTES:
1. REDUNDANT SIDEWALK MAY BE REMOVED. REFER TO SITE PLAN FOR SIDEWALK LOCATION AND EXTENTS.
2. REFER TO PLAN FOR PARKING LOCATIONS.
3. MOUNTABLE CURB PROPOSED ADJACENT TO TOWNHOMES. LANDSCAPE WIDTH REDUCED TO ACCOUNT FOR WIDER CURB.
4. STRIP ALL TOPSOIL SCARIFY AND RECOMPACT SUBGRADE A MINIMUM OF 8" DEPTH TO 95% STANDARD PROCTOR.
5. CONFIRM FILL SOILS (WHERE APPLICABLE) AND ROAD SECTION WITH SOILS ENGINEER PRIOR TO CONSTRUCTION



PRIVATE SITE ROAD SECTION - PERPENDICULAR PARKING

EMPTY NESTER & LIVE/WORK UNITS
N.T.S.

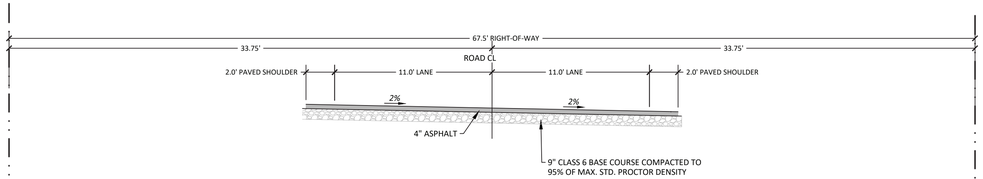
NOTES:
1. REFER TO PLAN FOR PARKING AND SIDEWALK LOCATIONS.
2. STRIP ALL TOPSOIL SCARIFY AND RECOMPACT SUBGRADE A MINIMUM OF 8" DEPTH TO 95% STANDARD PROCTOR.
3. CONFIRM FILL SOILS (WHERE APPLICABLE) AND ROAD SECTION WITH SOILS ENGINEER PRIOR TO CONSTRUCTION



PROPOSED N. WILD HORSE PARKING STREET SECTION

LOOKING SOUTH
N.T.S.

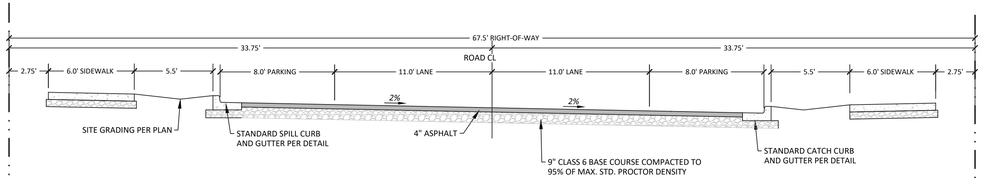
NOTES:
1. REFER TO PLAN FOR PARKING LOCATIONS.
2. STRIP ALL TOPSOIL SCARIFY AND RECOMPACT SUBGRADE A MINIMUM OF 8" DEPTH TO 95% STANDARD PROCTOR.
3. CONFIRM FILL SOILS (WHERE APPLICABLE) AND ROAD SECTION WITH SOILS ENGINEER PRIOR TO CONSTRUCTION



INTERIM N. WILD HORSE STREET SECTION

SOUTH OF VIX PARK, LOOKING SOUTH
N.T.S.

NOTES:
1. SECTION INCLUDES TRAVEL LANES TO ALLOW FOR FUTURE BUILD OUT OF ROAD BY OTHERS..
2. STRIP ALL TOPSOIL SCARIFY AND RECOMPACT SUBGRADE A MINIMUM OF 8" DEPTH TO 95% STANDARD PROCTOR.
3. CONFIRM FILL SOILS (WHERE APPLICABLE) AND ROAD SECTION WITH SOILS ENGINEER PRIOR TO CONSTRUCTION



FUTURE N. WILD HORSE STREET SECTION (BY OTHERS)

SOUTH OF VIX PARK, LOOKING SOUTH
N.T.S.

NOTES:
1. REFER TO PLAN FOR PARKING LOCATIONS.
2. STRIP ALL TOPSOIL SCARIFY AND RECOMPACT SUBGRADE A MINIMUM OF 8" DEPTH TO 95% STANDARD PROCTOR.
3. CONFIRM FILL SOILS (WHERE APPLICABLE) AND ROAD SECTION WITH SOILS ENGINEER PRIOR TO CONSTRUCTION

SOPRIS ENGINEERING LLC
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DATE:	09-16-2024	
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DESIGNED BY	JPP	
DRAWN BY	JPP	
CHECKED BY	YTN	

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION
06/18/24	TOWN COMMENTS

TITLE
ROAD SECTIONS

DRAWING NO.
C-1.1

Know what's below. Call before you dig.
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G:\2023\33011 CVH R2 RESCOVR\CIVIL\DWGS\PLOTS\33011-C10 SITE.DWG - Sep 16, 2024 - 4:46pm

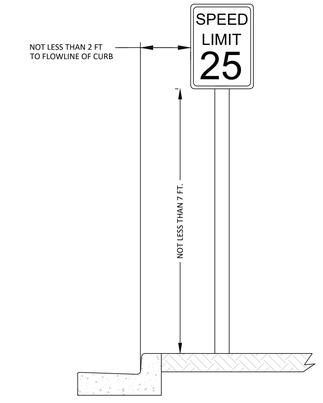


SIGNAGE & STRIPING NOTES

1. ALL SIGN LOCATION AND CONSTRUCTION TO MUTCD & TOWN OF BASALT STANDARDS. ALL STREET SIGNS TO BE HIGH INTENSITY PRISMATIC SIGNS. REFER TO SIGN DETAIL ON THIS SHEET.
2. ALL CROSSWALK MARKINGS, AND STOP BARS TO BE WHITE REFLECTIVE THERMOPLASTIC. REFER TO DETAIL ON THIS SHEET.
3. STREET NAME SIGNS TO BE MOUNTED ABOVE STOP AND YIELD SIGNS ONSITE. STREET SIGNS TO CONFORM TO TOWN OF BASALT STANDARDS.

LEGEND

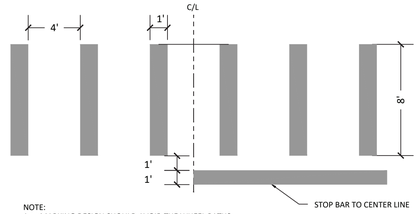
- PROPOSED SIGN
- STOP — PROPOSED STOP SIGN INSTALLED TO MUTCD STANDARDS
- YIELD — PROPOSED YIELD SIGN INSTALLED TO MUTCD STANDARDS
- 25 MPH — PROPOSED 25 MPH SPEED LIMIT & "UNLESS POSTED OTHERWISE" SIGNS INSTALLED TO MUTCD STANDARDS
- NO OVERNIGHT PARKING — PROPOSED NO OVERNIGHT PARKING & "UNLESS POSTED OTHERWISE" SIGNS INSTALLED TO MUTCD STANDARDS



ROADSIDE SIGN DETAIL

N.T.S.

HEIGHT AND LATERAL LOCATION OF ROADSIDE SIGNS FOR TYPICAL INSTALLATION MUTCD SECTION 2A.16



NOTE:
1. MARKING DESIGN SHOULD AVOID THE WHEEL PATHS
2. CROSSWALK AND STOP BAR TO BE WHITE REFLECTIVE THERMOPLASTIC PAVEMENT MARKING MATERIAL, MILLED INTO THE ASPHALT.
3. NO MARKING OR STRIPING ON CONCRETE.

PEDESTRIAN CROSS WALK DETAIL

N.T.S.

NORTH

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

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(970) 704 • 0311 • soprisengineering.com

DATE:	09-16-2024	
JOB NO.	33011.01	
DESIGNED BY	AKC	
DRAWN BY	JPP	
CHECKED BY	YTN	

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

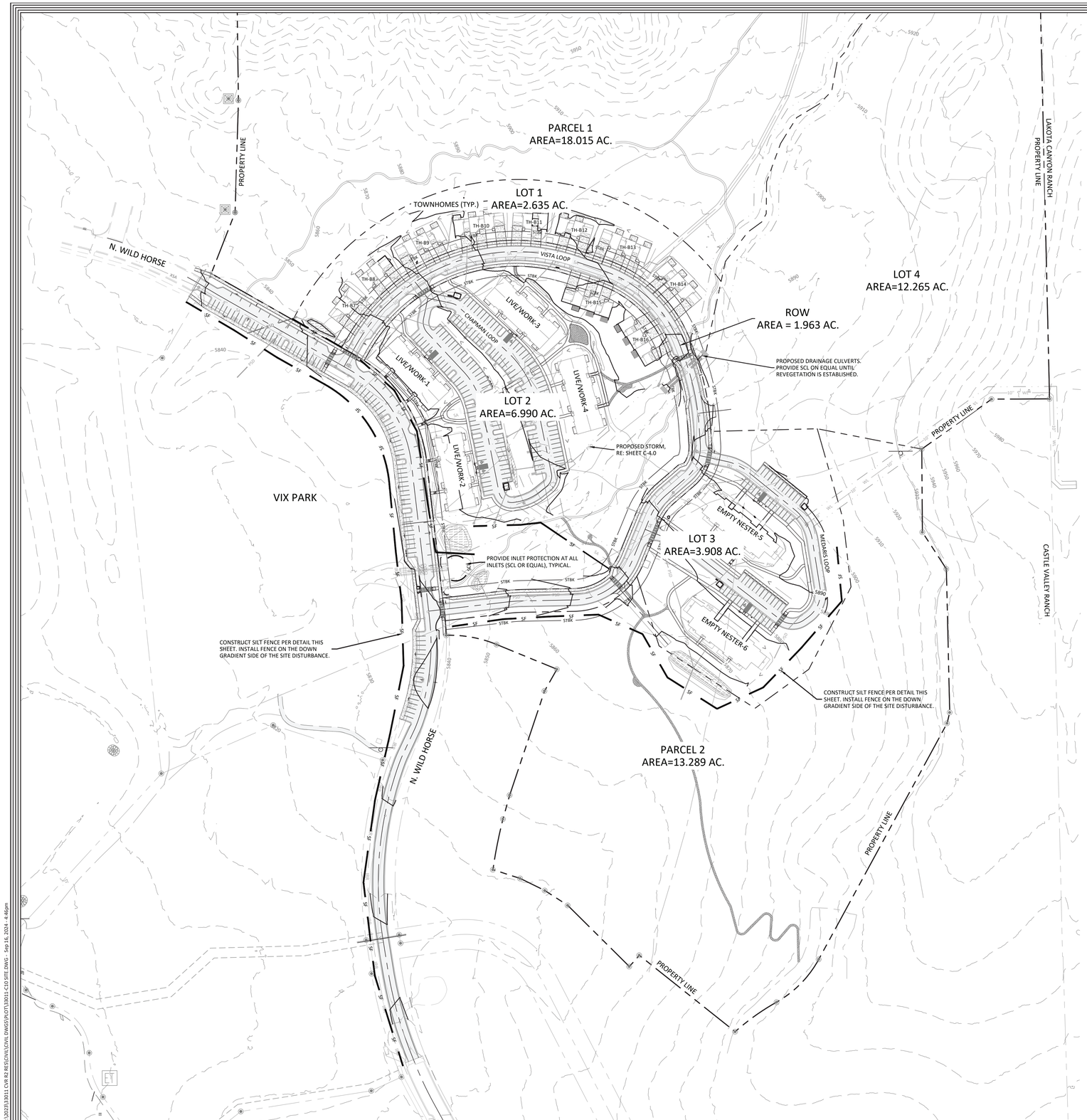
FINAL PLAN

DATE	REVISION

TITLE
SIGNAGE & STRIPING PLAN

DRAWING NO.
C-1.2

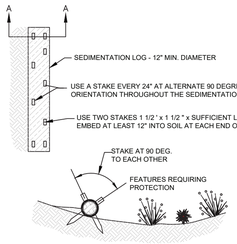
G:\2023\33011 CVR RZ RES\CIVIL\DWGS\PLOT\33011-C10 SITE.DWG - Sep 16, 2024 - 4:46pm



GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.



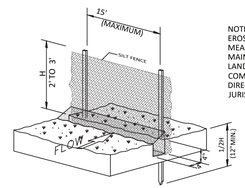
SECTION A - A

SEDIMENT CONTROL LOG INSTALLATION NOTES:
1. SEE PLAN VIEW FOR: LOCATION OF SEDIMENT CONTROL LOG.
2. SEDIMENT CONTROL LOGS SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER.
4. NOT FOR USE IN CONCENTRATED FLOW AREAS.
5. THE SEDIMENT CONTROL LOGS SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 2-INCHES.

SEDIMENT CONTROL LOG MAINTENANCE NOTES:
1. THE SWMP MANAGER SHALL INSPECT SEDIMENT CONTROL LOGS DAILY, DURING AND AFTER ANY STORM EVENT & MAKE REPAIRS OR CLEANOUT UPSTREAM SEDIMENT AS NECESSARY.
2. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOGS SHALL BE REMOVED WHEN THE UPSTREAM DEPTH IS WITHIN 1/2 THE HEIGHT OF THE CREST OF LOG.
3. SEDIMENT CONTROL LOGS SHALL BE REMOVED AT THE END OF CONSTRUCTION, ONCE PROPER VEGETATION HAS BEEN ESTABLISHED. IF ANY DISTURBED AREA EXISTS AFTER REMOVAL IT SHALL BE COVERED WITH TOPSOIL AND REVEGETATED/ STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

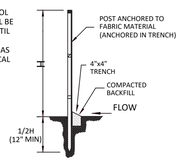
2 / C1040 SEDIMENT CONTROL LOG — SCL —

SCALE: N.T.S.



SILT FENCE INSTALLATION
-NTS-

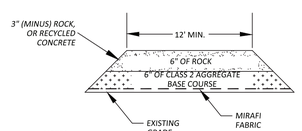
NOTE:
EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL LANDSCAPING IS COMPLETED, OR AS DIRECTED BY LOCAL JURISDICTION



SECTION
-NTS-

1 / C1040 SILT FENCE DETAIL — SF —

SCALE: N.T.S.



NOTES
1. ALL ROCK TO BE REMOVED UPON COMPLETION OF CONSTRUCTION.
2. PUBLIC ROADWAY TO BE KEPT CLEAN AND FREE OF MUD, DIRT AND DEBRIS AT ALL TIMES.
3. ALIGNMENT OF CONSTRUCTION ACCESS SHALL PROVIDE A MINIMUM LENGTH OF 40-FT MEASURED FROM THE CENTERLINE.

3 / C1040 VEHICLE TRACKING CONTROL

SCALE: N.T.S.

NOTE:
REFER TO EROSION CONTROL NOTES ON C-0.1

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CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3 • CARBONDALE CO 81623
(970) 704 • 0311 • soprisengineering.com

DATE:	09-16-2024	
JOB NO.	33011.01	
DESIGNED BY	AKC	
DRAWN BY	JPP	
CHECKED BY	YTN	

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

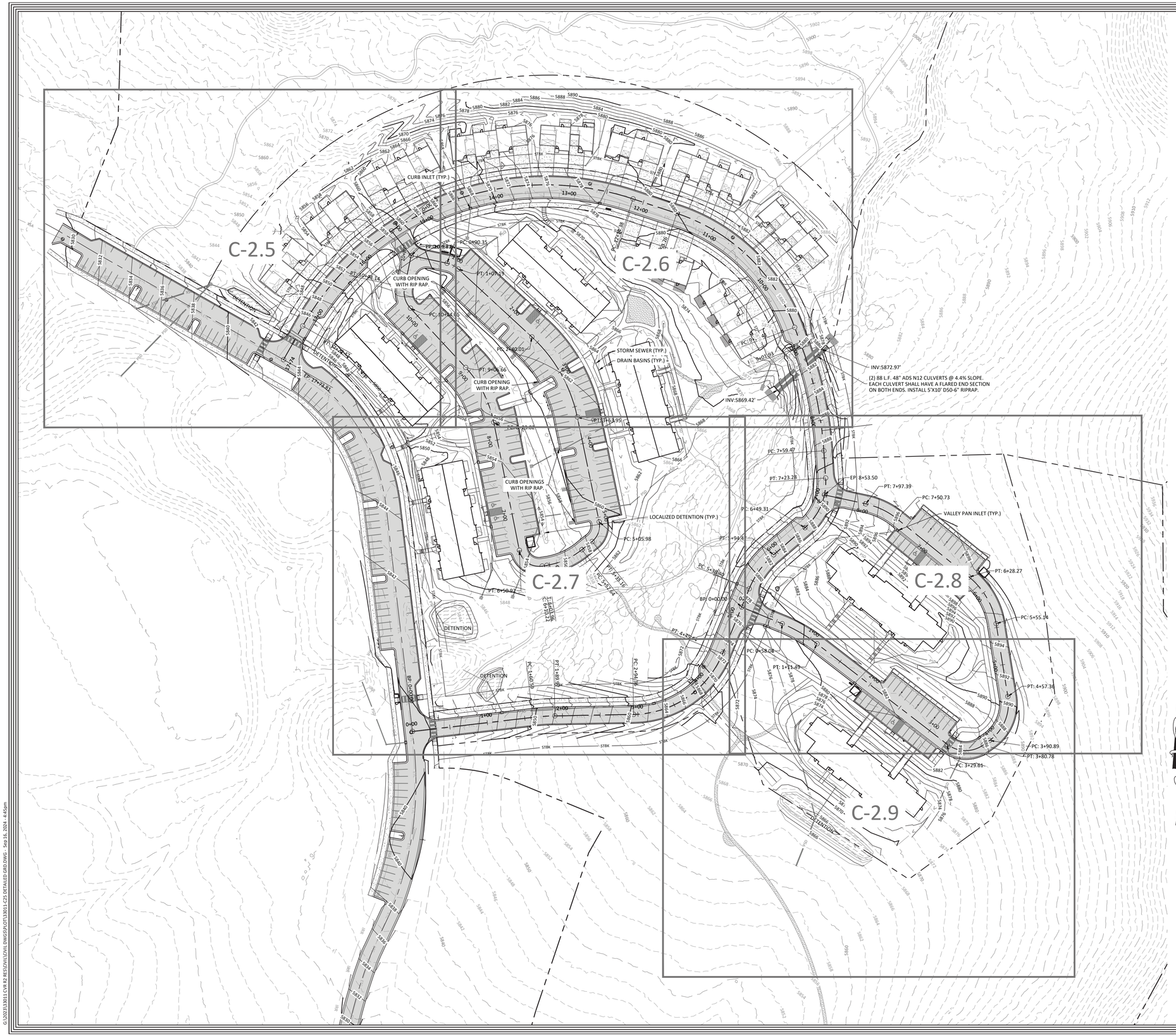
FINAL PLAN

DATE	REVISION

TITLE
EROSION CONTROL PLAN

DRAWING NO.
C-1.3

G:\2023\33011 CVR R2 RES\CIVIL\CIVIL DWGS\PLOTS\33011 C1D SITE.DWG - Sep 16, 2024 - 4:46pm



GENERAL GRADING NOTES:

1. THE EXISTING CONTOUR INTERVAL IS TWO (2) FEET (DASHED) FROM A SURVEY PERFORMED BY SOPRIS ENGINEERING, LLC.
2. THE PROPOSED CONTOUR INTERVAL IS TWO (2) FEET.
3. ALL GEOTECHNICAL ENGINEERING RECOMMENDATIONS SHALL BE ADHERED TO.

PROPOSED LEGEND

- PROPERTY LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- STBK — PROPOSED SETBACK
- PROPOSED LOT LINE
- PROPOSED CENTERLINE

GRADING LEGEND:

- PROPOSED 1' CONTOUR
- 7900 — PROPOSED 5' CONTOUR
- EXISTING CONTOUR
- 7900 — EXISTING CONTOUR INTERVAL
- 2.0% — PROPOSED SLOPE
- FL: 32.0 — PROPOSED SPOT ELEVATION
- PSD — PROPOSED STORM SEWER
- PROPOSED STORM INLET

SPOT ELEVATION LEGEND

BOW = BOTTOM OF WALL
EOA = EDGE OF ASPHALT
EX = EXISTING GRADE
FF = FINISHED FLOOR ELEVATION
FG = FINISHED GRADE
FL = FLOW LINE
GB = GRADE BREAK
HP = HIGH POINT
LP = LOW POINT
ME = MATCH EXISTING
RIM = RIM ELEVATION
TBC = TOP BACK OF CURB
TC = TOP OF CONCRETE

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

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

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9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
OVERALL GRADING PLAN

DRAWING NO.
C-2.0

G:\2023\33011 CWR RZ RES\CIVIL\CIVIL DWGS\PLOTS\33011-C25 DETAILED GRD.DWG - Sep 16, 2024 - 4:45pm



PROPOSED LEGEND

- PROPERTY LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- STBK — PROPOSED SETBACK
- PROPOSED LOT LINE
- PROPOSED CENTERLINE

GRADING LEGEND:

- PROPOSED 1' CONTOUR
- 7900 — PROPOSED 5' CONTOUR
- EXISTING CONTOUR
- 7900 — EXISTING CONTOUR INTERVAL
- 2.0% — PROPOSED SLOPE
- × FL: 32.0 — PROPOSED SPOT ELEVATION
- PSD — PSD — PROPOSED STORM SEWER
- PROPOSED STORM INLET

SPOT ELEVATION LEGEND

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TOC = TOP OF CONCRETE
TW = TOP OF WALL

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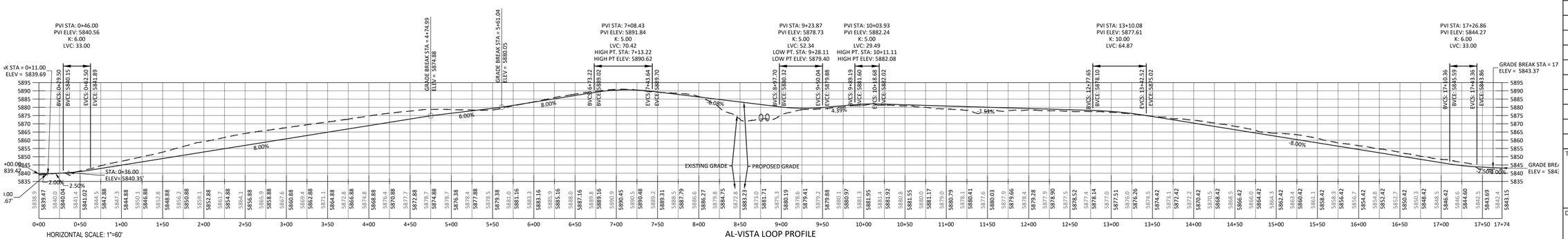

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9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
VISTA LOOP
PLAN/PROFILE

DRAWING NO.
C-2.1

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PROPOSED LEGEND

- PROPERTY LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- PROPOSED SETBACK
- PROPOSED LOT LINE
- PROPOSED CENTERLINE

GRADING LEGEND:

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- 7900 PROPOSED 5' CONTOUR
- EXISTING CONTOUR
- 7900 EXISTING CONTOUR INTERVAL
- 2.0% PROPOSED SLOPE
- FL: 32.0 PROPOSED SPOT ELEVATION
- PSD PROPOSED STORM SEWER
- PROPOSED STORM INLET

SPOT ELEVATION LEGEND

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LP = LOW POINT
ME = MATCH EXISTING
RIM = RIM ELEVATION
TBC = TOP BACK OF CURB
TOC = TOP OF CONCRETE
TW = TOP OF WALL

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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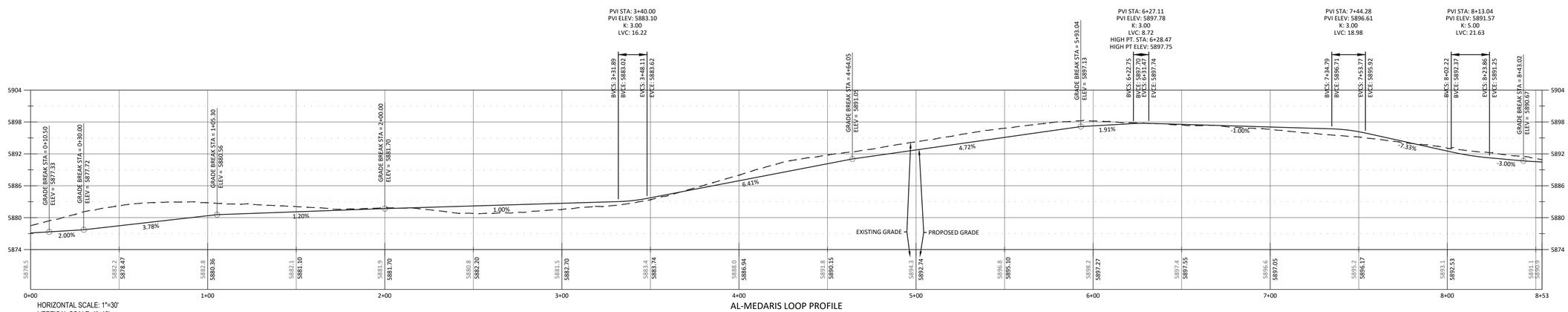

HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=10'

AL-MEDARIS LOOP PROFILE

SOPRIS ENGINEERING LLC
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NEW CASTLE, COLORADO

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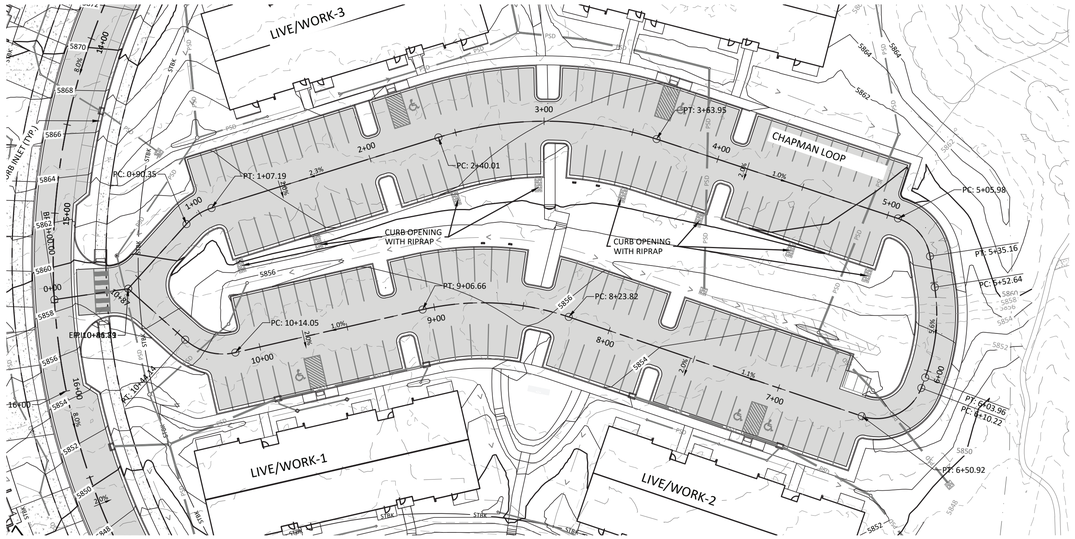
DATE	REVISION

TITLE
MEDARIS LOOP PLAN/PROFILE

DRAWING NO.
C-2.2

G:\2023\33011 CVR R2 RES\CIVIL\DWGS\PLOT\33011-C20 GRADING.DWG - Sep 16, 2024 - 5:04pm



PROPOSED LEGEND

- PROPERTY LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- PROPOSED SETBACK
- PROPOSED LOT LINE
- PROPOSED CENTERLINE

GRADING LEGEND:

- PROPOSED 1' CONTOUR
- PROPOSED 5' CONTOUR
- EXISTING CONTOUR
- EXISTING CONTOUR INTERVAL
- PROPOSED SLOPE
- PROPOSED SPOT ELEVATION
- PROPOSED STORM SEWER
- PROPOSED STORM INLET

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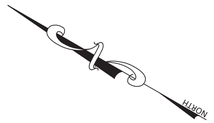

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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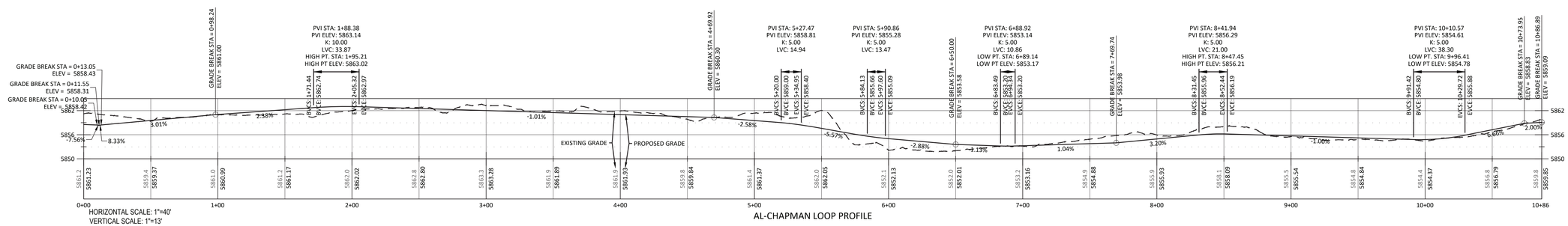
Call before you dig.

CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES



SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3•CARBONDALE CO 81623
(970) 704•0311• soprisengineering.com

DATE:	09-16-2024
JOB NO.	33011.01
DESIGNED BY	JPP
DRAWN BY	JPP
CHECKED BY	YTN

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

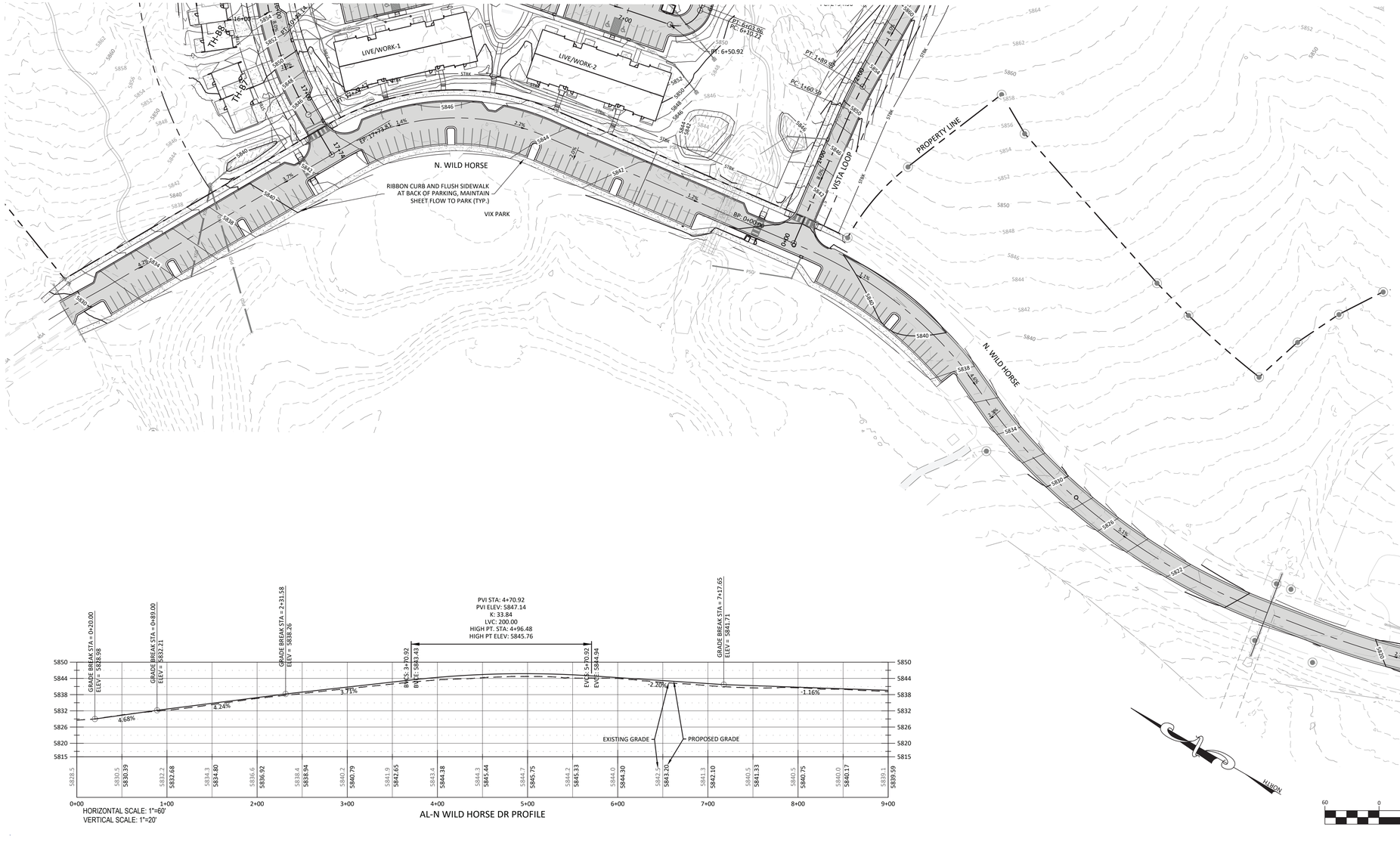
FINAL PLAN

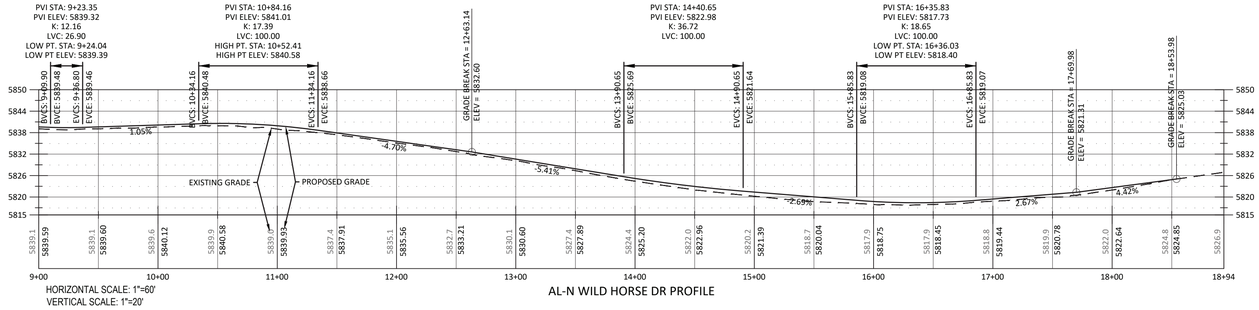
DATE	REVISION

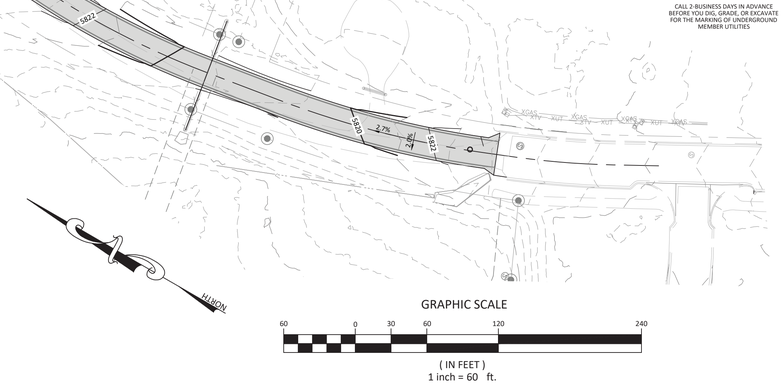
TITLE
CHAPMAN LOOP
PLAN/PROFILE

DRAWING NO.
C-2.3

G:\2023\33011 CVR RX RESTAURANT\CIVIL DWGS\PLOTS\33011-C03 GRADING.DWG - Sep 16, 2024 - 5:04pm







GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

PROPOSED LEGEND

- PROPERTY LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- STRK — PROPOSED SETBACK
- PROPOSED LOT LINE
- PROPOSED CENTERLINE

GRADING LEGEND:

- PROPOSED 1' CONTOUR
- 7900 — PROPOSED 5' CONTOUR
- EXISTING CONTOUR
- 7900 — EXISTING CONTOUR INTERVAL
- 2.0% → PROPOSED SLOPE
- × FL: 32.0 — PROPOSED SPOT ELEVATION
- PSD — PSD — PROPOSED STORM SEWER
- PROPOSED STORM INLET

SPOT ELEVATION LEGEND

BOW = BOTTOM OF WALL
EOA = EDGE OF ASPHALT
EX = EXISTING GRADE
FFE = FINISHED FLOOR ELEVATION
FG = FINISHED GRADE
FL = FLOW LINE
HP = HIGH POINT
LP = LOW POINT
ME = MATCH EXISTING
RIM = RIM ELEVATION
TBC = TOP BACK OF CURB
TOC = TOP OF CONCRETE
TW = TOP OF WALL

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

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DATE:	09-16-2024	
JOB NO.	33011.01	
DESIGNED BY	JPP	
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CHECKED BY	YTN	

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
N. WILD HORSE
PLAN/PROFILE

DRAWING NO.
C-2.4

G:\33011\33011 CVR RX RES\CIVIL\CIVIL DWGS\PLOT\33011-C03 GRADING.DWG - Sep 16, 2024 - 5:04pm



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9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
NORTH WEST GRADING

DRAWING NO.
C-2.5

G:\33013\33011 CVR RX RES\CIVIL\CIVIL DWGS\PLOT\33011-C03 DETAILED GRD.DWG - Sep 16, 2024 - 4:57pm



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DATE	REVISION

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

TITLE
NORTH EAST GRADING

DRAWING NO.
C-2.6

G:\2023\33011 CVR R2 RES\CIVIL\CIVIL DWGS\PLOT\33011-C2D_DETAILED GRD.DWG - Sep 16, 2024 - 4:57pm



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9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
WEST GRADING

DRAWING NO.
C-2.7

G:\33011\33011 CVR R3 RES\CIVIL\CIVIL DWGS\PLOT\33011-C03 DETAILED GRD.DWG - Sep 16, 2024 - 4:57pm



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9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
EAST GRADING

DRAWING NO.
C-2.8

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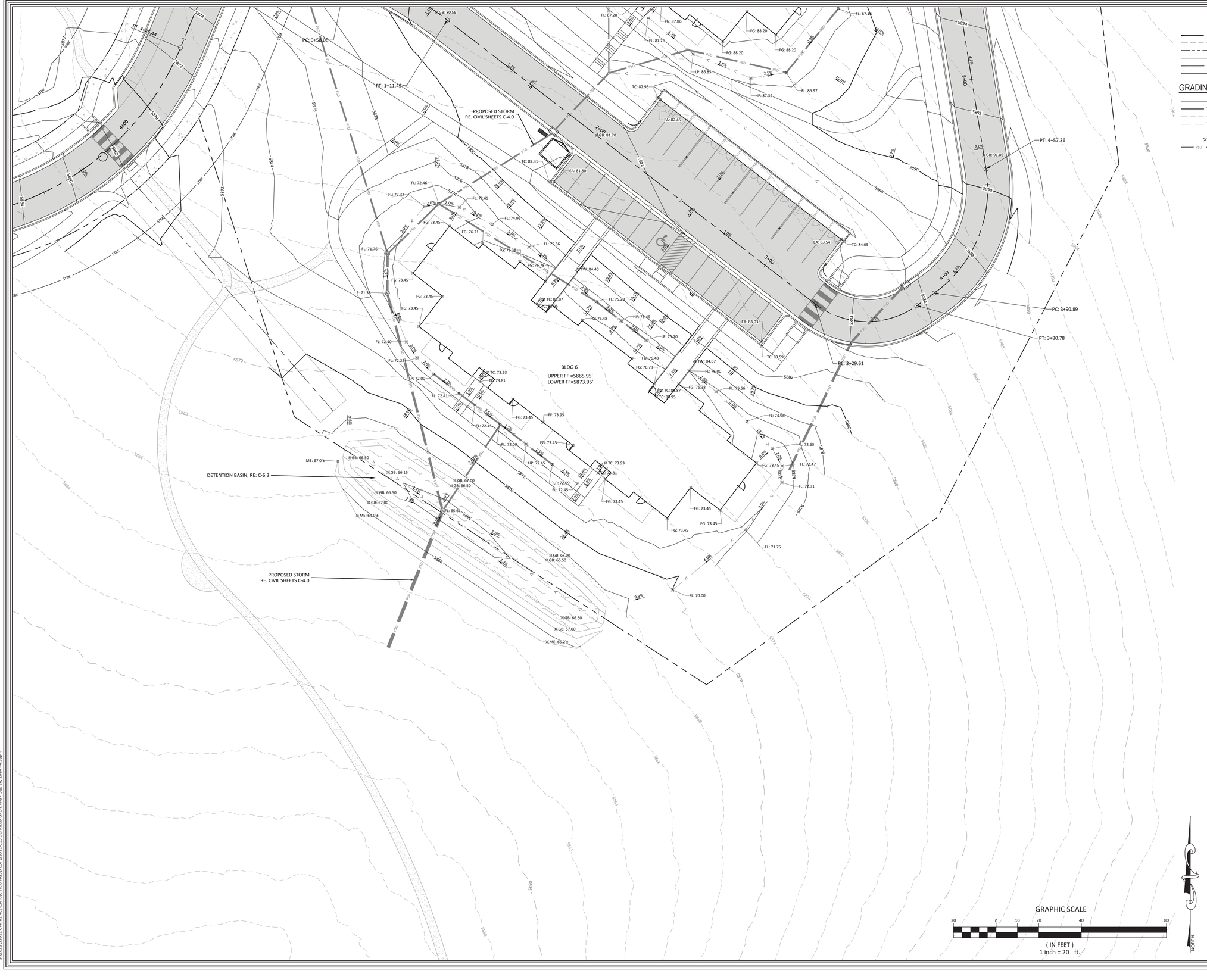

PROPOSED LEGEND

- PROPERTY LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- SETBACK
- PROPOSED LOT LINE
- PROPOSED CENTERLINE

GRADING LEGEND:

- PROPOSED 1' CONTOUR
- 7900 PROPOSED 5' CONTOUR
- EXISTING CONTOUR
- 7900 EXISTING CONTOUR INTERVAL
- 2.0% PROPOSED SLOPE
- FL: 32.0 PROPOSED SPOT ELEVATION
- PSD PROPOSED STORM SEWER
- PROPOSED STORM INLET

SPOT ELEVATION LEGEND

BOW = BOTTOM OF WALL
EOA = EDGE OF ASPHALT
EX = EXISTING GRADE
FF = FINISHED FLOOR ELEVATION
FG = FINISHED GRADE
FL = FLOW LINE
GB = GRADE BREAK
HP = HIGH POINT
LP = LOW POINT
ME = MATCH EXISTING
RIM = RIM ELEVATION
TBC = TOP BACK OF CURB
TC = TOP OF CONCRETE

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

NORTH

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9 NORTH WILD HORSE
NEW CASTLE, COLORADO

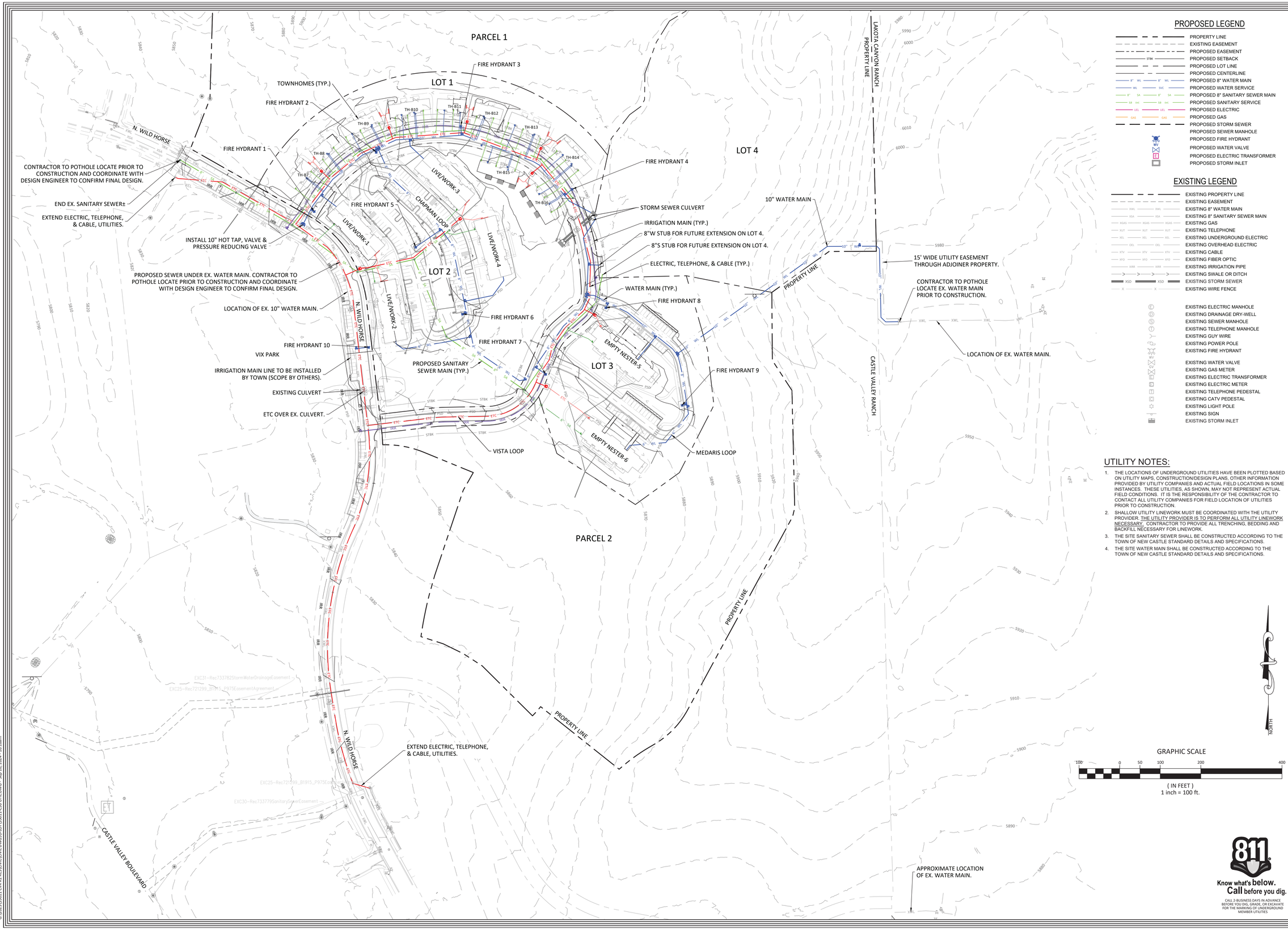
FINAL PLAN

DATE	REVISION

TITLE
SOUTH GRADING

DRAWING NO.
C-2.9

G:\33013\13011 CVR RZ RES\CIVIL\CIVIL DWGS\PLOT\13011-C2S DETAILED GRD.DWG - Sep 16, 2024 - 4:58pm



PROPOSED LEGEND

- PROPERTY LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- PROPOSED SETBACK
- PROPOSED LOT LINE
- PROPOSED CENTERLINE
- PROPOSED 8" WATER MAIN
- PROPOSED WATER SERVICE
- PROPOSED 8" SANITARY SEWER MAIN
- PROPOSED SANITARY SERVICE
- PROPOSED ELECTRIC
- PROPOSED GAS
- PROPOSED STORM SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED ELECTRIC TRANSFORMER
- PROPOSED STORM INLET

EXISTING LEGEND

- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING 8" WATER MAIN
- EXISTING 8" SANITARY SEWER MAIN
- EXISTING GAS
- EXISTING TELEPHONE
- EXISTING UNDERGROUND ELECTRIC
- EXISTING OVERHEAD ELECTRIC
- EXISTING CABLE
- EXISTING FIBER OPTIC
- EXISTING IRRIGATION PIPE
- EXISTING SWALE OR DITCH
- EXISTING STORM SEWER
- EXISTING WIRE FENCE
- EXISTING ELECTRIC MANHOLE
- EXISTING DRAINAGE DRY-WELL
- EXISTING SEWER MANHOLE
- EXISTING TELEPHONE MANHOLE
- EXISTING GUY WIRE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING GAS METER
- EXISTING ELECTRIC TRANSFORMER
- EXISTING ELECTRIC METER
- EXISTING TELEPHONE PEDESTAL
- EXISTING CATV PEDESTAL
- EXISTING LIGHT POLE
- EXISTING SIGN
- EXISTING STORM INLET

UTILITY NOTES:

1. THE LOCATIONS OF UNDERGROUND UTILITIES HAVE BEEN PLOTTED BASED ON UTILITY MAPS, CONSTRUCTION/DESIGN PLANS, OTHER INFORMATION PROVIDED BY UTILITY COMPANIES AND ACTUAL FIELD LOCATIONS IN SOME INSTANCES. THESE UTILITIES, AS SHOWN, MAY NOT REPRESENT ACTUAL FIELD CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT ALL UTILITY COMPANIES FOR FIELD LOCATION OF UTILITIES PRIOR TO CONSTRUCTION.
2. SHALLOW UTILITY LINEWORK MUST BE COORDINATED WITH THE UTILITY PROVIDER. THE UTILITY PROVIDER IS TO PERFORM ALL UTILITY LINEWORK NECESSARY. CONTRACTOR TO PROVIDE ALL TRENCHING, BEDDING AND BACKFILL NECESSARY FOR LINEWORK.
3. THE SITE SANITARY SEWER SHALL BE CONSTRUCTED ACCORDING TO THE TOWN OF NEW CASTLE STANDARD DETAILS AND SPECIFICATIONS.
4. THE SITE WATER MAIN SHALL BE CONSTRUCTED ACCORDING TO THE TOWN OF NEW CASTLE STANDARD DETAILS AND SPECIFICATIONS.

NORTH

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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CHECKED BY	YTN

DATE	REVISION

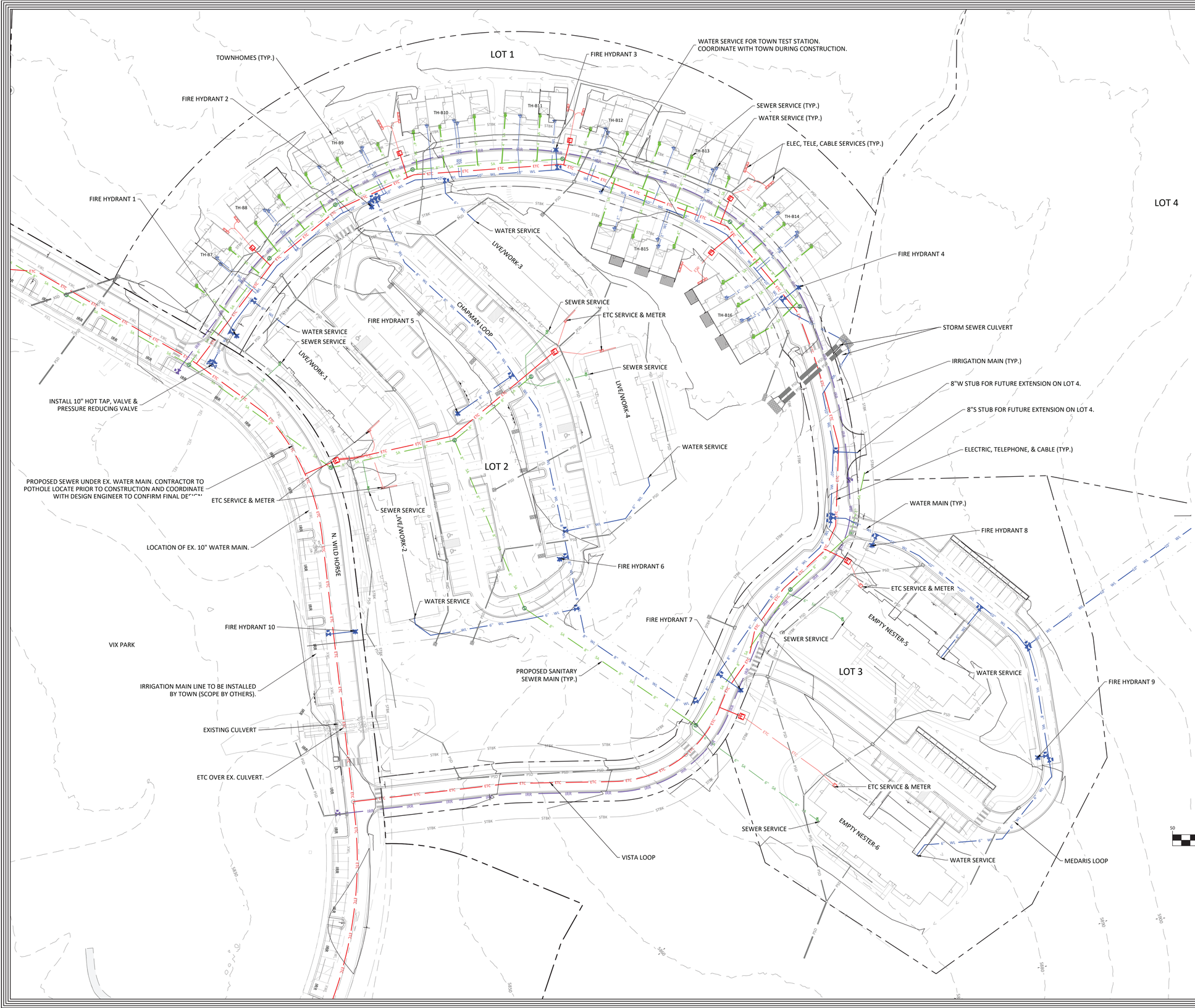
9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

TITLE
OVERALL UTILITY PLAN

DRAWING NO.
C-3.0

G:\2023\33011 CVR RZ RES\CIVIL\CIVIL DWGS\PLOTS\33011-C3D UTIL.DWG - Sep 16, 2024 - 10:18am



PROPOSED LEGEND

- PROPERTY LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- PROPOSED SETBACK
- PROPOSED LOT LINE
- PROPOSED CENTERLINE
- PROPOSED 8" WATER MAIN
- PROPOSED WATER SERVICE
- PROPOSED 8" SANITARY SEWER MAIN
- PROPOSED SANITARY SERVICE
- PROPOSED ELECTRIC
- PROPOSED GAS
- PROPOSED STORM SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED ELECTRIC TRANSFORMER
- PROPOSED STORM INLET

EXISTING LEGEND

- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING 8" WATER MAIN
- EXISTING 8" SANITARY SEWER MAIN
- EXISTING GAS
- EXISTING TELEPHONE
- EXISTING UNDERGROUND ELECTRIC
- EXISTING OVERHEAD ELECTRIC
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- EXISTING GUY WIRE
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- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING GAS METER
- EXISTING ELECTRIC TRANSFORMER
- EXISTING ELECTRIC METER
- EXISTING TELEPHONE PEDESTAL
- EXISTING CATV PEDESTAL
- EXISTING LIGHT POLE
- EXISTING SIGN
- EXISTING STORM INLET

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

NORTH

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DATE: 09-16-2024
JOB NO. 33011.01
DESIGNED BY AKC
DRAWN BY JPP
CHECKED BY YTN

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
SITE UTILITY PLAN

DRAWING NO.
C-3.1

G:\2023\33011 CVR K2 RES\CIVIL\CIVIL DWGS\PLOT\33011-C3D UTIL.DWG - Sep 16, 2024 - 10:18am

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NORTH

SMH-EX-A1
STA:0+00.00
RIM:5823.14'
8" INV-I:5809.00'

SMH-A2
STA:1+85.82
RIM:5829.40'
8" INV-I:5815.84'
8" INV-O:5815.64'

SMH-A3
STA:3+45.16
RIM:5836.31'
8" INV-I:5824.18'
8" INV-O:5823.98'

SMH-A4
STA:5+04.73
RIM:5842.45'
8" INV-I:5832.48'
8" INV-I:5830.99'
8" INV-O:5832.28'

SMH-A5
STA:7+03.14
RIM:5846.68'
8" INV-I:5836.87'
8" INV-O:5836.67'

SMH-A6
STA:8+46.50
RIM:5855.72'
8" INV-I:5841.50'
8" INV-I:5841.50'
8" INV-O:5841.30'

SMH-A7
STA:10+52.42
RIM:5855.42'
8" INV-I:5843.53'
8" INV-O:5843.33'

SMH-A8
STA:12+87.32
RIM:5869.92'
8" INV-I:5861.39'
8" INV-O:5861.19'

SMH-A9
STA:14+74.55
RIM:5883.95'
8" INV-I:5877.67'
8" INV-O:5877.47'

SMH-A10
STA:15+68.40
RIM:5890.70'
8" INV-I:5882.05'
8" INV-O:5881.85'

182' of 8" @ 3.57%

155' of 8" @ 5.24%

156' of 8" @ 5.21%

198' of 8" @ 2.11%

494' of 8" @ 2.11%

141' of 8" @ 3.13%

202' of 8" @ 0.91%

232' of 8" @ 7.63%

184' of 8" @ 8.59%

90' of 8" @ 4.66%

70' of 8" @ 0.73%

ETC CROSSING
STA: 2+90.82
T.O.P. EL: 5829.48'
B.O.P. EL: 5829.28'

ETC CROSSING
STA: 6+30.93
T.O.P. EL: 5841.23'
B.O.P. EL: 5841.03'

ETC CROSSING
STA: 13+97.63
T.O.P. EL: 5874.05'
B.O.P. EL: 5873.86'

EX 10"W>8"S
ASSUMED ELEV. (TOP) = 5839.21
CONTRACTOR TO POTHOLE LOCATE EX WATER MAIN @SEWER CROSSING AND NOTIFY ENGINEER PRIOR TO CONSTRUCTION.

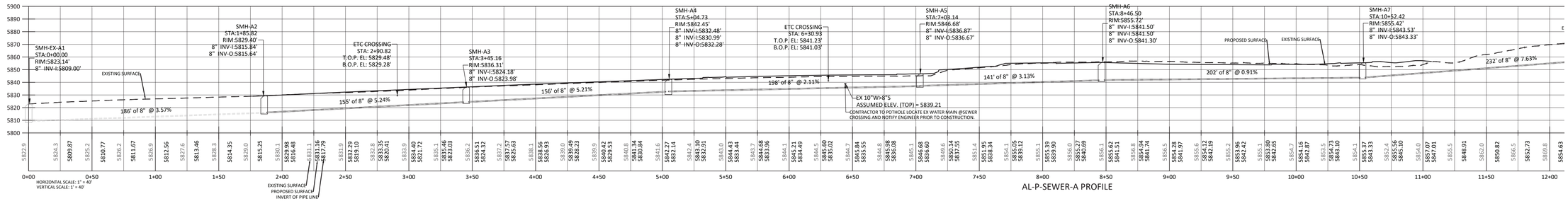
POTHOLE LOCATE SEWER MAIN AND NOTIFY ENGINEER PRIOR TO CONSTRUCTION

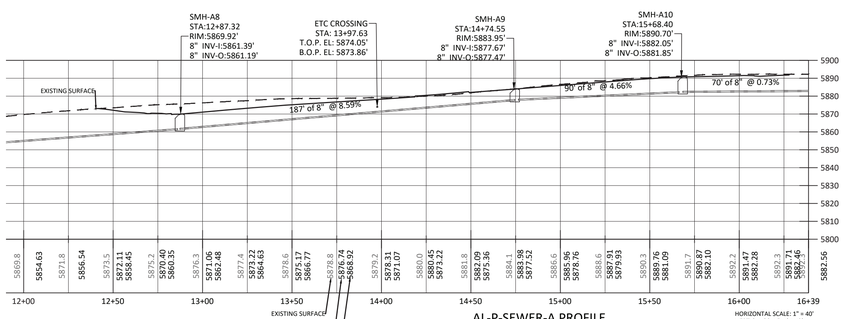
POTHOLE LOCATE WATER MAIN AND NOTIFY ENGINEER PRIOR TO CONSTRUCTION

EXISTING SURFACE

PROPOSED SURFACE

INVERT OF PIPE LINE





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DRAWN BY	JPP	
CHECKED BY	YTN	

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

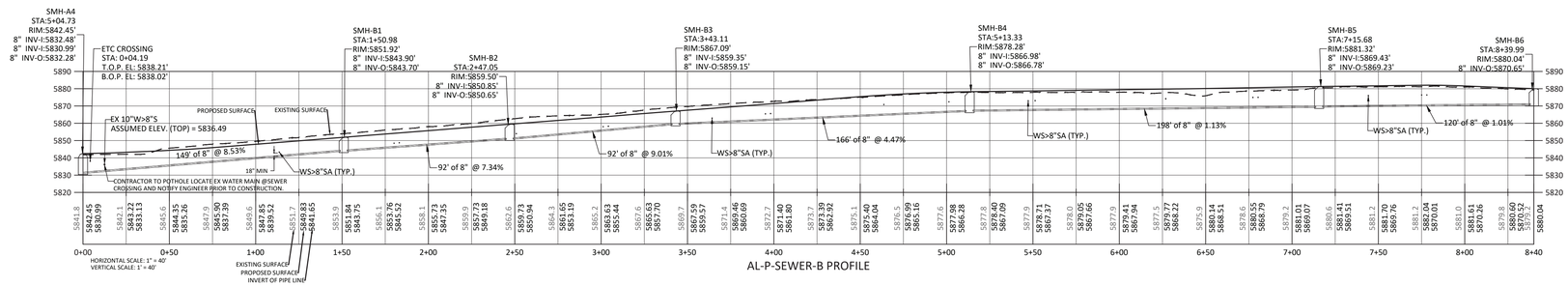
DATE	REVISION

TITLE
SEWER MAIN A

DRAWING NO.
C-3.2

G:\2023\33011 CVR R2 RES\CIVIL\CIVIL DWGS\PLOT\33011-C00 UTIL.DWG - Sep 16, 2024 - 10:18am





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9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
SEWER MAIN B

DRAWING NO.
C-3.3

Know what's **below.**
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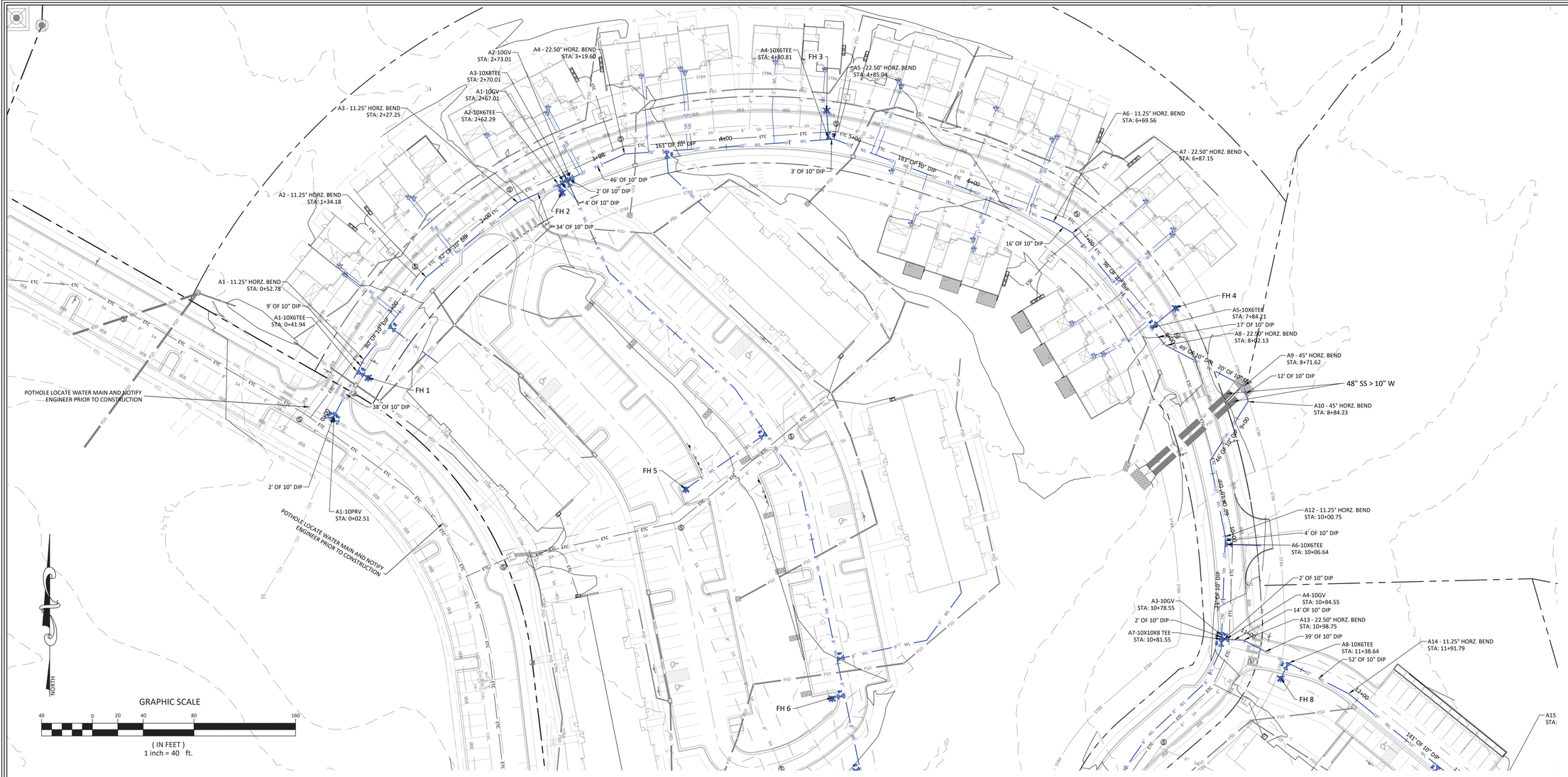

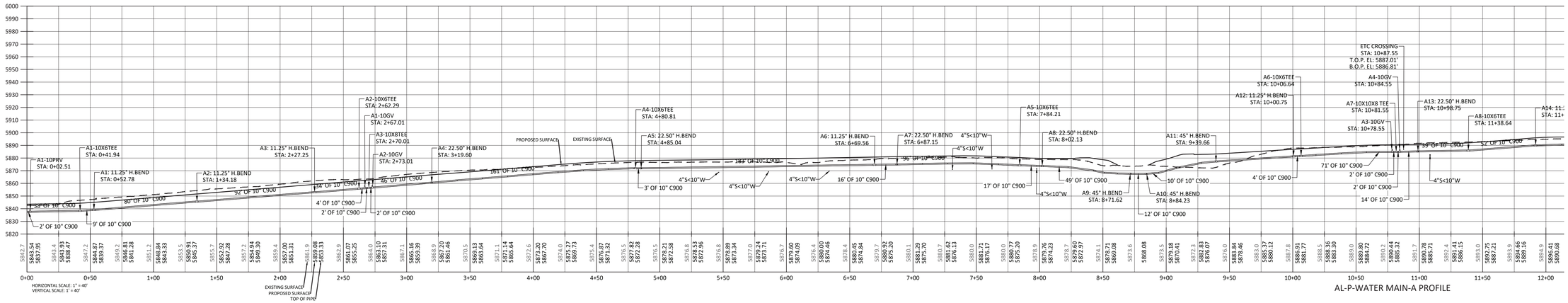

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9 NORTH WILD HORSE
NEW CASTLE, COLORADO

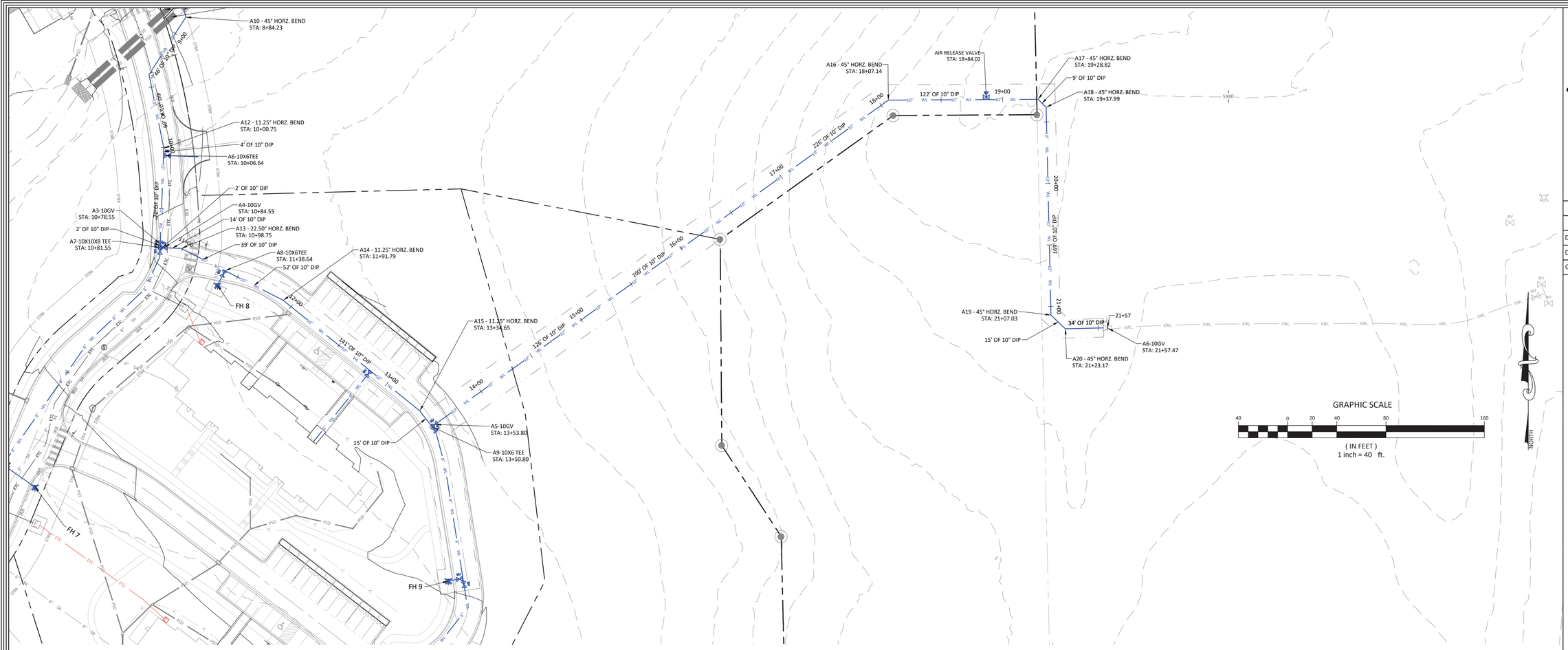
FINAL PLAN

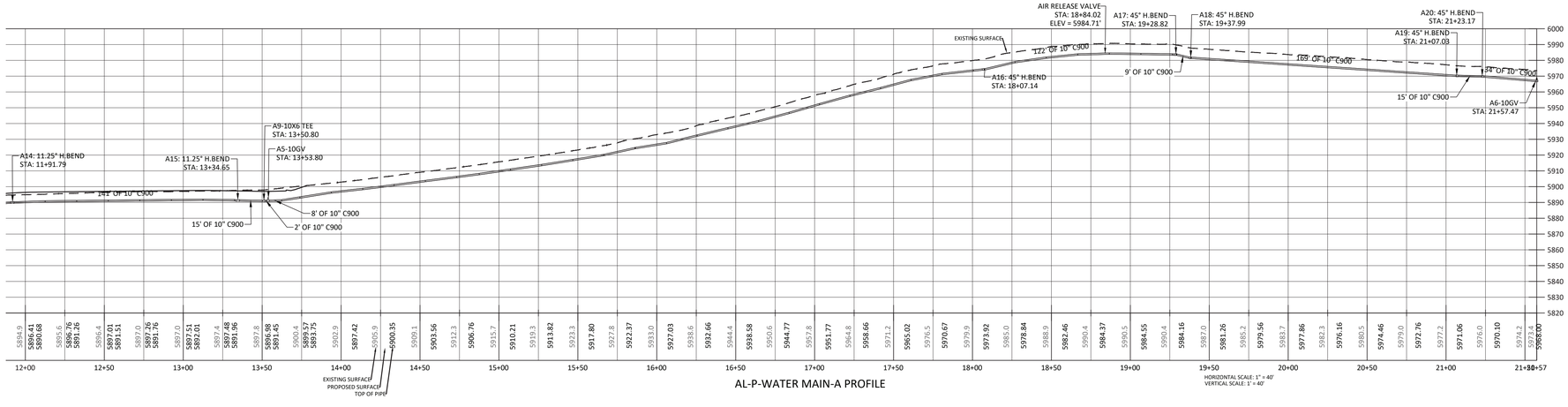
DATE	REVISION

TITLE
WATER MAIN A STA 0+00 - 12+00

DRAWING NO.
C-3.4

G:\2023\33011 CVR RZ RES\CIVIL\CIVIL DWGS\PLOTS\33011-C3D LTTL.DWG - Sep 16, 2024 - 10:19am





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9 NORTH WILD HORSE
NEW CASTLE, COLORADO

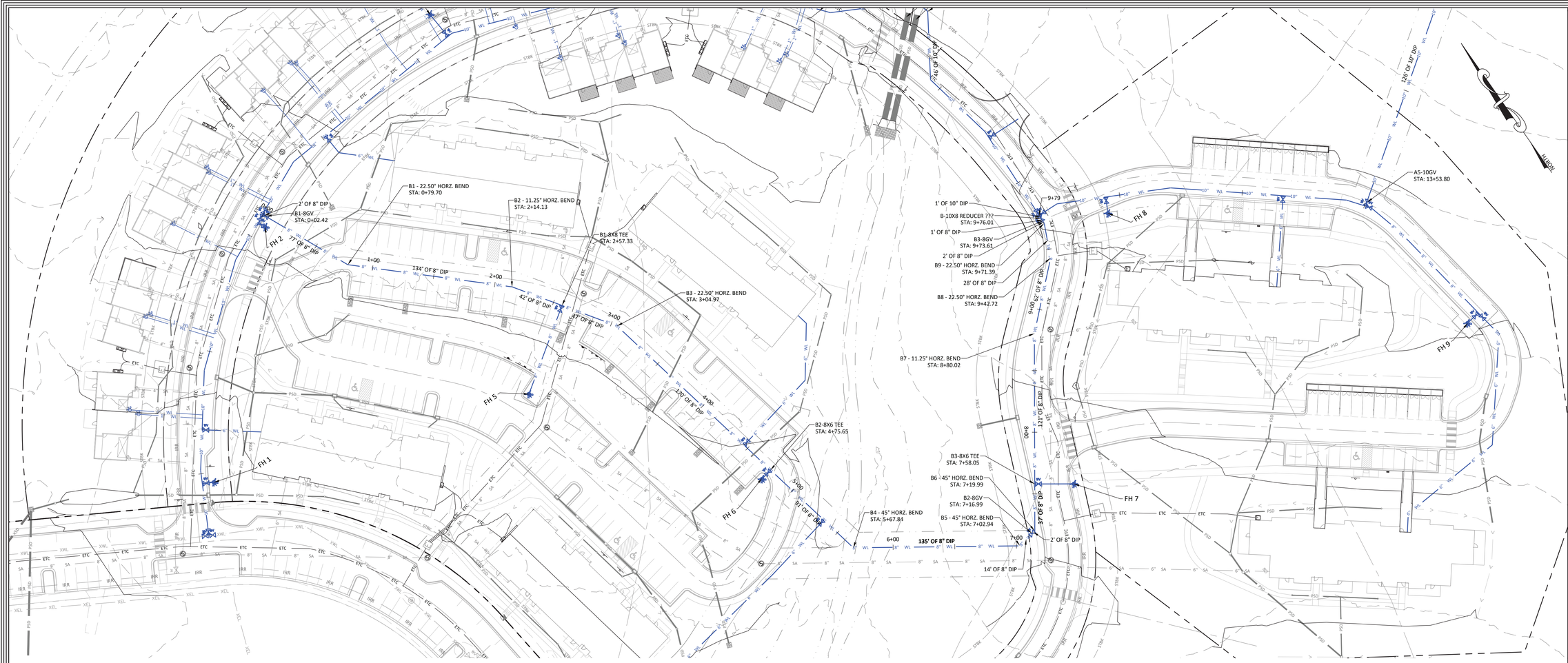
FINAL PLAN

DATE	REVISION

TITLE
WATER MAIN A STA 12+00 - 19+91

DRAWING NO.
C-3.5

G:\2023\33011 CVR RZ RES\CIVIL\CIVIL DWGS\PLOT\33011-C3D LTPL.DWG - Sep 16, 2024 - 10:19am



GRAPHIC SCALE

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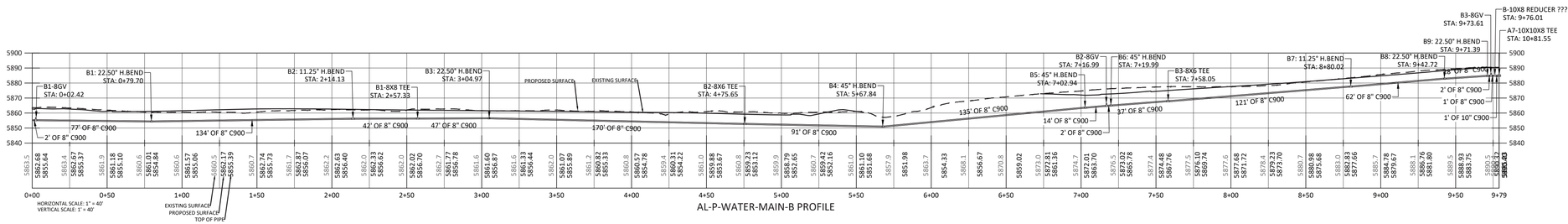
(IN FEET)
1 inch = 40 ft.



AL-P-WATER-MAIN-B PROFILE

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3•CARBONDALE CO 81623
(970) 704•0311• soprisengineering.com

DATE:	09-16-2024	
JOB NO.	33011.01	
DESIGNED BY	AKC	
DRAWN BY	JPP	
CHECKED BY	YTN	

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
WATER MAIN B

DRAWING NO.
C-3.6

G:\2023\33011 CVR RZ RES\CIVIL\CIVIL DWGS\PLOT\33011-C3D UTIL.DWG - Sep 16, 2024 - 10:18am



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DATE:	09-16-2024	
JOB NO.	33011.01	
DESIGNED BY	JPP	
DRAWN BY	JPP	
CHECKED BY	YTN	

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
STORM PLAN
A, B, & C

DRAWING NO.
C-4.0

G:\2023\33011 CWR R2 HES\Civil\Cfds\ DWGS\FOT\33011-C4D-STORM.DWG - Sep 16, 2024 - 4:28pm

GRAPHIC SCALE

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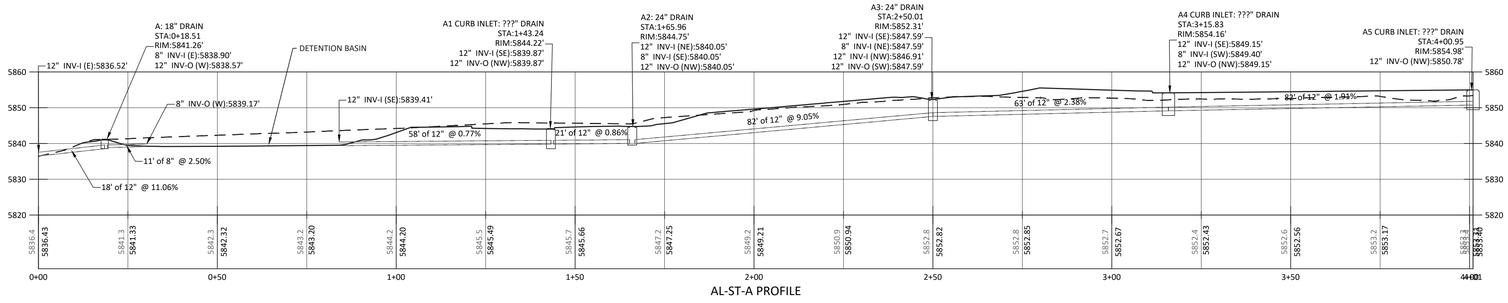
(IN FEET)
1 inch = 20 ft.

NORTH



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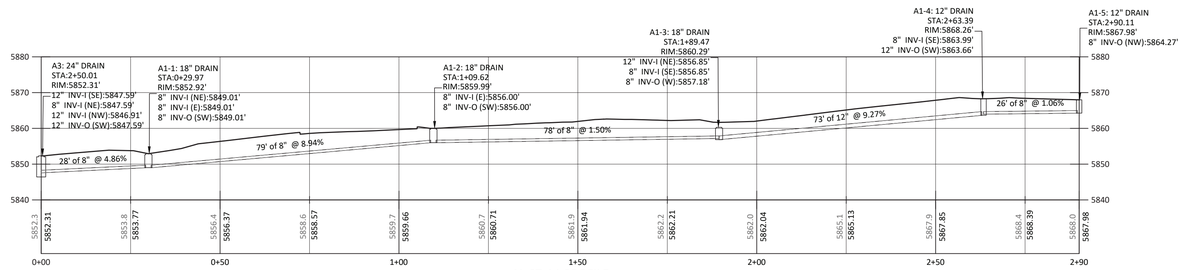

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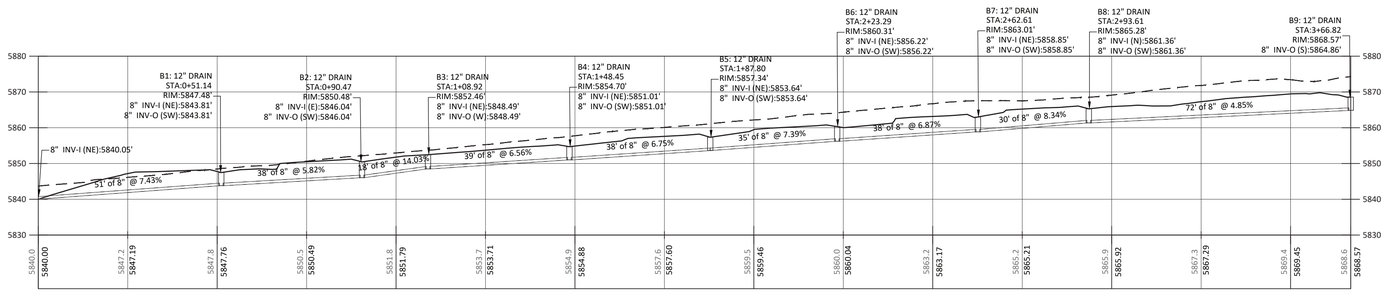

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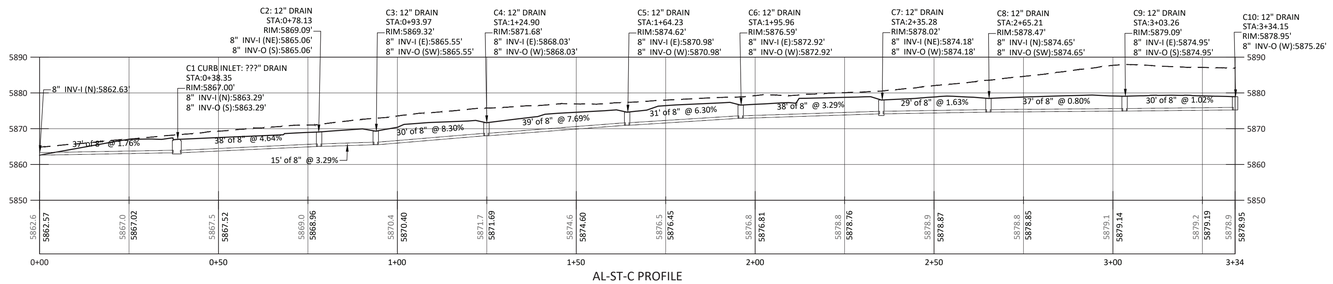

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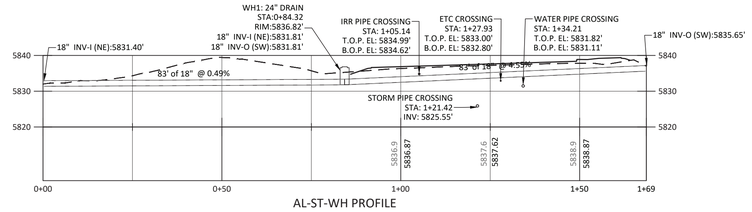

AL-ST-WH PROFILE

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DESIGNED BY	JPP	
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9 NORTH WILD HORSE
NEW CASTLE, COLORADO

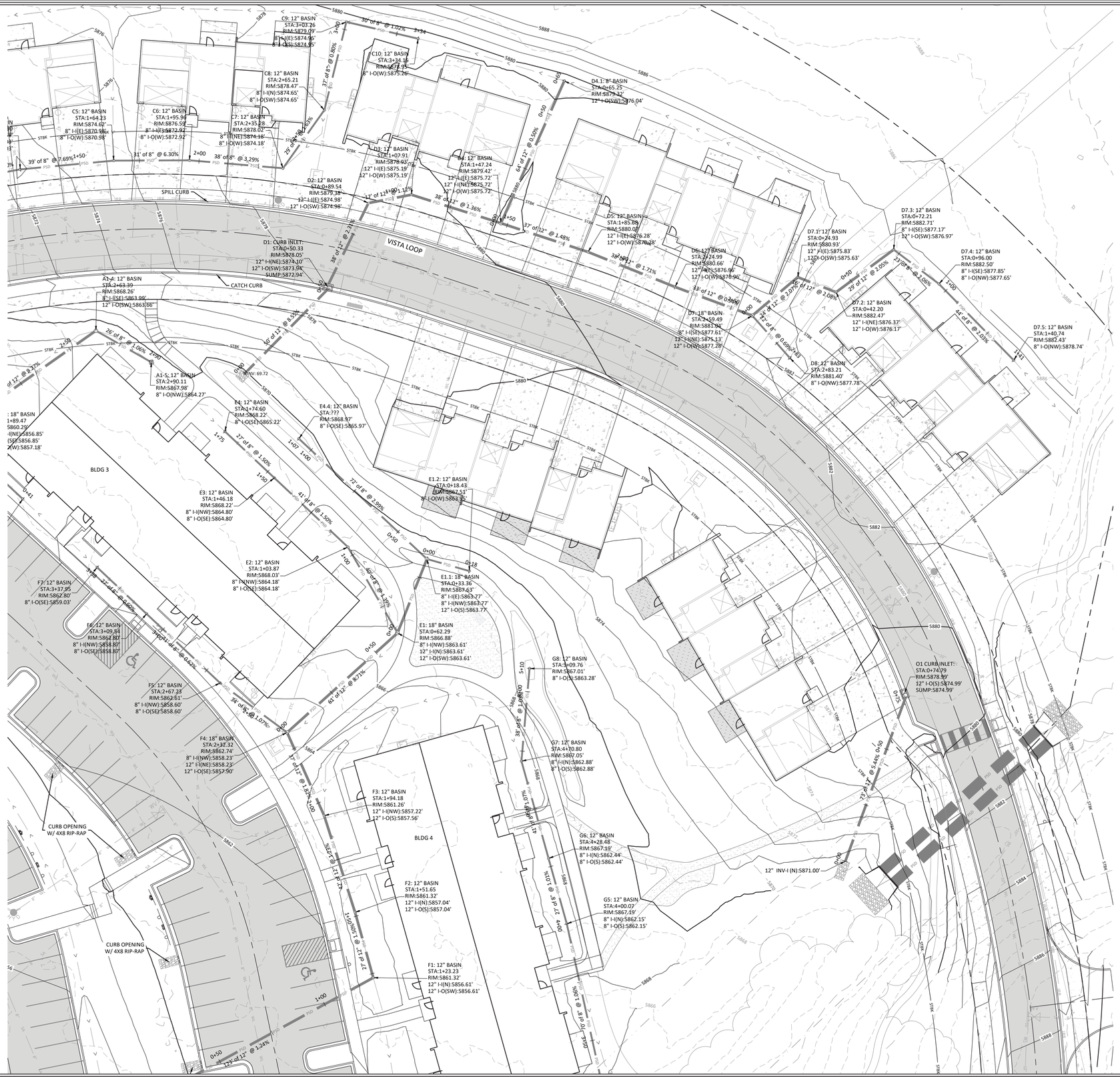
FINAL PLAN

DATE	REVISION

TITLE
STORM PROFILES
A, B, & C

DRAWING NO.
C-4.1

G:\2023\33011 CVR RZ RES\Civil\CIVIL DWGS\PLOT\33011-C4B STORM DWG - Sep 16, 2024 - 4:29pm



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DATE:	09-16-2024	
JOB NO.	33011.01	
DESIGNED BY	JPP	
DRAWN BY	JPP	
CHECKED BY	YTN	

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
STORM PLAN
D, E, & F

DRAWING NO.
C-4.2

© \\SOS\33\33011 CVR R2 RES\CIVIL\CIVIL DWGS\PLOTS\33011-C4B STORM DWG - Sep 16, 2024 - 4:29pm

GRAPHIC SCALE

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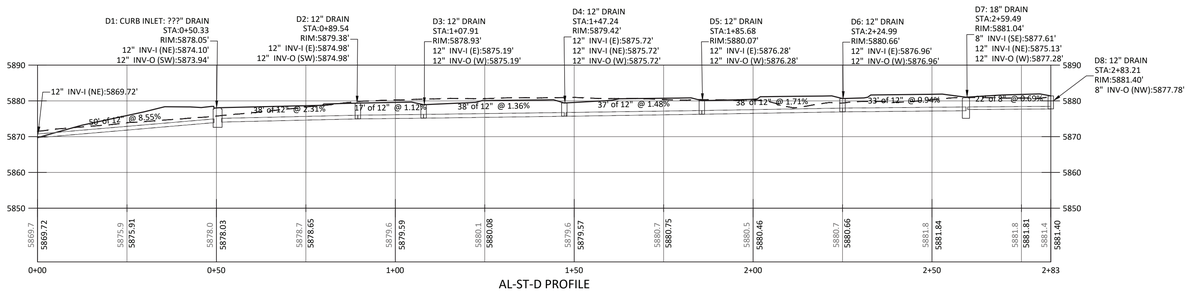
(IN FEET)
1 inch = 20 ft.

NORTH



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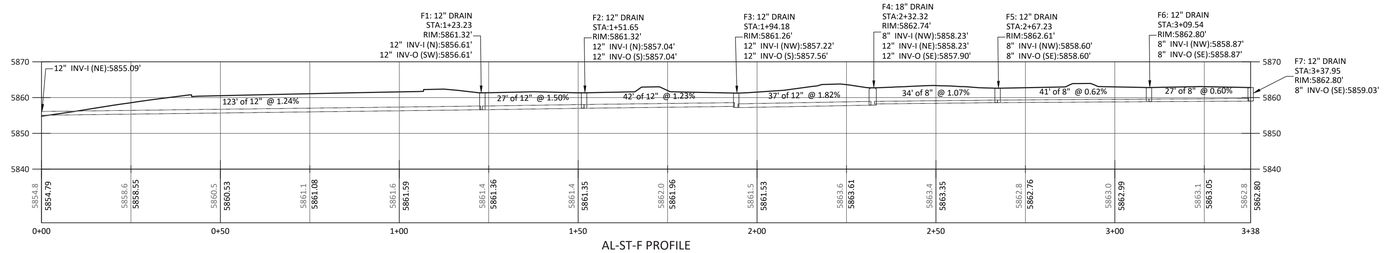
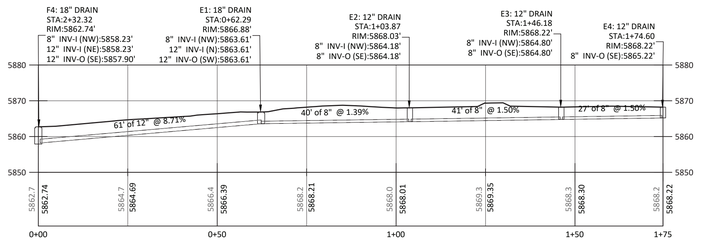


AL-ST-F PROFILE



AL-ST-E PROFILE

SOPRIS ENGINEERING LLC
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(970) 704•0311• soprisengineering.com

DATE:	09-16-2024	
JOB NO.	33011.01	
DESIGNED BY	JPP	
DRAWN BY	JPP	
CHECKED BY	YTN	

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
STORM PROFILES
D, E, & F

DRAWING NO.
C-4.3

G:\2023\33011 CVR RZ RES\CIVIL\CIVIL DWGS\PLOT\33011-C40 STORM.DWG - Sep 16, 2024 - 4:29pm

SHEET FLOW TO PARK (TYP.)

J1: 12" BASIN
STA:0+00.00
RIM:5847.83'
8" I-O(S):5843.94'

J2: 12" BASIN
STA:0+32.00
RIM:5846.12'
8" I-I(N):5842.79'
8" I-O(S):5842.79'

38' of 8" @ 0.58%

J3: 12" BASIN
STA:1+70.75
RIM:5846.83'
8" I-I(N):5842.57'
8" I-O(S):5842.57'

J4: 12" BASIN
STA:1+04.92
RIM:5846.72'
8" I-I(N):5842.34'
8" I-O(S):5842.34'

J5: 12" BASIN
STA:1+33.33
RIM:5846.72'
8" I-I(N):5842.16'
8" I-O(S):5842.16'

BLDG 2

H2.3: 12" BASIN
STA:0+80.49
RIM:5852.07'
8" I-O(S):5849.07'

H2.2: 12" BASIN
STA:0+38.22
RIM:5852.31'
8" I-I(N):5848.45'
8" I-O(S):5848.45'

H2.1: 12" BASIN
STA:0+09.76
RIM:5852.31'
8" I-I(N):5848.03'
8" I-O(E):5848.03'

10' of 8" @ 1.50%

H1 CURB INLET:
STA:0+00.00
RIM:5863.51'
12" I-O(S):5849.34'
SUMP:5849.34'

INV: 54.79
CURB OPENING
W/ 4X8 RIP-RAP

123' of 12" @ 1.24%

H2 CURB INLET:
STA:0+87.15
RIM:5852.56'
8" I-I(W):5847.89'
12" I-(N):5848.48'
12" I-O(S):5848.48'
SUMP:5847.89'

G2: 12" BASIN
STA:1+10.97
RIM:5853.89'
12" I-I(E):5849.83'
12" I-O(S):5849.83'

119' of 12" @ 5.33%

CURB OPENING
W/ 4X8 RIP-RAP

G1: 12"BASIN
STA:0+66.56
RIM:5853.80'
12" I-I(N):5849.43'
12" I-O(S):5849.43'

43' of 12" @ 0.91%

H3: 18" BASIN
STA:1+45.02
RIM:5851.80'
12" I-I(N):5847.65'
12" I-O(S):5847.65'

60' of 12" @ 1.24%

INV: 47.03

INV: 49.02

J6: 12" BASIN
STA:1+01.86
RIM:5842.68'
8" I-I(N):5838.59'
8" I-O(SE):5838.59'

J7: 18" BASIN
STA:2+50.13
RIM:5842.98'
8" I-I(NW):5838.13'
6" I-O(S):5838.13'

36' of 6" @ 6.53%

INV: 35.65

RIBBON CURB AND FLUSH SIDEWALK
AT BACK OF PARKING, MAINTAIN
SHEET FLOW TO PARK (TYP.)

M1: 18" BASIN
STA:0+36.25
RIM:5845.67'
12" I-I(SE):5841.67'
4" I-O(NW):5842.34'

INV: 37.41

36' of 4" @ 13.78%

M2 CURB INLET:
STA:0+80.63
RIM:5846.26'
12" I-I(E):5842.26'
12" I-O(NW):5842.26'
SUMP:5842.26'

M3 CURB INLET:
STA:2+82.30
RIM:5862.55'
12" I-O(W):5858.55'
SUMP:5858.55'

200' of 12" @ 8.19%

INV: 30.60

88' of 12" @ 4.08%

N1: 12" BASIN
STA:0+88.88
RIM:5838.69'
12" I-I(E):5834.19'
12" I-O(N):5834.19'

24' of 12" @ 0.84%

N2 CURB INLET:
STA:1+14.86
RIM:5838.40'
12" I-O(W):5834.40'
SUMP:5834.40'

VISTA LOOP

G4: 12" BASIN
STA:3+28.79
RIM:5865.45'
8" I-I(N):5861.40'
8" I-O(SW):5861.40'

97' of 8" @ 5.14%

G3: 12" BASIN
STA:2+30.60
RIM:5860.22'
8" I-I(NE):5856.35'
12" I-O(W):5856.18'

12" I-O(SW):5856.61'

960' of 8" @ 8.10%

12" INV-I (SE):5873.13'

Q1 CURB INLET:
STA:0+29.90
RIM:5878.28'
12" I-O(NW):5874.28'
SUMP:5874.28'

101' of 8" @ 6.95%

K5: 18" BASIN
STA:3+85.59
RIM:5879.80'
8" I-I(NE):5875.72'
8" I-O(S):5875.72'

72' of 8" @ 5.22%

K4 CURB INLET:
STA:3+33.13
RIM:5877.74'
8" I-I(N):5873.06'
8" I-O(S):5873.06'
SUMP:5873.06'

K3: 24" BASIN
STA:1+92.92
RIM:5871.76'
8" I-I(N):5867.42'
8" I-I(NE):5868.76'
12" I-O(S):5867.08'

32' of 8" @ 7.08%

K2: 24" BASIN
STA:1+74.45
RIM:5871.35'
12" I-I(N):5866.79'
12" I-O(S):5866.79'

409' of 12" @ 4.03%

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

NORTH

SOPRIS ENGINEERING LLC
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DESIGNED BY	JPP	
DRAWN BY	JPP	
CHECKED BY	YTN	

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
STORM PLAN
G, H, J, M, & N

DRAWING NO.
C-4.4

G:\2023\33011 CVR #2 RES\CIVIL\CIVIL DWGS\PLOT\33011-C4B STORM.DWG - Sep 16, 2024 - 4:29pm

GRAPHIC SCALE

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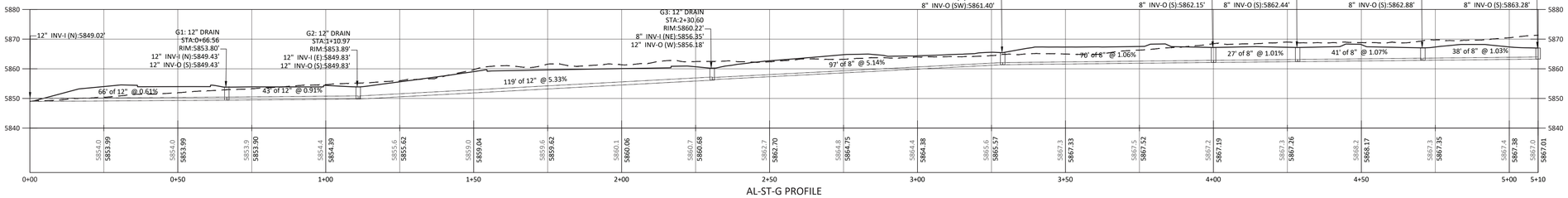
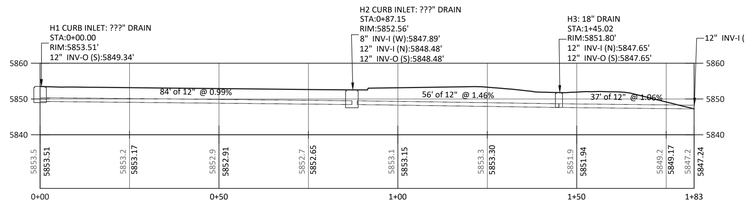
(IN FEET)
1 inch = 20 ft.

NORTH



AL-ST-G PROFILE



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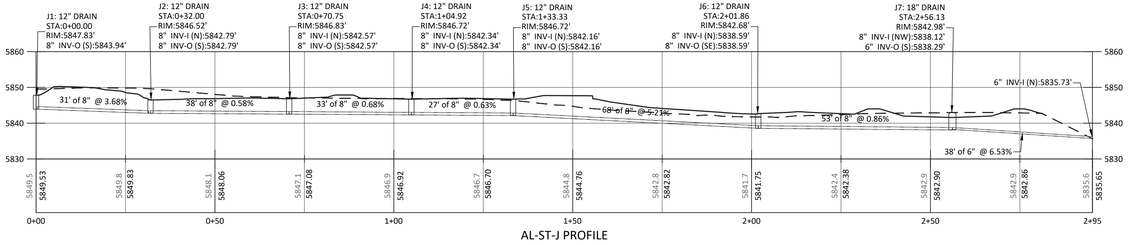

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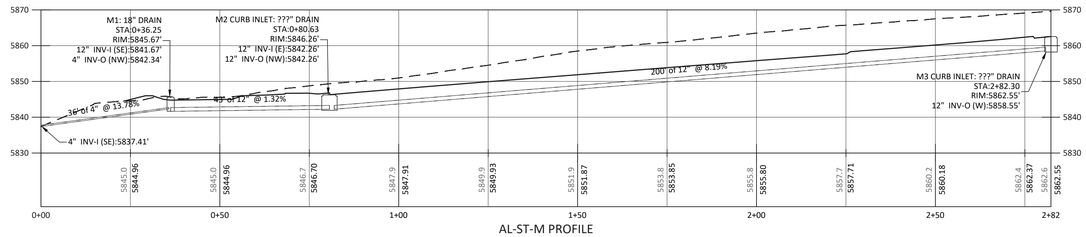

AL-ST-M PROFILE

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JOB NO.	33011.01	
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CHECKED BY	YTN	

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

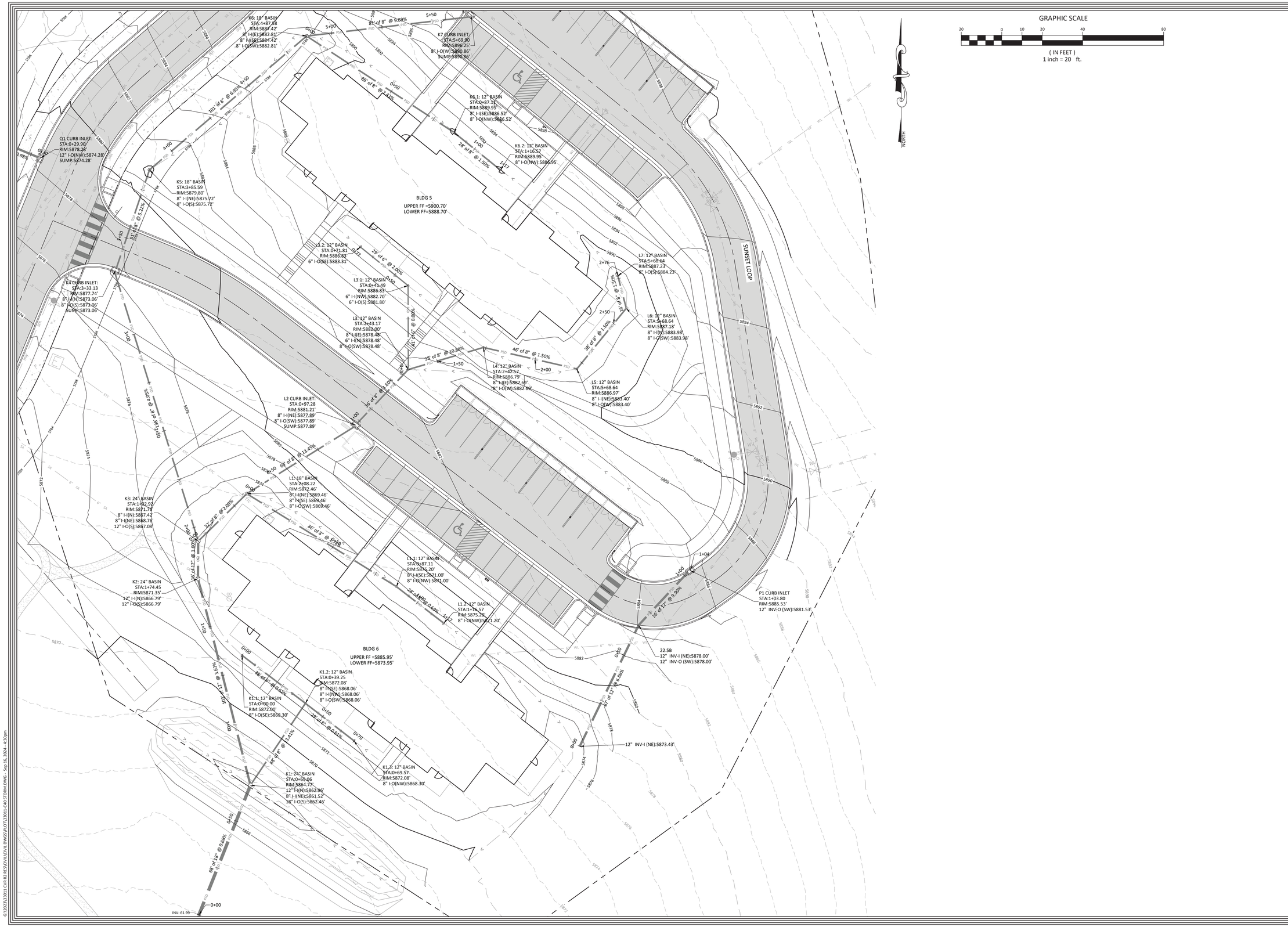
FINAL PLAN

DATE	REVISION

TITLE
STORM PROFILES
G, H, J, & M

DRAWING NO.
C-4.5

G:\2023\33011 CVR RZ RES\Civil\CIVIL DWGS\PLOT\33011-C40 STORM DWG - Sep 16, 2024 - 4:29pm



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DRAWN BY	JPP
CHECKED BY	YTN

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
STORM PLAN
K & L

DRAWING NO.
C-4.6

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GRAPHIC SCALE

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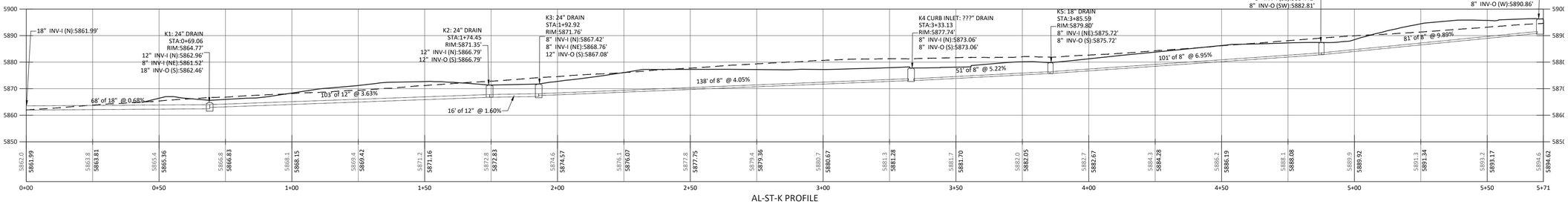
(IN FEET)
1 inch = 20 ft.

NORTH



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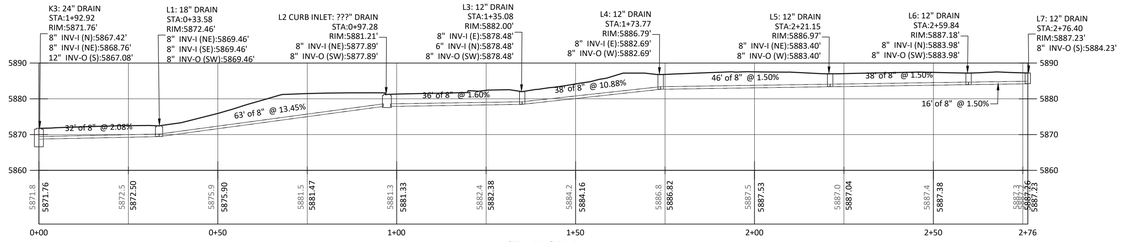

AL-ST-L PROFILE

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(970) 704•0311• soprisengineering.com

DATE:	09-16-2024	
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9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
STORM PROFILES
K & L

DRAWING NO.
C-4.7

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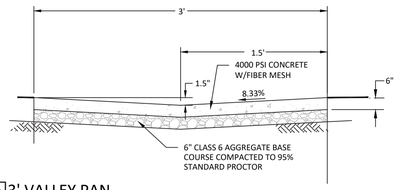
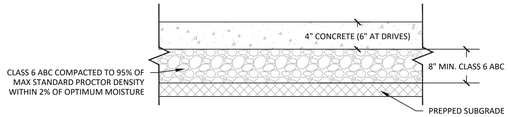


1 C5.0 **3' VALLEY PAN**

SCALE: N.T.S.

NOTES:

1. CONTRACTOR TO STRIP ALL TOPSOIL, SCARIFY SUBGRADE TO A DEPTH OF 8", MOISTURE TREATED TO WITHIN 2 PERCENT OF OF OPTIMUM MOISTURE CONTENT, AND RE-COMPACT TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR DENSITY.
2. AGGREGATE BASE COURSE SHALL BE LAID IN THIN LIFTS NOT TO EXCEED 6-INCHES, MOISTURE TREATED TO WITHIN 2 PERCENT OF OF OPTIMUM MOISTURE CONTENT, AND COMPACTED TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR DENSITY.

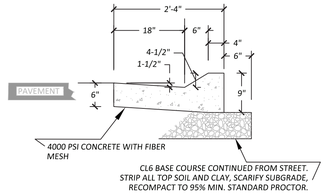


2 C5.0 **TYPICAL CONCRETE PAVEMENT SECTION**

SCALE: N.T.S.

NOTES:

1. CONTRACTOR TO STRIP ALL TOPSOIL, SCARIFY SUBGRADE TO A DEPTH OF 8", MOISTURE TREATED TO WITHIN 2 PERCENT OF OF OPTIMUM MOISTURE CONTENT, AND RE-COMPACT TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR DENSITY.
2. AGGREGATE BASE COURSE SHALL BE LAID IN THIN LIFTS NOT TO EXCEED 6-INCHES, MOISTURE TREATED TO WITHIN 2 PERCENT OF OF OPTIMUM MOISTURE CONTENT, AND COMPACTED TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR DENSITY.
3. THE SUBGRADE & BASE COURSE SHALL BE PROOF ROLLED AFTER THE REQUIRED COMPACTION HAS BEEN OBTAINED AND THE SUBGRADE HAS BEEN SHAPED TO THE REQUIRED CROSS SECTION. PROOF ROLLING SHALL BE PERFORMED IN ACCORDANCE WITH CDOT SPECIFICATIONS WITH A VEHICLE WITH A MINIMUM AXLE LOAD OF 18 kips PER AXLE AND OBSERVED BY PROJECT ENGINEER AND/OR PROJECT GEOTECHNICAL ENGINEER
4. THE PUBLIC PEDESTRIAN AREAS HAVE BEEN DESIGNED PER THE AMERICAN'S WITH DISABILITIES ACT (ADA) STANDARDS. THE ADA CORRIDORS HAVE BEEN DESIGNED WITH A MAXIMUM CROSS SLOPE OF 2%. THE CONTINUOUS LONGITUDINAL SLOPES ARE ALL LESS THAN THE MAXIMUM 5% (1:20) SLOPE. HANDICAP PEDESTRIAN AREAS SHALL BE CONSTRUCTED TO MEET ALL ADA STANDARDS AND SPECIFICATIONS, INCLUDING, BUT NOT LIMITED TO; ACCESS WIDTHS, CROSS SLOPE, LONGITUDINAL SLOPE, CHANGE IN LEVEL, SLOT OPENINGS, SURFACE TEXTURE, AND SCORE JOINT WIDTHS.

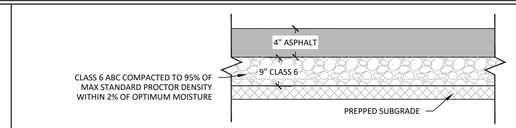


3 C5.0 **MOUNTABLE CURB & GUTTER**

SCALE: N.T.S.

NOTES:

1. CONTRACTOR TO STRIP ALL TOPSOIL, SCARIFY AND RE-COMPACT AS REQUIRED TO ACCOMMODATE REQUIRED CONCRETE SECTION AND COMPACT SUBGRADE TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR DENSITY.
2. AGGREGATE BASE COURSE SHALL BE LAID IN THIN LIFTS NOT TO EXCEED 6-INCHES, MOISTURE TREATED TO WITHIN 2 PERCENT OF OF OPTIMUM MOISTURE CONTENT, AND COMPACTED TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR DENSITY.

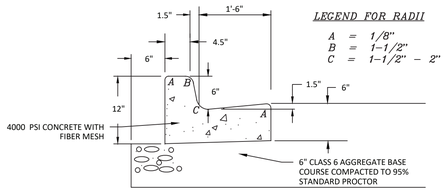


4 C5.0 **TYPICAL ASPHALT PAVEMENT DETAIL**

SCALE: N.T.S.

NOTES:

1. CONTRACTOR TO STRIP ALL TOPSOIL, SCARIFY SUBGRADE TO A DEPTH OF 8", MOISTURE TREATED TO WITHIN 2 PERCENT OF OF OPTIMUM MOISTURE CONTENT, AND RE-COMPACT TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR DENSITY.
2. ASPHALT DESIGN MIX SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL.
3. 4" ASPHALT DEPTH W/ 2" BASE LAYER AND 2" TOP LAYER.
4. SUBGRADE FILL SHALL CONSIST OF SCREENED ONSITE MATERIAL (OR APPROVED EQUAL), MOISTURE TREATED, COMPACTED, AND INSTALLED IN LIFTS PER THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. CONSTRUCTION SHALL BE OBSERVED AND TESTED BY THE GEOTECHNICAL ENGINEER.
5. THE EXISTING SUBGRADE & SUBBASE SHALL BE PROOF ROLLED AFTER THE REQUIRED COMPACTION HAS BEEN OBTAINED AND THE SUBGRADE HAS BEEN SHAPED TO THE REQUIRED CROSS SECTION. PROOF ROLLING SHALL BE PERFORMED IN ACCORDANCE WITH CDOT SPECIFICATIONS WITH A VEHICLE WITH A MINIMUM AXLE LOAD OF 18 kips PER AXLE AND OBSERVED BY PROJECT ENGINEER AND/OR PROJECT GEOTECHNICAL ENGINEER.

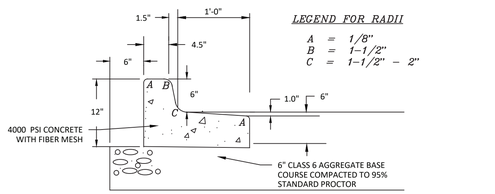


5 C5.0 **STANDARD VERTICAL CATCH CURB**

SCALE: N.T.S.

NOTES:

1. CONTRACTOR TO STRIP ALL TOPSOIL, SCARIFY SUBGRADE TO A DEPTH OF 8", MOISTURE TREATED TO WITHIN 2 PERCENT OF OF OPTIMUM MOISTURE CONTENT, AND RE-COMPACT TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR DENSITY.
2. AGGREGATE BASE COURSE SHALL BE LAID IN THIN LIFTS NOT TO EXCEED 6-INCHES, MOISTURE TREATED TO WITHIN 2 PERCENT OF OF OPTIMUM MOISTURE CONTENT, AND COMPACTED TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR DENSITY.
3. REFER TO SITE PLAN FOR FOR CATCH CURB, SPILL CURB, AND TRANSITION LOCATIONS.

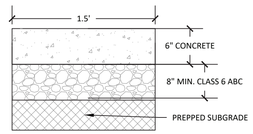


6 C5.0 **STANDARD VERTICAL SPILL CURB**

SCALE: N.T.S.

NOTES:

1. CONTRACTOR TO STRIP ALL TOPSOIL, SCARIFY SUBGRADE TO A DEPTH OF 8", MOISTURE TREATED TO WITHIN 2 PERCENT OF OF OPTIMUM MOISTURE CONTENT, AND RE-COMPACT TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR DENSITY.
2. AGGREGATE BASE COURSE SHALL BE LAID IN THIN LIFTS NOT TO EXCEED 6-INCHES, MOISTURE TREATED TO WITHIN 2 PERCENT OF OF OPTIMUM MOISTURE CONTENT, AND COMPACTED TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR DENSITY.
3. REFER TO SITE PLAN FOR FOR CATCH CURB, SPILL CURB, AND TRANSITION LOCATIONS.

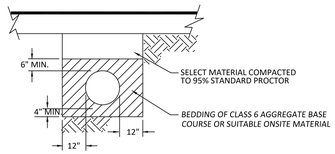


7 C5.0 **STANDARD RIBBON CURB**

SCALE: N.T.S.

NOTES:

1. CONTRACTOR TO STRIP ALL TOPSOIL, SCARIFY SUBGRADE TO A DEPTH OF 8", MOISTURE TREATED TO WITHIN 2 PERCENT OF OF OPTIMUM MOISTURE CONTENT, AND RE-COMPACT TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR DENSITY.
2. AGGREGATE BASE COURSE SHALL BE LAID IN THIN LIFTS NOT TO EXCEED 6-INCHES, MOISTURE TREATED TO WITHIN 2 PERCENT OF OF OPTIMUM MOISTURE CONTENT, AND COMPACTED TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR DENSITY.

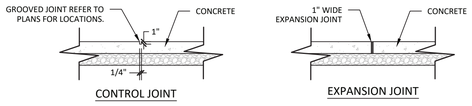


8 C5.0 **TRENCH CROSS-SECTION FOR PVC OR HDPE LINES**

SCALE: N.T.S.

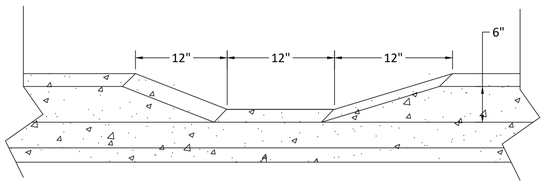
NOTES:

1. SELECT MATERIAL SHALL BE SUITABLE ONSITE MATERIAL THAT IS FREE OF ORGANICS, SCREENED 3" MINUS COMPACTED TO 95% OF STANDARD PROCTOR DENSITY. IF SUITABLE ONSITE MATERIAL IS NOT AVAILABLE, CONTRACTOR SHALL IMPORT CLASS 2 STRUCTURAL BACKFILL OR APPROVED EQUAL.



9 C5.0 **CONCRETE JOINTS**

SCALE: N.T.S.



10 C5.0 **CURB OPENING**

SCALE: N.T.S.

11 C5.0 **ON-SITE COMMON UTILITY TRENCH**

SCALE: N.T.S.

NOTES:
1. BEDDING MATERIAL TO BE CLASS 6 ABC.
2. MIN 4" BEDDING MATERIAL UNDER CONDUITS.
3. MIN 12" CLASS 6 ABC OVER TOP OF CONDUITS.
4. WARNING TAPE TO BE INSTALLED ABOVE CONDUITS PER UTILITY COMPANY STANDARDS.
5. TRENCH WALLS ARE TO BE SLOPED PER CURRENT OSHA AND COSH STANDARDS.
6. DEPTH OF TRENCH IS TO BE MEASURED FROM FINISHED GRADE.

TOWN OF NEW CASTLE DETAILS

STREET, WATER, SANITARY SEWER, AND IRRIGATION UTILITY IMPROVEMENTS SHALL BE CONSTRUCTED ACCORDING TO THE LATEST COPY OF THE TOWN OF NEW CASTLE PUBLIC WORKS MANUAL. DETAILS AMENDED PER THE FOLLOWING NOTES.

1. WHERE THE PLANS AND TOWN OF NEW CASTLE REGULATIONS DIFFER THE CONTRACTOR SHALL HOLD TO THE MORE STRINGENT CRITERIA.
2. DUPLICATE CURB DETAILS INCLUDED HERE ARE FOR DIMENSIONS SPECIFIC TO THIS SITE. CONFIRM DIMENSIONS FOR RIGHT OF WAY IMPROVEMENTS WITH ENGINEER OF RECORD AND TOWN OF NEW CASTLE PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL PROVIDE MATERIAL SUBMITTALS FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
4. PURE CORE IS AN ALLOWABLE WATER SERVICE MATERIAL.
5. CONTRACTOR SHALL COMPLY WITH ALL COUNTY, STATE, AND FEDERAL SAFETY AND HEALTH REGULATIONS. IN PARTICULAR, THE "TRENCHING" AND "OPEN EXCAVATION" OPERATIONS AND ALL CURRENT O.S.H.A. REGULATORY REQUIREMENTS.

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3 • CARBONDALE CO 81623
(970) 704•0311 • soprisengineering.com

DATE:	09-16-2024
JOB NO.	33011.01
DESIGNED BY	AKC
DRAWN BY	JPP
CHECKED BY	YTN

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
SITE DETAILS

DRAWING NO.
C-5.0

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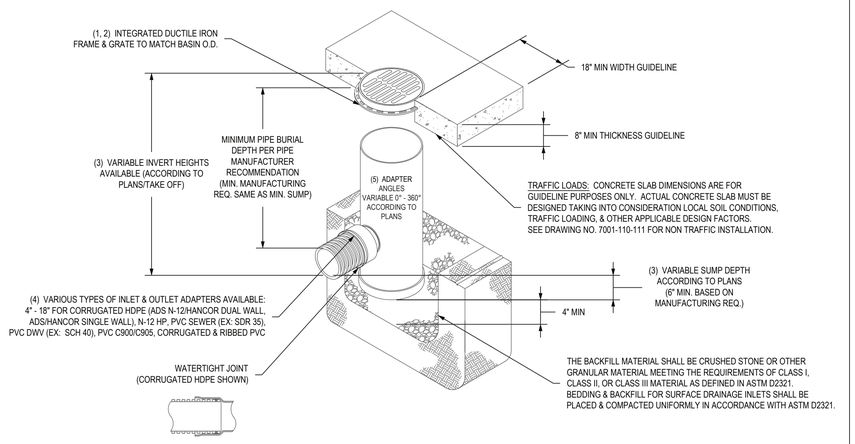
NYLOPLAST DRAIN BASIN: 2818AG _ _ X



GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS H-20	1818BCSP	7001-110-252
BICYCLE COVER	MEETS H-20	1818BCGE	7001-110-253
SOLID COVER	MEETS H-20	1818BCSC	7001-110-254
DOME	N/A	1818BCDD	7001-110-255
GRADE ALLOWLITE	LIGHT DUTY	1818CSL	7001-110-264

1 / C5.1 NYLOPLAST INLET DETAIL

SCALE: N.T.S.

1 - GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER.
5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.

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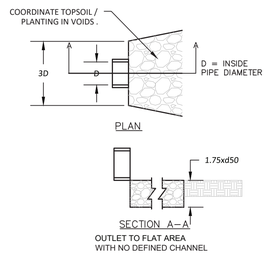
DRAWN BY	EBC	MATERIAL	
DATE	04-03-06		
REVISED BY	NMH	PROJECT NO./NAME	
DATE	03-14-16		
DWG SIZE	A	SCALE 1:30	SHEET 1 OF 1

Nyloplast — 3130 VERONA AVE, BUFORD, GA 30518, PHN (770) 932-2443, FAX (770) 932-2490, www.nyloplast-us.com

TITLE: 18 IN DRAIN BASIN QUICK SPEC INSTALLATION DETAIL

DWG NO. 7001-110-191 REV E



RIPRAP SIZING NOTES:
RIPRAP SHALL CONFORM TO THE MATERIAL, GRADATION AND CONSTRUCTION REQUIREMENTS OF SECTION 506, RIPRAP, OF THE STATE DEPARTMENT OF HIGHWAYS, DIVISION OF HIGHWAYS, STATE OF COLORADO, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. TABLE 506-2E IS REDUCED BELOW.

TABLE 5-1 - CLASSIFICATION AND GRADATION OF ORDINARY RIPRAP

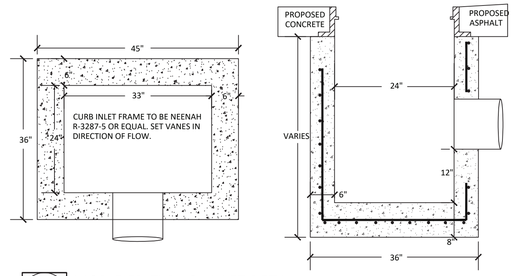
RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIM (IN)	d50*(IN)
TYPE VL	70-100	12	6
	50-70	9	
	35-50	6	
	2-10	2	

*d50=NOMINAL STONE SIZE =6"

SITE RIPRAP NOTES:
1. SEE PLANS FOR D (INSIDE DIAMETER OF CULVERT WHERE APPLICABLE) & NOMINAL STONE SIZE (d50)
2. PLACE EXCAVATED SOIL AND GRAVEL MATERIAL IN RIPRAP VOIDS. PLACE EXCAVATED SOIL AND GRAVEL MATERIAL IN RIPRAP VOIDS. COORDINATE PLANTING WITH LANDSCAPE ARCHITECT'S PLANS AND SPECIFICATIONS.
3. ALL RIPRAP APRONS SHALL CONSIST OF d50=6" ANGULAR ROCK. THE TOP OF THE EMBEDDED RIPRAP APRONS TO BE CONSTRUCTED TO MATCH THE FLOW LINE OF THE SWALE OR THE CULVERT INVERT GRADES.

2 / C5.1 RIPRAP DETAIL

SCALE: N.T.S.



3 / C5.1 MODIFIED TYP 13 INLET DETAIL

SCALE: N.T.S.

NOTES:
1. CONCRETE MUST CURE TO 4500 PSI STRENGTH IN 28 CONSECUTIVE DAYS
2. STEEL REINFORCEMENT;
   - #4 RE-BAR FOR FLOOR SLAB AT 8" CENTERS IN TWO HORIZONTAL DIRECTIONS (X AND Y)
   - #4 RE-BAR AT 9" CENTERS INSTALLED HORIZONTALLY AND VERTICALLY FOR WALLS

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3 • CARBONDALE CO 81623
(970) 704 • 0311 • soprisengineering.com

DATE:	09-16-2024	
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9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE: GRADING AND DRAINAGE DETAILS

DRAWING NO. C-5.1

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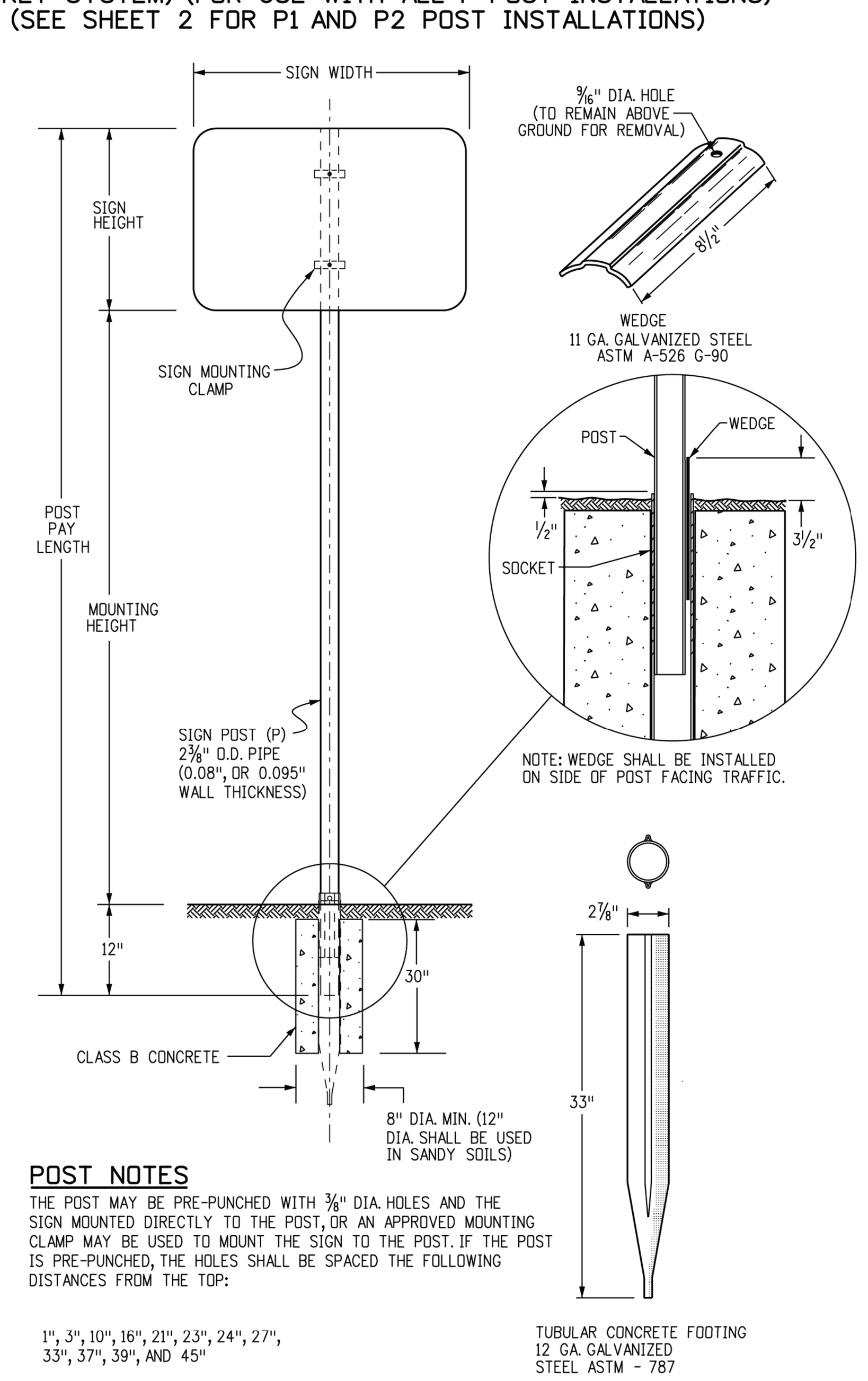
TUBULAR STEEL POSTS
(SOCKET SYSTEM) (FOR USE WITH ALL P-POST INSTALLATIONS)
(SEE SHEET 2 FOR P1 AND P2 POST INSTALLATIONS)



POST NOTES
THE POST MAY BE PRE-PUNCHED WITH ⅜" DIA. HOLES AND THE SIGN MOUNTED DIRECTLY TO THE POST, OR AN APPROVED MOUNTING CLAMP MAY BE USED TO MOUNT THE SIGN TO THE POST. IF THE POST IS PRE-PUNCHED, THE HOLES SHALL BE SPACED THE FOLLOWING DISTANCES FROM THE TOP:

1", 3", 10", 16", 21", 23", 24", 27", 33", 37", 39", AND 45"

SIGNPOST SELECTION GUIDE (90 MPH WIND LOAD DESIGN)
(FOR SOCKET SYSTEM AND SLIPBASE INSTALLATIONS USING P, P1 OR P2 POSTS)

7' MOUNTING HEIGHT (SIGN WIDTH (FT) across; SIGN HEIGHT (FT) down)

SIGN HEIGHT (FT)	1	2	2.5	3	4	5	6	7	8	9
1	P	P	P	P	P	P1	SIZES NOT USED			
2	P	P	P	P	P	P1	TWO P1'S			
2.5	P	P	P	P	P1	P1				
3	P	P	P	P1	P1	P1				
4	P	P1	P1	P1	P1	P1				
5	SIZES NOT USED		P1	P1	P1	P1				
6			P1	P1	P1	▼P2				TWO P2'S
7			P1	P1	▼P2	TWO P1'S			TWO P2'S	SIZE NOT USED

8' MOUNTING HEIGHT

SIGN HEIGHT (FT)	1	2	2.5	3	4	5	6	7	8	9
1	P	P	P	P	P	P1	SIZES NOT USED			
2	P	P	P	P	P1	P1	TWO P1'S			
2.5	P	P	P	P1	P1	P1				
3	P	P	P1	P1	P1	P1				
4	P	P1	P1	P1	P1	P1				
5	SIZES NOT USED		P1	P1	P1	▼P2				
6			P1	P1	P1	▼P2				TWO P2'S
7			P1	P1	TWO P1'S	TWO P1'S		TWO P2'S	SIZES NOT USED	

9' MOUNTING HEIGHT

SIGN HEIGHT (FT)	1	2	2.5	3	4	5	6	7	8	9
1	P	P	P	P	P	P1	SIZES NOT USED			
2	P	P	P	P	P1	P1	TWO P1'S			
2.5	P	P	P	P1	P1	P1				
3	P	P	P1	P1	P1	P1				
4	P	P1	P1	P1	P1	P1				
5	SIZES NOT USED		P1	P1	P1	▼P2				TWO P2'S
6			P1	P1	▼P2	TWO P1'S			TWO P2'S	
7			P1	P2	TWO P1'S	TWO P1'S		TWO P2'S	SIZES NOT USED	

▼ SEE CHART NOTE 4.

CHART NOTES
1. TYPICAL POST MOUNTING HEIGHTS FROM GROUND TO BOTTOM OF SIGN PANEL ARE 7, 8 OR 9 FEET. OTHER HEIGHTS MAY BE REQUIRED WHEN SIGNS ARE MOUNTED ON STEEPER FILL OR CUT SLOPES.
2. FOR SIGNS MOUNTED ON TWO POSTS, THE MINIMUM DISTANCE BETWEEN POSTS SHALL BE 2 FEET AND THE MAXIMUM DISTANCE SHALL BE 8 FEET. DISTANCE FROM POST TO EDGE OF SIGN PANEL(S) SHALL BE 0 TO 4 INCHES. WHEN BACKING ZEES ARE USED, POSTS SHALL BE INSTALLED WITH A MINIMUM OF 2 INCHES TO THE EDGE OF THE BACKING ZEE.
3. ALL SIGN PANELS GREATER THAN 60 INCHES IN WIDTH MUST BE MOUNTED ON TWO POSTS TO PREVENT TURNING.
4. THE POST SIZES SHOWN ARE THE MINIMUM SIZES REQUIRED. TWO P1 POSTS MAY BE SUBSTITUTED WHERE ONE P2 POST IS INDICATED. P2 POSTS MAY BE SUBSTITUTED FOR P1 POSTS WHEN DIRECTED BY THE ENGINEER.

GENERAL NOTES
1. SIGNS BETWEEN 37 IN. AND 60 IN. WIDTH WITH ONE POST INSTALLATION REQUIRE A T OR U SIGN SUPPORT BRACKET IN ADDITION TO THE BACKING ZEE REQUIREMENTS. WHEN DIRECTED BY THE ENGINEER, SIGN PANELS LESS THAN 48 IN. IN WIDTH MAY ATTACHED DIRECTLY TO T OR U BRACKETS WITHOUT ZEES.
2. U-BRACKETS MAY BE USED FOR MULTIPLE SIGN INSTALLATIONS.
3. FOR BACKING ZEE REQUIREMENTS AND DETAILS, SEE STANDARD PLANS S-614-3 AND S-614-4.

POST SPECIFICATIONS

POST SIZE	OUTSIDE DIAMETER	WALL THICKNESS	MATERIAL	**COATING	MAX ALLOW MOMENT	PAID FOR AS:
P	2.375"	.080"	ASTM-513	ASTM A-653 G-210 WITH 3.0 MIL POLYMER COATING PER ASTM A123 CLEAR COATING	1.47 KIP FT	STEEL SIGN SUPPORT (2 INCH ROUND)
P1	2.875"	.160"	ASTM-513		4.02 KIP FT	STEEL SIGN SUPPORT (2½ INCH ROUND NP-40)
P2	2.875"	.276"	ASTM-500	GC HOT DIPPED PER ASTM-123	5.13 KIP FT	STEEL SIGN SUPPORT (2½ INCH ROUND SCH 80)

** COLOR POWDER COATING MAY BE ADDED ACCORDING TO MANUFACTURER SPECIFICATIONS FOR SPECIAL LOCATIONS WHEN SHOWN ON THE PLANS.

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12	Initials: KEN	Date:	Comments
Last Modification Date: 03/05/13	Initials: NNC	R-1 03/05/13	SHTS 1 & 2 - UPDATED DETAIL TITLES
Full Path: www.coloradodot.info/library/traffic/traffic-s-standard-plans			
Drawing File Name: S-614-08.dgn			
CAD Ver.: MicroStation V8i Scale: Not to Scale Units: English			

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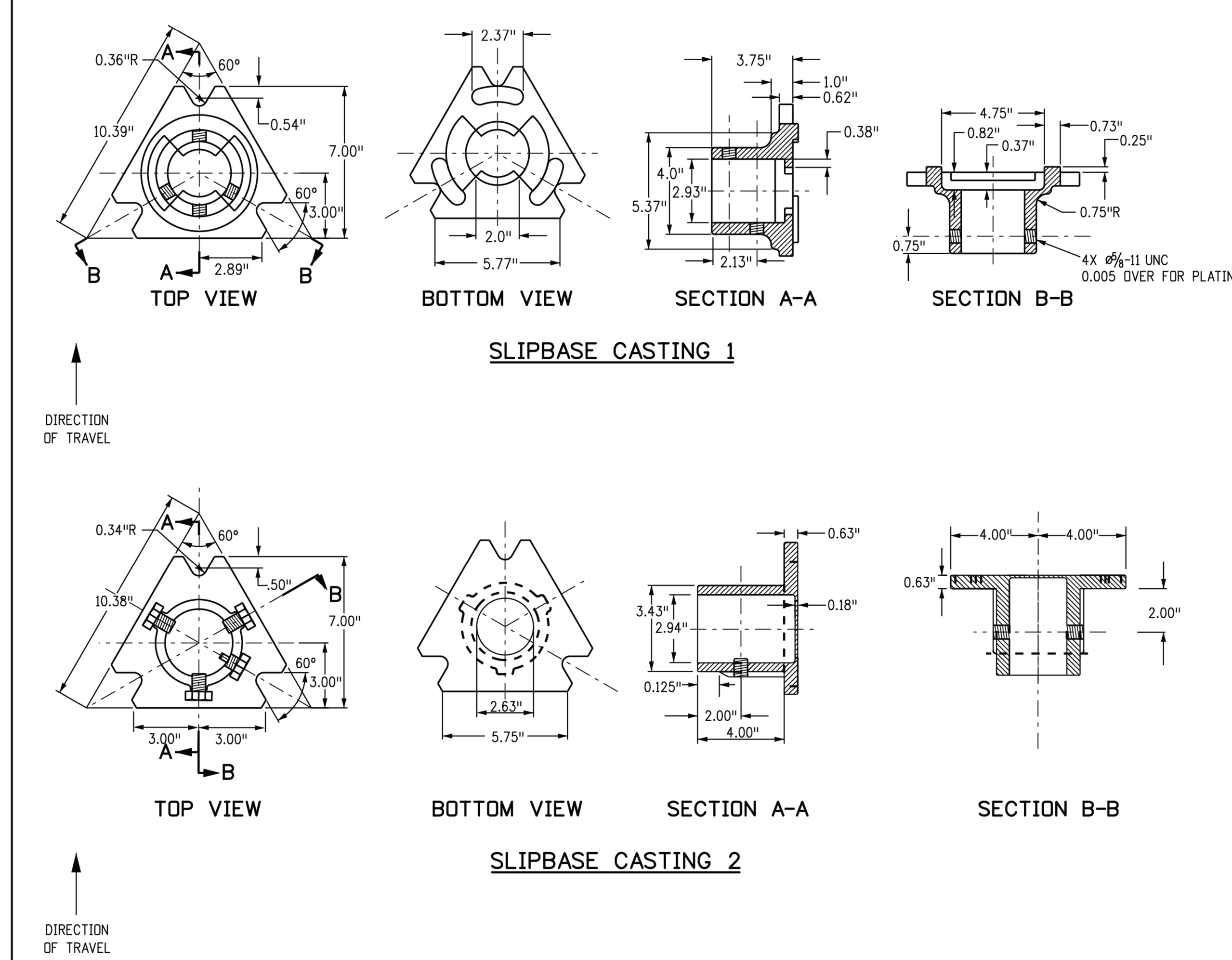
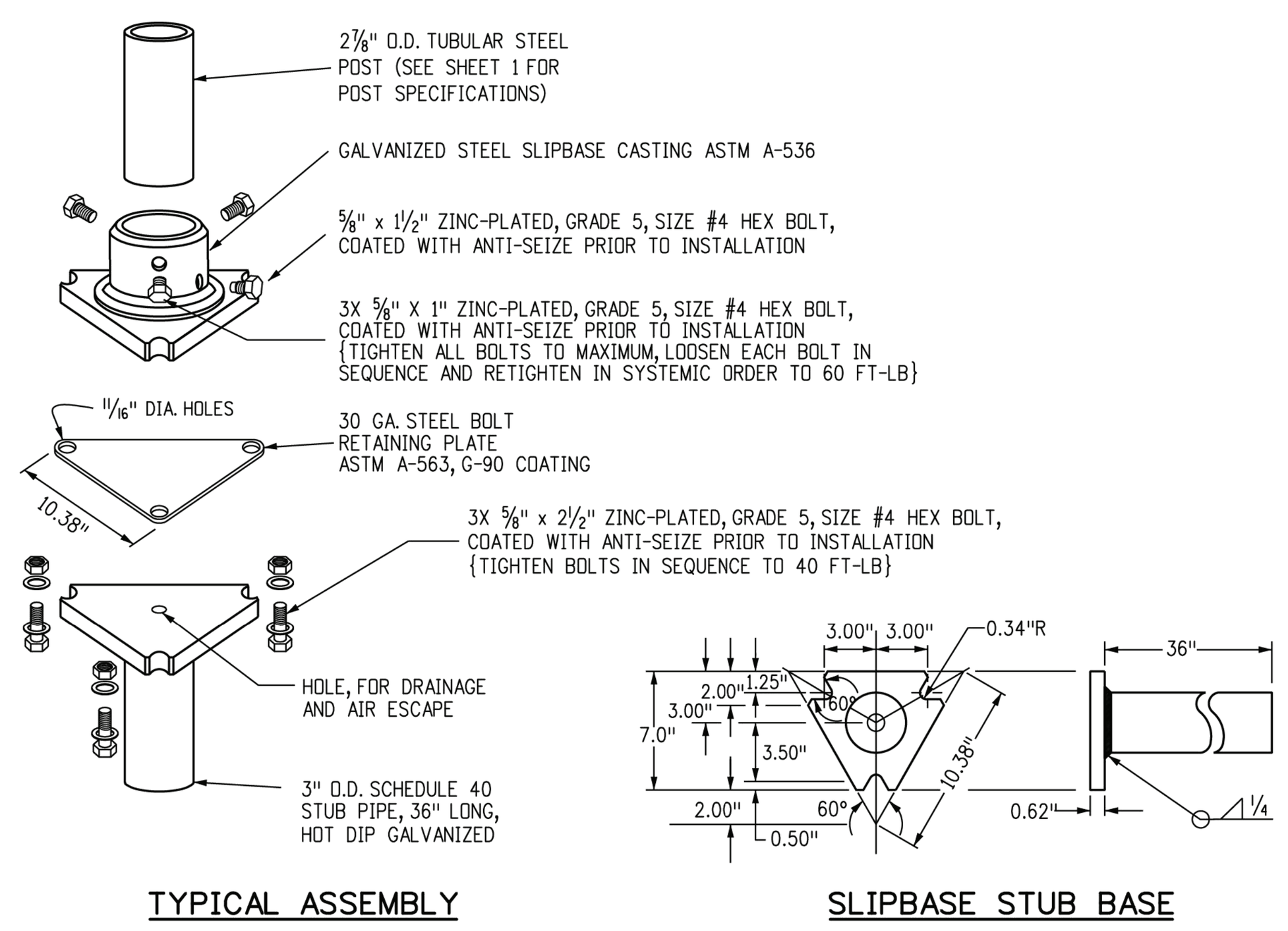
Safety & Traffic Engineering KCM

TUBULAR STEEL SIGN SUPPORT DETAILS
Issued By: Safety & Traffic Engineering Branch July 4, 2012
STANDARD PLAN NO. S-614-8
Sheet No. 1 of 7





SLIPBASE CASTING REQUIREMENTS
FOR 2-7/8 INCH POSTS (P1 OR P2 POSTS)
GALVANIZED STEEL SLIPBASE CASTING ASTM-536

MOUNTING HARDWARE
- 3 - EACH ⅝ x 2½ INCH LONG HEX BOLT
- 3 - EACH ⅝ x 1 INCH LONG ZINC-PLATED, GRADE 5 SIZE #4 HEX BOLT
- 1 - EACH ⅝ x 1½ INCH LONG ZINC-PLATED, GRADE 5 SIZE #4 HEX BOLT
- 1 - EACH 30 GAUGE STEEL BOLT RETAINING PLATE ASTM A-563, G-90 COATING

INSTALLATION REQUIREMENTS
ALL HEX BOLTS SHALL BE COATED WITH ANTI-SEIZE PRIOR TO INSTALLATION

ALL HARDWARE WILL BE GALVANIZED OR ZINC PLATED.

TUBULAR STEEL SIGN SUPPORT SLIPBASE NOTES
1. REFER TO SIGNING PLANS FOR SIGN LOCATIONS AND HEIGHT
2. MINUMUM ALLOWABLE TENSION CAPACITY FOR WEDGE ANCHORS = 3000 LBS.
3. MAXIMUM ALLOWABLE MOMENT FOR SIGN BASE = 5.13 kip-ft.
4. PAY ITEM "STEEL SIGN SUPPORT(X-INCH ROUND)(SLIPBASE)" SHALL INCLUDE STUB BASE, CASTING AND NECESSARY HARDWARE (SLIPBASE CASTING MOUNTING HARDWARE AS SHOWN ON STD S-614-8, SHEET 3)
5. PAY ITEM "STEEL SIGN SUPPORT CASTING" SHALL INCLUDE CASTING AND NECESSARY MOUNTING HARDWARE (SLIPBASE CASTING MOUNTING HARDWARE AS SHOWN ON STD S-614-8, SHEET 3)
6. PAY ITEM "STEEL SIGN GROUND STUB BASE (36)" SHALL INCLUDE SLIPBASE STUB BASE

STEEL SIGN SUPPORT SLIPBASE INSTALLATION

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12	Initials: KEN	Date:	Comments
Last Modification Date: 04/12/18	Initials: DINARDO	R-1 10/23/14	NEW SHEET. INCLUDES SLIP BASE DETAILS PLUS 4" BASE PLATE DETAIL
Full Path: www.coloradodot.info/library/traffic/traffic-s-standard-plans		R-2 04/01/16	UPDATES TO RETRO-FIT HARDWARE
Drawing File Name: S-614-08.dgn		R-3 12/01/16	ADDED DETAILS FOR SLIPBASE 2
CAD Ver.: MicroStation V8i Scale: Not to Scale Units: English		R-4 04/12/18	ADDED TORQUE VALUES NEW PAY ITEM FOR SLIPBASE CASTING

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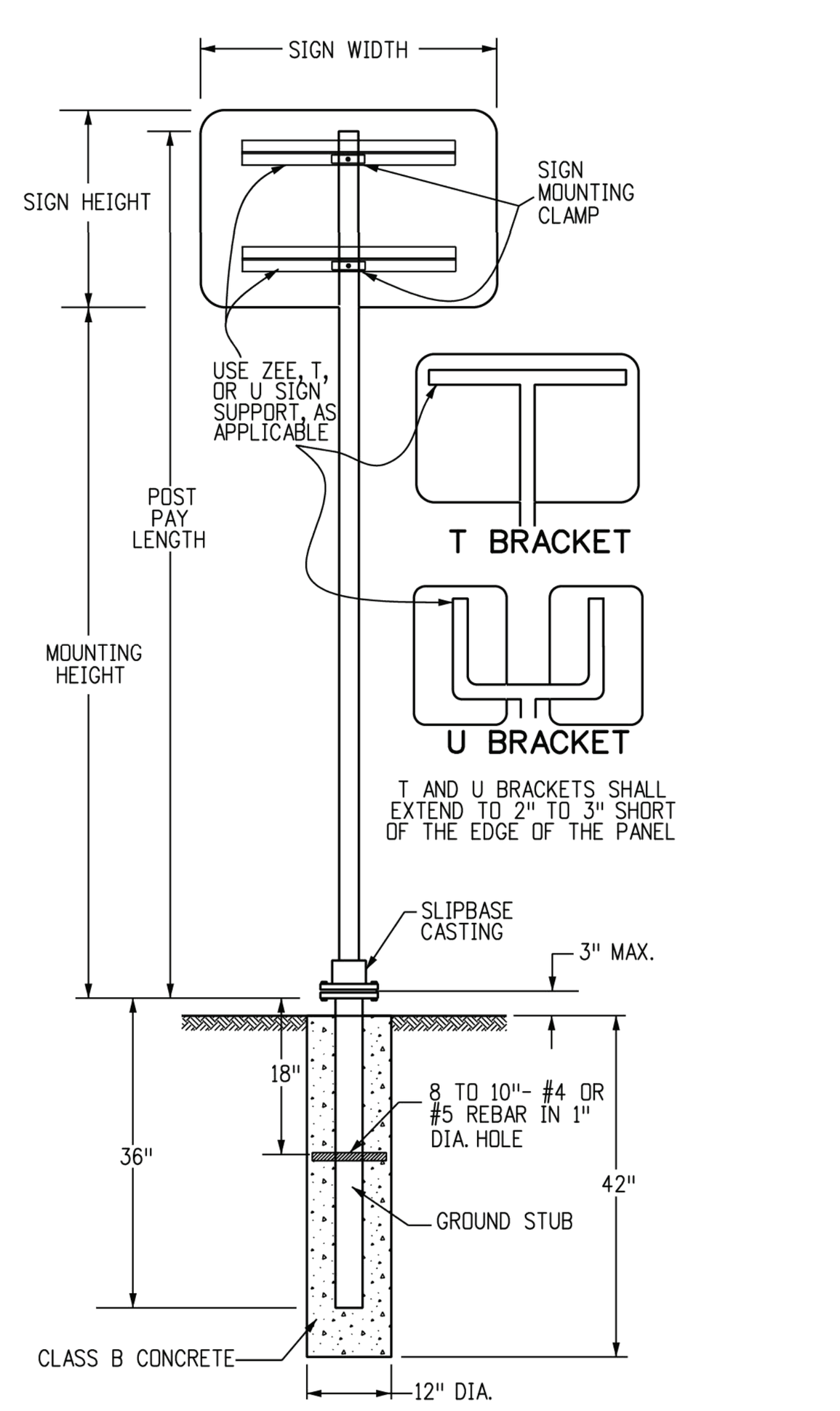
Safety & Traffic Engineering KCM

TUBULAR STEEL SIGN SUPPORT DETAILS
Issued By: Safety & Traffic Engineering Branch July 4, 2012
STANDARD PLAN NO. S-614-8
Sheet No. 3 of 7

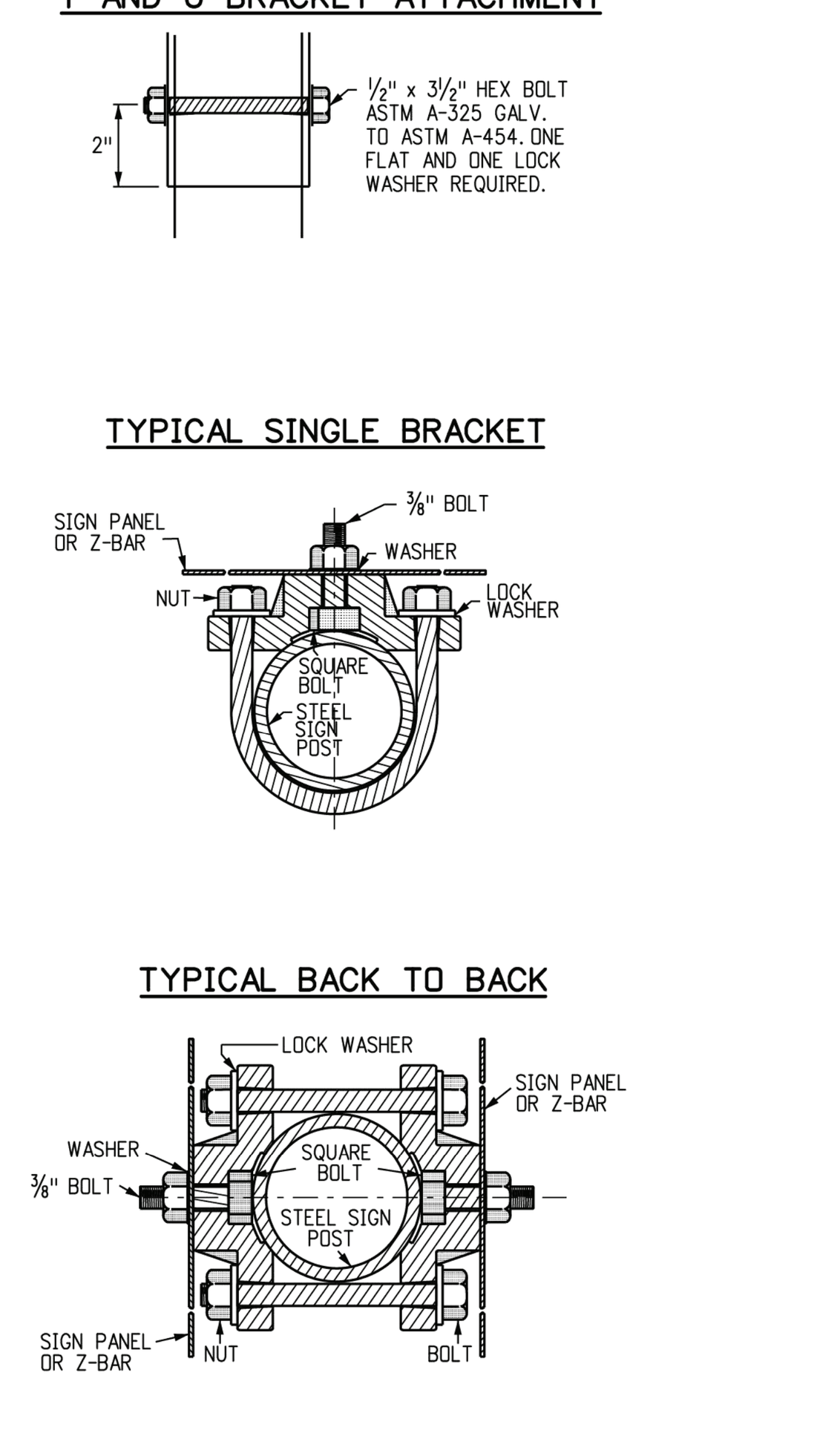


TUBULAR STEEL POST
(WITH SLIPBASE)
(FOR USE WITH ALL P1 AND P2 POST INSTALLATIONS)
(SEE SHEET 1 FOR P-POST INSTALLATIONS)

GENERAL NOTE
THE CONTRACTOR SHALL INSTALL THE POSTS PER THE MANUFACTURER'S RECOMMENDATIONS WITHOUT ADDITIONAL COMPENSATION.

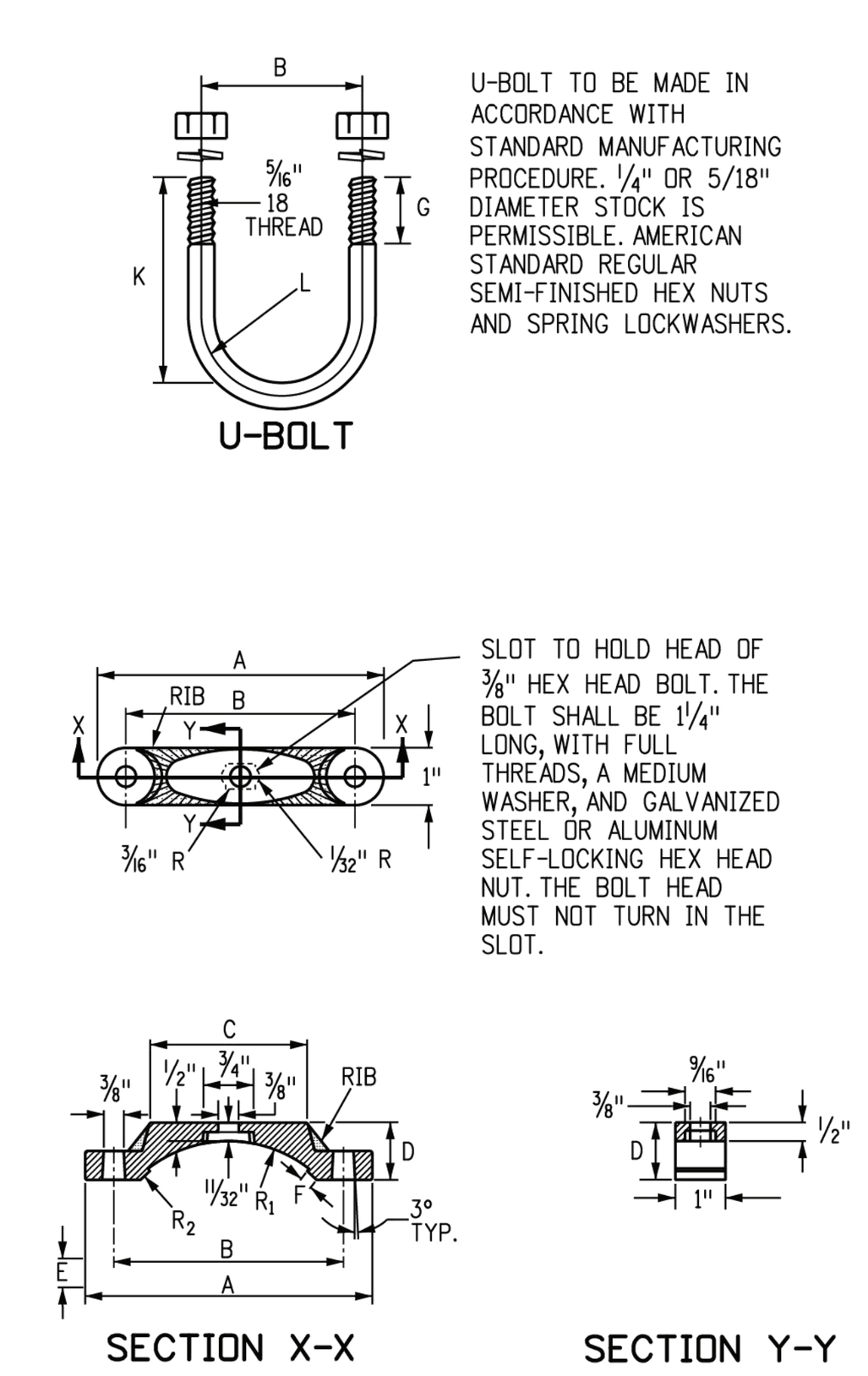
DIMENSIONS FOR MOUNTING CLAMP (ALL DIMENSION ARE IN INCHES)

STANDARD PIPE SIZE	A	B	C	D	E	F	G	K	L	R_1	R_2
2	3¾	2¾	1½	1⅛	½	3/16	1	2 11/16	1 7/32	1¼	1 3/16
2½	4¼	3¼	2	1¼	½	¼	1	3 3/16	1 15/32	1½	1 7/16



DETAILS FOR SIGN PANEL ATTACHMENT

PIPE CLAMP CASTING
PIPE CLAMP CASTING SHALL BE ASTM B26 OR B108 ALUMINUM ALLOY A444.0-T4 OR 356.0-F. ALL SIGN MOUNTING CLAMP PARTS NOT MADE FROM ALUMINUM SHALL BE GALVANIZED STEEL IN CONFORMANCE WITH ASTM A153 OR STAINLESS STEEL.

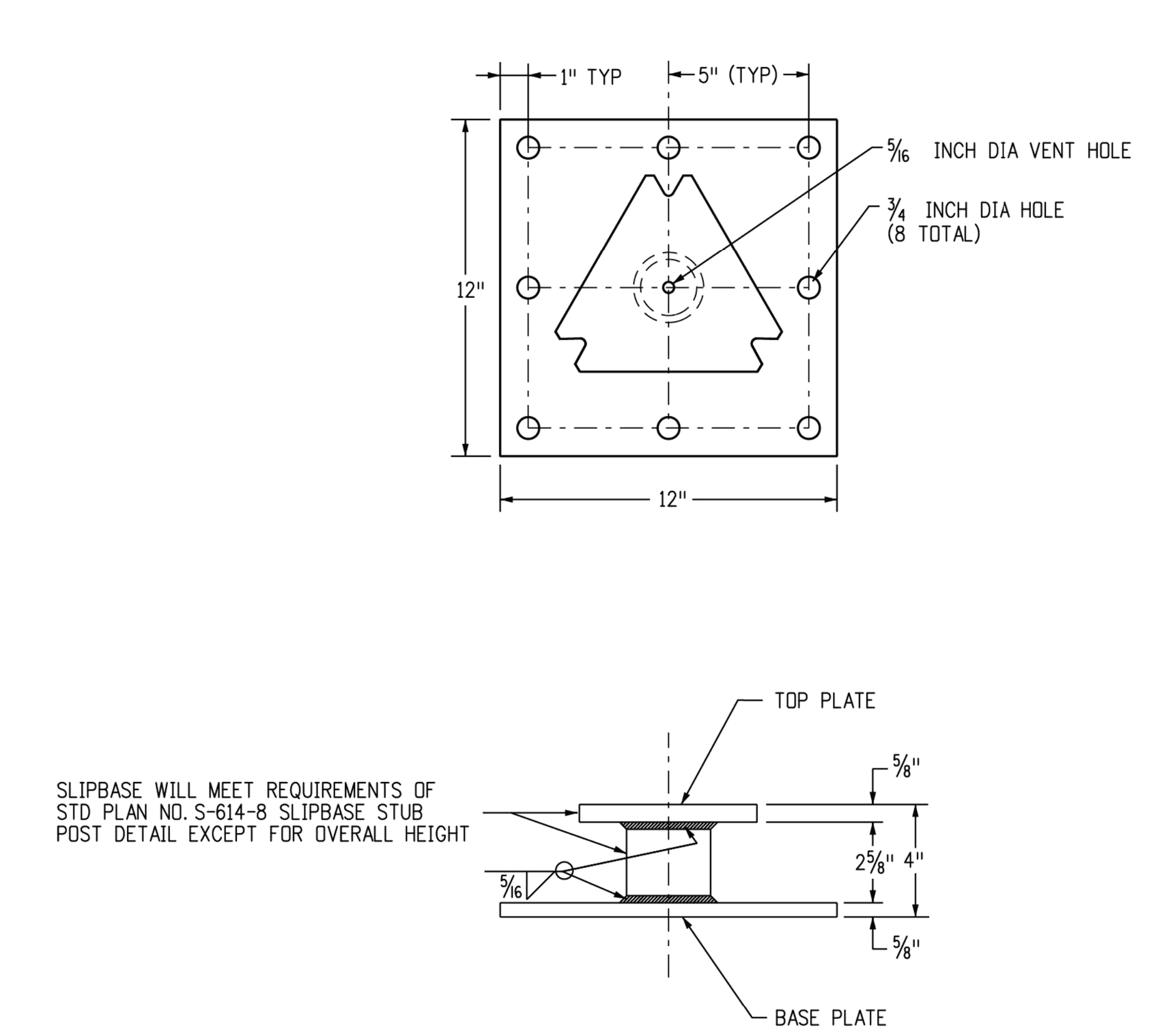


MOUNTING CLAMP FOR SOCKET OR SLIPBASE

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12	Initials: SCL	Date:	Comments
Last Modification Date: 10/23/14	Initials: KEN	R-1 03/05/13	UPDATED DETAIL TITLES
Full Path: www.coloradodot.info/library/traffic/traffic-s-standard-plans		R-2 10/23/14	MOVED SLIPBASE DETAILS TO SHEET 3
Drawing File Name: S-614-08.dgn			
CAD Ver.: MicroStation V8i Scale: Not to Scale Units: English			

Colorado Department of Transportation
2829 W Howard Place
Denver, Colorado 80204
Phone: 303-757-9543 FAX: 303-757-9219
Safety & Traffic Engineering KCM

TUBULAR STEEL SIGN SUPPORT DETAILS
Issued By: Safety & Traffic Engineering Branch July 4, 2012
STANDARD PLAN NO. S-614-8
Sheet No. 2 of 7



SURFACE MOUNT SLIPBASE BASE PLATE

SURFACE MOUNT SLIPBASE BASE PLATE FABRICATION REQUIREMENTS
BASE PLATE - ¾ INCH ASTM A 36 PLATE STEEL
PIPE STUB - 3 INCH NOMINAL SCHEDULE 80, ASTM A-500 GRADE B
TOP PLATE - MEET REQUIREMENTS OF STD PLAN NO. S-614-8, SHEET 3

MEET ASTM A-123 GALVANIZING AFTER FABRICATION IS COMPLETE

SURFACE MOUNT SLIPBASE TUBULAR STEEL SIGN BASE REQUIREMENTS
FOR 2-7/8 INCH POSTS (P1 OR P2 POSTS)
FOR CONCRETE SURFACES GREATER THAN 7 INCHES THICK
FOR CONCRETE SURFACES GREATER THAN 12 INCHES IN WIDTH

MOUNTING HARDWARE
- 8 - EACH ⅝ x 5½ INCH LONG "HILTI KWIK HUS-EZ SCREW ANCHORS
- 16 - EACH ⅝ INCH FLAT WASHERS
- 8 - EACH ⅝ INCH LOCK WASHERS
- 8 - EACH ⅝ INCH NUTS

ALL HARDWARE WILL BE GALVANIZED OR ZINC PLATED.

INSTALLATION REQUIREMENTS:
DRILL: (8) - ⅝ INCH HOLES 6 INCH DEEP, CLEAN HOLE PRIOR TO INSTALLING ANCHORS

USE ADDITIONAL WASHERS FOR SHIMMING TO LEVEL BASE PLATE.

TUBULAR STEEL SIGN SUPPORT SURFACE MOUNT SLIPBASE NOTES
1. REFER TO SIGNING PLANS FOR SIGN LOCATIONS AND HEIGHT
2. REFER TO STD PLAN NO. S-614-8, SHEET 3 FOR SLIPBASE CASTING INFORMATION
3. MINUMUM ALLOWABLE TENSION CAPACITY FOR WEDGE ANCHORS = 3000 LBS.
4. MAXIMUM ALLOWABLE MOMENT FOR SIGN BASE = 5.13 kip-ft.
5. PAY ITEM "STEEL SIGN SURFACE MOUNT BASE PLATE (SLIPBASE)" SHALL INCLUDE BASE PLATE, CASTING AND ALL NECESSARY HARDWARE (SLIPBASE CASTING MOUNTING HARDWARE AS SHOWN ON STD S-614-8, SHEET 3 AND SURFACE MOUNT SLIPBASE MOUNTING HARDWARE AS SHOWN ON STD 6-14-8, SHEET 4)
6. PAY ITEM "STEEL SIGN SURFACE MOUNT BASE PLATE" SHALL INCLUDE BASE PLATE AND NECESSARY HARDWARE (SURFACE MOUNT SLIPBASE MOUNTING HARDWARE AS SHOWN ON STD S-614-8, SHEET 4)

SURFACE MOUNT SLIPBASE INSTALLATION

Computer File Information		Sheet Revisions	
Creation Date: 04/12/18	Initials: DINARDO	Date:	Comments
Last Modification Date:	Initials:		
Full Path: www.coloradodot.info/library/traffic/traffic-s-standard-plans			
Drawing File Name: S-614-08.dgn			
CAD Ver.: MicroStation V8i Scale: Not to Scale Units: English			

Colorado Department of Transportation
2829 W Howard Place
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TUBULAR STEEL SIGN SUPPORT DETAILS
Issued By: Safety & Traffic Engineering Branch July 4, 2012
STANDARD PLAN NO. S-614-8
Sheet No. 4 of 7

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3 • CARBONDALE CO 81623
(970) 704-0311 • soprisengineering.com

DATE:	09-16-2024
JOB NO.	33011.01
DESIGNED BY	AKC
DRAWN BY	JPP
CHECKED BY	YTN

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
SIGNAGE DETAILS

DRAWING NO.
C-5.2

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DRAINAGE NOTES/ASSUMPTIONS

1. EXISTING OFFSITE DRAINAGE BASIN OS-01 DRAINAGE CALCULATED USING THE USGS STREAM STATS PROGRAM. Q = 130 CFS. REFER TO THE ENGINEERING REPORT APPENDIX FOR CALCULATIONS.

EXISTING ONSITE DRAINAGE BASIN PEAK RUNOFF SUMMARY

TABLE 1: EXISTING DRAINAGE SUMMARY (25 YEAR-30 MIN STORM)

BASIN ID	Area (ac)	Weighted C	Precip. (in/hr)	Q (cfs)
EX-01	11.94	0.33	1.93	7.61
EX-02A	3.07	0.33	2.37	2.40
EX-02B	8.42	0.33	1.88	5.23
EX-03	19.17	0.33	1.62	10.27

[1] TIME OF CONCENTRATION (Tc) FOR EXISTING BASINS CALCULATED USING THE SCS TR-55 METHOD. REFER TO OUTPUT REPORTS IN DRAINAGE REPORT APPENDIX.

[2] RATIONAL C FACTORS ARE BASED ON THE PERCENT IMPERVIOUS FROM CHAPTER 6 OF THE MHFD - MILE HIGH FLOOD DISTRICT DRAINAGE CRITERIA MANUAL.

[3] RAINFALL INTENSITY IS FROM THE NOAA 14 IDF CURVE FOR NEW CASTLE, CO

EXISTING LEGEND

- EXISTING CONTOUR
- 7900 EXISTING CONTOUR INTERVAL
- EXISTING FLOW PATH
- EXISTING DRAINAGE BASIN
- DP # DESIGN POINT

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

NORTH

Know what's **below.** **Call** before you dig.
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3 • CARBONDALE CO 81623
(970) 704-0311 • sopriseengineering.com

DATE:	09-16-2024	
JOB NO.	33011.01	
DESIGNED BY	JPP	
DRAWN BY	JPP	
CHECKED BY	YTN	

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
EXISTING DRAINAGE EXHIBIT

DRAWING NO.
C-6.0

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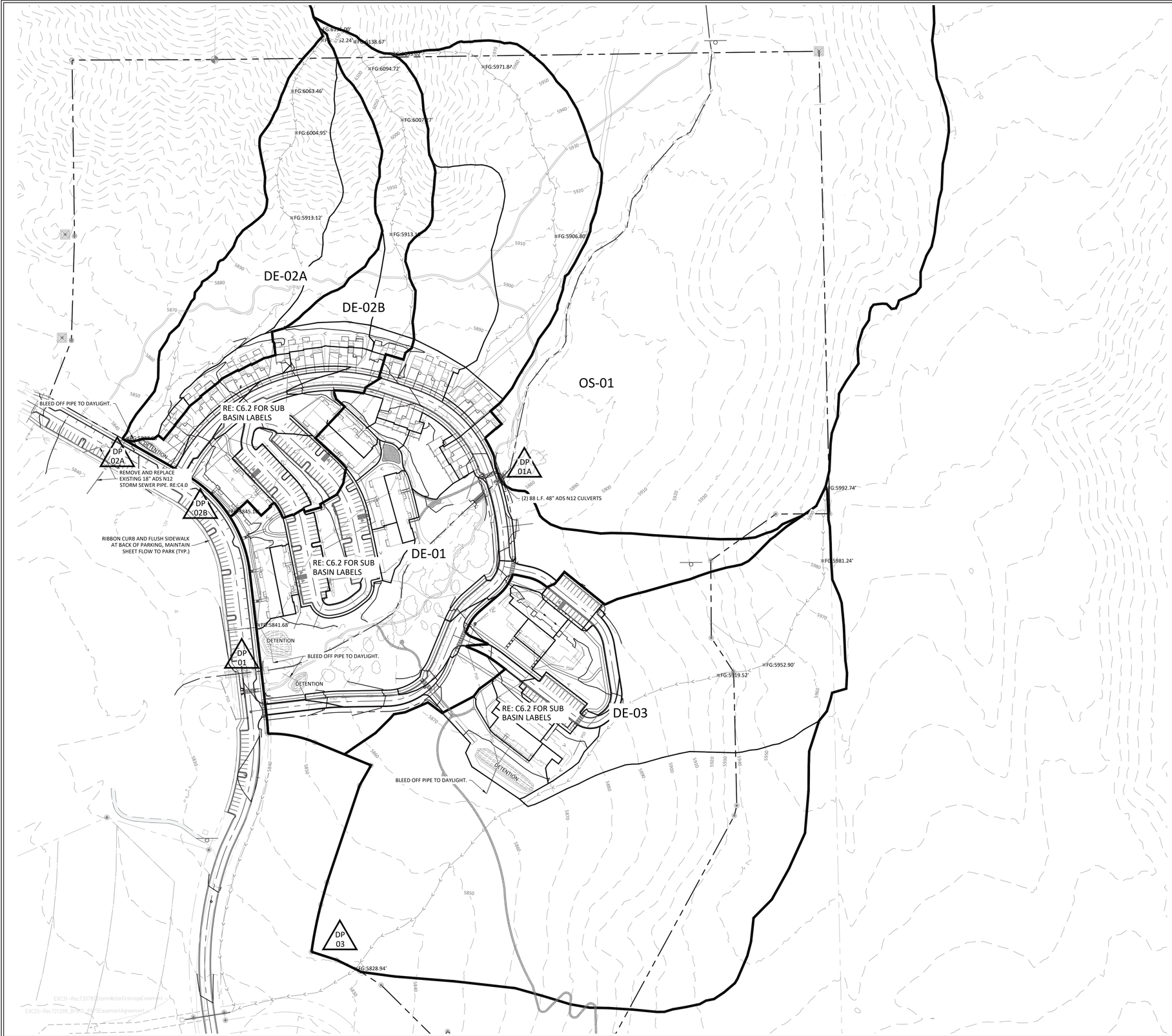
Exc25 Rec721099_Bk 0 2978 DocumentAgreement.pdf
Exc25 Rec721099_Bk 0 2978 StormWaterDrainageEasement.pdf



DEVELOPED DRAINAGE BASIN PEAK RUNOFF SUMMARY

TABLE 2: DEVELOPED DRAINAGE SUMMARY (25 YEAR-30 MIN STORM)

BASIN ID	Area (ac)	Weighted C	Precip. (in/hr)	Q (cfs)
DE-01	8.58	Varies	Varies per Tc	7.48
DE-02A	4.16	Varies	Varies per Tc	3.09
DE-02B	4.79	Varies	Varies per Tc	3.36
DE-03	18.87	Varies	Varies per Tc	9.83

[1] TIME OF CONCENTRATION (Tc) FOR EXISTING BASINS CALCULATED USING THE SCS TR-55 METHOD. Tc FOR PROPOSED BASINS ASSUMED EQUAL TO 10 MINUTES EXCEPT FOR 100% IMPERVIOUS SUB-BASINS WHERE Tc = 5 MINUTES, REFER TO OUTPUT REPORTS IN DRAINAGE REPORT APPENDIX.

[2] RATIONAL C FACTORS ARE BASED ON THE PERCENT IMPERVIOUS FROM CHAPTER 6 OF THE MHFD - MILE HIGH FLOOD DISTRICT DRAINAGE CRITERIA MANUAL. REFER TO OUTPUT REPORTS IN DRAINAGE REPORT APPENDIX.

[3] RAINFALL INTENSITY IS FROM THE NOAA 14 IDF CURVE FOR NEW CASTLE, CO

DEVELOPED DRAINAGE DETENTION RUNOFF SUMMARY

DESIGN POINT SUMMARY - DEVELOPED DETENTION

DESIGN PT I.D.	EX Q_{25} (cfs)	DET Q_{25} (cfs)	DET. REQ. (cf)	DET. PROV. (cf)	+/- Q (cfs)
1	7.61	7.48	4,861	4,861	-0.13
2A	2.40	3.09	0	0	0.69
2B	5.23	3.36	1,153	1,153	-1.87
3	10.27	9.83	0	2,708	-0.44

[1] TIME OF CONCENTRATION (Tc) FOR EXISTING BASINS CALCULATED USING THE SCS TR-55 METHOD. Tc FOR PROPOSED BASINS ASSUMED EQUAL TO 10 MINUTES EXCEPT FOR 100% IMPERVIOUS SUB-BASINS WHERE Tc = 5 MINUTES

[2] RATIONAL C FACTORS ARE BASED ON THE PERCENT IMPERVIOUS FROM CHAPTER 6 OF THE MHFD - MILE HIGH FLOOD DISTRICT DRAINAGE CRITERIA MANUAL.

[3] RAINFALL INTENSITY IS FROM THE NOAA 14 IDF CURVE FOR NEW CASTLE, CO

PROPOSED LEGEND

- PROPOSED CONTOUR
- 7900 PROPOSED CONTOUR INTERVAL
- PROPOSED FLOW PATH
- PROPOSED DRAINAGE BASIN
- DP # DESIGN POINT

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

NORTH

OFFSITE DRAINAGE LEGEND

- EXISTING GIS CONTOUR
- OFFSITE DRAINAGE BASIN
- TRAVEL PATH FOR Tc COMPUTATIONS
- DP # DESIGN POINT
- EXISTING FLOW ARROW

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

CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

SOPRIS ENGINEERING LLC
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(970) 704-0311 • soprisengineering.com

DATE:	09-16-2024	
JOB NO.	33011.01	
DESIGNED BY	JPP	
DRAWN BY	JPP	
CHECKED BY	YTN	

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

FINAL PLAN

DATE	REVISION

TITLE
DEVELOPED DRAINAGE EXHIBIT

DRAWING NO.
C-6.1

G:\2023\33011 CVR R2 RES\CIVIL\CIVIL DWGS\DR\DP\03011-DP01.DWG - Sep 14, 2024 - 11:24am


DE-02B-EX1
DE-02B-EX2
DE-02B3
DE-02B4
DE-01A-EX1
DE-02A-EX1
DE-02A3
DE-02B5
DE-01A3
DE-01A-EX2
DE-02B6
DE-01A4
DE-02B8
DE-02B7
DE-01A5
DE-02A4
DE-01A10
DE-01A6
DE-02B9
DE-01A8
DE-02B10
DE-01A11
DE-01A7
DE-02B11
DE-02B12
DE-01A12
DE-01A13
DE-01A14
DE-01A15
DE-01A18
DE-01A16
DE-01A17
DE-01B2
DE-01B-EX1
DE-03A3
DE-03A5
DE-03A7
DE-01B3
DE-03A8
DE-03A9
DE-03A6
DE-03A4
DE-03A-EX1
DE-01B4
DE-01B5
DE-01B6
DE-03A13
DE-03A11
DE-03A10
DE-03A14
DE-03A12
DE-03A15
DE-03A-EX2
DE-01A-EX9
DP 02A
DP 02B
DP 01A
DP 01
BLEED OFF PIPE TO DAYLIGHT.
DETENTION
REMOVE AND REPLACE EXISTING 18" ADS N12 STORM SEWER PIPE. RE:C4.0
RIBBON CURB AND FLUSH SIDEWALK AT BACK OF PARKING, MAINTAIN SHEET FLOW TO PARK (TYP.)
(2) 88 L.F. 48" ADS N12 CULVERTS
BLEED OFF PIPE TO DAYLIGHT.
DETENTION
BLEED OFF PIPE TO DAYLIGHT.
DETENTION
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
10+00
11+00
12+00
13+00
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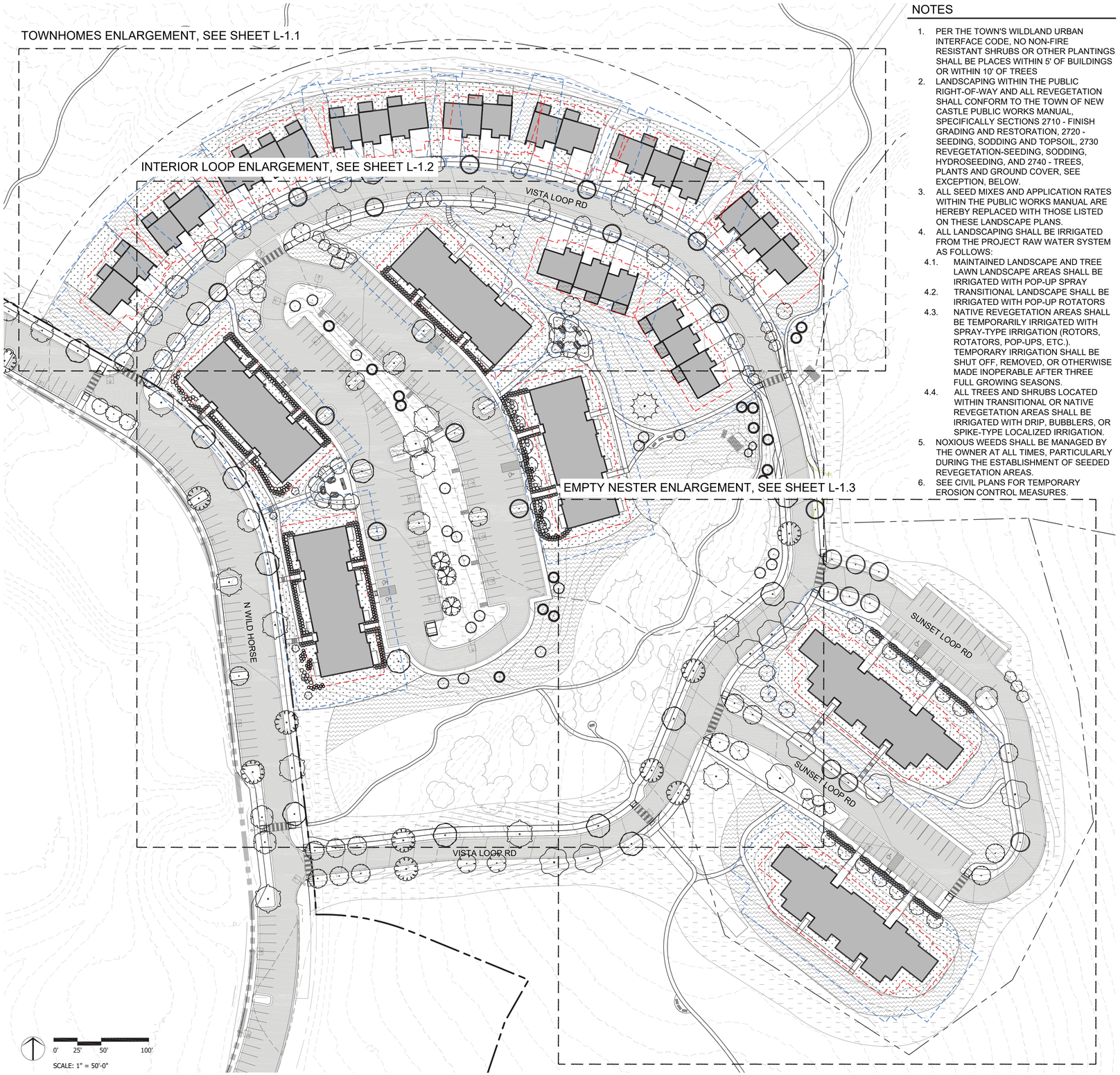


NOTES

1. PER THE TOWN'S WILDLAND URBAN INTERFACE CODE, NO NON-FIRE RESISTANT SHRUBS OR OTHER PLANTINGS SHALL BE PLACES WITHIN 5' OF BUILDINGS OR WITHIN 10' OF TREES
2. LANDSCAPING WITHIN THE PUBLIC RIGHT-OF-WAY AND ALL REVEGETATION SHALL CONFORM TO THE TOWN OF NEW CASTLE PUBLIC WORKS MANUAL, SPECIFICALLY SECTIONS 2710 - FINISH GRADING AND RESTORATION, 2720 - SEEDING, SODDING AND TOPSOIL, 2730 REVEGETATION-SEEDING, SODDING, HYDROSEEDING, AND 2740 - TREES, PLANTS AND GROUND COVER, SEE EXCEPTION, BELOW.
3. ALL SEED MIXES AND APPLICATION RATES WITHIN THE PUBLIC WORKS MANUAL ARE HEREBY REPLACED WITH THOSE LISTED ON THESE LANDSCAPE PLANS.
4. ALL LANDSCAPING SHALL BE IRRIGATED FROM THE PROJECT RAW WATER SYSTEM AS FOLLOWS:
   - 4.1. MAINTAINED LANDSCAPE AND TREE LAWN LANDSCAPE AREAS SHALL BE IRRIGATED WITH POP-UP SPRAY
   - 4.2. TRANSITIONAL LANDSCAPE SHALL BE IRRIGATED WITH POP-UP ROTATORS
   - 4.3. NATIVE REVEGETATION AREAS SHALL BE TEMPORARILY IRRIGATED WITH SPRAY-TYPE IRRIGATION (ROTORS, ROTATORS, POP-UPS, ETC.). TEMPORARY IRRIGATION SHALL BE SHUT OFF, REMOVED, OR OTHERWISE MADE INOPERABLE AFTER THREE FULL GROWING SEASONS.
   - 4.4. ALL TREES AND SHRUBS LOCATED WITHIN TRANSITIONAL OR NATIVE REVEGETATION AREAS SHALL BE IRRIGATED WITH DRIP, BUBBLERS, OR SPIKE-TYPE LOCALIZED IRRIGATION.
5. NOXIOUS WEEDS SHALL BE MANAGED BY THE OWNER AT ALL TIMES, PARTICULARLY DURING THE ESTABLISHMENT OF SEEDED REVEGETATION AREAS.
6. SEE CIVIL PLANS FOR TEMPORARY EROSION CONTROL MEASURES.

LEGEND

- PROPERTY BOUNDARY
- INTERNAL LOT LINES
- EXISTING VEGETATION TO REMAIN
- 10' WILDLAND URBAN INTERFACE TREE CLEARANCE ZONE
- 30' WILDLAND URBAN INTERFACE FUEL MODIFICATION ZONE

PLANT SCHEDULE

SYMBOL	BOTANICAL / COMMON NAME	CONT	QTY
TREES			
	ACER PLATANOIDES 'DEBORAH' DEBORAH NORWAY MAPLE	2.5" CAL B&B	18
	ACER PLATANOIDES 'ROYAL RED' ROYAL RED NORWAY MAPLE	15 GAL	21
	CELTIS OCCIDENTALIS 'CHICAGOLAND' CHICAGOLAND HACKBERRY	15 GAL	17
	CRATAEGUS CRUS-GALLI 'CRUSADER' CRUSADERIS COCKSPUR HAWTHORN	15 GAL	18
	GLEDITSIA TRIACANTHOS INERMIS 'SHADEMASTER' SHADEMASTER HONEY LOCUST	15 GAL	13
	GLEDITSIA TRIACANTHOS INERMIS 'SKYLINE' SKYLINE HONEY LOCUST	15 GAL	11
	JUNIPERUS MONOSPERMA ONESEED JUNIPER	15 GAL	16
	JUNIPERUS SCOPULORUM ROCKY MOUNTAIN JUNIPER	3' B&B	2
	KOELREUTERIA PANICULATA GOLDEN RAIN TREE	15 GAL	9
	MALUS X 'SPRING SNOW' SPRING SNOW CRABAPPLE	15 GAL	53
	PINUS EDULIS PINYON PINE	15 GAL	19
	PINUS SYLVESTRIS SCOTCH PINE	15 GAL	2
	POPULUS X ACUMINATA LANCELEAF COTTONWOOD	2.5" CAL B&B	3
	PRUNUS PADUS MAYDAY TREE	15 GAL	9
	TILIA CORDATA 'GREENSPIRE' GREENSPIRE LITTLELEAF LINDEN	15 GAL	9
	ULMUS AMERICANA 'PRINCETON' PRINCETON AMERICAN ELM	2.5" CAL B&B	14

SYMBOL	BOTANICAL / COMMON NAME	SIZE	QTY
SHRUBS			
	ACER GINNALA FLAME AMUR FLAME MAPLE	5 GAL	4
	BERBERIS THUNBERGII 'ATROPURPUREA' RED LEAF JAPANESE BARBERRY	5 GAL	108
	LONICERA TATARICA TATARIAN HONEYSUCKLE	5 GAL	102
	PHILADELPHUS LEWISII 'CHEYENNE' CHEYENNE MOCKORANGE	5 GAL	745
	RHUS TRILOBATA 'AUTUMN AMBER' AUTUMN AMBER SUMAC	5 GAL	68

MAINTAINED LANDSCAPE:
ORNAMENTAL TREES AND SHRUBS PER THE WILDLAND URBAN INTERFACE CODE, AND MOWED TURF GRASS

TRANSITIONAL REVEGETATION SEED MIX

BOTANICAL NAME	COMMON NAME	MIX	PLS lbs/ac
Achnatherum hymenoides	indian ricegrass	13%	3.00
Bouteloua gracilis	blue grama	25%	6.00
Festuca campestris	rough fescue	25%	6.00
Festuca ovina 'Ariba'	Arizona fescue	25%	6.00
Poa secunda	sandberg bluegrass	13%	3.00
	Total	**100%**	**24.00**

NATIVE REVEGETATION SEED MIX

BOTANICAL NAME	COMMON NAME	MIX	PLS lbs/ac
SHRUBS			
Artemisia tridentata wyomingensis	Wyoming big sagebrush	1%	0.25
Artemisia tridentata vaseyana	mountain big sagebrush	1%	0.25
Artemisia nova	black sagebrush	1%	0.25
Ericameria nauseosa ssp. nauseosa var.	tall green rabbitbrush	7%	2.00
GRASSES			
Achnatherum hymenoides	indian ricegrass	7%	2.00
Bouteloua gracilis	blue grama	11%	3.00
Elymus trachycaulus	slender wheatgrass	19%	5.00
Festuca ovina 'Ariba'	Arizona fescue	4%	1.00
Nasella viridula	green needlegrass	11%	3.00
Pascopyrum smithii	western wheatgrass	19%	5.00
Pseudoroegneria spicata	bluebunch wheatgrass	7%	2.00
FORBS & WILDFLOWERS			
Artemesia frigida	fringed sage	1%	0.25
Castilleja linariifolia	indian paintbrush	1%	0.25
Chrysopsis villosa	hairy golden aster	1%	0.25
Gaillardia aristata	blanketflower	2%	0.50
Lupinus argenteus	silver lupine	7%	2.00
	Total	**100%**	**27.00**

TREE LAWN SPECIES MIX:
TREE LAWN GRASS MIX SHALL CONSIST OF A "MEDIUM" WATER-USE TURF, SUCH AS "NATURE'S PRAIRIE TURF", A MIXTURE THE FOLLOWING SPECIES:

- *bouteloua curtipendula* - sideoats grama
- *deschampsia cespitosa* - tufted hairgrass
- *festuca ovina* - sheep fescue
- *festuca rubra ssp. rubra* - creeping red fescue
- *koeleria cristata* - prairie junegrass

NATURE'S PRAIRIE TURF IS AVAILABLE FROM:
TURF MASTER
3327 GIDDINGS ROAD
FORT COLLINS, CO 80524
(970) 493-8311

DHM DESIGN
Land+Shelter ARCHITECTURE AND PLANNING
ma design
SOPRIS ENGINEERING LLC
JVAM

9 NORTH WILD HORSE
New Castle, Colorado

PROJECT NUMBER: Project #23100
DATE: 09/09/2024
DESIGNED:
DRAWN:
CHECKED:

REVISIONS:

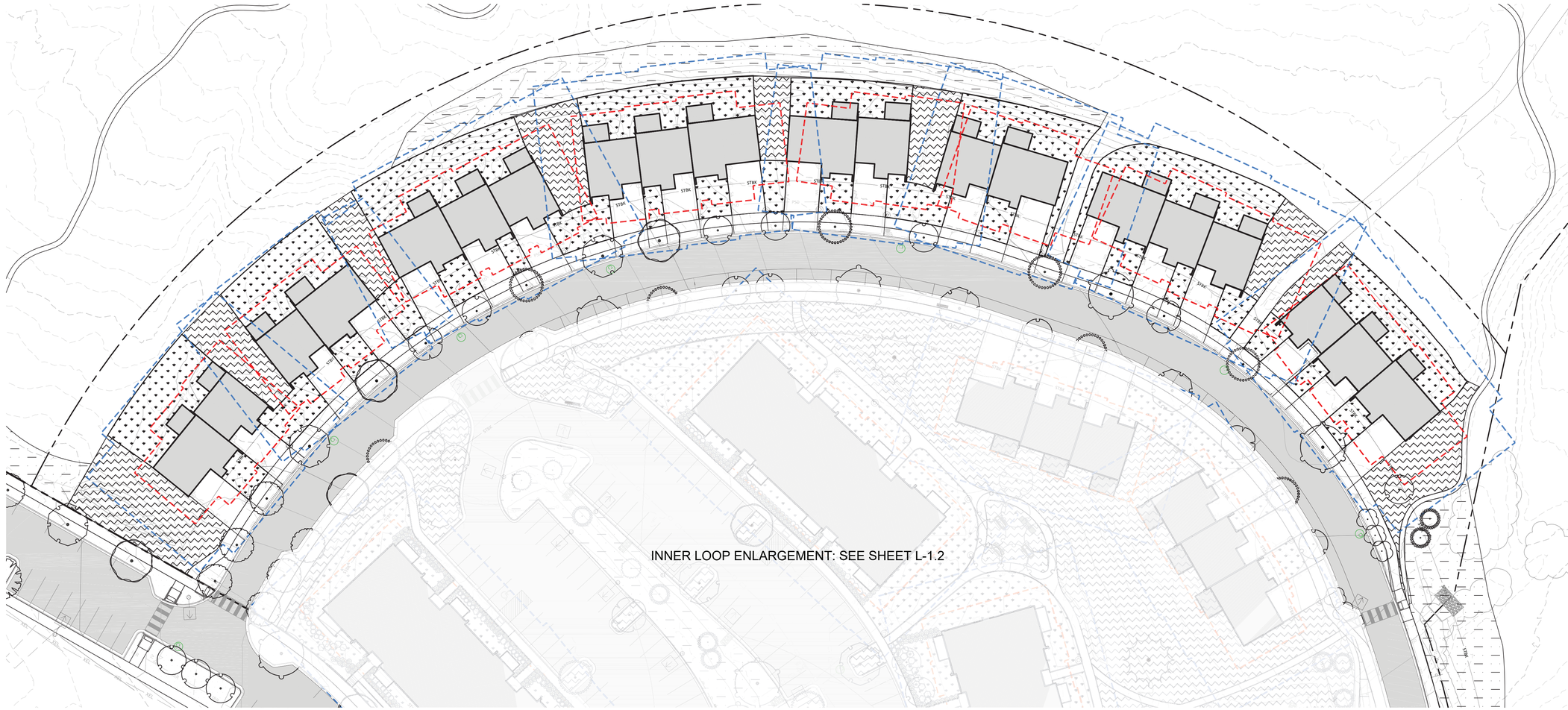
JOB DESCRIPTION:

SHEET TITLE:
LANDSCAPE PLAN

SCALE:

SHEET NUMBER:
L-1.0

SHEET_____OF_____



SCALE: 1" = 30'-0"

LEGEND

- PROPERTY BOUNDARY
- INTERNAL LOT LINES
- EXISTING VEGETATION TO REMAIN
- 10' WUI TREE CLEARANCE ZONE
- 30' WUI FUEL MODIFICATION ZONE

NOTES

1. PER THE WILDLAND-URBAN INTERFACE CODE, NO NON-FIRE RESISTANT SHRUBS OR OTHER PLANTINGS SHALL BE PLACES WITHIN 5' OF BUILDINGS OR WITHIN 10' OF TREES

PLANT SCHEDULE TOWNHOMES

SYMBOL	BOTANICAL / COMMON NAME	CONT	QTY
TREES			
	ACER PLATANOIDES `DEBORAH` DEBORAH NORWAY MAPLE	2.5" CAL B&B	4
	ACER PLATANOIDES 'ROYAL RED' ROYAL RED NORWAY MAPLE	15 GAL	4
	CELTIS OCCIDENTALIS `CHICAGOLAND` CHICAGOLAND HACKBERRY	15 GAL	3
	CRATAEGUS CRUS-GALLI `CRUSADER` CRUSADER® COCKSPUR HAWTHORN	15 GAL	3
	GLEDITSIA TRIACANTHOS INERMIS 'SHADEMASTER' SHADEMASTER HONEY LOCUST	15 GAL	4
	GLEDITSIA TRIACANTHOS INERMIS 'SKYLINE' SKYLINE HONEY LOCUST	15 GAL	1
	KOELREUTERIA PANICULATA GOLDEN RAIN TREE	15 GAL	2
	MALUS X 'SPRING SNOW' SPRING SNOW CRABAPPLE	15 GAL	6
	ULMUS AMERICANA `PRINCETON` PRINCETON AMERICAN ELM	2.5" CAL B&B	3

MAINTAINED LANDSCAPE:
ORNAMENTAL TREES AND SHRUBS (LIMITED QUANTITIES) AND SEEDED MIXED GRASSES THAT CAN BE MOWED IF DESIRED

TRANSITIONAL REVEGETATION SEED MIX

BOTANICAL NAME	COMMON NAME	MIX	PLS lbs/ac
Achnatherum hymenoides	indian ricegrass	13%	3.00
Bouteloua gracilis	blue grama	25%	6.00
Festuca campestris	rough fescue	25%	6.00
Festuca ovina 'Arriba'	Arizona fescue	25%	6.00
Poa secunda	sandberg bluegrass	13%	3.00
	Total	**100%**	**24.00**

NATIVE REVEGETATION SEED MIX

BOTANICAL NAME	COMMON NAME	MIX	PLS lbs/ac
SHRUBS			
Artemisia tridentata wyomingensis	Wyoming big sagebrush	1%	0.25
Artemisia tridentata vaseyana	mountain big sagebrush	1%	0.25
Artemisia nova	black sagebrush	1%	0.25
Ericameria nauseosa ssp. nauseosa var.	tall green rabbitbrush	7%	2.00
GRASSES			
Achnatherum hymenoides	indian ricegrass	7%	2.00
Bouteloua gracilis	blue grama	11%	3.00
Elymus trachycaulus	slender wheatgrass	19%	5.00
Festuca ovina 'Arriba'	Arizona fescue	4%	1.00
Nassella viridula	green needlegrass	11%	3.00
Pascopyrum smithii	western wheatgrass	19%	5.00
Pseudoroegneria spicata	bluebunch wheatgrass	7%	2.00
FORBS & WILDFLOWERS			
Artemesia frigida	fringed sage	1%	0.25
Castilleja linariifolia	Indian paintbrush	1%	0.25
Chrysopsis villosa	hairy golden aster	1%	0.25
Gaillardia aristata	blanketflower	2%	0.50
Lupinus argenteus	silver lupine	7%	2.00
	Total	**100%**	**27.00**

TREE LAWN SPECIES MIX:

TREE LAWN GRASS MIX SHALL CONSIST OF A "MEDIUM" WATER-USE TURF, SUCH AS "NATURE'S PRAIRIE TURF", A MIXTURE THE FOLLOWING SPECIES:

- *bouteloua curtipendula* - sideoats grama
- *deschampsia cespitosa* - tufted hairgrass
- *festuca ovina* - sheep fescue
- *festuca rubra ssp. rubra* - creeping red fescue
- *koeleria cristata* - prairie junegrass

NATURE'S PRAIRIE TURF IS AVAILABLE FROM:
TURF MASTER
3327 GIDDINGS ROAD
FORT COLLINS, CO 80524
(970) 493-8311

DHM DESIGN
R²
Land+Shelter ARCHITECTURE AND PLANNING
ma design
SOPRIS ENGINEERING LLC
JVAM

9 NORTH WILD HORSE
New Castle, Colorado

PROJECT NUMBER: Project #23100
DATE: 09/09/2024
DESIGNED:
DRAWN:
CHECKED:

REVISIONS:

JOB DESCRIPTION:

SHEET TITLE:
LANDSCAPE PLAN ENLARGEMENT

SCALE:

SHEET NUMBER:
L-1.1

SHEET_____OF_____



LEGEND

- PROPERTY BOUNDARY
- INTERNAL LOT LINES
- EXISTING VEGETATION TO REMAIN
- 10' WUI TREE CLEARANCE ZONE
- 30' WUI FUEL MODIFICATION ZONE

NOTES

1. PER THE WILDLAND-URBAN INTERFACE CODE, NO NON-FIRE RESISTANT SHRUBS OR OTHER PLANTINGS SHALL BE PLACES WITHIN 5' OF BUILDINGS OR WITHIN 10' OF TREES

PLANT SCHEDULE INNER LOOP

SYMBOL	BOTANICAL / COMMON NAME	CONT	QTY
TREES			
	ACER PLATANOIDES `DEBORAH` DEBORAH NORWAY MAPLE	2.5" CAL B&B	13
	ACER PLATANOIDES 'ROYAL RED' ROYAL RED NORWAY MAPLE	15 GAL	6
	CELTIS OCCIDENTALIS `CHICAGOLAND` CHICAGOLAND HACKBERRY	15 GAL	10
	CRATAEGUS CRUS-GALLI `CRUSADER` CRUSADER® COCKSPUR HAWTHORN	15 GAL	7
	GLEDITSIA TRIACANTHOS INERMIS 'SHADEMASTER' SHADEMASTER HONEY LOCUST	15 GAL	8
	GLEDITSIA TRIACANTHOS INERMIS 'SKYLINE' SKYLINE HONEY LOCUST	15 GAL	5
	JUNIPERUS MONOSPERMA ONESEED JUNIPER	15 GAL	14
	JUNIPERUS SCOPULORUM ROCKY MOUNTAIN JUNIPER	3` B&B	2
	KOELREUTERIA PANICULATA GOLDEN RAIN TREE	15 GAL	5
	MALUS X 'SPRING SNOW' SPRING SNOW CRABAPPLE	15 GAL	27
	PINUS EDULIS PINYON PINE	15 GAL	19
	PINUS SYLVESTRIS SCOTCH PINE	15 GAL	2
	POPULUS X ACUMINATA LANCELEAF COTTONWOOD	2.5" CAL B&B	3
	ULMUS AMERICANA `PRINCETON` PRINCETON AMERICAN ELM	2.5" CAL B&B	7

SYMBOL	BOTANICAL / COMMON NAME	SIZE	QTY
SHRUBS			
	ACER GINNALA FLAME AMUR FLAME MAPLE	5 GAL	4
	BERBERIS THUNBERGII 'ATROPURPUREA' RED LEAF JAPANESE BARBERRY	5 GAL	108
	LONICERA TATARICA TATARIAN HONEYSUCKLE	5 GAL	102
	PHILADELPHUS LEWISII 'CHEYENNE' CHEYENNE MOCKORANGE	5 GAL	569
	RHUS TRILOBATA 'AUTUMN AMBER' AUTUMN AMBER SUMAC	5 GAL	68

MAINTAINED LANDSCAPE:
ORNAMENTAL TREES AND SHRUBS (LIMITED QUANTITIES) AND SEEDED MIXED GRASSES THAT CAN BE MOWED IF DESIRED

TRANSITIONAL REVEGETATION SEEDING (SEE SHEET L-1.0 FOR FULL SEED MIX)

NATIVE REVEGETATION SEEDING (SEE SHEET L-1.0 FOR FULL SEED MIX)

TREE LAWN SEEDING (SEE SHEET L-1.0 FOR FULL SEED MIX)

DHM DESIGN
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ma design
SOPRIS ENGINEERING LLC
JVAM

9 NORTH WILD HORSE
New Castle, Colorado

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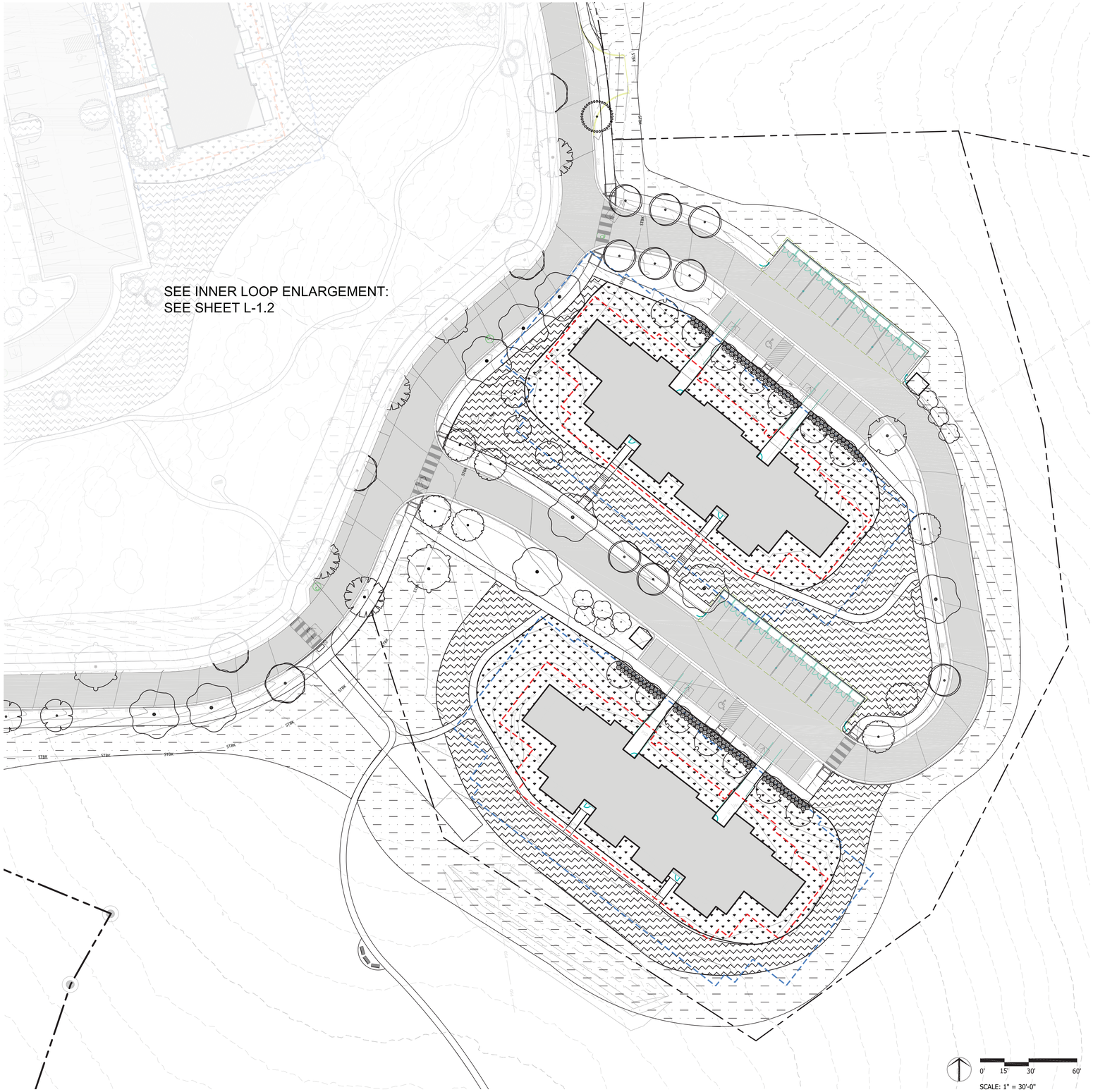
JOB DESCRIPTION:

SHEET TITLE:
LANDSCAPE PLAN ENLARGEMENT

SCALE:

SHEET NUMBER:
L-1.2

SHEET_____OF_____



LEGEND

- PROPERTY BOUNDARY
- INTERNAL LOT LINES
- EXISTING VEGETATION TO REMAIN
- 10' WUI TREE CLEARANCE ZONE
- 30' WUI FUEL MODIFICATION ZONE

NOTES

1. PER THE WILDLAND-URBAN INTERFACE CODE, NO NON-FIRE RESISTANT SHRUBS OR OTHER PLANTINGS SHALL BE PLACES WITHIN 5' OF BUILDINGS OR WITHIN 10' OF TREES

PLANT SCHEDULE EMPTY NESTER

SYMBOL	BOTANICAL / COMMON NAME	CONT	QTY
TREES			
	ACER PLATANOIDES `DEBORAH` DEBORAH NORWAY MAPLE	2.5" CAL B&B	1
	ACER PLATANOIDES 'ROYAL RED' ROYAL RED NORWAY MAPLE	15 GAL	10
	CELTIS OCCIDENTALIS `CHICAGOLAND` CHICAGOLAND HACKBERRY	15 GAL	1
	CRATAEGUS CRUS-GALLI `CRUSADER` CRUSADER® COCKSPUR HAWTHORN	15 GAL	8
	GLEDITSIA TRIACANTHOS INERMIS 'SHADEMASTER' SHADEMASTER HONEY LOCUST	15 GAL	1
	GLEDITSIA TRIACANTHOS INERMIS 'SKYLINE' SKYLINE HONEY LOCUST	15 GAL	2
	JUNIPERUS MONOSPERMA ONESEED JUNIPER	15 GAL	2
	KOELREUTERIA PANICULATA GOLDEN RAIN TREE	15 GAL	2
	MALUS X 'SPRING SNOW' SPRING SNOW CRABAPPLE	15 GAL	17
	PRUNUS PADUS MAYDAY TREE	15 GAL	9
	TILIA CORDATA 'GREENSPIRE' GREENSPIRE LITTLELEAF LINDEN	15 GAL	9
	ULMUS AMERICANA `PRINCETON` PRINCETON AMERICAN ELM	2.5" CAL B&B	1

SYMBOL	BOTANICAL / COMMON NAME	SIZE	QTY
SHRUBS			
	PHILADELPHUS LEWISII 'CHEYENNE' CHEYENNE MOCKORANGE	5 GAL	176

- MAINTAINED LANDSCAPE: ORNAMENTAL TREES AND SHRUBS (LIMITED QUANTITIES) AND SEEDED MIXED GRASSES THAT CAN BE MOWED IF DESIRED
- TRANSITIONAL REVEGETATION SEEDING (SEE SHEET L-1.0 FOR FULL SEED MIX)
- NATIVE REVEGETATION SEEDING (SEE SHEET L-1.0 FOR FULL SEED MIX)
- TREE LAWN SEEDING (SEE SHEET L-1.0 FOR FULL SEED MIX)

DHM DESIGN

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ma design

SOPRIS ENGINEERING LLC

JVAM

9 NORTH WILD HORSE
New Castle, Colorado

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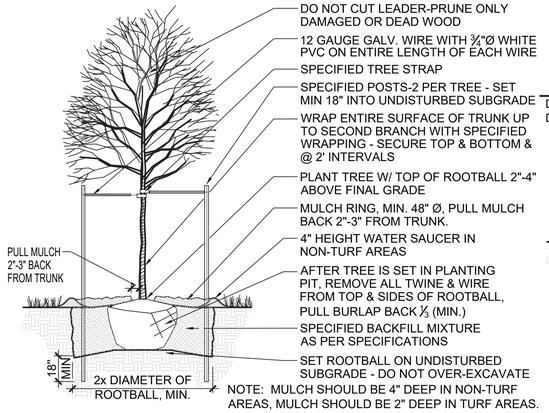
JOB DESCRIPTION:

SHEET TITLE:
LANDSCAPE PLAN ENLARGEMENT

SCALE:

SHEET NUMBER:
L-1.3

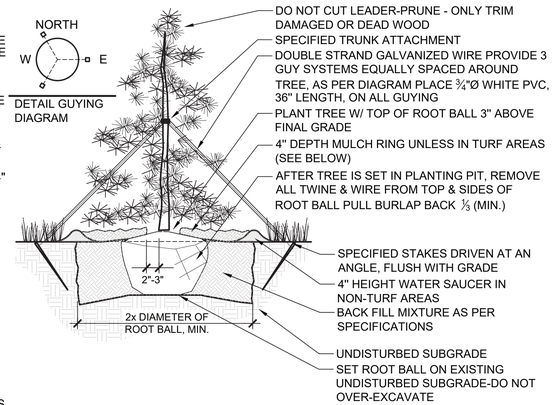
SHEET____OF____



NOTE: MULCH SHOULD BE 4" DEEP IN NON-TURF AREAS, MULCH SHOULD BE 2" DEEP IN TURF AREAS.

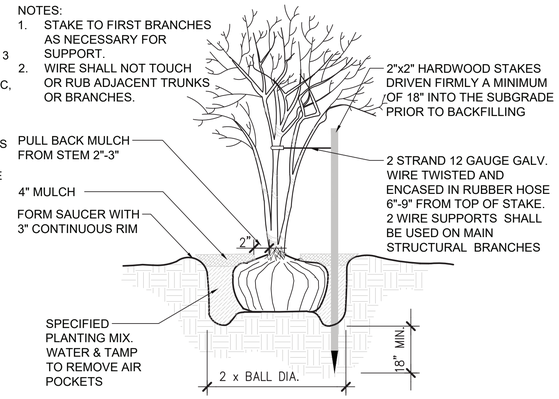
1 DECIDUOUS TREE PLANTING

NOT TO SCALE DCS-PL-01



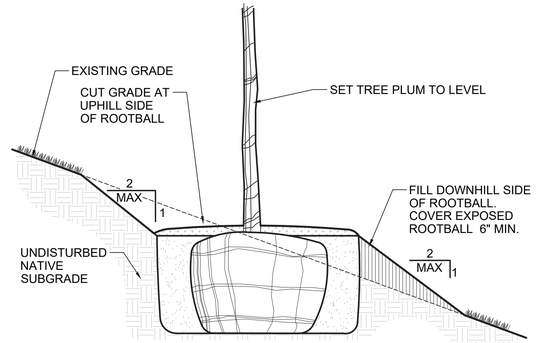
2 EVERGREEN TREE PLANTING

NOT TO SCALE DCS-PL-02



3 MULTI-TRUNK TREE STAKING

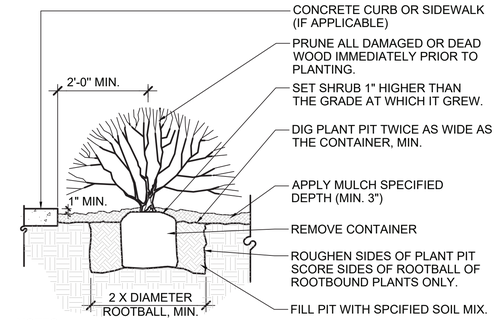
1" = 1" DCS-PL-04



NOTES:
1. REFER TO VARIOUS SPECIFIC TREE INSTALLATION DETAILS FOR STAKING, GUYING, MULCHING, ETC.
2. THIS INSTALLATION SHALL APPLY TO ALL TREE TYPES AND SIZES PLANTED ON SLOPES LESS THAN 2:1.

4 TREE PLANTING ON SLOPE

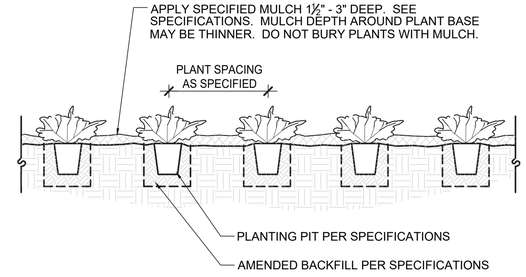
NOT TO SCALE DCS-PL-03



NOTES:
1. ANY BROKEN OR CRUMBLING ROOTBALLS WILL BE REJECTED.
2. REMOVING THE CONTAINERS WILL NOT BE AN EXCUSE FOR DAMAGED ROOTBALLS.
3. HOLD GRADE 1" BELOW EDGE OF WALK OR CURB

5 SHRUB PLANTING

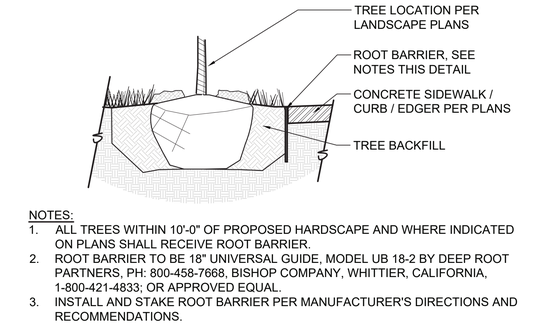
NOT TO SCALE DCS-PL-05



NOTE:
1. REMOVE PLANT FROM CONTAINER PRIOR TO INSTALLATION.
2. SEE ALSO TRIANGULAR SPACING DETAIL FOR MASSING PLANTING AS REQUIRED.

6 GROUNDCOVER AND PERENNIAL PLANTING

NOT TO SCALE DCS-PL-06



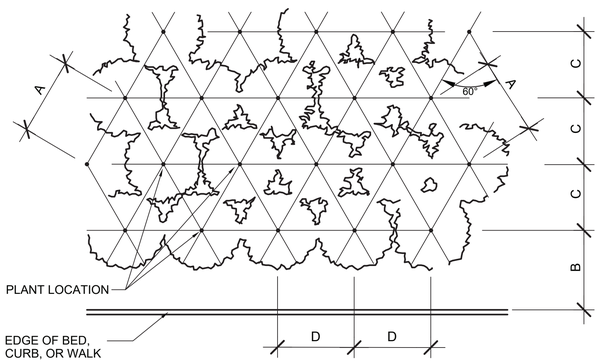
NOTES:
1. ALL TREES WITHIN 10'-0" OF PROPOSED HARDSCAPE AND WHERE INDICATED ON PLANS SHALL RECEIVE ROOT BARRIER.
2. ROOT BARRIER TO BE 18" UNIVERSAL GUIDE, MODEL UB 18-2 BY DEEP ROOT PARTNERS, PH: 800-458-7668, BISHOP COMPANY, WHITTIER, CALIFORNIA, 1-800-421-4833; OR APPROVED EQUAL.
3. INSTALL AND STAKE ROOT BARRIER PER MANUFACTURER'S DIRECTIONS AND RECOMMENDATIONS.
4. INSTALL ROOT BARRIER 10'-0" MINIMUM IN EACH DIRECTION FROM CENTER OF TREE TRUNK (20'-0" TOTAL LENGTH MIN.) ALONG EDGE OF HARDSCAPE.
5. TOP OF ROOT BARRIER SHALL BE 1" BELOW TOP OF ADJACENT HARDSCAPE FINISH SURFACE, TYPICAL.
6. SEE ALSO TREE PLANTING DETAILS.

7 ROOT BARRIER INSTALLATION

NOT TO SCALE DCS-PL-11

NOTES

1. LANDSCAPING WITHIN THE PUBLIC RIGHT-OF-WAY AND ALL REVEGETATION SHALL CONFORM TO THE TOWN OF NEW CASTLE PUBLIC WORKS MANUAL, SPECIFICALLY SECTIONS 2710 - FINISH GRADING AND RESTORATION, 2720 - SEEDING, SODDING AND TOPSOIL, 2730 REVEGETATION-SEEDING, SODDING, HYDROSEEDING, AND 2740 - TREES, PLANTS AND GROUND COVER, SEE EXCEPTION, BELOW.
2. ALL SEED MIXES AND APPLICATION RATES WITHIN THE PUBLIC WORKS MANUAL ARE HEREBY REPLACED WITH THOSE LISTED ON THESE LANDSCAPE PLANS.



PLANT SPACING	A	B	C	D
6"	6"	6"	5"	6"
8"	8"	6"	7"	8"
12"	12"	8"	10"	12"
18"	18"	9"	15½"	18"
24"	24"	18"	21"	24"
30"	30"	15"	26"	30"
36"	36"	30"	31"	36"
48"	48"	30"	42"	48"
60"	60"	36"	52"	60"

NOTE: ALIGN FRONT ROW PARALLEL TO BED LINE

8 TRIANGULAR SPACING LAYOUT FOR SHRUBS / GROUNDCOVER / FLOWERS

NOT TO SCALE DCS-PL-08

DHM DESIGN

Land+Shelter ARCHITECTURE AND PLANNING

ma design

SOPRIS ENGINEERING LLC

JVAM

9 NORTH WILD HORSE
New Castle, Colorado

PROJECT NUMBER: Project #23100
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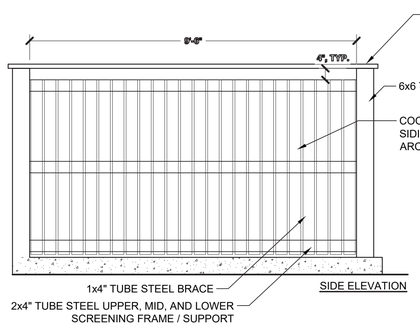
JOB DESCRIPTION:

SHEET TITLE: LANDSCAPE DETAILS

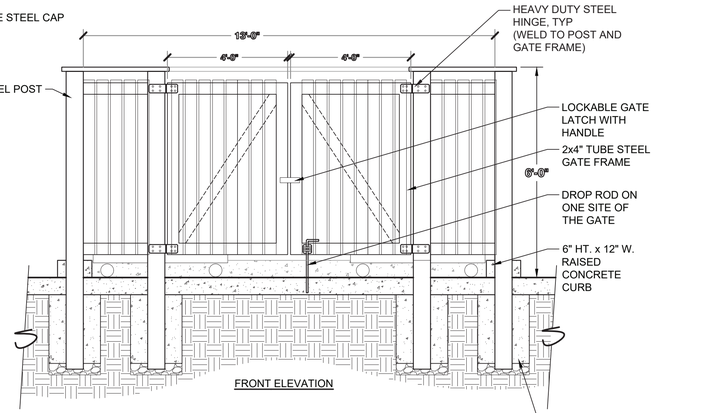
SCALE:

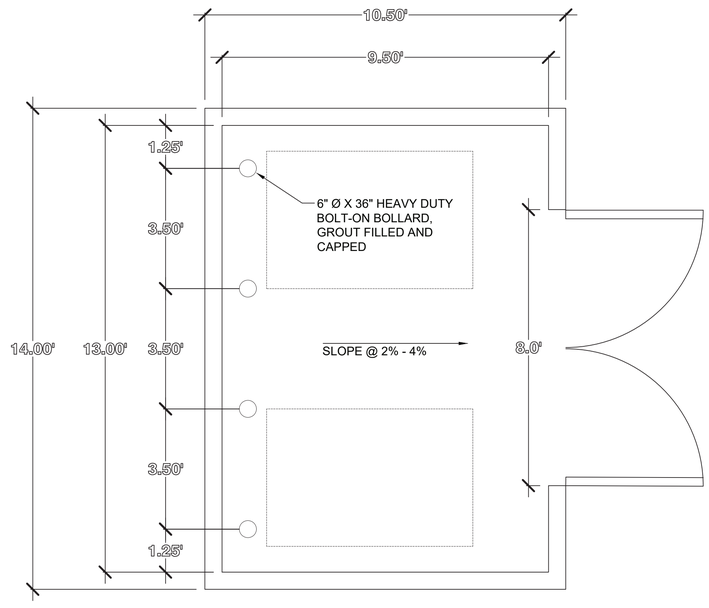
SHEET NUMBER: L-2.0

SHEET_____OF_____



NOTES:
1. CONTRACTOR SHALL SUBMIT SHOP DRAWING OF ENCLOSURE FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION.





1 TRASH ENCLOSURE
1/2" = 1'-0"

DHM DESIGN
Land+Shelter ARCHITECTURE AND PLANNING
ma design
SOPRIS ENGINEERING LLC
JVAM

9 NORTH WILD HORSE
New Castle, Colorado

PROJECT NUMBER: Project #23100
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DESIGNED:
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SHEET TITLE: TRASH ENCLOSURE

SCALE:

SHEET NUMBER: L-2.1

SHEET_____OF_____

GENERAL NOTES

1. THE CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL NECESSARY FOR A COMPLETE AND FUNCTIONING LIGHTING SYSTEM.
2. THE GENERAL CONTRACTOR, ELECTRICAL CONTRACTOR(S), AND LOW VOLTAGE CONTRACTOR(S) SHALL REFER TO THE LIGHTING PLANS, SCHEDULES, AND DETAILS HEREIN, INCLUDING ANY ATTACHED LIGHTING SPECIFICATIONS AND PRODUCT CUTSHEETS FOR ADDITIONAL INFORMATION.
3. THE CONTRACTOR SHALL LAY OUT ALL LIGHT FIXTURE LOCATIONS AND TRANSFORMER LOCATIONS PRIOR TO INSTALLATION FOR APPROVAL BY ALPENGLOW LIGHTING DESIGN, INC., ARCHITECT, INTERIOR DESIGNER, ENGINEER(S), AND OWNER.
4. MATERIALS AND INSTALLATION SHALL COMPLY WITH CODES, LAWS, AND ORDINANCES OF FEDERAL, STATE AND LOCAL GOVERNING BODIES HAVING JURISDICTION.
5. MATERIALS AND EQUIPMENT SHALL BE LISTED AND/OR LABELED BY UL., ETL, GSA OR ANOTHER RECOGNIZED TESTING LAB.
6. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, GOVERNMENTAL FEES, TAXES AND LICENSES NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE ELECTRICAL WORK.
7. THE CONTRACTOR SHALL PREPARE AND SUBMIT TO GOVERNMENTAL AGENCIES AND UTILITY COMPANIES ANY SHOP DRAWINGS AS REQUIRED BY THESE AGENCIES FOR THEIR APPROVAL.
8. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT, OWNER, AND LIGHTING DESIGNER OF ANY MATERIALS OR APPARATUS BELIEVED TO BE INADEQUATE, UNSUITABLE, IN VIOLATION OF LAWS, ORDINANCES, RULES OR REGULATIONS OF AUTHORITIES HAVING JURISDICTION.
9. THE CONTRACTOR SHALL CAREFULLY EXAMINE THE CONTRACT DOCUMENTS, VISIT THE SITE, AND THOROUGHLY BECOME FAMILIAR WITH THE BUILDING AND STANDARDS AND LOCAL CONDITIONS RELATING TO THE WORK. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR OF THE OBLIGATIONS OF THE CONTRACT.
10. ALL MATERIALS, AND EQUIPMENT SHALL BE ERECTED, INSTALLED, CONNECTED, CLEANED, ADJUSTED, TESTED, CONDITIONED, AND PLACED IN SERVICE IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS AND RECOMMENDATIONS.
11. ALL CUTTING, DRILLING, AND PATCHING OF MASONRY, STEEL OR IRON WORK BELONGING TO THE BUILDING MUST BE DONE BY THIS CONTRACTOR IN ORDER THAT HIS WORK MAY BE PROPERLY INSTALLED, BUT UNDER NO CONDITIONS MAY STRUCTURAL WORK BE CUT, EXCEPT AT THE DIRECTION OF THE ARCHITECT, ENGINEER, OR THEIR REPRESENTATIVE.
12. ALL MATERIAL, EQUIPMENT, WIRING DEVICES, ETC. SHALL BE NEW UNLESS SPECIFICALLY INDICATED AS EXISTING TO BE REUSED.
13. EXCEPT AS NOTED OTHERWISE, ALL WORK REQUIRED FOR THE INSTALLATION AS SHOWN ON DRAWINGS INCLUDING LABOR, EQUIPMENT, AND MATERIALS SHALL BE IN STRICT COMPLIANCE WITH THE BUILDING STANDARDS.
14. COMMERCIAL APPLICATIONS: THE CONTRACTOR MAY PROVIDE COMPLETE METAL RACEWAY SYSTEMS AND ENCLOSURES FOR ALL WIRING THROUGHOUT THE EXTENT OF THE REQUIRED SYSTEM. RESIDENTIAL APPLICATIONS MAY USE NON METALLIC WIRE (ROMEX).
15. MC CABLE MAY BE USED FOR ALL BRANCH CIRCUITING. MC CABLE SHALL NOT ENTER INTO PANELBOARDS. ELECTRICAL CONTRACTOR SHALL UTILIZE EMT OUT OF THE PANELBOARD INTO A FULL BOX, GUTTER, OR SIMILAR DEVICE, AND THEN RUN MC CABLE FOR THE REMAINDER OF BRANCH CIRCUITING RUN. MINIMUM RACEWAY SIZE SHALL BE 1/2" UNLESS OTHERWISE INDICATED. MC CABLE MAY ONLY BE USED IN CONCEALED LOCATIONS.
16. FLEXIBLE CONDUIT CONNECTIONS TO RECESSED LIGHTING FIXTURES SHALL BE MADE WITH FLEXIBLE STEEL CONDUIT, ¾" MINIMUM.
17. ALL NEW CIRCUITS SHALL HAVE A GROUND WIRE INSTALLED.
18. ALL WIRE NOT INSTALLED IN CONDUIT AND IN THE CEILING SHALL BE PLENUM RATED.
19. REMOTE POWER SUPPLIES AND TRANSFORMERS SHALL BE CONCEALED IN ATTICS, CRAWL SPACES, OR SIMILAR ACCESSIBLE LOCATIONS. MAXIMUM WIRE RUN TO THE END OF THE FIXTURE SHALL NOT EXCEED 75 FEET.
20. IN SUSPENDED CEILINGS, SUPPORT CONDUIT AND JUNCTION BOXES DIRECTLY FROM THE STRUCTURAL SLAB, DECK, OR FRAMING PROVIDED FOR THAT PURPOSE. LIGHTING BRANCH CIRCUIT CONDUITS SHALL NOT BE CLIPPED TO THE CEILING SUPPORT WIRES OR SPLINE UNLESS THE CEILING HAS BEEN SPECIFICALLY DESIGNED FOR THAT PURPOSE.
21. SHOULD ACTUAL FIELD CONDITIONS REQUIRE INDICATED CIRCUIT DESIGNATIONS TO VARY, INDICATE THE CIRCUIT NUMBER USED ON THE AS-BUILT DRAWINGS.
22. ALL FACE PLATE AND DEVICE COLORS SHALL BE APPROVED BY ARCHITECT, INTERIOR DESIGNER, AND OWNER.
23. ALL BATTERY BACKUP EMERGENCY LIGHTING AND EXIT LIGHTS SHALL BE WIRED AHEAD OF ANY LOCAL SWITCHING, UNLESS OTHERWISE NOTED.
24. THE CONTRACTOR SHALL VERIFY THE CEILING TYPE BEFORE ORDERING LIGHTING FIXTURES.
25. THE CONTRACTOR IS TO REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ALL FIRE-RATED PENETRATION INSTALLATION REQUIREMENTS.
26. THE CONTRACTOR IS TO NOTIFY THE ARCHITECT PRIOR TO INSTALLING ANY FIXTURES WITHIN A FIRE RATED CEILING OR WALL. FIRE RATING MUST BE MAINTAINED FOR THIS TYPE OF INSTALLATION WITH DRYWALL TENTING OR LISTED FIREBOX ASSEMBLY.
27. BIDS SHALL HAVE LINE-ITEM PRICING. BIDS WHICH SHOW LOT PRICING FOR LIGHTING FIXTURES AND/OR LIGHTING CONTROLS SHALL BE REJECTED WITHOUT CONSIDERATION. BIDDER SHALL HAVE FIVE (5) BUSINESS DAYS TO RESUBMIT LINE-ITEM PRICING. AFTER FIVE (5) BUSINESS DAYS, BID SHALL BE CONSIDERED TO BE NULL AND VOID AND WILL BE REJECTED. BIDDERS WARRANT THEIR COMPLIANCE WITH THE ROBINSON-PATMAN AND CLAYTON ACTS.
28. SUBMIT PRODUCT DATA DESCRIBING FIXTURES, LAMPS, BALLASTS, AND EMERGENCY LIGHTING UNITS WITHIN 30 DAYS OF DIRECTION TO PROCEED FROM THE OWNER. ALL NOTATIONS SHALL BE .PDF FORMAT OR LASER PRINTED. ARRANGE PRODUCT DATA FOR FIXTURES IN ORDER OF FIXTURE DESIGNATION. AFTER 30 DAYS, A MINIMUM OF EIGHT HOURS OF PROFESSIONAL TIME TO CONSIDER ANY SUBMITTAL SHALL BE PAID FOR BY THE CONTRACTOR. SUCH PAYMENT DOES NOT GUARANTEE APPROVAL. COSTS INCURRED TO THE PROJECT DUE TO PROBLEMS ARISING FROM LATE SUBMITTALS ARE TO BE PAID BY THE CONTRACTOR. TWO (2) RESUBMITTALS SHALL BE ALLOWED PER PROJECT. AFTER TWO (2) RESUBMITTALS, A MINIMUM OF EIGHT HOURS OF PROFESSIONAL TIME TO CONSIDER ANY RESUBMITTALS SHALL BE PAID FOR BY THE CONTRACTOR. SUCH PAYMENT DOES NOT GUARANTEE APPROVAL. COSTS INCURRED TO THE PROJECT DUE TO PROBLEMS ARISING FROM MULTIPLE RESUBMITTALS ARE TO BE PAID FOR BY THE CONTRACTOR.
29. THE EXPRESSION "..OR AS APPROVED" OR "..OR APPROVED EQUAL" OR "..OR EQUAL" MEANS THAT COMPETING PRODUCTS OF A SIMILAR NATURE ARE THOUGHT TO EXIST. THE CONTRACTOR IS ENCOURAGED TO PROPOSE SUBSTITUTION REQUESTS OF SUCH EQUIVALENT PRODUCTS AS LONG AS THE PRODUCT CONFORMS TO ALL PARTS OF THIS SPECIFICATION. WHERE THE ABOVE NOTED EXPRESSIONS ARE OMITTED OR EXPRESSION SUCH AS "NO SUBSTITUTIONS" APPEARS THE CONTRACTOR SHALL PROVIDE ONLY THE PRODUCT INDICATED.
30. SUBSTITUTION REQUESTS AND VALUE ENGINEERING RECOMMENDATIONS FROM THE CONTRACTOR WILL BE CONSIDERED IF SUBMITTED WITHIN 30 DAYS OF DIRECTION TO PROCEED FROM THE OWNER. EACH LUMINAIRE SUBSTITUTION REQUEST SHALL INDICATE THE ESTIMATED OR POTENTIAL SAVINGS TO THE OWNER FOR THAT LUMINAIRE FROM THE SPECIFIED DESIGN. THE PROFESSIONAL TIME TO CONSIDER ANY SUBSTITUTION REQUEST OR V.E. REQUEST SHALL BE PAID FOR BY THE CONTRACTOR, AT A MINIMUM OF EIGHT HOURS. SUCH PAYMENT DOES NOT GUARANTEE APPROVAL. AFTER 30 DAYS, A MINIMUM OF EIGHT HOURS OF PROFESSIONAL TIME TO CONSIDER ANY SUCH REQUEST SHALL BE PAID FOR BY THE CONTRACTOR. SUBMITTAL OF ANY SUBSTITUTION REQUEST OR VALUE ENGINEERING RECOMMENDATION SHALL NOT BE CONSTRUED AS APPROVAL IN ANY WAY. THE OWNER, ARCHITECT AND LIGHTING DESIGNER RESERVE THE RIGHT TO REJECT ANY SUBSTITUTION OR VALUE ENGINEERING RECOMMENDATION WITHOUT EXPLANATION.
31. CONTRACTOR MAY BE REQUIRED TO PROVIDE TABLE TOP SAMPLES AND/OR A FAIR MOCKUP OF SPECIFIED FIXTURE AND PROPOSED ALTERNATE. THIS REQUIREMENT SHALL BE EXERCISED AT THE OPTION OF OWNER, ARCHITECT, OR LIGHTING DESIGNER. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL COSTS INCURRED BY SUBSTITUTION REQUEST SAMPLE AND/OR MOCKUP PRODUCTION AND REVIEW INCLUDING PROFESSIONAL TIME AND TRAVEL EXPENSES.
32. SUBSTITUTIONS OR VALUE ENGINEERING RECOMMENDATIONS SHALL ACCOMMODATE THE IMPACT ON OTHER SPECIFIED SYSTEMS OR PRODUCTS, SUCH AS BALLASTS, DRIVERS, AND DIMMING SYSTEMS. THE LIGHTING SYSTEMS ARE DESIGNED AS COMPLETE AND IT IS THE CONTRACTOR'S RESPONSIBILITY FOR ANY IMPACTS OF ANY CHANGE RECOMMENDED. CONTRACTOR SHALL SUBMIT PRODUCTS WHICH RESULT IN A FULLY FUNCTIONING LIGHTING SYSTEM WHICH OPERATES AS ORIGINALLY DESIGNED.
33. SUBSTITUTION REQUESTS AND VALUE ENGINEERING RECOMMENDATIONS SHALL BE DESCRIBED ON CSI STANDARD FORMS AND SHALL INCLUDE PRODUCT CUTSHEET. PRODUCTS SUBMITTED WITHOUT PROPER CSI FORMS SHALL NOT BE APPROVED.
34. WHEN REQUESTING A SUBSTITUTION, CONTRACTOR SHALL PROVIDE UNIT AND EXTENDED PRICING FOR SPECIFIED LIGHT FIXTURE, UNIT AND EXTENDED PRICING FOR PROPOSED ALTERNATE, AND UNIT AND EXTENDED DELTA SAVINGS TO OWNER TO BE REALIZED BY USING PROPOSED ALTERNATE. CONTRACTOR SHALL PROVIDE UNIT PRICING FOR EACH FIXTURE TYPE SPECIFIED TO PROVIDE BASELINE COMPARISON FOR SUBSTITUTION REQUEST. CONTRACTOR SHALL GUARANTEE PRICING ON ALL FIXTURE TYPES FOR WHICH A SUBSTITUTION REQUEST HAS BEEN GRANTED. THIS PRICE GUARANTEE SHALL BE PER UNIT AND SHALL BE MAINTAINED THROUGH THE END OF CONSTRUCTION REGARDLESS OF QUANTITY PURCHASED. LIGHTING FIXTURE SUBSTITUTION REQUESTS FOR PRODUCTS USED AS EGRESS OR EMERGENCY LIGHTING SYSTEMS OR EXTERIOR SITE AND ROADWAY LIGHTING SHALL INCLUDE LIGHTING CALCULATION DATA DEMONSTRATING COMPLIANCE WITH RELEVANT CODES AND ORDINANCES. PROVIDE HARDCOPY CALCULATIONS AND DATAFILE IN DIALUX (.evo) FORMAT. SUBSTITUTION REQUESTS WITHOUT SUCH DATA WILL BE REJECTED WITHOUT CONSIDERATION. VE REVIEW TIME SHALL BE PAID FOR BY THE CONTRACTOR.
35. EQUIPMENT DELIVERY LEAD-TIME SHALL NOT BE HELD AS A VALID REASON FOR REQUESTING FIXTURE SUBSTITUTION UNLESS FIXTURE LEAD-TIME FROM SPECIFIED MANUFACTURER IS IN EXCESS OF 14 WEEKS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE NECESSARY EQUIPMENT LEAD TIMES, DELIVER SUBMITTALS FOR REVIEW IN A TIMELY FASHION, AND PLACE ORDERS ACCORDINGLY TO ENSURE TIMELY DELIVERY.
36. CONTRACTOR SHALL ADJUST AIMABLE LUMINARIES AS DIRECTED BY LIGHTING DESIGNER. CONTRACTOR SHALL PROVIDE MANPOWER AND EQUIPMENT, INCLUDING LADDERS, LIFTS, TOOLS, ETC., AND ALLOW FOR THIS ACTIVITY TO OCCUR DURING PREMIUM NIGHT AND/OR WEEKEND TIME. CONTRACTOR SHALL INCLUDE A MINIMUM OF 20 HOURS IN HIS BID FOR THIS EFFORT.
37. THE GENERAL CONTRACTOR, ELECTRICAL CONTRACTOR(S), AND LOW VOLTAGE CONTRACTOR(S) SHALL ASK QUESTIONS VIA TELEPHONE, EMAIL, OR WRITTEN CORRESPONDENCE PRIOR TO MAKING A COMPLETE MESS OF THINGS. CONTRACTORS WHO FAIL TO ASK QUESTIONS SHALL BE FED TO THE RAVENOUS BUGBLATTER BEAST OF TRAAL.
38. THE GENERAL CONTRACTOR SHALL CONFIRM THAT ALL BIDDERS AND SUBCONTRACTORS HAVE READ THE PRECEDING THIRTY-EIGHT NOTES BY SUBMITTING A SCAN OR PHOTOGRAPH OF THIS NOTE, SIGNED BY THE BIDDER(S). BIDDERS WHO FAIL TO SUBMIT THIS NOTE SHALL HAVE THEIR BIDS REJECTED WITHOUT CONSIDERATION.
39. THE GENERAL CONTRACTOR SHALL PROVIDE A MINIMUM OF TWELVE (12) PERFORATED PASTRY UNITS AND COFFEE AT ALL CONSTRUCTION MEETINGS. DECAFFEINATED COFFEE SHALL BE REJECTED WITHOUT CONSIDERATION. THE CONTRACTOR SHALL PROTECT THE CONSTRUCTION DOCUMENTS FROM DIRECT CONTACT WITH THE PERFORATED PASTRY UNITS.

POWER DEVICES

SYMBOL	DESCRIPTION
	SIMPLEX RECEPTACLE - WALL, CEILING, ON ALT.
	DUPLEX RECEPTACLE - WALL, CEILING, ON ALT.
	DOUBLE DUPLEX RECEPTACLE - WALL, CLG, ON ALT.
AB	RECEPTACLE TYPE SHOWN -WALL -ABOVE COUNTER BACKSPLASH. SEE ARCHITECTURAL DRAWINGS.
"ON ALT."	SHADED RECEPTACLES NOTED "ON ALT." ABOVE ARE CONNECTED TO ALTERNATE POWER SOURCE (EMERG., STANDBY, UPS, ETC.) PER CIRCUITING INDICATED
	DUPLEX RECEPTACLE - WALL - HALF SWITCHED
	COMBINATION SWITCH/DUPLEX RECEPTACLE
GFCI	DUPLEX RECEPTACLE - WALL - WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER
WP	RECEPT. TYPE SHOWN W/ WEATHERPROOF COVER
+42"	RECEPT. TYPE SHOWN AT SPECIAL HEIGHT
	CLOCK HANGER RECEPTACLE
	MOTORIZED SHADE. VERIFY MOTOR LOCATIONS WITH SHADE VENDOR AND INSTALLER.
	FLUSH FLOOR BOX DEVICE - DEVICE TYPE PER SYMBOLS ABOVE
	PEDESTAL FLOOR DEVICE - DEVICE TYPE PER SYMBOLS ABOVE
	IN RAISED FLOOR - SEE ARCH DWGS; WITH MULTI-SERVICE FLOOR BOX CAST IN CONC. OR RECEPTACLES & SIGNAL OUTLETS AS NOTED.
	JUNCTION BOX PROVIDE BLANK COVER U.N.O.

LIGHTING

SYMBOL	DESCRIPTION
	RECESSED LENSED TROFFER (SIZE/SHAPE VARIES)
	RECESSED PARABOLIC TROFFER (SIZE/SHAPE VARIES)
	SURFACE LENSED LUMINAIRE (SIZE/SHAPE VARIES)
	SURFACE PARABOLIC TROFFER (SIZE/SHAPE VARIES)
	SHADING OF ANY LUMINAIRE INDICATES CONNECTION TO ALTERNATE POWER SOURCE (EMERGENCY, UPS, STANDBY, ETC.) PER CIRCUITING INDICATED
	SUSPENDED LINEAR PENDANT (SIZE/SHAPE VARIES)
	NON LINEAR PENDANT (SIZE, SHAPE VARIES)
	DOWNLIGHT OR POINT SOURCE - SURFACE, RECESSED CEILING MTD.
	DIRECTIONAL OR WALLWASH - SURFACE, RECESSED CEILING MTD.
	RECESSED BATH FAN OR FAN/LIGHT
	SURFACE OR PENDANT CEILING FAN - PROVIDE APPROPRIATE BRACED JUNCTION BOX
	LINEAR LOW VOLTAGE COVE OR UNDERCABINET
	TRACK OR LOW VOLTAGE LIGHTING WITH HEADS
	STRIPLIGHT
	STRIPLIGHT WITH REFLECTOR OR LENS
	SCONCE, "FOOT" INDICATES WALL MOUNTING. VERIFY HEIGHT WITH ARCHITECT, INTERIOR DESIGNER.
	WALL MOUNTED LINEAR (SIZES VARY)
	RECESSED STEPLIGHT
	BATTERY POWER EMERGENCY UNIT EQUIPMENT (SEE LUMINARE SCHEDULE FOR QUANTITY OF HEADS) - WALL, CEILING MOUNTED.
	ILLUMINATED EXIT SIGN, SHADED QUADRANT INDICATES FACES, ARROWS AS SHOWN
	FLOOR OR GRADE MOUNTED BOLLARD
	FLUSH GRADE POINT SOURCE
	POLE MOUNTED LUMINAIRE- SINGLE OR DUAL HEAD ARROW INDICATES OPTICAL ORIENTATION
	POLE TOP MOUNTED LUMINAIRE
L# 1071	
D# 1071 1071DC	
X# 1071	

LUMINAIRE MARKING CONVENTIONS:
LETTER DESIGNATION FOLLOWED BY SEQUENTIAL NUMBER

L# = LED
D# = DECORATIVE
S# = SITE SPECIFIC
X# = EXIT SIGN
E# = EMERGENCY SPECIFIC

CIRCUITING CONVENTION:
107# = ARCHITECTURAL ROOM NUMBER
###1 = SEQUENTIAL CIRCUIT IN ROOM.
####DC = 0-10VDC CONTROL CIRCUIT

SWITCHING & CONTROLS

SYMBOL	DESCRIPTION
S_a	SINGLE POLE SWITCH (SUPERSCRIPT DENOTES SIMILARLY MARKED LUMINAIRES CONTROLLED TOGETHER. NO SUBSCRIPT INDICATES SWITCH TO CONTROL ALL LIGHTING WITHIN ROOM, U.O.N.).
S^2	TWO POLE SWITCH
S^3	THREE WAY SWITCH
S^4	FOUR WAY SWITCH
S^K	KEY OPERATED SWITCH
D	DIMMER SWITCH. NUMBER INDICATES WATTAGE RATING. IF NOT SHOWN THEN EQUAL TO LOAD.
S_{JAMB}	JAMB SWITCH
S^{TS}	TIMER SWITCH
S^{XP}	EXPLOSION PROOF SWITCH
S^{WP}	WEATHERPROOF SWITCH
S^{FAN}	LINE VOLTAGE, VARIABLE SPEED FAN CONTROL LOCATE ADJACENT TO ADJACENT TO LIGHT SWITCHES
$S_{\#}$	MULTI-BUTTON LIGHTING CONTROL SWITCH INDIVIDUAL SWITCH CONFIGURATION VARIES.
PC	PHOTOCELL
TC	TIME CLOCK
OS	OCCUPANCY SENSOR - WALL MOUNTED
OS	360 DEGREE OCCUPANCY SENSOR - CEILING MTD.
OS	180 DEGREE OCCUPANCY SENSOR - CEILING MTD.
OS	CORRIDOR/AISLE OCCUPANCY SENSOR - CEILING MOUNTED
S^b OS^a	OCCUPANCY SENSOR & SWITCH GANGED UNDER A COMMON COVER PLATE. OCCUPANY SENSOR TO CONTROL ALL LIGHT FIXTURES IN ROOM WITH 1/2 LIGHT REDUCTION CONTROLLED BY SWITCH, DESIGNATED BY LETTER.
LCP #	LIGHTING CONTROL PANEL AND ASSOCIATED COMPONENTS. PROVIDE 120V OR 277V CONTROL POWER AS REQUIRED OR AS INDICATED.
T	REMOTE MOUNTED LINE TO LOW-VOLTAGE FUSED TRANSFORMER OR POWER SUPPLY. CONCEAL FROM VIEW.

LIGHTING REFERENCES

1. IESNA HANDBOOK 9TH EDITION, 2010
2. NATIONAL ELECTRIC CODE VERSION 2023
3. IECC 2021
4.

LIGHTING SHEET INDEX

LIGHT-000 LIGHTING LEGEND
LIGHT-100 SITE LIGHTING
LIGHT-101 SITE LIGHTING CALCULATIONS
LIGHT-102 SITE LIGHTING CUTSHEETS

FINAL PLAN
original issue date:
8/26/24
revision dates:

9 NORTH WILDHORSE
NEW CASTLE, COLORADO

ALPENGLOW LIGHTING DESIGN, INC.
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(970) 948-2657 aaron@alpenglowinc.com

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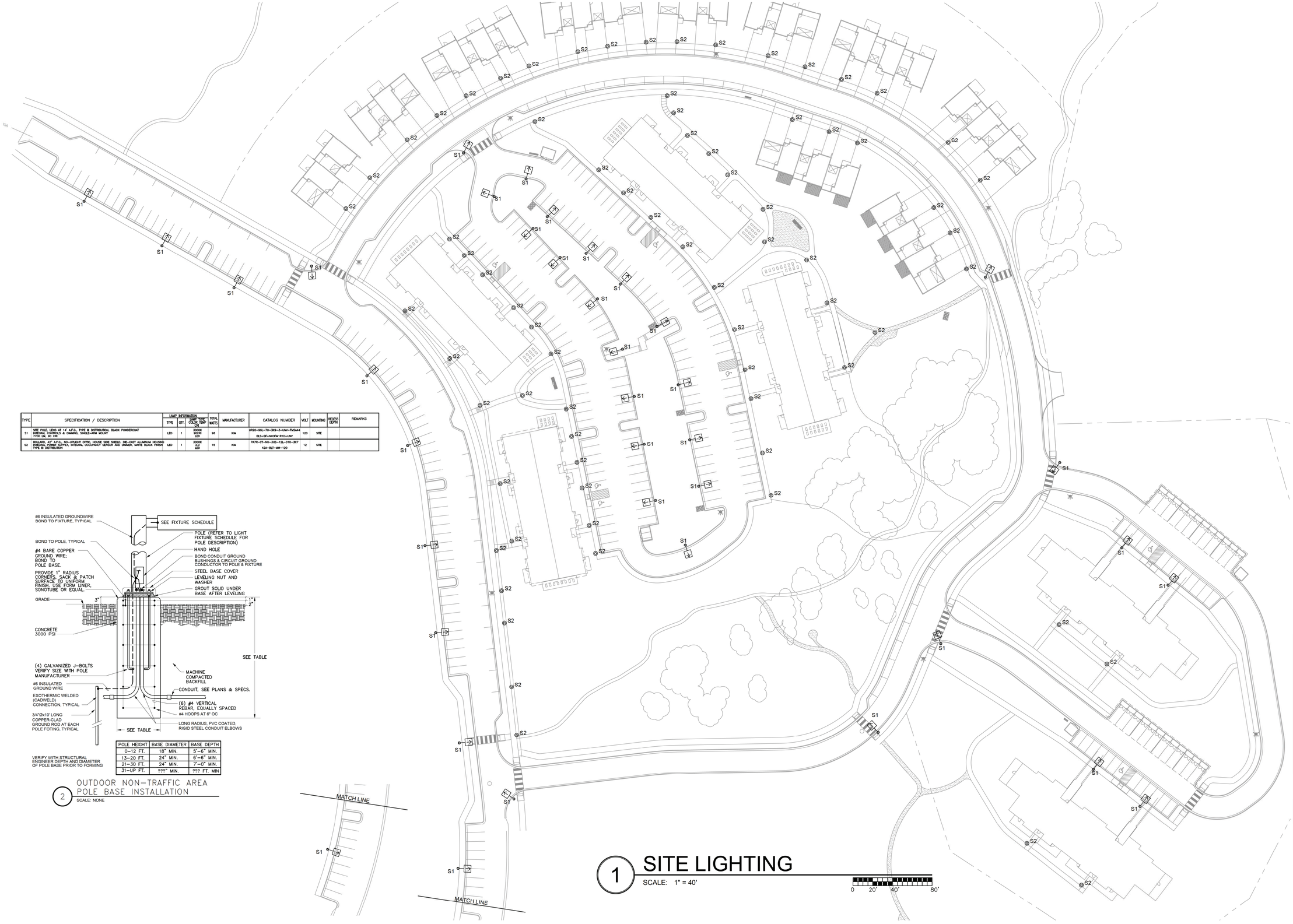
LIGHTING LEGEND

LIGHT-000



TYPE	SPECIFICATION / DESCRIPTION	LAMP INFORMATION			TOTAL WATTS	MANUFACTURER	CATALOG NUMBER	VOLT	MOUNTING	RECESS DEPTH	REMARKS
		TYPE	QTY.	LAMP TYPE COLOR TEMP (K)							
S1	SITE POLE, LENS AT 14' A.F.G., TYPE III DISTRIBUTION, BLACK POWDERCOAT INTERNAL CONTROLS & DIMMING, SINGLE-ARM MOUNT 7700 LM, 90 CRI	LED	1	3000K 90CRI LED	96	KIM	LR20-96L-70-3K9-3-UNV-FMSA44 BLS-SF-NNOFM1810-UNV	120	SITE		
S2	BOLLARD, 42" A.F.G., NO-UPLIGHT OPTIC, HOUSE SIDE SHIELD, DIE-CAST ALUMINUM HOUSING INTERNAL POWER SUPPLY, INTEGRAL OCCUPANCY SENSOR AND DIMMER, WATTE BLACK FINISH TYPE III DISTRIBUTION	LED	1	3000K 2.0 LED	15	KIM	PA70-CT-NU-3K5-12L-010-3K7 42A-BLT-MW-120	12	SITE		

POLE HEIGHT	BASE DIAMETER	BASE DEPTH
0–12 FT.	18" MIN.	5'–6" MIN.
13–20 FT.	24" MIN.	6'–6" MIN.
21–30 FT.	24" MIN.	7'–0" MIN.
31–UP FT.	???" MIN.	??? FT. MIN

VERIFY WITH STRUCTURAL ENGINEER DEPTH AND DIAMETER OF POLE BASE PRIOR TO FORMING

2 OUTDOOR NON-TRAFFIC AREA POLE BASE INSTALLATION

SCALE: NONE

1 SITE LIGHTING

SCALE: 1" = 40'

0 20' 40' 80'

FINAL PLAN

original issue date:
8/26/24
revision dates:

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SITE LIGHTING PLAN

LIGHT-100

#	Name	Parameter	Min	Max	Average	Min/average	Min/max
1	SITE	Perpendicular Illuminance	0.00 fc	5.2 fc	0.40 fc	0.00	0.00

MATCH LINE

MATCH LINE

1 SITE LIGHTING CALCULATIONS

SCALE: 1" = 40'

0 20' 40' 80'

FINAL PLAN
original issue date:
8/26/24
revision dates:

9 NORTH WILDHORSE

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SITE LIGHTING CALCULATIONS

LIGHT-101

KIM LIGHTING

DATE: LOCATION: TYPE S1

TYPE: PROJECT:

CATALOG #:

UR20 EDGE-LIT Post Top

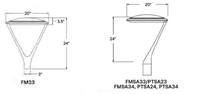
ARCHITECTURAL AREA/SITE

ouro EDGE-LIT

FEATURES

- 20" size in single/dual arm (end box) pole and wall mount
- High performance optics up to 15,227 delivered lumens
- Elegant form factor
- Edge-Lit Light Guide
- NX lighting controls
- UL/cUL listed for wet locations, IP66 and 4G/1.5G vibration rated





FM33

FMSA33/PTSA33
FMSA34, PTSA24, PTSA34

	Weight	EPA
UR20	24 lbs / 10.9 kg	0.02 ft.²

CONTROL TECHNOLOGY

NX LIGHTGRID

SPECIFICATIONS

CONSTRUCTION

- Low copper aluminum alloy die-casting is designed as one-piece, low profile luminaire
- Molded silicone gasket throughout ensures the sealing between the two compartments and provides ingress protection
- Housing is designed with integral heat sink fins to aid in thermal transfer of the electrical component
- IK07 rated enclosure protects electrical equipment against external mechanical impacts
- All fasteners are stainless steel
- Cover is secured to lens frame by the latch and hinge
- One-piece low copper aluminum alloy die-cast lens frame is secured to housing with a tool-less latch and integral offset hinge
- LEDs mount to a metal printed circuit board assembly (MCPCB)

INSTALLATION

- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury

ELECTRICAL

- Universal voltage, 120 through 277V with a ±10% tolerance. Driver is Underwriters Laboratories listed
- High voltage configurations, 347/480. Driver has a 0-10V dimming interface for multi-level illumination options. Driver is Underwriters Laboratories listed
- "Thermal Shield", secondary side, thermistor provides protection for the sustainable life of LED module and electronic components

ELECTRICAL (CONTINUED)

- Drivers shall have greater than a 0.9 power factor, less than 20% harmonic distortion, and be suitable for operation in -40°C to 40°C ambient environments
- Luminaire shall be capable of operating at 100% brightness in a 40°C environment. Both driver and optical array have integral thermal protection that will dim the luminaire upon detection of temperatures in excess of 85°C
- Surge protection: 10kV and 20kA in series
- Wiring: No. 18AWM rated 105°C, wet rating

CONTROLS

7PR

- Fully gasketed and wired 7-pin receptacle option. Easy access location above the electrical compartment, 7-pin construction allows for a user-defined interface and provides a controlled definition of operational performance. ANSI twist-lock control module by-others.

Standard customer operation modes:

- Traditional on/off photoelectric control
- 5-pin wireless photoelectric control for added dimming feature.
- 7-pin wireless photoelectric control for for dimming and additional I/O connections for customer use.

DIMMING

- Dimming range from 100% to 10% through the use of the standard 0-10V interface on the programmable driver
- Modular wiring harness in the service area provides user access to the dimming circuitry

(Specifications continued on page 5)

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KIM LIGHTING

DATE: LOCATION: TYPE S1

TYPE: PROJECT:

CATALOG #:

UR20 EDGE-LIT Post Top

ARCHITECTURAL AREA/SITE

DELIVERED LUMENS

LEDs #	Lumens Package	Drive Current (mA)	Nominal Watts	Distribution	3000K 70CRI				4000K 70CRI				5000K 70CRI			
					Lumen	BUG Rating B	U	G	lm/w	Lumen	BUG Rating B	U	G	lm/w	Lumen	BUG Rating B	U	G	lm/w
96L	3,000	350	30	Type 2M	2958	2	0	2	104.9	2965	2	0	2	106.2	3025	2	0	2	107.3
	5,000	600	50		4835	3	0	3	103.7	4896	3	0	3	105.1	4945	3	0	3	106.1
	7,000	870	70		6862	3	0	3	99.3	6949	3	0	3	100.6	7019	3	0	3	101.6
	9,000	1150	90		9050	3	0	3	100.3	9163	3	0	3	101.6	9256	3	0	3	102.6
	12,000	800	135		11696	4	0	4	84.6	11843	4	0	4	85.6	11963	4	0	4	86.5
	3,000	350	30	Type 3	3326	1	0	2	117.3	3368	1	0	2	119.4	3402	1	0	2	120.6
	5,000	600	50		5437	1	0	2	116.7	5505	1	0	2	118.1	5560	1	0	2	119.3
	7,000	870	70		7719	2	0	3	111.7	7815	2	0	3	113.1	7894	2	0	3	114.2
	9,000	1150	90		10178	2	0	3	112.8	10306	2	0	3	114.3	10410	2	0	3	115.4
	12,000	800	135		13154	3	0	4	95.1	13319	3	0	4	96.3	13454	3	0	4	97.3
192L	3,000	350	30	Type SW	3273	2	0	2	119.0	3315	2	0	2	120.5	3348	2	0	2	121.7
	5,000	560	45		5191	2	0	2	117.7	5255	3	0	2	119.2	5309	3	0	2	120.4
	7,000	800	60		7343	3	0	3	122.0	7435	3	0	3	123.5	7510	3	0	3	124.8
	9,000	960	75		8763	3	0	3	116.9	8863	3	0	3	120.4	8953	3	0	3	121.6
	12,000	680	110		12204	4	0	3	114.6	12357	4	0	4	116.0	12482	4	0	4	117.2
	15,000	840	135		14887	4	0	4	108.8	15075	4	0	4	111.2	15227	4	0	4	112.3

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KIM LIGHTING

DATE: LOCATION: TYPE S1

TYPE: PROJECT:

CATALOG #:

UR20 EDGE-LIT Post Top

ARCHITECTURAL AREA/SITE

ORDERING GUIDE

CATALOG #

Example: UR20-96L-50-3KB-3-UNV-FMSA33-BLS-7PR

HOUSING

UR20

Model	LED Engine	CCT	Distribution	Voltage	Mounting
UR20	Ouro	**Type 2M (ext 3 Light)**	**3K7** 3000K, 70 CRI	**2M *** Type II Medium	Flush mt 3.0" OD pole, 3" fixture base
		96L-30 3,000 lm	**3KB** 3000K, 80 CRI	**3** * Type III Short	Flush mt 3.6" to 4.0" OD pole, 4" fixture base
		96L-50 5,000 lm	**3K9** 3000K, 90 CRI	**3W** * Type III Wide	3" Post Top mount for 2-3/8" OD x 4" Long Tenon
		96L-70 7,000 lm	**4C7** 4000K, 70 CRI		4" Post Top mount for 2-3/8" OD x 4" Long Tenon
		96L-90 9,000 lm	**4KB** 4000K, 80 CRI		4" Post Top mount for 3-3/8" OD x 4" Long Tenon
		96L-115 12,000 lm	**5K7** 5000K, 70 CRI		Square Arm Post Top Mount 3.0" to 4.0" OD Pole, 4" fixture base
		Type SW (2 Light)	Consult factory for other CCTs and CRIs		Side Arm Post Top Flush Mount 3.0" to 4.0" OD Pole, 4" fixture base
		192L-30 3,000 lm			Side Arm Post Top Flush Mount 3.0" to 4.0" OD Pole, 4" fixture base
		192L-45 5,000 lm			2" Side Arm Post Top Mount for 2-3/8" OD x 4" Long Tenon
		192L-60 7,000 lm			4" Side Arm Post Top Mount for 2-3/8" OD x 4" Long Tenon
		192L-75 9,000 lm			4" Side Arm Post Top Mount for 2-7/8" OD x 4" Long Tenon
		192L-135 15,000 lm			

Fixture Finish		Control Options	
BLS	Black-Gloss Smooth	**7PR-TL**	7 pin PCR with twist lock photocontrol
BLT	Black-Matte Textured	**7PR-SC**	7 pin PCR with shorting cap
DBS	Dark Bronze Gloss Smooth	**7PR**	7 pin POL wireless control enabled
DBT	Dark Bronze Matte Textured	**AD-01** *	1kV/10M 50% output at midnight
GTT	Graphite Matte Textured	**AD-02** *	1kV/10M 50% output midnight to 4 AM
LGS	Light Grey Gloss Smooth	**AD-03** *	1kV/10M 50% output 10PM
LGT	Light Grey Matte Textured	**AD-04** *	1kV/10M 50% output 10PM to 4AM
PSS	Platinum Silver Gloss Smooth	**NXN** *	NX Networked Wireless Node Module 10/0V(z) and Bluetooth Programming, without Sensor
VGT	Verde Green Matte Textured	**WSP-40F**	3mm/sq Occ. Sensor for up to 40' MH, 120-480V
WHS	White Gloss Smooth		
WHT	White Matte Textured		
Color Option			
CC *	Custom Color		

Options	
SF	Single Fuse
DF	Double Fuse
TPL	Tamper Proof Latch
WBPM3	Wall Bracket Arm for FMA5 or FMSA33
WBPM4	Wall Bracket Arm for FMA6 or FMSA44
TAFM3 1,4	Twin Arm mount for FMSS or FMSA33
TAFM4 1,4	Twin Arm mount for FMA6 or FMSA44

Control Accessories	
WR-RME-L	LightGRID™ External Fixture Module
NXDFMRB-UNV	NX 7-Pin Twist-Lock® with NX Networked Wireless Radio, Integral Sensor, Bluetooth Protocol, Integral Single Pole Relay with Dimming and Bluetooth Programming

1 Consult factory for custom color, marine and corrosive finish options
2 Not available with Bluetooth wireless control options.
3 Not available with 347V and 480V.
5 Only available with BLS.
6 Only available with 7PR.
7 Pole requires 2.28 x 4" Long tenon
8 Not available with 7PR or NX Post Top PMSA/PTS4L
9 Order one for each pair of fixtures per pole.

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KIM LIGHTING

DATE: LOCATION: TYPE S1

TYPE: PROJECT:

CATALOG #:

UR20 EDGE-LIT Post Top

ARCHITECTURAL AREA/SITE

OUTDOOR LIGHTING CONTROLS OPTIONS

CONTROLS FUNCTIONALITY

LIGHTGRID

Control Option Ordering Logic & Description		Control Option Functionality										Control Option Components	
		Motion/Ambient	Grouping	Scheduling	Occupancy/ Motion	Daylight Harvesting	0-10V Dimming	On/Off Control	Bluetooth App Programming	Sensor Height			
Sensorless	SIGNIFY GRID	✓	✓	✓	–	✓	✓	✓	✓	–		NXDFMRB-UV	
	SENSE	✓	✓	✓	–	–	✓	✓	✓	–		NXMSU-V	
Sensor	NODE/EP	✓	✓	✓	✓	✓	✓	✓	✓	10A		NXSMT2-UNV	
	MOMENT	✓	✓	✓	✓	✓	✓	✓	✓	40A		NXSMT3-UNV	

DEFAULT SETTINGS

Occupancy Sensor	Enabled /
Occupancy Sensor Sensitivity	4
Occupancy Sensor Timeout	10 Minutes
Occupied Dim Level	100%
Unoccupied Dim Level	0%
Daylight Sensor	Disabled
Bluetooth	Enabled
2.4GHz Wireless Mesh	On
"Pinnacle Factory Passcode: 1234567"	Enabled

Occupancy Sensor	Enabled
Occupancy Sensor Sensitivity	3
Occupancy Sensor Timeout	6 Minutes
Occupied Dim Level	100%
Unoccupied Dim Level	10%
Daylight Sensor	2 footc.

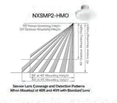
NX WIRELESS COVERAGE PATTERNS

NXSMP2-UMO



Sensor Lens Coverage and Detection Patterns
When Mounted at 40ft and 40ft with Ambient Control

NXSMP2-HMO



Sensor Lens Coverage and Detection Patterns
When Mounted at 40ft and 40ft with Standard Control

NX LIGHTING CONTROLS FREE APP

The NX Lighting Controls App is free to use mobile application for programming both NX Lighting Controls wireless nodes and Bluetooth luminaires. Download the app to configure daytime dimming, distance and setup wireless enable luminaires and program NX system settings.

Apple App https://apps.apple.com/us/app/nx-lighting-controls/id1562112056

Google Play https://play.google.com/store/apps/details?id=com.kwattner.nxlightingcontrols

Apple App

Google Play

CONTROLS TECH SUPPORT 800-888-8006 (7:00 AM - 7:00 PM)

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KIM LIGHTING

DATE: LOCATION: TYPE S1

TYPE: PROJECT:

CATALOG #:

UR20 EDGE-LIT Post Top

ARCHITECTURAL AREA/SITE

OUTDOOR LIGHTING CONTROLS OPTIONS

CONTROLS FUNCTIONALITY

Control Option Ordering Logic & Description		Control Option Functionality										Control Option Components	
		Remote/Local	Grouping	Scheduling	Occupancy/ Motion	Daylight Harvesting	0-10V Dimming	On/Off Control	Bluetooth App Programming	Sensor Height			
Sensorless	AD	AutoDIM Time of Day Dimming	–	–	✓	–	–	–	✓	–		ADT	
	7PR	7-PIN Receptacle	–	–	Paired with occupancy control	–	Paired with occupancy control	–	Paired with occupancy control	–	–	7PR	
	3PR/4C	7-Pin Receptacle with shorting cap	–	–	–	–	–	–	–	–		7PR-SC	
	7PR-TL	7-Pin with photocontrol	–	–	–	–	✓	–	✓	–		7PR-TL	

DEFAULT SETTINGS

Occupancy Sensor	Enabled /
Occupancy Sensor Sensitivity	4
Occupancy Sensor Timeout	10 Minutes
Occupied Dim Level	100%
Unoccupied Dim Level	0%
Daylight Sensor	Disabled
Bluetooth	Enabled
2.4GHz Wireless Mesh	On
"Pinnacle Factory Passcode: 1234567"	Enabled

Occupancy Sensor	Enabled
Occupancy Sensor Sensitivity	3
Occupancy Sensor Timeout	6 Minutes
Occupied Dim Level	100%
Unoccupied Dim Level	50%
Daylight Sensor	2 footc.

NX WIRELESS COVERAGE PATTERNS

NXSMP2-UMO

Sensor Lens Coverage and Detection Patterns
When Mounted at 40ft and 40ft with Ambient Control

NXSMP2-HMO

Sensor Lens Coverage and Detection Patterns
When Mounted at 40ft and 40ft with Standard Control

NX LIGHTING CONTROLS FREE APP

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Apple App https://apps.apple.com/us/app/nx-lighting-controls/id1562112056

Google Play https://play.google.com/store/apps/details?id=com.kwattner.nxlightingcontrols

Apple App

Google Play

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KIM LIGHTING

DATE: LOCATION: TYPE S1

TYPE: PROJECT:

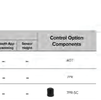
CATALOG #:

UR20 EDGE-LIT Post Top

ARCHITECTURAL AREA/SITE

DIMENSIONS

FM33



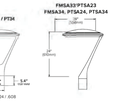
PT23



FM44

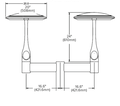


PT31 / PT34

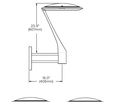


FMSA33/PTSA33
FMSA34, PTSA24, PTSA34

TAFM3/TAFM4

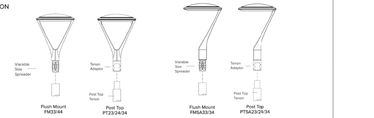


WBPM3/WBPM4

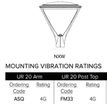


ARM	DIAMETER
FMSA33	3" diameter
FMSA44	4" diameter
PTSA23	3" diameter with tenon mount
PTSA24	4" diameter with tenon mount
PTSA34	4" diameter with tenon mount

MOUNTING INSTALLATION



SENSOR PLACEMENT



NXW



WSP-40F

MOUNTING VIBRATION RATINGS

UR 20 Arm		UR 20 Post Top		UR 20 Solo Arm	
Ordering Code	Rating	Ordering Code	Rating	Ordering Code	Rating
ASQ	4G	FM33	4G	FMSA33	1.5G
A34	4G	FM44	1.5G	FMSA44	1.5G
A46	4G	PT23	4G	PTSA23	1.5G
MAF	4G	PT24	4G	PTSA24	1.5G
		PT34	1.5G	PTSA34	1.5G

For the 4 G test, ANSI C136.31-2010 Vibration is tested to comply with Vibration Test Level 1 Normal Applications
Vibration Test Level 2 Bridge/Overpass Applications, and Vibration Test Level 3

For the 1.5G test, ANSI C136.31-2010 Vibration is tested to comply with V3r ation Level 1 Bridge/Overpass Applications

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KIM LIGHTING

DATE: LOCATION: TYPE S2

TYPE: PROJECT:

CATALOG #:

PA7R

BOLLARD

FEATURES

- IDA Dark Sky Compliant, No Up-light configuration
- Elegant form factor blended with Performance Optics
- Integral NEMA 3R Enclosure
- Dual receptacle power and control
- PA System capability
- Bluetooth® enabled RGBW accent



CONTROL TECHNOLOGY

Bluetooth DMX phoros

SPECIFICATIONS

CONSTRUCTION

HOUSING:

- Castings are low copper aluminum alloy die-cast
- Gaskets are molded silicone to prevent harmful ingress to the lamp and driver compartments
- IP65 rated

SHAFT:

- Aluminum shaft(s) is 325" thick extruded aluminum 6061 alloy
- Concrete shaft(s) conforms to current specifications for "Portland Cement," ASTM C150, Type I or II. Aggregates shall meet current requirements of "Specifications for Concrete Aggregates," ASTM C33. Water shall be clean and free from deleterious amounts of silt, oil, acids, alkalies or organic materials. Wire for reinforcement shall conform to ASTM A185. Steel for lugs and plates shall conform to ASTM A36, or A283 grade D
- Concrete shaft(s) is medium sand blasted with anti-graffiti sealer and material color shall be integral to the concrete mix
- Concrete shaft(s) is cured to allow for completion of the hydration process, and result in a 28 day compressive strength of not less than 4,500 psi
- Concrete shaft(s) is cast from fiberglass molds used to insure uniform parts. Mold parting lines maybe slightly visible in finished parts

OPTICS

- LEDs mount to a metal printed circuit board assembly (MCPCB)
- Optical lenses are clear injection molded PMMA acrylic
- *UG configurations have an optically clear flat tempered glass lens, all other configurations have either an optically clear or high transmission diffused acrylic lens*

INSTALLATION

- Aluminum shaft configurations will have four 3/8" x 10" x 2" thk* plated L-hook anchor bolts shall to be installed with an included template. Nuts and washers are provided to level and secure the mounting plate to the anchor bolts.
- Aluminum shaft configurations will have a mounting plate and be able to be rotated 20° in either direction during installation for aiming adjustment
- Concrete shaft configurations will have four steel mounting tabs for installation on four 1/2" x 10" x 2" zinc electroplated L-hook anchor bolts. Each anchor bolt is supplied with two nuts, two washers, and a rigid pressed board template
- Concrete shaft configurations are palletized with adequate hold-downs to prevent load movement in transit
- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury

ELECTRICAL

- Universal voltage, 120 through 277V with a ±10% tolerance. Driver is Underwriters Laboratories listed
- High voltage configurations, 208-277, 347/480. Driver is Underwriters Laboratories listed
- "Thermal Shield", secondary side, thermistor provides protection for the sustainable life of LED module and electronic components
- Drivers are greater than a 0.9 power factor, less than 20% harmonic distortion, and be suitable for operation in -40°C to 40°C ambient environments
- Luminaire is capable of operating at 100% brightness in a 40°C environment. Both driver and optical array have integral thermal protection that will dim the luminaire upon detection of temperatures in excess of 85°C

(Specifications continued on page 7)

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KIM LIGHTING

DATE: LOCATION: TYPE S2

TYPE: PROJECT:

CATALOG #:

PA7R

BOLLARD

Pavilion

FT
Flat Top



CT
Crowned Top

Finish	Voltage	Mounting
PA7R Pavilion 7" Ø Round	**UNV** 120-277V	**FM33** Flush mt 3.0" OD pole, 3" fixture base

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KIM LIGHTING

DATE: LOCATION: TYPE S2

TYPE: PROJECT:

CATALOG #:

PA7R

BOLLARD

ORDERING GUIDE

CATALOG #

Example: PA7R-FT-NU-1-QL-210-SK7-24A-BLS-UNV-EM

HOUSING

PA7R

Model	Top	Optics	Distribution	Light Engine [1,2]
PA7R Pavilion 7" Ø Round	**FT** Flat Top **CT** * Crowned Top	**NU** No Up-light **CH** Clear Horizontal Lens **CL** * Clear Vertical Lens **DL** [14] Diffuse Vertical Lens **LV** Louvers **GC** Grille with clear vertical lens **GD** * Grille with diffuse vertical lens	**1** Type I **2** Type II **3** Type III **3HS** Type III + House side shield **4** Type IV **5** Type V	**12L-210-24AB** * Mild, Monochromatic Amber **12L-010-3K7** Mild (1000 nominal ins, 3000K, 70 CRI **12L-010-4K7** Mild (1000 nominal ins, 4000K, 70 CRI **12L-010-5K7** Mild (1000 nominal ins, 5000K, 70 CRI **12L-020-24AB** * 22W, Monochromatic Amber **12L-020-3K7** 22W (2000 nominal ins), 3000K, 70 CRI **12L-020-4K7** 22W (2000 nominal ins), 4000K, 70 CRI **12L-020-5K7** 22W (2000 nominal ins), 5000K, 70 CRI Consult factory for other CCTs (2700K - 6500K) and CRIs (80, 90 CRI)

Body		Fixture Finish		Voltage		Options	
24A	24" OAH, Aluminum	**BLS**	Black Gloss Smooth	**UNV**	120-277V	**BM** *	Battery Backup
42A	42" OAH, Aluminum	**BLT**	Black Matte Textured	**120***	120V	**LR** *	Luminous Accent
42BR-C	42" OAH, Brown Concrete	**DBS**	Dark Bronze Gloss Smooth	**277***	208-277V	**SF** *	Single Fuse
42CH-C	42" OAH, Charcoal Concrete	**DBT**	Dark Bronze Matte Textured	**347***	347V	**DF** *	Double Fuse
42NG-C	42" OAH, Natural Gray Concrete	**GTT**	Graphite Matte Textured	**480***	480V		
42WH-C	42" OAH, White Concrete	**LGS**	Light Grey Gloss Smooth				
42A-ROP *	42" OAH, Aluminum + Dual Receptacle Outlet Panel and Cover	**LGT**	Light Grey Matte Textured				
42A-ROPL *	42" OAH, Aluminum + Dual Receptacle Outlet Panel and Locking Cover	**PSS**	Platinum Silver Gloss Smooth				
42A-2GEB	42" OAH, Aluminum + Integral Recessed 2 Gang Electrical Box	**VGT**	Verde Green Matte Textured				
42A-SG3	42" OAH, Aluminum + Speaker Grille Enclosure for 3" ID speaker	**WHS**	White Gloss Smooth				
44A	44" Non-Impact Resistant OAH, Aluminum	**WHT**	White Matte Textured				
44A-ROP	44" Non-Impact Resistant OAH, Aluminum + Dual Receptacle Outlet Panel and Cover	**Color Option**					
44A-ROPL	44" Non-Impact Resistant OAH, Aluminum + Dual Receptacle Outlet Panel and Locking Cover	**CC** *	Custom Color				
44A-2GEB	44" Non-Impact Resistant OAH, Aluminum + Recessed 2 Gang Electrical Box						
44A-SG3	44" Non-Impact Resistant OAH, Aluminum + Speaker Grille Enclosure for 3" ID speaker						

For Impact Rated 44" OAH Round Pedtal

1 Adds .6 / 15mm to OAH (over all height).
2 CL and DL configurations shall be NU4
3 Only Available with 1 Type I or 5 Type V distributions only.
4 DL Optics only available with Type V Distribution.
5 Dedicated Input voltage, required for MIR Motions sensing.
6 -17°C min starting temperature, 90+ minute run time, output equivalent to 12L-010-4K7
7 Adds +5 watts and 1" / 25mm to overall height.
8 SF for 120, 277 and 347 input voltage, DF for 208, 240 and 480 input voltage.
9 Type IV Only
10 Consult factory for custom color, marine and corrosive finish options
11 5-step MacAdam Ellipse Binning standard, Consult factory for 3-step MacAdam Ellipse Binning

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KIM LIGHTING

DATE: LOCATION: TYPE S2

TYPE: PROJECT:

CATALOG #:

PA7R

BOLLARD

SPECIFICATIONS CONT'D

CONTROLS

- Standard fixtures dimming range shall be from 10% to 100% and be compatible with 0-10V, user-defined, control devices



WIRELESS CONTROLS

BLUETOOTH®:

- The Integral module shall enable the adjustment of the Luminous Accent to dim or change color to the desired setting when paired with RGBW Remote App via cellular/tablet device
- The integral module shall be compatible with Bluetood Low Energy (BLE) or Bluetooth® Smart mobile devices operating on IOS8 or Android Gingerbread operating systems or newer
- Mobile App, dimming range from 0% to 100% through the use of RGBW app (available on IOS and Android)
- Color selection and adjustment
- Camera function for color matching
- Intensity slider for dimming/ramping up
- Save and rename up to 10 presets
- Group and rename fixtures
- Fixture is password protected, refer to instructions to set unique password

DMX:

- 5 wires: Red (DMX+), Brown (DMX-), Yellow (DMX Ground), Black (Line Voltage), White (common), and Green (Ground)
- Single DMX universe with six slots/addresses of virtual control which are pre-programmed at the factory:
- DMX slot/address 1 = red
- DMX slot/address 2 = green
- DMX slot/address 3 = blue
- DMX slot/address 4 = white
- Fully DMX RDM compatible
- Mobile App specification in additional information section

OPTIONAL BACKUP BATTERY

- Integral battery backup provides emergency path of egress lighting for the required 90 minutes for UL emergent environments.

CAUTION:

- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury

CERTIFICATIONS AND LISTINGS

- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations and 40°C ambient temperatures
- IP65 rated
- *IEC 66363 Mechanical Impact Code IK10*
- IDA approved, 3000K and warmer CCTs only
- RoHS compliant
- Emergency battery pack options are California Energy Commission (CEC) Title 20 Compliant
- This product meets federal procurement law requirements under the Buy American Act (FAR 52.225-5) and Trade Agreements Act (FAR 52.225-11). See Buy America(n) Solutions think to https://www.currentlighting.com/resources/america-solutions)

WARRANTY

- 5 year warranty
- See HLI Standard Warranty for additional information

Bluetooth App Store Google play

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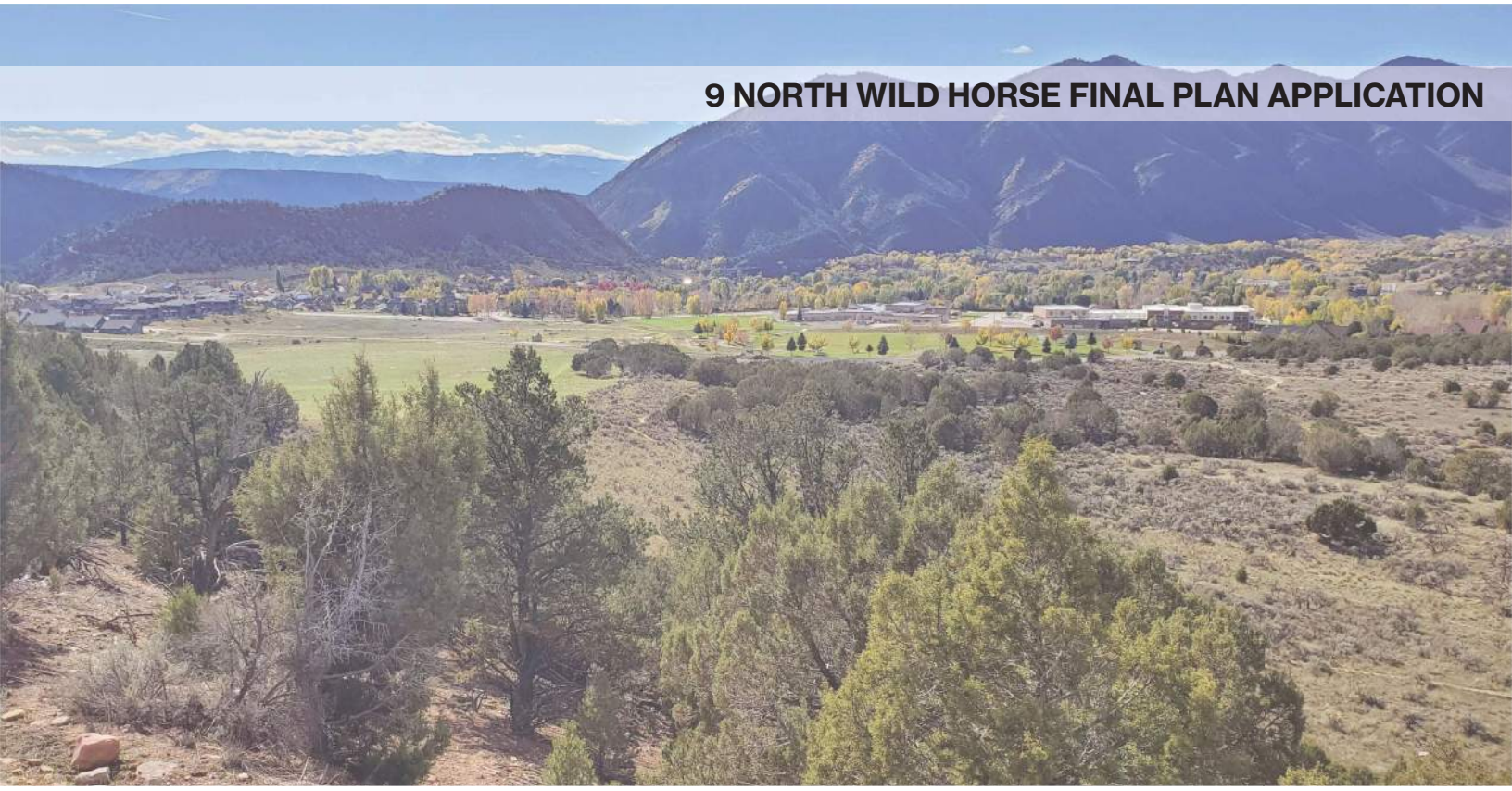
APPENDIX



9 NORTH WILD HORSE FINAL PLAN APPLICATION

APPENDIX CONTENTS

DOCUMENTS BY PAGE NUMBER:

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152 - 154 ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COSTS

155 - 156 GARFIELD COUNTY APPROVAL OF STREET NAMES

157 - 158 AREAS OF KNOWN HAZARDS

159 - 160 EQR AND RAW WATER TABLE

161 - 173 DECLARATION OF COVENANTS

174 - 180 AFFORDABLE HOUSING PLAN

181 - 182 FEE OFFSET AND COST RECOVERY REQUESTS

183 - 184 STATEMENT REGARDING NETZERO BUILDING

185 - 190 TEMPORARY CONSTRUCTION EASEMENT

191 - 211 LAND TITLE COMMITMENT

212 - 213 LIST OF PROPERTY OWNERS WITHIN 250 FEET

APPLICANT RESPONSES TO PRELIMINARY PLAN CONDITIONS OF APPROVAL

9 North Wild Horse - Applicant Responses to Preliminary Plan Conditions of Approval

Condition	Condition Text	Applicant Response
a.	Where feasible, Applicant shall add additional parking spaces to the inner radius of Vista Loop across from in the vicinity of townhome units.	On-street parking has been added where feasible on Vista Loop, see Parking Summary for parking count.
b.(1)	The Applicant shall comply with all currently adopted building code and municipal code requirements, including all sign code regulations in effect at the time of building permit application.	Acknowledged. Monument signage is not included as part of the Final Plan but will be submitted separately with a sign permit application per Code 17.18
b.(2)	All site specific development applications subject to the provisions of the International Fire Code or matters requiring fire alarms and/or fire suppression shall be submitted to the Fire Marshal for review and comment.	Acknowledged.
c.	The applicant shall comply with all recommendations of the Town Engineer, Town Public Works Director, and Town Attorney provided in response to review of the Application.	The Applicant's civil engineer has been in communication and coordination with the Town Engineer throughout the design of Final Plan. Please note that North Wild Horse Drive is proposed to not have curb and gutter to avoid point discharge of drainage at VIX Park, which is a change from the design presented at Preliminary Plan.
d.	All exterior lighting to be dark-sky compliant per the comprehensive plan. Demonstrate that all exterior lighting will limit trespass. Parking lot lighting should be on timers to reduce the light duration at night while maintaining security lighting as needed.	A Site Lighting Plan is included in the Application design documents, see table of contents for location. The lighting plan demonstrates compliance with the dark-sky requirements.
e.	All outside parking areas facing residential-only use shall incorporate landscape buffers to obscure vehicles from view per Code Section 17.104.100. In event the aforementioned code section conflicts with the building code, the building code shall control.	Please see the landscape plan enlargements showing the required landscape buffer at parking areas. Shrubs shown within 10' of buildings are listed on the Firewise Plant List.
f.	Pursuant to House Bill HB22-1362, specifically Section CV502.1 of the Colorado Model Electric Ready and Solar Ready Code, the Applicant shall collaborate with Public Works to site the required Electric Vehicle Supply Equipment (EVSE) within the N Wild Horse Dr. right of way adjacent to VIX Park. Public Works shall have the ultimate discretion of the EVSE supplier.	The number of EV spaces and EV ready spaces required by HB22-1362 are shown on the parking diagram in the Application. The Applicant has coordinated with the Town regarding the EV charging stations to be located within the public right-of-way.
g.	Fire access routes should be semi-impervious (compacted road base), two-track roads permanently signed “Emergency Access Only”. Extend an additional access road from Loop Rd. to Lakota Links property boundary to the north. Locations of fire access routes should be approved by the Fire Marshal.	Please see the Civil and Landscape plans showing the location of the described fire access route which utilizes the existing two-track road. Per direct communication from the Town, the fire access does not need to be improved with road base.
h.	Extend raw water infrastructure from existing stub-outs into the new development with an extension along N Wildhorse Dr. Design plans to be approved by the Town Engineer.	Please see the Civil plans for the raw water infrastructure, which has been designed in coordination with the Town Engineer.
i.	Minimize construction traffic along N Wild Horse Dr. with provisions for a temporary construction easement that includes an impervious road surface that accommodates construction vehicle circulation for the buildout of PA 8 & 9 (R2 Partners LLC) and PA 12 (TC Fuels Midwest LLC) until the completion of either PA 12 or PAs 8 & 9, whichever is first.	R2 Partners is in communication with the owners of PA 12 regarding the construction easement. The parties are in general agreement that a temporary construction easement is acceptable, however no agreement has been signed. The email communication between the parties and the draft alignment of a 30' wide temporary easement is included in the Appendix.
j.	All trash dumpsters shall be located within an approved trash enclosure that extends six feet high and includes a bear resistant latching mechanism.	The landscape plans include a detail for a trash enclosure.

9 North Wild Horse - Applicant Responses to Preliminary Plan Conditions of Approval

Condition	Condition Text	Applicant Response
k.	A declaration of covenants for the common interest community that are to the satisfaction of the Town Attorney.	A declaration of covenants is included in the Appendix.
l.	A parking plan shall be added to the covenants prior to final application with provisions for reserved parking in shared lots as necessary. Signage on both sides of N Wild Horse Dr adjacent to VIX park shall read “No Overnight Parking at Any time”.	The covenants contain language pertaining to parking management.
m.	The Applicant shall submit a memorandum proposing Netzero building strategies to be included with the development.	Please see the memorandum included in the Appendix.
n.	A subdivision improvements agreement (SIA) containing an engineer’s stamped cost estimate of public improvements, to the satisfaction of the Town Attorney.	A draft SIA will be provided to the Applicant by the Town; at the time of submittal, the draft SIA was not yet provided to the Applicant. The Engineering Report includes an opinion of costs for the public improvements, see Appendix.
o.	Provide a construction phasing plan for inclusion in a subdivision improvements agreement. Identify, at minimum, each of the following components:	A Construction Phasing Plan (CPP) is included in the Application, see table of contents for location.
	• Buildout phases if necessary;	Construction is anticipated to occur sequentially in a continuous phase.
	• Schedule that identifies the sequencing of construction, sequencing of occupancy, traffic flow, and traffic control plans during construction;	Buildout sequencing is noted on the CPP.
	• Storage and staging areas for construction equipment and materials;	Storage, staging, and parking are noted on the CPP.
	• Illustrate drainage and erosion control best management practices (BMP's);	The Civil plans include temporary drainage and erosion control measures, see Sheet C-1.3.
	• Conformance to all requirements and specifications approved by the fire marshal concerning temporary access to the project;	The CPP includes a note regarding maintaining temporary emergency access per the fire marshal.
p.	Landscaping shall incorporate native grasses and plants that minimize maintenance, mowing [sic], and irrigating. The landscaping plan shall be approved by the Parks Department. Plans submitted to obtain a building permit for any building shall demonstrate no more than 2,500 square feet of sod per dwelling unit as specified in 13.20.060 of the Municipal Code.	The planting plan includes native and drought tolerant species in general, but also specifically in the revegetation seed mixes which consist of native species appropriate for the site eco-type. The total area of manicured landscape is approximately 800 SF/unit. This area will not all be sod, so the total sod area will be well below the 2,500 SF limit. The sod area/unit will be quantified on the landscape plans for each building, which will be submitted with the building permits.
q.	All disturbed areas in the project shall be revegetated and maintained in a predominantly weed free condition.	The landscape plans shows revegetation of all site disturbance. Weed management notes are also included on the landscape plans.
r.	Reach agreement with the Town about ownership and maintenance of roadways, trails, and sidewalks.	Applicant has been in communication with the Town regarding this; see Plat for proposed lot and right-of-way boundaries and trail easements
s.	All representations of the Applicant made verbally or in written submittals presented to the Town in conjunction with the Application before the Commission or Town Council shall be considered part of the Application and binding on the Applicant.	Applicant acknowledges this condition.
t.	The Applicant shall reimburse the Town for any and all expenses incurred by the Town regarding this approval, including, without limitation, all costs incurred by the Town's outside consultants such as legal and engineering costs.	Applicant acknowledges this condition.

9 North Wild Horse - Applicant Responses to Preliminary Plan Conditions of Approval

Condition	Condition Text	Applicant Response
u.	Request approval of street names through Garfield County Communications to avoid any duplication of names in the county dispatch area.	The street names have been approved by Garfield County Communications; an email approval is included in the Appendices.
v.	The sale of individual lots, parcels or units may not occur until a plat creating the lot, parcel or unit is recorded with Garfield County and security for public improvements has been received by the Town.	Applicant acknowledges this Condition.
w.	As part of its Final Application, Applicant shall include provisions for Applicant's plan for providing affordable or community housing units, together with covenants to be recorded in the public record. Community housing shall be made available to Town employees and other employers' employees designated by the Town and include at least 1 two bedroom unit. Affordability shall be a minimum of a 25% reduction from market rates charged by Applicant.	The Applicant's plan for providing affordable housing is included in the appendix.

ENGINEERING REPORT

September 16, 2024

Chad J Lee.
JVAM
chad@jvamlaw.com

RE: 9 North Wild Horse Subdivision, Castle Valley Ranch, New Castle, CO – Final Plan Submission
SE Job # 33011

Chad,

Sopris Engineering, LLC (SE) has prepared the following Engineering Letter for the Final Plan Submission for the proposed 9 North Wild Horse Subdivision (9NWH) in Castle Valley Ranch (CVR) in New Castle, CO. The overall site is a 59 acre parcel east of Vix Park. The proposed development is 46.5 acres+/- that will be developed with 130 residential units. The proposed development has been divided into 3 development lots plus 2 open space parcels. The remaining 12.5 acre 'Lot 4' will be retained by the current landowner. The site will be developed in compliance with the Castle Valley Ranch PUD agreements and the Town of New Castle code requirements.

The subject property is Garfield County parcel #212329300194. The site is located east of Vix Park on the east side of N. Wild Horse Drive. The residential site will be developed with townhomes, live/work, and empty nester units. Refer to the Civil site plan, along with the Landscape Architect's and the Architect's plans for additional site and building details.

The final site, utility, grading, & drainage improvements are shown on the Civil Plans.

1. Existing Conditions

The existing conditions are shown on the existing conditions survey prepared by SE. The SE survey supplements the ALTA survey prepared by SGM. Utility locates were completed and field surveyed on; N. Wild Horse Drive, onsite, and for the existing water main connection on the Lakota Canyon Ranch locations east of the site. Additional utility maps were used to draft in the approximate location of other improvements.

The existing conditions map includes a detailed topographical survey of N. Wild Horse and the adjacent site improvements. The most current Lidar aerial topography was used for the undeveloped site.

2. Access:

The N. Wild Horse road section will be improved from where the pavement ends on the south and west sides. The road sections were reviewed during the Final Plan approval process and are included on the civil plans. The portion of road south of the development will be paved with two 11' travel lanes plus 2' paved shoulders. Perpendicular parking is proposed on the west side of the road adjacent to Vix Park. Parallel parking is proposed adjacent to the 9NWH site.

The site has good access on Vista Loop with two connections to N. Wild Horse Drive. The empty nester residential will be accessed from Medaris Loop which will connect to Vista Loop at two locations. The Live / Work residential will have be accessed from Chapman Loop with one access on the north side to Vista Loop. The townhomes will all have direct access to Vista Loop. Mountable curb is proposed for the street section in front of the proposed townhomes.

Emergency access will be provided throughout the site on the proposed roads and parking access roads.

Parallel parking is proposed on one side of Vista Loop as shown on the Site Plan and road sections. Refer to C1.0 Site plan and Sheet C1.1 for the proposed road sections.

Drainage:

The New Castle public work manual states; "*The rate of runoff from any developed area shall not exceed the historic rate of runoff based on a twenty-five (25) year rainfall event*"

The site grading and drainage has been developed to provide positive drainage away from all structures in coordination with the area storm drainage pattern. The site has local detention basins to ensure the Town's pre-post drainage requirements are met. Two 48" culverts with flared end sections will be installed at the proposed Vista Loop road crossing at the primary drainage channel onsite. The runoff from this primary offsite drainage basin will be safely routed through the site following the existing drainage path. The undeveloped portions of the drainage basins above the site development will be safely routed around the site improvements.

The offsite and existing conditions are described below followed by the proposed drainage improvements. The Hydrologic and Hydraulic drainage modeling was completed in Autodesk's Storm & Sanitary Analyis (Stormnet) program. The drainage model calculations are summarized on civil sheets C6.0 - C6.2 and are included in Appendix A. The general drainage analysis and improvements described and shown on the final plan application are designed in detail for this final plan application.

2.1. Offsite & Existing:

OS-01: The large offsite drainage basin above the site is approximately 2.97 square miles (1,900 acres) in size. This basin flows through the center of this site. SE used the USGS streamstats online program to analyze this drainage basin. The 100 year Q is approximately = 130 cfs.

The site will protect the existing drainage to the extent possible. The site has water and sewer utility crossings which will not change the existing grade at all. Vista Loop has one road crossing which will fill over the existing drainage channel.

For the road crossing, the existing flowline grade will be maintained which provides the best hydraulic situation for a culvert installation. SE utilized the Culvert Nomograph calculator which is a part of the Hydraflow Express Extension for Autodesk to calculate the culvert capacity. Two 48" ADS N-12 culverts will be installed following the existing grade with flared end sections and riprap installed on both sides. The culvert nomograph indicates the 48" culverts have well over 200 CFS capacity which provides a good factor of safety. The culvert nomograph calculations are included in Appendix A.

The existing drainage basins were adjusted slightly after studying the drainage patterns in Vix Park, and to align better with the high point in N. Wild Horse Drive. Existing basin 02 was also divided into two basins as described below.

EX-01: Existing basin 01 is the primary drainage channel through the center of the site. As described above, only one grade change with culverts will impact the drainage channel. EX-01 flows down to the west through the center of the site. Storm water runoff leaves the site and flows through two large diameter corrugated metal culverts under N. Wild Horse. We have designated this location as Design Point 1 (DP-1).

EX-02A: Existing basin 02A is the northwestern portion of the site. The drainage basin extends up the steep hillside on the north side of the site. The drainage paths on the upper portions of the site are numerous. Storm water runoff from this basin flows to a storm sewer culvert on the northside of N. Wild Horse which is identified as Design Point 2A (DP-2A).

The existing storm sewer invert in is clear and the pipe appears to flow down under the road to the southwest. We were not able to locate the invert out of the storm sewer pipe in Vix Park. It appears the daylight invert out is covered by a boulder head wall in the drainage channel south of the existing parking area. Because the swale on

the southwest side of the existing parking area drains down towards a small swale directly adjacent to a residential lot, we have proposed a new culvert to daylight the storm water runoff more directly south to Vix park. This proposed storm sewer is discussed further in the Section 2.2 below.

EX-02B: Existing basin 02B is the northern portion of the site. This drainage basin also extends up the steep hillside on the north side of the site. The drainage paths on the upper portions of the site are numerous. Storm water runoff from this basin appears to sheet flow across N. Wild Horse Drive. We have identified this sheet flow as Design Point 2 (DP-2B).

EX-03: Existing basin 03 is the southern portion of the site. The drainage basin extends up the hillside west of the site to the ridge line that generally defines the eastern limit of Castle Valley Ranch. The drainage paths are numerous but generally appear to sheet flow or flow in small swales to the lower portions of the site. Storm water runoff combines into one primary drainage channel for this basin which is designated as Design Point 3 (DP-3).

2.2. Proposed:

The overall proposed site drainage paths will generally maintain the existing flow paths. The proposed site basins generally match the existing onsite basins. With proposed grading and storm sewer routing, a portion of runoff from basin 02 will be now directed to basin 01. This will minimize the storm water runoff that currently sheet flows across N. Wild Horse. The proposed basins are described in greater detail below and are illustrated on C6.1 and C6.2.

The storm water runoff has been subdivided into smaller sub-basins in order to size the storm water runoff infrastructure through the site. The drainage sub-basins are shown on C6.2 and are detailed and depicted in the Stormnet output graphics and reports.

DE-01: Developed basin 01 is the primary drainage channel through the center of the site. The south end of Vista Loop, approximately 2/3 of the Live / Work development, and the upper northeastern townhome buildings are within this basin. Storm water runoff starts on the existing hillside above development. Drainage swales will direct this runoff to storm inlets. Storm water runoff from the developed site will sheet flow from the landscape and hardscape and be routed in surface swales to storm inlets. Storm sewer pipes daylight to swales and micro detention basins where possible. The upper live work parking lot will have curb openings which allow storm water runoff to daylight into the large landscape area below. Storm water runoff will be attenuated in the site drainage swales. Storm water runoff then flows to two detention basins, one on either side of the primary drainage channel. The storm water runoff will be detained to the historic rate by smaller outflow pipes. When the detention basins are filled to capacity during storm events larger than the 25 year event, the storm water runoff will overtop and sheet flow to the existing drainage path. Storm water runoff leaves the site at DP-1.

DE-02A: Developed basin 02A is the northwestern portion of the site. The proposed basin generally matches the existing basin. Subbasin DE-02A-EX2 is routed to the adjacent drainage swale to the west above the site. A small portion of the backside of the townhomes also will drain to the existing drainage channel. The steep hillside above development will remain undisturbed. The storm water runoff from this basin flows directly to the culvert outlet at DP-2A.

As noted in section EX-02A above, the existing storm sewer pipe appears to direct storm water runoff to the SW. The existing offsite drainage swale near the northwest corner of Vix Park is small, not well defined and is directly adjacent to a residential lot. Because of this, we have proposed the storm sewer pipe be re-routed more southerly, to the south side of the existing berm. The storm water runoff from this new daylight location combines with the current existing flow path in the NW corner of Vix Park, so the existing drainage pattern will be maintained.

DE-02B: Developed basin 02B is the northern portion of the site. Most of the proposed townhomes and the northern portions of the Live / Work are included in this basin. The steep hillside above development will remain undisturbed. Drainage swales will direct the existing runoff to storm inlets. Storm water runoff from the developed

site will sheet flow from the landscape and hardscape and be routed in surface swales to storm inlets. Storm sewer pipes daylight to swales and micro detention basins where possible. Storm water runoff then flows to the detention basin just east of DP-02A. With the development onsite, the sheet flow to the N. Wild Horse street section will be re-routed to the new 18" storm sewer pipe that flows under the improved road and daylights on the north end of Vix Park.

The storm water runoff from the combined DE-02 basin will be detained to the historic rate by a smaller outflow pipe from the detention basin. When the detention basins are filled to capacity during storm events larger than the 25 year event, the storm water runoff will overtop and sheet flow to the existing drainage path. Storm water runoff leaves the site at DP-2.

DE-03: Developed basin 03 is the southern portion of the site. The hillside west of the development will remain undisturbed. The empty nester portion of the site development is within this basin. Storm water runoff from the developed site will sheet flow on the landscape and hardscape areas and be routed in surface swales to storm inlets. Storm water runoff then flows to the site detention basin. The storm water runoff will be detained to the historic rate by a smaller outflow pipe. When the detention basins are filled to capacity during storm events larger than the 25 year event, the storm water runoff will overtop and sheet flow to the existing drainage path. Storm water runoff leaves the site at DP-3.

2.3. Hydrologic Analysis Methods & Assumptions

The smaller onsite and offsite drainage basins were analyzed using the Rational Method (Equation 1) since the basin areas are less than 90 acres.

Equation 1: $Q = C^* I * A$

Q = Runoff Flow Rate (cfs); C = Runoff Coefficient

I = Rainfall Intensity (in/hr); A= Area of Basin (acres)

The runoff coefficient (C) is a variable that represents the ratio of runoff to rainfall volumes during a storm event. The determination of C mainly depends on the soil type, watershed impervious and storm event frequency. Each drainage basin was studied to determine the percent of impervious area.

Each basin's total or effective percent impervious area was used to establish a weighted runoff coefficient. The Mile High Flood District (MHFD), [formerly the Urban Drainage Flood Control District (UDFCD)] out of Denver, CO has developed runoff coefficient tables, which are based on the soil type, percent impervious, and the storm event. The C factor tables are included for reference in Appendix A of this report. This table was used to determine the corresponding 25-year weighted average runoff coefficients based on a Type C hydrologic soil classification.

The design rainfall duration used in the Rational Method is referred to as the time of concentration. The time of concentration is the cumulative travel time, including overland flow and channelized flow, for runoff to get from the furthest point upstream of a basin to a designated design point. The time of concentration for the existing drainage basins was calculated using the TR-55 method and varies from approximately 17-30 minutes. The majority of the proposed sub-basins Tc was assumed to be equal to 10 minutes. This is appropriate for basins that are not 100% impervious and have landscape areas and drainage swales. The Tc was assumed equal to 5 minutes for the proposed sub-basins that are close to 100% impervious without landscape swales.

2.4. Hydraulic Analysis Methods & Assumptions

Storm water runoff is routed on the surface via sheet flow and in drainage swales, and is then routed in storm sewer pipes which daylight to the surface. The stormnet model includes the storm sewer pipes and drainage swales which are hydrodynamically modeled through the site.

The table below is included for general pipe sizing onsite. The gravity storm pipes were sized using Manning's Equation (Equation 2).

Equation 2: $Q = 1.49/n * R2/3 * A * S0.5$

Q = Runoff Flow Rate (cfs); n = Manning's Roughness Coefficient

R = Hydraulic Radius (ft); A= Flow Area (sf), S = Channel Slope (ft/ft)

The hydraulic capacity calculations have been separated by standard pipe sizes for site storm water drainage with a minimum 2% slope. The pipes onsite collect storm water from small subareas within the larger drainage basins. The approximate maximum capacity of each size storm pipe is summarized in Table 1 below.

Table 1: Hydraulic Pipe capacity

Pipe Size (IN)	Pipe Material	Manning's n	Slope	Capacity (CFS)
6	Solid PVC	0.012	2.00%	1.00
8	Solid PVC	0.012	2.00%	2.18
12	ADS N12	0.012	2.00%	6.35
18	ADS N12	0.012	2.00%	17.15

2.5. Existing Drainage Channel 100 yer Q.

SE prepared a simple HEC-RAS model to analyze the 100 year flow depth in the primary drainage channel onsite. We imported the existing aerial topography terrain data, created a flowline, bank, and defined cross sections for the length of the channel across the site. We then performed a steady flow analysis at the estimated 100 year Q of 130 cfs.

The results show that the existing cross section will safely convey the 130 CFS flow within the existing drainage channel. On the upper end of the channel, above the site development, the drainage channel is deep and well defined. South of the Live / Work, the channel is not as deep and has adjoining grade north of the north bank that is closer to the flow line elevation. The cross sections 348, 261, & 167 show the 130 CFS water surface elevation is higher than the grade on the right overbank. Because the channel does not overtop this area should not actually have storm runoff from the large offsite basin.

The proposed grading will fill in these adjoining low areas and increase the bank height to further define the primary drainage channel. This will ensure that the 100 year flow is contained in the existing channel. The building finish floor elevations and finish grade are also set higher than the adjacent top of bank elevation. The HEC-RAS output results are included in Appendix A.

3. Utilities:

The existing site utilities are shown on the existing condition base map. Will serve letters have been requested from all the utility providers. Electric, gas, and telephone utilities provided will serve letters and have capacity to serve this site. The Town provides potable water, sanitary sewer and irrigation water which have the capacity to serve this site. Proposed utility improvements are discussed here and are shown on the Civil utility sheets. Will serve letters received were provided for the Final Plan review and are included again in Appendix B.

3.1. Potable Water:

The Town of New Castle water system serves CVR. An existing 10" main is under N. Wild Horse Drive. Existing water main lines are stubbed at two locations along the eastern boundary of CVR from the adjacent Lakota subdivision.

Following Final Plan approval during final plan design, the applicant has coordinated the water main connection with Town Staff. Recorded utility easement documents for water main extension on the offsite adjoining properties have not been found. The applicant coordinated with the adjacent property owners requesting a utility easement. At this point the applicant has not been able to obtain the necessary easements. The town will need to assist in obtaining the necessary easements from the adjoining property owner(s).

Connection to the water main lines east of this site are required as we understand this site will be served in the Town's upper pressure zone. When easements have been obtained the applicant will extend a 10" water main from Lakota and routed through the development to N. Wild Horse. The applicant will install pressure reducing valves at the connection to the existing water main in N. Wild Horse Drive. The water main line will have good pressures as the site is on the low elevation of the upper pressure zone. The site will have good flow from a 10" main line along with a second parallel 8" main line. Further design and modeling will be coordinated with the Town Engineer as necessary during the final plan approval process.

The water main line alignment, water valves, fire hydrants, and water service locations are shown on the Civil Utility Plans.

3.2. Sanitary Sewer:

The Town of New Castle sanitary sewer system serves CVR. The existing sanitary sewer main line ends where the N. Wild Horse Drive paved road improvements end on the west end of this site.

The sanitary sewer main will be extended from the west end under N. Wild Horse Drive. Sewer Main 'A' will extend from the existing main line under N. Wild Horse and then will extend up through live / work Lot 2 up to the Empty Nester Lot 3. Sewer Main 'B' will extend up the north side of Vista Loop to serve the Townhomes and the north west live work building. The sanitary sewer main line alignment and service locations are shown on the final civil plans.

The developed site is within the Castle Valley Ranch master planned development. We understand per utility mapping that the existing sewer mains have capacity to serve this development. The 8" sanitary sewer main line slopes are 1% minimum and 10% maximum. These slopes are within the standard range for sewer main lines.

Sewer Main 'A' onsite will serve 104 residential units. Sewer Main 'B' onsite will serve 26 residential units.

3.3. Water and Sewer Tap fees:

The table of equivalent units (EQRs) for water and sewer tap fees are outlined in code section 13.20.060. Our estimate of the proposed site's EQRs is summarized in Table 1 below.

TABLE 1 - WATER & SEWER TAP FEES

Unit Type	# Units	EQR/Unit*	# EQRs
Townhome - 3BR	26	1.000	26.000
Empty Nester - 1&2BR	24	0.800	19.200
Live/Work - 1&2BR	80	0.800	64.000
Subtotal =	130		109.2
25% Raw Water Irrigation Reduction =			**81.9**

Per code section 13.38.030(D) the EQRs can be reduced by 25% if we use raw water irrigation for the site landscaping.

3.4. Raw Water Irrigation:

The Town of New Castle raw water irrigation system serves portions of CVR. SE received the 03/28/2023 Irrigation Improvement plans prepared by SGM Inc, which will extend a new 8" irrigation main line on the west side of N. Wild

Horse. We understand that this main line extension is scheduled for construction in September of 2024. SE has coordinated with Town staff during Final Plan Design. We understand that two 4" irrigation service main lines will be stubbed for extension onsite. A 4" C900 DR-14 site irrigation main line with 18-24" depth of bury will extend in the Vista Loop ROW to serve this site.

We understand from the Town Engineer that the irrigation main line under North Wild Horse will be able to provide 450 gpm at 60 psi static. This equals approximately 43 psi at the high end of the 9NWH site. The site landscape design will target a maximum flow rate of around 30 gpm per zone. Booster pumps for site irrigation should not be necessary.

The project is proposing drip, xeriscape, and native landscape areas except in several active use areas as shown on the Landscape site plan. Each parcel will have irrigation services from the site 4" main line. The raw water usage calculations are included in the Landscape Architect calculations in the submittal documents.

3.5. Electric:

New Castle has electric and natural gas service from Xcel Energy. This development is designed to be 100% electric, so natural gas service will not be needed or extended to this site.

SE has requested and received a will serve letter and information from Xcel Energy on the existing electric and gas infrastructure in this area. Only electric main lines will be extended from both directions in N. Wild Horse Drive from the end of the existing CVR development.

The site will have electric main lines extending from the new main line in N. Wild Horse Drive. Electric main line will follow Vista Loop to serv the Empty Nester buildings and the townhomes. An additional main line will extend in between the Live / Work buildings to serve Buildings 1 - 4. The proposed transformer and meter locations are shown on the Utility Plan.

The applicant has reached out to Xcel Energy to receive a final plan review letter. We have not received a response yet. SE will continue to coordinate the Electric design with Xcel Energy. Additional details will be provided when received from Xcel Energy.

3.6. Telephone

SE has requested and has received a will serve letter from Lumen (formally CenturyLink). The existing telephone is at the end of the current development south and west of this site. The proposed telephone main lines will extend from the existing infrastructure and will follow the proposed electric alignment to serve each building. The applicant will continue to coordinate the Telephone main lines with Lumen. Additional details will be provided for the final plan submittal.

3.7. Cable:

SE has requested a will serve letter and information on the existing cable infrastructure from Comcast. We have not received communication back from Comcast. At this point we assume the cable lines will be extended in N. Wild Horse Drive from the end of the site development. The proposed cable lines will extend from the existing infrastructure and will follow the proposed electric alignment to serve each building. The applicant will continue to coordinate the cable service with Comcast. Additional details will be provided as necessary when received.

4. Conclusion

The proposed site has good access to N. Wild Horse Drive which connects to Castle Valley Boulevard and then to the larger road network. The existing utilities are adjacent to the site or can be extended from offsite. The primary offsite drainage basin will be routed through the site following the existing drainage path. Storm water runoff will be routed around and through the site to local detention basins.

If you have any questions or need any additional information, please call.

Sincerely,
SOPRIS ENGINEERING, LLC

John Petaisto, PE
Project Engineer

Yancy Nichol, PE
Principal

APPENDIX-A

Drainage Data & Calculations


CVR-R2 Multi Family
Offsite Drainage Basin
Legend
8500' ELEV.+/-
OS-01:
AREA= 2.97 sq. mi
1,900 AC.+-
5880' ELEV.+/-
CVR-R2 MF SITE +-
241
245
241
240
240
70
Buford Rd
Alder Ave
Castle Valley Blvd
Castle Valley Blvd
New Castle
N
2 mi
Google Earth

USGS
science for a changing world

Study Area Storm Event Runoff Summary for 24 Hour 100 Year Precipitation (TR55)

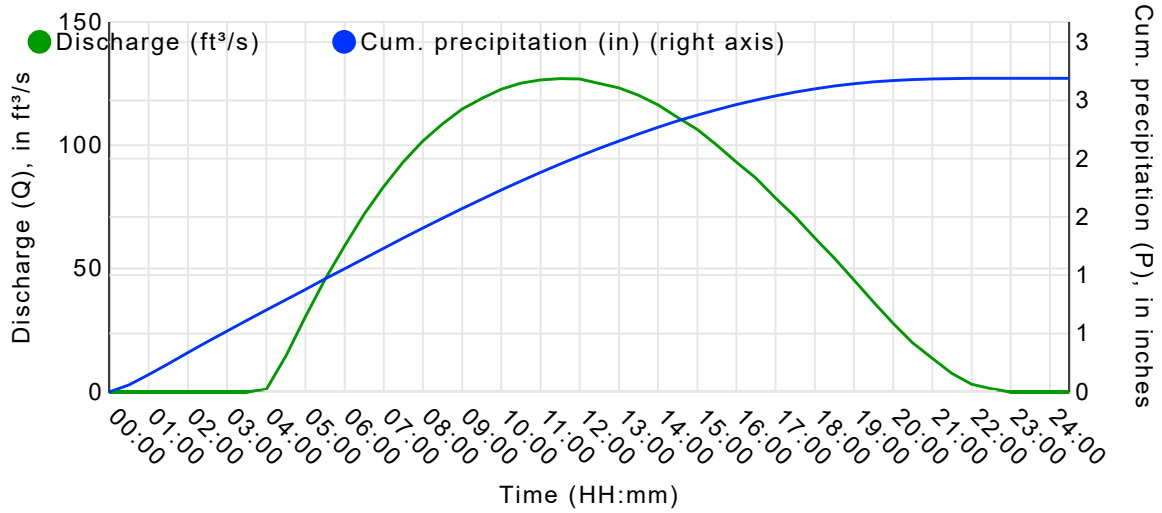
Parameters

Precipitation (inches):	**2.69**
Drainage Area (square miles):	**2.93**
Runoff-Curve Number (dimensionless):	**74.91**

Summary

Peak runoff (cubic feet per second):	**127**
Total infiltration (inches):	**1.93**
Total excess precip (inches):	**0.76**

Runoff hydrograph from 24 Hour 100 Year Precipitation



Tabular Hydrograph

Time	DRNAREA	P	RCN	Duration	Ia	S	dP	P-Ia	Pl	Pe	dPe	Q
00:00	2.93	0.00	74.91	24	0.67	3.35	0	-0.67	0	0	0	0
00:30	2.93	0.06	74.91	24	0.67	3.35	0.0611	-0.609	0.0611	0	0	0
01:00	2.93	0.15	74.91	24	0.67	3.35	0.0855	-0.523	0.0855	0	0	0
01:30	2.93	0.24	74.91	24	0.67	3.35	0.0942	-0.429	0.0942	0	0	0
02:00	2.93	0.34	74.91	24	0.67	3.35	0.0955	-0.334	0.0955	0	0	0
02:30	2.93	0.43	74.91	24	0.67	3.35	0.0939	-0.24	0.0939	0	0	0
03:00	2.93	0.52	74.91	24	0.67	3.35	0.0917	-0.148	0.0917	0	0	0
03:30	2.93	0.61	74.91	24	0.67	3.35	0.0898	-0.0582	0.0898	0	0	0
04:00	2.93	0.70	74.91	24	0.67	3.35	0.089	0.0309	0.0888	0.000282	0.000282	1.07
04:30	2.93	0.79	74.91	24	0.67	3.35	0.0885	0.119	0.0847	0.00411	0.00383	14.5
05:00	2.93	0.88	74.91	24	0.67	3.35	0.0888	0.208	0.0807	0.0122	0.00807	30.5
05:30	2.93	0.97	74.91	24	0.67	3.35	0.089	0.297	0.077	0.0242	0.012	45.5
06:00	2.93	1.06	74.91	24	0.67	3.35	0.0888	0.386	0.0731	0.0399	0.0157	59.2
06:30	2.93	1.14	74.91	24	0.67	3.35	0.0888	0.475	0.0697	0.0589	0.0191	72.1
07:00	2.93	1.23	74.91	24	0.67	3.35	0.088	0.563	0.066	0.0809	0.022	83.2
07:30	2.93	1.32	74.91	24	0.67	3.35	0.0872	0.65	0.0625	0.106	0.0247	93.3
08:00	2.93	1.41	74.91	24	0.67	3.35	0.0858	0.736	0.0589	0.132	0.0269	102
08:30	2.93	1.49	74.91	24	0.67	3.35	0.0842	0.82	0.0555	0.161	0.0287	109
09:00	2.93	1.57	74.91	24	0.67	3.35	0.0826	0.902	0.0523	0.192	0.0303	115
09:30	2.93	1.65	74.91	24	0.67	3.35	0.0804	0.983	0.049	0.223	0.0314	119
10:00	2.93	1.73	74.91	24	0.67	3.35	0.0785	1.06	0.0461	0.255	0.0324	123
10:30	2.93	1.81	74.91	24	0.67	3.35	0.0764	1.14	0.0433	0.289	0.0331	125
11:00	2.93	1.88	74.91	24	0.67	3.35	0.074	1.21	0.0405	0.322	0.0334	126
11:30	2.93	1.95	74.91	24	0.67	3.35	0.0716	1.28	0.038	0.356	0.0336	127
12:00	2.93	2.02	74.91	24	0.67	3.35	0.0691	1.35	0.0356	0.389	0.0335	127
12:30	2.93	2.09	74.91	24	0.67	3.35	0.0662	1.42	0.0331	0.422	0.0331	125
13:00	2.93	2.15	74.91	24	0.67	3.35	0.0635	1.48	0.0309	0.455	0.0326	123
13:30	2.93	2.21	74.91	24	0.67	3.35	0.0605	1.54	0.0287	0.486	0.0318	120
14:00	2.93	2.27	74.91	24	0.67	3.35	0.0573	1.6	0.0265	0.517	0.0307	116
14:30	2.93	2.32	74.91	24	0.67	3.35	0.0538	1.65	0.0244	0.547	0.0294	111
15:00	2.93	2.37	74.91	24	0.67	3.35	0.0506	1.7	0.0224	0.575	0.0281	106
15:30	2.93	2.42	74.91	24	0.67	3.35	0.0468	1.75	0.0204	0.601	0.0264	100
16:00	2.93	2.46	74.91	24	0.67	3.35	0.043	1.79	0.0184	0.626	0.0246	93.2
16:30	2.93	2.50	74.91	24	0.67	3.35	0.0395	1.83	0.0166	0.649	0.0229	86.6
17:00	2.93	2.54	74.91	24	0.67	3.35	0.0355	1.87	0.0147	0.67	0.0208	78.6

Time	DRNAREA	P	RCN	Duration	Ia	S	dP	P-Ia	Pl	Pe	dPe	Q
17:30	2.93	2.57	74.91	24	0.67	3.35	0.0317	1.9	0.013	0.688	0.0187	70.9
18:00	2.93	2.60	74.91	24	0.67	3.35	0.0277	1.93	0.0112	0.705	0.0165	62.4
18:30	2.93	2.62	74.91	24	0.67	3.35	0.0239	1.95	0.0096	0.719	0.0143	54.2
19:00	2.93	2.64	74.91	24	0.67	3.35	0.0199	1.97	0.00791	0.731	0.012	45.3
19:30	2.93	2.66	74.91	24	0.67	3.35	0.0159	1.99	0.00627	0.741	0.0096	36.3
20:00	2.93	2.67	74.91	24	0.67	3.35	0.0121	2	0.00476	0.748	0.00735	27.8
20:30	2.93	2.68	74.91	24	0.67	3.35	0.00861	2.01	0.00337	0.753	0.00524	19.8
21:00	2.93	2.68	74.91	24	0.67	3.35	0.00592	2.02	0.00231	0.757	0.00361	13.6
21:30	2.93	2.69	74.91	24	0.67	3.35	0.00323	2.02	0.00126	0.759	0.00197	7.45
22:00	2.93	2.69	74.91	24	0.67	3.35	0.00134	2.02	0.000524	0.76	0.000821	3.11
22:30	2.93	2.69	74.91	24	0.67	3.35	0.000538	2.02	0.000209	0.76	0.000329	1.24
23:00	2.93	2.69	74.91	24	0.67	3.35	0	2.02	0	0.76	0	0
23:30	2.93	2.69	74.91	24	0.67	3.35	0	2.02	0	0.76	0	0
24:00	2.93	2.69	74.91	24	0.67	3.35	0	2.02	0	0.76	0	0
24:30	2.93	2.69	74.91	24	0.67	3.35	0	2.02	0	0.76	0	0

Citations

Asante, K.O., Artan, G.A., Pervez, S., Bandaragoda, C., and Verdin, J.P., 2008, Technical Manual for the Geospatial Stream Flow Model (GeoSFM): U.S. Geological Survey Open-File Report 2007–1441, 65 p., accessed June 2016 (https://pubs.usgs.gov/of/2007/1441/)

Colorado Department of Natural Resources, 2006, Colorado Floodplain and Stormwater Criteria Manual, Volume 2, 468 p., accessed June 15, 2016 (http://www2.cde.state.co.us/artemis/nrmonos/nr38c862006internet/)

Soil Conservation Service, United States Department of Agriculture, 1986, Urban Hydrology for Small Watersheds, Tech. Release 55, 164 p., accessed October 2017 (https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044171.pdf)

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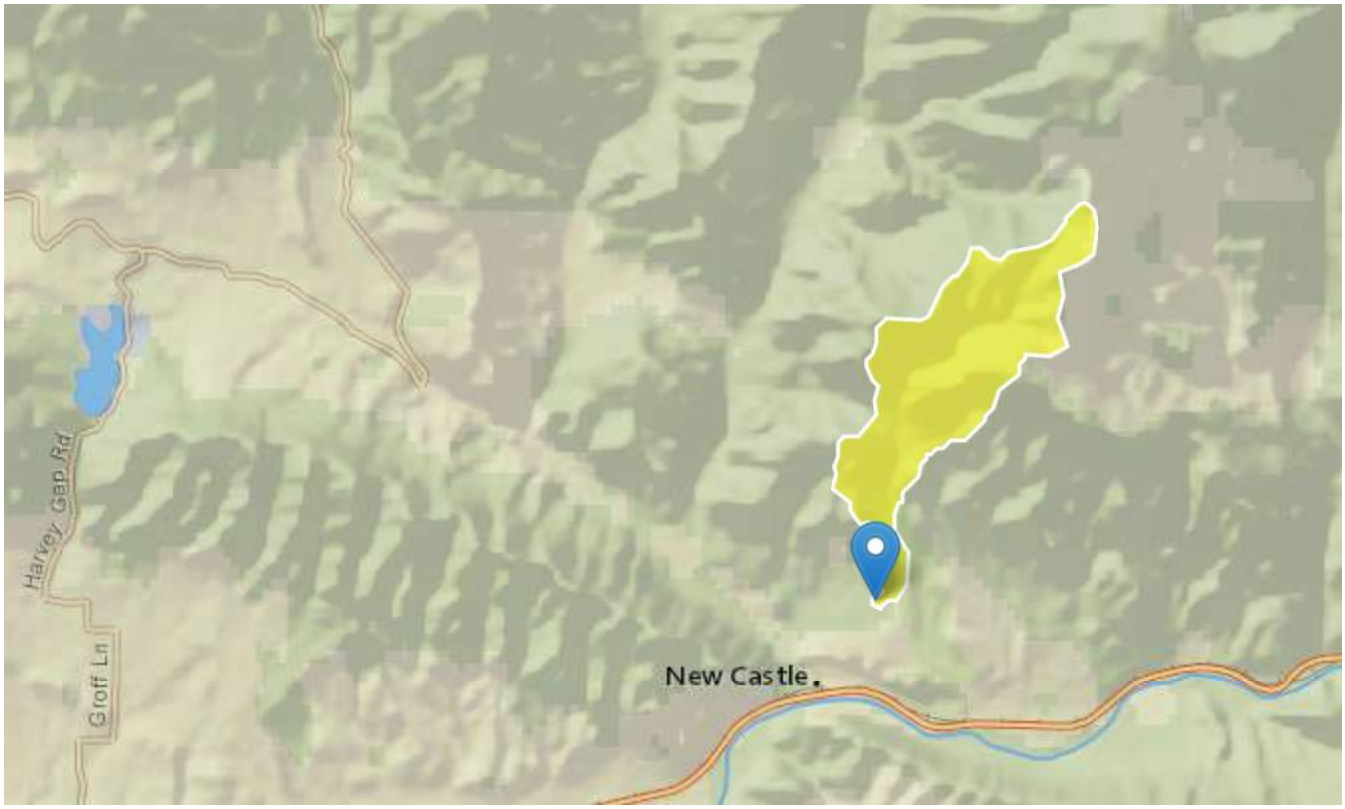
Application Version: 4.16.1

33011-USGS Streamstats Drainage report

Region ID: CO
Workspace ID: CO20230804145829508000
Clicked Point (Latitude, Longitude): 39.58211, -107.52641
Time: 2023-08-04 08:58:50 -0600



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BSLDEM10M	Mean basin slope computed from 10 m DEM	39	percent
CSL1085LFP	Change in elevation divided by length between points 10 and 85 percent of distance along the longest flow path to the basin divide, LFP from 2D grid	525.2	feet per mi
DRNAREA	Area that drains to a point on a stream	2.93	square mile
EL7500	Percent of area above 7500 ft	52	percent

Parameter Code	Parameter Description	Value	Unit
ELEV	Mean Basin Elevation	7380	feet
ELEVMAX	Maximum basin elevation	8560	feet
I24H100Y	Maximum 24-hour precipitation that occurs on average once in 100 years	2.69	inches
I24H2Y	Maximum 24-hour precipitation that occurs on average once in 2 years - Equivalent to precipitation intensity index	1.26	inches
I6H100Y	6-hour precipitation that is expected to occur on average once in 100 years	1.72	inches
I6H2Y	Maximum 6-hour precipitation that occurs on average once in 2 years	0.83	inches
LAT_OUT	Latitude of Basin Outlet	39.582008	degrees
LC11BARE	Percentage of barren from NLCD 2011 class 31	0	percent
LC11CRPHAY	Percentage of cultivated crops and hay, classes 81 and 82, from NLCD 2011	0.2	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	1.8	percent
LC11FOREST	Percentage of forest from NLCD 2011 classes 41-43	84.5	percent
LC11GRASS	Percent of area covered by grassland/herbaceous using 2011 NLCD	0.4	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	2	percent
LC11SHRUB	Percent of area covered by shrubland using 2011 NLCD	12.7	percent
LC11SNOIC	Percent snow and ice from NLCD 2011 class 12	0	percent
LC11WATER	Percent of open water, class 11, from NLCD 2011	0	percent
LC11WETLND	Percentage of wetlands, classes 90 and 95, from NLCD 2011	0	percent
LFPLENGTH	Length of longest flow path	5.21	miles
LONG_OUT	Longitude of Basin Outlet	-107.526397	degrees
MINBELEV	Minimum basin elevation	5830	feet
OUTLETELEV	Elevation of the stream outlet in feet above NAVD88	5835	feet

Parameter Code	Parameter Description	Value	Unit
PRECIP	Mean Annual Precipitation	19.46	inches
RCN	Runoff-curve number as defined by NRCS (http://policy.nrcs.usda.gov /OpenNonWebContent.aspx?content=17758.wba)	74.91	dimensionle
RUNCO_CO	Soil runoff coefficient as defined by Verdin and Gross (2017)	0.47	dimensionle
SSURGOA	Percentage of area of Hydrologic Soil Type A from SSURGO	2.35	percent
SSURGOB	Percentage of area of Hydrologic Soil Type B from SSURGO	13.6	percent
SSURGOC	Percentage of area of Hydrologic Soil Type C from SSURGO	25.6	percent
SSURGOD	Percentage of area of Hydrologic Soil Type D from SSURGO	58.4	percent
STATSCLAY	Percentage of clay soils from STATSGO	25.06	percent
STORNHD	Percent storage (wetlands and waterbodies) determined from 1:24K NHD	0	percent
TOC	Time of concentration in hours	1.4	hours

Peak-Flow Statistics

Peak-Flow Statistics Parameters [52.7 Percent (1.54 square miles) Mountain Region Peak Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.93	square miles	1	1060
BSLDEM10M	Mean Basin Slope from 10m DEM	39	percent	7.6	60.2
PRECIP	Mean Annual Precipitation	19.46	inches	18	47

Peak-Flow Statistics Parameters [47.3 Percent (1.39 square miles) Northwest Region Peak Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.93	square miles	1	5250
EL7500	Percent above 7500 ft	52	percent	0	99
PRECIP	Mean Annual Precipitation	19.46	inches	8	49

Peak-Flow Statistics Flow Report [52.7 Percent (1.54 square miles) Mountain Region Peak Flow]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	ASEp
50-percent AEP flood	19.6	ft^3/s	49
20-percent AEP flood	30.8	ft^3/s	44
10-percent AEP flood	38.6	ft^3/s	41
4-percent AEP flood	50.5	ft^3/s	40
2-percent AEP flood	62.2	ft^3/s	39
1-percent AEP flood	71.3	ft^3/s	36
0.5-percent AEP flood	79.7	ft^3/s	36
0.2-percent AEP flood	98.6	ft^3/s	33

Peak-Flow Statistics Flow Report [47.3 Percent (1.39 square miles) Northwest Region Peak Flow]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	ASEp
50-percent AEP flood	18.4	ft^3/s	113
20-percent AEP flood	32.5	ft^3/s	88
10-percent AEP flood	44.9	ft^3/s	79
4-percent AEP flood	63.8	ft^3/s	74
2-percent AEP flood	81.5	ft^3/s	74
1-percent AEP flood	101	ft^3/s	75
0.5-percent AEP flood	122	ft^3/s	76
0.2-percent AEP flood	160	ft^3/s	79

Peak-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
50-percent AEP flood	19	ft^3/s
20-percent AEP flood	31.6	ft^3/s
10-percent AEP flood	41.6	ft^3/s
4-percent AEP flood	56.8	ft^3/s
2-percent AEP flood	71.3	ft^3/s
1-percent AEP flood	85.4	ft^3/s
0.5-percent AEP flood	99.7	ft^3/s
0.2-percent AEP flood	128	ft^3/s

Peak-Flow Statistics Citations

Capesius, J.P., and Stephens, V. C.,2009, Regional Regression Equations for Estimation of Natural Streamflow Statistics in Colorado: U. S. Geological Survey Scientific Investigations Report 2009-5136, 32 p. (http://pubs.usgs.gov/sir/2009/5136/)

Flood-Volume Statistics

Flood-Volume Statistics Parameters [52.7 Percent (1.54 square miles) Mountain Region Max Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.93	square miles	1	1060
PRECIP	Mean Annual Precipitation	19.46	inches	18	47

Flood-Volume Statistics Parameters [47.3 Percent (1.39 square miles) Northwest Region Max Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.93	square miles	5	5250
PRECIP	Mean Annual Precipitation	19.46	inches	8	49
EL7500	Percent above 7500 ft	52	percent	0	99

Flood-Volume Statistics Flow Report [52.7 Percent (1.54 square miles) Mountain Region Max Flow]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	ASEp
7 Day 2 Year Maximum	11.9	ft^3/s	46
7 Day 10 Year Maximum	20.5	ft^3/s	35
7 Day 50 Year Maximum	30.3	ft^3/s	31

Flood-Volume Statistics Disclaimers [47.3 Percent (1.39 square miles) Northwest Region Max Flow]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Flood-Volume Statistics Flow Report [47.3 Percent (1.39 square miles) Northwest Region Max Flow]

Statistic	Value	Unit
7 Day 2 Year Maximum	1.22	ft^3/s
7 Day 10 Year Maximum	3.74	ft^3/s
7 Day 50 Year Maximum	9.55	ft^3/s

Flood-Volume Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Maximum	6.85	ft^3/s
7 Day 10 Year Maximum	12.6	ft^3/s
7 Day 50 Year Maximum	20.5	ft^3/s

Flood-Volume Statistics Citations

Capesius, J.P., and Stephens, V. C.,2009, Regional Regression Equations for Estimation of Natural Streamflow Statistics in Colorado: U. S. Geological Survey Scientific Investigations Report 2009-5136, 32 p. (http://pubs.usgs.gov/sir/2009/5136/)

Low-Flow Statistics

Low-Flow Statistics Parameters [52.7 Percent (1.54 square miles) Mountain Region Min Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.93	square miles	1	1060
PRECIP	Mean Annual Precipitation	19.46	inches	18	47
ELEV	Mean Basin Elevation	7380	feet	8600	12000

Low-Flow Statistics Parameters [47.3 Percent (1.39 square miles) Northwest Region Min Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.93	square miles	5	5250
ELEV	Mean Basin Elevation	7380	feet	6880	10480

Low-Flow Statistics Disclaimers [52.7 Percent (1.54 square miles) Mountain Region Min Flow]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [52.7 Percent (1.54 square miles) Mountain Region Min Flow]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0166	ft^3/s
7 Day 10 Year Low Flow	0.00355	ft^3/s
7 Day 50 Year Low Flow	0.0143	ft^3/s

Low-Flow Statistics Disclaimers [47.3 Percent (1.39 square miles) Northwest Region Min Flow]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [47.3 Percent (1.39 square miles) Northwest Region Min Flow]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0586	ft^3/s
7 Day 10 Year Low Flow	0.0217	ft^3/s
7 Day 50 Year Low Flow	0.0156	ft^3/s

Low-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0365	ft^3/s
7 Day 10 Year Low Flow	0.0121	ft^3/s
7 Day 50 Year Low Flow	0.0149	ft^3/s

Low-Flow Statistics Citations

Capesius, J.P., and Stephens, V. C.,2009, Regional Regression Equations for Estimation of Natural Streamflow Statistics in Colorado: U. S. Geological Survey Scientific Investigations Report 2009-5136, 32 p. (http://pubs.usgs.gov/sir/2009/5136/)

Flow-Duration Statistics

Flow-Duration Statistics Parameters [52.7 Percent (1.54 square miles) Mountain Region Flow Duration]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.93	square miles	1	1060
PRECIP	Mean Annual Precipitation	19.46	inches	18	47

Flow-Duration Statistics Parameters [47.3 Percent (1.39 square miles) Northwest Region Flow Duration]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.93	square miles	1	5250
PRECIP	Mean Annual Precipitation	19.46	inches	8	49

Flow-Duration Statistics Flow Report [52.7 Percent (1.54 square miles) Mountain Region Flow Duration]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	ASEp
10 Percent Duration	4.34	ft^3/s	45
25 Percent Duration	1.16	ft^3/s	55
50 Percent Duration	0.488	ft^3/s	55
75 Percent Duration	0.267	ft^3/s	64
90 Percent Duration	0.127	ft^3/s	85

Flow-Duration Statistics Flow Report [47.3 Percent (1.39 square miles) Northwest Region Flow Duration]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	ASEp
10 Percent Duration	0.802	ft^3/s	73
25 Percent Duration	0.267	ft^3/s	77
50 Percent Duration	0.119	ft^3/s	83
75 Percent Duration	0.0525	ft^3/s	100
90 Percent Duration	0.0231	ft^3/s	154

Flow-Duration Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
10 Percent Duration	2.67	ft^3/s
25 Percent Duration	0.737	ft^3/s
50 Percent Duration	0.313	ft^3/s
75 Percent Duration	0.165	ft^3/s
90 Percent Duration	0.0778	ft^3/s

Flow-Duration Statistics Citations

Capesius, J.P., and Stephens, V. C.,2009, Regional Regression Equations for Estimation

of Natural Streamflow Statistics in Colorado: U. S. Geological Survey Scientific Investigations Report 2009-5136, 32 p. (http://pubs.usgs.gov/sir/2009/5136/)

Annual Flow Statistics

Annual Flow Statistics Parameters [52.7 Percent (1.54 square miles) Mountain Region Mean Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.93	square miles	1	1060
PRECIP	Mean Annual Precipitation	19.46	inches	18	47

Annual Flow Statistics Parameters [47.3 Percent (1.39 square miles) Northwest Region Mean Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.93	square miles	1	5250
PRECIP	Mean Annual Precipitation	19.46	inches	8	49

Annual Flow Statistics Flow Report [52.7 Percent (1.54 square miles) Mountain Region Mean Flow]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	ASEp
Mean Annual Flow	2.02	ft^3/s	33

Annual Flow Statistics Flow Report [47.3 Percent (1.39 square miles) Northwest Region Mean Flow]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	ASEp
Mean Annual Flow	0.554	ft^3/s	55

Annual Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit

Statistic	Value	Unit
Mean Annual Flow	1.33	ft^3/s

Annual Flow Statistics Citations

Capesius, J.P., and Stephens, V. C.,2009, Regional Regression Equations for Estimation of Natural Streamflow Statistics in Colorado: U. S. Geological Survey Scientific Investigations Report 2009-5136, 32 p. (http://pubs.usgs.gov/sir/2009/5136/)

Monthly Flow Statistics

Monthly Flow Statistics Parameters [52.7 Percent (1.54 square miles) Mountain Region Mean Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.93	square miles	1	1060
PRECIP	Mean Annual Precipitation	19.46	inches	18	47

Monthly Flow Statistics Parameters [47.3 Percent (1.39 square miles) Northwest Region Mean Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.93	square miles	1	5250
PRECIP	Mean Annual Precipitation	19.46	inches	8	49

Monthly Flow Statistics Flow Report [52.7 Percent (1.54 square miles) Mountain Region Mean Flow]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	ASEp
January Mean Flow	0.287	ft^3/s	50
February Mean Flow	0.274	ft^3/s	51
March Mean Flow	0.285	ft^3/s	49
April Mean Flow	0.497	ft^3/s	44
May Mean Flow	4.96	ft^3/s	46

Statistic	Value	Unit	ASEp
June Mean Flow	11.3	ft^3/s	46
July Mean Flow	2.93	ft^3/s	76
August Mean Flow	1.35	ft^3/s	80
September Mean Flow	0.744	ft^3/s	59
October Mean Flow	0.519	ft^3/s	45
November Mean Flow	0.409	ft^3/s	46
December Mean Flow	0.336	ft^3/s	47

Monthly Flow Statistics Flow Report [47.3 Percent (1.39 square miles) Northwest Region Mean Flow]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	ASEp
January Mean Flow	0.137	ft^3/s	85
February Mean Flow	0.118	ft^3/s	77
March Mean Flow	0.153	ft^3/s	68
April Mean Flow	0.415	ft^3/s	84
May Mean Flow	1.96	ft^3/s	71
June Mean Flow	0.7	ft^3/s	80
July Mean Flow	1	ft^3/s	75
August Mean Flow	0.822	ft^3/s	90
September Mean Flow	0.642	ft^3/s	104
October Mean Flow	0.267	ft^3/s	94
November Mean Flow	0.159	ft^3/s	83
December Mean Flow	0.138	ft^3/s	79

Monthly Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
January Mean Flow	0.216	ft^3/s
February Mean Flow	0.2	ft^3/s
March Mean Flow	0.223	ft^3/s

Statistic	Value	Unit
April Mean Flow	0.458	ft^3/s
May Mean Flow	3.54	ft^3/s
June Mean Flow	6.28	ft^3/s
July Mean Flow	2.02	ft^3/s
August Mean Flow	1.1	ft^3/s
September Mean Flow	0.696	ft^3/s
October Mean Flow	0.4	ft^3/s
November Mean Flow	0.291	ft^3/s
December Mean Flow	0.242	ft^3/s

Monthly Flow Statistics Citations

Capesius, J.P., and Stephens, V. C.,2009, Regional Regression Equations for Estimation of Natural Streamflow Statistics in Colorado: U. S. Geological Survey Scientific Investigations Report 2009-5136, 32 p. (http://pubs.usgs.gov/sir/2009/5136/)

Bankfull Statistics

Bankfull Statistics Parameters [81.3 Percent (2.38 square miles) Rocky Mountain System D Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.93	square miles	0.15444	9730.1061

Bankfull Statistics Parameters [81.3 Percent (2.38 square miles) Southern Rocky Mountains P Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.93	square miles	1.540539	9729.943938

Bankfull Statistics Parameters [18.7 Percent (0.548 square miles) Intermontane Plateau D Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.93	square miles	3.62934	7579.9152

Bankfull Statistics Parameters [18.7 Percent (0.548 square miles) Colorado Plateau P Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.93	square miles	3.621618	3649.980906

Bankfull Statistics Parameters [USA Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.93	square miles	0.07722	59927.7393

Bankfull Statistics Flow Report [81.3 Percent (2.38 square miles) Rocky Mountain System D Bieger 2015]

Statistic	Value	Unit
Bieger_D_channel_width	9.82	ft
Bieger_D_channel_depth	1.19	ft
Bieger_D_channel_cross_sectional_area	8.68	ft^2

Bankfull Statistics Flow Report [81.3 Percent (2.38 square miles) Southern Rocky Mountains P Bieger 2015]

Statistic	Value	Unit
Bieger_P_channel_width	12.1	ft
Bieger_P_channel_depth	0.935	ft
Bieger_P_channel_cross_sectional_area	10.1	ft^2

Bankfull Statistics Disclaimers [18.7 Percent (0.548 square miles) Intermontane Plateau D Bieger 2015]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Bankfull Statistics Flow Report [18.7 Percent (0.548 square miles) Intermontane Plateau D Bieger 2015]

Statistic	Value	Unit

Statistic	Value	Unit
Bieger_D_channel_width	8.44	ft
Bieger_D_channel_depth	0.447	ft
Bieger_D_channel_cross_sectional_area	3.45	ft^2

Bankfull Statistics Disclaimers [18.7 Percent (0.548 square miles) Colorado Plateau P Bieger 2015]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Bankfull Statistics Flow Report [18.7 Percent (0.548 square miles) Colorado Plateau P Bieger 2015]

Statistic	Value	Unit
Bieger_P_channel_width	6.28	ft
Bieger_P_channel_depth	0.217	ft
Bieger_P_channel_cross_sectional_area	1.39	ft^2

Bankfull Statistics Flow Report [USA Bieger 2015]

Statistic	Value	Unit
Bieger_USA_channel_width	18.1	ft
Bieger_USA_channel_depth	1.52	ft
Bieger_USA_channel_cross_sectional_area	30.5	ft^2

Bankfull Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
Bieger_D_channel_width	9.56	ft
Bieger_D_channel_depth	1.05	ft
Bieger_D_channel_cross_sectional_area	7.7	ft^2
Bieger_P_channel_width	11	ft
Bieger_P_channel_depth	0.801	ft
Bieger_P_channel_cross_sectional_area	8.47	ft^2

Statistic	Value	Unit
Bieger_USA_channel_width	18.1	ft
Bieger_USA_channel_depth	1.52	ft
Bieger_USA_channel_cross_sectional_area	30.5	ft^2

Bankfull Statistics Citations

Bieger, Katrin; Rathjens, Hendrik; Allen, Peter M.; and Arnold, Jeffrey G.,2015, Development and Evaluation of Bankfull Hydraulic Geometry Relationships for the Physiographic Regions of the United States, Publications from USDA-ARS / UNL Faculty, 17p. (https://digitalcommons.unl.edu/usdaarsfacpub /1515?utm_source=digitalcommons.unl.edu%2Fusdaarsfacpub%2F1515& utm_medium=PDF&utm_campaign=PDFCoverPages)

Maximum Probable Flood Statistics

Maximum Probable Flood Statistics Parameters [Crippen Bue Region 13]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.93	square miles	0.1	10000

Maximum Probable Flood Statistics Flow Report [Crippen Bue Region 13]

Statistic	Value	Unit
Maximum Flood Crippen Bue Regional	12900	ft^3/s

Maximum Probable Flood Statistics Citations

Crippen, J.R. and Bue, Conrad D.1977, Maximum Floodflows in the Conterminous United States, Geological Survey Water-Supply Paper 1887, 52p. (https://pubs.usgs.gov /wsp/1887/report.pdf)

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Application Version: 4.16.1

StreamStats Services Version: 1.2.22

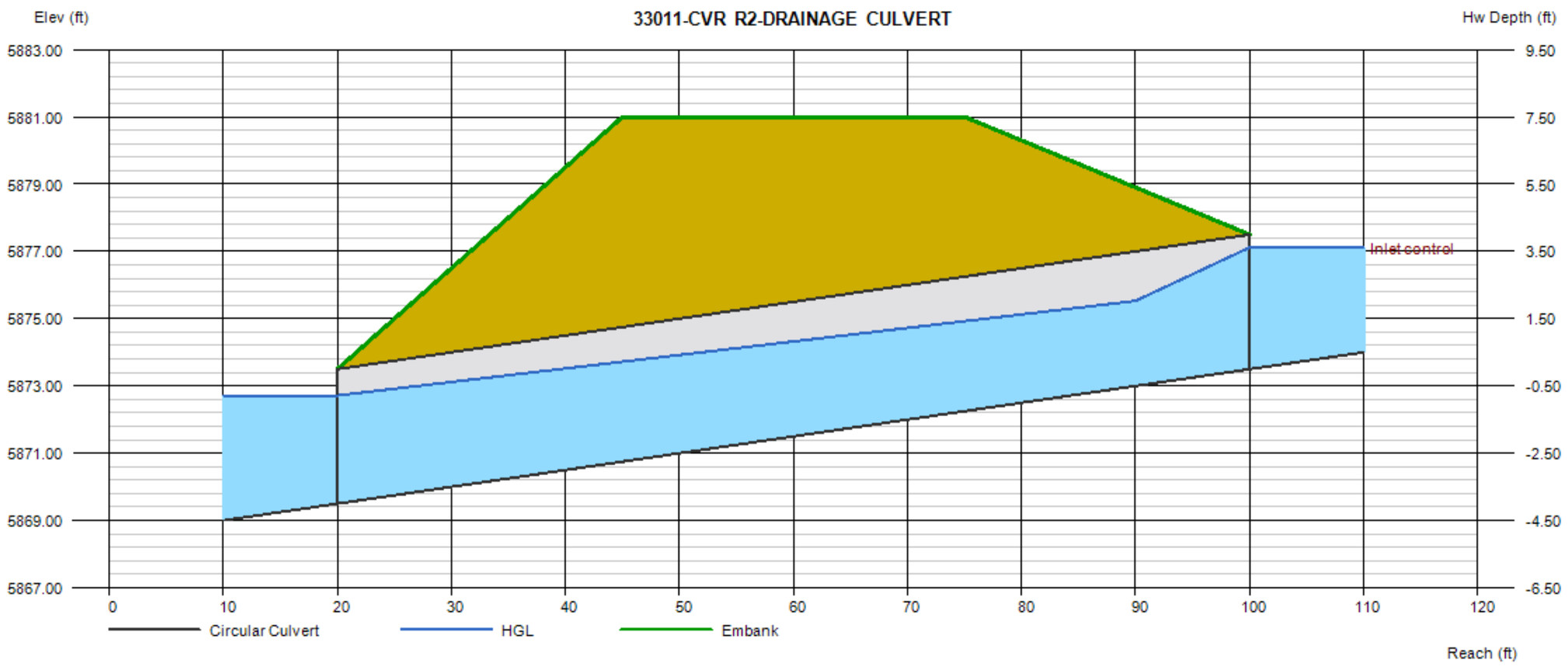
NSS Services Version: 2.2.1

Culvert Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Friday, Mar 15 2024

33011-CVR R2-DRAINAGE CULVERT

Invert Elev Dn (ft)	= 5869.50	**Calculations**	
Pipe Length (ft)	= 80.00	Qmin (cfs)	= 0.00
Slope (%)	= 5.00	Qmax (cfs)	= 200.00
Invert Elev Up (ft)	= 5873.50	Tailwater Elev (ft)	= (dc+D)/2
Rise (in)	= 48.0		
Shape	= Circular	**Highlighted**	
Span (in)	= 48.0	Qtotal (cfs)	= 130.00
No. Barrels	= 2	Qpipe (cfs)	= 130.00
n-Value	= 0.012	Qovertop (cfs)	= 0.00
Culvert Type	= Circular Culvert	Veloc Dn (ft/s)	= 6.00
Culvert Entrance	= Smooth tapered inlet throat	Veloc Up (ft/s)	= 8.13
Coeff. K,M,c,Y,k	= 0.534, 0.555, 0.0196, 0.9, 0.2	HGL Dn (ft)	= 5872.72
		HGL Up (ft)	= 5875.93
Embankment		Hw Elev (ft)	= 5877.12
Top Elevation (ft)	= 5881.00	Hw/D (ft)	= 0.90
Top Width (ft)	= 30.00	Flow Regime	= Inlet Control
Crest Width (ft)	= 30.00		

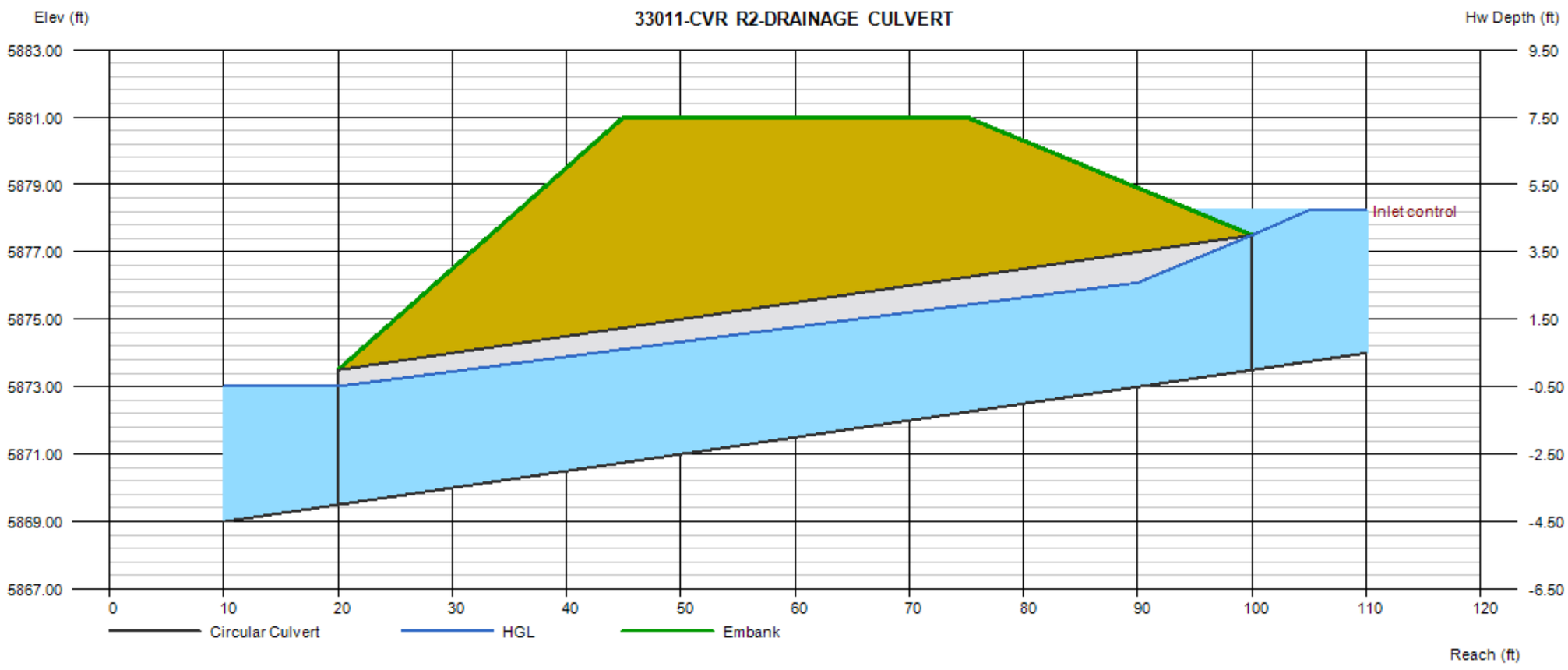


Culvert Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Friday, Mar 15 2024

33011-CVR R2-DRAINAGE CULVERT

Invert Elev Dn (ft)	= 5869.50	**Calculations**	
Pipe Length (ft)	= 80.00	Qmin (cfs)	= 0.00
Slope (%)	= 5.00	Qmax (cfs)	= 200.00
Invert Elev Up (ft)	= 5873.50	Tailwater Elev (ft)	= (dc+D)/2
Rise (in)	= 48.0		
Shape	= Circular	**Highlighted**	
Span (in)	= 48.0	Qtotal (cfs)	= 200.00
No. Barrels	= 2	Qpipe (cfs)	= 200.00
n-Value	= 0.012	Qovertop (cfs)	= 0.00
Culvert Type	= Circular Culvert	Veloc Dn (ft/s)	= 8.55
Culvert Entrance	= Smooth tapered inlet throat	Veloc Up (ft/s)	= 9.80
Coeff. K,M,c,Y,k	= 0.534, 0.555, 0.0196, 0.9, 0.2	HGL Dn (ft)	= 5873.01
		HGL Up (ft)	= 5876.53
Embankment		Hw Elev (ft)	= 5878.24
Top Elevation (ft)	= 5881.00	Hw/D (ft)	= 1.19
Top Width (ft)	= 30.00	Flow Regime	= Inlet Control
Crest Width (ft)	= 30.00		



Hydrologic Soil Group—Rifle Area, Colorado, Parts of Garfield and Mesa Counties
(33011-CVR R2-NRCS SOILS)



Map Scale: 1:4,750 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

Hydrologic Soil Group—Rifle Area, Colorado, Parts of Garfield and Mesa Counties
(33011-CVR R2-NRCS SOILS)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

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

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

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

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
5	Ascalon fine sandy loam, 1 to 6 percent slopes	B	0.4	0.4%
6	Ascalon fine sandy loam, 6 to 12 percent slopes	B	20.0	17.1%
31	Heldt clay loam, 12 to 25 percent slopes	C	11.6	9.9%
35	Ildefonso-Lazear complex, 6 to 65 percent slopes	A	14.2	12.1%
58	Potts-Ildefonso complex, 12 to 25 percent slopes	C	0.3	0.2%
66	Torriorthents-Camborthids-Rock outcrop complex, steep	D	6.2	5.4%
67	Torriorthents-Rock outcrop complex, steep	D	13.2	11.3%
68	Vale silt loam, 3 to 6 percent slopes	C	2.1	1.8%
69	Vale silt loam, 6 to 12 percent slopes	C	48.7	41.7%
Totals for Area of Interest			**116.7**	**100.0%**

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

NOAA Atlas 14, Volume 8, Version 2
Location name: New Castle, Colorado, USA*
Latitude: 39.5817°, Longitude: -107.5268°
Elevation: 5830 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**1.51** (1.18-1.93)	**1.98** (1.55-2.54)	**2.78** (2.16-3.59)	**3.47** (2.68-4.49)	**4.44** (3.32-6.02)	**5.22** (3.80-7.19)	**6.01** (4.25-8.53)	**6.85** (4.63-10.0)	**7.99** (5.20-12.1)	**8.88** (5.62-13.6)
10-min	**1.10** (0.864-1.42)	**1.45** (1.13-1.86)	**2.03** (1.58-2.62)	**2.54** (1.96-3.29)	**3.25** (2.44-4.41)	**3.82** (2.79-5.26)	**4.40** (3.11-6.25)	**5.02** (3.39-7.34)	**5.85** (3.80-8.84)	**6.50** (4.12-9.98)
15-min	**0.896** (0.700-1.15)	**1.18** (0.920-1.52)	**1.66** (1.29-2.13)	**2.06** (1.60-2.67)	**2.64** (1.98-3.59)	**3.10** (2.27-4.28)	**3.58** (2.53-5.08)	**4.08** (2.76-5.97)	**4.76** (3.09-7.19)	**5.28** (3.34-8.12)
30-min	**0.576** (0.450-0.738)	**0.768** (0.598-0.986)	**1.08** (0.842-1.39)	**1.35** (1.04-1.74)	**1.71** (1.28-2.31)	**2.00** (1.45-2.74)	**2.28** (1.61-3.23)	**2.58** (1.74-3.76)	**2.97** (1.93-4.48)	**3.27** (2.07-5.02)
60-min	**0.374** (0.292-0.480)	**0.476** (0.371-0.611)	**0.643** (0.500-0.829)	**0.784** (0.606-1.02)	**0.980** (0.731-1.32)	**1.13** (0.826-1.55)	**1.29** (0.907-1.82)	**1.45** (0.976-2.11)	**1.66** (1.08-2.50)	**1.82** (1.15-2.80)
2-hr	**0.230** (0.182-0.292)	**0.284** (0.223-0.361)	**0.372** (0.292-0.475)	**0.447** (0.349-0.573)	**0.551** (0.416-0.735)	**0.633** (0.466-0.858)	**0.716** (0.509-0.999)	**0.801** (0.547-1.15)	**0.916** (0.601-1.36)	**1.00** (0.642-1.52)
3-hr	**0.178** (0.141-0.225)	**0.211** (0.167-0.266)	**0.265** (0.209-0.336)	**0.312** (0.245-0.397)	**0.378** (0.288-0.503)	**0.431** (0.320-0.582)	**0.486** (0.348-0.675)	**0.543** (0.373-0.778)	**0.621** (0.410-0.918)	**0.682** (0.438-1.02)
6-hr	**0.113** (0.091-0.141)	**0.130** (0.104-0.162)	**0.157** (0.125-0.197)	**0.181** (0.144-0.229)	**0.216** (0.166-0.283)	**0.244** (0.183-0.325)	**0.272** (0.197-0.373)	**0.302** (0.210-0.427)	**0.343** (0.229-0.501)	**0.376** (0.244-0.556)
12-hr	**0.069** (0.056-0.086)	**0.080** (0.064-0.099)	**0.097** (0.078-0.121)	**0.112** (0.090-0.140)	**0.134** (0.104-0.173)	**0.151** (0.114-0.199)	**0.169** (0.123-0.228)	**0.187** (0.131-0.261)	**0.212** (0.143-0.305)	**0.232** (0.152-0.339)
24-hr	**0.042** (0.034-0.052)	**0.049** (0.040-0.060)	**0.059** (0.048-0.073)	**0.069** (0.056-0.085)	**0.082** (0.064-0.106)	**0.093** (0.071-0.121)	**0.104** (0.077-0.139)	**0.116** (0.082-0.160)	**0.132** (0.090-0.188)	**0.145** (0.096-0.209)
2-day	**0.025** (0.021-0.030)	**0.029** (0.024-0.035)	**0.035** (0.029-0.042)	**0.040** (0.033-0.049)	**0.048** (0.038-0.061)	**0.054** (0.042-0.070)	**0.061** (0.046-0.081)	**0.068** (0.049-0.093)	**0.078** (0.054-0.109)	**0.086** (0.057-0.122)
3-day	**0.018** (0.015-0.022)	**0.021** (0.017-0.026)	**0.026** (0.021-0.031)	**0.030** (0.025-0.036)	**0.036** (0.029-0.045)	**0.041** (0.031-0.052)	**0.045** (0.034-0.060)	**0.051** (0.036-0.068)	**0.058** (0.040-0.080)	**0.063** (0.042-0.089)
4-day	**0.015** (0.012-0.018)	**0.017** (0.014-0.021)	**0.021** (0.017-0.025)	**0.024** (0.020-0.029)	**0.029** (0.023-0.036)	**0.033** (0.025-0.042)	**0.037** (0.027-0.048)	**0.040** (0.029-0.054)	**0.046** (0.032-0.063)	**0.050** (0.034-0.070)
7-day	**0.010** (0.008-0.012)	**0.011** (0.009-0.014)	**0.014** (0.011-0.016)	**0.016** (0.013-0.019)	**0.019** (0.015-0.023)	**0.021** (0.016-0.026)	**0.023** (0.017-0.030)	**0.025** (0.018-0.034)	**0.029** (0.020-0.039)	**0.031** (0.021-0.043)
10-day	**0.008** (0.007-0.009)	**0.009** (0.007-0.011)	**0.011** (0.009-0.013)	**0.012** (0.010-0.014)	**0.014** (0.011-0.017)	**0.016** (0.012-0.020)	**0.017** (0.013-0.022)	**0.019** (0.014-0.025)	**0.021** (0.015-0.029)	**0.023** (0.016-0.032)
20-day	**0.005** (0.004-0.006)	**0.006** (0.005-0.007)	**0.007** (0.006-0.008)	**0.008** (0.006-0.009)	**0.009** (0.007-0.011)	**0.010** (0.008-0.012)	**0.011** (0.008-0.013)	**0.012** (0.008-0.015)	**0.013** (0.009-0.017)	**0.014** (0.009-0.019)
30-day	**0.004** (0.003-0.005)	**0.005** (0.004-0.005)	**0.005** (0.005-0.006)	**0.006** (0.005-0.007)	**0.007** (0.006-0.008)	**0.008** (0.006-0.009)	**0.008** (0.006-0.011)	**0.009** (0.007-0.012)	**0.010** (0.007-0.013)	**0.011** (0.007-0.014)
45-day	**0.003** (0.003-0.004)	**0.004** (0.003-0.004)	**0.004** (0.004-0.005)	**0.005** (0.004-0.006)	**0.006** (0.005-0.007)	**0.006** (0.005-0.008)	**0.007** (0.005-0.008)	**0.007** (0.005-0.009)	**0.008** (0.006-0.010)	**0.008** (0.006-0.011)
60-day	**0.003** (0.002-0.003)	**0.003** (0.003-0.004)	**0.004** (0.003-0.004)	**0.004** (0.004-0.005)	**0.005** (0.004-0.006)	**0.005** (0.004-0.006)	**0.006** (0.004-0.007)	**0.006** (0.005-0.008)	**0.007** (0.005-0.009)	**0.007** (0.005-0.010)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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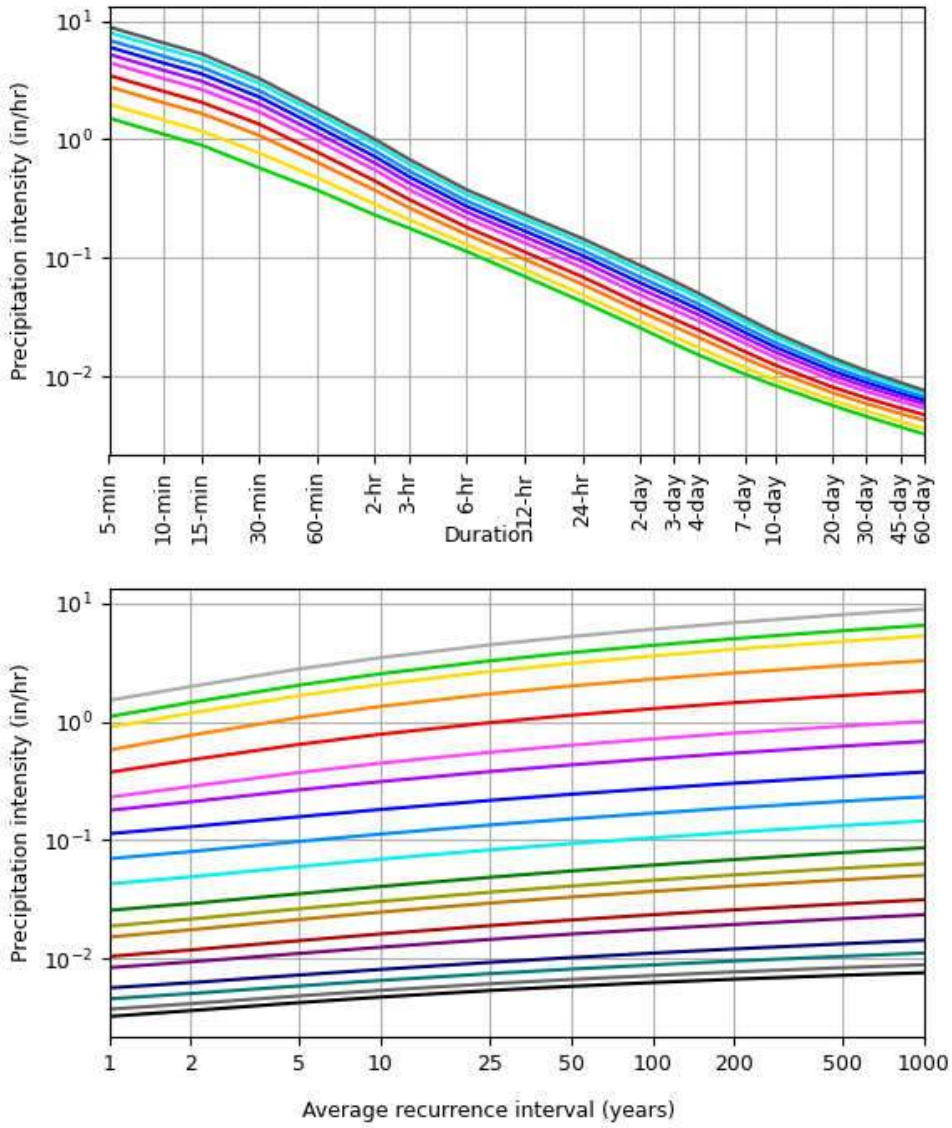
PF graphical

PDS-based intensity-duration-frequency (IDF) curves
Latitude: 39.5817°, Longitude: -107.5268°



NOAA Atlas 14, Volume 8, Version 2

Created (GMT): Thu Mar 21 17:11:16 2024

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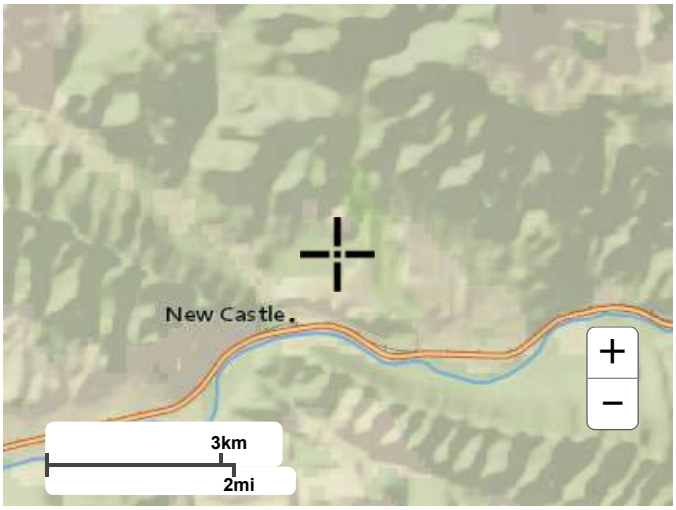
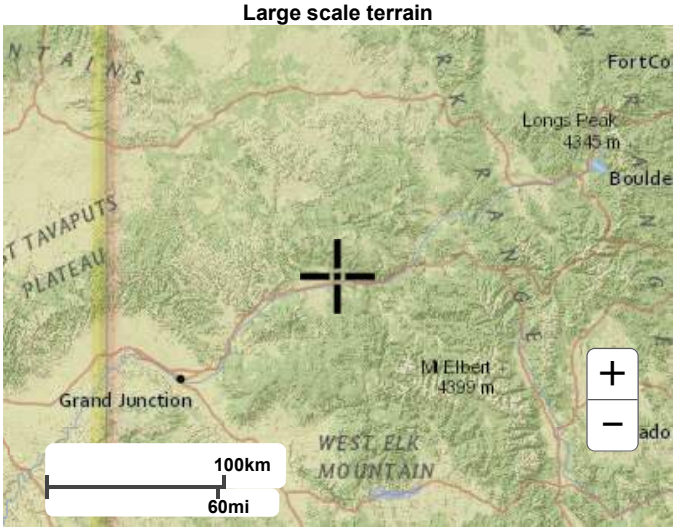
Maps & aerials

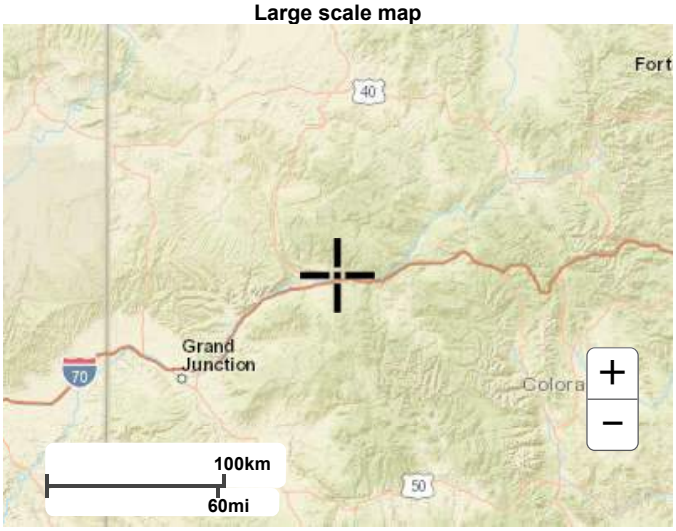
Small scale terrain



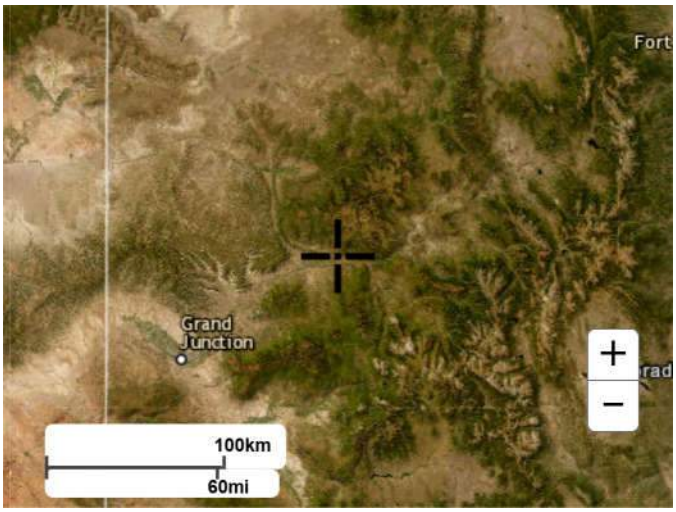
Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Table 6-5. Runoff coefficients, *c*

Total or Effective % Impervious	NRCS Hydrologic Soil Group A						
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year	500-Year
2%	0.01	0.01	0.01	0.01	0.04	0.13	0.27
5%	0.02	0.02	0.02	0.03	0.07	0.15	0.29
10%	0.04	0.05	0.05	0.07	0.11	0.19	0.32
15%	0.07	0.08	0.08	0.1	0.15	0.23	0.35
20%	0.1	0.11	0.12	0.14	0.2	0.27	0.38
25%	0.14	0.15	0.16	0.19	0.24	0.3	0.42
30%	0.18	0.19	0.2	0.23	0.28	0.34	0.45
35%	0.21	0.23	0.24	0.27	0.32	0.38	0.48
40%	0.25	0.27	0.28	0.32	0.37	0.42	0.51
45%	0.3	0.31	0.33	0.36	0.41	0.46	0.54
50%	0.34	0.36	0.37	0.41	0.45	0.5	0.58
55%	0.39	0.4	0.42	0.45	0.49	0.54	0.61
60%	0.43	0.45	0.47	0.5	0.54	0.58	0.64
65%	0.48	0.5	0.51	0.54	0.58	0.62	0.67
70%	0.53	0.55	0.56	0.59	0.62	0.65	0.71
75%	0.58	0.6	0.61	0.64	0.66	0.69	0.74
80%	0.63	0.65	0.66	0.69	0.71	0.73	0.77
85%	0.68	0.7	0.71	0.74	0.75	0.77	0.8
90%	0.73	0.75	0.77	0.79	0.79	0.81	0.84
95%	0.79	0.81	0.82	0.83	0.84	0.85	0.87
100%	0.84	0.86	0.87	0.88	0.88	0.89	0.9
Total or Effective % Impervious	**NRCS Hydrologic Soil Group B**						
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year	500-Year
2%	0.01	0.01	0.07	0.26	0.34	0.44	0.54
5%	0.03	0.03	0.1	0.28	0.36	0.45	0.55
10%	0.06	0.07	0.14	0.31	0.38	0.47	0.57
15%	0.09	0.11	0.18	0.34	0.41	0.5	0.59
20%	0.13	0.15	0.22	0.38	0.44	0.52	0.61
25%	0.17	0.19	0.26	0.41	0.47	0.54	0.63
30%	0.2	0.23	0.3	0.44	0.49	0.57	0.65
35%	0.24	0.27	0.34	0.47	0.52	0.59	0.66
40%	0.29	0.32	0.38	0.5	0.55	0.61	0.68
45%	0.33	0.36	0.42	0.53	0.58	0.64	0.7
50%	0.37	0.4	0.46	0.56	0.61	0.66	0.72
55%	0.42	0.45	0.5	0.6	0.63	0.68	0.74
60%	0.46	0.49	0.54	0.63	0.66	0.71	0.76
65%	0.5	0.54	0.58	0.66	0.69	0.73	0.77
70%	0.55	0.58	0.62	0.69	0.72	0.75	0.79
75%	0.6	0.63	0.66	0.72	0.75	0.78	0.81
80%	0.64	0.67	0.7	0.75	0.77	0.8	0.83
85%	0.69	0.72	0.74	0.78	0.8	0.82	0.85
90%	0.74	0.76	0.78	0.81	0.83	0.84	0.87
95%	0.79	0.81	0.82	0.85	0.86	0.87	0.88
100%	0.84	0.86	0.86	0.88	0.89	0.89	0.9

Table 6-5. Runoff coefficients, *c* (continued)

Total or Effective % Impervious	NRCS Hydrologic Soil Group C						
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year	500-Year
2%	0.01	0.05	0.15	0.33	0.40	0.49	0.59
5%	0.03	0.08	0.17	0.35	0.42	0.5	0.6
10%	0.06	0.12	0.21	0.37	0.44	0.52	0.62
15%	0.1	0.16	0.24	0.4	0.47	0.55	0.64
20%	0.14	0.2	0.28	0.43	0.49	0.57	0.65
25%	0.18	0.24	0.32	0.46	0.52	0.59	0.67
30%	0.22	0.28	0.35	0.49	0.54	0.61	0.68
35%	0.26	0.32	0.39	0.51	0.57	0.63	0.7
40%	0.3	0.36	0.43	0.54	0.59	0.65	0.71
45%	0.34	0.4	0.46	0.57	0.62	0.67	0.73
50%	0.38	0.44	0.5	0.6	0.64	0.69	0.75
55%	0.43	0.48	0.54	0.63	0.66	0.71	0.76
60%	0.47	0.52	0.57	0.65	0.69	0.73	0.78
65%	0.51	0.56	0.61	0.68	0.71	0.75	0.79
70%	0.56	0.61	0.65	0.71	0.74	0.77	0.81
75%	0.6	0.65	0.68	0.74	0.76	0.79	0.82
80%	0.65	0.69	0.72	0.77	0.79	0.81	0.84
85%	0.7	0.73	0.76	0.79	0.81	0.83	0.86
90%	0.74	0.77	0.79	0.82	0.84	0.85	0.87
95%	0.79	0.81	0.83	0.85	0.86	0.87	0.89
100%	0.83	0.85	0.87	0.88	0.89	0.89	0.9

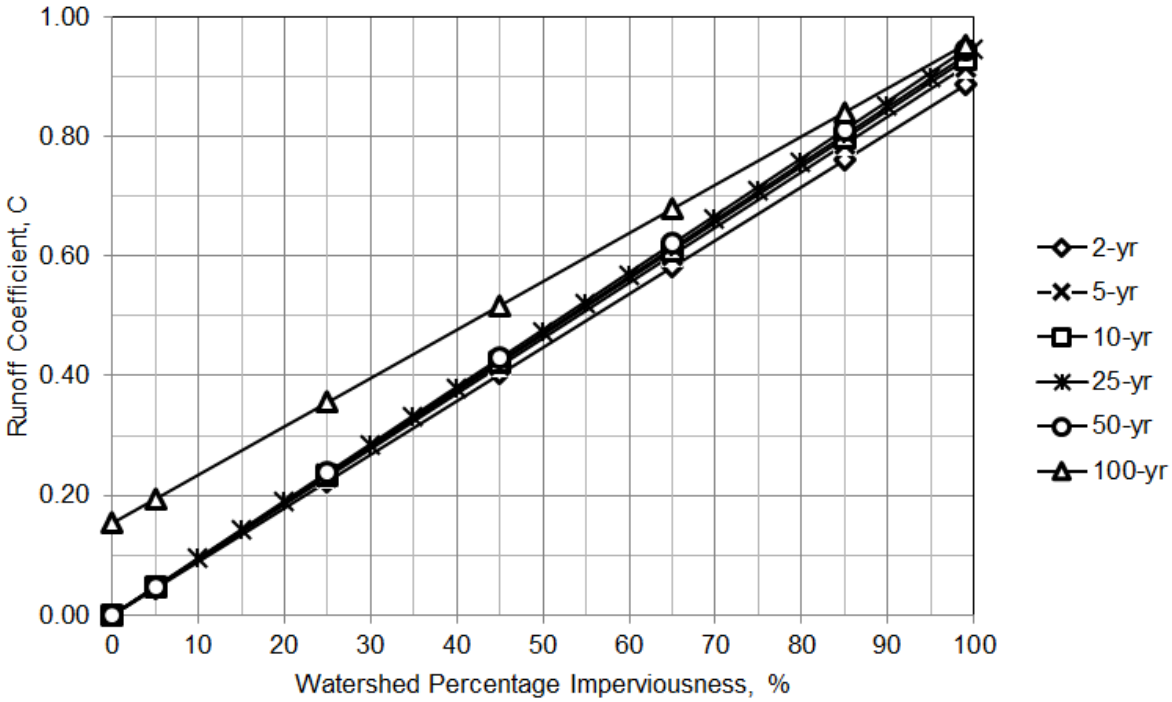
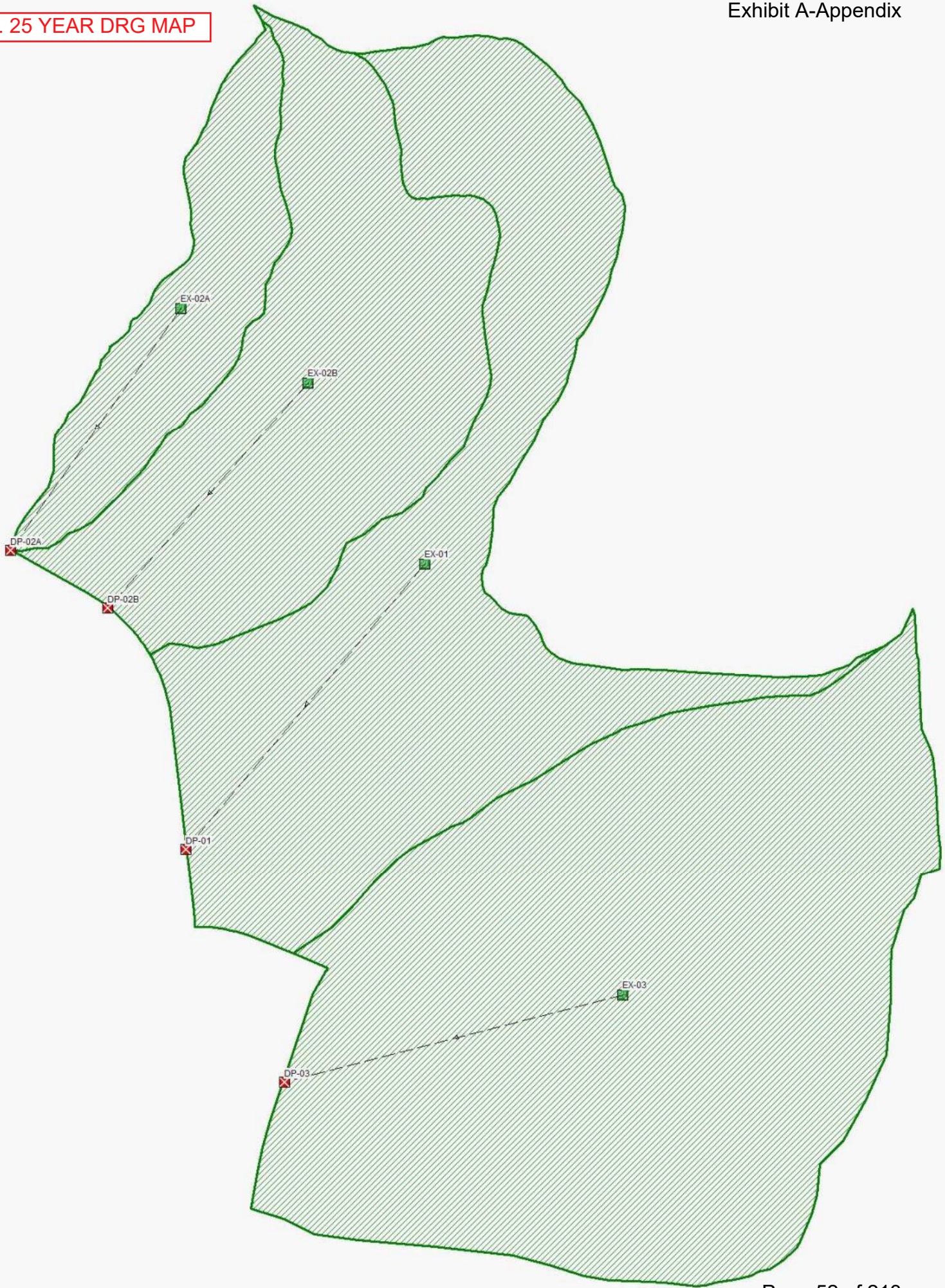


Figure 6-1. Runoff coefficient vs. watershed imperviousness NRCS HSG A

EX. 25 YEAR DRG MAP



Autodesk® Storm and Sanitary Analysis 2024 - Version 13.6.268 (Build 0)

****
Project Description
****
File Name 33011-EX DRG-RATIONAL-25YR.SPF
Description ..... 33011-EX DRG-25 YEAR

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. Rational
Time of Concentration..... SCS TR-55
Return Period..... 25 years
Storage Node Exfiltration.. None
Starting Date MAR-21-2024 00:00:00
Ending Date MAR-21-2024 02:00:00
Report Time Step 00:00:10

****
Element Count
****
Number of subbasins 4
Number of nodes 4
Number of links 0

****
Subbasin Summary
****

Subbasin ID	Total Area acres

EX-01	11.94
EX-02A	3.07
EX-02B	8.42
EX-03	19.17

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
DP-01	OUTFALL	5838.00	5838.00	0.00	
DP-02A	OUTFALL	0.00	0.00	0.00	
DP-02B	OUTFALL	5840.00	5840.00	0.00	
DP-03	OUTFALL	5829.00	5829.00	0.00	

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	2.922	0.823
Continuity Error (%)	0.673	

Flow Routing Continuity	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	1.241	0.404
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

****
Runoff Coefficient Computations Report
****

Subbasin EX-01

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_2%_IMPERV	11.94	C	0.33
Composite Area & Weighted Runoff Coeff.	11.94		0.33

Subbasin EX-02A

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_2%_IMPERV	3.07	C	0.33
Composite Area & Weighted Runoff Coeff.	3.07		0.33

Subbasin EX-02B

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_2%_IMPERV	8.42	C	0.33
Composite Area & Weighted Runoff Coeff.	8.42		0.33

Subbasin EX-03

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_2%_IMPERV	19.17	C	0.33
Composite Area & Weighted Runoff Coeff.	19.17		0.33

****

SCS TR-55 Time of Concentration Computations Report
****

Sheet Flow Equation

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where:

Tc = Time of Concentration (hrs)
n = Manning's Roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's Roughness

Subbasin EX-01

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.00	0.00
Flow Length (ft):	213.00	0.00	0.00
Slope (%):	57.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.20	0.00	0.00
Velocity (ft/sec):	0.27	0.00	0.00
Computed Flow Time (minutes):	13.36	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.03	0.00
Flow Length (ft):	432.00	1120.00	0.00
Channel Slope (%):	15.00	5.70	0.00
Cross Section Area (ft²):	0.50	0.50	0.00
Wetted Perimeter (ft):	7.00	7.00	0.00
Velocity (ft/sec):	3.31	2.04	0.00
Computed Flow Time (minutes):	2.17	9.15	0.00

Total TOC (minutes):	24.68

Subbasin EX-02A

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.30	0.00
Flow Length (ft):	27.00	130.00	0.00
Slope (%):	14.00	68.00	0.00
2 yr, 24 hr Rainfall (in):	1.20	1.20	0.00
Velocity (ft/sec):	0.10	0.26	0.00
Computed Flow Time (minutes):	4.49	8.39	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	90.00	0.00	0.00
Slope (%):	64.00	0.00	0.00
Surface Type:	Woodland	Unpaved	Unpaved
Velocity (ft/sec):	4.00	0.00	0.00
Computed Flow Time (minutes):	0.38	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.03	0.00
Flow Length (ft):	207.00	680.00	0.00
Channel Slope (%):	44.00	11.00	0.00
Cross Section Area (ft²):	0.50	0.50	0.00
Wetted Perimeter (ft):	7.00	7.00	0.00
Velocity (ft/sec):	5.67	2.84	0.00
Computed Flow Time (minutes):	0.61	4.00	0.00

Total TOC (minutes):	17.85

Subbasin EX-02B

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.30	0.00
Flow Length (ft):	100.00	70.00	0.00
Slope (%):	18.00	61.00	0.00
2 yr, 24 hr Rainfall (in):	1.20	1.20	0.00
Velocity (ft/sec):	0.14	0.22	0.00
Computed Flow Time (minutes):	11.57	5.34	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	135.00	0.00	0.00
Slope (%):	64.00	0.00	0.00
Surface Type:	Woodland	Unpaved	Unpaved
Velocity (ft/sec):	4.00	0.00	0.00
Computed Flow Time (minutes):	0.56	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.04	0.04	0.00
Flow Length (ft):	260.00	805.00	0.00
Channel Slope (%):	36.00	8.50	0.00
Cross Section Area (ft²):	0.50	0.50	0.00
Wetted Perimeter (ft):	7.00	7.00	0.00
Velocity (ft/sec):	3.85	1.87	0.00
Computed Flow Time (minutes):	1.13	7.18	0.00

Total TOC (minutes):	25.77

Subbasin EX-03

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.00	0.00
Flow Length (ft):	160.00	0.00	0.00
Slope (%):	8.70	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.20	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (minutes):	22.53	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	270.00	0.00	0.00
Slope (%):	8.70	0.00	0.00
Surface Type:	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec):	2.06	0.00	0.00
Computed Flow Time (minutes):	2.18	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.03	0.00
Flow Length (ft):	103.00	1050.00	0.00
Channel Slope (%):	32.00	8.70	0.00
Cross Section Area (ft²):	0.50	0.50	0.00
Wetted Perimeter (ft):	7.00	7.00	0.00
Velocity (ft/sec):	4.84	2.52	0.00
Computed Flow Time (minutes):	0.35	6.94	0.00

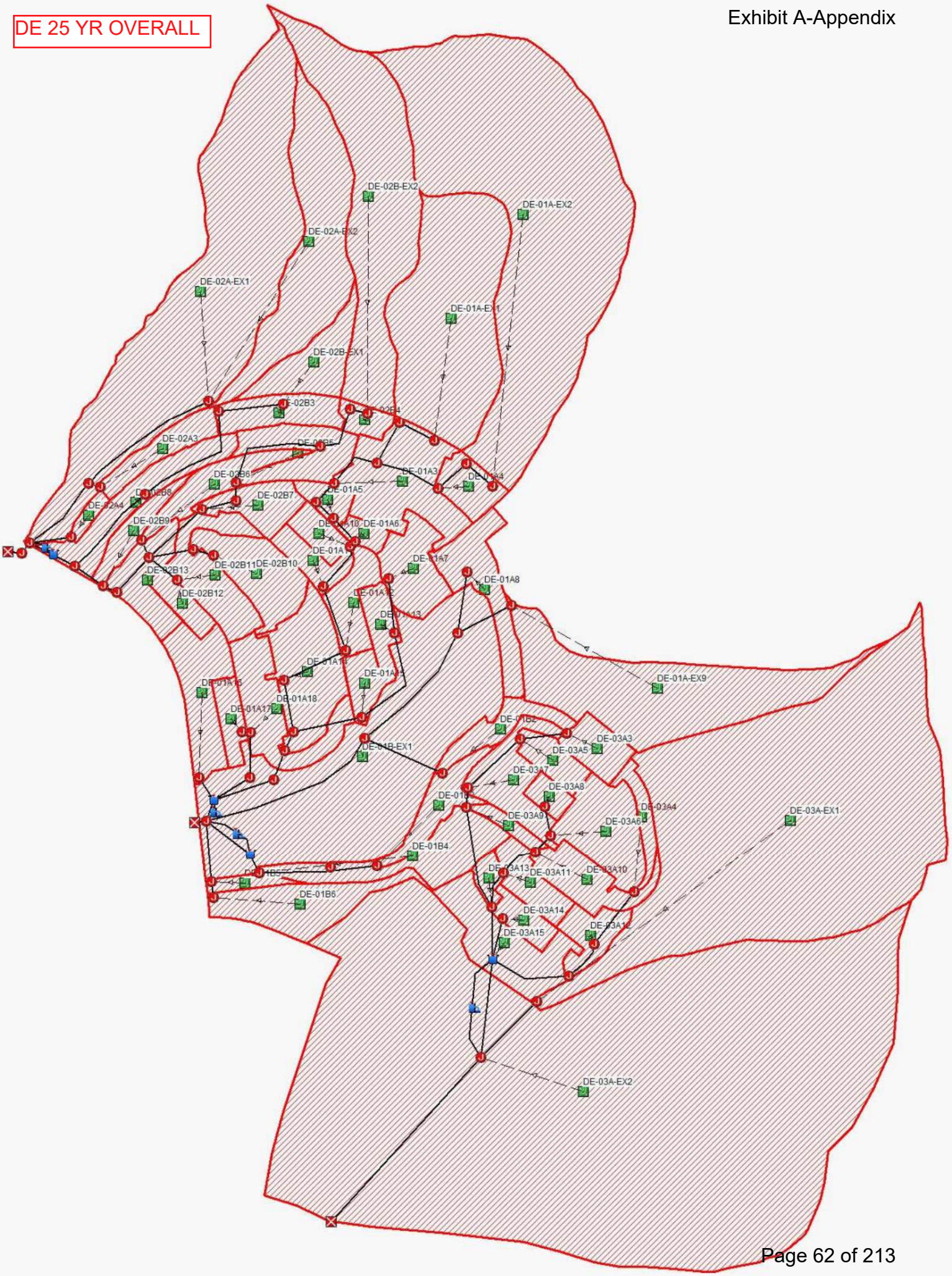
Total TOC (minutes):	32.01

****
Subbasin Runoff Summary
****

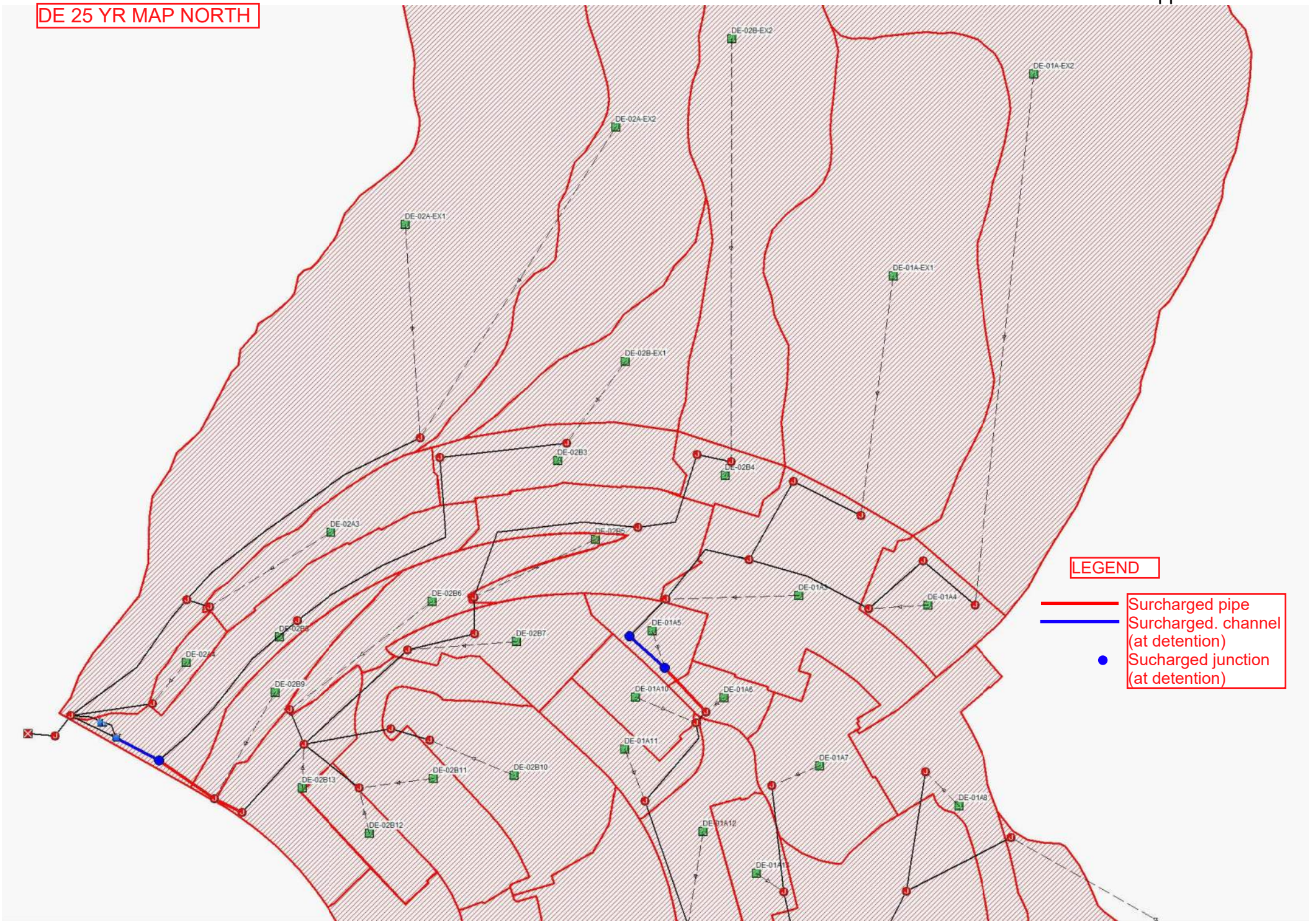
Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days	Time of Concentration hh:mm:ss
EX-01	0.79	1.93	0.26	7.61	0.330	0	00:24:40
EX-02A	0.70	2.37	0.23	2.40	0.330	0	00:17:51
EX-02B	0.81	1.88	0.27	5.23	0.330	0	00:25:46
EX-03	0.87	1.62	0.29	10.27	0.330	0	00:32:00

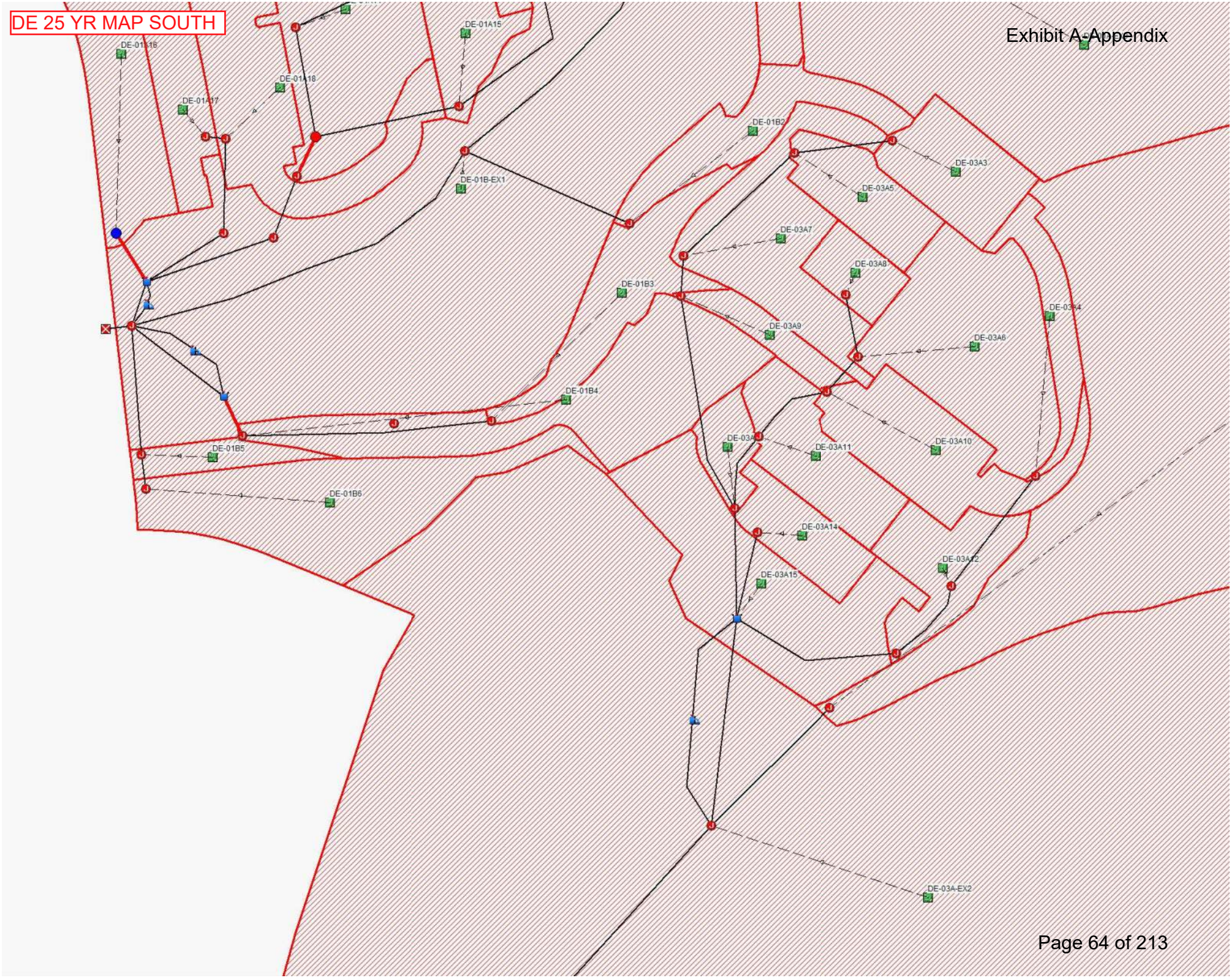
Analysis began on: Sat Sep 14 11:44:41 2024
Analysis ended on: Sat Sep 14 11:44:41 2024
Total elapsed time: < 1 sec

DE 25 YR OVERALL



DE 25 YR MAP NORTH

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DE-03A8
DE-01B3
DE-03A4
DE-03A9
DE-03A6
DE-01B4
DE-01B5
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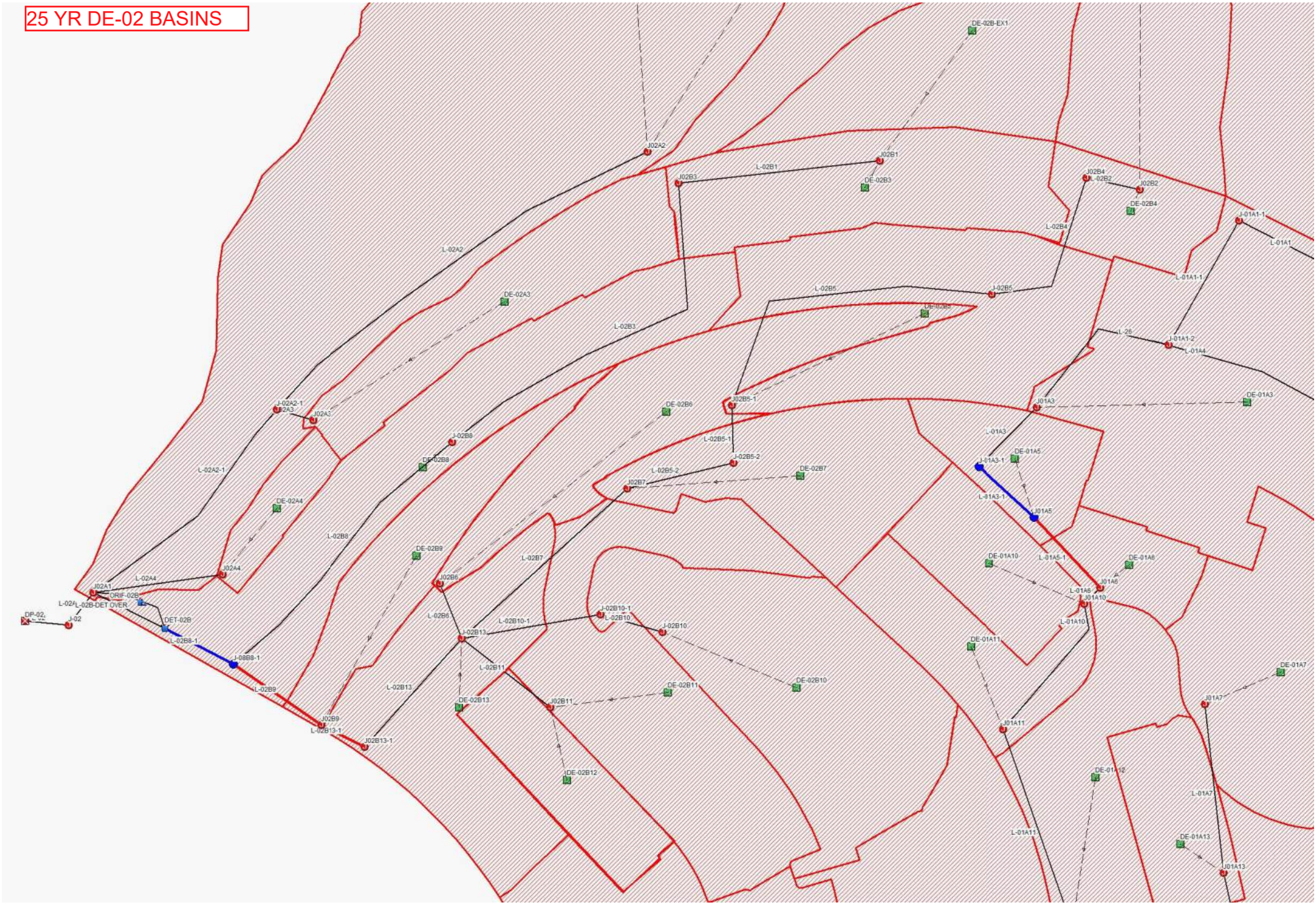
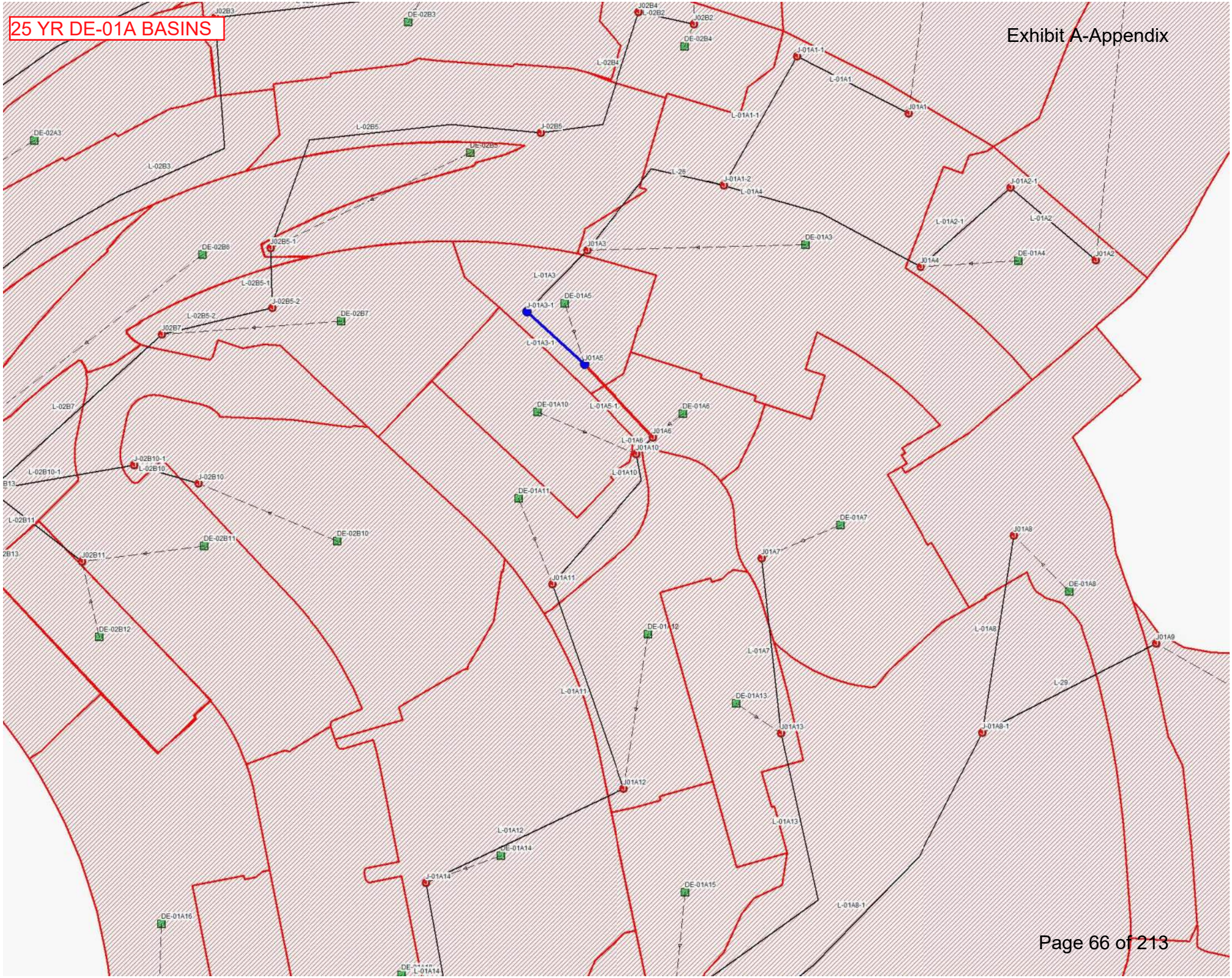
DE-03A15
DE-03A-EX2

25 YR DE-02 BASINS

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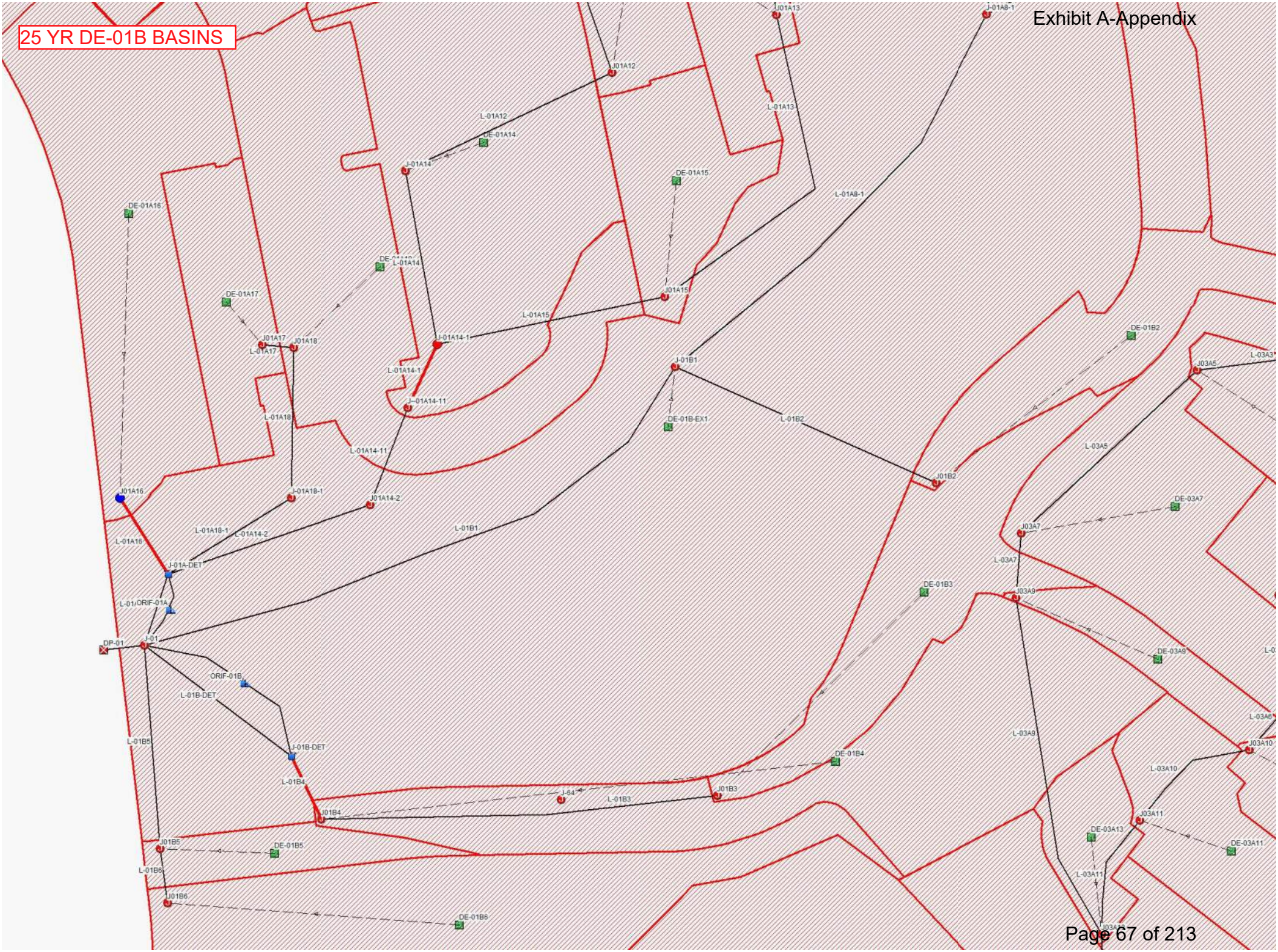
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DP-01
J-01
ORIF-01B
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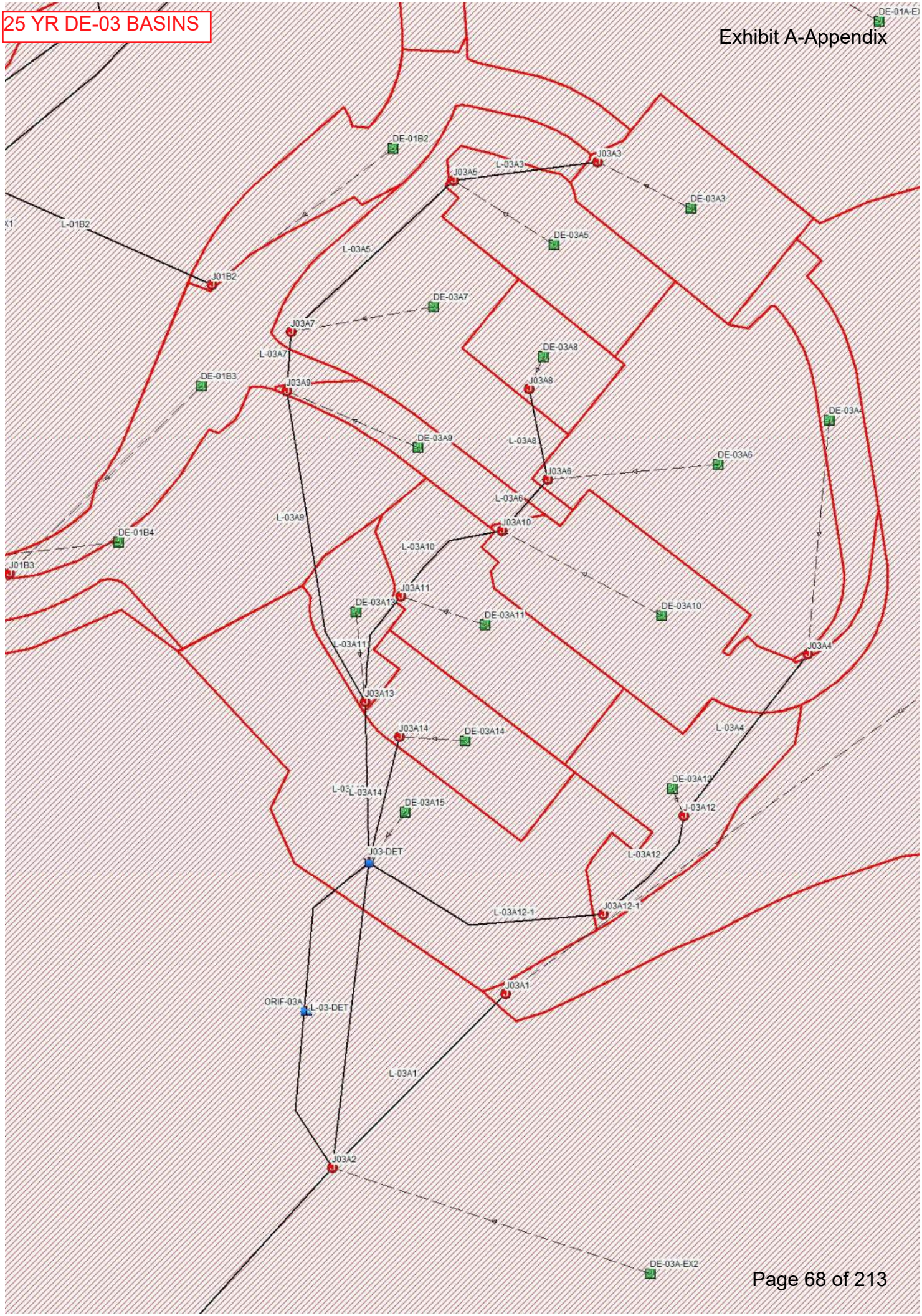
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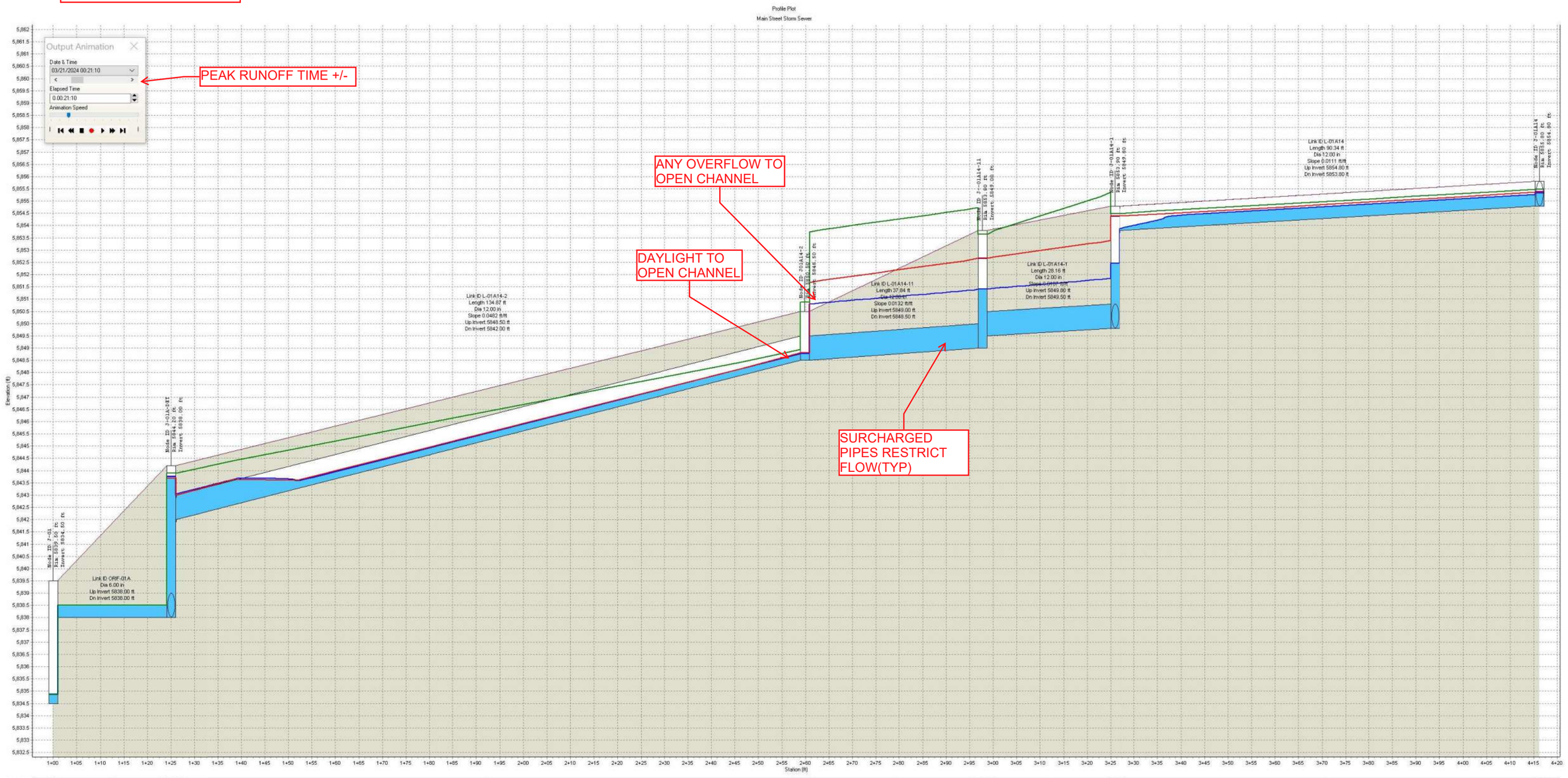
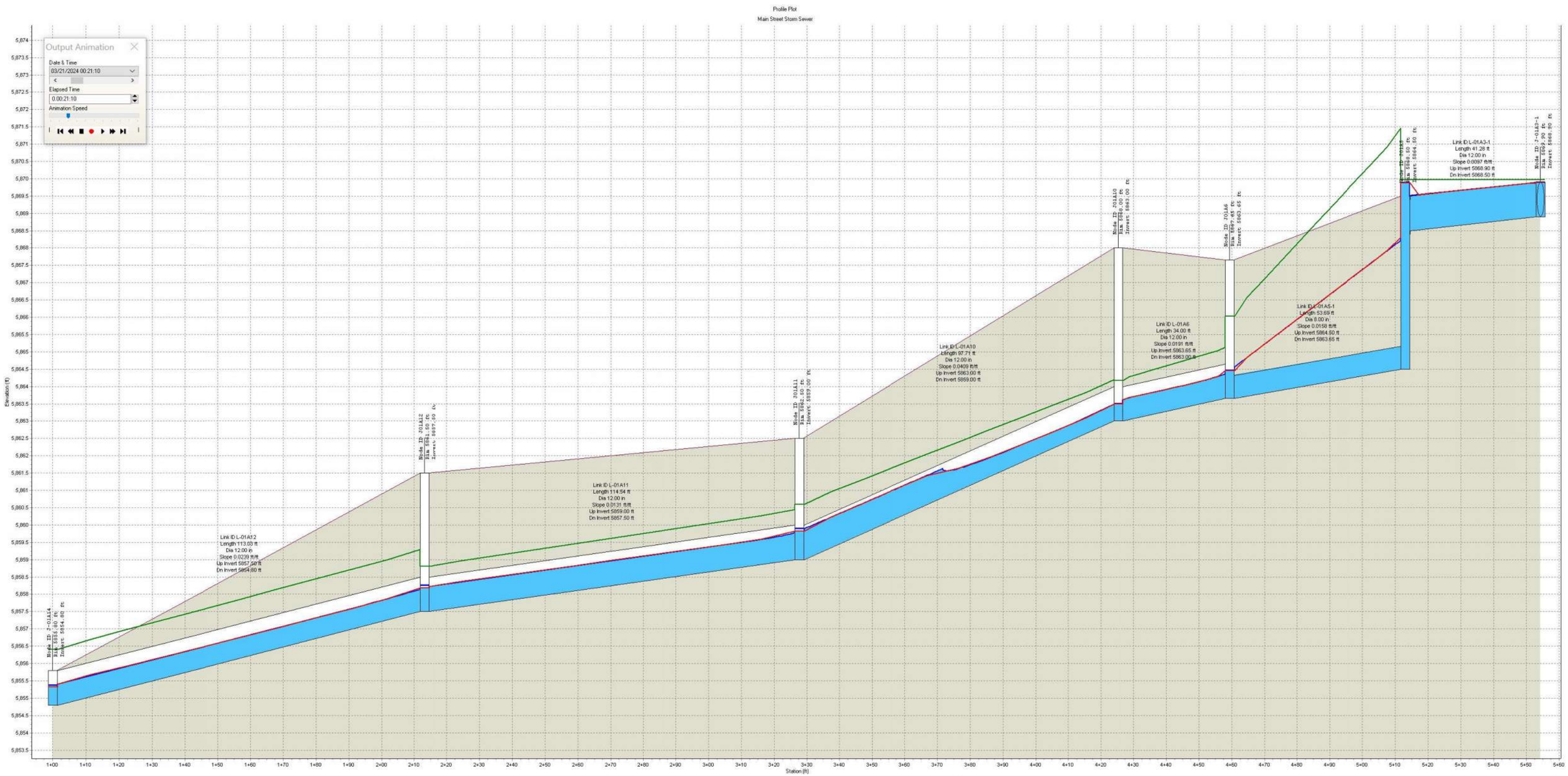
DE-01A MAIN CHANNEL-1



Node ID:	J-01	J-01A-DET	J01A14-2	J-01A14-11	J-01A14-1	J-01A14
Rim (ft):	5839.50	5844.20	5850.50	5853.80	5853.90	5855.80
Invert (ft):	5834.50	5838.00	5848.50	5849.00	5849.80	5854.80
Min Pipe Cover (ft):	0.00		1.00	3.30	0.00	0.00
Max HGL (ft):	5834.86	5843.76	5848.80	5852.66	5854.39	5855.38

Link ID:	ORIF-01A	L-01A14-2	L-01A14-11	L-01A14-1	L-01A14
Length (ft):		134.87	37.84	28.16	90.34
Dia (in):	6.00	12.00	12.00	12.00	12.00
Slope (ft/ft):		0.0482	0.0132	0.0107	0.0111
Up Invert (ft):	5838.00	5848.50	5849.00	5849.80	5854.80
Dn Invert (ft):	5838.00	5842.00	5848.50	5849.50	5853.80
Max Q (cfs):	2.27	6.25	6.25	6.25	5.72
Max Vel (ft/s):	0.00	3.00	11.55	7.96	2.58
Max Depth (ft):	0.00	0.65	0.65	1.00	0.56

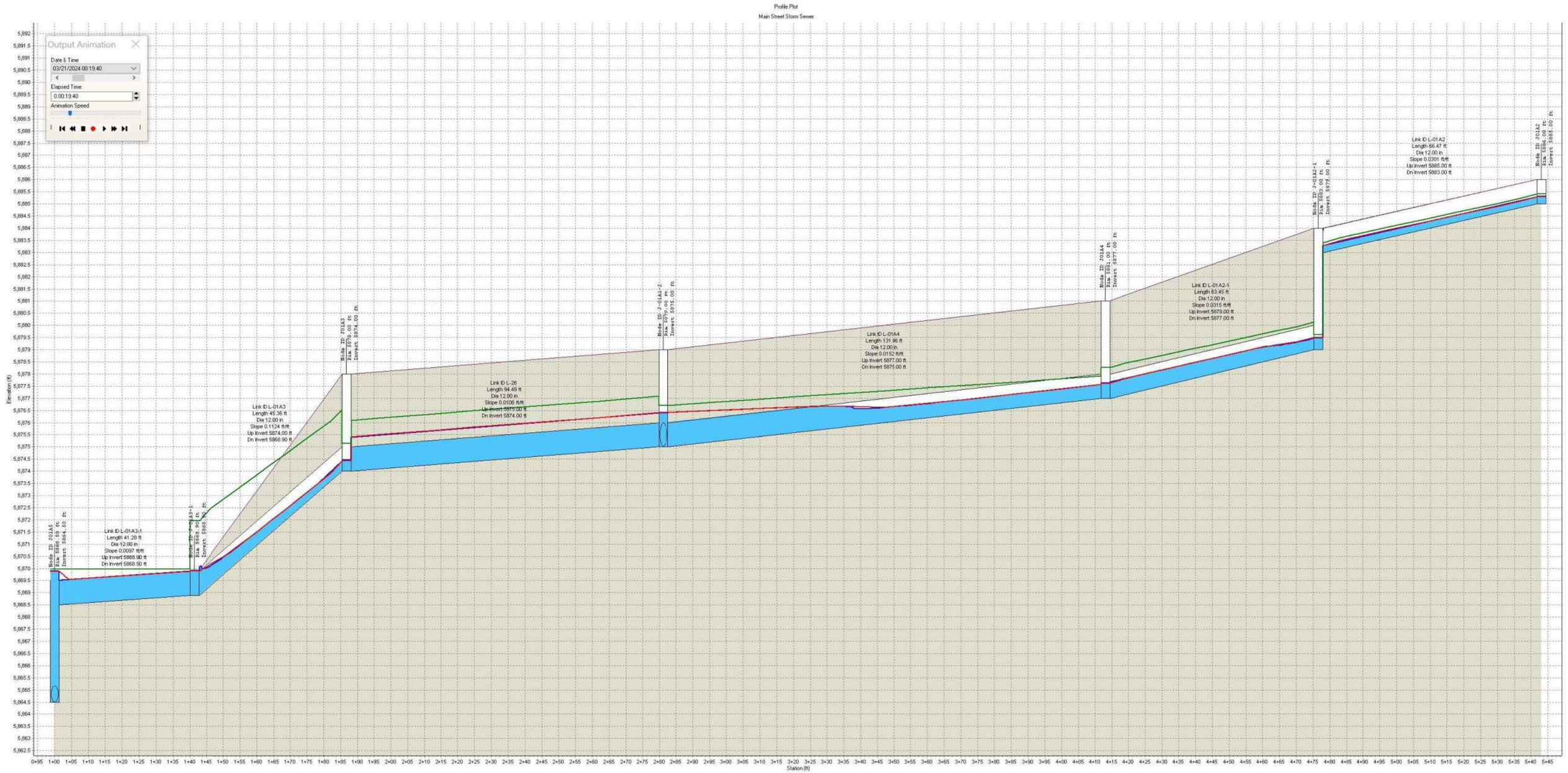
DE-01A MAIN CHANNEL-2



Node ID:	J-01A14	J01A12	J01A11	J01A10	J01A6	J01A5	J-01A3-1
Rim (ft):	5865.80	5861.50	5862.50	5868.00	5867.65	5868.50	5869.90
Invert (ft):	5854.80	5857.50	5859.00	5863.00	5863.65	5864.50	5868.90
Min Pipe Cover (ft):	0.00	3.00	2.50	4.00	3.00	0.00	0.00
Max HGL (ft):	5855.38	5858.26	5859.90	5863.50	5864.46	5863.89	5869.90

Link ID:	L-01A12	L-01A11	L-01A10	L-01A6	L-01A5-1	L-01A3-1
Length (ft):	113.03	114.54	97.71	34.00	53.69	41.28
Dia (in):	12.00	12.00	12.00	12.00	8.00	12.00
Slope (ft/ft):	0.0239	0.0131	0.0409	0.0191	0.0158	0.0097
Up Invert (ft):	5857.50	5859.00	5863.00	5863.65	5864.50	5868.90
Dn Invert (ft):	5854.80	5857.50	5859.00	5863.00	5863.65	5868.50
Max Q (cfs):	4.43	3.99	3.75	3.58	3.51	4.62
Max Vel (ft/s):	8.14	5.89	6.71	6.61	10.06	2.23
Max Depth (ft):	0.67	0.83	0.70	0.65	0.67	1.00

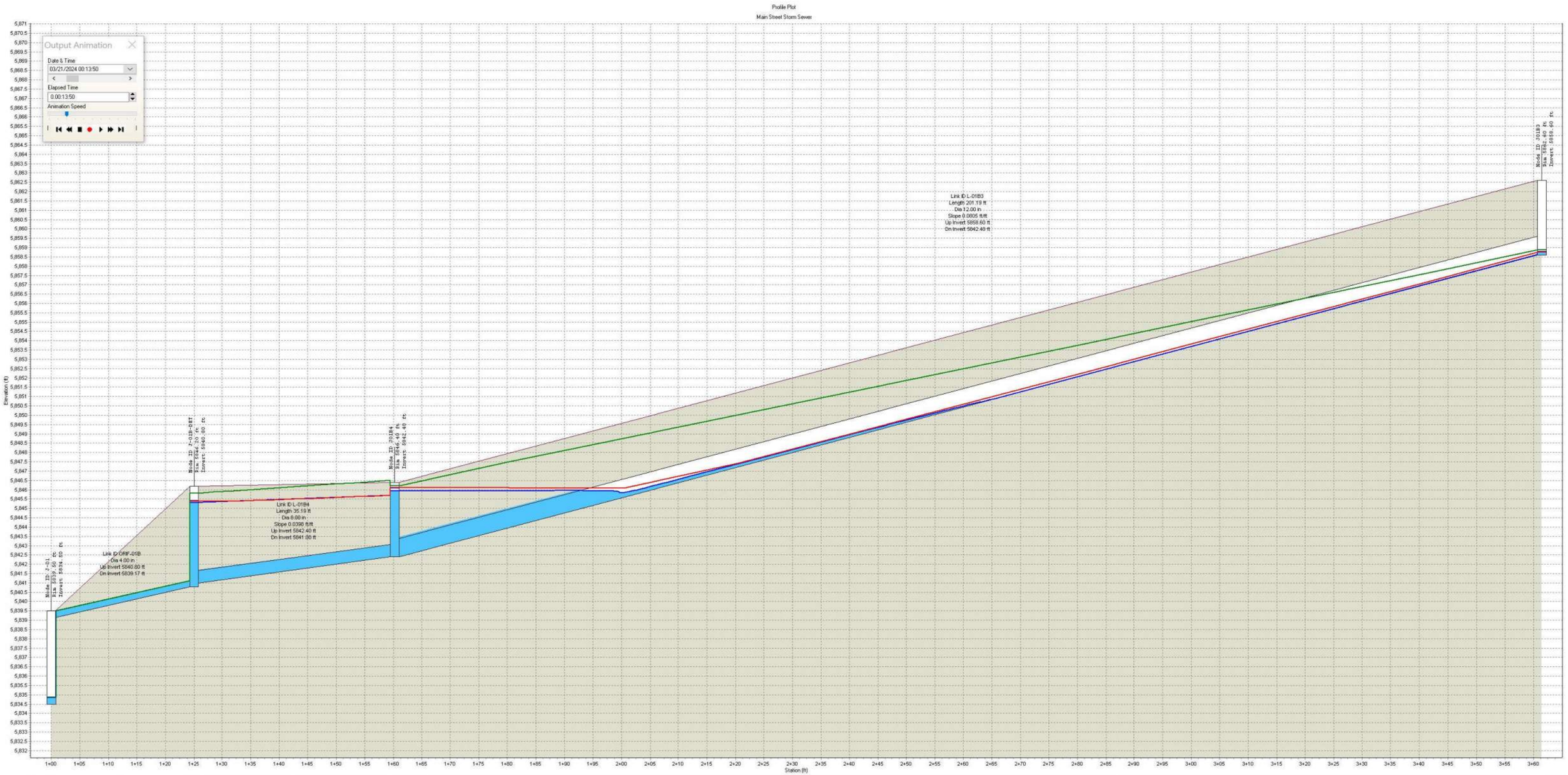
DE-01A MAIN CHANNEL-3



Node ID:	J01A5	J-01A3-1	J01A3	J-01A1-2	J01A4	J-01A2-1	J01A2
Rim (ft):	5868.50	5869.90	5878.00	5879.00	5881.00	5883.00	5885.00
Invert (ft):	5864.50	5868.90	5874.00	5875.00	5877.00	5879.00	5885.00
Min Pipe Cover (ft):	0.00	0.00	3.00	3.00	3.00	0.00	0.00
Max HGL (ft):	5869.89	5869.90	5874.46	5876.69	5877.63	5879.50	5885.30

Link ID:	L-01A3-1	L-01A3	L-26	L-01A4	L-01A2-1	L-01A2
Length (ft):	41.28	45.36	94.49	131.96	63.45	66.47
Dia (in):	12.00	12.00	12.00	12.00	12.00	12.00
Slope (ft/ft):	0.0097	0.1124	0.0106	0.0152	0.0315	0.0301
Up Invert (ft):	5868.90	5874.00	5875.00	5877.00	5879.00	5885.00
Dn Invert (ft):	5868.50	5868.90	5874.00	5875.00	5877.00	5883.00
Max Q (cfs):	4.62	4.86	3.97	2.95	2.80	2.79
Max Vel (ft/s):	2.23	11.54	6.59	4.31	6.41	2.74
Max Depth (ft):	1.00	0.72	0.73	0.82	0.56	0.29

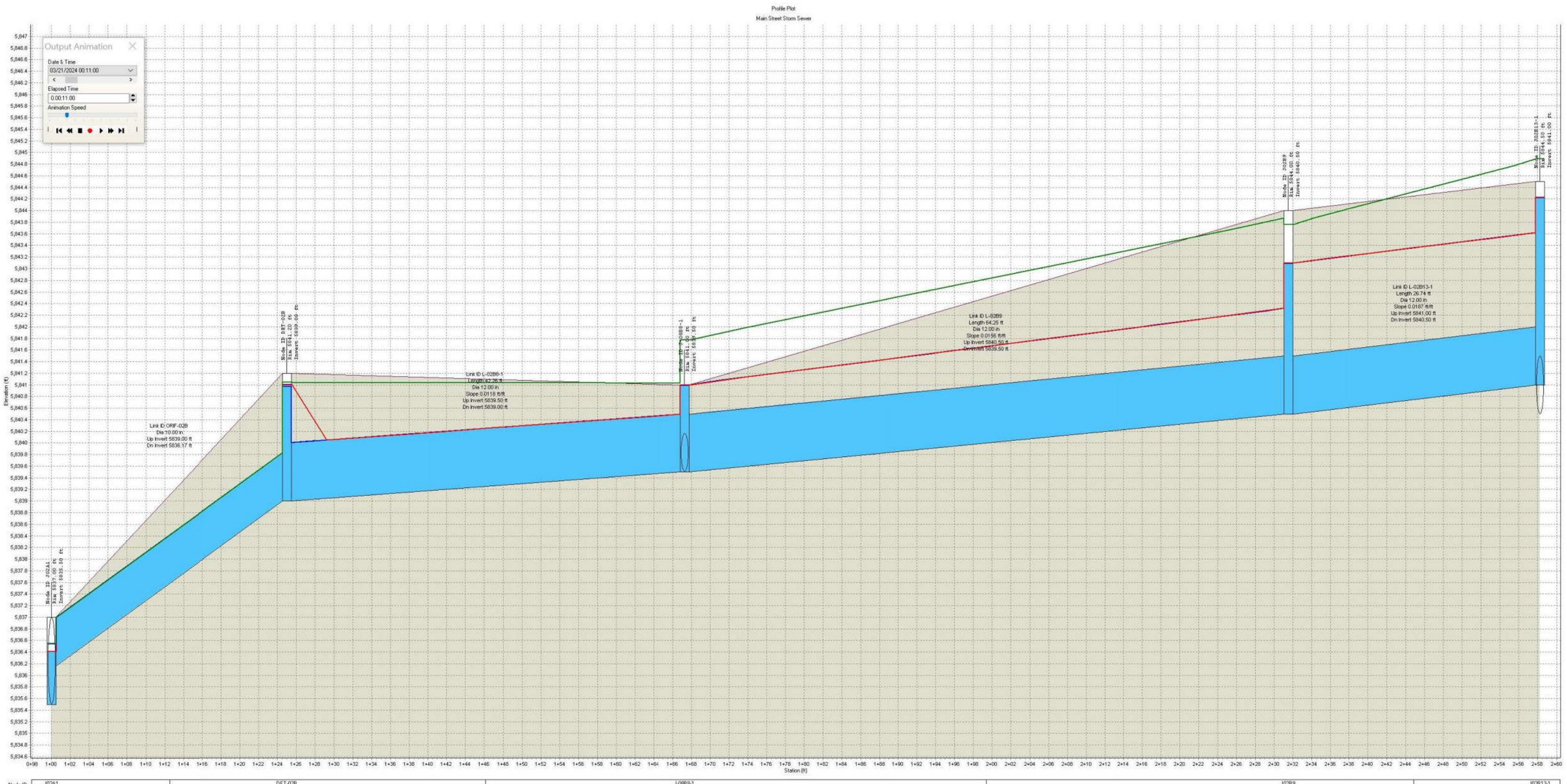
DE-01B MAIN CHANNEL-1



Node ID:	J-01	J-01B-DET	J01B4	J01B3
Rim (ft)	5839.50	5846.20	5846.40	5862.60
Invert (ft)	5834.50	5840.80	5842.40	5858.60
Min Pipe Cover (ft)	0.00	3.00		3.00
Max HGL (ft)	5834.86	5845.40	5846.26	5858.76

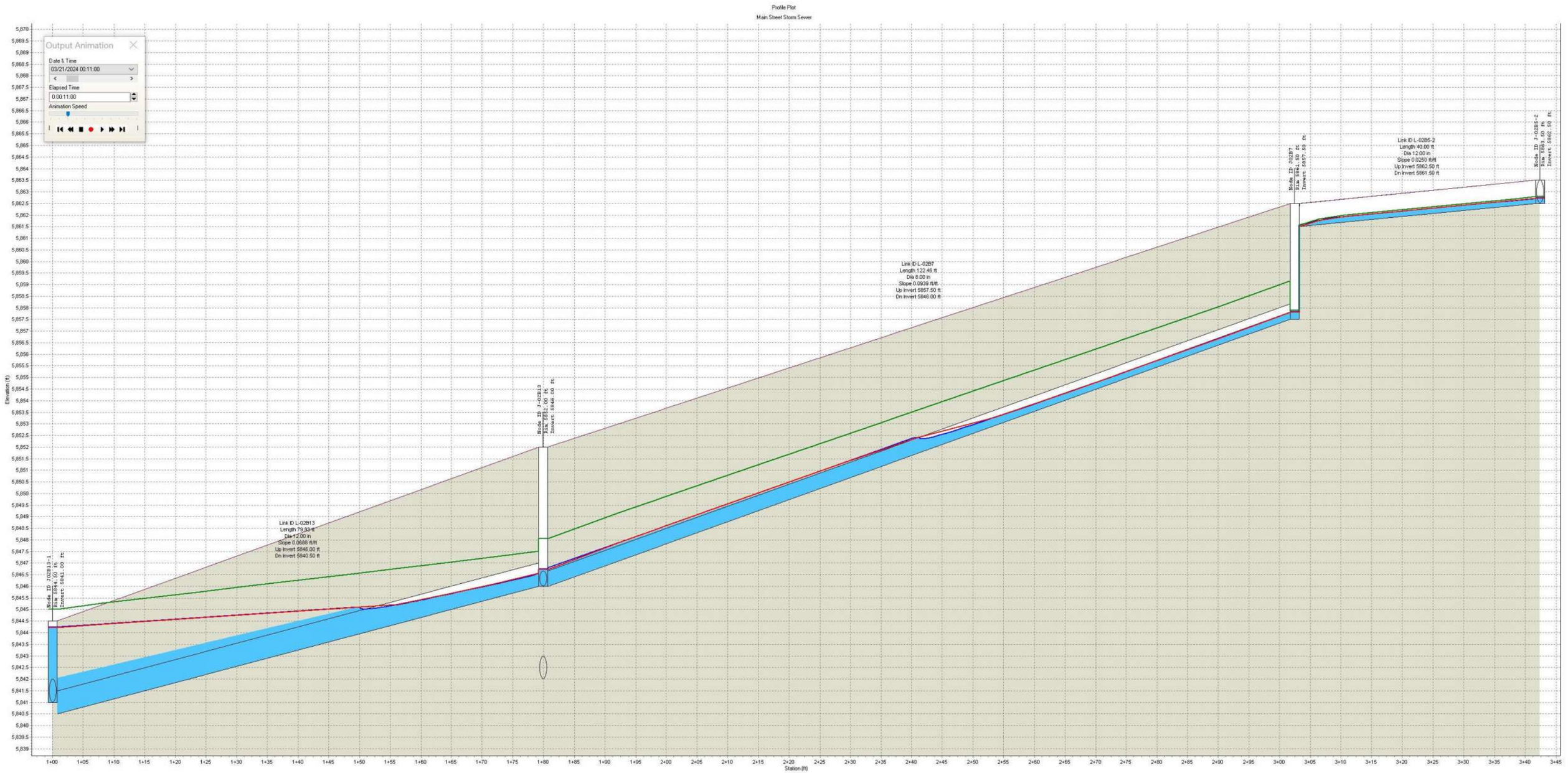
Link ID:	ORIF-01B	L-01B4	L-01B3
Length (ft)		35.19	201.19
Dia (in)	4.00	8.00	12.00
Slope (ft/ft)		0.0398	0.0805
Up Invert (ft)	5840.80	5842.40	5858.60
Dn Invert (ft)	5839.17	5841.00	5842.40
Max Q (cfs)	0.91	1.79	0.59
Max Vel (ft/s)	0.00	5.12	2.75
Max Depth (ft)	0.00	0.67	0.58

DE-02B MAIN CHANNEL-1



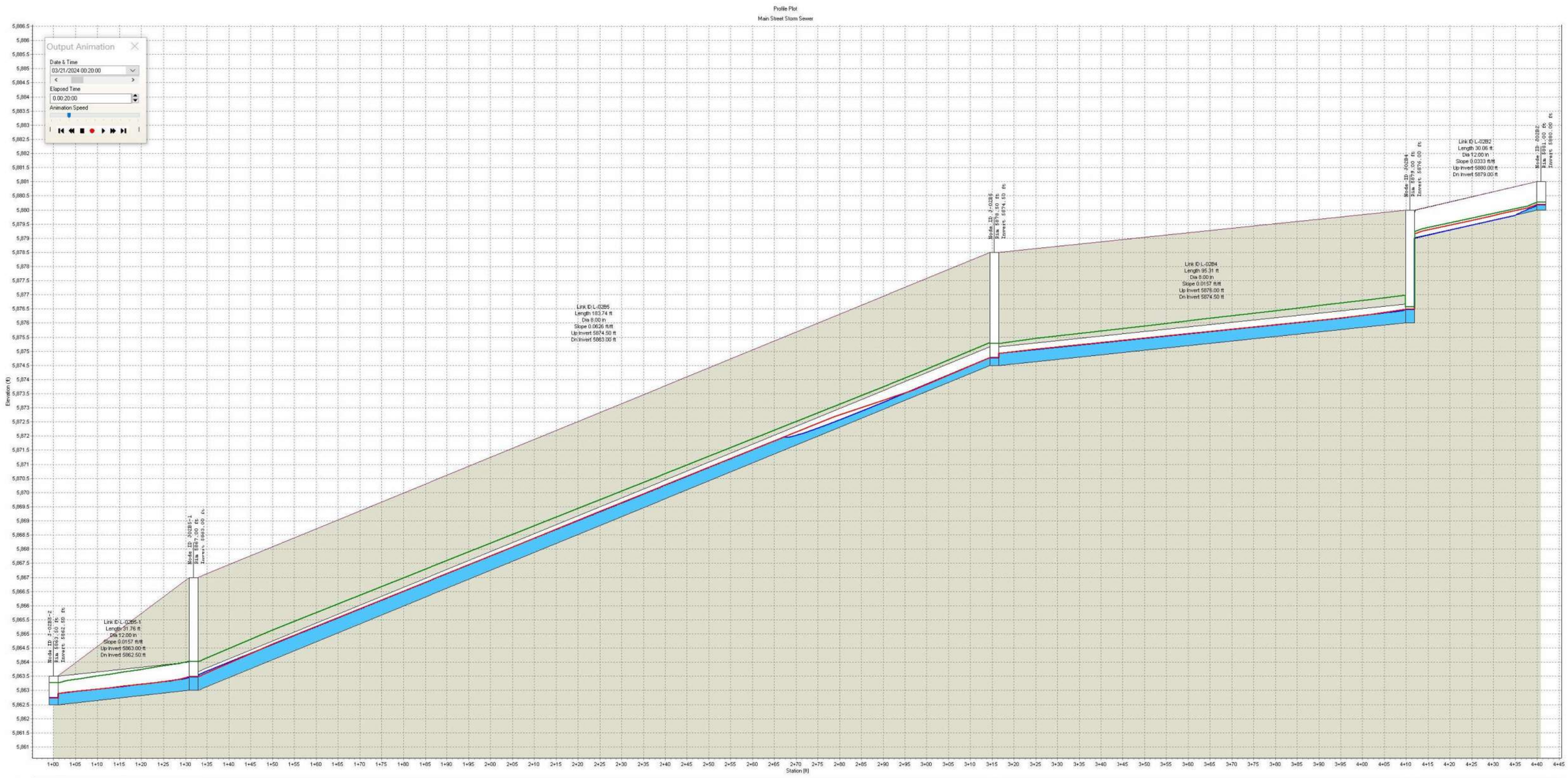
Node ID:	J02A1	DET-02B	J-08B8-1	J02B9	J02B13-1	
Rim (ft):	5837.00	5841.20	5841.00	5844.00	5844.50	
Invert (ft):	5835.50	5839.00	5839.50	5840.50	5841.00	
Min Pipe Cover (ft):	0.00		0.50	2.50	2.50	
Max HGL (ft):	5836.55	5841.01	5841.00	5843.10	5844.23	
Link ID:	ORIF-02B	L-02B8-1	L-02B9	L-02B13-1		
Length (ft):		42.26	64.25	26.74		
Dia (in):	10.00	12.00	12.00	12.00		
Slope (ft/ft):		0.0118	0.0156	0.0187		
Up Invert (ft):	5839.00	5839.50	5840.50	5841.00		
Dn Invert (ft):	5836.17	5839.00	5839.50	5840.50		
Max Q (cfs):	3.39	5.31	5.54	5.13		
Max Vel (ft/s):	0.00	1.44	7.05	6.53		
Max Depth (ft):	0.00	1.00	1.00	1.00		

DE-02B MAIN CHANNEL-2



Node ID:	J02B13-1	J-02B13	J02B7	J-02B5-2	
Rim (ft):	5844.50	5852.00	5861.50	5863.50	
Invert (ft):	5841.00	5846.00	5857.50	5862.50	
Min Pipe Cover (ft):	2.50	5.00	0.00	0.00	
Max HGL (ft):	5844.23	5846.73	5857.82	5862.73	
Link ID:	L-02B13	L-02B7	L-02B5-2		
Length (ft):	79.93	122.46	40.00		
Dia (in):	12.00	8.00	12.00		
Slope (ft/ft):	0.0688	0.0939	0.0250		
Up Invert (ft):	5846.00	5857.50	5862.50		
Dn Invert (ft):	5840.50	5846.00	5861.50		
Max Q (cfs):	5.13	1.84	1.51		
Max Vel (ft/s):	7.10	9.27	2.18		
Max Depth (ft):	0.87	0.49	0.22		

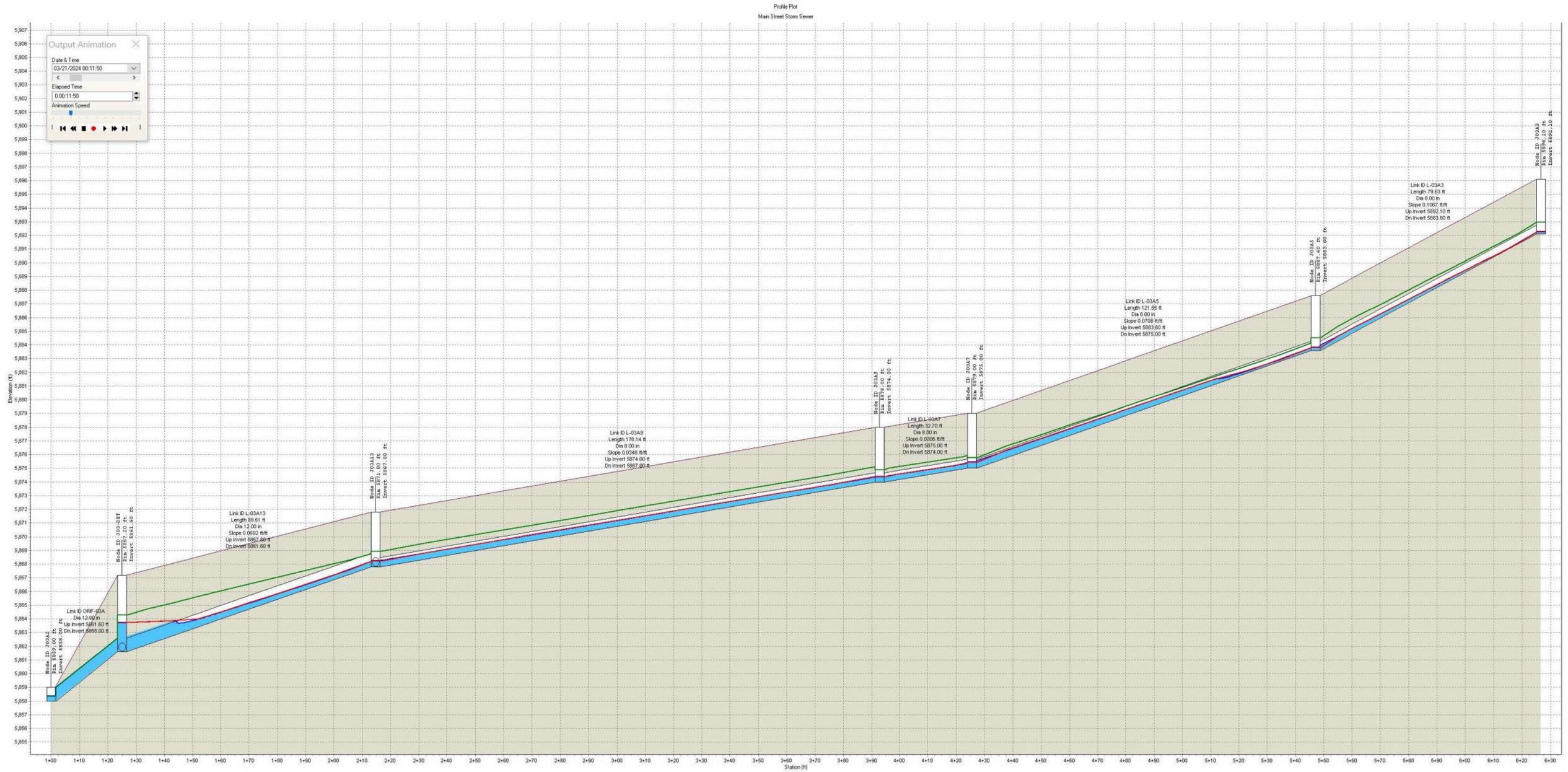
DE-02B MAIN CHANNEL-3



Node ID:	J-02B5-2	J02B5-1	J-02B5	J02B4	J02B2
Rim (ft):	5869.50	5867.00	5878.50	5879.00	5881.00
Invert (ft):	5862.50	5863.00	5874.50	5876.00	5880.00
Min Pipe Cover (ft):	0.00	3.00	3.33	0.00	0.00
Max HGL (ft):	5862.73	5863.49	5874.78	5876.49	5880.19

Link ID:	L-02B5-1	L-02B5	L-02B4	L-02B2
Length (ft):	31.76	183.74	95.31	30.06
Dia (in):	12.00	8.00	8.00	12.00
Slope (ft/ft):	0.0157	0.0626	0.0157	0.0333
Up Invert (ft):	5863.00	5874.50	5876.00	5880.00
Dn Invert (ft):	5862.50	5863.00	5874.50	5879.00
Max Q (cfs):	1.51	1.19	1.19	1.19
Max Vel (ft/s):	5.91	5.88	5.68	2.29
Max Depth (ft):	0.36	0.38	0.39	0.19

DE-03 MAIN CHANNEL-1



Node ID:	J03A2	J03-DET	J03A13	J03A9	J03A7	J03A5	J03A3
Rim (ft):	5859.00	5867.20	5871.80	5878.00	5879.00	5887.60	5896.10
Invert (ft):	5858.00	5861.60	5867.80	5874.00	5875.00	5883.60	5892.10
Min Pipe Cover (ft):	0.00	3.00	3.33	3.33	3.33	3.33	3.33
Max HGL (ft):	5858.34	5863.72	5868.21	5874.39	5875.44	5883.82	5892.26

Link ID:	ORIF-03A	L-03A13	L-03A9	L-03A7	L-03A5	L-03A3
Length (ft):		89.61	178.14	32.70	121.55	79.63
Dia (in):	12.00	12.00	8.00	8.00	8.00	8.00
Slope (ft/ft):		0.0692	0.0348	0.0306	0.0708	0.1067
Up Invert (ft):	5861.60	5867.80	5874.00	5875.00	5883.60	5892.10
Dn Invert (ft):	5858.00	5861.60	5867.80	5874.00	5875.00	5883.60
Max Q (cfs):	4.93	3.57	1.50	1.29	0.79	0.55
Max Vel (ft/s):	0.00	6.02	6.82	5.69	4.65	6.77
Max Depth (ft):	0.00	0.71	0.40	0.41	0.33	0.19

Autodesk® Storm and Sanitary Analysis 2024 - Version 13.6.268 (Build 0)

****
Project Description
****
File Name 33011-DE DRG-RATIONAL-25YR-DET.SPF
Description ..... 33011-DE DRG-25 YEAR

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. Rational
Time of Concentration..... SCS TR-55
Return Period..... 25 years
Link Routing Method ..... Hydrodynamic
Storage Node Exfiltration.. None
Starting Date MAR-21-2024 00:00:00
Ending Date MAR-21-2024 02:00:00
Report Time Step 00:00:10

****
Element Count
****
Number of subbasins 56
Number of nodes 80
Number of links 80

****
Subbasin Summary
****

Subbasin ID	Total Area acres
DE-01A10	0.13
DE-01A11	0.15
DE-01A12	0.23
DE-01A13	0.15
DE-01A14	0.56
DE-01A15	0.14
DE-01A16	0.41
DE-01A17	0.13
DE-01A18	0.43
DE-01A3	0.64
DE-01A4	0.19
DE-01A5	0.11
DE-01A6	0.08
DE-01A7	0.32
DE-01A8	0.38
DE-01A-EX1	1.55
DE-01A-EX2	3.71
DE-01A-EX9	1.36
DE-01B2	0.20
DE-01B3	0.23
DE-01B4	0.46
DE-01B5	0.07
DE-01B6	0.45
DE-01B-EX1	2.66
DE-02A3	0.21
DE-02A4	0.05
DE-02A-EX1	2.85
DE-02A-EX2	1.06
DE-02B10	0.40
DE-02B11	0.39
DE-02B12	0.12
DE-02B13	0.28

DE-02B3	0.26
DE-02B4	0.10
DE-02B5	0.35
DE-02B6	0.24
DE-02B7	0.23
DE-02B8	0.40
DE-02B9	0.16
DE-02B-EX1	0.33
DE-02B-EX2	1.54
DE-03A10	0.29
DE-03A11	0.21
DE-03A12	0.19
DE-03A13	0.07
DE-03A14	0.13
DE-03A15	0.48
DE-03A3	0.19
DE-03A4	0.12
DE-03A5	0.16
DE-03A6	0.45
DE-03A7	0.35
DE-03A8	0.08
DE-03A9	0.07
DE-03A-EX1	4.78
DE-03A-EX2	11.31

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
J-01	JUNCTION	5834.50	5839.50	0.00	
J01A1	JUNCTION	5881.00	5882.00	0.00	
J01A10	JUNCTION	5863.00	5868.00	0.00	

J01A11	JUNCTION	5859.00	5862.50	0.00
J-01A1-1	JUNCTION	5876.50	5880.50	0.00
J01A12	JUNCTION	5857.50	5861.50	0.00
J-01A1-2	JUNCTION	5875.00	5879.00	0.00
J01A13	JUNCTION	5863.20	5867.50	0.00
J-01A14	JUNCTION	5854.80	5855.80	0.00
J-01A14-1	JUNCTION	5849.80	5854.80	300.00
J--01A14-11	JUNCTION	5849.00	5853.80	100.00
J01A14-2	JUNCTION	5848.50	5850.50	0.00
J01A15	JUNCTION	5856.20	5860.20	0.00
J01A16	JUNCTION	5838.50	5842.50	0.00
J01A17	JUNCTION	5848.80	5852.30	0.00
J01A18	JUNCTION	5848.30	5852.30	0.00
J-01A18-1	JUNCTION	5847.00	5849.00	0.00
J01A2	JUNCTION	5885.00	5886.00	0.00
J-01A2-1	JUNCTION	5879.00	5884.00	0.00
J01A3	JUNCTION	5874.00	5878.00	0.00
J-01A3-1	JUNCTION	5868.90	5869.90	0.00
J01A4	JUNCTION	5877.00	5881.00	0.00
J01A5	JUNCTION	5864.50	5869.50	625.00
J01A6	JUNCTION	5863.65	5867.65	200.00
J01A7	JUNCTION	5863.60	5867.10	560.00
J01A8	JUNCTION	5875.00	5879.00	0.00
J-01A8-1	JUNCTION	5870.00	5872.00	0.00
J01A9	JUNCTION	5876.00	5877.00	0.00
J-01B1	JUNCTION	5860.00	5862.00	0.00
J01B2	JUNCTION	5873.30	5877.30	0.00
J01B3	JUNCTION	5858.60	5862.60	0.00
J01B4	JUNCTION	5842.40	5846.40	0.00
J01B5	JUNCTION	5838.70	5839.70	0.00
J01B6	JUNCTION	5839.70	5840.70	0.00
J-02	JUNCTION	5835.00	5838.00	0.00
J02A1	JUNCTION	5835.50	5837.00	0.00
J02A2	JUNCTION	5878.00	5879.00	0.00
J-02A2-1	JUNCTION	5851.00	5857.00	0.00
J02A3	JUNCTION	5854.00	5855.00	0.00

J02A4	JUNCTION	5847.00	5848.00	0.00
J02B1	JUNCTION	5875.00	5876.00	0.00
J-02B10	JUNCTION	5851.50	5855.50	200.00
J-02B10-1	JUNCTION	5851.00	5856.00	100.00
J02B11	JUNCTION	5850.20	5854.20	0.00
J-02B13	JUNCTION	5846.00	5852.00	0.00
J02B13-1	JUNCTION	5841.00	5844.50	0.00
J02B2	JUNCTION	5880.00	5881.00	0.00
J02B3	JUNCTION	5865.00	5870.00	0.00
J02B4	JUNCTION	5876.00	5880.00	0.00
J-02B5	JUNCTION	5874.50	5878.50	0.00
J02B5-1	JUNCTION	5863.00	5867.00	0.00
J-02B5-2	JUNCTION	5862.50	5863.50	0.00
J02B6	JUNCTION	5847.00	5851.00	0.00
J02B7	JUNCTION	5857.50	5862.50	400.00
J-02B8	JUNCTION	5853.50	5857.50	0.00
J02B9	JUNCTION	5840.50	5844.00	0.00
J03A1	JUNCTION	5864.00	5865.00	0.00
J03A10	JUNCTION	5877.50	5881.50	0.00
J03A11	JUNCTION	5868.60	5872.60	0.00
J-03A12	JUNCTION	5872.60	5873.60	0.00
J03A12-1	JUNCTION	5870.00	5871.00	0.00
J03A13	JUNCTION	5867.80	5871.80	0.00
J03A14	JUNCTION	5868.30	5872.30	0.00
J03A2	JUNCTION	5858.00	5859.00	0.00
J03A3	JUNCTION	5892.10	5896.10	0.00
J03A4	JUNCTION	5881.50	5885.50	0.00
J03A5	JUNCTION	5883.60	5887.60	0.00
J03A6	JUNCTION	5878.50	5882.50	0.00
J03A7	JUNCTION	5875.00	5879.00	0.00
J03A8	JUNCTION	5882.70	5886.70	0.00
J03A9	JUNCTION	5874.00	5878.00	0.00
J-08B8-1	JUNCTION	5839.50	5841.00	0.00
J-64	JUNCTION	0.00	6.00	0.00
DP-01	OUTFALL	5834.00	5835.00	0.00
DP-02	OUTFALL	5834.00	5835.00	0.00

DP-03	OUTFALL	5829.00	5830.00	0.00
DET-02B	STORAGE	5839.00	5841.20	0.00
J-01A-DET	STORAGE	5838.00	5844.20	0.00
J-01B-DET	STORAGE	5840.80	5846.20	0.00
J03-DET	STORAGE	5861.60	5867.20	0.00

****
Link Summary
****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
L-01	J-01	DP-01	CHANNEL	20.9	2.3969	0.0320
L-01A1	J01A1	J-01A1-1	CHANNEL	63.3	2.3693	0.0320
L-01A10	J01A10	J01A11	CONDUIT	97.7	4.0937	0.0120
L-01A11	J01A11	J01A12	CONDUIT	114.5	1.3096	0.0120
L-01A1-1	J-01A1-1	J-01A1-2	CONDUIT	78.4	1.9125	0.0120
L-01A12	J01A12	J-01A14	CONDUIT	113.0	2.3887	0.0120
L-01A13	J01A13	J01A15	CONDUIT	183.8	3.8075	0.0120
L-01A14	J-01A14	J-01A14-1	CHANNEL	90.3	1.1069	0.0320
L-01A14-1	J-01A14-1	J--01A14-11	CONDUIT	28.2	1.0653	0.0120
L-01A14-11	J--01A14-11	J01A14-2	CONDUIT	37.8	1.3214	0.0120
L-01A14-2	J01A14-2	J-01A-DET	CHANNEL	134.9	4.8195	0.0320
L-01A15	J01A15	J-01A14-1	CONDUIT	72.8	8.7973	0.0120
L-01A16	J01A16	J-01A-DET	CONDUIT	49.6	1.0089	0.0150
L-01A17	J01A17	J01A18	CONDUIT	16.0	3.1328	0.0120
L-01A18	J01A18	J-01A18-1	CONDUIT	76.1	1.7078	0.0120
L-01A18-1	J-01A18-1	J-01A-DET	CHANNEL	71.2	7.0205	0.0320
L-01A2	J01A2	J-01A2-1	CHANNEL	66.5	3.0089	0.0320
L-01A2-1	J-01A2-1	J01A4	CONDUIT	63.5	3.1521	0.0120
L-01A3	J01A3	J-01A3-1	CONDUIT	45.4	11.2434	0.0120
L-01A3-1	J-01A3-1	J01A5	CHANNEL	41.3	0.9690	0.0320
L-01A4	J01A4	J-01A1-2	CONDUIT	132.0	1.5156	0.0120
L-01A5-1	J01A5	J01A6	CONDUIT	53.7	1.5832	0.0120
L-01A6	J01A6	J01A10	CONDUIT	34.0	1.9118	0.0120

L-01A7	J01A7	J01A13	CONDUIT	93.4	0.4284	0.0120
L-01A8	J01A8	J-01A8-1	CONDUIT	75.0	6.6667	0.0120
L-01A8-1	J-01A8-1	J-01B1	CHANNEL	242.3	4.1276	0.0320
L-01A-DET	J-01A-DET	J-01	CHANNEL	37.4	25.4351	0.0320
L-01B1	J-01B1	J-01	CHANNEL	313.2	8.1420	0.0320
L-01B2	J01B2	J-01B1	CHANNEL	144.7	9.1889	0.0320
L-01B3	J01B3	J01B4	CONDUIT	201.2	8.0521	0.0120
L-01B4	J01B4	J-01B-DET	CONDUIT	35.2	3.9784	0.0120
L-01B5	J01B5	J-01	CHANNEL	103.6	4.0556	0.0320
L-01B6	J01B6	J01B5	CHANNEL	27.9	3.5894	0.0320
L-01B-DET	J-01B-DET	J-01	CHANNEL	93.2	12.3444	0.0320
L-02	J-02	DP-02	CHANNEL	22.0	4.5434	0.0320
L-02A1	J02A1	J-02	CONDUIT	55.0	0.9098	0.0120
L-02A2	J02A2	J-02A2-1	CHANNEL	249.7	10.8112	0.0320
L-02A2-1	J-02A2-1	J02A1	CHANNEL	143.8	10.7759	0.0320
L-02A3	J02A3	J-02A2-1	CHANNEL	20.8	14.3954	0.0320
L-02A4	J02A4	J02A1	CHANNEL	71.6	16.0704	0.0320
L-02B1	J02B1	J02B3	CHANNEL	111.2	5.3962	0.0320
L-02B10	J-02B10	J-02B10-1	CONDUIT	35.2	1.4192	0.0120
L-02B10-1	J-02B10-1	J-02B13	CONDUIT	77.4	6.4608	0.0120
L-02B11	J02B11	J-02B13	CONDUIT	61.6	6.8204	0.0120
L-02B13	J-02B13	J02B13-1	CONDUIT	79.9	6.2555	0.0120
L-02B13-1	J02B13-1	J02B9	CONDUIT	26.7	1.8699	0.0120
L-02B2	J02B2	J02B4	CHANNEL	30.1	3.3267	0.0320
L-02B3	J02B3	J-02B8	CONDUIT	218.5	5.2627	0.0120
L-02B4	J02B4	J-02B5	CONDUIT	95.3	1.5738	0.0120
L-02B5	J-02B5	J02B5-1	CONDUIT	183.7	6.2588	0.0120
L-02B5-1	J02B5-1	J-02B5-2	CONDUIT	31.8	1.5743	0.0120
L-02B5-2	J-02B5-2	J02B7	CHANNEL	40.0	2.5000	0.0320
L-02B6	J02B6	J-02B13	CONDUIT	32.7	3.0618	0.0120
L-02B7	J02B7	J-02B13	CONDUIT	122.5	9.3908	0.0120
L-02B8	J-02B8	J-08B8-1	CONDUIT	175.5	7.9777	0.0120
L-02B8-1	J-08B8-1	DET-02B	CHANNEL	42.3	1.1832	0.0320
L-02B9	J02B9	J-08B8-1	CONDUIT	64.3	1.5564	0.0120
L-02B-DET OVER	DET-02B	J02A1	CHANNEL	33.9	16.2338	0.0320
L-03A1	J03A1	J03A2	CHANNEL	134.4	4.4643	0.0320

L-03A10	J03A10	J03A11	CONDUIT	69.7	12.7763	0.0120
L-03A11	J03A11	J03A13	CONDUIT	63.6	1.2577	0.0120
L-03A12	J-03A12	J03A12-1	CHANNEL	72.8	3.5719	0.0320
L-03A12-1	J03A12-1	J03-DET	CHANNEL	166.2	2.6479	0.0320
L-03A13	J03A13	J03-DET	CONDUIT	89.6	6.9189	0.0120
L-03A14	J03A14	J03-DET	CONDUIT	80.5	8.3261	0.0120
L-03A2	J03A2	DP-03	CHANNEL	378.4	7.6641	0.0320
L-03A3	J03A3	J03A5	CONDUIT	79.6	10.6744	0.0120
L-03A4	J03A4	J-03A12	CONDUIT	111.4	7.9892	0.0120
L-03A5	J03A5	J03A7	CONDUIT	121.5	7.0753	0.0120
L-03A6	J03A6	J03A10	CONDUIT	37.8	2.6490	0.0120
L-03A7	J03A7	J03A9	CONDUIT	32.7	3.0581	0.0120
L-03A8	J03A8	J03A6	CONDUIT	51.1	8.2111	0.0120
L-03A9	J03A9	J03A13	CONDUIT	178.1	3.4804	0.0120
L-03-DET	J03-DET	J03A2	CHANNEL	170.3	5.2832	0.0320
L-26	J-01A1-2	J01A3	CONDUIT	94.5	1.0583	0.0120
L-29	J01A9	J-01A8-1	CHANNEL	103.4	5.8038	0.0320
ORIF-01A	J-01A-DET	J-01	ORIFICE			
ORIF-01B	J-01B-DET	J-01	ORIFICE			
ORIF-02B	DET-02B	J02A1	ORIFICE			
ORIF-03A	J03-DET	J03A2	ORIFICE			

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Cross Section Summary
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Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft²	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
L-01	TRAPEZOIDAL	1.00	14.00	1	10.00	0.70	56.78
L-01A1	TRAPEZOIDAL	1.00	12.00	1	7.00	0.57	34.55
L-01A10	CIRCULAR	1.00	1.00	1	0.79	0.25	7.81
L-01A11	CIRCULAR	1.00	1.00	1	0.79	0.25	4.42
L-01A1-1	CIRCULAR	1.00	1.00	1	0.79	0.25	5.34

L-01A12	CIRCULAR	1.00	1.00	1	0.79	0.25	5.97
L-01A13	CIRCULAR	0.67	0.67	1	0.35	0.17	2.55
L-01A14	TRAPEZOIDAL	1.00	10.00	1	6.00	0.59	20.52
L-01A14-1	CIRCULAR	1.00	1.00	1	0.79	0.25	3.98
L-01A14-11	CIRCULAR	1.00	1.00	1	0.79	0.25	4.44
L-01A14-2	TRAPEZOIDAL	1.00	12.00	1	8.00	0.65	61.40
L-01A15	CIRCULAR	1.00	1.00	1	0.79	0.25	11.45
L-01A16	CIRCULAR	1.00	1.00	1	0.79	0.25	3.10
L-01A17	CIRCULAR	0.67	0.67	1	0.35	0.17	2.32
L-01A18	CIRCULAR	1.00	1.00	1	0.79	0.25	5.04
L-01A18-1	TRAPEZOIDAL	1.00	12.00	1	8.00	0.65	74.11
L-01A2	TRAPEZOIDAL	1.00	12.00	1	7.00	0.57	38.94
L-01A2-1	CIRCULAR	1.00	1.00	1	0.79	0.25	6.85
L-01A3	CIRCULAR	1.00	1.00	1	0.79	0.25	12.94
L-01A3-1	TRAPEZOIDAL	1.00	10.00	1	6.00	0.59	19.20
L-01A4	CIRCULAR	1.00	1.00	1	0.79	0.25	4.75
L-01A5-1	CIRCULAR	0.67	0.67	1	0.35	0.17	1.65
L-01A6	CIRCULAR	1.00	1.00	1	0.79	0.25	5.34
L-01A7	CIRCULAR	0.67	0.67	1	0.35	0.17	0.86
L-01A8	CIRCULAR	0.67	0.67	1	0.35	0.17	3.38
L-01A8-1	TRAPEZOIDAL	1.00	14.00	1	10.00	0.70	74.52
L-01A-DET	TRAPEZOIDAL	0.20	11.60	1	2.16	0.19	16.45
L-01B1	TRAPEZOIDAL	1.00	14.00	1	10.00	0.70	104.66
L-01B2	TRAPEZOIDAL	1.00	14.00	1	10.00	0.70	111.18
L-01B3	CIRCULAR	1.00	1.00	1	0.79	0.25	10.95
L-01B4	CIRCULAR	0.67	0.67	1	0.35	0.17	2.61
L-01B5	TRAPEZOIDAL	1.00	12.00	1	8.00	0.65	56.33
L-01B6	TRAPEZOIDAL	1.00	12.00	1	8.00	0.65	52.99
L-01B-DET	TRAPEZOIDAL	0.20	11.60	1	2.16	0.19	11.46
L-02	TRAPEZOIDAL	1.00	10.00	1	6.00	0.59	41.57
L-02A1	CIRCULAR	1.50	1.50	1	1.77	0.38	10.85
L-02A2	TRAPEZOIDAL	1.00	10.00	1	6.00	0.59	64.12
L-02A2-1	TRAPEZOIDAL	1.00	10.00	1	6.00	0.59	64.02
L-02A3	TRAPEZOIDAL	1.00	12.00	1	7.00	0.57	85.17
L-02A4	TRAPEZOIDAL	1.00	10.00	1	6.00	0.59	78.18
L-02B1	TRAPEZOIDAL	1.00	10.00	1	6.00	0.59	45.30

L-02B10	CIRCULAR	0.67	0.67	1	0.35	0.17	1.56
L-02B10-1	CIRCULAR	0.67	0.67	1	0.35	0.17	3.33
L-02B11	CIRCULAR	0.67	0.67	1	0.35	0.17	3.42
L-02B13	CIRCULAR	1.00	1.00	1	0.79	0.25	9.65
L-02B13-1	CIRCULAR	1.00	1.00	1	0.79	0.25	5.28
L-02B2	TRAPEZOIDAL	1.00	10.00	1	6.00	0.59	35.57
L-02B3	CIRCULAR	0.67	0.67	1	0.35	0.17	3.00
L-02B4	CIRCULAR	0.67	0.67	1	0.35	0.17	1.64
L-02B5	CIRCULAR	0.67	0.67	1	0.35	0.17	3.28
L-02B5-1	CIRCULAR	1.00	1.00	1	0.79	0.25	4.84
L-02B5-2	TRAPEZOIDAL	1.00	12.00	1	7.00	0.57	35.49
L-02B6	CIRCULAR	1.00	1.00	1	0.79	0.25	6.75
L-02B7	CIRCULAR	0.67	0.67	1	0.35	0.17	4.01
L-02B8	CIRCULAR	0.67	0.67	1	0.35	0.17	3.70
L-02B8-1	TRAPEZOIDAL	1.00	8.00	1	5.00	0.60	17.98
L-02B9	CIRCULAR	1.00	1.00	1	0.79	0.25	4.82
L-02B-DET OVER	TRAPEZOIDAL	0.20	12.00	1	2.20	0.18	13.25
L-03A1	TRAPEZOIDAL	1.00	12.00	1	8.00	0.65	59.10
L-03A10	CIRCULAR	0.67	0.67	1	0.35	0.17	4.68
L-03A11	CIRCULAR	0.67	0.67	1	0.35	0.17	1.47
L-03A12	TRAPEZOIDAL	1.00	12.00	1	7.00	0.57	42.43
L-03A12-1	TRAPEZOIDAL	1.00	12.00	1	7.00	0.57	36.53
L-03A13	CIRCULAR	1.00	1.00	1	0.79	0.25	10.15
L-03A14	CIRCULAR	0.67	0.67	1	0.35	0.17	3.78
L-03A2	TRAPEZOIDAL	1.00	12.00	1	8.00	0.65	77.43
L-03A3	CIRCULAR	0.67	0.67	1	0.35	0.17	4.28
L-03A4	CIRCULAR	0.67	0.67	1	0.35	0.17	3.70
L-03A5	CIRCULAR	0.67	0.67	1	0.35	0.17	3.48
L-03A6	CIRCULAR	0.67	0.67	1	0.35	0.17	2.13
L-03A7	CIRCULAR	0.67	0.67	1	0.35	0.17	2.29
L-03A8	CIRCULAR	0.67	0.67	1	0.35	0.17	3.75
L-03A9	CIRCULAR	0.67	0.67	1	0.35	0.17	2.44
L-03-DET	TRAPEZOIDAL	1.00	18.00	1	14.00	0.77	125.24
L-26	CIRCULAR	1.00	1.00	1	0.79	0.25	3.97
L-29	TRAPEZOIDAL	1.00	12.00	1	8.00	0.65	67.38

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	2.481	0.699
Continuity Error (%)	0.609	

Flow Routing Continuity	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	1.161	0.378
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.001	0.000
Continuity Error (%)	0.000	

Runoff Coefficient Computations Report

Subbasin DE-01A10

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_60%IMPERV	0.13	C	0.66
Composite Area & Weighted Runoff Coeff.	0.13		0.66

Subbasin DE-01A11

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.

MHFD_C_40%IMPERV	0.15	C	0.54
Composite Area & Weighted Runoff Coeff.	0.15		0.54

Subbasin DE-01A12

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_60%IMPERV	0.23	C	0.66
Composite Area & Weighted Runoff Coeff.	0.23		0.66

Subbasin DE-01A13

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_70%IMPERV	0.15	C	0.71
Composite Area & Weighted Runoff Coeff.	0.15		0.71

Subbasin DE-01A14

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_55%IMPERV	0.56	C	0.63
Composite Area & Weighted Runoff Coeff.	0.56		0.63

Subbasin DE-01A15

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.

MHFD_C_30%IMPERV	0.14	C	0.49
Composite Area & Weighted Runoff Coeff.	0.14		0.49

Subbasin DE-01A16

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_40%IMPERV	0.41	C	0.54
Composite Area & Weighted Runoff Coeff.	0.41		0.54

Subbasin DE-01A17

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_80%IMPERV	0.13	C	0.77
Composite Area & Weighted Runoff Coeff.	0.13		0.77

Subbasin DE-01A18

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_95%IMPERV	0.43	C	0.85
Composite Area & Weighted Runoff Coeff.	0.43		0.85

Subbasin DE-01A3

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.

MHFD_C_75%IMPERV	0.64	C	0.74
Composite Area & Weighted Runoff Coeff.	0.64		0.74

Subbasin DE-01A4

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_60%IMPERV	0.19	C	0.66
Composite Area & Weighted Runoff Coeff.	0.19		0.66

Subbasin DE-01A5

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_02%IMPERV	0.11	C	0.33
Composite Area & Weighted Runoff Coeff.	0.11		0.33

Subbasin DE-01A6

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_20%IMPERV	0.08	C	0.43
Composite Area & Weighted Runoff Coeff.	0.08		0.43

Subbasin DE-01A7

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.

MHFD_C_20%IMPERV	0.32	C	0.43
Composite Area & Weighted Runoff Coeff.	0.32		0.43

Subbasin DE-01A8

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_90%IMPERV	0.38	C	0.82
Composite Area & Weighted Runoff Coeff.	0.38		0.82

Subbasin DE-01A-EX1

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_2%_IMPERV	1.55	C	0.33
Composite Area & Weighted Runoff Coeff.	1.55		0.33

Subbasin DE-01A-EX2

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_2%_IMPERV	3.71	C	0.33
Composite Area & Weighted Runoff Coeff.	3.71		0.33

Subbasin DE-01A-EX9

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.

MHFD_C_2%_IMPERV	1.36	C	0.33
Composite Area & Weighted Runoff Coeff.	1.36		0.33

Subbasin DE-01B2

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_90%IMPERV	0.20	C	0.82
Composite Area & Weighted Runoff Coeff.	0.20		0.82

Subbasin DE-01B3

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_85%IMPERV	0.23	C	0.80
Composite Area & Weighted Runoff Coeff.	0.23		0.80

Subbasin DE-01B4

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_60%IMPERV	0.46	C	0.80
Composite Area & Weighted Runoff Coeff.	0.46		0.80

Subbasin DE-01B5

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.

MHFD_C_100%IMPERV	0.07	C	0.89
Composite Area & Weighted Runoff Coeff.	0.07		0.89

Subbasin DE-01B6

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_02%IMPERV	0.45	C	0.33
Composite Area & Weighted Runoff Coeff.	0.45		0.33

Subbasin DE-01B-EX1

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_2%_IMPERV	2.66	C	0.33
Composite Area & Weighted Runoff Coeff.	2.66		0.33

Subbasin DE-02A3

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_40%IMPERV	0.21	C	0.54
Composite Area & Weighted Runoff Coeff.	0.21		0.54

Subbasin DE-02A4

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.

MHFD_C_50%IMPERV	0.05	C	0.60
Composite Area & Weighted Runoff Coeff.	0.05		0.60

Subbasin DE-02A-EX1

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_2%_IMPERV	2.85	C	0.33
Composite Area & Weighted Runoff Coeff.	2.85		0.33

Subbasin DE-02A-EX2

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_2%_IMPERV	1.06	C	0.33
Composite Area & Weighted Runoff Coeff.	1.06		0.33

Subbasin DE-02B10

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_65%IMPERV	0.40	C	0.68
Composite Area & Weighted Runoff Coeff.	0.40		0.68

Subbasin DE-02B11

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.

MHFD_C_100%IMPERV	0.39	C	0.89
Composite Area & Weighted Runoff Coeff.	0.39		0.89

Subbasin DE-02B12

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_80%IMPERV	0.12	C	0.77
Composite Area & Weighted Runoff Coeff.	0.12		0.77

Subbasin DE-02B13

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_45%IMPERV	0.28	C	0.57
Composite Area & Weighted Runoff Coeff.	0.28		0.57

Subbasin DE-02B3

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_30%IMPERV	0.26	C	0.49
Composite Area & Weighted Runoff Coeff.	0.26		0.49

Subbasin DE-02B4

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.

MHFD_C_40%IMPERV	0.10	C	0.54
Composite Area & Weighted Runoff Coeff.	0.10		0.54

Subbasin DE-02B5

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_70%IMPERV	0.35	C	0.71
Composite Area & Weighted Runoff Coeff.	0.35		0.71

Subbasin DE-02B6

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_85%IMPERV	0.24	C	0.80
Composite Area & Weighted Runoff Coeff.	0.24		0.80

Subbasin DE-02B7

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_30%IMPERV	0.23	C	0.49
Composite Area & Weighted Runoff Coeff.	0.23		0.49

Subbasin DE-02B8

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.

MHFD_C_45%IMPERV	0.40	C	0.57
Composite Area & Weighted Runoff Coeff.	0.40		0.57

Subbasin DE-02B9

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_95%IMPERV	0.16	C	0.85
Composite Area & Weighted Runoff Coeff.	0.16		0.85

Subbasin DE-02B-EX1

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_02%IMPERV	0.33	C	0.33
Composite Area & Weighted Runoff Coeff.	0.33		0.33

Subbasin DE-02B-EX2

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_02%_IMPERV	1.54	C	0.33
Composite Area & Weighted Runoff Coeff.	1.54		0.33

Subbasin DE-03A10

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.

MHFD_C_100%IMPERV	0.29	C	0.89
Composite Area & Weighted Runoff Coeff.	0.29		0.89

Subbasin DE-03A11

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_25%IMPERV	0.21	C	0.46
Composite Area & Weighted Runoff Coeff.	0.21		0.46

Subbasin DE-03A12

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_15%IMPERV	0.19	C	0.42
Composite Area & Weighted Runoff Coeff.	0.19		0.42

Subbasin DE-03A13

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_10%IMPERV	0.07	C	0.38
Composite Area & Weighted Runoff Coeff.	0.07		0.38

Subbasin DE-03A14

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.

MHFD_C_90%IMPERV	0.13	C	0.82
Composite Area & Weighted Runoff Coeff.	0.13		0.82

Subbasin DE-03A15

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_15%IMPERV	0.48	C	0.40
Composite Area & Weighted Runoff Coeff.	0.48		0.40

Subbasin DE-03A3

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_100%IMPERV	0.19	C	0.89
Composite Area & Weighted Runoff Coeff.	0.19		0.89

Subbasin DE-03A4

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_100%IMPERV	0.12	C	0.89
Composite Area & Weighted Runoff Coeff.	0.12		0.89

Subbasin DE-03A5

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.

```
--------------------------------------------------------------------------------
MHFD_C_30%IMPERV                                  0.16MHFD_C_20%IMPERV         0.49
Composite Area & Weighted Runoff Coeff.           0.16                         0.49

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Subbasin DE-03A6
-------------------
                                                    Area          Soil       Runoff
Soil/Surface Description                           (acres)        Group      Coeff.
--------------------------------------------------------------------------------
MHFD_C_25%IMPERV                                    0.45            C         0.46
Composite Area & Weighted Runoff Coeff.             0.45                      0.46

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Subbasin DE-03A7
-------------------
                                                    Area          Soil       Runoff
Soil/Surface Description                           (acres)        Group      Coeff.
--------------------------------------------------------------------------------
MHFD_C_25%IMPERV                                    0.35            C         0.46
Composite Area & Weighted Runoff Coeff.             0.35                      0.46

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Subbasin DE-03A8
-------------------
                                                    Area          Soil       Runoff
Soil/Surface Description                           (acres)        Group      Coeff.
--------------------------------------------------------------------------------
MHFD_C_95%IMPERV                                    0.08            C         0.85
Composite Area & Weighted Runoff Coeff.             0.08                      0.85

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Subbasin DE-03A9
-------------------
                                                    Area          Soil       Runoff
Soil/Surface Description                           (acres)        Group      Coeff.
```

MHFD_C_100%IMPERV	0.07	C	0.89
Composite Area & Weighted Runoff Coeff.	0.07		0.89

Subbasin DE-03A-EX1

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_2%_IMPERV	4.78	C	0.33
Composite Area & Weighted Runoff Coeff.	4.78		0.33

Subbasin DE-03A-EX2

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_C_2%_IMPERV	11.31	C	0.33
Composite Area & Weighted Runoff Coeff.	11.31		0.33

****
SCS TR-55 Time of Concentration Computations Report
****

Sheet Flow Equation

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where:

Tc = Time of Concentration (hrs)
n = Manning's Roughness

```
        Lf = Flow Length (ft)
        P  = 2 yr, 24 hr Rainfall (inches)
        Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation
----------------------------------

        V  = 16.1345 * (Sf^0.5) (unpaved surface)
        V  = 20.3282 * (Sf^0.5) (paved surface)
        V  = 15.0 * (Sf^0.5) (grassed waterway surface)
        V  = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
        V  = 9.0 * (Sf^0.5) (cultivated straight rows surface)
        V  = 7.0 * (Sf^0.5) (short grass pasture surface)
        V  = 5.0 * (Sf^0.5) (woodland surface)
        V  = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
        Tc = (Lf / V) / (3600 sec/hr)

        Where:

        Tc = Time of Concentration (hrs)
        Lf = Flow Length (ft)
        V  = Velocity (ft/sec)
        Sf = Slope (ft/ft)

Channel Flow Equation
---------------------

        V  = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
        R  = Aq / Wp
        Tc = (Lf / V) / (3600 sec/hr)

        Where:

        Tc = Time of Concentration (hrs)
        Lf = Flow Length (ft)
        R  = Hydraulic Radius (ft)
```

```
        Aq = Flow Area (ft²)
        Wp = Wetted Perimeter (ft)
        V  = Velocity (ft/sec)
        Sf = Slope (ft/ft)
        n  = Manning's Roughness

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Subbasin DE-01A10
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        User-Defined TOC override (minutes):     10.00

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Subbasin DE-01A11
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        User-Defined TOC override (minutes):     10.00

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Subbasin DE-01A12
--------------------

        User-Defined TOC override (minutes):     10.00

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Subbasin DE-01A13
--------------------

        User-Defined TOC override (minutes):     10.00

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Subbasin DE-01A14
--------------------

        User-Defined TOC override (minutes):     10.00
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Subbasin DE-01A15
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        User-Defined TOC override (minutes):     10.00

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Subbasin DE-01A16
--------------------

        User-Defined TOC override (minutes):     10.00

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Subbasin DE-01A17
--------------------

        User-Defined TOC override (minutes):     10.00

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Subbasin DE-01A18
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        User-Defined TOC override (minutes):      5.00

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Subbasin DE-01A3
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        User-Defined TOC override (minutes):     10.00

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Subbasin DE-01A4
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        User-Defined TOC override (minutes):     10.00
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Subbasin DE-01A5

User-Defined TOC override (minutes): 10.00

Subbasin DE-01A6

User-Defined TOC override (minutes): 10.00

Subbasin DE-01A7

User-Defined TOC override (minutes): 10.00

Subbasin DE-01A8

User-Defined TOC override (minutes): 10.00

Subbasin DE-01A-EX1

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.00	0.00
Flow Length (ft):	150.00	0.00	0.00
Slope (%):	50.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.20	0.00	0.00
Velocity (ft/sec):	0.24	0.00	0.00

Computed Flow Time (minutes):	10.63	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	300.00	0.00	0.00
Channel Slope (%):	8.50	0.00	0.00
Cross Section Area (ft²):	0.50	0.00	0.00
Wetted Perimeter (ft):	7.00	0.00	0.00
Velocity (ft/sec):	2.49	0.00	0.00
Computed Flow Time (minutes):	2.01	0.00	0.00
Total TOC (minutes):	12.64		

Subbasin DE-01A-EX2

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.00	0.00
Flow Length (ft):	213.00	0.00	0.00
Slope (%):	57.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.20	0.00	0.00
Velocity (ft/sec):	0.27	0.00	0.00
Computed Flow Time (minutes):	13.36	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.03	0.00
Flow Length (ft):	432.00	370.00	0.00

Channel Slope (%):	15.00	5.50	0.00
Cross Section Area (ft²):	0.50	0.50	0.00
Wetted Perimeter (ft):	7.00	7.00	0.00
Velocity (ft/sec):	3.31	2.01	0.00
Computed Flow Time (minutes):	2.17	3.08	0.00
Total TOC (minutes):	18.61		

Subbasin DE-01A-EX9

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.00	0.00
Flow Length (ft):	120.00	0.00	0.00
Slope (%):	20.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.20	0.00	0.00
Velocity (ft/sec):	0.16	0.00	0.00
Computed Flow Time (minutes):	12.83	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	150.00	0.00	0.00
Slope (%):	30.00	0.00	0.00
Surface Type:	Woodland	Unpaved	Unpaved
Velocity (ft/sec):	2.74	0.00	0.00
Computed Flow Time (minutes):	0.91	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C

Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	300.00	0.00	0.00
Channel Slope (%):	10.00	0.00	0.00
Cross Section Area (ft²):	0.50	0.00	0.00
Wetted Perimeter (ft):	7.00	0.00	0.00
Velocity (ft/sec):	2.70	0.00	0.00
Computed Flow Time (minutes):	1.85	0.00	0.00
Total TOC (minutes):	15.59		

Subbasin DE-01B2

User-Defined TOC override (minutes): 10.00

Subbasin DE-01B3

User-Defined TOC override (minutes): 10.00

Subbasin DE-01B4

User-Defined TOC override (minutes): 10.00

Subbasin DE-01B5

User-Defined TOC override (minutes): 5.00

Subbasin DE-01B6

User-Defined TOC override (minutes): 10.00

Subbasin DE-01B-EX1

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.00	0.00
Flow Length (ft):	100.00	0.00	0.00
Slope (%):	15.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.20	0.00	0.00
Velocity (ft/sec):	0.13	0.00	0.00
Computed Flow Time (minutes):	12.44	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	100.00	0.00	0.00
Slope (%):	10.00	0.00	0.00
Surface Type:	Woodland	Unpaved	Unpaved
Velocity (ft/sec):	1.58	0.00	0.00
Computed Flow Time (minutes):	1.05	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	500.00	0.00	0.00
Channel Slope (%):	5.00	0.00	0.00
Cross Section Area (ft²):	0.50	0.00	0.00

Wetted Perimeter (ft):	7.00	0.00	0.00
Velocity (ft/sec):	1.91	0.00	0.00
Computed Flow Time (minutes):	4.36	0.00	0.00
Total TOC (minutes):	17.86		

Subbasin DE-02A3

User-Defined TOC override (minutes): 10.00

Subbasin DE-02A4

User-Defined TOC override (minutes): 10.00

Subbasin DE-02A-EX1

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.30	0.00
Flow Length (ft):	27.00	130.00	0.00
Slope (%):	14.00	68.00	0.00
2 yr, 24 hr Rainfall (in):	1.20	1.20	0.00
Velocity (ft/sec):	0.10	0.26	0.00
Computed Flow Time (minutes):	4.49	8.39	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	90.00	0.00	0.00
Slope (%):	64.00	0.00	0.00
Surface Type:	Woodland	Unpaved	Unpaved
Velocity (ft/sec):	4.00	0.00	0.00
Computed Flow Time (minutes):	0.38	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.03	0.00
Flow Length (ft):	207.00	680.00	0.00
Channel Slope (%):	44.00	11.00	0.00
Cross Section Area (ft²):	0.50	0.50	0.00
Wetted Perimeter (ft):	7.00	7.00	0.00
Velocity (ft/sec):	5.67	2.84	0.00
Computed Flow Time (minutes):	0.61	4.00	0.00
Total TOC (minutes):	17.85		

Subbasin DE-02A-EX2

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.00	0.00
Flow Length (ft):	150.00	0.00	0.00
Slope (%):	66.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.20	0.00	0.00
Velocity (ft/sec):	0.26	0.00	0.00
Computed Flow Time (minutes):	9.52	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	90.00	0.00	0.00
Slope (%):	64.00	0.00	0.00
Surface Type:	Woodland	Unpaved	Unpaved
Velocity (ft/sec):	4.00	0.00	0.00
Computed Flow Time (minutes):	0.38	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.03	0.00
Flow Length (ft):	100.00	300.00	0.00
Channel Slope (%):	40.00	10.00	0.00
Cross Section Area (ft²):	0.50	0.50	0.00
Wetted Perimeter (ft):	7.00	7.00	0.00
Velocity (ft/sec):	5.41	2.70	0.00
Computed Flow Time (minutes):	0.31	1.85	0.00
Total TOC (minutes):	12.05		

Subbasin DE-02B10

User-Defined TOC override (minutes): 10.00

Subbasin DE-02B11

User-Defined TOC override (minutes): 5.00

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Subbasin DE-02B12
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        User-Defined TOC override (minutes):     10.00

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Subbasin DE-02B13
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        User-Defined TOC override (minutes):     10.00

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Subbasin DE-02B3
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        User-Defined TOC override (minutes):     10.00

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Subbasin DE-02B4
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        User-Defined TOC override (minutes):     10.00

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Subbasin DE-02B5
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        User-Defined TOC override (minutes):     10.00

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Subbasin DE-02B6
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        User-Defined TOC override (minutes):     10.00
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Subbasin DE-02B7
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        User-Defined TOC override (minutes):     10.00

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Subbasin DE-02B8
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        User-Defined TOC override (minutes):     10.00

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Subbasin DE-02B9
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        User-Defined TOC override (minutes):     10.00

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Subbasin DE-02B-EX1
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Sheet Flow Computations
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                                          Subarea A          Subarea B          Subarea C
        Manning's Roughness:                   0.30               0.00               0.00
        Flow Length (ft):                    100.00               0.00               0.00
        Slope (%):                             8.50               0.00               0.00
        2 yr, 24 hr Rainfall (in):             1.20               0.00               0.00
        Velocity (ft/sec):                     0.11               0.00               0.00
        Computed Flow Time (minutes):         15.62               0.00               0.00

Shallow Concentrated Flow Computations
--------------------------------------
                                          Subarea A          Subarea B          Subarea C
        Flow Length (ft):                    180.00               0.00               0.00
```

Slope (%):	8.00	0.00	0.00
Surface Type:	Woodland	Unpaved	Unpaved
Velocity (ft/sec):	1.41	0.00	0.00
Computed Flow Time (minutes):	2.13	0.00	0.00
Total TOC (minutes):	17.74		

Subbasin DE-02B-EX2

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.30	0.00
Flow Length (ft):	100.00	70.00	0.00
Slope (%):	18.00	61.00	0.00
2 yr, 24 hr Rainfall (in):	1.20	1.20	0.00
Velocity (ft/sec):	0.14	0.22	0.00
Computed Flow Time (minutes):	11.57	5.34	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	135.00	0.00	0.00
Slope (%):	64.00	0.00	0.00
Surface Type:	Woodland	Unpaved	Unpaved
Velocity (ft/sec):	4.00	0.00	0.00
Computed Flow Time (minutes):	0.56	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.03	0.00

Flow Length (ft):	260.00	230.00	0.00
Channel Slope (%):	36.00	8.50	0.00
Cross Section Area (ft²):	0.50	0.50	0.00
Wetted Perimeter (ft):	7.00	7.00	0.00
Velocity (ft/sec):	5.13	2.49	0.00
Computed Flow Time (minutes):	0.84	1.54	0.00
Total TOC (minutes):	19.85		

Subbasin DE-03A10

User-Defined TOC override (minutes): 10.00

Subbasin DE-03A11

User-Defined TOC override (minutes): 10.00

Subbasin DE-03A12

User-Defined TOC override (minutes): 10.00

Subbasin DE-03A13

User-Defined TOC override (minutes): 10.00

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Subbasin DE-03A14
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        User-Defined TOC override (minutes):     10.00

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Subbasin DE-03A15
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        User-Defined TOC override (minutes):     10.00

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Subbasin DE-03A3
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        User-Defined TOC override (minutes):      5.00

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Subbasin DE-03A4
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        User-Defined TOC override (minutes):      5.00

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Subbasin DE-03A5
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        User-Defined TOC override (minutes):     10.00

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Subbasin DE-03A6
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        User-Defined TOC override (minutes):     10.00

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Subbasin DE-03A7

User-Defined TOC override (minutes): 10.00

Subbasin DE-03A8

User-Defined TOC override (minutes): 5.00

Subbasin DE-03A9

User-Defined TOC override (minutes): 5.00

Subbasin DE-03A-EX1

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.00	0.00
Flow Length (ft):	160.00	0.00	0.00
Slope (%):	8.70	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.20	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (minutes):	22.53	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	270.00	0.00	0.00
Slope (%):	8.70	0.00	0.00

Surface Type:	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec):	2.06	0.00	0.00
Computed Flow Time (minutes):	2.18	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.03	0.00
Flow Length (ft):	103.00	525.00	0.00
Channel Slope (%):	32.00	8.70	0.00
Cross Section Area (ft²):	0.50	0.50	0.00
Wetted Perimeter (ft):	7.00	7.00	0.00
Velocity (ft/sec):	4.84	2.52	0.00
Computed Flow Time (minutes):	0.35	3.47	0.00
Total TOC (minutes):	28.54		

Subbasin DE-03A-EX2

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.30	0.00	0.00
Flow Length (ft):	140.00	0.00	0.00
Slope (%):	8.70	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.20	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (minutes):	20.25	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C

Flow Length (ft):	150.00	0.00	0.00
Slope (%):	32.00	0.00	0.00
Surface Type:	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec):	3.96	0.00	0.00
Computed Flow Time (minutes):	0.63	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.03	0.00	0.00
Flow Length (ft):	850.00	0.00	0.00
Channel Slope (%):	9.00	0.00	0.00
Cross Section Area (ft²):	0.50	0.00	0.00
Wetted Perimeter (ft):	7.00	0.00	0.00
Velocity (ft/sec):	2.56	0.00	0.00
Computed Flow Time (minutes):	5.52	0.00	0.00

Total TOC (minutes): 26.41

****
Subbasin Runoff Summary
****

Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days	Time of Concentration hh:mm:ss
DE-01A10	0.54	3.25	0.36	0.27	0.660	0	00:10:00
DE-01A11	0.54	3.25	0.29	0.27	0.540	0	00:10:00
DE-01A12	0.54	3.25	0.36	0.49	0.660	0	00:10:00
DE-01A13	0.54	3.25	0.38	0.35	0.710	0	00:10:00
DE-01A14	0.54	3.25	0.34	1.15	0.630	0	00:10:00
DE-01A15	0.54	3.25	0.27	0.23	0.490	0	00:10:00

DE-01A16	0.54	3.25	0.29	0.72	0.540	0	00:10:00
DE-01A17	0.54	3.25	0.42	0.33	0.770	0	00:10:00
DE-01A18	0.54	3.25	0.46	1.20	0.850	0	00:10:00
DE-01A3	0.54	3.25	0.40	1.54	0.740	0	00:10:00
DE-01A4	0.54	3.25	0.36	0.41	0.660	0	00:10:00
DE-01A5	0.54	3.25	0.18	0.12	0.330	0	00:10:00
DE-01A6	0.54	3.25	0.23	0.11	0.430	0	00:10:00
DE-01A7	0.54	3.25	0.23	0.45	0.430	0	00:10:00
DE-01A8	0.54	3.25	0.44	1.01	0.820	0	00:10:00
DE-01A-EX1	0.61	2.88	0.20	1.47	0.330	0	00:12:38
DE-01A-EX2	0.72	2.31	0.24	2.82	0.330	0	00:18:36
DE-01A-EX9	0.67	2.58	0.22	1.16	0.330	0	00:15:35
DE-01B2	0.54	3.25	0.44	0.53	0.820	0	00:10:00
DE-01B3	0.54	3.25	0.43	0.60	0.800	0	00:10:00
DE-01B4	0.54	3.25	0.43	1.20	0.800	0	00:10:00
DE-01B5	0.54	3.25	0.48	0.20	0.890	0	00:10:00
DE-01B6	0.54	3.25	0.18	0.48	0.330	0	00:10:00
DE-01B-EX1	0.70	2.37	0.23	2.08	0.330	0	00:17:51
DE-02A3	0.54	3.25	0.29	0.37	0.540	0	00:10:00
DE-02A4	0.54	3.25	0.32	0.10	0.600	0	00:10:00
DE-02A-EX1	0.70	2.37	0.23	2.22	0.330	0	00:17:51
DE-02A-EX2	0.59	2.95	0.19	1.03	0.330	0	00:12:03
DE-02B10	0.54	3.25	0.37	0.88	0.680	0	00:10:00
DE-02B11	0.54	3.25	0.48	1.11	0.890	0	00:10:00
DE-02B12	0.54	3.25	0.42	0.30	0.770	0	00:10:00
DE-02B13	0.54	3.25	0.31	0.51	0.570	0	00:10:00
DE-02B3	0.54	3.25	0.27	0.42	0.490	0	00:10:00
DE-02B4	0.54	3.25	0.29	0.18	0.540	0	00:10:00
DE-02B5	0.54	3.25	0.38	0.80	0.710	0	00:10:00
DE-02B6	0.54	3.25	0.43	0.64	0.800	0	00:10:00
DE-02B7	0.54	3.25	0.27	0.37	0.490	0	00:10:00
DE-02B8	0.54	3.25	0.31	0.74	0.570	0	00:10:00
DE-02B9	0.54	3.25	0.46	0.44	0.850	0	00:10:00
DE-02B-EX1	0.70	2.38	0.23	0.26	0.330	0	00:17:44
DE-02B-EX2	0.73	2.21	0.24	1.13	0.330	0	00:19:51
DE-03A10	0.54	3.25	0.48	0.84	0.890	0	00:10:00

DE-03A11	0.54	3.25	0.25	0.31	0.460	0	00:10:00
DE-03A12	0.54	3.25	0.23	0.26	0.420	0	00:10:00
DE-03A13	0.54	3.25	0.21	0.09	0.380	0	00:10:00
DE-03A14	0.54	3.25	0.44	0.34	0.820	0	00:10:00
DE-03A15	0.54	3.25	0.22	0.62	0.400	0	00:10:00
DE-03A3	0.54	3.25	0.48	0.55	0.890	0	00:10:00
DE-03A4	0.54	3.25	0.48	0.34	0.890	0	00:10:00
DE-03A5	0.54	3.25	0.27	0.25	0.490	0	00:10:00
DE-03A6	0.54	3.25	0.25	0.67	0.460	0	00:10:00
DE-03A7	0.54	3.25	0.25	0.52	0.460	0	00:10:00
DE-03A8	0.54	3.25	0.46	0.23	0.850	0	00:10:00
DE-03A9	0.54	3.25	0.48	0.21	0.890	0	00:10:00
DE-03A-EX1	0.84	1.76	0.28	2.78	0.330	0	00:28:32
DE-03A-EX2	0.81	1.85	0.27	6.91	0.330	0	00:26:24

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Node Depth Summary
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Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Flooded Time minutes	Retention Time hh:mm:ss
J-01	0.14	0.36	5834.86	0	00:18	0	0	0:00:00
J01A1	0.04	0.23	5881.23	0	00:13	0	0	0:00:00
J01A10	0.16	0.50	5863.50	0	00:16	0	0	0:00:00
J01A11	0.26	0.90	5859.90	0	00:11	0	0	0:00:00
J-01A1-1	0.07	0.36	5876.86	0	00:13	0	0	0:00:00
J01A12	0.22	0.76	5858.26	0	00:11	0	0	0:00:00
J-01A1-2	0.27	1.69	5876.69	0	00:14	0	0	0:00:00
J01A13	0.04	0.27	5863.47	0	00:10	0	0	0:00:00
J-01A14	0.18	0.58	5855.38	0	00:11	0	0	0:00:00

J-01A14-1	0.68	4.59	5854.39	0	00:13	0	0	0:00:00
J--01A14-11	0.64	3.66	5852.66	0	00:13	0	0	0:00:00
J01A14-2	0.08	0.30	5848.80	0	00:13	0	0	0:00:00
J01A15	0.03	0.20	5856.40	0	00:10	0	0	0:00:00
J01A16	2.60	5.00	5843.50	0	00:17	0.60	24	0:00:00
J01A17	0.03	0.17	5848.97	0	00:10	0	0	0:00:00
J01A18	0.07	0.52	5848.82	0	00:10	0	0	0:00:00
J-01A18-1	0.02	0.12	5847.12	0	00:10	0	0	0:00:00
J01A2	0.08	0.30	5885.30	0	00:19	0	0	0:00:00
J-01A2-1	0.13	0.50	5879.50	0	00:19	0	0	0:00:00
J01A3	0.12	0.46	5874.46	0	00:10	0	0	0:00:00
J-01A3-1	0.23	1.00	5869.90	0	00:15	0.12	8	0:00:00
J01A4	0.16	0.63	5877.63	0	00:19	0	0	0:00:00
J01A5	1.24	5.39	5869.89	0	00:16	0.09	21	0:00:00
J01A6	0.25	0.81	5864.46	0	00:16	0	0	0:00:00
J01A7	0.05	0.37	5863.97	0	00:10	0	0	0:00:00
J01A8	0.04	0.31	5875.31	0	00:10	0	0	0:00:00
J-01A8-1	0.03	0.12	5870.12	0	00:16	0	0	0:00:00
J01A9	0.02	0.11	5876.11	0	00:16	0	0	0:00:00
J-01B1	0.04	0.16	5860.16	0	00:18	0	0	0:00:00
J01B2	0.01	0.05	5873.35	0	00:10	0	0	0:00:00
J01B3	0.02	0.16	5858.76	0	00:10	0	0	0:00:00
J01B4	0.58	3.86	5846.26	0	00:07	0	0	0:00:00
J01B5	0.01	0.09	5838.79	0	00:10	0	0	0:00:00
J01B6	0.01	0.07	5839.77	0	00:10	0	0	0:00:00
J-02	0.13	0.44	5835.44	0	00:19	0	0	0:00:00
J02A1	0.30	1.05	5836.55	0	00:19	0	0	0:00:00
J02A2	0.06	0.22	5878.22	0	00:18	0	0	0:00:00
J-02A2-1	0.06	0.23	5851.23	0	00:18	0	0	0:00:00
J02A3	0.01	0.06	5854.06	0	00:10	0	0	0:00:00
J02A4	0.00	0.03	5847.03	0	00:10	0	0	0:00:00
J02B1	0.02	0.11	5875.11	0	00:11	0	0	0:00:00
J-02B10	0.06	0.44	5851.94	0	00:10	0	0	0:00:00
J-02B10-1	0.03	0.23	5851.23	0	00:10	0	0	0:00:00
J02B11	0.04	0.30	5850.50	0	00:10	0	0	0:00:00
J-02B13	0.13	0.73	5846.73	0	00:11	0	0	0:00:00

J02B13-1	0.35	3.23	5844.23	0	00:10	0	0	0:00:00
J02B2	0.05	0.19	5880.19	0	00:20	0	0	0:00:00
J02B3	0.05	0.19	5865.19	0	00:11	0	0	0:00:00
J02B4	0.13	0.49	5876.49	0	00:20	0	0	0:00:00
J-02B5	0.08	0.28	5874.78	0	00:20	0	0	0:00:00
J02B5-1	0.15	0.49	5863.49	0	00:11	0	0	0:00:00
J-02B5-2	0.07	0.23	5862.73	0	00:11	0	0	0:00:00
J02B6	0.03	0.21	5847.21	0	00:10	0	0	0:00:00
J02B7	0.09	0.32	5857.82	0	00:11	0	0	0:00:00
J-02B8	0.06	0.27	5853.77	0	00:10	0	0	0:00:00
J02B9	0.33	2.60	5843.10	0	00:10	0	0	0:00:00
J03A1	0.08	0.20	5864.20	0	00:28	0	0	0:00:00
J03A10	0.04	0.28	5877.78	0	00:10	0	0	0:00:00
J03A11	0.16	2.06	5870.66	0	00:10	0	0	0:00:00
J-03A12	0.02	0.12	5872.72	0	00:10	0	0	0:00:00
J03A12-1	0.02	0.13	5870.13	0	00:12	0	0	0:00:00
J03A13	0.06	0.41	5868.21	0	00:10	0	0	0:00:00
J03A14	0.02	0.13	5868.43	0	00:10	0	0	0:00:00
J03A2	0.15	0.34	5858.34	0	00:26	0	0	0:00:00
J03A3	0.02	0.16	5892.26	0	00:10	0	0	0:00:00
J03A4	0.02	0.14	5881.64	0	00:10	0	0	0:00:00
J03A5	0.03	0.22	5883.82	0	00:10	0	0	0:00:00
J03A6	0.05	0.35	5878.85	0	00:10	0	0	0:00:00
J03A7	0.06	0.44	5875.44	0	00:10	0	0	0:00:00
J03A8	0.02	0.11	5882.81	0	00:10	0	0	0:00:00
J03A9	0.06	0.39	5874.39	0	00:10	0	0	0:00:00
J-08B8-1	0.30	1.50	5841.00	0	00:08	0.44	14	0:00:00
J-64	0.00	0.00	0.00	0	00:00	0	0	0:00:00
DP-01	0.13	0.33	5834.33	0	00:18	0	0	0:00:00
DP-02	0.12	0.41	5834.41	0	00:19	0	0	0:00:00
DP-03	0.14	0.34	5829.34	0	00:26	0	0	0:00:00
DET-02B	0.45	2.01	5841.01	0	00:08	0	0	0:00:00
J-01A-DET	2.93	5.76	5843.76	0	00:25	0	0	0:00:00
J-01B-DET	0.89	4.60	5845.40	0	00:18	0	0	0:00:00
J03-DET	0.24	2.12	5863.72	0	00:11	0	0	0:00:00

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Node Flow Summary
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Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days	Time of Peak Inflow Occurrence hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days	Time of Peak Flooding Occurrence hh:mm
J-01	JUNCTION	0.00	7.52	0	00:17	0.00		
J01A1	JUNCTION	1.47	1.47	0	00:12	0.00		
J01A10	JUNCTION	0.27	3.75	0	00:15	0.00		
J01A11	JUNCTION	0.27	3.99	0	00:11	0.00		
J-01A1-1	JUNCTION	0.00	1.44	0	00:13	0.00		
J01A12	JUNCTION	0.49	4.43	0	00:11	0.00		
J-01A1-2	JUNCTION	0.00	3.97	0	00:19	0.00		
J01A13	JUNCTION	0.35	0.79	0	00:10	0.00		
J-01A14	JUNCTION	1.15	5.51	0	00:10	0.00		
J-01A14-1	JUNCTION	0.00	6.64	0	00:12	0.00		
J--01A14-11	JUNCTION	0.00	6.25	0	00:13	0.00		
J01A14-2	JUNCTION	0.00	6.25	0	00:13	0.00		
J01A15	JUNCTION	0.23	1.00	0	00:10	0.00		
J01A16	JUNCTION	0.72	1.90	0	00:23	1.90	0	00:23
J01A17	JUNCTION	0.33	0.33	0	00:10	0.00		
J01A18	JUNCTION	1.20	1.52	0	00:10	0.00		
J-01A18-1	JUNCTION	0.00	1.51	0	00:10	0.00		
J01A2	JUNCTION	2.82	2.82	0	00:18	0.00		
J-01A2-1	JUNCTION	0.00	2.79	0	00:19	0.00		
J01A3	JUNCTION	1.54	4.86	0	00:15	0.00		
J-01A3-1	JUNCTION	0.00	4.86	0	00:15	1.67	0	00:16
J01A4	JUNCTION	0.41	2.98	0	00:19	0.00		
J01A5	JUNCTION	0.12	4.70	0	00:15	1.21	0	00:15
J01A6	JUNCTION	0.11	3.58	0	00:16	0.00		
J01A7	JUNCTION	0.45	0.45	0	00:10	0.00		

J01A8	JUNCTION	1.01	1.01	0	00:10	0.00
J-01A8-1	JUNCTION	0.00	1.80	0	00:15	0.00
J01A9	JUNCTION	1.16	1.16	0	00:15	0.00
J-01B1	JUNCTION	2.08	4.04	0	00:17	0.00
J01B2	JUNCTION	0.53	0.53	0	00:10	0.00
J01B3	JUNCTION	0.60	0.60	0	00:10	0.00
J01B4	JUNCTION	1.20	1.79	0	00:10	0.00
J01B5	JUNCTION	0.20	0.68	0	00:10	0.00
J01B6	JUNCTION	0.48	0.48	0	00:10	0.00
J-02	JUNCTION	0.00	6.42	0	00:19	0.00
J02A1	JUNCTION	0.00	6.50	0	00:18	0.00
J02A2	JUNCTION	2.94	2.94	0	00:18	0.00
J-02A2-1	JUNCTION	0.00	3.11	0	00:18	0.00
J02A3	JUNCTION	0.37	0.37	0	00:10	0.00
J02A4	JUNCTION	0.10	0.10	0	00:10	0.00
J02B1	JUNCTION	0.56	0.56	0	00:10	0.00
J-02B10	JUNCTION	0.88	0.88	0	00:10	0.00
J-02B10-1	JUNCTION	0.00	0.88	0	00:10	0.00
J02B11	JUNCTION	1.41	1.41	0	00:10	0.00
J-02B13	JUNCTION	0.51	5.20	0	00:10	0.00
J02B13-1	JUNCTION	0.00	5.13	0	00:11	0.00
J02B2	JUNCTION	1.20	1.20	0	00:20	0.00
J02B3	JUNCTION	0.00	0.55	0	00:11	0.00
J02B4	JUNCTION	0.00	1.19	0	00:20	0.00
J-02B5	JUNCTION	0.00	1.19	0	00:20	0.00
J02B5-1	JUNCTION	0.80	1.51	0	00:11	0.00
J-02B5-2	JUNCTION	0.00	1.51	0	00:11	0.00
J02B6	JUNCTION	0.64	0.64	0	00:10	0.00
J02B7	JUNCTION	0.37	1.84	0	00:11	0.00
J-02B8	JUNCTION	0.74	1.25	0	00:10	0.00
J02B9	JUNCTION	0.44	5.54	0	00:11	0.00
J03A1	JUNCTION	2.78	2.78	0	00:28	0.00
J03A10	JUNCTION	0.84	1.73	0	00:10	0.00
J03A11	JUNCTION	0.31	2.03	0	00:10	0.00
J-03A12	JUNCTION	0.26	0.59	0	00:10	0.00
J03A12-1	JUNCTION	0.00	0.59	0	00:10	0.00

J03A13	JUNCTION	0.09	3.60	0	00:10	0.00			
J03A14	JUNCTION	0.34	0.34	0	00:10	0.00			
J03A2	JUNCTION	6.91	9.90	0	00:26	0.00			
J03A3	JUNCTION	0.55	0.55	0	00:10	0.00			
J03A4	JUNCTION	0.34	0.34	0	00:10	0.00			
J03A5	JUNCTION	0.25	0.80	0	00:10	0.00			
J03A6	JUNCTION	0.67	0.90	0	00:10	0.00			
J03A7	JUNCTION	0.52	1.30	0	00:10	0.00			
J03A8	JUNCTION	0.23	0.23	0	00:10	0.00			
J03A9	JUNCTION	0.21	1.50	0	00:10	0.00			
J-08B8-1	JUNCTION	0.00	6.79	0	00:11	3.44	0	00:11	
J-64	JUNCTION	0.00	0.00	0	00:00	0.00			
DP-01	OUTFALL	0.00	7.48	0	00:18	0.00			
DP-02	OUTFALL	0.00	6.42	0	00:19	0.00			
DP-03	OUTFALL	0.00	9.83	0	00:26	0.00			
DET-02B	STORAGE	0.00	5.31	0	00:08	0.00			
J-01A-DET	STORAGE	0.00	8.19	0	00:11	0.00			
J-01B-DET	STORAGE	0.00	1.79	0	00:10	0.00			
J03-DET	STORAGE	0.62	5.01	0	00:10	0.00			

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Storage Node Summary
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Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days hh:mm	Average Ponded Volume 1000 ft³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft³

DET-02B	0.004	91	0	00:08	0.001	21	3.48	0.00	0:00:00	0.000
J-01A-DET	2.680	74	0	00:25	0.887	24	4.11	0.00	0:00:00	0.000
J-01B-DET	0.302	33	0	00:18	0.033	4	0.91	0.00	0:00:00	0.000
J03-DET	0.004	0	0	00:11	0.000	0	4.93	0.00	0:00:00	0.000

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Outfall Loading Summary
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Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
DP-01	98.34	2.31	7.48
DP-02	97.34	1.42	6.42
DP-03	99.40	3.42	9.83
System	98.36	7.14	23.34

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Link Flow Summary
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Link ID	Element Type	Time of Peak Flow Occurrence days	hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Reported Time minutes	Condition
L-01	CHANNEL	0	00:18	2.92	1.00	7.48	56.78	0.13	0.35	0	Calculated
L-01A1	CHANNEL	0	00:13	2.14	1.00	1.44	34.55	0.04	0.22	0	Calculated
L-01A10	CONDUIT	0	00:16	6.71	1.00	3.75	7.81	0.48	0.70	0	Calculated
L-01A11	CONDUIT	0	00:11	5.89	1.00	3.99	4.42	0.90	0.83	0	Calculated
L-01A1-1	CONDUIT	0	00:13	3.01	1.00	1.44	5.34	0.27	0.67	0	Calculated
L-01A12	CONDUIT	0	00:11	8.14	1.00	4.43	5.97	0.74	0.67	0	Calculated
L-01A13	CONDUIT	0	00:10	7.04	1.00	0.78	2.55	0.31	0.35	0	Calculated
L-01A14	CHANNEL	0	00:12	2.58	1.00	5.72	20.52	0.28	0.56	0	Calculated
L-01A14-1	CONDUIT	0	00:13	7.96	1.00	6.25	3.98	1.57	1.00	19	SURCHARGED
L-01A14-11	CONDUIT	0	00:13	11.55	1.00	6.25	4.44	1.41	0.65	0	> CAPACITY
L-01A14-2	CHANNEL	0	00:13	3.00	1.00	6.25	61.40	0.10	0.65	0	Calculated
L-01A15	CONDUIT	0	00:10	3.16	1.00	1.00	11.45	0.09	0.60	0	Calculated
L-01A16	CONDUIT	0	00:25	2.34	1.00	1.84	3.10	0.59	1.00		

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68  SURCHARGED
 L-01A17             CONDUIT      0  00:10      1.80    1.00        0.33        2.32      0.14      0.52
 0  Calculated
 L-01A18             CONDUIT      0  00:10      7.01    1.00        1.51        5.04      0.30      0.32
 0  Calculated
 L-01A18-1           CHANNEL      0  00:10      2.27    1.00        1.50       74.11      0.02      0.55
 0  Calculated
 L-01A2              CHANNEL      0  00:19      2.74    1.00        2.79       38.94      0.07      0.29
 0  Calculated
 L-01A2-1            CONDUIT      0  00:19      6.41    1.00        2.80        6.85      0.41      0.56
 0  Calculated
 L-01A3              CONDUIT      0  00:15     11.54    1.00        4.86       12.94      0.38      0.72
 0  Calculated
 L-01A3-1            CHANNEL      0  00:15      2.23    1.00        4.62       19.20      0.24      1.00
 8  FLOODED
 L-01A4              CONDUIT      0  00:19      4.31    1.00        2.95        4.75      0.62      0.82
 0  Calculated
 L-01A5-1            CONDUIT      0  00:24     10.06    1.00        3.51        1.65      2.13      1.00
26  SURCHARGED
 L-01A6              CONDUIT      0  00:16      6.61    1.00        3.58        5.34      0.67      0.65
 0  Calculated
 L-01A7              CONDUIT      0  00:10      2.70    1.00        0.45        0.86      0.52      0.48
 0  Calculated
 L-01A8              CONDUIT      0  00:10     10.41    1.00        1.01        3.38      0.30      0.32
 0  Calculated
 L-01A8-1            CHANNEL      0  00:16      1.99    1.00        1.80       74.52      0.02      0.14
 0  Calculated
 L-01A-DET           CHANNEL      0  00:00      0.00    1.00        0.00       16.45      0.00      0.50
 0  Calculated
 L-01B1              CHANNEL      0  00:18      2.18    1.00        4.02      104.66      0.04      0.26
 0  Calculated
 L-01B2              CHANNEL      0  00:10      0.99    1.00        0.51      111.18      0.00      0.10
 0  Calculated
 L-01B3              CONDUIT      0  00:10      2.75    1.00        0.59       10.95      0.05      0.58
 0  Calculated
 L-01B4              CONDUIT      0  00:10      5.12    1.00        1.79        2.61      0.68      1.00
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```
23  SURCHARGED
 L-01B5              CHANNEL      0  00:10      1.11    1.00        0.66       56.33      0.01      0.21
 0  Calculated
 L-01B6              CHANNEL      0  00:10      1.37    1.00        0.48       52.99      0.01      0.08
 0  Calculated
 L-01B-DET           CHANNEL      0  00:00      0.00    1.00        0.00       11.46      0.00      0.50
 0  Calculated
 L-02                CHANNEL      0  00:19      4.02    1.00        6.42       41.57      0.15      0.43
 0  Calculated
 L-02A1              CONDUIT      0  00:19      7.29    1.00        6.42       10.85      0.59      0.50
 0  Calculated
 L-02A2              CHANNEL      0  00:18      4.52    1.00        2.92       64.12      0.05      0.22
 0  Calculated
 L-02A2-1            CHANNEL      0  00:18      2.43    1.00        3.09       64.02      0.05      0.61
 0  Calculated
 L-02A3              CHANNEL      0  00:10      1.56    1.00        0.37       85.17      0.00      0.14
 0  Calculated
 L-02A4              CHANNEL      0  00:10      0.94    1.00        0.10       78.18      0.00      0.51
 0  Calculated
 L-02B1              CHANNEL      0  00:11      2.15    1.00        0.55       45.30      0.01      0.11
 0  Calculated
 L-02B10             CONDUIT      0  00:10      5.00    1.00        0.88        1.56      0.56      0.50
 0  Calculated
 L-02B10-1           CONDUIT      0  00:10      3.98    1.00        0.87        3.33      0.26      0.67
 0  Calculated
 L-02B11             CONDUIT      0  00:10      5.88    1.00        1.41        3.42      0.41      0.72
 0  Calculated
 L-02B13             CONDUIT      0  00:11      7.10    1.00        5.13        9.65      0.53      0.87
 0  Calculated
 L-02B13-1           CONDUIT      0  00:11      6.53    1.00        5.13        5.28      0.97      1.00
13  SURCHARGED
 L-02B2              CHANNEL      0  00:20      2.29    1.00        1.19       35.57      0.03      0.19
 0  Calculated
 L-02B3              CONDUIT      0  00:11      5.46    1.00        0.55        3.00      0.18      0.34
 0  Calculated
 L-02B4              CONDUIT      0  00:20      5.68    1.00        1.19        1.64      0.72      0.58
```

0	Calculated								
L-02B5	CONDUIT	0	00:20	5.88	1.00	1.19	3.28	0.36	0.57
0	Calculated								
L-02B5-1	CONDUIT	0	00:11	5.91	1.00	1.51	4.84	0.31	0.36
0	Calculated								
L-02B5-2	CHANNEL	0	00:11	2.18	1.00	1.51	35.49	0.04	0.22
0	Calculated								
L-02B6	CONDUIT	0	00:10	2.35	1.00	0.63	6.75	0.09	0.47
0	Calculated								
L-02B7	CONDUIT	0	00:11	9.27	1.00	1.84	4.01	0.46	0.74
0	Calculated								
L-02B8	CONDUIT	0	00:10	5.13	1.00	1.25	3.70	0.34	0.70
0	Calculated								
L-02B8-1	CHANNEL	0	00:08	1.44	1.00	5.31	17.98	0.30	1.00
18	FLOODED								
L-02B9	CONDUIT	0	00:11	7.05	1.00	5.54	4.82	1.15	1.00
14	SURCHARGED								
L-02B-DET OVER	CHANNEL	0	00:08	0.08	1.00	0.09	13.25	0.01	0.53
0	Calculated								
L-03A1	CHANNEL	0	00:28	2.05	1.00	2.77	59.10	0.05	0.27
0	Calculated								
L-03A10	CONDUIT	0	00:10	6.50	1.00	1.72	4.68	0.37	0.71
0	Calculated								
L-03A11	CONDUIT	0	00:10	6.73	1.00	2.03	1.47	1.38	0.81
0	> CAPACITY								
L-03A12	CHANNEL	0	00:10	1.84	1.00	0.59	42.43	0.01	0.12
0	Calculated								
L-03A12-1	CHANNEL	0	00:12	1.68	1.00	0.54	36.53	0.01	0.12
0	Calculated								
L-03A13	CONDUIT	0	00:10	6.02	1.00	3.57	10.15	0.35	0.71
0	Calculated								
L-03A14	CONDUIT	0	00:10	2.11	1.00	0.34	3.78	0.09	0.60
0	Calculated								
L-03A2	CHANNEL	0	00:26	5.34	1.00	9.83	77.43	0.13	0.34
0	Calculated								
L-03A3	CONDUIT	0	00:10	6.77	1.00	0.55	4.28	0.13	0.28

0 Calculated									
L-03A4	CONDUIT	0	00:10	6.86	1.00	0.33	3.70	0.09	0.20
0 Calculated									
L-03A5	CONDUIT	0	00:10	4.65	1.00	0.79	3.48	0.23	0.49
0 Calculated									
L-03A6	CONDUIT	0	00:10	5.46	1.00	0.89	2.13	0.42	0.48
0 Calculated									
L-03A7	CONDUIT	0	00:10	5.69	1.00	1.29	2.29	0.57	0.62
0 Calculated									
L-03A8	CONDUIT	0	00:10	2.13	1.00	0.23	3.75	0.06	0.35
0 Calculated									
L-03A9	CONDUIT	0	00:10	6.82	1.00	1.50	2.44	0.61	0.60
0 Calculated									
L-03-DET	CHANNEL	0	00:00	0.00	1.00	0.00	125.24	0.00	0.17
0 Calculated									
L-26	CONDUIT	0	00:19	6.59	1.00	3.97	3.97	1.00	0.73
0 Calculated									
L-29	CHANNEL	0	00:16	2.21	1.00	1.15	67.38	0.02	0.12
0 Calculated									
ORIF-01A	ORIFICE	0	00:25			2.27			1.00
ORIF-01B	ORIFICE	0	00:18			0.91			1.00
ORIF-02B	ORIFICE	0	00:08			3.39			1.00
ORIF-03A	ORIFICE	0	00:11			4.93			1.00

```
  ********************************
  Highest Flow Instability Indexes
  ********************************
  Link L-01A16 (2)
```

```
  WARNING 108 : Surcharge elevation defined for Junction J01A8 is below junction maximum elevation. Assumed
surcharge elevation equal to maximum elevation.
```

```
  WARNING 117 : Conduit outlet invert elevation defined for Conduit L-02B13 is below downstream node invert
elevation.
                Assumed conduit outlet invert elevation equal to downstream node invert elevation.
  WARNING 117 : Conduit outlet invert elevation defined for Conduit L-02B6 is below downstream node invert
elevation.
                Assumed conduit outlet invert elevation equal to downstream node invert elevation.
  WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node
J-01A1-1.
  WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node
J-01A14-1.
  WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node
J-01A2-1.
  WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node
J01A5.
  WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node
J02B3.
  WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node
J02B4.
  WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node
J02B7.

  Analysis began on:  Sat Sep 14 11:53:24 2024
  Analysis ended on:  Sat Sep 14 11:53:24 2024
  Total elapsed time: < 1 sec
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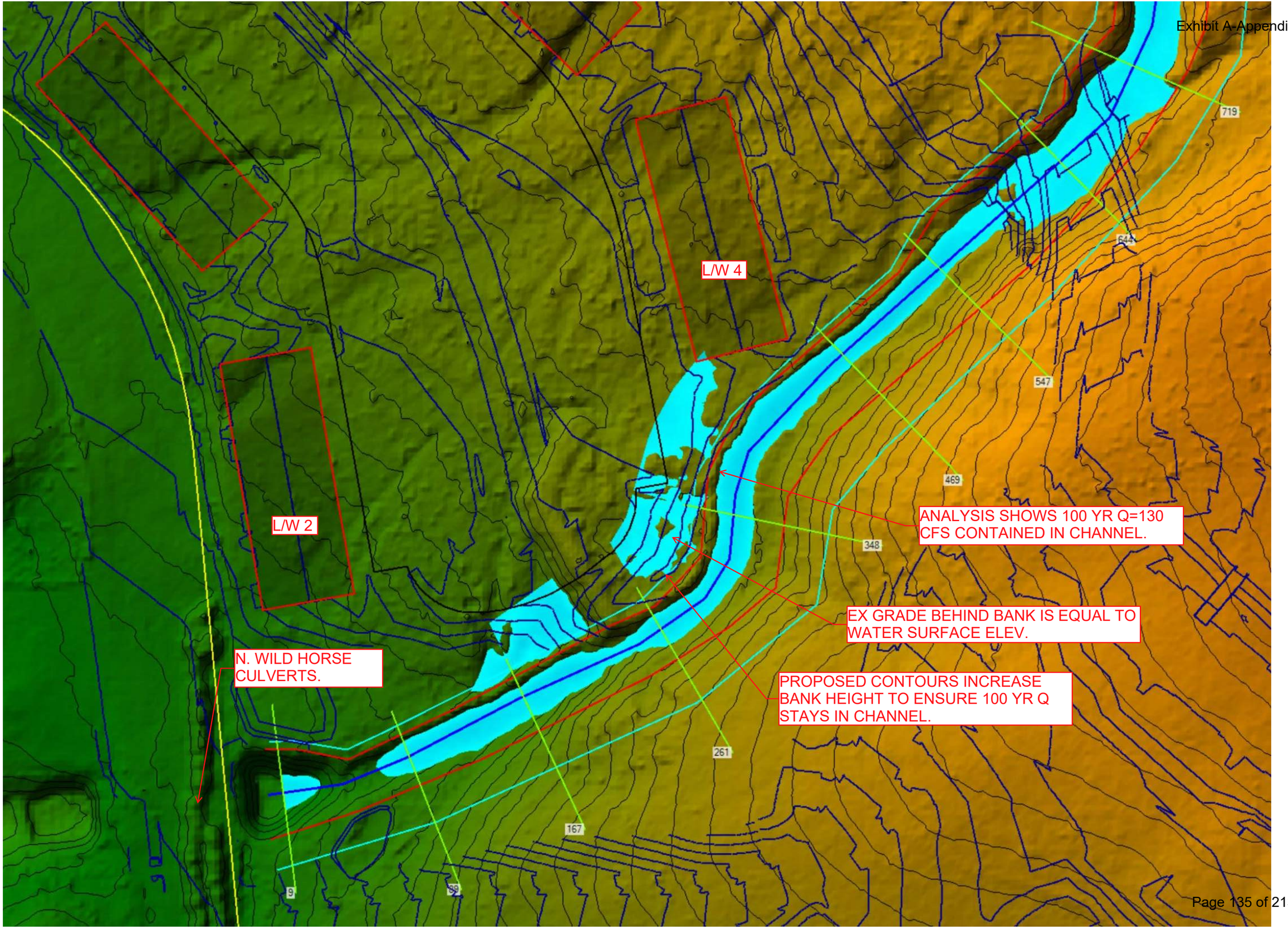
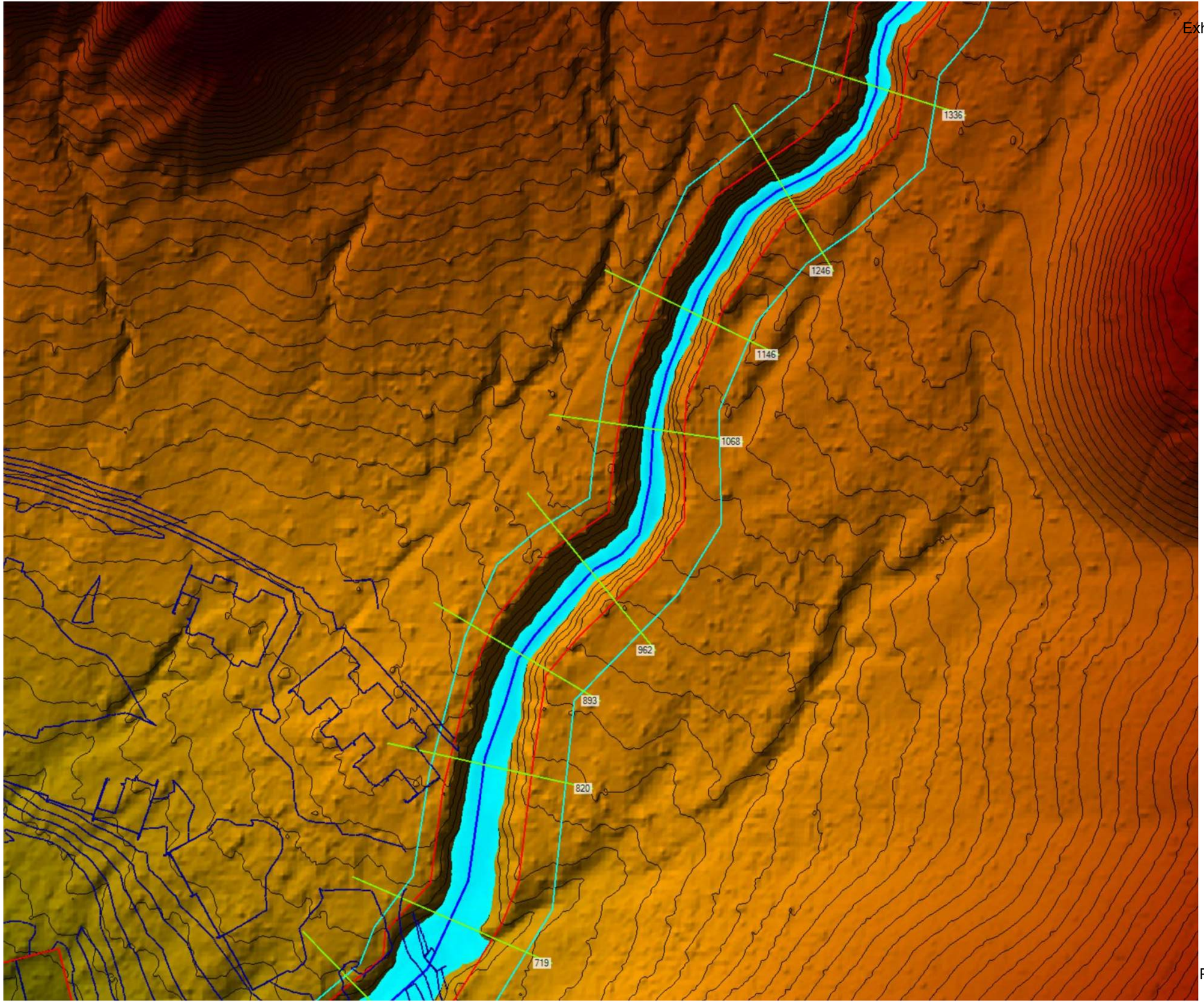

L/W 4
L/W 2
N. WILD HORSE CULVERTS.
ANALYSIS SHOWS 100 YR Q=130 CFS CONTAINED IN CHANNEL.
EX GRADE BEHIND BANK IS EQUAL TO WATER SURFACE ELEV.
PROPOSED CONTOURS INCREASE BANK HEIGHT TO ENSURE 100 YR Q STAYS IN CHANNEL.
719
644
547
469
348
261
167
99
9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1246
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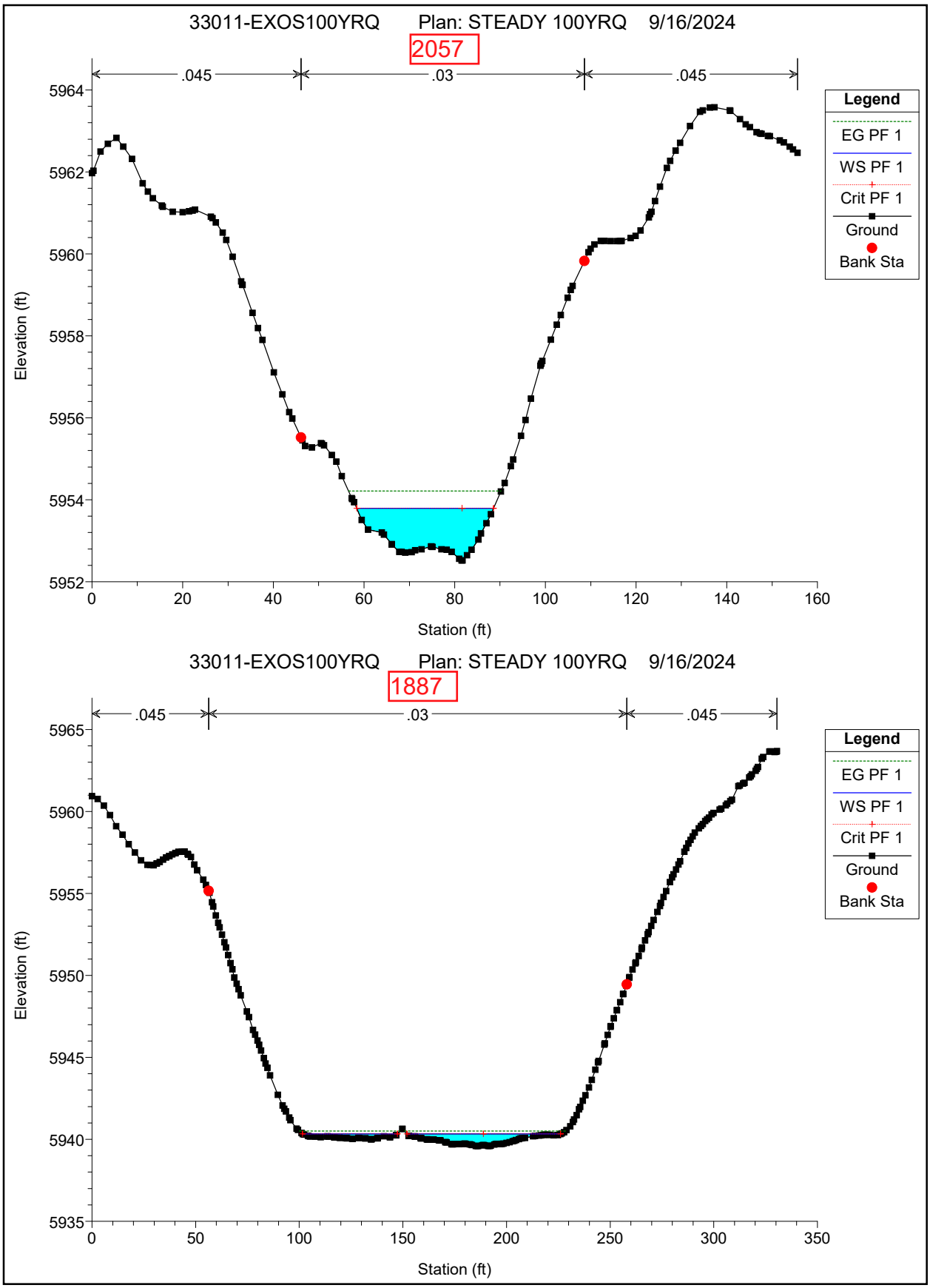
1068
962
893
820
719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.03
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Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
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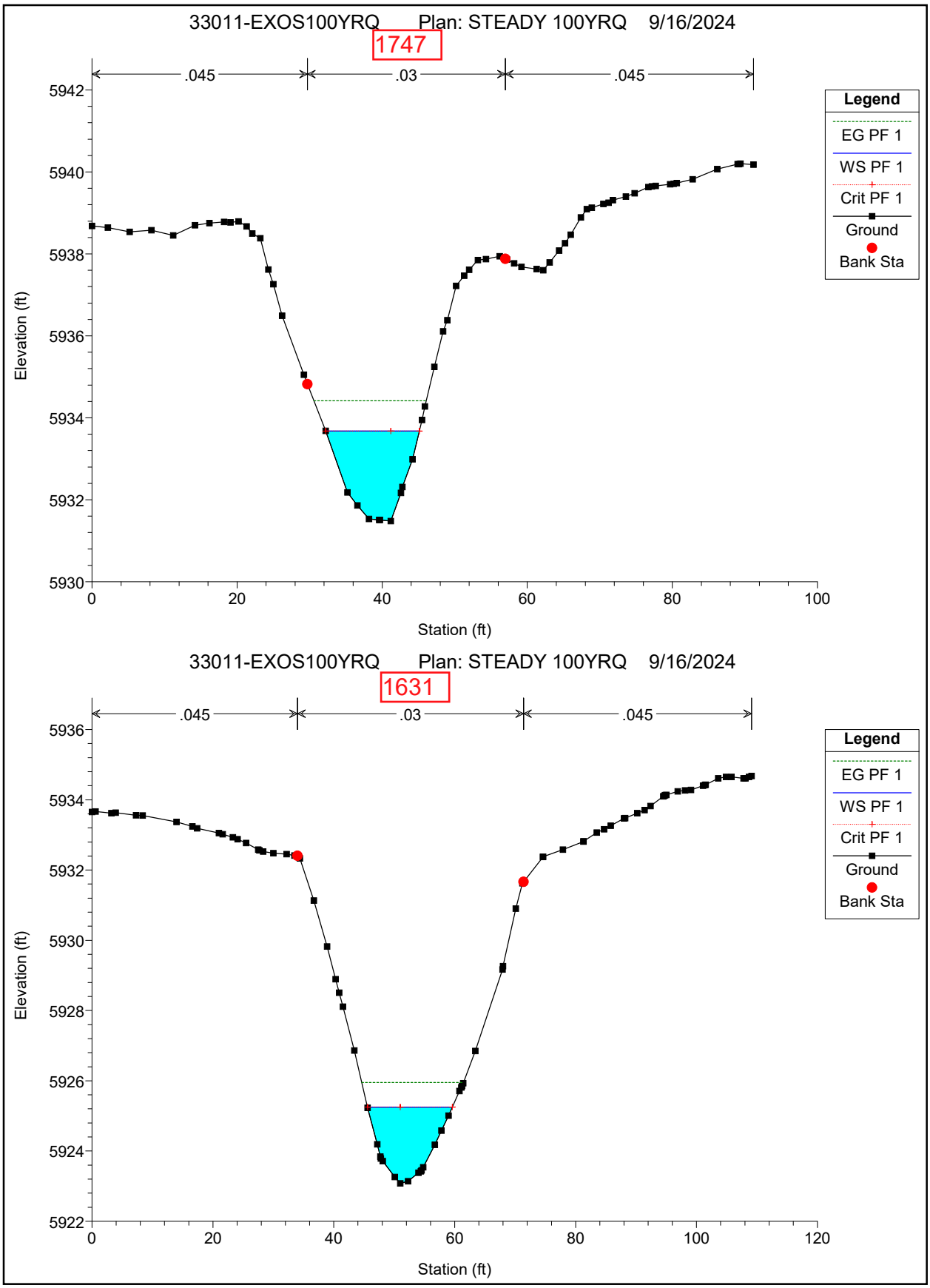
Station (ft)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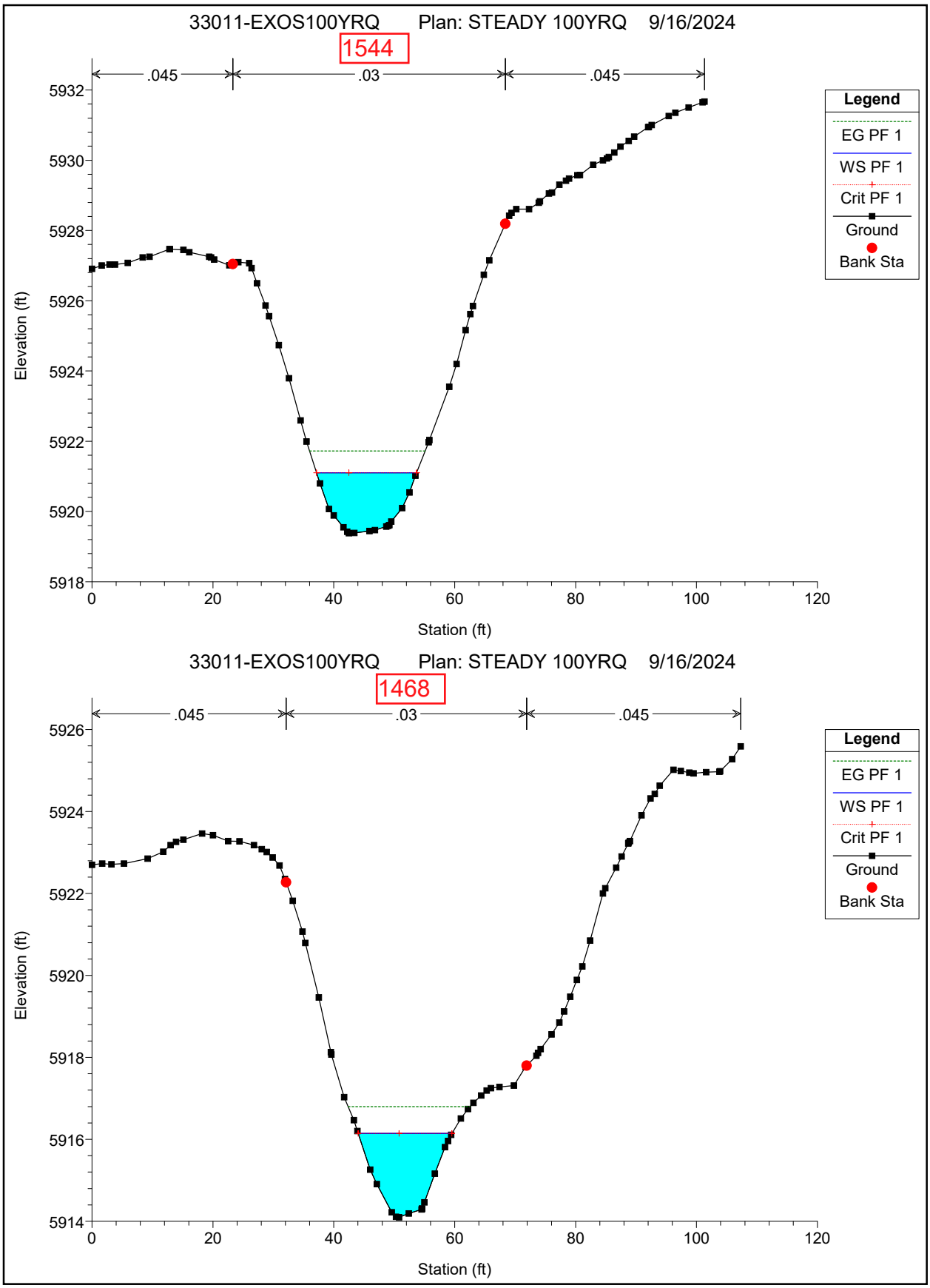
Station (ft)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Crit PF 1
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Bank Sta
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Station (ft)
Legend
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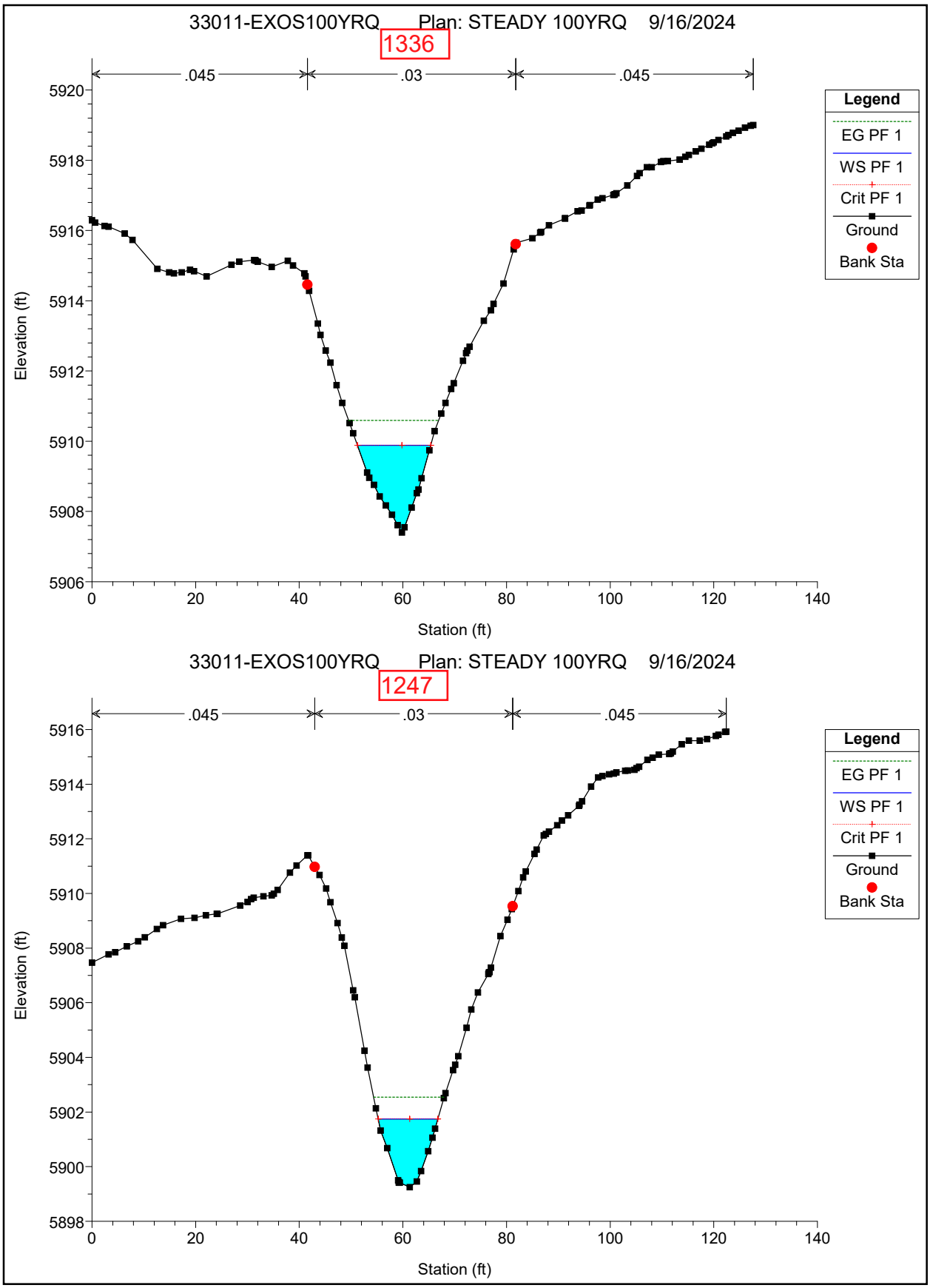
Crit PF 1
Ground
Bank Sta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Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
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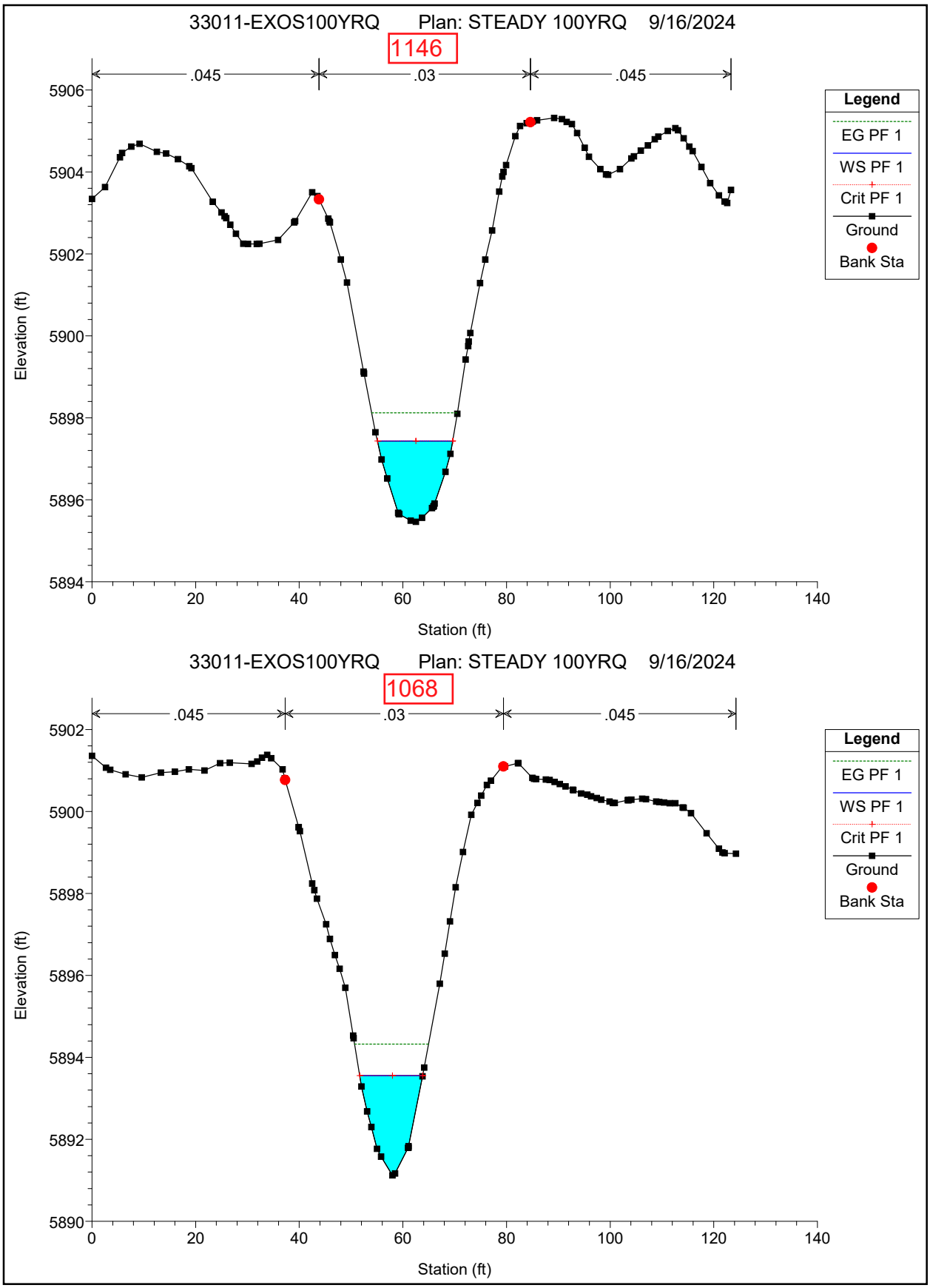
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)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Bank Sta
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Station (ft)
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Crit PF 1
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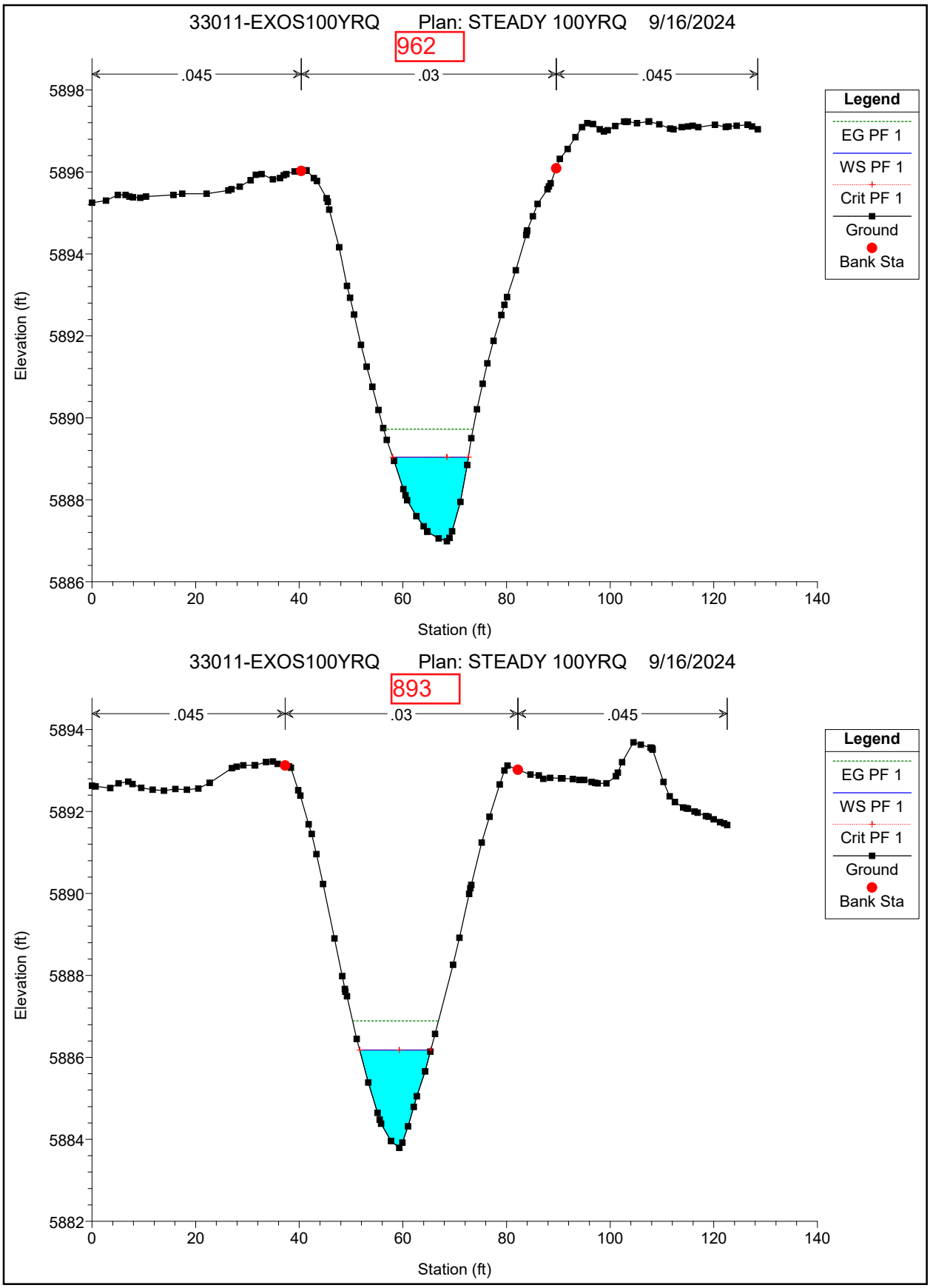
Bank Sta
Elevation (ft)
Station (ft)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Bank Sta
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Station (ft)
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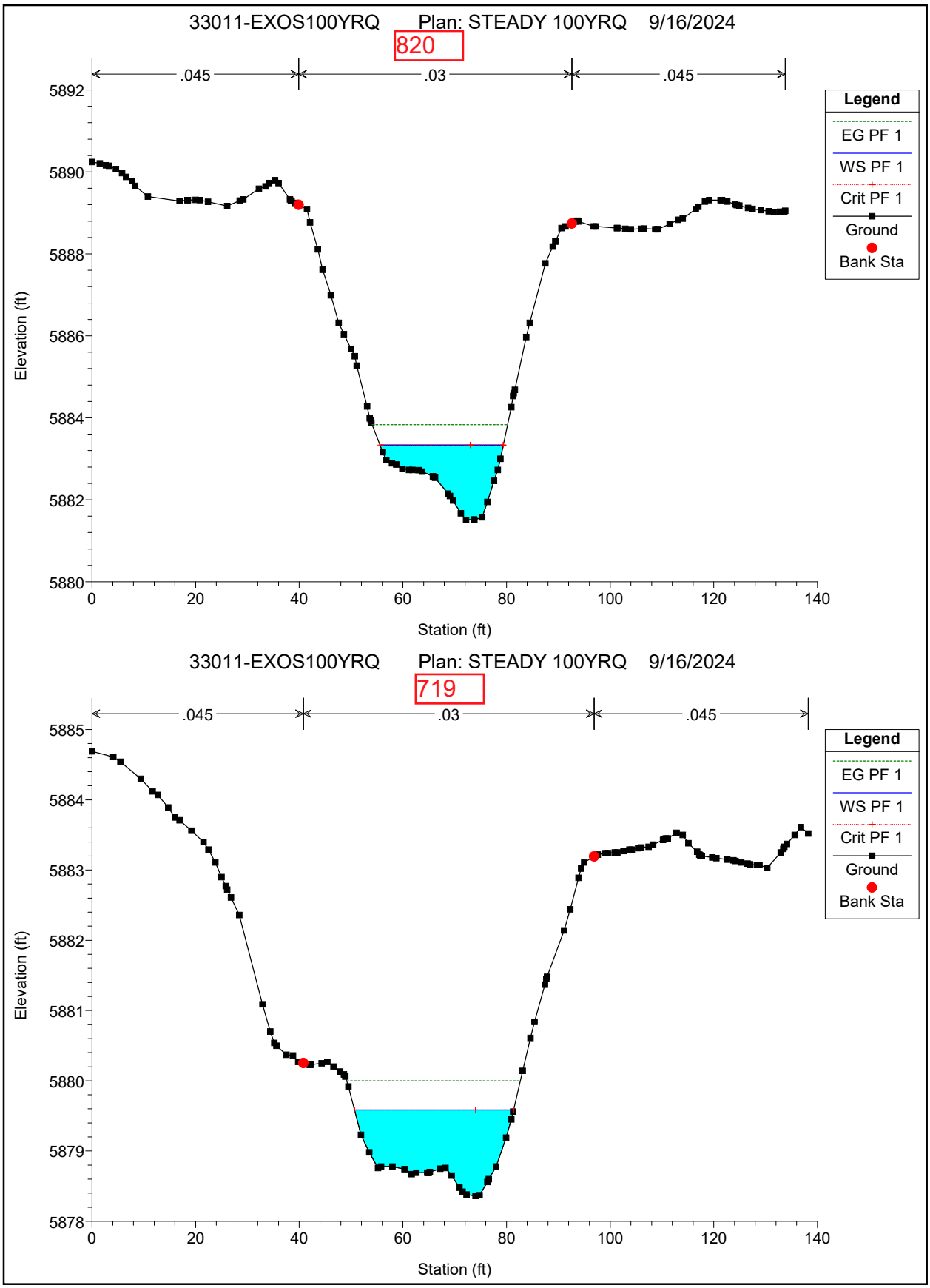
Bank Sta
Elevation (ft)
Station (ft)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Bank Sta
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Station (ft)
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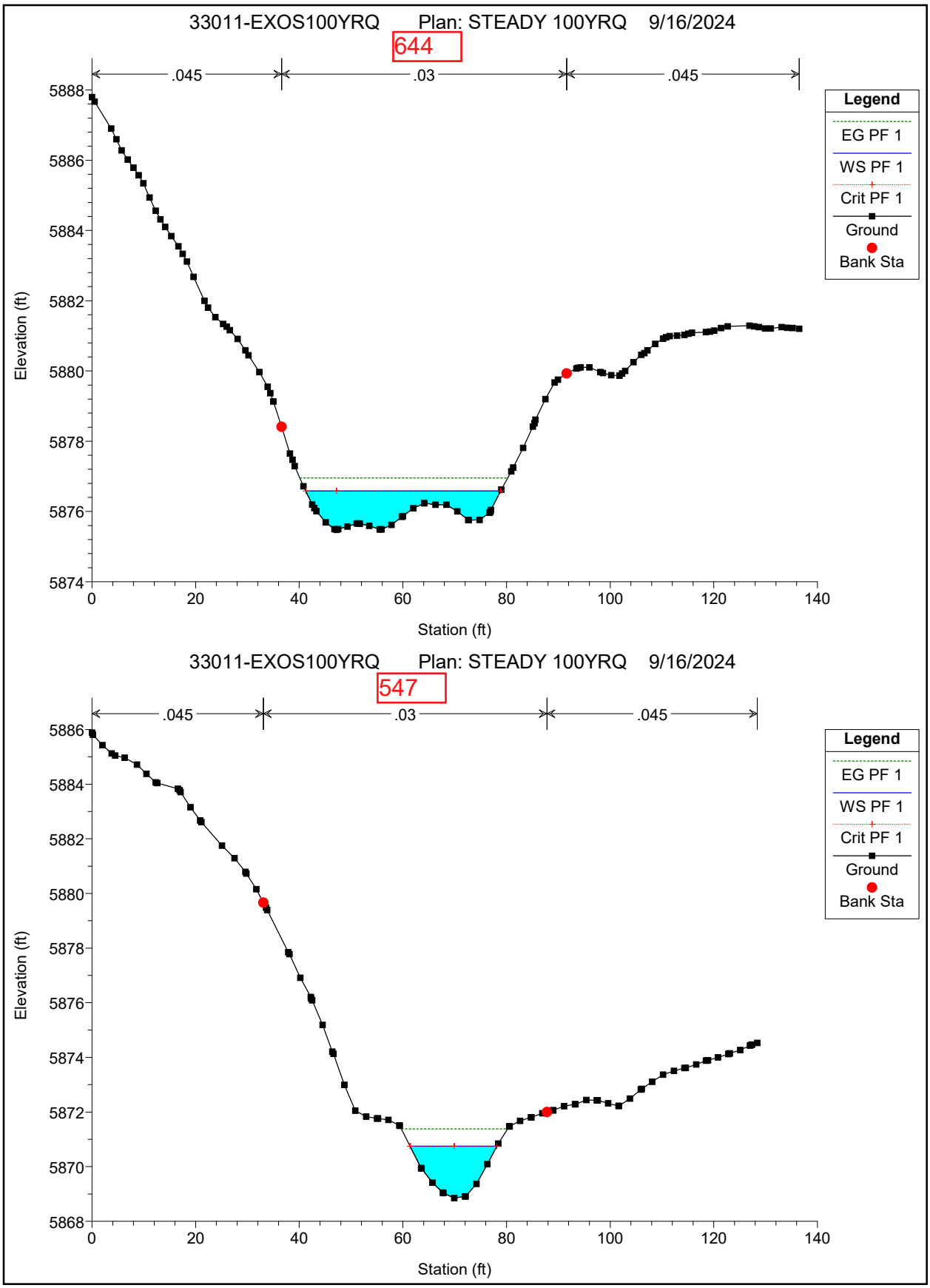
Elevation (ft)
Station (ft)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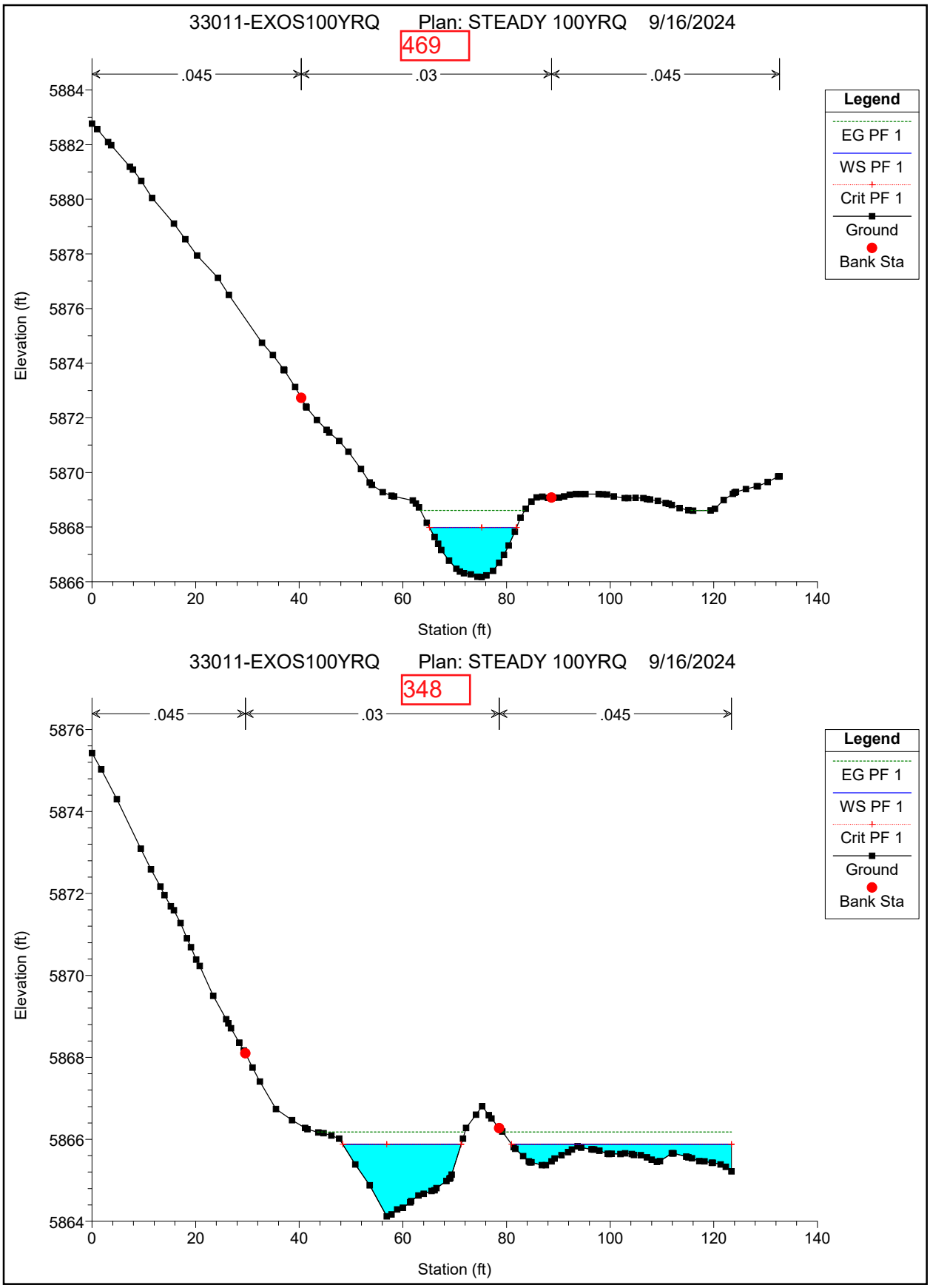
Station (ft)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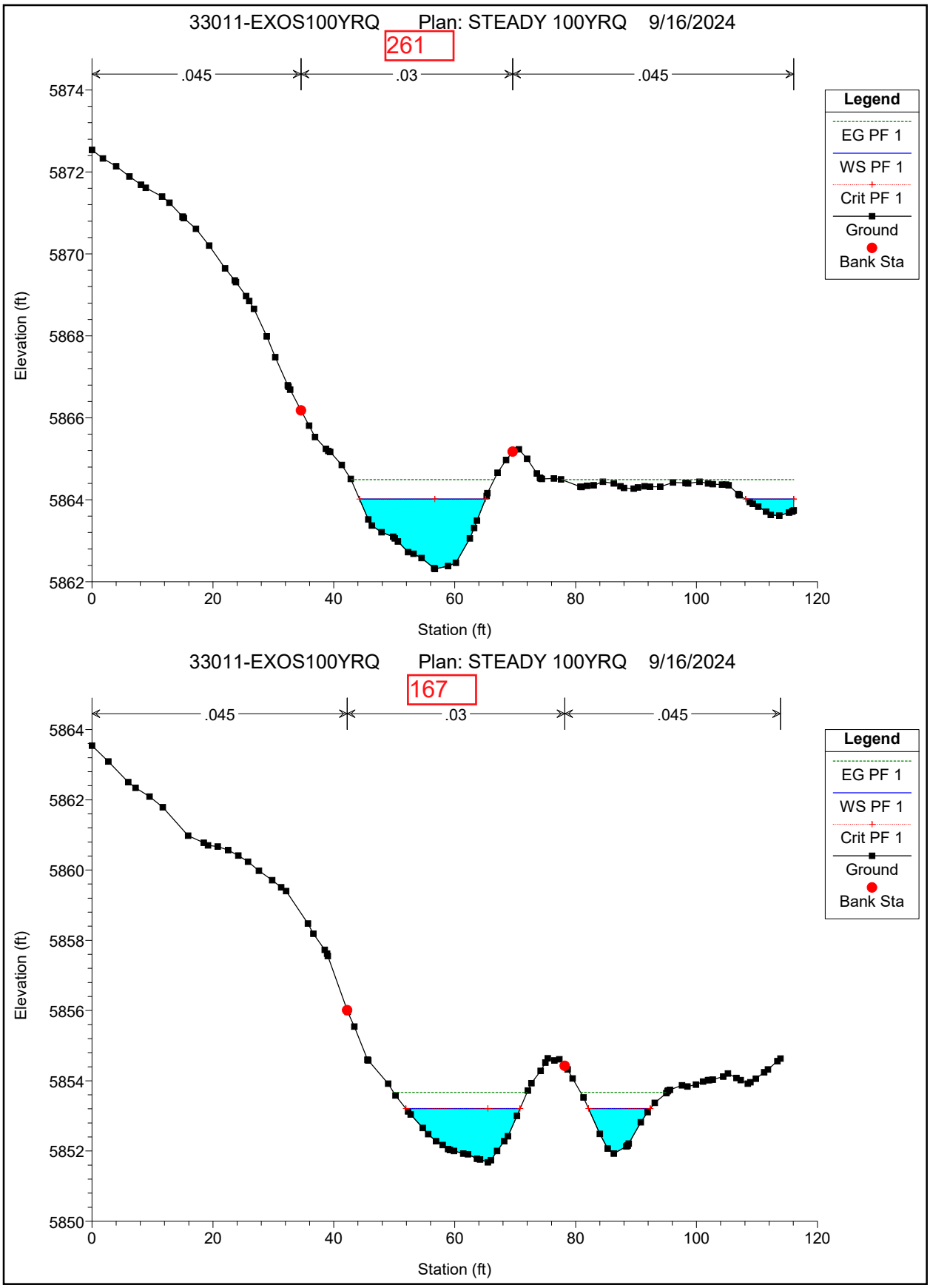
Station (ft)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Station (ft)
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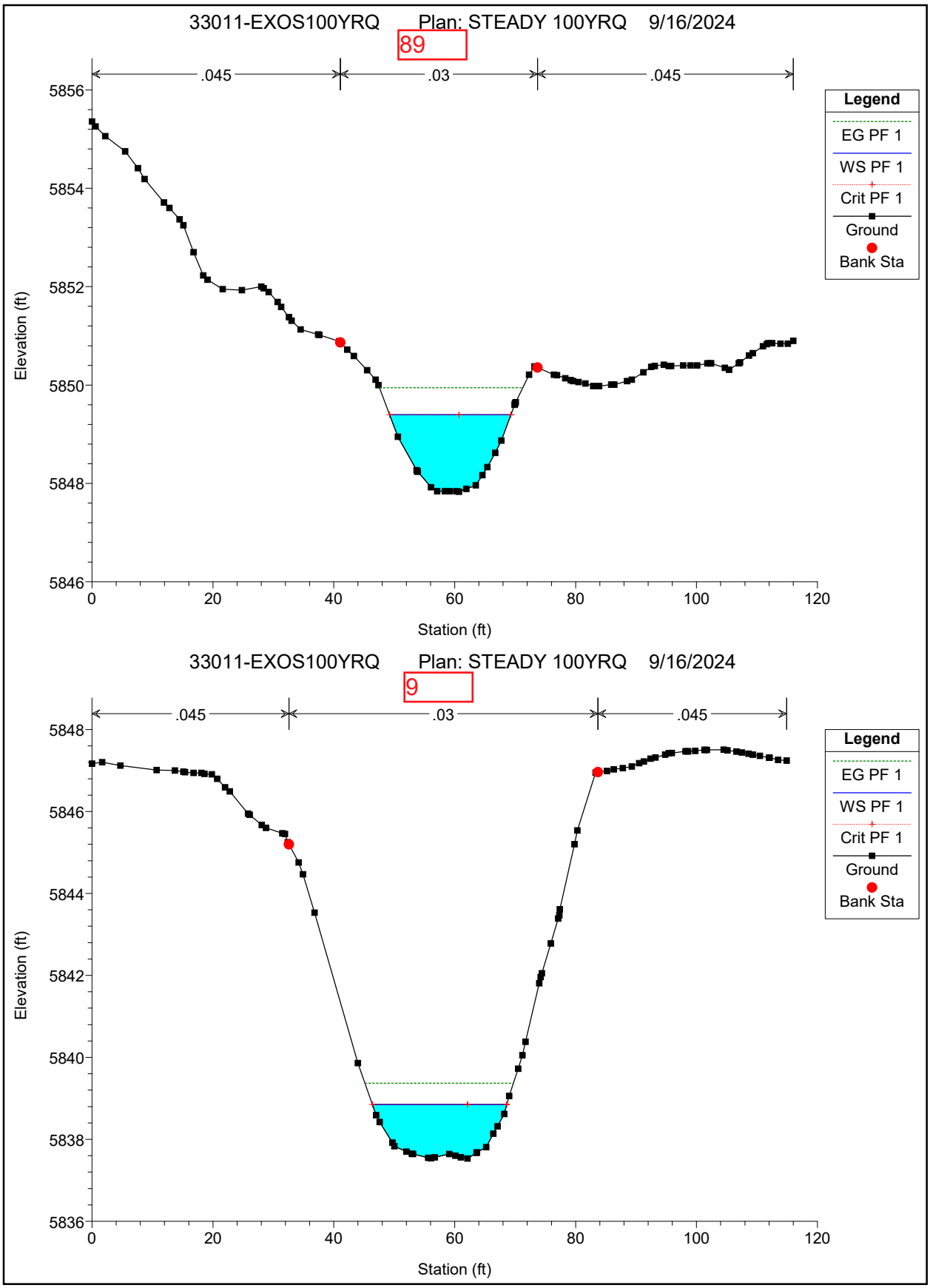
Station (ft)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Bank Sta
Elevation (ft)
Station (ft)
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9
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Legend
EG PF 1
WS PF 1
Crit PF 1
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Bank Sta
Elevation (ft)
Station (ft)

APPENDIX-B

Will Serve Letters

WILL SERVE LETTER

July 13, 2023

Sopris Engineering
502 Main St Ste A3
Carbondale Co 81623

Re: CVR-R2-MULTIFAMILY

Dear John,

This letter is to confirm that Xcel Energy is your utility provider for natural gas and electric service. In accordance with our tariffs, on file with and approved by the Colorado Public Utilities Commission, gas and electric facilities can be made available to serve the project at CVR-R2-MULTIFAMILY. The cost, and whether any reinforcements or extensions are required, for the Company to provide those facilities will be determined by your designer upon receipt of application and project plans.

Your utility service(s) will be provided after the following steps are completed:

- ***Application submitted to Xcel Energy's "Builders Call Line (BCL)"*** – once your application is accepted you will be assigned a design department representative who will be your primary point of contact
- ***Utility design is completed*** – you must provide your design representative with the site plan, the one - line diagrams, and panel schedules for electric and gas loads if applicable
- ***All documents provided by design representative are signed and returned***
- ***Payment is received*** (Residential Service Laterals if applicable)
- ***Required easements are granted*** - you must sign and return applicable easement documents to your Right-of-Way agent
- ***Site is ready for utility construction*** - the site ready information can be found on our website at may be viewed at Construction and Inspection | Xcel Energy.

An estimated scheduled in-service date will be provided once these requirements have been met. It is important to keep in mind that the terms and conditions of utility service, per our tariffs, require that you provide adequate space and an easement on your property for all gas and electric facilities required to serve your project, including but not limited to gas and electrical lines and meters, transformers, and pedestals. General guidelines for requirements can be found on our website at xcelenergy.com/InstallAndConnect.

Xcel Energy looks forward to working with you on your project and if I can be of further assistance, please contact me at the phone number or email listed below.

Sincerely,

Samantha Wakefield
Xcel Energy Planner
970-201-4860 - samantha.l.wakefield@xcelenergy.com

Mailing address: Xcel Energy
1995 Howard Ave
Rifle, CO 81650



7/11/2023

ATTN: John Petaisto, PE
Sopris Engineering
502 Main Street, Suite A-3
Carbondale, CO 81623
970-704-0311

RE: Castle Valley Ranch (130 units)

To whom it may concern:

Your request for facilities to Castle Valley Ranch (130 units) is within CenturyLink/Lumen's serving area and will be provided in accordance with all the rates and tariffs set forth by the Colorado Public Utilities Commission.

Connections to CenturyLink/Lumen facilities are contingent upon the customer meeting all the requirements of the Utilities tariffs that are in effect for each requested utility service at the time the application for service is made by the customer and formally accepted by CenturyLink/Lumen. Connection requirements may include provisions for necessary line extensions and/or other system improvements, and payment of all applicable system development charges, recovery agreement charges and other fees or charges applicable to the requested service.

Although CenturyLink/Lumen diligently seeks to expand its facilities as necessary to meet anticipated growth, CenturyLink/Lumen services are provided to eligible customers at the time of connection to the facilities on a "first come, first served" basis after acceptance of the customer's application as described above. In certain instances, our facilities and capacities may be limited. Accordingly, no specific allocations or amounts of CenturyLink/Lumen facilities or supplies are reserved for service to the subject property, and no commitments are made as to the availability of CenturyLink/Lumen service at future times.

Sincerely,

Jason Sharpe

Senior Field Engineer
970-328-8290

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COSTS

9 North Wild Horse Subdivision Public Improvements
Engineer's Opinion of Probable Construction Costs
SE Job # 33011

ITEM	NATURE OF WORK	QUANTITY	UNIT	UNIT COST	COST
GENERAL					
G1	MOBILIZATION	JOB	L.S.	50,000.00	$ 50,000.00
G2	LAYOUT, OBSERVATION, TESTING & AS-BUILTS	JOB	L.S.	200,000.00	$ 200,000.00
G3	TRAFFIC CONTROL	JOB	L.S.	15,000.00	$ 15,000.00
G4	EROSION CONTROL	JOB	L.S.	20,000.00	$ 20,000.00
				SUBTOTAL SITE =	**$ 285,000.00**
N. WILD HORSE					
WH1	4" DEPTH ASPHALTIC PAVEMENT	6,905	S.Y.	45.00	$ 310,725.00
WH2	SUBGRADE PREP, FINE GRADING	JOB	L.S.	15,000.00	$ 15,000.00
WH3	CLASS 6 AGGREGATE	2,278	C.Y.	80.00	$ 182,240.00
WH4	CURB AND GUTTER	2,532	L.F.	42.00	$ 106,344.00
WH5	CONCRETE SIDEWALK	12,284	S.F.	8.00	$ 98,272.00
WH6	NEW HANDICAP RAMPS (8)	480	S.F.	12.00	$ 5,760.00
WH7	SIGNAGE & STRIPING	JOB	L.S.	10,000.00	$ 10,000.00
WH8	TOPSOIL PLACEMENT	80	C.Y.	15.00	$ 1,200.00
WH9	INSTALL TREES	30	E.A.	750.00	$ 22,500.00
WH10	GRASS PREP AND SEEDING	11,000	S.F.	1.50	$ 16,500.00
				SUBTOTAL N. WILD HORSE =	**$ 768,541.00**
VISTA LOOP ROW					
VL1	4" DEPTH ASPHALTIC PAVEMENT	4,685	S.Y.	45.00	$ 210,825.00
VL2	GRADING / EXCAV.,SUBGRADE PREP, FINE GRADING	JOB	L.S.	15,000.00	$ 15,000.00
VL3	STRUCTURAL FILL MATERIAL	833	C.Y.	60.00	$ 49,980.00
VL4	CLASS 6 AGGREGATE	1,716	C.Y.	80.00	$ 137,280.00
VL5	CURB AND GUTTER	3,782	L.F.	42.00	$ 158,844.00
VL6	CONCRETE SIDEWALK	17,364	S.F.	8.00	$ 138,912.00
VL7	NEW HANDICAP RAMPS (10)	600	S.F.	12.00	$ 7,200.00
VL8	SIGNAGE & STRIPING	JOB	L.S.	4,000.00	$ 4,000.00
VL9	TOPSOIL PLACEMENT	500	C.Y.	15.00	$ 7,500.00
VL10	INSTALL TREES	70	E.A.	750.00	$ 52,500.00
VL12	GRASS PREP AND SEEDING	11,000	S.F.	1.50	$ 16,500.00
				SUBTOTAL VISTA LOOP =	**$ 798,541.00**
N. WILD HORSE STORM					
STW1	CURB INLET	1	E.A.	4,000.00	$ 4,000.00
STW2	18" STORM INLETS	1	E.A.	4,000.00	$ 4,000.00
STW3	12" STORM PIPE	115	L.F.	65.00	$ 7,475.00
				SUBTOTAL N. WILD HORSE STORM =	**$ 15,475.00**
VISTA LOOP STORM					
STV1	CURB INLET	8	E.A.	4,000.00	$ 32,000.00
STV2	12" STORM PIPE	432	L.F.	65.00	$ 28,080.00
STV3	48" CULVERT PIPE	176	L.F.	200.00	$ 35,200.00
STV4	48" FLARED END SECTION	4	E.A.	1,500.00	$ 6,000.00
STV5	RIPRAP	JOB	L.S.	2,000.00	$ 2,000.00
				SUBTOTAL VISTA LOOP STORM =	**$ 103,280.00**
SANITARY SEWER					
SS1	8" SDR 35 SEWER LINE	2,373	L.F.	100.00	$ 237,300.00
SS2	4' DIA. PRECAST SEWER MANHOLE	16	E.A.	8,500.00	$ 136,000.00
SS3	6" SDR 35 SEWER SERVICE	487	L.F.	80.00	$ 38,960.00
SS4	4" SDR 35 SEWER SERVICE	1,300	L.F.	60.00	$ 78,000.00
				SUBTOTAL SEWER =	**$ 490,260.00**

NOTE: This opinion of probable construction cost was prepared for budgeting purposes only. Sopris Engineering, LLC cannot be held responsible for variances from this estimate as actual costs may vary due to bid and market fluctuations.

9 North Wild Horse Subdivision Public Improvements
Engineer's Opinion of Probable Construction Costs
SE Job # 33011

ITEM	NATURE OF WORK	QUANTITY	UNIT	UNIT COST	COST
WATER MAIN & HYDRANTS					
W1	CUT & INSTALL TEE AND VALVES AT EX. 10" MAIN	1	L.S.	6,500.00	$ 6,500.00
W2	10" C900 PVC WATER MAIN	2,158	L.F.	110.00	$ 237,380.00
W3	10" WATER VALVES	9	E.A.	4,500.00	$ 40,500.00
W4	8" C900 PVC WATER MAIN	980	L.F.	100.00	$ 98,000.00
W5	8" WATER VALVES	3	E.A.	4,000.00	$ 12,000.00
W6	6" C900 PVC WATER SERVICE	729	L.F.	80.00	$ 58,320.00
W7	6" WATER VALVES	6	E.A.	3,500.00	$ 21,000.00
W8	1" WATER SERVICE	26	E.A.	2,500.00	$ 65,000.00
W9	FIRE HYDRANT ASSEMBLY	10	E.A.	8,000.00	$ 80,000.00
				SUBTOTAL WATER =	**$ 618,700.00**
N. WILD HORSE IRRIGATION SERVICE					
IW1	IRRIGATION SERVICE TO LANDSCAPE AREAS	11,000	S.F.	1.50	$ 16,500.00
				SUBTOTAL N. WH IRRIGATION =	**$ 16,500.00**
VISTA LOOP IRRIGATION MAIN					
IV1	4" PVC C900 DR 18 IRRIGATION MAIN	1,875	L.F.	50.00	$ 93,750.00
IV2	4" WATER VALVES	3	E.A.	2,500.00	$ 7,500.00
IV3	IRRIGATION SERVICE TO LANDSCAPE AREAS	11,000	S.F.	1.50	$ 16,500.00
				SUBTOTAL VISTA LOOP IRR. =	**$ 117,750.00**
ELECTRIC & SHALLOW UTILITIES					
E1	ELECTRIC TRENCHING, BEDDING, BACKFILL, CONDUIT	4,086	L.F.	50.00	$ 204,300.00
E2	ELECTRIC VAULT	8	E.A.	3,000.00	$ 24,000.00
E3	ELECTRIC TRANSFORMER	9	E.A.	6,000.00	$ 54,000.00
				SUBTOTAL ELECTRIC =	**$ 282,300.00**
				TOTAL OF ITEMS ABOVE =	**$ 3,496,347.00**
				10% CONTINGENCY =	349,634.70
				TOTAL ALL ITEMS =	**$ 3,845,981.70**



NOTE: This opinion of probable construction cost was prepared for budgeting purposes only. Sopris Engineering, LLC cannot be held responsible for variances from this estimate as actual costs may vary due to bid and market fluctuations.

GARFIELD COUNTY APPROVAL OF STREET NAMES

RE: 9NWH Street Names

Cody Smith <smithc@garco911.com>
Tue 7/30/2024 3:28 PM

To:John Petaisto <jpetaisto@sopriseng.com>;Orrin.Moon@Crfr.us <Orrin.Moon@Crfr.us>;Paul Smith <psmith@newcastlecolorado.org>
Cc:Louis Wilsher <LWilsher@dhmdesign.com>;Barry Rosenberg <b.rosenberg@r2partners.co>;Paul Schirmer <paul.schirmer@cdsg-us.com>

Hey John,

Those look okay to me!

Thanks!

Cody Smith – IT Administrator
smithc@garco911.com – 970-625-8281
Garfield County Emergency Communications Authority

From: John Petaisto <jpetaisto@sopriseng.com>
Sent: Tuesday, July 30, 2024 12:47 PM
To: smithc@garco911.com; Orrin.Moon@Crfr.us; Paul Smith <psmith@newcastlecolorado.org>
Cc: Louis Wilsher <LWilsher@dhmdesign.com>; Barry Rosenberg <b.rosenberg@r2partners.co>; Paul Schirmer <paul.schirmer@cdsg-us.com>
Subject: 9NWH Street Names

Hi Cody,

We are working on the proposed 9 North Wild Horse Subdivision in Castle Valley Ranch New Castle. Orrin Moon previously emailed with proposed street names. See attached site plan and proposed street names below.

We understand that '**Vista Loop**' is acceptable which will be the primary street loop through the subdivision.

We are proposing '**Medaris Loop**' for the road on the east end.

We are proposing '**Chapman Loop**' for the road in the for the four center Multi Family buildings.

Can you please review and confirm these names are acceptable?
Thank you,
John Petaisto, PE
C: 970-316-5212
www.soprisengineering.com

SOPRIS ENGINEERING LLC
CIVIL AND SURVEY CONSULTANTS

AREAS OF KNOWN HAZARDS

AREAS OF KNOWN HAZARDS ON THE SUBJECT PROPERTY

The Geotechnical Study submitted with Preliminary Plan lists expansive clays and claystone bedrock as being present on or near the site. According to the Study, the claystone exhibited zero to very high swell when tested. This potential expansive soil hazard can be mitigated by ensuring proper fill placement, drainage design, and control of irrigation water, as noted by geotechnical engineer. A geotechnical engineer shall perform localized soil boring and testing where foundations are proposed, and make specific mitigation recommendations for the design of structural foundations for building permit.

As noted in the Engineer's Report, there are no known mapped 100 year floodplains, rockfall or slide hazards on the Property. There are no known economically valuable mineral deposits.

EQR AND RAW WATER TABLE

9NWH PUD ACCOUNTING FORM
WATER RIGHT DEDICATION DRY UP

DEVELOPMENT

	(1)	Number of EQRs Developed				EQR's
	(2)	Number of EQRs Proposed in Filing			32.50	EQR's
*	(3)	Number of EQRs for Raw Water Irrigation Developed			12.13	EQR's
	(4)	Number of EQRs Proposed for Raw Water Irrigation in Filing				EQR's
	(5)	Total No. of EQRs			44.63	EQR's

AMOUNT OF DRY UP

A	CORYELL DITCH	(UP TO 140 ACRES)				
			EQRs	Acres/EQR		
(6)	EQR's X 0.10 Acres/EQR		44.63	0.1	4.463	Acres
(7)	Total Dedicated Acres Coryell Ditch to date				4.463	
B	RED ROCK DITCH	(UP TO 193 ACRES)				
			EQRs	Acres/EQR		
(8)	EQR's X 0.10 Acres/EQR			0.1	0	Acres
(9)	Total Dedicated Acres Coryell Ditch to date					

WATER RIGHT DEDICATION

C	CORYELL DITCH	(UP TO 140 ACRES)				
			Acres	cfs/Acres		
(10)	Acres X 0.020 cfs/acre	(Priority #11)	4.463	0.02	0.0893	cfs
(11)	Acres X 0.035 cfs/acre	(Priority #220-S)	4.463	0.035	0.1562	cfs
D	RED ROCK DITCH	(UP TO 193 ACRES)				
(12)	Acres X 0.019 cfs/acre	(First Priority)				cfs
(13)	Acres X 0.0016 cfs/acre	(Second Priority)				cfs
(14)	Acres X 0.032 cfs/acre	(Third Priority)				cfs

* Dedication of .4 EQR/6000 sq ft for 182,000 SqFt of Open Space

DECLARATION OF COVENANTS

COVENANTS, CONDITIONS, AND RESTRICTIONS OF 9 NORTH WILDHORSE PUD SUBDIVISION

The undersigned owner ("Declarant") being all the owner of Lots 1, 2, and 4, as well as Parcels 1 and 2 of as depicted on the Final Plat of 9 North Wildhorse PUD Subdivision recorded in the records of Garfield County, Colorado on _____ as Reception No. _____ ("Property") hereby declares, establishes, makes, and grants the following covenants, conditions, restrictions, reservations, agreements as set forth herein (the "Covenants").

NOW, THEREFORE, Declarant hereby adopts and imposes the following Covenants on the Property:

ARTICLE 1.
GENERAL PURPOSE AND SCOPE

1.1 **Imposition of Servitudes**. Declarant hereby makes, declares and establishes the covenants, conditions, restrictions, reservations and easements contained in this Declaration for the benefit of the Property, including all improvements, amenities and facilities appurtenant to or located within the boundaries of the Property now and constructed or installed in the future. From this day forward, the real property and improvements that comprise the Property, or any portion thereof, shall be held, sold, conveyed, encumbered, leased, rented, occupied, improved, and dealt with in any manner whatsoever subject to this Declaration. All covenants, conditions, restrictions, reservations, agreements, easements and other terms and provisions whatsoever established under this Declaration shall: (i) run with the Property or as equitable servitudes as the case may be, and (ii) shall inure to the benefit of and bind all persons or entities having any right, title or interest in all or any part of the Property, including the Declarant, all owners of Lots or Parcels within the Property and their respective heirs, executors, administrators, personal representatives, successors, assigns, grantees, tenants, guests, employees, families, contractors, agents, licensees and invitees; and (iii) create specific rights and privileges which may be shared and enjoyed by all owners and lawful occupants of any part of the Property.

1.2 **Declarant's Intent**. Declarant intends to preserve and protect the attractiveness of the Property, to restrain and minimize future impairment or deterioration of the Property, and to preserve, protect and enhance the value and desirability of the Property and to promote and safeguard the health, comfort, safety, convenience and welfare of the owners and lawful occupants of the Property. Declarant intends to encourage the construction and maintenance of attractive permanent improvements, appropriately located to preserve the harmonious development of the Property and to promote and safeguard the health, comfort, safety, convenience and welfare of all occupants of the Property.

ARTICLE 2.
DEFINITIONS

2.1 **Articles.** The articles of incorporation for the Association may or may not be filed with the Colorado Secretary of State, and any amendments that may be made to those Articles from time to time.

2.2 **Association.** The 9 North Wildhorse Property Owner's Association, which shall be either a registered Colorado nonprofit corporation, or an unincorporated association at Owner's option.

2.3 **Board.** Board of Directors of the Association.

2.4 **Bylaws.** The bylaws of the Association.

2.5 **Common Area.** Parcels 1 and 2 as depicted on the Final Plat.

2.6 **Common Expenses.** As used in this Declaration, this term includes all charges levied by and for the benefit of the Association, pursuant to the Governing Documents, including but not limited to annual costs and expenses of the Association resulting from maintenance of the Property.

2.7 **Common Expense Assessment(s); Assessment(s).** These terms shall include but not be limited to the following items levied against a particular Owner: (i) the Owner's allocated interest in the Common Expenses; (ii) late charges, attorneys' fees, fines and interest charged by the Association at the rate as determined by the Bylaws and rules and regulations enacted by the Association, (iii) charges against a particular Owner and the Lot for the purpose of reimbursing the Association for expenditures and other costs of the Association in curing any violation of the Governing Documents by the Owner or related users; (iv) charges levied against an Owner pursuant to Section 4.5, below, due to the Owner's negligence or misconduct ("Default Assessment") and (iv) any sums permitted by the Governing Documents to be assessed against a particular Owner or Lot.

2.8 **Covenants.** Collective term for all promises, restrictions, reservations, conditions, terms, easements, and rights-of-way specifically set forth or referenced in this Declaration and set forth in the Governing Documents, as the same may be adopted and amended from time to time. Each and every Covenant shall be given the same force and effect at law or equity without regard to in which Governing Document it is set forth.

2.9 **Governing Documents.** Collective references to those documents which govern the operation of the Association, including: (a) Articles; (b) Bylaws; (c) its rules and regulations; and (d) this Declaration, as one or more of the same may be amended from time to time. Each and every provision of the Governing Documents shall be given the force and effect as if set forth in this Declaration.

2.10 **Lot.** One individual Lot or Parcel as set forth on the Final Plat.

2.11 **Owner.** The owner of record, whether one or more persons or entities, of fee simple title to any Lot.

2.12 **Open Space.** The Common Area.

2.13 **Special Assessments.** The Association may at any time, from time to time, determine, levy and assess a Special Assessment applicable to that particular assessment year for the purpose of defraying, in whole or in part, payments for any operating deficit and/or unbudgeted costs, fees and expenses of any construction, reconstruction, repair, demolition, replacement or maintenance of a capital improvement on the Property. Any such Special Assessment shall be due and payable as determined by the Board. Notice in writing setting forth the amount of such Special Assessment per Lot and the due date for payment thereof shall be given to the Owners not less than thirty (30) days prior to such due date.

ARTICLE 3.
THE 9 NORTH WILDHORSE PROPERTY OWNER ASSOCIATION

3.1 **Organization.** The Association may be formed with as an unincorporated association or a registered Colorado nonprofit corporation charged with the duties and invested with the powers prescribed by law and set forth in the Articles, the Bylaws, and this Declaration.

3.2 **Membership on Board.** Each Owner of a Lot shall be entitled either to serve as a voting member of the Board or appoint a voting member to the Board. Provided, however, that in the event any Lot is owned by two (2) or more Owners, whether by joint tenancy, tenancy in common, or otherwise, there shall be only one (1) director per Lot, and the several Owners of any one (1) Lot shall designate to the Corporation which one of the co-Owners shall be a director. In the event a corporation or other association is the Owner of a Lot, the corporation or association shall designate which one of its representatives shall be a director. The membership on the Board shall be appurtenant to each Lot, and shall not be transferred, pledged, or alienated, in any way, except upon the transfer of title to each Lot or a portion thereof, and then only to the transferee of title to a Lot or portion thereof. Any attempt to make a prohibited transfer shall be void. Any transfer of title to a Lot shall operate automatically to transfer membership to the new owner thereof.

3.3 In the event an Owner of a Lot declines to participate on or appoint a director to the Board, the Board shall appoint a director (who shall not be deemed to be the representative or agent of the Owner of the Lot who declined to participate). In the event an Owner desires to participate on the Board who previously had declined to participate or had appointed a representative, such Owner shall become a director immediately upon giving written notice to the Board. In that event, the term of any director appointed in

the Owner's absence (whether appointed by the Owner or the Board) shall terminate immediately upon the Owner giving written notice to the Board.

3.4 Each director shall have one vote. In the event Owners of more than one Lot appoint the same director, such director shall have one vote for each Lot for which the director was appointed.

3.5 The right to vote may not be severed or separated from the ownership of the parcel of property conferring the right to vote.

3.6 Assignment of the right to vote to designee, lessee, or beneficiary, as provided herein is permitted.

3.7 If at any meeting where proper notice of the meeting was given, a director casts a vote representing a certain Lot, it will be conclusively presumed for all purposes that the director casting the vote was acting with the authority and consent of all Owners of the Lot.

3.8 The Association shall have the obligation, subject to and in accordance with the Covenants, to perform each of the following duties for the benefit of the Owners of each Lot within the Property.

3.8.1 To accept and exercise jurisdiction over the Property.

3.8.2 To adopt and amend bylaws and rules and regulations.

3.8.3 To adopt and amend budgets for revenues, expenditures and reserves and collect Assessments.

3.8.4 To hire and terminate management agents and other employees, agents and independent contractors.

3.8.5 To institute, defend or intervene in litigation or administrative proceedings in its own name on behalf of itself or two or more Owners on matters affecting the Property.

3.8.6 To make contracts and incur liabilities.

3.8.7 To regulate the use, maintenance, repair, replacement and modification of the Property.

3.8.8 To cause additional improvements to be made to the Property.

3.8.9 To impose charges for late payment of Assessments, recover reasonable attorney fees and other legal costs for collection of Assessments and other actions to enforce the power of the Association, regardless of whether or not suit was initiated, and after notice and opportunity to be heard, levy reasonable fines for violations of the Governing Documents.

3.8.10 To impose reasonable charges for the preparation and recordation of amendments to the Declaration or statements of unpaid Assessments.

3.8.11 To provide for indemnification of its officers and Board and maintain directors' and officers' liability insurance.

3.8.12 To assign its right to future income, including the right to receive Assessments.

3.8.13 To exercise any other powers conferred by the Declaration or the Bylaws.

3.8.14 To obtain and maintain in force policies of insurance covering the liability of the Association for all activities of the Association and its directors and officers, and such other insurance as it deems advisable.

3.8.15 To exercise all other powers that may be exercised in this state by legal entities of the same type as the Association.

3.8.16 Such other powers as are consistent with the powers herein outlined and those powers adopted by the Association not in conflict herewith.

3.9 **Rights of Action.** The Association on behalf of itself and any aggrieved Owner shall be granted a right of action against any and all Owners for failure to comply with the provisions of the Governing Documents, or with decisions of the Board made pursuant to authority granted to the Association in the Governing Documents. The Owners shall have a right of action against the Association for failure to comply with the provisions of the Governing Documents, or with decisions of the Board made pursuant to authority granted to the Association in the Governing Documents. In any action covered by this section, the Association or any Owner shall have the right but not the obligation to enforce the Governing Documents by any proceeding at law or in equity, or as set forth in the Governing Documents, or by mediation or binding arbitration if the parties so agree. Failure by the Association or by any Owner to enforce compliance with any provision of the Governing Documents shall not be deemed a waiver of the right to enforce any provision thereafter.

3.10 **Implied Rights and Obligations.** The Association may exercise any right or privilege expressly granted to the Association in the Governing Documents or by the Colorado Nonprofit Corporation Act.

3.11 **Notice.** Any notice to an Owner of matters affecting the Property by the Association or by another Owner shall be sufficiently given if in writing and delivered personally, by courier or private service delivery, or the third business day after deposit in the mails for registered or certified mail, return receipt requested, at the address of record for real property tax assessment notices with respect to that Owner's Lot.

ARTICLE 4.
ASSESSMENTS

4.1 **Purpose of Assessments.** Assessments shall be used for the purposes of promoting the health, safety, and welfare of Owners and related users, and in particular:

4.1.1 To provide for a Common Expense Assessment made on an annual basis against all Lots based upon the Association's advance budget of the cash requirements needed by it to provide for the administration and performance of its duties during such Assessment year,

4.1.2 To enforce all provisions of the Governing Documents;

4.1.3 To exercise all rights and powers and to discharge all duties and obligations pursuant to the Governing Documents;

4.1.4 To discharge all expenses incurred by the Association in the alteration, improvement, construction, reconstruction, repair, maintenance or replacement of the Property;

4.1.5 To fund any operating deficit or reserves the Association deems necessary to meet its financial obligations.

4.2 **Budget.** The Board shall adopt an annual budget and distribute the same to the Lot Owners.

4.3 **Annual Assessments.** Annual Assessments made for Common Expenses shall be based upon the estimated cash requirements as the Board shall from time to time determine to be paid by all of the Owners, subject to Section 4.1 above. Estimated Common Expenses shall include, but shall not be limited to, the cost of routine maintenance and snow removal on the Property, expenses of management and insurance premiums for insurance coverage as deemed desirable or necessary by the Association, wages, legal and accounting fees, management fees, expenses and liabilities incurred by the Association under or by reason of this Declaration, payment of any default remaining from a previous assessment period, and the creation of a reasonable and adequate contingency or other reserve or surplus fund for insurance deductibles and general, routine maintenance of the Property on a periodic basis, as needed.

4.4 **Apportionment of Common Expenses.** Except as provided below and elsewhere in this Declaration, all Common Expense Assessments shall be assessed pro rata against each Lot (1/3 to each Lot).

4.4.1 Any Common Expense for insurance may be assessed in proportion to risk.

4.4.2 If a Common Expense is caused by the misconduct of an Owner, the Association may

assess that expense exclusively against that Owner and that Lot, in addition to sums charged to the Owner pursuant to paragraph 4.5 below.

4.4.3 Fees, charges, taxes, impositions, late charges, fines, collection costs and interest charged against an Owner are enforceable as Common Expense Assessments.

4.5 **Owner's Negligence or Misconduct.** In the event that the need for maintenance or repair of the Property or any portion thereof, is caused by or in any way results from the negligent or willful act or failure to act, or the misconduct of an Owner or an Owner's related user, then the expenses, costs, and fees incurred by the Association for such maintenance or repair shall be a personal obligation of such Owner, and such obligation shall be considered a Default Assessment, collectible as a Common Expense Assessment.

4.6 **Special Assessments.** The Association may at any time, from time to time, determine, levy and assess a Special Assessment applicable to that particular assessment year for the purpose of defraying, in whole or in part, payments for any operating deficit and/or unbudgeted costs, fees and expenses of any construction, reconstruction, repair, demolition, replacement or maintenance of the Property or any portion thereof. Any such Special Assessment shall be due and payable as determined by the Board. Notice in writing setting forth the amount of such Special Assessment per Lot and the due date for payment thereof shall be given to the Owners not less than thirty (30) days prior to such due date.

4.7 **Effect of Nonpayment; Assessment Lien.** Any Assessment installment whether pertaining to any Annual, Special or Default Assessment, which is not paid on or before five (5) days after its due date shall be delinquent. If an Assessment installment becomes delinquent, the Association, in its sole discretion, may take any or all of the following actions:

4.7.1 Assess a late charge for each delinquency in such amount the Association deems appropriate.

4.7.2 Assess an interest charge from the due date at the yearly rate of six (6) points above the prime rate charged by the Association's bank, or such other lawful rate as the Board may establish, not exceeding twenty-one percent (21%) per year.

4.7.3 Suspend the voting rights of the Owner during any period of delinquency.

4.7.4 Bring an action against any Owner personally obligated to pay the delinquent Assessments.

4.7.5 Proceed with foreclosure as set forth in more detail below.

4.8 **Lien Rights.** Assessments chargeable to any Lot shall constitute a lien on such Lot. the Association may institute foreclosure proceedings against the defaulting Owner's Lot in the manner for foreclosing a

mortgage on real property under the laws of the State of Colorado. In the event of foreclosure, the Owner shall be liable for the amount of unpaid assessments, any penalties and interest thereon, the cost and expenses of such proceedings, the cost and expenses for filing the notice of the claim and lien, and all reasonable attorneys' fees incurred in connection with the enforcement of the lien. the Association shall have the power to bid on a Lot at foreclosure sale and to acquire and hold, lease, mortgage, and convey the same.

ARTICLE 5.
MAINTENANCE

5.1 **Association's Maintenance Responsibility**. The Association shall maintain and keep the Property in good, clean, attractive and sanitary condition and repair, the costs and expenses of which shall be Common Expenses. Without limiting the foregoing, the Association shall be responsible for maintaining and operating the following in good condition consistent with an upscale residential development:

a. All internal roads, trails, sidewalks, and walkways within the Property, including the roadway surface, shoulder, footpaths and their asphalt, concrete or gravel driving surface or walking surface.

b. Landscaping, vegetation or grass within the Open Space Parcels, and within any other Common Element, including control of noxious weeds.

c. The raw water irrigation system serving the Community, including the irrigation lines and associated trenches; irrigation pump(s), its pedestal, housing, vault, ditch turnout, controllers, control wiring, other associated electronics, and power supply; and all other irrigation features / items equipment used to irrigate the Community.

d. All stormwater and drainage infrastructure located on the Property;

e. All landscaping upon the Property;

f. Common utilities installations including associated trenches and pedestals, but not feeder lines that serve individual Lots, which are the individual Lot Owner's responsibility;

g. Fire hydrants;

h. Fencing;

i. Signs.

The Association will also be responsible for keeping all roads, parking areas, sidewalks and access ways reasonably free of snow, ice, debris and other obstructions, maintaining clear access on the access

drive for emergency vehicles and clear access to the fire hydrants, and maintaining the landscaping within the Common Areas.

5.2 **Lot Owner's Maintenance Responsibility.** Except as provided otherwise in this Declaration or by written agreement with the Association, all maintenance of individual Lots including, without limitation, all exterior and interior surfaces, structural and nonstructural members, utility systems, utility lines from the point of departure from a shared usage, glazing, doors, patios, decks, balconies and other fixtures designed to serve a single Lot, shall be the sole responsibility of the respective Lot Owners. Each Lot shall be maintained in a good, clean, attractive and sanitary condition and repair. Additionally, a Lot Owner shall be fully responsible for all damage and the cost of repair and restoration of service for utility lines or connections outside the boundaries of such Owner's Lot if the Owner or his family members, tenants, guests, invitees, licensees or agents caused such damage or the necessity of repair.

ARTICLE 6.
GENERAL RESTRICTIONS APPLICABLE TO THE PROPERTY

6.1 **Use and Occupancy of Lots.** All Lots shall be used in accordance with the Development Agreement, Project Documents, PUD Guide, and any other applicable laws. Each Owner shall be entitled to the exclusive ownership and possession of his or her Lot, subject to the rights of the Declarant and the Association provided in this Declaration. Occupancy of the improvements on each Lot shall comply with any applicable health or safety code adopted by the Town or County in which the Project is located at the time this Declaration is recorded.

6.2 **Compliance with Laws, Ordinances, Development Agreement and Association Documents**. No Lot shall be used for any purpose not permitted by the PUD Guide for the Project, the Development Agreement, or this Declaration.

6.3 **Use of Common Elements**. Parcels 1 and 2 shall be owned by the Association and shall be utilized for passive open space purposes only, including for casual use by the residents of the Property.

6.4 **Prohibition of Increases in Insurable Risks and Certain Activities**. Nothing shall be done or kept in any Lot or in or on the Common Elements, or any part thereof, which would result in the cancellation of the insurance on all or any part of the Project or in an increase in the rate of the insurance on all or any part of the Project over what the Association, but for such activity, would pay, without the prior written approval of the Board of Directors. Nothing shall be done or kept in any Lot or in or on the Common Elements which would be in violation of any Applicable Law. No damage to or waste of the Common Elements shall be committed by any Owner or Occupant, and each Owner shall indemnify and hold the

Association and the other Owners harmless against all loss resulting from any such damage or waste caused by such Owner or an Occupant of such Owner's Lot (including all Costs of Enforcement incurred in the defense of claims arising by reason of this Section or incurred in establishing the right to indemnification). Failure to so indemnify shall be a default by such Owner under this Section and shall give rise to a Default Assessment against such Owner's Lot. At its own initiative or upon the written request of any Owner, if the Association determines that further action by the Association is proper, the Association shall enforce the foregoing indemnity as a Default Assessment levied against such Lot.

6.5 **Lighting**. No lights shall be emitted which are unreasonably bright or cause unreasonable glare; no sound shall be emitted which is unreasonably loud or annoying; and no odor shall be emitted which is nauseous or unreasonably offensive to others. The Association may adopt additional restrictions regarding these matters in the Rules and Regulations or in a separate policy.

6.6 **Subdivision of Lots**. No Lot or Parcel shall be further subdivided without the express consent of the Association and the Town of New Castle. In the event of further subdivision the Town may require these Covenants to be amended to comply with the Colorado Common Interest Ownership Act, or other law as applicable at the time of said subdivision. This provision shall not be amended without the express consent of the Town of Newcastle.

6.7 **Parking**. The Association shall manage parking on the Property in a reasonable manner, and may enact further rules and policies with regard to parking. If the HOA fails to adopting parking rules or policies for the Property, the Town may require the HOA to adopt and enforce a parking management plan deemed appropriate in the Town's reasonable discretion.

6.8 **Pets**. The Association shall manage pets on the Property in a reasonable manner, and may enact further rules and policies regarding the same.

6.9 **Outdoor Irrigation**. Landscaping on the Property, including on a Lot or Common Area, shall be irrigated only with raw ditch water through the Association managed raw water system, except that if the raw water irrigation system is malfunctioning, newly planted landscaping or newly planted vegetation required for soil stabilization may be watered by other water sources, including potable, and such irrigation system shall be repair expeditiously. All irrigation systems within the Property should be maintained and in good repair.

6.10 **Use of Open Space**. All Lot owners, their tenants and permittees are granted easement for use of the Open Space for recreational uses and no other uses. All use is at the sole risk and responsibility of

such user. Each Lot Owner utilizing, or authorizing or allowing the use of the Open Space by a guest, permittee or invitee of such Lot Owner shall indemnify, defend and hold harmless the Association and the owner of Lot 1 for any and all claims, liabilities, losses, damages, fees, costs, or expenses of any kind, including without limitation attorneys' fees and disbursements, arising out of or related to such Lot Owner or such Lot Owner's guest, permittee or invitee's use of the Open Space. No use of the Recreational Common Area shall be allowed other than by Lot Owners, their guests, permittees and invitees as set forth herein. Any other use of the Recreational Common Area by any other person shall constitute unlawful trespass. The Association shall maintain appropriate insurance covering the authorized use of the Open Space described in this section, with limits of not less than $1M per occurrence of coverage or such higher amount as may be determined by the Executive Board. Uses shall be suspended for residents who demonstrate unruly, careless, reckless, unsafe or injurious behavior in this area. Uses that endanger any user of this Recreational Common Area are not allowed. All residents and guests using the Open Space must clean up after themselves and their pets. Any failure to leave the area in a clean and orderly fashion will result in suspension of use rights for such resident and/or guest. Recreation activities are not allowed in the common areas that lie outside of the Open Space.

6.11 **Severability.** Invalidation of any one of these covenants or restrictions by judgment or court order shall in no way affect any other provisions which shall remain in full force and effect.

6.12 **Conflicts Between Documents.** In case of conflict between this Declaration and the Articles and the Bylaws, this Declaration shall control. In case of conflict between the Articles and the Bylaws, the Articles shall control.

[SIGNATURES OF ALL OWNERS]

By: _____ By: _____

STATE OF COLORADO)
) ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me this _____ day of _____, 20_____, by _____ as Owner of the Property, and as Declarant.

WITNESS my hand and official seal.

My commission expires: _____

_____

Notary Public

AFFORDABLE HOUSING PLAN AND AGREEMENT

AFFORDABLE HOUSING PLAN AND AGREEMENT
R2 PARTNERSHIP, LLC
9 NORTH WILDHORSE PROJECT
NEW CASTLE, COLORADO

THIS Affordable Housing Plan (this "Plan") is made and executed this __ day of _____, 2024 (the "Effective Date"), by and between _____, LLC, a Colorado limited liability company and/or its assigns (the "Owner"), for the benefit of and enforceable by the Board of Trustees of the Town of New Castle, Colorado (the "Town").

WHEREAS, on _____ the Town, by Resolution No._____ approved a the Final Plat for the 9 North Wildhorse PUD Subdivision, recorded on _____ as Reception No. _____ (the "Final Plat"); and

WHEREAS, Owner is the owner of Lots 1, 2, and 4, as well as Parcels 1 and 2 depicted on the Final Plat ("Property"), which is being developed by R2 Partnership, LLC ("Developer"); and

WHEREAS, on _____ the Town, by Resolution No. _____ approved the site plan and construction of 130 townhome units and apartments on the Property (the "Project"); and

WHEREAS, despite that there is no current obligation in the Town of Newcastle Code to provide affordable or deed restricted units, Developer voluntarily agreed to provide 5 such units to the Town and its designees for a rate of not more than 75% of the then-current free market rent for a period of not more than 20 years from the issuance of a certificate of occupancy; and

WHEREAS, as a condition of approval of the Final Plat submitted by Developer to the BOCC for approval as required by the laws of the State of Colorado, Owner, as Developer's predecessor in interest to the Property agrees to enter into this Plan with the Town, setting forth certain restrictions and conditions regarding the providing of affordable housing on the Property, all as more fully set forth below.

NOW THEREFORE, in consideration of the mutual covenants and promises contained herein, the parties agree as follows:

I. Affordable Housing Plan

1. Project. The project consists of 130 townhouse- and apartment-style rental units ("Project"). Of those 130 units, 26 are townhomes in duplex and triplex configurations, and 104 are apartments. Of those 104 apartments, 80 are live/work residences in two and three-story buildings, and the remaining 24 apartment residences are "empty nester" units in two-story buildings.

2. Restricted Units. Owner agrees to restrict 5 units as an "affordable" rental units according to this Plan (together the "Restricted Units" and each a "Restricted Unit"). The Restricted Units shall consist of three 1-bedroom and two 2-bedroom units within the project, and are initially those units set forth on **Exhibit A**. The Restricted Units shall be occupied in accordance with this plan.

3. Timing. Owner shall offer the Restricted Units to the Town upon Certificate of Occupancy.

4. Maximum Rent. The net rental price for the units shall not, at the time of leasing, exceed 75% of the then-current market rental rate for other units in the project. To the extent rental rates rise, Owner may provide 60 days' notice of such increase in the rental rate to the tenant, then thereafter increase rent.

5. Allocation; Notice of Vacancy. The Units will be offered first to the Town of New Castle for its employees. The Town has the authority to designate the occupants of the Restricted Units upon notice to the Owner. Owner shall provide 30 days' notice to the Town prior to the expiration of any lease for a Restricted Unit if the lease will not be renewed. Within 14 days from receiving the vacancy notice from Owner, the Town shall provide Owner with the employee to whom the Town wants to provide the to-be vacant Restricted Unit. Owner has the right to conduct a reasonable investigation of any proposed tenant, and may accept or reject the proposed tenant in the same manner as free market tenants. If the proposed tenant is rejected, the Town shall have an additional 14-day time period to find a second proposed tenant. If the Town does not designate a proposed tenant with the above-described time periods, or Owner reasonably rejects the second proposed tenant, Owner may rent that Restricted Unit for a period of 12 months at a free market rental rate. At the expiration of the 12-month free-market term, Owner shall reoffer the Restricted Unit to the Town pursuant to the procedure described above.

6. Management. Tenants, whether renting under restricted or free-market rent, shall sign the same lease as all other free market tenants, and shall be subject to the same rules and restrictions as other occupants of the Project. Owner reserves the right to terminate any tenant's lease for cause, including unreasonable interference with other tenants' quiet enjoyment, Substantial Violations as described by the lease or applicable law, or nonpayment of rent. In the event a tenant is removed or evicted, Owner shall provide notice to Town, which will have a 30-day period to provide Owner with a proposed tenant to assume the lease. Owner

has the right to conduct a reasonable investigation of any proposed tenant, and may accept or reject the proposed tenant in the same manner as free market tenants. If the proposed tenant is rejected, the Town shall have an additional 14-day time period to find a second proposed tenant. If the Town does not designate a proposed tenant with the above-described time periods, or Owner reasonably rejects the second proposed tenant, Owner may rent that Restricted Unit for a period of 12 months at a free market rental rate. At the expiration of the 12-month free-market term, Owner shall offer the Restricted Unit to the Town pursuant to the procedure described in Paragraph 5.

7. Recording; Expiration; Renegotiation. This Agreement may be recorded against the Property. Notwithstanding any recordation, this Agreement, including Owner's obligation to provide any type of rent restricted units, shall automatically expire twenty (20) years after the issuance of a certificate of occupancy for the first Restricted Unit (the "Expiration Date"). If the Town wishes to continue this Plan after the Expiration Date, the Town shall approach Owner (or its successors or assigns) prior to the Expiration Date, and the Town and Owner shall re-negotiate in good faith the terms of a renewed Affordable Housing Plan for the Project.

II. GENERAL PROVISIONS

1. Compliance with Land Use Regulations. The Developer and its successor or assigns shall be required to obtain all necessary permits and comply with the provisions of the Town's Municipal Code as the same are in effect at the time of commencement of the Plan referred to herein.

2. Severability. Whenever possible, each provision of this Plan and any other related documents shall be interpreted in such a manner as to be valid under applicable law; but if any provision of any of the foregoing shall be invalid or prohibited under said applicable law, such provision shall be ineffective to the extent of such invalidity or prohibition without invalidating the remaining provisions of such subsection or document.

3. Amendment and Modification. The parties hereto mutually agree that this Plan may be amended or modified from time to time, provided that such amendment or modification is in writing and signed by the Developer or the Developer's successor(s) affected by any such amendment.

4. Assignability. This Plan shall be enforceable against the Developer, provided, however, that in the event the Developer sells, transfers or assigns all or part of the Property, the obligations of the Developer under this Plan as to that portion of the Property shall be deemed be assumed by the purchaser of the parcel, and the Developer shall have no further obligations hereunder.

5. Binding upon Successors. This Plan shall inure to the benefit of and be binding upon the parties hereto, their respective successors, and assigns.

6. No Rights to Third Parties. This Plan does not and shall not be deemed

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to confer upon or grant to any third party any right to claim damages or to bring any lawsuit, action or other proceedings against either the Town or its officers, employees or agents because of any breach hereof or because of any terms, covenants, agreements or conditions contained herein.

7. Enforcement. At its sole option, the Town may enforce the provisions of this Plan in the same manner and with the same remedies applicable to the enforcement of land use regulations pursuant to the Town's Municipal Code, as they may be amended from time to time, or as otherwise provided by law.

8. Notices. All notices or deliveries required under this Agreement shall be in writing and delivered to the other Party personally, via email to the email address shown below, or via courier or other delivery method that provides proof of delivery (e.g., FedEx, UPS, USPS registered with return receipt, etc.) at the physical address shown below, and shall be effective on the date of delivery or if sent via email the earlier of the date receipt is acknowledged via reply email or one business day after the email is sent. The Parties' initial notice addresses are:

a. Town of New Castle:
[Physical Address]
[Physical Address]
[Physical Address]
[email address]

b. *With copies to:*
David McConaughty, Esq.
910 Grand Avenue, Suite 201
Glenwood Springs,
Colorado 81601
dmcconaughy@garfieldhecht.com

c. Owner c/o Developer:
c/o Barry Rosenberg
R2 Partnership, LLC
PO Box 9833
Cincinnati, OH 45209
b.rosenberg@r2partners.com

d. *With copies to:*
Chad J. Lee, Esq.
901 Grand Ave., Suite 201
Glenwood Springs, CO 81602
chad@jvamlaw.com

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IN WITNESS WHEREOF, Owner, Developer, and the Town have executed this Affordable Housing Plan and Agreement dated to be effective as of _____, 2024.

Town of Newcastle, Colorado

ATTEST:

By._____ _____
_____, Mayor Clerk of the Board

_____
Date

[Owner Entity],
a Colorado Limited Liability Company

By: _____
_____, Managing Member

R2 Partnership, LLC
a Colorado Limited Liability Company

By: _____
Barry Rosenberg, Managing Member

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(placeholder for Exhibit A)
Initial Restricted Unit Depiction

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FEE OFFSET AND COST RECOVERY REQUESTS

Request for Offset of Park Impact Fees.

The Town Code requires that Developers either dedicate parkland and/or pay a fee-in-lieu. The Code also allows a Developer to obtain credit towards the dedication requirement by constructing recreational facilities, so long as the construction of those facilities is secured in the Subdivision Improvement Agreement. For this project, initial feedback from Town Staff was that the project may eliminate several parking spaces at VIX park, even though those parking spaces were located completely or partially on private property. To alleviate this concern, this developer agreed to construct additional parking along North Wild Horse Drive within the Town's right of way. This parking isn't associated with the Developer's project and doesn't count towards its parking requirements. Rather, it will primarily be an amenity serving the public, and VIX park specifically. The Applicant is requesting that all improvements above and beyond what would have been required to construct the road (without the parking) be credited towards otherwise applicable parkland dedication or fee-in-lieu requirements.

Additionally, the Applicant hopes the Town will consider the recreational value of the trail access this project is preserving in their discussion of the park impact fee.

Request for Cost Recovery for Construction of North Wildhorse Road.

The North Wild Horse Drive connection needs to be constructed to serve this Development, even though it will also serve at least 2 other potential developments. Because this property is the first of the various parcels to develop, this Developer is being required to front the entire cost of the road construction, even though this street will serve adjacent properties when those properties eventually develop. As such, the Applicant is requesting that the Town require those future developers to reimburse the Applicant's actual costs to construct the road on a proportionate basis based on objective traffic generation counts.

STATEMENT REGARDING NETZERO BUILDING

Net Zero Design - Program at Castle Valley Ranch Multifamily – 9 North Wildhorse

Philosophically, the first moves in net zero design are to limit the amount of energy consumption required by making smart orientation and envelope choices, and then choosing efficient equipment and utilizing electric utilities for power, with the goal of 100% source power by renewable resources.. In the case of 9 North Wild Horse, we are addressing the goal of Net Zero design through exactly this method. Site design is efficient, buildings are built right and envelopes are excellent. This is a sound start to meeting New Castle's goals for a net zero future. In detail:

1. We are orienting the buildings for passive solar access to sun to the south, and that reduces energy loads but also orientates roofs for southern exposure. The essential site layout is best practices for reducing energy consumption and conducive to net zero design.
2. The building's energy usage is planned to be 5% better than baseline energy usage at a minimum, with 15% being the goal. Efficient water heaters, mechanical systems, low flow fixtures, energy star appliances and building thermal envelope upgrades via insulation and windows/doors are all being considered and will be studied further as the technical drawings for the project are advanced with the assistance of a third party energy modeling consultant. New Castle is already on the most current, most efficient energy code, so this is really at the bleeding edge of what is possible for envelope technology today.
3. The project is all electric including energy efficient LED lighting. This is an enormous commitment and impactful in terms of net zero goals. No gas service is anticipated to the buildings. This goes well beyond the base code minimum, which currently allows for gas based fuel appliances, which are less costly upfront and less costly to operate. The "all electric from day one" approach guarantees that we will be aligning with the power grid utilizing cleaner and cleaner renewable energy sources. For example, sustainability consultants have identified 2026 as the year that Colorado's electric grid becomes cleaner utilizing renewable sources over carbon based energy sources and this only improves over time. At some point in the future, as the grid relies more and more upon renewable sources of power, this project will achieve net zero by virtue of this initial all-electric commitment as the electrical infrastructure is already fully ready to support the needs of the project.
4. EV parking space capabilities are being provided per the Colorado Solar Ready code, affecting 60% of the required site parking spaces.

TEMPORARY
CONSTRUCTION EASEMENT

Outlook

FW: easement access

From Paul Schirmer <paul.schirmer@CDSG-US.COM>
Date Wed 10/30/2024 12:09 PM
To Louis Wilsher <LWilsher@dhmdesign.com>; Chad Lee (chad@jvamlaw.com) <chad@jvamlaw.com>

From: Paul Smith <psmith@newcastlecolorado.org>
Sent: Monday, October 28, 2024 3:33 PM
To: Maarjan Pasha <maarjan@tcfuels.com>
Cc: Paul Schirmer <paul.schirmer@CDSG-US.COM>; Barry Rosenberg <b.rosenberg@r2partners.co>; John Wenzel <jwenzel@newcastlecolorado.org>
Subject: RE: easement access

Thanks, Maarjan, on behalf of the surrounding community! We'll include this with the Applicant's packet.

Thank you,
Paul Smith
Town Planner/Inspector
psmith@newcastlecolorado.org
(970) 984-2311 #108

From: Maarjan Pasha <maarjan@tcfuels.com>
Sent: Monday, October 28, 2024 12:38 PM
To: Paul Smith <psmith@newcastlecolorado.org>
Cc: Paul Schirmer <paul.schirmer@cdsg-us.com>; Barry Rosenberg <b.rosenberg@r2partners.co>; John Wenzel <jwenzel@newcastlecolorado.org>
Subject: Re: easement access

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Please share this with the town, and review.
I am ok with giving the access.

Thanks
Maarjan

On Wed, Oct 23, 2024 at 10:05 AM Paul Smith <psmith@newcastlecolorado.org> wrote:

That's the location the Town would prefer. I know we would also want a robust track pad added at the roundabout and construction safety fencing in the relevant public locations. The asphalt bike path could be ramped/repaired afterwards or both. John with public works would need to review.

Thank you,

Paul Smith
Town Planner/Inspector
psmith@newcastlecolorado.org
(970) 984-2311 #108

From: Paul Schirmer <paul.schirmer@CDSG-US.COM>
Sent: Wednesday, October 23, 2024 8:53 AM
To: Maarjan Pasha <maarjan@tcfuels.com>
Cc: Paul Smith <psmith@newcastlecolorado.org>; Barry Rosenberg <b.rosenberg@r2partners.co>
Subject: RE: easement access

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Maarjan:

See attached; please let me know if this location works.

Thanks,

Paul

From: Maarjan Pasha <maarjan@tcfuels.com>
Sent: Tuesday, October 22, 2024 2:53 PM
To: Paul Schirmer <paul.schirmer@CDSG-US.COM>
Cc: Paul Smith <psmith@newcastlecolorado.org>
Subject: Re: easement access

ok, thanks.

-Maarjan

On Tue, Oct 22, 2024 at 1:47 PM Paul Schirmer <paul.schirmer@cdsg-us.com> wrote:

> I asked our engineer to outline the area & will follow up once I receive.
>
> Thanks,

Paul

From: Maarjan Pasha <maarjan@tcfuels.com>
Sent: Tuesday, October 22, 2024 2:09 PM
To: Paul Smith <psmith@newcastlecolorado.org>
Cc: Paul Schirmer <paul.schirmer@CDSG-US.COM>
Subject: Re: easement access

Great, thanks for your reply.
Ill wait to hear from them.
Take care
Maarjan

On Tue, Oct 22, 2024 at 10:45 AM Paul Smith <psmith@newcastlecolorado.org> wrote:

> Hi Maarjan,
>
> Thanks for following up on this. Yes, the location along the school property line would suit. I copied Paul Shirmer with the R2 team. If they are still willing to move forward with this, he can direct his team to create a temporary easement agreement with the terms for you to and the Town to review. We would like to get this completed before the application gets final approval. However, we still have time to finalize prior to permitting if necessary.
>
> Thank you,
> *Paul Smith*
> *Town Planner/Inspector*
> psmith@newcastlecolorado.org
> (970) 984-2311 #108
>
> NEW CASTLE
> AUTHENTICALLY COLORADO
>
> ---
>
> **From:** Maarjan Pasha <maarjan@tcfuels.com>
> **Sent:** Tuesday, October 22, 2024 9:30 AM
> **To:** Paul Smith <psmith@newcastlecolorado.org>
> **Subject:** easement access
>
> CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.
>
> Hi Paul,
> I've been meaning to call you regarding the easement.
> I got a chance to discuss it with the guys and they'd like to see where it will be placed(preferably alongside the school and not through the middle of the property).
> If it helps the town, we would like to help facilitate this.
> If they could provide us a plan of where it will be placed and a contract, we can review and help progress the process.

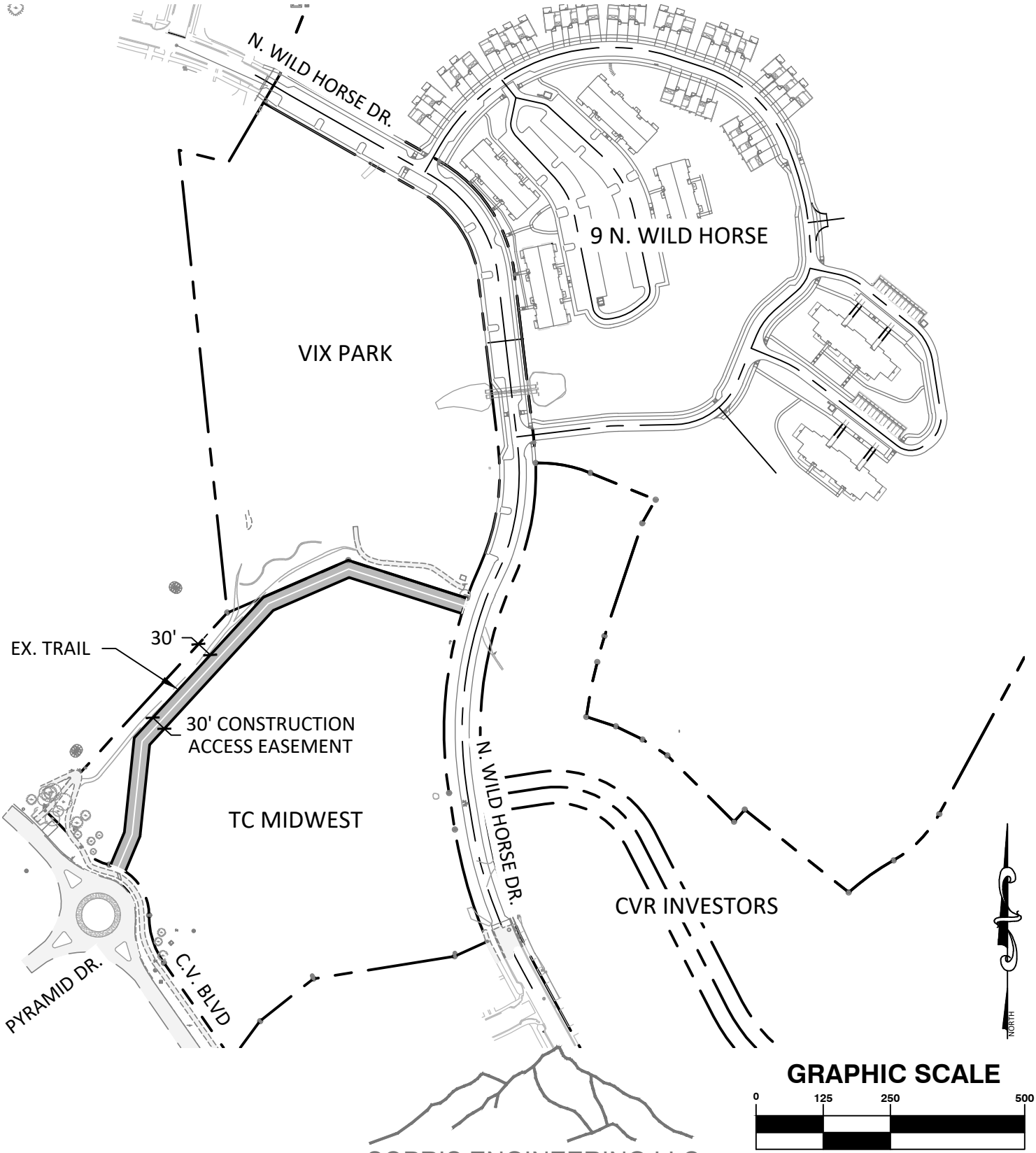
Thanks
Maarjan

TC MIDWEST: CONSTRUCTION EASEMENT EXHIBIT

9 NORTH WILD HORSE

NEW CASTLE, COLORADO.

SHEET 1 OF 1



GRAPHIC SCALE

0 125 250 500

(IN FEET)

1 inch = 250 ft.

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3 • CARBONDALE CO 81623
(970) 704•0311• soprisengineering.com

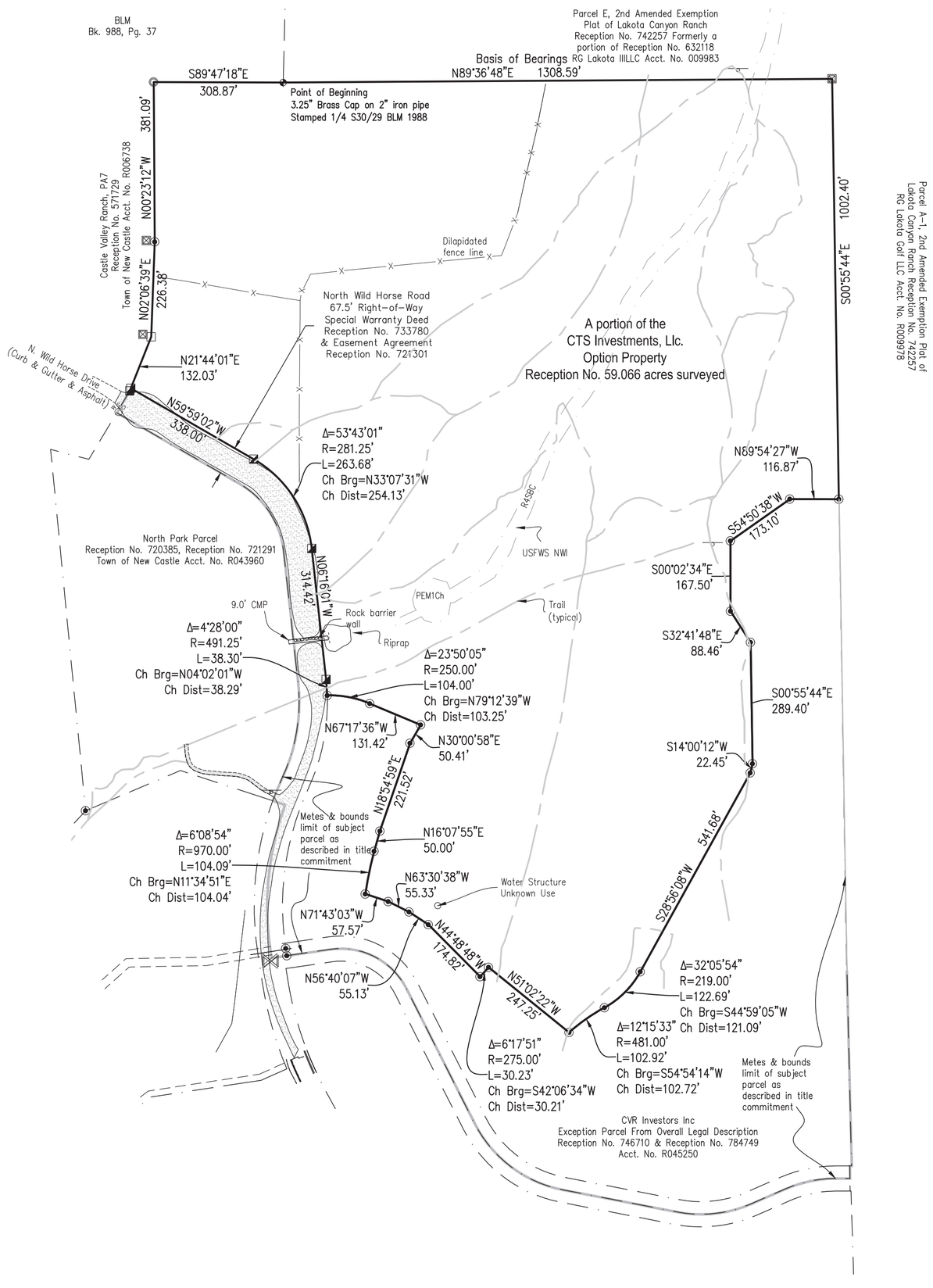
G:\2023\33011 CVR R2 RES\CIVIL\CIVIL DWGS\DE\33011-SITE.DWG - Oct 23, 2024 - 8:39am

LAND TITLE COMMITMENT

ALTA/NSPS Land Title Survey

A portion of the 'Option Parcel' a metes and bounds parcel situated in SW1/4 SECTION 29, SE1/4 SECTION 30, THE NE1/4 SECTION 31 AND THE NW1/4 SECTION 32 Township 5 South, Range 90 West of the 6th P.M.

Town of New Castle, Colorado



For Review
11/17/2021 12:27:02 PM

— LEGEND —

- ⊕ – Found Monument as Described
- ⊠ – Found 1/2" rebar
- □ – Found 5/8" rebar
- ◢ – Set 18" Long 5/8" Rebar & 1.25" Orange Plastic Cap, LS # 38182
- ○ – Found 5/8" Rebar & 1.25" Orange Plastic Cap, LS # 36572
- ◉ – Found 5/8" Rebar & 1.25" Plastic Cap, LS 20133
- ⊠ – Found 5/8" Rebar & 1.25" Yellow Plastic Cap, LS 13501
- ⋈ – Water valve
- ⋔ – Water Shut-off
- –o– – Sign – Single Pole
- —x—x—x—x— Fenceline
- – Asphalt paving
- – Gravel

Graphic Scale
0 100 200 400
In U.S. Feet : 1" = 200'

SGM
118 West Sixth Street, Suite 200
Glenwood Springs, CO 81601
970.945.1004 www.sgm-inc.com

A Portion of the Option Parcel

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

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

Job No.	2000-109.033
Drawn by:	SAH & ao
Date:	Nov. 5, 2021
QA/QC: reb	PLS: sah
File:	Option Parcel ALTA

Title:
ALTA/NSPS Land Title Survey

Sheet No.
2
Of: 2

I:\2000\2000-109\033-2021\OptionParcelALTA\Vr-Dwgs\Surv\Dwgs\BaseMaps\Option Parcel ALTA.dwg Plotted: 11/17/2021 9:52 AM By: Scott Hamman

I:\2000\2000-109\033-2021OptionParcelALTA\H-Dwgs\Surv\Dwgs\BaseMaps\Option Parcel ALTA.dwg Plotted: 11/17/2021 9:52 AM By: Scott Hemmen

ALTA/NSPS Land Title Survey

A portion of the 'Option Parcel' a metes and bounds parcel situated in SW1/4 SECTION 29, SE1/4 SECTION 30, THE NE1/4 SECTION 31 AND THE NW1/4 SECTION 32 Township 5 South, Range 90 West of the 6th P.M. Town of New Castle, Colorado

Property Description:

A parcel of land being a portion of the 'Option Property' as described in that Quit Claim Deed recorded at Reception No. 775392 and being situated in the SW1/4 Section 29, SE1/4 Section 30, the NE1/4 Section 31 and the NW1/4 section 32, Township 5 South, Range 90 West of the 6th P.M.., County of Garfield, State of Colorado, said parcel of land being more particularly described as follows:

Beginning at the 1/4 corner between said Sections 29 and 30, a 3.25" Brass Cap on 2" iron pipe Stamped 1/4 S30/29 BLM 1988 thence N 89° 36' 48" E, the assumed basis of bearings along the southerly line of the 2nd Amended Exemption Plat of Lakota Canyon Ranch recorded as Reception No. 742257 a distance of 1308.59 feet to the Northeast Corner of said 'Option Property', being a 1.25" yellow plastic cap with illegible stamping on a 5/8" rebar said corner being coincidental with westerly and southerly lines of said Reception No. 742257.

Thence S 00°55'44" E along easterly line of said Option Property and the said coincidental westerly line of Reception No. 742257 a distance of 1002.40 feet to a point on the northerly line of that parcel of land described in the Special warranty Deed recorded at Reception No. 784749;
Thence the following twenty (20) course along; northerly, westerly, easterly and then northerly lines of said Reception No. 784749:

1. N 89°54'27" W a distance of 116.87 feet;
2. S 54°50'38" W a distance of 173.10 feet;
3. S 00°02'34" E a distance of 167.50 feet;
4. S 32°41'48" E a distance of 88.46 feet;
5. S 00°55'44" E a distance of 289.40 feet;
6. S 14°00'12" W a distance of 22.45 feet;
7. S 28°56'08" W a distance of 541.68 feet;
8. 122.69 feet along a curve to the right, having a radius of 219.00 feet, a central angle of 32°05'54", the chord of which bears S 44°59'05" W, a distance of 121.09 feet;
9. 102.92 feet along a non-tangent curve to the left, having a radius of 481.00 feet, a central angle of 12°15'33", the chord of which bears S 54°54'14" W a distance of 102.72 feet;
10. N 51°02'22" W a distance of 247.25 feet;
11. 30.23 feet along a non-tangent curve to the right, having a radius of 275.00 feet, a central angle of 6°17'51", the chord of which bears S 42°06'34" W a distance of 30.21 feet;
12. N 44°48'48" W a distance of 174.82 feet;
13. N 56°40'07" W a distance of 55.13 feet;
14. N 63°30'38" W a distance of 55.33 feet;
14. N 71°43'03" W a distance of 57.57 feet;
15. 104.09 feet along a non-tangent curve to the right, having a radius of 970.00 feet, a central angle of 6°08'54", the chord of which bears N 11°34'51" E a distance of 104.04 feet;
16. N 16°07'55" E a distance of 50.00 feet;
17. N 18°54'59" E a distance of 221.52 feet;
18. N 30°00'58" E a distance of 50.41 feet;
19. N 67°17'36" W a distance of 131.42 feet;
20. 104.00 feet along a curve to the left, having a radius of 250.00 feet, a central angle of 23°50'05", the chord of which bears N 79°12'39" W, a distance of 103.25 feet to a point on the northeasterly line of North Wild Horse Road as described in that Special Warranty Deed recorded at Reception No. 733780;

Thence the following four (4) courses along said northeasterly line of North Wild Horse Road, being situated parallel to and 67.50 feet northeasterly of the westerly line of said Option Property also a coincidental line with the North Park Parcel as recorded at Reception No. 721291:

1. 38.30 feet along a non-tangent curve to the left, having a radius of 491.25 feet, a central angle of 4°28'00", the chord of which bears N 04°02'01" W a distance of 38.29 feet;
2. N 06°16'01" W a distance of 314.42 feet;
3. 263.68 feet along a curve to the left, having a radius of 281.25 feet, a central angle of 53°43'01", the chord of which bears N 33°07'31" W, a distance of 254.13 feet;
4. N 59°59'02" W a distance of 338.00 feet to a point on the westerly line of said Option Property;

thence the following three (3) courses along westerly lines of said Option Property:

1. N 21°44'01" E a distance of 132.03 feet;
2. N 02°06'39" E a distance of 226.38 feet;
3. N 00°23'12" W a distance of 381.09 feet to a point on the north line of the SW1/4 Section 30;

Thence S 89°47'18" E along said North line SW1/4 Section 30 a distance of 308.87 feet to the point of beginning, said parcel containing 59.066 acres more or less.

NOTES:

1. Basis of Bearings: Bearings shown hereon are based on an assumed bearing of N89°36'48"E, between found monuments for the 1/4 Corner common to said Section 30 and Section 29 being a 3.25" Brass Cap on 2" iron pipe Stamped 1/4 S30/29 BLM 1988 and the Northeast Corner of the Option Parcel being a 1.25" yellow plastic cap with illegible stamping on a 5/8" rebar.
2. This map has been prepared pursuant to client request for an ALTA/ASGM Land Title Survey
3. Date of field survey :October ___, 2021
4. Units of linear measurements are displayed in US Survey Feet.
5. SGM is not responsible for any changes made to this document after it leaves our possession. Any copy, facsimile, etc., of this document must be compared to the original signed, sealed and dated document to insure the accuracy of the information shown on any such copy, and to insure that no such changes have been made.
6. Subsurface utilities are not within the scope of this survey. Client/contractor must contact specific utility companies to verify both the location and depth of respective utilities. Additional surveying work may be required to show any such subsurface utility locations on this drawing. SGM will not be responsible for protection of subsurface utilities.
7. Property descriptions shown hereon are based on the title commitment referenced below.
8. Fences shown hereon have been shown for general reference and do not necessarily depict limits of ownership.
9. Abbreviations: American Land title Association / National Society of Professional Surveyors=ALTA/NSPS
Diameter = dia. Reception Number = Rec., Rec.No., feet=' or ft.; inches=" or in.; National Wetland Inventory = NWI; Riverine–Intermittent–Streambed–Seasonally Flooded = R4SBC;
The little pond area is Palustrine–Emergent–Persistent–Seasonally Flooded–Dike/Impounded = PEM1Ch.
10. The property shown hereon is subject to all easements, rights–of–way, building setbacks or other restrictions of record, as such items may affect this property. This survey does not represent a title search by this surveyor to determine ownership or to discover easements or other encumbrances of record. All information pertaining to ownership, easement and other encumbrances of record has been taken from the title insurance commitment issued by Land title Guarantee Company, Order No. ABS63017893–2 having an effective date of 11/08/2021.

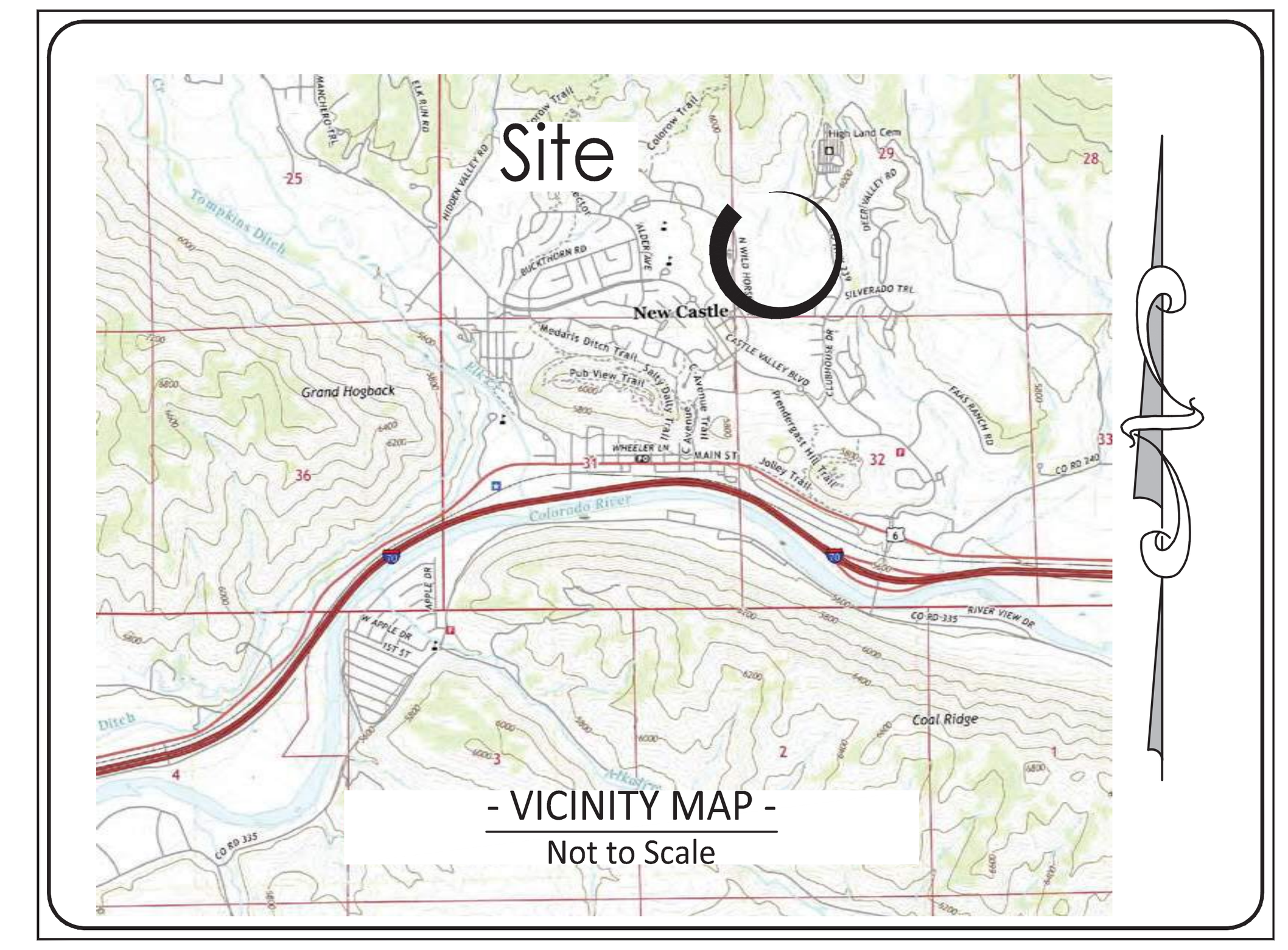
Every attempt has been made to show all easements, rights–of–way, etc. referred to in the Schedule B2 Exceptions recited in said title insurance policy. Some such items may not be addressed (i.e. Items 1–8) if they are standard title commitment exceptions.

Pertaining to other schedule B2 matters:

Item 9: Right of proprietor of a vein or lode to extract and remove his ore therefrom should the same be found to penetrate or intersect the premises as reserved in United States Patent recorded February 17, 1896 in Book 12 at Page 407 and November 28, 1941 in Book 73 at Page 213. These patents affect the subject parcel in a general sense that cannot be graphically depicted.
Item 10: Right of Way for ditches or canals constructed by the authority of the United States as reserved in United States Patent recorded November 28, 1941, in Book 73 at Page 213. This patent affects the subject parcel in a general sense that cannot be graphically depicted.
Item 11: An undivided one–half interest in all oil, gas and other minerals as described in instrument recorded March 25, 1980 in Book 545 at Page 681 any and all assignments thereof or interests therein. The affects if any on the subject parcel cannot be graphically depicted.
Item 12: An undivided one–half interest of all oil, gas and other minerals as reserved in instrument recorded July 14, 1964 as Rec. No. 226276 in Book 359 at Page 328 any and all assignments thereof or interests therein. The affects if any on the subject parcel cannot be graphically depicted.
Item 13: An undivided one–half interest in all oil, gas and other minerals as reserved in instrument recorded March 13, 1964 as Rec. No. 224674 in book 356 at page 319 any and all assignments thereof or interests therein. The affects if any on the subject parcel cannot be graphically depicted.
Item 14: The terms, conditions and provisions of Ordinance #99–8 recorded June 08, 1999 as Rec. No.546810 in Book 1133 at Page 632. This ordinance affects the subject parcel in a general sense that cannot be graphically depicted.
Item 15: Restrictive covenants, which do not contain a forfeiture or reverter clause, but omitting any covenant or restriction based on race, color, religion, sex, handicap, familial status or national origin unless and only to the extent that said covenant (A) is exempt under Chapter 42, Section 3607 of the United States Code or (B) relates to handicap but does not discriminate against handicapped persons, as contained in instrument recorded August 15, 1983 as Rec. No. 344748 in Book 632 at Page 961 and as amended in instrument recorded February 08, 1996 as Rec. No. 488796 in Book 966 at Page 679 and as amended in instrument recorded November 06, 2000 as Rec. No. 571847 in Book 1216 at Page 205, and supplement recorded November 29, 2000 as Rec. No. 572848 in Book 1219 at Page 627 and Fourth Supplement recorded November 29, 2000 as Rec. No. 572849 in Book 1219 at Page 640 and Fifth Supplement recorded April 26, 2002 as Rec. No. 602252 in Book 1350 at Page 64, Sixth Supplement recorded June 24, 2003 as Rec. No. 630148 in Book 1484 at Page 138, Seventh Supplement recorded October 22, 2004 at Rec. No. 662166 in Book 1633 at Page 210, Eighth Supplement recorded June 13, 2005 as Rec. No. 676110 in Book 1696 at Page 460, Ninth Supplement recorded November 25, 2005 as Rec. No. 687292 in Book 1750 at Page 282 assignment of declarants rights recorded March 9, 2006 as Rec. No. 693692 in Book 1778 at Page 709. These covenants, amendments and supplements affect the subject parcel in a general sense that cannot be graphically depicted.
Item 16: The terms, conditions and provisions of Ordinance #2002–2 recorded April 26, 2002 as Rec. No 602245 in Book 1349 at Page 946. This ordinance affects the subject parcel in a general sense that cannot be graphically depicted.
Item 17: The terms, conditions and provisions of agreement recorded March 16, 2006 as Rec. No. 694099 in Book 1780 at page 501. This agreement affects the subject parcel in a general sense that cannot be graphically depicted.
Item 18: The restrictive covenants, which do not contain a forfeiture or reverter clause, but omitting any covenants or restrictions, if any, based upon race, color, religion, sex, handicap, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as contained in instrument recorded March 09, 2006 as Rec. No. 693698 in Book 1778 at Page 731. This covenant affects the subject parcel in a general sense that cannot be graphically depicted.
Item 19: The terms, conditions and provisions of agreement recorded March 09, 2006 as Rec. No. 693690 in Book 1778 at Page 689. This agreement affects the subject parcel in a general sense that cannot be graphically depicted.
Item 20: (THIS ITEM WAS INTENTIONALLY DELETED)
Item 21: The terms, conditions and provisions of water rights agreement recorded April 17, 2007 as Rec. No. 721292 in Book 1915 at Page 902. This agreement affects the subject parcel in a general sense that cannot be graphically depicted.
Item 22: The terms, conditions and provisions of assignment regarding development agreement recorded April 17, 2007 as Rec. No. 721295 in Book 1915 at Page 939. This assignment agreement affects the subject parcel in a general sense that cannot be graphically depicted.
Item 23: The Terms, conditions and provisions of agreement regarding town agreements recorded April 17, 2007 as Rec. No. 721296 in Book 1915 at Page 949. This agreement affects the subject parcel in a general sense that cannot be graphically depicted.
Item 24: The restrictive covenants, which do not contain a forfeiture or reverter clause, but omitting any covenants or restrictions, if any, based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as contained in instrument recorded April 17, 2007 as Rec. No. 721297 in Book 1915 at Page 960. This covenant affects the subject parcel in a general sense that cannot be graphically depicted.
Item 25: The terms, conditions and provisions of assignment of declarant rights recorded April 17, 2007 as Rec No. 721298 in Book 1915 at Page 969 affect the subject parcel in a general sense that cannot be graphically depicted.
Item 26: The terms, conditions and provisions of agreement regarding grant of easement recorded April 17, 2007 as Rec. No. in Book 1915 at Page 975 affects the subject parcel in a general sense that cannot be graphically depicted.
Item 27: The terms, conditions and provisions of agreement regarding Silverado Trail recorded April 17, 2007 as Rec. No. 721300 in Book 1915 at Page 987 affects the subject parcel in a general sense that cannot be graphically depicted.
Item 28: The terms, conditions and provisions of easement agreement recorded April 17, 2007 as Rec. No. 721301 in Book 1915 at Page 997 affects the subject parcel in a general sense that cannot be graphically depicted.
Item 29: The terms, conditions and provisions of grading agreement recorded April 17, 2007 as Rec. No. 721302 in Book 1916 at Page 1 affects the subject parcel in a general sense that cannot be graphically depicted.
Item 30: (THIS ITEM WAS INTENTIONALLY DELETED)
Item 31: The terms, conditions, provisions, burdens, obligations and easements as set forth and granted in deed of easement recorded March 15, 2007 under Reception No. 719068 affects the subject parcel in a general sense that cannot be graphically depicted.
Item 32: The easements, conditions, covenants, restrictions, reservations and notes on the plat of Castle Valley Ranch Subdivision Exemption Map and ALTA/ACSM Land Survey Plat recorded April 17, 2007 under Reception No. 721291. The subject parcel is a portion of the Option Parcel as depicted on said survey.
Item 33: (THIS ITEM WAS INTENTIONALLY DELETED).
Item 34: (THIS ITEM WAS INTENTIONALLY DELETED)
Item 35: (THIS ITEM WAS INTENTIONALLY DELETED)
Item 36: (THIS ITEM WAS INTENTIONALLY DELETED)
Item 37: (THIS ITEM WAS INTENTIONALLY DELETED)
Item 38: (THIS ITEM WAS INTENTIONALLY DELETED)
Item 39: (THIS ITEM WAS INTENTIONALLY DELETED)
Item 40: The terms, conditions, provisions, burdens and obligations as set forth in Resolution No. BOE–09–041 recorded august 05, 2009 under Reception No. 772899. Affects the subject parcel in a general sense that cannot be graphically depicted.
Item 41: The terms, conditions, provisions, burdens and obligations as set forth in Resolution No. BOE–11–034 recorded July 28, 2011 under Reception No. 805833. Affects the subject parcel in a general sense that cannot be graphically depicted.

11. Other documents used in the preparation of this map Include: Deeds of the North Park Reception No. 720385 and Reception No. 721291; Special Warranty Deed Reception No. 784749; North Wild Horse Road a 67.5' Right–of–Way Reception No. 733780 and the Easement Agreement Reception No. 721301

12. The subject parcel contains numerous trails some with signs and names. There is significant evidence of pedestrian use.



ALTA Notes:

Table A Optional Responsibilities and Specifications

1. Table A Item 1 Monuments placed (or a reference monument or witness to the corner) at all major corners of the boundary of the surveyed property, unless already marked or referenced by existing monuments or witnesses in close proximity to the corner.
2. Table A Item 2 Address(es) of the surveyed property if disclosed in documents provided to or obtained by the surveyor, or observed while conducting the fieldwork. TBD North Wildhorse Drive, New Castle, CO 81647
3. Table A Item 3 Flood zone classification is Zone C according to FIRM Panel 1015 of 1900, Map Number 0802051015B with an Revision date of January 3, 1986
4. Table A Item 4 Gross Land Area : 59.066 acres more or less
5. Table A Item 6(a) On the date of this survey according to Town of New Castle Zoning Map the subject parcel is zoned:P/S Public open space or park and R Residential.
6. Table A Item 7(a, b, c) there are no buildings on the subject parcel.
7. Table A Item 8 Substantial features observed in the process of conducting the fieldwork (in addition to the improvements and features required pursuant to Section 5 above) (e.g., parking lots, billboards, signs, swimming pools, landscaped areas, substantial areas of refuse) are shown hereon.
13. Table A Item 13 Names of adjoining owners according to current tax records. If more than one owner, identify the first owner's name listed in the tax records followed by "et al." are shown hereon.
16 Table A Item 16 Evidence of recent earth moving work, building construction, or building additions observed in the process of conducting the fieldwork.
20. (a) show wetlands pursuant to current U.S.Fish and Wildlife Service (USFWS) shown here on by shape file from USFWS NWI Mapping a 20.73 acre Riverine habitat classified R4SBC. Wetlands and deepwater habitats in this area were photo interpreted by others using 1:58,000 scale, color infrared imagery from 1982.

SURVEYOR'S CERTIFICATE:
To: BLD GROUP, LLC; CTS INVESTMENTS, LLC, A COLORADO LIMITED LIABILITY COMPANY; Squire Patton Boggs (US) LLP; and Land Title Guaranty Company,

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes: Items 1, 2, 3, 4, 6(a), 7(a), 7(b), 7(c), 8, 13, 14, 16, 19 of Table A thereof together with specially negotiated item.20(a) show wetlands pursuant to current U.S.Fish and Wildlife Maps and/or local municipality maps as shown here on.

The field work was completed on October 26, 2021.

Date of Plat or Map: October 27, 2021.

For Review
11/17/2021 12:26:45 PM

Scott Hemmen
Colorado PLS # 38182
For, and on behalf of SGM
Scotth@sgm-inc.com

SGM
118 West Sixth Street, Suite 200
Glenwood Springs, CO 81601
970.945.1004 www.sgm-inc.com

A Portion of the Option Parcel

#	Revision	Date	By:
1	Attorney comments and TC update added	11–17–2021	sah
2			
3			
4			
5			
6			
7			
8			
9			

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

Job No.	2000-109.033
Drawn by:	SAH & ao
Date:	Nov 5, 2021
QA/QC: reb	PLS: sah
File:	Option Parcel ALTA

Title: ALTA/NSPS Land Title Survey

Sheet No. 1

Of: 2

GARFIELD COUNTY TREASURER

Certificate of Taxes Due

Account Number R043961
Parcel 212329300194

Assessed To
CTS INVESTMENTS, LLC
343 DAKOTA BLVD
BOULDER, CO 80304

Certificate Number 2023-00571
Acres 61.216
Order Number
Vendor ID 4

Land Title
1317 Grand Ave
#200
Glenwood Springs, CO 81601

Legal Description

EXCEPT A TR OF LAND CONT 21.53 AC +/- AS DESC IN PLAT #746709 & SWD REC #746710 Section: 30 Township: 5 Range: 90
PARCEL KNOWN AS OPTION PROPERTY AS PER CVR SUB-DIV EXEMPTION AND ALTA/ACSM LAND SURVEY PLAT

Situs Address

Year	Tax	Interest	Fees	Payments	Balance
Tax Charge					
2022	$6,350.84	$0.00	$0.00	($6,350.84)	$0.00
Total Tax Charge					$0.00
Grand Total Due as of 03/27/2023					**$0.00**

Tax Billed at 2022 Rates for Tax Area 038 - 2-3SF - 038

Authority	Mill Levy	Amount
GARFIELD COUNTY	13.1180000	$1,255.39
GARFIELD COUNTY - R & B	0.0940000	$9.00
GARFIELD COUNTY - SOCIAL SE	0.4430000	$42.40
TOWN OF NEW CASTLE	8.5510000	$818.33
COLORADO RIVER FIRE PROTECT	9.1020000	$871.06
COLO RIVER WATER CONS	0.5010000	$47.95
SCHOOL DISTRICT RE-2	25.3160000	$2,422.74
COLORADO MTN COLLEGE	4.0850000	$390.93
GARFIELD COUNTY PUBLIC LIBR	2.5020000	$239.44
RFTA	2.6500000	$253.60
Taxes Billed 2022	66.3620000	$6,350.84

Values	Actual	Assessed
VACANT PUD LOTS	$330,000	$95,700
Total	$330,000	$95,700

Balances due for Tax Sale Liens are subject to change due to endorsement of current taxes by the lienholder or to advertising and distraint warrant fees that may be added after Sepember 1, 2023, making it advisable to contact the Treasurer's Office prior to remittance.

TO AVOID DELAYS IN THE ISSUANCE OF CERTIFICATES OF REDEMPTION, IT IS RECOMMENDED THAT PAYMENTS TO REDEEM TAX LIENS BE MADE WITH CERTIFIED FUNDS, DEFINED AS CASH, CASHIER'S CHECK, MONEY ORDER OR WIRE TRANSFER.

Special taxing districts and the boundaries of such districts may be on file with the Board of County Commissioners, the County Clerk, or the County Assessor.

This certificate does not include land or improvements assessed under a separate account number, personal property taxes, transfer tax or misc. tax collected on behalf of other entities, special or local improvement district assessments or mobile homes, unless specifically mentioned.

I, the undersigned, do hereby certify that the entire amount of taxes due upon the above described parcels of real property and all outstanding sales for unpaid taxes as shown by the records in my office from which the same may still be redeemed with the amount required for redemption are as noted herein. In witness whereof. I have hereunto set my hand and seal.

Garfield County Treasurer
109 8th Street
Suite 204
Glenwood Springs CO 81601
PH: (970) 945-6382

Receipt2023-03-27-AM-1802

Product	Name	Extended
2	Certificate of Taxes Due R043961	$10.00
		Account #: R043961
		Effective Date: 3/27/23
		Certificate Number: 2023-00571
		Item ID: R043961/
Certificate of Taxes Due		($10.00)
CERT REVENUE		$10.00
WORKING FUND DUE TO FUNDS		$10.00
Total		$10.00
Tender (House Account)		$10.00

Account #	4
Account Name	Land Title
Customer Name	LAND TITLE GUARANTEE COMPANY, MARISA BARTNIK
Balance	($600.00)

Thank You

Land Title GUARANTEE COMPANY Since 1967

Customer Distribution

Prevent fraud - Please call a member of our closing team for wire transfer instructions or to initiate a wire transfer. Note that our wiring instructions will never change.

Order Number: **ABS63019485** Date: **11/30/2023**

Property Address: **NEW CASTLE (VACANT LAND), NEW CASTLE, CO 81647**

For Closing Assistance
Jessica Reed
901 GRAND AVENUE #202
GLENWOOD SPRINGS, CO 81601
(970) 930-9815 (Work)
(800) 318-8206 (Work Fax)
jreed@ltgc.com
Contact License: CO299243
Company License: CO44565

Closers Assistant
Jordan Crisler
901 GRAND AVENUE #202
GLENWOOD SPRINGS, CO 81601
(970) 945-2610 (Work)
(800) 318-8206 (Work Fax)
jcrisler@ltgc.com
Contact License: CO732837
Company License: CO44565

Closing Processor
Raven Peterson
901 GRAND AVENUE #202
GLENWOOD SPRINGS, CO 81601
(970) 945-2610 (Work)
(800) 318-8206 (Work Fax)
ravpeterson@ltgc.com
Company License: CO44565

For Title Assistance
George Rietsch
5975 GREENWOOD PLAZA BLVD
GREENWOOD VILLAGE, CO 80111
(303) 850-4151 (Work)
grietsch@ltgc.com

Buyer/Borrower
R2 PARTNERS, LLC, AN OHIO LIMITED LIABILITY COMPANY
7140 WILDBRIAR DRIVE
DALLAS, TX 75214
b.rosenberg@r2partners.co
d.rosenberg@r2partners.co
Delivered via: Electronic Mail

Attorney for Buyer
GARFIELD & HECHT
Attention: HALEY M CARMER
910 GRAND AVE., SUITE 201
GLENWOOD SPRINGS, CO 81601
(970) 920-5807 (Work)
(970) 917-1937 (Work Fax)
hcarmer@garfieldhecht.com
Delivered via: Electronic Mail

Seller/Owner
CTS INVESTMENTS LLC, A COLORADO LIMITED LIABILITY COMPANY
343 DAKOTA BLVD.
BOULDER, CO 80304
(720) 626-2410 (Cell)
nowintomesee@me.com
Delivered via: Electronic Mail

Buyers Closing Coordinator
DONNA LUNIK
donna.lunik@cdsg-us.com
Delivered via: Electronic Mail

Estimate of Title Fees

Order Number: ABS63019485 **Date:** 11/30/2023

Property Address: NEW CASTLE (VACANT LAND), NEW CASTLE, CO 81647

Seller(s): CTS INVESTMENTS, LLC, A COLORADO LIMITED LIABILITY COMPANY

Buyer(s): R2 PARTNERS, LLC, AN OHIO LIMITED LIABILITY COMPANY

Thank you for putting your trust in Land Title. Below is the estimate of title fees for the transaction. The final fees will be collected at closing. Visit **ltgc.com** to learn more about Land Title.

Estimate of Title Insurance Fees	
"ALTA" Owner's Policy 06-17-06	$7,467.00
Deletion of Standard Exception(s)	$100.00
Tax Certificate	$27.00
TOTAL	**$7,594.00**

Note: The documents linked in this commitment should be reviewed carefully. These documents, such as covenants conditions and restrictions, may affect the title, ownership and use of the property. You may wish to engage legal assistance in order to fully understand and be aware of the implications of the documents on your property.

Chain of Title Documents:

Garfield county recorded 03/09/2006 under reception no. 693683

ALTA COMMITMENT

Old Republic National Title Insurance Company

Schedule A

Order Number: ABS63019485

Property Address:

NEW CASTLE (VACANT LAND), NEW CASTLE, CO 81647

1. **Effective Date:**

   03/31/2023 at 5:00 P.M.

2. **Policy to be Issued and Proposed Insured:**

   "ALTA" Owner's Policy 06-17-06 $4,014,706.00
   Proposed Insured:
   R2 PARTNERS, LLC, AN OHIO LIMITED LIABILITY COMPANY

3. **The estate or interest in the land described or referred to in this Commitment and covered herein is:**

   A FEE SIMPLE

4. **Title to the estate or interest covered herein is at the effective date hereof vested in:**

   CTS INVESTMENTS, LLC, A COLORADO LIMITED LIABILITY COMPANY

5. **The Land referred to in this Commitment is described as follows:**

A PARCEL OF LAND BEING A PORTION OF THE 'OPTION PROPERTY', AS DESCRIBED IN THAT QUIT CLAIM DEED, RECORDED SEPTEMBER 21, 2009 AT RECEPTION NO. **775392**, AND BEING SITUATED IN THE SW1/4, SECTION 29, SE1/4, SECTION 30, THE NE1/4, SECTION 31, AND THE NW1/4, SECTION 32, TOWNSHIP 5 SOUTH, RANGE 90 WEST OF THE 6TH P.M., COUNTY OF GARFIELD, STATE OF COLORADO, SAID PARCEL OF LAND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE 1/4 CORNER BETWEEN SAID SECTIONS 29 AND 30, A 3.25" BRASS CAP ON 2" IRON PIPE STAMPED 1/4 S30/29 BLM 1988, THENCE N 89° 36' 48" E, THE ASSUMED BASIS OF BEARINGS ALONG THE SOUTHERLY LINE, OF THE 2ND AMENDED EXEMPTION PLAT OF LAKOTA CANYON RANCH, RECORDED FEBRUARY 4, 2008 AS RECEPTION NO. **742257**, A DISTANCE OF 1308.59 FEET, TO THE NORTHEAST CORNER OF SAID 'OPTION PROPERTY', BEING A 1.25" YELLOW PLASTIC CAP WITH ILLEGIBLE STAMPING ON A 5/8" REBAR, SAID CORNER BEING COINCIDENTAL WITH WESTERLY AND SOUTHERLY LINES OF SAID RECEPTION NO. **742257**,

THENCE S 00°55'44" E, ALONG EASTERLY LINE OF SAID OPTION PROPERTY, AND THE SAID COINCIDENTAL WESTERLY LINE OF RECEPTION NO. 742257, A DISTANCE OF 1002.40 FEET, TO A POINT ON THE NORTHERLY LINE OF THAT PARCEL OF LAND DESCRIBED IN THE SPECIAL WARRANTY DEED, RECORDED APRIL 15, 2010 AT RECEPTION NO. **784749**;
THENCE THE FOLLOWING TWENTY (21) COURSES ALONG THE NORTHERLY, WESTERLY, EASTERLY AND THEN NORTHERLY LINES OF SAID RECEPTION NO. **784749**;
1. N 89°54'27" W A DISTANCE OF 116.87 FEET;
2. S 54°50'38" W A DISTANCE OF 173.10 FEET;
3. S 00°02'34" E A DISTANCE OF 167.50 FEET;
4. S 32°41'48" E A DISTANCE OF 88.46 FEET;
5. S 00°55'44" E A DISTANCE OF 289.40 FEET;
6. S 14°00'12" W A DISTANCE OF 22.45 FEET;
7. S 28°56'08" W A DISTANCE OF 541.68 FEET;
8. 122.69 FEET ALONG A CURVE TO THE RIGHT, HAVING A RADIUS OF 219.00 FEET, A CENTRAL ANGLE OF 32°05'54", THE CHORD OF WHICH BEARS S 44°59'05" W, A DISTANCE OF 121.09 FEET;
9. 102.92 FEET ALONG A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 481.00 FEET, A CENTRAL ANGLE OF 12°15'33", THE CHORD OF WHICH BEARS S 54°54'14" W A DISTANCE OF 102.72 FEET;
10. N 51°02'22" W A DISTANCE OF 247.25 FEET;
11. 30.23 FEET ALONG A NON-TANGENT CURVE TO THE RIGHT, HAVING A RADIUS OF 275.00 FEET, A CENTRAL ANGLE OF 6°17'51", THE CHORD OF WHICH BEARS S 42°06'34" W A DISTANCE OF 30.21 FEET;

ALTA COMMITMENT

Old Republic National Title Insurance Company

Schedule A

Order Number: ABS63019485

12. N 44°48'48" W A DISTANCE OF 174.82 FEET;
13. N 56°40'07" W A DISTANCE OF 55.13 FEET;
14. N 63°30'38" W A DISTANCE OF 55.33 FEET;
15. N 71°43'03" W A DISTANCE OF 57.57 FEET;
16. 104.09 FEET ALONG A NON-TANGENT CURVE TO THE RIGHT, HAVING A RADIUS OF 970.00 FEET, A CENTRAL ANGLE OF 6°08'54", THE CHORD OF WHICH BEARS N 11°34'51" E A DISTANCE OF 104.04 FEET;
17. N 16°07'55" E A DISTANCE OF 50.00 FEET;
18. N 18°54'59" E A DISTANCE OF 221.52 FEET;
19. N 30°00'58" E A DISTANCE OF 50.41 FEET;
20. N 67°17'36" W A DISTANCE OF 131.42 FEET;
21. 104.00 FEET ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 250.00 FEET, A CENTRAL ANGLE OF 23°50'05", THE CHORD OF WHICH BEARS N 79°12'39" W, A DISTANCE OF 103.25 FEET, TO A POINT ON THE NORTHEASTERLY LINE OF NORTH WILD HORSE ROAD, AS DESCRIBED IN THAT SPECIAL WARRANTY DEED RECORDED SEPTEMBER 25, 2007 AT RECEPTION NO. **733780**;
THENCE THE FOLLOWING FOUR (4) COURSES ALONG SAID NORTHEASTERLY LINE OF NORTH WILD HORSE ROAD, BEING SITUATED PARALLEL TO AND 67.50 FEET NORTHEASTERLY OF THE WESTERLY LINE OF SAID OPTION PROPERTY, ALSO A COINCIDENTAL LINE WITH THE NORTH PARK PARCEL, RECORDED APRIL 17, 2007 AT RECEPTION NO. **721291**;
1. 38.30 FEET ALONG A NON - TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 491.25 FEET, A CENTRAL ANGLE OF 4°28'00", THE CHORD OF WHICH BEARS N 04°02'01" W A DISTANCE OF 38.29 FEET;
2. N 06°16'01" W A DISTANCE OF 314.42 FEET;
3. 263.68 FEET ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 281.25 FEET, A CENTRAL ANGLE OF 53°43'01", THE CHORD OF WHICH BEARS N 33°07'31" W, A DISTANCE OF 254.13 FEET;
4. N 59°59'02" W A DISTANCE OF 338.00 FEET, TO A POINT ON THE WESTERLY LINE OF SAID OPTION PROPERTY, THENCE THE FOLLOWING THREE (3) COURSES ALONG WESTERLY LINES OF SAID OPTION PROPERTY;
1. N 21°44'01" E A DISTANCE OF 132.03 FEET;
2. N 02°06'39" E A DISTANCE OF 226.38 FEET;
3. N 00°23'12" W A DISTANCE OF 381.09 FEET, TO A POINT ON THE NORTH LINE OF THE SW1/4, SECTION 30,
THENCE S 89°47'18" E ALONG SAID NORTH LINE, SW1/4, SECTION 30, A DISTANCE OF 308.87 FEET, TO THE POINT OF BEGINNING,
COUNTY OF GARFIELD, STATE OF COLORADO.

THE ABOVE LEGAL DESCRIPTION WAS CREATED BY SCOTT A. HEMMEN
FOR AND BEHALF OF SGM
118 WEST SIXTH STREET, SUITE 200, GLENWOOD SPRINGS, CO 81601
970-945-1004

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ALTA COMMITMENT

Old Republic National Title Insurance Company

Schedule B, Part I

(Requirements)

Order Number: ABS63019485

All of the following Requirements must be met:

This proposed Insured must notify the Company in writing of the name of any party not referred to in this Commitment who will obtain an interest in the Land or who will make a loan on the Land. The Company may then make additional Requirements or Exceptions.

Pay the agreed amount for the estate or interest to be insured.

Pay the premiums, fees, and charges for the Policy to the Company.

Documents satisfactory to the Company that convey the Title or create the Mortgage to be insured, or both, must be properly authorized, executed, delivered, and recorded in the Public Records.

1. A FULL COPY OF THE FULLY EXECUTED OPERATING AGREEMENT AND ANY AND ALL AMENDMENTS THERETO FOR R2 PARTNERS, LLC, AN OHIO LIMITED LIABILITY COMPANY MUST BE FURNISHED TO LAND TITLE GUARANTEE COMPANY. SAID AGREEMENT MUST DISCLOSE WHO MAY CONVEY, ACQUIRE, ENCUMBER, LEASE OR OTHERWISE DEAL WITH INTERESTS IN REAL PROPERTY FOR SAID ENTITY.

   NOTE: ADDITIONAL REQUIREMENTS MAY BE NECESSARY UPON REVIEW OF THIS DOCUMENTATION.

2. DULY EXECUTED AND ACKNOWLEDGED STATEMENT OF AUTHORITY SETTING FORTH THE NAME OF R2 PARTNERS, LLC, AN OHIO LIMITED LIABILITY COMPANY AS A LIMITED LIABILITY COMPANY. THE STATEMENT OF AUTHORITY MUST STATE UNDER WHICH LAWS THE ENTITY WAS CREATED, THE MAILING ADDRESS OF THE ENTITY, AND THE NAME AND POSITION OF THE PERSON(S) AUTHORIZED TO EXECUTE INSTRUMENTS CONVEYING, ENCUMBERING, OR OTHERWISE AFFECTING TITLE TO REAL PROPERTY ON BEHALF OF THE ENTITY AND OTHERWISE COMPLYING WITH THE PROVISIONS OF SECTION 38-30-172, CRS.

   NOTE: THE STATEMENT OF AUTHORITY MUST BE RECORDED WITH THE CLERK AND RECORDER.

3. WARRANTY DEED FROM CTS INVESTMENTS, LLC, A COLORADO LIMITED LIABILITY COMPANY TO R2 PARTNERS, LLC, AN OHIO LIMITED LIABILITY COMPANY CONVEYING SUBJECT PROPERTY.

   NOTE: THE OPERATING AGREEMENT AND STATEMENT OF AUTHORITY RECORDED SEPTEMBER 22, 2021 UNDER RECEPTION NO. **963574** FOR CTS INVESTMENTS, LLC, A COLORADO LIMITED LIABILITY COMPANY DISCLOSES CTS SERVICES, LLC AS THE MANAGER AUTHORIZED TO EXECUTE LEGAL INSTRUMENTS ON BEHALF OF SAID ENTITY.

ALTA COMMITMENT

Old Republic National Title Insurance Company

Schedule B, Part I

(Requirements)

Order Number: ABS63019485

All of the following Requirements must be met:

REQUIREMENTS TO DELETE THE PRE-PRINTED EXCEPTIONS IN THE OWNER'S POLICY TO BE ISSUED

A. ITEMS 1-3 OF THE PRE-PRINTED EXCEPTIONS ARE HEREBY DELETED.

B. UPON THE APPROVAL OF THE COMPANY AND THE RECEIPT OF A NOTARIZED FINAL LIEN AFFIDAVIT, ITEM 4 OF THE PRE-PRINTED EXCEPTIONS, WILL BE AMENDED TO READ:

ITEM 4 OF THE PRE-PRINTED EXCEPTIONS IS DELETED AS TO ANY LIENS OR FUTURE LIENS RESULTING FROM WORK OR MATERIAL FURNISHED AT THE SPECIFIC, DIRECT REQUEST, AND WITH THE ACTUAL KNOWLEDGE OF CTS INVESTMENTS, LLC, A COLORADO LIMITED LIABILITY COMPANY.

OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY SHALL HAVE NO LIABILITY FOR ANY LIENS ARISING FROM WORK OR MATERIAL FURNISHED AT THE SPECIFIC, DIRECT REQUEST, AND WITH THE ACTUAL KNOWLEDGE OF R2 PARTNERS, LLC, AN OHIO LIMITED LIABILITY COMPANY.

C. ITEM 5 OF THE PRE-PRINTED EXCEPTIONS WILL BE DELETED IF LAND TITLE GUARANTEE COMPANY CONDUCTS THE CLOSING OF THE CONTEMPLATED TRANSACTION(S) AND RECORDS THE DOCUMENTS IN CONNECTION THEREWITH.

D. UPON PROOF OF PAYMENT OF 2022 TAXES AND ASSESSMENTS, ITEM 6 OF THE PRE-PRINTED EXCEPTIONS WILL BE AMENDED TO READ:

TAXES AND ASSESSMENTS FOR THE YEAR 2023 AND SUBSEQUENT YEARS.

ALTA COMMITMENT

Old Republic National Title Insurance Company

Schedule B, Part II

(Exceptions)

Order Number: ABS63019485

This commitment does not republish any covenants, condition, restriction, or limitation contained in any document referred to in this commitment to the extent that the specific covenant, conditions, restriction, or limitation violates state or federal law based on race, color, religion, sex, sexual orientation, gender identity, handicap, familial status, or national origin.

1. **Any facts, rights, interests, or claims thereof, not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.**
2. **Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.**
3. **Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.**
4. **Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the Public Records.**
5. **Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the public records or attaching subsequent to the effective date hereof but prior to the date of the proposed insured acquires of record for value the estate or interest or mortgage thereon covered by this Commitment.**
6. **(a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.**
7. **(a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water.**
8. EXISTING LEASES AND TENANCIES, IF ANY.
9. RIGHT OF PROPRIETOR OF A VEIN OR LODE TO EXTRACT AND REMOVE HIS ORE THEREFROM SHOULD THE SAME BE FOUND TO PENETRATE OR INTERSECT THE PREMISES AS RESERVED IN UNITED STATES PATENT RECORDED FEBRUARY 17, 1896 IN BOOK 12 AT PAGE 407 AND NOVEMBER 28, 1941 IN BOOK 73 AT PAGE 213
10. RIGHT OF WAY FOR DITCHES OR CANALS CONSTRUCTED BY THE AUTHORITY OF THE UNITED STATES AS RESERVED IN UNITED STATES PATENT RECORDED NOVEMBER 28, 1941, IN BOOK 73 AT PAGE 213.
11. AN UNDIVIDED ONE-HALF INTEREST IN ALL OIL, GAS AND OTHER MINERALS AS DESCRIBED IN INSTRUMENT RECORDED MARCH 25, 1980 IN BOOK 545 AT PAGE 681 ANY AND ALL ASSIGNMENTS THEREOF OR INTERESTS THEREIN

    (NOTE AFFECTS PARCEL III OF SAID DOCUMENT AND IS NOT PLOTTABLE)
12. AN UNDIVIDED ONE-HALF INTEREST OF ALL OIL, GAS AND OTHER MINERALS AS RESERVED IN INSTRUMENT RECORDED JULY 14, 1964 IN BOOK 359 AT PAGE 328 ANY AND ALL ASSIGNMENTS THEREOF OR INTERESTS THEREIN
13. AN UNDIVIDED ONE-HALF INTEREST IN ALL OIL, GAS AND OTHER MINERALS AS RESERVED IN INSTRUMENT RECORDED MARCH 13, 1964 IN BOOK 356 AT PAGE 319 ANY AND ALL ASSIGNMENTS THEREOF OR INTERESTS THEREIN

ALTA COMMITMENT

Old Republic National Title Insurance Company

Schedule B, Part II

(Exceptions)

Order Number: ABS63019485

14. TERMS, CONDITIONS AND PROVISIONS OF ORDINANCE #99-8 RECORDED JUNE 08, 1999 IN BOOK 1133 AT PAGE 632.
15. RESTRICTIVE COVENANTS, WHICH DO NOT CONTAIN A FORFEITURE OR REVERTER CLAUSE, BUT OMITTING ANY COVENANT OR RESTRICTION BASED ON RACE, COLOR, RELIGION, SEX, HANDICAP, FAMILIAL STATUS OR NATIONAL ORIGIN UNLESS AND ONLY TO THE EXTENT THAT SAID COVENANT (A) IS EXEMPT UNDER CHAPTER 42, SECTION 3607 OF THE UNITED STATES CODE OR (B) RELATES TO HANDICAP BUT DOES NOT DISCRIMINATE AGAINST HANDICAPPED PERSONS, AS CONTAINED IN INSTRUMENT RECORDED AUGUST 15, 1983, IN BOOK 632 AT PAGE 961 AND AS AMENDED IN INSTRUMENT RECORDED FEBRUARY 08, 1996, IN BOOK 966 AT PAGE 679 AND AS AMENDED IN INSTRUMENT RECORDED NOVEMBER 06, 2000, IN BOOK 1216 AT PAGE 205, AND SUPPLEMENT RECORDED NOVEMBER 29, 2000 IN BOOK 1219 AT PAGE 627 AND FOURTH SUPPLEMENT RECORDED NOVEMBER 29, 2000 IN BOOK 1219 AT PAGE 640 AND FIFTH SUPPLEMENT RECORDED APRIL 26, 2002, IN BOOK 1350 AT PAGE 64, SIXTH SUPPLEMENT RECORDED JUNE 24, 2003 IN BOOK 1484 AT PAGE 138, SEVENTH SUPPLEMENT RECORDED OCTOBER 22, 2004 IN BOOK 1633 AT PAGE 210, EIGHTH SUPPLEMENT RECORDED JUNE 13, 2005 IN BOOK 1696 AT PAGE 460, NINTH SUPPLEMENT RECORDED NOVEMBER 25, 2005 IN BOOK 1750 AT PAGE 282 ASSIGNMENT OF DECLARANTS RIGHTS RECORDED MARCH 9, 2006 IN BOOK 1778 AT PAGE 709
16. TERMS, CONDITIONS AND PROVISIONS OF ORDINANCE #2002-2 RECORDED APRIL 26, 2002 IN BOOK 1349 AT PAGE 946.
17. TERMS, CONDITIONS AND PROVISIONS OF AGREEMENT RECORDED MARCH 16, 2006 IN BOOK 1780 AT PAGE 501.
18. RESTRICTIVE COVENANTS, WHICH DO NOT CONTAIN A FORFEITURE OR REVERTER CLAUSE, BUT OMITTING ANY COVENANTS OR RESTRICTIONS, IF ANY, BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW, AS CONTAINED IN INSTRUMENT RECORDED MARCH 09, 2006, IN BOOK 1778 AT PAGE 731.
19. TERMS, CONDITIONS AND PROVISIONS OF AGREEMENT RECORDED MARCH 09, 2006 IN BOOK 1778 AT PAGE 689.
20. TERMS, CONDITIONS AND PROVISIONS OF WATER RIGHTS AGREEMENT RECORDED APRIL 17, 2007 IN BOOK 1915 AT PAGE 902.
21. TERMS, CONDITIONS AND PROVISIONS OF ASSIGNMENT REGARDING DEVELOPMENT AGREEMENT RECORDED APRIL 17, 2007 IN BOOK 1915 AT PAGE 939.
22. TERMS, CONDITIONS AND PROVISIONS OF AGREEMENT REGARDING TOWN AGREEMENTS RECORDED APRIL 17, 2007 IN BOOK 1915 AT PAGE 949.
23. RESTRICTIVE COVENANTS, WHICH DO NOT CONTAIN A FORFEITURE OR REVERTER CLAUSE, BUT OMITTING ANY COVENANTS OR RESTRICTIONS, IF ANY, BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW, AS CONTAINED IN INSTRUMENT RECORDED APRIL 17, 2007, IN BOOK 1915 AT PAGE 960.
24. TERMS, CONDITIONS AND PROVISIONS OF ASSIGNMENT OF DECLARANT RIGHTS RECORDED APRIL 17, 2007 IN BOOK 1915 AT PAGE 969.

ALTA COMMITMENT

Old Republic National Title Insurance Company

Schedule B, Part II

(Exceptions)

Order Number: ABS63019485

25. TERMS, CONDITIONS AND PROVISIONS OF AGREEMENT REGARDING GRANT OF EASEMENT RECORDED APRIL 17, 2007 IN BOOK 1915 AT PAGE **975**.
26. TERMS, CONDITIONS AND PROVISIONS OF AGREEMENT REGARDING SILVERADO TRAIL RECORDED APRIL 17, 2007 IN BOOK 1915 AT PAGE **987**.
27. TERMS, CONDITIONS AND PROVISIONS OF EASEMENT AGREEMENT RECORDED APRIL 17, 2007 IN BOOK 1915 AT PAGE **997**.
28. TERMS, CONDITIONS AND PROVISIONS OF GRADING AGREEMENT RECORDED APRIL 17, 2007 IN BOOK 1916 AT PAGE **1**.
29. TERMS, CONDITIONS, PROVISIONS, BURDENS, OBLIGATIONS AND EASEMENTS AS SET FORTH AND GRANTED IN DEED OF EASEMENT RECORDED MARCH 15, 2007 UNDER RECEPTION NO. **719068**.
30. EASEMENTS, CONDITIONS, COVENANTS, RESTRICTIONS, RESERVATIONS AND NOTES ON THE PLAT OF CASTLE VALLEY RANCH SUBDIVISION EXEMPTION MAP AND ALTA/ACSM LAND SURVEY PLAT RECORDED APRIL 17, 2007 UNDER RECEPTION NO. **721291**.
31. TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN RESOLUTION NO. BOE-09-041 RECORDED AUGUST 05, 2009 UNDER RECEPTION NO. **772899**.
32. TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN RESOLUTION NO. BOE-11-034 RECORDED JULY 28, 2011 UNDER RECEPTION NO. **805833**.
33. MATTERS DISCLOSED ON ALTA / NSPS LAND TITLE SURVEY PREPARED BY SCOTT A. HEMMEN FOR AND BEHALF OF SGM, CERTIFIED NOVEMBER 05, 2021, JOB NO. 2000-109.033

    SAID DOCUMENT STORED AS OUR IMAGE **42244344**

    A: FENCES ARE NOT COINCIDENT WITH THE PROPERTY LINES.
    B: EXCEPTION TO RIGHTS OF OTHERS FOR TRAILS THAT TRANSVERS THROUGHOUT WITHOUT THE BENEFIT OF A RECORDED EASEMENT OR AGREEMENT.

Land Title Guarantee Company
Disclosure Statements

Note: Pursuant to CRS 10-11-122, notice is hereby given that:

(A) The Subject real property may be located in a special taxing district.

(B) A certificate of taxes due listing each taxing jurisdiction will be obtained from the county treasurer of the county in which the real property is located or that county treasurer's authorized agent unless the proposed insured provides written instructions to the contrary. (for an Owner's Policy of Title Insurance pertaining to a sale of residential real property).

(C) The information regarding special districts and the boundaries of such districts may be obtained from the Board of County Commissioners, the County Clerk and Recorder, or the County Assessor.

Note: Effective September 1, 1997, CRS 30-10-406 requires that all documents received for recording or filing in the clerk and recorder's office shall contain a top margin of at least one inch and a left, right and bottom margin of at least one half of an inch. The clerk and recorder may refuse to record or file any document that does not conform, except that, the requirement for the top margin shall not apply to documents using forms on which space is provided for recording or filing information at the top margin of the document.

Note: Colorado Division of Insurance Regulations 8-1-2 requires that "Every title entity shall be responsible for all matters which appear of record prior to the time of recording whenever the title entity conducts the closing and is responsible for recording or filing of legal documents resulting from the transaction which was closed". Provided that Land Title Guarantee Company conducts the closing of the insured transaction and is responsible for recording the legal documents from the transaction, exception number 5 will not appear on the Owner's Title Policy and the Lenders Policy when issued.

Note: Affirmative mechanic's lien protection for the Owner may be available (typically by deletion of Exception no. 4 of Schedule B, Section 2 of the Commitment from the Owner's Policy to be issued) upon compliance with the following conditions:

(A) The land described in Schedule A of this commitment must be a single family residence which includes a condominium or townhouse unit.

(B) No labor or materials have been furnished by mechanics or material-men for purposes of construction on the land described in Schedule A of this Commitment within the past 6 months.

(C) The Company must receive an appropriate affidavit indemnifying the Company against un-filed mechanic's and material-men's liens.

(D) The Company must receive payment of the appropriate premium.

(E) If there has been construction, improvements or major repairs undertaken on the property to be purchased within six months prior to the Date of Commitment, the requirements to obtain coverage for unrecorded liens will include: disclosure of certain construction information; financial information as to the seller, the builder and or the contractor; payment of the appropriate premium fully executed Indemnity Agreements satisfactory to the company, and, any additional requirements as may be necessary after an examination of the aforesaid information by the Company.

No coverage will be given under any circumstances for labor or material for which the insured has contracted for or agreed to pay.

Note: Pursuant to CRS 10-11-123, notice is hereby given:

This notice applies to owner's policy commitments disclosing that a mineral estate has been severed from the surface estate, in Schedule B-2.

(A) That there is recorded evidence that a mineral estate has been severed, leased, or otherwise conveyed from the surface estate and that there is substantial likelihood that a third party holds some or all interest in oil, gas, other minerals, or geothermal energy in the property; and

(B) That such mineral estate may include the right to enter and use the property without the surface owner's permission.

Note: Pursuant to CRS 10-1-128(6)(a), It is unlawful to knowingly provide false, incomplete, or misleading facts or information to an insurance company for the purpose of defrauding or attempting to defraud the company. Penalties may include imprisonment, fines, denial of insurance, and civil damages. Any insurance company or agent of an insurance company who knowingly provides false, incomplete, or misleading facts or information to a policyholder or claimant for the purpose of defrauding or attempting to defraud the policyholder or claimant with regard to a settlement or award payable from insurance proceeds shall be reported to the Colorado Division of Insurance within the Department of Regulatory Agencies.

Note: Pursuant to Colorado Division of Insurance Regulations 8-1-3, notice is hereby given of the availability of a closing protection letter for the lender, purchaser, lessee or seller in connection with this transaction.

Note: Pursuant to CRS 24-21-514.5, Colorado notaries may remotely notarize real estate deeds and other documents using real-time audio-video communication technology. You may choose not to use remote notarization for any document.

Joint Notice of Privacy Policy of Land Title Guarantee Company Land Title Guarantee Company of Summit County Land Title Insurance Corporation and Old Republic National Title Insurancy Company

This Statement is provided to you as a customer of Land Title Guarantee Company as agent for Land Title Insurance Corporation and Old Republic National Title Insurance Company.

We want you to know that we recognize and respect your privacy expectations and the requirements of federal and state privacy laws. Information security is one of our highest priorities. We recognize that maintaining your trust and confidence is the bedrock of our business. We maintain and regularly review internal and external safeguards against unauthorized access to your non-public personal information ("Personal Information").

In the course of our business, we may collect Personal Information about you from:

- applications or other forms we receive from you, including communications sent through TMX, our web-based transaction management system;
- your transactions with, or from the services being performed by us, our affiliates, or others;
- a consumer reporting agency, if such information is provided to us in connection with your transaction;

  and
- The public records maintained by governmental entities that we obtain either directly from those entities, or from our affiliates and non-affiliates.

Our policies regarding the protection of the confidentiality and security of your Personal Information are as follows:

- We restrict access to all Personal Information about you to those employees who need to know that information in order to provide products and services to you.
- We may share your Personal Information with affiliated contractors or service providers who provide services in the course of our business, but only to the extent necessary for these providers to perform their services and to provide these services to you as may be required by your transaction.
- We maintain physical, electronic and procedural safeguards that comply with federal standards to protect your Personal Information from unauthorized access or intrusion.
- Employees who violate our strict policies and procedures regarding privacy are subject to disciplinary action.
- We regularly assess security standards and procedures to protect against unauthorized access to Personal Information.

WE DO NOT DISCLOSE ANY PERSONAL INFORMATION ABOUT YOU WITH ANYONE FOR ANY PURPOSE THAT IS NOT STATED ABOVE OR PERMITTED BY LAW.

Consistent with applicable privacy laws, there are some situations in which Personal Information may be disclosed. We may disclose your Personal Information when you direct or give us permission; when we are required by law to do so, for example, if we are served a subpoena; or when we suspect fraudulent or criminal activities. We also may disclose your Personal Information when otherwise permitted by applicable privacy laws such as, for example, when disclosure is needed to enforce our rights arising out of any agreement, transaction or relationship with you.

Our policy regarding dispute resolution is as follows: Any controversy or claim arising out of or relating to our privacy policy, or the breach thereof, shall be settled by arbitration in accordance with the rules of the American Arbitration Association, and judgment upon the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof.

Commitment For Title Insurance
Issued by Old Republic National Title Insurance Company

NOTICE

IMPORTANT—READ CAREFULLY: THIS COMMITMENT IS AN OFFER TO ISSUE ONE OR MORE TITLE INSURANCE POLICIES. ALL CLAIMS OR REMEDIES SOUGHT AGAINST THE COMPANY INVOLVING THE CONTENT OF THIS COMMITMENT OR THE POLICY MUST BE BASED SOLELY IN CONTRACT.

THIS COMMITMENT IS NOT AN ABSTRACT OF TITLE, REPORT OF THE CONDITION OF TITLE, LEGAL OPINION, OPINION OF TITLE, OR OTHER REPRESENTATION OF THE STATUS OF TITLE. THE PROCEDURES USED BY THE COMPANY TO DETERMINE INSURABILITY OF THE TITLE, INCLUDING ANY SEARCH AND EXAMINATION, ARE PROPRIETARY TO THE COMPANY, WERE PERFORMED SOLELY FOR THE BENEFIT OF THE COMPANY, AND CREATE NO EXTRACONTRACTUAL LIABILITY TO ANY PERSON, INCLUDING A PROPOSED INSURED.

THE COMPANY'S OBLIGATION UNDER THIS COMMITMENT IS TO ISSUE A POLICY TO A PROPOSED INSURED IDENTIFIED IN SCHEDULE A IN ACCORDANCE WITH THE TERMS AND PROVISIONS OF THIS COMMITMENT. THE COMPANY HAS NO LIABILITY OR OBLIGATION INVOLVING THE CONTENT OF THIS COMMITMENT TO ANY OTHER PERSON. .

COMMITMENT TO ISSUE POLICY

Subject to the Notice; Schedule B, Part I—Requirements; Schedule B, Part II—Exceptions; and the Commitment Conditions, Old Republic National Title Insurance Company, a Minnesota corporation (the "Company"), commits to issue the Policy according to the terms and provisions of this Commitment. This Commitment is effective as of the Commitment Date shown in Schedule A for each Policy described in Schedule A, only when the Company has entered in Schedule A both the specified dollar amount as the Proposed Policy Amount and the name of the Proposed Insured. If all of the Schedule B, Part I—Requirements have not been met within 6 months after the Commitment Date, this Commitment terminates and the Company's liability and obligation end.

COMMITMENT CONDITIONS

1. DEFINITIONS
   (a) "Knowledge" or "Known": Actual or imputed knowledge, but not constructive notice imparted by the Public Records.
   (b) "Land": The land described in Schedule A and affixed improvements that by law constitute real property. The term "Land" does not include any property beyond the lines of the area described in Schedule A, nor any right, title, interest, estate, or easement in abutting streets, roads, avenues, alleys, lanes, ways, or waterways, but this does not modify or limit the extent that a right of access to and from the Land is to be insured by the Policy.
   (c) "Mortgage": A mortgage, deed of trust, or other security instrument, including one evidenced by electronic means authorized by law.
   (d) "Policy": Each contract of title insurance, in a form adopted by the American Land Title Association, issued or to be issued by the Company pursuant to this Commitment.
   (e) "Proposed Insured": Each person identified in Schedule A as the Proposed Insured of each Policy to be issued pursuant to this Commitment.
   (f) "Proposed Policy Amount": Each dollar amount specified in Schedule A as the Proposed Policy Amount of each Policy to be issued pursuant to this Commitment.
   (g) "Public Records": Records established under state statutes at the Commitment Date for the purpose of imparting constructive notice of matters relating to real property to purchasers for value and without Knowledge.
   (h) "Title": The estate or interest described in Schedule A.

2. If all of the Schedule B, Part I—Requirements have not been met within the time period specified in the Commitment to Issue Policy, Commitment terminates and the Company's liability and obligation end.

3. The Company's liability and obligation is limited by and this Commitment is not valid without:
   (a) the Notice;
   (b) the Commitment to Issue Policy;
   (c) the Commitment Conditions;
   (d) Schedule A;
   (e) Schedule B, Part I—Requirements; and
   (f) Schedule B, Part II—Exceptions; and
   (g) a counter-signature by the Company or its issuing agent that may be in electronic form.

4. **COMPANY'S RIGHT TO AMEND**

   The Company may amend this Commitment at any time. If the Company amends this Commitment to add a defect, lien, encumbrance, adverse claim, or other matter recorded in the Public Records prior to the Commitment Date, any liability of the Company is limited by Commitment Condition 5. The Company shall not be liable for any other amendment to this Commitment.

5. **LIMITATIONS OF LIABILITY**
   (a) The Company's liability under Commitment Condition 4 is limited to the Proposed Insured's actual expense incurred in the interval between the Company's delivery to the Proposed Insured of the Commitment and the delivery of the amended Commitment, resulting from the Proposed Insured's good faith reliance to:
      i. comply with the Schedule B, Part I—Requirements;
      ii. eliminate, with the Company's written consent, any Schedule B, Part II—Exceptions; or
      iii. acquire the Title or create the Mortgage covered by this Commitment.
   (b) The Company shall not be liable under Commitment Condition 5(a) if the Proposed Insured requested the amendment or had Knowledge of the matter and did not notify the Company about it in writing.
   (c) The Company will only have liability under Commitment Condition 4 if the Proposed Insured would not have incurred the expense had the Commitment included the added matter when the Commitment was first delivered to the Proposed Insured.
   (d) The Company's liability shall not exceed the lesser of the Proposed Insured's actual expense incurred in good faith and described in Commitment Conditions 5(a)(i) through 5(a)(iii) or the Proposed Policy Amount.
   (e) The Company shall not be liable for the content of the Transaction Identification Data, if any.
   (f) In no event shall the Company be obligated to issue the Policy referred to in this Commitment unless all of the Schedule B, Part I—Requirements have been met to the satisfaction of the Company.
   (g) In any event, the Company's liability is limited by the terms and provisions of the Policy.

6. **LIABILITY OF THE COMPANY MUST BE BASED ON THIS COMMITMENT**
   (a) Only a Proposed Insured identified in Schedule A, and no other person, may make a claim under this Commitment.
   (b) Any claim must be based in contract and must be restricted solely to the terms and provisions of this Commitment.
   (c) Until the Policy is issued, this Commitment, as last revised, is the exclusive and entire agreement between the parties with respect to the subject matter of this Commitment and supersedes all prior commitment negotiations, representations, and proposals of any kind, whether written or oral, express or implied, relating to the subject matter of this Commitment.

(d) The deletion or modification of any Schedule B, Part II—Exception does not constitute an agreement or obligation to provide coverage beyond the terms and provisions of this Commitment or the Policy.
(e) Any amendment or endorsement to this Commitment must be in writing and authenticated by a person authorized by the Company.
(f) When the Policy is issued, all liability and obligation under this Commitment will end and the Company's only liability will be under the Policy.

7. **IF THIS COMMITMENT HAS BEEN ISSUED BY AN ISSUING AGENT**

The issuing agent is the Company's agent only for the limited purpose of issuing title insurance commitments and policies. The issuing agent is not the Company's agent for the purpose of providing closing or settlement services.

8. **PRO-FORMA POLICY**

The Company may provide, at the request of a Proposed Insured, a pro-forma policy illustrating the coverage that the Company may provide. A pro-forma policy neither reflects the status of Title at the time that the pro-forma policy is delivered to a Proposed Insured, nor is it a commitment to insure.

9. **ARBITRATION**

The Policy contains an arbitration clause. All arbitrable matters when the Proposed Policy Amount is $2,000,000 or less shall be arbitrated at the option of either the Company or the Proposed Insured as the exclusive remedy of the parties. A Proposed Insured may review a copy of the arbitration rules at http://www.alta.org/arbitration.

IN WITNESS WHEREOF, Land Title Insurance Corporation has caused its corporate name and seal to be affixed by its duly authorized officers on the date shown in Schedule A to be valid when countersigned by a validating officer or other authorized signatory.

Issued by:
Land Title Guarantee Company
3033 East First Avenue Suite 600
Denver, Colorado 80206
303-321-1880

CB Rants

Craig B. Rants, Senior Vice President

OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY
A Stock Company
400 Second Avenue South, Minneapolis, Minnesota 55401
(612) 371-1111

By C Monroe President

Attest David Wold Secretary

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by Old Republic National Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I—Requirements; and Schedule B, Part II—Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

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LIST OF PROPERTY OWNERS WITHIN 250 FEET

Garfield County Land Explorer

Parcel	Physical Address	Owner	Account Num	Mailing Address
212303400954	Not available NEW CASTLE	BUREAU OF LAND MANAGEMENT	R030107	2300 RIVER FRONTAGE ROAD SILT, CO 81652
212329200190	Not available NEW CASTLE	RG LAKOTA III LLC	R009983	350 MARKET STREET STE 304 BASALT, CO 81621
212329300185	1000 CLUBHOUSE DR NEW CASTLE	RG LAKOTA GOLF LLC	R009978	350 MARKET STREET STE 304 BASALT, CO 81621
212329300194	Not available NEW CASTLE	CTS INVESTMENTS, LLC	R043961	343 DAKOTA BLVD BOULDER, CO 80304
212329300197	Not available NEW CASTLE	CVR INVESTORS INC	R045250	PO BOX 1380 CAREFREE, AZ 85377
212330400001	Not available NEW CASTLE	GARFIELD SCHOOL DISTRICT RE-2	R380824	839 WHITERIVER AVENUE RIFLE, CO 81650-3515
212330400003	Not available NEW CASTLE	NEW CASTLE, TOWN OF	R043960	PO BOX 90 NEW CASTLE, CO 81647
212330423007	631 N WILD HORSE DR NEW CASTLE	LORD, JAMES T & KELLY M	R006709	631 N WILD HORSE DRIVE NEW CASTLE, CO 81647
212330423008	627 N WILD HORSE DR NEW CASTLE	RATAJCZAK, ZDZISLAW & HALINA	R006710	627 NORTH WILDHORSE DRIVE NEW CASTLE, CO 81647
212330423009	6 BUCKSKIN CIR NEW CASTLE	YOUNG, DAVID A & FRAMBACH, JANE	R006711	6 BUCKSKIN CIRCLE NEW CASTLE, CO 81647
212330423010	10 BUCKSKIN CIR NEW CASTLE	CLASSEN, ROBERT SETH & GONZALEZ CLASSEN, GLORIA ELIZABETH	R006712	10 BUCKSKIN CIRCLE NEW CASTLE, CO 81647
212330423011	14 BUCKSKIN CIR NEW CASTLE	BADOLATO, AARON & ANNE	R006713	14 BUCKSKIN CIRCLE NEW CASTLE, CO 81647
212330423012	18 BUCKSKIN CIR NEW CASTLE	WHITCOMB, RANDALL K LIVING TRUST	R006714	1302 MAUS WICHITA, KS 67212
212330423036	Not available NEW CASTLE	NEW CASTLE, TOWN OF	R006738	PO BOX 90 NEW CASTLE, CO 81647-0166
212330423037	Not available NEW CASTLE	NEW CASTLE, TOWN OF	R006739	PO BOX 90 NEW CASTLE, CO 81647-0166
212332200195	Not available NEW CASTLE	CVR INVESTORS INC	R043962	PO BOX 1380 CAREFREE, AZ 85377
ROW	Not available null			

From: Orrin Moon
To: Paul Smith; John Wenzel; jeffs (jeffs@sgm-inc.com); mjs@mountainlawfirm.com
Cc: Remi Bordelon; Dave Reynolds
Subject: Re: R2 Final Plan Deadlines
Date: Friday, October 18, 2024 11:40:19 AM
Attachments: image001.png
Outlook-430xkt1v.png
Outlook-dky5iah1.png

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Paul,
I have reviewed the final plans for this project and only have the following comment:

I need to see a Civil plan with fire hydrants on a landscape overlay. This will allow me to see fire hydrant and tree planting locations. Nothing in the landscape plan addresses planting trees or vegetation next to fire hydrants. As the construction process progresses this will be missed unless it's outlined in the plans. I will be watching for obstructed fire hydrants and or the potential of having fire hydrants obstructed in the future.

Please feel free to contact me with any questions.

Thank You,

Orrin D. Moon
Prevention Division Chief/Fire Marshal
Colorado River Fire Rescue
970-625-1243
orrin.moon@crfr.us

October 18, 2025

Mr. Dave Reynolds, Town Administrator
Town of New Castle
P.O. Box 90
New Castle, Colorado 81647

RE: Castle Valley Ranch, 9 North Wildhorse Subdivision
Final Plan Review

Dear Dave,

The purpose of this letter serves to provide comments, concerns and questions regarding the proposed development of 9 North Wildhorse Subdivision of Castle Valley Ranch. To conduct this review, we are in receipt of the following submittal information:

1. An 88-sheet set of Final Plan Application prepared by DHM and subconsultants dated September 25, 2024. Primarily including Civil Plans prepared by Sopris Engineering generally dated 9/16/2024.

The review initially checked the status of previously supplied Preliminary Plan comments which are *copied and pasted in italics* from the May 31, 2025, letter to the Town below. The status of addressing those review comments is shown in red.

1. *Our prior letter identified the need for staff to provide a review and accounting of the EQR's for CVR as related to the water rights transfers and availability. Although this may have already been provided, we have not seen any correspondence or updates relating to such.*
    i. Need status update or documentation from Town staff.
2. *The general layout of the water system as discussed in our prior sketch plan review appears to address the issues of tying to existing infrastructure in Lakota and to the 10" water main in North Wild Horse. The proposal of the PRV is noted as well. When reviewing the specifics of the design currently provided, we do have several concerns that exist in addition to those mentioned in John Wenzel's 5/31/24 memo. Those concerns are noted as follows:*

    a. *All water line alignments will need to have access available for maintenance and repair. Review of the alignments considering maintenance and repair access is necessary (contemplating future development) as the ties (alternatives) to Lakota will traverse some steep grades. Valving needs to be considered on each side of difficult areas of access to assure isolation of problem areas can be provided.*
        i. Align A – Valves are provided on either side of steep area on the Lakota connection.
        ii. Align B – Provide valves at either side of drainage crossing (5+35, 7+58)
    b. *In the profile views of the water line alignments, there will be the need to provide blow offs, air release/vacuum vaults or hydrants at high points in the lines. Several locations have been noted to be needed.*
        i. WL Align A - Sta ~11+50 to ~13+50; Maintain positive grade on water main profile to remove high / low points and eliminate the need for ARV / BO / Drains.

ii. WL Align A – Sta 7+48 +/- needs an ARV/BO
iii. WL Align B – Address High Pt at Sta 3+04.97
iv. WL Align A / B connection - Maintain positive grade on water main profile to remove high / low points and eliminate the need for ARV / BO.
v. Provide adequate detailing to ensure correct installation by Contractor.

c. *Similarly with the high points, there will be low points in the water line that will need to be drained for line shut down/repairs, etc… Several low points are noted to be needing drains/hydrants.*
   i. WL Align B – Address Low Pt at Sta 0+79.7
   ii. WL Align B – Address Low Pt at Sta 5+67.84
d. *In our prior pre-review meeting with the applicant, the Fire Marshal noted the need to provide an additional hydrant somewhere mid-block of the North Wild Horse area between Live/Work buildings 1 and 2.*
   i. Adequate Fire hydrant coverage across project area.
e. *For storm drain and culvert crossings, the need to provide adequate frost protection exists. For the crossing of the 48" diameter pipes in the north end, the water line will need to frost protected as only 24" of cover is provided under the culverts. We would recommend that if it is determined to provide the alignment under the culverts, then the water line will need to be sleeved to avoid the need to remove culverts in case of repair. Likewise, insulation will be necessary. Another option would be to go "over" the culverts with the waterline also being insulated.*
   i. WL Align A – Sta ~8+50 to ~9+00, provide adequate setback (and easement) for 10" water main from 48" culverts and end sections to provide for future excavation of water main without disturbance to 48" culverts and end sections.
f. *Service lines will need to be shown for each building/unit complete with the locations of the curb stops and meter locations. The size and type of material will be necessary and should be sized based upon the anticipated working pressures. Consideration of adequate cover of line type and clearance at sewer and storm drain crossings needs to be made. A minimum of 18" clearance is required or encasement is needed at both storm and sewer crossings. Insulation at storm drain crossings will need to be added at crossings if the 5 ½' of cover cannot be made.*
   i. Curb stops to be located at or within two feet of the property line unless otherwise permitted by the Town.
   ii. Meter locations shall be shown on the plans.
   iii. Parallel water service lines may share the same trench, however, the taps to the water main will need to be no closer than 4 feet from each other to avoid "micro pipe" splitting between the two adjacent taps. Also, taps shall be no closer than 4' to a fitting or a joint.
   iv. All storm drain crossings shall be identified on the water and sewer profiles.
      - Provide a minimum of 18" clearance or encasement for storm and sewer crossings of water main.
      - At crossings where adequate cover above utility is reduced by the storm crossing, installation of insulation shall be shown on the final construction plans.
g. *Fire flows at each hydrant will be necessary to be provided along with the residual pressure being noted.*
   i. Not addressed in Plans or Engineering Report
h. *Valves in each side of each tee (including hydrants) will be required.*

i. Not addressed in Plans.

i. A cut in tie to the North Wild Horse waterline will be necessary (with tee and valves) in lieu of a hot tap.

i. Not addressed in Plans.
ii. Provide hydraulic calculations (Service and Fire Flow) for currently designed water system (one North Wildhorse and one Lakota connection) and calculation for two North Wildhorse (additional connection south of Live/Work 2) and the Lakota connection. The calculations should include the scenario where the Lakota connection is offline. Based on these calculations the Town may require a second connection to North Wildhorse.
iii. At the tie to North Wild Horse, a note references a PRV installation, which is required. Identify and detail, with specificity, the PRV installation complete with manhole, valving, by pass, proper PRV sizing/specification, etc…

j. For the waterline alignment(s) tying to Lakota, for the other parcels that the alignment will cross, there will be the need to provide service stubs to those parcels including valves and end caps to avoid the need for future water line shut downs to provide service to these parcels.

i. Per the Engineering Report, "Water" section; *The applicant coordinated with the adjacent property owners requesting a utility easement. At this point the applicant has not been able to obtain the necessary easements. The town is assisting in obtaining the necessary easements from the adjoining property owner(s).*

k. For the construction drawings, when prepared, the engineer will need to provide all anticipated details for construction in the plan set to avoid any interpretation issues during construction between the contractor/engineer and Town. All work will need to be performed in accordance with the Town's Public Works Manual.

i. Several items not addressed in Plans, shown in other comments and on Plans.
ii. Provide clear direction in construction plans deleting SE details and including the ToNC PWM standard details in the Plans.
iii. Note that all water line fittings are to be polywrapped ductile iron pipe fittings and not PVC. Also, plan view mapping reflects DIP water lines and PVC C900 in profile. Clarify that the PVC C900 pipe is what is to be used.
iv. Assure that all water/sewer crossings can be provided with a minimum separation of 18". This also holds true for all water/storm drain crossings. Assure that water/storm drain crossings provide adequate freeze protection at each crossing.
v. Where water and sewer mains are constructed in areas of fill; a note shall be included on the profile stating the Contractor shall provide a minimum of 95% compaction 10 feet either side of the Sewer / Water main with compaction testing at 200 foot increments in fill areas under pipe, minimum two test locations required per area.
vi. Where water and sewer connections are to be provided to existing facilities, provide detail as to the work required for the connection; existing conditions (size, material, depth), removals, fittings, thrust blocks, testing procedures, etc.
vii. Provide information on how pressure testing, sanitizing, flushing, air release and subsequent operation of the water, sanitary sewer, and storm sewer utilities are performed.

viii. Note that due of SB 18-167, all utilities will need to be installed to be electronically locatable. Details will need to be revised to provide instruction to the contractor that provide tracer wire, magnetic tape, etc… on all subsurface utilities including service lines.

ix. Pothole all existing utility crossings prior to construction of new facilities.

l. The water lines will traverse through the large drainage that is tributary to the project from the front nine of the Lakota Golf Course. It will be necessary to assure that the area of disturbance created with construction will be property erosion protected and that the water line, valves and drains will be adequately protected from the 100-year flooding.

i. The 100-year flood limits calculated with the HEC-RAS model shall be shown on the overall Site and Site Utility Plans to define that there are not impacts to the proposed site infrastructure and address comment 2.l.

3. Sewer service is proposed to be taken from the east end of the existing collection line on North Wildhorse adjacent to the west end of VIX park. Our review of the plan and profile drawings are noted as follows:

a. At each manhole proposed, there is a need to provide at least 0.1 foot of drop from the invert into the manhole to the invert out. Currently, the alignment reflects no drop. This will cause some modification to each profile.

i. Addressed in Plans (0.2 foot drop)

ii. There is a design bust at SMH A4 to be addressed.

b. It will be necessary to provide the elevations of water and sewer at each crossing to determine how separation is being made.

i. Not addressed in Plans, provide detail at each location with Station, Elevation, and Separation.

c. For those locations where the sewer crosses the large drainage from Lakota Golf Course, there will be the need to assure that the sewer line and manholes are protected from the 100 year flood and that the disturbance area is erosion protected from erosion.

i. Not addressed in Plans. See 2.l. above.

d. Sewer ~~service~~ main line plans and profiles will be necessary to be provided in the subsequent construction drawings. Note that tracer wire is now required with all sewer mains and service lines.

i. Included in Plans with comments noted, provide tracer wire for mains and service lines.

ii. Per prior Public Works comments, the manhole spacing between SMH-A2 and SMH-A3 is too great for the Town's bidirectional jetting, reduce spacing to 175'.

4. *This note is repeated from the sketch plan review: Given the magnitude of the area tributary to the draw that bisects the subdivision, care must be taken to assure that any improvements that are constructed in the open space are constructed to be outside the 100-year flood plain and/or designed to resist erosion from excess velocities and are not going to negatively impact the flow carrying capacity of the draw. No buildings, parking lots or roadways shall be located in the 100-year floodplain.*

i. Addressed in Drainage Report, reflect the 100-year flood limits on Plans as noted in 2.l. above.

5. At final plat and for the construction drawings, a detailed grading plan will be needed around each building (complete with spot elevations) to assure that uphill units are not flowing into the sides of downhill units. Likewise, there will be the need to assure that the detailed grading continues to support the drainage patterns and calculations proposed.

i. Site grading comment applies to all site grading.

- Review and ensure drainage away from all structures adheres to Geotechnical recommendations.
- Review and ensure all driveway grading is coordinated with adjacent lot grading and percent slopes are accurately represented between defined points.

ii. Define catch or spill gutter for all parking islands along North Wildhorse Drive. Provide for concentrated flow solution across sidewalk areas.

iii. Define catch or spill gutter for all parking islands in on-site parking and roadway areas.

6. *Construction drawings will need to identify all of the specific grades for storm drain (plan and profile) as well as all of the detailed design of detention ponds and outfalls.*
   i. Provide calculations showing the 100-yr event does not flood units and roadways, on-site, and downstream properties.
   ii. Unable to coordinate Site Drainage Plans to Storm modeling due to naming conventions…overall summary and detention appear acceptable based Plan volume summary.
   iii. Detention model summary results do not match Detention summary on Plan C6.1
   iv. Provide 12" minimum sump in all curb inlets per ToNC standard detail.
   v. Provide detention pond details; required volume, top, bottom, water level, side slopes, weir/overflow, and outlet details on construction plans.
   vi. Provide drainage easement for 12" culvert crossing Vista Loop immediately west of proposed 48" culvert. Noted sheet 2.0.
   vii. Provide drainage easements for detention areas. Noted sheet C2.0.
   viii. Identify how access for maintenance the detention ponds are to be provided.
7. *Preliminary stormwater management plans will be necessary to be provided prior to construction.*
   i. Silt fence (or Sediment Control logs) located along contour downstream of disturbed areas to protect undisturbed areas.
   ii. Inlet protection identified for area basins, curb inlets, and culverts.
   iii. Outlet protection identified above downstream culvert end.
   iv. Vehicle Tracking Pad location(s) identified.
8. *Specific details are needed for the pathway improvements proposed to co-exist with the main drainage from Lakota Golf Course. How will these pathways be protected from erosion and flooding?*
   i. Not addressed in Plans.
   ii. Path / Trail in "open space" locations, grades, materials, and typical cross sections are undefined
9. *For dry utilities, when preparing the final plan for construction and prior to construction, the drawings will need to be updated to assure that the proposed dry utility designs (prepared by the utility provider) continue to integrate with all of the improvements and planning proposed by the developer's team.*
   i. Addressed in Plans.
   ii. The subdivision will not provide natural gas service. Provide documentation from Xcel.
   iii. Construction Plans will require final coordination with utility with utility providers.
10. *As subsequent designs are performed, the water system and raw water system designs will continue to need to be coordinated with the Town. It should still be anticipated that there will likely be the need to install pumping capacity for raw water infrastructure in the upper portions of the proposed subdivision. John Wenzel's memo describes in more detail the information for design that will be necessary for the raw water irrigation system. Like the water and sewer, separation of raw water irrigation from potable water*

will be necessary. Also, the need to identify where service lines are proposed to assure landscaping, snow storage, signage and other utility locations are not going to conflict with the irrigation infrastructure.

i. Provide adequate construction detailing for locating the RW main midway between BOC and SW, showing service locations, maintaining separation, coordinating horizontal and vertical conflicts, and providing RW trench detail.
ii. Based on Town provided 450 gpm at 60 psi static pressure in N Wildhorse, raw water booster pumps will not be necessary per the SE Engineering Report.

11. *Coordination with Town Staff will be necessary to define HOA maintained open space and trails as well as Town maintained open space and trails when developing the final design for open space and trails.*
    i. Provide clear direction on Plans in terms of ownership, maintenance, construction responsibility, or construction details.
12. *Road sections for both the loop road section and North Wildhorse need to be confirmed through coordination with the soils engineer and traffic engineer. As proposed, the road sections do not match the specific recommendations in the soils report. Providing the pavement design calculations to substantiate the current proposal would also be adequate to support the proposal.*
    i. Although the structural pavement sections generally meet the intent of the AG Wassenaar Soils Report for internal Site and North Wildhorse Drive. It is recommended that the pavement design meet a structural number of 3.16 for the previously constructed segments of North Wildhorse Drive, which would equal 4" HMA on 10" ABC.
    ii. The ToNC and CVR standard uses mountable curb and gutter (MCG) rather than vertical curb and gutter. Use MCG on North Wildhorse Drive to maintain consistency with existing segments.
    iii. An 8 ft sidewalk section is located on the south and west side of existing North Wildhorse Drive. Design provides for a 6 ft concrete sidewalk and ribbon curb in parking areas. The implementation of wheel stops should be considered to maintain the proposed narrower 6 ft sidewalk through VIX park.
    iv. Provide 12" wide ABC Class 6 shoulders on North Wildhorse interim road section to protect edge of asphalt.
    v. Note that all pavement ties to existing require a Pavement Joint (T-patch) that involves rotomilling at least 24" of the existing pavement to allow the friction course of asphalt to span the joint of existing asphalt with the lower course of asphalt. Provide a detail that specifically identifies such.
    vi. Provide details identifying how new concrete improvements are to tie to existing.
    vii. The vertical profile shall be designed as follows.
        - For on-site roadway alignment, using a posted speed of 20 mph for stopping sight distance; minimum K = 7 for crest vertical curves and a minimum k = 17 for sag vertical curves.
        - For North Wildhorse Drive roadway alignment, using a design speed of 25 mph for stopping sight distance; minimum K = 12 for crest vertical curves and a minimum k = 26 for sag vertical curves.
        - Check and confirm that 5 ½ ft cover is maintained over the existing water main.
    viii. A vertical curve is required for an algebraic grade difference (|A|) > 1%.

ix. Provide extended viewport of existing North Wildhorse Drive profile (100 ft) to determine existing grade of roadway, delta |A|, and need for and K value of vertical curve based on design speed.

13. *Sheet L-1.0 depicts the areas of the existing drainage that will be disturbed because of trail and infrastructure construction. Further detail will be necessary to support the design of these areas to assure that the 100-year flood does not create erosion and that the proposed infrastructure and units area protected from the flood. As noted during sketch plan, we need to know that all improvements are located outside of the floodplain and what modifications to the draw are proposed, have the capacity to handle the flood and are protected from erosion resulting therefrom.*
    i. Show the 100-year flood limits on Plans as noted in 2.l. above. Provide details for protection on all infrastructure located within or crossing the flood limits on the Plans.
14. *Anticipated future detail for signage and striping is expected in future submittals.*
    i. Speed Limit posted at 20 mph, existing on N Wildhorse Drive.
    ii. Include pedestrian crossing signage as noted on Plan sheet C1.2. [R1-5e (8); R1-6e (4)]
    iii. Show and provide detail for Stop bars, crosswalks, centerline, and parking striping.
15. *We anticipate that the project is going to be constructed in a single phase, however, if it becomes necessary to phase the project, it will be necessary to provide phasing plans for the improvements to assure utility service, access and emergency services can be provided with future infrastructure improvements also being secured.*
    i. Provide specific discussion on the phasing of infrastructure improvements relative to the construction of residential units discussed on sheet 13 of submittal. It is assumed that all infrastructure improvements will be completed prior to beginning building construction and that interim phasing connections and storm water management will not be required, please confirm. If the phasing of improvements are required, then details need to be provided to assure that adequate turn arounds are provided, emergency services are provided and other specific details such as methods of handling drainage, erosion control, short term seeding, etc… are defined and provided.

Please note that as there are a variety of concerns and clarifications noted/requested, we have held back on the review of the cost estimate for the Subdivision Improvements Agreement. Once we confirm the specific scope of work and final construction drawings are prepared, we will provide a review of such. Although there are a variety of concerns and clarifications noted, we do not see that the issues cannot be technically resolved.

Upon your receipt and review, if you have any questions, please don't hesitate to call.

Respectfully,
SGM

Jefferey S. Simonson, P.E.
Principal

New Castle Public Works

Memo

To: Paul Smith

From: John Wenzel

Date: October 21, 2024

Re: R2 CVR

The Town of New Castle Public Works Department has had the chance to review the R2 CRV **Final** Plan Application and has the following comments:

Raw Water Irrigation:

- Municipal Code 13.20.130 “Maintenance of service pipes and fixtures” should apply to the raw water taps and service lines. This language should be included in the final plat or SIA.

Water and Sewer Utilities:

- All potable water connections must be protected by a Reduced Pressure Principle Assembly check valve. This is not indicated in the final drawings.
- Provide a single water service for a test station. The town will provide the station. The approximate station size is 12”x12”. Location requires 5 residents above and five below. This is not indicated in the final drawing
- No 10” hot tap valve at the existing mainline. We can isolate with no interruption to other services. Please use a standard mega lug fitting
- The manhole spacing, connecting the existing sewer on N. Wildhorse and West Vista Loop (SMH-A2and SMH-A3), is too great. Maximum spacing 175 ft. We are concerned about the steep grade in this area. There is a possibility that we may not be able mechanically push a jetter hose the entire 300 length.

Karp.Neu.Hanlon PC
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Partner/Shareholder

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Office: 970.945.2261
Fax: 970.945.7336
**Direct Mail to Glenwood Springs*

November 5, 2024

Paul Smith
Town Planner
Town of New Castle
Sent via email: psmith@newcastlecolorado.org

Re: Comments on Final Plat Application
R2 Partners

Dear Paul:

I have reviewed the Final Plat application materials submitted by R2 Partners and the supplemental materials. My comments are as follows:

Overall, the application and approval documents should consistently refer to either "North Wildhorse" or "North Wild Horse." Paul Smith should decide which version is used.

Final Plat and Construction Documents

The construction plan for North Wildhorse needs to depict the boundaries of the existing easement and identify any improvements including grading that will extend outside of the easement boundaries. See Sheet C-2.4. Adjustments to the North Wildhorse easement may be required.

The drainage documents show that drainage improvements (including detention) will be used to facilitate drainage from multiple lots. This means that easements must be created and depicted on the final plat for drainage facilities serving more than one lot.

A construction specification needs to be included in the construction documents for the fire access roads.

The construction document on Sheet C-1.0 shows a 16' easement for the fire road crossing Lot 2 to Lot 3. The final plat only shows a 12' easement.

The water line to connect to the Lakota tank needs final design and an easement established prior to Council approval of the final plat.

Finalization of the temporary construction access easement to the Town's satisfaction must occur prior to Council approval of final plat.

The engineer's cost estimate needs to include amounts for: lighting, fire access road construction, trails, internal sidewalks, common trash enclosures, common mailboxes, and the parking improvements at VIX park.

The utility easements on sheet 3 of the final plat need to be more visible.

On the construction documents the water main in Vista Loop deviates from the ROW at the drainage culvert. An easement for this section of the water line needs to be created on the final plat.

The property subject of this application was approved for a subdivision exemption in Resolution No. PZ 2008-3. The implementing plat was never recorded. Despite this fact, the property that was subject to the subdivision exemption was deeded into separate ownership. This final plat will rectify the subdivision status as to the northern parcel (the R2 property). The southern parcel (CVR Investors Inc.) subdivision status will be rectified at the time that property goes through a future subdivision or land use review.

The certificate of dedication and ownership will need edits to properly identify to which entity easements are dedicated. To the Town: Vista Loop ROW, utility easements, trail easements, emergency access easements, and the 50' drainage easement. To the Association: drainage easements for internal drainage.

The final plat needs a note stating that the Final Development Plan and Final Subdivision Plat for the R2 project does not confer any development rights on Lot 4.

Common Interest Community

The applicant needs to clarify that the owners association will own the open space parcels 1 and 2. The method and timing of conveyance of parcels 1 and 2 need to be described in the subdivision improvements agreement. The covenants need to have provisions allowing for the governance of the open space parcels and funding of maintenance and improvements.

The covenants need to to provide for maintenance of common elements including stormwater detention, common mailboxes, common trash enclosures, and similarly shared by private improvements.

The covenants need to address parking enforcement for tenants within the development. This should include a permit system, fines to prevent parking in unallowed areas including designated guest parking, and fines. Similarly the covenants need to address limitations on number of pets per unit, cleanup of pet waste, dog at large, and fines for violations.

Items for P&Z Consideration

R2 has submitted an affordable housing proposal that makes available: (a) five units (three 1-bedroom units and 2-two bedroom units) , (b) at a rate of 75% of the then current free market rent, (c) made available only to Town employees, and (d) only for a period of 20 years. P&Z should

provide comments for Council consideration on: unit makeup, limitation on Town employees as opposed to being open to other public employees (e.g. teachers) and potentially non-profit employees, and the 20 year termination.

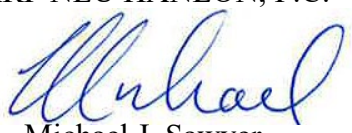
The applicant has requested vested rights for the project. This is a period of time during which new zoning regulations and impact fees cannot be imposed on the property. It gives the applicant time to build out the project under the rules in place at the time of the approval. Staff is considering a vesting period of 5-10 years. P&Z should provide comments for Council consideration on the vesting period.

Request for credit against recreation facilities development fee for the parking areas created adjacent to VIX park. This item will be discussed by staff and a recommendation made to Council.

Request for cost recovery for construction of North Wildhorse by the other two development parcels along this road. This item will be discussed by staff and a recommendation made to Council.

Very truly yours,

KARP NEU HANLON, P.C.



Michael J. Sawyer

MJS:
enclosure
cc: Chad Lee, Esq.

From: Paul Smith
To: Maarjan Pasha
Cc: Paul Schirmer; Barry Rosenberg; John Wenzel
Subject: RE: easement access
Date: Monday, October 28, 2024 1:32:00 PM
Attachments: image001.png

Thanks, Maarjan, on behalf of the surrounding community! We'll include this with the Applicant's packet.

Thank you,
Paul Smith
Town Planner/Inspector
psmith@newcastlecolorado.org
(970) 984-2311 #108

From: Maarjan Pasha <maarjan@tcfuels.com>
Sent: Monday, October 28, 2024 12:38 PM
To: Paul Smith <psmith@newcastlecolorado.org>
Cc: Paul Schirmer <paul.schirmer@cdsg-us.com>; Barry Rosenberg <b.rosenberg@r2partners.co>; John Wenzel <jwenzel@newcastlecolorado.org>
Subject: Re: easement access

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Please share this with the town, and review.
I am ok with giving the access.

Thanks
Maarjan

On Wed, Oct 23, 2024 at 10:05 AM Paul Smith <psmith@newcastlecolorado.org> wrote:

> That's the location the Town would prefer. I know we would also want a robust track pad added at the roundabout and construction safety fencing in the relevant public locations. The asphalt bike path could be ramped/repaired afterwards or both. John with public works would need to review.
>
> Thank you,
> *Paul Smith*
> *Town Planner/Inspector*
> psmith@newcastlecolorado.org
> (970) 984-2311

From: Paul Schirmer <paul.schirmer@CDSG-US.COM>
Sent: Wednesday, October 23, 2024 8:53 AM
To: Maarjan Pasha <maarjan@tcfuels.com>
Cc: Paul Smith <psmith@newcastlecolorado.org>; Barry Rosenberg <b.rosenberg@r2partners.co>
Subject: RE: easement access

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Maarjan:

See attached; please let me know if this location works.

Thanks,

Paul

From: Maarjan Pasha <maarjan@tcfuels.com>
Sent: Tuesday, October 22, 2024 2:53 PM
To: Paul Schirmer <paul.schirmer@CDSG-US.COM>
Cc: Paul Smith <psmith@newcastlecolorado.org>
Subject: Re: easement access

ok, thanks.

-Maarjan

On Tue, Oct 22, 2024 at 1:47 PM Paul Schirmer <paul.schirmer@cdsg-us.com> wrote:

> I asked our engineer to outline the area & will follow up once I receive.
>
> Thanks,
>
> Paul
>
> **From:** Maarjan Pasha <maarjan@tcfuels.com>
> **Sent:** Tuesday, October 22, 2024 2:09 PM
> **To:** Paul Smith psmith@newcastlecolorado.org>
> **Cc:** Paul Schirmer <paul.schirmer@CDSG-US.COM>
> **Subject:** Re: easement access
>
> Great, thanks for your reply.
> Ill wait to hear from them.
> Take care
> Maarjan
>
> On Tue, Oct 22, 2024 at 10:45 AM Paul Smith <psmith@newcastlecolorado.org> wrote:

Hi Maarjan,

Thanks for following up on this. Yes, the location along the school property line would suit. I copied Paul Shirmer with the R2 team. If they are still willing to move forward with this, he can direct his team to create a temporary easement agreement with the terms for you to and the Town to review. We would like to get this completed before the application gets final approval. However, we still have time to finalize prior to permitting if necessary.

Thank you,

Paul Smith
Town Planner/Inspector
psmith@newcastlecolorado.org
(970) 984-2311 #108

From: Maarjan Pasha <maarjan@tcfuels.com>
Sent: Tuesday, October 22, 2024 9:30 AM
To: Paul Smith <psmith@newcastlecolorado.org>
Subject: easement access

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Paul,
I've been meaning to call you regarding the easement.
I got a chance to discuss it with the guys and they'd like to see where it will be placed(preferably alongside the school and not through the middle of the property).
If it helps the town, we would like to help facilitate this.
If they could provide us a plan of where it will be placed and a contract, we can review and help progress the process.

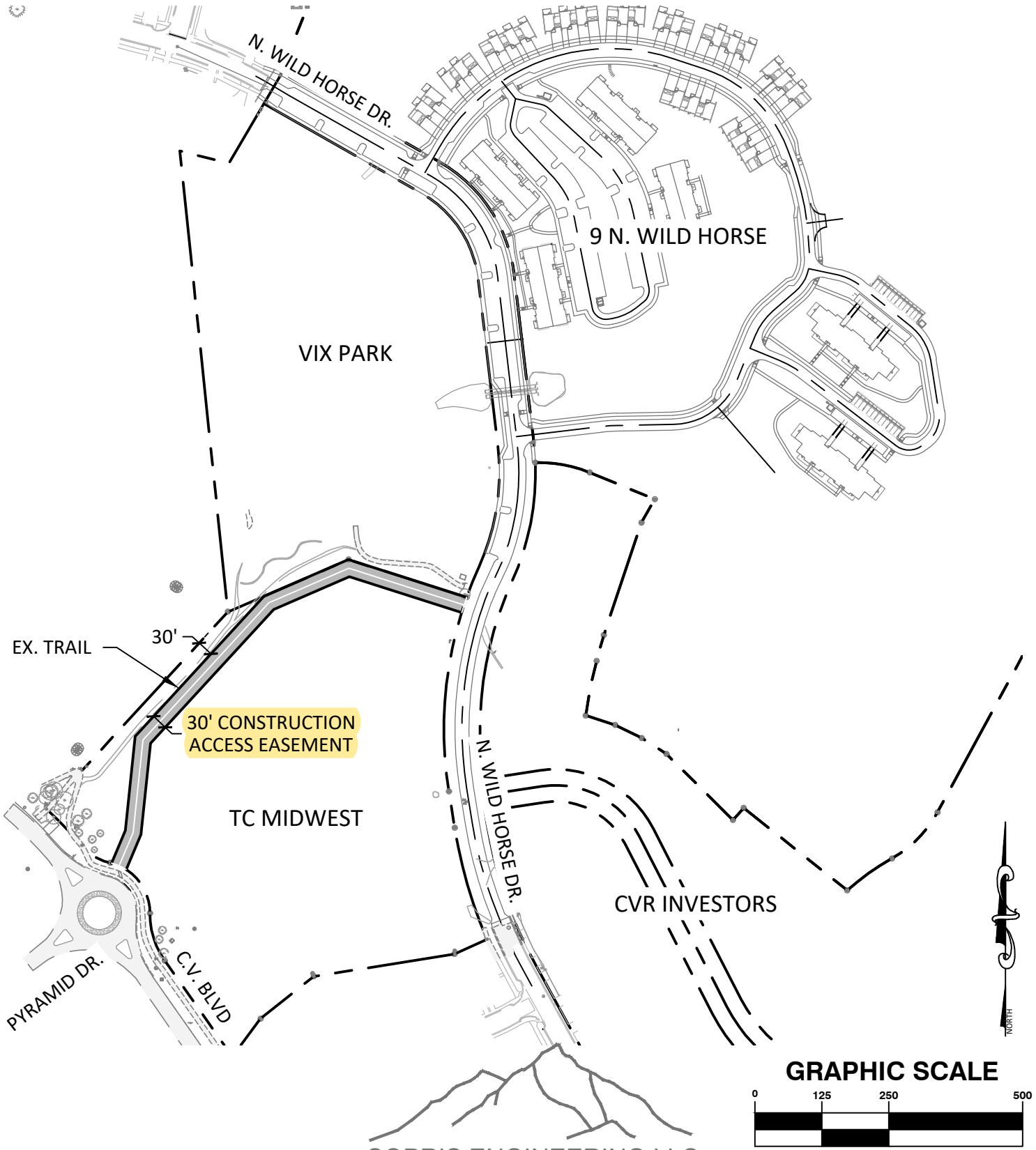
Thanks
Maarjan

TC MIDWEST: CONSTRUCTION EASEMENT EXHIBIT

9 NORTH WILD HORSE

NEW CASTLE, COLORADO.

SHEET 1 OF 1



GRAPHIC SCALE

0 125 250 500

(IN FEET)

1 inch = 250 ft.

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3 • CARBONDALE CO 81623
(970) 704•0311• soprisengineering.com

G:\2023\33011 CVR R2 RES\CIVIL\CIVIL DWGS\DE\33011-SITE.DWG - Oct 23, 2024 - 8:39am

NOTICE OF PUBLIC HEARING
Town of New Castle

Virtual Meetings are subject to internet and technical capabilities.

To join by computer, smart phone or tablet:
https://us02web.zoom.us/j/7096588400

If you prefer to telephone in:
Please call: 1-346-248-7799
Meeting ID: 709 658 8400

Follow the prompts as directed. Be sure to set your phone to mute until called on.

Date:	November 13, 2024
Time:	7:00 PM
Place of meeting:	New Castle Town Hall, 450 W Main St, New Castle, CO
Brief description of meeting:	Presentation of the 9 North Wild Horse Multi-Family Housing, consisting of 16 total buildings with 130 rental units, combining townhomes, apartments and open space on ~47.6 acres in Castle Valley Ranch, east of VIX Ranch Park.
Legal description:	See Exhibit A
Common address:	TBD (East of VIX Ranch Park)
Applicant:	R2 Partners
Landowner:	CTS Investments, LLC

The complete application is available at the Town Clerk's office at 450 West Main Street, P.O. Box 90, New Castle, CO 81647. All interested persons are invited to appear and state their views, protests, or objections. If you cannot appear personally at such hearing, then you are urged to state your views by letter.

EXHIBIT A

Legal Description

A parcel of land being a portion of the 'Option Property', as described in that Quit Claim Deed, recorded September 21, 2009 at Reception No. 775392, and being situated in the SW1/4, Section 29, SE1/4, Section 30, the NE1/4, Section 31, and the NW1/4, section 32, Township 5 South, Range 90 West of the 6th P.M.., County of Garfield, State of Colorado, said parcel of land being more particularly described as follows:

Beginning at the 1/4 corner between said Sections 29 and 30, a 3.25" Brass Cap on 2" iron pipe Stamped 1/4 S30/29 BLM 1988, thence N 89° 36' 48" E, the assumed basis of bearings along the southerly line of the 2nd Amended Exemption Plat of Lakota Canyon Ranch, recorded February 4, 2008 as Reception No. 742257, a distance of 1308.59 feet, to the Northeast Corner of said 'Option Property', being a 1.25" yellow plastic cap with illegible stamping on a 5/8" rebar, said corner being coincidental with westerly and southerly lines of said Reception No. 742257,
Thence S 00°55'44" E, along easterly line of said Option Property, and the said coincidental westerly line of Reception No. 742257, a distance of 1002.40 feet, to a point on the northerly line of that parcel of land described in the Special warranty Deed, recorded April 15, 2010 at Reception No. 784749;
Thence the following twenty (21) courses along the northerly, westerly, easterly and then northerly lines of said Reception No. 784749;

1. N 89°54'27" W a distance of 116.87 feet;
2. S 54°50'38" W a distance of 173.10 feet;
3. S 00°02'34" E a distance of 167.50 feet;
4. S 32°41'48" E a distance of 88.46 feet;
5. S 00°55'44" E a distance of 289.40 feet;
6. S 14°00'12" W a distance of 22.45 feet;
7. S 28°56'08" W a distance of 541.68 feet;
8. 122.69 feet along a curve to the right, having a radius of 219.00 feet, a central angle of 32°05'54", the chord of which bears S 44°59'05" W, a distance of 121.09 feet;
9. 102.92 feet along a non-tangent curve to the left, having a radius of 481.00 feet, a central angle of 12°15'33", the chord of which bears S 54°54'14" W a distance of 102.72 feet;
10. N 51°02'22" W a distance of 247.25 feet;
11. 30.23 feet along a non-tangent curve to the right, having a radius of 275.00 feet, a central angle of 6°17'51", the chord of which bears S 42°06'34" W a distance of 30.21 feet;
12. N 44°48'48" W a distance of 174.82 feet;
13. N 56°40'07" W a distance of 55.13 feet;
14. N 63°30'38" W a distance of 55.33 feet;
15. N 71°43'03" W a distance of 57.57 feet;
16. 104.09 feet along a non-tangent curve to the right, having a radius of 970.00 feet, a central angle of 6°08'54", the chord of which bears N 11°34'51" E a distance of 104.04 feet;
17. N 16°07'55" E a distance of 50.00 feet;
18. N 18°54'59" E a distance of 221.52 feet;
19. N 30°00'58" E a distance of 50.41 feet;
20. N 67°17'36" W a distance of 131.42 feet;
21. 104.00 feet along a curve to the left, having a radius of 250.00 feet, a central angle of 23°50'05", the chord of which bears N 79°12'39" W, a distance of 103.25 feet, to a point on the northeasterly line of North Wild Horse Road, as described in that Special Warranty Deed recorded September 25, 2007 at Reception No. 733780;
Thence the following four (4) courses along said northeasterly line of North Wild Horse Road, being situated parallel to and 67.50 feet northeasterly of the westerly line of said Option Property, also a coincidental line with the North Park Parcel, recorded April 17, 2007 at Reception No. 721291;

1. 38.30 feet along a non - tangent curve to the left, having a radius of 491.25 feet, a central angle of 4°28'00", the chord of which bears N 04°02'01" W a distance of 38.29 feet;

2. N 06°16'01" W a distance of 314.42 feet;
3. 263.68 feet along a curve to the left, having a radius of 281.25 feet, a central angle of 53°43'01", the chord of which bears N 33°07'31" W, a distance of 254.13 feet;
4. N 59°59'02" W a distance of 338.00 feet, to a point on the westerly line of said Option Property, thence the following three (3) courses along westerly lines of said Option Property;

1. N 21°44'01" E a distance of 132.03 feet;
2. N 02°06'39" E a distance of 226.38 feet;
3. N 00°23'12" W a distance of 381.09 feet, to a point on the north line of the SW1/4, Section 30, thence S 89°47'18" E along said North line, SW1/4, Section 30, a distance of 308.87 feet, to the point of beginning, County of Garfield, State of Colorado.

The above legal description was created by Scott A. Hemmen for and behalf of SGM
118 West Sixth Street, Suite 200, Glenwood Springs, CO 81601
970-945-1004

AFFIDAVIT AS TO NOTICE OF PUBLIC HEARING

We, **R2 Partners**, do hereby certify that pursuant to ordinances of the Town of New Castle, Colorado, we provided notice of a Public Hearing on **November 13, 2024,** regarding a **proposed development** by doing the following:

1. At least fifteen **(15) days prior** to such hearing, we sent a copy of the attached Notice of Public Hearing by **certified mail to the owners of all property within two hundred fifty (250) feet** of the subject property and to the Town of New Castle.

2. If required by Chapter 16.10 of the new Castle Municipal Code, at least thirty **(30) days prior** to such hearing, I sent a copy of the attached Notice of Public Hearing by certified mail to the **owners of mineral estates** who have requested notification with respect to the subject property at the Garfield County Clerk and Recorder.

3. At least fifteen (15) days prior to such hearing, **we posted Notice of Public Hearing on the property on a sign** approved by the Town at least twenty-two (22) inches wide, twenty-six (26) inches high, with letters at least one (1) inch in height. The sign was posted so that it was visible from a public street.

4. At least (15) days prior to such hearing, the attached Notice of Public Hearing was published on the **Town's website**.

Signature

STATE OF COLORADO)
) ss.
COUNTY OF Garfield)

Subscribed and sworn to before me this 5th day of November, 2024, by Luis Wilsher.

Witness my hand and official seal.

Notary Public
My commission expires: 8/21/27

KATIE JOHNSON
NOTARY PUBLIC · STATE OF COLORADO
Notary ID #20154033231
My Commission Expires 8/21/2027

Garfield County Land Explorer

Parcel	Physical Address	Owner	Account Num	Mailing Address
212303400954	Not available NEW CASTLE	BUREAU OF LAND MANAGEMENT	R030107	2300 RIVER FRONTAGE ROAD SILT, CO 81652
212329200190	Not available NEW CASTLE	RG LAKOTA III LLC	R009983	350 MARKET STREET STE 304 BASALT, CO 81621
212329300185	1000 CLUBHOUSE DR NEW CASTLE	RG LAKOTA GOLF LLC	R009978	350 MARKET STREET STE 304 BASALT, CO 81621
212329300194	Not available NEW CASTLE	CTS INVESTMENTS, LLC	R043961	343 DAKOTA BLVD BOULDER, CO 80304
212329300197	Not available NEW CASTLE	CVR INVESTORS INC	R045250	PO BOX 1380 CAREFREE, AZ 85377
212330400001	Not available NEW CASTLE	GARFIELD SCHOOL DISTRICT RE-2	R380824	839 WHITERIVER AVENUE RIFLE, CO 81650-3515
212330400003	Not available NEW CASTLE	NEW CASTLE, TOWN OF	R043960	PO BOX 90 NEW CASTLE, CO 81647
212330423007	631 N WILD HORSE DR NEW CASTLE	LORD, JAMES T & KELLY M	R006709	631 N WILD HORSE DRIVE NEW CASTLE, CO 81647
212330423008	627 N WILD HORSE DR NEW CASTLE	RATAJCZAK, ZDZISLAW & HALINA	R006710	627 NORTH WILDHORSE DRIVE NEW CASTLE, CO 81647
212330423009	6 BUCKSKIN CIR NEW CASTLE	YOUNG, DAVID A & FRAMBACH, JANE	R006711	6 BUCKSKIN CIRCLE NEW CASTLE, CO 81647
212330423010	10 BUCKSKIN CIR NEW CASTLE	CLASSEN, ROBERT SETH & GONZALEZ CLASSEN, GLORIA ELIZABETH	R006712	10 BUCKSKIN CIRCLE NEW CASTLE, CO 81647
212330423011	14 BUCKSKIN CIR NEW CASTLE	BADOLATO, AARON & ANNE	R006713	14 BUCKSKIN CIRCLE NEW CASTLE, CO 81647
212330423012	18 BUCKSKIN CIR NEW CASTLE	WHITCOMB, RANDALL K LIVING TRUST	R006714	1302 MAUS WICHITA, KS 67212
212330423036	Not available NEW CASTLE	NEW CASTLE, TOWN OF	R006738	PO BOX 90 NEW CASTLE, CO 81647-0166
212330423037	Not available NEW CASTLE	NEW CASTLE, TOWN OF	R006739	PO BOX 90 NEW CASTLE, CO 81647-0166
212332200195	Not available NEW CASTLE	CVR INVESTORS INC	R043962	PO BOX 1380 CAREFREE, AZ 85377
ROW	Not available null			

TOWN OF NEW CASTLE, COLORADO
RESOLUTION NO. PZ 2024-6

A RESOLUTION OF THE NEW CASTLE PLANNING AND ZONING COMMISSION RECOMMENDING CONDITIONAL APPROVAL OF A FINAL PUD DEVELOPMENT PLAN AND A FINAL SUBDIVISION PLAT FOR CASTLE VALLEY RANCH PUD FILING 13 (9 N WILD HORSE DR)

WHEREAS, CTS Investments, LLC ("Owner") is the owner of certain real property within the Town of New Castle described in the attached Exhibit A, which property is located within the Castle Valley Ranch PUD (the "Property,"); and

WHEREAS, Owner has authorized R2 Partners ("Applicant") to file a land use application for preliminary plan approval for the Property; and

WHEREAS, on March 21, 2024, Applicant submitted an application requesting approval of a Preliminary PUD Development Plan ("Preliminary Plan") and a Preliminary Plat ("Preliminary Plat") for the Property;

WHEREAS, the Town of New Castle Planning & Zoning Commission ("Commission") held a duly noticed public hearing on June 26, 2024 approving the Preliminary Plan and Preliminary Plat with conditions; and

WHEREAS, the Applicant submitted an application requesting approval of a final PUD development plan ("Development Plan") and a final subdivision plat ("Final Plat"); and

WHEREAS, the Commission has considered the Application materials, testimony, and other evidence from Staff, the Applicant, and members of the public concerning the Application; and

WHEREAS, based on the Application, testimony, and other information presented, subject to compliance with the terms and conditions of this Resolution, the Commission finds that the Application complies with the following review criteria set forth in Sections 16.16.030(G) and 17.100.060(F) of the Code:

1. Consistency with the comprehensive plan;
2. Compliance with zoning and density requirements;
3. Compatibility to neighboring land uses;
4. Availability of town services from public works (including water and sewer services), fire, and police;
5. Adequacy of off-street parking and vehicle, bicycle, and pedestrian circulation;
6. Required open space or parks designed for active or passive use by residents of the subdivision and the public; and

7. Development consistent with the natural character, contours, and viewsheds of the land

NOW, THEREFORE, BE IT RESOLVED BY THE PLANNING AND ZONING COMMISSION OF THE TOWN OF NEW CASTLE, COLORADO:

1. Recitals. The foregoing recitals are incorporated by reference as findings and determinations of the Planning and Zoning Commission.

2. Definition of the Application. The "Application" consists of the documents and information identified on Exhibit B, plus all representations of and other documents presented by the Applicant reflected in the minutes of the Planning and Zoning Commission public hearing held on November 13, 2024.

3. Action regarding Final Plan: The Final Plan proposes:

a. The construction of 130 residential units as rental apartments and townhomes as depicted on the most updated site plan included in the Application;

b. The subdivision of the Property into 4 lots and 2 Parcels as shown on the Preliminary Plat dated April 12, 2024; and

c. The construction of public and private improvements as depicted on the most updated construction documents included in the Application.

The Planning Commission hereby recommends approval of the Development Plan and Final Plat, subject to compliance with all conditions set forth in Section 5 of this Resolution.

4. Zoning. The development and use of the Property shall be subject to the following restrictions and requirements:

a. the restrictions and requirements of the MF-2 per the Castle Valley Ranch PUD; and

b. all other applicable provisions of the Code; and

c. all applicable Ordinances of the Town.

5. Conditions. Approval of the Application is subject to and contingent up on satisfaction of the following conditions:

a. The maximum building height of Buildings B1, B2, B3, & B4 shall not exceed the building elevations presented in Exhibit A-Plan, pages 18-26. Alternatively, the Applicant shall consider height reductions, additional screening, architectural modifications, or any combination of these to these structures to optimize

consistency with the natural character of the land. All other structures shall comply with the building height requirements specified in Section 17.04.050.

b. All site specific development applications subject to the provisions of the International Fire Code or matters requiring fire alarms and/or fire suppression shall be submitted to the Fire Marshal for review and comment.

c. The applicant shall comply with all recommendations of the Town Engineer, Town Public Works Director, and Town Attorney provided in response to review of the Application.

d. All exterior lighting to be dark-sky compliant per the comprehensive plan. Demonstrate that all exterior lighting will limit trespass. Parking lot lighting should be on timers to reduce the light duration at night while maintaining security lighting as needed.

e. The location and manufacturer of any electric vehicle supply equipment installed within the public right of way shall be at the discretion of Public Works.

f. Fire access roads as depicted in the Application shall be permanently signed "Emergency Access Only".

g. A temporary construction easement, generally conforming to that depicted in the Application, shall be constructed to accommodate construction vehicle circulation for the buildout of PA 8 & 9 (R2 Partners LLC) and PA 12 (TC Midwest LLC) until the completion of either PA 12 or PAs 8 & 9, whichever is first. The easement shall consist of a semi-impervious surface, a track pad at the intersection with Castle Valley Blvd. and include safety fencing along the hazardous to the public. Any damage to public infrastructure, including but not limited to, asphalt bike paths, landscape irrigation, underground utilities, landscaping shall be the responsibility of the Applicant.

h. All trash dumpsters shall be located within an approved trash enclosure that extends six feet high and includes a bear resistant latching mechanism. Trash receptacles for townhomes shall be of a bear resistant type and stored inside.

i. A declaration of covenants for the common interest community that are to the satisfaction of the Town Attorney. The form of the declaration of covenants shall be finalized before consideration of the Final Plat by the town council. Recordation of the declaration of covenants shall be accomplished at or before recording of the Final Plat.

j. A parking management plan shall be added to the covenants prior to final approval with provisions for reserved parking in shared lots as necessary. Signage on both sides of N Wild Horse Dr adjacent to VIX park shall read "No Overnight Parking".

k. A subdivision improvements agreement ("SIA") containing an engineer's stamped cost estimate of public improvements, to the satisfaction of the Town Attorney. The form of the SIA shall be finalized before consideration of the Final Plat by the town council. Recordation of the SIA shall be accomplished at or before recording of the Final Plat.

l. Provide a construction phasing plan for inclusion in a subdivision improvements agreement. Identify, at minimum, each of the following components:

- Buildout phases if necessary;
- Schedule that identifies the sequencing of construction, sequencing of occupancy, traffic flow, and traffic control plans during construction;
- Storage and staging areas for construction equipment and materials;
- Illustrate drainage and erosion control best management practices (BMP's);
- Conformance to all requirements and specifications approved by the fire marshal concerning temporary access to the project;

m. Landscaping shall incorporate native grasses and plants that minimize maintenance, mowing, and irrigating. The landscaping plan shall be approved by the Parks Department. Plans submitted for building permit for any building shall demonstrate no more than 2,500 square feet of sod per dwelling unit as specified in 13.20.060 of the Municipal Code.

n. All disturbed areas in the project shall be revegetated and maintained in a predominantly weed free condition.

o. All representations of the Applicant made verbally or in written submittals presented to the Town in conjunction with the Application before the Commission or Town Council shall be considered part of the Application and binding on the Applicant.

p. The Applicant shall reimburse the Town for any and all expenses incurred by the Town regarding this approval, including, without limitation, all costs incurred by the Town's outside consultants such as legal and engineering costs.

q. The sale of individual lots, parcels or units may not occur until a plat creating the lot, parcel or unit is recorded with Garfield County and security for public improvements has been received by the Town.

r. The Applicant and Town reach final agreement on the form of an affordable housing covenant that includes definition of the number of restricted units, the calculation of below market rents, the workforce that qualify to live in the units,

and the term for which the affordable housing covenant shall be in force. The affordable housing covenant shall be finalized before consideration of the Final Plat by the town council. Recordation of the affordable housing covenant shall be accomplished at or before recording of the Final Plat.

s. Finalization of water rights dedication requirements for the project. Calculation of irrigated areas and finalization of EQR dedication requirements. A warranty deed conveying the required water rights in the Coryell Ditch shall be executed and recorded together with the final plat.

t. Vested rights be granted for a period of __ years.

6. Severability. Each section of this Resolution is an independent section and a holding of any section or part thereof to be unconstitutional, void, or ineffective for any cause or reason shall not be deemed to affect the validity or constitutionality of any other section or part hereof, the intent being that the provisions of this Resolution are severable.

7. Effective Date. This Resolution shall be effective upon adoption.

SO RESOLVED this 13th day of November, 2024, by a vote of ____ to ____.

TOWN OF NEW CASTLE
PLANNING & ZONING
COMMISSION

_____
Chuck Apostolik, Chairman

ATTEST:

_____
Remi Bordelon, Deputy Town Clerk

Exhibits:
Exhibit A: Legal Description
Exhibit B: List of Application materials

EXHIBIT A
Legal Description

A parcel of land being a portion of the 'Option Property', as described in that Quit Claim Deed, recorded September 21, 2009 as Reception No. 775392, and being situated in the SW1/4 of Section 29, SE1/4 of Section 30, the NE1/4 of Section 31, and the NW1/4 of SECTION 32, Township 5 South, Range 90 West of the 6TH P.M., County of Garfield, State of Colorado, said parcel of land being more particularly described as follows:

Beginning at the 1/4 corner, between said sections 29 and 30, a 3.25" brass cap on 2" iron pipe stamped "1/4 S30/29 BLM 1988", thence N 89° 36' 48" E the assumed Basis of Bearings along the southerly line of the 2nd Amended Exemption Plat of Lakota Canyon Ranch, recorded February 4, 2008 as Reception No. 742257, a distance of 1308.59 feet to the Northeast corner of said 'Option Property', being a #5 rebar & 1.25" yellow plastic cap stamped "CLAYCOMB ENG L.S. 3174", said corner being coincidental with Westerly and Southerly lines of Reception No. 742257;

Thence S 00°55'44" E, along Easterly line of said 'Option Property', and the said coincidental Westerly line of Reception No. 742257, a distance of 1002.40 feet, to a point on the Northerly line of that parcel of land described in the Special Warranty Deed, recorded April 15, 2010 as Reception No. 784749;

Thence the following twenty-one (21) courses along the Northerly, Westerly, Easterly and Northerly lines of said Reception No. 784749;

1. N 89°54'27" W a distance of 116.87 feet;
2. S 54°50'38" W a distance of 173.10 feet;
3. S 00°02'34" E a distance of 167.50 feet;
4. S 32°41'48" E a distance of 88.46 feet;
5. S 00°55'44" E a distance of 289.40 feet;
6. S 14°00'12" W a distance of 22.45 feet;
7. S 28°56'08" W a distance of 541.68 feet;
8. 122.69 feet along a curve to the right, having a radius of 219.00 feet, a central angle of 32°05'54", the chord of which bears S 44°59'05" W, a distance of 121.09 feet;
9. 102.92 feet along a non-tangent curve to the left, having a radius of 481.00 feet, a central angle of 12°15'33", the chord of which bears S 54°54'14" W a distance of 102.72 feet;
10. N 51°02'22" W a distance of 247.25 feet;
11. 30.23 feet along a non-tangent curve to the right, having a radius of 275.00 feet, a central angle of 6°17'51", the chord of which bears S 42°06'34" W a distance of 30.21 feet;
12. N 44°48'48" W a distance of 174.82 feet;
13. N 56°40'07" W a distance of 55.13 feet;
14. N 63°30'38" W a distance of 55.33 feet;
15. N 71°43'03" W a distance of 57.57 feet;
16. 104.09 feet along a non-tangent curve to the right, having a radius of 970.00 feet, a central angle of 6°08'54", the chord of which bears N 11°34'51" E a distance of 104.04 feet;
17. N 16°07'55" E a distance of 50.00 feet;
18. N 18°54'59" E a distance of 221.52 feet;
19. N 30°00'58" E a distance of 50.41 feet;
20. N 67°17'36" W a distance of 131.42 feet;
21. 104.00 feet along a curve to the left, having a radius of 250.00 feet, a central angle of 23°50'05", the chord of which bears N 79°12'39" W, a distance of 103.25 feet, to a point on the Northeasterly line of North Wild Horse Road, as described in that Special Warranty Deed recorded September 25, 2007 at Reception No. 733780;

Thence the following four (4) courses along said Northeasterly line of North Wild Horse Road, being situated parallel to and 67.50 feet Northeasterly of the westerly line of said 'Option Property', also a coincidental line with the North Park Parcel recorded April 17, 2007 at Reception No. 721291;

1. 38.30 feet along a non-tangent curve to the left, having a radius of 491.25 feet, a central angle of 4°28'00", the chord of which bears N 04°02'01" W a distance of 38.29 feet;
2. N 06°16'01" W a distance of 314.42 feet;
3. 263.68 feet along a curve to the left, having a radius of 281.25 feet, a central angle of 53°43'01", the chord of which bears N 33°07'31" W, a distance of 254.13 feet;
4. N 59°59'02" W a distance of 338.00 feet, to a point on the westerly line of said 'Option Property';

Thence the following three (3) courses along the westerly lines of said 'Option Property';

1. N 21°44'01" E a distance of 132.03 feet;
2. N 02°06'39" E a distance of 226.38 feet;
3. N 00°23'12" W a distance of 381.09 feet, to a point on the North line of the TO A SW1/4 of Section 30;

Thence S 89°47'18" E along said North line SW1/4 of Section 30, a distance of 308.87 feet, To the Point of Beginning,

County of Garfield, State of Colorado.

and containing 50.055 acres, more or less, have by these presents laid out, platted and subdivided the same into lots and blocks as shown hereon and designate the same as O N WILD

EXHIBIT B

Final PUD Application Materials

A. Applicant Final Plan Application & Appendix – September 30, 2024
B. CRFR Fire Marshal Referral, Orrin Moon – October 18, 2024
C. Town Engineer Comments, Jefferey Simonson – October 18, 2024
D. Town Public Works Director Comments, John Wenzel – October 21, 2024
E. Town Attorney Comments, Michael Sawyer – November 5, 2024
F. Temporary Easement Access Referral, TC Midwest, LLC – October 28, 2024
G. Public Hearing Notice, with Legal Description for Final Plan P&Z – November 13, 2024
H. Notarized Affidavit of Public Hearing Notice – November 5, 2024
I. List of Adjacent Property Owners within 250 Feet

New Castle, Colorado
Planning and Zoning Commission
Wednesday, July 24, 2024, 7:00 PM

Call to Order
Acting Chair Caitlin Carey called the meeting to order at 7:00 p.m.

Roll Call

Present	Chair Apostolik (Present at 7:03pm)
	Commissioner McDonald
	Commissioner Carey (Acting Chair)
	Alternate Commission Rittner
	Alternate Commissioner Parks
	Commissioner Martinez
	Commissioner Westerlind
Absent	Commissioner Sass
	Commissioner Cotey

Also present at the meeting was Town Administrator Dave Reynolds, Town Planner Paul Smith, Assistant Town Planner Lauren Prentice, Deputy Town Clerk Remi Bordelon, and members of the public.

Meeting Notice
Deputy Town Clerk Bordelon verified that her office gave notice of the meeting in accordance with Resolution TC 2024-1.

Conflicts of Interest
There were no conflicts of interest.

Citizen Comments on Items NOT on the Agenda
There were no citizen comments.

Items for Consideration
Deputy Bordelon clarified that the agenda item was not a public hearing but rather classified as an 'Item for Consideration' despite the error on the meeting agenda.

Acting Chair Carey noted for the record that Chair Chuck Apostolik was present to the meeting after role call was administered.

Consider Resolution PZ 2024-5, A Resolution of the New Castle Planning and Zoning Commission Approving a Multiple Lot Line Dissolution for Property Located in the R-1 Residential District.
Assistant Town Planner Lauren Prentice introduced landowner Valerie Curry. Mrs. Curry reflected that she had been a resident of New Castle for 25 years. She stated she owned all four lots involving the dissolution request. She said her house is located on three of the four lots. She explained her intent for the dissolution was to have the ability to build an ADU within code requirements/standards.

Assistant Planner Prentice introduced Resolution PZ 2024-5, reviewing her summary memo with the commission. She explained that the resolution involved multiple lot line dissolutions. She added that if the resolution only involved one lot line dissolution, it would have been processed administratively.

To: *Planning and Zoning Commission*
From: *Lauren Prentice*
Re: *P&Z Meeting – Hear and decide on an application for a multiple lot line vacation by Applicants, Valerie and Michael Curry, on their 4 lots, located at 161 and 171 N 4th St.*
Date: *7/24/2024*

Purpose: *Per Section 16.40.080, decisions on applications for multiple lot line vacations shall be made directly by the Planning Commission. The Applicant submitted a complete application for the dissolution of three (3) lot lines between four (4) lots. Since the vacation request does not exceed 20 lots, the application shall be treated as a request to amend the plat. "Amended plats shall be subject to review by the Planning Commission, Planning Staff, the Town Engineer, and all appropriate review agencies and subject to final approval by the Town Engineer", Town Municipal Code Section 16.40.080. The Town Engineer has reviewed the provided application and recommends approval, providing the Planning Commission finds no issue.*

The four (4) lots, Lots 21-24 in Block A (see Exhibit A), are currently divided into two addressed properties: a single-family home is on the 5,500 square feet (SF) southern lot at 161 N 4th St. Directly to the north, 171 N 4th St. is a vacant lot of roughly 4,000 SF. The requested lot line dissolution would combine the four (4) lots into one (1) lot of 0.220 acres. The address to 171 N 4th St. would become obsolete.

When originally subdivided, the lots downtown, in the Original Townsite, measured 25 feet by 100 to 105 feet. The narrowness of these lots makes it difficult for modern structures to conform with the current R/1 zoning minimum lot size, floor area ratio, parking and setback requirements. On some residential lots downtown, storage sheds or ADUs are infeasible to build without a variance or lot line adjustments. Lot line dissolutions are typically enlisted as a means to improve the adequacy of the lot size and feasibility of making improvements to the lot (e.g. adding an ADU or an addition). Staff is generally supportive of combining adjacent lots of common ownership as long as the no new nonconformance issues are created.

As shown on the lot line dissolution plat, the existing structure on Lots 21 and 22 (161 N. 4th) is nonconforming because the home is within both the front and rear-yard setbacks. The front deck also encroaches slightly onto the 4th Street right-of-way and a standalone shed is located within the rear yard setback. Per Section 17.88.010 and 17.88.030, a nonconforming structure may continue to be occupied provided that any future expansion of the structure does not further violate setback or off-street parking provisions of the Town Code.

In 2007, a prior owner of the property received conditional use approval for an ADU on 161 N. 4th, but the ADU was never built, a conditional use certificate was never signed or issued, and the conditions of approval of the CUP (payment of tap and dedication fees) were not satisfied, so the CUP approval is now void per Section 17.84.050(E). The applicant will need to apply for a new CUP if they desire to construct an ADU in the future.

The application meets the approval criteria outlined in Section 16.40.040 of the Town Municipal Code as follows:
A. The lot line adjustment or vacation does not result in the creation of additional lots;
The multiple lot line dissolution creates fewer lots.

B. The lot line adjustment or vacation does not result in the creation of lots that do not comply with town zoning requirements, including floor area ratio requirements, setback requirements, and minimum lot size requirements;
While the existing structure is a non-conforming structure as described above that may continue

to be occupied, the resulting single lot does not create any new nonconformance issues with R/1 zoning requirements of Section 17.20.

C. The lot line adjustment or vacation does not result in the creation of a lot or lots that will have an infeasible building envelope pursuant to any town setback, foot area ratio, or other building/zoning requirement; The adjustment should improve existing building envelopes.

D. All utility companies and/or any other beneficiaries having an interest in existing easements thereon have granted approval in regard to the disposition of existing easements as a result of the adjustment or vacation; There are no utility easements within the amended area.

E. All easements associated with property involved in the application are properly addressed and/or granted in the proposed deed(s) effectuating the adjustment or vacation;
There are no other easements associated with the property involved in this application.

F. The lot line adjustment or vacation does not alter or affect the location or arrangement of any other lot line within the subdivision; Adjacent properties will be unaffected.

G. No lot line adjustment or vacation has been granted by the town with respect to or in connection with the same property or any adjoining property under common ownership or control of same person within the past one (1) year; and
The Town has not granted any lot line adjustment or vacation for the same properties within the past year.

H. The lot line adjustment or vacation does not in any way adversely affect any surrounding lot.
The adjustment is to the internal boundaries of the subject properties, so it does not affect any surrounding lot.

The Applicant shall be notified in writing of the decision of the town within seven days from the date of such decision. In the event of denial of the application, the applicant will be advised of the reasons for the denial. Time for comments, questions and deliberations will be given tonight, concluding in approval, approval with conditions or denial of Resolution No. PZ 2024-5.

Thank you, Lauren Prentice, Assistant Town Planner

Assistant Planner Prentice reviewed the resolution with the commission. Alternate Commissioner Richard Parks asked if the combined size of the lot would be 0.22 acres and Assistant Town Planner Prentice confirmed. Town Planner Paul Smith noted a correction to the resolution, number three needed to be rewritten to state, "floor area ratio."

MOTION: Commissioner Westerlind made a motion to approve Resolution PZ 2024-5, A Resolution of the New Castle Planning and Zoning Commission Approving a Multiple Lot Line Dissolution for Property Located in the R-1 Residential District. Commissioner McDonald seconded the motion, and it passed on a roll call vote: Commissioner Westerlind: Yes; Commissioner Martinez: Yes; Alternate Commissioner Parks: Yes; Acting Chair Carey: Yes; Alternate Commissioner Rittner: Yes; Commissioner Apostolik: Yes; Commissioner McDonald: Yes.

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Commission Comments and Reports
Commissioner Parks reported Historic Preservation Commission (HPC) was a representative at the Town's Ice Cream Social. He stated there were not many residents who came by to speak with HPC. He stated the next HPC meeting would be focused on drafting a proposal to designate the town's cemetery.

Commissioner Rittner referenced page 43 of the Downtown Comprehensive Plan regarding desired features which outlined separate sidewalks, garages on alleys and front porches. Planner Smith clarified that both Comprehensive Plans speak to the matter of desired features for alleyway garages. Commissioner Rittner acknowledged that most of Castle Valley Ranch was already built without adhering to those desired features and added it would be unfair to request that from newer developers. She asked if the town were to annex additional land, should there be consideration to adhere to the desired features in the Comprehensive Plan. Acting Chair Carey shared that she found alley way garages have a significantly different urban presence however, she added that alleys are difficult in regard to adding more road for that access. Chair Apostolik shared the intent of the two Comprehensive Plans. Town Administrator Reynolds clarified that there existed wording that spoke to back alley garages in the Comprehensive Plans, however that wording was a suggestion and not mandatory. Chair Apostolik stated that the commission had to look at what each developer wanted to achieve with their plans. He added that the commission was not in a position to demand 'wants' and the Comprehensive Plan was a guide. Planner Smith stated that the development application comes to him first before it goes to the Planning and Zoning Commission. He said it was best to catch it early and discuss with the developers the desired features that were listed in the Comprehensive Plan as an initial review of the development application.

Staff Reports
Town Administrator Reynolds shared his experience with a recent webinar he attended regarding Planning and Zoning. He stated his relief of having a good P&Z Commission for New Castle and added his intention was to only share takeaways from the webinar as friendly reminders. He shared a resource flyer made by Deputy Town Clerk Bordelon that was used as a tool to help navigate public confusion involving the land use development application process.

From the webinar, he identified the focuses of a P&Z land use application process and the different complexities in planning details based on the review process: Sketch Plan, Community Open House, Preliminary and Final. A local example he shared was the TC Fuels Sketch Plan, where he received feedback from the developer stating the discussion of specific details felt to be too soon for them in the process of a land use application as a Sketch Plan meeting. He explained that staff made the decision a few years back to make an open house a mandatory step in the development application process whereby establishing a neighborhood 'reality check' with the public who may otherwise not attend a P&Z or Council meeting. He acknowledged that a Community Open House often lends itself to very specific planning comments from the public. Town Administrator Reynolds clarified that the finer details would be found in a Preliminary and Final application meeting and discussed examples with the commission. He explained that the cost spent on planning was far greater for the applicant as they progressed through the development process into more detailed

stages of planning, allowing for detailed discussions of the project in later stages of the application process.

Town Administrator Reynolds relayed the attended webinar message that a planning and zoning commission must treat each developer the same regardless of differences such as location of the developer's company. He acknowledged that the public could and has, in the past, commented on whether a developer was local to the valley or a nonlocal. He shared an example of the public feedback given to TC Fuels and described it as harsh commentary. He stressed the importance for the commission to remain unbiased and impartial. He added he had heard stories of other P&Z commissions straining relations with developers due to biased opinions. He shared highlights of a P&Z webinar that staff attended:

- Limit personal opinions. P&Z commissions do not get to pick the developer's business model for the proposed project. He added that the Comprehensive Plan helped to navigate general topics of development. He clarified that a discussion of affordability differed from discussing rental units versus sold units with a developer. Town Administrator Reynolds said a denial of a land use application could not be denied if it met code requirements.

- Limit personal preferences. Planner Smith shared the example of paint colors. He said architectural variation was part of the Comprehensive Plan but added when a discussion shifts from variation to something along the line of specific colors or materials – it would cross over into personal preferences.

Acting Chair Carey commented that the commission and the community had a stake in understanding if a development intended to be rentals or sold units and what the price point would be. She added that the questions the commission would ask could help the development team learn as they go through the application process as well as help education the public about the application. She said the questions the commission would ask should be intentional and thoughtful. She proposed to ask the town attorneys for best practices on how the commission can ask questions to get the desired information without overstepping boundaries with the developer. Town Administrator Reynolds agreed and clarified that questions were very important but taking into consideration where the developer was in the application process was something to consider. A suggestion he shared was to have the developer finish their presentation to the commission before any questions are asked.

Acting Chair Carey asked Planner Smith if there existed a quick reference sheet for the commission to know what to expect for a Sketch Plan versus a Preliminary Hearing. Planner Smith said there were many things not covered on a Sketch Plan such as sidewalks. He said depending on the developer, Sketch Plan could be fairly broad with project details or could be more detailed. Deputy Clerk Bordelon offered to create a quick sheet guide for the commission like she had made for the general public regarding the land use development process, specifically identifying required materials from the developer based on the stages of the application process. The commission agreed.

Town Administrator Reynolds discussed staff's efforts regarding packet materials and the timeline for the commission to review packets prior to a meeting. He reminded the commission that he or Planner Smith or Assistant Planner Prentice were available to review packet materials earlier with commissioners, when desired. Deputy Clerk Bordelon added that reminders for upcoming meetings were also listed in the email notices sent out to the commission.

Town Administrator Reynolds summarized the application process and timeline of Filing 11 and answered questions from the commission.

Review Minutes from Previous Meeting
MOTION: Commissioner Martinez made a motion to approve the June 26, 2024 meeting minutes. Acting Chair Carey seconded the motion and it passed unanimously.

MOTION: Commissioner Westerlind made a motion to adjourn the meeting. Commissioner McDonald seconded the motion and it passed unanimously.

The meeting adjourned at 8:55 p.m.

Respectfully Submitted,

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Chuck Apostolik, Chair

_____
Remi Bordelon, Deputy Town Clerk

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