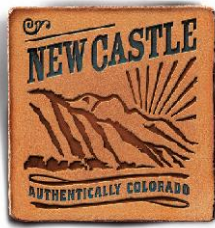


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Town of New Castle

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

Administration Department

Phone: (970) 984-2311

Fax: (970) 984-2716

www.newcastlecolorado.org

Agenda

New Castle Planning and Zoning Commission Regular Meeting

Wednesday, June 26, 2024, 7:00 PM

At the Community Center, 423 W Main Street

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 2024-4, A Resolution of the New Castle Planning and Zoning Commission Approving a Preliminary PUD Development Plan and Preliminary Subdivision Plat for Number 212329300194 (R2 Partners)**

Comments/Reports

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

Review Minutes of Previous Meetings

- B. Draft Minutes of May 8, 2024**

Adjournment

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



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

LAND DEVELOPMENT APPLICATION

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 | ☐ Conditional Use Permit or Special Review Use Permit |
| ☐ Annexation | ☐ Lot Line Adjustment or Dissolution |
| ☐ Subdivision (including Minor and Major Subdivisions, Lot Splits, Sketch Plans, Subdivision Preliminary Plans, Subdivision Final Plans, & Condominiumizations) | ☐ Site Specific Development Plan/Vested Rights |
| ☐ Amended Plat | ☐ Variance |
| ☒ Planned Unit Development (including PUD Sketch Plans, Preliminary PUD Development Plans, PUD Master Plans and Final PUD Development Plans) | ☐ Zoning |
| ☐ Master Plan Amendment | ☐ 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 21 day of MARCH, 2024

Barry Rosenberg

Applicant (Print Name)

614-266-7629

Telephone Number

b.rosenberg@r2partners.co

Email

Steve Craven

Property Owner

Seller to Buyer

Relationship of Owner to Applicant


Signature of Applicant

1009 Delta Avenue , Cincinnati OH

Mailing Address of Applicant

b.rosenberg@r2partners.co

Email Address of Applicant


Signature of Property Owner

343 Dakota Boulevard, Boulder CO 90304

Owner Mailing Address

Type of application: PUD PRELIMINARY PLAN

Property description: Vacant land in CVR PUD, Garfield County Parcel Number 212329300194
Revised 3/2021

**Town of New Castle**

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

**Planning & Code Administration
Department****Phone:** (970) 984-2311**Fax:** (970) 984-2716

Staff Report

**9 North Wild Horse
Castle Valley Ranch PA 8 & 9 Preliminary Plan
Resolution PZ #2024-4
Planning & Zoning Commission – June 26th, 2024**

Report Compiled: 6/20/2024

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 Wildhorse 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 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 (~765-1,365sf);
- Model 2: “Live/Work” focuses on professionals looking for adaptive designs and multi-functional space focused on a work-from-home end user (~690-960sf);
- 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 and VIX parking. The Applicant will maintain and allow public access to several existing single track trails that traverse the property from VIX park to the BLM property. 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

The preliminary plan submittal was completed on May 3rd, 2024 as the second of three application steps required for new planned unit developments (“PUD”) & subdivisions. At this step the plan shall demonstrate zoning conformance, compliance with the Town code, provisions for utilities and infrastructure, compatibility with the comprehensive plan, and address any adverse impacts to the Town. Unlike the sketch plan, the preliminary plan is assessed through a public hearing, culminating with an approval decision by the Planning & Zoning Commission (P&Z).

Within thirty (30) days after the close of the public hearing, or within such time as is mutually agreed by P&Z and the Applicant, P&Z shall make one of three decisions regarding the application: 1) approve the application unconditionally; 2) approve the application with conditions; 3) deny the application. A continuance may be granted pursuant to Section 16.08.040(G) of the code.

II Changes from October, 2023 Sketch Plan

At the January 24th P&Z meeting, the Commissioners unanimously endorsed the Applicant’s revisions to site plan. Key changes included (**See Exhibit AB**):

- Reconfiguration and shortening of the main ring-road;
- Relocation of two live/work buildings, reducing five total buildings to four;

- Increasing two, two-story live/work buildings to three stories;
- Reorientation of the two empty-nester buildings;
- Redesigned parking area for the live/work buildings;
- Townhomes altered to duplexes and triplexes from triplexes and fourplexes (increasing townhome building total from 8 to 10);

The table below previews essential updates made since the Community Open House Meeting on December 7th, 2023:

Sketch Plan	Preliminary Plan
• 130 residential rental units: 26townh, 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/intended	• No change
• 15 buildings including triplexes and quads	• 16 buildings including duplexes & triplexes
• 5 apartment buildings; 8 townh buildings	• 4 apartment buildings; 10 townh buildings
• All buildings two story or less	• Apartments B-3 & B-4 are three story
• Two active open space areas	• Replaced with passive open space areas
• MF-1 zoning; 35' building height	• MF-2 zoning; 40' building height
• Tallest building: Empty Nesters @ 33'	• Tallest building: B3/B4 (Live/Work) @ 38.1'
• 2,200 sf minimum lot area	• 1,600 minimum lot area
• Snow storage: discussed	• Snow Storage: 20.5% of road area;
• Live/Work units balconies included	• Live/Work units balconies removed
• Open space: Town owned & maintained	• Open space: Applicant owned & maintained
• Parking on both sides of N Wild Horse @ VIX Park	• Parking on one side of N Wild Horse @ VIX Park
• Townhomes: two-story, three and four-plexes	• Townhomes: two-story duplexes and triplexes
• Workforce housing: 2 live/work units	• Workforce housing: 5 live/work @ 75% FMV

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 preliminary 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 consistent with the natural character, contours, and viewsheds of the land.

1) *Is the proposal consistent with the comprehensive plan?*

Applicants are expected to clearly 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 to 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 planned within this application, commercial development is anticipated on the vacant parcel south of VIX Park. To meet Smart Growth objectives, the Planning Commission should consider how the current application will balance with the adjoining commercial venture. Though independently owned, the Town should be mindful as to how these two developments can mutually complement each other.

Trails/Open Space/Recreation: The trails shown on **Exhibit A, page 12**, 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 with trails 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 within the development’s interior. Taken together 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 recognizes the 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 in **Exhibit L**. Jake Stanton, the District Wildlife Manager, 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 has expressed a commitment to 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 onsite. Net-zero/all-electric appliances paired with solar PV or ground source heating are feasible methods to exploit especially considering the multitude of local, state, and federal incentives currently available.

At Sketch Plan, the Applicant 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 receive 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 proposed community is a unique attribute. 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 space that serves dual functions as a home and work area. The live/work units, for example, have adjustable dividers to repurpose space as needed. In sum, the diversity of housing works to stratify rent prices and makes housing attainable for varying income demographics.

9 North Wild Horse offers a community promoting quality of life. Price points will vary with unit type and should track the market rates of New Castle and Glenwood Springs. Of the 130 total units (**Exhibit A, 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 asking price of \$2,600.

Discussions around affordable housing in New Castle are bracketed by several features: 1) There are currently no price caps per vested rights required on rent (or sales) prices; 2)

the Comprehensive Plan indicates only that the town will create and preserve affordable housing as an **element** of all new development (**Goal HO-2**); 3) the comprehensive plan 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. Market values 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 H** and **Exhibit X**). Furthermore, the Applicant has also agreed to a housing provision for an onsite property manager in response to the Town’s concerns with property oversight. To conclude, the Applicant has made significant adjustments to the site plan and building architecture to produce a more economically viable product that reduce costs and makes housing more attainable.

Fiscal Impact: A fiscal impact study (**Exhibit G**) 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 off of the town’s budget averaged between the tax years of 2021 and 2024. The results, illustrated in **Exhibit A, page 5**, show an annual 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 consistent results. Based on the assumptions of the analysis, Staff is therefore confident that the development is fiscally viable.

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 demonstrated in the submittal packet (**Exhibit A, page 10**) 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: The maximum building height for the three story live/work buildings (**Exhibit A, page 38**) was increased to 38.1 feet, which was a topic of interest at the amended site plan meeting on January 24th, 2024. At that meeting P&Z expressed concern with the visual impacts of the increased height on the views to the north and east and discussed ways to mitigate conflicts. At least two of these methods were explored in the updated design: 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 feels that concerns with increased building height on the surrounding views will be alleviated.

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) 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 also been hospitable to adding transitional elements between uses 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 (**Exhibit A, page 9**). In anticipation of this, the Applicant includes open space buffering (~150’ separation) adjacent to homes along Buckskin Dr. Similar, if not more, 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 home design. Townhomes units will have horizontal and vertical displacement (stepping) to better resemble the SF home look. Note, the Applicant has elected to substitute balconies with tall glass windows and two shared open spaces for all live/work

buildings as a matter of safety and aesthetics (See Application email April 17, 2024 (**Exhibit AC**). Compare site plan from January 24th, 2024 (**Exhibit AB**)). Residential buildings without balconies are uncharacteristic for New Castle, the Watts Building across from the Town library being the only exception. Roof pitches have also been reduced to better accommodate the revised building heights. In the end, community feedback has been mixed with respect to the more urban, block style multifamily buildings characteristic of developments in Denver and parts of the Roaring Fork mid-valley, a style that might be deemed less compatible than what was viewed originally at sketch plan.

On the other hand, with a more conventionally urban approach the Applicant successfully minimizes sprawl and champions the more rural side 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, page 11**). 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 taken pains 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 (**Exhibit O**).

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 defensible 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 path extending towards the Lakota Links property. The Applicant has updated the site plan to address this concern **Exhibit A, page 9**. It is important that these routes be improved sufficiently enough to carry 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. Wildhorse

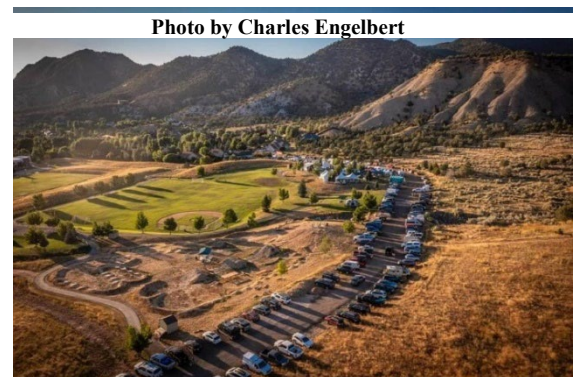
connector once all public improvements are accepted. Remaining streets will be private. Public Works agrees that speed, safety, and costs are priorities in road design. On-street parking serves to accommodate overflow vehicle parking for guests, deliveries, trash collection, extra resident vehicles, and emergency vehicles. Staff's preferred road design (58' ROW) is provided in **Exhibit A, page 17**, in juxtaposition with the Applicant's proposed cross-sections. Public Works has been considering the Applicant's street design alternatives and provides the following recommendations:

Vista Loop

<i>Applicant: ~52.5' ROW</i>	<i>Town: ~52' ROW</i>
• 5' sidewalks	• 6' sidewalks
• 6' green belts	• 5.5' green belts
• 10' drive lanes	• 10' drive lanes
• 8' parking lane inner radius	• 8' parking lane inner radius

Similarly, Public Works is motivated to provide extra parking on N Wild Horse Dr to meet parking demand during larger park events. Staff believes that N Wild Horse Dr. adjacent to VIX park needs as much parking as possible. The picture exemplifies the demand swell during annual events such as Rides-and-Reggae.

The proposed ROW from the plat shows 67.5' from edge of sidewalk. This ROW is inconsistent with the design illustration on **Exhibit A, page 17**, and wider by 5.5'. Staff recommends the following design which, importantly, adds parallel parking on the east side of N Wild Horse:



N Wild Horse @ VIX

<i>Applicant: ~62' ROW</i>	<i>Town: 66.5' ROW</i>
• 5' sidewalks	• 6' sidewalks
• 6' green belts	• 5.5' green belts
• 13' drive lanes	• 11' drive lanes
• 19' perpendicular parking @ VIX	• 19' perpendicular parking @ VIX
• No parking east side of NWH Dr.	• 8' parallel parking lane east side of NWH Dr.

The Town alternative would result in a 66.5' ROW with an additional 35-40 parking stalls. Further south on N Wild Horse, road design should revert back to the Town standard of 58'.

Snow Storage: Snow removal is located on the site plan (**Exhibit A, page 14**). 20.5% of total roadway area has been designated for snow storage which is 4.5% more than required. Ample snow storage is demonstrated on all separated sidewalks, Staff's preferred storage location. Though snow removal on private roads and parking lots will be managed by the property owners, private storage areas should be illustrated on the site plan.

Raw Water: Raw water is available at the north end of VIX Park and is expected to

irrigate all common 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, page 11**, 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 eight spaces in the live/work parking area will require charging 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 tenants. Fortunately, there appears to be an overage of eight units on the site plan. Nonetheless, the Applicant is considering how to address the matter. Staff recommends a parking plan be added to the covenants prior to final application with provisions for reserved parking in shared lots and prohibitions on overnight parking along N Wildhorse 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 58’ 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, page 12**). 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, page 12**). To reduce the overall development footprint, small, active parks have been replaced with passive open space and two small sitting areas (**Exhibit A, page 13**). 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, page 12**) follows the sloping topography downhill from northeast to southwest. Each unit or block of units generally steps gradually with the slope (**Exhibit A, pages 44-52**). Displacement between units helps to limit cut-and-fill and reduce the need for extensive landscape retention. Terracing of grade and structure softens the blunt, “blocky” appearance, and is a preferred fit with rolling terrain. The lot designs appear to maintain existing drainage features such as that found on the central single-track trail which bisects the development.

The ridgeline associated with Sunset Trail to the west is a prominent geologic feature enjoyed by New Castle residents. Per Policy EN-6B, visual access to the ridgeline is anticipated and illustrated by the Applicant in **Exhibit A, pages 48-50**. To mitigate building mass at the southwest elevation, modestly sized berms and drought resistant trees or shrubs could provide sustainable and more organic screening methods. It is relevant that the development slated for the parcel owned by TC Midwest will likely impact views from CVB to the east to such an extent that the buildings contemplated with this application will be obscured.

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.



IV P&Z Comments from October 25th, 2023 Sketch Plan Meeting:

The Applicant introduced the proposal to the Planning Commission on October 25th, 2023. The Commissioners provided constructive feedback, some of which is summarized below:

A. P&Z Questions/Applicant Answers

- Do leases restrict units types to certain tenant demographic (e.g. Are only retirees able to rent “empty nester” units)? **No; Unit types are open to anyone, but each is better suited for a certain type of tenant through unit layout and/or price-points.**
- Will lease agreements cap the number of occupants who can live in a unit at one time? **Yes**
- Will there be onsite management? **Not sure yet on property management provider.**
- Are you open to rent reduced units for local employees (i.e. teachers, first responders, etc.)? **We are open to a discussion. It is not offered on our other properties.**
- Do you have other developments in the state of Colorado? **We have developed in other others in the state but nothing to this level.**
- Have you used this type of niche specific development (i.e. three different models on one property) successfully? **Yes, outside the state.**
- Who is responsible for the infrastructure improvements? **Staff answer: The developer. N Wildhorse and the ring road will be conveyed to the Town.**
- Are you considering passive and/or active solar capacity? **All is on the table. We start with making units efficient. Then, solar production is considered for every project we do. Net zero is a priority.**
- Are the empty nesters single level? **Yes, they are flats...some open from lower floor, the others from the upper floor in the rear.**
- What are the projected rental prices? **Still early on this, but perhaps \$4,000-\$5,000 for the empty nesters and townhomes. \$2000-\$3000 for live/work units.**
- Who will manage the trails? **Still being decided.**
- What are the trail surfaces? **Still early but considering a more primitive type surface.**
- Are you considering more native, drought resistant vegetation? **Yes, native/natural landscaping is becoming standard in the Valley as a matter of water conservation.**
- Is there a private clubhouse amenity for residents similar to other developments you’ve built? **Outdoor space is not fully designed yet. Priority will be to “amenitize” the outdoor space versus indoor type recreation. Outdoor lifestyle is a New Castle value, but community gathering areas will be considered.**
- Is snow storage shown on the site plan? **Staff response: No fully addressed at this time, however separated sidewalk buffers will be main areas for storage. N Wildhorse storage will need to be clarified.**
- Why does Staff want a 58’ ROW near the townhomes? **Staff response: it provides for better quality of life and was the preferred cross-section for recently approved street design. Residents tend to expect parking on the street in front of homes. Speeding will be addressed with narrower drive and parking lanes.**

B. Recommendations

- Provide way for fulltime property management to live onsite (as necessary).
- N Wildhorse at VIX park looks busy and potentially congested. Partner with town for traffic calming strategies such as bump outs near trail access points. Provide N Wildhorse cross-section in plan set.

- Consider fire resistant materials and defensible space around buildings.
- Show which trails are public (town maintained) and which are private.
- Provide hi-visibility crosswalk at N Wildhorse towards central trail and at the central trail where it crosses the ring road, towards BLM.
- The mix of unit types and site planning is commendable.
- Provide building heights on plan set.
- 1300-1400sf for three bedroom unit is a tight space. Could be difficult from a livability/practicity perspective.
- Projected price points seem competitive with home ownership prices.
- Be clear on public and private open space so the public can know that trails will still be accessible to the entire Town.
- During grading, consider salvaging as many existing plants and trees (junipers, pinyons, shrub oak, rabbit brush, etc.) as possible, in light of their age and history in New Castle.
- Work hard to make sure roof lines do not exceed ridge lines such as Sunset Trail.
- Provide viewshed image looking from Sunlight Trail back west.
- 52' ROW of ring road should be reconsidered by Staff in order to limit further sprawl.
- RV space requirement does not seem pertinent to this development.

V Staff Recommendations

Staff suggests that P&Z explore the following recommendations to the preliminary PUD application prior to deciding on Resolution *PZ 2024-4*:

A. Staff recommends the following road designs for proposed public rights-of-way:

Vista Loop: ~52' ROW

- 6' sidewalks
- 5.5' green belts
- 10' drive lanes
- 8' parking lane inner radius (as illustrated in Exhibit A site plan)

N Wild Horse Dr adjacent to VIX Park: ~66.5' ROW

- 6' sidewalks
- 5.5' green belts
- 11' drive lanes
- 19' perpendicular parking @ VIX
- 8' parallel parking lane east side of NWH Dr.

N Wild Horse Dr south of VIX Park: ~58' Town standard

- 6' sidewalks
- 5.5' green belts
- 11' drive lanes
- 8' parallel parking lane

B. 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. 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. 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.
- 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.
- 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.
- 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.
- 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.
- J. All trash dumpsters shall be located within an approved trash enclosure that extends six feet high and includes a bear resistant latching mechanism.
- K. A declaration of covenants for the common interest community that are to the satisfaction of the Town Attorney.
- 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".
- M. The Applicant shall submit a memorandum proposing Netzero building strategies to be included with the development.
- N. A subdivision improvements agreement containing an engineer's stamped cost estimate of public improvements, to the satisfaction of the Town Attorney.
- O. 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;
- P. Landscaping shall incorporate native grasses and plants that minimize maintenance, moving, 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.
- Q. All disturbed areas in the project shall be revegetated and maintained in a predominantly weed free condition.
- R. Reach agreement with the Town about ownership and maintenance of roadways, trails and sidewalks.
- 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.
- 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.
- U. Request approval of street names through Garfield County Communications to avoid any duplication of names in the county dispatch area.
- 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 the public improvements has been received by the Town.
- 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.

VI Duration of Preliminary Plan Approval

Preliminary plan approval granted pursuant to this Section 17.100.050 will remain in effect for one (1) year from the date of the P&Z's resolution. If the Applicant does not submit a final PUD plan application within said year or if the preliminary PUD plan application includes substantial changes (e.g., proposes new uses, higher density development, changed layout, new or additional variances, etc.) from the as-approved preliminary PUD plan, then, at the discretion of the Town Administrator, the applicant may be required to obtain approval of a new preliminary PUD plan application before filing a final PUD plan application.

VI Preliminary Plan Exhibits:

- A. Applicant Preliminary Plan Submittal – May 3, 2024
- B. Geotechnical Study – June 12, 2006
- C. Traffic Impact Study – April 4, 2024
- D. Easement Agreement for Wildhorse Drive – April 17, 2007
- E. Applicant Engineering Report – March 22, 2024
- F. Legal Water Supply – May 3, 2024
- G. Fiscal Impact Study – April 10, 2024
- H. Workforce Housing Proposal
- I. Brief Description of Proposed Covenants
- J. Adjacent Property Owners within 250 feet
- K. Land Title Commitment
- L. CPW Comments – May 8, 2024
- M. CRFR Fire Marshal Referral, Orrin Moon – Oct. 17, 2023
- N. Garfield County Road Name Comments – April 15, 2024
- O. Town Police Chief Referral, Chuck Burrows – May 29, 2024
- P. Town Public Works Director Referral, John Wenzel – May 31, 2024
- Q. Town Engineer Referral, Jeff Simonson – May 31, 2024
- R. Floodplain Updates, needed prior to Final – June 6, 2024
- S. Town Attorney Referral, Michael Sawyer – June 3, 2024
- T. CDOT Referral Letter – April 23, 2024
- U. CenturyLink/Lumen Will Serve Letter – July 11, 2023
- V. Comcast Will Serve Letter – April 17, 2024
- W. Xcel Will Serve Letter – July 13, 2023
- X. Strategic Multifamily Analysis – May 16, 2023
- Y. Net Zero Proposed – May 29, 2024
- Z. P&Z Public Hearing Notice for June 26, 2024, with Legal Description
- AA. Notarized Affidavit of Notice of Public Hearing – June 13, 2024
- AB. Pages from Sketch Plan, revised site plan – January 24, 2024
- AC. Applicant Explanation of Architectural Changes – April 17, 2024
- AD. Applicant Referral Comment Review Memo – June 19, 2024
- AE. Applicant Referral Comment Table – June 19, 2024

9 NORTH WILD HORSE PRELIMINARY PLAN APPLICATION



DHM DESIGN LANDSCAPE ARCHITECTURE
URBAN DESIGN + LAND PLANNING
ECOLOGICAL PLANNING



Land+Shelter
ARCHITECTURE AND PLANNING



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PROJECT NARRATIVE

The following documents constitute the Preliminary 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 11.5 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. The remaining land to the north and south of the development area is designated as open space. 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 draft Plat Map illustrates how the Parcel is to be divided. There are four distinct boundary types proposed:

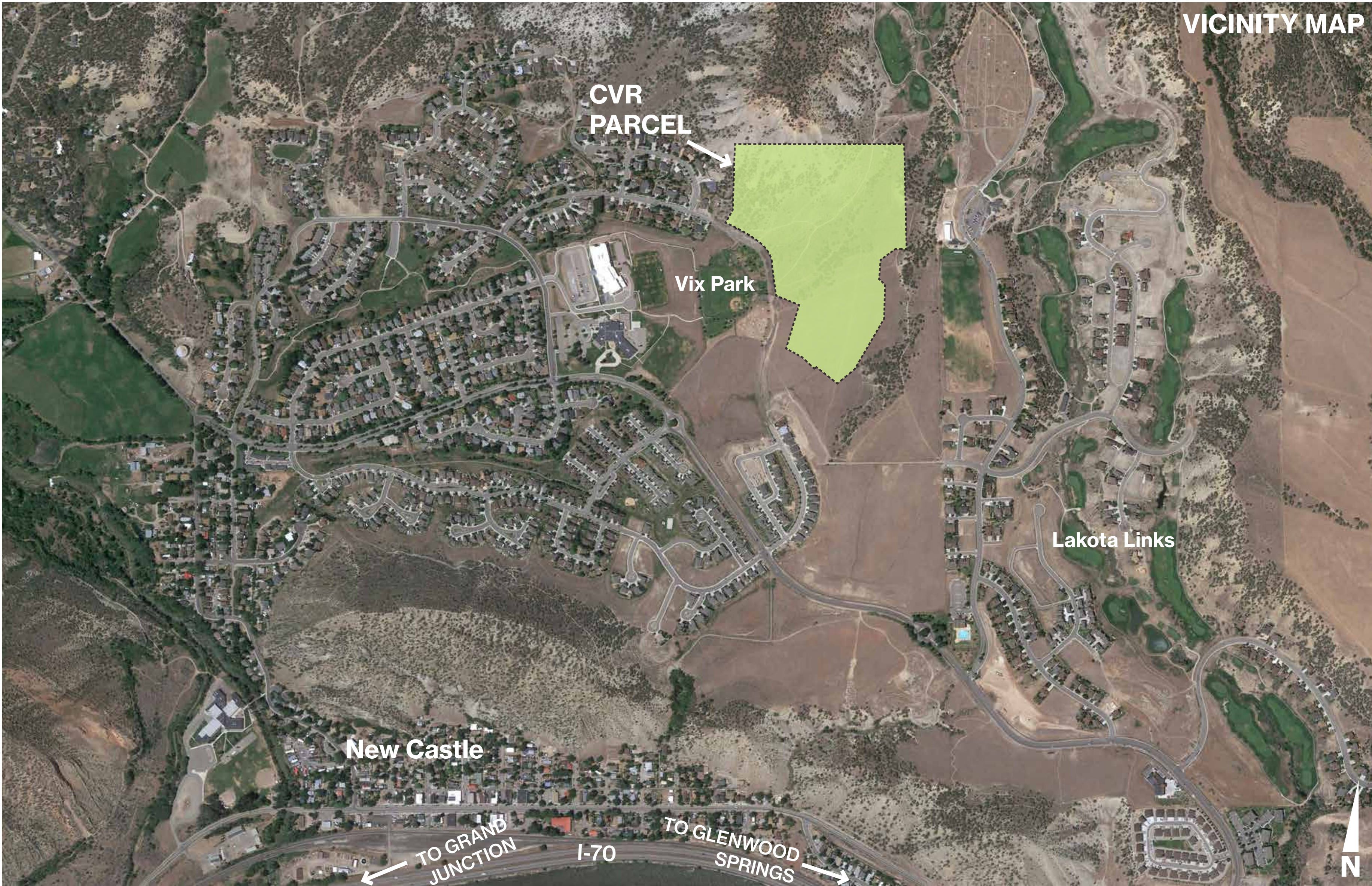
- Street Rights-of-Way to be dedicated to the public
- The development area, including residential building lots and private roads and parking
- Open space, including private resident and public access areas
- Seller retained land

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 11.5 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
- 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 vernacular, 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 Preliminary Plan application.

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';

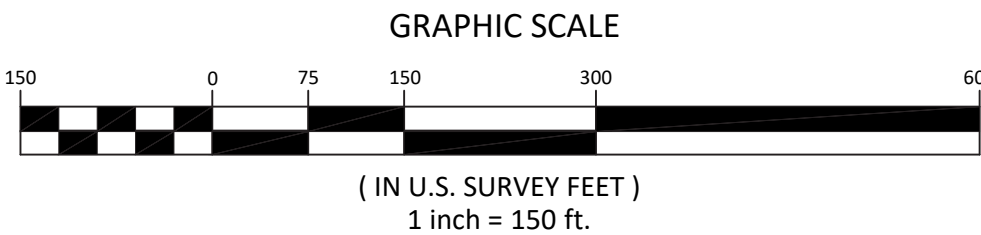
Thence the following three (3) courses along the westerly lines of said 'Option Property';

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



SURVEYOR'S STATEMENT

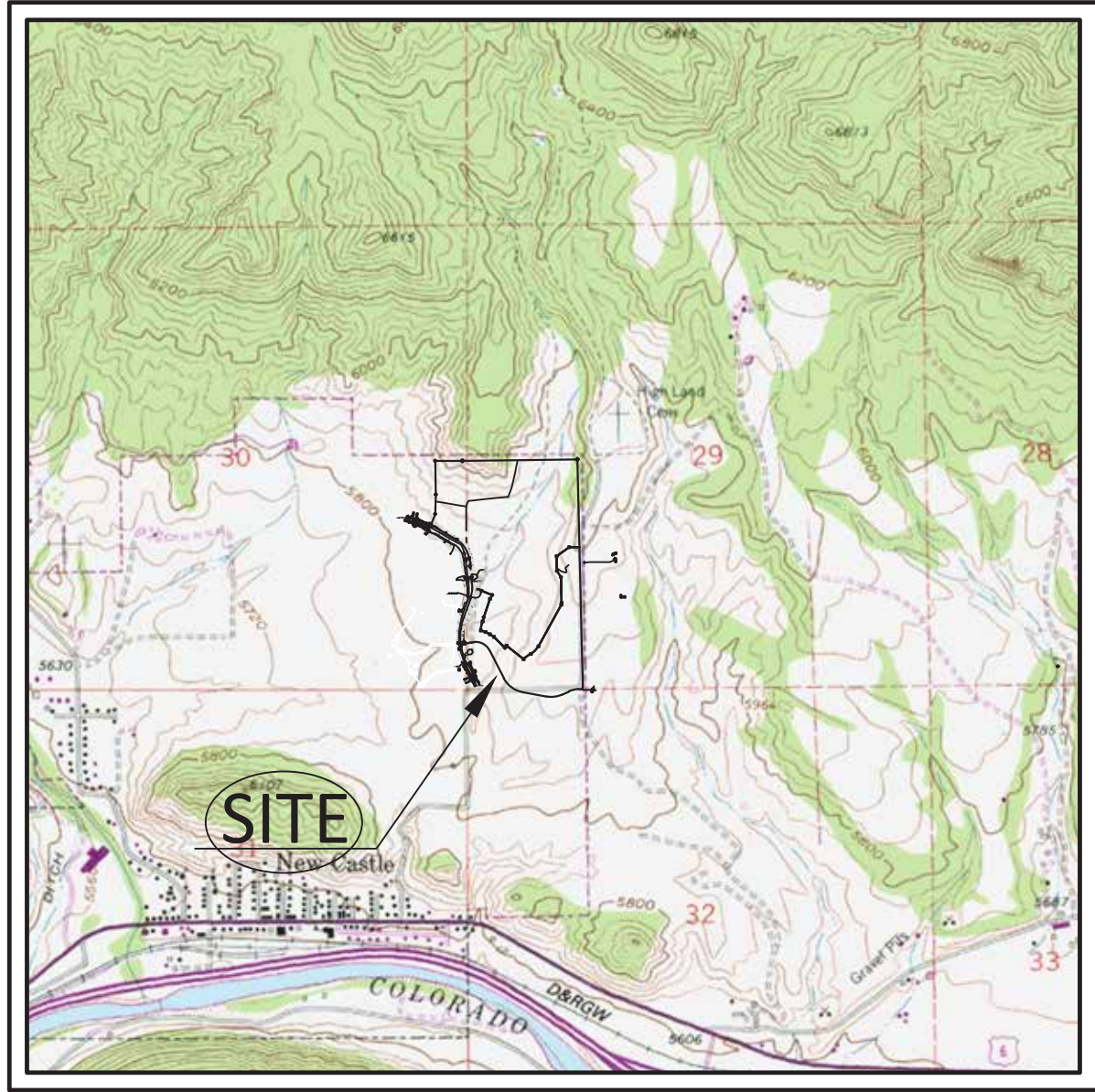
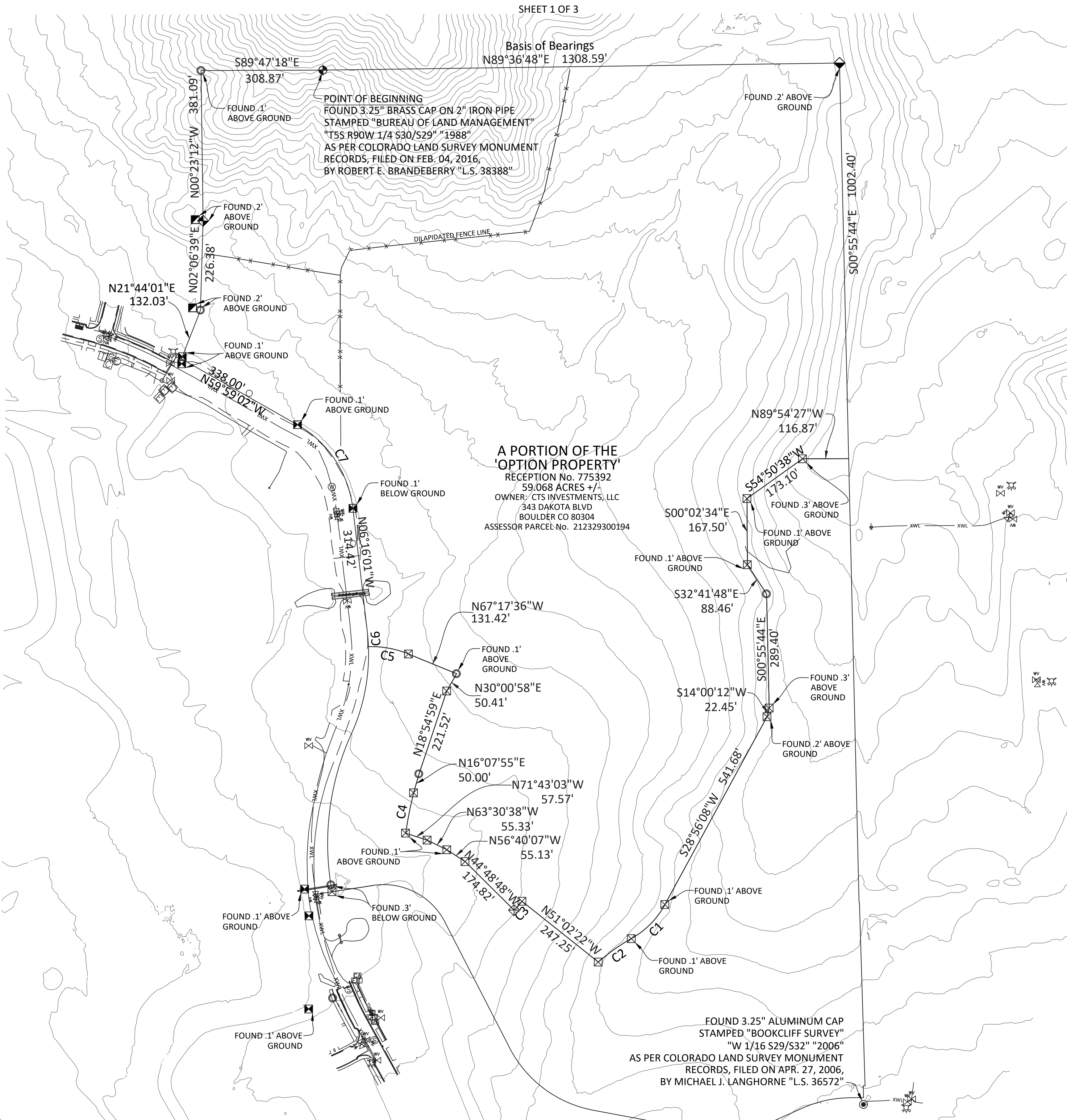
I, Mark S. Beckler, do hereby state that this survey was prepared by Sopris Engineering, LLC for CTS Investments, LLC, a Colorado Limited Liability Company, and that it is true and correct to the best of my knowledge and belief.

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'

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) G5C1 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

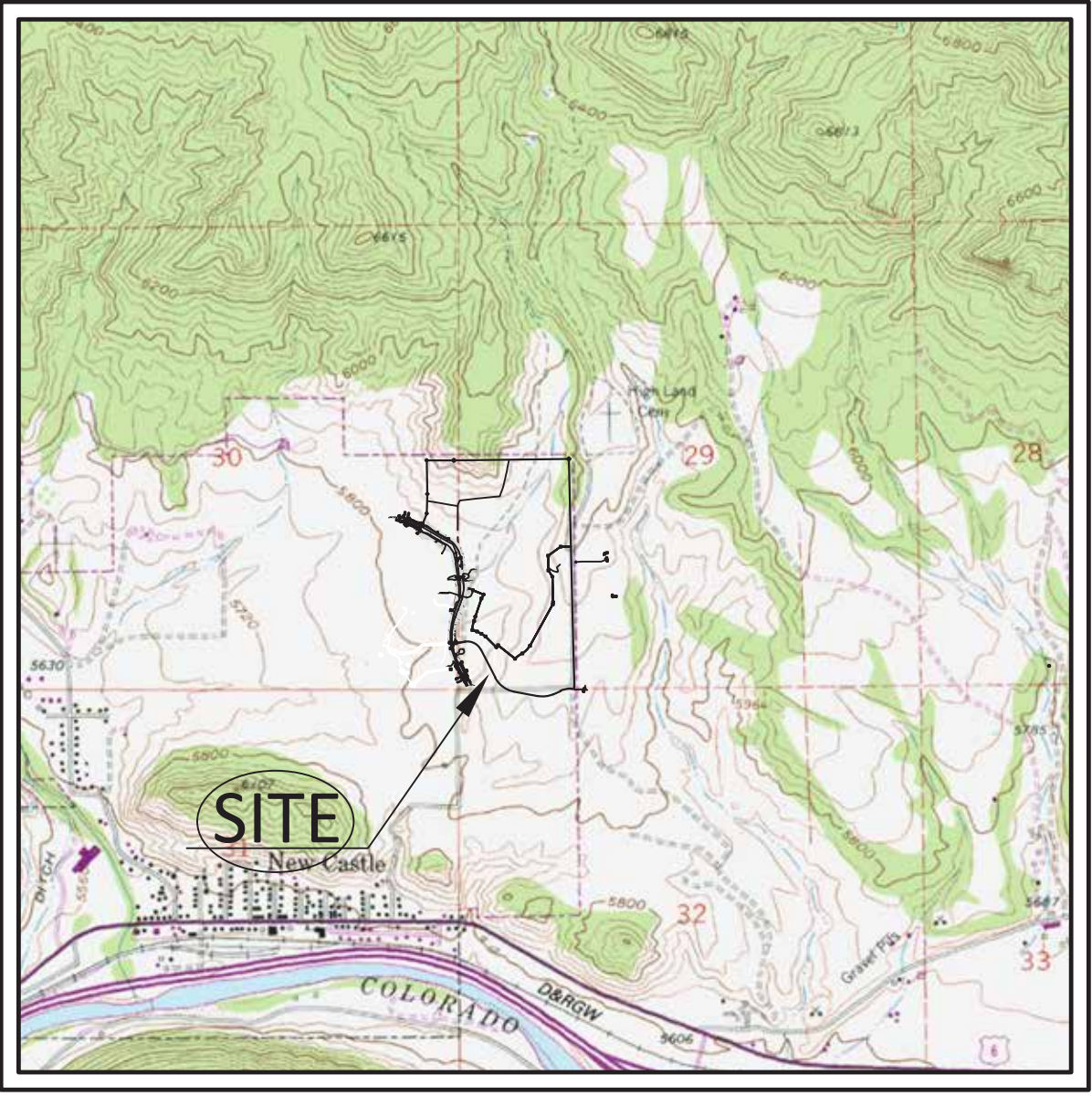
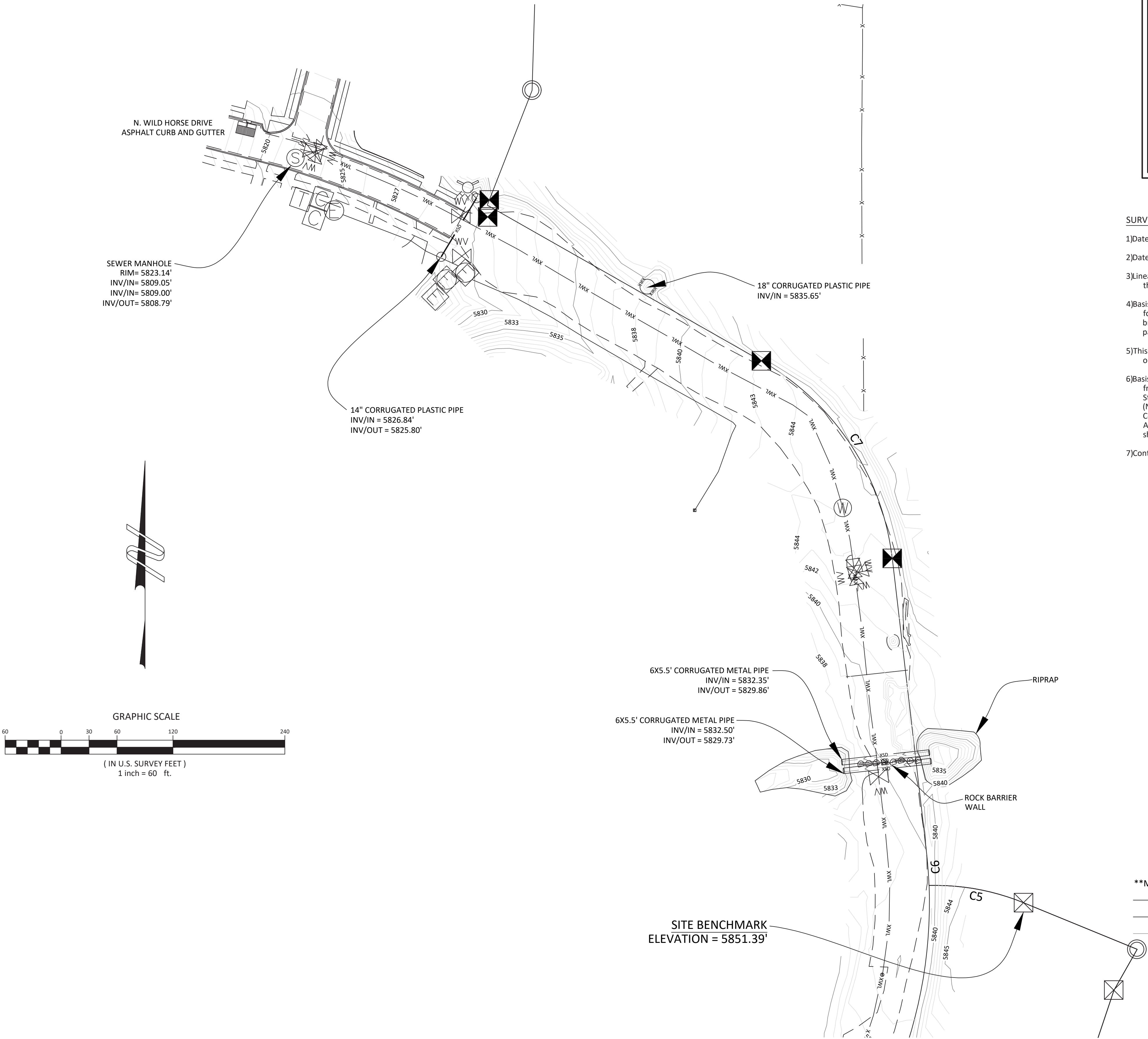
	CABLE LINE LOCATION
	COMCAST PEDESTAL
	TELEPHONE PEDESTAL
	SEWER MANHOLE
	STORM MANHOLE
	STORM INLET
	ELECTRIC TRANSFORMER
	ELECTRIC RISER
	LIGHT POLE
	EXISTING FIRE HYDRANT
	WATER VALVE
	FOUND BRASS CAP
	FOUND ALUMINUM CAP
	FOUND #5 REBAR
	FOUND #4 REBAR & YELLOW PLASTIC CAP STAMPED "L.S. 13501"
	FOUND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

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TOWN OF NEW CASTLE, COLORADO

SHEET 2 OF 3



- SURVEY NOTES**
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 - 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
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- UNDERGROUND ELECTRIC
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SURVEYOR'S STATEMENT

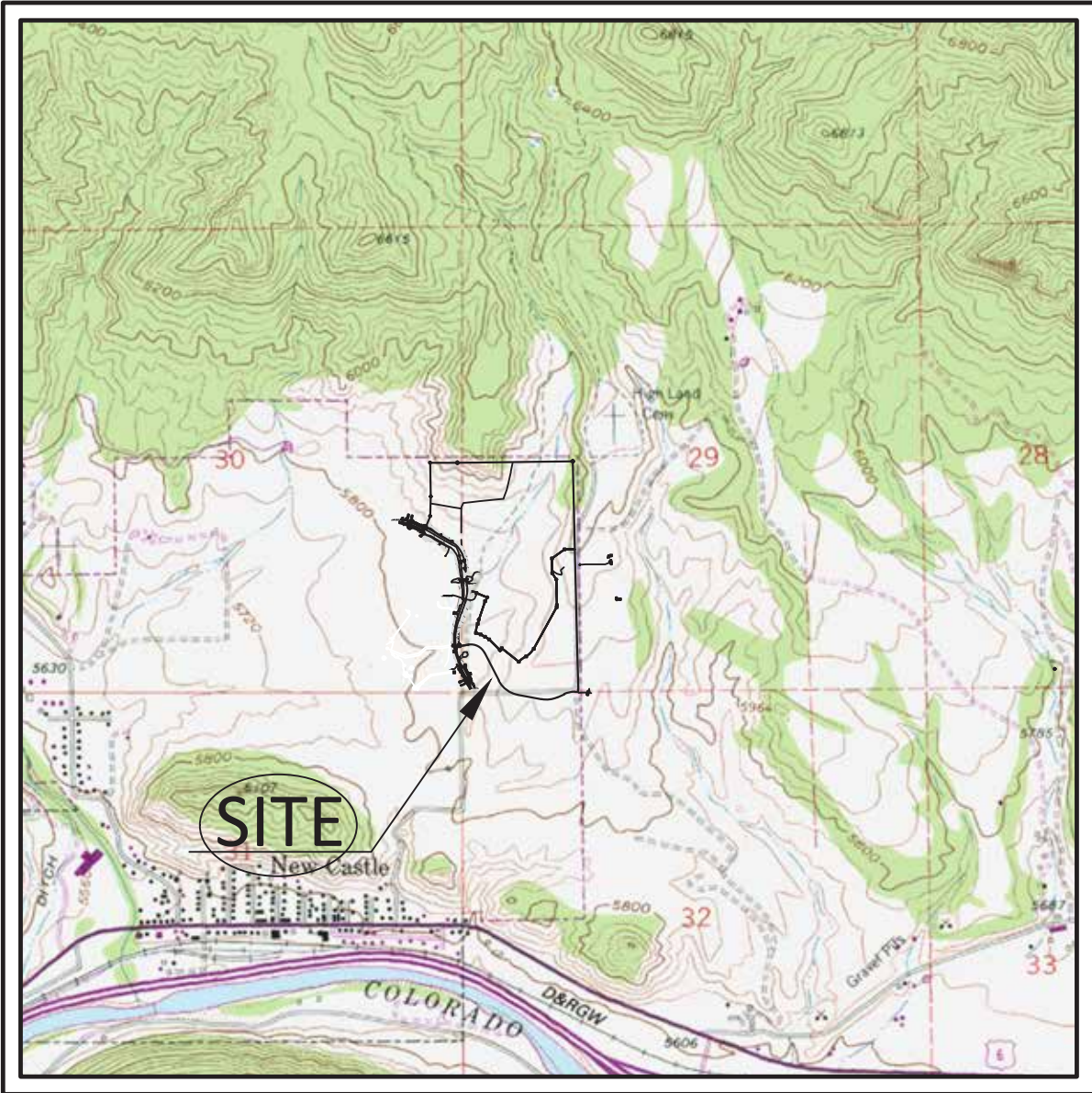
I, Mark S. Beckler, do hereby state that this survey was prepared by Sopris Engineering, LLC for CTS Investments, LLC, A Colorado Limited Liability Company, and that it is true and correct to the best of my knowledge and belief.

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

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

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TOWN OF NEW CASTLE, COLORADO



VICINITY MAP
SCALE: 1" = 2000'

SURVEY NOTES

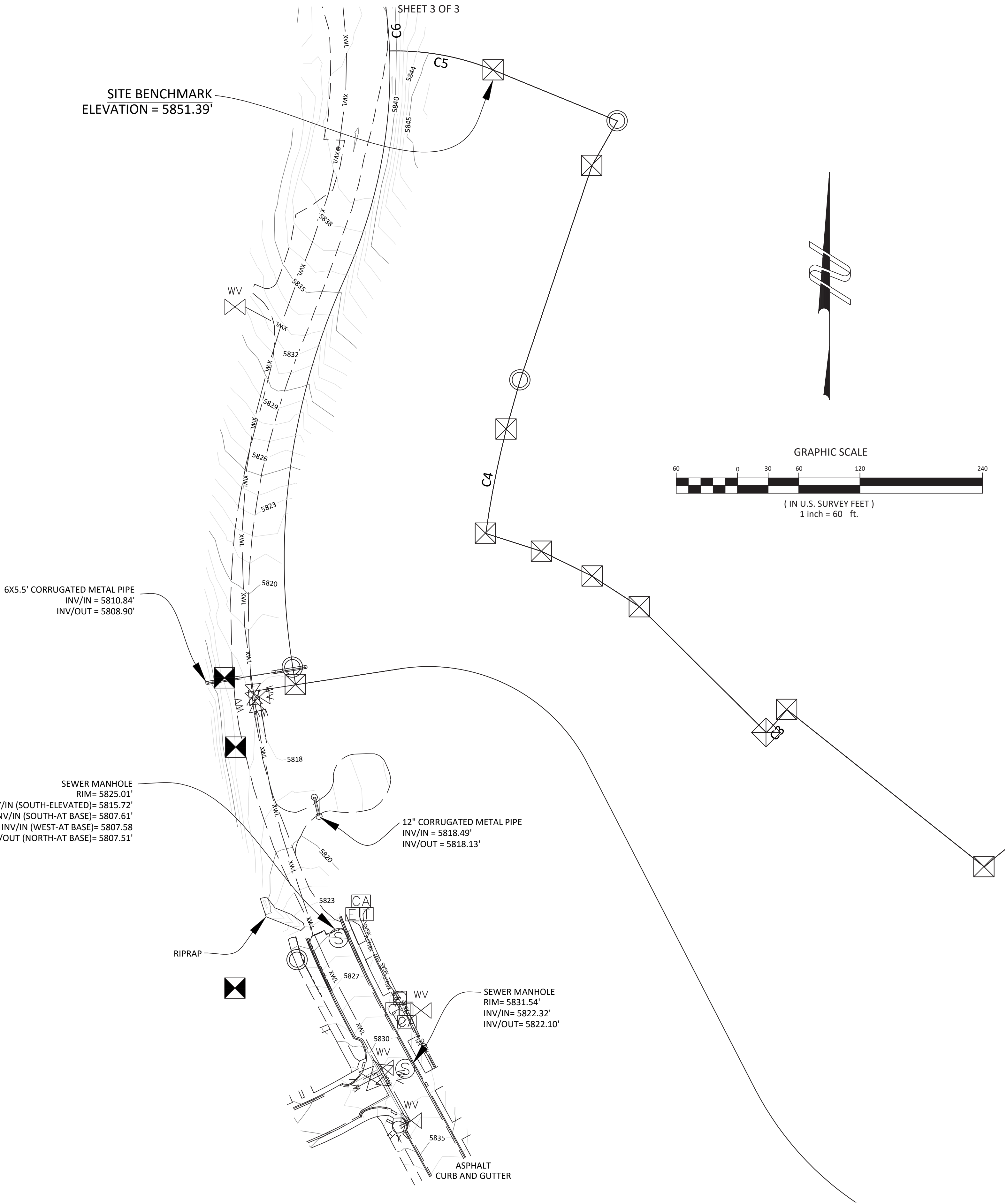
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- 7)Contour interval one (1') foot.

EXISTING CONDITIONS LEGEND

- | | |
|--|--|
| | CABLE LINE LOCATION |
| | COMCAST PEDESTAL |
| | TELEPHONE PEDESTAL |
| | SEWER MANHOLE |
| | STORM MANHOLE |
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- **MONUMENTS WERE FOUND FLUSH WITH THE GROUND UNLESS OTHERWISE STATED**
- | | |
|--|----------------------|
| | UNDERGROUND ELECTRIC |
| | WATER LINE |
| | WIRE FENCE |

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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
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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 "1/4 530/29 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°02'23" 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 Northeastery 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 Northeastery line of North Wild Horse Road, being situated parallel to and 67.50 feet Northeastery 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 39°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.

Mayor

Witness my hand and the seal of the Town of New Castle.

Attest:

Town Clerk

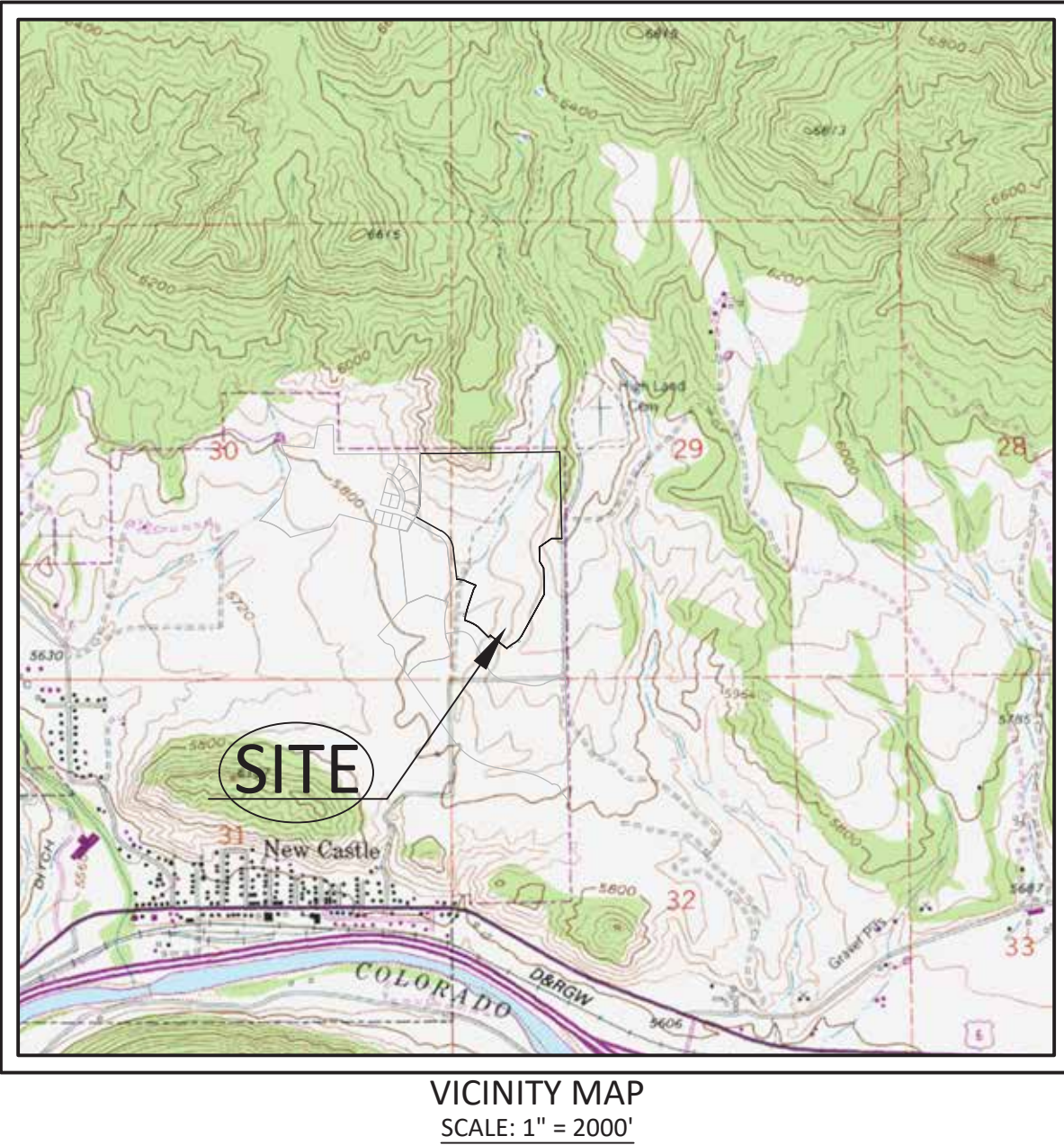
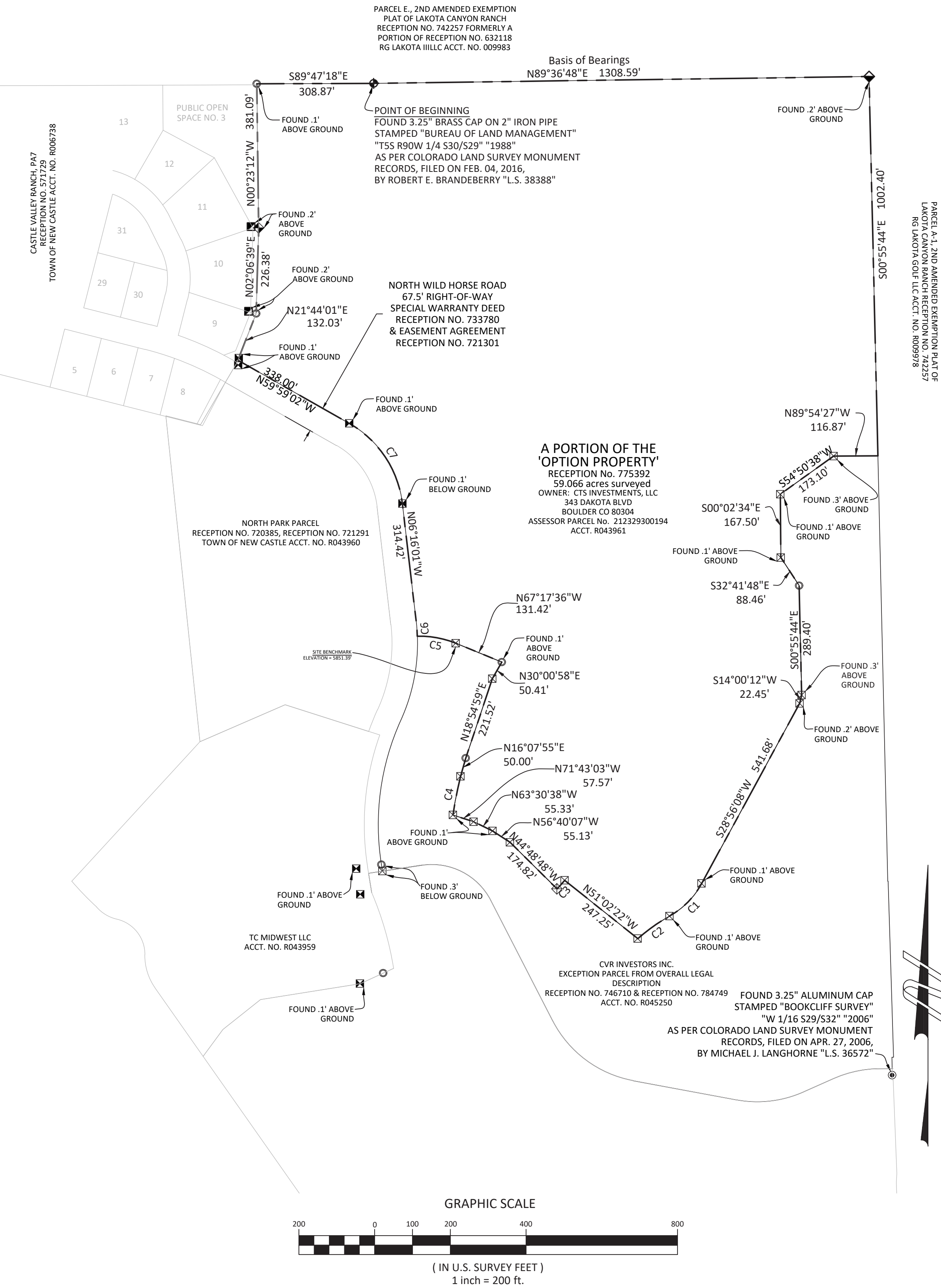
TITLE INSURANCE COMPANY CERTIFICATE

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'

PRELIMINARY PLAT OF:
9 NORTH WILD HORSE PUD SUBDIVISION
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 2
SUBJECT PROPERTY DESCRIPTION, CERTIFICATES AND NOTES, AND MONUMENT CONTROL



EXISTING CONDITIONS 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"
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MONUMENTS WERE FOUND FLUSH WITH THE GROUND UNLESS OTHERWISE STATED

SURVEY NOTES

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- 2) Date of Preparation: March-April, 2024.
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- 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 AB563019458 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.

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.

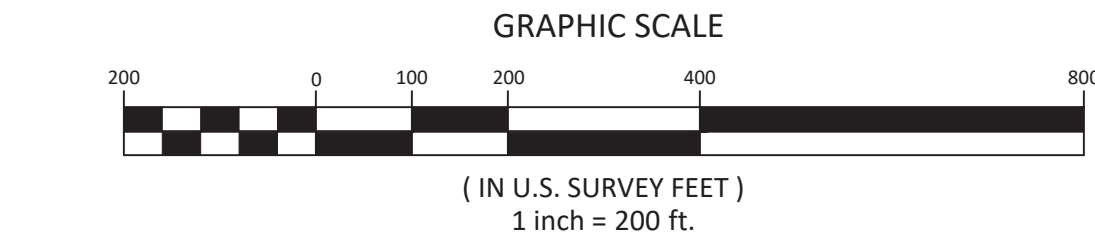
In witness whereof I have set my hand and seal this ____ day of ____, AD. 2024.

MARK S. BECKLER
Registered Land Surveyor #28643

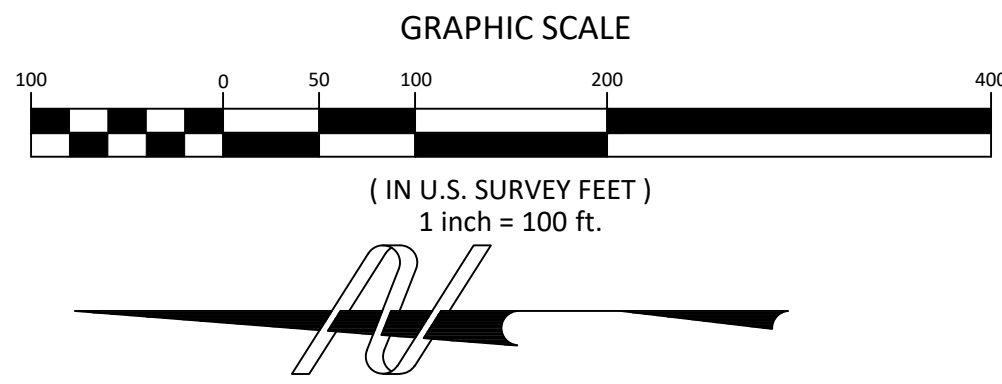
CLERK AND RECORDER'S CERTIFICATE

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



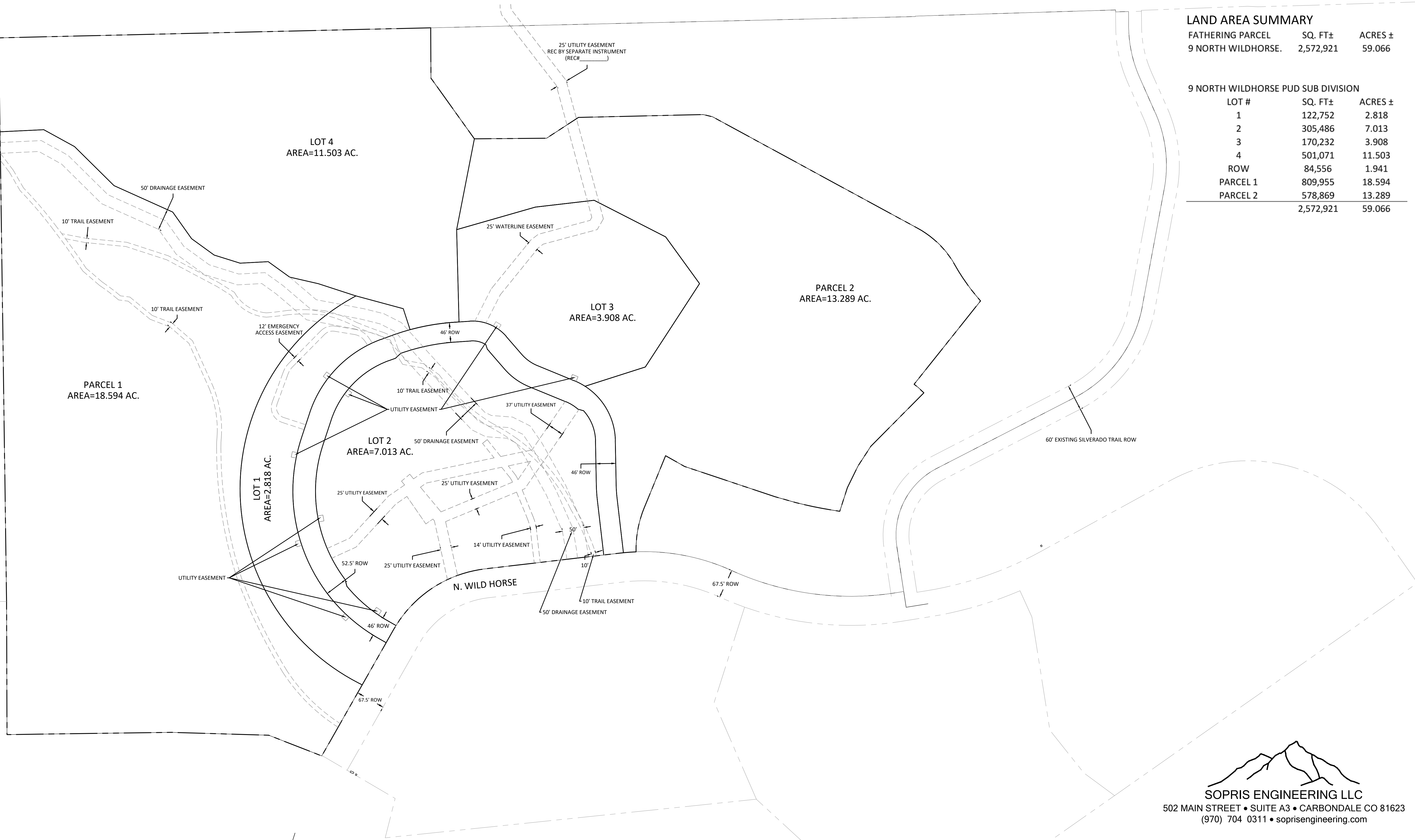
SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3 • CARBONDALE CO 81623
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PRELIMINARY PLAT OF:
9 NORTH WILD HORSE PUD SUBDIVISION

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TOWN OF NEW CASTLE, COLORADO

SHEET 2 OF 2
THE PUD SUBDIVISION BOUNDARY, LOTS, RIGHTS-OF-WAY AND PARCELS, AND EASEMENTS



LAND AREA SUMMARY

FATHERING PARCEL	SQ. FT±	ACRES ±
9 NORTH WILDHORSE.	2,572,921	59.066

9 NORTH WILDHORSE PUD SUB DIVISION

LOT #	SQ. FT±	ACRES ±
1	122,752	2.818
2	305,486	7.013
3	170,232	3.908
4	501,071	11.503
ROW	84,556	1.941
PARCEL 1	809,955	18.594
PARCEL 2	578,869	13.289
	2,572,921	59.066

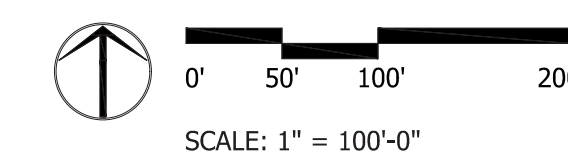
ILLUSTRATIVE SITE PLAN

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



Exhibit A



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

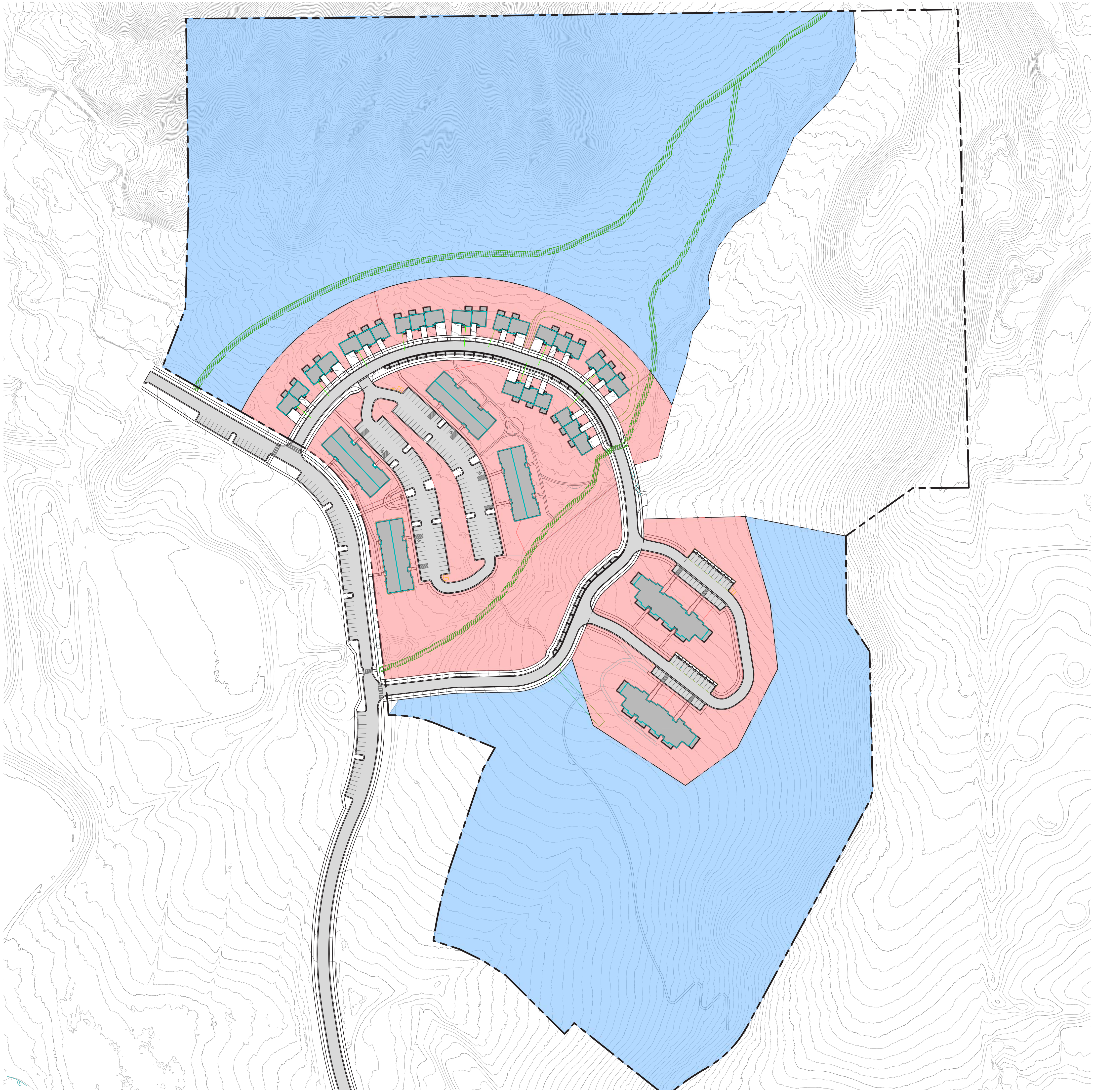
TOTAL PARKING PROPOSED
WITHIN NORTH WILD HORSE ROW = 115 SPACES

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:

Exhibit A





LEGEND

- PASSIVE OPEN SPACE
OWNED BY HOA / CIC
1,481,996 sq ft (34 acres) TOTAL
- DEVELOPMENT OPEN SPACE
OWNED BY HOA / CIC
420,931 sq ft (9.6 acres) TOTAL
- PUBLIC ACCESS TRAIL EASEMENT

NOTES

- PASSIVE OPEN SPACE TO INCLUDE UNDISTURBED ACREAGE AND TRAILS OUTSIDE OF THE AREA OF DEVELOPMENT. PUBLIC ACCESS EASEMENTS TO BE DEFINED FOR TRAIL USAGE.
- 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.

DHM DESIGN



Land+Shelter
ARCHITECTURE AND PLANNING



9 NORTH WILD HORSE
New Castle, Colorado

PROJECT NUMBER: DATE
Project #23100 04/12/2024
DESIGNED:
DRAWN:
CHECKED:

REVISIONS:

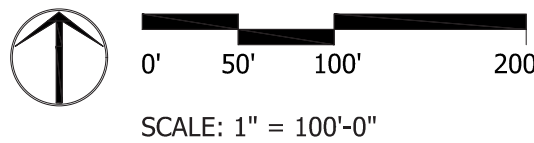
JOB DESCRIPTION:

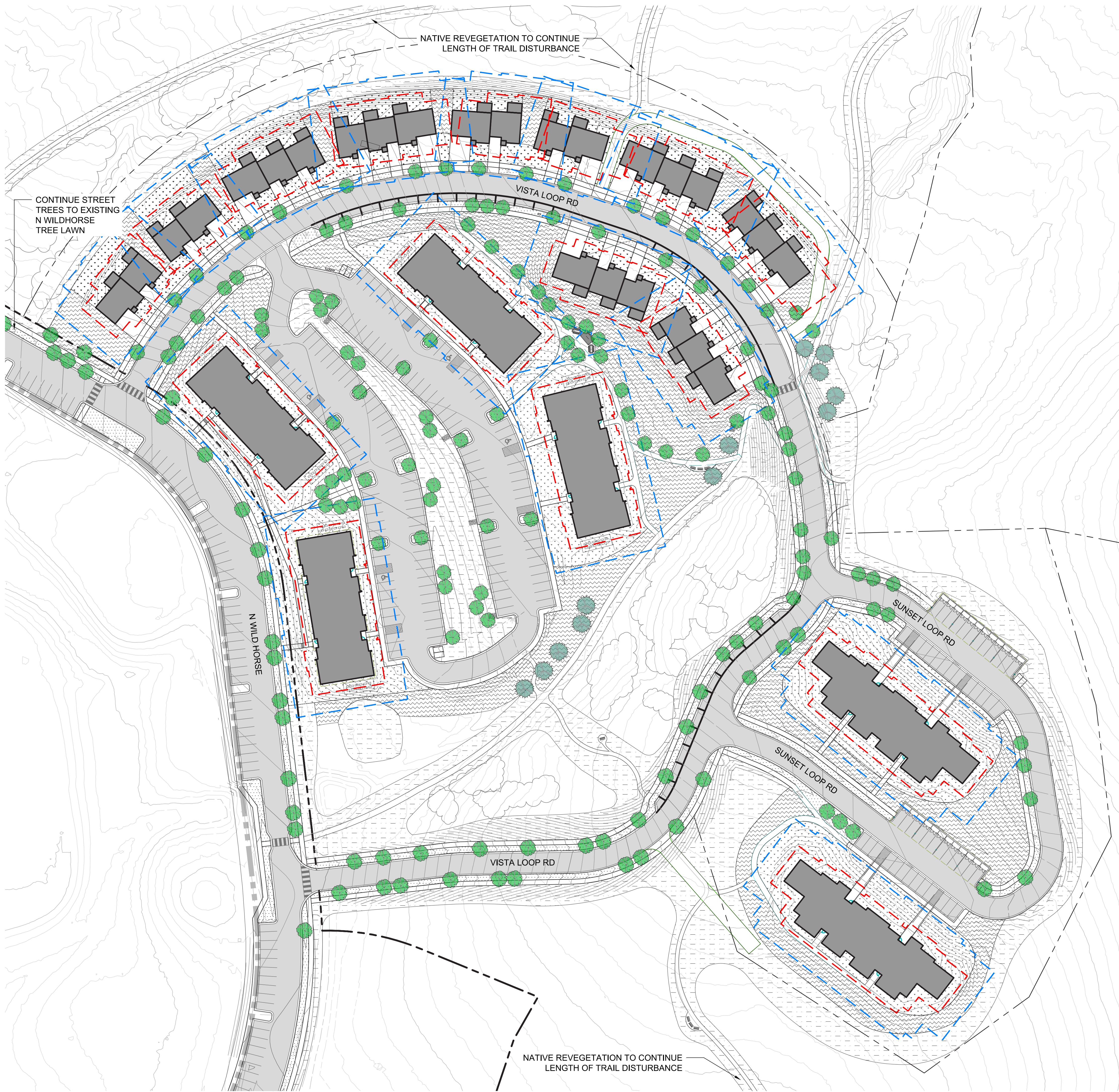
SHEET TITLE:
OPEN SPACE
PLAN

SCALE:
SHEET NUMBER:

L-0.1

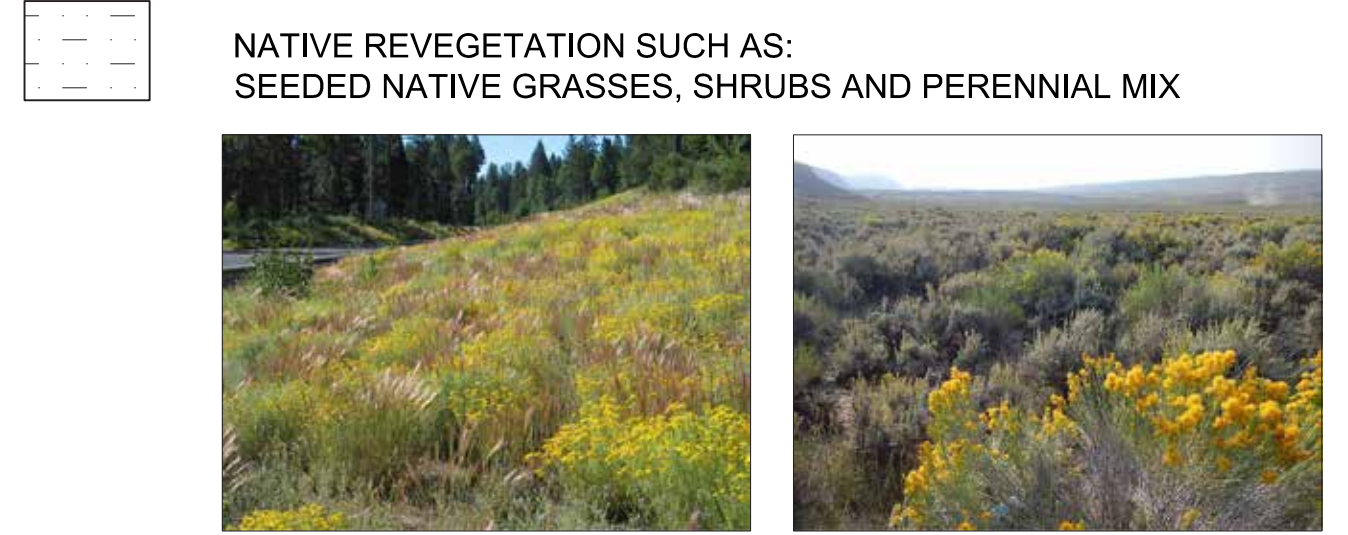
SHEET OF





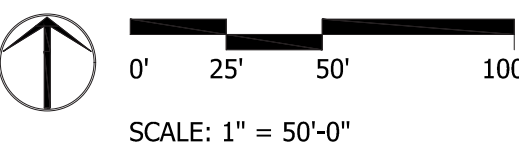
LEGEND

- PROPERTY BOUNDARY
- INTERNAL LOT LINES
- PROPOSED DECIDUOUS TREE SUCH AS:
STREET TREES
ACER GRANDIDENTATUM ROCKY MOUNTAIN GLOW / ROCKY MOUNTAIN GLOW MAPLE
GLEDITSIA TRIACANTHOS INERMIS SHADEMASTER / SHADEMASTER HONEYLOCUST
KOELREUTERIA PANICULATA / GOLDEN RAIN TREE
MALUS 'SPRING SNOW' / SPRING SNOW CRABAPPLE
SORBUS AUCUPARIA CARDINAL ROYAL / CARDINAL ROYAL MOUNTAIN ASH
ULMUS WILSONIANA 'PROSPECTOR' / PROSPECTOR ELM
LANDSCAPE TREES
CRATAEGUS CRUS-GALLI INERMIS / THORNLESS COCKSPUR HAWTHORN
QUERCUS RUBRA / NORTHERN RED OAK
- PROPOSED EVERGREEN TREE SUCH AS:
LANDSCAPE TREES
JUNIPERUS MONOSPERMA / ONE SEED JUNIPER
PINUS ARISTATA / BRISTLEcone PINE
PINUS EDULIS / PINON PINE
- EXISTING VEGETATION TO REMAIN
- 10' WUI TREE CLEARANCE ZONE
- 30' WUI FUEL MODIFICATION ZONE



NOTES

- 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





LEGEND

SNOW STORAGE AREAS
TOTAL SNOW STORAGE = 22,675 SQ FT
20.5% OF TOTAL ROADWAY AREA

TRASH ENCLOSURES

MAILBOX CLUSTERS

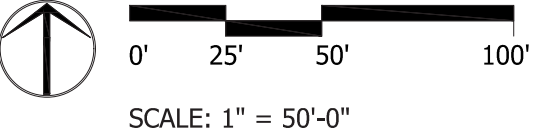


Exhibit A

DHM DESIGN

Land+Shelter
ARCHITECTURE AND PLANNING

9 NORTH WILD HORSE

New Castle, Colorado

PROJECT NUMBER: DATE
Project #23100 04/12/2024

DESIGNED:
DRAWN:
CHECKED:

REVISIONS:

JOB DESCRIPTION:

SHEET TITLE:
SERVICE AREAS
AND SNOW
STORAGE

SCALE:
SHEET NUMBER:

L-1.1

SHEET OF

DATE:		04-12-2024	
JOB NO.		33011.01	
DESIGNED BY	AKC		
DRAWN BY	JPP		
CHECKED BY	YTN		

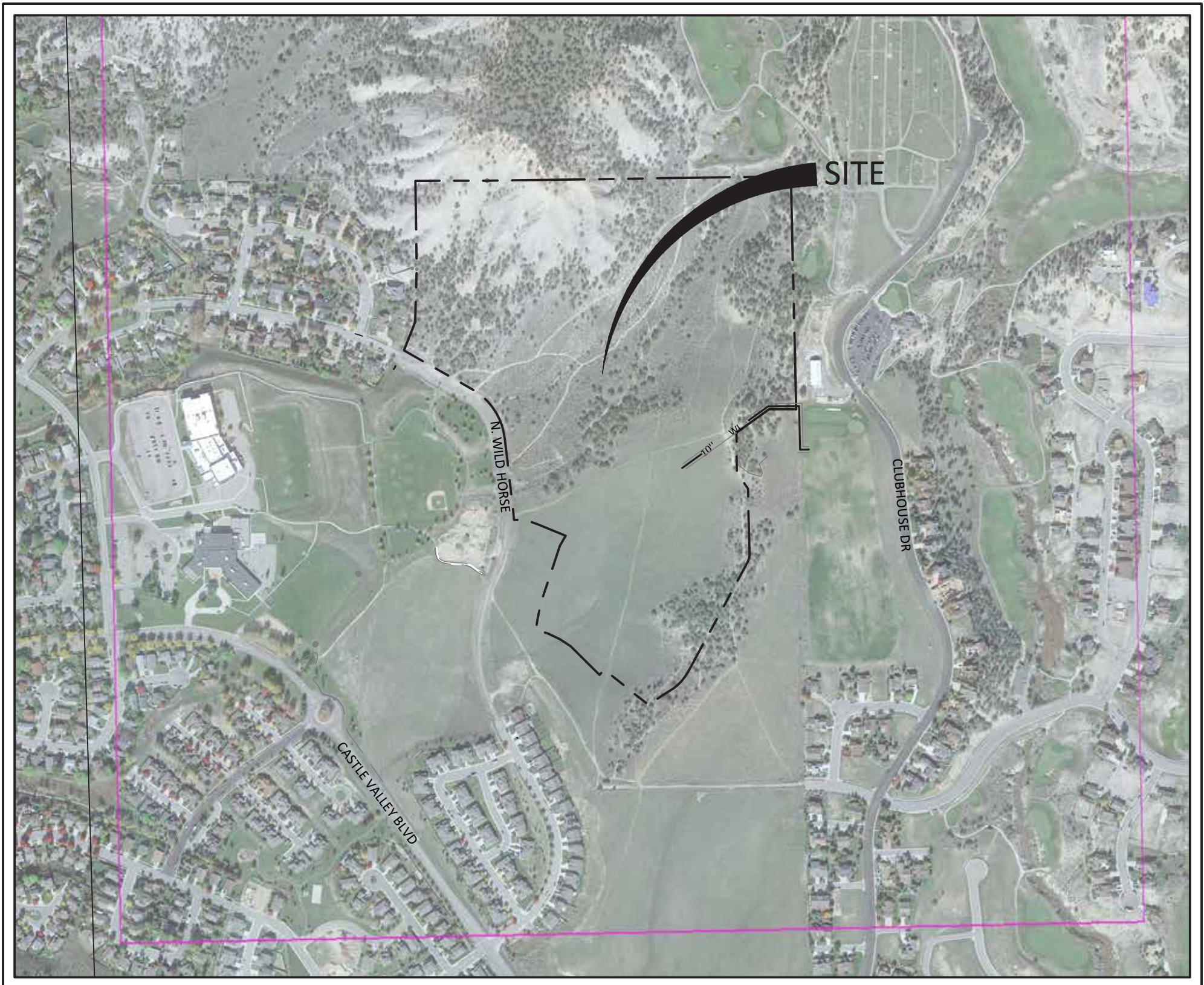
9 NORTH WILD HORSE
NEW CASTLE, COLORADO

PRELIMINARY PLAN

[illegible]

COVER

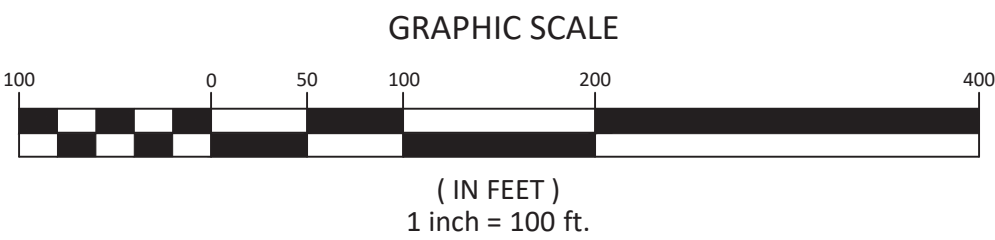
DRAWING NO.
C-0.0



VICINITY MAP
SCALE: 1" = 500'

PLAN INDEX

- C0.0 - COVER SHEET
- C1.0 - SITE PLAN
 - C1.1 - SITE PLAN SECTIONS
 - C2.0 - OVERALL GRADING PLAN
 - C2.1 - VISTA LOOP PLAN/PROFILE
 - C2.2 - SUNSET LOOP PLAN/PROFILE
 - C2.3 - LIVE WORK PLAN/PROFILE
 - C2.4 - N. WILD HORSE PLAN/PROFILE
 - C2.5 - LIVE /WORK GRADING PLAN
 - C2.6 - EMPTY NESTER GRADING PLAN
 - C3.0 - UTILITY PLAN
 - C3.1 - PROPOSED SEWER A PLAN/PROFILE
 - C3.2 - PROPOSED SEWER B PLAN/PROFILE
 - C3.3 - PROPOSED WATER MAIN A PLAN/PROFILE 1
 - C3.4 - PROPOSED WATER MAIN A PLAN/PROFILE 2
 - C3.5 - PROPOSED WATER MAIN B PLAN/PROFILE
 - C6.0 - EXISTING DRAINAGE EXHIBIT
 - C6.1 - PROPOSED 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

JOB NO. 33011.01

DESIGNED BY	AKC
-------------	-----

DRAWN BY	JPP	
----------	-----	--

CHECKED BY	YTN	
------------	-----	--

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

PRELIMINARY PLAN

[illegible]

TITLE

SITE PLAN

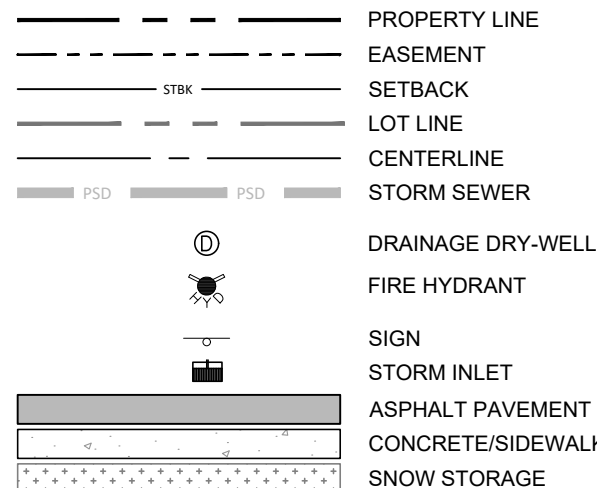
DRAWING NO.

C-1.0

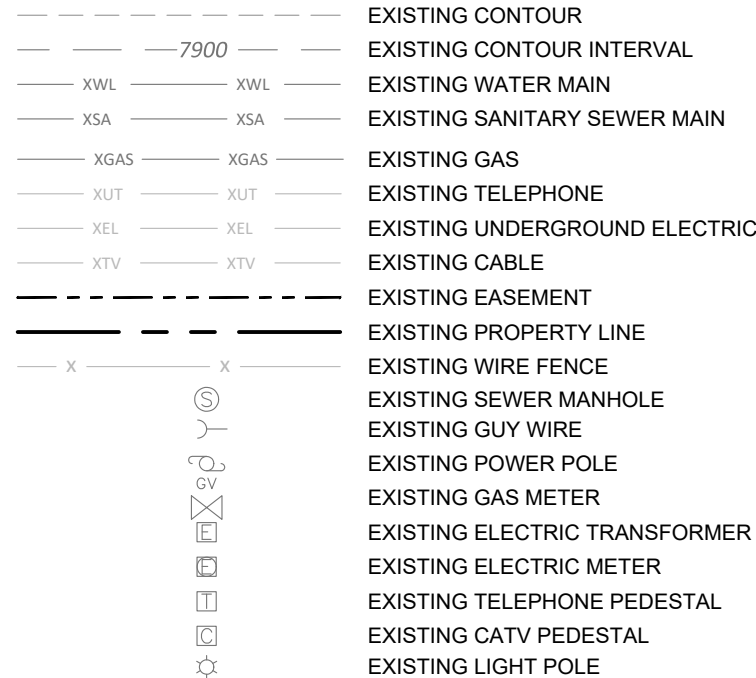
SITE NOTES:

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



EXISTING LEGEND



GRAPHIC SCALE

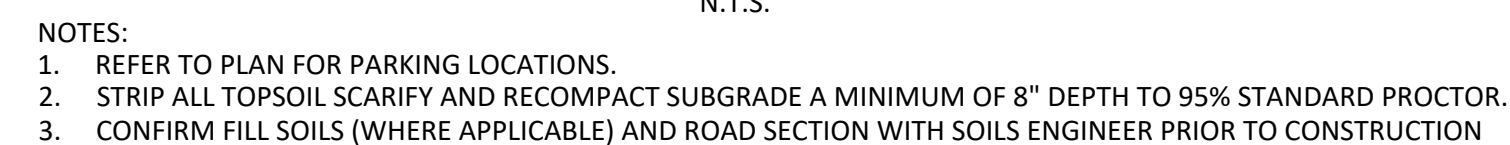
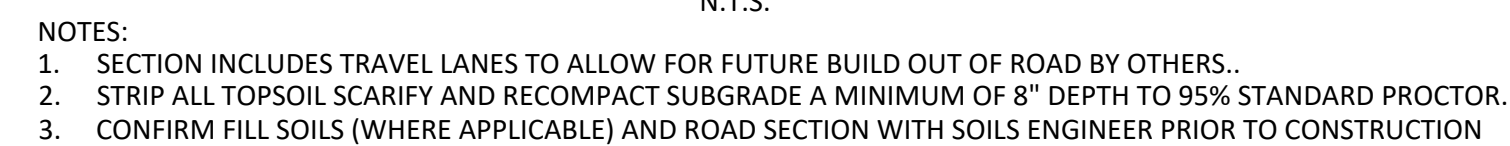
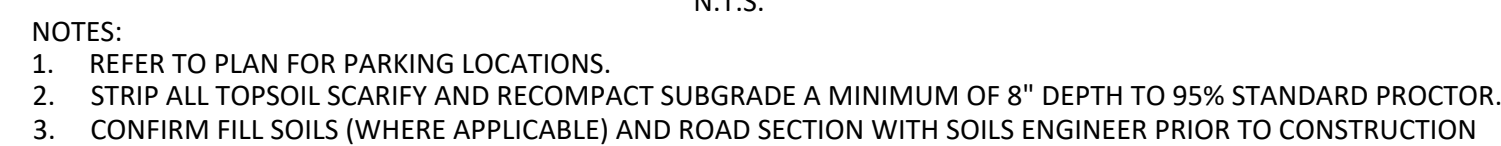
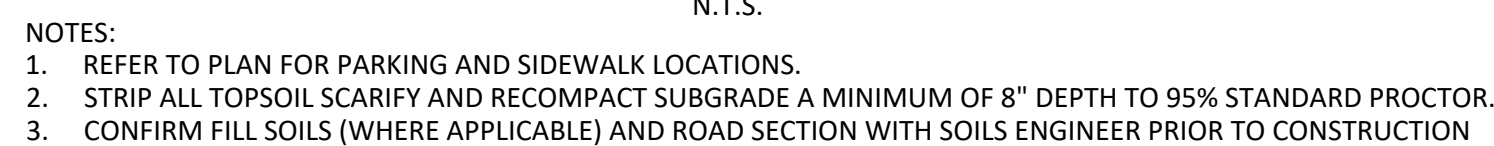
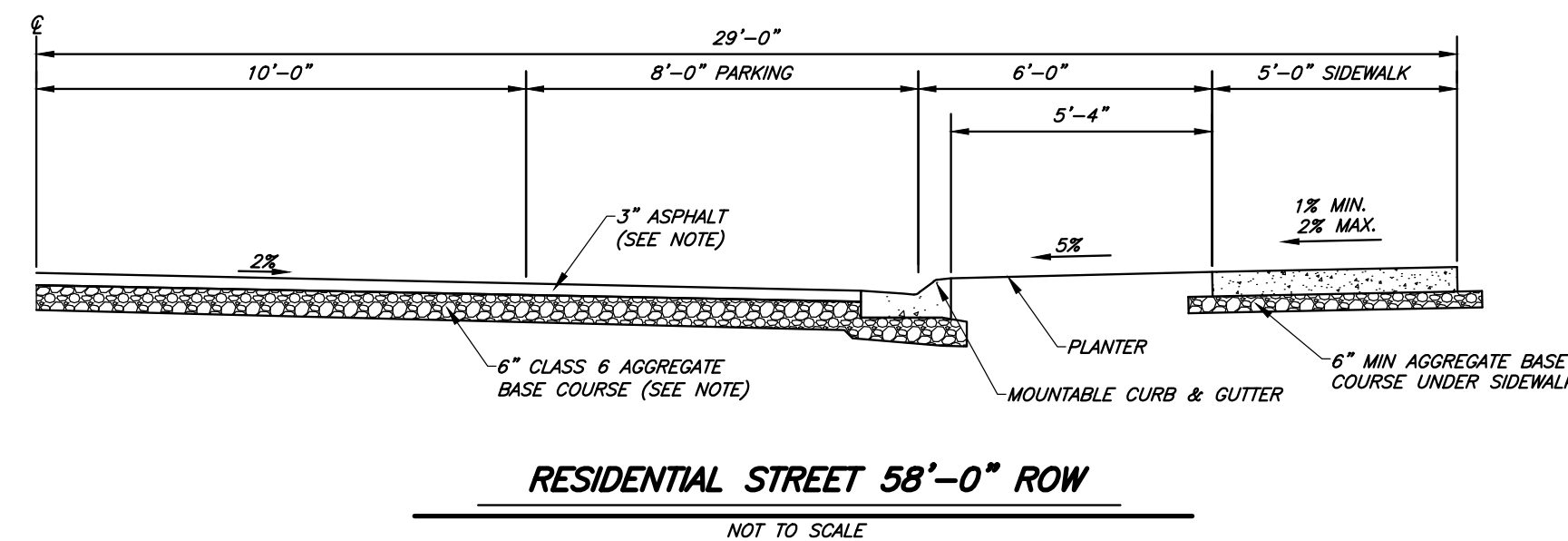
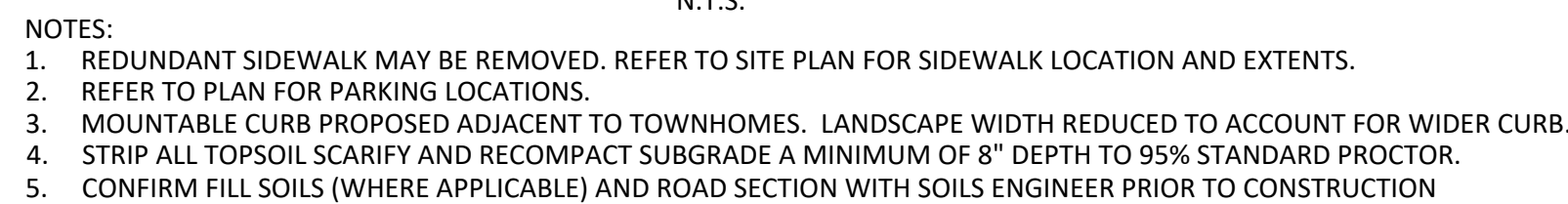
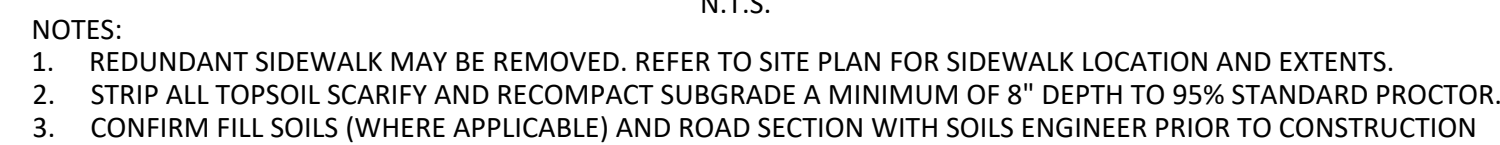


(IN FEET)
1 inch = 100 ft.



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



DATE:		04-12-2024
JOB NO.		33011.01
DESIGNED BY	JPP	
DRAWN BY	JPP	
CHECKED BY	YTN	

[illegible]

TITLE	ROAD SECTIONS
-------	---------------

DRAWING NO.

C-1.1



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

JOB NO. 33011.01

DESIGNED BY	JPP	
-------------	-----	--

DRAWN BY	JPP	
----------	-----	--

CHECKED BY	YTN	
------------	-----	--

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

PRELIMINARY PLAN

[illegible]

TITLE
OVERALL GRADING
PLAN

DRAWING NO.

C-2.0

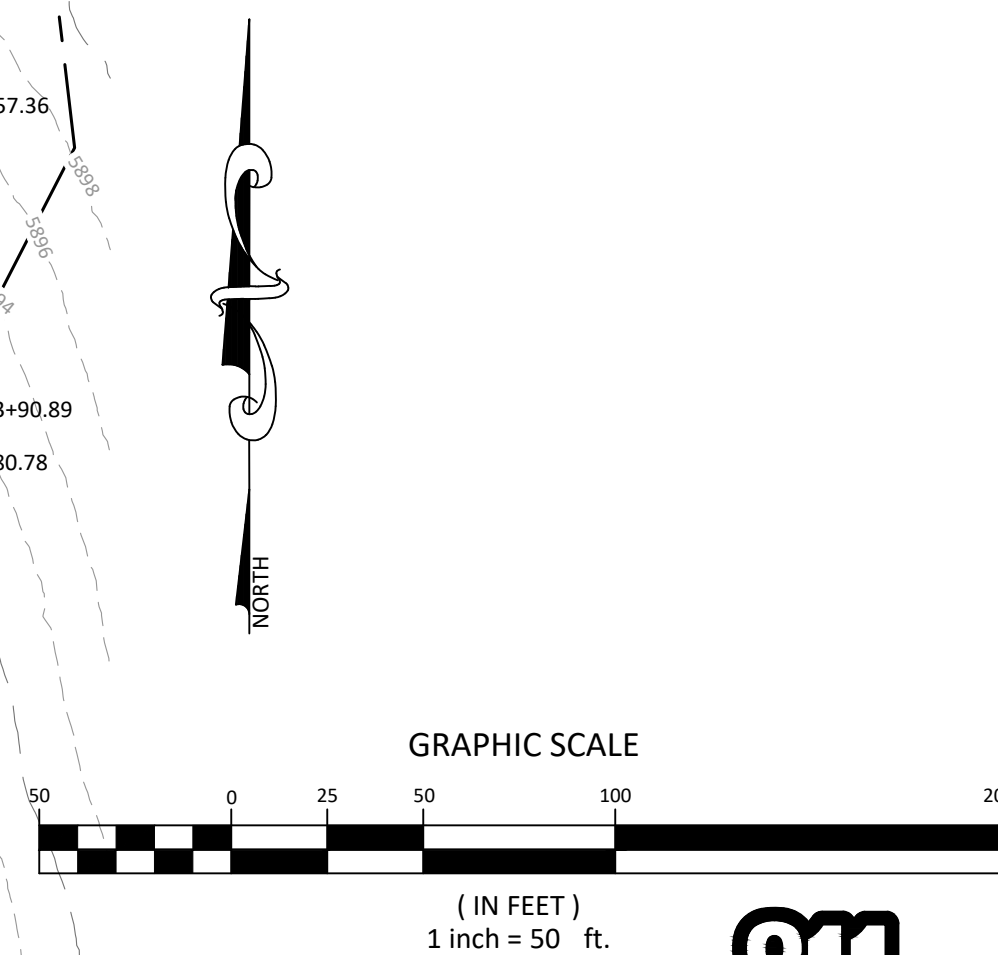
1. THE EXISTING CONTOUR INTERVAL IS TWO (2) FEET (DASHED) FROM A SURVEY PERFORMED BY SOPRIS ENGINEERING, LLC.
2. THE PROPOSED CONTOUR INTERVAL IS TWO (2) FEET.
3. ALL GEOTECHNICAL ENGINEERING RECOMMENDATIONS SHALL BE ADHERED TO.

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

Diagram illustrating the proposed storm sewer profile and existing contours. The diagram shows a cross-section of the ground with various contours and a proposed storm sewer structure.

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

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



**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

JOB NO. 33011.01

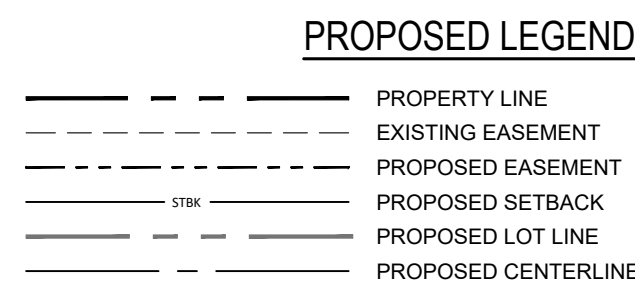
DESIGNED BY	JPP	
-------------	-----	--

DRAWN BY	JPP	
----------	-----	--

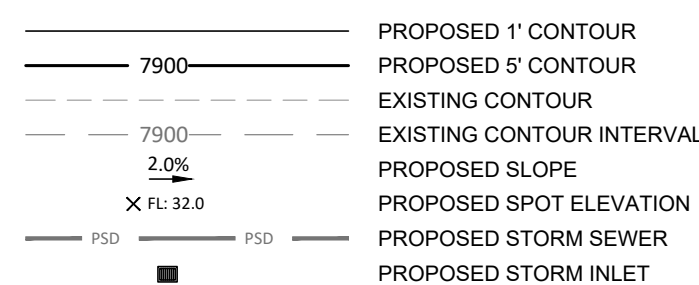
CHECKED BY	YTN	
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9 NORTH WILD HORSE
NEW CASTLE, COLORADO

PRELIMINARY PLAN

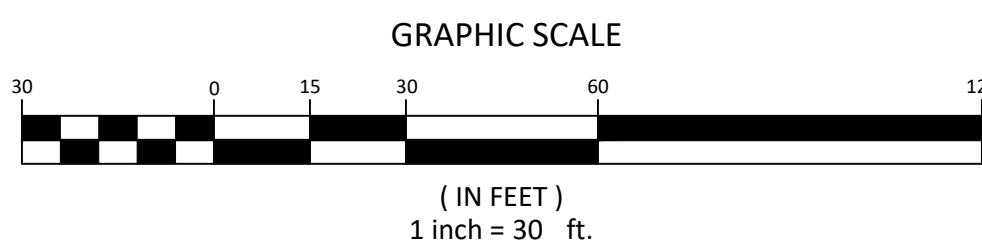


GRADING LEGEND



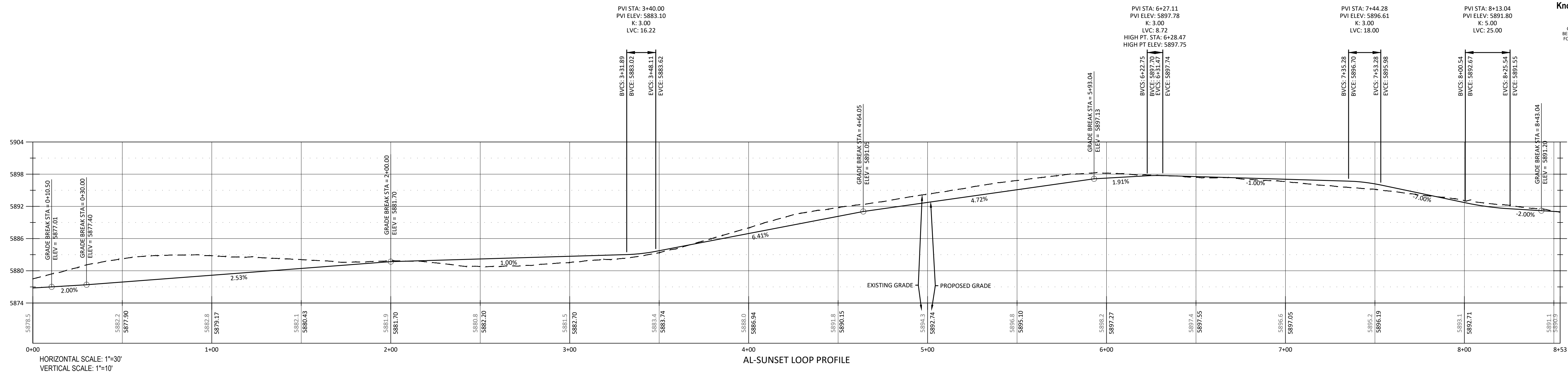
SPOT ELEVATION LEGEND

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



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



AL-SUNSET LOOP PROFILE

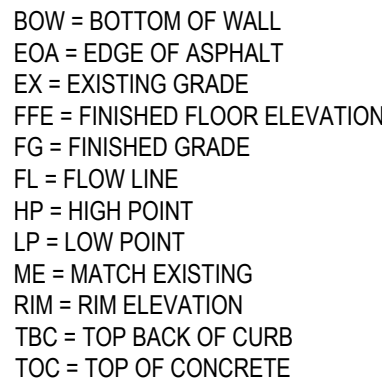
DATE	REVISION
------	----------

TITLE	SUNSET LOOP PLAN/PROFILE
-------	-----------------------------

DRAWING NO.

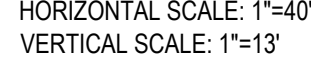
C-2.2

PRELIMINARY PLAN



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



AL-LW PARKING LOOP PROFILE

STA: 9+08.42
ELEV= 5005.58

[illegible]

TITLE

VISTA LOOP
PLAN/PROFILE

DRAWING NO.

C-2.1

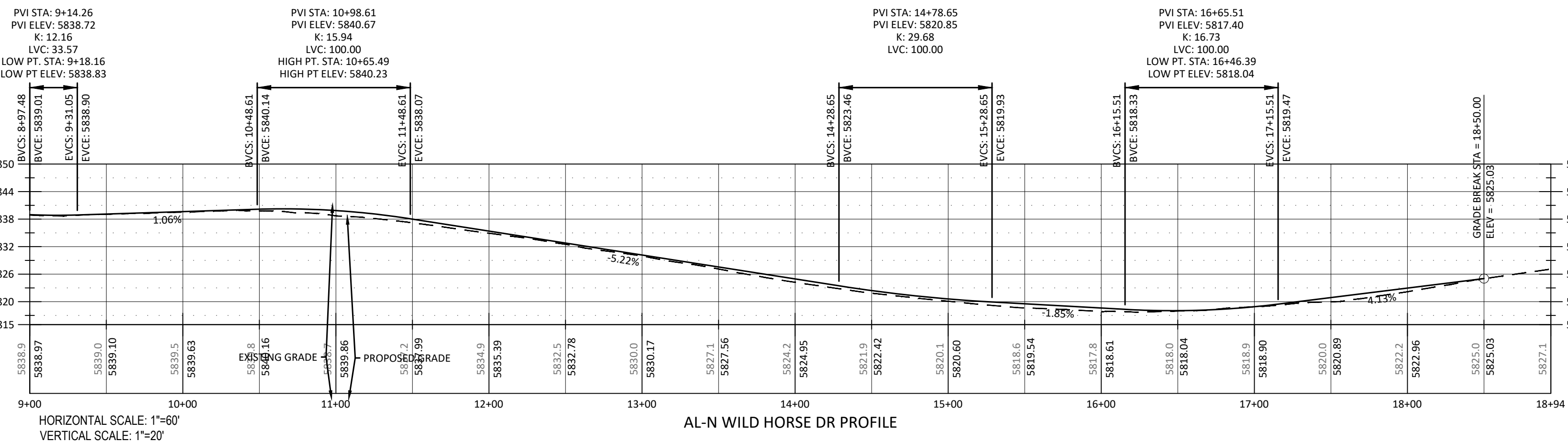
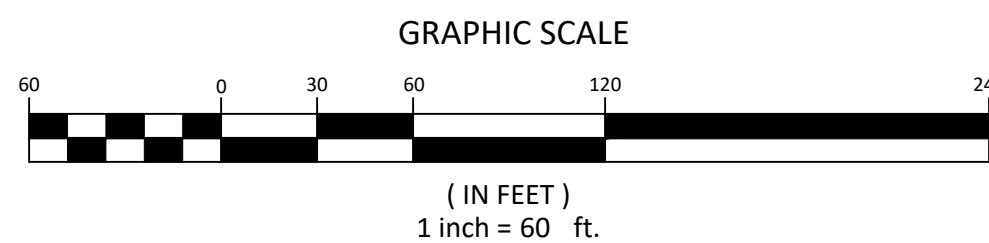
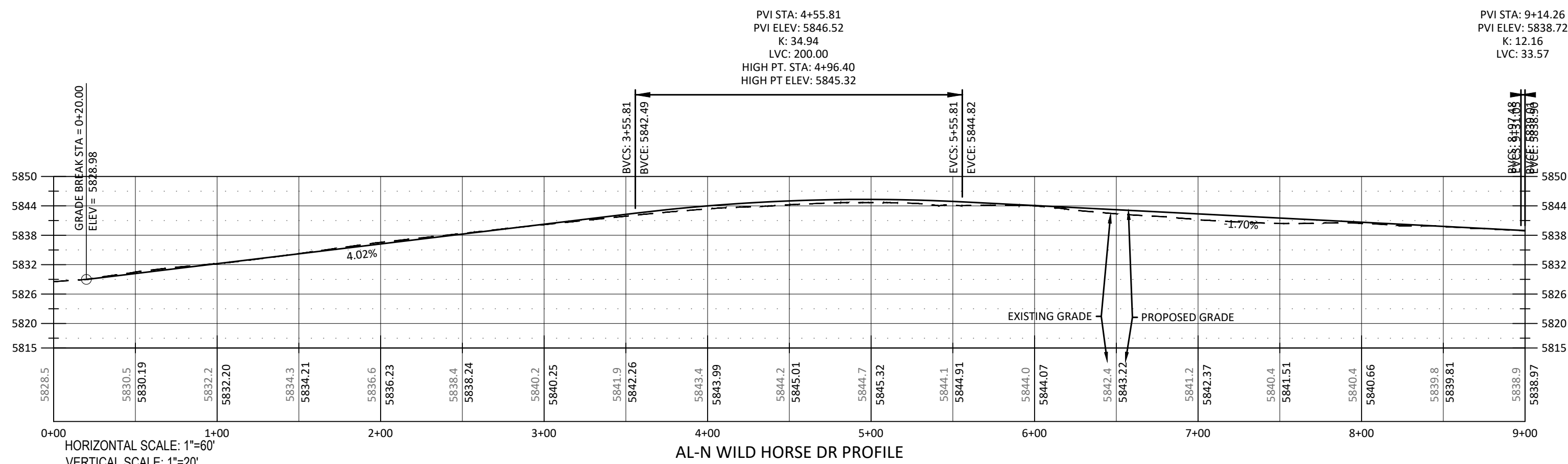
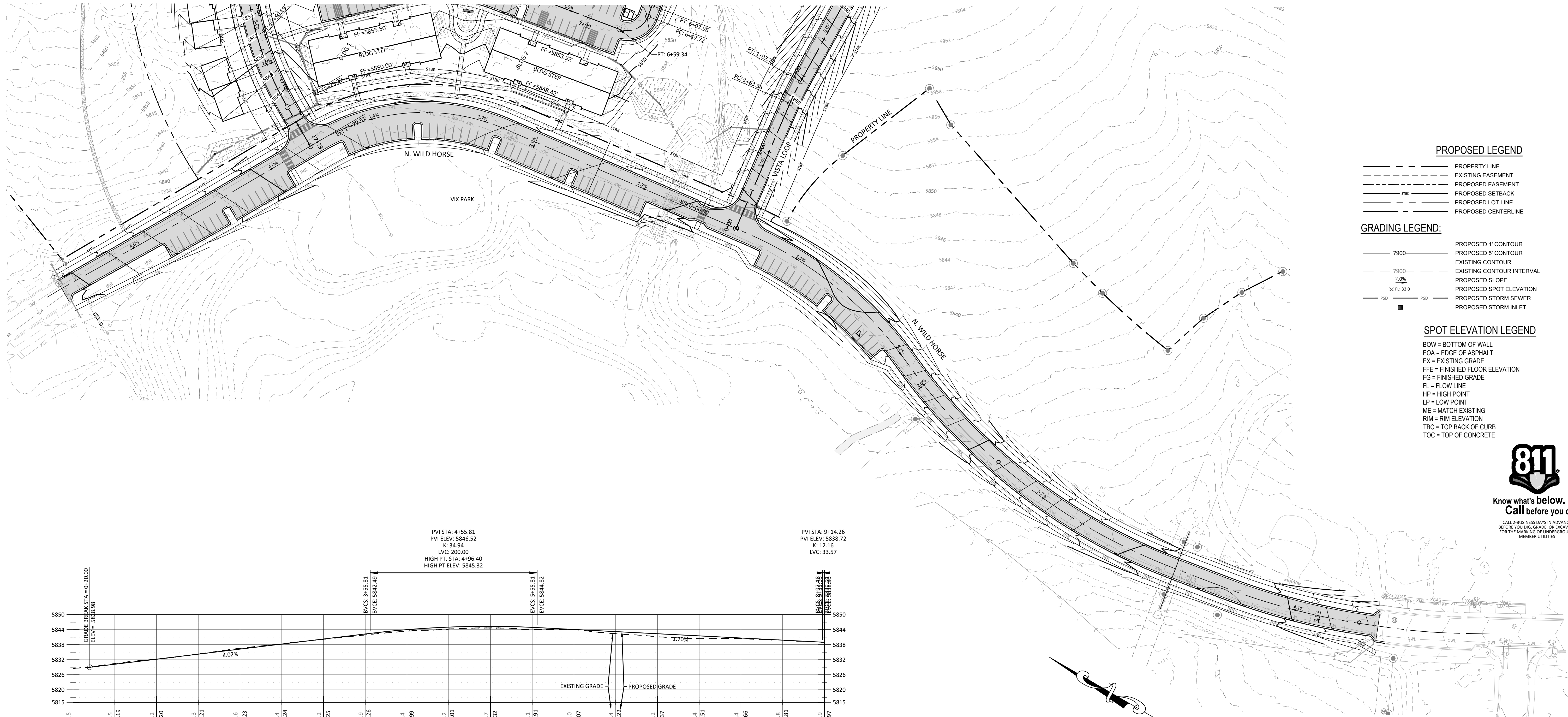
DATE:	04-12-2024
JOB NO.	33011.01
DESIGNED BY	JPP
DRAWN BY	JPP
CHECKED BY	VTN

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

PRELIMINARY PLAN



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



DATE	REVISION

TITLE
N. WILD HORSE
PLAN/PROFILE

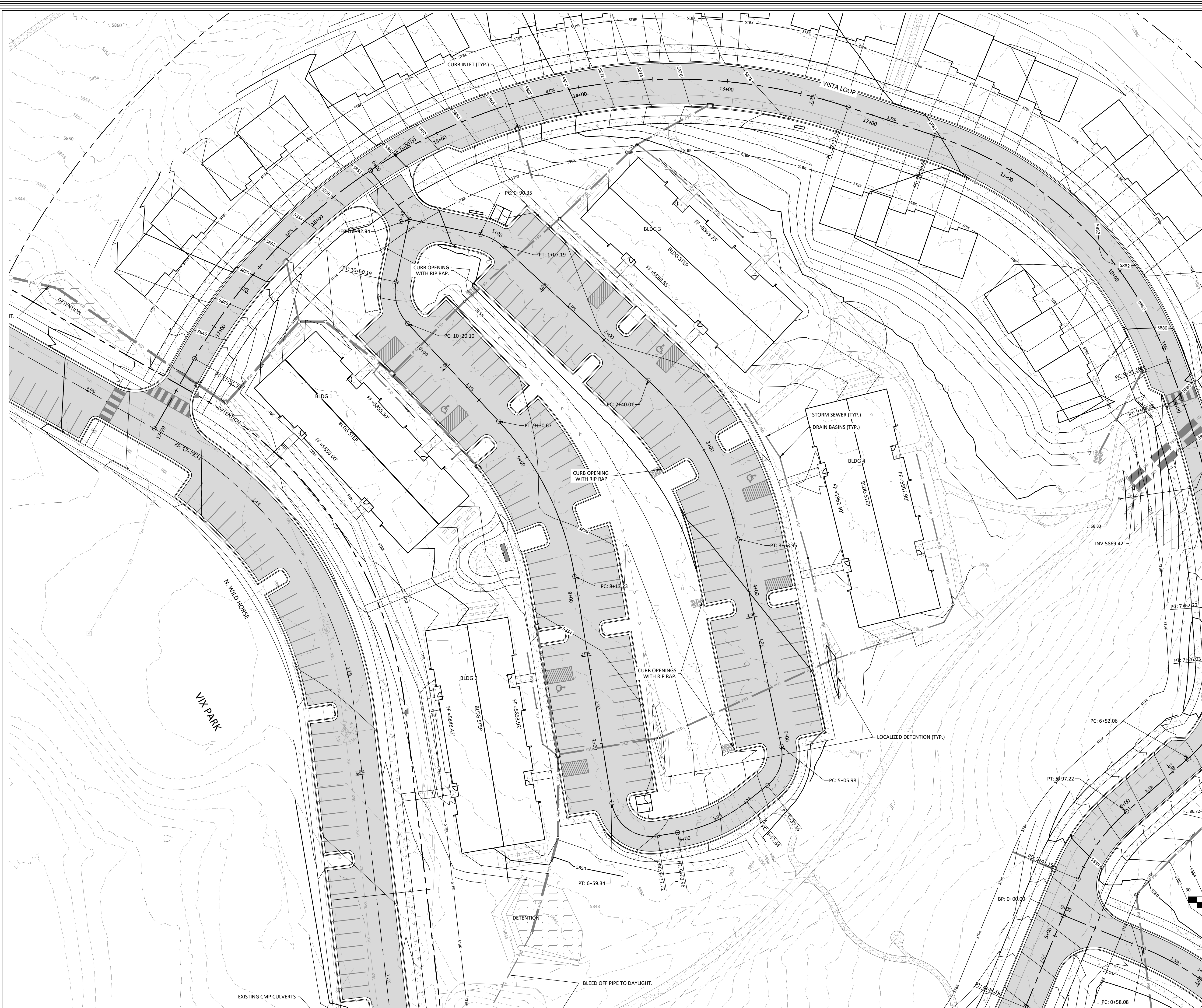
DRAWING NO.
C-2.4

[illegible]

TITLE	LIVE/WORK GRADING PLAN
-------	---------------------------

DRAWING NO.

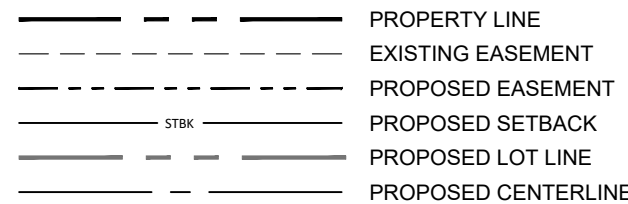
C-2.5



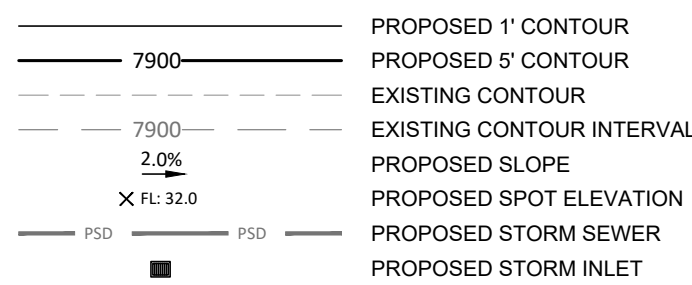
GENERAL GRADING NOTES:

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



GRADING LEGEND:



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

(IN FEET)
1 inch = 30 ft.



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

[illegible]

TITLE	EMPTY NESTER GRADING PLAN
-------	------------------------------

DRAWING NO.

C-2.6

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
 PROPOSED SETBACK
 PROPOSED LOT LINE
 PROPOSED CENTERLINE

GRADING LEGEND:

Diagram illustrating the proposed and existing contours and elevations for a stormwater management structure. The diagram shows a cross-section of a structure with a proposed 1' contour, proposed 5' contour, existing contour, and existing contour interval. The proposed slope is indicated as 2.0%. The proposed spot elevation is shown as 7900. The proposed storm sewer is shown as a black line. The proposed storm inlet is shown as a black square. The existing storm sewer is shown as a grey line. The existing storm inlet is shown as a grey square. The diagram also shows the proposed and existing stormwater management structures.

Feature	Value / Description
PROPOSED 1' CONTOUR	7900
PROPOSED 5' CONTOUR	7900
EXISTING CONTOUR	7900
EXISTING CONTOUR INTERVAL	2.0%
PROPOSED SLOPE	2.0%
PROPOSED SPOT ELEVATION	7900
PROPOSED STORM SEWER	PSD
PROPOSED STORM INLET	PSD

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

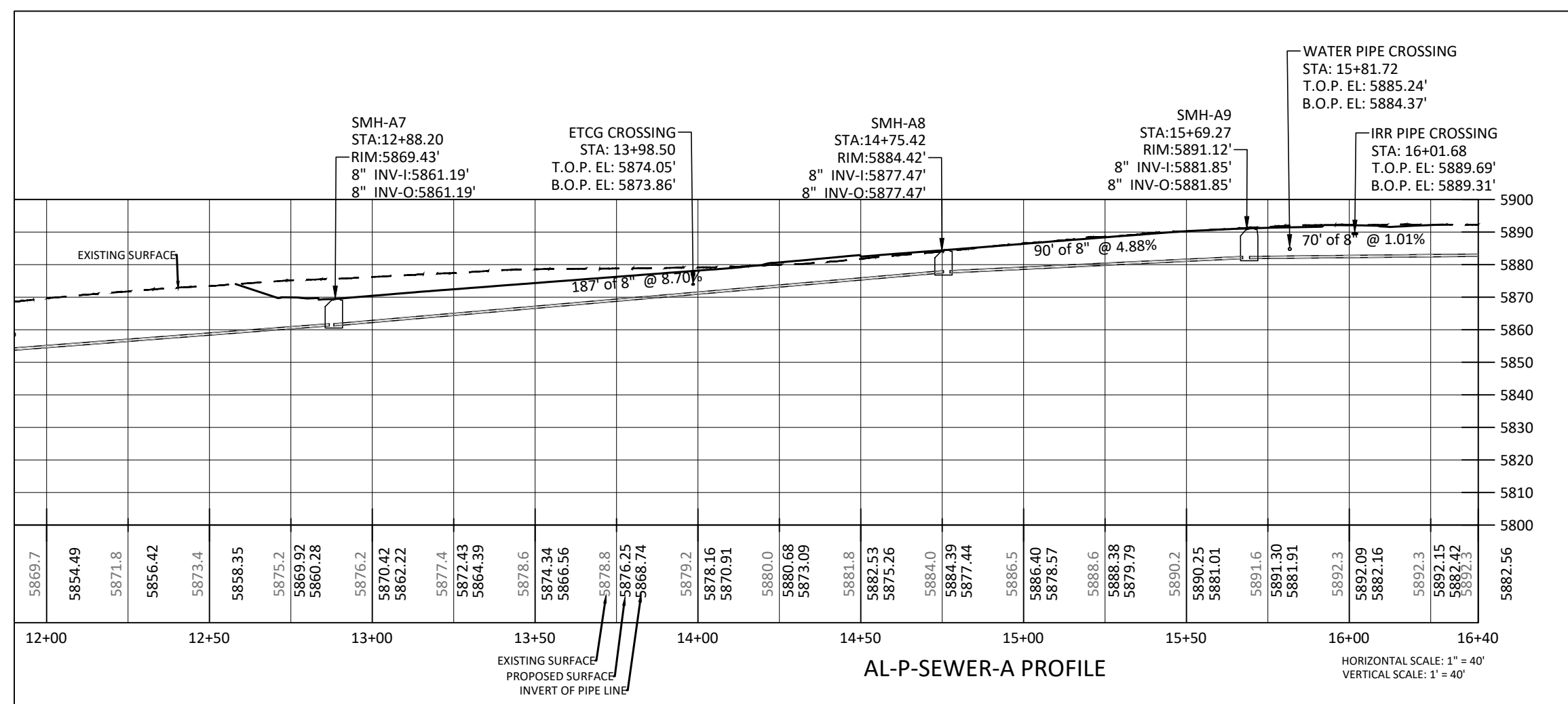
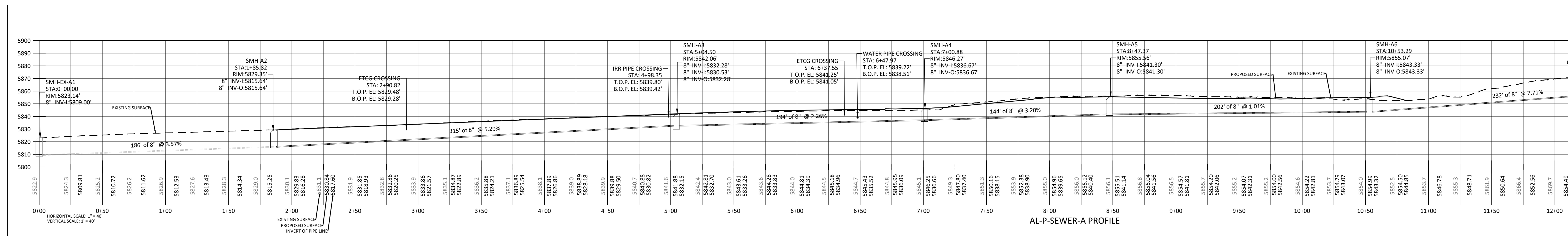
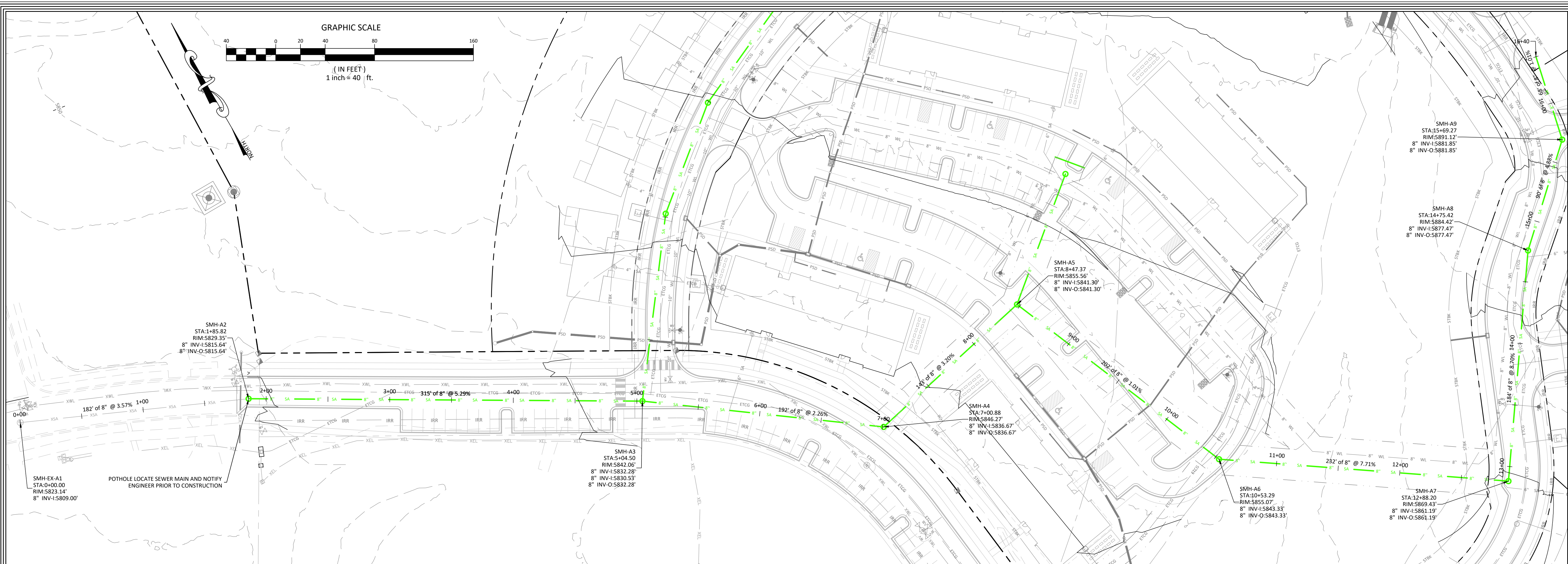


(IN FEET)
1 inch = 30 ft.



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**



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

DATE	REVISION
TITLE	
PROPOSED SEWER MAIN A	
DRAWING NO.	C-3.1

DATE:		04-12-2024
JOB NO.		33011.01
DESIGNED BY	AKC	
DRAWN BY	JPP	
CHECKED BY	YTN	

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

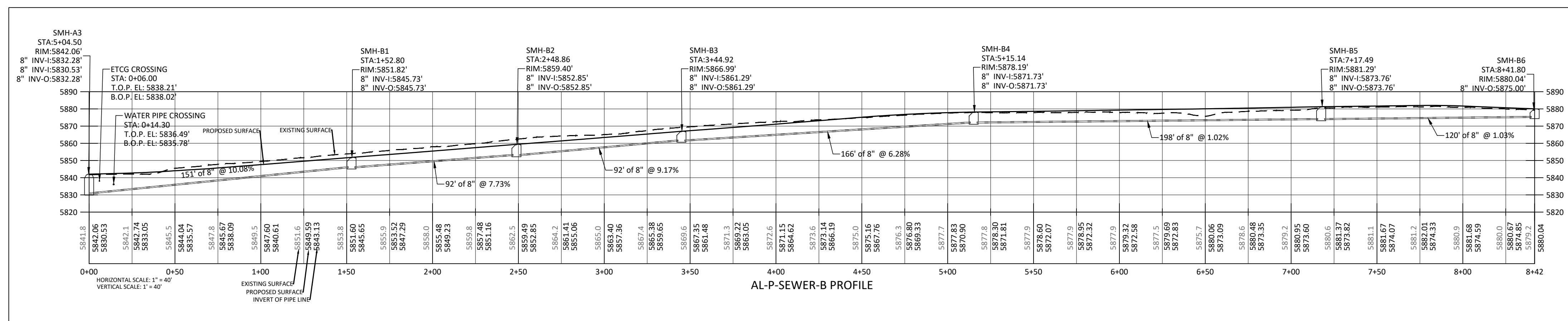
PRELIMINARY PLAN

DATE	REVISION
TITLE	
PROPOSED SEWER MAIN B	
DRAWING NO.	
C-3.2	



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



DATE:		04-12-2024
JOB NO.		33011.01
DESIGNED BY	AKC	
DRAWN BY	JPP	
CHECKED BY	YTN	

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

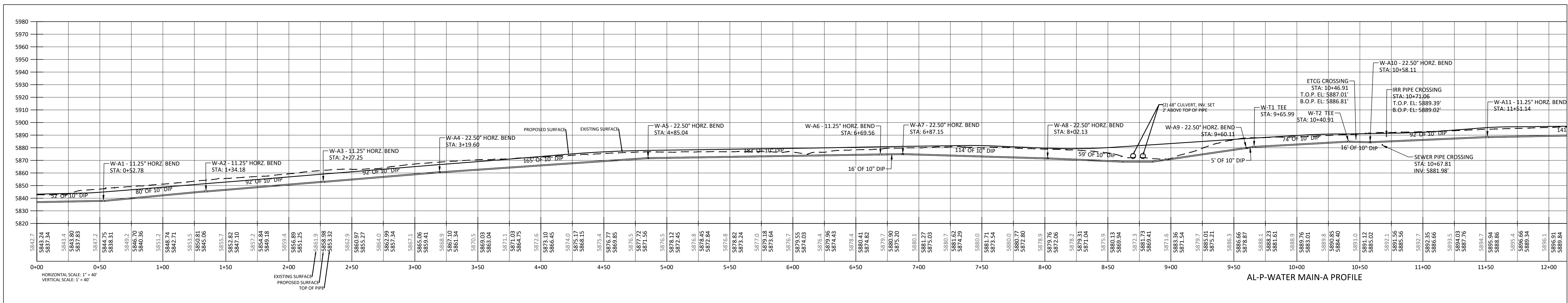
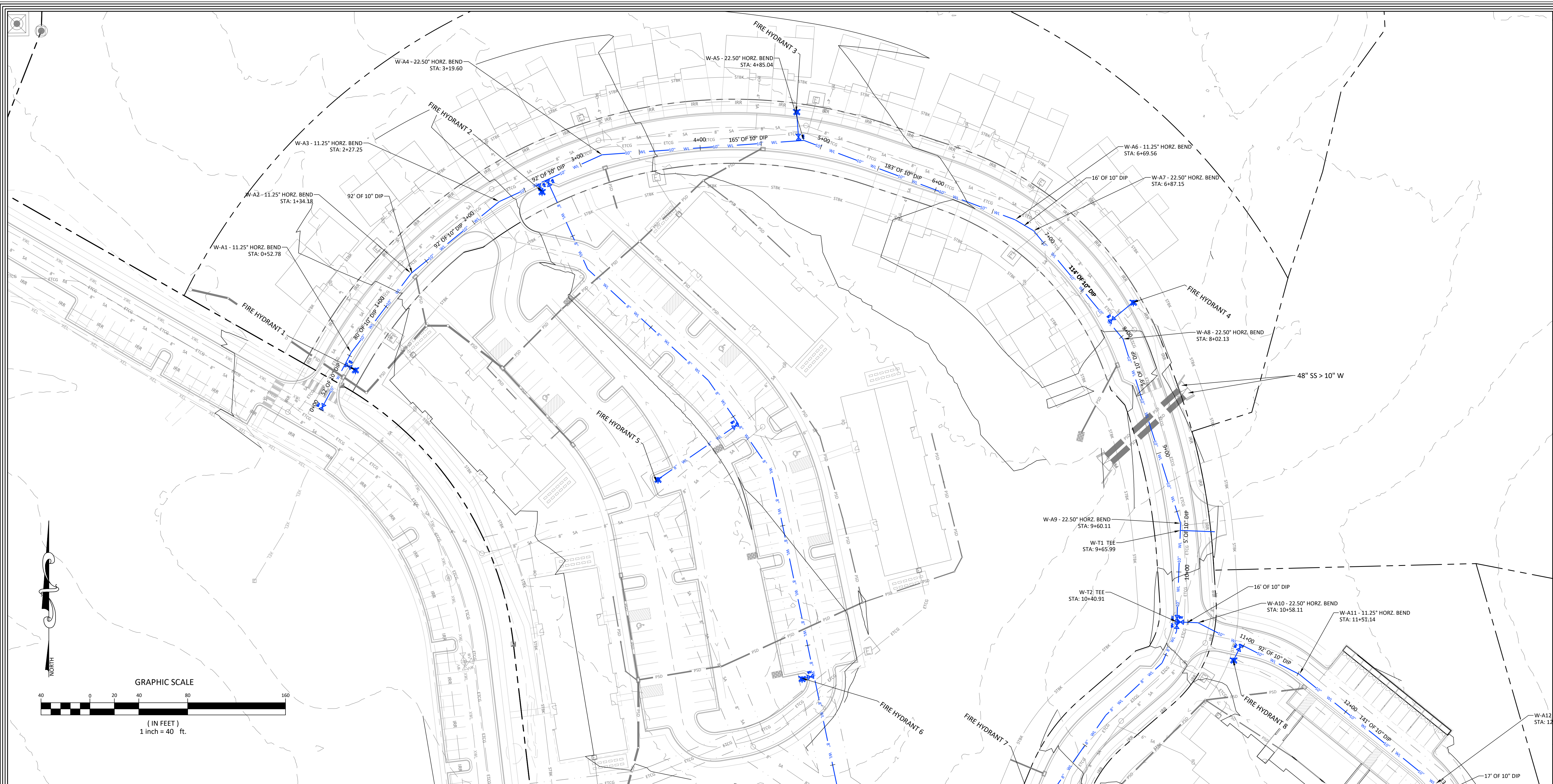
PRELIMINARY PLAN

[illegible]

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

DRAWING NO.

C-3.3



DATE:	04-12-2024	
JOB NO.	33011.01	
DESIGNED BY	AKC	
DRAWN BY	JPP	
CHECKED BY	YTN	

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

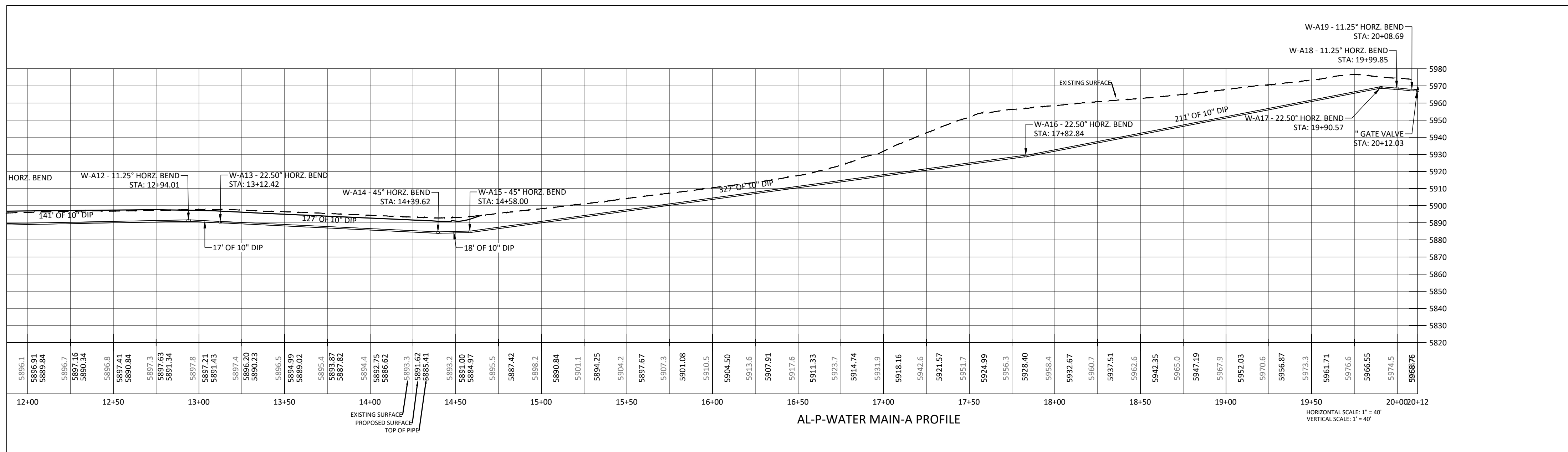
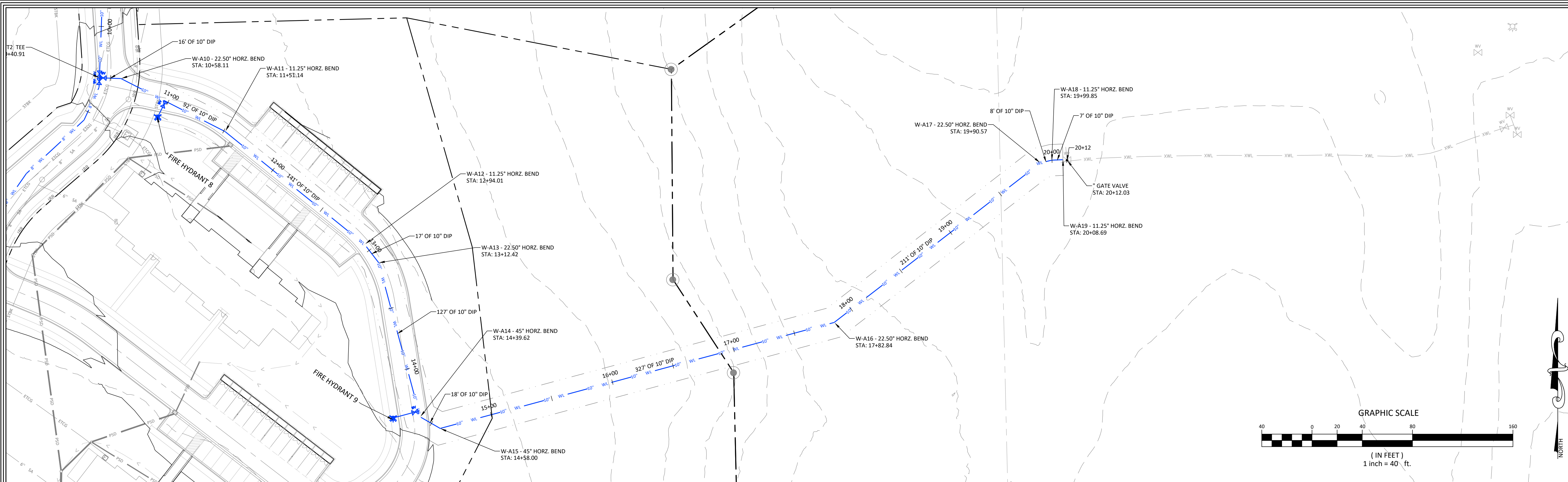
PRELIMINARY PLAN

[illegible]

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

DRAWING NO.

C-3.4

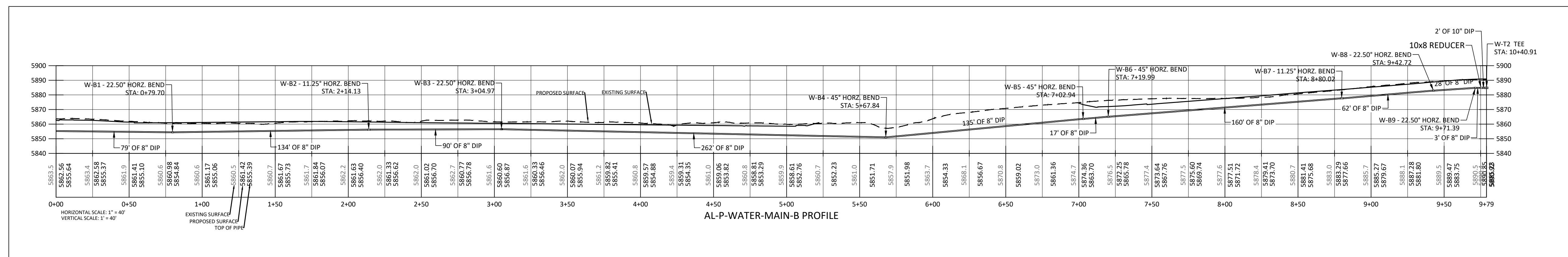
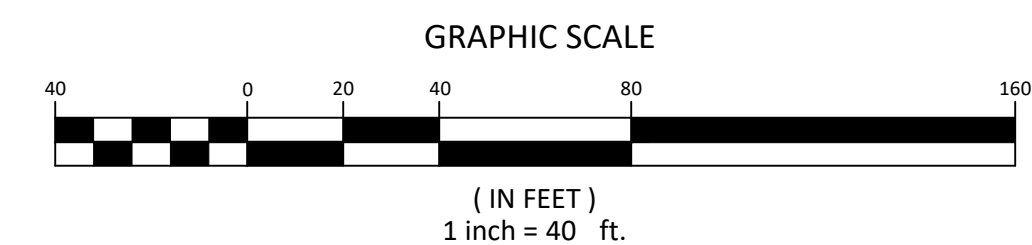
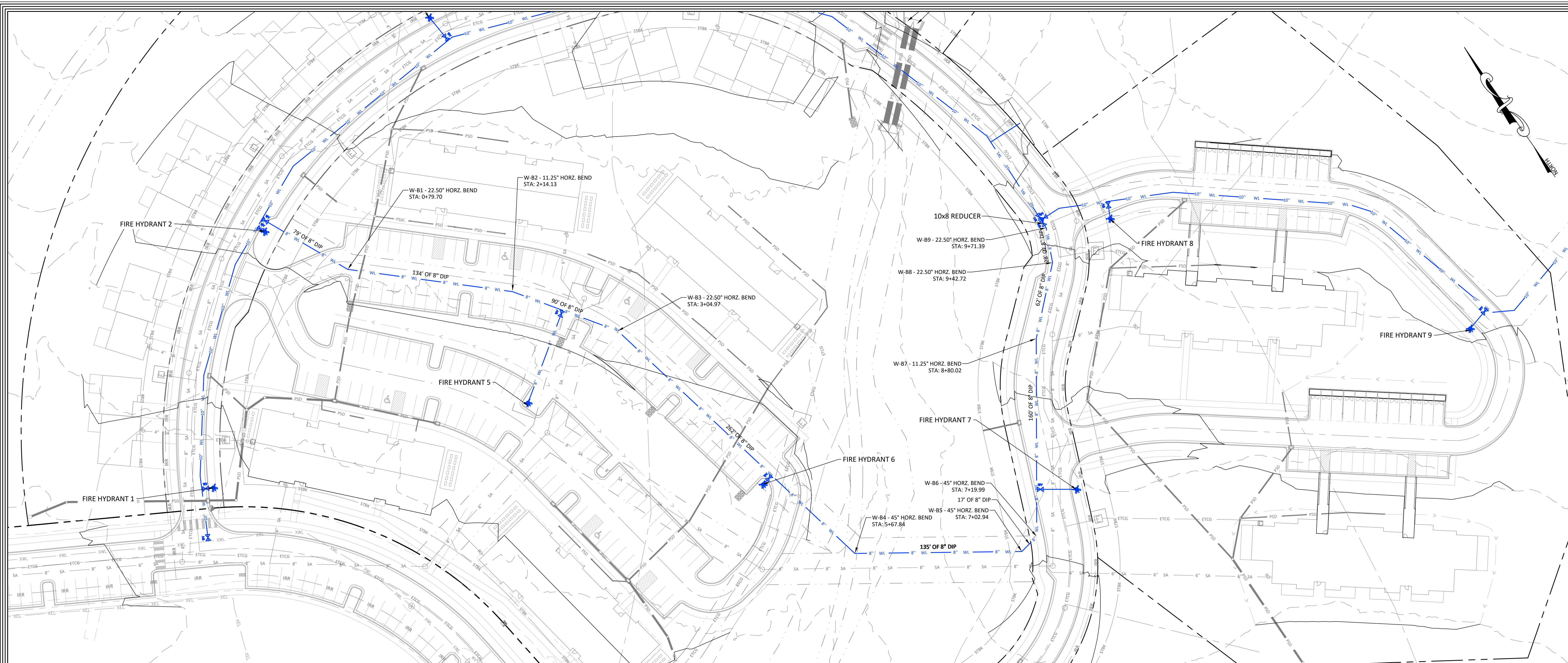


JOB NO. 33011.01

DRAWN BY	JPP
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9 NORTH WILD HORSE
NEW CASTLE, COLORADO

PRELIMINARY PLAN

[illegible]

TITLE

PROPOSED WATER
MAIN B

DRAFTING NO.

C-3.5

1. EXISTING OFFSITE DRAINAGE BASIN 05-01 DRAINAGE CALCULATED USING THE USGS STREAM STATS PROGRAM. Q = 130 CFS. REFER TO THE ENGINEERIN REPORT APPENDIX FOR CALCULATIONS.

BASIN ID	Area (ac)	Weighted C	Precip. (in/hr)	Q (cfs)
EX-01	6.77	0.33	1.71	3.82
EX-02	16.66	0.33	1.71	9.40
EX-03	19.17	0.33	1.71	10.82

[1] TIME OF CONCENTRATION ASSUMED EQUAL TO 30 MINUTES.

[2] RATIONAL C FACTORS ARE BASED ON THE PERCENT IMPERVIOUS FROM TABLE 6-5 OF 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

DATE: 04-12-2024

OB NO.	33011.01
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SIGNED BY	JPP				
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DRAWN BY	JPP				
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9 NORTH WILD HORSE
NEW CASTLE, COLORADO

PRELIMINARY PLAN

DATE	REVISION
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[illegible][illegible][illegible]

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[illegible][illegible][illegible]

[illegible]

FILE			

EXISTING DRAINAGE

EXHIBIT

Downloaded from <http://ajph.org/> on November 10, 2015

[illegible]

DRAWING NO.

C-6.0

[illegible]

EXISTING CONTOUR

EXISTING CONTOUR INTERVAL

EXISTING FLOW PATH

EXISTING DRAINAGE BASIN

DESIGN POINT

DP #

(IN FEET)
1 inch = 100 ft.



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

DATE: 04-12-2024

JOB NO. 33011.01

DESIGNED BY JPP

DRAWN BY JPP

CHECKED BY YTN

9 NORTH WILD HORSE
NEW CASTLE, COLORADO

PRELIMINARY PLAN

DATE REVISION

TITLE
DEVELOPED
DRAINAGE EXHIBIT

DRAWING NO.
C-6.1

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	0.49	1.71	7.19
DE-02	14.97	0.40	1.71	10.24
DE-03	19.05	0.36	1.71	11.73

[1] TIME OF CONCENTRATION ASSUMED EQUAL TO 30 MINUTES.

[2] RATIONAL C FACTORS ARE BASED ON THE PERCENT IMPERVIOUS FROM TABLE 6-5 OF 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

DEVELOPED DRAINAGE DETENTION RUNOFF SUMMARY

DESIGN POINT SUMMARY - DEVELOPED DETENTION						
DESIGN PT I.D.	EX Q ₂₅ (cfs)	DE Q ₂₅ (cfs)	DET. REQ. (cf)	DET. PROV. (cf)	POST DET Q ₂₅ (cfs)	+/- Q (cfs)
1	3.82	7.19	7,205	7,250	3.37	0.45
2	9.40	10.24	2,931	3,750	8.72	0.68
3	10.82	11.73	3,332	3,500	9.71	1.11

[1] TIME OF CONCENTRATION ASSUMED EQUAL TO 30 MINUTES.

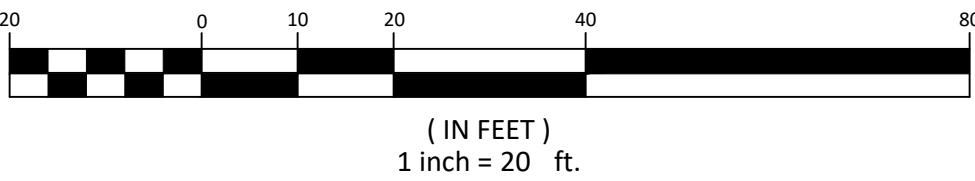
[2] RATIONAL C FACTORS ARE BASED ON THE PERCENT IMPERVIOUS FROM TABLE 6-5 OF CHAPTER 6 OF THE MHFD - MILE HIGH FLOOD DISTRICT DRAINAGE CRITERIA MANUAL.

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

PROPOSED LEGEND

	EXISTING CONTOUR
	EXISTING CONTOUR INTERVAL
	EXISTING FLOW PATH
	EXISTING DRAINAGE BASIN
	DESIGN POINT

GRAPHIC SCALE



OFFSITE DRAINAGE LEGEND

	EXISTING GIS CONTOUR
	OFFSITE DRAINAGE BASIN
	TRAVEL PATH FOR TC COMPUTATIONS
	DESIGN POINT
	EXISTING FLOW ARROW

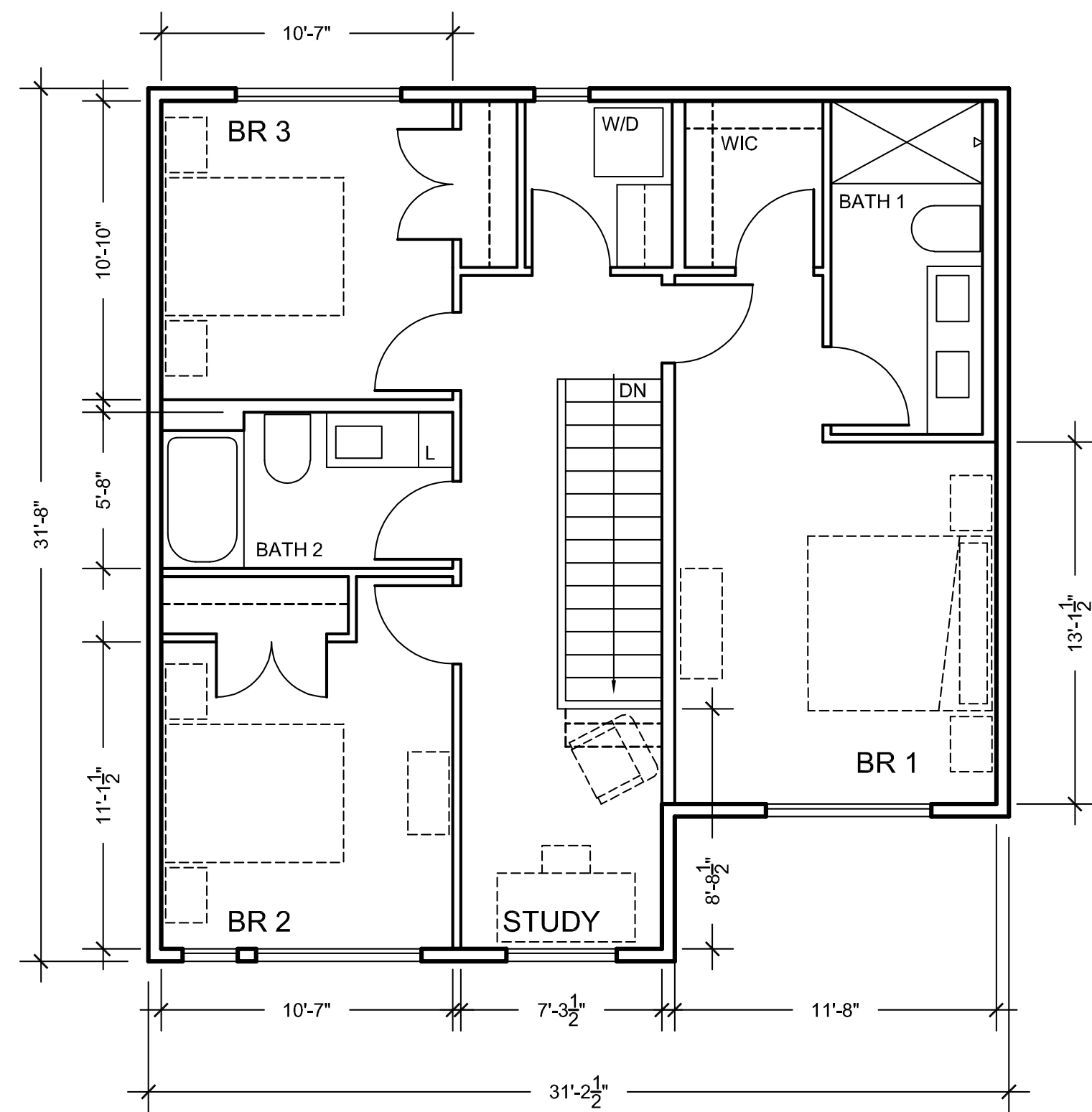
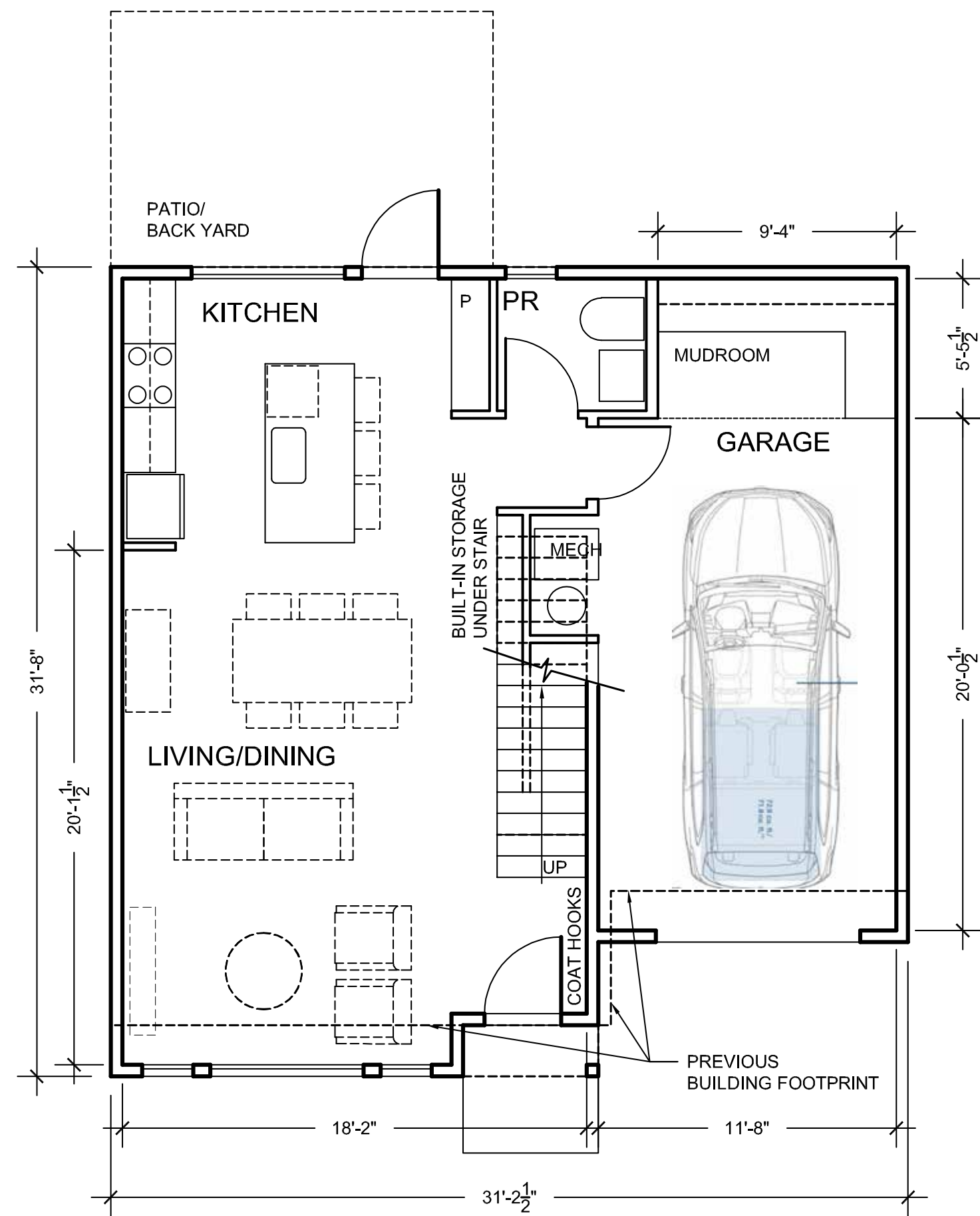
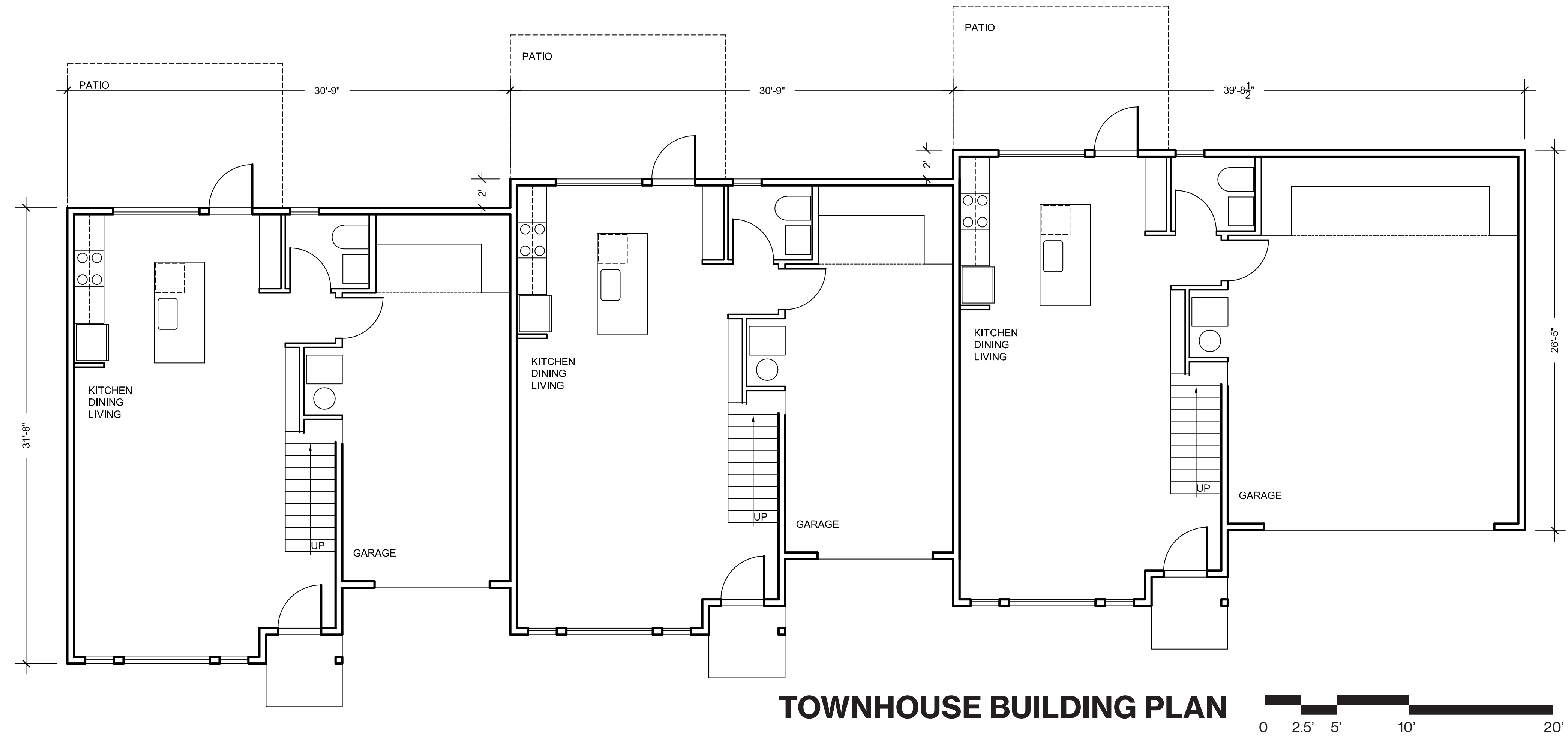


Know what's below.
Call before you dig.

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

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





TOWNHOUSE UNIT PLAN

0 2.5' 5' 10' 20'



TOWNHOUSE TRIPLEX - SIDE ELEVATION
1/8" = 1'-0" 6



TOWNHOUSE DUPLEX - SIDE ELEVATION
1/8" = 1'-0" 3



TOWNHOUSE TRIPLEX - BACK ELEVATION
1/8" = 1'-0" 5



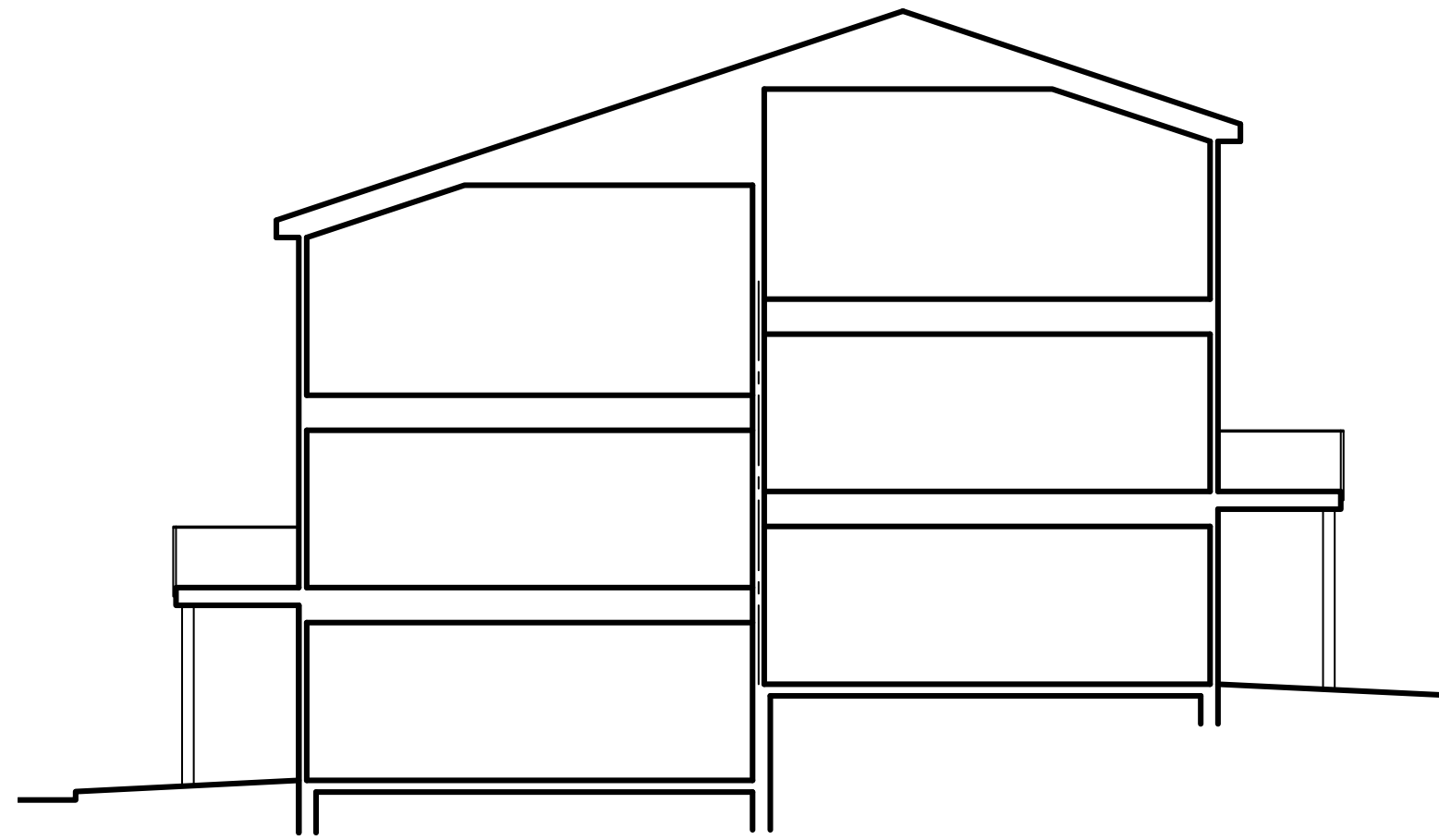
TOWNHOUSE DUPLEX - BACK ELEVATION
1/8" = 1'-0" 2



TOWNHOUSE TRIPLEX - FRONT ELEVATION
1/8" = 1'-0" 4

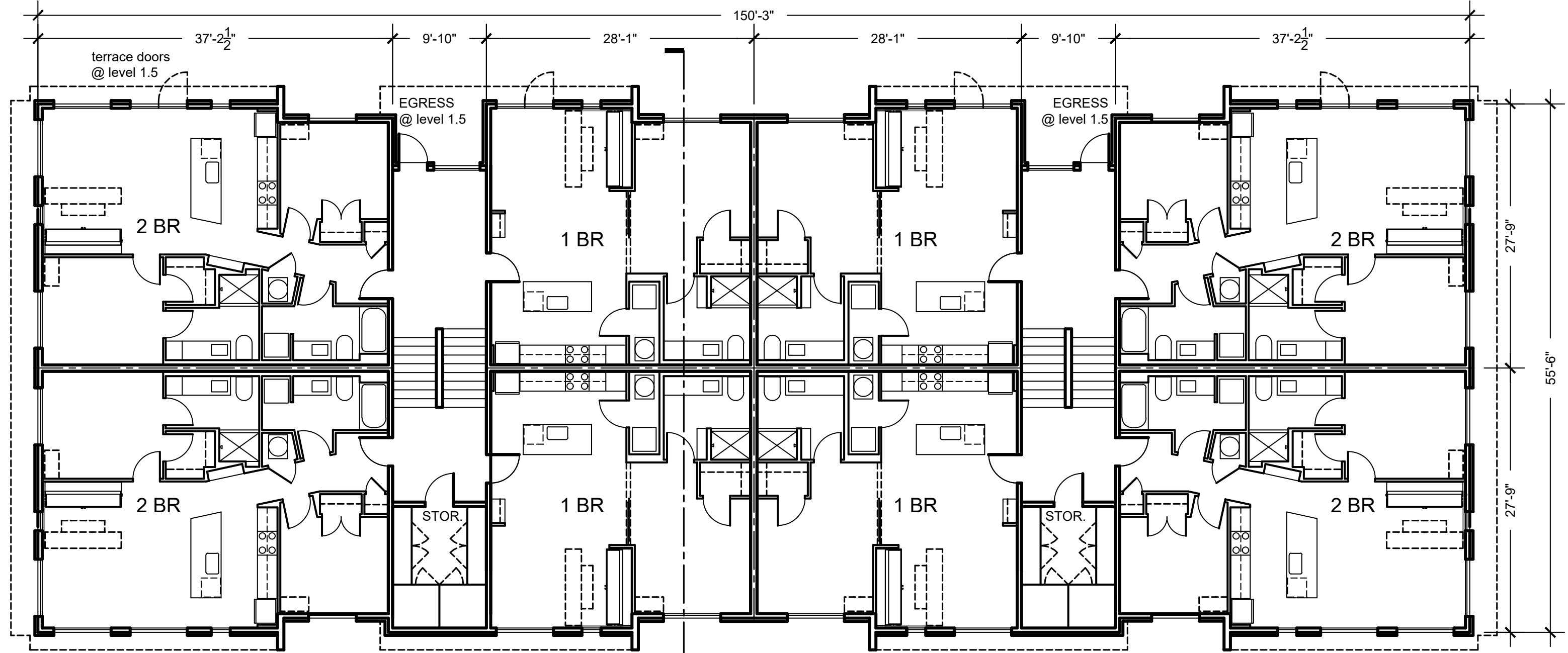


TOWNHOUSE DUPLEX - FRONT ELEVATION
1/8" = 1'-0" 1



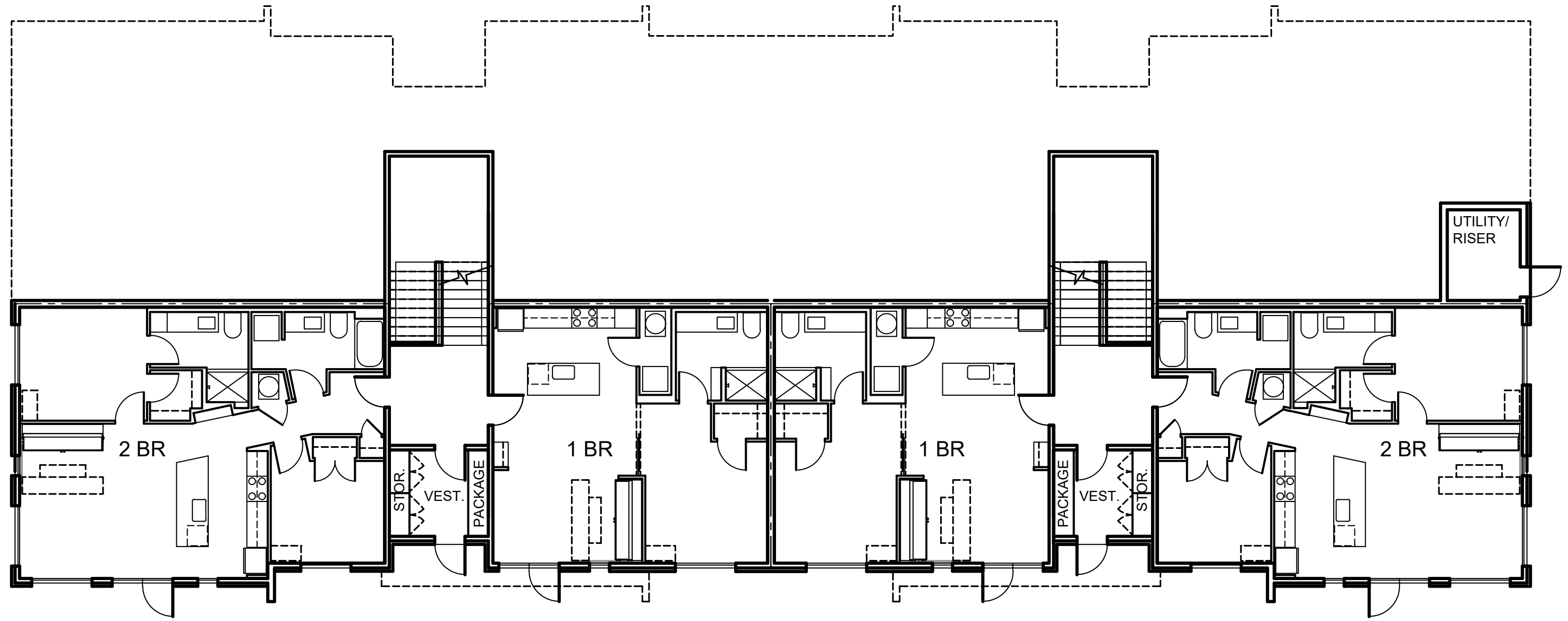
BUILDING SECTION

LIVE/WORK UNIT PLAN

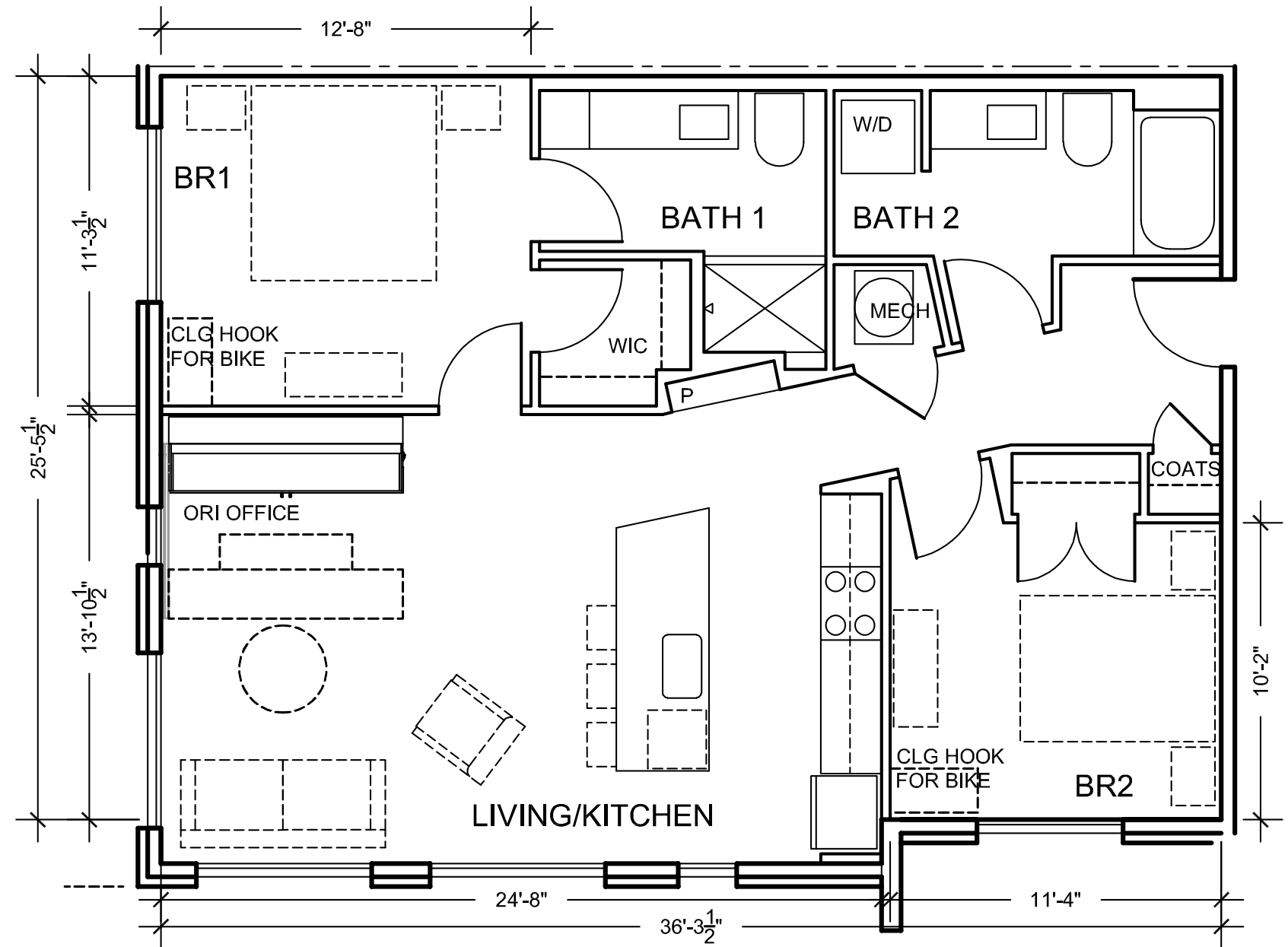


BUILDING SECTION

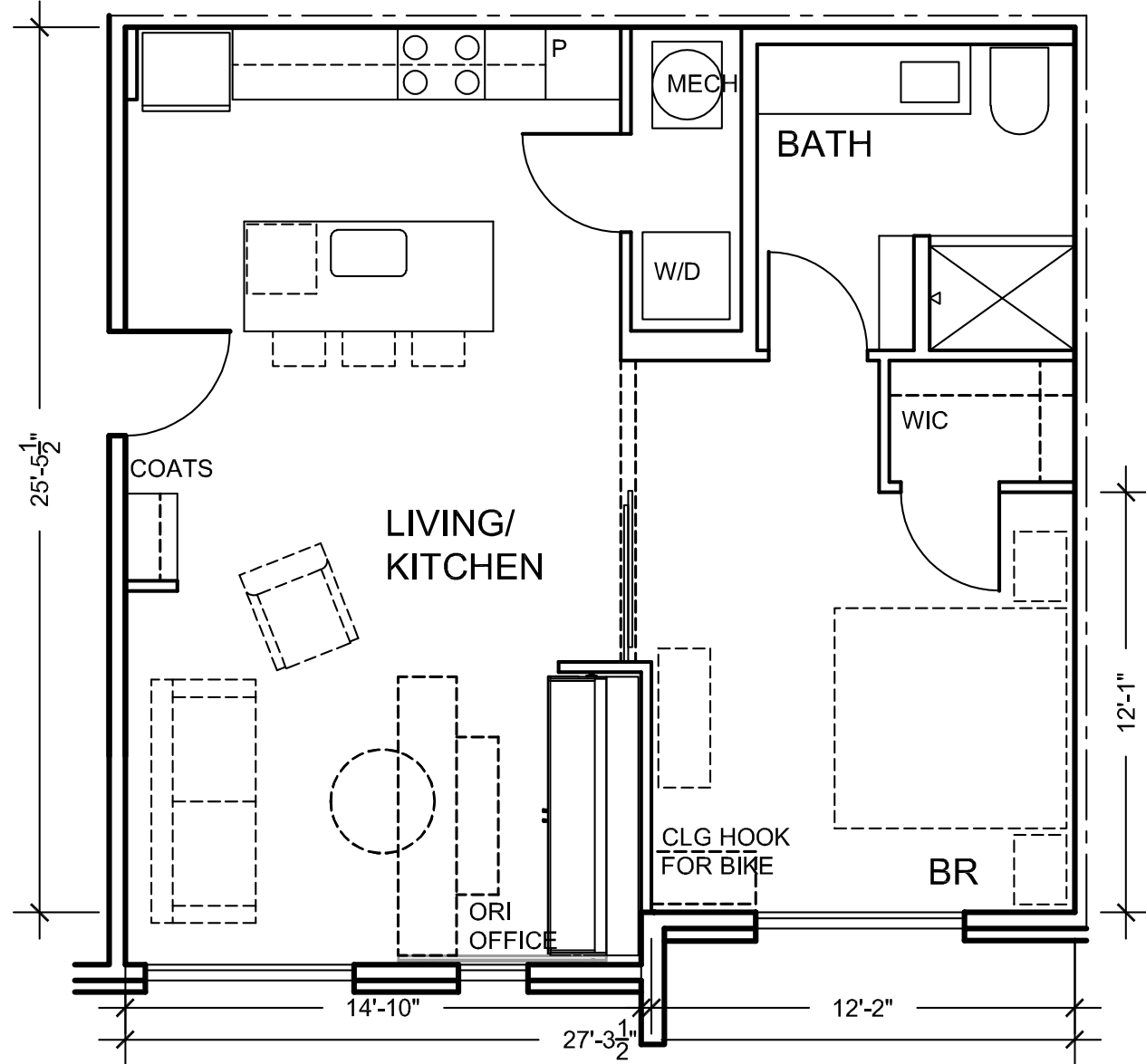
1.5 TO 3RD FLOOR PLAN



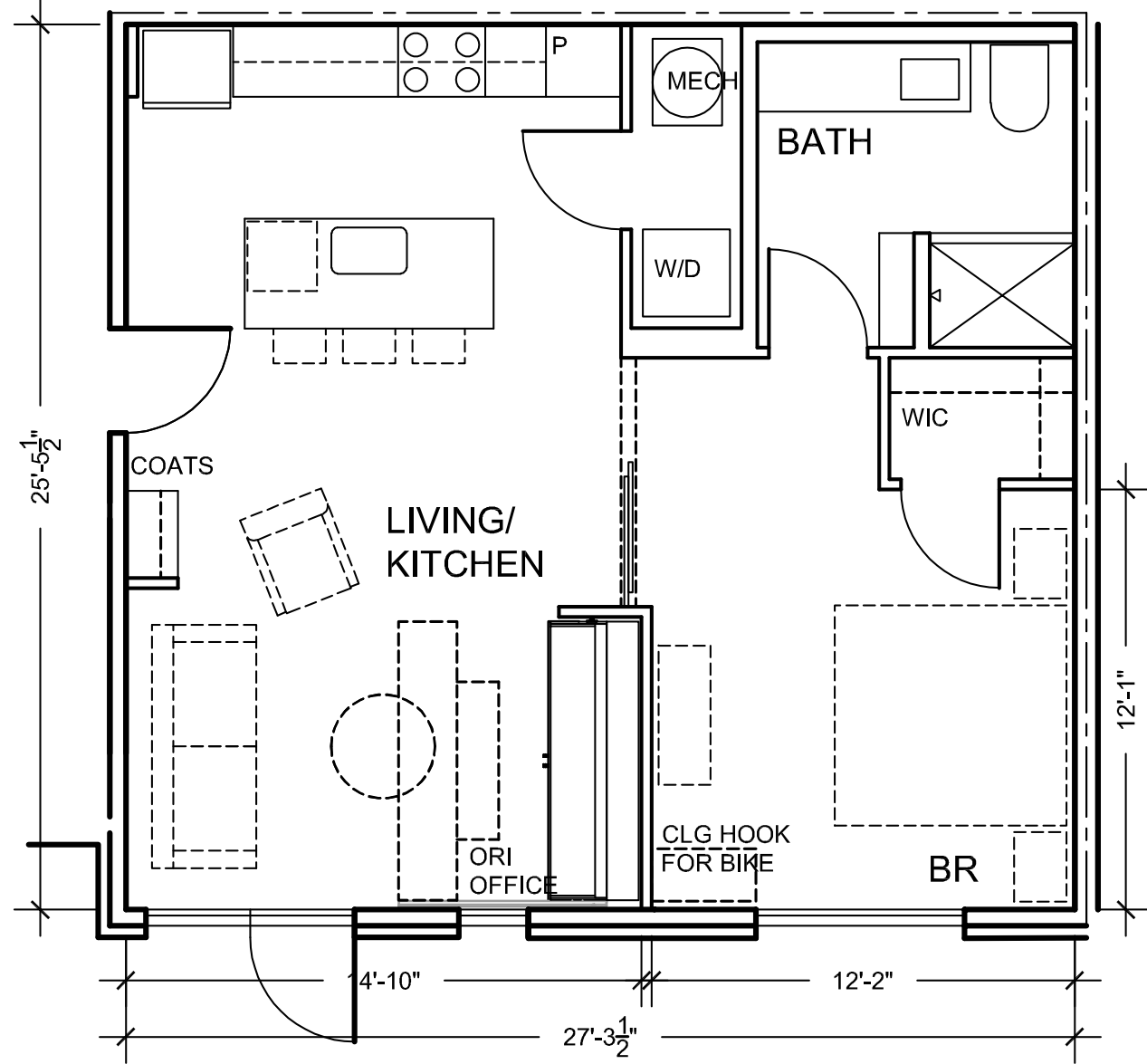
LIVE/WORK FLOOR PLANS



LIVE-WORK
2-BEDROOM UNIT
960 nsf



LIVE-WORK
1-BEDROOM UNIT
715 nsf



LIVE-WORK
1-BEDROOM UNIT
690 nsf



LIVE-WORK 2-STORY - SIDE ELEVATION 3
1/8" = 1'-0"



LIVE-WORK 2-STORY - BACK ELEVATION 2
1/8" = 1'-0"



LIVE-WORK 2-STORY - FRONT ELEVATION 1
1/8" = 1'-0"



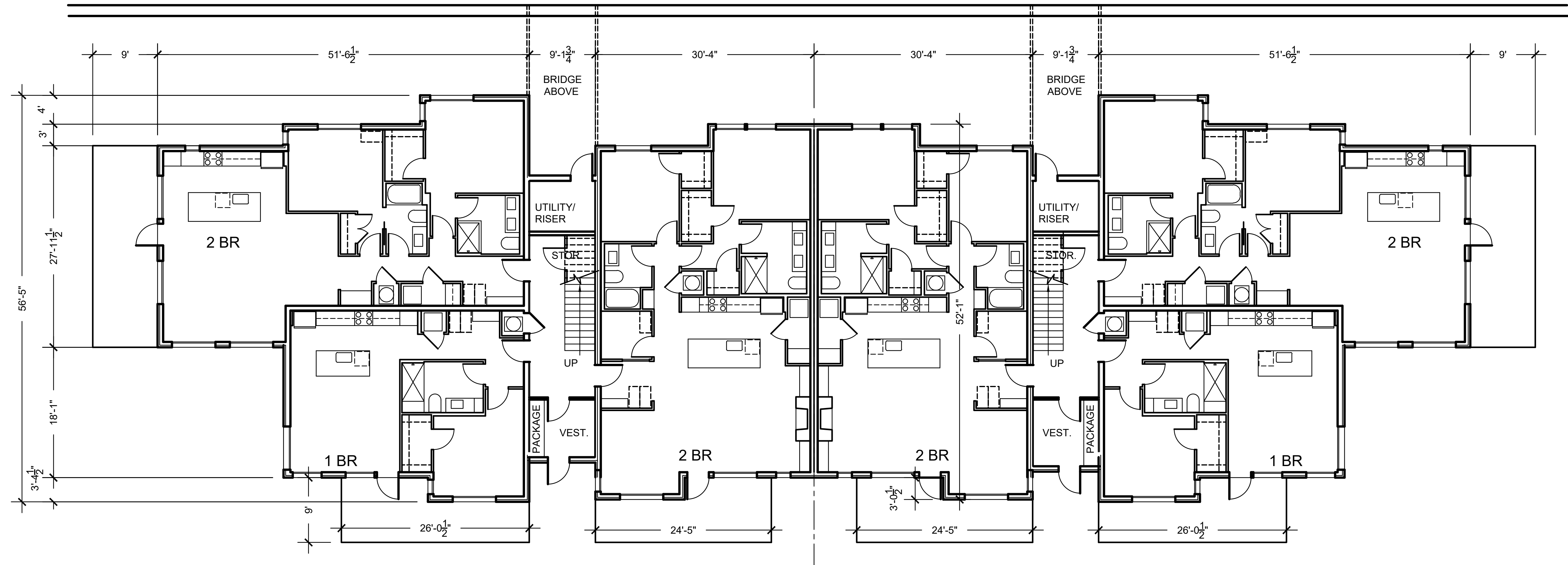
LIVE-WORK 3-STORY - SIDE ELEVATION
1/8" = 1'-0" 3



LIVE-WORK 3-STORY - BACK ELEVATION
1/8" = 1'-0" 2

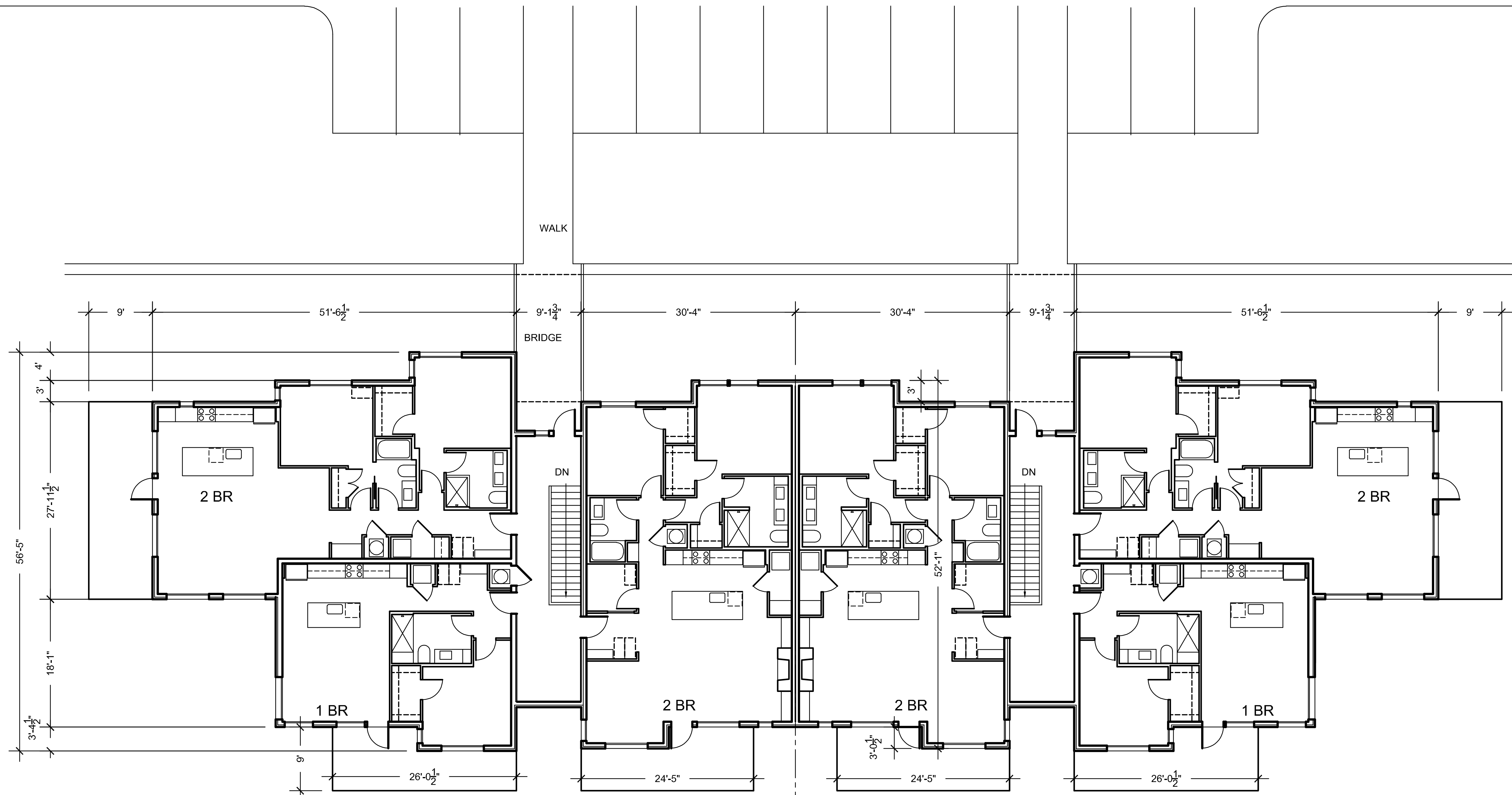
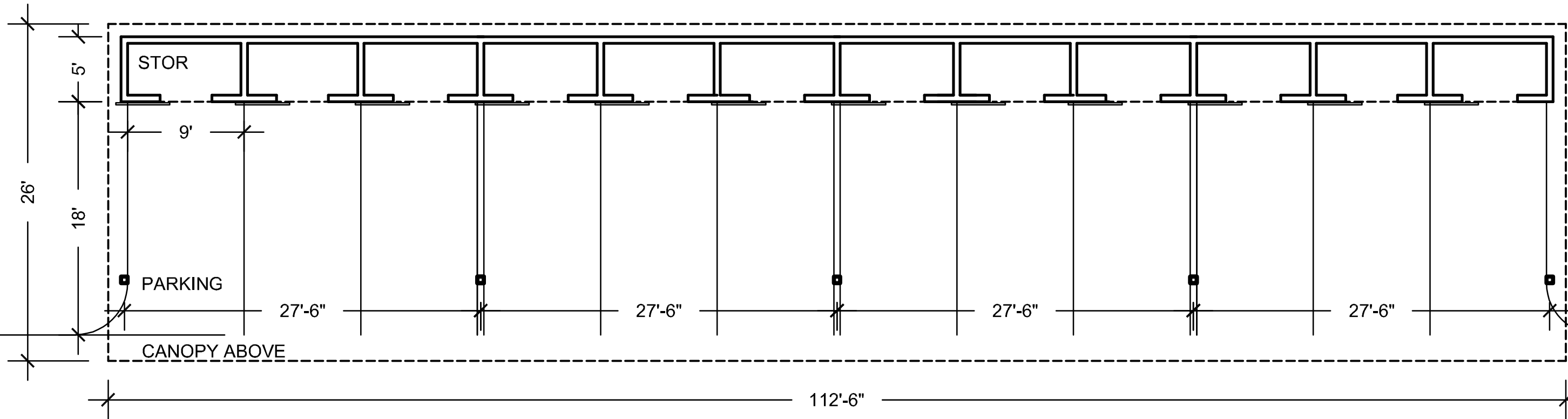


LIVE-WORK 3-STORY - FRONT ELEVATION
1/8" = 1'-0" 1



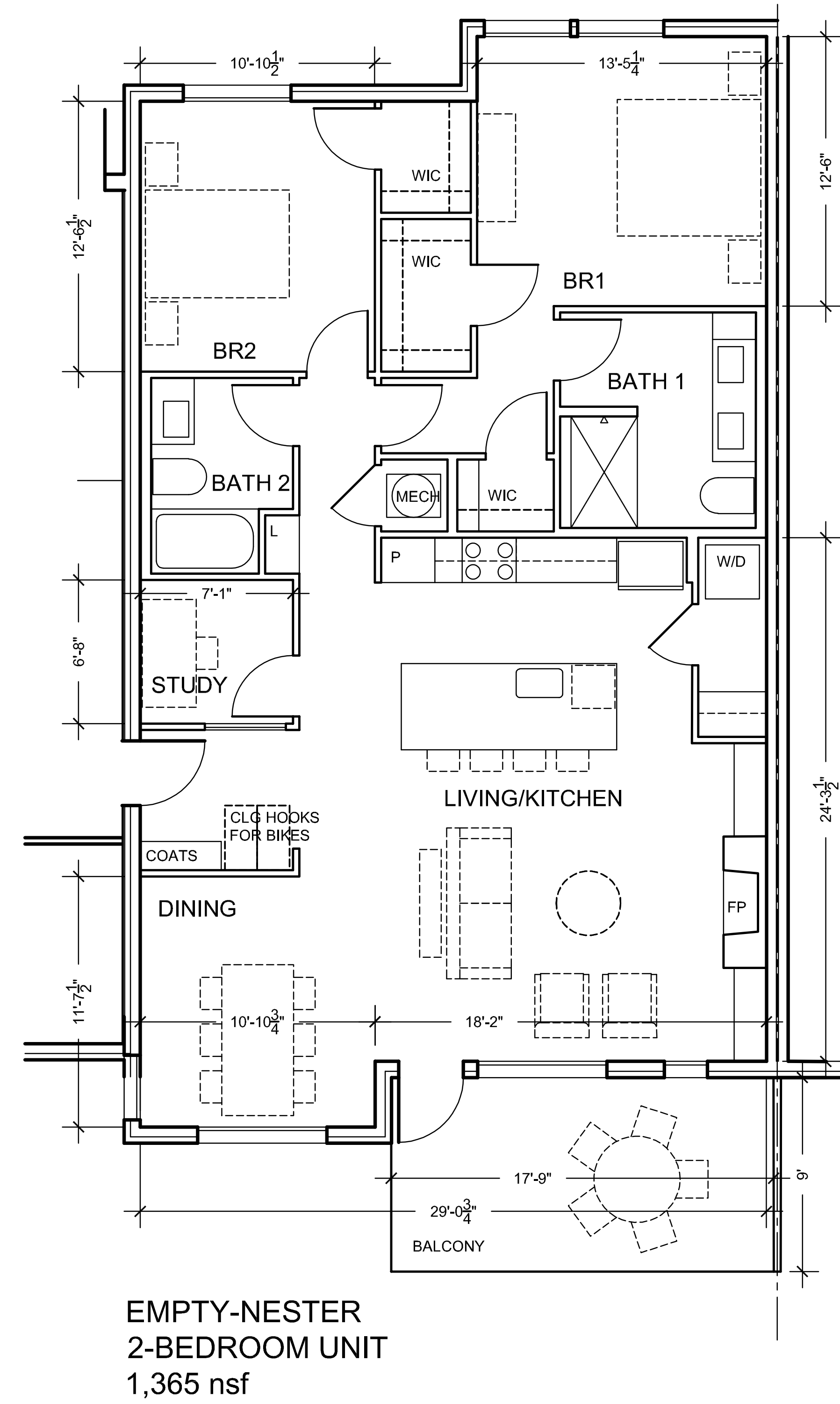
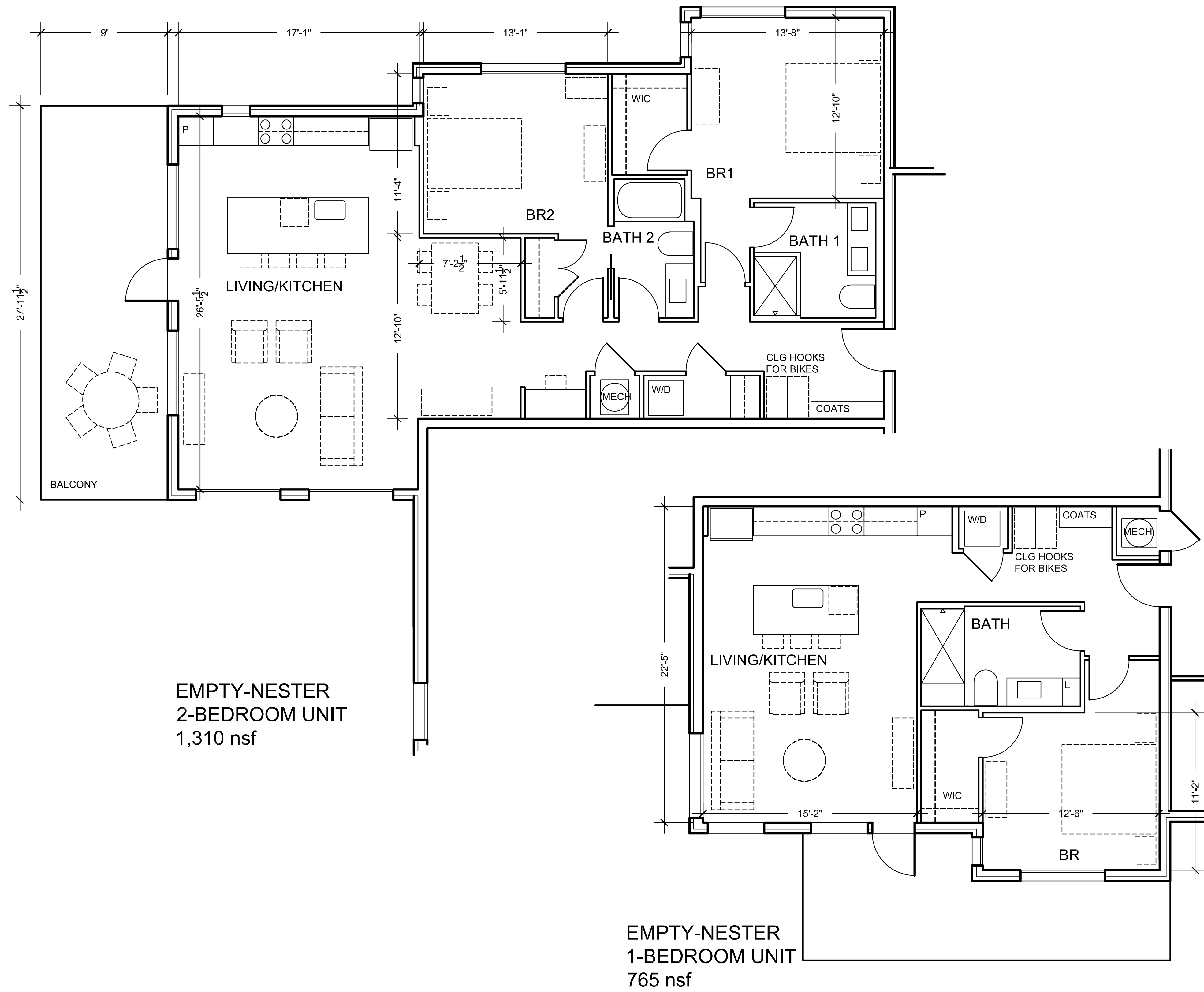
EMPTY NESTER UNIT PLAN - FIRST FLOOR





EMPTY NESTER UNIT PLAN - SECOND FLOOR





EMPTY NESTER FLOOR PLANS





EMPTY-NESTERS - SIDE ELEVATION
1/8" = 1'-0"

3



EMPTY-NESTERS - BACK ELEVATION
1/8" = 1'-0"

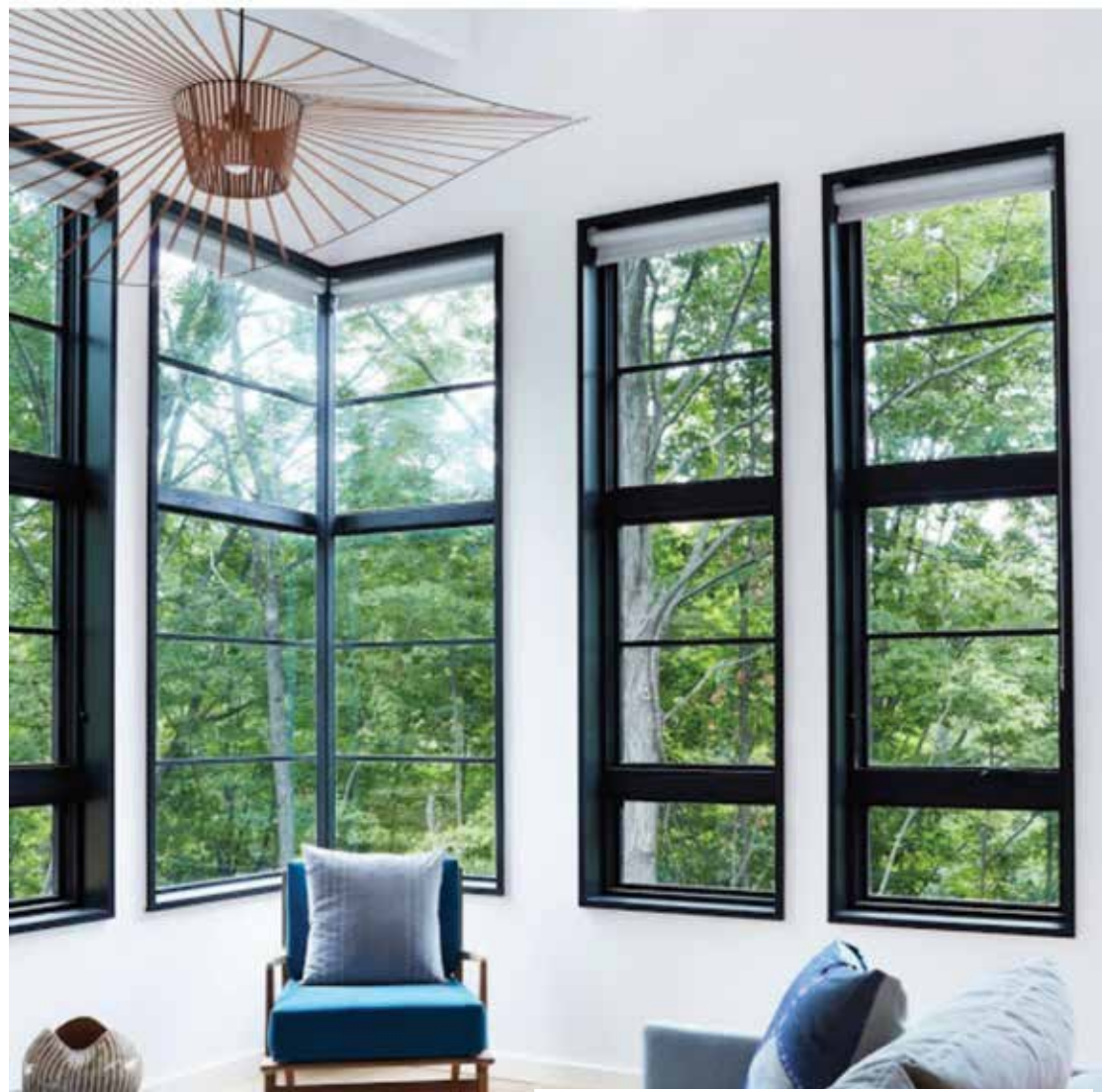
2



EMPTY-NESTERS - FRONT ELEVATION
1/8" = 1'-0"

1

Building Materials



Large View Windows
to be minimum 20 min rated



Fire Treated Wood Accents
to be minimum 1 hour rated or meet the requirements of Section 2303.2 of IBC



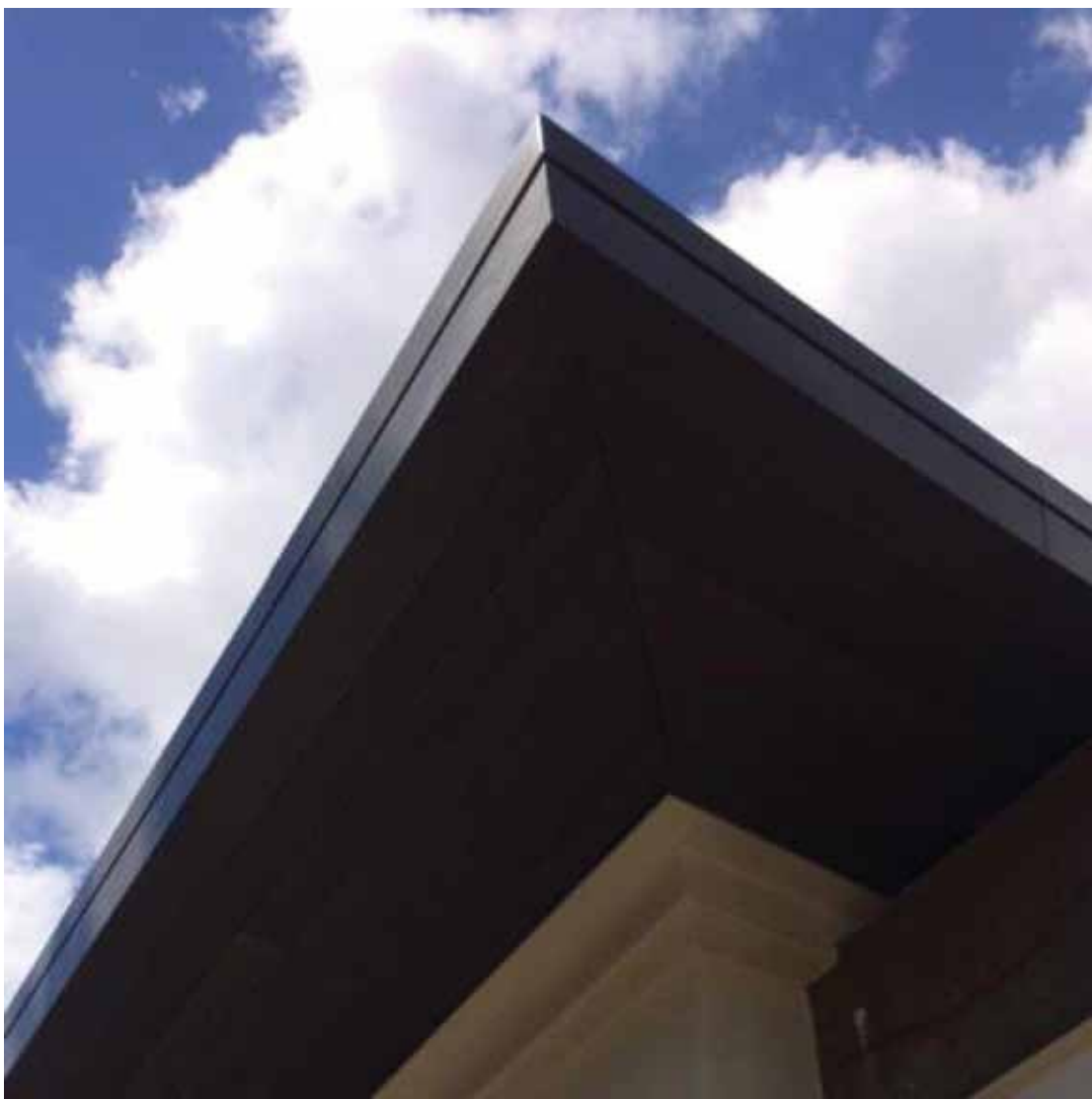
Painted Fiber Cement Board Siding
to be minimum 1 hour rated or approved as non combustible material



Vertical Fiber Cement Shiplap Siding
to be minimum 1 hour rated or approved as non combustible material



Natural Fiber Cement Board Siding
to be minimum 1 hour rated or approved as non combustible material



Fiber Cement Soffit
to be minimum 1 hour rated



Fiber Cement Shiplap Soffit
to be minimum 1 hour rated



Metal Roofing and Siding
to be minimum class A rated



Asphalt Shingle Roofing
to be minimum class A rated

Townhouses



Overhang to protect door from weather | Generous view windows | Garage at each unit



Texture and pattern of material adds human scale elements

Side at Garage



Gable highlights each unit. The wrapping roof line provides privacy and identity.

Townhouse Unit



Natural tones of durable material such as fiber cement, metal, and wood

Private ground level outdoor space at each unit backyard

Back

Live-Work



Texture and pattern of material adds human scale elements

Natural tones of durable material such as fiber cement, metal, and wood

Gable breaks up massing. The wrapping roof line provides privacy and identity.



Large corner windows to capture views



Defined units



Empty Nester



Texture and pattern of material adds human scale elements

Natural tones of durable material such as fiber cement, metal, and wood



At grade entry on both levels.

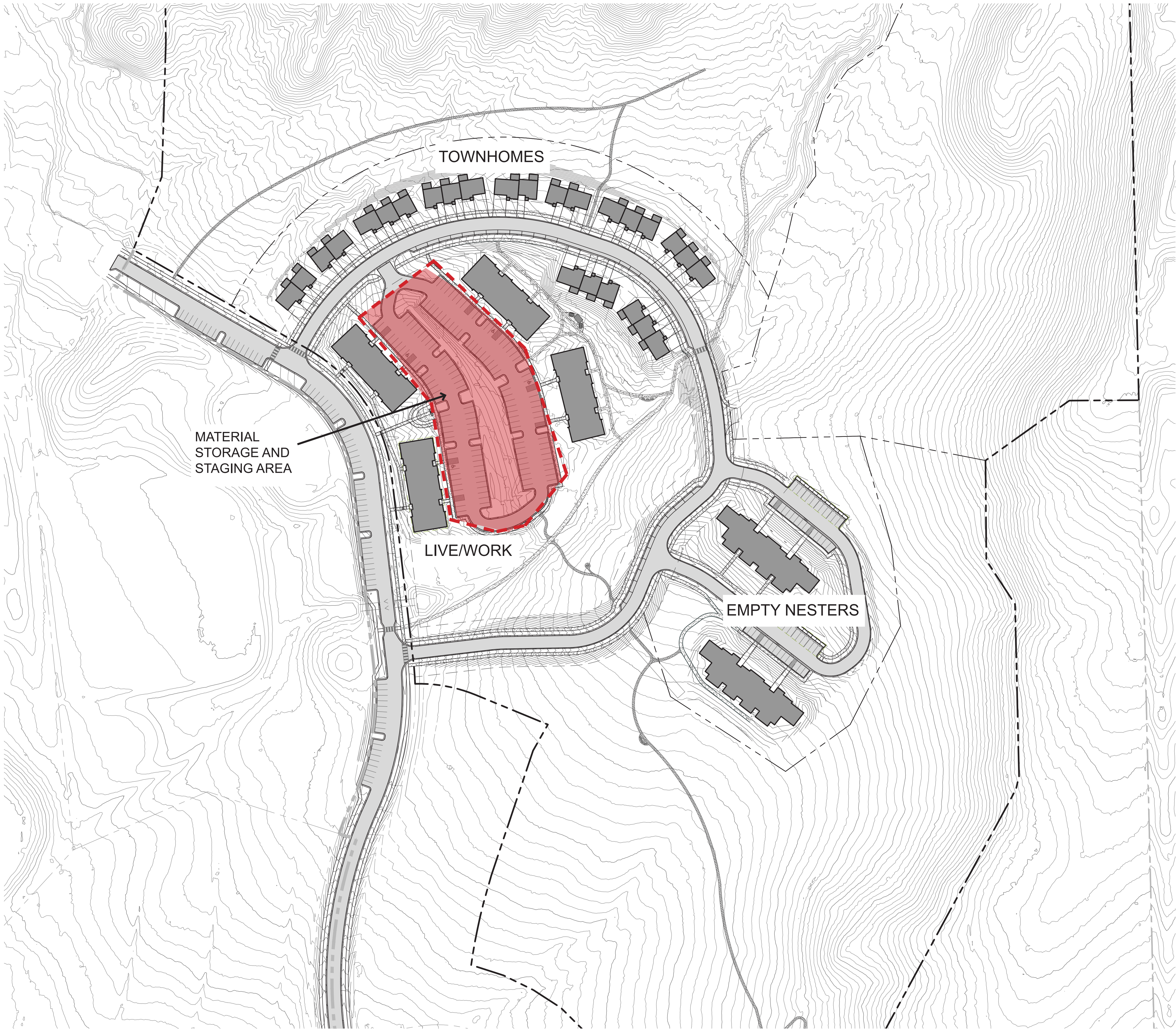
Generous outdoor living with room for outdoor dining at each unit.



Large corner windows to capture views



Defined units



CONSTRUCTION SEQUENCING NOTES

IT IS ENVISIONED THAT CONSTRUCTION SHALL PROCEED IN A SINGLE, CONTINUOUS PHASE, IN THE FOLLOWING SEQUENCE:

1. LOOP ROAD (VISTA LOOP RD) GRADING, CONSTRUCTION OF CURBS, GUTTER, AND SIDEWALKS.
2. INSTALLATION OF SITE UTILITIES.
3. CONSTRUCTION OF TOWNHOMES AND EMPTY NESTER BUILDINGS.
4. TOWNHOMES SHALL BE CONSTRUCTED IN ORDER FROM WEST TO EAST ALONG VISTA LOOP, SEQUENCE OF EMPTY NESTER BUILDINGS AND PARKING TO BE DETERMINED.
5. EXTENSION OF NORTH WILDHORSE DRIVE.
6. CONSTRUCTION OF LIVE/WORK BUILDINGS AND PARKING.
7. FINAL ASPHALT OVERLAY OF ROADS AND PARKING.
8. LANDSCAPING SHALL BE INSTALLED SEASONALLY AS BUILDINGS ARE COMPLETED.





VIEW TOWARDS TOWNHOMES FROM NORTHERN WILD HORSE DRIVE



VIEW TOWARDS LIVE-WORK BUILDINGS FROM WILD HORSE DRIVE



DISTANT VIEW APPROACHING FROM THE SOUTH ALONG WILD HORSE DRIVE



VIEW APPROACHING FROM THE SOUTH ALONG WILD HORSE DRIVE



DISTANT VIEW FROM INTERIOR OF VIX PARK



VIEW FROM INTERIOR OF VIX PARK



STREETSCAPE AT TOWNHOMES



LIVE-WORK ACCESS AND PARKING



COMMON OPEN SPACE BETWEEN LIVE-WORK AND TOWNHOMES



COMMON OPEN SPACE BETWEEN LIVE-WORK AND TOWNHOMES



PUBLIC ACCESS TRAIL IN PARCEL 2



PUBLIC ACCESS TRAIL IN OPEN SPACE NORTH OF TOWNHOMES

GEOTECHNICAL STUDY

PRELIMINARY GEOTECHNICAL STUDY FOR

CASTLE VALLEY RANCH
WEST OF CASTLE VALLEY BOULEVARD
AND CLUBHOUSE DRIVE
NEW CASTLE, COLORADO

PREPARED FOR

VILLAGE HOMES OF COLORADO, INC.
100 INVERNESS TERRACE EAST, SUITE 200
ENGLEWOOD, COLORADO 80112

JUNE 12, 2006
PROJECT NUMBER 90114

June 12, 2006

Village Homes of Colorado, Inc.
100 Inverness Terrace East, Suite 200
Englewood, Colorado 80112

Attention: Mr. Ron Hettinger

Subject: Preliminary Geotechnical Study
Castle Valley Ranch
West of Castle Valley Boulevard and Clubhouse Drive
New Castle, Colorado
Project Number 90114

Dear Mr. Hettinger:

We have conducted a preliminary geotechnical study for the proposed development at the subject site. Our summary of the data collected during our field and laboratory work and our analysis, opinions, and conclusions are presented in the attached report. The purpose of our study is to provide geotechnical design criteria for planning and site development, and preliminary design concepts for foundation systems, interior floor support, and drainage for the proposed development. Preliminary pavement thickness recommendations are also included.

In general, the subsurface materials encountered consist of topsoil, fill, sandy clay, silty to clayey sand and sand and gravel overlying bedrock. Claystone and/or sandstone bedrock was encountered at depths of four and one-half (4½) to 26 feet below the ground surface in 15 of the 22 test borings. Ground water was not encountered during this study. Six (6) of the 22 test borings caved at depths of 13 to 27½ feet one (1) to two (2) days after drilling.

Site development considerations should include provisions related to the presence of expansive clays and bedrock. Consideration should be given to the placement of a thick layer of moisture treated fill to mitigate the expansive materials. Well cemented, hard to very hard sandstone bedrock was found in five (5) borings which may cause construction difficulties.

Based upon the results of this preliminary study, we expect that the structures at the site will be founded on straight shaft piers drilled into competent bedrock or footings or footing pads. Preliminary foundation design concepts are given in the report.

Village Homes of Colorado, Inc.
Project Number 90114
June 12, 2006
Page 2

Slabs-on-grade will require some special consideration because of the moderate to high swelling potential of some of the clay and the claystone. Where the structures are founded upon straight shaft piers, structural floors can be anticipated. Where footings are constructed, slabs-on-grade may be appropriate.

Perimeter subdrains will be necessary for all below grade areas.

Sulfate test results indicate that concrete in contact with the soils should be designed for very severe sulfate conditions.

Preliminary pavement sections are given in the following report. Overexcavation and placement of moisture treated fill in the streets during site grading may be advantageous in areas where claystone is found in the cut areas prior to pavement construction.

Additional recommendations are presented in the following report.

If you have any questions regarding the contents of this report or our analyses of the subsurface conditions which will influence the proposed development, please call us. We have appreciated the opportunity to provide this service for you.

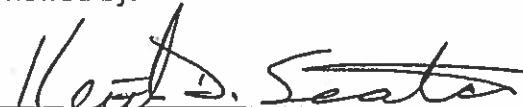
Sincerely,

A. G. WASSENAAR, INC.


Kathleen A. Noonan, P.E.
Project Engineer



Reviewed by:


Keith D. Seaton, P.E.
Senior Engineer

KAN/KDS/kan/meg

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SPECIFICATIONS FOR PLACEMENT OF OVERLOT GRADING FILL	APPENDIX

PRELIMINARY GEOTECHNICAL STUDY

Castle Valley Ranch
West of Castle Valley Boulevard and Clubhouse Drive
New Castle, Colorado
June 12, 2006

PURPOSE

This report presents results of a geotechnical study for a proposed development located along Castle Valley Boulevard to the west of Clubhouse Drive in New Castle, Colorado. This study was conducted for the purpose of generating geotechnical data to assist in determining geotechnical design criteria for planning, site evaluation, and development considerations. Preliminary geotechnical design concepts are also presented for foundations, interior floor support, drainage, and street construction. Factual data gathered during the field and laboratory work is summarized on Figures 1 through 27 and Table I attached. Our opinions and recommendations presented in this report are based on the data generated during this field exploration, associated laboratory testing, our experience with similar type projects, and our understanding of the proposed project.

This report was not intended to provide design criteria for individual foundations or street construction. Additional geotechnical studies will be required to develop these types of final design criteria and construction recommendations.

PROPOSED CONSTRUCTION

We understand the proposed 157 acre development will consist of single family and/or multi-family residential structures and the associated infrastructure. No details of structure construction are available at this time. Preliminary overlot grading plans were not available at the time of this study.

We have assumed maximum cut/fill depths will not exceed 10 feet across the site.

SITE CONDITIONS

The site is located to the north and south of New Castle, Colorado (see Figure 1). The total relief of approximately 330 feet. It appears that the level areas of the parcel runs along the southern boundary of the northern, eastern, and southern boundaries.

FIELD EXPLORATIONS

Subsurface conditions were explored by indicated on Figure 1. The boring typographic features on the site. The boring flight auger powered by a truck-mounted, the subsurface materials were taken using soil by dropping a 140-pound hammer through the sampler is a 2.5-inch outside diameter by required for the sampler to penetrate 12 inches density of the soils encountered. Results presented on the "Exploratory Boring Log" logging each boring for material types, gross drilling and again one (1) and two (2) days

LABORATORY TESTING

Samples were returned to the laboratory with engineer. Testing was then assigned to special

The laboratory tests included 34 settlement-swell tests to evaluate the effect of wetting and loading on the selected soils samples. The results of the settlement-swell tests are presented on Figures 6 through 22. Nine (9) gradation analysis tests and Atterberg limits tests were conducted to evaluate grain size distribution and plasticity. These results are presented on Figures 23 through 27. In addition, representative samples were tested for water soluble sulfates, pH, resistivity, and chlorides. These results are discussed under the heading "Site Concrete and Corrosivity". The test results are summarized on Figures 2 through 5 and Table I.

SUBSURFACE CONDITIONS

The subsurface materials encountered in our test borings consisted of topsoil, fill, sandy clays, silty to clayey sands and sand and gravel over sedimentary bedrock. Claystone and/or sandstone bedrock was encountered at depths of four and one-half (4½) to 26 feet below the ground surface in 15 of the 22 test borings. Ground water was not encountered during this study. Six (6) of the 22 test borings had caved at depths of 13 to 27½ feet when checked one (1) to two (2) days after drilling. A graphical depiction of the subsurface materials and ground water encountered is shown on Figures 2 through 5.

Topsoil was found in 19 of the 22 test borings. The topsoil encountered consisted of sandy clay, up to one-half (½) foot thick, was organic and moist, and dark brown in color. The topsoil is not considered capable of supporting the structures and should be removed. Construction on topsoil is at the sole risk of the Owner.

Fill was found in one (1) test boring (Boring 22). The fill material encountered consisted of sandy clay and was 16 feet thick. It was compact in consistency and moist. It was mottled brown in color. It exhibited in-situ dry densities ranging from 102 to 119 pounds per cubic foot (pcf) at in-

situ moisture contents ranging from 10 to 12 percent (%). The samples tested were of low plasticity. These soils exhibited consolidation (-1.9% to -0.3%) upon wetting and under a load of 1,000 pounds per square foot (psf). This fill was placed prior to A. G. Wassenaar, Inc.'s involvement at this site. Therefore, it is not known if this fill was placed with the proper compactive effort and density compaction testing. Unless documentation is available for the fill which verifies proper placement and compaction, this fill is not considered capable of supporting the structures. Construction on undocumented fill is at the sole risk of the Owner.

Sandy clay was found in 19 of the 22 borings. The clay was generally stiff to very stiff, slightly moist to moist, and brown to red brown in color. It exhibited in-situ dry densities ranging from 78 to 120 pcf at in-situ moisture contents ranging from 6 to 18%. The samples tested were of low to moderate plasticity. These soils exhibited compression to high swell (+4.3%) upon wetting and under a load of 1,000 psf. Some samples from the southern portion of the site exhibited collapse. This soil is assessed to possess a low to high expansion potential.

Silty to clayey sand was encountered in 11 of the 22 test borings. The sand was dense to medium dense, slightly moist to moist, with some silt layers and scattered gravel and cobble and sandstone, and brown to light brown to red brown to gray in color. It exhibited in-situ dry densities of 87 to 123 pcf at an in-situ moisture contents of 2 to 8%. The samples tested were non-plastic or of low plasticity. The samples tested exhibited consolidation (-0.5%) to low swell (+1.7%) when wetted under a 1,000 psf surcharge load. The sands are considered to possess no to low expansion potential.

Claystone bedrock was encountered in 11 of the 22 borings. It was medium hard to very hard, silty to very silty, slightly sandy to sandy, iron stained, with sulfur and sulfate crystals, slightly moist

to moist, and olive to rust in color. It exhibited in-situ dry densities of 94 to 124 pcf at in-situ moisture contents of 6 to 16%. The samples tested were of moderate plasticity. The claystone exhibited consolidation (-7.5%) to very high swell (+6.0%) upon wetting and under a loading of 1,000 psf. It is considered to possess a high expansion potential.

Sandstone bedrock was encountered in five (5) of the 22 borings. The sandstone encountered was clean to silty to clayey, moderately to well cemented, firm to very hard, slightly moist to moist, and rust to brown in color. The sandstone tested exhibited an in-situ dry density of 120 pcf at an in-situ moisture content of 5%. The samples observed were visually of low plasticity. The sandstone exhibited low swell (+0.8%) upon wetting and under a loading of 1,000 psf. It is considered to possess a low expansion potential. A map showing the estimated depths to bedrock is shown on Figure 28.

GEOTECHNICAL CONCERNS

Expansive clays and claystone bedrock were encountered across the site. The clays exhibited no to high swell when tested. The claystone exhibited no to very high swell when tested. In our opinion, the expansive properties of the soil and bedrock can be reduced with proper fill placement, drainage, future irrigation controls, and with the use of proper design and construction techniques. To eliminate use of deep foundations for expansive and collapse prone soils, overexcavation may be performed.

Hard to very hard sandstone bedrock was encountered in the test borings. Very hard, well cemented bedrock may cause construction difficulties during the various excavations to be made during development. It may become especially evident if cuts encounter the sandstone bedrock.

The sandstone may require light blasting or special equipment. The sandstone may require crushing in order to be re-used as fill.

Collapsing clays were encountered in Test Borings 19 and 21. The final concern is the presence of the collapse prone sandy clay. In the presence of moisture, these soils will consolidate, sometimes suddenly. This could cause significant settlements to structures (residence, pavements, etc.) supported by these soils. If left in-place, pier type foundations would be needed in these areas to prevent settlement of the structures. Due to the wide spacing of the test borings, the extent of the collapsing soils could not be accurately determined. We recommend a more in-depth study in the vicinity of these test borings be conducted in order to adequately delineate the areas of collapse potential.

Fill was encountered in Test Boring 22. The fill is approximately 16 feet thick and was placed prior to our involvement with this site. Construction on undocumented fill is the sole risk of the Owner. We recommend the removal of this fill.

SITE DEVELOPMENT

OVERLOT GRADING

We assume the fill materials to be used at the site will be from on-site cut areas. In general, suitable inorganic on-site or off-site soils may be used for structural fill. Any topsoil, or soil containing vegetation or other deleterious material, should also be removed prior to placement of structural fill. Any materials that have been chemically contaminated should be removed from the site for proper disposal. Off-site material considered for structural fill should be evaluated by our office prior to hauling to the site.

Construction of the fill embankments throughout the site will consist of proper foundation preparation, constructing embankment benching where necessary, disposition of strippings, proper fill placement and compaction, and designing and vegetating slopes in accordance with the analysis performed and the applicable governing regulations. Following are general site grading recommendations:

1. It is recommended that we be called to observe and test the fill placement so that a uniform, compacted fill will be placed.
2. Based upon the subsurface information contained in this report, and our assumption that the near surface soils will be used as fill, we have provided general specifications for the project in the Appendix.
3. All vegetation and topsoil beneath planned fill areas should be thoroughly stripped and removed prior to fill placement. These soils should be removed from the site or stockpiled for future use in revegetating exposed slopes. In no case should these materials be used in the structural areas or where the stability of slopes will be affected by their low shear strength. If these materials are used in non-structural areas, they should only be placed in fills where the embankment section does not exceed five feet in height.
4. Any existing fill should be entirely removed prior to new fill placement.
5. Soft soils are anticipated near the existing drainage. Soft soils may need to be stabilized prior to fill placement where encountered. This may be accomplished by drying, addition of angular rock or with manufactured products such as geogrids or stabilization fabric. These areas will need to be field identified at the time of grading. Once the extent of these areas is identified, a stabilization method may be chosen.

6. Where natural slopes exceed an existing slope of 5:1 (horizontal to vertical), benching will be required for structural integrity of any fills. Benches should be constructed as shown on Figure 29.
7. After the foundation has been properly prepared, the natural foundation soils should be scarified to a minimum depth of 6 inches, brought to the proper moisture content and then compacted according to the Appendix.
8. The compaction and moisture control of the soils will be dependent upon material types. The specifications outlined in the Appendix are based upon providing a fill with sufficient shear strength to support structures and controlling residual swell of expansive soil used in fill sections.
9. Particular attention should be paid to compaction of the exterior faces of slopes (i.e., slopes should be compacted to the minimum specification to the surface of the fill embankment).
10. Other specifications outlined in the Appendix of this report should be followed.

MOISTURE TREATED FILL

An option to reduce the amount of swell of the expansive clays and claystone and potential for collapse of the clays would be to remove them from beneath the foundation and pavement areas and then to replace them as a moisture treated fill. This procedure generally results in a fill that is either able to support footing type foundations or reduces the swell of the materials sufficiently to allow the construction of minimum pier lengths. This procedure involves excavating to a depth below the foundations and pavements as determined by the amount of potential swell. The excavated soil is then wetted to above the optimum moisture content and then recompact into the excavations. If this procedure is desired, it will be necessary to perform a more detailed study

of the proposed residential areas to better define the characteristics of the existing soil and bedrock. We are available to discuss this with you.

SLOPES

A slope stability analysis was not conducted as part of this study. Based upon preliminary site specific observation, it appears that most of the existing slopes appear stable. The only instabilities noted were the result of erosion of banks along the various gullies and intermittent stream channels on the site. These areas will need to be laid back or removed during construction. Where natural slopes exceed 5 to 1, horizontal to vertical, benching to maintain structural integrity will be required. Planned excavations into the steeper natural slopes should be reviewed by this office when grading plans become available. Construction of conventional fill slopes should be limited to 2 to 1 or flatter. Cut slopes steeper than 2 to 1 should be evaluated for stability.

CONSTRUCTION EXCAVATIONS

In our opinion, the site grading and utility excavations may be constructed using conventional earth-moving equipment for the area. The excavations in areas where bedrock is present at or near the surface will require additional effort where moderately to well cemented sandstone is encountered. The use of a large dozer (CAT D8 or D9) with a single shank ripper tooth will be required. In addition, some of the sandstone may require light blasting where well cemented. Excavations deeper than three feet should be properly sloped or braced to prevent collapse because of caving soils. Local, city, county, state, and federal (OSHA) regulations should be followed.

SITE DRAINAGE

We recommend that provision be made to divert surface runoff away from foundation areas. This may reduce potential problems associated with excess water in the foundation bearing soils. The site should be designed such that a 10% slope can be established at the residences after foundation construction. Slopes of at least 2% should then be planned in landscaped areas once the water is away from the foundation.

SUBSURFACE DRAINAGE

The ground water encountered is not anticipated to cause significant problems across most of the site during development except near the existing drainages. It may be necessary to construct blanket drains in the existing drainages if they are to be filled to significant depths.

The types of materials encountered across the site have a relatively low permeability, and are, therefore, susceptible to the creation of a perched water condition. Perched water, in conditions such as these, forms after construction has taken place, when extensive irrigation is introduced to the property.

For these reasons, we recommend an overall area drain be considered during site development. In addition, the overall area drain can also provide for a discharge and collection point for individual foundation drains. Because the sanitary sewer trench excavation is typically the deepest excavated trench area, underdrains can be designed and constructed with installation of the sanitary sewer system. The civil engineering company contracted to design the infrastructure should be able to provide this design. We are available to assist in drain design. For the system to work, the area drain must be graded to a positive discharge point. Given the topography of the site, it should be possible to lead the area drain to a gravity "daylight" outfall on the lower

topographic portions of the site. If a permanent outfall for an area drain cannot be determined, the area drain should not be constructed. If an area drain is not constructed, it would be advantageous to provide a gravity outfall for the sewer bedding material.

UTILITY CONSTRUCTION

Excavations into the overburden soils will encounter primarily sands, clays and some bedrock. The bedrock may be considered a "Type A" soil, where intact. The overburden clay above the ground water level may be considered a "Type B" soil, and the sands and any soil influenced by the ground water should be considered as a "Type C" soil. Final determination of the soil types must be made by the contractor's "competent person" at the time of construction. All excavations should be sloped or shored in the interest of safety, following local and federal (OSHA) regulations.

The bedrock, when encountered, may stand vertically unsupported, except where fractured or inundated with water. In the interest of safety, bedrock excavations should be sloped as outlined above. In our opinion, most of the utility excavations may be constructed using conventional earth-moving equipment for the area. Difficulty will be experienced where moderately to well cemented sandstone is found. Excavation with rock buckets or trenchers designed for the cemented rock should be anticipated. In addition, some light blasting may be required.

Trench backfill should be well compacted to prevent future settlement. Trenches, as a minimum, should be compacted to the same specifications as required for overlot grading. Trenches in streets should be compacted to Town of New Castle specifications. Density-compaction testing must be performed during trench backfilling.

SITE CONCRETE AND CORROSIVITY

Testing performed on selected soil samples indicates a water soluble sulfate content ranging from less than 50 ppm to 20,000 ppm. This is considered to be a negligible to very severe concentration relative to potential corrosive attack on concrete. Therefore, all concrete in contact with the soils on the site should be designed for very severe sulfate exposure in accordance with the American Concrete Institute (ACI) Design Manual, Section 318, Chapter 4.3, 2004 Edition.

The pH testing exhibited levels of 7.32 to 8.31. Resistivity testing at in-situ moistures resulted in levels from 516 to 3,984 Ohms/cm. Chloride test results indicated less than 0.0001% to 0.0068%. These results are summarized on Figures 2 through 5, and in Table I. The results of this testing should be used as an aid in choosing the construction materials in contact with these soils and will be resistant to the various corrosive forces. Manufacturer's representatives should be contacted regarding the specific corrosivity resistance to the stated levels of pH, resistivity, and chlorides for their particular product. In addition, local district specifications should be consulted when selecting pipe materials.

PRELIMINARY FOUNDATION DESIGN CONCEPTS

The foundation recommendations for each structure are dependent upon the subsurface profile and engineering properties of the materials encountered at and near to the depth of the proposed foundation. These are dependent upon the final configuration and construction methods used during overlot grading at the site and the type of structure to be constructed. Therefore, foundation design recommendations for each structure cannot be presented until site grading is complete. The information presented in the following sections presents preliminary foundation concepts which must be finalized for each building site upon completion of the overlot grading operations. We should be retained to provide an additional soil and foundation

exploration after completion of site grading to provide specific foundation design recommendations for each site.

PIERS

A suitable foundation system for structures founded where claystone bedrock, moderate to highly expansive clay soils or collapse prone soils are found at or near to the bottom of the final excavations would be straight shaft piers drilled into bedrock. The piers will likely be designed for an end bearing pressure in the range of 15,000 to 30,000 pounds per square foot (psf), a minimum dead load pressure in the range of 15,000 to 20,000 psf, and a side shear in the range of 1,500 to 3,000 psf. The side shear would be applied for that portion of the pier in undisturbed bedrock with the exception of the upper 10 feet of each pier beneath the grade beam or foundation wall. Pier lengths on the order of 20 to 30 feet with bedrock penetration from eight (8) to 15 feet can be anticipated.

As an alternative, helical steel piers may be considered. These piers will need to be drilled to depths of 15 to 20 feet below the bottom of the foundation and bear into materials capable of supporting their design pressures. Due to the hardness of the bedrock, pre-drilling of the pier locations will likely be necessary. Heavy duty piers may be necessary. Additionally, refusal of the piers may occur in the well cemented sandstone.

FOOTINGS

It is likely that some of the structures could be supported by spread footings or pad-type footings bearing on the natural sands, sandstone, and clays or thick, low expansive fill materials. If the expansive and collapse prone materials are overexcavated and replaced as moisture treated fill,

most of the structures could likely be supported by footings. The footings must be founded below frost depth. Some densification may be required for footing support in areas where loose sand is encountered at foundation level. The footings will likely be designed for a maximum soil pressure ranging from 1,000 to 3,000 pounds per square foot (psf). A minimum dead load pressure may be required where clays are present.

LATERAL EARTH PRESSURES

Foundation walls with fill on only one side and any retaining walls will need to be designed for lateral earth pressures. For this site, lateral equivalent fluid pressures on the order of 45 to 60 pounds per cubic foot should be anticipated dependent upon the type of soil used to backfill the walls.

INTERIOR FLOOR CONSTRUCTION

Where straight shaft piers are used for foundation support, the sites will be assessed with a moderate to very high slab risk performance evaluation. Where footing type foundations are constructed, it is likely that the sites will be assessed with a low or moderate slab risk performance evaluation. For structures constructed on piers, it is likely that it will be necessary to construct a structural basement floor where moderate or higher risk is present. Where structures are supported on footings, low to moderate basement slab risk assessments can be anticipated. If the risk tolerance for slab movement is zero, structural floors should be considered in all areas.

DRAIN SYSTEMS

Due to the relatively impermeable nature of the soils encountered on the site, drain systems will be required where below grade spaces are planned. Either interior or exterior drains may be used. The drains must be led to a positive gravity outfall or sump.

BACKFILL AND SURFACE DRAINAGE

Backfill should be moistened and compacted to reduce future settlement. The site grading should consider a slope of 10% away from the foundations at the completion of construction. All other drainage swales in landscaped areas should slope at a minimum of 2%.

PRELIMINARY STREET PAVEMENT DESIGN

Pavement design procedures are based on strength properties of the subgrade and pavement materials, along with the assumed design traffic conditions. Subgrade materials, such as the clay materials encountered on this site, are potentially expansive and require additional precautions be taken to provide for adequate pavement performance. The pavement design procedures outlined address expansive subgrade materials primarily by modifying the subgrade materials in such a manner as to reduce the swell potential and then by attempting to minimize subgrade wetting after construction.

Based upon our preliminary analysis, it appears the proposed pavement subgrade materials will be the sandy clays and clayey sands. These soils are summarized below according to their AASHTO Soil Classification System and Group Index Method.

Soil	AASHTO	
	Classification	Group Index
Silty, gravelly sand, clayey sand, sandstone	A-1-b, A-2-4, A-4	0
Sandy clay	A-6	9-14

From these soil classifications, we have estimated R-Values in order to determine the preliminary pavement thicknesses. Based on this information and utilizing thickness as determined from the CDOT Design Nomograph, as accepted by the Town of New Castle, the alternatives presented below were calculated.

PAVEMENT ALTERNATIVES FOR INTERIOR STREETS

A-1-b, A-2-4, A-4 Soils		
Traffic Category	HBP	HBP/ABC
Local	5.5" - 6.5"	3.5" - 4.5" / 7.5" - 9.0"
Minor Collector (Residential)	7.0" - 8.5"	4.0" - 5.0" / 8.0" - 9.5"

A-6 Soils		
Traffic Category	HBP	HBP/ABC
Local	6.0" - 7.0"	3.5" - 4.5" / 7.5" - 9.0"
Minor Collector (Residential)	8.0" - 9.5"	4.5" - 5.5" / 8.0" - 9.5"

HBP = Hot Bituminous Pavement ABC = Aggregate Base Course

Note: Composite sections are only allowed in private streets and parking lots.

DTNs of 5 were used for the local streets and a DTN of 30 was used for the residential minor collector. A design life of 20 years was assumed. It should be emphasized that the design alternatives provided above are preliminary for interior local residential streets and collectors. The final design thickness could be more or less than indicated.

Proper surface and subsurface drainage is essential for adequate performance of pavements constructed on these types of subgrade materials. It has been our experience that water from landscaped areas will infiltrate pavement subgrade soils and result in loss of subgrade integrity

followed by pavement damage. Therefore, provisions should be made to maintain adequate drainage and/or contain runoff from such areas. In addition, water and irrigation lines should be thoroughly pressure tested for leaks prior to placement of pavement materials.

It must be reiterated that the information contained in this section is preliminary in nature. More detailed information will be required by the Town of New Castle prior to issuance of a paving permit. Therefore, when overlot grading is complete at the site, a final pavement evaluation must be performed.

FINAL DESIGN CONSULTATION AND CONSTRUCTION OBSERVATION

This report has been prepared for the exclusive use of Village Homes of Colorado, Inc. for the purpose of providing geotechnical criteria for the proposed project. The data gathered and the conclusions and recommendations presented herein are based upon the consideration of many factors including, but not limited to, the type of structures proposed, the configuration of the structures, the proposed usage of the site, the configuration of surrounding structures, the geologic setting, the materials encountered, and our understanding of the level of risk acceptable to the client. Therefore, the conclusions and recommendations contained in this report shall not be considered valid for use by others unless accompanied by written authorization from A. G. Wassenaar, Inc.

It is recommended that A. G. Wassenaar, Inc. be retained to provide general review of the final design and specifications in order that the recommendations presented may be properly interpreted and implemented. Our firm should also be retained to provide geotechnical engineering and material testing services during construction of the site grading, utilities, and drainage features. The purpose is to observe the construction with respect to the geotechnical

design concepts, specifications or recommendations, and to facilitate design changes in the event that subsurface conditions differ from those anticipated prior to start of construction. It is also recommended that our firm be retained to perform a final pavement design for the streets and parking lots in the development and to perform a final foundation design report for each structure in the development after site grading is complete.

GEOTECHNICAL RISK

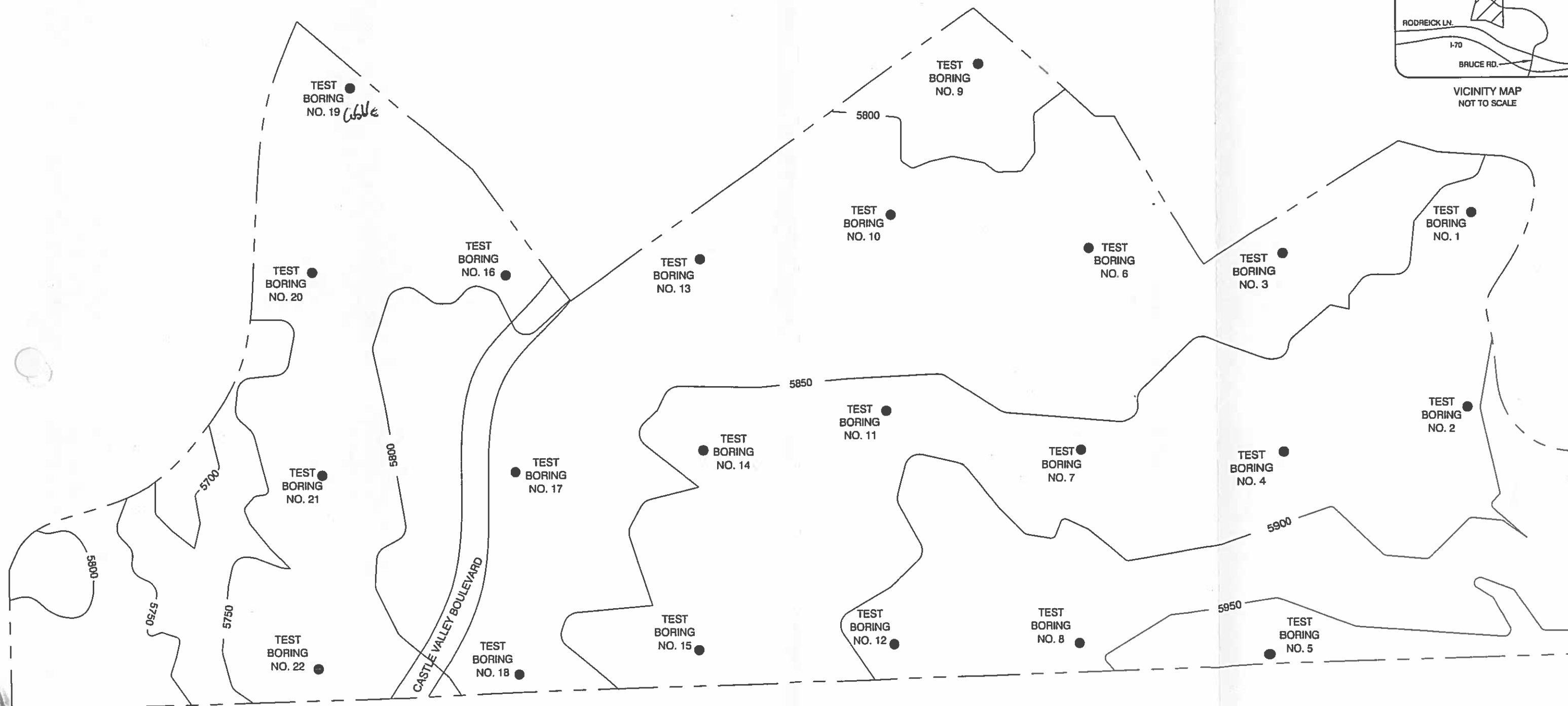
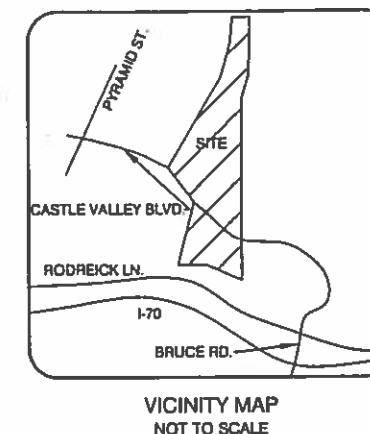
The concept of risk is an important aspect of any geotechnical evaluation. The primary reason for this is that the analytical methods used to develop geotechnical recommendations do not comprise an exact science. The analytical tools which geotechnical engineers use are generally empirical and must be tempered by engineering judgment and experience. Therefore, the solutions or recommendations presented in any geotechnical evaluation should not be considered risk-free and, more importantly, are not a guarantee that the interaction between the soils and the proposed structure will perform as desired or intended. What the engineering recommendations presented in the preceding sections do constitute is our best estimate, based on the information generated during this and previous evaluations and our experience in working with these conditions, of those measures that are necessary to help the development perform in a satisfactory manner. The Developer, Builder, and future Owners must understand this concept of risk, as it is they who must decide what is an acceptable level of risk for the proposed development of the site.

LIMITATIONS

The professional judgments expressed in this report meet the standard care of our profession in this area at this time. The test borings drilled for this study were spaced to obtain a reasonably accurate picture of underground conditions for design purposes. Variations frequently occur from

these conditions which are not indicated by the test borings. These variations are sometimes sufficient to necessitate modifications in the designs. For this reason, we should be retained to observe the site during construction.

Our scope of services for this project did not include any research, testing, or assessment relative to past or present contamination of the site by any source. If such contamination were present, it is likely that the exploration and testing conducted for this report would not reveal its existence. If the Client is concerned about the potential for such contamination, additional studies should be undertaken. We are available to discuss the scope of such studies with you.

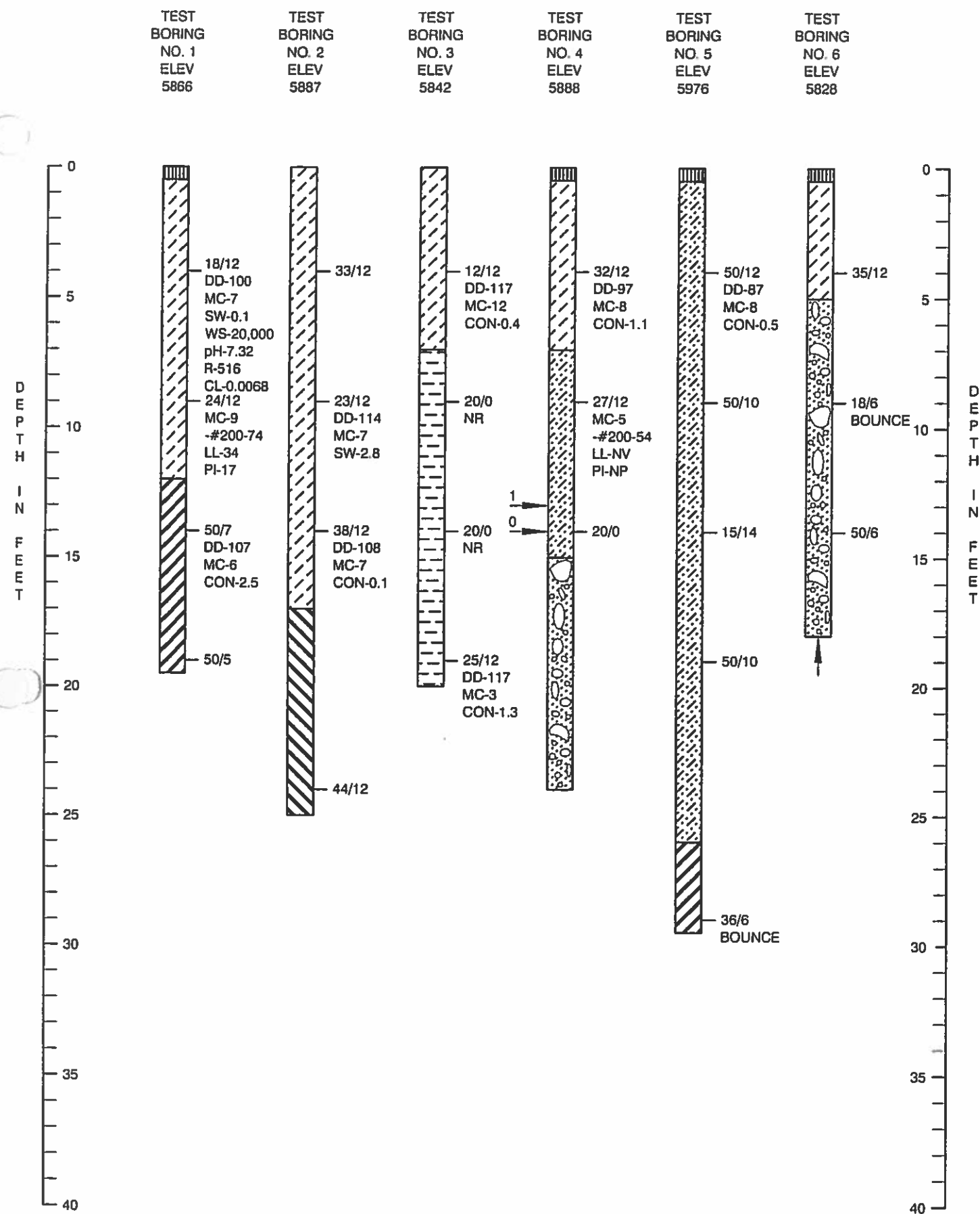


NOTE: ALL LOCATIONS ARE APPROXIMATE

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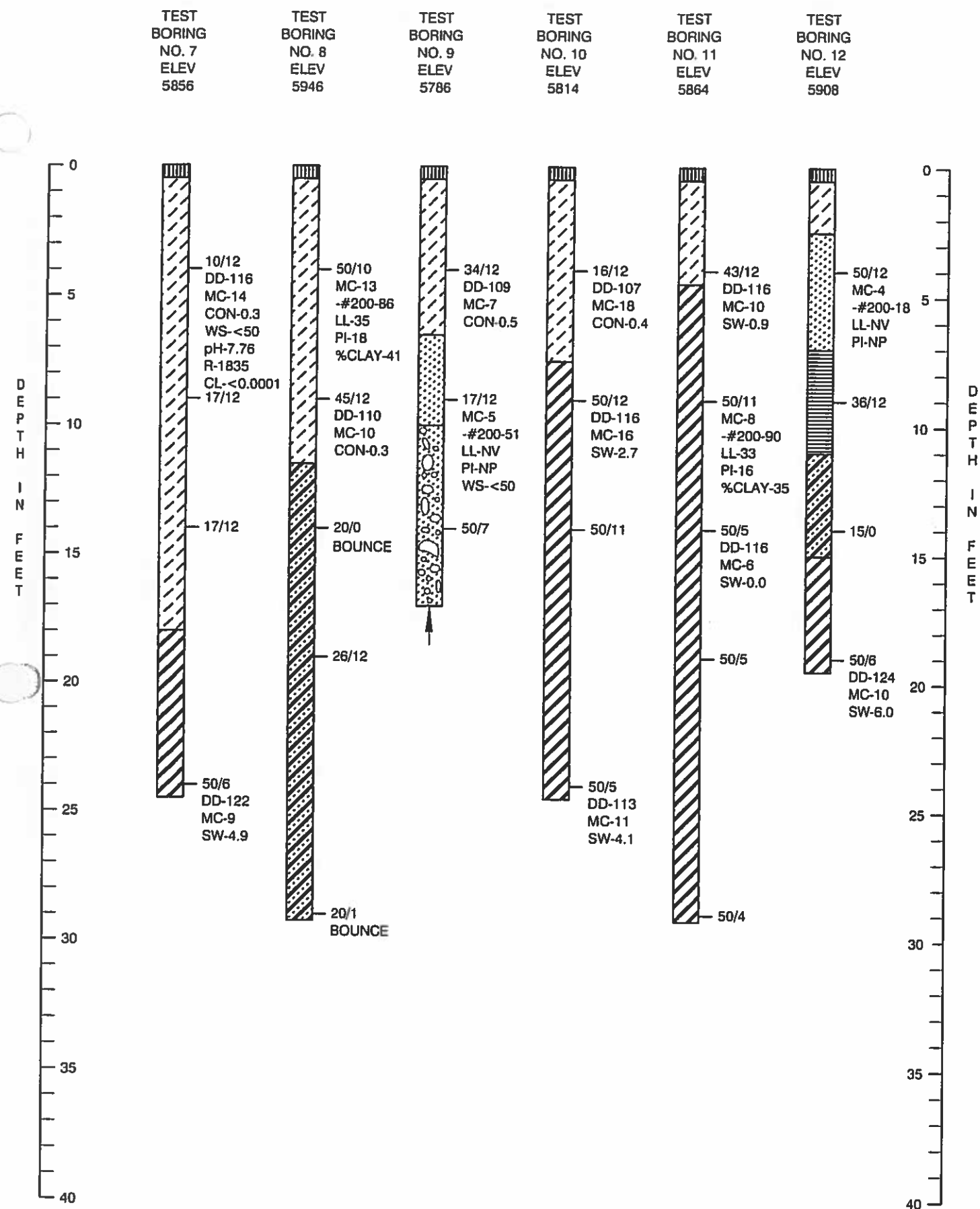
SITE PLAN
AND
VICINITY MAP

PROJECT NO. 90114
FIGURE 1



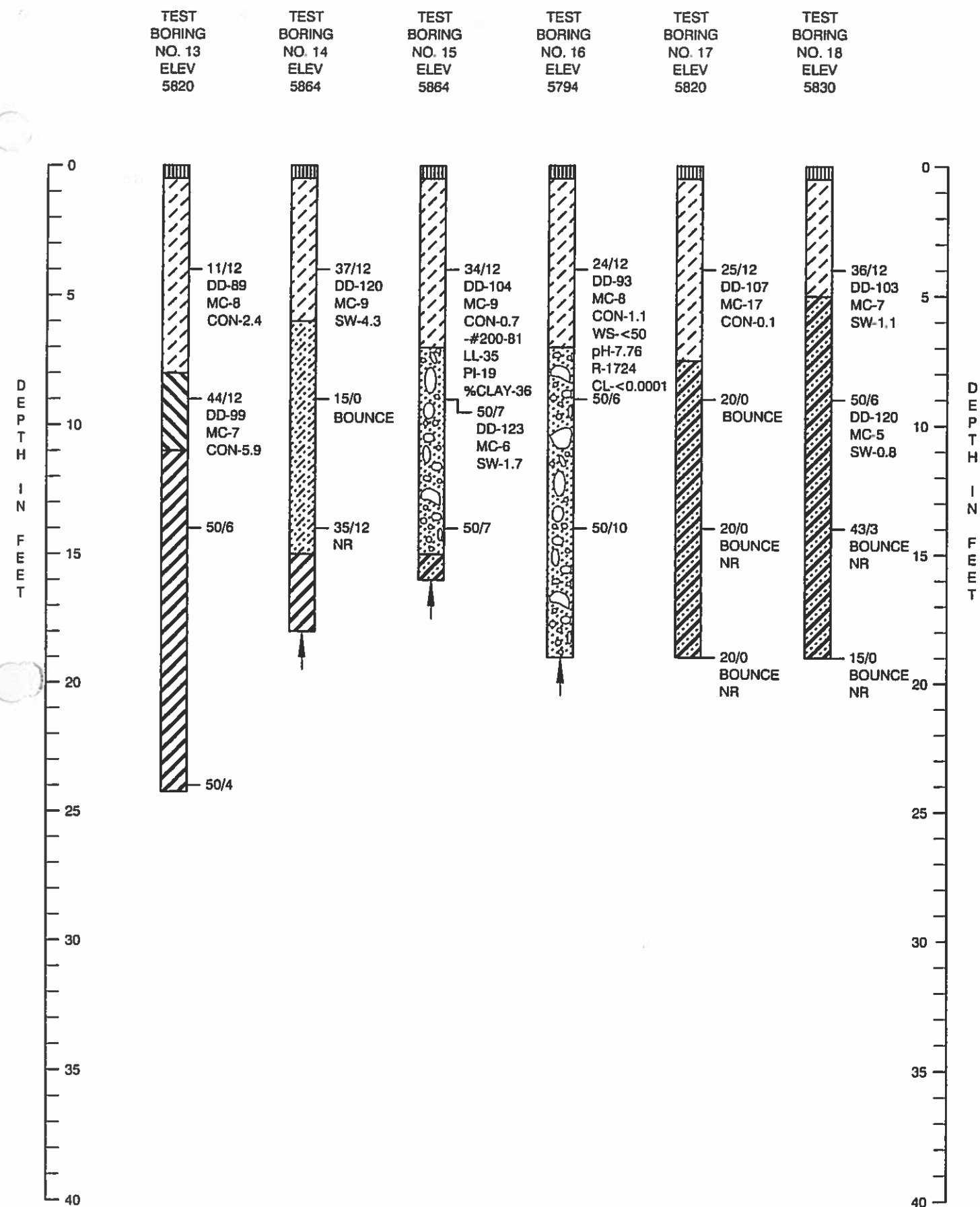
SEE FIGURE 5 FOR LEGEND AND NOTES TO EXPLORATORY BORINGS

EXPLORATORY BORING LOGS
FIGURE 2



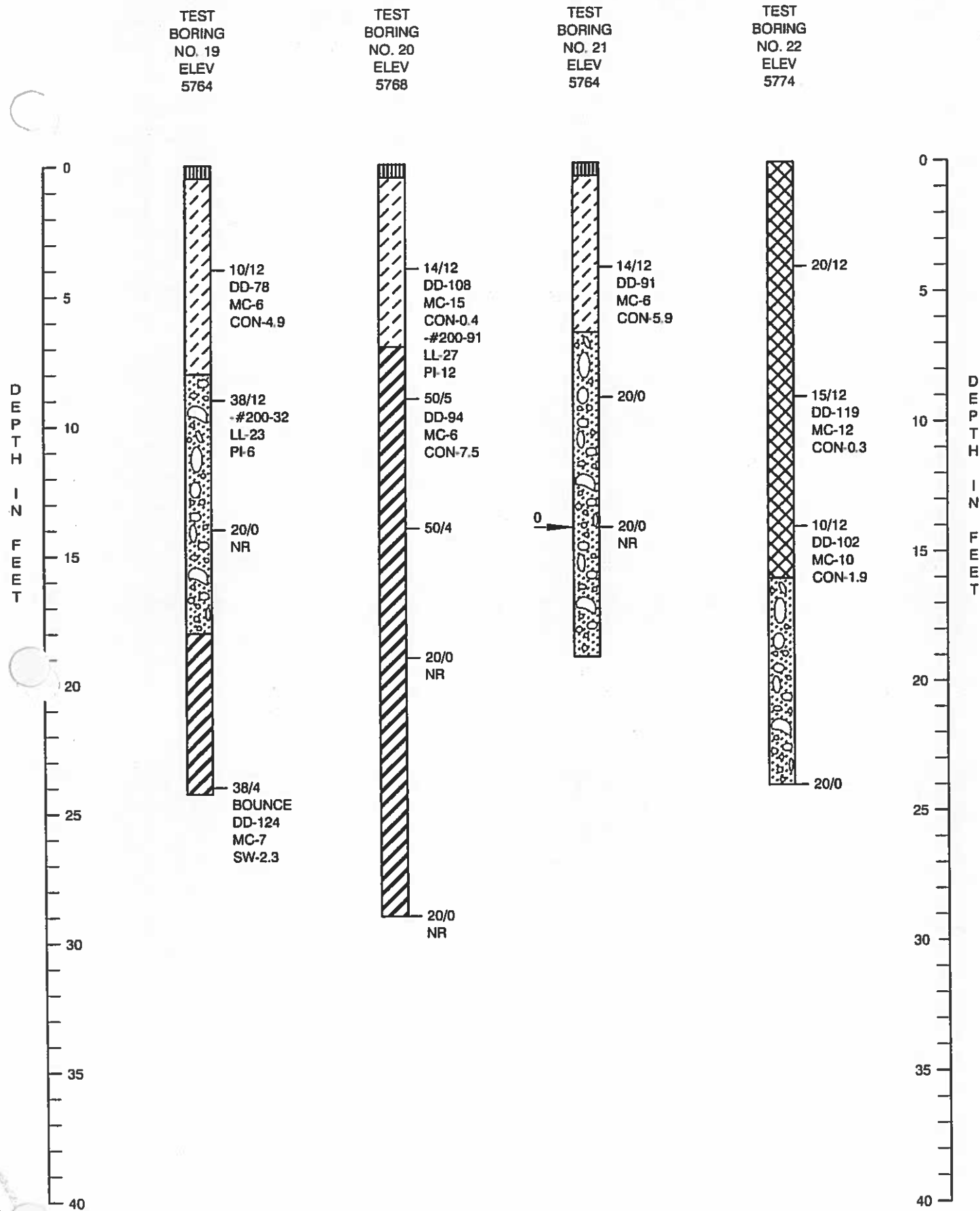
SEE FIGURE 5 FOR LEGEND AND NOTES TO EXPLORATORY BORINGS

EXPLORATORY BORING LOGS
FIGURE 3



SEE FIGURE 5 FOR LEGEND AND NOTES TO EXPLORATORY BORINGS

EXPLORATORY BORING LOGS
FIGURE 4



LEGEND

- TOPSOIL, CLAY, SANDY, ORGANIC, MOIST, DARK BROWN
- FILL (MAN-MADE), CLAY, COMPACT, SANDY, MOIST, MOTTLED BROWN (AF)
- CLAY, STIFF TO VERY STIFF, SILTY, SANDY, WITH SCATTERED GRAVEL, CALCAREOUS, SLIGHTLY MOIST, BROWN TO RED BROWN (CL)
- CLAY, VERY STIFF TO HARD, SILTY, SANDY, WITH COBBLES, SLIGHTLY MOIST, BROWN
- SAND, MEDIUM DENSE, SILTY, WITH VERY SAND SILT AND VERY SANDY GRAVEL LENSES, SLIGHTLY MOIST, RED BROWN (SM)
- SAND, MEDIUM DENSE TO DENSE, SILTY, CLAYEY, WITH VERY SANDY SILT LENSES, SCATTERED GRAVEL, SLIGHTLY MOIST TO MOIST, RED BROWN (SC)
- SAND AND GRAVELS, DENSE, WITH COBBLES, SLIGHTLY MOIST, RED BROWN
- SAND / CLAY, INTERBEDDED, DENSE / VERY STIFF, VERY SILTY, WITH SCATTERED GRAVEL, SLIGHTLY MOIST, RED BROWN
- CLAYSTONE (BEDROCK), MEDIUM HARD, SILTY TO VERY SILTY, SLIGHTLY SANDY, WITH GYPSUM, MOIST, OLIVE
- CLAYSTONE (BEDROCK), HARD TO VERY HARD, SILTY TO VERY SILTY, IRON STAINED, WITH SULFUR CRYSTALS, SLIGHTLY MOIST, OLIVE TO RUST
- SANDSTONE (BEDROCK), VERY HARD, MODERATELY TO WELL CEMENTED, SILTY, SLIGHTLY MOIST, RED BROWN
- 18/12 INDICATES THAT 18 BLOWS OF A 140-POUND HAMMER FALLING 30 INCHES WERE REQUIRED TO DRIVE A 2.5-INCH OUTSIDE DIAMETER SAMPLER 12 INCHES.
- 18/12* INDICATES THAT 18 BLOWS OF A 140-POUND HAMMER FALLING 30 INCHES WERE REQUIRED TO DRIVE A 2-INCH OUTSIDE DIAMETER SAMPLER 12 INCHES.
- NR INDICATES NO SAMPLE RECOVERED
- BOUNCE INDICATES THAT THE SAMPLER BOUNCED WHEN DRIVEN WITH A 140-POUND HAMMER FALLING 30 INCHES
- 0 - INDICATES THE DEPTH TO THE FREE WATER TABLE AND THE NUMBER OF DAYS AFTER DRILLING WHEN THE MEASUREMENT WAS TAKEN.
- ↑ INDICATES DEPTH AT WHICH PRACTICAL DRILLING REFUSAL WAS ENCOUNTERED.
- 0 - INDICATES THE DEPTH AT WHICH THE TEST BORING CAVED AND THE NUMBER OF DAYS AFTER DRILLING WHEN THE MEASUREMENT WAS TAKEN.
- DD INDICATES DRY WEIGHT OF SAMPLE IN POUNDS PER CUBIC FOOT.
- MC INDICATES MOISTURE CONTENT AS A PERCENTAGE OF DRY WEIGHT OF SOIL.
- SW INDICATES PERCENT SWELL UNDER A SURCHARGE OF 1000 PSF UPON WETTING.
- CON INDICATES PERCENT CONSOLIDATION UNDER A SURCHARGE OF 1000 PSF UPON WETTING
- #200 INDICATES PERCENT PASSING THE NO. 200 SIEVE.
- % CLAY INDICATES PERCENTAGE OF CLAY SIZES (<0.002mm)
- LL INDICATES LIQUID LIMIT.
- PI INDICATES PLASTICITY INDEX.
- NP INDICATES NON-PLASTIC.
- NV INDICATES NO VALUE.
- WS INDICATES WATER SOLUBLE SULFATES IN PARTS PER MILLION.
- pH INDICATES ACIDITY OR ALKALINITY OF SAMPLE IN pH UNITS.
- CL INDICATES CHLORIDES IN PERCENT.
- R INDICATES RESISTIVITY IN OHMS-CM.

NOTES

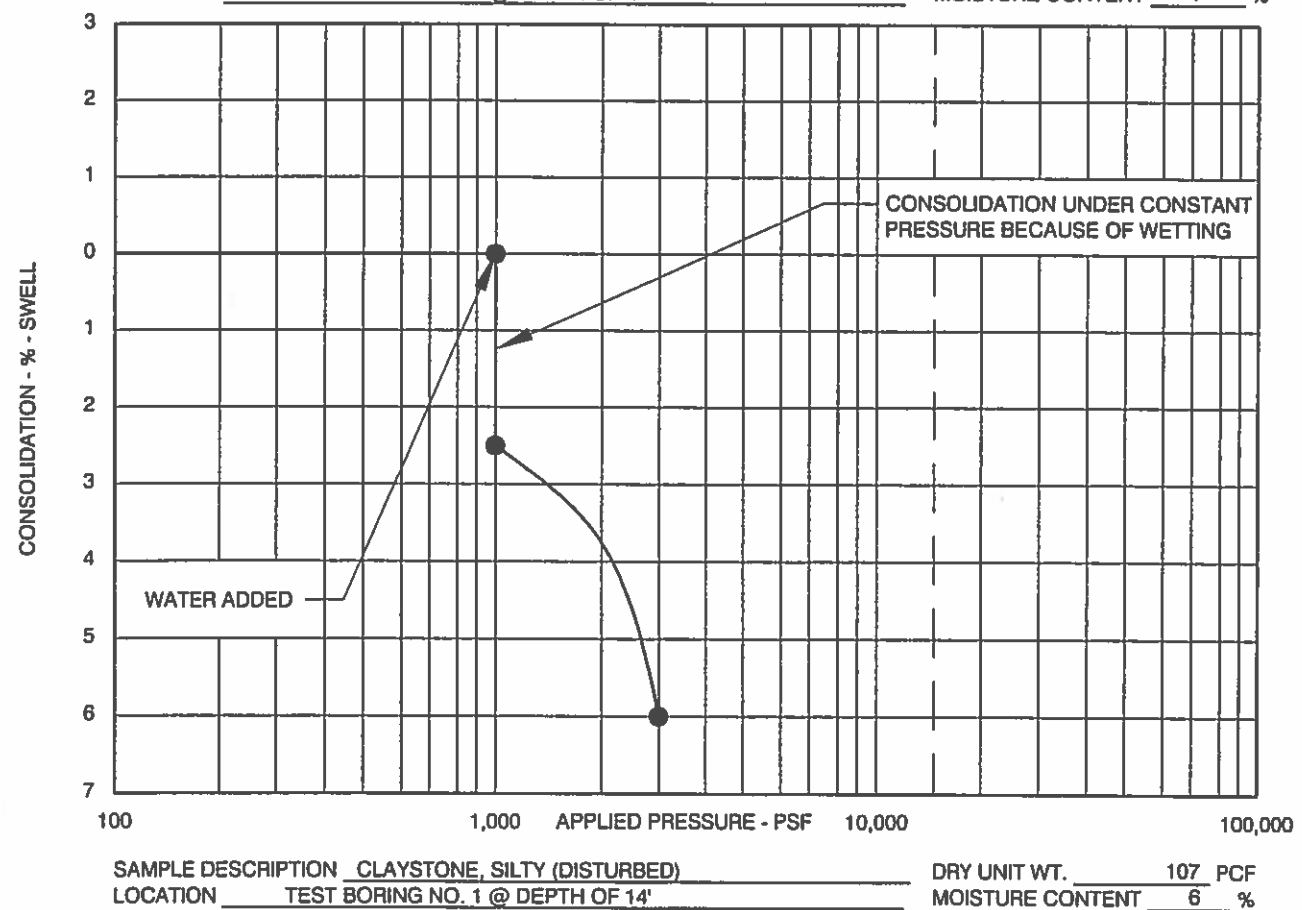
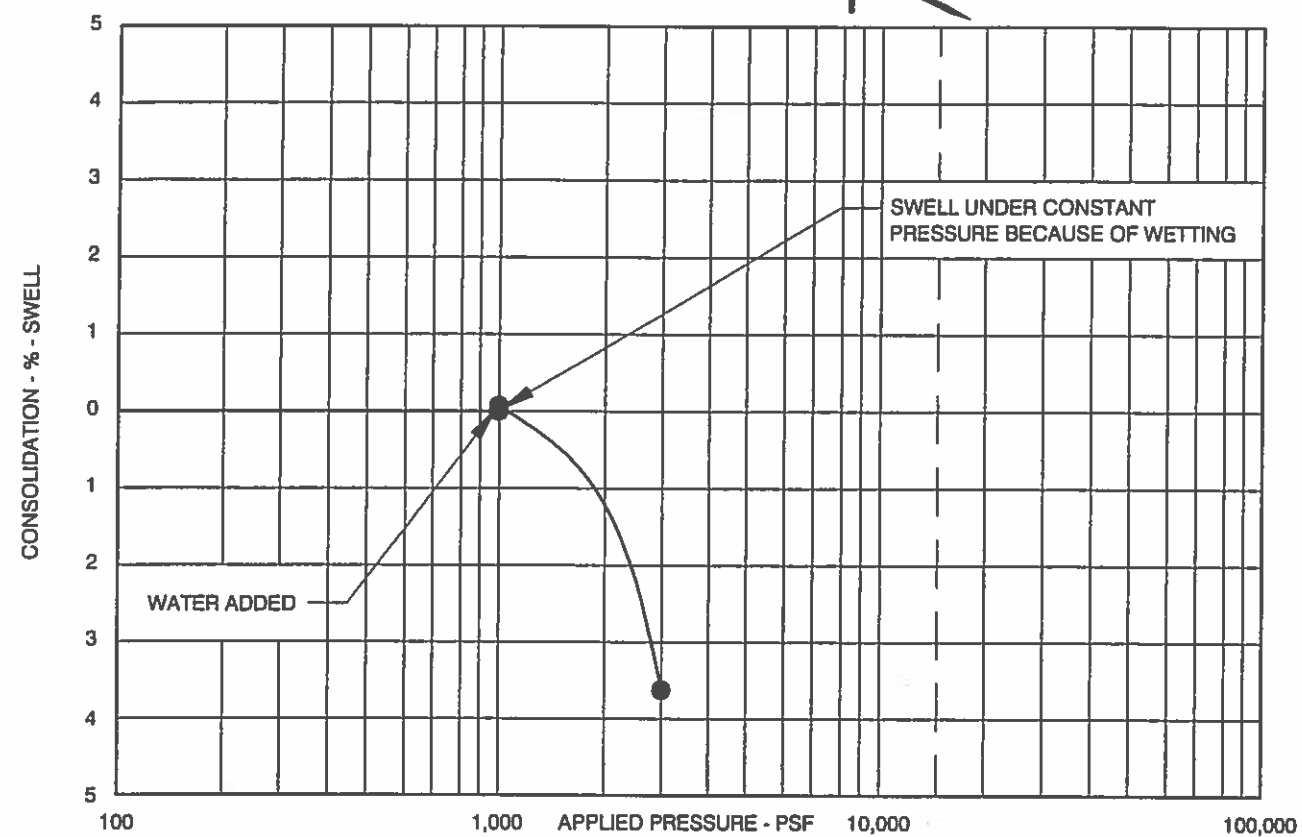
- TEST BORINGS WERE DRILLED MAY 17 & 18, 2006 WITH A 4-INCH DIAMETER, CONTINUOUS FLIGHT POWER AUGER.
- NO FREE WATER WAS OBSERVED AT THE TIME OF DRILLING.
- LOCATIONS OF TEST BORINGS WERE DETERMINED BY RECONNOITERING FROM FEATURES SHOWN ON THE SITE PLAN PROVIDED BY OTHERS.
- ELEVATIONS ARE APPROXIMATE AND REFER TO THE TOPOGRAPHIC SITE PLAN PROVIDED BY OTHERS.
- THE HORIZONTAL LINES SHOWN ON THE LOGS ARE TO DIFFERENTIATE MATERIALS AND REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN MATERIALS. THE TRANSITIONS BETWEEN MATERIALS MAY BE GRADUAL
- DRILL LOGS SHOWN IN THIS REPORT ARE SUBJECT TO THE LIMITATIONS, EXPLANATIONS, AND CONCLUSIONS OF THIS REPORT.

A.G. Wassenaar
Geotechnical and Environmental Consultants **Inc.**

EXPLORATORY BORING LOGS

PROJECT NO. 90114
FIGURE 5

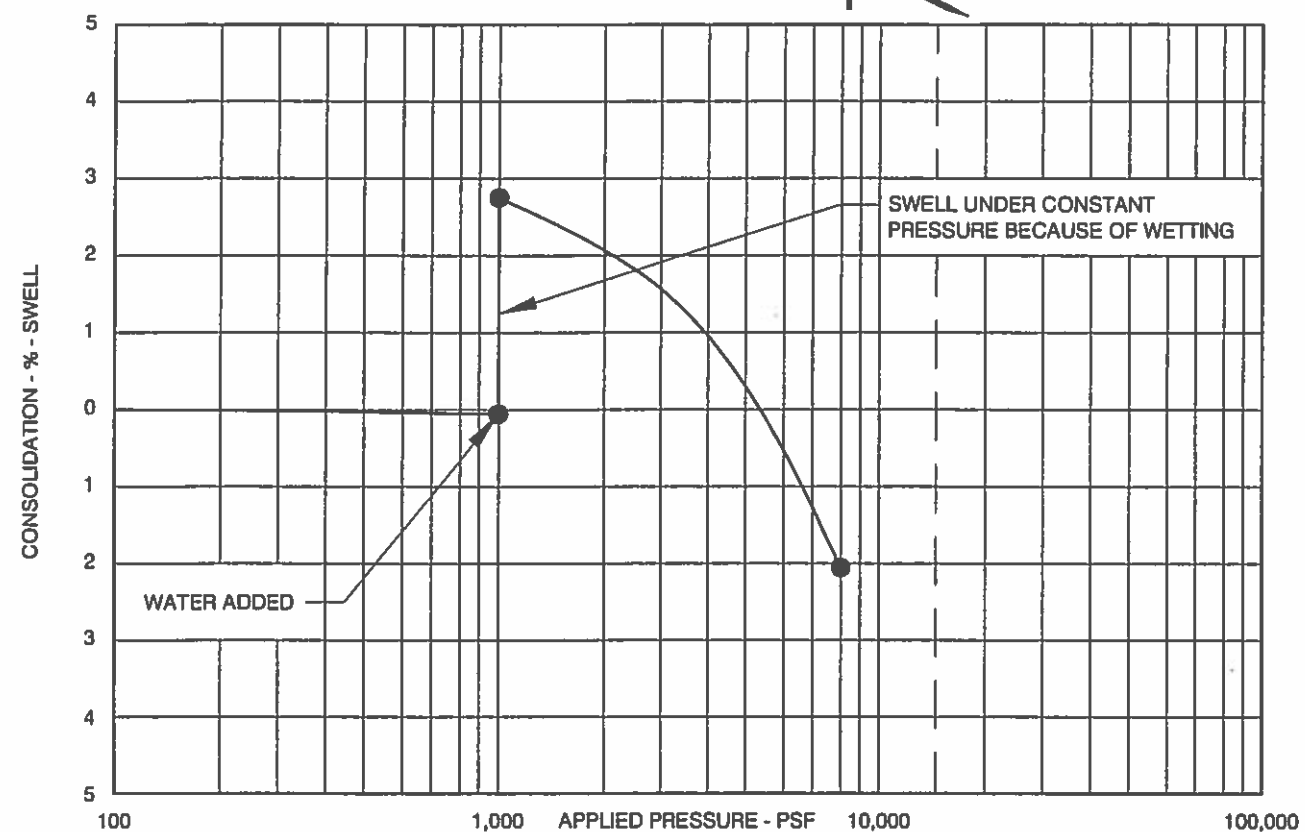
A.G. Wassenaar
Geotechnical and Environmental Consultants **Inc.**



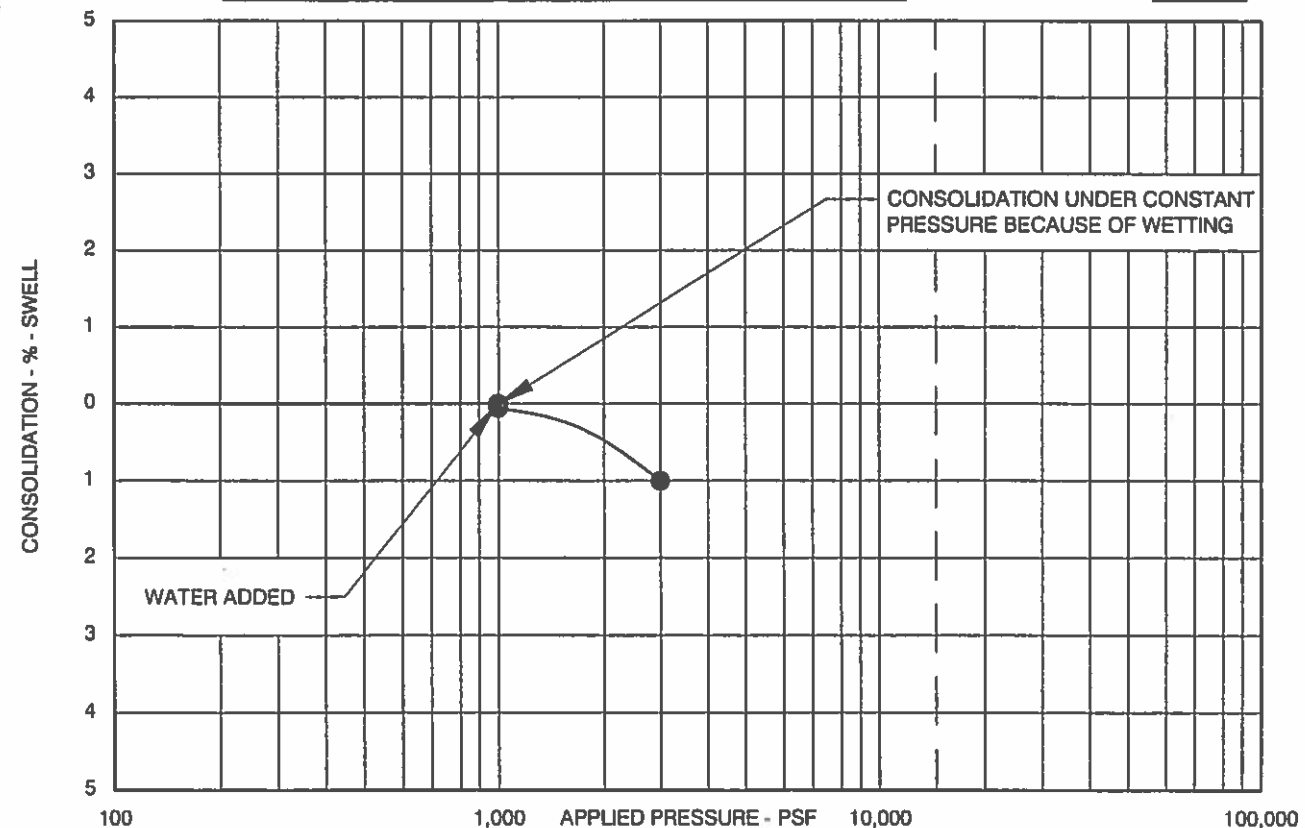
SWELL - CONSOLIDATION TEST RESULTS

FIGURE 6

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SAMPLE DESCRIPTION CLAY, SANDY DRY UNIT WT. 114 PCF
LOCATION TEST BORING NO. 2 @ DEPTH OF 9' MOISTURE CONTENT 7 %

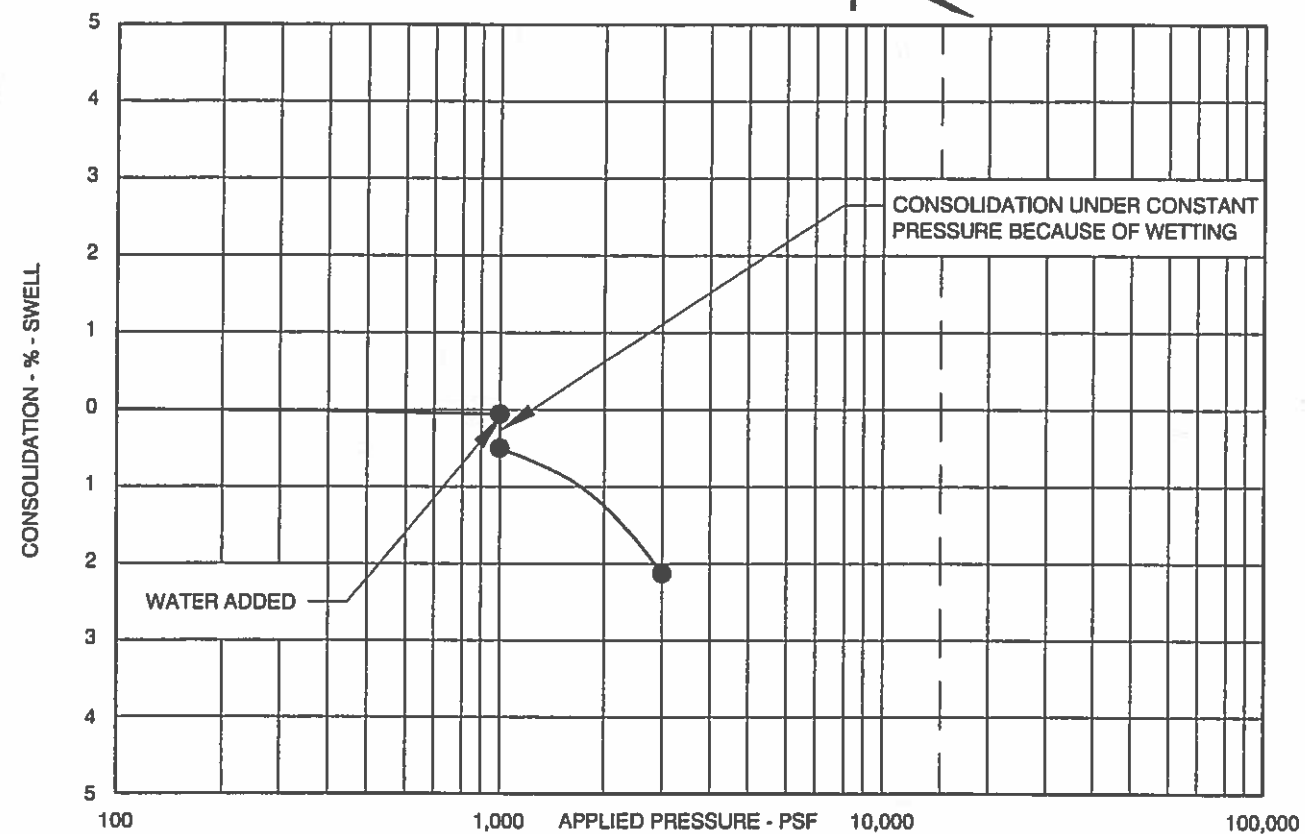


SAMPLE DESCRIPTION CLAY, SANDY DRY UNIT WT. 108 PCF
LOCATION TEST BORING NO. 2 @ DEPTH OF 14' MOISTURE CONTENT 7 %

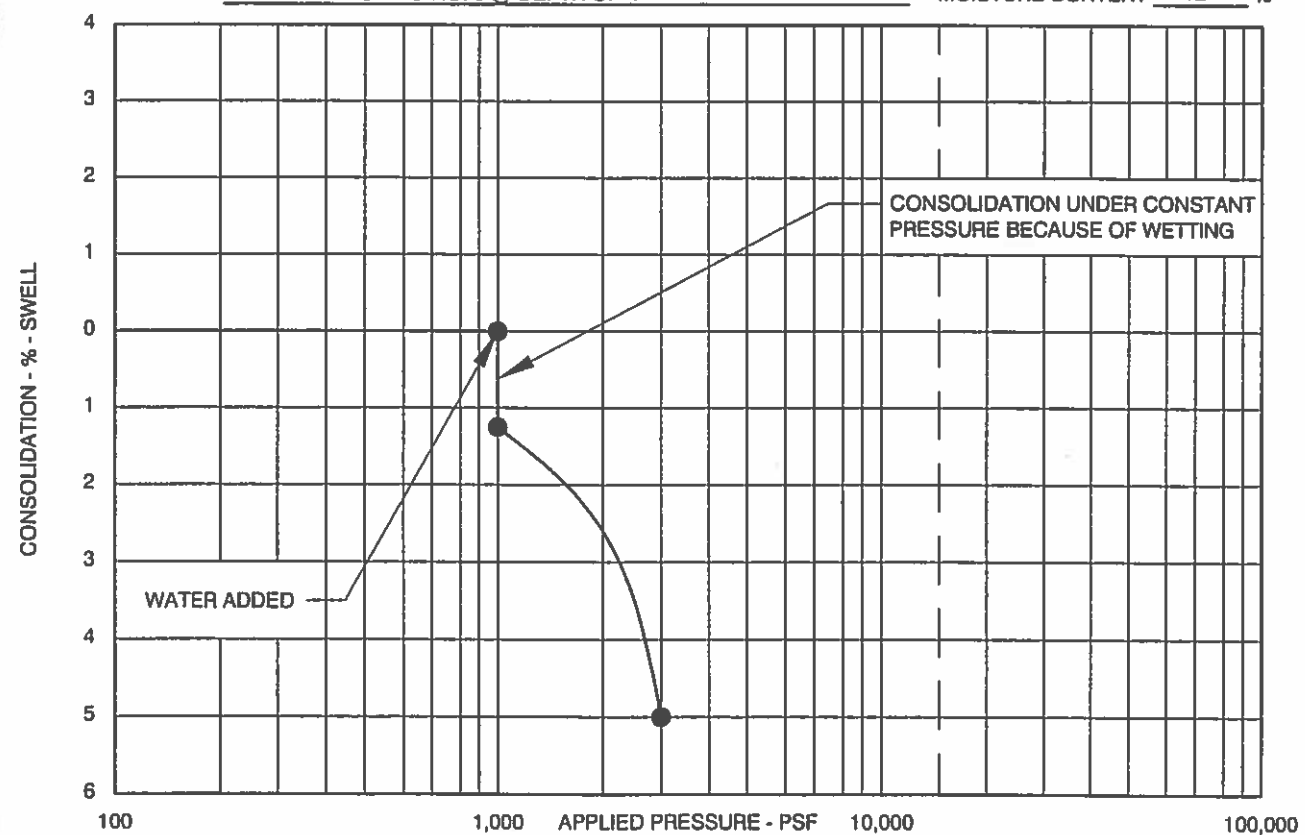
SWELL - CONSOLIDATION TEST RESULTS

FIGURE 7

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Geotechnical and Environmental Consultants **Inc.**



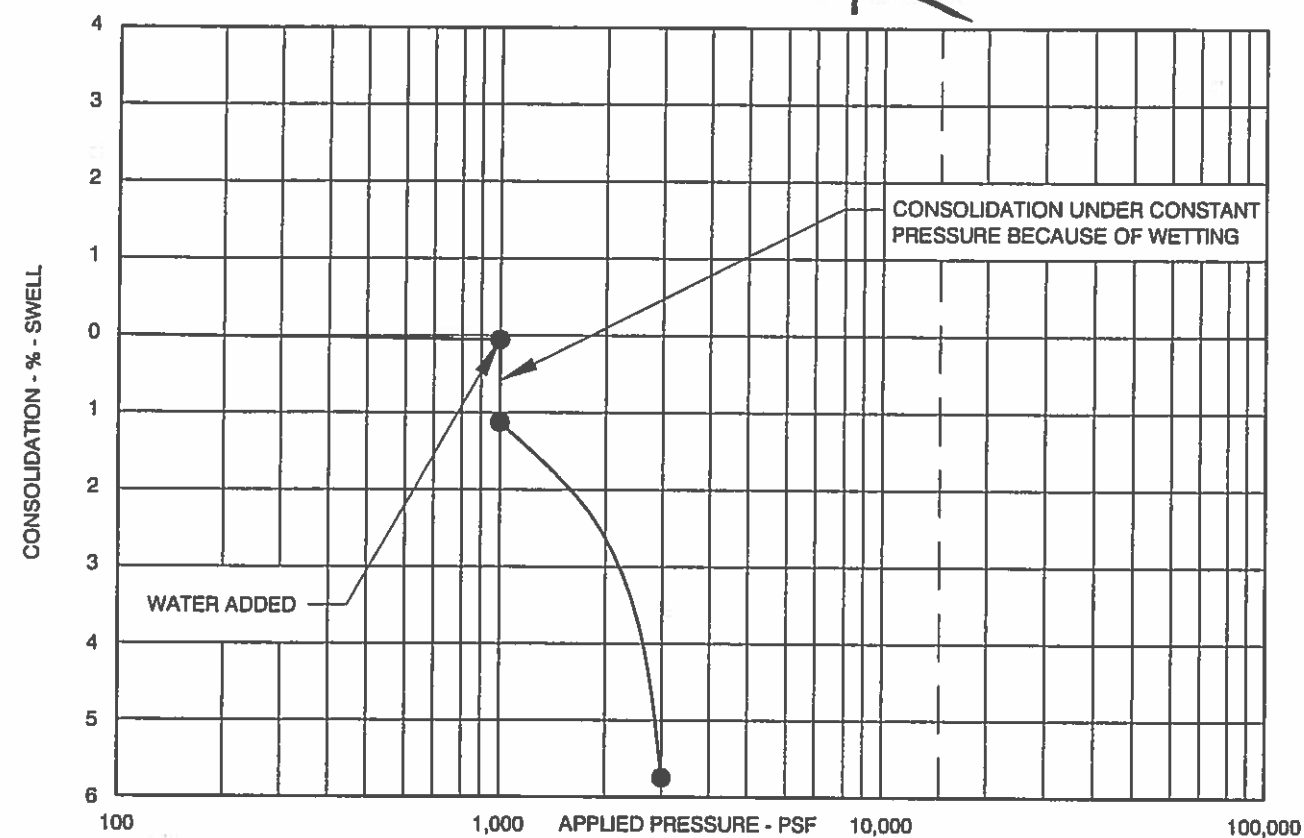
SAMPLE DESCRIPTION CLAY, SANDY DRY UNIT WT. 117 PCF
LOCATION TEST BORING NO. 3 @ DEPTH OF 4' MOISTURE CONTENT 12 %



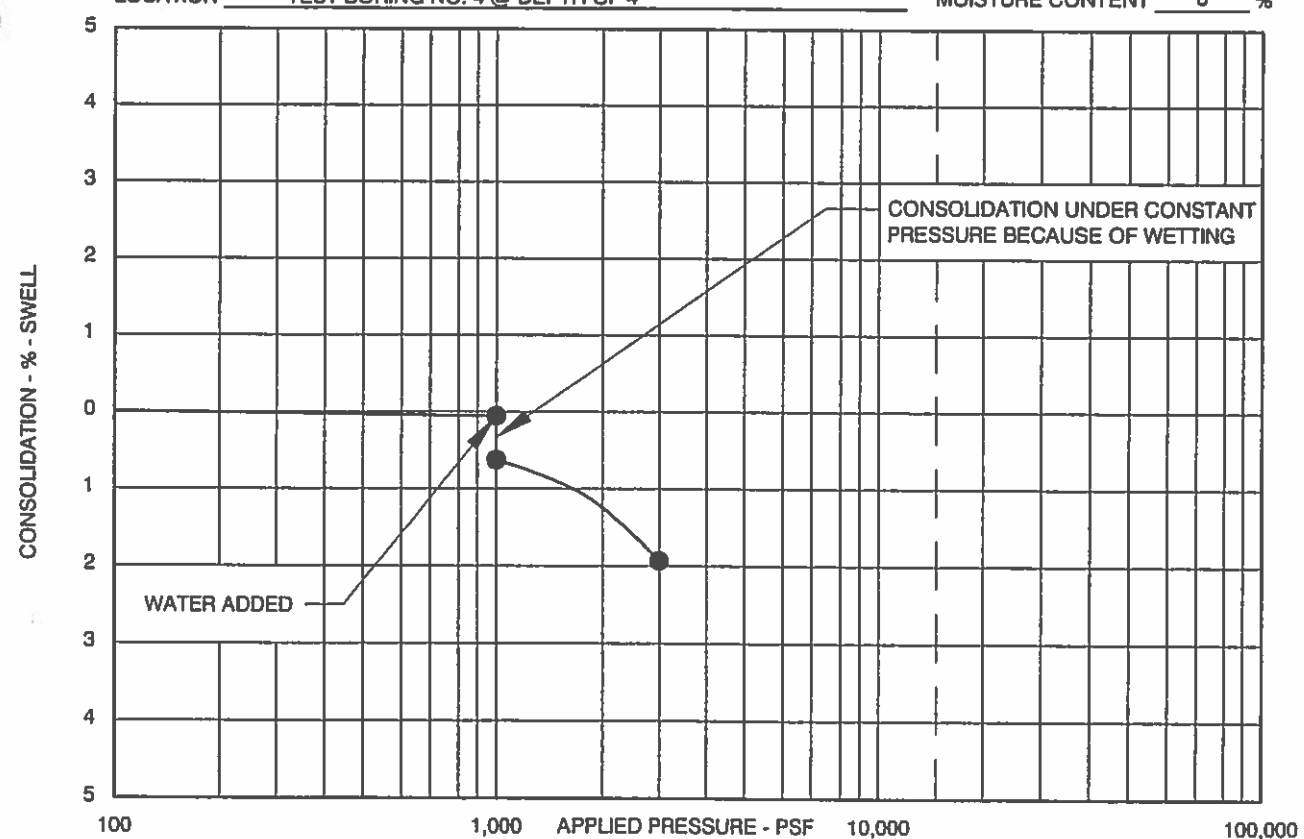
SAMPLE DESCRIPTION CLAY, SANDY DRY UNIT WT. 117 PCF
LOCATION TEST BORING NO. 3 @ DEPTH OF 19' MOISTURE CONTENT 3 %

SWELL - CONSOLIDATION TEST RESULTS

FIGURE 8



SAMPLE DESCRIPTION CLAY, SANDY DRY UNIT WT. 97 PCF
LOCATION TEST BORING NO. 4 @ DEPTH OF 4' MOISTURE CONTENT 8 %

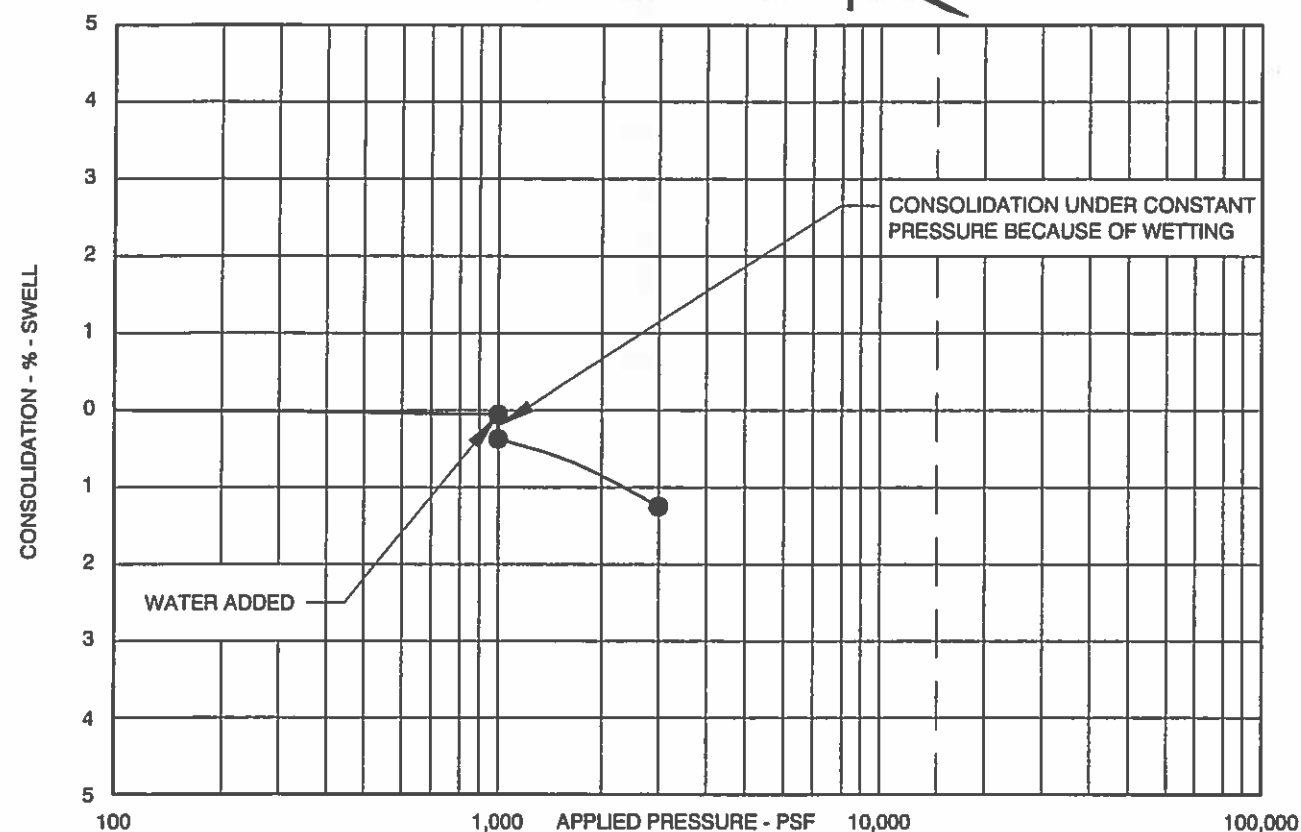


SAMPLE DESCRIPTION SAND, CLAYEY DRY UNIT WT. 87 PCF
LOCATION TEST BORING NO. 5 @ DEPTH OF 4' MOISTURE CONTENT 8 %

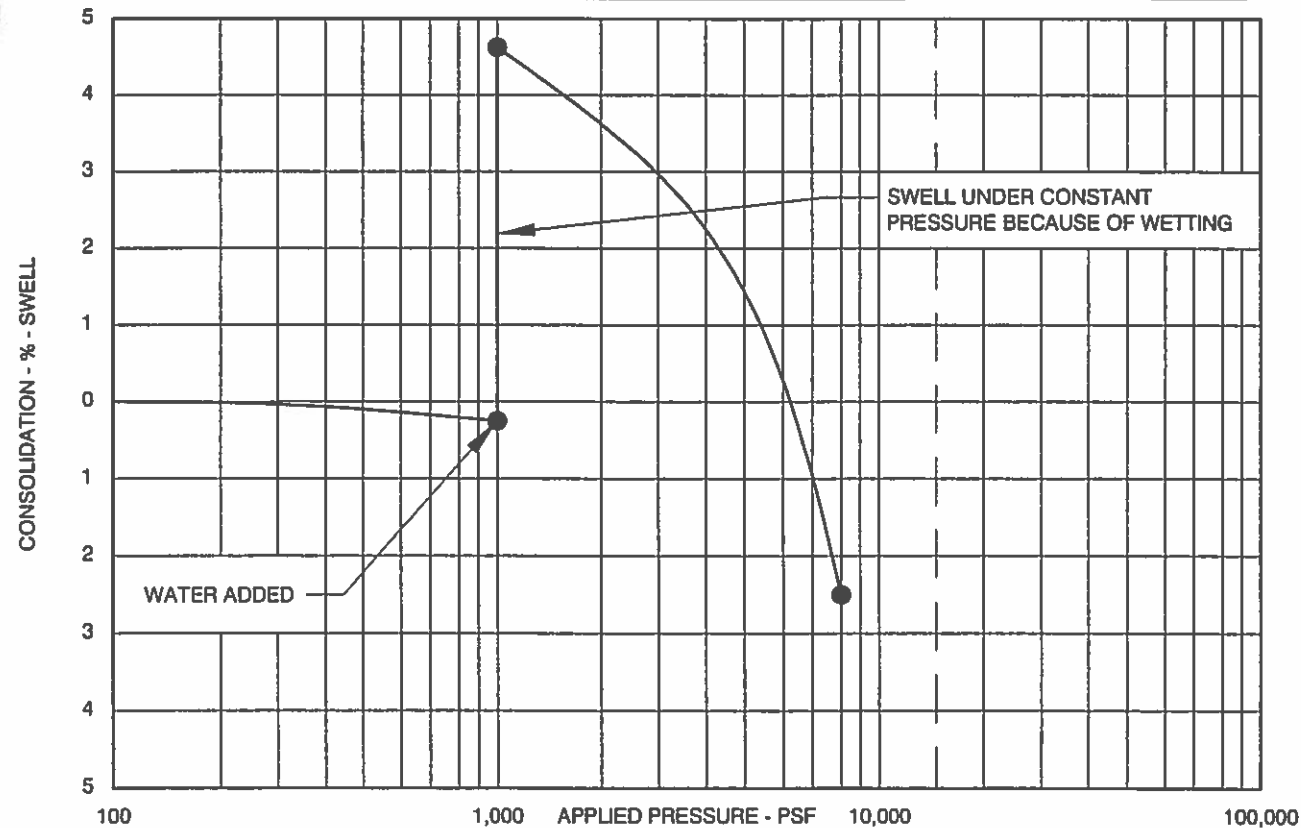
SWELL - CONSOLIDATION TEST RESULTS

FIGURE 9

A.G. Wassenaar
Geotechnical and Environmental Consultants **Inc.**



SAMPLE DESCRIPTION CLAY, SANDY DRY UNIT WT. 118 PCF
LOCATION TEST BORING NO. 7 @ DEPTH OF 4' MOISTURE CONTENT 14 %

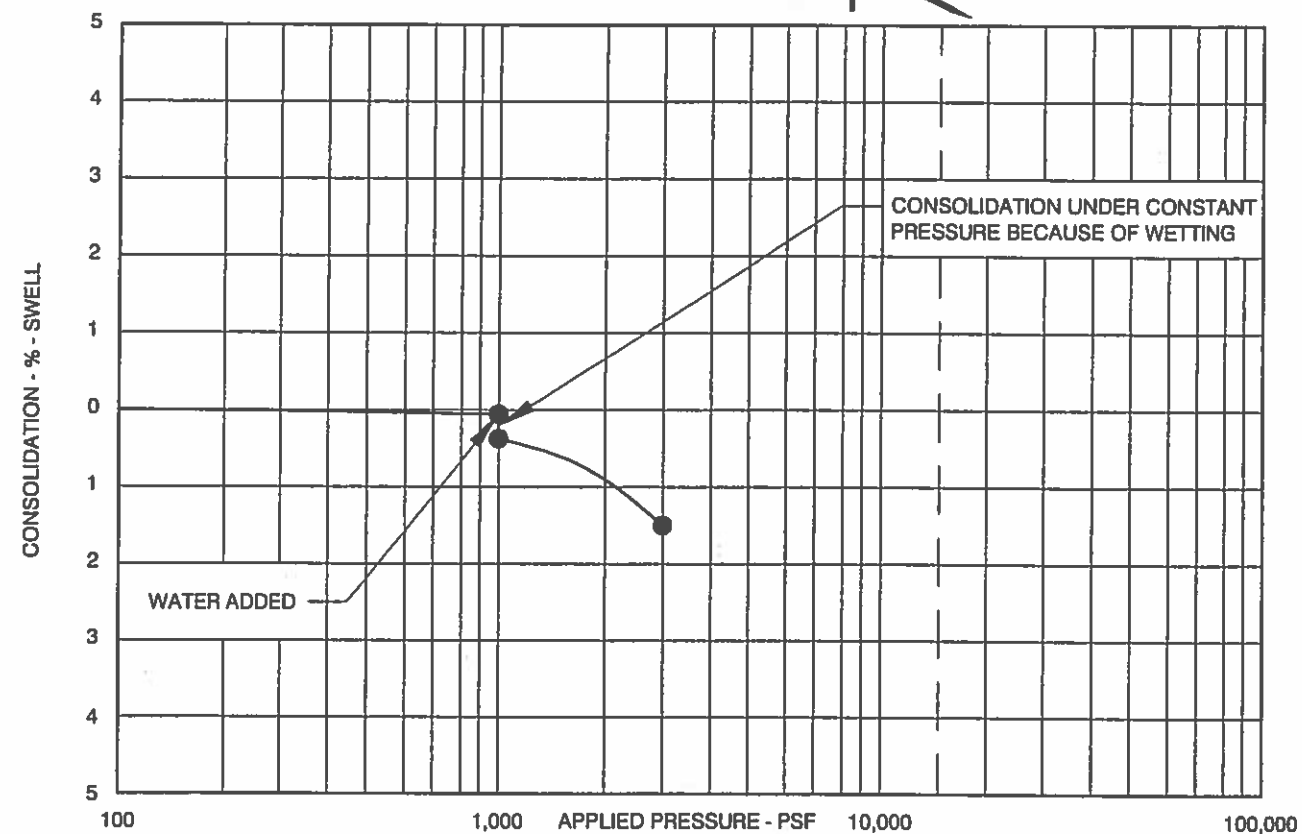


SAMPLE DESCRIPTION CLAYSTONE, SILTY DRY UNIT WT. 122 PCF
LOCATION TEST BORING NO. 7 @ DEPTH OF 24' MOISTURE CONTENT 9 %

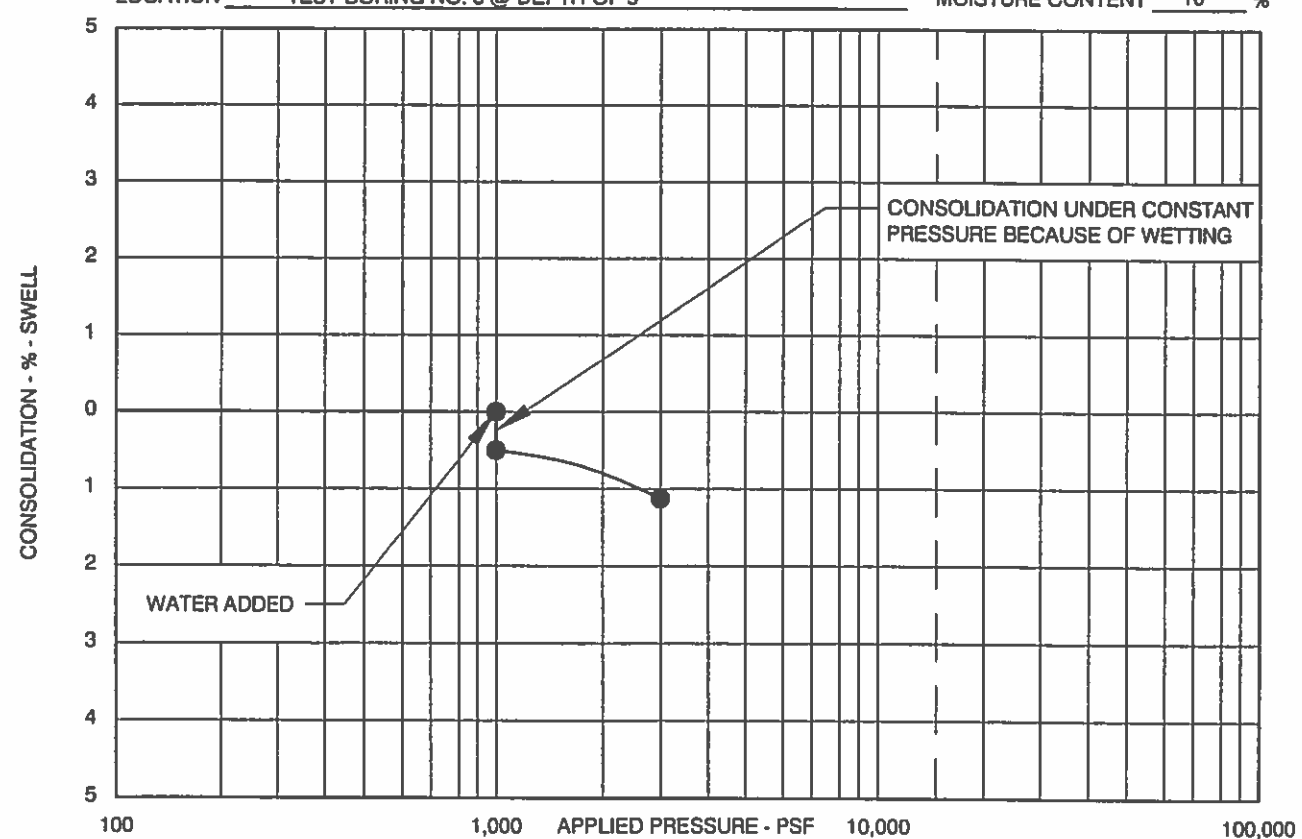
SWELL - CONSOLIDATION TEST RESULTS

FIGURE 10

A.G. Wassenaar
Geotechnical and Environmental Consultants **Inc.**



SAMPLE DESCRIPTION CLAY, SANDY DRY UNIT WT. 110 PCF
LOCATION TEST BORING NO. 8 @ DEPTH OF 9' MOISTURE CONTENT 10 %

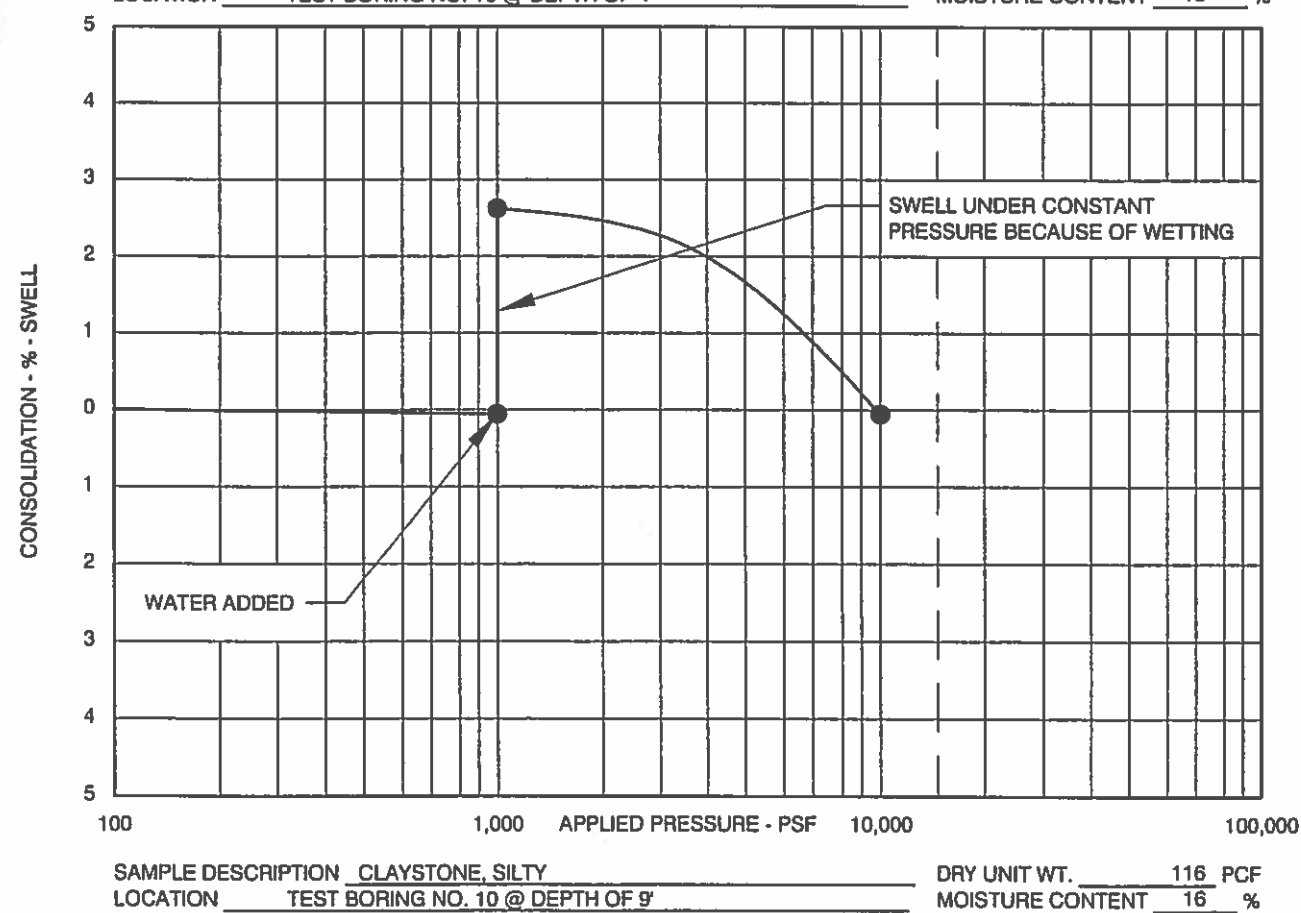
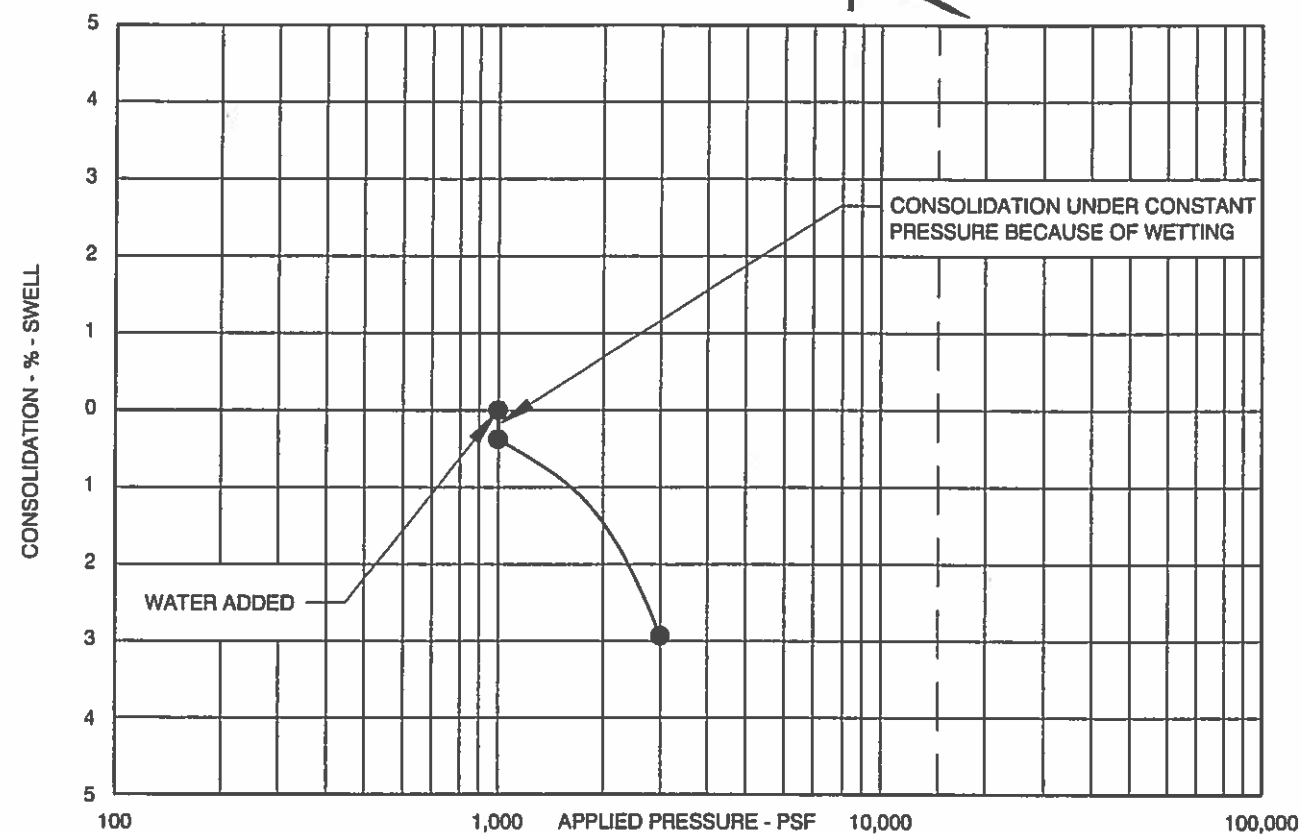


SAMPLE DESCRIPTION CLAY, SANDY DRY UNIT WT. 109 PCF
LOCATION TEST BORING NO. 9 @ DEPTH OF 4' MOISTURE CONTENT 7 %

SWELL - CONSOLIDATION TEST RESULTS

FIGURE 11

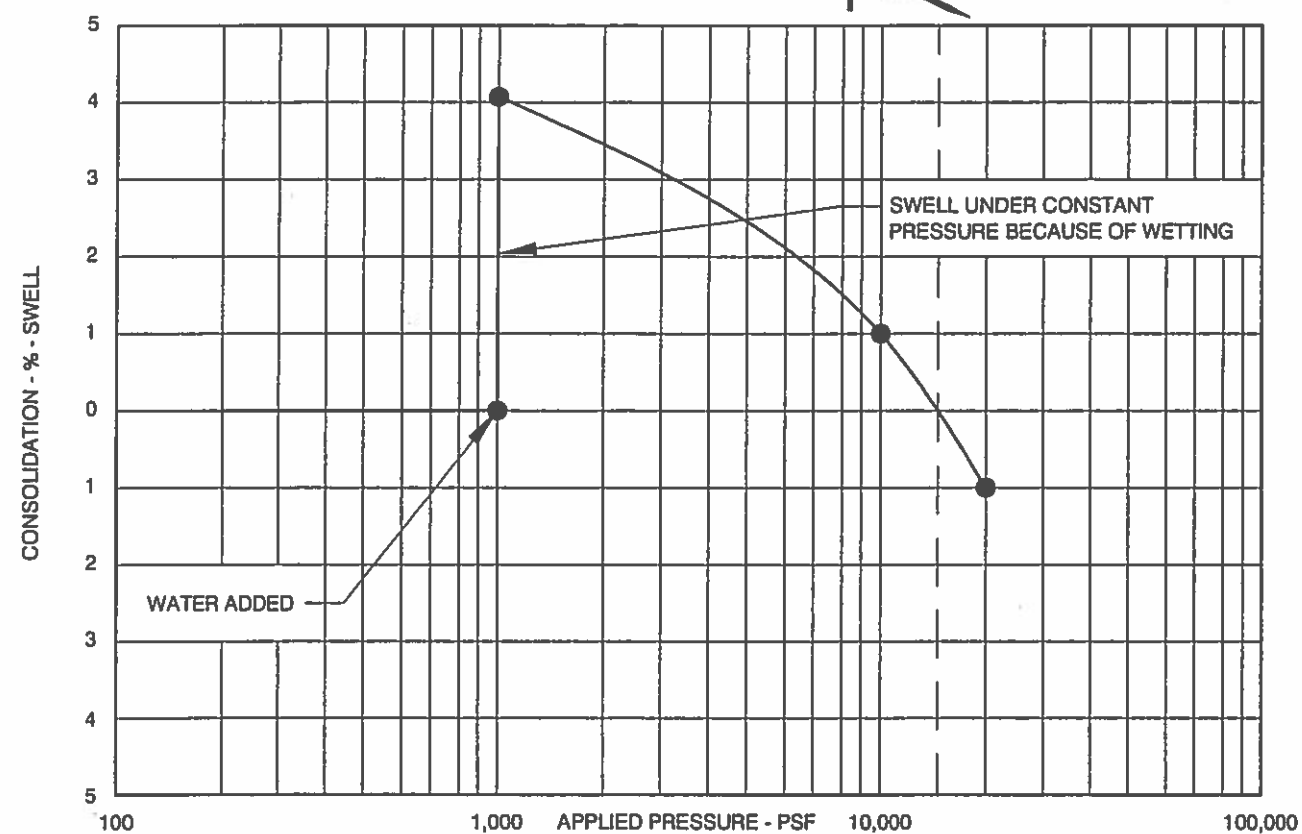
A.G. Wassenaar
Geotechnical and Environmental Consultants **Inc.**



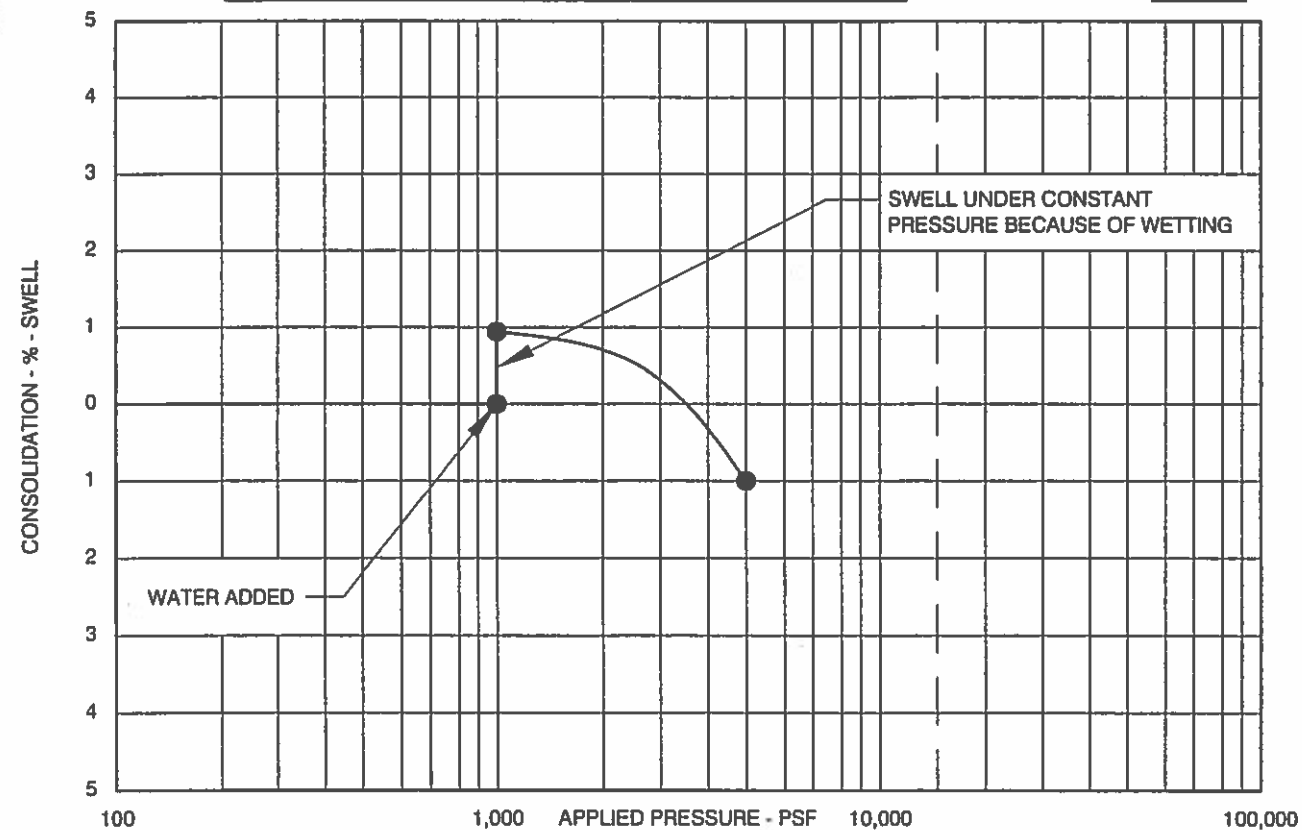
SWELL - CONSOLIDATION TEST RESULTS

FIGURE 12

A.G. Wassenaar
Geotechnical and Environmental Consultants **Inc.**



SAMPLE DESCRIPTION CLAYSTONE, SILTY DRY UNIT WT. 113 PCF
LOCATION TEST BORING NO. 10 @ DEPTH OF 24' MOISTURE CONTENT 11 %

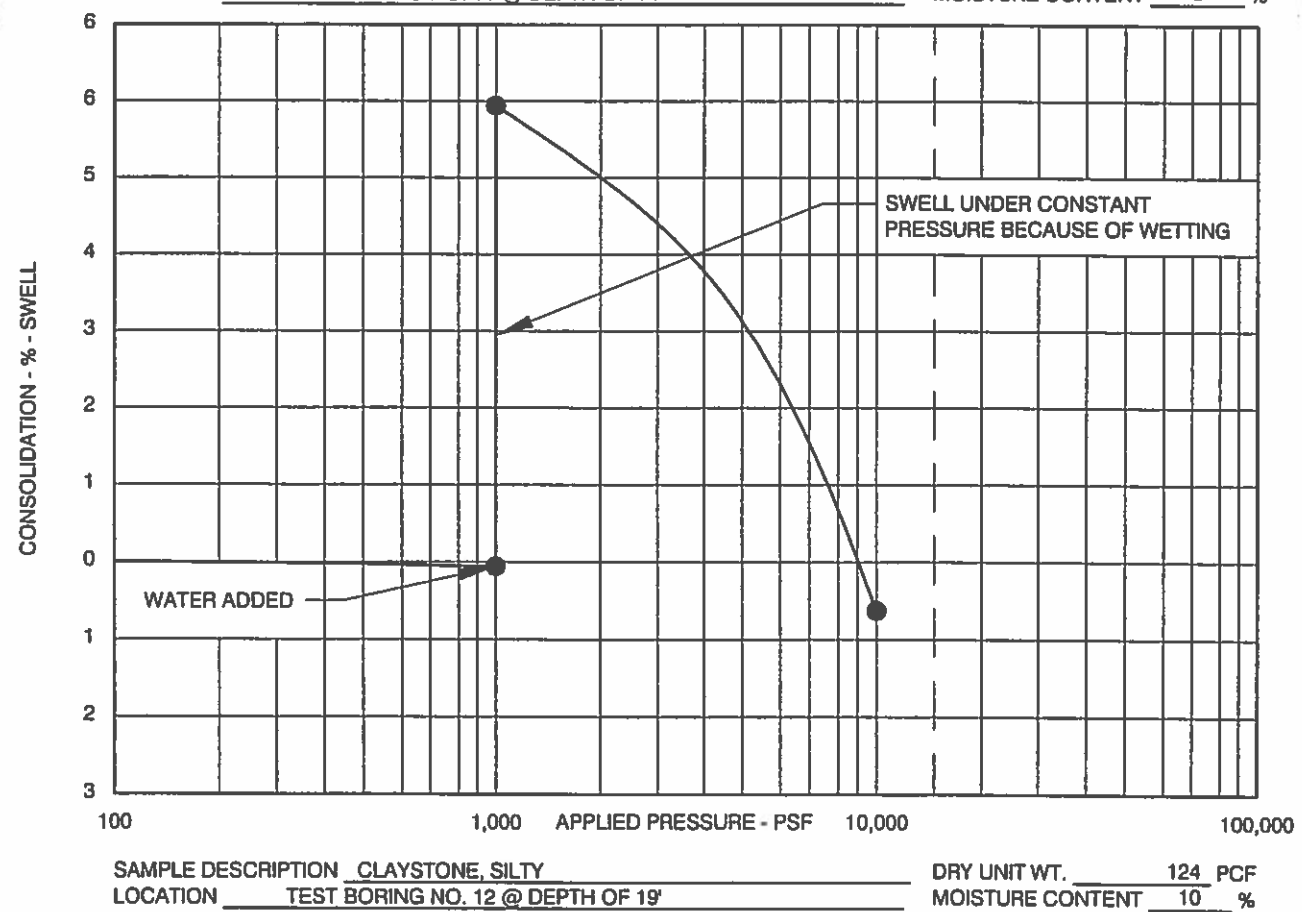
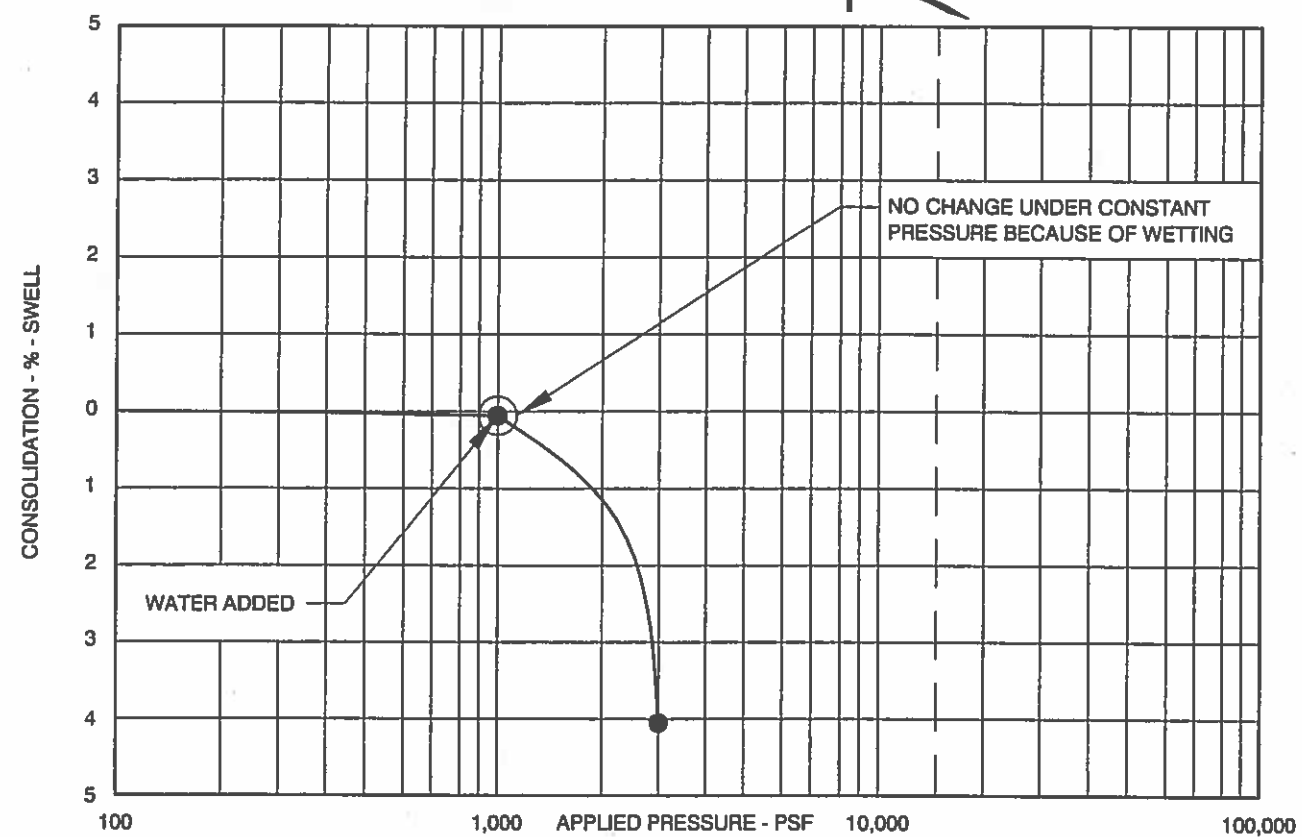


SAMPLE DESCRIPTION CLAYSTONE, SILTY DRY UNIT WT. 116 PCF
LOCATION TEST BORING NO. 11 @ DEPTH OF 4' MOISTURE CONTENT 10 %

SWELL - CONSOLIDATION TEST RESULTS

FIGURE 13

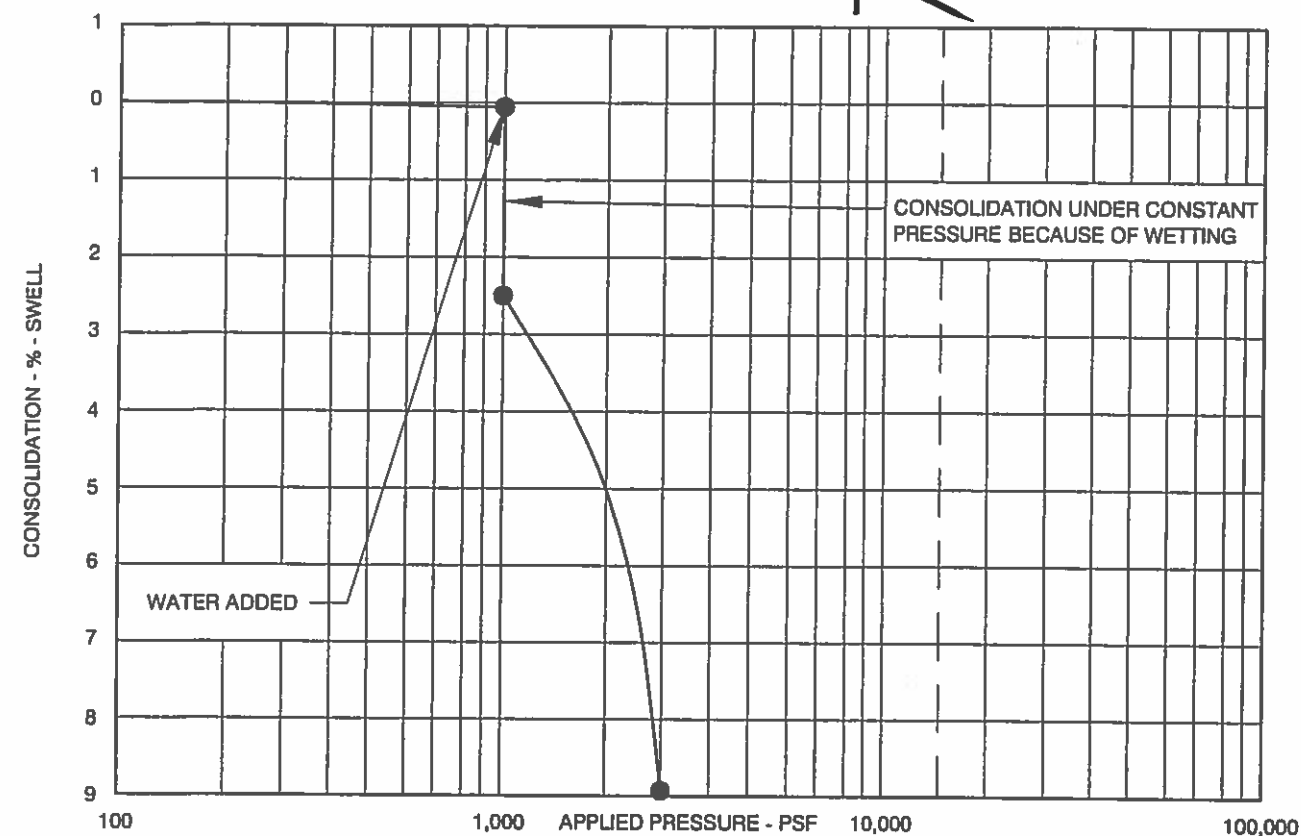
A.G. Wassenaar
Geotechnical and Environmental Consultants **Inc.**



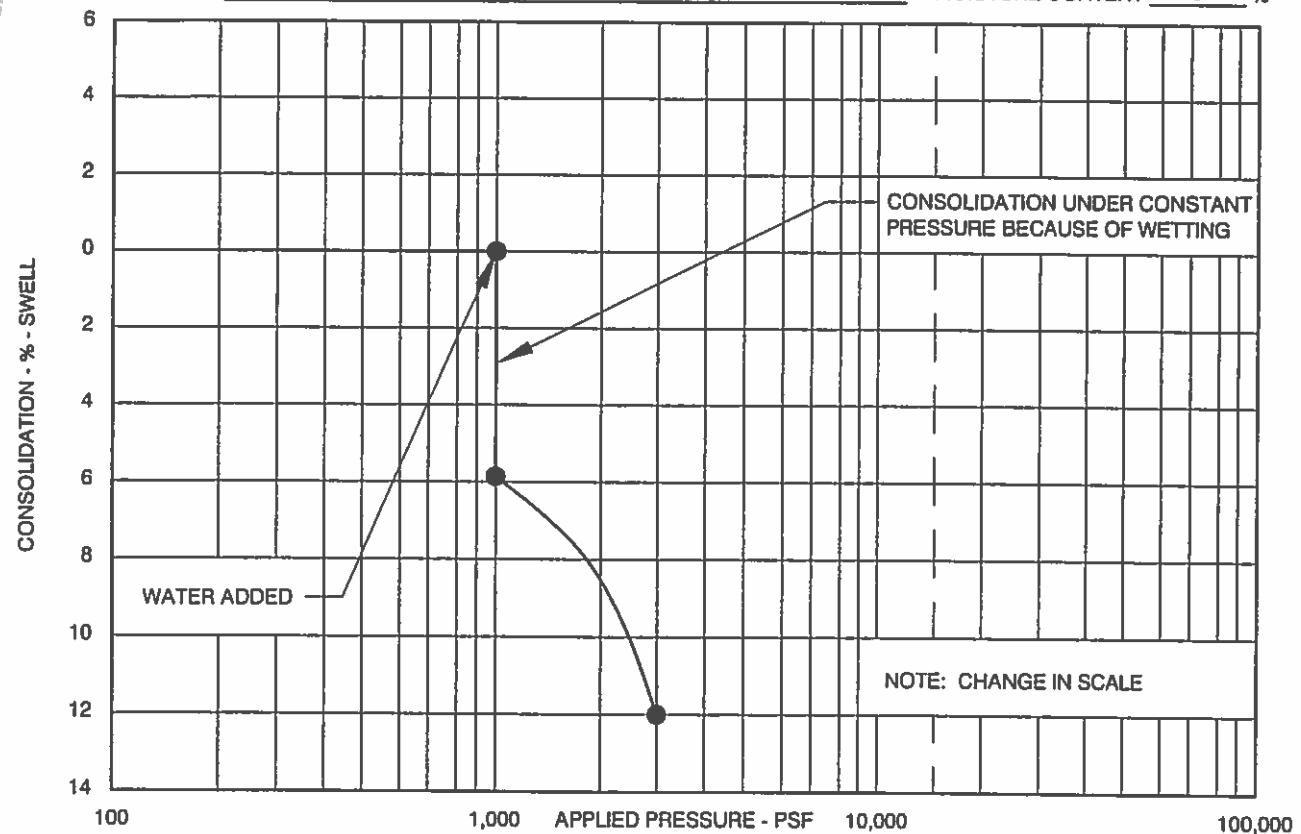
SWELL - CONSOLIDATION TEST RESULTS

FIGURE 14

A.G. Wassenaar
Geotechnical and Environmental Consultants **Inc.**



SAMPLE DESCRIPTION CLAY, SANDY DRY UNIT WT. 89 PCF
LOCATION TEST BORING NO. 13 @ DEPTH OF 4' MOISTURE CONTENT 8 %

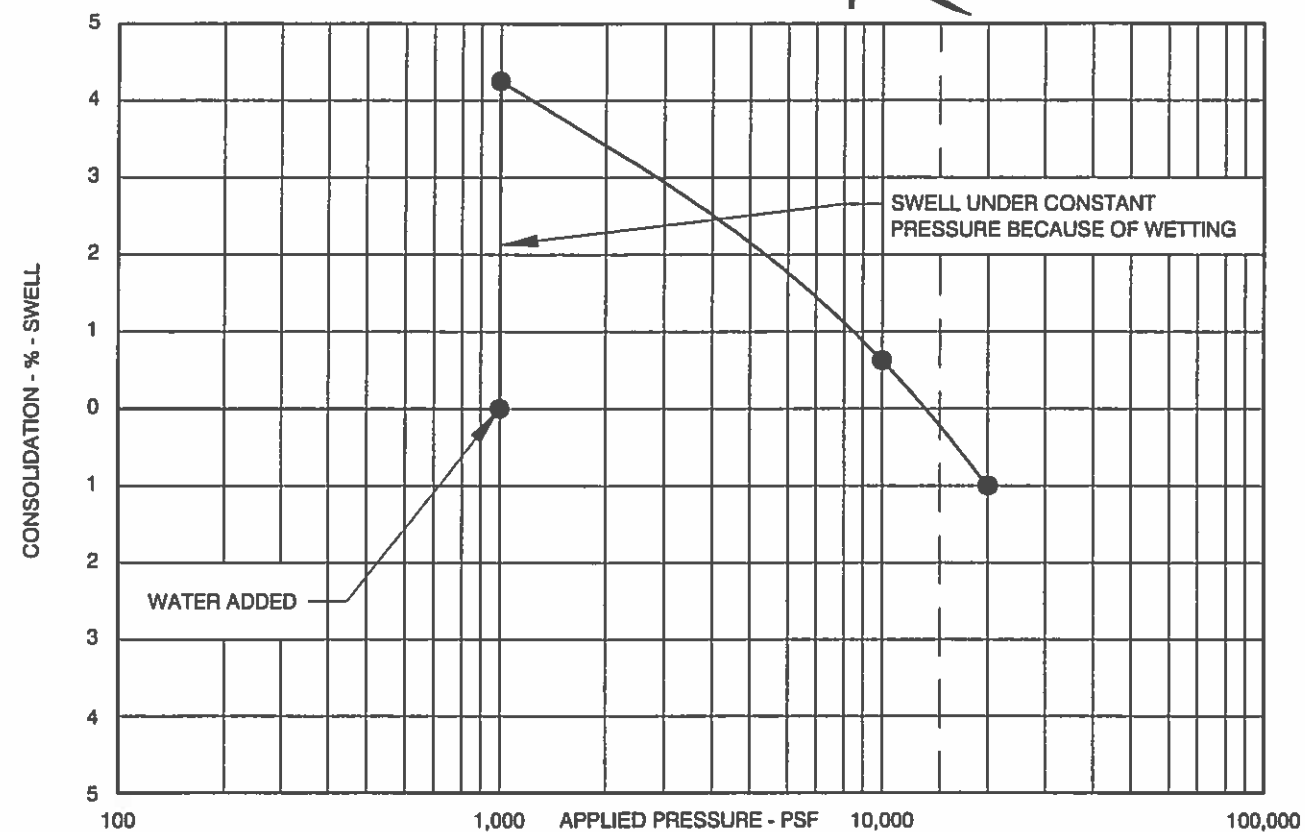


SAMPLE DESCRIPTION CLAYSTONE, SILTY (DISTURBED) DRY UNIT WT. 99 PCF
LOCATION TEST BORING NO. 13 @ DEPTH OF 9' MOISTURE CONTENT 7 %

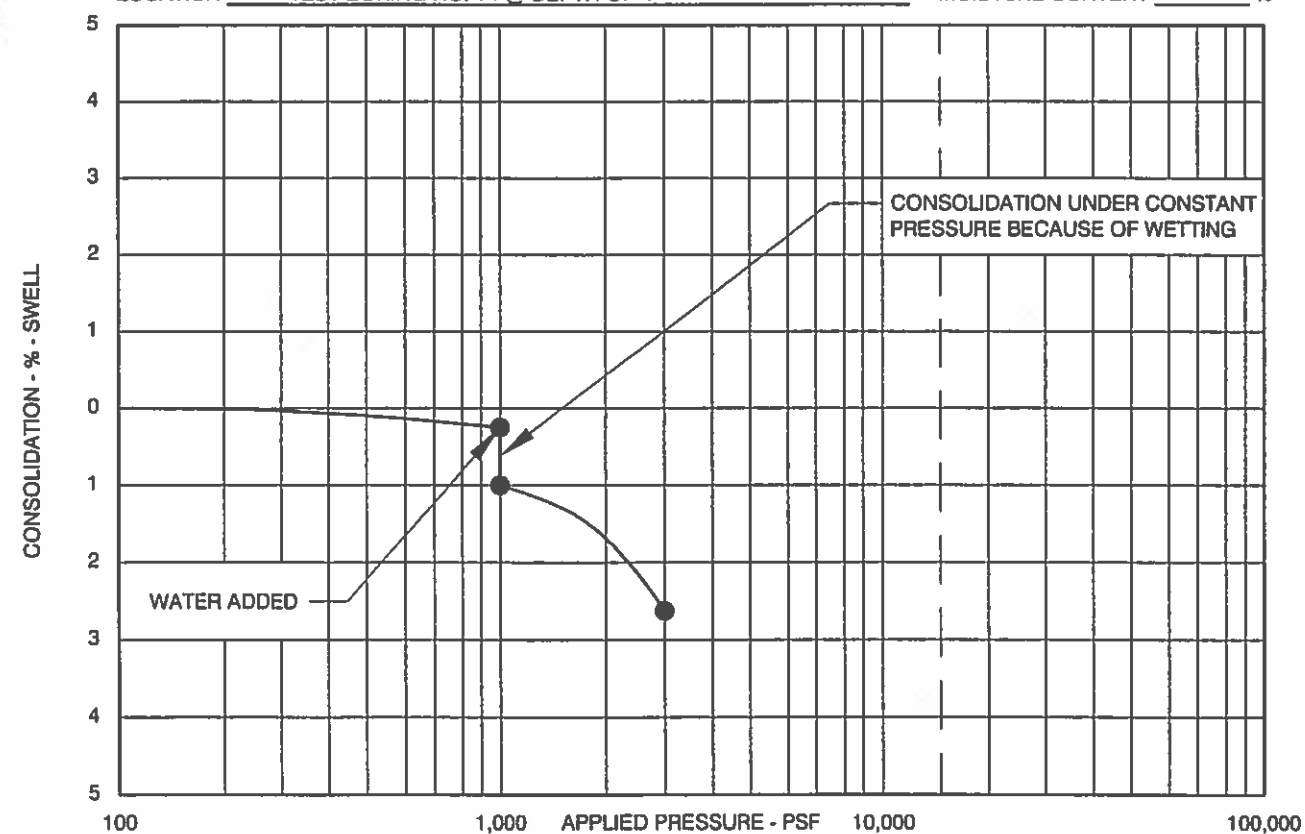
SWELL - CONSOLIDATION TEST RESULTS

FIGURE 15

A.G. Wassenaar
Geotechnical and Environmental Consultants **Inc.**



SAMPLE DESCRIPTION CLAY, SANDY DRY UNIT WT. 120 PCF
LOCATION TEST BORING NO. 14 @ DEPTH OF 4' MOISTURE CONTENT 9 %

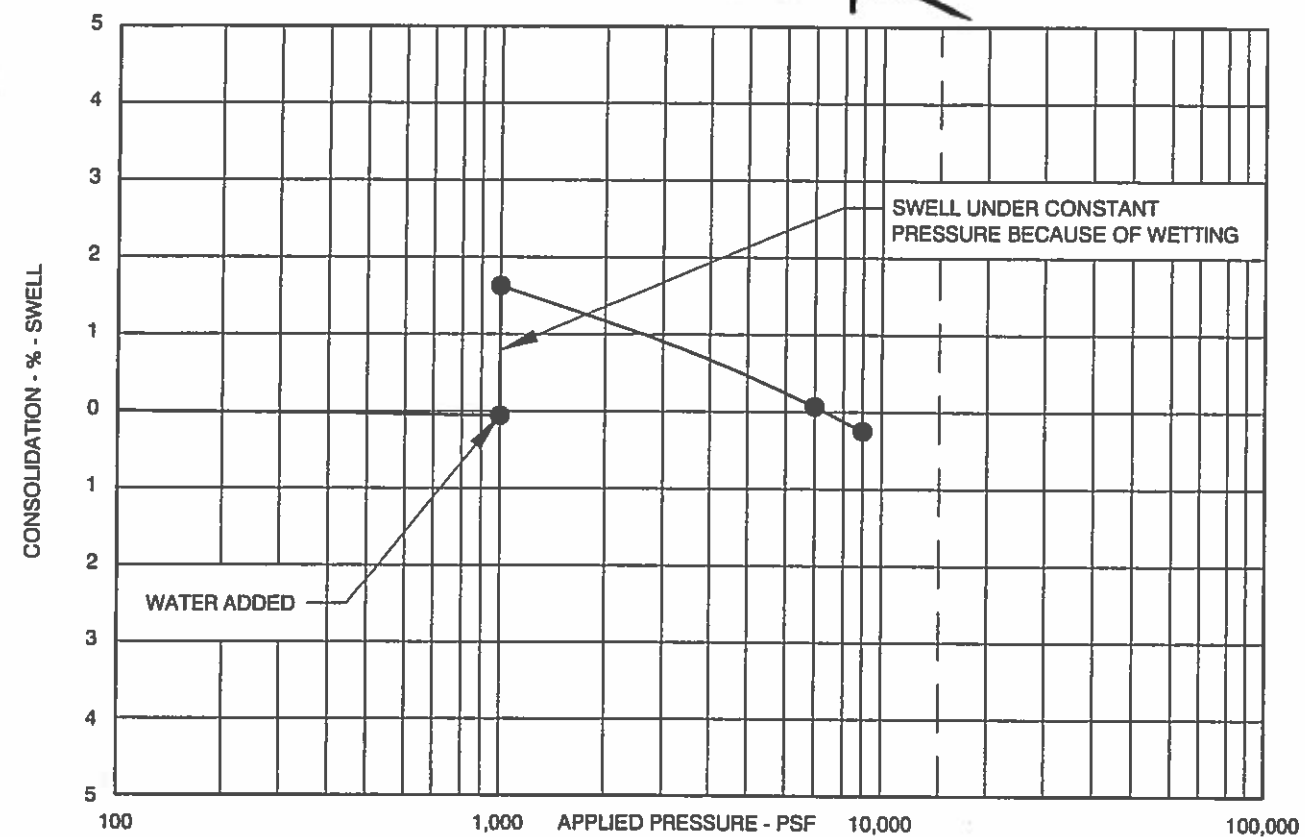


SAMPLE DESCRIPTION CLAY, SANDY DRY UNIT WT. 104 PCF
LOCATION TEST BORING NO. 15 @ DEPTH OF 4' MOISTURE CONTENT 9 %

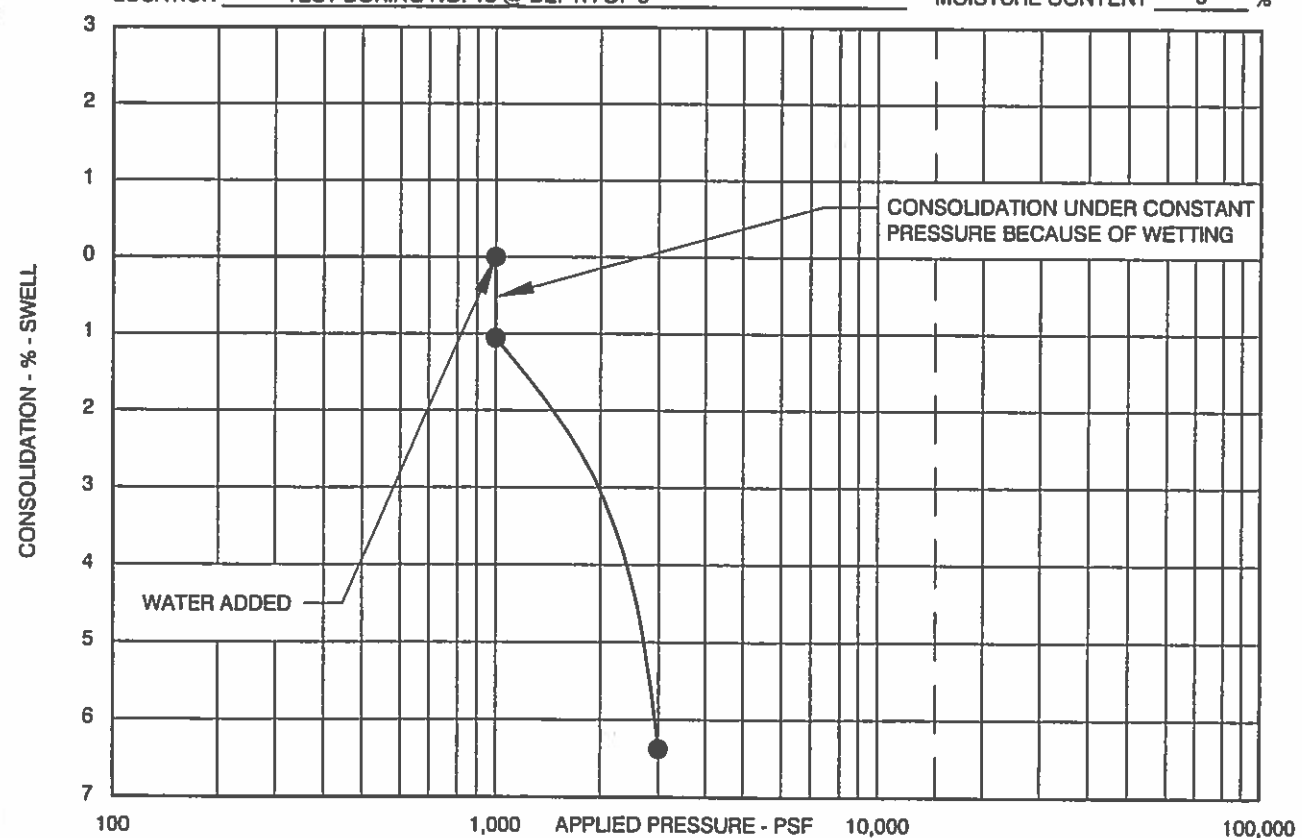
SWELL - CONSOLIDATION TEST RESULTS

FIGURE 16

A.G. Wassenaar
Geotechnical and Environmental Consultants **Inc.**



SAMPLE DESCRIPTION CLAY, VERY SANDY DRY UNIT WT. 123 PCF
LOCATION TEST BORING NO. 15 @ DEPTH OF 9' MOISTURE CONTENT 6 %

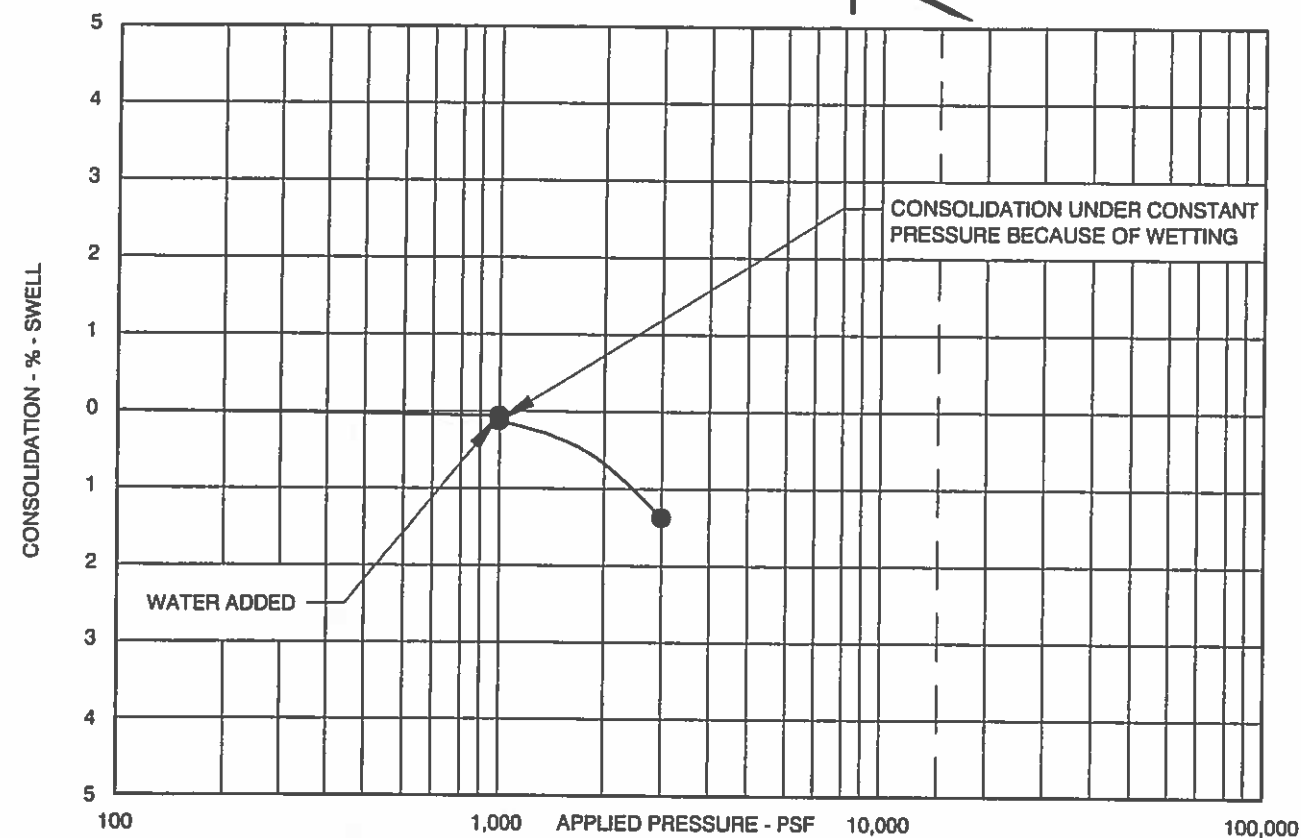


SAMPLE DESCRIPTION CLAY, SANDY DRY UNIT WT. 93 PCF
LOCATION TEST BORING NO. 16 @ DEPTH OF 4' MOISTURE CONTENT 8 %

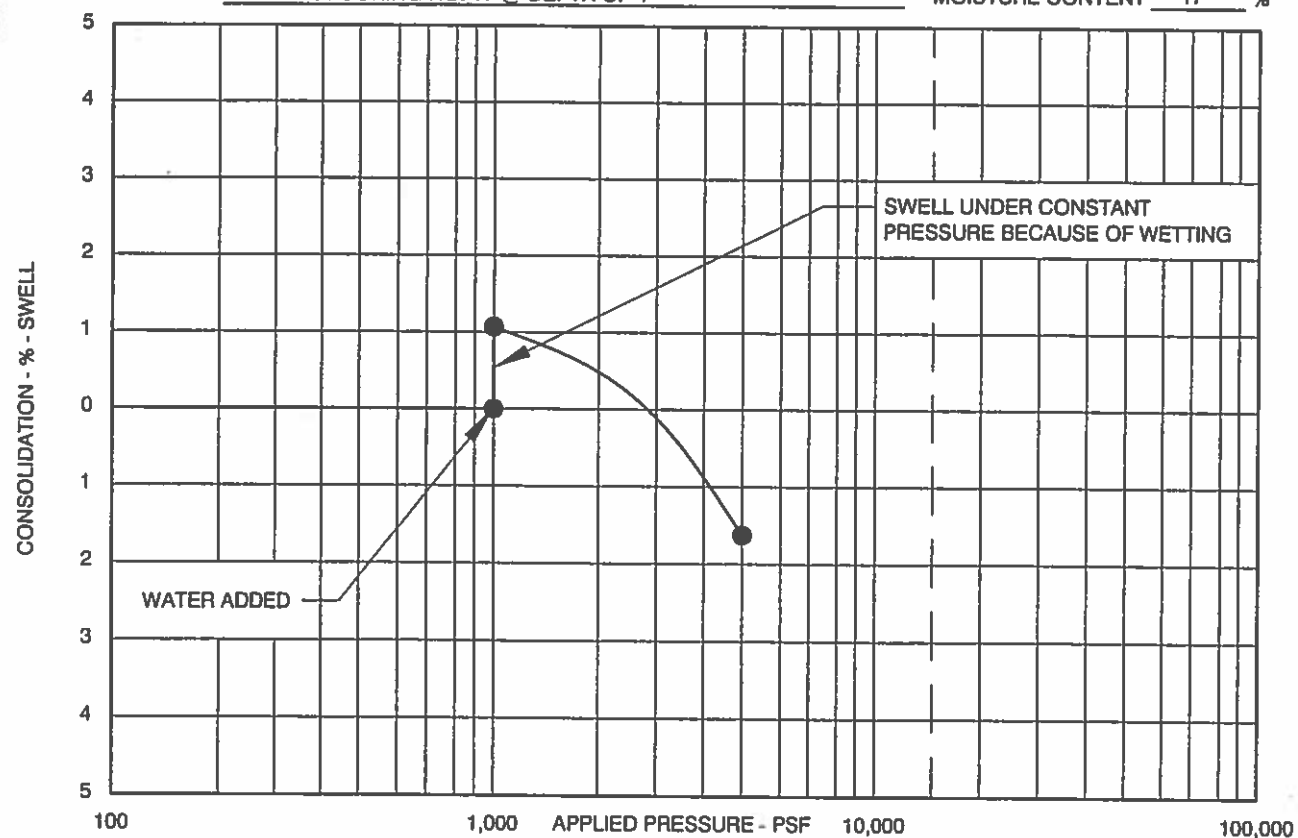
SWELL - CONSOLIDATION TEST RESULTS

FIGURE 17

A.G. Wassenaar
Geotechnical and Environmental Consultants **Inc.**



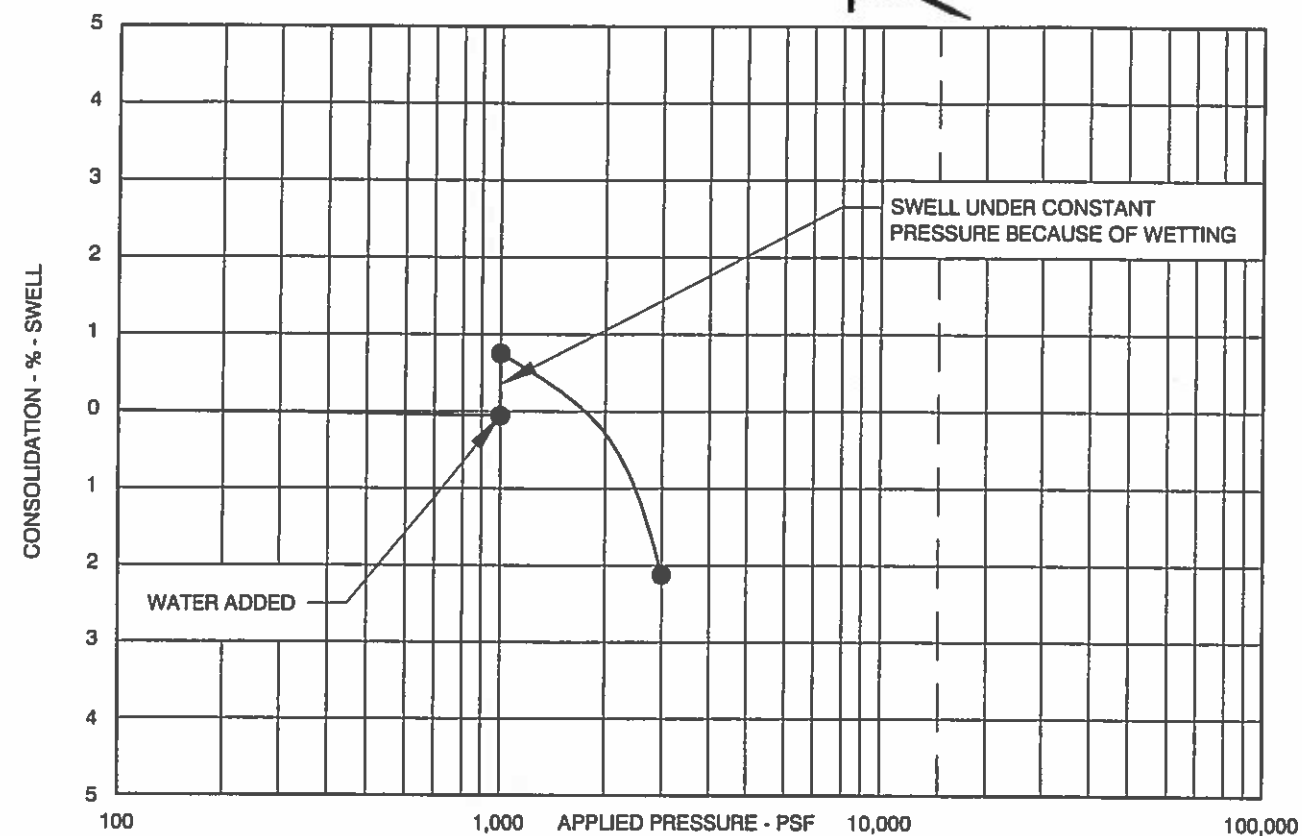
SAMPLE DESCRIPTION CLAY, SANDY DRY UNIT WT. 107 PCF
LOCATION TEST BORING NO. 17 @ DEPTH OF 4' MOISTURE CONTENT 17 %



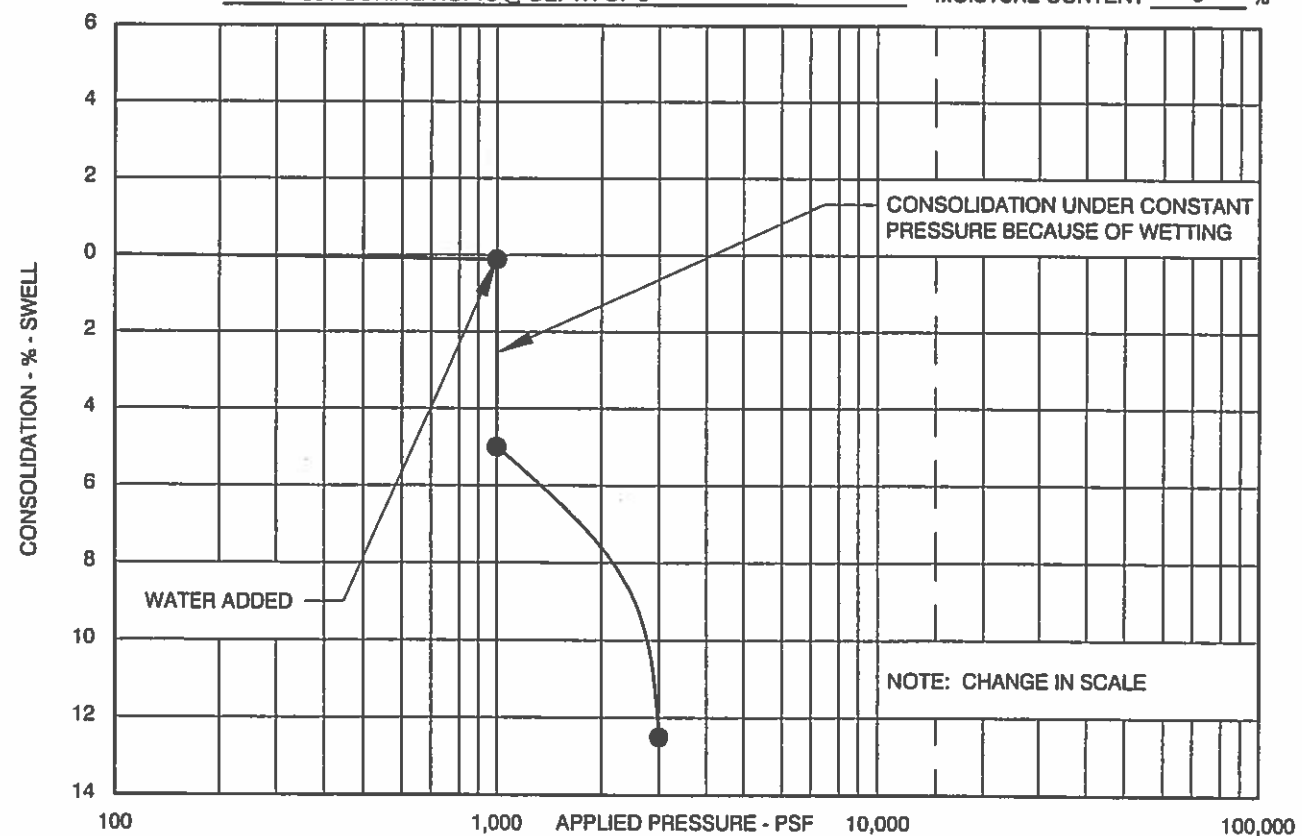
SAMPLE DESCRIPTION CLAY, SANDY DRY UNIT WT. 103 PCF
LOCATION TEST BORING NO. 18 @ DEPTH OF 4' MOISTURE CONTENT 7 %

SWELL - CONSOLIDATION TEST RESULTS

FIGURE 18



SAMPLE DESCRIPTION SANDSTONE, SLIGHTLY CLAYEY DRY UNIT WT. 120 PCF
LOCATION TEST BORING NO. 18 @ DEPTH OF 9' MOISTURE CONTENT 5 %

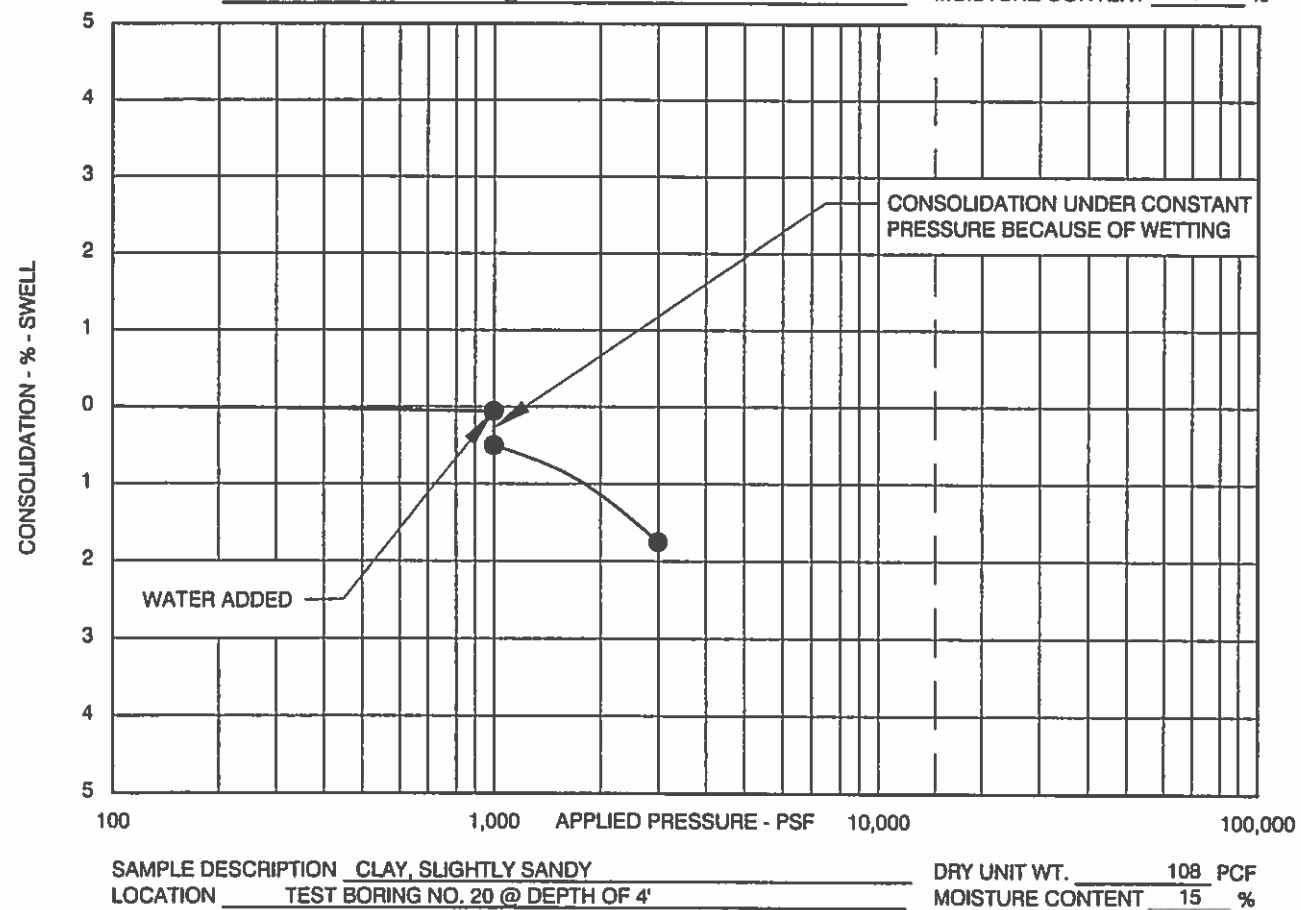
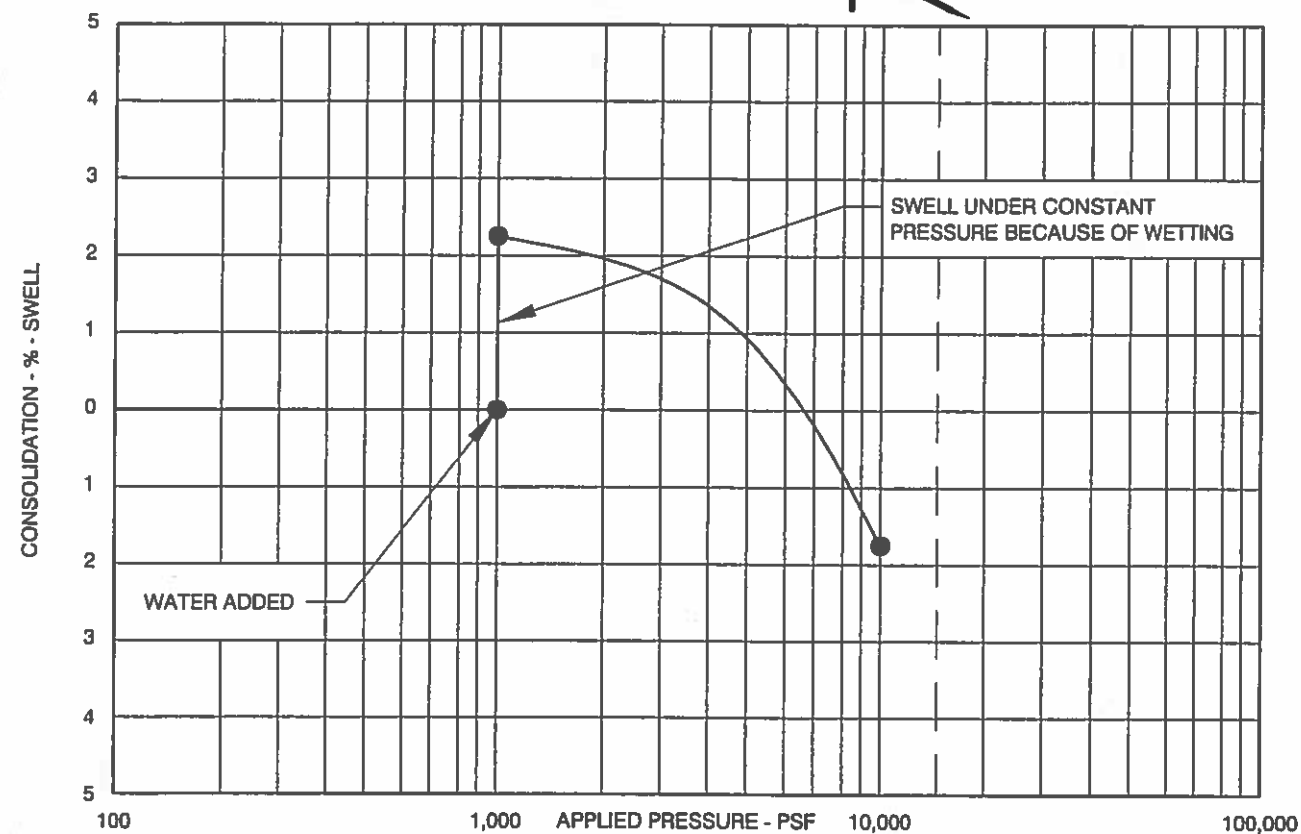


SAMPLE DESCRIPTION CLAY, SANDY DRY UNIT WT. 78 PCF
LOCATION TEST BORING NO. 19 @ DEPTH OF 4' MOISTURE CONTENT 6 %

SWELL - CONSOLIDATION TEST RESULTS

FIGURE 19

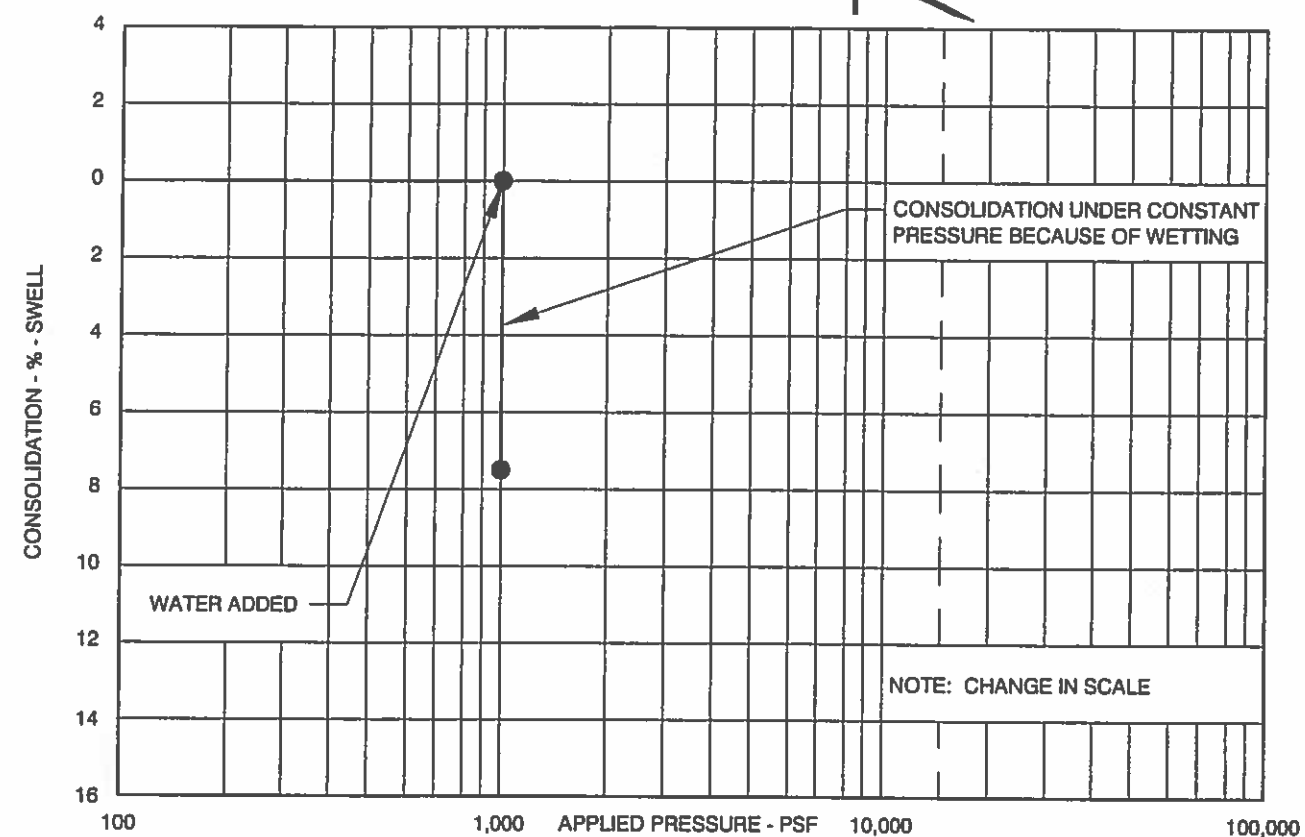
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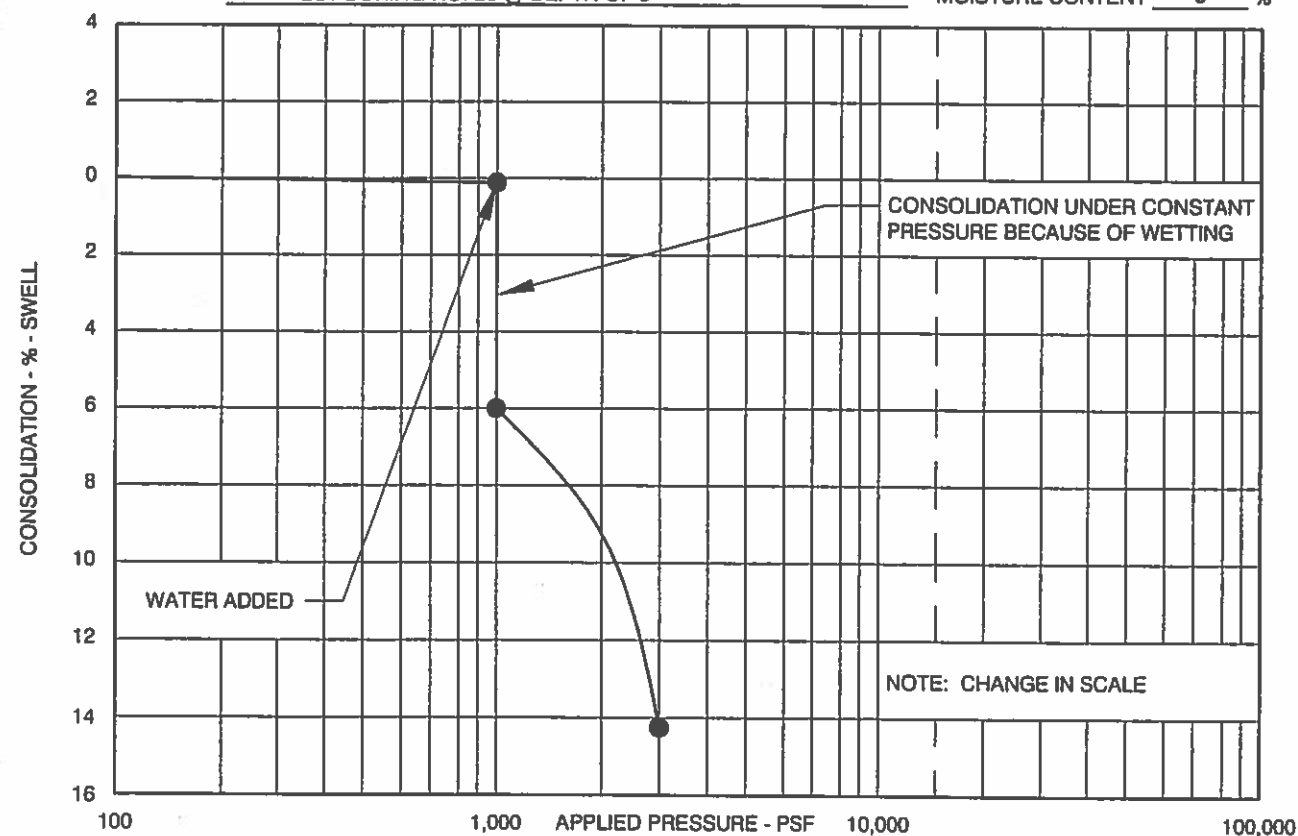
SWELL - CONSOLIDATION TEST RESULTS

FIGURE 20

A.G. Wassenaar
Geotechnical and Environmental Consultants **Inc.**



SAMPLE DESCRIPTION CLAYSTONE, SILTY (DISTURBED) DRY UNIT WT. 94 PCF
LOCATION TEST BORING NO. 20 @ DEPTH OF 9' MOISTURE CONTENT 6 %

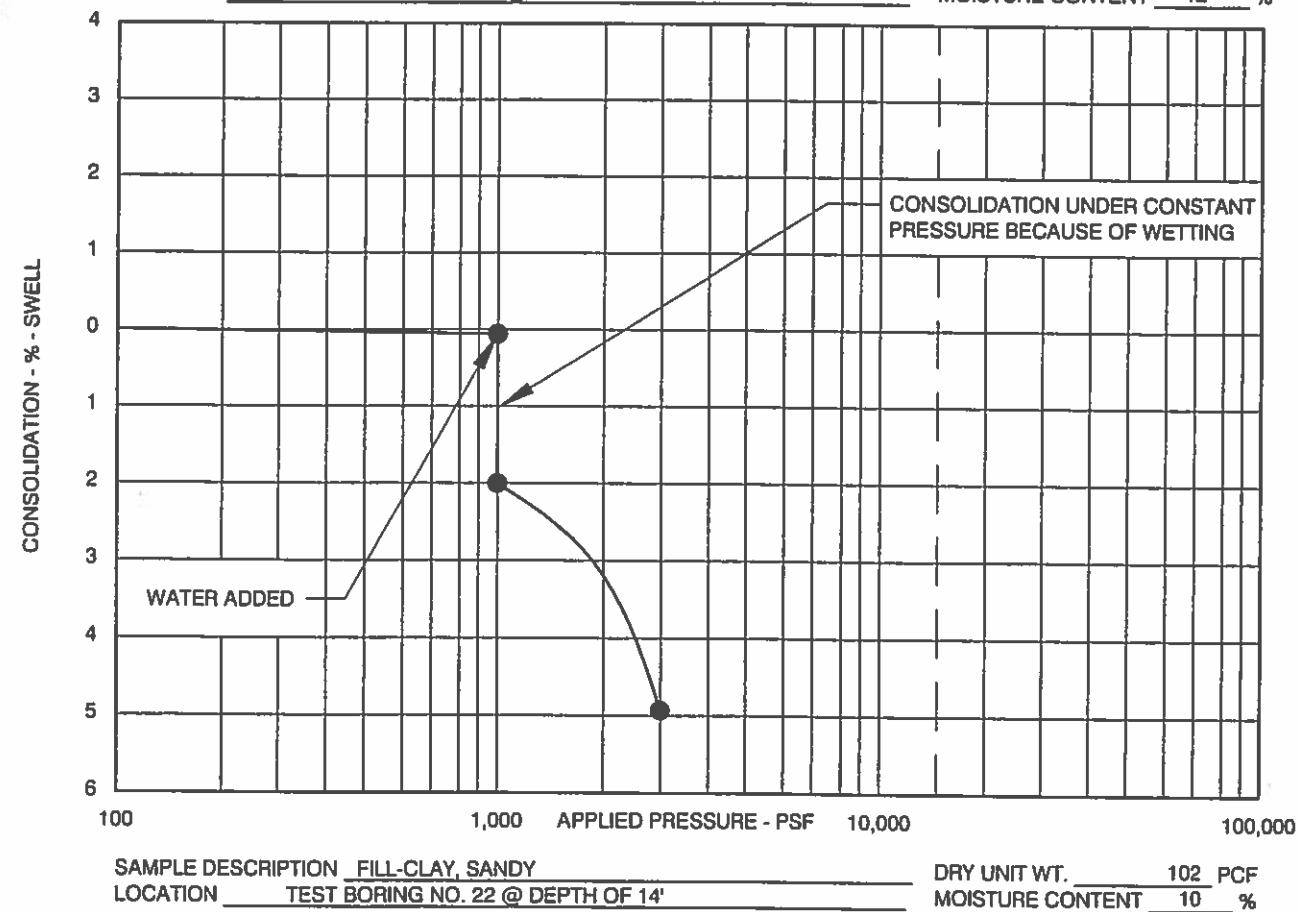
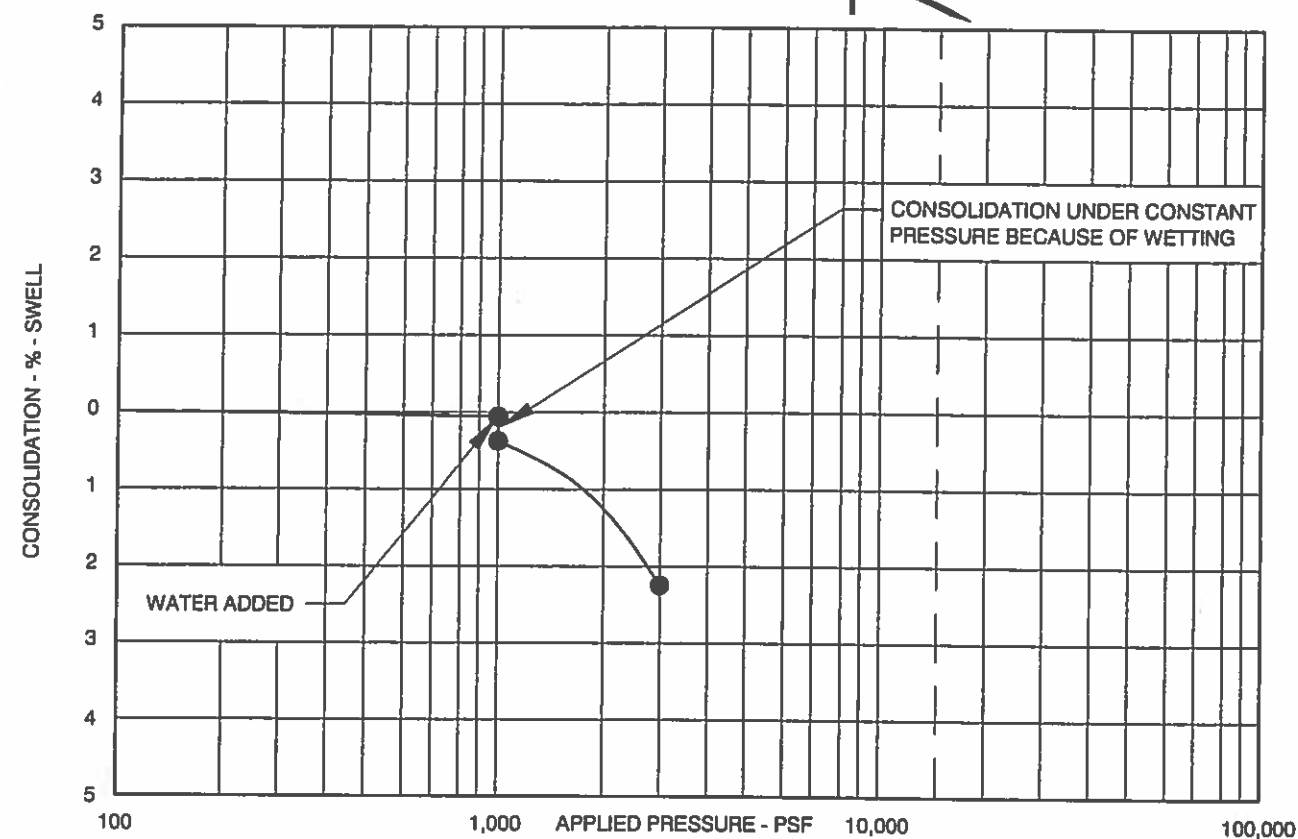


SAMPLE DESCRIPTION CLAY, SANDY DRY UNIT WT. 91 PCF
LOCATION TEST BORING NO. 21 @ DEPTH OF 4' MOISTURE CONTENT 6 %

SWELL - CONSOLIDATION TEST RESULTS

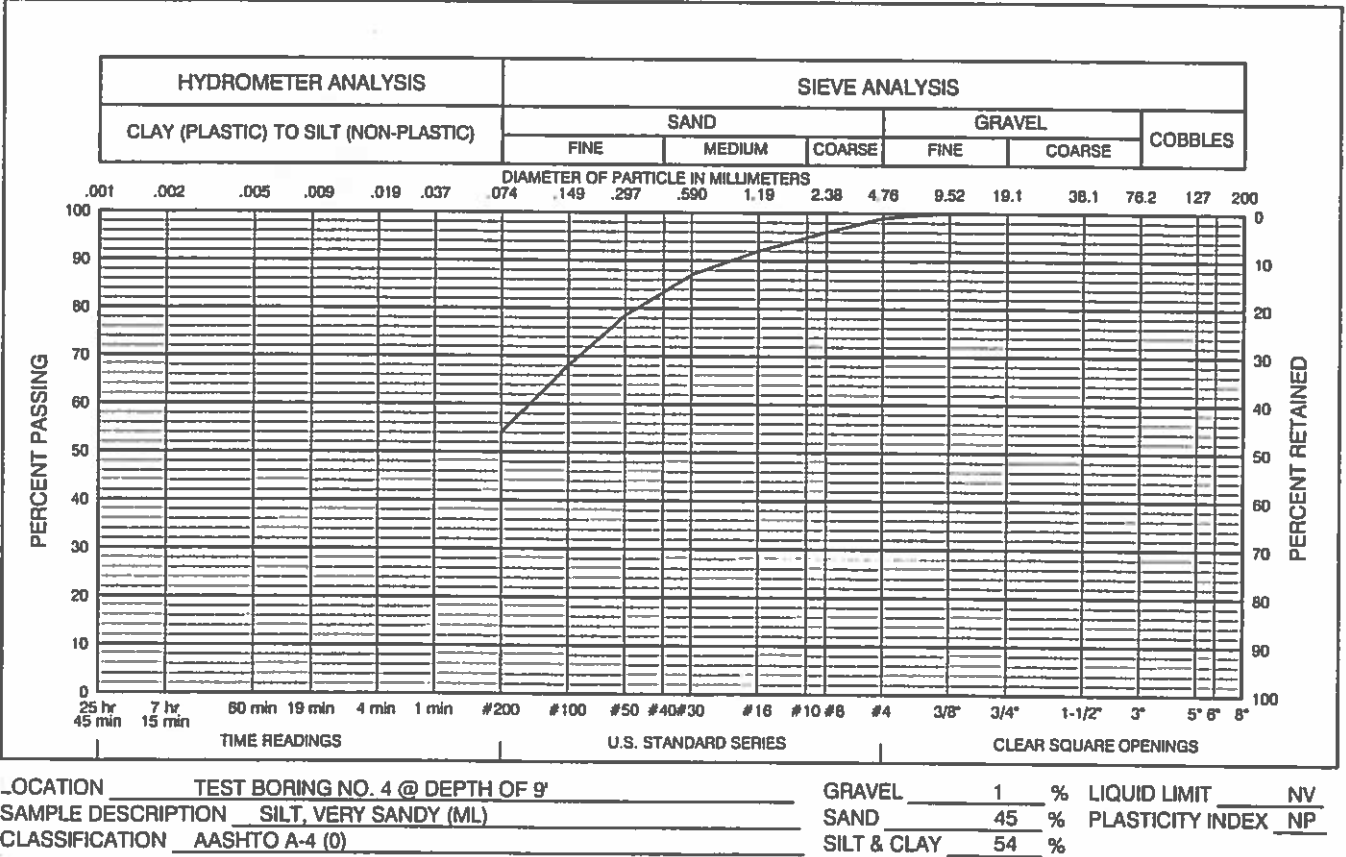
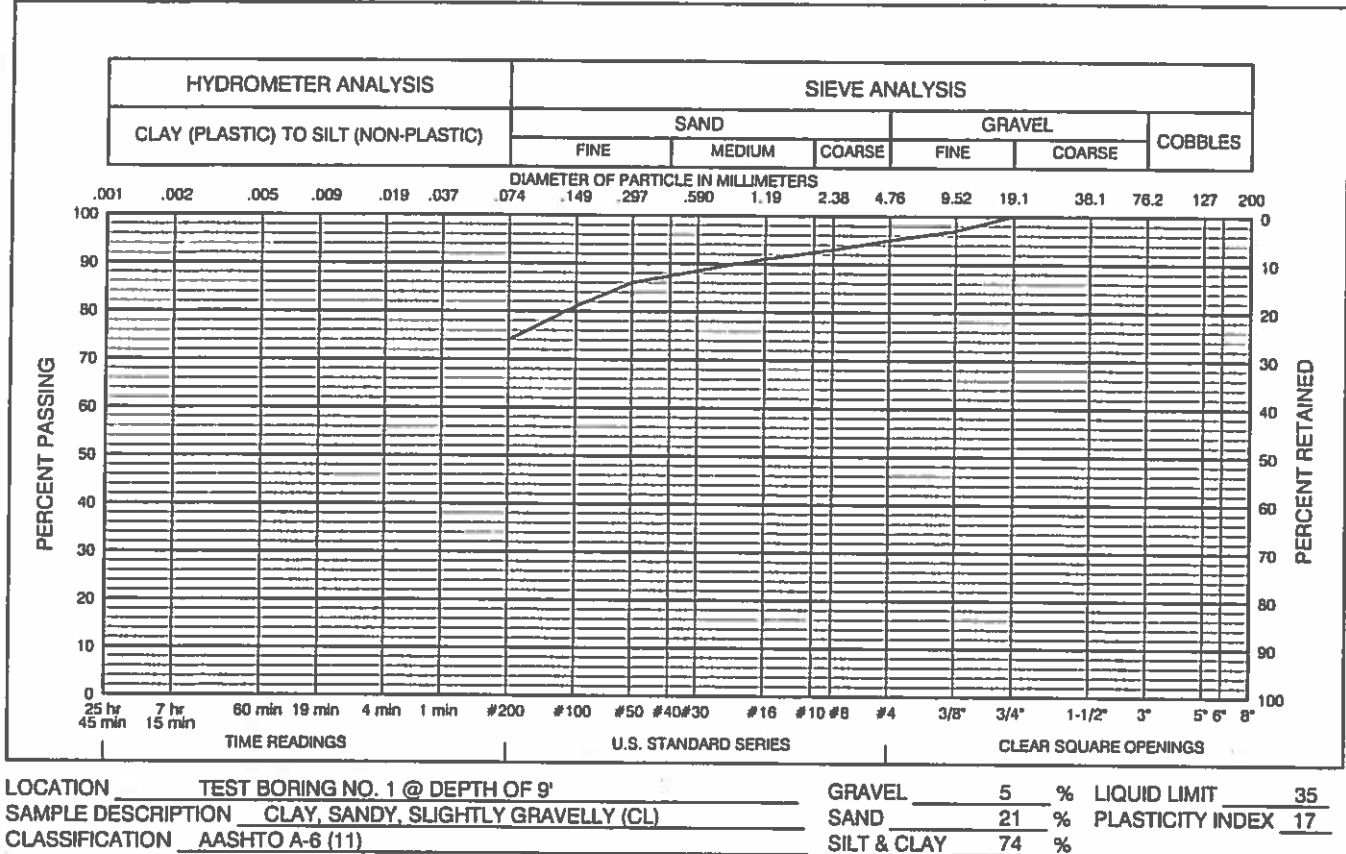
FIGURE 21

A.G. Wassenaar
Geotechnical and Environmental Consultants **Inc.**

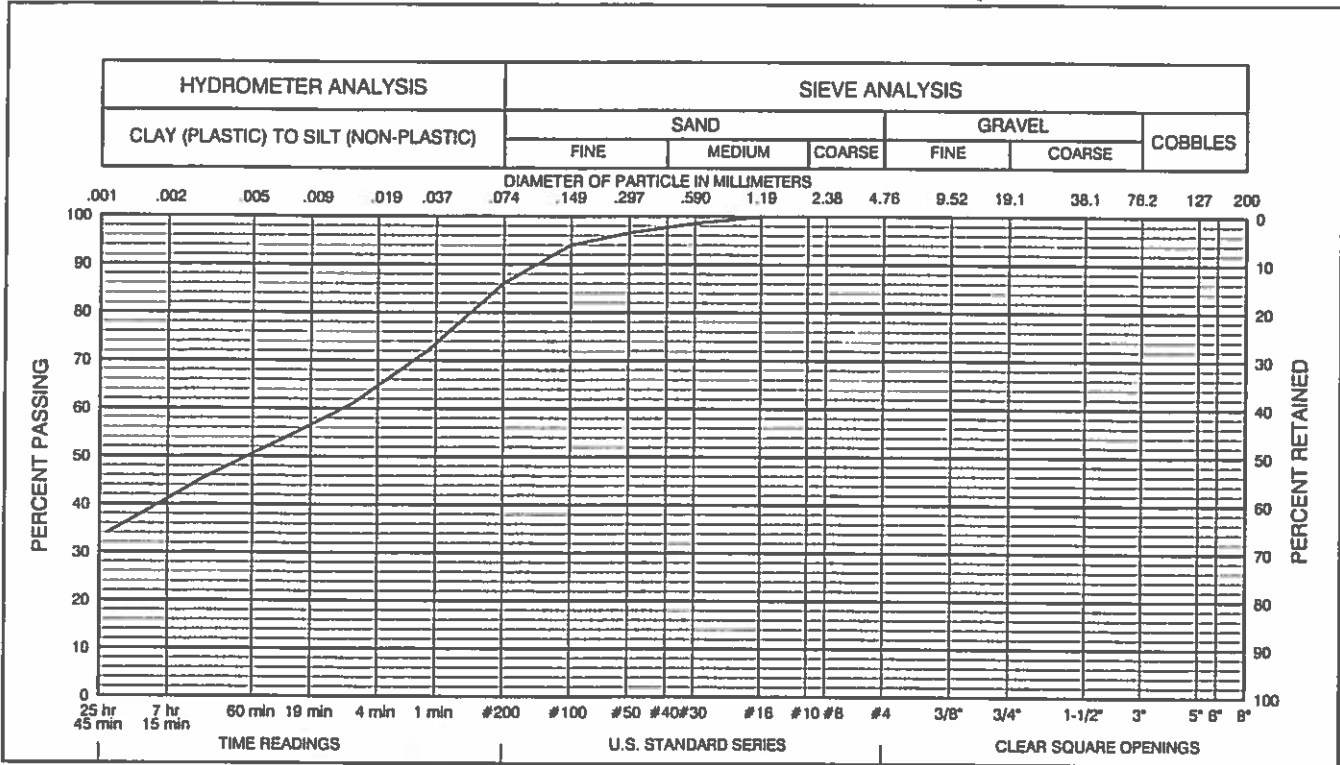


SWELL - CONSOLIDATION TEST RESULTS

FIGURE 22



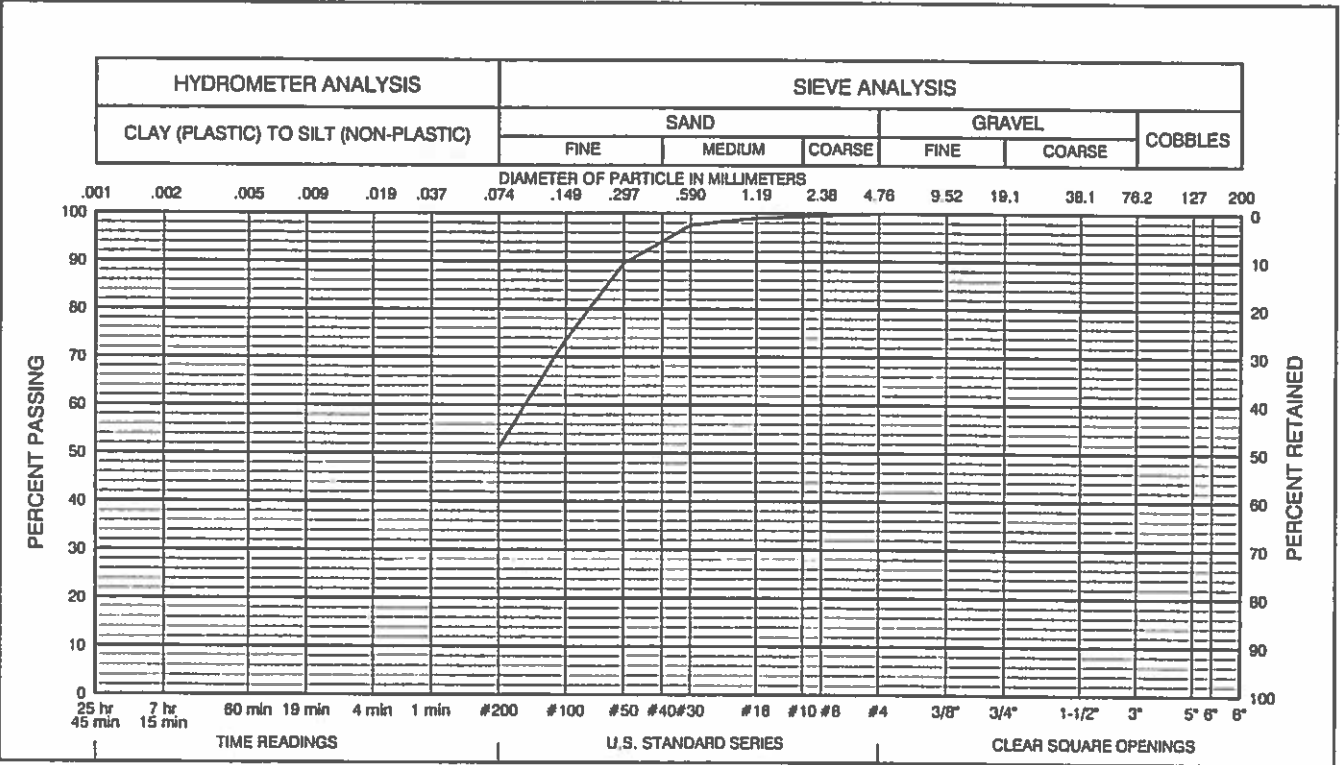
GRADATION TEST RESULTS
FIGURE 23



LOCATION TEST BORING NO. 8 @ DEPTH OF 4'

SAMPLE DESCRIPTION CLAY, SLIGHTLY SANDY (CL)

CLASSIFICATION AASHTO A-8 (13)



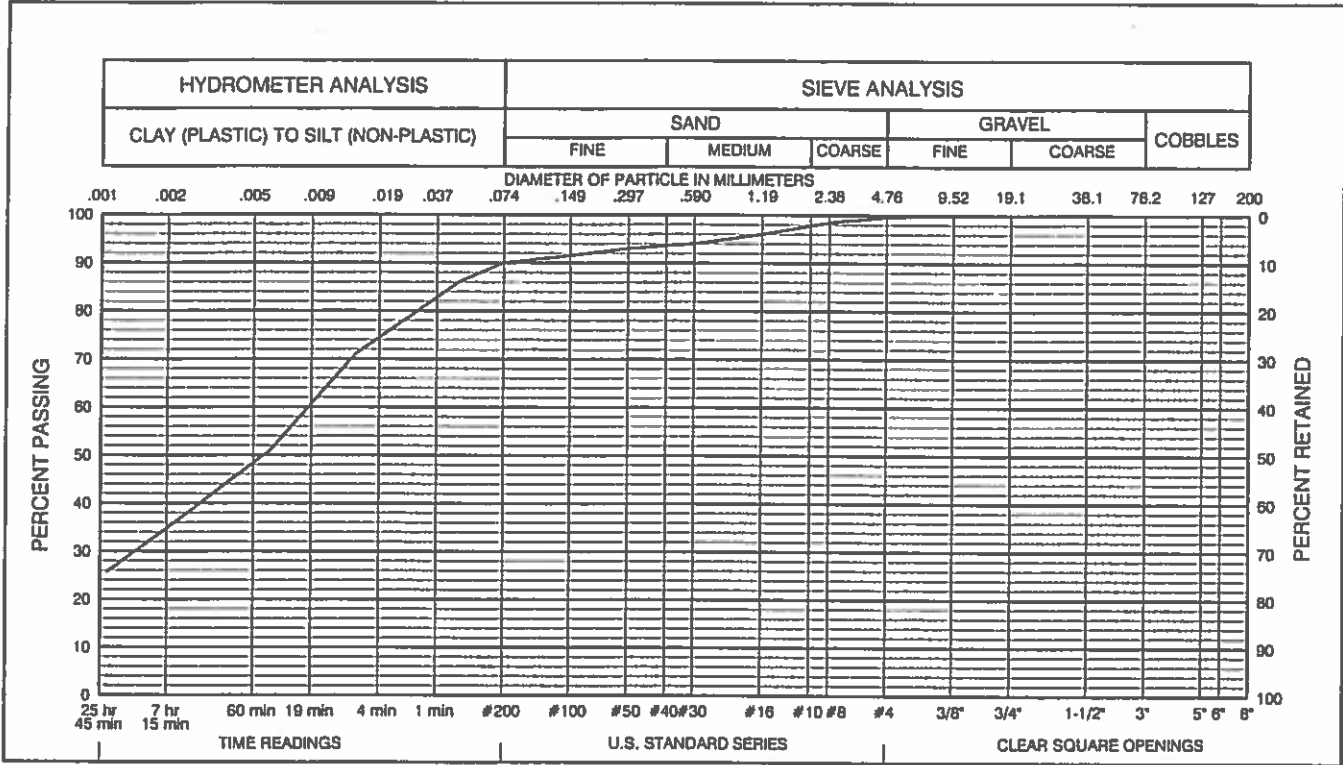
LOCATION TEST BORING NO. 9 @ DEPTH OF 9'

SAMPLE DESCRIPTION SILT, VERY SANDY (ML)

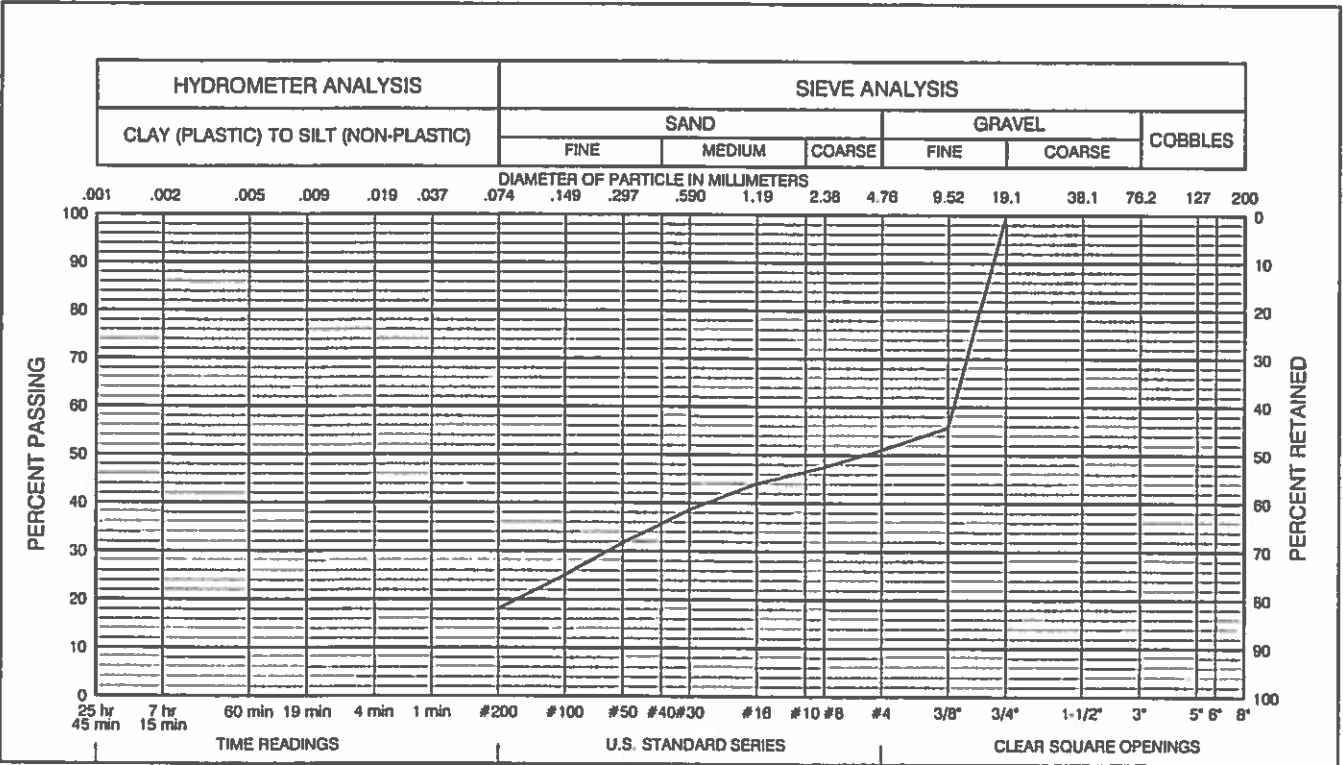
CLASSIFICATION AASHTO A-4 (0)

GRADATION TEST RESULTS

FIGURE 24

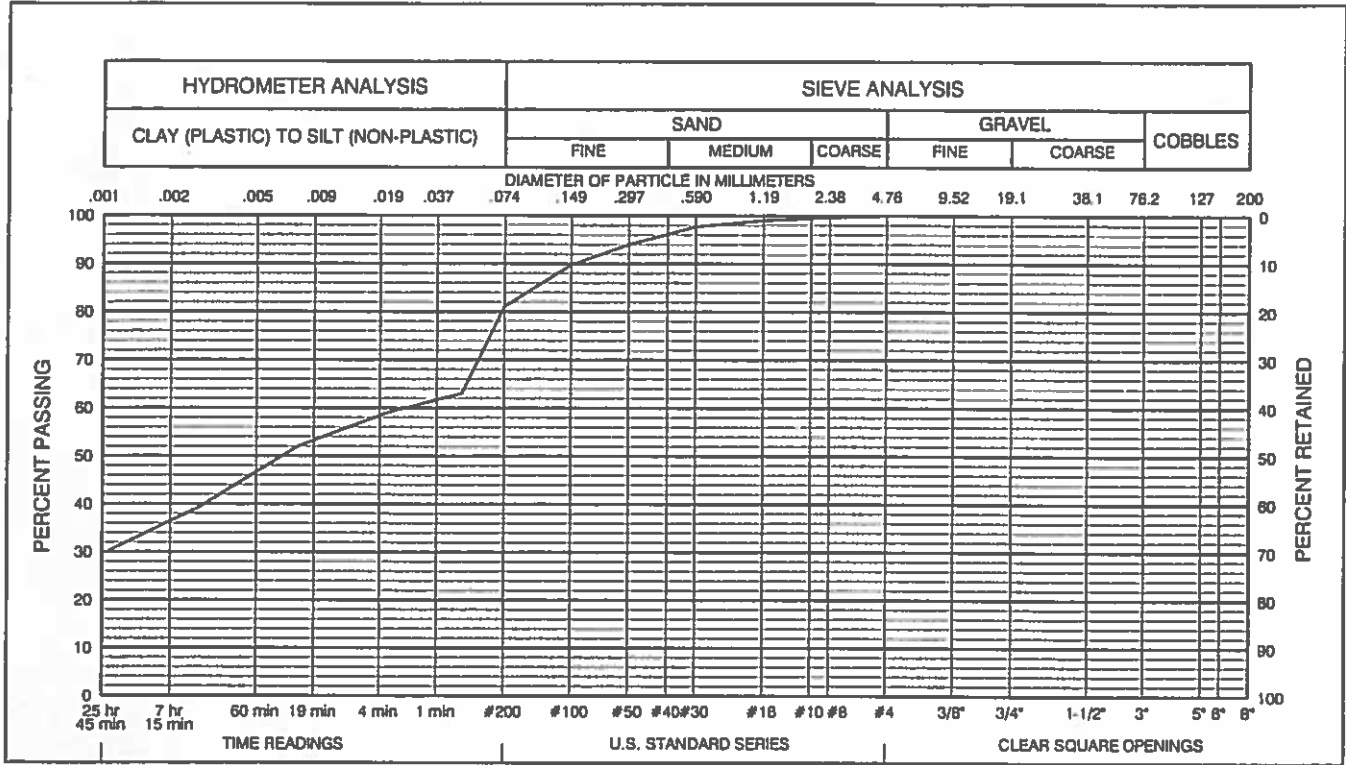


LOCATION TEST BORING NO. 11 @ DEPTH OF 9' GRAVEL 0 % LIQUID LIMIT 33
SAMPLE DESCRIPTION CLAY, SLIGHTLY SANDY (CL) SAND 10 % PLASTICITY INDEX 16
CLASSIFICATION AASHTO A-6 (13) SILT & CLAY 90 %



LOCATION TEST BORING NO. 12 @ DEPTH OF 4' GRAVEL 49 % LIQUID LIMIT NV
SAMPLE DESCRIPTION GRAVEL, VERY SANDY, SILTY (GM) SAND 33 % PLASTICITY INDEX NP
CLASSIFICATION AASHTO A-1-b SILT & CLAY 18 %

GRADATION TEST RESULTS
FIGURE 25



LOCATION TEST BORING NO. 15 @ DEPTH OF 4'

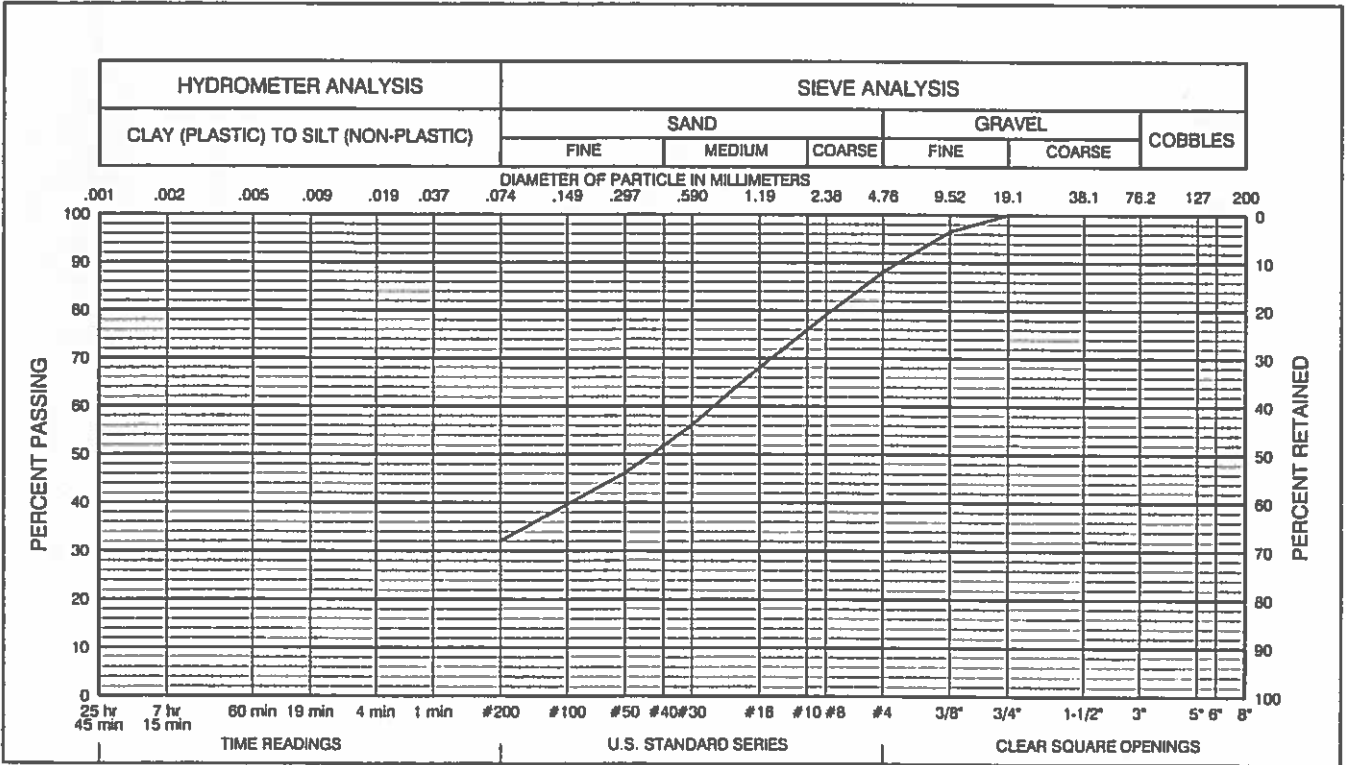
SAMPLE DESCRIPTION CLAY, SLIGHTLY SANDY (CL)

CLASSIFICATION AASHTO A-6 (14)

GRAVEL 0 % LIQUID LIMIT 35

SAND 19 % PLASTICITY INDEX 19

SILT & CLAY 81 %



LOCATION TEST BORING NO. 19 @ DEPTH OF 9'

SAMPLE DESCRIPTION SAND, VERY CLAYEY TO SILTY, SL. GRAVELLY (SC-SM)

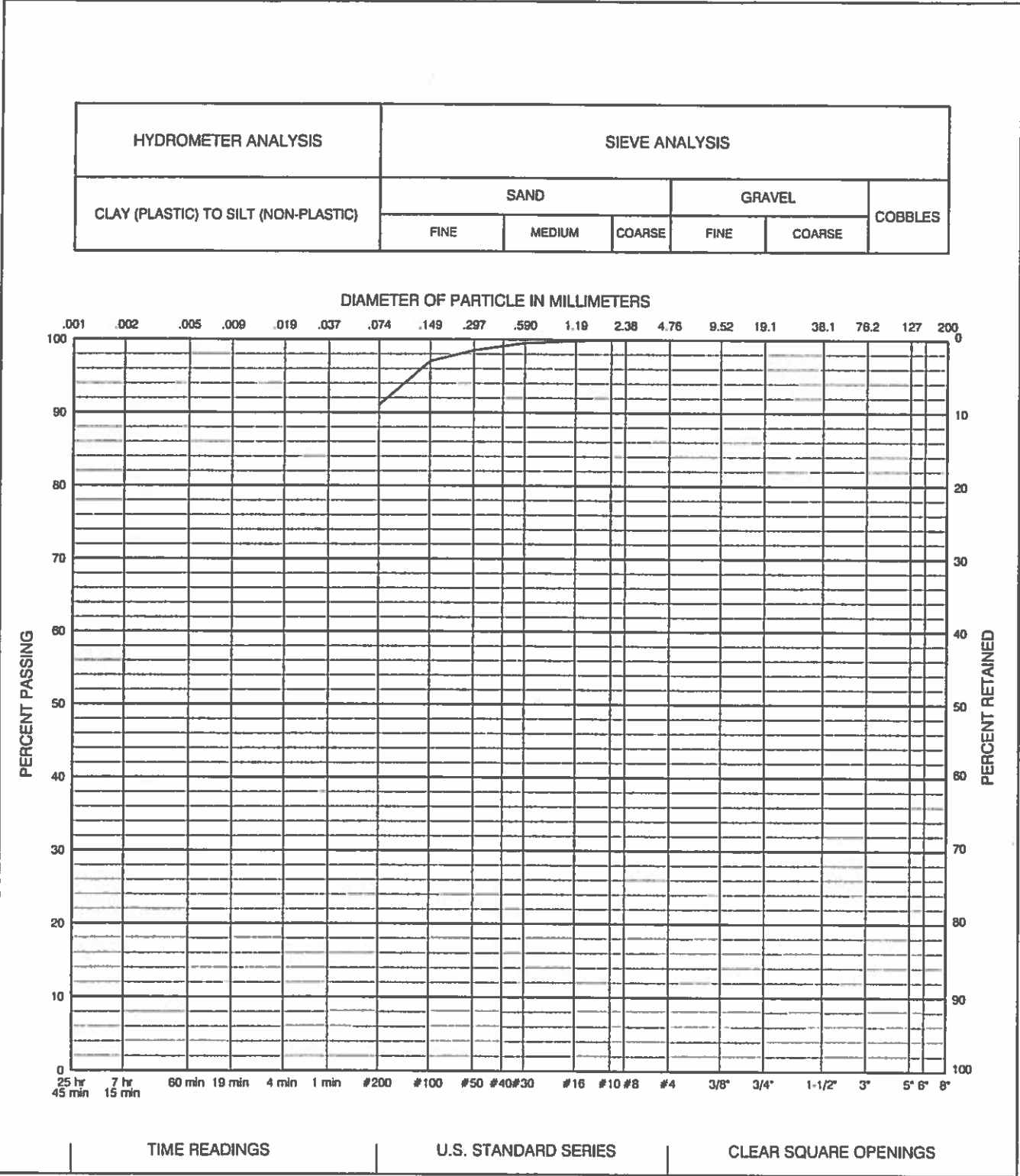
CLASSIFICATION AASHTO A-2-4 (0)

GRAVEL 12 % LIQUID LIMIT 23

SAND 65 % PLASTICITY INDEX 6

SILT & CLAY 32 %

GRADATION TEST RESULTS
FIGURE 26



LOCATION TEST BORING NO. 20 @ DEPTH OF 4'

SAMPLE DESCRIPTION CLAY, SLIGHTLY SANDY (CL)

CLASSIFICATION AASHTO A-6 (9)

GRAVEL 0 %

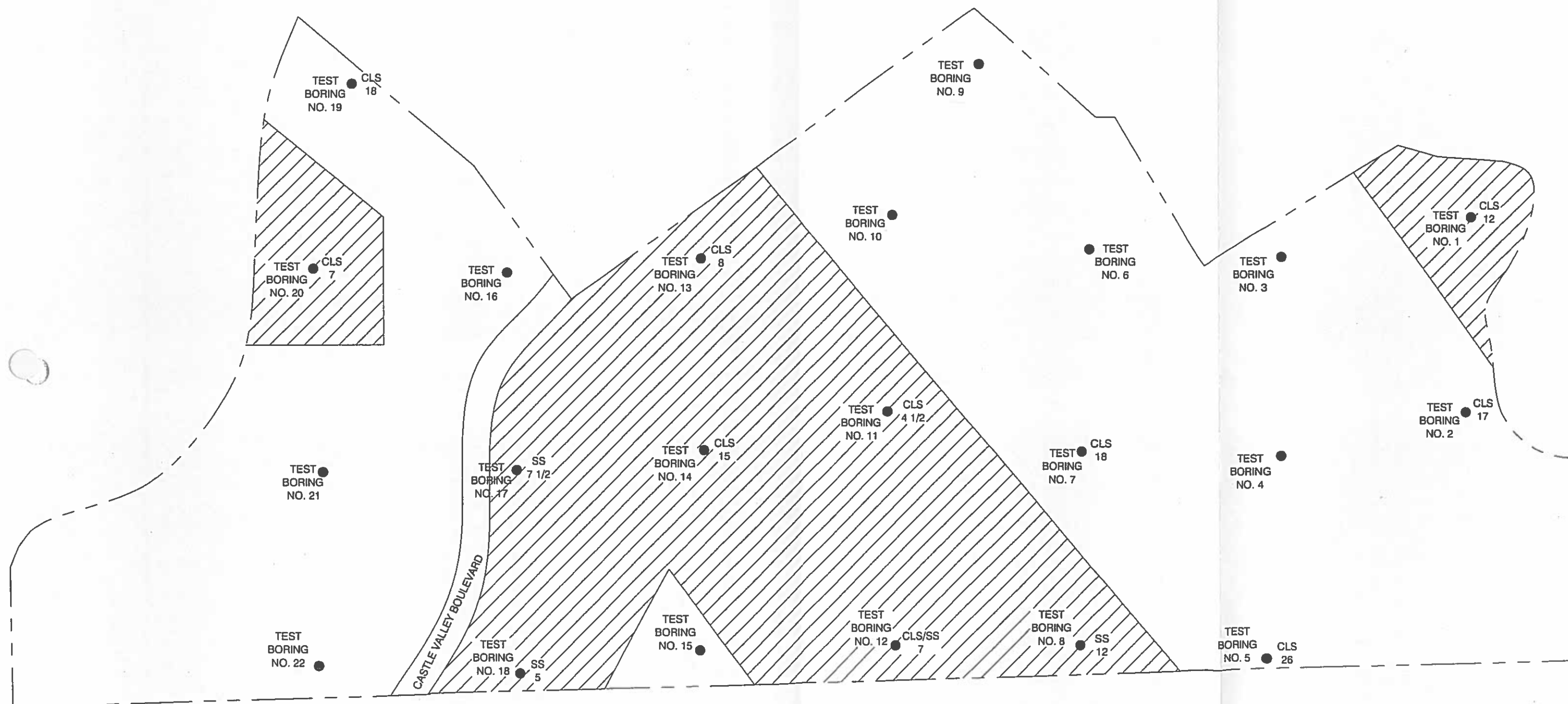
SAND 9 %

SILT & CLAY 91 %

LIQUID LIMIT 27

PLASTICITY INDEX 12

GRADATION TEST RESULTS
FIGURE 27



- CLS 15 INDICATES DEPTH TO CLAYSTONE BEDROCK OF 15 FEET
- SS 5 INDICATES DEPTH TO SANDSTONE BEDROCK OF 5 FEET
- CLS/SS 7 INDICATES DEPTH TO CLAYSTONE/SANDSTONE BEDROCK OF 7 FEET
-  INDICATES ESTIMATED AREA WHERE BEDROCK IS LESS THAN 15 FEET BELOW THE EXISTING GROUND SURFACE

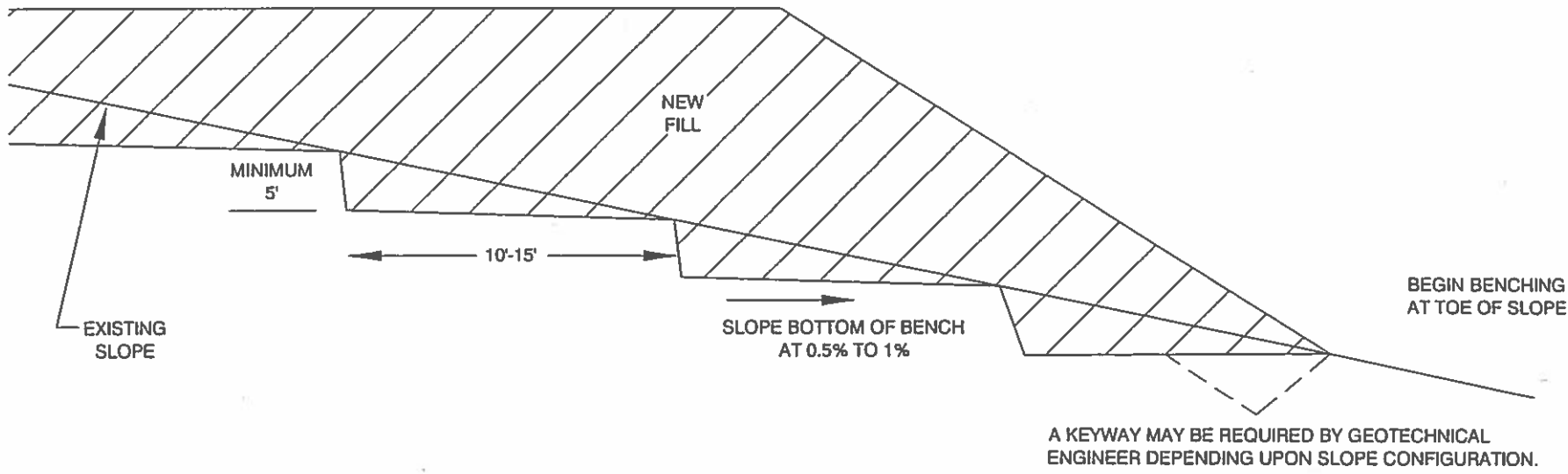
NOTE: ALL LOCATIONS ARE APPROXIMATE

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Geotechnical and Environmental Consultants *Inc.*

ESTIMATED DEPTH
TO BEDROCK MAP

PROJECT NO. 90114
FIGURE 28

CONTINUE BENCHING UNTIL NATURAL SLOPE
FLATTENS OR SLOPE DAYLIGHTS



BENCHING REQUIRED WHEN EXISTING
SLOPE IS 5 : 1 (HORITONTAL : VERTICAL) OR GREATER

NOTES: DRAINS MAY BE REQUIRED IF GROUND
WATER IS ENCOUNTERED.

ADDITIONAL CUTTING BACK OF SOME SLOPES
MAY BE REQUIRED BY GEOTECHNICAL ENGINEER
IF SLOPE INSTABILITY IS NOTED.

NOT TO SCALE

A.G. Wassenaar Geotechnical and Environmental Consultants Inc.	
GENERALIZED BENCHING DETAIL	PROJECT NO. 90114 FIGURE 29

Test Boring No.	Depth (feet)	Soil Type	Natural Dry Density (pcf)	Natural Moisture (%)	Swell (+) / Consolidation (-) (%)*	Swell Pressure (psf)	% Clay	% Passing #200 Sieve	Atterberg		pH	Resistivity (ohm/cm)	Water Soluble Sulfates (ppm)	Chlorides (%)
									Liquid Limit LL	Plasticity Index PI				
1	4	Clay, sandy	100	7	+0.1	1,100					7.32	516	20,000	0.0068
	9	Clay, sandy, slightly gravelly		9				74	35	17				
	14	Claystone, silty (disturbed)	107	6	-2.5	—								
2	9	Clay, sandy	114	7	+2.8	5,400								
	14	Clay, sandy	108	7	-0.1	—								
3	4	Clay, sandy	117	12	-0.4	—								
	19	Clay, sandy	117	3	-1.3	—								
4	4	Clay, sandy	97	8	-1.1	—								
	9	Silt, very sandy		5				54	NV	NP				
5	4	Sand, clayey	87	8	-0.5	—								
7	4	Clay, sandy	116	14	-0.3	—					7.76	1,835	<50	<0.0001
	24	Claystone, silty	122	9	+4.9	6,500								
8	4	Clay, slightly sandy		13			41	86	35	18				
	9	Clay, slightly sandy	110	10	-0.3	—								
9	4	Clay, slightly sandy	109	7	-0.5	—								
	9	Silt, very sandy		5				51	NV	NP			<50	

Notes:
*Indicates Percent Swell (+) or Consolidation (-) when wetted under a 1,000 psf load.

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SUMMARY OF LABORATORY TEST RESULTS
Village Homes of Colorado, Inc.
Castle Valley Ranch
Project Number 90114

TABLE I

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Test Boring No.	Depth (feet)	Soil Type	Natural Dry Density (pcf)	Natural Moisture (%)	Swell (+) / Consolidation (-) (%)*	Swell Pressure (psf)	% Clay	% Passing #200 Sieve	Atterberg		pH	Resistivity (ohm/cm)	Water Soluble Sulfates (ppm)	Chlorides (%)
									Liquid Limit LL	Plasticity Index PI				
10	4	Clay, sandy	107	18	-0.4	—								
	9	Claystone, silty	116	16	+2.7	10,000					8.31	1,000	<50	0.0003
	24	Claystone, silty	113	11	+4.1	15,000								
11	4	Claystone, silty	116	10	+0.9	3,500								
	9	Clay, slightly sandy		8			35	90	33	16				
	14	Clay, slightly sandy	116	6	0.0	—								
12	4	Gravel, very sandy, silty		4				18	NV	NP				
	19	Claystone, silty	124	10	+6.0	9,200								
13	4	Clay, sandy	89	8	-2.4	—								
	9	Claystone, silty (disturbed)	99	7	-5.9	—								
14	4	Clay, sandy	120	9	+4.3	14,000								
15	4	Clay, slightly sandy	104	9	-0.7	—	36	81	35	19				
	9	Clay, very sandy	123	6	+1.7	7,700								
16	4	Clay, sandy	93	8	-1.1	—					7.76	1,724	<50	<0.0001
17	4	Clay, sandy	107	17	-0.1	—								
18	4	Clay, sandy	103	7	+1.1	2,900								

Notes:

*Indicates Percent Swell (+) or Consolidation (-) when wetted under a 1,000 psf load.

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Inc.

SUMMARY OF LABORATORY TEST RESULTS

Village Homes of Colorado, Inc.

Castle Valley Ranch

Project Number 90114

TABLE I

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Test Boring No.	Depth (feet)	Soil Type	Natural Dry Density (pcf)	Natural Moisture (%)	Swell (+) / Consolidation (-) (%)*	Swell Pressure (psf)	% Clay	% Passing #200 Sieve	Atterberg		pH	Resistivity (ohm/cm)	Water Soluble Sulfates (ppm)	Chlorides (%)
									Liquid Limit LL	Plasticity Index PI				
18	9	Sandstone, slightly clayey	120	5	+0.8									
19	4	Clay, sandy	78	6	-4.9	—								
	9	Sand, very clayey to silty, slightly gravelly		2				32	23	6				
	24	Claystone, silty	124	7	+2.3									
20	4	Clay, slightly sandy	108	15	-0.4	—		91	27	12				
	9	Claystone, silty (disturbed)	94	6	-7.5	—								
21	4	Clay, sandy	91	6	-5.9	—								
22	9	Fill - clay, sandy	119	12	-0.3	—								
	14	Fill - clay, sandy	102	10	-1.9	—					7.82	3,984	<50	0.0007

Notes:

*Indicates Percent Swell (+) or Consolidation (-) when wetted under a 1,000 psf load.

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SUMMARY OF LABORATORY TEST RESULTS

Village Homes of Colorado, Inc.

Castle Valley Ranch

Project Number 90114

TABLE I

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A.G. Wassenaar

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www.agwassenaar.com

APPENDIX

SPECIFICATIONS FOR PLACEMENT OF FILL

GENERAL

The Soil Engineer, as the Owner's representative, shall conduct tests to determine if the material, method of placement, and compaction are in reasonable compliance with the specifications.

PREPARATION OF NATURAL GROUND

Vegetation, organic topsoil, any existing man-made fill and any other deleterious materials shall be removed from the fill area. The area to be filled shall then be scarified, moistened if necessary, and compacted in the manner specified below prior to placement of subsequent layers of fill.

FILL MATERIAL

Fill material shall consist of on or off-site soils which are relatively free of vegetable matter and rubble. Off-site materials shall be evaluated by the Soil Engineer prior to importation. No organic, frozen, perishable, or other unsuitable material shall be placed in the fill. For the purpose of this specification, cohesive soil shall be defined as a mixture of clay, sand, and silt with more than 35% passing a U. S. Standard #200 sieve and a Plasticity Index of at least 11. These materials will classify as an A-6 or A-7 by the AASHTO Classification system. Granular soils shall be all materials which do not classify as cohesive.

Crushed sandstone should consist of a material of which at least 90% are smaller than 4-inches in dimension and at least 60% passes a U. S. Standard No. 4 sieve.

PLACEMENT OF FILL MATERIAL

The materials shall be delivered to the fill in a manner which will permit a well and uniformly compacted fill. Before compacting, the fill material shall be properly mixed and spread in approximately horizontal layers not greater than 8 inches in loose thickness.

MOISTURE CONTROL

While being compacted, the material shall contain uniformly distributed optimum moisture for compaction. The Contractor shall be required to add moisture to the materials if, in the opinion of the Soil Engineer, proper and uniform moisture is not being obtained for compaction. If the fill materials are too wet for proper compaction, aerating and/or mixing with drier materials may be required.

Moisture content shall be controlled as a percentage deviation from optimum. Optimum moisture content is defined as the moisture content corresponding to the maximum density of a laboratory compacted sample performed according to ASTM D698 for cohesive soils or ASTM D1557 for granular soils. The moisture content specifications for the various areas are as follows:

APPENDIX
SPECIFICATIONS FOR PLACEMENT OF FILL
PAGE TWO

- | | | |
|----------------------------------|----------|-------------------|
| 1. Beneath Structural Areas: | Cohesive | - 1 to +3 percent |
| | Granular | -2 to +2 percent |
| 2. Beneath Non-Structural Areas: | | -3 to +3 percent |
| 3. Moisture Treated Fill: | Cohesive | 0 to +4 percent |
| | Granular | -2 to +2 percent |

COMPACTION

When the moisture content and conditions of each layer spread are satisfactory, it shall then be compacted by an approved method. Moisture-density tests shall be performed on typical fill materials to determine the maximum density. Field density tests must then be made to determine the adequacy of the fill compaction. The compaction standard to be utilized in determining the maximum density is ASTM D698 for cohesive soils or ASTM D1557 for granular soils. The following compaction specifications should be followed for each area:

- | | |
|----------------------------------|----------------------------|
| 1. Beneath Structural Areas: | 95% of Maximum Dry Density |
| 2. Beneath Non-Structural Areas: | 90% of Maximum Dry Density |

If Proctor testing is not feasible due to the percentage of +¾ inch material, compaction of the fill should be judged by the methodology for rock fills as described in The Colorado Department of Transportation Standard Specifications.

Note: In areas where fill depths exceed 20 feet, additional compaction considerations will be required to minimize fill settlement. We recommend any fill placed within 20 feet of final subgrade elevation be compacted to a minimum of 95% of the appropriate maximum dry density, and deeper fills be compacted to 100% of the appropriate maximum dry density. The required moisture content for all fills more than 20 feet deep shall be -2 to +2% of optimum moisture content.

If the structural fill contains less than 10% passing the No. 200 sieve, it may be necessary to control compaction based on relative density (ASTM D 2049). If this is the case, then compaction around the structures and beneath slabs shall be to at least 60% relative density, and compaction beneath foundations and pavements shall be to at least 70% relative density.

TRAFFIC IMPACT STUDY

Traffic Impact Study

9 North Wildhorse

New Castle, Colorado

Prepared for:

Sopris Engineering LLC

Kimley»Horn

T R A F F I C I M P A C T S T U D Y

9 North Wildhorse

New Castle, Colorado

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April 2024

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1.0 EXECUTIVE SUMMARY

The 9 North Wildhorse development is proposed to be located along the east side of Wildhorse Drive, north of Castle Valley Boulevard in New Castle, Colorado. The project is proposed to include a mix of townhome and apartment style homes, totaling up to 130 dwelling units. It is expected that the project will be completed in the next several years. Therefore, analysis was conducted for the 2026 short-term buildout horizon as well as the 2045 long-term twenty-year planning horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study in accordance with the Town of New Castle standards and requirements:

- Alder Avenue & Wildhorse Drive (Intersection #1)
- Castle Valley Boulevard & Wildhorse Drive (#2)

At the request of the Town of New Castle, the Main Street (US-6) & 7th Street (#3) and the US-6 & Castle Valley Boulevard (#4) intersections were included in this study to determine whether State of Colorado Department of Transportation (CDOT) access permits would be needed based on the traffic expected to be generated by the 9 North Wildhorse development. In addition, the proposed two full movement accesses into the site were included for evaluation in this study. These accesses include a northern and southern access to the loop road—called Vista Loop—which will serve all development within the project site.

Regional access to 9 North Wildhorse will be provided by Interstate 70 (I-70) and US-6. Primary access will be provided by Main Street (US-6), 7th Street, and Castle Valley Boulevard, while direct access will be provided by two full movement accesses along the east side of Wildhorse Drive to the east of VIX Ranch Park.

9 North Wildhorse is expected to generate approximately 930 weekday daily trips, with 67 of these trips occurring during the morning peak hour and 80 of these trips occurring during the afternoon peak hour.

Based on the analysis presented in this report, Kimley-Horn believes 9 North Wildhorse will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following recommendations:

- With project construction, the remaining unpaved portion of Wildhorse Drive will be paved. Additionally, two full movement accesses are proposed into the project site on the east side of Wildhorse Drive. These accesses are recommended to operate with stop control on the westbound approach exiting the development, with posted R1-1 “STOP” signs. All approaches to each access intersection are expected to operate well through the 2045 horizon with a single lane in each direction, with no need for separated turn lanes.
- The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the north legs of the Main Street (US-6) & 7th Street (#3) and US-6 & Castle Valley Boulevard (#4) intersections is not anticipated to increase existing access traffic volumes by more than 20 percent. The maximum expected increase is anticipated to be a 4.3 percent increase during the afternoon peak hour at the US-6 & 7th Street (#3) intersection (15 project traffic volume / 352 existing 2024 afternoon peak hour volume) and a 7.5 percent increase during the afternoon peak hour at the US-6 & Castle Valley Boulevard (#4) intersection (64 project traffic volume / 855 existing 2024 afternoon peak hour volume). Therefore, a CDOT access permit is not anticipated to be required in association with this project.
- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the Town of New Castle and the Manual on Uniform Traffic Control Devices (MUTCD) – 11th Edition, 2023.

2.0 INTRODUCTION

Kimley-Horn has prepared this report to document the results of a Traffic Impact Study for 9 North Wildhorse proposed to be located along the east side of Wildhorse Drive, north of Castle Valley Boulevard in New Castle, Colorado. A vicinity map illustrating the 9 North Wildhorse development location is shown in **Figure 1**. The project is proposed to include 130 dwelling units which are expected to consist of a mix of townhome and apartment style dwelling units. A conceptual site plan is attached in **Appendix A**. It is expected that the project will be completed in the next several years; therefore, analysis was conducted for the 2026 short-term buildout horizon as well as the 2045 long-term twenty-year planning horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study in accordance with the Town of New Castle standards and requirements:

- Alder Avenue & Wildhorse Drive (Intersection #1)
- Castle Valley Boulevard & Wildhorse Drive (#2)

At the request of the Town of New Castle, the Main Street (US-6) & 7th Street (#3) and the US-6 & Castle Valley Boulevard (#4) intersections were included in this study to determine whether State of Colorado Department of Transportation (CDOT) access permits would be needed based on the traffic expected to be generated by the 9 North Wildhorse development. In addition, the proposed two full movement accesses into the site were included for evaluation in this study. These accesses include a northern and southern access to the loop road—called Vista Loop—which will serve all development within the project site.

Regional access to 9 North Wildhorse will be provided by Interstate 70 (I-70) and US-6. Primary access will be provided by Main Street (US-6), 7th Street, and Castle Valley Boulevard, while direct access will be provided by two full movement accesses along the east side of Wildhorse Drive to the east of VIX Ranch Park.

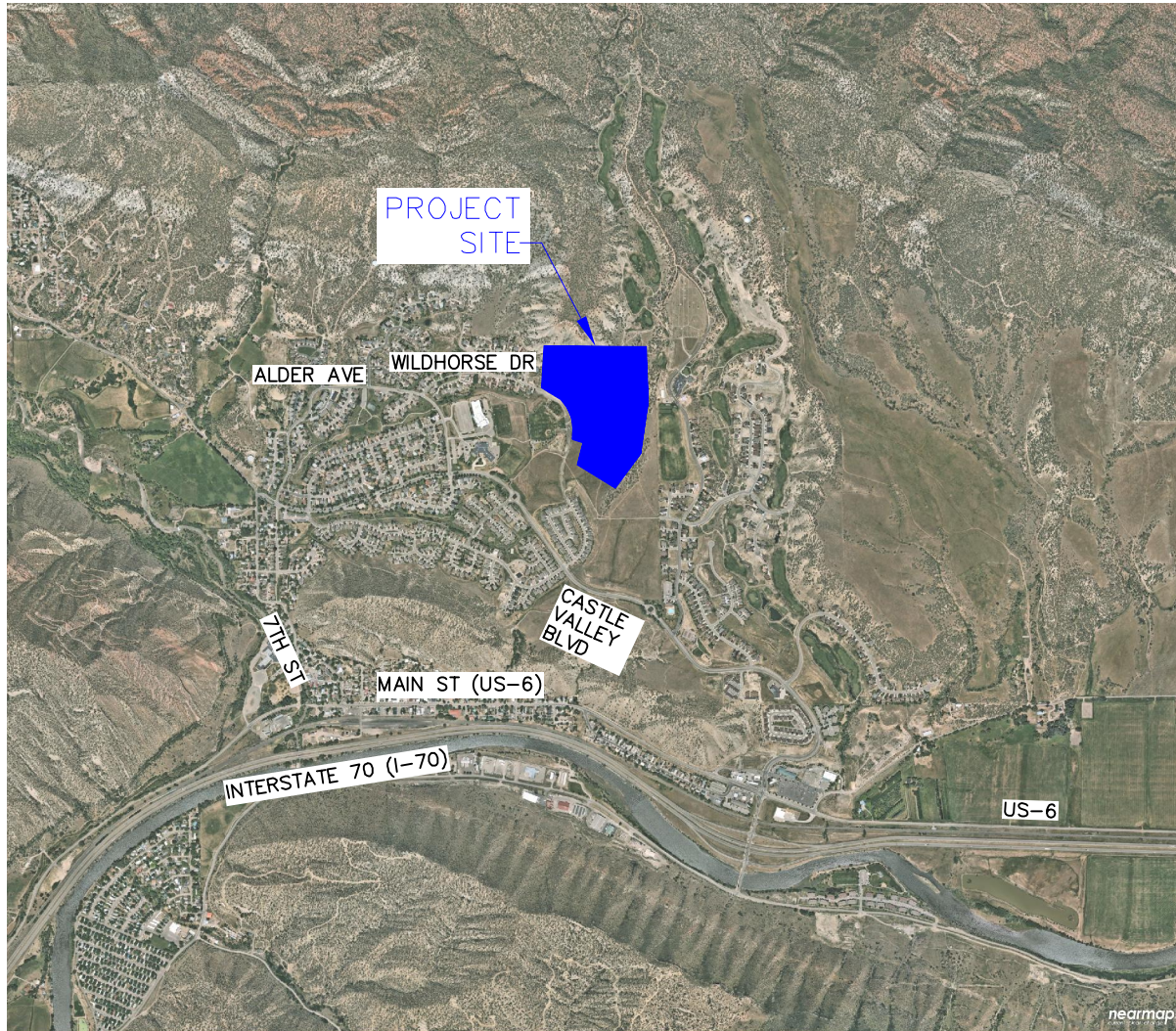


FIGURE 1
9 NORTH WILDHORSE
NEW CASTLE, COLORADO
VICINITY MAP

3.0 EXISTING AND FUTURE CONDITIONS

3.1 Existing Study Area

The existing site is comprised of vacant land. To the west of Wildhorse Drive is VIX Ranch Park, Riverside Middle School, Kathryn Senor Elementary School, and some single-family residential uses. To the south of the site is also primarily undeveloped land and additional single-family and duplex/townhome style homes. To the east of the site is additional residential uses and the Lakota Links golf course.

3.2 Existing Roadway Network

Wildhorse Drive connects to Alder Avenue to the west and to Castle Valley Boulevard to the south with a posted speed limit of 20 miles per hour. A portion of Wildhorse Drive—adjacent to where the 9 North Wildhorse site is proposed to be constructed—is not yet paved, as a gravel road. This portion separates two paved portions of roadway that already exist, which are nearest to Alder Avenue and Castle Valley Boulevard.

Castle Valley Boulevard primarily exists within the Town of New Castle as an east-west roadway that provides two through lanes in each direction from just west of the western connection with Alder Avenue to just west of the roundabout at Pyramid Drive. It has one through lane in each direction between Pyramid Drive and US-6. The posted speed limit along most of Castle Valley Boulevard is 30 miles per hour, whereas the speed limit along Castle Valley Boulevard is 20 miles per hour near the US-6 intersection.

Alder Avenue is a two-lane roadway that operates as a minor collector with a posted speed limit of 20 miles per hour. This roadway connects to the north side of Castle Valley Boulevard in two locations, with these connections approximately ½-mile from each other. Alder Avenue connects to Castle Valley Boulevard on the west at the four-leg intersection with Rio Grande Avenue whereas to the east, Alder Avenue connects at Current Drive.

7th Street is a north-south roadway on the western side of New Castle with one through lane in each direction and a posted speed limit of 20 miles per hour.

US-6 (Main Street) is an east/west highway that roughly parallels the I-70 freeway just to the south within the study area. US-6 primarily provides one through lane in each direction within Town boundaries while a two-way left-turn lane (TWLTL) is present along the Main Street portion of US-6 between approximately 7th Street and C Avenue. The posted speed limit near the 7th Street intersection is 30 miles per hour, while near Castle Valley Boulevard, the posted speed limit along US-6 is 45 miles per hour.

The Alder Avenue & Wildhorse Drive (#1) 'T'-intersection is unsignalized and operates with stop control on Wildhorse Drive. For purposes of this study, at this intersection, Alder Avenue is identified as an east-west roadway while Wildhorse Drive is a north-south roadway. All turning movements operate from within one lane in each direction for shared turning movements. An aerial photo of the existing intersection configuration is below.



Alder Avenue & Wildhorse Drive (#1)

The Castle Valley Boulevard & Wildhorse Drive (#2) intersection operates with stop control on the Wildhorse Drive approaches to the intersection. For purposes of this study, Castle Valley Boulevard is identified as the east-west roadway whereas Wildhorse Drive is identified to be the north-south roadway. The Castle Valley Boulevard approaches to the intersection each provide a shared left/through lane and a separated right-turn lane whereas the Wildhorse Drive approaches each provide one lane for shared left/through/right-turning movements. A short acceleration lane is provided for vehicles turning southbound to westbound right onto northbound Castle Valley Boulevard. An aerial photo of the existing intersection configuration is below.



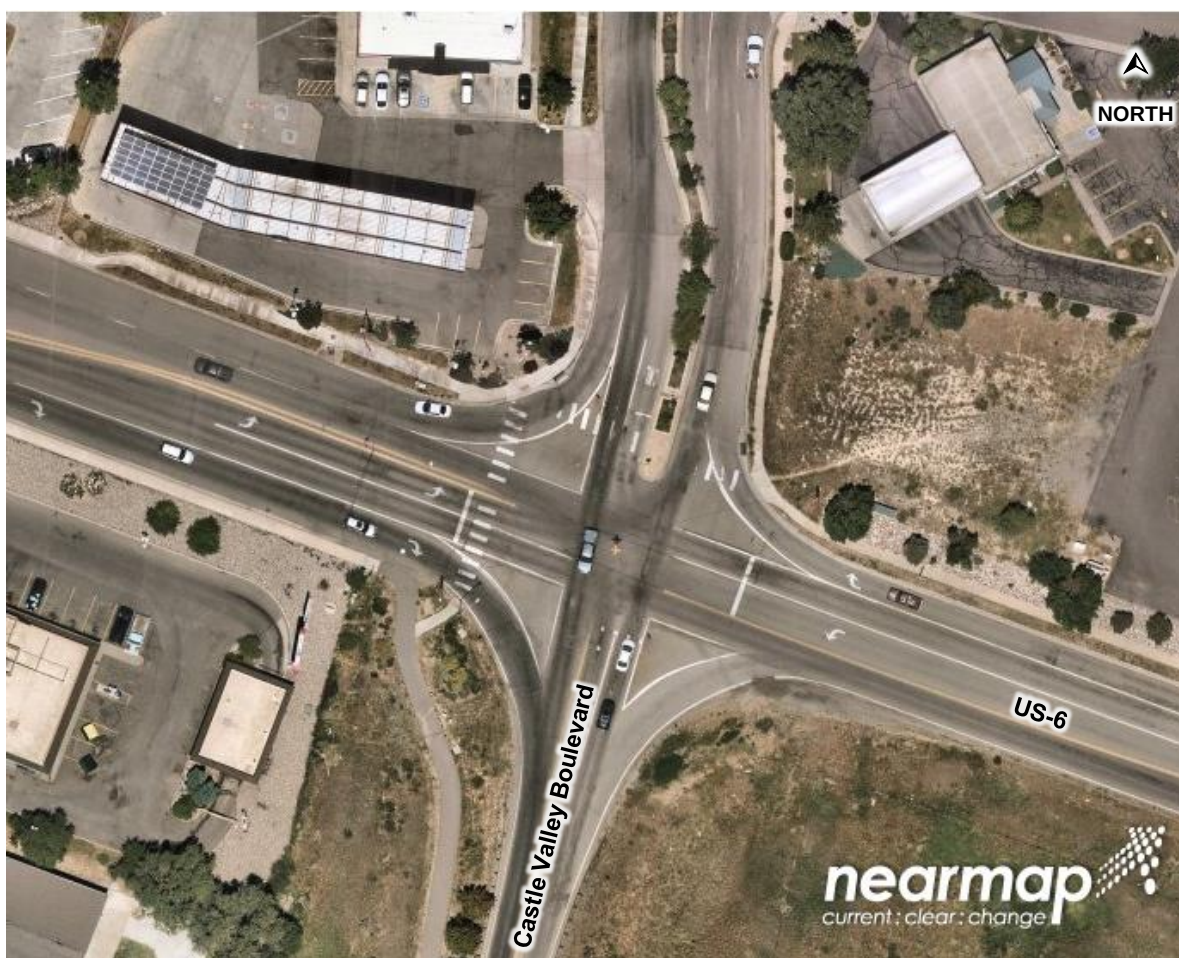
Castle Valley Boulevard & Wildhorse Drive (#2)

The Main Street (US-6) & 7th Street (#3) 'T'-intersection operates with stop control on the southbound 7th Street approach to the intersection. Although there is additional pavement width along Main Street (US-6), because of a lack of striping it was assumed that all approaches to this intersection operate with one lane in each direction for shared turning movements. An aerial photo of the existing intersection configuration is below.



Main Street (US-6) & 7th Street (#3)

The US-6 & Castle Valley Boulevard (#4) intersection currently operates with all-way stop control, though construction is currently underway to convert this intersection into a roundabout. In its current configuration, US-6 along the eastbound and westbound approaches each provide a left-turn lane, one through lane, and a right-turn lane, with the right-turn lanes being channelized with yield control. The northbound Castle Valley Boulevard approach, which comes from the I-70 interchange, provides a left-turn lane, one through lane, and a channelized right-turn lane operating with yield control. The southbound Castle Valley Boulevard approach to the intersection also provides a left-turn lane, one through lane, and a right-turn lane, though this channelized right-turn lane operates with free movement as an acceleration lane along westbound US-6 is provided. An aerial photo of the existing intersection configuration is below.



US-6 & Castle Valley Boulevard (#4)

The intersection lane configuration and control for the study area intersections are shown in Figure 2.

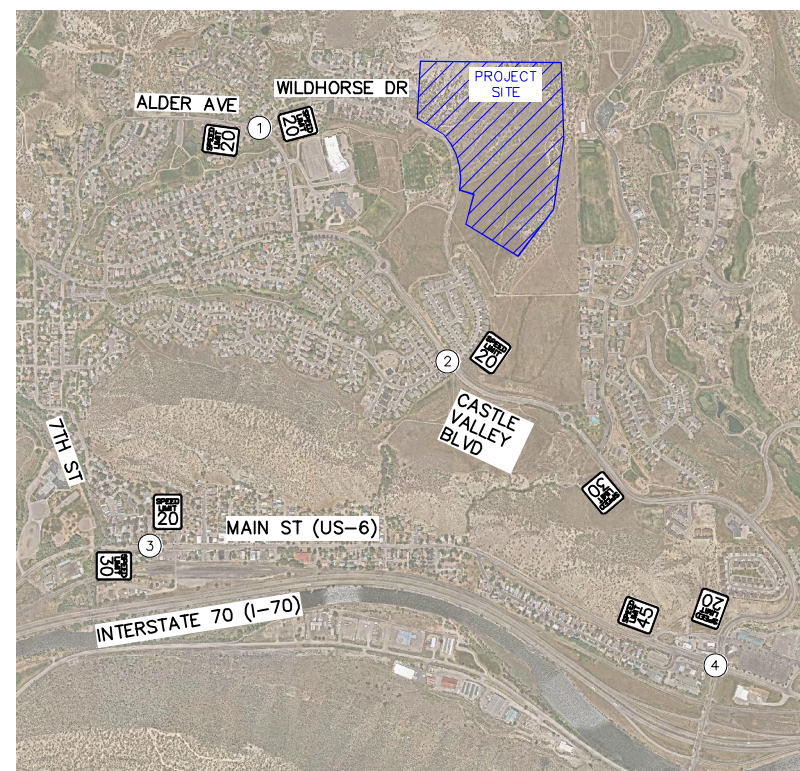
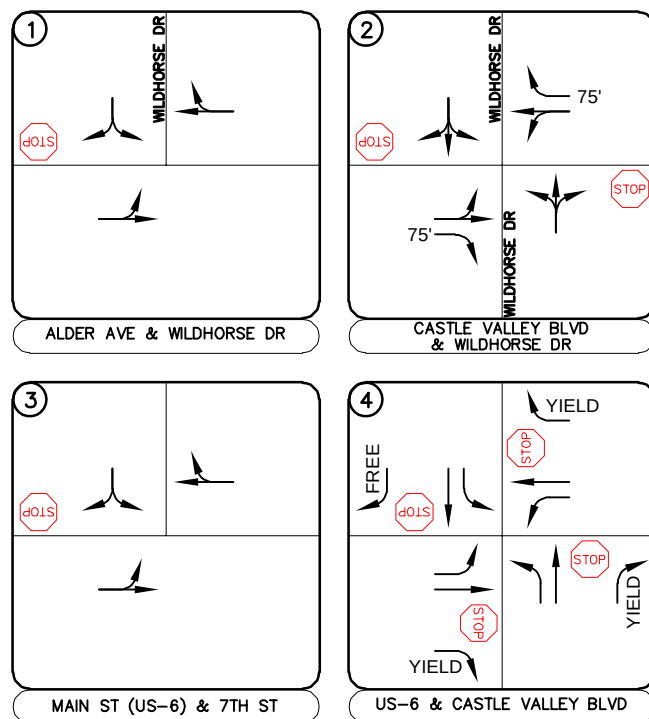
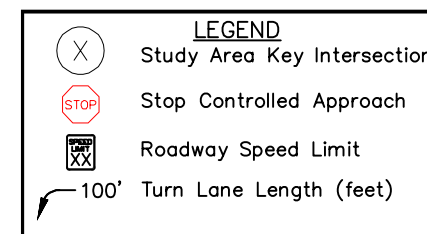


FIGURE 2
9 NORTH WILDHORSE
NEW CASTLE, COLORADO
EXISTING GEOMETRY AND CONTROL



3.3 Existing Traffic Volumes

Existing turning movement counts were conducted at the study intersections on Tuesday, March 19, 2024 during the weekday morning and afternoon peak hours. The counts were conducted during the morning and afternoon peak hours of adjacent street traffic in 15-minute intervals from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM on this count date. The existing intersection traffic volumes are shown in **Figure 3** with count sheets provided in **Appendix B**.

3.4 Unspecified Development Traffic Growth

According to information provided on the website for the Colorado Department of Transportation (CDOT), the 20-year growth factor along US-6 in the vicinity of the site is between 1.26 and 1.40, or an average growth factor of approximately 1.33. This 20-year growth factor equates to annual growth rate of approximately 1.44 percent. Traffic information from the CDOT Online Transportation Information System (OTIS) website is included in **Appendix C**.

Additionally, it is understood that several other developments are expected to be constructed within the study area over the next several years, as the Town of New Castle continues to develop. Site traffic volumes from the Lakota Canyon Ranch Traffic Impact Study completed in March 2022 were added into the background traffic volumes of this study in both the short-term 2026 and long-term 2045 horizons.

Though no known traffic impact study has been completed to date for the TC Midwest development at the northeast side of the Castle Valley Boulevard & Pyramid Drive roundabout, based on the current development plans of this area with a mix of commercial services, anticipated traffic volumes from this site were also added into the background traffic volumes for the 2045 long-term horizon. This site is not expected to be completed prior to opening of the 9 North Wildhorse project.

Based on coordination with Town of New Castle staff it is understood that the Silverado Trail roadway, which currently ends just west of Clubhouse Drive, is expected to be connected to Wildhorse Drive after the 2026 short-term horizon but prior to 2045. The expected additional cut-through traffic from this connection was added into the background traffic volumes in the 2045 horizon. Applicable documents from the Lakota Canyon Ranch traffic study, the TC Midwest development plans, and the Silverado Trail roadway connection are included in **Appendix D**.

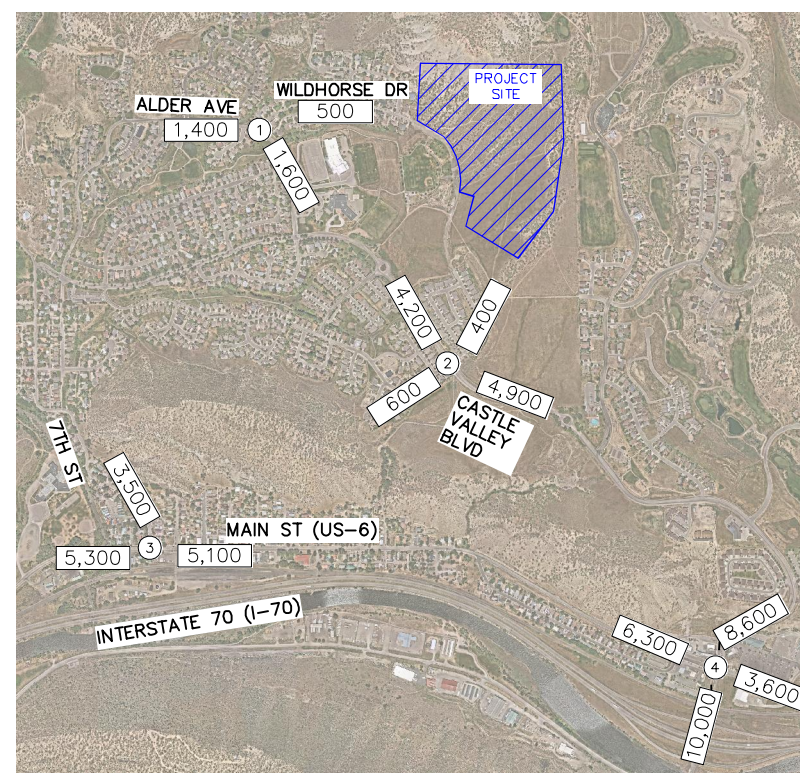
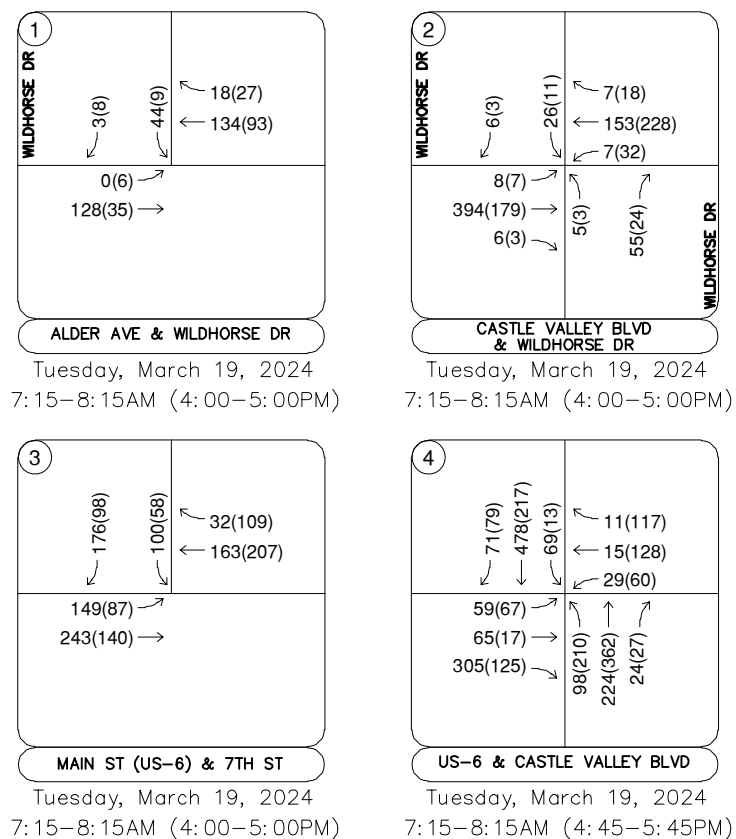


FIGURE 3
9 NORTH WILDHORSE
NEW CASTLE, COLORADO
2024 EXISTING TRAFFIC VOLUMES

LEGEND

- (X) Study Area Key Intersection
- XXX(XXX) Weekday AM(PM)
Peak Hour Traffic Volumes
- [XX,X00] Estimated Daily Traffic Volume

Finally, it is expected that with construction of the 9 North Wildhorse project and paving of the remaining unpaved portion of Wildhorse Drive, some additional traffic may occur along Wildhorse Drive adjacent to the site once the roadway is improved to be a fully paved road between Alder Avenue and Castle Valley Boulevard. For purposes of this study, paving of this portion of roadway is only expected to occur with construction of this development, as such, this additional through traffic was added to the background plus project traffic scenarios only.

The annual growth rate plus these other development studies were used to estimate near-term 2026 traffic volume projections at the key intersections. However, the added developments in the long-term 2045 horizon will substantially build out Castle Valley Ranch resulting in a future traffic growth rate of approximately 1.79 percent or greater at the Alder Avenue & Wildhorse Drive (#1) and the Castle Valley Boulevard & Wildhorse Drive (#2) intersections. As such, it was determined that no additional background traffic growth rate would be applied for the 2045 volumes at these two intersections prior to the addition of the other background projects, as it is expected the traffic volumes from these developments exceed the projected annual growth rate of 1.44 percent. Of note, an annual background traffic growth rate of 0.50 percent was applied to the US-6 & 7th Street (#3) and the US-6 & Castle Valley Boulevard (#4) intersection to meet the approximate 1.44 percent annual growth rate following the addition of the traffic generated by the other background traffic developments. Background traffic volumes for 2026 and 2045 are shown in **Figures 4** and **5**, respectively.

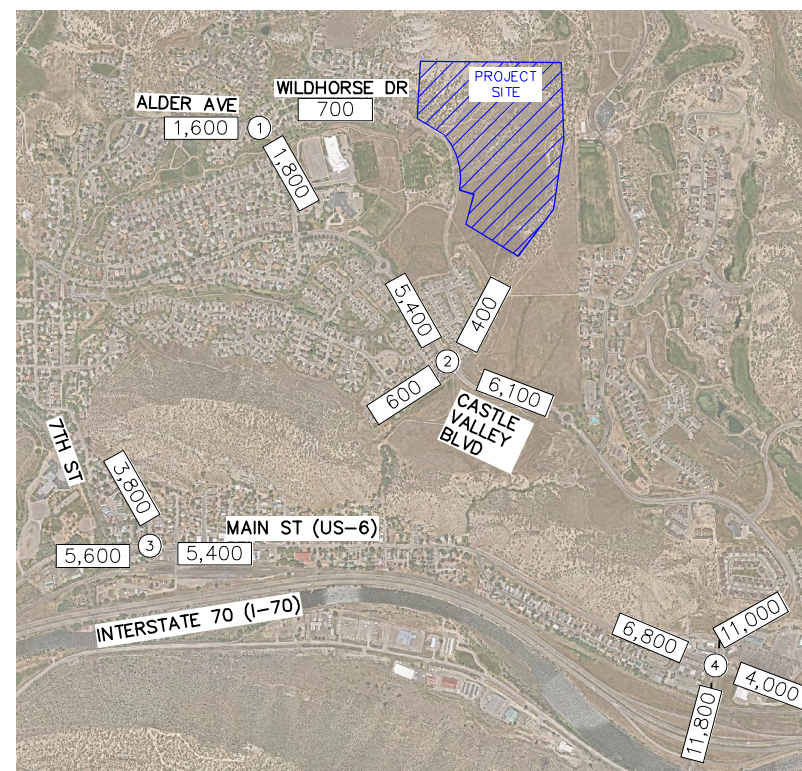
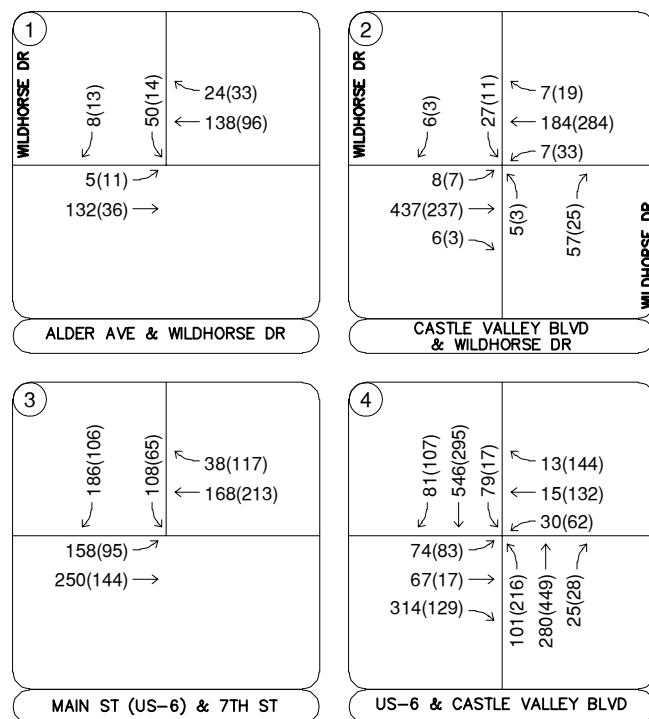


FIGURE 4
9 NORTH WILDHORSE
NEW CASTLE, COLORADO
2026 BACKGROUND TRAFFIC VOLUMES

LEGEND

- (X) Study Area Key Intersection
- XXX(XXX) Weekday AM(PM)
Peak Hour Traffic Volumes
- [XX,X00] Estimated Daily Traffic Volume

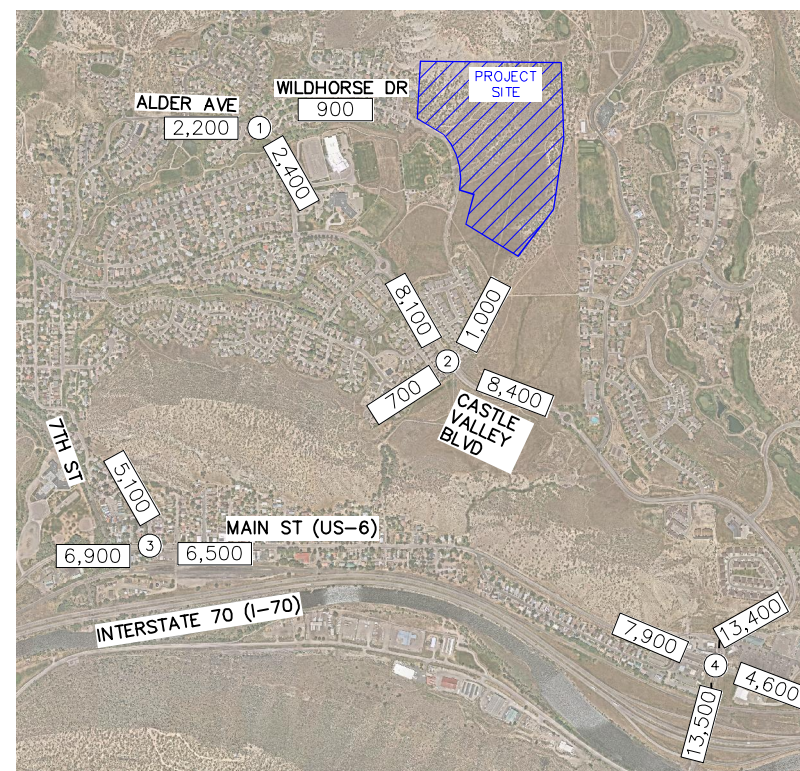
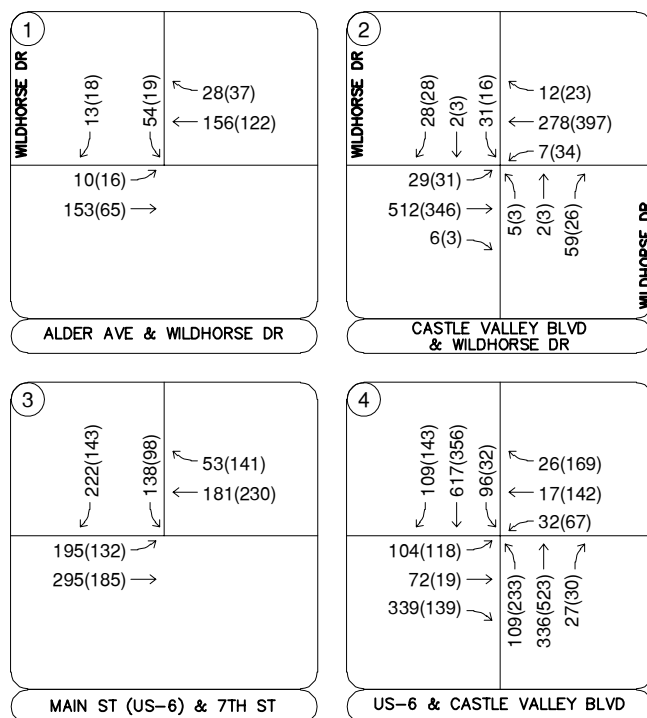
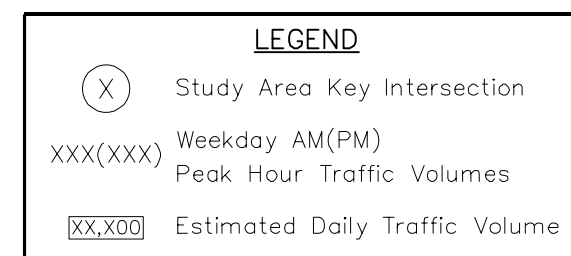


FIGURE 5
9 NORTH WILDHORSE
NEW CASTLE, COLORADO
2045 BACKGROUND TRAFFIC VOLUMES



4.0 PROJECT TRAFFIC CHARACTERISTICS

4.1 Trip Generation

Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the *Trip Generation Manual*¹ published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. For this study, Kimley-Horn used the ITE Trip Generation Report average rate equations for Single-Family Attached Housing (ITE Land Use Code 215) with the 26 expected townhomes and the fitted curve equations for Multifamily Low-Rise Housing (ITE Land Use Code 220) with the 104 apartment-style dwelling units for the traffic associated with this development.

9 North Wildhorse is expected to generate approximately 930 weekday daily trips, with 67 of these trips occurring during the morning peak hour and 80 of these trips occurring during the afternoon peak hour. Calculations were based on the procedure and information provided in the ITE *Trip Generation Manual, 11th Edition – Volume 1: User's Guide and Handbook*, 2021. **Table 1** summarizes the estimated trip generation for the project. The trip generation worksheets are included in **Appendix E**. Of note, the previous plan for this area was to be developed as single-family detached homes. Single-family detached housing (9.43 average weekday daily trips per unit) generates more traffic on a per-unit basis than single-family attached housing (7.20 average weekday daily trips per unit) and multifamily low-rise housing (6.74 average weekday daily trips per unit).

Table 1 – 9 North Wildhorse Traffic Generation

Land Use and Size	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Single-Family Attached Housing – 26 Dwelling Units (ITE 215)	188	3	9	12	9	6	15
Multifamily Low-Rise Housing – 104 Dwelling Units (ITE 220)	742	13	42	55	41	24	65
Total Project Trips	930	16	51	67	50	30	80

¹ Institute of Transportation Engineers, *Trip Generation Manual*, Eleventh Edition, Washington DC, 2021.

4.2 Trip Distribution

Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns, existing and anticipated surrounding employment, school, and attraction information, and the proposed access system for the project. The directional distribution of traffic is a means to quantify the percentage of site-generated traffic that approaches the site from a given direction and departs the site back to the original source. The project trip distribution for the proposed development is illustrated in **Figure 6**.

4.3 Traffic Assignment

9 North Wildhorse traffic assignment was obtained by applying the project trip distribution to the estimated traffic generation of the development shown in **Table 1**. Traffic assignment is shown in **Figure 7**.

4.4 Total (Background Plus Project) Traffic

Site traffic volumes were added to the background volumes to represent estimated traffic conditions for the short-term 2026 buildout horizon and long-term 2045 twenty-year planning horizon. These total traffic volumes for the study area are illustrated for the 2026 and 2045 horizon years in **Figures 8** and **9**, respectively.

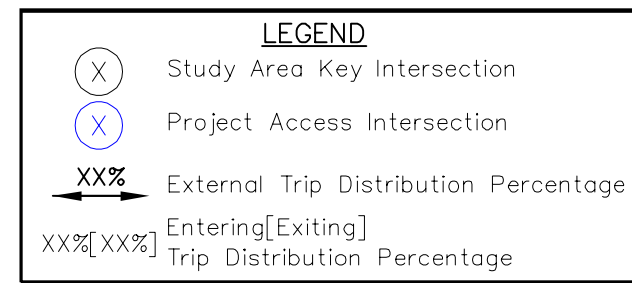
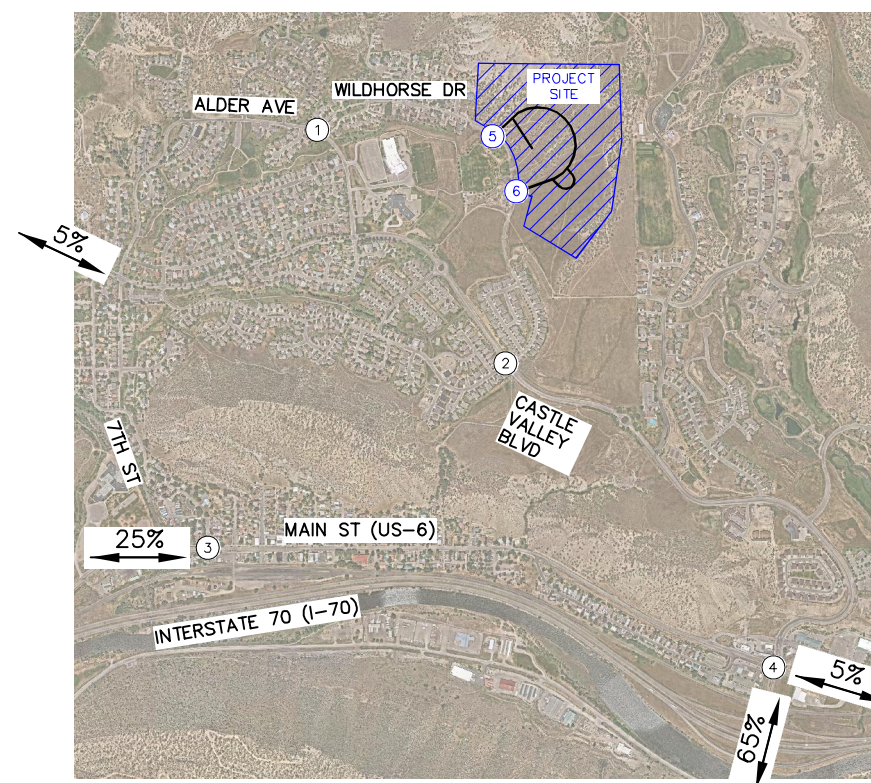
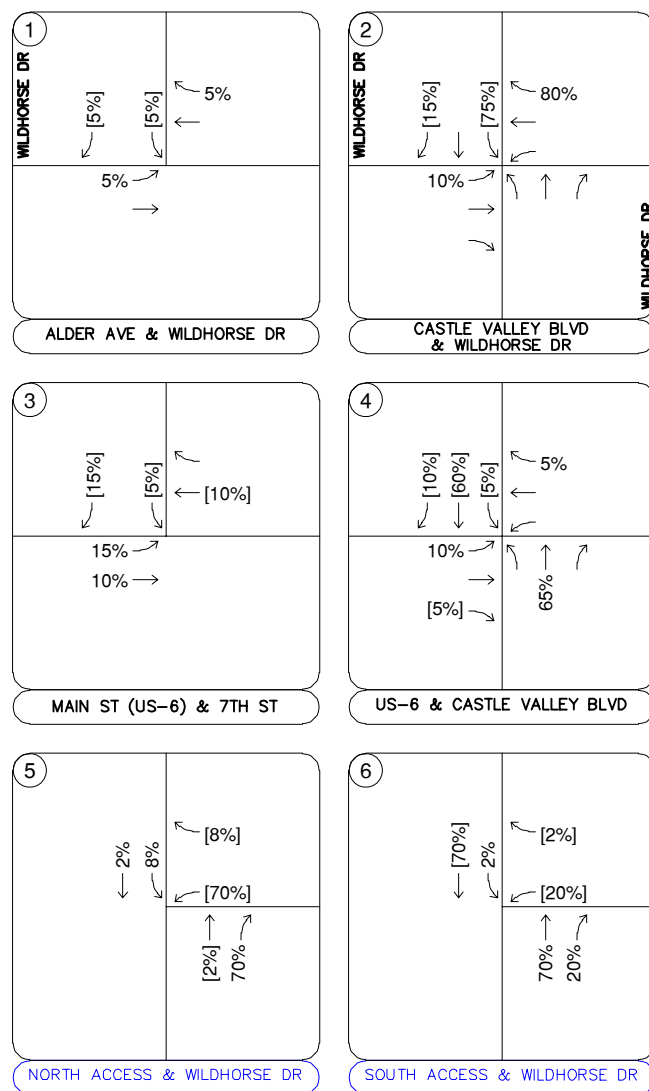


FIGURE 6
9 NORTH WILDHORSE
NEW CASTLE, COLORADO
PROJECT TRIP DISTRIBUTION

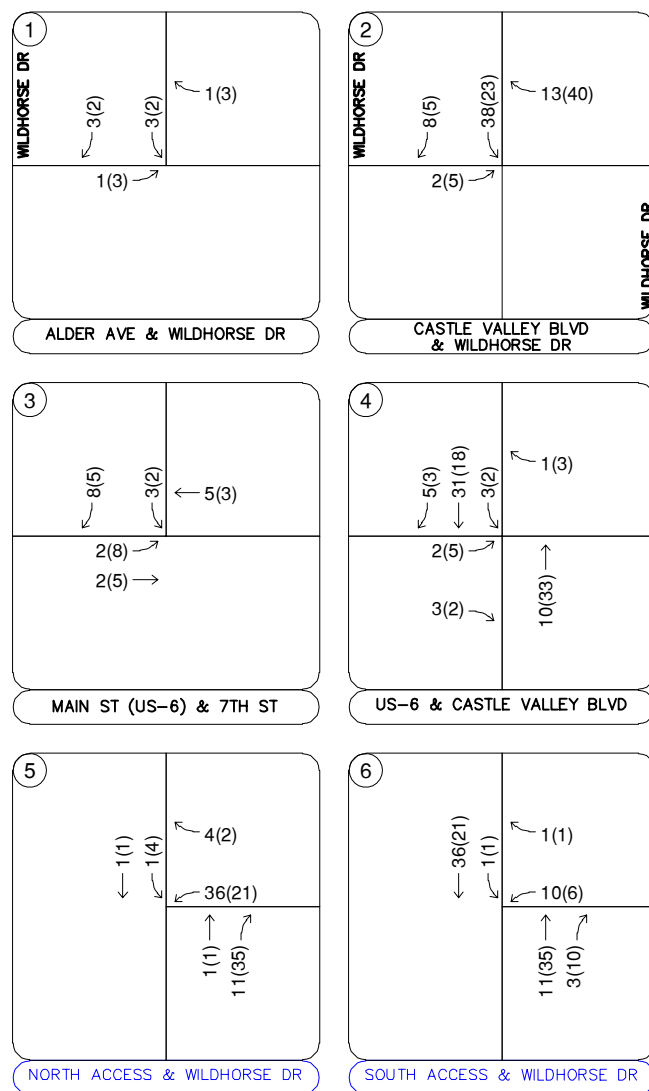
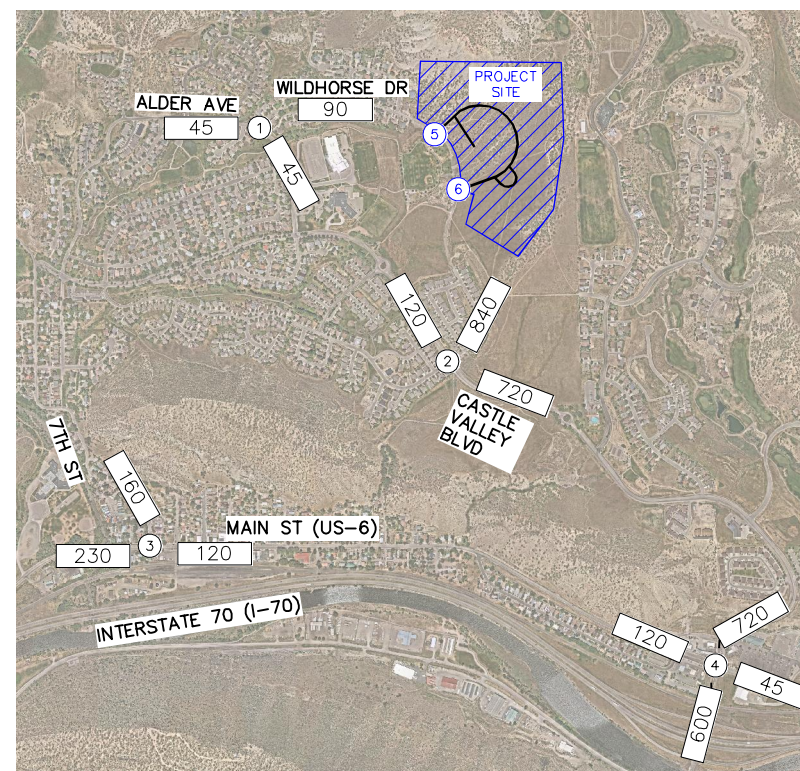


FIGURE 7
9 NORTH WILDHORSE
NEW CASTLE, COLORADO
PROJECT TRAFFIC ASSIGNMENT



LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- XXX(XXX) Weekday AM(PM)
Peak Hour Traffic Volumes
- XX,X00 Estimated Daily Traffic Volume

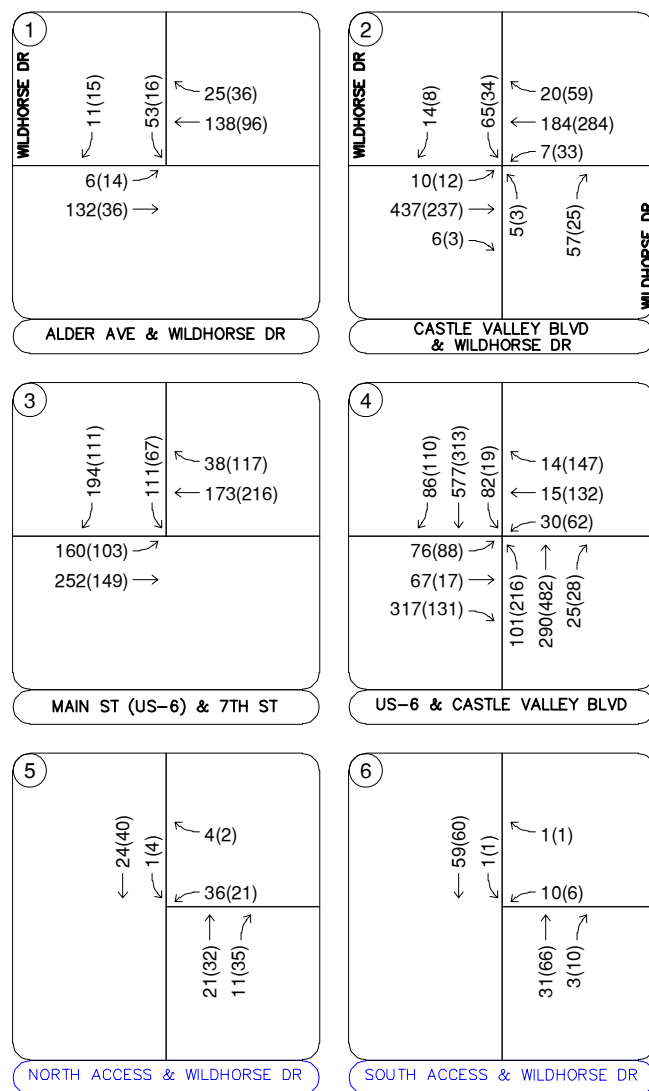
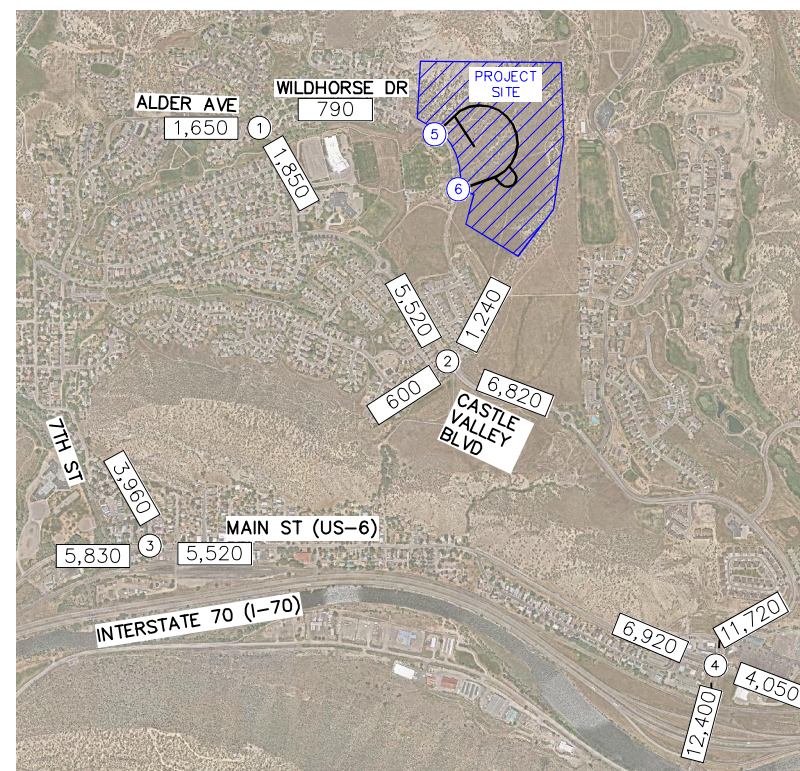
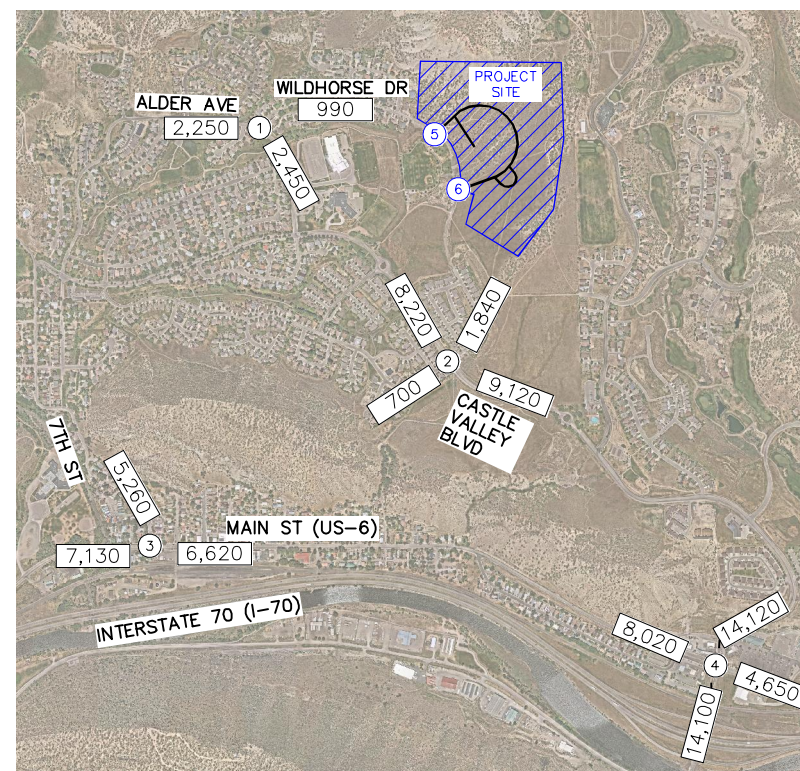
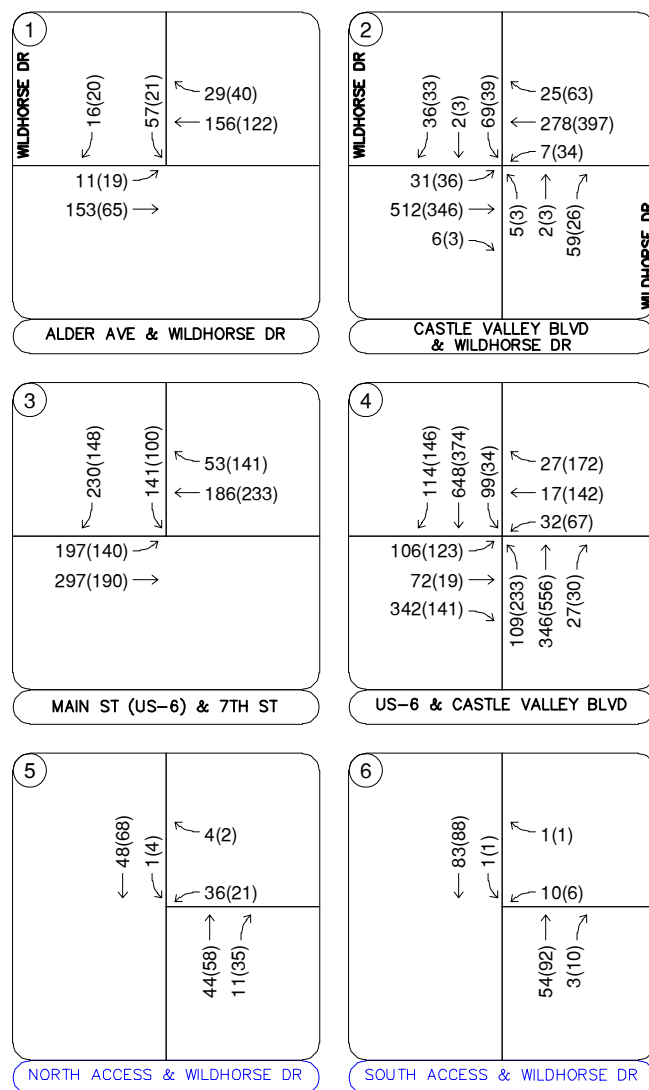


FIGURE 8
9 NORTH WILDHORSE
NEW CASTLE, COLORADO
2026 TOTAL TRAFFIC VOLUMES



LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- XXX(XXX) Weekday AM(PM)
Peak Hour Traffic Volumes
- XX,X00 Estimated Daily Traffic Volume



LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- XXX(XXX) Weekday AM(PM)
Peak Hour Traffic Volumes
- XX,X00 Estimated Daily Traffic Volume

FIGURE 9
9 NORTH WILDHORSE
NEW CASTLE, COLORADO
2045 TOTAL TRAFFIC VOLUMES

5.0 TRAFFIC OPERATIONS ANALYSIS

Kimley-Horn's analysis of traffic operations in the site vicinity was conducted to determine potential capacity deficiencies in the 2026 and 2045 development horizons at the identified key intersections. The acknowledged source for determining overall capacity is the *Highway Capacity Manual (HCM)*².

5.1 CDOT Analysis

The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the north legs of the Main Street (US-6) & 7th Street (#3) and US-6 & Castle Valley Boulevard (#4) intersections is not anticipated to increase existing access traffic volumes by more than 20 percent. The maximum expected increase is anticipated to be a 4.3 percent increase during the afternoon peak hour at the US-6 & 7th Street (#3) intersection (15 project traffic volume / 352 existing 2024 afternoon peak hour volume) and a 7.5 percent increase during the afternoon peak hour at the US-6 & Castle Valley Boulevard (#4) intersection (64 project traffic volume / 855 existing 2024 afternoon peak hour volume). Therefore, a CDOT access permit is not anticipated to be required in association with this project. In coordination with Town staff, because access permits are not anticipated to be required, these two US-6 intersections were not analyzed for operational level of service in this study, although, traffic projections are provided at these intersections.

5.2 Analysis Methodology

Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). For intersections and roadways in this study area, standard traffic engineering practice recommends overall intersection LOS D and movement/approach LOS E as the minimum

² Transportation Research Board, *Highway Capacity Manual*, Sixth Edition, Washington DC, 2016.

desirable thresholds for acceptable operations. **Table 2** shows the definition of level of service for signalized and unsignalized intersections.

Table 2 – Level of Service Definitions

Level of Service	Unsignalized Intersection Average Total Delay (sec/veh)
A	≤ 10
B	$> 10 \text{ and } \leq 15$
C	$> 15 \text{ and } \leq 25$
D	$> 25 \text{ and } \leq 35$
E	$> 35 \text{ and } \leq 50$
F	> 50

Definitions provided from the Highway Capacity Manual, Sixth Edition, Transportation Research Board, 2016.

Study area intersections were analyzed based on average total delay analysis for unsignalized intersections. The LOS for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement and is not defined for the intersection as a whole. LOS for roundabout and all-way stop-controlled intersections are defined for each approach and for the overall intersection.

5.3 Key Intersection Operational Analysis

Calculations for the operational level of service at the key intersections for the study area are provided in **Appendix F**. The existing year analysis is based on the lane geometry and intersection control shown in **Figure 2**. Existing peak hour factors were utilized in the existing and 2026 horizon analysis years. In the 2045 long-term horizon at the Castle Valley Boulevard & Wildhorse Drive (#2) intersection, rather than using the HCM urban standard peak hour factor of 0.92, the midpoint in difference between the existing year peak hour factor and the HCM urban standard of 0.92 was used (if the peak hour factor was 0.80 in the existing year, the 2045 peak hour factor used was 0.86 $[(0.92-0.80)/2]$). The Alder Avenue & Wildhorse Drive (#1) intersection assumed the existing peak hour factors in the long-term horizon as well, as this area is more fully built out today and traffic conditions are largely expected to remain the same at this intersection in the future. Synchro traffic analysis software was used to analyze the study area key intersections for HCM level of service.

Alder Avenue & Wildhorse Drive (#1)

The Alder Avenue & Wildhorse Drive (#1) 'T'-intersection operates with stop control on the southbound Wildhorse Drive approach to the intersection. The intersection movements operate at LOS B or better in both peak hours under existing conditions. By the 2045 long-term horizon, the intersection movements are expected to continue operating at an acceptable level of service of B or better during both peak hours with the addition of project traffic. Therefore, no improvements or modifications are anticipated to be needed at this intersection based on the addition of project traffic and this operational level of service analysis. **Table 3** provides the results of the LOS analysis conducted at this intersection.

Table 3 – Alder Avenue & Wildhorse Drive (#1) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2024 Existing				
Eastbound Left	0.0	A	7.8	A
Southbound Approach	12.2	B	10.0	B
2026 Background				
Eastbound Left	7.9	A	7.8	A
Southbound Approach	12.7	B	10.3	B
2026 Background Plus Project				
Eastbound Left	7.9	A	7.9	A
Southbound Approach	12.7	B	10.4	B
2045 Background				
Eastbound Left	8.1	A	8.0	A
Southbound Approach	13.8	B	11.3	B
2045 Background Plus Project				
Eastbound Left	8.1	A	8.0	A
Southbound Approach	13.9	B	11.4	B

Castle Valley Boulevard & Wildhorse Drive (#2)

The Castle Valley Boulevard & Wildhorse Drive (#2) intersection operates with stop control on the northbound and southbound Wildhorse Drive approaches to the intersection. The intersection movements operate at LOS C or better in both peak hours under existing conditions. With the existing configuration and control, the intersection is expected to continue operating acceptably in 2026 with the addition of project traffic. Therefore, no improvements are anticipated to be needed at this intersection with development of this project.

By the 2045 long-term horizon, the southbound Wildhorse Drive approach to the intersection may operate at LOS E with the addition of project traffic during the morning peak hour. This is a single movement operating with an expected average delay of 42 seconds per vehicle, with LOS E being the minimum threshold for acceptable operations. While this project contributes to this southbound volume exiting Wildhorse Drive, there is expected to be significant additional traffic traveling east/west along Castle Valley Boulevard from Lakota Canyon Ranch, TC Midwest development, and other background traffic growth that will occur prior to 2045, causing fewer gaps for minor street vehicles to turn left onto Castle Valley Boulevard. If drivers have trouble turning southbound left from Wildhorse Drive onto Castle Valley Boulevard, southbound left-turning vehicles could instead turn right and use the existing Pyramid Drive roundabout to the northwest to then travel eastbound on Castle Valley Boulevard. It is recommended that traffic operations continue to be monitored at this intersection in the future. **Table 4** provides the results of the LOS analysis conducted at this intersection.

Table 4 – Castle Valley Boulevard & Wildhorse Drive (#2) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2024 Existing				
Northbound Approach	12.6	B	10.7	B
Eastbound Left	7.7	A	7.8	A
Westbound Left	8.4	A	7.9	A
Southbound Approach	18.7	C	14.8	B
2026 Background				
Northbound Approach	13.4	B	11.6	B
Eastbound Left	7.8	A	8.0	A
Westbound Left	8.5	A	8.2	A
Southbound Approach	21.7	C	17.8	C
2026 Background Plus Project				
Northbound Approach	13.5	B	11.8	B
Eastbound Left	7.9	A	8.1	A
Westbound Left	8.5	A	8.2	A
Southbound Approach	29.7	D	22.3	C
2045 Background				
Northbound Approach	15.1	C	14.3	B
Eastbound Left	8.1	A	8.4	A
Westbound Left	8.7	A	8.4	A
Southbound Approach	24.4	C	19.8	C
2045 Background Plus Project				
Northbound Approach	15.2	C	14.7	C
Eastbound Left	8.1	A	8.6	A
Westbound Left	8.7	A	8.4	A
Southbound Approach	42.0	E	29.5	D

Project Accesses

With completion of the 9 North Wildhorse project, two accesses into the development are proposed along the east side of Wildhorse Drive. It is recommended that R1-1 “STOP” signs be installed on the westbound approaches exiting the development at each of these accesses. **Table 5** provides the level of service results for these project accesses. As shown in the table, the project access intersections are anticipated to have all movements operating with acceptable LOS A during the peak hours in both the buildout year 2026 and the 2045 long-term horizons.

Table 5 – Project Access Level of Service Results

Intersection	2026 Total				2045 Total			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay (sec/ veh)	LOS	Delay (sec/ veh)	LOS	Delay (sec/ veh)	LOS	Delay (sec/ veh)	LOS
North Access & Wildhorse Dr (#5)								
Westbound Approach	9.1	A	9.4	A	9.2	A	9.4	A
Southbound Left	7.3	A	7.4	A	7.3	A	7.4	A
South Access & Wildhorse Dr (#6)								
Westbound Approach	9.2	A	9.5	A	9.3	A	9.5	A
Southbound Left	7.3	A	7.4	A	7.3	A	7.4	A

5.4 Vehicle Queueing Analysis

A vehicle queueing analysis was conducted for the study area intersections. The queueing analysis was performed using Synchro presenting the results of the 95th percentile queue lengths. Results are shown in the following **Table 6** with calculations provided within the level of service operational sheets in **Appendix F**.

Table 6 – Turn Lane Queueing Analysis Results

Intersection Turn Lane	Existing Turn Lane Length (feet)	2026 Calculated Queue (feet)	2026 Recommended Length (feet)	2045 Calculated Queue (feet)	2045 Recommended Length (feet)
Alder Ave & Wildhorse Dr (#1)					
Eastbound Approach	Shared	25'	Shared	25'	Shared
Southbound Approach	Shared	25'	Shared	25'	Shared
Castle Valley & Wildhorse Dr (#2)					
Northbound Approach	Shared	25'	Shared	25'	Shared
Eastbound Left/Through	Shared	25'	Shared	25'	Shared
Westbound Left/Through	Shared	25'	Shared	25'	Shared
Southbound Approach	Shared	75'	Shared	100'	Shared
North Access & Wildhorse Dr (#5)					
Westbound Approach	DNE	25'	Shared	25'	Shared
Southbound Approach	DNE	25'	Shared	25'	Shared
South Access & Wildhorse Dr (#6)					
Westbound Approach	DNE	25'	Shared	25'	Shared
Southbound Approach	DNE	25'	Shared	25'	Shared

TWLTL = Two-Way Left-Turn Lane; **Blue** Text = Recommendation

All queues are anticipated to remain within the existing or recommended turn lane lengths through 2045. The North and South Accesses (#5 and #6) are both expected to operate acceptably without the need for separate turn lanes along any of the approaches to each intersection.

5.5 Improvement Summary

Based on the results of the intersection operational and vehicle queueing analysis, the key intersection recommended improvements and control for the 2026 buildout horizon of the 9 North Wildhorse project are shown in **Figure 10**.

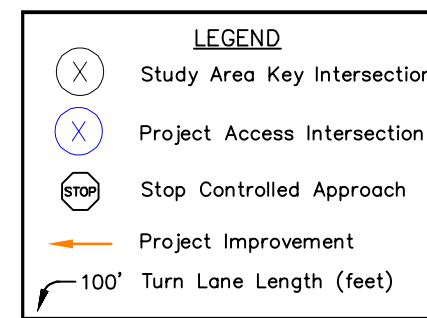
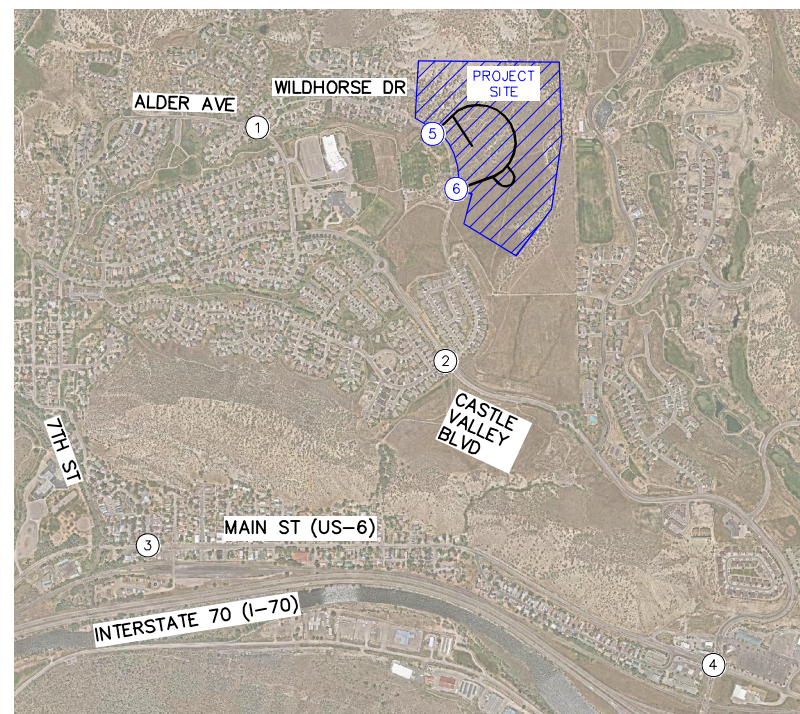
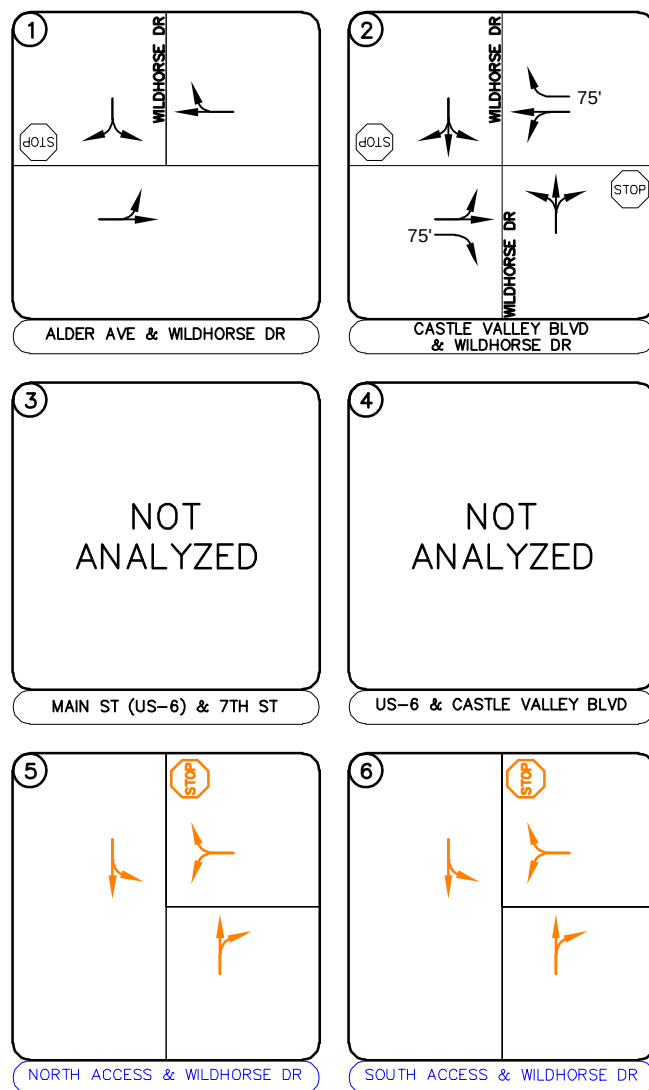


FIGURE 10
9 NORTH WILDHORSE
NEW CASTLE, COLORADO
RECOMMENDED GEOMETRY AND CONTROL

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis presented in this report, Kimley-Horn believes 9 North Wildhorse will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following recommendations:

- With project construction, the remaining unpaved portion of Wildhorse Drive will be paved. Additionally, two full movement accesses are proposed into the project site on the east side of Wildhorse Drive. These accesses are recommended to operate with stop control on the westbound approach exiting the development, with posted R1-1 “STOP” signs. All approaches to each access intersection are expected to operate well through the 2045 horizon with a single lane in each direction, with no need for separated turn lanes.
- The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the north legs of the Main Street (US-6) & 7th Street (#3) and US-6 & Castle Valley Boulevard (#4) intersections is not anticipated to increase existing access traffic volumes by more than 20 percent. The maximum expected increase is anticipated to be a 4.3 percent increase during the afternoon peak hour at the US-6 & 7th Street (#3) intersection (15 project traffic volume / 352 existing 2024 afternoon peak hour volume) and a 7.5 percent increase during the afternoon peak hour at the US-6 & Castle Valley Boulevard (#4) intersection (64 project traffic volume / 855 existing 2024 afternoon peak hour volume). Therefore, a CDOT access permit is not anticipated to be required in association with this project.
- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the Town of New Castle and the Manual on Uniform Traffic Control Devices (MUTCD) – 11th Edition, 2023.

APPENDICES

APPENDIX A

Conceptual Site Plan

ILLUSTRATIVE SITE PLAN

- LEGEND
- 1

TOWNHOMES - 10 BUILDINGS
- 2

LIVE/WORK APARTMENTS - 4 BUILDINGS
- 3

EMPTY-NESTERS APARTMENTS - 2 BUILDINGS
- 4

PAVED PATHS & SIDEWALKS
- 5

SOFT SURFACE TRAILS
- 6

EXISTING TRAILS
- 7

NORTH WILDHORSE DRIVE EXTENSION
- 8

VIX PARK
- 9

LAKOTA PUD
- 10

FUTURE DEVELOPMENT
- 11

SELLER RETAINED LAND
- 12

EXISTING RESIDENTIAL DEVELOPMENT



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



APPENDIX B

Intersection Count Sheets



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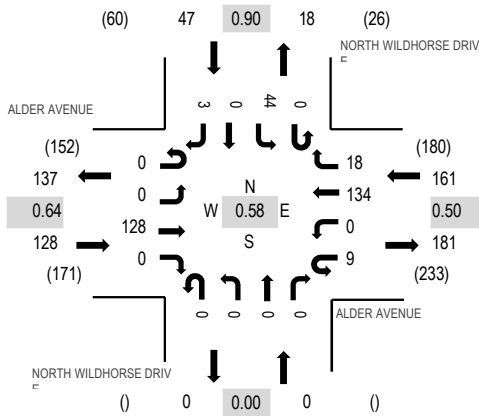
Location: 1 NORTH WILDHORSE DRIVE & ALDER AVENUE AM

Date: Tuesday, March 19, 2024

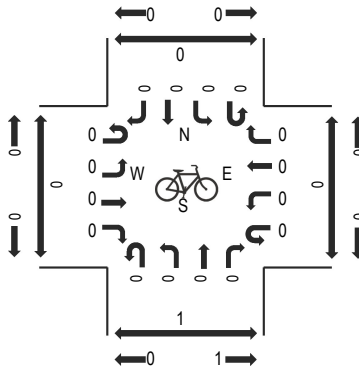
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Peak 15-Minutes: 07:45 AM - 08:00 AM

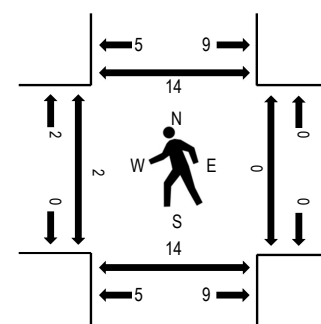
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	ALDER AVENUE Eastbound				ALDER AVENUE Westbound				NORTH WILDHORSE DRIVE Northbound				NORTH WILDHORSE DRIVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	13	0	0	0	2	0	0	0	0	0	0	2	0	0	17	306	0	0	0	1
7:15 AM	0	0	19	0	0	0	10	0	0	0	0	0	0	11	0	0	40	336	2	0	3	0
7:30 AM	0	0	38	0	0	0	47	7	0	0	0	0	0	13	0	0	105	317	0	0	4	4
7:45 AM	0	0	50	0	8	0	65	8	0	0	0	0	0	12	0	1	144	235	0	0	3	6
8:00 AM	0	0	21	0	1	0	12	3	0	0	0	0	0	8	0	2	47	105	0	0	4	4
8:15 AM	0	1	9	0	0	0	4	1	0	0	0	0	0	6	0	0	21		0	0	0	0
8:30 AM	0	2	10	0	0	0	3	3	0	0	0	0	0	4	0	1	23		0	0	0	0
8:45 AM	0	0	8	0	0	0	5	1	0	0	0	0	0	0	0	0	14		0	0	0	0
Count Total	0	3	168	0	9	0	148	23	0	0	0	0	0	56	0	4	411		2	0	14	15
Peak Hour	0	0	128	0	9	0	134	18	0	0	0	0	0	44	0	3	336		2	0	14	14



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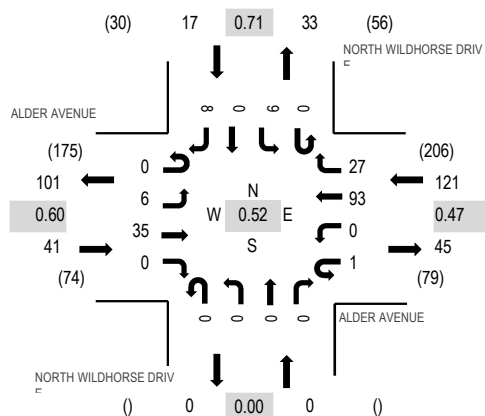
Location: 1 NORTH WILDHORSE DRIVE & ALDER AVENUE PM

Date: Tuesday, March 19, 2024

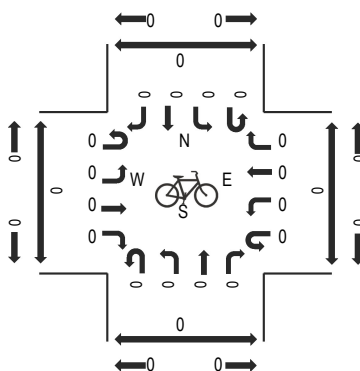
Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:00 PM - 04:15 PM

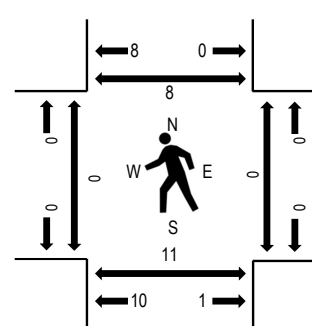
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	ALDER AVENUE Eastbound				ALDER AVENUE Westbound				NORTH WILDHORSE DRIVE Northbound				NORTH WILDHORSE DRIVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	1	16	0	1	0	55	8	0	0	0	0	0	4	0	1	86	179	0	0	5	3
4:15 PM	0	0	4	0	0	0	23	6	0	0	0	0	0	0	0	2	35	119	0	0	2	0
4:30 PM	0	3	8	0	0	0	9	6	0	0	0	0	0	3	0	1	30	130	0	0	2	2
4:45 PM	0	2	7	0	0	0	6	7	0	0	0	0	0	2	0	4	28	131	0	0	2	3
5:00 PM	0	1	6	0	0	0	14	3	0	0	0	0	0	2	0	0	26	131	2	1	5	0
5:15 PM	0	2	12	0	0	0	22	9	0	0	0	0	0	1	0	0	46		4	2	4	2
5:30 PM	0	2	6	0	0	0	16	4	0	0	0	0	0	1	0	2	31		4	1	2	2
5:45 PM	0	1	3	0	0	0	16	1	0	0	0	0	0	3	0	4	28		1	0	3	0
Count Total	0	12	62	0	1	0	161	44	0	0	0	0	0	16	0	14	310		11	4	25	12
Peak Hour	0	6	35	0	1	0	93	27	0	0	0	0	0	9	0	8	179		0	0	11	8



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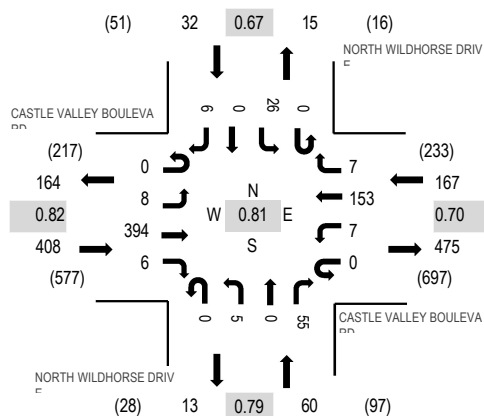
Location: 2 NORTH WILDHORSE DRIVE & CASTLE VALLEY BOULEVARD AM

Date: Tuesday, March 19, 2024

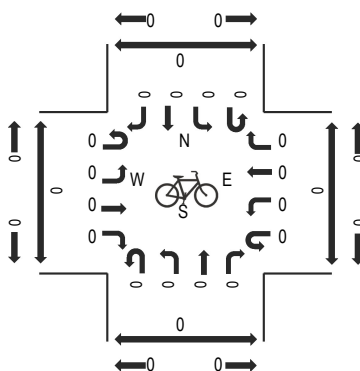
Peak Hour: 07:15 AM - 08:15 AM

Peak 15-Minutes: 07:45 AM - 08:00 AM

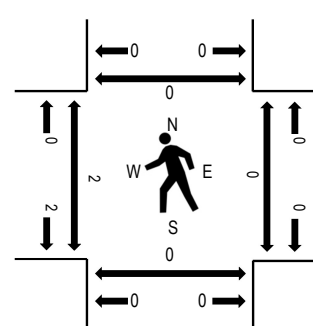
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	CASTLE VALLEY BOULEVARD Eastbound				CASTLE VALLEY BOULEVARD Westbound				NORTH WILDHORSE DRIVE Northbound				NORTH WILDHORSE DRIVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	48	0	0	1	8	0	0	1	0	11	0	2	0	0	71	599	1	0	0	1
7:15 AM	0	1	75	0	0	1	38	0	0	2	0	17	0	9	0	2	145	667	0	0	0	0
7:30 AM	0	2	106	1	0	0	39	3	0	1	0	14	0	10	0	2	178	617	0	0	0	0
7:45 AM	0	3	120	2	0	2	56	2	0	1	0	13	0	5	0	1	205	503	1	0	0	0
8:00 AM	0	2	93	3	0	4	20	2	0	1	0	11	0	2	0	1	139	359	1	0	0	0
8:15 AM	0	0	57	0	0	5	17	0	0	0	0	9	0	6	1	0	95		0	0	0	0
8:30 AM	0	0	35	0	0	3	13	1	0	0	0	9	0	3	0	0	64		0	0	0	1
8:45 AM	0	0	28	1	0	4	14	0	0	0	0	7	0	7	0	0	61		0	0	0	0
Count Total	0	8	562	7	0	20	205	8	0	6	0	91	0	44	1	6	958		3	0	0	2
Peak Hour	0	8	394	6	0	7	153	7	0	5	0	55	0	26	0	6	667		2	0	0	0



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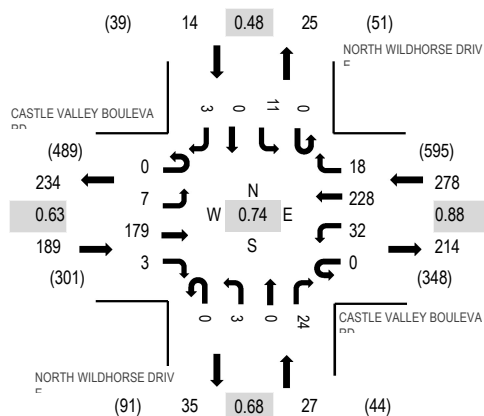
Location: 2 NORTH WILDHORSE DRIVE & CASTLE VALLEY BOULEVARD PM

Date: Tuesday, March 19, 2024

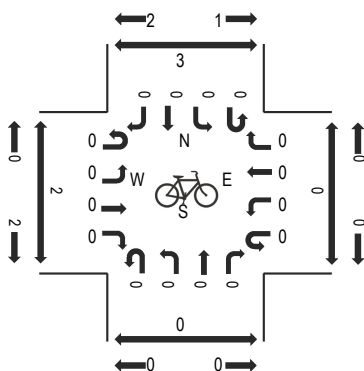
Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:00 PM - 04:15 PM

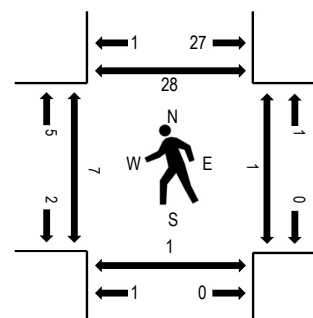
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	CASTLE VALLEY BOULEVARD Eastbound				CASTLE VALLEY BOULEVARD Westbound				NORTH WILDHORSE DRIVE Northbound				NORTH WILDHORSE DRIVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	1	73	1	0	8	70	5	0	1	0	6	0	5	0	2	172	508	3	0	0	1
4:15 PM	0	1	35	0	0	8	57	2	0	1	0	4	0	2	0	0	110	445	0	0	0	2
4:30 PM	0	1	34	1	0	12	47	4	0	0	0	10	0	1	0	1	111	457	2	1	0	1
4:45 PM	0	4	37	1	0	4	54	7	0	1	0	4	0	3	0	0	115	474	2	0	1	24
5:00 PM	0	0	26	2	0	9	57	4	0	0	0	6	0	3	0	2	109	471	3	0	0	19
5:15 PM	0	2	26	0	0	19	67	4	0	0	0	4	0	0	0	0	122		4	0	0	17
5:30 PM	0	1	25	1	0	14	67	8	0	0	0	5	0	4	0	3	128		1	0	0	0
5:45 PM	0	1	26	2	0	9	54	5	0	1	1	0	0	9	0	4	112		0	1	0	0
Count Total	0	11	282	8	0	83	473	39	0	4	1	39	0	27	0	12	979		15	2	1	64
Peak Hour	0	7	179	3	0	32	228	18	0	3	0	24	0	11	0	3	508		7	1	1	28



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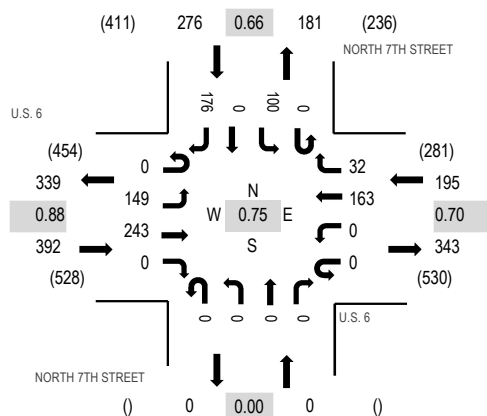
Location: 4 NORTH 7TH STREET & U.S. 6 AM

Date: Tuesday, March 19, 2024

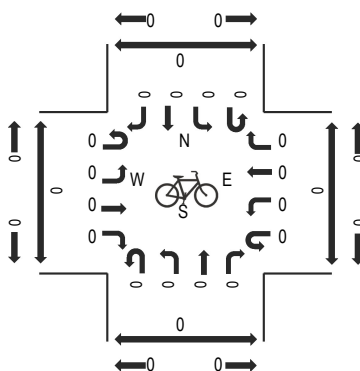
Peak Hour: 07:15 AM - 08:15 AM

Peak 15-Minutes: 07:45 AM - 08:00 AM

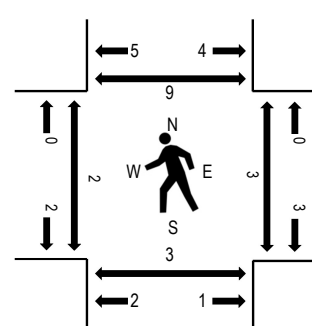
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	U.S. 6 Eastbound				U.S. 6 Westbound				NORTH 7TH STREET Northbound				NORTH 7TH STREET Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	9	21	0	0	0	18	5	0	0	0	0	0	33	0	18	104	784	1	0	1	0
7:15 AM	0	33	41	0	0	0	21	5	0	0	0	0	0	25	0	22	147	863	2	1	2	2
7:30 AM	0	52	56	0	0	0	62	5	0	0	0	0	0	26	0	45	246	820	0	0	0	7
7:45 AM	0	34	78	0	0	0	54	16	0	0	0	0	0	27	0	78	287	649	0	1	1	0
8:00 AM	0	30	68	0	0	0	26	6	0	0	0	0	0	22	0	31	183	436	0	1	0	0
8:15 AM	0	11	37	0	0	0	18	7	0	0	0	0	0	19	0	12	104		0	0	2	0
8:30 AM	0	2	26	0	0	0	9	7	0	0	0	0	0	18	0	13	75		0	0	1	0
8:45 AM	0	10	20	0	0	0	18	4	0	0	0	0	0	13	0	9	74		0	0	0	0
Count Total	0	181	347	0	0	0	226	55	0	0	0	0	0	183	0	228	1,220		3	3	7	9
Peak Hour	0	149	243	0	0	0	163	32	0	0	0	0	0	100	0	176	863		2	3	3	9



(303) 216-2439
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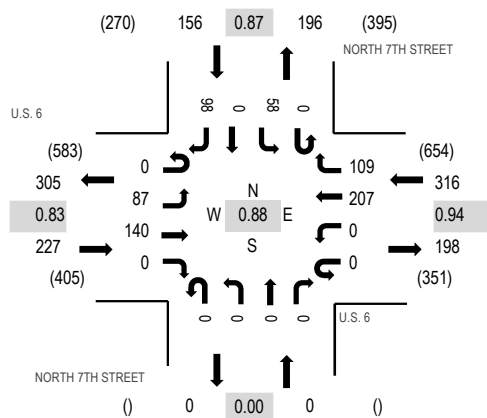
Location: 4 NORTH 7TH STREET & U.S. 6 PM

Date: Tuesday, March 19, 2024

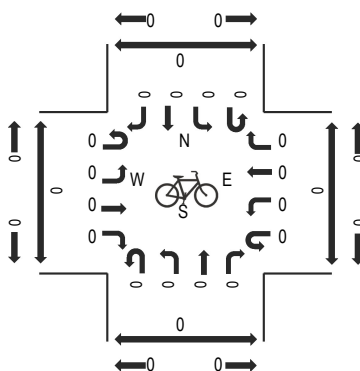
Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:15 PM - 04:30 PM

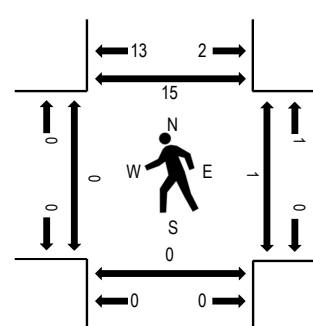
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	U.S. 6 Eastbound				U.S. 6 Westbound				NORTH 7TH STREET Northbound				NORTH 7TH STREET Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	25	43	0	0	0	36	26	0	0	0	0	0	18	0	27	175	699	0	0	0	0
4:15 PM	0	18	47	0	0	0	71	19	0	0	0	0	0	13	0	31	199	682	0	0	0	6
4:30 PM	0	18	28	0	0	0	42	24	0	0	0	0	0	14	0	24	150	647	0	1	0	7
4:45 PM	0	26	22	0	0	0	58	40	0	0	0	0	0	13	0	16	175	662	0	0	0	2
5:00 PM	0	15	24	0	0	0	57	40	0	0	0	0	0	15	0	7	158	630	0	0	2	6
5:15 PM	0	19	27	0	0	0	59	31	0	0	0	0	0	10	0	18	164		0	0	1	2
5:30 PM	0	19	26	0	0	0	55	28	0	0	0	0	0	16	0	21	165		0	0	2	2
5:45 PM	0	26	22	0	0	0	47	21	0	0	0	0	0	13	0	14	143		0	0	0	4
Count Total	0	166	239	0	0	0	425	229	0	0	0	0	0	112	0	158	1,329		0	1	5	29
Peak Hour	0	87	140	0	0	0	207	109	0	0	0	0	0	58	0	98	699		0	1	0	15



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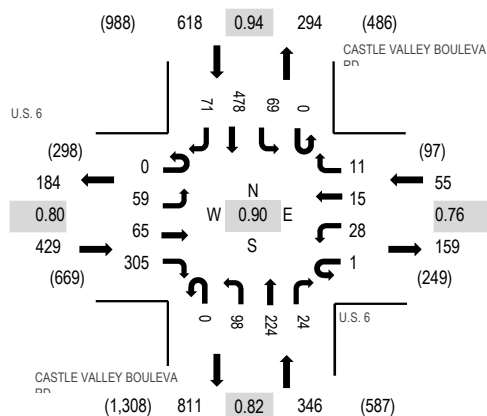
Location: 3 CASTLE VALLEY BOULEVARD & U.S. 6 AM

Date: Tuesday, March 19, 2024

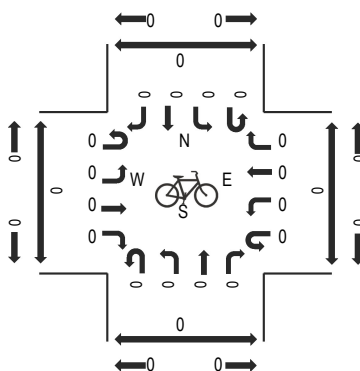
Peak Hour: 07:15 AM - 08:15 AM

Peak 15-Minutes: 07:45 AM - 08:00 AM

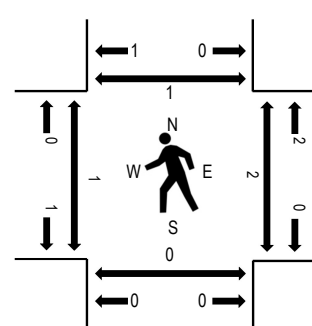
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	U.S. 6 Eastbound				U.S. 6 Westbound				CASTLE VALLEY BOULEVARD Northbound				CASTLE VALLEY BOULEVARD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	11	10	41	0	3	1	1	0	12	28	3	0	8	75	5	198	1,325	4	0	0	0
7:15 AM	0	12	14	64	0	4	1	2	0	20	56	8	0	16	120	10	327	1,448	0	0	0	0
7:30 AM	0	14	15	80	1	6	8	5	0	40	63	3	0	29	113	22	399	1,392	1	0	0	0
7:45 AM	0	17	22	95	0	14	5	2	0	28	59	6	0	11	118	24	401	1,217	0	0	0	0
8:00 AM	0	16	14	66	0	4	1	2	0	10	46	7	0	13	127	15	321	1,016	0	2	0	1
8:15 AM	0	7	9	49	0	7	6	3	0	17	39	13	0	7	103	11	271		0	3	0	1
8:30 AM	0	7	13	36	0	4	4	3	0	18	45	4	0	10	74	6	224		0	1	0	2
8:45 AM	0	10	9	38	0	6	1	3	0	26	35	1	0	3	61	7	200		0	0	0	0
Count Total	0	94	106	469	1	48	27	21	0	171	371	45	0	97	791	100	2,341		5	6	0	4
Peak Hour	0	59	65	305	1	28	15	11	0	98	224	24	0	69	478	71	1,448		1	2	0	1



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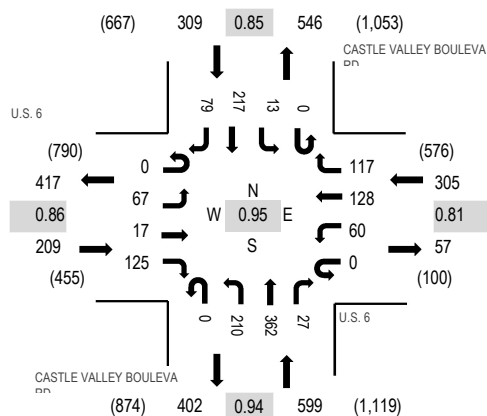
Location: 3 CASTLE VALLEY BOULEVARD & U.S. 6 PM

Date: Tuesday, March 19, 2024

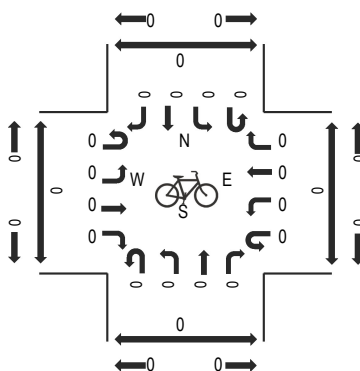
Peak Hour: 04:45 PM - 05:45 PM

Peak 15-Minutes: 05:15 PM - 05:30 PM

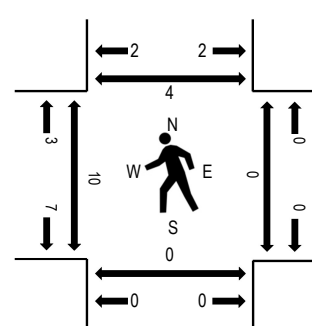
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	U.S. 6 Eastbound				U.S. 6 Westbound				CASTLE VALLEY BOULEVARD Eastbound				CASTLE VALLEY BOULEVARD Westbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	23	4	39	0	14	30	16	0	49	95	2	2	1	69	20	364	1,413	3	0	4	0
4:15 PM	0	31	5	36	0	14	14	14	0	47	92	7	0	3	81	22	366	1,387	1	0	2	3
4:30 PM	0	19	3	32	0	22	25	20	0	45	61	5	0	1	69	10	312	1,394	1	0	2	4
4:45 PM	0	20	7	29	0	16	39	20	0	59	89	11	0	2	62	17	371	1,422	1	0	0	1
5:00 PM	0	20	4	33	0	9	28	20	0	51	94	4	0	3	54	18	338	1,404	0	0	0	0
5:15 PM	0	18	4	30	0	22	30	44	0	56	82	6	0	3	55	23	373		8	0	0	2
5:30 PM	0	9	2	33	0	13	31	33	0	44	97	6	0	5	46	21	340		1	0	0	1
5:45 PM	0	25	1	28	0	15	52	35	0	35	74	8	0	3	53	24	353		2	0	0	0
Count Total	0	165	30	260	0	125	249	202	0	386	684	49	2	21	489	155	2,817		17	0	8	11
Peak Hour	0	67	17	125	0	60	128	117	0	210	362	27	0	13	217	79	1,422		10	0	0	4

APPENDIX C

Future Traffic Projections

ROUTE	REFPT	ENDREFPT	LENGTH	AADTYR	YR20FACTOR	GROWTHRATE	DHV	DD	LOCATION
006D	105.906	107.118	1.104	2022	1.26	1.16%	11	57	ON SH 6 W/O CR 240 CONNECTION TO I-70 E/O NEW CASTLE
006D	107.118	110.806	3.829	2022	1.40	1.70%	11	57	ON SH 6 E/O CR 240 CONNECTION TO I-70 E/O NEW CASTLE
Average					1.33	1.44%			

APPENDIX D

Background Traffic Studies

Lakota Canyon Ranch

Traffic Impact Study

Exhibit C



Date: March 21, 2022

Submitted To:

The Romero Group, LLC
350 Market Street, Suite 304
PO Box 4100
Basalt, CO 81621-4100

Submitted By:

Fox Tuttle Transportation Group, LLC
1624 Market Street, Suite 202
Denver, CO 80202

For the purpose of this traffic study, the following land uses were assumed:

- 29 single-family detached homes
- 20 townhomes
- 136 multi-family apartments
- 12,730± square feet of medical office/clinic space
- 36,000± square feet of retail/office/restaurant space

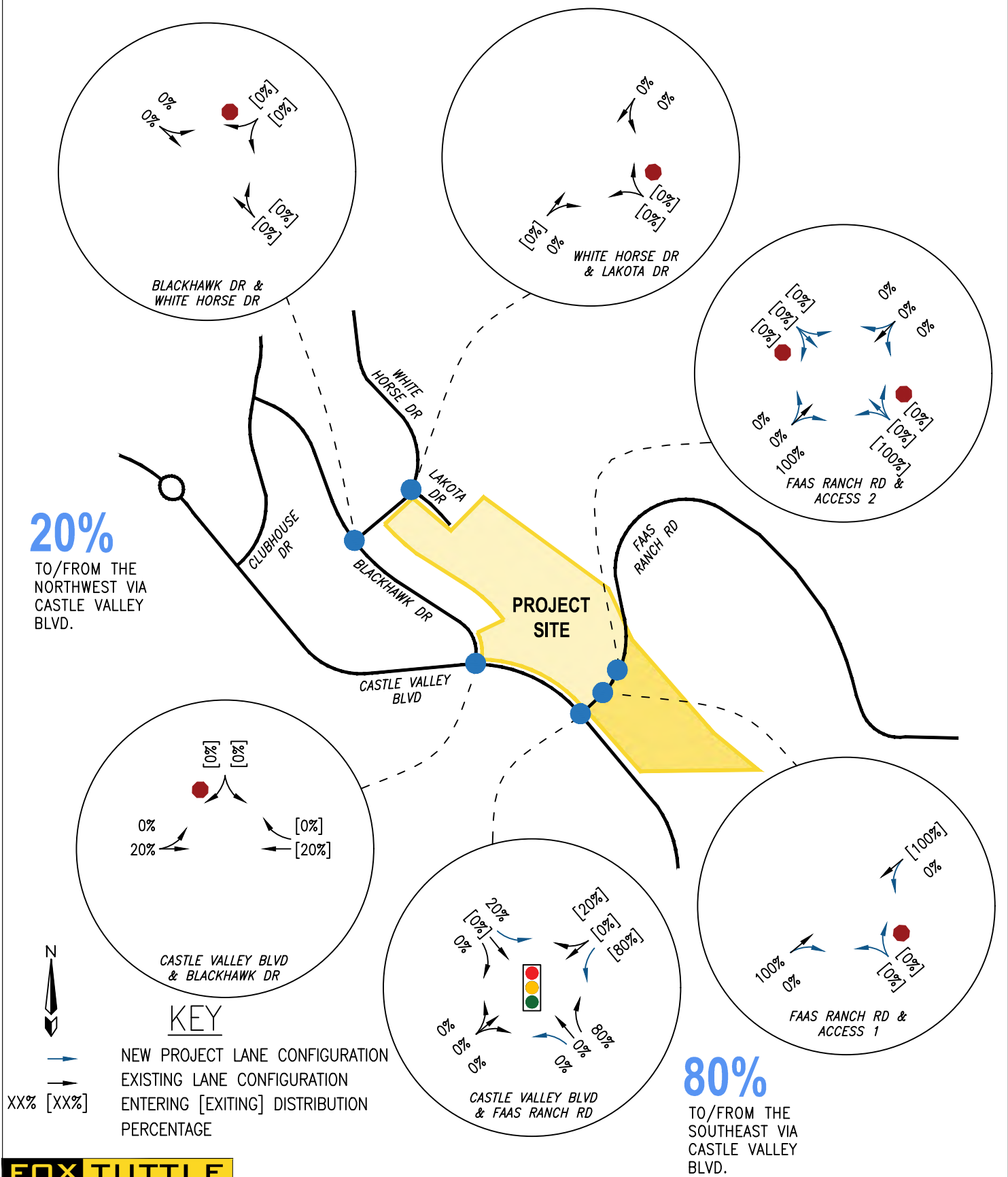
For conservative purposes, it was assumed that Lakota Canyon Ranch Mixed-Use Development will be completed by Year 2030. The analysis also includes the scenario that the project is constructed by Year 2025 to understand the potential roadway and intersection needs if the project were completed earlier. Note that these land uses represent one scenario that could adjust slightly based on market dynamics. It is anticipated that this report evaluates the highest density and mix of uses that would be built within the Lakota Canyon Ranch property.

The project proposes to provide three (3) accesses into the development; two along Faas Ranch Road and the extension of Lakota Drive. The first access on Faas Ranch Road will be a T-intersection with the addition of an access road into the southeast area of the project. This access is proposed to be located approximately 125 feet north of Castle Valley Boulevard, with full movement and side-street stop-control. The second access on Faas Ranch Road is proposed to provide entry into both sides of the development. This access is proposed to be located approximately 180 feet north of Access 1, with full movement and side-street stop control.

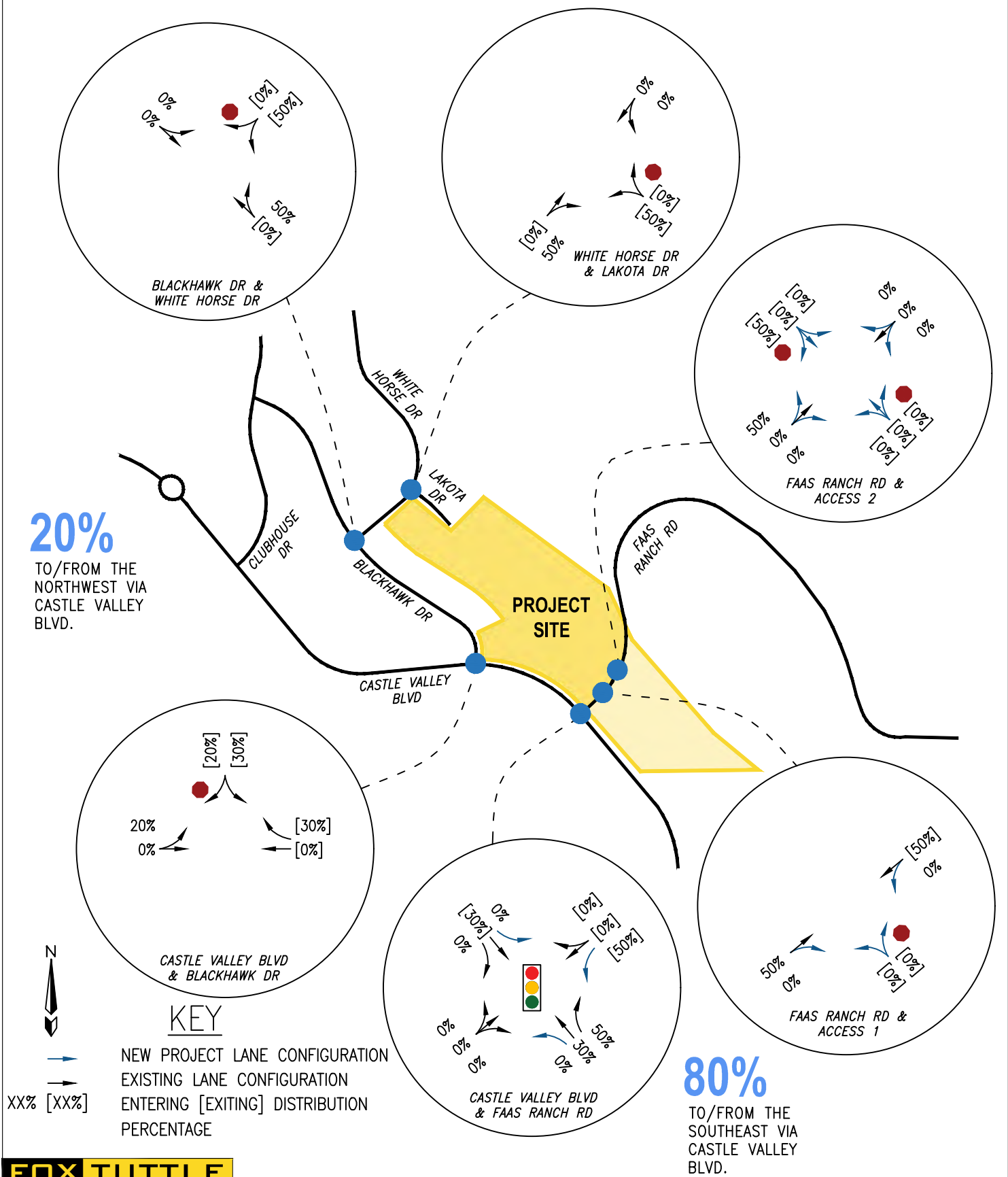
The Lakota Canyon Ranch project will extend Lakota Drive (existing local roadway) through the site to provide additional access, connecting to Faas Ranch Road. Lakota Drive connects to White Horse Drive and is approximately 195 feet in length currently to serve a few existing homes. With the proposed project, Lakota Drive will be extended to connect to Faas Ranch Road to serve the existing and future community. The Lakota Canyon Ranch project proposes to construct the extended roadway to include one travel lane per direction and on-street parking. It is proposed that three (3) access intersections be built on the new Lakota Drive to serve the mixed-uses and provide safe crossing locations for pedestrians. The conceptual site plan and accesses are provided on **Figure 2**.

Table 3. Trip Generation Summary

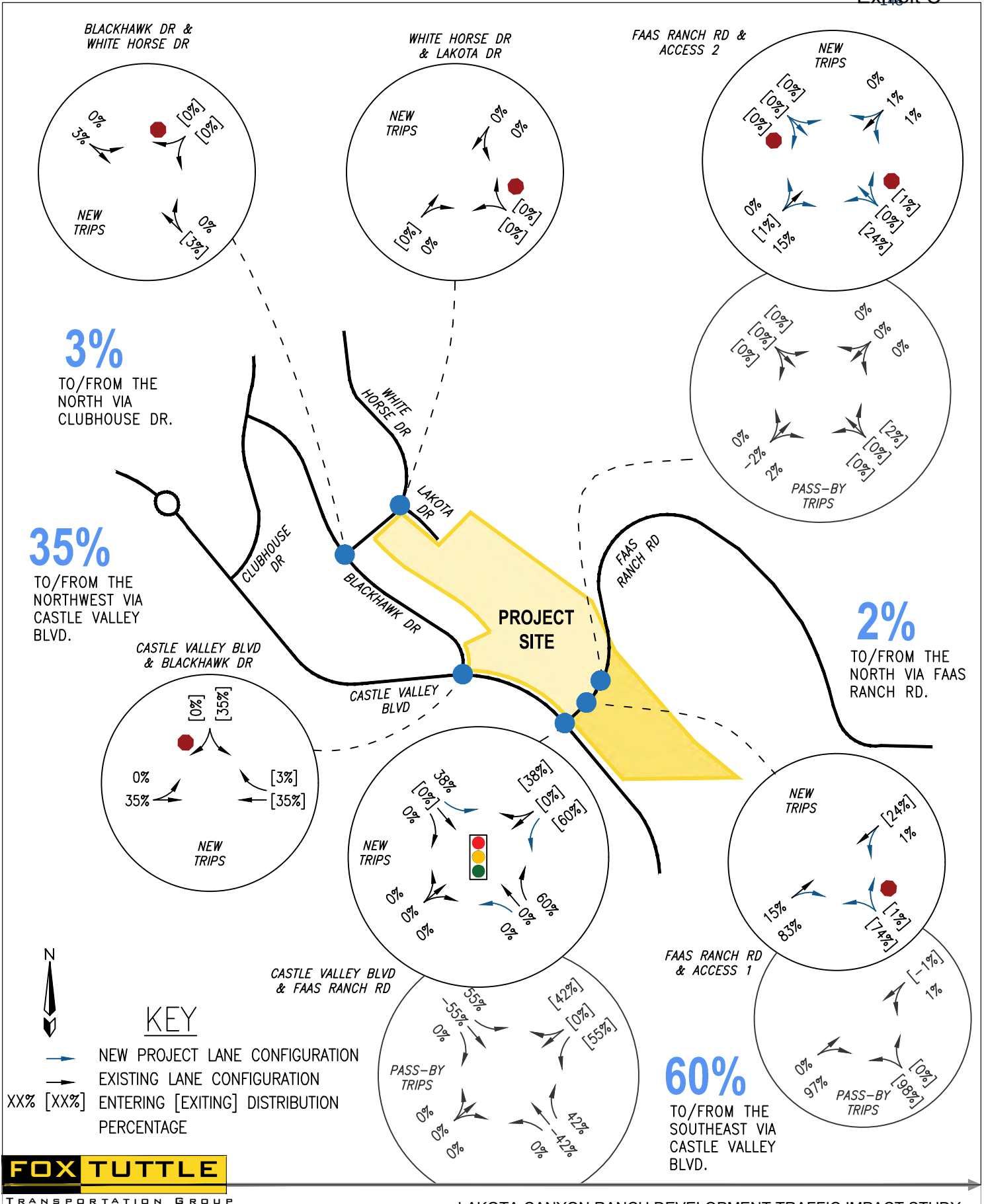
Land Use	Size	Unit	Internal Capture & Non-Auto Factor	Average Daily Trips				AM Peak Hour Trips				PM Peak Hour Trips			
				Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
Parcel 1															
ITE 221 - Multi-Family (Mid Rise) Housing	69	DU	10%	4.54	282	141	141	0.4	23	5	18	0.39	24	15	9
Parcel 2															
ITE 221 - Multi-Family (Mid Rise) Housing	9	DU	10%	4.54	37	19	18	0.4	3	1	2	0.39	3	2	1
ITE 822 - Retail Plaza (<40k)	10.38	KSF	10%	54.45	509	255	254	2.36	22	13	9	6.59	62	31	31
ITE 912 - Drive-In Bank	5.6	KSF	10%	100.35	506	253	253	9.95	50	29	21	21.01	106	53	53
ITE 720 - Medical-Dental Office Building	12.732	KSF	10%	36.0	413	207	206	3.10	36	28	8	3.93	45	14	31
Subtotal of Trips					1,465	734	731		111	71	40		216	100	116
Pass-by Trips: Shopping Center				34%	-173	-87	-86		0	0	0		-21	-11	-10
Pass-by Trips: Bank (AM)				29%	0	0	0		-15	-8	-7		0	0	0
Pass-by Trips: Bank (PM)				35%	-177	-89	-88		0	0	0		-37	-19	-18
Subtotal of New Trips					1,115	558	557		96	63	33		158	70	88
Parcel 3															
ITE 215 - Single-Family Attached Housing	8	DU	10%	7.2	52	26	26	0.48	3	1	2	0.57	4	2	2
Parcel 4															
ITE 220 - Multi-Family (Low Rise) Housing	6	DU	10%	6.74	36	18	18	0.40	2	0	2	0.51	3	2	1
ITE 822 - Retail Plaza (<40k)	7.38	KSF	10%	54.45	362	181	181	2.36	16	10	6	6.59	44	22	22
Pass-by Trips: Shopping Center				34%	-123	-62	-61		0	0	0		-15	-7	-8
Subtotal of New Trips					275	137	138		18	10	8		32	17	15
Parcel 5															
ITE 220 - Multi-Family (Low Rise) Housing	10	DU	10%	6.74	61	31	30	0.40	4	1	3	0.51	5	3	2
ITE 822 - Retail Plaza (<40k)	6.81	KSF	10%	54.45	334	167	167	2.36	14	8	6	6.59	40	20	20
ITE 971 - Brewery Tap Room	5.836	KSF	10%	61.69	324	162	162	0.68	4	4	0	9.83	52	31	21
Pass-by Trips: Shopping Center				34%	-224	-112	-112		0	0	0		-31	-17	-14
Subtotal of New Trips					495	248	247		22	13	9		66	37	29
Parcel 6															
ITE 220 - Multi-Family (Low Rise) Housing	42	DU	10%	6.74	255	128	127	0.40	15	4	11	0.51	19	12	7
Parcel 7															
ITE 215 - Single-Family Attached Housing	0	DU	10%	7.2	0	0	0	0.48	0	0	0	0.57	0	0	0
Parcel 8															
ITE 215 - Single-Family Attached Housing	3	DU	10%	7.2	19	10	9	0.48	1	0	1	0.57	2	1	1
Parcel 9															
ITE 215 - Single-Family Attached Housing	9	DU	10%	7.2	58	29	29	0.48	4	1	3	0.57	5	3	2
Parcel 10 - 39															
ITE 210 - Single-Family Detached Housing	29	DU	10%	9.43	246	123	123	0.70	18	5	13	0.94	25	16	9
Total New Trips					2,797	1,400	1,397		200	102	98		335	173	162
Total Pass-By Trips					697	350	347		15	8	7		104	54	50
Total Trips					3,494	1,750	1,744		215	110	105		439	227	212



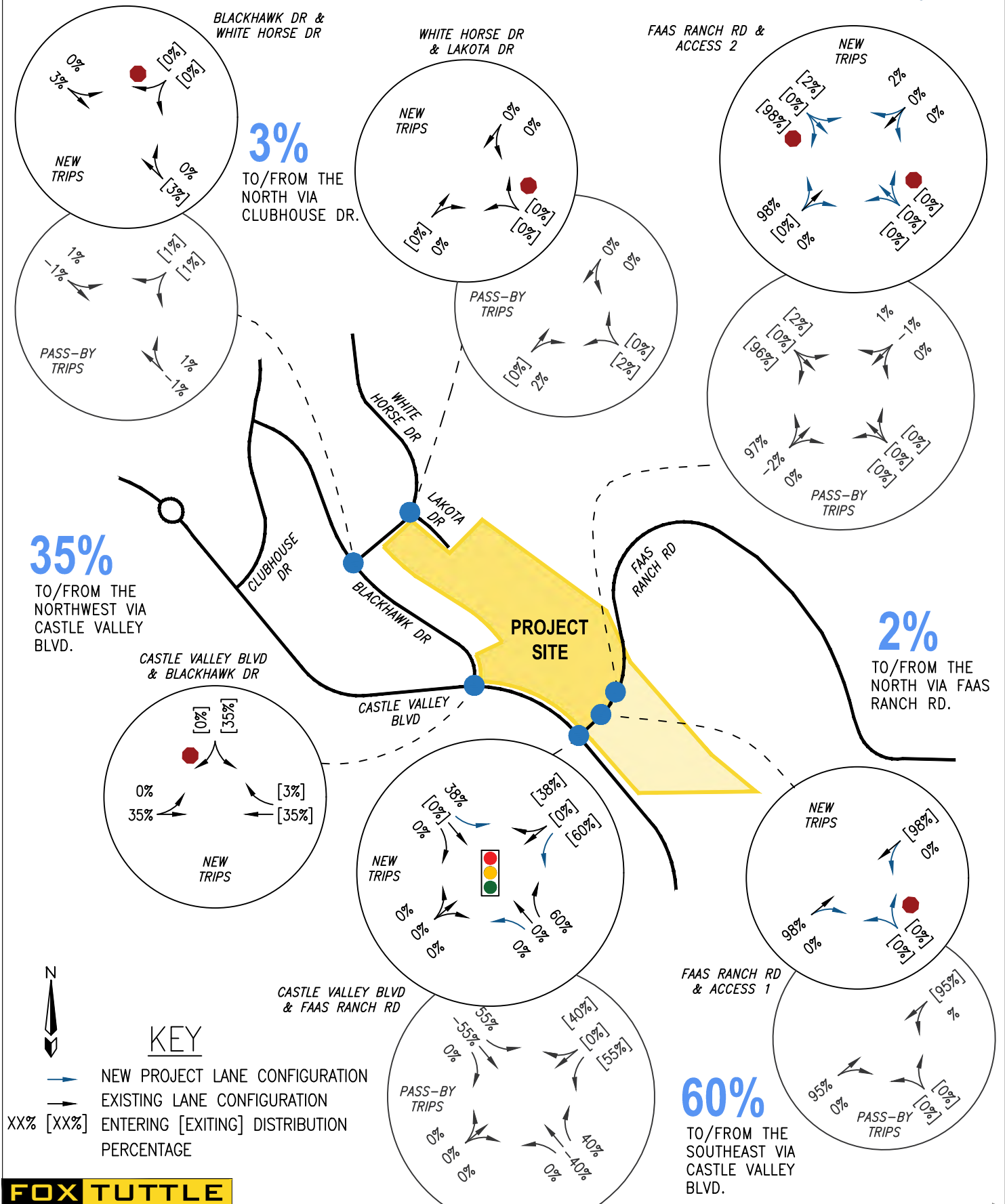
LAKOTA CANYON RANCH DEVELOPMENT TRAFFIC IMPACT STUDY
TRIP DISTRIBUTION - SOUTHEAST RESIDENTIAL

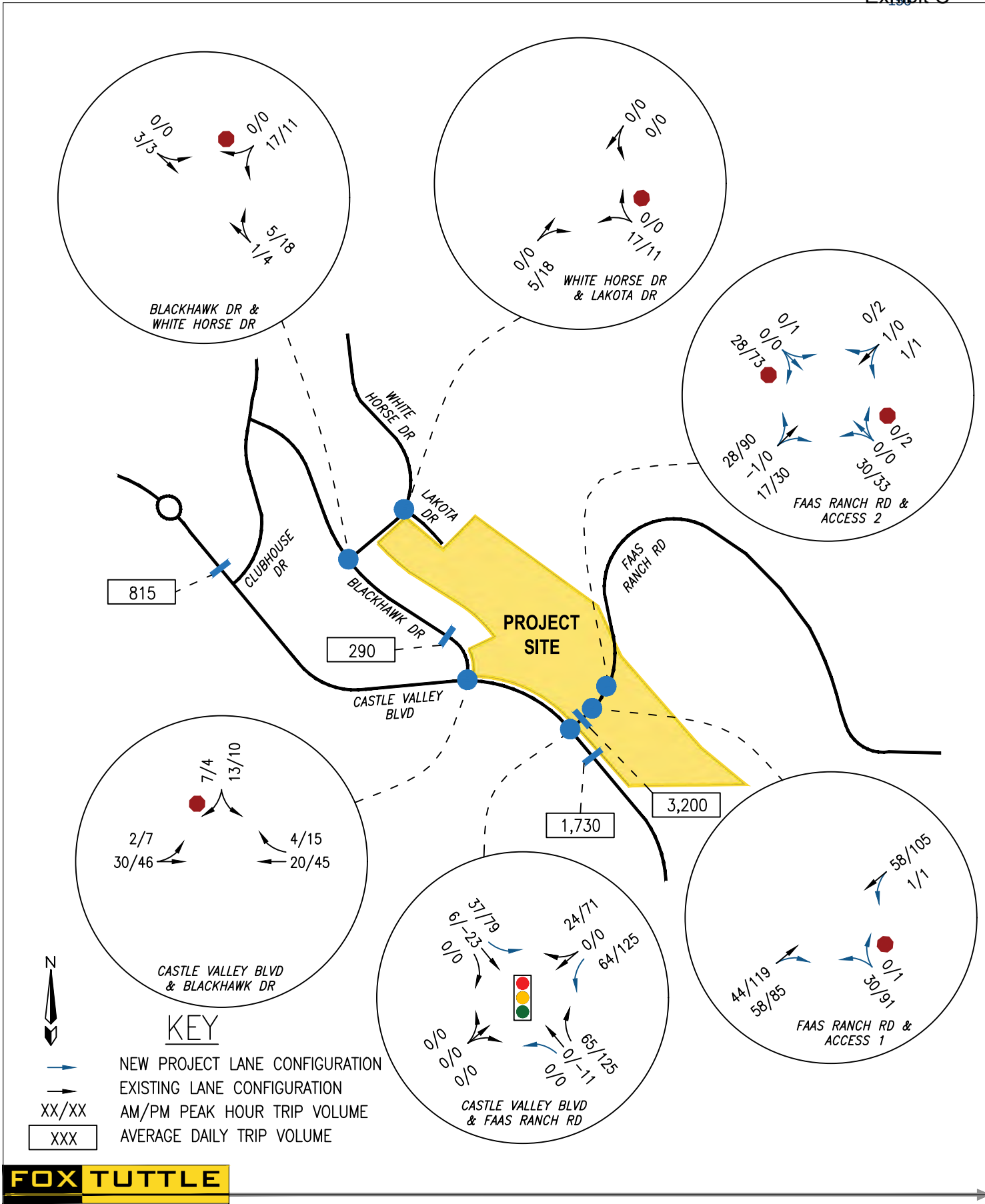


LAKOTA CANYON RANCH DEVELOPMENT TRAFFIC IMPACT STUDY
TRIP DISTRIBUTION - NORTHWEST RESIDENTIAL



LAKOTA CANYON RANCH DEVELOPMENT TRAFFIC IMPACT STUDY
TRIP DISTRIBUTION - SOUTHEAST COMMERCIAL





Refined Master Plan

- Centralized event plaza
- Perimeter vehicular circulation
- Reconciling Master Plan + Grading
- Target: 56-64k sqft. of MU Commercial



Building Area Approximate Summary

Building #	Lvl1	Lvl2	(Lvl3) (Opt.)	Total
Building 1:	8,056			8,056sf
Building 2:	6,050			6,050sf
Building 3:	7,194			7,194sf
Building 4:	2,500			2,500sf
Building 5:	9,600	8,100	(8,100)	17,700sf - (25,800sf)
Building 6:	4,400	7,600		12,000sf
Building 7:	3,700	6,000		9,700sf
Grand Total:				63,200sf - 71,300sf



Table 2: Future Phase EQR Estimate					
Unit Type	# Units	EQR/Unit	# EQRs	GPD/EQR	GPD
Building 4: 2,500 SF Restaurant (connected to Hotel)					
Food Service with 25 seats	1	1	1	350	350
Subtotal =			1		350
Building 5: Three story hotel					
Bathrooms (1-3 Fixtures)	1	1	1	350	350
First hotel unit	1	1	1	350	350
Unit with cooking	29	0.5	14.5	350	5,075
Unit w/o cooking	29	0.4	11.6	350	4,060
Subtotal =			28.1		9,835
Building 6: 12k SF Commercial - Mixed Use Restaurant / Retail, 2 floors					
Bathrooms (1-3 Fixtures)	6	1	6	350	2,100
Food Service with 25 seats	2	1	2	350	700
Subtotal =			6		2,100
Building 7: 10k SF Commercial - Mixed Use Restaurant / Retail, 2 floors					
Bathrooms (1-3 Fixtures)	4	1	4	350	1,400
Food Service with 25 seats	2	1	2	350	700
Subtotal =			4		1,400
Future Phase Total			39.1		13,685
25% Raw Water Irrigation Reduction =			29.33		

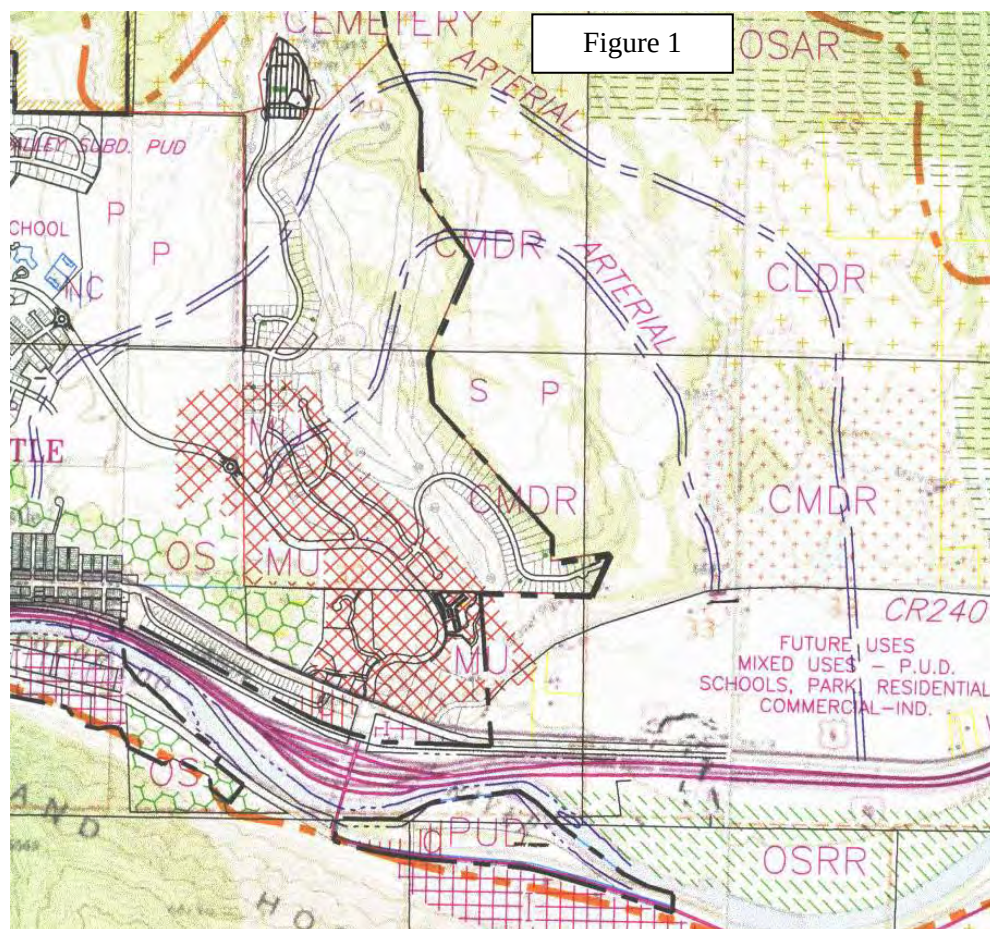


PLANNING STAFF MEMORANDUM

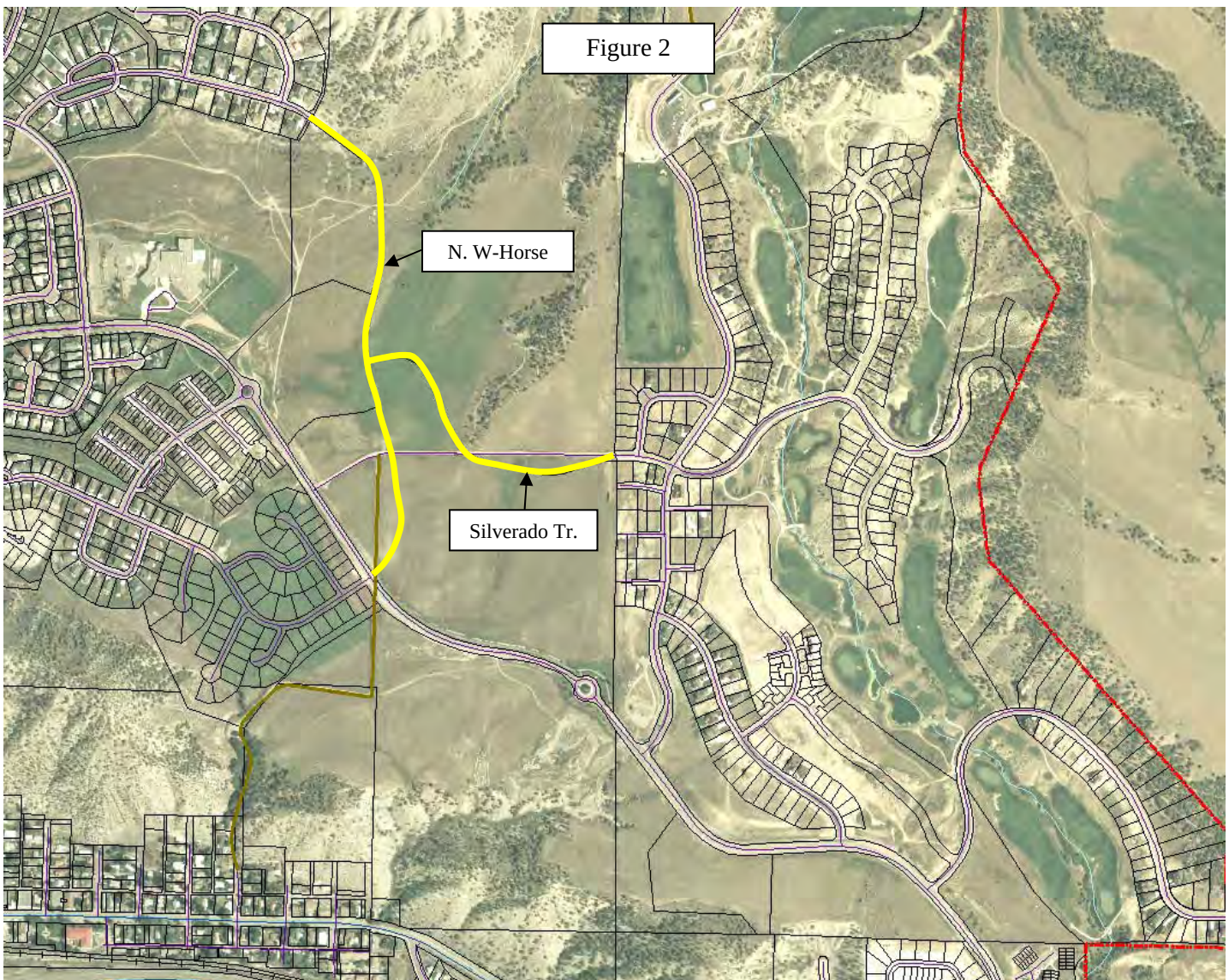
TO: NEW CASTLE PLANNING COMMISSION
FROM: DAVIS FARRAR - WESTERN SLOPE CONSULTING LLC
SUBJECT: NORTH WILDHORSE AND SILVERADO TRAIL ACCESS DISCUSSION
DATE: 12/7/2007
CC: JEFF SIMONSON, DAVID SMITH, DAVID MCCONAUGHY, TIM CAIN

We will be discussing the topic of roadway classification and limited versus open access to Wildhorse Drive and Silverado Trail at the Planning Commission meeting on Wednesday December 12, 2007. This discussion is prompted by a request from Village Homes and Castle Valley Ranch to allow direct access on both roadways in Filing 11. The Commission is aware that a sketch plan for Filing 11 is an agenda item at the same meeting.

The current New Castle Three-Mile Area Plan (Figure 1) shows two conceptual alignments of arterial roadways intended to provide access from Castle Valley Ranch east through Lakota Canyon Ranch, through the Faas Ranch and eventually connecting to Highway 6 & 24. See Figure 1 Below.



The Figure 2 (aerial photograph with parcels) below illustrates the future connections on Wildhorse and Silverado. The roadways shown in yellow are the topic of discussion.



Village Homes commissioned a traffic impact analysis that was completed in September by LSC Transportation Consultants, Inc. A copy of the report is included in your planning commission packets. The report analyzed present roadway traffic, peak hour traffic generated by the proposed development, directional distribution of the traffic and projected future traffic volumes to the year 2026. The consultants looked at traffic impacts, evaluated street classifications and future improvements necessary to mitigate traffic impacts. Specifically, they looked at Castle Valley Blvd., Highway 6 & 24, Clubhouse Drive, and Silverado Trail. The analysis considered the 1999 New Castle 3-Mile Area Plan that is shown in the map in this memorandum. The report concluded, "Projected traffic volumes would not appear to warrant an

APPENDIX E

Trip Generation Worksheets



Project 9 North Wildhorse
 Subject Trip Generation for Single-Family Attached Housing
 Designed by TJD Date March 25, 2024 Job No. 096671014
 Checked by _____ Date _____ Sheet No. _____ of _____

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Single-Family Attached Housing (215)

Independent Variable - Dwelling Units (X)

$$X = 26$$

T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (200 Series Page 239)

Average Weekday	Directional Distribution:	26% ent.	74% exit.
(T) = 0.48(X)	T = 12	Average Vehicle Trip Ends	
(T) = 0.48 * (26.0)	3 entering	9	exiting
	3 + 9 = 12		

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (200 Series Page 240)

Average Weekday	Directional Distribution:	59% ent.	41% exit.
(T) = 0.57 (X)	T = 15	Average Vehicle Trip Ends	
(T) = 0.57 * (26.0)	9 entering	6	exiting
	9 + 6 = 15		

Weekday (200 Series Page 238)

Average Weekday	Directional Distribution:	50% ent.	50% exit.
(T) = 7.20 (X)	T = 188	Average Vehicle Trip Ends	
(T) = 7.20 * (26.0)	94 entering	94	exiting
	94 + 94 = 188		



Project 9 North Wildhorse
 Subject Trip Generation for Multifamily Housing (Low-Rise)
 Designed by TJD Date March 25, 2024 Job No. 096671014
 Checked by _____ Date _____ Sheet No. _____ of _____

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Fitted Curve Equations

Land Use Code - Multifamily Housing (Low-Rise) (220)

Independent Variable - Dwelling Units (X)

$$X = 104$$

T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (200 Series Page 255)

$(T) = 0.31 (X) + 22.85$ $(T) = 0.31 * (104.0) + 22.85$	Directional Distribution: 24% ent. 76% exit. T = 55 Average Vehicle Trip Ends 13 entering 42 exiting 13 + 42 = 55
--	--

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (200 Series Page 256)

$(T) = 0.43 (X) + 20.55$ $(T) = 0.43 * (104.0) + 20.55$	Directional Distribution: 63% ent. 37% exit. T = 65 Average Vehicle Trip Ends 41 entering 24 exiting 41 + 24 = 65
--	--

Weekday (200 Series Page 254)

$(T) = 6.41 (X) + 75.31$ $(T) = 6.41 * (104.0) + 75.31$	Directional Distribution: 50% ent. 50% exit. T = 742 Average Vehicle Trip Ends 371 entering 371 exiting 371 + 371 = 742
--	--

APPENDIX F

Intersection Analysis Worksheets

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	128	134	18	44	3
Future Vol, veh/h	0	128	134	18	44	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	50	50	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	200	268	36	49	3
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	304	0	-	0	486	286
Stage 1	-	-	-	-	286	-
Stage 2	-	-	-	-	200	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1257	-	-	-	540	753
Stage 1	-	-	-	-	763	-
Stage 2	-	-	-	-	834	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1257	-	-	-	540	753
Mov Cap-2 Maneuver	-	-	-	-	540	-
Stage 1	-	-	-	-	763	-
Stage 2	-	-	-	-	834	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		12.2		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1257	-	-	-	550	
HCM Lane V/C Ratio	-	-	-	-	0.095	
HCM Control Delay (s)	0	-	-	-	12.2	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.3	

HCM 6th TWSC
1: Alder Ave & Wildhorse Dr

Exhibit C
2024 Existing PM
03/26/2024

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	35	93	27	9	8
Future Vol, veh/h	6	35	93	27	9	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	60	47	47	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	58	198	57	13	11
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	255	0	-	0	305	227
Stage 1	-	-	-	-	227	-
Stage 2	-	-	-	-	78	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1310	-	-	-	687	812
Stage 1	-	-	-	-	811	-
Stage 2	-	-	-	-	945	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1310	-	-	-	682	812
Mov Cap-2 Maneuver	-	-	-	-	682	-
Stage 1	-	-	-	-	805	-
Stage 2	-	-	-	-	945	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		10		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1310	-	-	-	738	
HCM Lane V/C Ratio	0.008	-	-	-	0.032	
HCM Control Delay (s)	7.8	0	-	-	10	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	132	138	24	50	8
Future Vol, veh/h	5	132	138	24	50	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	50	50	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	206	276	48	56	9
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	324	0	-	0	522	300
Stage 1	-	-	-	-	300	-
Stage 2	-	-	-	-	222	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1236	-	-	-	515	740
Stage 1	-	-	-	-	752	-
Stage 2	-	-	-	-	815	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1236	-	-	-	511	740
Mov Cap-2 Maneuver	-	-	-	-	511	-
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	815	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.3	0		12.7		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1236	-	-	-	534	
HCM Lane V/C Ratio	0.006	-	-	-	0.121	
HCM Control Delay (s)	7.9	0	-	-	12.7	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.4	

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	36	96	33	14	13
Future Vol, veh/h	11	36	96	33	14	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	60	47	47	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	60	204	70	20	18
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	274	0	-	0	335	239
Stage 1	-	-	-	-	239	-
Stage 2	-	-	-	-	96	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1289	-	-	-	660	800
Stage 1	-	-	-	-	801	-
Stage 2	-	-	-	-	928	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1289	-	-	-	651	800
Mov Cap-2 Maneuver	-	-	-	-	651	-
Stage 1	-	-	-	-	790	-
Stage 2	-	-	-	-	928	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.8	0		10.3		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1289	-	-	-	715	
HCM Lane V/C Ratio	0.014	-	-	-	0.053	
HCM Control Delay (s)	7.8	0	-	-	10.3	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	132	138	25	53	11
Future Vol, veh/h	6	132	138	25	53	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	50	50	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	206	276	50	59	12
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	326	0	-	0	525	301
Stage 1	-	-	-	-	301	-
Stage 2	-	-	-	-	224	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1234	-	-	-	513	739
Stage 1	-	-	-	-	751	-
Stage 2	-	-	-	-	813	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1234	-	-	-	509	739
Mov Cap-2 Maneuver	-	-	-	-	509	-
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	813	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.3	0		12.7		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1234	-	-	-	538	
HCM Lane V/C Ratio	0.008	-	-	-	0.132	
HCM Control Delay (s)	7.9	0	-	-	12.7	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.5	

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	36	96	36	16	15
Future Vol, veh/h	14	36	96	36	16	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	60	47	47	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	60	204	77	23	21
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	281	0	-	0	349	243
Stage 1	-	-	-	-	243	-
Stage 2	-	-	-	-	106	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1282	-	-	-	648	796
Stage 1	-	-	-	-	797	-
Stage 2	-	-	-	-	918	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1282	-	-	-	636	796
Mov Cap-2 Maneuver	-	-	-	-	636	-
Stage 1	-	-	-	-	782	-
Stage 2	-	-	-	-	918	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.2	0		10.4		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1282	-	-	-	705	
HCM Lane V/C Ratio	0.018	-	-	-	0.062	
HCM Control Delay (s)	7.9	0	-	-	10.4	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	153	156	28	54	13
Future Vol, veh/h	10	153	156	28	54	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	50	50	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	239	312	56	60	14
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	368	0	-	0	611	340
Stage 1	-	-	-	-	340	-
Stage 2	-	-	-	-	271	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1191	-	-	-	457	702
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	775	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1191	-	-	-	450	702
Mov Cap-2 Maneuver	-	-	-	-	450	-
Stage 1	-	-	-	-	710	-
Stage 2	-	-	-	-	775	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.5	0		13.8		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1191	-	-	-	484	
HCM Lane V/C Ratio	0.013	-	-	-	0.154	
HCM Control Delay (s)	8.1	0	-	-	13.8	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.5	

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	16	65	122	37	19	18
Future Vol, veh/h	16	65	122	37	19	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	60	47	47	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	108	260	79	27	25
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	339	0	-	0	462	300
Stage 1	-	-	-	-	300	-
Stage 2	-	-	-	-	162	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1220	-	-	-	558	740
Stage 1	-	-	-	-	752	-
Stage 2	-	-	-	-	867	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1220	-	-	-	545	740
Mov Cap-2 Maneuver	-	-	-	-	545	-
Stage 1	-	-	-	-	734	-
Stage 2	-	-	-	-	867	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.6	0		11.3		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1220	-	-	-	625	
HCM Lane V/C Ratio	0.022	-	-	-	0.083	
HCM Control Delay (s)	8	0	-	-	11.3	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	153	156	29	57	16
Future Vol, veh/h	11	153	156	29	57	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	50	50	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	239	312	58	63	18
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	370	0	-	0	614	341
Stage 1	-	-	-	-	341	-
Stage 2	-	-	-	-	273	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1189	-	-	-	455	701
Stage 1	-	-	-	-	720	-
Stage 2	-	-	-	-	773	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1189	-	-	-	448	701
Mov Cap-2 Maneuver	-	-	-	-	448	-
Stage 1	-	-	-	-	708	-
Stage 2	-	-	-	-	773	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.5	0		13.9		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1189	-	-	-	486	
HCM Lane V/C Ratio	0.014	-	-	-	0.167	
HCM Control Delay (s)	8.1	0	-	-	13.9	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.6	

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	65	122	40	21	20
Future Vol, veh/h	19	65	122	40	21	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	60	47	47	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	108	260	85	30	28
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	345	0	-	0	475	303
Stage 1	-	-	-	-	303	-
Stage 2	-	-	-	-	172	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1214	-	-	-	548	737
Stage 1	-	-	-	-	749	-
Stage 2	-	-	-	-	858	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1214	-	-	-	533	737
Mov Cap-2 Maneuver	-	-	-	-	533	-
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	858	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.8	0		11.4		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1214	-	-	-	616	
HCM Lane V/C Ratio	0.026	-	-	-	0.094	
HCM Control Delay (s)	8	0	-	-	11.4	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	

HCM 6th TWSC
2: Wildhorse Dr & Castle Valley Blvd

Exhibit C
2024 Existing AM
03/26/2024

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Vol, veh/h	8	394	6	7	153	7	5	0	55	26	0	6
Future Vol, veh/h	8	394	6	7	153	7	5	0	55	26	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	75	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	70	70	70	79	79	79	67	67	67
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	480	7	10	219	10	6	0	70	39	0	9
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	229	0	0	487	0	0	749	749	480	778	746	219
Stage 1	-	-	-	-	-	-	500	500	-	239	239	-
Stage 2	-	-	-	-	-	-	249	249	-	539	507	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1339	-	-	1076	-	-	328	341	586	314	342	821
Stage 1	-	-	-	-	-	-	553	543	-	764	708	-
Stage 2	-	-	-	-	-	-	755	701	-	527	539	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1339	-	-	1076	-	-	319	334	586	272	335	821
Mov Cap-2 Maneuver	-	-	-	-	-	-	319	334	-	272	335	-
Stage 1	-	-	-	-	-	-	547	538	-	756	700	-
Stage 2	-	-	-	-	-	-	739	693	-	460	534	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.4			12.6			18.7		
HCM LOS							B			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	548	1339	-	-	1076	-	-	311				
HCM Lane V/C Ratio	0.139	0.007	-	-	0.009	-	-	0.154				
HCM Control Delay (s)	12.6	7.7	0	-	8.4	0	-	18.7				
HCM Lane LOS	B	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.5				

HCM 6th TWSC
2: Wildhorse Dr & Castle Valley Blvd

Exhibit C
2024 Existing PM
03/26/2024

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕	↕		↕			↕	
Traffic Vol, veh/h	7	179	3	32	228	18	3	0	24	11	0	3
Future Vol, veh/h	7	179	3	32	228	18	3	0	24	11	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	75	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	88	88	88	68	68	68	48	48	48
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	284	5	36	259	20	4	0	35	23	0	6
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	279	0	0	289	0	0	650	657	284	657	642	259
Stage 1	-	-	-	-	-	-	306	306	-	331	331	-
Stage 2	-	-	-	-	-	-	344	351	-	326	311	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1284	-	-	1273	-	-	382	385	755	378	392	780
Stage 1	-	-	-	-	-	-	704	662	-	682	645	-
Stage 2	-	-	-	-	-	-	671	632	-	687	658	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1284	-	-	1273	-	-	366	368	755	348	375	780
Mov Cap-2 Maneuver	-	-	-	-	-	-	366	368	-	348	375	-
Stage 1	-	-	-	-	-	-	697	655	-	675	623	-
Stage 2	-	-	-	-	-	-	643	611	-	648	651	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.9			10.7			14.8		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	675	1284	-	-	1273	-	-	395				
HCM Lane V/C Ratio	0.059	0.009	-	-	0.029	-	-	0.074				
HCM Control Delay (s)	10.7	7.8	0	-	7.9	0	-	14.8				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile O(veh)	0.2	0	-	-	0.1	-	-	0.2				

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Vol, veh/h	8	437	6	7	184	7	5	0	57	27	0	6
Future Vol, veh/h	8	437	6	7	184	7	5	0	57	27	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	75	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	70	70	70	79	79	79	67	67	67
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	533	7	10	263	10	6	0	72	40	0	9
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	273	0	0	540	0	0	846	846	533	876	843	263
Stage 1	-	-	-	-	-	-	553	553	-	283	283	-
Stage 2	-	-	-	-	-	-	293	293	-	593	560	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1290	-	-	1028	-	-	282	299	547	269	300	776
Stage 1	-	-	-	-	-	-	517	514	-	724	677	-
Stage 2	-	-	-	-	-	-	715	670	-	492	511	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1290	-	-	1028	-	-	274	292	547	230	293	776
Mov Cap-2 Maneuver	-	-	-	-	-	-	274	292	-	230	293	-
Stage 1	-	-	-	-	-	-	511	508	-	716	670	-
Stage 2	-	-	-	-	-	-	699	663	-	422	505	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.3			13.4			21.7		
HCM LOS							B			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	506	1290	-	-	1028	-	-	264				
HCM Lane V/C Ratio	0.155	0.008	-	-	0.01	-	-	0.187				
HCM Control Delay (s)	13.4	7.8	0	-	8.5	0	-	21.7				
HCM Lane LOS	B	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.7				

HCM 6th TWSC
2: Wildhorse Dr & Castle Valley Blvd

Exhibit C
2026 Background PM
03/26/2024

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Vol, veh/h	7	237	3	33	284	19	3	0	25	11	0	3
Future Vol, veh/h	7	237	3	33	284	19	3	0	25	11	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	75	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	88	88	88	68	68	68	48	48	48
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	376	5	38	323	22	4	0	37	23	0	6
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	345	0	0	381	0	0	811	819	376	818	802	323
Stage 1	-	-	-	-	-	-	398	398	-	399	399	-
Stage 2	-	-	-	-	-	-	413	421	-	419	403	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1214	-	-	1177	-	-	298	310	670	295	317	718
Stage 1	-	-	-	-	-	-	628	603	-	627	602	-
Stage 2	-	-	-	-	-	-	616	589	-	612	600	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1214	-	-	1177	-	-	284	294	670	268	301	718
Mov Cap-2 Maneuver	-	-	-	-	-	-	284	294	-	268	301	-
Stage 1	-	-	-	-	-	-	620	596	-	619	578	-
Stage 2	-	-	-	-	-	-	586	565	-	571	593	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.8			11.6			17.8		
HCM LOS							B			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	585	1214	-	-	1177	-	-	310				
HCM Lane V/C Ratio	0.07	0.009	-	-	0.032	-	-	0.094				
HCM Control Delay (s)	11.6	8	0	-	8.2	0	-	17.8				
HCM Lane LOS	B	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.3				

HCM 6th TWSC
2: Wildhorse Dr & Castle Valley Blvd

Exhibit C
2026 Total AM
03/26/2024

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Vol, veh/h	10	437	6	7	184	20	5	0	57	65	0	14
Future Vol, veh/h	10	437	6	7	184	20	5	0	57	65	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	75	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	70	70	70	79	79	79	67	67	67
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	533	7	10	263	29	6	0	72	97	0	21
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	292	0	0	540	0	0	865	869	533	880	847	263
Stage 1	-	-	-	-	-	-	557	557	-	283	283	-
Stage 2	-	-	-	-	-	-	308	312	-	597	564	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1270	-	-	1028	-	-	274	290	547	268	299	776
Stage 1	-	-	-	-	-	-	515	512	-	724	677	-
Stage 2	-	-	-	-	-	-	702	658	-	490	508	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1270	-	-	1028	-	-	261	282	547	228	291	776
Mov Cap-2 Maneuver	-	-	-	-	-	-	261	282	-	228	291	-
Stage 1	-	-	-	-	-	-	508	505	-	714	669	-
Stage 2	-	-	-	-	-	-	675	650	-	419	501	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.3			13.5			29.7		
HCM LOS							B			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	503	1270	-	-	1028	-	-	261				
HCM Lane V/C Ratio	0.156	0.01	-	-	0.01	-	-	0.452				
HCM Control Delay (s)	13.5	7.9	0	-	8.5	0	-	29.7				
HCM Lane LOS	B	A	A	-	A	A	-	D				
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	2.2				

HCM 6th TWSC
2: Wildhorse Dr & Castle Valley Blvd

Exhibit C
2026 Total PM
03/26/2024

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Vol, veh/h	12	237	3	33	284	59	3	0	25	34	0	8
Future Vol, veh/h	12	237	3	33	284	59	3	0	25	34	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	75	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	88	88	88	68	68	68	48	48	48
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	376	5	38	323	67	4	0	37	71	0	17
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	390	0	0	381	0	0	855	880	376	834	818	323
Stage 1	-	-	-	-	-	-	414	414	-	399	399	-
Stage 2	-	-	-	-	-	-	441	466	-	435	419	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1169	-	-	1177	-	-	278	286	670	288	311	718
Stage 1	-	-	-	-	-	-	616	593	-	627	602	-
Stage 2	-	-	-	-	-	-	595	562	-	600	590	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1169	-	-	1177	-	-	259	268	670	259	292	718
Mov Cap-2 Maneuver	-	-	-	-	-	-	259	268	-	259	292	-
Stage 1	-	-	-	-	-	-	603	581	-	614	577	-
Stage 2	-	-	-	-	-	-	557	538	-	555	578	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.7			11.8			22.3		
HCM LOS							B			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	573	1169	-	-	1177	-	-	295				
HCM Lane V/C Ratio	0.072	0.016	-	-	0.032	-	-	0.297				
HCM Control Delay (s)	11.8	8.1	0	-	8.2	0	-	22.3				
HCM Lane LOS	B	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0.1	-	-	1.2				

HCM 6th TWSC
2: Wildhorse Dr & Castle Valley Blvd

Exhibit C
2045 Background AM
04/04/2024

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Vol, veh/h	29	512	6	7	278	12	5	2	59	31	2	28
Future Vol, veh/h	29	512	6	7	278	12	5	2	59	31	2	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	75	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	81	81	81	86	86	86	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	589	7	9	343	15	6	2	69	39	3	35
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	358	0	0	596	0	0	1043	1031	589	1055	1023	343
Stage 1	-	-	-	-	-	-	655	655	-	361	361	-
Stage 2	-	-	-	-	-	-	388	376	-	694	662	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1201	-	-	980	-	-	207	233	508	204	236	700
Stage 1	-	-	-	-	-	-	455	463	-	657	626	-
Stage 2	-	-	-	-	-	-	636	616	-	433	459	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1201	-	-	980	-	-	187	221	508	168	224	700
Mov Cap-2 Maneuver	-	-	-	-	-	-	187	221	-	168	224	-
Stage 1	-	-	-	-	-	-	436	444	-	630	619	-
Stage 2	-	-	-	-	-	-	595	609	-	357	440	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.2			15.1			24.4		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	434	1201	-	-	980	-	-	261				
HCM Lane V/C Ratio	0.177	0.028	-	-	0.009	-	-	0.292				
HCM Control Delay (s)	15.1	8.1	0	-	8.7	0	-	24.4				
HCM Lane LOS	C	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0	-	-	1.2				

HCM 6th TWSC
2: Wildhorse Dr & Castle Valley Blvd

Exhibit C
2045 Background PM
04/04/2024

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Vol, veh/h	31	346	3	34	397	23	3	3	26	16	3	28
Future Vol, veh/h	31	346	3	34	397	23	3	3	26	16	3	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	75	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	90	90	90	80	80	80	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	444	4	38	441	26	4	4	33	23	4	40
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	467	0	0	448	0	0	1076	1067	444	1062	1045	441
Stage 1	-	-	-	-	-	-	524	524	-	517	517	-
Stage 2	-	-	-	-	-	-	552	543	-	545	528	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1094	-	-	1112	-	-	197	222	614	201	229	616
Stage 1	-	-	-	-	-	-	537	530	-	541	534	-
Stage 2	-	-	-	-	-	-	518	520	-	523	528	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1094	-	-	1112	-	-	168	201	614	174	208	616
Mov Cap-2 Maneuver	-	-	-	-	-	-	168	201	-	174	208	-
Stage 1	-	-	-	-	-	-	511	504	-	514	509	-
Stage 2	-	-	-	-	-	-	458	496	-	468	502	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.6			14.3			19.8		
HCM LOS							B			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	426	1094	-	-	1112	-	-	310				
HCM Lane V/C Ratio	0.094	0.036	-	-	0.034	-	-	0.217				
HCM Control Delay (s)	14.3	8.4	0	-	8.4	0	-	19.8				
HCM Lane LOS	B	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0.1	-	-	0.8				

HCM 6th TWSC
2: Wildhorse Dr & Castle Valley Blvd

Exhibit C
2045 Total AM
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Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Vol, veh/h	31	512	6	7	278	25	5	2	59	69	2	36
Future Vol, veh/h	31	512	6	7	278	25	5	2	59	69	2	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	75	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	81	81	81	86	86	86	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	589	7	9	343	31	6	2	69	86	3	45
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	374	0	0	596	0	0	1062	1053	589	1061	1029	343
Stage 1	-	-	-	-	-	-	661	661	-	361	361	-
Stage 2	-	-	-	-	-	-	401	392	-	700	668	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1184	-	-	980	-	-	201	226	508	202	234	700
Stage 1	-	-	-	-	-	-	452	460	-	657	626	-
Stage 2	-	-	-	-	-	-	626	606	-	430	456	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1184	-	-	980	-	-	178	213	508	166	221	700
Mov Cap-2 Maneuver	-	-	-	-	-	-	178	213	-	166	221	-
Stage 1	-	-	-	-	-	-	432	439	-	627	618	-
Stage 2	-	-	-	-	-	-	576	599	-	353	435	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.2			15.2			42		
HCM LOS							C			E		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	430	1184	-	-	980	-	-	225				
HCM Lane V/C Ratio	0.178	0.03	-	-	0.009	-	-	0.594				
HCM Control Delay (s)	15.2	8.1	0	-	8.7	0	-	42				
HCM Lane LOS	C	A	A	-	A	A	-	E				
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0	-	-	3.4				

HCM 6th TWSC
2: Wildhorse Dr & Castle Valley Blvd

Exhibit C
2045 Total PM
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Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Vol, veh/h	36	346	3	34	397	63	3	3	26	39	3	33
Future Vol, veh/h	36	346	3	34	397	63	3	3	26	39	3	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	75	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	90	90	90	80	80	80	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	444	4	38	441	70	4	4	33	56	4	47
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	511	0	0	448	0	0	1114	1123	444	1074	1057	441
Stage 1	-	-	-	-	-	-	536	536	-	517	517	-
Stage 2	-	-	-	-	-	-	578	587	-	557	540	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1054	-	-	1112	-	-	185	206	614	198	225	616
Stage 1	-	-	-	-	-	-	529	523	-	541	534	-
Stage 2	-	-	-	-	-	-	501	497	-	515	521	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1054	-	-	1112	-	-	155	185	614	170	202	616
Mov Cap-2 Maneuver	-	-	-	-	-	-	155	185	-	170	202	-
Stage 1	-	-	-	-	-	-	498	493	-	510	508	-
Stage 2	-	-	-	-	-	-	437	473	-	456	491	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0.6			14.7			29.5		
HCM LOS							B			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	411	1054	-	-	1112	-	-	252				
HCM Lane V/C Ratio	0.097	0.044	-	-	0.034	-	-	0.425				
HCM Control Delay (s)	14.7	8.6	0	-	8.4	0	-	29.5				
HCM Lane LOS	B	A	A	-	A	A	-	D				
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0.1	-	-	2				

HCM 6th TWSC
5: Wildhorse Dr & North Access

Exhibit C
2026 Total AM
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Intersection						
Int Delay, s/veh	4.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	36	4	21	11	1	24
Future Vol, veh/h	36	4	21	11	1	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	67	67	90	90	67	67
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	6	23	12	1	36
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	67	29	0	0	35	0
Stage 1	29	-	-	-	-	-
Stage 2	38	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	938	1046	-	-	1576	-
Stage 1	994	-	-	-	-	-
Stage 2	984	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	937	1046	-	-	1576	-
Mov Cap-2 Maneuver	937	-	-	-	-	-
Stage 1	994	-	-	-	-	-
Stage 2	983	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.1	0		0.3		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	947	1576	-	
HCM Lane V/C Ratio	-	-	0.063	0.001	-	
HCM Control Delay (s)	-	-	9.1	7.3	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.2	0	-	

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	2	32	35	4	40
Future Vol, veh/h	21	2	32	35	4	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	68	68	71	71	68	68
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	31	3	45	49	6	59
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	141	70	0	0	94	0
Stage 1	70	-	-	-	-	-
Stage 2	71	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	852	993	-	-	1500	-
Stage 1	953	-	-	-	-	-
Stage 2	952	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	849	993	-	-	1500	-
Mov Cap-2 Maneuver	849	-	-	-	-	-
Stage 1	953	-	-	-	-	-
Stage 2	948	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.4	0		0.7		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	860		1500	-	
HCM Lane V/C Ratio	-	0.039		0.004	-	
HCM Control Delay (s)	-	9.4		7.4	0	
HCM Lane LOS	-	A		A	A	
HCM 95th %tile Q(veh)	-	0.1		0	-	

HCM 6th TWSC
5: Wildhorse Dr & North Access

Exhibit C
2045 Total AM
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Intersection						
Int Delay, s/veh	2.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	36	4	44	11	1	48
Future Vol, veh/h	36	4	44	11	1	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	4	48	12	1	52
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	108	54	0	0	60	0
Stage 1	54	-	-	-	-	-
Stage 2	54	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	889	1013	-	-	1544	-
Stage 1	969	-	-	-	-	-
Stage 2	969	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	888	1013	-	-	1544	-
Mov Cap-2 Maneuver	888	-	-	-	-	-
Stage 1	969	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.2	0		0.1		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	899		1544	-	
HCM Lane V/C Ratio	-	0.048		0.001	-	
HCM Control Delay (s)	-	9.2		7.3	0	
HCM Lane LOS	-	A		A	A	
HCM 95th %tile Q(veh)	-	0.2		0	-	

HCM 6th TWSC
5: Wildhorse Dr & North Access

Exhibit C
2045 Total PM
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Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	2	58	35	4	68
Future Vol, veh/h	21	2	58	35	4	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	2	63	38	4	74
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	164	82	0	0	101	0
Stage 1	82	-	-	-	-	-
Stage 2	82	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	827	978	-	-	1491	-
Stage 1	941	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	825	978	-	-	1491	-
Mov Cap-2 Maneuver	825	-	-	-	-	-
Stage 1	941	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.4	0		0.4		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	836	1491	-	
HCM Lane V/C Ratio	-	-	0.03	0.003	-	
HCM Control Delay (s)	-	-	9.4	7.4	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

HCM 6th TWSC
6: Wildhorse Dr & South Access

Exhibit C
2026 Total AM
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Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	10	1	31	3	1	59
Future Vol, veh/h	10	1	31	3	1	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	67	67	90	90	67	67
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	1	34	3	1	88
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	126	36	0	0	37	0
Stage 1	36	-	-	-	-	-
Stage 2	90	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	869	1037	-	-	1574	-
Stage 1	986	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	868	1037	-	-	1574	-
Mov Cap-2 Maneuver	868	-	-	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	933	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.2	0		0.1		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	881		1574	-	
HCM Lane V/C Ratio	-	0.019		0.001	-	
HCM Control Delay (s)	-	9.2		7.3	0	
HCM Lane LOS	-	A		A	A	
HCM 95th %tile Q(veh)	-	0.1		0	-	

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	1	66	10	1	60
Future Vol, veh/h	6	1	66	10	1	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	68	68	71	71	68	68
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	1	93	14	1	88
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	190	100	0	0	107	0
Stage 1	100	-	-	-	-	-
Stage 2	90	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	799	956	-	-	1484	-
Stage 1	924	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	798	956	-	-	1484	-
Mov Cap-2 Maneuver	798	-	-	-	-	-
Stage 1	924	-	-	-	-	-
Stage 2	933	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.5	0		0.1		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 817		1484	-	
HCM Lane V/C Ratio	-	- 0.013		0.001	-	
HCM Control Delay (s)	-	- 9.5		7.4	0	
HCM Lane LOS	-	- A		A	A	
HCM 95th %tile Q(veh)	-	- 0		0	-	

HCM 6th TWSC
6: Wildhorse Dr & South Access

Exhibit C
2045 Total AM
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Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	1	54	3	1	83
Future Vol, veh/h	10	1	54	3	1	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	1	59	3	1	90
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	153	61	0	0	62	0
Stage 1	61	-	-	-	-	-
Stage 2	92	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	839	1004	-	-	1541	-
Stage 1	962	-	-	-	-	-
Stage 2	932	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	838	1004	-	-	1541	-
Mov Cap-2 Maneuver	838	-	-	-	-	-
Stage 1	962	-	-	-	-	-
Stage 2	931	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.3	0		0.1		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-		851	1541	
HCM Lane V/C Ratio	-	-		0.014	0.001	
HCM Control Delay (s)	-	-		9.3	7.3	
HCM Lane LOS	-	-		A	A	
HCM 95th %tile Q(veh)	-	-		0	0	

HCM 6th TWSC
6: Wildhorse Dr & South Access

Exhibit C
2045 Total PM
04/04/2024

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	1	92	10	1	88
Future Vol, veh/h	6	1	92	10	1	88
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	1	100	11	1	96
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	204	106	0	0	111	0
Stage 1	106	-	-	-	-	-
Stage 2	98	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	784	948	-	-	1479	-
Stage 1	918	-	-	-	-	-
Stage 2	926	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	783	948	-	-	1479	-
Mov Cap-2 Maneuver	783	-	-	-	-	-
Stage 1	918	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.5	0		0.1		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	803	1479	-	
HCM Lane V/C Ratio	-	-	0.009	0.001	-	
HCM Control Delay (s)	-	-	9.5	7.4	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

From: Rowe, Curtis <Curtis.Rowe@kimley-horn.com>
Sent: Thursday, May 30, 2024 3:13 PM
To: Paul Smith <psmith@newcastlecolorado.org>; Paul Schirmer <paul.schirmer@CDSG-US.COM>; Louis Wilsher <LWilsher@dhmdesign.com>
Cc: Daines, Tanner <Tanner.Daines@kimley-horn.com>; Lauren Prentice <lprentice@newcastlecolorado.org>; jeffs (jeffs@sgm-inc.com) <jeffs@sgm-inc.com>
Subject: RE: Traffic study - CVB at N Wild Horse?

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Hi Paul,

We understand those thoughts and concern Paul. It is important to note that access to the CVRI development and those residents will be gained further to the southeast along Castle Valley Boulevard. As most trips are destined to and from Main Street (US-6), the amount of traffic along Castle Valley Boulevard at Wildhorse Drive will be minimized. Our growth of traffic through this intersection accounted for a volume increase of 30 morning peak hour trips in 2045 attributable to other undefined projects (such as CVRI) outside of Lakota Ranch and TC Midwest. We included this background volume for exactly this purpose to include potential other projects in the area and believe that the CVRI volume is included in this number.

As described in the traffic study, if southbound (yes, the Wildhorse Drive approach) left turn delays grow to be around 40+ seconds per vehicle during the morning peak hour by 2045 (and if this is deemed excessive), then the Town could consider restricting turn movements at this intersection with a three-quarter configuration. Left turning traffic from Wildhorse Drive to southeastbound Castle Valley Boulevard would be able to turn right and use the Pyramid Drive roundabout to turn around conveniently. To answer your other question, in 2045 during the AM peak hour, we're seeing a queue of about 3 to 4 vehicles (75 to 100 feet) on the left turn from Wildhorse Drive to Castle Valley Boulevard. The peak delay condition is probably for about 30 minutes during the morning peak hour (afternoon peak hour works fine) with full area buildout. The volume on that southbound left turn from Wildhorse Drive to Castle Valley Boulevard is about 70 vehicles per hour, or about one vehicle per minute.

Let us know if you have any additional questions or need anything else.

Thanks,
Curtis

Curtis Rowe, P.E., PTOE

(P.E. in CO, ID, KS, MT, NE, UT, and WY)

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From: Paul Smith <psmith@newcastlecolorado.org>

Sent: Wednesday, May 29, 2024 9:43 AM

To: Rowe, Curtis <Curtis.Rowe@kimley-horn.com>; Paul Schirmer <paul.schirmer@CDSG-US.COM>;
Louis Wilsher <LWilsher@dhmdesign.com>

Cc: Daines, Tanner <Tanner.Daines@kimley-horn.com>; Lauren Prentice
<lprentice@newcastlecolorado.org>; jeffs (jeffs@sgm-inc.com) <jeffs@sgm-inc.com>

Subject: RE: Traffic study - CVB at N Wild Horse?

Thanks Curtis!

The main question we had was one of understanding the future level of service at CVB and N Wild Horse Dr per your analysis. The table below from page 26 (see below) seems to indicate a possible LOS from 2026 to 2045 hitting D or E without the impacts of the CVRI buildout. Is this understanding correct? Also, I wanted to be sure, is the "southbound approach" in the table referring to the southbound lane(s) on N Wild Horse at CVB?

A follow-up matter was the future queuing distance addressed in the analysis (page 28). Again, without the impacts of CVRI that distance at the AM peak is projected to be 75'-100'. Is this understanding correct? A possible concern that will arise is whether the new intersection for CVRI at Redstone drive (about 175' from CVB per my crude measurements) can efficiently negotiate turns onto N Wild Horse with those peak time constraints.

Anything you would be willing add would be helpful. Thank you!

Table 4 – Castle Valley Boulevard & Wildhorse Drive (#2) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2024 Existing				
Northbound Approach	12.6	B	10.7	B
Eastbound Left	7.7	A	7.8	A
Westbound Left	8.4	A	7.9	A
Southbound Approach	18.7	C	14.8	B
2026 Background				
Northbound Approach	13.4	B	11.6	B
Eastbound Left	7.8	A	8.0	A
Westbound Left	8.5	A	8.2	A
Southbound Approach	21.7	C	17.8	C
2026 Background Plus Project				
Northbound Approach	13.5	B	11.8	B
Eastbound Left	7.9	A	8.1	A
Westbound Left	8.5	A	8.2	A
Southbound Approach	29.7	D	22.3	C
2045 Background				
Northbound Approach	15.1	C	14.3	B
Eastbound Left	8.1	A	8.4	A
Westbound Left	8.7	A	8.4	A
Southbound Approach	24.4	C	19.8	C
2045 Background Plus Project				
Northbound Approach	15.2	C	14.7	C
Eastbound Left	8.1	A	8.6	A
Westbound Left	8.7	A	8.4	A
Southbound Approach	42.0	E	29.5	D

Table 6 – Turn Lane Queueing Analysis Results

Intersection Turn Lane	Existing Turn Lane Length (feet)	2026 Calculated Queue (feet)	2026 Recommended Length (feet)	2045 Calculated Queue (feet)	2045 Recommended Length (feet)
Alder Ave & Wildhorse Dr (#1)					
Eastbound Approach	Shared	25'	Shared	25'	Shared
Southbound Approach	Shared	25'	Shared	25'	Shared
Castle Valley & Wildhorse Dr (#2)					
Northbound Approach	Shared	25'	Shared	25'	Shared
Eastbound Left/Through	Shared	25'	Shared	25'	Shared
Westbound Left/Through	Shared	25'	Shared	25'	Shared
Southbound Approach	Shared	75'	Shared	100'	Shared
North Access & Wildhorse Dr (#5)					
Westbound Approach	DNE	25'	Shared	25'	Shared
Southbound Approach	DNE	25'	Shared	25'	Shared
South Access & Wildhorse Dr (#6)					
Westbound Approach	DNE	25'	Shared	25'	Shared
Southbound Approach	DNE	25'	Shared	25'	Shared

TWLTL = Two-Way Left-Turn Lane; Blue Text = Recommendation

From: Rowe, Curtis <Curtis.Rowe@kimley-horn.com>

Sent: Tuesday, May 28, 2024 6:26 PM

To: Paul Schirmer <paul.schirmer@CDSG-US.COM>; Paul Smith <psmith@newcastlecolorado.org>; Louis Wilsher <LWilsher@dhmdesign.com>

Cc: Daines, Tanner <Tanner.Daines@kimley-horn.com>

Subject: RE: Traffic study contact?

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Hi Paul and Paul,

We investigated these two questions and offer the following response below:

1. What's different from the original 2006 analysis?

- a. Unfortunately, there is no definitive site plan that would allow us to compare this exact 9 North Wildhorse site to the overall study area used in the 2006 study. Based on rough interpretation of the traffic analysis zones (TAZs) used in the original study, we estimate that our site would include part or most of TAZs 4 and 5, which proposed 100 and 50 single-family dwelling units, respectively, but our site may not have included full portions of each of these TAZs. Because these boundary lines for the TAZs are not well-defined specific to our area, it's difficult to obtain a true comparison of our site to anything that was analyzed in the original study.
- b. In terms of the traffic volumes, our existing traffic counts were collected in 2024, so obviously a lot has changed since 2006 in that sense and when those counts were taken.
- c. We also included several anticipated background developments that may have different intensities than those that were originally anticipated. Specifically, we included traffic volumes from the Lakota Canyon Ranch study to the southeast of our site near Faas Ranch Road, and future proposed TC Midwest development at the Pyramid Drive roundabout to the southwest of this site. In addition, we included estimated cut-through traffic volume with completion of the Silverado Trail connection.

2. Does the forecast assume full buildout of the adjacent CVR Investment parcel and connection with Silverado Trail?

- a. We did not directly include that traffic in our study, but as mentioned, we did include assumed additional cut-through traffic from the Silverado Trail connection. We did include an additional 0.50 percent background annual traffic growth rate to account for some additional unknown developments in the area, which would account for some of this traffic.
- b. It is likely there would be some marginal additional traffic on Wildhorse Drive because of that connection, though because of the nature of the Town, it would be expected the majority of the 143 single-family units would use Clubhouse Drive to travel onto Castle Valley Boulevard to US-6 instead of rerouting backwards to use Wildhorse Drive.

If you have any further questions, please feel free to reach out.

Thanks,
Curtis

Curtis Rowe, P.E., PTOE

(P.E. in CO, ID, KS, MT, NE, UT, and WY)

Kimley-Horn | 6200 South Syracuse Way, Suite 300, Greenwood Village, CO 80111

ENGINEERING REPORT

March 22, 2024

Chad J Lee.
JVAM
chad@jvamlaw.com

RE: 9 North Wildhorse Subdivision, Castle Valley Ranch, New Castle, CO – Preliminary Plan Submission
SE Job # 33011

Chad,

Sopris Engineering, LLC (SE) has prepared the following Engineering Letter for the Preliminary Plan Submission for the proposed 9 North Wildhorse Subdivision (site) 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 47.5 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 11.5 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. Wildhorse 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 preliminary 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. The ALTA survey was used for the Sketch Plan application. Utility locates were completed and field surveyed on; N. Wildhorse Drive, onsite, and also 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. Wildhorse and the adjacent site improvements. The most current Lidar aerial topography was used for the undeveloped site.

2. Access:

The N. Wildhorse road section will be improved from where the pavement ends on the south and west sides. The minor collector road section will be used from the Town Public Works Manual. Perpendicular parking is proposed on the west side of the road adjacent to Vix Park.

The site has good access on Vista Loop with two connections to N. Wildhorse Drive. The empty nester residential will be accessed off of Sunset Loop which will connect to Vista Loop at two locations. The Live / Work residential will have an internal 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 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. Refer to the C1.0 Site plan and Sheet C1.1 for the proposed road sections.

3. 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 will have local detention basins to ensure the Town's pre-post drainage requirements are met. A large culvert crossing will be installed at the proposed 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. Supporting drainage calculations are included on civil sheets C6.0 & C6.1 and in Appendix A.

3.1. 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 concrete headwalls and a concrete pan. The culvert nomograph indicates the 48" culverts have well over 200 CFS capacity which provides a good factor of safety. If the culvert were to plug the storm water would overtop the road and continue downstream. The culvert nomograph calculations are included in Appendix A.

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. Wildhorse. We have designated this location as Design Point 1 (DP-1).

EX-02: Existing basin 02 is the northern 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 one identified storm sewer culvert on the northwest side. The runoff otherwise appears to sheet flow across N. Wildhorse Drive. As all of this storm water flows to and through Vix Park we have identified this as Design Point 2 (DP-2).

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).

3.2. Proposed:

The overall proposed site drainage patterns will be maintained. The proposed site basins generally match the existing onsite basins. The proposed basins are described in greater detail below and are illustrated on C6.1.

DE-01: Developed basin 01 is the primary drainage channel through the center of the site. The south end of Vista Loop and a good portion of the Live / Work development are within this basin. Storm water runoff from the developed site will sheet flow on the pavement and be routed in surface swales to storm inlets. Several curb openings are proposed in the Live work development. This allows storm water runoff to daylight into the larger landscape areas and flow through longer drainage swales. Storm water runoff then flows to site detention basins. The storm water runoff will be detained to the historic rate by smaller outflow pipes. If the detention basin full the storm water runoff will overtop to the existing drainage path. Storm water runoff leaves the site at DP-1.

DE-02: Developed basin 02 is the northern portion of the site. The steep hillside above development will remain undisturbed. The proposed townhomes and the northern portions of the Live / Work are included in this basin. The drainage paths are numerous above the developed site. Storm water runoff from the developed site will sheet flow on the pavement and be routed in surface swales to storm inlets. Storm water runoff then flows to site detention basins. The storm water runoff will be detained to the historic rate by smaller outflow pipes. If the detention basins are full the storm water runoff will overtop 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 pavement and be routed in surface swales to storm inlets. Storm water runoff then flows to site detention basins. The storm water runoff will be detained to the historic rate by smaller outflow pipes. If the detention basin is at capacity the storm water runoff will overtop to the existing drainage path. Storm water runoff leaves the site at DP-3.

3.3. 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.

$$\text{Equation 1: } Q = C * I * A$$

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 these drainage basins was assumed to be 30 minutes. Note this assumption is also valid for the developed basins because the percentage of development is small compared to the overall basin size.

The proposed runoff rates and calculations are shown and summarized on civil sheet C6.1. The drainage model calculations are included in Appendix A.

3.4. 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 gravity storm pipes were sized using Manning's Equation (Equation 2).

$$\text{Equation 2: } Q = 1.49/n * R^{2/3} * A * S^{0.5}$$

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 was used to size the storm sewer pipes for the small sub-basin areas. More detailed design and modeling will be completed for the final plan submittal.

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

4. Utilities:

The existing site utilities are shown on the existing condition base map. Will serve letters have been requested from all of 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 capacity to serve this site. Proposed utility improvements are discussed here and are shown on the Civil utility sheets. Will serve letters received are included in Appendix B.

4.1. Potable Water:

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

Per previous development coordination and review of this site we understand this site will be served in the Town's upper pressure zone. The applicant will coordinate with the adjacent property owner to extend the water main from the Lakota Subdivision, and will install pressure reducing valves at the connection to the existing water main in N. Wildhorse 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 for the final plan submittal.

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

4.2. Sanitary Sewer:

The Town of New Castle sanitary sewer system serves CVR. The existing sanitary sewer main line ends where the N. Wildhorse 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. Wildhorse Drive. Sewer Main 'A' will extend from the existing main line under N. Wildhorse 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 preliminary 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.

4.3. 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.

4.4. 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. Wildhorse. We understand that this main line extension is scheduled for 2024 construction.

The project is proposing a 4" looped main line that will connect to the 8" main at two locations and will loop through the site following Vista Loop.

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 off of the site 4" main line. The raw water usage calculations and the irrigation system design will be completed for the final plan submittal.

4.5. Electric & Natural Gas:

New Castle has electric and natural gas service from Xcel Energy. SE has requested and received a will serve letter and information on the existing electric and gas infrastructure in this area. The main lines will be extended from both directions in N. Wildhorse Drive from the end of the site development.

The site will have electric and natural gas main lines extending from the new main line in N. Wildhorse Drive. A loop electric and natural gas main line will follow Vista Loop to serv the Empty Nester buildings, the townhomes, and the two north Live / Work buildings 1 & 3. An additional main line will extend on the south side of the Live / Work buildings to serve Buildings 2 & 4. The proposed transformer and meter locations are shown on the Utility Plan.

The applicant will continue to coordinate the Electric and Natural Gas main lines with Xcel Energy. Additional details will be provided for the final plan submittal.

4.6. 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 electric & natural gas 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.

4.7. 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. Wildhorse Drive from the end of the site development. The proposed cable lines will extend from the existing infrastructure, and will follow the electric & natural gas alignment to serve each building. The applicant will continue to coordinate the cable service with Comcast. Additional details will be provided for the final plan submittal.

5. Conclusion

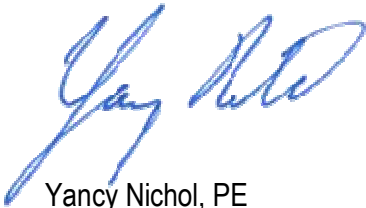
The proposed site has good access to N. Wildhorse Drive which connects to Castle Valley Boulevard and then to the larger road network. The existing utilities are adjacent to the site or can be extended from offsite. The primary offsite drainage basin will be routed through the site following the existing 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

Exhibit D Legend



OS-01:
AREA= 2.97 sq. mi
1,900 AC. +/-

8500' ELEV. +/-

5880' ELEV. +/-

CVR-R2 MF SITE +/-



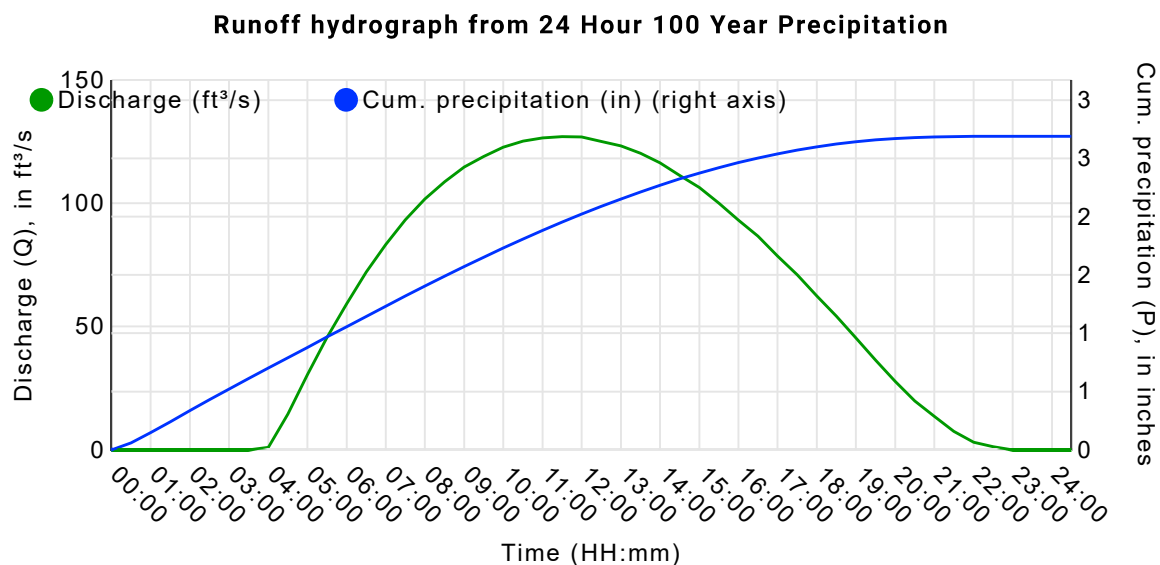
Study Area Storm Event Runoff Summary for 24 Hour 100 Year Precipitation (TR55)

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



Tabular Hydrograph

Exhibit D

Time	DRN	AREA	P	RCN	Duration	la	S	dP	P-la	PI	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

Exhibit D

Time	DRNAREA	P	RCN	Duration	la	S	dP	P-la	PI	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

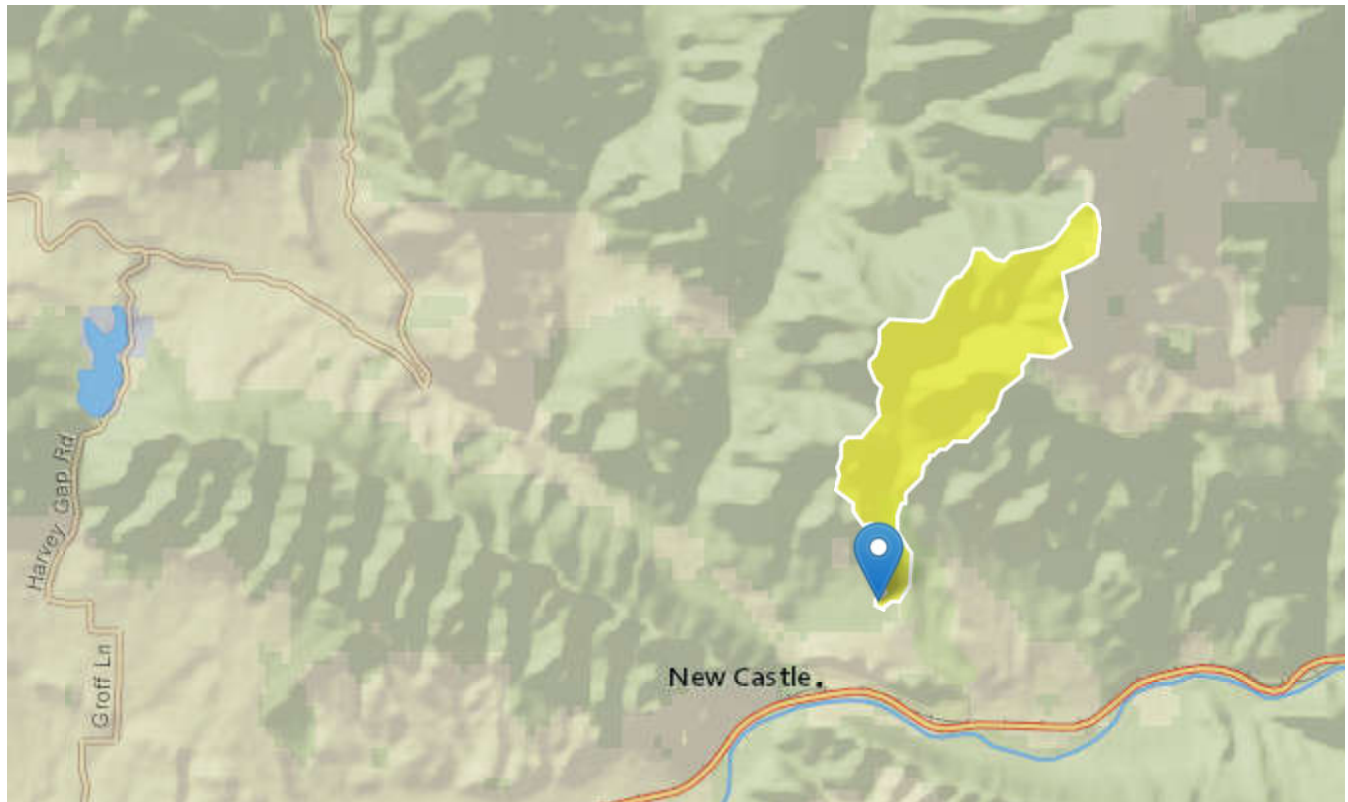
33011-USGS Streamstats Drainage report

Region ID: CO

Workspace ID: C020230804145829508000

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

Exhibit D

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

Exhibit D

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	dimensionless
RUNCO_CO	Soil runoff coefficient as defined by Verdin and Gross (2017)	0.47	dimensionless
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]

Exhibit D

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]

PIl: Prediction Interval-Lower, Plu: 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]

PIl: Prediction Interval-Lower, Plu: 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]

PIl: Prediction Interval-Lower, Plu: 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]

PIl: Prediction Interval-Lower, Plu: 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]

PIl: Prediction Interval-Lower, Plu: 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]

Pll: Prediction Interval-Lower, Plu: 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]

Pll: Prediction Interval-Lower, Plu: 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]

PIl: Prediction Interval-Lower, Plu: 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

Exhibit D

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, Plu: 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

Exhibit D

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
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Exhibit D

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

Exhibit D

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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Exhibit D

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USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

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.

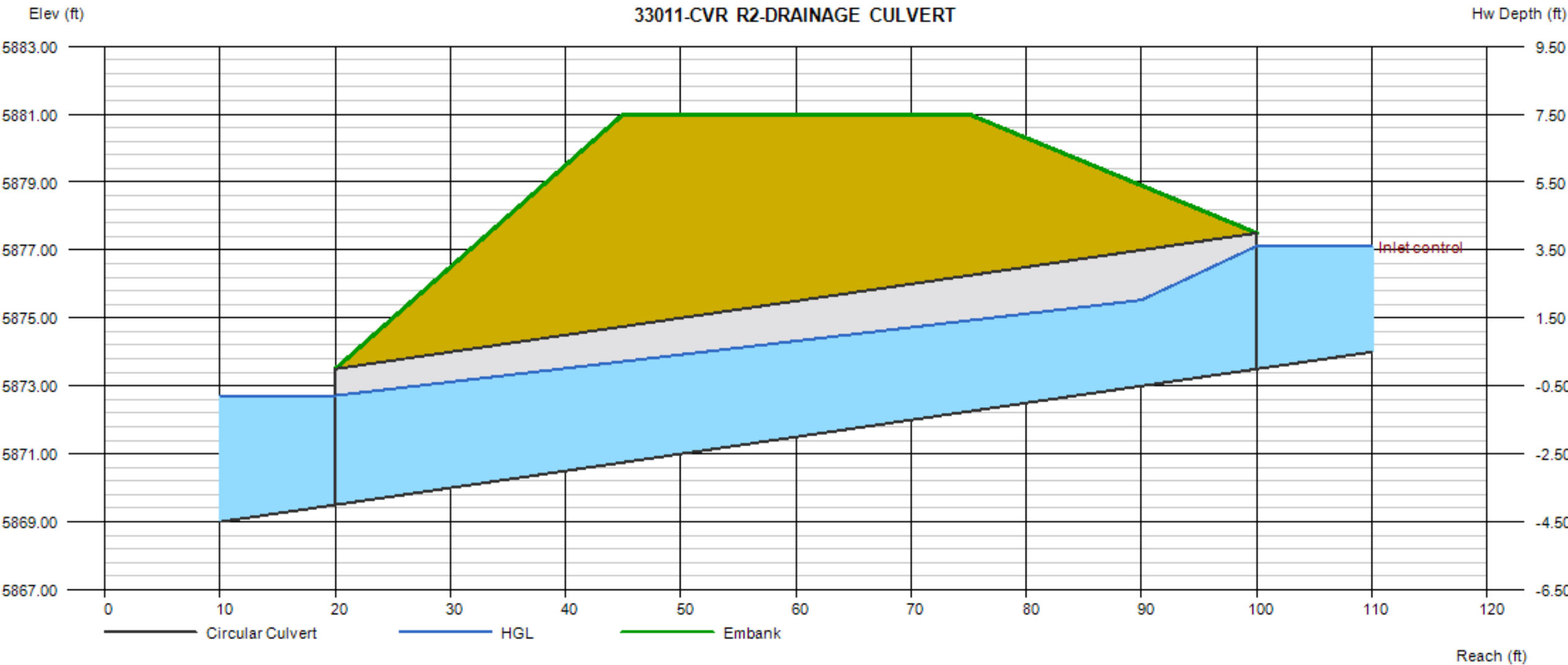
Friday, Mar 15 2024

33011-CVR R2-DRAINAGE CULVERT

Invert Elev Dn (ft)	=	5869.50
Pipe Length (ft)	=	80.00
Slope (%)	=	5.00
Invert Elev Up (ft)	=	5873.50
Rise (in)	=	48.0
Shape	=	Circular
Span (in)	=	48.0
No. Barrels	=	2
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

Embankment	
Top Elevation (ft)	= 5881.00
Top Width (ft)	= 30.00
Crest Width (ft)	= 30.00

Calculations	
Qmin (cfs)	= 0.00
Qmax (cfs)	= 200.00
Tailwater Elev (ft)	= (dc+D)/2
Highlighted	
Qtotal (cfs)	= 130.00
Qpipe (cfs)	= 130.00
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 6.00
Veloc Up (ft/s)	= 8.13
HGL Dn (ft)	= 5872.72
HGL Up (ft)	= 5875.93
Hw Elev (ft)	= 5877.12
Hw/D (ft)	= 0.90
Flow Regime	= Inlet Control



Culvert Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc.

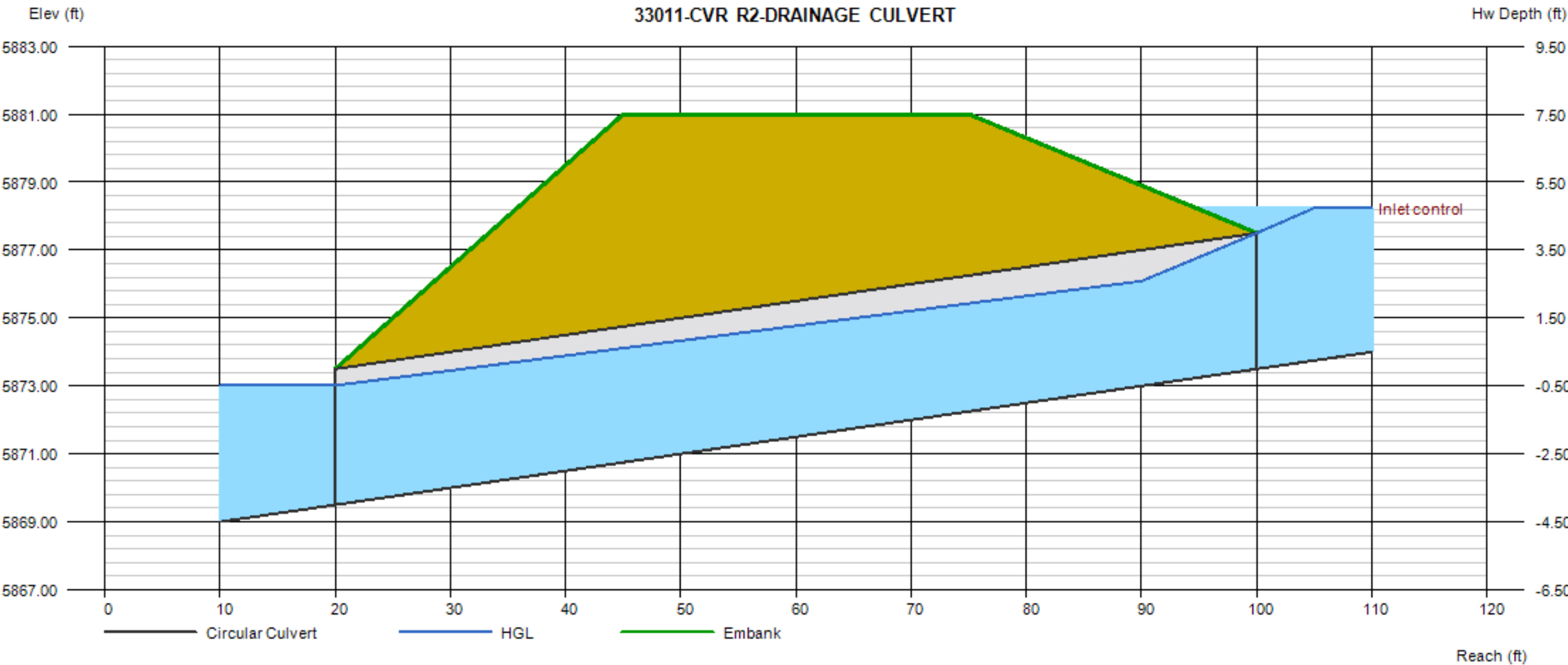
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Qmin (cfs)	= 0.00
Qmax (cfs)	= 200.00
Tailwater Elev (ft)	= (dc+D)/2
Highlighted	
Qtotal (cfs)	= 200.00
Qpipe (cfs)	= 200.00
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 8.55
Veloc Up (ft/s)	= 9.80
HGL Dn (ft)	= 5873.01
HGL Up (ft)	= 5876.53
Hw Elev (ft)	= 5878.24
Hw/D (ft)	= 1.19
Flow Regime	= Inlet Control



Hydrologic Soil Group—Rifle Area, Colorado, Parts of Garfield and Mesa Counties
(33011-CVR R2-NRCS SOILS)



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, Geoffrey Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps_&_aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.51 (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

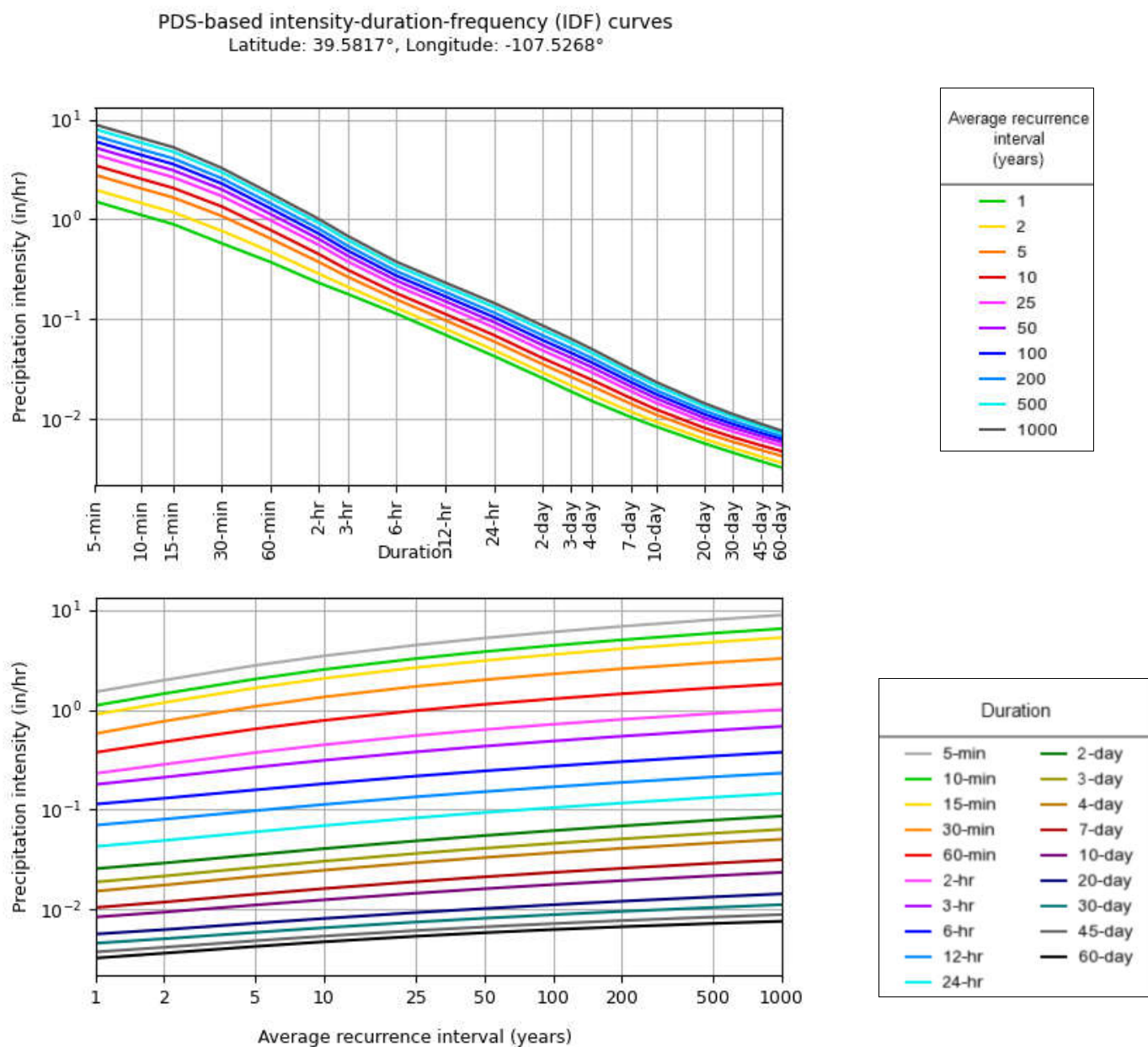
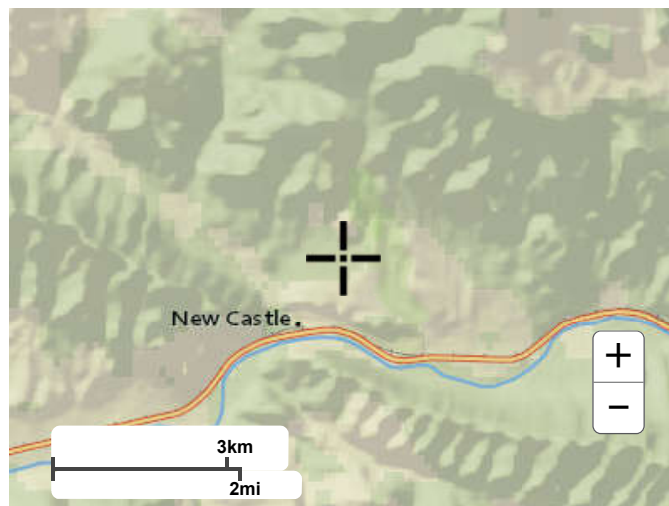
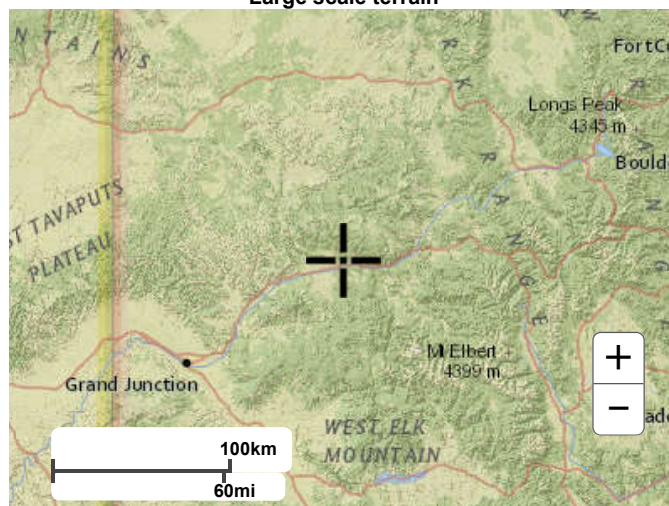


Exhibit D



Large scale terrain

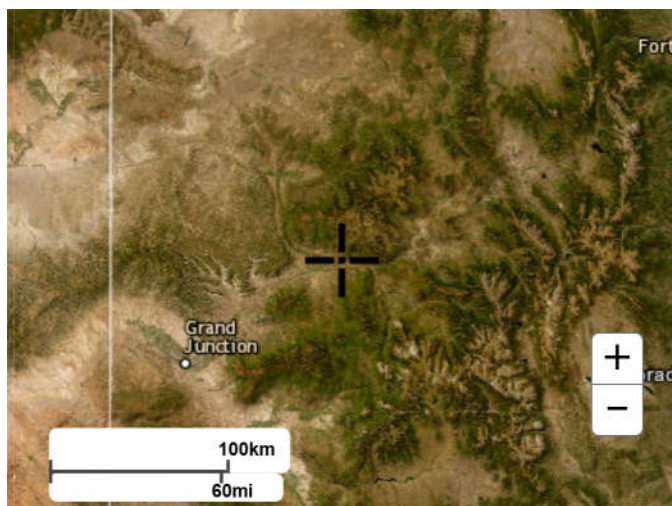


Large scale map



Large scale aerial

Exhibit D

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Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

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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

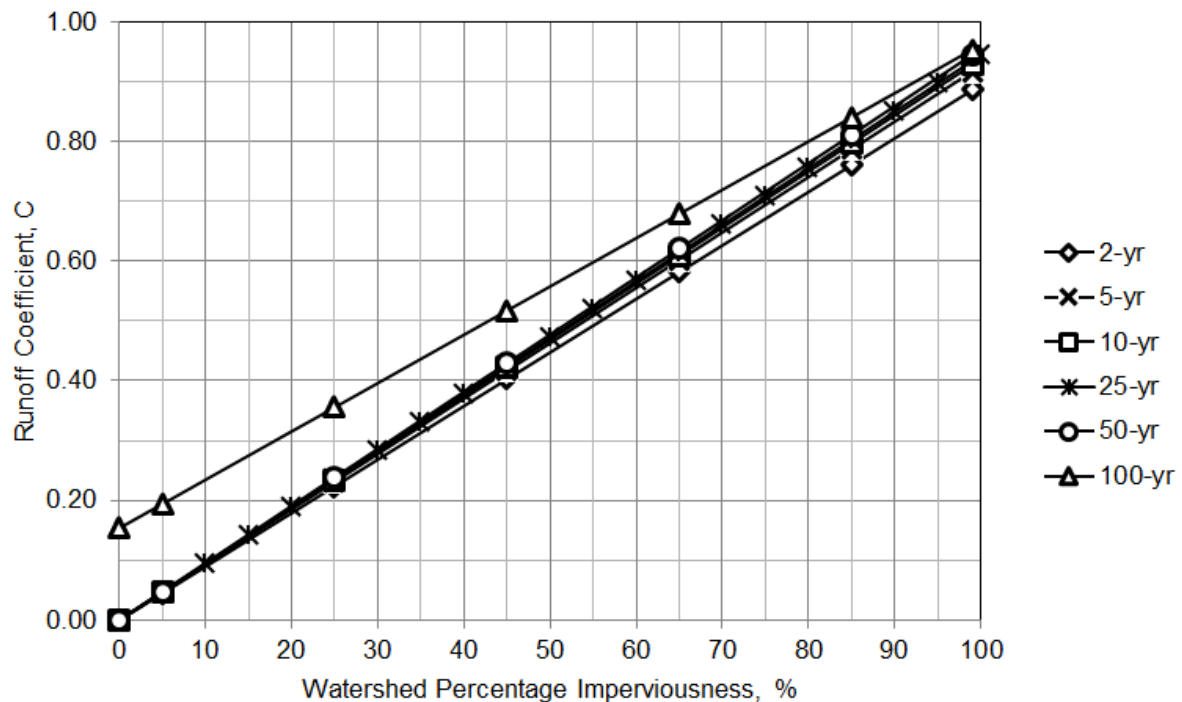


Figure 6-1. Runoff coefficient vs. watershed imperviousness NRCS HSG A

33011-EX DRG-25 YEAR

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 3

Number of nodes 3

Number of links 0

Subbasin Summary

Subbasin	Total Area
ID	acres
-----	-----
EX-01	6.77
EX-02	16.66
EX-03	19.17

Node Summary

33011-EX DRG-25 YEAR

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft ²	External Inflow
DP-01	OUTFALL	5838.00	5838.00	0.00	
DP-02	OUTFALL	5840.00	5840.00	0.00	
DP-03	OUTFALL	5829.00	5829.00	0.00	

	Volume acre-ft	Depth inches
Runoff Quantity Continuity		
Total Precipitation	3.035	0.855
Continuity Error (%)	0.673	

	Volume acre-ft	Volume Mgallons
Flow Routing Continuity		
External Inflow	0.000	0.000
External Outflow	1.291	0.421
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	6.77	C	0.33
Composite Area & Weighted Runoff Coeff.	6.77		0.33

Subbasin EX-02

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
--------------------------	-----------------	---------------	------------------

33011-EX DRG-25 YEAR

MHFD_C_2%_IMPERV	16.66	C	0.33
Composite Area & Weighted Runoff Coeff.	16.66		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

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

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)

33011-EX DRG-25 YEAR

L_f = Flow Length (ft)
 V = Velocity (ft/sec)
 S_f = Slope (ft/ft)

Channel Flow Equation

$V = (1.49 * (R^{(2/3)}) * (S_f^{0.5})) / n$
 $R = A_q / W_p$
 $T_c = (L_f / V) / (3600 \text{ sec/hr})$

Where:

T_c = Time of Concentration (hrs)
 L_f = Flow Length (ft)
 R = Hydraulic Radius (ft)
 A_q = Flow Area (ft²)
 W_p = Wetted Perimeter (ft)
 V = Velocity (ft/sec)
 S_f = Slope (ft/ft)
 n = Manning's Roughness

Subbasin EX-01

User-Defined TOC override (minutes): 30.00

Subbasin EX-02

User-Defined TOC override (minutes): 30.00

Subbasin EX-03

User-Defined TOC override (minutes): 30.00

 Subbasin Runoff Summary

Subbasin	Accumulated	Rainfall	Total	Peak Weighted	Time of
----------	-------------	----------	-------	---------------	---------

33011-EX DRG-25 YEAR

ID	Precip in	Intensity in/hr	Runoff in	Runoff cfs	Runoff Coeff	Concentration days	hh:mm:ss
EX-01	0.86	1.71	0.28	3.82	0.330	0	00:30:00
EX-02	0.86	1.71	0.28	9.40	0.330	0	00:30:00
EX-03	0.86	1.71	0.28	10.82	0.330	0	00:30:00

Analysis began on: Fri Mar 22 15:25:52 2024
Analysis ended on: Fri Mar 22 15:25:52 2024
Total elapsed time: < 1 sec

33011-DE DRG-25 YEAR

Autodesk® Storm and Sanitary Analysis 2024 - Version 13.6.268 (Build 0)

Project Description

File Name 33011-DE DRG-RATIONAL-25YR.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

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 3

Number of nodes 3

Number of links 0

Subbasin Summary

Subbasin	Total Area
ID	acres
-----	-----
DE-01	8.58
DE-02	14.97
DE-03	19.05

Node Summary

33011-DE DRG-25 YEAR

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft ²	External Inflow
DP-01	OUTFALL	5838.00	5838.00	0.00	
DP-02	OUTFALL	5840.00	5840.00	0.00	
DP-03	OUTFALL	5829.00	5829.00	0.00	

	Volume acre-ft	Depth inches
Runoff Quantity Continuity		
Total Precipitation	3.035	0.855
Continuity Error (%)	0.603	

	Volume acre-ft	Volume Mgallons
Flow Routing Continuity		
External Inflow	0.000	0.000
External Outflow	1.566	0.510
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

Runoff Coefficient Computations Report

Subbasin DE-01

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_25YR_30%_IMPERV	8.58	C	0.49
Composite Area & Weighted Runoff Coeff.	8.58		0.49

Subbasin DE-02

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
--------------------------	-----------------	---------------	------------------

33011-DE DRG-25 YEAR

MHFD_25YR_14%_IMPERV	14.97	C	0.40
Composite Area & Weighted Runoff Coeff.	14.97		0.40

 Subbasin DE-03

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_25YR_7%_IMPERV	19.05	C	0.36
Composite Area & Weighted Runoff Coeff.	19.05		0.36

 SCS TR-55 Time of Concentration Computations Report

Sheet Flow Equation

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

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)

33011-DE DRG-25 YEAR

Lf = Flow Length (ft)
 V = Velocity (ft/sec)
 Sf = Slope (ft/ft)

Channel Flow Equation

$$V = (1.49 * (R^{(2/3)}) * (Sf^{0.5})) / n$$

$$R = Aq / Wp$$

$$Tc = (Lf / V) / (3600 \text{ sec/hr})$$

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 DE-01

 User-Defined TOC override (minutes): 30.00

Subbasin DE-02

 User-Defined TOC override (minutes): 30.00

Subbasin DE-03

 User-Defined TOC override (minutes): 30.00

 Subbasin Runoff Summary

Subbasin	Accumulated	Rainfall	Total	Peak Weighted	Time of
----------	-------------	----------	-------	---------------	---------

33011-DE DRG-25 YEAR

ID	Precip in	Intensity in/hr	Runoff in	Runoff cfs	Runoff Coeff	Concentration	
						days	hh:mm:ss
DE-01	0.86	1.71	0.42	7.19	0.490	0	00:30:00
DE-02	0.86	1.71	0.34	10.24	0.400	0	00:30:00
DE-03	0.86	1.71	0.31	11.73	0.360	0	00:30:00

Analysis began on: Fri Mar 22 15:27:32 2024
Analysis ended on: Fri Mar 22 15:27:32 2024
Total elapsed time: < 1 sec

33011-DE DRG-25 YEAR

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 3

Number of nodes 9

Number of links 9

Subbasin Summary

Subbasin	Total Area acres
DE-01	8.58
DE-02	14.97
DE-03	19.05

33011-DE DRG-25 YEAR

Node Summary

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft ²	External Inflow
J-01	JUNCTION	5838.50	5839.50	0.00	
J-02	JUNCTION	5840.10	5841.60	0.00	
J-03	JUNCTION	5830.00	5831.50	0.00	
DP-01	OUTFALL	5838.00	5839.00	0.00	
DP-02	OUTFALL	5840.00	5841.00	0.00	
DP-03	OUTFALL	5829.00	5830.00	0.00	
DET-01	STORAGE	5840.00	5842.50	0.00	
DET-02	STORAGE	5840.20	5842.70	0.00	
DET-03	STORAGE	5866.00	5868.50	0.00	

Link Summary

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Link-01	DET-01	J-01	CHANNEL	58.8	5.9554	0.0320
LINK-01A	J-01	DP-01	CHANNEL	5.0	10.0000	0.0320
LINK-02	DET-02	J-02	CHANNEL	5.0	42.0000	0.0320
LINK-02A	J-02	DP-02	CHANNEL	5.0	2.0000	0.0320
Link-03	DET-03	J-03	CHANNEL	291.0	13.0575	0.0320
LINK-03A	J-03	DP-03	CHANNEL	29.0	3.4495	0.0320
ORIF-01	DET-01	J-01	ORIFICE			
ORIF-02	DET-02	J-02	ORIFICE			
ORIF-03	DET-03	J-03	ORIFICE			

Cross Section Summary

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft ²	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Link-01	TRAPEZOIDAL	1.00	11.00	1	7.00	0.62	57.83
LINK-01A	TRAPEZOIDAL	1.00	13.00	1	9.00	0.68	102.14
LINK-02	TRAPEZOIDAL	1.00	13.00	1	9.00	0.68	209.33
LINK-02A	TRAPEZOIDAL	1.00	13.00	1	9.00	0.68	45.68

33011-DE DRG-25 YEAR

Link-03	TRAPEZOIDAL	1.00	13.00	1	9.00	0.68	116.72
LINK-03A	TRAPEZOIDAL	1.00	13.00	1	9.00	0.68	59.99

*****	Volume	Depth
Runoff Quantity Continuity	acre-ft	inches
*****	-----	-----
Total Precipitation	3.035	0.855
Continuity Error (%)	0.603	

*****	Volume	Volume
Flow Routing Continuity	acre-ft	Mgallons
*****	-----	-----
External Inflow	0.000	0.000
External Outflow	1.558	0.508
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.008	0.003
Continuity Error (%)	0.000	

Runoff Coefficient Computations Report

Subbasin DE-01

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_25YR_30%_IMPERV	8.58	C	0.49
Composite Area & Weighted Runoff Coeff.	8.58		0.49

Subbasin DE-02

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_25YR_14%_IMPERV	14.97	C	0.40
Composite Area & Weighted Runoff Coeff.	14.97		0.40

Subbasin DE-03

33011-DE DRG-25 YEAR

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
MHFD_25YR_7%_IMPERV	19.05	C	0.36
Composite Area & Weighted Runoff Coeff.	19.05		0.36

 SCS TR-55 Time of Concentration Computations Report

Sheet Flow Equation

$$T_c = (0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))$$

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

33011-DE DRG-25 YEAR

$V = (1.49 * (R^{(2/3)}) * (Sf^{0.5})) / n$
 $R = Aq / Wp$
 $Tc = (Lf / V) / (3600 \text{ sec/hr})$

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 DE-01

User-Defined TOC override (minutes): 30.00

 Subbasin DE-02

User-Defined TOC override (minutes): 30.00

 Subbasin DE-03

User-Defined TOC override (minutes): 30.00

 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 hh:mm:ss
DE-01	0.86	1.71	0.42	7.19	0.490	0 00:30:00
DE-02	0.86	1.71	0.34	10.24	0.400	0 00:30:00
DE-03	0.86	1.71	0.31	11.73	0.360	0 00:30:00

33011-DE DRG-25 YEAR

Node Depth Summary

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days hh:mm	Total Flooded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
J-01	0.14	0.18	5838.68	0 00:55	0	0	0:00:00
J-02	0.27	0.50	5840.60	0 00:37	0	0	0:00:00
J-03	0.22	0.41	5830.41	0 00:38	0	0	0:00:00
DP-01	0.12	0.15	5838.15	0 00:55	0	0	0:00:00
DP-02	0.22	0.41	5840.41	0 00:37	0	0	0:00:00
DP-03	0.21	0.38	5829.38	0 00:38	0	0	0:00:00
DET-01	1.34	1.99	5841.99	0 00:55	0	0	0:00:00
DET-02	0.89	1.75	5841.95	0 00:37	0	0	0:00:00
DET-03	0.98	1.99	5867.99	0 00:38	0	0	0:00:00

Node Flow Summary

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days hh:mm
J-01	JUNCTION	0.00	3.37	0 00:55	0.00	
J-02	JUNCTION	0.00	8.72	0 00:37	0.00	
J-03	JUNCTION	0.00	9.71	0 00:38	0.00	
DP-01	OUTFALL	0.00	3.37	0 00:55	0.00	
DP-02	OUTFALL	0.00	8.72	0 00:37	0.00	
DP-03	OUTFALL	0.00	9.71	0 00:38	0.00	
DET-01	STORAGE	7.19	7.19	0 00:30	0.00	
DET-02	STORAGE	10.24	10.24	0 00:30	0.00	
DET-03	STORAGE	11.73	11.73	0 00:30	0.00	

33011-DE DRG-25 YEAR

Storage Node Summary

Storage Node ID	Maximum Ponded Volume 1000 ft ³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days hh:mm	Average Ponded Volume 1000 ft ³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft ³
DET-01	7.206	67	0 00:55	3.956	37	3.37	0.00	0:00:00	0.000
DET-02	2.931	52	0 00:37	1.181	21	8.72	0.00	0:00:00	0.000
DET-03	3.332	64	0 00:38	1.283	25	9.71	0.00	0:00:00	0.000

Outfall Loading Summary

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
DP-01	99.56	2.42	3.37
DP-02	78.64	5.09	8.72
DP-03	95.21	4.82	9.71
System	91.14	12.33	21.55

Link Flow Summary

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 Time Surcharged minutes	Reported Condition
Link-01	CHANNEL	0 00:00	0.00	1.00	0.00	57.83	0.00	0.09	0	Calculated
LINK-01A	CHANNEL	0 00:55	3.61	1.00	3.37	102.14	0.03	0.17	0	Calculated
LINK-02	CHANNEL	0 00:00	0.00	1.00	0.00	209.33	0.00	0.25	0	Calculated
LINK-02A	CHANNEL	0 00:37	2.81	1.00	8.72	45.68	0.19	0.45	0	Calculated
Link-03	CHANNEL	0 00:00	0.00	1.00	0.00	116.72	0.00	0.20	0	Calculated
LINK-03A	CHANNEL	0 00:38	3.75	1.00	9.71	59.99	0.16	0.39	0	Calculated

33011-DE DRG-25 YEAR

ORIF-01	ORIFICE	0	00:55	3.37	1.00
ORIF-02	ORIFICE	0	00:37	8.72	1.00
ORIF-03	ORIFICE	0	00:38	9.71	1.00

Highest Flow Instability Indexes

All links are stable.

WARNING 106 : Max/rim elevation defined for Junction J-01 is below junction invert elevation.
Assumed max/rim elevation equal to invert elevation.

WARNING 106 : Max/rim elevation defined for Junction J-02 is below junction invert elevation.
Assumed max/rim elevation equal to invert elevation.

WARNING 106 : Max/rim elevation defined for Junction J-03 is below junction invert elevation.
Assumed max/rim elevation equal to invert elevation.

Analysis began on: Fri Mar 22 15:28:22 2024

Analysis ended on: Fri Mar 22 15:28:22 2024

Total elapsed time: < 1 sec

EASEMENT AGREEMENT FOR WILDHORSE DRIVE

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When recorded return to:
 Davis & Ceriani, P.C.
 1350 Seventeenth Street, Suite 400
 Denver, Co 80202
 Attention: Edward R. Gorab

EASEMENT AGREEMENT
(Wildhorse Drive)

THIS EASEMENT AGREEMENT (this "Agreement") is made as of this 16th day of April, 2007, by and between **CTS Investments, LLC**, a Colorado limited liability company ("**CTS**"), whose address is 104 Cardinal Lane, Glenwood Springs, CO 81601 and **Village Homes of Colorado, Inc.**, a Colorado corporation ("**VHC**") whose address is 100 Inverness Terrace East, Suite 200, Englewood, Colorado 80112. VHC and CTS may be referred to individually herein as "Party" and collective as "Parties".

RECITALS

A. VHC has this day purchased certain real property from CTS, which property is more particularly described on **Exhibit A**, attached hereto and incorporated herein ("**VHC Parcel**").

B. CTS owns certain real property which is described on **Exhibit B**, attached hereto and incorporated herein ("**CTS Parcel**"), and which is adjacent or near to the VHC Parcel. CTS also owns certain real property which is described in the attached **Exhibit D** ("**Commercial Parcel**")

C. The Parcels are subject to that certain Town of New Castle ("**Town**"), Colorado Ordinance No. 2006-11 which is recorded in the real estate records of Garfield County as Reception No. 703902 ("**Town Ordinance**"). The CTS Parcel, Commercial Parcel and VHC Parcel are referred to in this Agreement together as the "Parcels" or individually as a "Parcel."

AGREEMENT

NOW THEREFORE, in consideration of the mutual covenants hereinafter set forth, and other good and valuable consideration, the receipt and sufficiency of which are hereby mutually acknowledged, the parties hereto agree as follows:

1. Approval of Alignments, Road Sections and Elevations for Wildhorse Drive and Dedication Agreement. The Parties hereby approve the preliminary alignment, road sections and elevations for construction of portions of Wildhorse Drive which are attached hereto as **Exhibit C**, attached hereto and incorporated herein. Each of the Parties agrees to dedicate to the Town any portion on that Party's Parcel of the right of way of Wildhorse Drive as shown on **Exhibit C**, or in such locations required if the Town requires changes in the alignment, road sections or elevation (or if changes are recommended by Schmueser Gordon Meyer, Inc. or other engineer approved by both Parties ("**SGM**") for final design of Wildhorse Drive) and that Party approves the change as described below, within 30 days after written request from the Town or the other party. The Parties agree to diligently pursue approval by the Town of the alignment and elevations of Wildhorse Drive as shown on **Exhibit C**. If despite such diligent efforts the Town requires changes in the alignment, road sections or elevation of Wildhorse Drive prior to dedication, or if changes are recommended by SGM, each Party shall have the right to review and approve said changes, which approval may be withheld in that Party's sole and absolute discretion but response to such changes shall not be unreasonably delayed by either Party.

2. Grant of Construction Easement. CTS hereby grants, creates and establishes to VHC, its successors and assigns, and their respective invitees, guests, occupants, tenants, contractors and licensees, a temporary, non-exclusive easement ("**Construction Easement**") on, over, across and through those portions of the Parcels which are identified for that purpose on **Exhibit C**: (a) for the purposes of

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constructing Wildhorse Drive (including street, curb, gutter, sidewalks, water, sanitary and storm sewer lines and facilities, gas, cable, electric, telephone and related lines and facilities, and all other utilities required by the Town for the development of the VHC Parcel); and (b) for the purpose of the Slope Easement described in the next Section of this Agreement. If VHC does not construct all of the portions of Wildhorse Drive shown in Exhibit C on or before the earlier of: (i) termination of that certain Purchase and Sale and Option Agreement between CTS and VHC dated January 17, 2007; or (ii) within three years after the date of this Agreement, then beginning on one day after the earlier of (i) or (ii) above, and for so long as is required to complete Wildhorse Drive, VHC grants, creates and establishes to CTS, its successors and assigns, and their respective invitees, guests, occupants, tenants, contractors and licensees, a temporary, non-exclusive easement for the purposes described in (a) and (b) above on, over, across and through those portions of the VHC Parcel which are identified for that purpose on Exhibit C. If a change in the alignment or elevation of Wildhorse Drive is approved by the Parties as described in Section 1 above, then each Party shall grant the Construction Easement pursuant to this Section 2 in the location necessitated by said change within 30 days after receipt of written request from the other Party.

3. Grant of Slope Easement. The dedication to the Town described in Section 1 above shall include perpetual, non-exclusive slope easements on, over, across and through those portions of the Parcels described as being for that purpose on Exhibit C, for the purpose of constructing, maintaining, repairing and replacing inclined and/or declined graded areas occasioned by or resulting from the roadway improvements to be constructed pursuant to the Construction Easement ("Slope Easements"). The Parties agree to execute, deliver and record such additional documents as may be necessary or convenient to modify the Slope Easements to accommodate the subsequent development as approved by the Town of the Parcels. The final Slope Easement shall be determined by the as-built plans of the Commercial Parcel re-grade as determined by CTS's engineer and approved by the Town.

4. Damage. If any portion of the CTS Parcel is damaged as result of VHC exercising its rights hereunder, VHC shall repair the damaged property to substantially its condition prior to such damage and shall defend, indemnify and hold harmless CTS from and against all loss, liabilities, claims, costs and expenses of every nature (including without limitation reasonable attorneys fees and all costs and expenses of any action or proceeding) arising from or related to such damage. If any portion of the VHC Parcel is damaged as result of CTS exercising its rights hereunder, CTS shall repair the damaged property to substantially its condition prior to such damage and shall defend, indemnify and hold harmless VHC from and against all loss, liabilities, claims, costs and expenses of every nature (including without limitation reasonable attorneys fees and all costs and expenses of any action or proceeding) arising from or related to such damage.

5. Insurance. Prior to the exercise of any of its easement rights granted herein, VHC shall deliver to CTS a certificate evidencing the existence of comprehensive general liability insurance, naming CTS as an additional insured insuring against claims for personal injury, including death, and property damage with coverage of not less than \$1,000,000.00 per occurrence and \$2,000,000.00 general aggregate coverage. Prior to the exercise of any of its easement rights granted herein, CTS shall deliver to VHC a certificate evidencing the existence of comprehensive general liability insurance, naming VHC as an additional insured insuring against claims for personal injury, including death, and property damage with coverage of not less than \$1,000,000.00 per occurrence and \$2,000,000.00 general aggregate coverage.

6. Authority; Further Assurances. Each of the Parties warrants and represents to the other Party that they have the full power and authority to make, deliver, enter into and perform the terms and conditions of this Agreement. The Parties agree to take all such further action and to execute and deliver such additional documents as may be reasonably required to fully effectuate the terms and provisions of this Agreement and the transactions contemplated herein. For example, each Party shall cooperate with the other in obtaining any additional approvals from the Town to fulfill the terms of this Agreement.

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7. Town Ordinance. Each Party agrees that nothing in this Agreement limits the Parties' obligations under the Town Ordinance. If a Party has not dedicated to the Town right-of-way which the Town accepts in satisfaction of that Party's obligation to dedicate right-of-way pursuant to the Town Ordinance on or before June 1, 2026, then the other Party shall have the right to compel the non-performing Party to dedicate to the Town such a satisfactory right-of-way utilizing any remedies available at law or in equity, including without limitation claims for specific performance and/or injunctive relief.

8. No Effect on Option Agreement. Nothing in this Agreement shall limit or expand the Parties' respective rights or obligations under the Purchase and Sale and Option Agreement dated January 17, 2007, as amended, between CTS and VHC.

9. Miscellaneous Provisions.

a. No Liens. Nothing contained herein shall authorize VHC, or any person or entity acting through, with, or on behalf of VHC, to subject any lands owned by CTS, or any portion thereof or interest therein, to mechanics' liens. If any such lien shall be recorded against the lands owned by CTS, and VHC in any way caused or permitted such lien, VHC shall cause the lien to be released of record within 20 days after the lien's filing. In the event that such lien is not discharged within 20 days after the filing of the lien, then CTS, at its option, and at the sole cost and expense of VHC, including attorneys' fees, may settle, compromise or pay said lien, or may enter into, defend, prosecute or pursue any effort or action (whether or not litigation is involved) which CTS deems reasonably necessary to defend any lands owned by CTS from and against such lien. Any lien against all or any portion of the CTS Parcels not released in accordance with this provision shall constitute damage to the CTS Parcels under Section 4 of this Agreement. Nothing contained herein shall authorize CTS, or any person or entity acting through, with, or on behalf of CTS, to subject any lands owned by VHC, or any portion thereof or interest therein, to mechanics' liens. If any such lien shall be recorded against the lands owned by VHC, and CTS in any way caused or permitted such lien, CTS shall cause the lien to be released of record within 20 days after the lien's filing. In the event that such lien is not discharged within 20 days after the filing of the lien, then VHC, at its option, and at the sole cost and expense of CTS, including attorneys' fees, may settle, compromise or pay said lien, or may enter into, defend, prosecute or pursue any effort or action (whether or not litigation is involved) which VHC deems reasonably necessary to defend any lands owned by VHC from and against such lien. Any lien against all or any portion of the VHC Parcels not released in accordance with this provision shall constitute damage to the VHC Parcels under Section 4 of this Agreement.

b. Modification. This Agreement states the entire agreement of the Parties concerning its subject matter, and it may not be amended, modified or supplemented except in a writing executed by both CTS and VHC. No term of this Agreement shall be waived unless done so in writing by the Party benefited by such term.

c. Choice of Law; Venue; Jury Waiver. This Agreement and all disputes arising hereunder shall be governed by and construed in accordance with the laws of the State of Colorado without giving effect to its choice-of-law principles, and jurisdiction and venue shall be proper in the state courts of Garfield County, Colorado, to which jurisdiction and venue the Parties submit themselves by signing this Agreement. Each party waives all rights to any jury in any claim, action or proceeding concerning this Agreement to the maximum extent permitted by law.

d. Severability. If any one or more of the provisions of this Agreement, or its application, shall be invalid or illegal or unenforceable in any respect, then the validity, legality, enforceability of the remaining provisions of this Agreement, and any other application of them, shall not

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be affected or impaired and shall be enforced to the greatest extent permitted by law; provided, that the remaining provisions of this Agreement not determined to be invalid, illegal, or unenforceable shall be interpreted and enforced so as to implement, to the maximum extent possible, the intent of the parties entering into this Agreement as evidenced by all of its terms, conditions, and provisions, including any that have been determined to be invalid, illegal, or unenforceable.

e. Construction. The rule of strict construction shall not apply to this Agreement. This Agreement shall not be interpreted in favor of or against either CTS or VHC merely because of their respective efforts in preparing it.

f. Binding Effect. This Agreement shall inure to the benefit of and shall bind the respective heirs, executors, administrators, successors and assigns of CTS and VHC and shall bind and run with all of the Parcels.

g. Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be an original, but all of which together shall constitute one instrument.

h. Time of the Essence. Time is of the essence in all aspects, terms and conditions of this Agreement.

i. Attorney's Fees. The prevailing Party in any action or proceeding concerning this Agreement shall recover its reasonable attorney's fees in addition to any other relief or remedy to which that Party is entitled.

j. Headings. All section, subsection and paragraph headings of this Agreement are for convenience only and shall not effect interpretation or enforceability of this Agreement.

k. No Third-Party Beneficiaries. The agreements contained herein are solely for the benefit of the parties hereto and no other person or entity shall be a third party beneficiary thereof.

l. Notice. Unless notice is expressly required to be given in another manner by applicable law, notice required or permitted by this Agreement shall be in writing, signed by or on behalf of the party giving the notice, addressed to the party to receive notice of that party's address stated below (unless notice of change of address is given in the same manner stated in this Section), and delivered by personal delivery, United States certified mail (return receipt requested and postage prepaid), courier service requiring signed receipt for delivery (such as Federal Express), or facsimile transmission. Any notice will be effective upon receipt, except that notice by facsimile transmission shall be effective upon completion of transmission and shall be effective if, upon completion and only if, the sender is able to provide facsimile machine-generated confirmation of completion of transmission. For purposes of notice under this Contract, VHC's address and CTS's address are as follows (with notice required to be given to each address specified to be effective, except that a single notice may be addressed to both Mark Osborn and Peter Benson):

VHC: Mark Osborn
 Peter Benson
 Village Homes of Colorado, Inc.
 100 Inverness Terrace East, Suite 200
 Englewood, CO 80112
 (Facsimile 303-795-1467)

AND TO

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Edward R. Gorab
Davis & Ceriani, P.C.
1350 17th Street, Suite 400
Denver, CO 80202
(Facsimile 303-534-4618)

CTS:

Steven E. Craven
CTS Investments, LLC
104 Cardinal Lane
Glenwood Springs, CO 81601
(Facsimile 970-928-8837)

AND TO

Dufford, Waldeck, Milburn & Krohn, L.L.P.
ATTN: Richard H. Krohn
744 Horizon Court, Suite 300
Grand Junction, CO 81506
(Facsimile 970-243-7738)

m. Recitals. All of the above Recitals are true and are incorporated into this Agreement.

[The remainder of this page is intentionally left blank.]

THW

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IN WITNESS WHEREOF, the parties have placed their signatures and seals on this Agreement as of the date and year first written above pursuant to all necessary authority.

VHC:

Village Homes of Colorado, Inc.

By: [Signature]
 Name: JOHN E. OSBORN
 Its: CEO

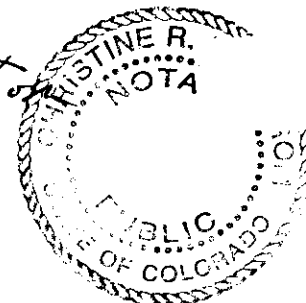
STATE OF COLORADO)
) ss.
 COUNTY OF Arapahoe

The foregoing instrument was acknowledged before me this 16th day of April, 2007, by John E. Osborn, CEO of Village Homes of Colorado, Inc.

Witness my hand and official seal.

My commission expires: 7/1/2010

Christine R. Christensen
 Notary Public



[Signature]

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CTS:

CTS Investments, LLC

By: CTS Services, LLC, its Manager

By: Steven E. Craven
Steven E. Craven, Manager

STATE OF COLORADO)
COUNTY OF Garfield) ss.

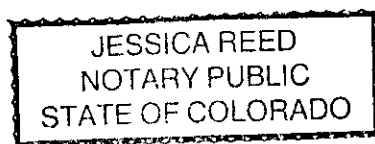
The foregoing instrument was acknowledged before me this 16th day of April, 2007, by Steven E. Craven as Manager of CTS Services, LLC, Manager of CTS Investments, LLC.

Witness my hand and official seal.

My commission expires: 8/2/07

Jessica Reed
Notary Public

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My Commission Expires Aug. 2, 2007

MMO

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EXHIBIT A
Legal Description of VHC Parcel

INITIAL PROPERTY 3

A PARCEL OF LAND SITUATE 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:

COMMENCING AT THE 1/4 CORNER BETWEEN SAID SECTIONS 29 AND 30, A BLM BRASS CAP IN PLACE; THENCE S27°20'37"E 2941.40 FEET TO A POINT ON THE WESTERLY LINE OF LAKOTA CANYON RANCH, FIRST AMENDED PLAT FILING NO. 1 AS FILED WITH THE GARFIELD COUNTY CLERK AND RECORDER'S OFFICE AS RECEPTION NO. 632116, THE TRUE POINT OF BEGINNING; THENCE DEPARTING SAID WESTERLY LINE S90°00'00"W 34.26 FEET; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 300.00 FEET, AN ARC LENGTH OF 123.32 FEET, CHORD BEARS S78°13'25"W 122.46 FEET; THENCE S66°26'50"W 88.64 FEET; THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 300.00 FEET, AN ARC LENGTH OF 180.86 FEET, CHORD BEARS S83°43'05"W 178.13 FEET; THENCE N79°00'40"W 277.49 FEET; THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 300.00 FEET, AN ARC LENGTH OF 273.25 FEET, CHORD BEARS N52°55'05"W 263.90 FEET; THENCE N26°49'30"W 358.53 FEET; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 175.00 FEET, AN ARC LENGTH OF 218.29 FEET, CHORD BEARS N62°33'33"W 204.41 FEET; THENCE S81°42'24"W 142.08 FEET; THENCE S08°42'12"E 51.58 FEET; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 855.84 FEET, AN ARC LENGTH OF 209.29 FEET, CHORD BEARS S15°42'32"E 208.77 FEET; THENCE S65°53'03"W 97.34 FEET; THENCE S81°23'34"W 266.32 FEET; THENCE S51°51'16"W 126.84 FEET; THENCE S36°47'12"W 88.30 FEET TO A POINT ON THE NORTHERLY RIGHT-OF-WAY LINE OF CASTLE VALLEY BOULEVARD AS FILED WITH THE GARFIELD COUNTY CLERK AND RECORDER'S OFFICE AS RECEPTION NO. 574735; THENCE ALONG SAID NORTHERLY RIGHT-OF-WAY THE FOLLOWING NINE (9) COURSES:

- 1.) S34°40'33"E 927.02 FEET
- 2.) ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 762.01 FEET, AN ARC LENGTH OF 620.22 FEET, CHORD BEARS S57°59'36"E 603.25 FEET;
- 3.) S81°18'39"E 261.25 FEET;
- 4.) ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 819.98 FEET, AN ARC LENGTH OF 395.62 FEET, CHORD BEARS S67°29'21"E 391.79 FEET;
- 5.) ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 140.42 FEET, AN ARC LENGTH OF 11.84 FEET, CHORD BEARS N87°15'43"E 11.84 FEET;
- 6.) ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 86.00 FEET, AN ARC LENGTH OF 136.02 FEET, CHORD BEARS S49°50'45"E 122.28 FEET;
- 7.) ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 170.42 FEET, AN ARC LENGTH OF 16.26 FEET, CHORD BEARS S07°16'18"E 16.26 FEET;
- 8.) ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 819.98 FEET, AN ARC LENGTH OF 70.54 FEET, CHORD BEARS S41°12'06"E 70.52 FEET;
- 9.) S38°44'14"E 63.19 FEET TO A POINT ON SAID WESTERLY LINE OF LAKOTA CANYON RANCH, FIRST AMENDED PLAT FILING NO. 1 AS FILED WITH THE GARFIELD COUNTY CLERK AND RECORDER'S OFFICE AS RECEPTION NO. 632116; THENCE ALONG SAID WESTERLY LINE THE FOLLOWING NINE (9);
- 1.) N01°19'33"W 284.64 FEET;
- 2.) N00°50'46"W 298.08 FEET;
- 3.) N01°24'24"W 405.00 FEET;
- 4.) N01°13'24"W 135.00 FEET;
- 5.) N03°05'23"E 23.82 FEET;
- 6.) N01°46'46"W 247.13 FEET;
- 7.) S88°47'17"W 2.05 FEET;

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- 8.) N01°19'33"W 12.43 FEET TO THE WEST 1/16 CORNER OF SECTIONS 29 AND 32 A REBAR AND ALUMINUM CAP LS NO. 36572 IN PLACE;
- 9.) N00°55'44"W 17.57 FEET TO THE POINT OF BEGINNING. SAID PARCEL OF LAND CONTAINING 42.000 ACRES, MORE OR LESS.

Reception#: 721301

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10 of 12 Rec Fee:\$61.00 Doc Fee:0.00 GARFIELD COUNTY CO

EXHIBIT B
Legal Description of CTS Parcel

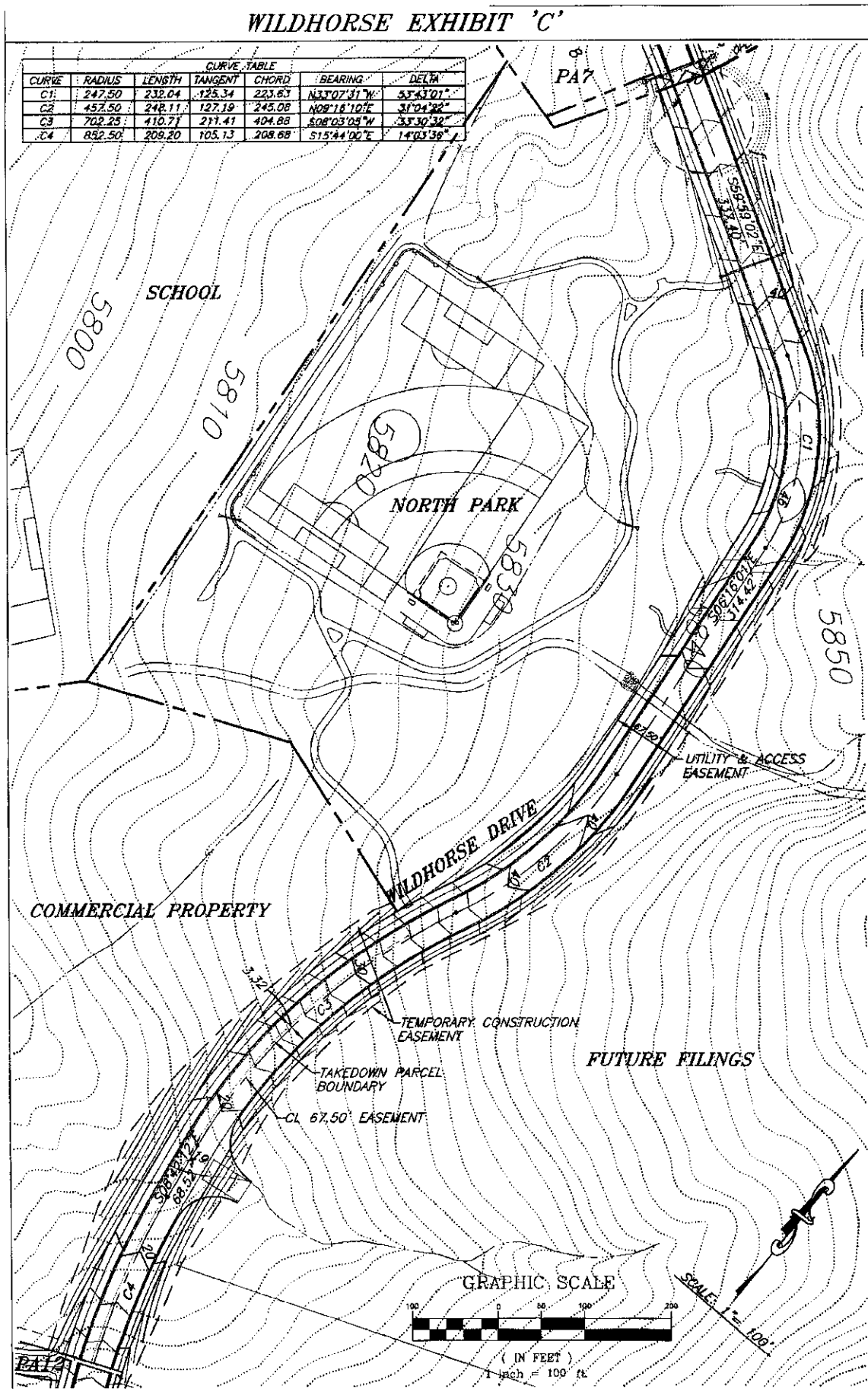
OPTION PROPERTY

A PARCEL OF LAND SITUATE 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 BLM BRASS CAP IN PLACE; THENCE N89°36'48"E ALONG THE SOUTHERLY LINE OF THE AMENDED AND RESTATED SUBDIVISION EXCLUSION/EXEMPTION OF LAKOTA CANYON RANCH AS FILED WITH THE GARFIELD COUNTY CLERK AND RECORDER'S OFFICE AS RECEPTION NO. 632118 A DISTANCE OF 1308.59 FEET TO A POINT ON THE WESTERLY LINE OF SAID EXEMPTION; THENCE DEPARTING SAID SOUTHERLY LINE S00°55'44"E ALONG SAID WESTERLY LINE 2126.92 FEET; THENCE CONTINUING ALONG SAID WESTERLY LINE N88°47'17"E 0.99 FEET TO A POINT ON THE WESTERLY LINE OF LAKOTA CANYON RANCH, FIRST AMENDED PLAT FILING NO. 1, AS FILED WITH THE GARFIELD COUNTY CLERK AND RECORDER'S OFFICE AS RECEPTION NO. 632116; THENCE DEPARTING SAID WESTERLY LINE S01°21'08"E AND ALONG SAID WESTERLY LINE OF SAID LAKOTA CANYON RANCH, FIRST AMENDED PLAT FILING NO. 1, A DISTANCE OF 465.00 FEET; THENCE S88°47'17"W ALONG SAID WESTERLY LINE 4.42 FEET; THENCE ALONG SAID WESTERLY LINE S00°55'44"E 30.00 FEET; THENCE DEPARTING SAID WESTERLY LINE S90°00'00"W 34.26 FEET; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 300.00 FEET, AN ARC LENGTH OF 123.32 FEET, CHORD BEARS S78°13'25"W 122.46 FEET; THENCE S66°26'50"W 88.64 FEET; THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 300.00 FEET, AN ARC LENGTH OF 180.86 FEET, CHORD BEARS S83°43'05"W 178.13 FEET; THENCE N79°00'40"W 277.49 FEET; THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 300.00 FEET, AN ARC LENGTH OF 273.25 FEET, CHORD BEARS N52°55'05"W 263.90 FEET; THENCE N26°49'30"W 358.53 FEET; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 175.00 FEET, AN ARC LENGTH OF 218.29 FEET, CHORD BEARS N62°33'33"W 204.41 FEET; THENCE S81°42'24"W 142.08 FEET; THENCE N08°42'12"W 16.95 FEET; THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 705.58 FEET, AN ARC LENGTH OF 353.92 FEET, CHORD BEARS N05°39'59"E 350.22 FEET; THENCE N71°52'33"W 30.43 FEET; THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 736.00 FEET, AN ARC LENGTH OF 62.29 FEET, CHORD BEARS N22°22'53"E 62.27 FEET; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 423.75 FEET, AN ARC LENGTH OF 229.81 FEET, CHORD BEARS N09°16'10"E 227.00 FEET; THENCE N06°16'01"W 314.43 FEET; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 213.75 FEET, AN ARC LENGTH OF 200.40 FEET, CHORD BEARS N33°07'31"W 193.14 FEET; THENCE N59°59'02"W 337.87 FEET TO A POINT ON THE EASTERLY LINE OF CASTLE VALLEY RANCH, PA7 AS FILED WITH THE CLERK AND RECORDER'S OFFICE OF GARFIELD COUNTY AS RECEPTION NO. 571729; THENCE ALONG SAID EASTERLY LINE THE FOLLOWING FOUR (4) COURSES:

- 1.) N30°49'03"E 60.80 FEET;
- 2.) N21°44'01"E 138.82 FEET;
- 3.) N02°06'39"E 226.38 FEET;
- 4.) N00°23'12"W 381.09 FEET TO A POINT ON THE CENTER SECTION LINE OF SAID SECTION 30; THENCE DEPARTING SAID EASTERLY LINE OF PA7 S89°47'18"E ALONG SAID CENTER SECTION LINE 308.87 FEET TO THE POINT OF BEGINNING. SAID PARCEL OF LAND CONTAINING 82.746 ACRES, MORE OR LESS.

RMO



Prepared by: SCHEIDT & BORDEN MEYER, INC. File: WildhorseExhibitC Job No: 2000-186,918 Date: 04/17/07 By: RJA

Handwritten signature/initials

Reception#: 721301

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12 of 12 Rec Fee:\$61.00 Doc Fee:0.00 GARFIELD COUNTY CO

EXHIBIT D
(Commercial Property)

COMMERCIAL PROPERTY

A PARCEL OF LAND SITUATE IN THE SE1/4 SECTION 30, 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:

COMMENCING AT THE 1/4 CORNER BETWEEN SAID SECTIONS 29 AND 30, A BLM BRASS CAP IN PLACE; THENCE S10°20'34"W 2610.05 FEET TO A POINT ON THE NORTHERLY RIGHT-OF-WAY LINE OF CASTLE VALLEY BOULEVARD AS FILED WITH THE GARFIELD COUNTY CLERK AND RECORDER'S OFFICE AS RECEPTION NO. 574735, THE TRUE POINT OF BEGINNING; THENCE ALONG SAID NORTHERLY RIGHT-OF-WAY THE FOLLOWING FIVE (5) COURSES:

- 1.) THENCE N34°40'33"W 220.40 FEET;
- 2.) ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 150.00 FEET, AN ARC LENGTH OF 93.27 FEET, CHORD BEARS N16°51'46"W 91.77 FEET;
- 3.) ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 95.83 FEET, AN ARC LENGTH OF 129.60 FEET, CHORD BEARS N37°47'30"W 119.95 FEET;
- 4.) ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 100.00 FEET, AN ARC LENGTH OF 63.58 FEET, CHORD BEARS N58°19'04"W 62.52 FEET;
- 5.) ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 784.64 FEET, AN ARC LENGTH OF 94.58 FEET, CHORD BEARS N43°33'19"W 94.52 FEET TO A POINT ON THE EASTERLY LINE OF THE GARFIELD COUNTY SCHOOL DISTRICT RE-2 (KATHRYN SENOR ELEMENTARY SCHOOL), AS FILED WITH THE GARFIELD COUNTY CLERK AND RECORDER'S OFFICE AS RECEPTION NO. 493428, THENCE DEPARTING SAID NORTHERLY RIGHT-OF-WAY N42°59'30"E ALONG SAID EASTERLY LINE 500.54 FEET; THENCE DEPARTING SAID EASTERLY LINE N66°57'08"E 245.52 FEET; THENCE S71°52'33"E 262.10 FEET; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 705.58 FEET, AN ARC LENGTH OF 353.92 FEET, CHORD BEARS S05°39'59"W 350.22 FEET; THENCE S08°42'12"E 68.53 FEET; THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 855.84 FEET, AN ARC LENGTH OF 209.29 FEET, CHORD BEARS S15°42'32"E 208.77 FEET; THENCE S65°53'03"W 97.34 FEET; THENCE S81°23'34"W 266.32 FEET; THENCE S51°51'16"W 126.84 FEET; THENCE S36°47'12"W 88.30 FEET TO THE POINT OF BEGINNING. SAID PARCEL OF LAND CONTAINING 10.766 ACRES, MORE OR LESS.

M:\wp\11722\003\Easement Agmt-Wildhorse (04-10-07).DOC

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WMO

LEGAL WATER SUPPLY



A Mountain Law Firm

Chad J. Lee
 901 Grand Ave, Ste. 201
 Glenwood Springs, Colorado, 81601
 (970) 945-8659
 chad@jvamlaw.com

May 3, 2024

Via Email

Town of New Castle
 c/o Paul Smith
 Town Planner
 psmith@newcastlecolorado.org

Re: 9 N Wildhorse Legal Water Supply

Dear Paul:

This letter confirms an adequate legal water supply for the 9 N Wildhorse Project. As you know, the Second Amended Annexation Agreement for Castle Valley Ranch requires developers to dedicate certain water rights to the Town. Attached as **Exhibit A** is a 2011 Water Ownership Agreement confirming ownership of water rights between the various owners in Castle Valley Ranch. This agreement confirmed that the current owner of the property, CTS Investments, LLC owned the following amounts:

- Coryell Ditch: 0.3863 cfs
- Coryell Ditch Third Enlargement: 0.6758 cfs

CTS has only issued one conveyance water rights since 2011. In 2021, CTS conveyed 0.07 cfs of the Coryell Ditch and 0.1225 cfs of the Coryell Ditch Third Enlargement to TC Midwest, LLC per that certain Bargain and Sale Deed recorded September 22, 2021, and recorded as Reception No. 963576. As a result, CTS current owns the following:

- Coryell Ditch: 0.3163 cfs
- Coryell Ditch Third Enlargement: 0.5533 cfs.

Aspen

Basalt

Buena Vista

Glenwood Springs

Salida

P.O. Box 878, Glenwood Springs, CO 81602



A Mountain Law Firm

Attached as **Exhibit B** is our engineer's calculation of the water required by this project, specifically:

- Coryell Ditch: 0.065
- Coryell Ditch Third Enlargement: 0.11375.

As such, the Seller has sufficient legal water supply to serve the project. Therefore, this letter serves as confirmation that the Seller (CTS Investments, LLC): (a) has sufficient legal water rights to serve the project, and (b) is committed to conveying sufficient water at closing to the Buyer for this project, and ultimately the Town of New Castle. Please let us know if you have any additional questions.

Best regards,

JVAM PLLC

By: _____
Chad Lee
Partner

Exhibit A

Water Ownership Agreement

AGREEMENT

This agreement ("Agreement") is entered into this ^{August} ~~11th~~ day of ~~May~~, 2011 by and between the Town of New Castle, Colorado, a Colorado municipal corporation ("Town"); CVR Investors, Inc., a Colorado corporation ("Investors"); CTS Investments, LLC, a Colorado limited liability company ("CTS"); CVR Development, LLC, a Colorado limited liability company ("CVR Development"); Eric C. Williams ("Williams"); Land Discovery, Inc., a Colorado corporation ("Land Discovery"); Williams Family Investments Company, LLLP, a Colorado limited liability limited partnership ("Williams Family Investments"); and Pine Mountain Mortgage, Inc., a Colorado corporation ("Pine Mountain"). CVR Development, Williams, Land Discovery, Williams Family Investments, and Pine Mountain are collectively referred to as the "Williams Entities". The Town, Investors, CTS, and the Williams Entities are collectively referred to herein as the "Parties".

Recitals:

A. WHEREAS, each of the Parties currently owns a certain interest in and to the following water rights:

- Coryell Ditch, Priority No. 11, adjudicated in Civil Action No. 103, District Court in and for Garfield County, on May 11, 1889; and the Coryell Ditch, Third Enlargement, Priority No. 220-S, adjudicated in Civil Action No. 3431, District Court in and for Garfield County, on January 11, 1943 (the "Coryell Rights");
- Red Rock Ditch, adjudicated in Civil Action No. 941, District Court, in and for Garfield County, on December 16, 1901, Red Rock Ditch First Enlargement, adjudicated in Civil Action No. 1690, District Court, in and for Garfield County, on February 26, 1914, and the Red Rock Ditch Second Enlargement, adjudicated in Civil Action No. 3431, District Court, in and for Garfield County, on January 11, 1943 (the "Red Rock Rights"); and
- An interest in the plan for augmentation decreed in Case No. 87CW373, District Court, Water Division 5, which changed the Coryell Rights and Red Rock Rights to allow these water rights to be used within the Castle Valley Ranch P.U.D. as described in that Decree.

B. WHEREAS, by this Agreement, the Parties wish to attest to their ownership interest in the Coryell Rights and the Red Rock Rights.

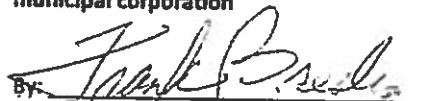
NOW THEREFORE, for and in consideration of the mutual promises and covenants contained herein, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. Town Ownership Summary. The Town acknowledges and agrees that, as of the date of this Agreement, it owns those interests in the Coryell Rights and the Red Rock Rights set forth in Exhibits A and B, respectively, attached hereto and incorporated herein by reference, as being "Total Currently Owned by Town of New Castle," by virtue of the dedication of such water rights to the Town.
2. Williams Entities Ownership Summary. The Williams Entities acknowledge and agree that, as of the date of this Agreement, they own only those interests in the Coryell Rights and the Red Rock Rights set forth in Exhibits A and B, respectively, as being "Total Currently Owned by Williams Entities."
3. CTS Ownership Summary. CTS acknowledges and agrees that, as of the date of this Agreement, it owns only those interests in the Coryell Rights and the Red Rock Rights set forth in Exhibits A and B, respectively, as being "Total Currently Owned by CTS Investments, LLC."
4. Investors Ownership Summary and Representation and Warranty. Investors acknowledges and agrees that, as of the date of this Agreement, it owns only those interests in the Coryell Rights and the Red Rock Rights set forth in Exhibits A and B, respectively, as being "Total Currently Owned by CVR Investors, Inc." Additionally, Investors represents and warrants to the Town that, by virtue of the conveyances noted in footnote 1 to Exhibit A and in footnote i to Exhibit B, Investors has good and clear title to the water rights listed in Exhibits A and B as being "Total Currently Owned by CVR Investors, Inc." as of the date of this Agreement.
5. Plan for Augmentation. The Parties agree that their ownership interests in the Coryell Rights and Red Rocks Rights entitle each party to a proportionate interest in those water rights as they are subject to the plan for augmentation decreed in Case No. 87CW373, consistent with the terms and conditions of said decree.
6. Prior Agreements. Except with respect to the parties' acknowledgment and agreement and/or warranty regarding the amount of Coryell Rights and Red Rock Rights owned as of the date hereof, nothing herein shall amend or supersede the terms of the decree and plan for augmentation in Case No. 87CW373 or any agreement or requirement of the Town regarding the dedication of water rights as a condition of development.

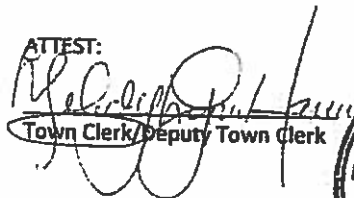
7. **Survival.** All of the acknowledgements, agreements, representations, and warranties contained in this Agreement shall survive any and all water rights dedications made by the parties to the Town after the date hereof, and such acknowledgements, agreements, representations, and warranties shall not merge into the deeds of such water rights dedications.
8. **Binding Effect.** This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, successors, and assigns.
9. **Authority.** Each person signing this Agreement represents and warrants that he or she is fully authorized to enter into and execute this Agreement and to bind the party he/she represents to the terms and conditions hereof.
10. **Counterparts.** This Agreement may be executed in multiple counterparts, each of which shall constitute an original and together shall constitute the Agreement.

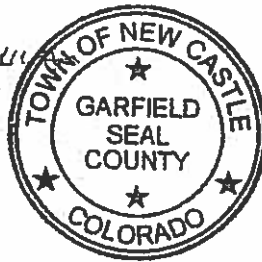
WHEREFORE, the Parties have executed this Agreement as of the date first written above.

TOWN OF NEW CASTLE COLORADO, a Colorado
municipal corporation

By: 
Frank Breslin, Mayor

ATTEST:


Town Clerk/Deputy Town Clerk

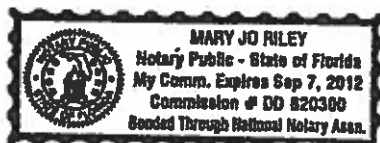


CVR INVESTORS, INC., a Colorado corporation

By: *[Signature]*Name: RONALD C. ATKINSONIts: VICE PRESIDENTSTATE OF FLORIDA)
COUNTY OF Polk)ss.

The within and foregoing instrument was acknowledged before me in the said County and State on this 10th day of August, 2011, by Ronald C. Atkinson as Vice President of CVR Investors, Inc., a Colorado corporation.

My Commission expires:



[Signature]
Notary Public

Mary Jo Riley

CTS INVESTMENTS, LLC, a Colorado limited
liability company

By: CTS Services LLC, its Manager
~~Name:~~ Steven E. Gruen
 Mr. Steven E. Gruen

STATE OF COLORADO)
) ss.
 COUNTY OF Boulder)

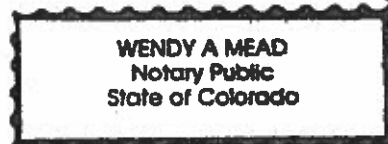
The within and foregoing instrument was acknowledged before me in the said County and State
 on this 23rd day of May, 2011, by Steven E. Gruen as Manager of CTS
Investments, LLC, a Colorado corporation, manager of CTS INVESTMENTS, LLC
Services

✓ My Commission expires: 10/14/2013

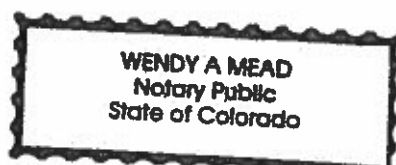


Chad Trout
 Notary Public

ERIC C. WILLIAMS

By *Eric C. Williams*STATE OF COLORADO)
COUNTY OF Sanford) ss.The within and foregoing instrument was acknowledged before me in the said County and State on this 9th day of August, 2011, by Eric C. Williams.My Commission expires: My Commission Expires
October 3, 2011*Wendy A. Mead*
Notary Public

CVR DEVELOPMENT, LLC, a Colorado limited liability company

By *Eric C. Williams*
Name: ERIC C. WILLIAMS
Its: MANAGERSTATE OF COLORADO)
COUNTY OF Garfield) ss.The within and foregoing instrument was acknowledged before me in the said County and State on this 9th day of August, 2011, by Eric C. Williams Manager of CVR Development, LLC, a Colorado limited liability company.My Commission expires: My Commission Expires
October 3, 2011*Wendy A. Mead*
Notary Public
Wendy A. Mead
Notary Public
State of Colorado

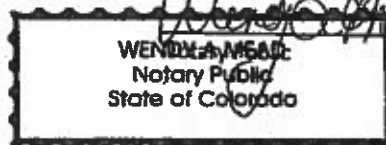
LAND DISCOVERY, INC., a Colorado corporation

By: [Signature]
 Name: ERIC C. WILLIAMS
 Its: President

STATE OF COLORADO)
) ss.
 COUNTY OF Garfield)

The within and foregoing instrument was acknowledged before me in the said County and State on this 9th day of August, 2011, by ERIC C. WILLIAMS as President of Land Discovery, Inc., a Colorado corporation.

My Commission expires: My Commission Expires
October 3, 2011



WILLIAMS FAMILY INVESTMENTS COMPANY,
 LLP, a Colorado limited liability limited
 partnership

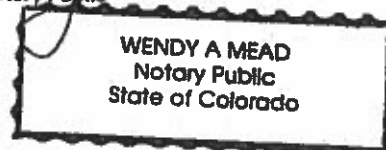
By: [Signature]
 Name: ERIC C. WILLIAMS
 Its: Manager

STATE OF COLORADO)
) ss.
 COUNTY OF Garfield)

The within and foregoing instrument was acknowledged before me in the said County and State on this 9th day of August, 2011, by ERIC C. WILLIAMS as Manager of Williams Family Investments Company, LLP, a Colorado limited liability limited partnership.

My Commission expires: My Commission Expires
October 3, 2011

[Signature]
 Notary Public



PINE MOUNTAIN MORTGAGE, INC., a Colorado corporation

By: *Eric C. Williams*
 Name: ERIC C. WILLIAMS
 Its: President

STATE OF COLORADO)
) ss.
 COUNTY OF Garfield)

The within and foregoing instrument was acknowledged before me in the said County and State on this 9th day of August, 2011, by Eric C. Williams President of Pine Mountain Mortgage, Inc., a Colorado corporation.

My Commission expires: My Commission Expires
October 3, 2011

Wendy A Mead
 Notary Public
 WENDY A MEAD
 Notary Public
 State of Colorado

EXHIBIT A

OWNERSHIP SUMMARY

Castle Valley Ranch (CVR) – Coryell Rights

	Coryell Ditch	Coryell Ditch Third Enlargement	
Total Coryell Water Right (per Decree 8/22/91):	2.8000 (cfs)	4.9000 (cfs)	
<u>Dedications to Town of New Castle</u>			
Filings 1 – 6 (Reception #602243 and #602244)	1.2733	2.2283	
Filing 7A (Reception #602248 and #602249)	0.0324	0.0567	
Filing 7B (Reception #630147)	0.0359	0.0628	
Filings 7C – 7E (Reception #679302)	0.1136	0.1989	
Filing 8 (Reception #722111 and #722112)	0.1382	0.2418	
Filing 9 (Reception #757819)	0.0418	0.0731	
Middle school (Reception #783715)	0.056	0.098	
TOTAL CURRENTLY OWNED BY TOWN OF NEW CASTLE:	1.6912	2.9596	60.4%
<u>TOTAL CURRENTLY OWNED BY WILLIAMS ENTITIES</u>			
Reserved / Retained for PA 1 and PA 2 (Reception #693684, #693685, #693686, #693687 and #693688)	0.1165	0.2038	4.2%
<u>Rights Conveyed by Eric Williams (and related entities) to CTS Investments, Inc.:</u>			
(Reception #693684, #693686, #693687 and #693688)	1.2283	2.1495	
<u>Dedications by CTS to Town of New Castle:</u>			
Filing 8 (Reception #722111)	(0.1382)	(0.2418)	
Middle school (Reception #783715)	(0.056)	(0.098)	
<u>Rights Conveyed by CTS Investments, Inc. to Village Homes of Colorado, Inc.:</u>			
April 2007 (Reception #721294)	(0.5290)	(0.9261)	
April 2008 (Reception #746711)	(0.1188)	(0.2078)	
TOTAL CURRENTLY OWNED BY CTS INVESTMENTS, LLC:	0.3863	0.6758	13.8%
<u>Rights conveyed by CTS Investments, Inc. to Village Homes of Colorado, Inc.:</u>			
April 2007 (#721294)	0.5290	0.9261	
April 2008 (746711)	0.1188	0.2078	
<u>Dedications by Village Homes to Town of New Castle:</u>			
Filing 9 (Reception #757819)	(0.0418)	(0.0731)	
TOTAL CURRENTLY OWNED BY CVR INVESTORS, INC.¹:	0.6060	1.0608	21.6%
TOTAL	2.800	4.900	100%

¹ CVR Investors, Inc. is the successor in interest to the water rights owned by Village Homes pursuant to the Bargain and Sale Deed from Village Homes to RC Properties XVI, LLC (Reception #776773), the Public Trustees Certificate of Purchase (Reception # 781620), the Public Trustee Confirmation Deed to RC Properties XVI, LLC (Reception # 782536); Quit Claim Deed RC Properties XVI LLC to CVR Investors Inc. (Reception #784750).

Exhibit B

OWNERSHIP SUMMARY

Castle Valley Ranch (CVR) - Red Rock Rights

	Red Rock Ditch	Red Rock Ditch 1 st Enlgmt.	Red Rock Ditch 2 nd Enlgmt.
Total	3.7 (cfs)	0.3 (cfs)	6.2 (cfs)
Total Currently Owned by Town of New Castle	0.0	0.0	0.0
Total Currently Owned by Williams Entities	0.15392	0.01248	0.25792
Reserved / Retained for PA 1 and PA2 (Reception #693684, #693685, #693686, #693686, #693687 and #693688)			
Rights Conveyed by Williams Entities (Reception #693684, #693685, #693686, #693686, #693687 and #693688) to CTS Investments, LLC	3.54608	0.28752	5.94208
Rights Conveyed by CTS Investments, LLC to Village Homes			
April 16, 2007 (#721294)	(2.128)	(0.173)	(3.565)
April 16, 2008 (#746711)	(0.4773)	(0.0387)	(0.8001)
Total Currently Owned by CTS Investments, LLC.	0.94078	0.07582	1.57698
Rights Conveyed to Village Homes by CTS Investments			
April 16, 2007 (#721294)	2.128	0.173	3.565
April 16, 2008 (#746711)	0.4773	0.0387	0.8001
Total Currently Owned by CVR Investors, Inc.¹	2.6053	0.2117	4.3651
Total	3.7	0.3	6.2

¹ CVR Investors, Inc. is the successor in interest to the water rights owned by Village Homes pursuant to the Bargain and Sale Deed from Village Homes to RC Properties XVI, LLC (Reception #776773), the Public Trustees Certificate of Purchase (Reception # 781620), the Public Trustee Confirmation Deed to RC Properties XVI, LLC (Reception # 782536); Quit Claim Deed RC Properties XVI LLC to CVR Investors Inc. (Reception #784750).

Exhibit B: Water Rights Dedication Calculation		
9 North Wild Horse: Castle Valley Ranch P.U.D.		
A) Multi Family dedication		
0.25 EQR / Residential Unit (if irrigation is by raw water irrigation & lot size <9,000 SF / unit)		
[1]	# of Units =	130
[2]	EQR Rate/unit =	0.25
[3]	# of EQR's =	32.50 [1] x [2]
Amount of Dry Up (Coryell Ditch)		
[4]	Acres / EQR =	0.10
[5]	Acres =	3.25 [3] x [4]
Water Rights Dedication (Coryell Ditch)		
[6]	Priority #11: cfs/acre	0.020
[7]	Priority #11: cfs =	0.065 [5] x [6]
[8]	Priority #220-S: cfs/acre	0.035
[9]	Priority #220-S: cfs =	0.11375 [5] x [8]
[10]	Total cfs =	0.17875 [7] + [9]

SE: 33011-Water Rights Dedication.xlsx

FISCAL IMPACT STUDY



Fiscal Impact Analysis of the 9 North Wildhorse Development

April 10, 2024

Introduction

R2 Partners retained Triple Point Strategic Consulting to conduct a fiscal impact study of the 9 North Wildhorse Preliminary Plan Application. The project is located in the northeast corner of the Castle Valley Ranch planned unit development (PUD) subdivision, in the Town of New Castle, Colorado. R2 Partners is proposing to develop 130 multifamily, rental apartment units in the 9 North Wildhorse neighborhood.

According to the Town's Preliminary Plan checklist, a calculation of "projected ongoing revenues and costs to be received or incurred by the town as a result of development of the subdivision proposed in the application" is required. Such calculations shall be provided for the first 15 years after full development of the proposed subdivision.

In this analysis, revenues to be received and costs to be incurred as a result of the proposed development have been projected out to 2045 on the basis of available data and various assumptions. The projection period through 2045 is intended to capture ongoing impacts for the first 15 years following full build-out.

According to the Town's 2024 adopted budget:

During the past few years New Castle has experienced high inflation, swiftly rising housing costs, labor shortages, high construction costs, rising operational costs, and other challenges that were not in place prior to the COVID pandemic. Despite these challenges, New Castle has been able to maintain or in some cases expand on its' services and commitment to the community. New Castle remains committed to being fiscally responsible, forward-thinking, and protective of our strong community values. We understand why residents choose to call New Castle their home and stand determined to manage the town's finances and resources in the best interest of those that we serve.

On the basis of various assumptions—such building cost per square foot, annual local spending per household, and others—we will estimate the economic impact arising from construction of the residential units and from the increased economic activity over time.

Methodology

To study the fiscal impacts of the proposed development, Triple Point Strategic Consulting constructed a hybrid build-out–proforma model. The number of units by type, phasing, and construction costs were used to create a build-out model of the development occurring over two years from 2025 through 2026.

The financial impacts of construction were estimated using an additional economic input-output model developed by IMPLAN and using national average data. Two different industry sectors were incorporated in the model representing infrastructure and multifamily construction. Total construction cost is estimated to be \$43.7 million, not including soft costs such as architecture. This amount was reduced to 60 percent, or \$26.2 million, to conservatively capture only local impact. IMPLAN modeling also estimates multiplier effects known as indirect and induced impacts as construction investment ripples through New Castle's economy. IMPLAN also provides estimates of the number of jobs resulting from a given level and type of investment.

Financial impacts were extrapolated from the incremental growth in population and units arising from the development. IMPLAN was used to estimate indirect and induced impacts arising from incremental economic activity (see below for more information).

Property tax impacts are inferred for each type of proposed property based on comparable property assessments and using New Castle's 8.551 mill levy. The property is current taxed as vacant commercial property. Once the apartments would be developed, the property would be taxed as multifamily residential at the 6.8 percent assessment rate. The current property tax paid on the three parcels is netted out of estimates of future property tax revenues. All revenues and expenses are assumed to escalate at 2.5 percent annually.

The following revenue and expense categories are explicitly modeled:

- Construction sales tax, including multiplier effects
- Construction use tax
- Building permits, TAP, and other fees
- Incremental general fund revenue, including incremental sales tax
- Incremental utility fund revenue (housing units)
- Property tax – residential
- Property tax – current (negative)
- Incremental general fund expense (residents)
- Incremental utility fund expense (housing units)

Total property tax impacts are also estimated; these include revenue for school, water, transportation, and other jurisdictions in addition to the Town of New Castle.

Results

The population of New Castle has grown at an annual average rate of 1.8 percent from 2017 to 2022. To be conservative, we estimate the population growing at an annual average rate of 1.5 percent from 2023 to 2045. The rate of 1.5 percent is taken from the State Demographer's Office (SDO) forecast for Garfield County. At this rate, New Castle's population will grow from 4,949 in 2023 to 6,953 in 2045, an increase of 2,004. For empty nester units, we assume an average of 1.8 people per unit. For the other units, we use the SDO estimate of 2.56 people per housing unit. Based on this information, the proposed development would house a total of 313 people beginning in 2027.

The \$26.2 million construction investment modeled would generate an indirect impact of \$10.5 million and an induced impact of \$28.2 million, for a total of \$64.9 million. Thirty-six percent of the local construction impact (\$23.6 million) is estimated to be intermediate expenditures and largely subject to

sales tax. We assume New Castle sales tax (3.5 percent) would be paid on 55 percent of intermediate expenditures. To be conservative, we assume the 2 percent use tax would be paid on 45 percent of the 60 percent of actual estimated cost. This sales tax benefit is estimated to be \$454,398 and the use tax would be \$236,097 over the two years from 2025 through 2026.

Incremental general fund revenue is extrapolated from the estimated number of new residents in the development. This is revenue that results from everything from tobacco taxes to soccer registration. Taking an average of 2021 actual through 2024 budget, we find an average of \$1,073 per person.

Incremental utility fund revenue is extrapolated in a similar manner as general fund revenue from the estimated number of new housing units in the development. Only the three primary operating accounts are included: water, wastewater, and trash.

Property tax on the new development begins in 2027. The current property tax amount of \$3,101 is netted out beginning in 2027, when the Town's share of the property tax payment is estimated to be \$25,673. The table below shows the total amount of property tax is estimated to be \$187,024. The amount accruing to each tax authority in 2027 is also shown.

Tax Authorities in Tax Area 38	Tax Rate	Tax Amount
GARFIELD COUNTY	11.14	\$33,446
GARFIELD COUNTY - R&B FUND	0.047	\$141
GARFIELD COUNTY - NEW CASTL	0.047	\$141
GARFIELD COUNTY - SOCIAL SE	0.519	\$1,558
GARFIELD COUNTY - CAPITAL E	0.935	\$2,807
GARFIELD COUNTY - RETIREMEN	0.467	\$1,402
TOWN OF NEW CASTLE - GENERA	8.551	\$25,673
COLORADO RIVER FIRE PROTECT	11.102	\$33,332
COLO RIVER WATER CONS	0.5	\$1,501
SCHOOL DIST RE-2 GENERAL FU	7.72	\$23,178
SCHOOL DIST RE-2 - BOND	6.283	\$18,864
COLORADO MTN COLLEGE	2.977	\$8,938
GARFIELD COUNTY PUBLIC LIBR	2.501	\$7,509
SCHOOL DIST RE-2 - MILL LEV	6.853	\$20,575
RFTA	2.65	\$7,956
Total Taxes Billed 2027	62.292	\$187,024

The incremental increased costs incurred by the Town are estimated by taking the average general fund expenditure per person for the years 2021 to 2024 budget (\$985 per person). Utility fund expenses are extrapolated in the same manner as utility fund revenues, from incremental housing units and per-unit expenses.

Employment

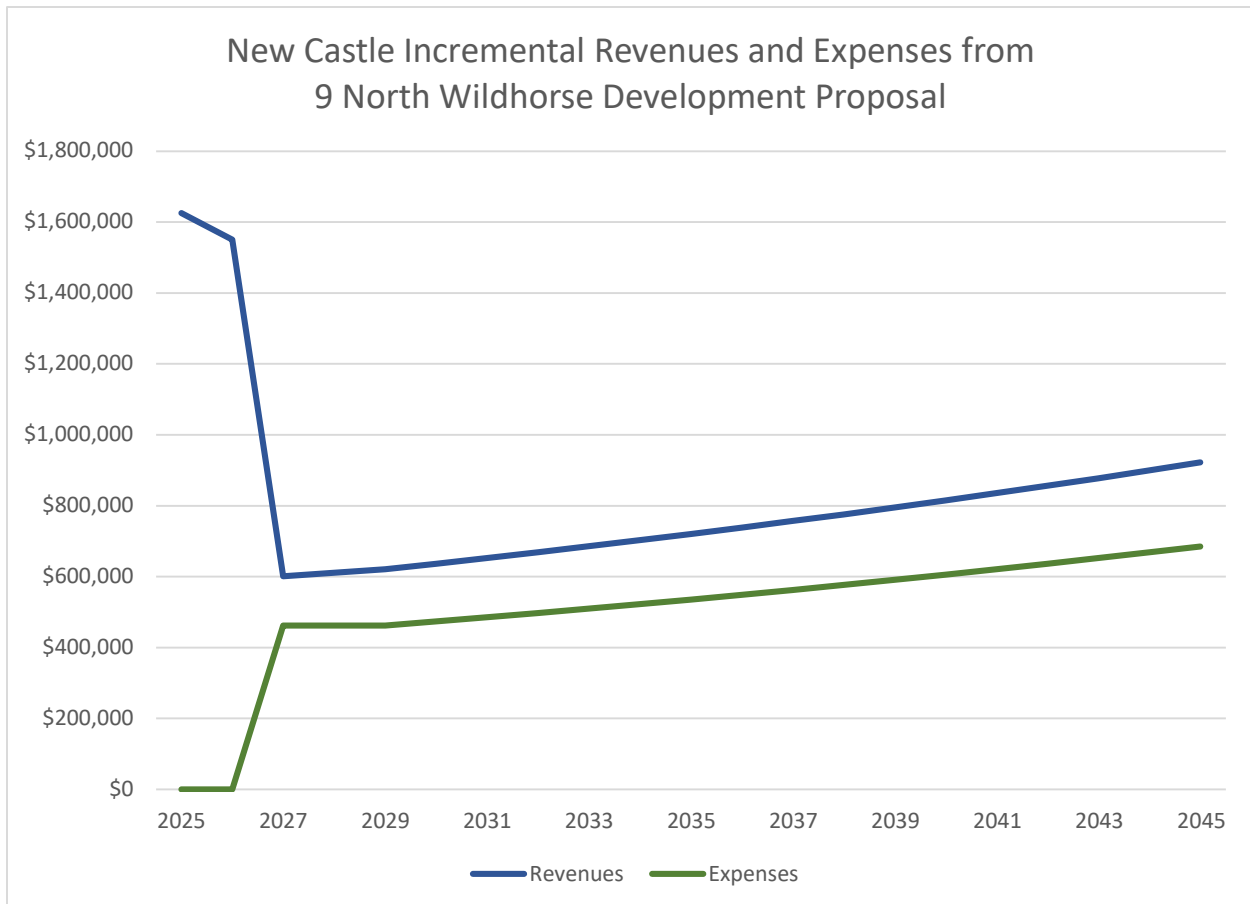
The table below shows the annual average number of jobs directly resulting from construction as well as the total jobs including multiplier impacts. The direct jobs are included in the total job count.

Type of Job	2025	2026
Direct Jobs	127.8	105.6
Total Jobs	224.6	181.0

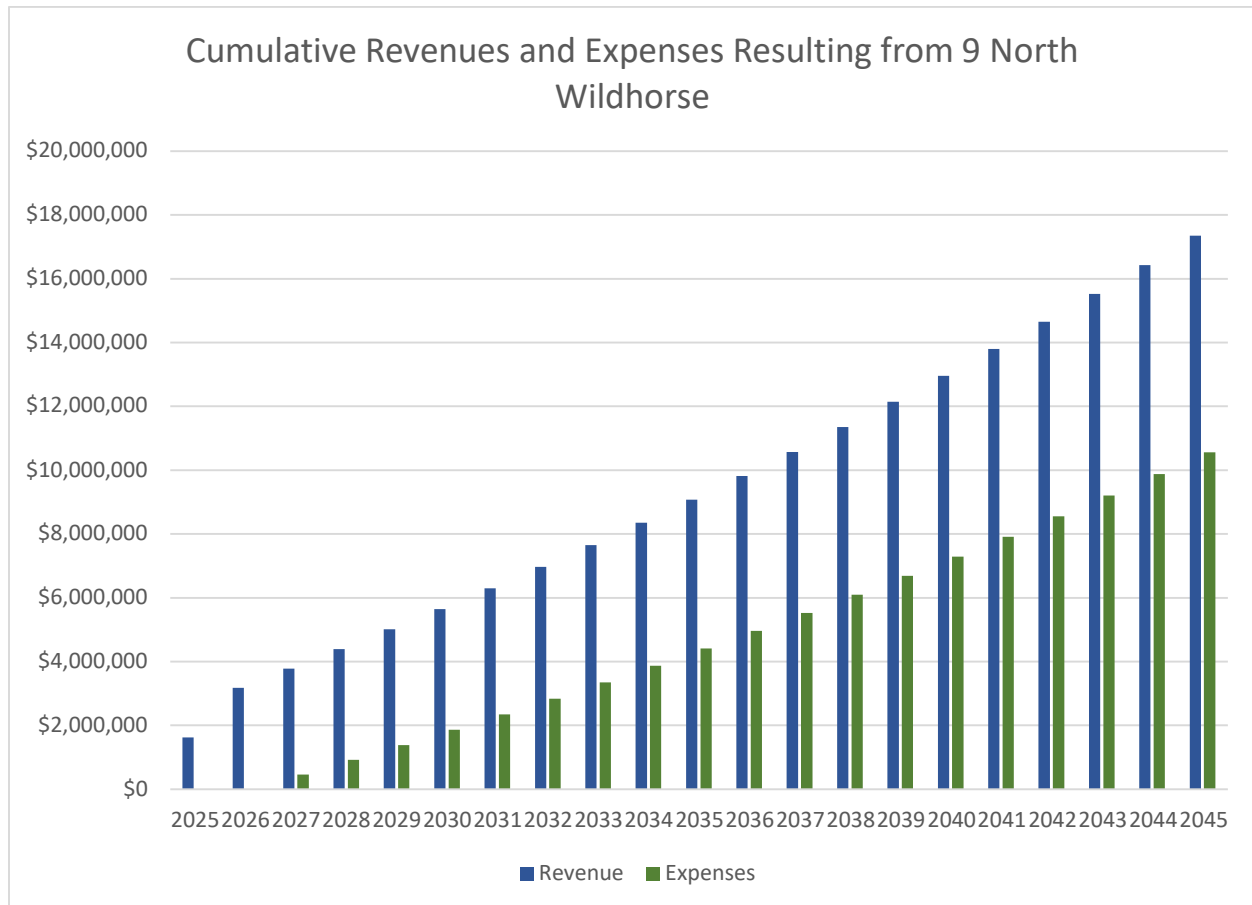
Combined Fiscal Impacts

The initial economic benefit to the Town would be \$3.2 million during the two years of construction. From 2027 through 2045, the average annual net benefit would be \$190,177, as shown in the chart below.

From 2027, the total amount of property tax collected for all tax authorities in tax area 38 would exceed \$5 million.



The chart below compares cumulative revenues and expenses. By 2045, the total revenue received by New Castle would exceed \$17 million, while expenses would cumulate to over \$10 million.



About IMPLAN

The IMPLAN economic software system is used to estimate the benefits that would result from constructing and operating the Project. IMPLAN uses annual regional data to predict how specific economic changes would impact a given regional economy. For example, IMPLAN estimates supply chain (i.e., indirect) spending, such as the purchase of fuel and lumber for construction, and labor income (i.e., induced) spending, such as grocery and retail goods purchased by employees. The IMPLAN system incorporates more than 90 different datasets. For example, employment and labor income data are sourced from information provided by the U.S. Bureau of Labor Statistics Census of Employment and Wages, U.S. Census Bureau's County Business Patterns Reports, and U.S. Bureau of Economic Analysis' Regional Economic Accounts. Other sources include the National Agricultural Statistical Service, National Bureau of Economic Research, Internal Revenue Service, and Energy Information Administration.

About Triple Point Strategic Consulting

Triple Point specializes in developing custom economic and financial models. We deliver results for our clients with high-value and accurate information, as demonstrated by our many repeat clients. Triple Point is active across the western United States and Canada, modeling for scenario planning, financial forecasting, permitting and approvals, optimal resource allocation, and improved decision-making. Economic impact studies are conducted using the IMPLAN model.

In 2013, Jeff Moffett founded Triple Point Strategic Consulting to provide marketing, strategic planning, and economic analysis services. Focus areas are renewable energy, affordable housing, health assessments, sustainable tourism, and economic development. Jeff earned his M.S. in Econometrics and Ph.D. in Applied Statistics at the University of Washington, Seattle. For more information visit www.tpsconsulting.net.

Jeff is joined by Nathan Perry, Ph.D. Nathan is a Professor of Economics at Colorado Mesa University. He has conducted many regional economic studies in Colorado, including economic impact studies, public land studies, and energy studies, and has published academic work on deficits and debt, inflation, and the Great Depression. Dr. Perry regularly presents on the economic conditions in western Colorado and the national economy, and serves on the Governor's Revenue Estimating Advisory Committee (GREAC).

WORKFORCE HOUSING PROPOSAL

APPLICANT PROPOSAL RE: WORKFORCE HOUSING

R2's Residential project in Castle Valley Ranch consists of 80 "Live Work" units, 26 "Townhome" units, and 24 "Empty Nester" units. Of the total 130 units, Applicant proposes that the Town of New Castle will have preference for 5 of the 1 bedroom "Live Work" units for its employees. These units will be specifically identified at the time of Final Plat. Rents for Town employees in these units will be restricted to 75% of the then-current free market rent roll (for the same type of unit). As these specific units become available, Applicant will provide the Town with fourteen (14) days notice to accept the unit, which notice shall include the amount of rent and the specific unit.

If the employee is terminated during his or her occupancy, they may continue to occupy the unit through the end of their current lease. If there are no available Town of New Castle employees at the time a unit is available, applicant may rent to a free market tenant for a period of no more than 12 months, at which time the unit must be offered to the Town again with thirty (30) days notice. This program will expire 20 years after the last Certificate of Occupancy for the employee units is issued.

BRIEF DESCRIPTION OF PROPOSED COVENANTS

BRIEF DESCRIPTION OF PROPOSED COVENANTS.

The project will create six separate parcels, primarily due to the location of the internal road. Three of the parcels will contain the multifamily buildings, separated by the interior road. The internal road will be conveyed to the Town. Two of the parcels will be common area (open space). One of the parcels will be retained by the Seller. The Owner will record a Declaration of Covenants against the parcels. The Covenants will create a Common Interest Community (e.g., a property owner's association) to manage the common elements among the parcels. This includes the irrigation system, parking, open space parcels, and internal sidewalks. The main thrust of the covenants will be to ensure the owner of each parcel is allocated a proportionate share of their expenses to operate and maintain the common elements. The Covenants will also ensure that the buildings and all other elements of the project are maintained to a high standard in perpetuity.

ADJACENT PROPERTY OWNERS

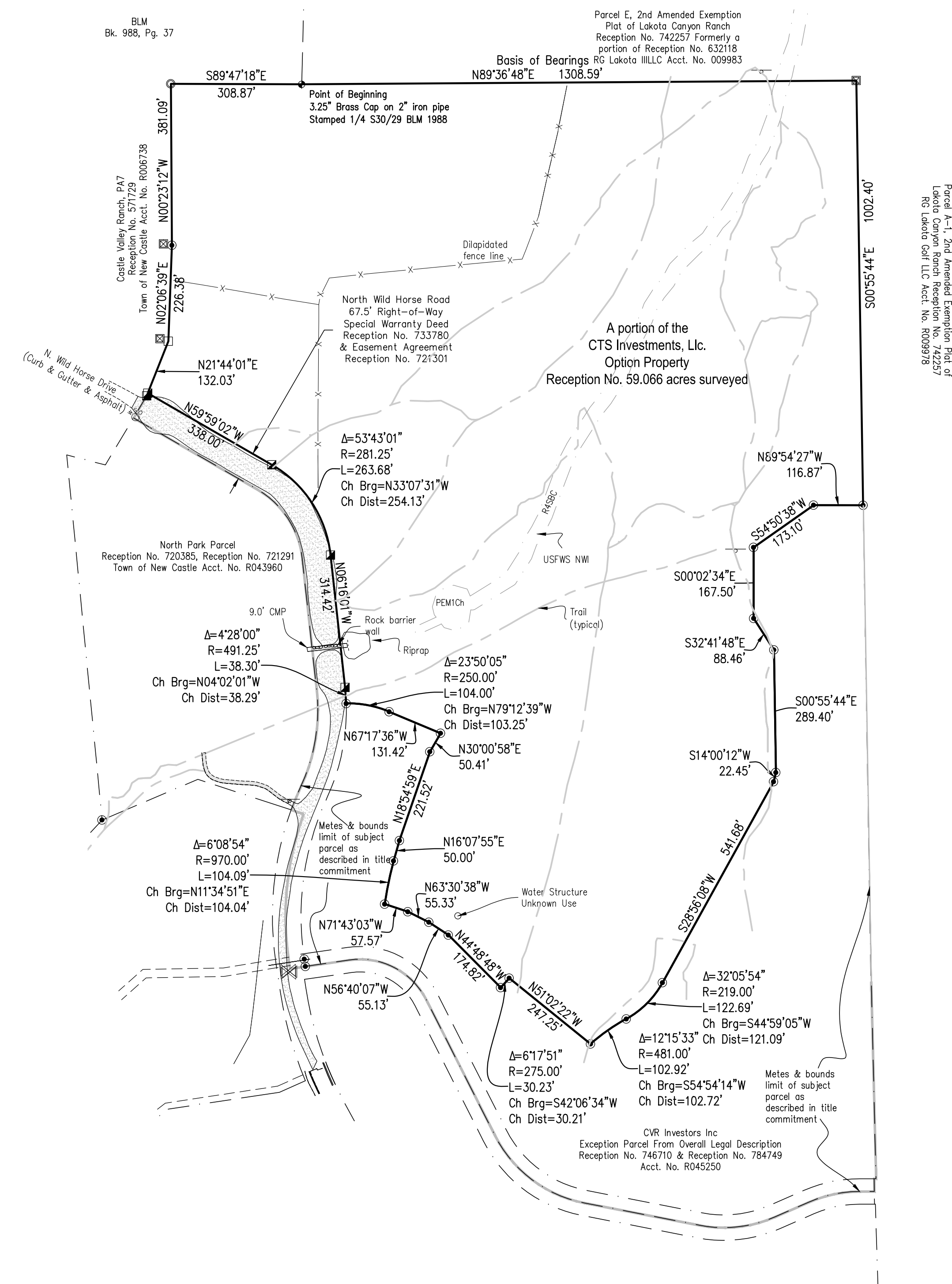
List of Adjacent Property Owners & Addresses within 250'

Parcel Number	Physical Address	Owner	Mailing Address
212303400954	Not available NEW CASTLE	BUREAU OF LAND MANAGEMENT	2300 RIVER FRONTAGE ROAD SILT, CO 81652
212329200015	1009 CLUBHOUSE DR NEW CASTLE	NEW CASTLE, TOWN OF (CEMETERY)	PO BOX 90 NEW CASTLE, CO 81647-0166
212329200190	Not available NEW CASTLE	RG LAKOTA III LLC	350 MARKET STREET STE 304 BASALT, CO 81621
212329300185	1000 CLUBHOUSE DR NEW CASTLE	RG LAKOTA GOLF LLC	350 MARKET STREET STE 304 BASALT, CO 81621
212329300194	Not available NEW CASTLE	CTS INVESTMENTS, LLC	343 DAKOTA BLVD BOULDER, CO 80304
212329300197	Not available NEW CASTLE	CVR INVESTORS INC	PO BOX 1380 CAREFREE, AZ 85377
212330400001	Not available NEW CASTLE	GARFIELD SCHOOL DISTRICT RE-2	839 WHITERIVER AVENUE RIFLE, CO 81650-3515
212330400002	Not available NEW CASTLE	TC MIDWEST LLC	17774 PRESTON ROAD DALLAS, TX 75252
212330400003	Not available NEW CASTLE	NEW CASTLE, TOWN OF	PO BOX 90 NEW CASTLE, CO 81647
212330423007	631 N WILD HORSE DR NEW CASTLE	LORD, JAMES T & KELLY M	631 N WILD HORSE DRIVE NEW CASTLE, CO 81647
212330423008	627 N WILD HORSE DR NEW CASTLE	RATAJCZAK, ZDZISLAW & HALINA	627 NORTH WILDHORSE DRIVE NEW CASTLE, CO 81647
212330423009	6 BUCKSKIN CIR NEW CASTLE	YOUNG, DAVID A & FRAMBACH, JANE	6 BUCKSKIN CIRCLE NEW CASTLE, CO 81647
212330423010	10 BUCKSKIN CIR NEW CASTLE	CLASSEN, ROBERT SETH & GONZALEZ CLASSEN,	10 BUCKSKIN CIRCLE NEW CASTLE, CO 81647
212330423011	14 BUCKSKIN CIR NEW CASTLE	BADOLATO, AARON & ANNE	14 BUCKSKIN CIRCLE NEW CASTLE, CO 81647
212330423012	18 BUCKSKIN CIR NEW CASTLE	WHITCOMB, RANDALL K LIVING TRUST	1302 MAUS WICHITA, KS 67212
212330423030	634 N WILD HORSE DR NEW CASTLE	WENZEL, LORI & JOHN J	634 N WILDHORSE DRIVE NEW CASTLE, CO 81647-9489
212330423031	13 BUCKSKIN CIR NEW CASTLE	RISCHMILLER, JOHN & TASHA	13 BUCKSKIN CIRCLE NEW CASTLE, CO 81647
212330423036	Not available NEW CASTLE	NEW CASTLE, TOWN OF	PO BOX 90 NEW CASTLE, CO 81647-0166
212330423037	Not available NEW CASTLE	NEW CASTLE, TOWN OF	PO BOX 90 NEW CASTLE, CO 81647-0166
212332200195	Not available NEW CASTLE	CVR INVESTORS INC	PO BOX 1380 CAREFREE, AZ 85377
ROW	Not available null		

LAND TITLE COMMITMENT

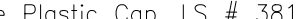
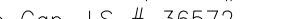
ALTA/NSPS Land Title Survey

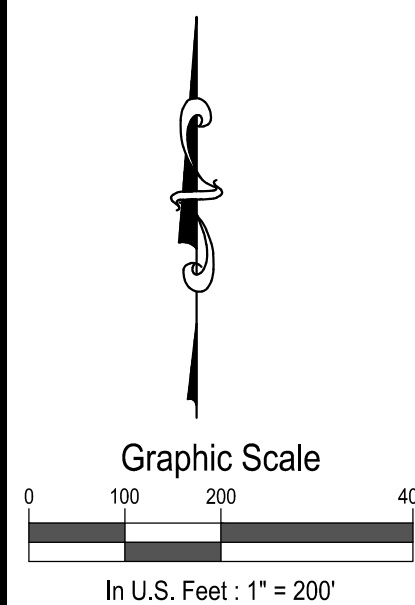
A portion of the 'Option Parcel' a metes and bounds parcel situated in
SW1/4 SECTION 29, SE1/4 SECTION 30, THE NE1/4 SECTION 31 AND THE NW1/4 SECTION 32
Township 5 South, Range 90 West of the 6th P.M.
Town of New Castle, Colorado



For Review
11/17/2021 12:27:02 PM

LEGEND

	Found Monument as Described		Fence line
	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		Asphalt paving
	Sign - Single Pole		Gravel



SGM
1118 West Sixth Street, Suite 200
Glenwood Springs, CO 81601
770.945.1004 www.sgm-inc.com

A Portion of the
Option Parcel

Re	Revision	Date	By
1			
2			
3			
4			
5			
6			
7			
8			

Notes: 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 shall any legal claim or action be commenced later than three years from the date of the original date of the certification shown hereon.

Job No: 2000-109-03
 Drawn by: SAH / ad
 Date: Nov 5, 2002
 QM/QC: reb | PLS: ad
 File: C:\proj\2000-109-03\2000-109-03.dwg

Title:

ALTA/NSPS Land
Title Survey

Sheet No.

2

Of: 2

GARFIELD COUNTY TREASURER

Certificate of Taxes Due

Account Number R043961
Parcel 212329300194

Certificate Number 2023-00571

Acres 61.216

Order Number

Assessed To

Vendor ID 4

CTS INVESTMENTS, LLC
343 DAKOTA BLVD
BOULDER, CO 80304

Land Title
1317 Grand Ave
#200
Glenwood Springs, CO 81601

Legal Description

Situs Address

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

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	Values	Actual	Assessed
GARFIELD COUNTY	13.1180000	\$1,255.39	VACANT PUD LOTS	\$330,000	\$95,700
GARFIELD COUNTY - R & B	0.0940000	\$9.00	Total	\$330,000	\$95,700
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			

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 September 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



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 LODGE 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
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Schedule B, Part II
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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](#).

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Old Republic National Title Insurance Company
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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 Insurance 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



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  President
Attest  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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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:

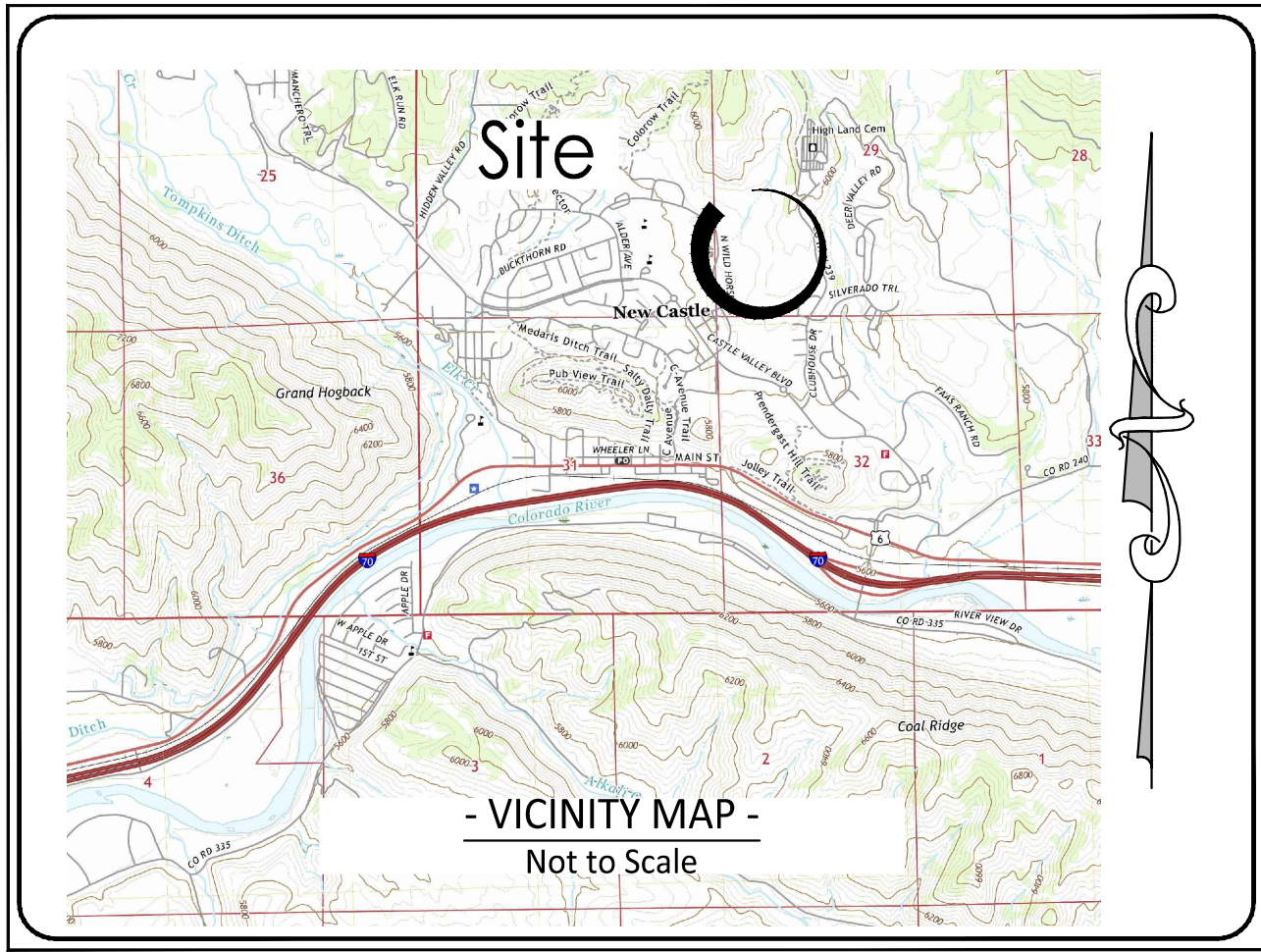
1. Basis of Bearings: Bearings shown hereon are based on an assumed bearing of N89°36'48"E, between found monuments for the 1/4 Corner common to said Section 30 and Section 29 being a 3.25" Brass Cap on 2" iron pipe Stamped 1/4 S30/29 BLM 1988 and the Northeast Corner of the Option Parcel being a 1.25" 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 = PEMICH.
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. 468796 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, 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 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 infared imagery from 1982.

I:\20001-2000-109\123-2021OptionParcelALTA\16-Drafts\Survey\Drawings\Option Parcel ALTA.dwg Plotted: 11/17/2021 9:42 AM By: Scott Hemmen

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
Scott@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	sch
2			
3			
4			
5			
6			
7			
8			
9			

Notar: According to Colorado Law, this map contains no legal advice 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 completion of this map.

Job No:	2000-109.033
Drawn by:	SAH
Date:	Nov 5, 2021
QA/QC:	sch
File:	Option Parcel ALTA

Title:
ALTA/NSPS Land
Title Survey

Sheet No.

1

Of: 2

**REFERRAL COMMENTS
AND
WILL SERVE LETTERS**



COLORADO

Parks and Wildlife

Department of Natural Resources

Grand Junction (Area 7) Service Center & Northwest Regional Office

711 Independent Ave.

Grand Junction, CO 81505

970.255.6100

RE: CVR 9 North Wild Horse Preliminary App Plan

Dear Louis,

Upon reviewing the documents concerning the proposed development within the Castle Valley Ranch PUD, I am well-acquainted with the site and its current wildlife and habitat. The area predominantly hosts small mammal species like ground squirrels, coyotes, foxes, and various songbirds. Additionally, mule deer, mountain lions, black bears, and wintering elk are regular visitors to the site.

It is encouraging that 67% of the property will remain as open space, with development primarily concentrated along North Wildhorse Drive. This strategic approach will help mitigate pressures on wildlife as development progresses throughout New Castle.

Given the significant wildlife presence on the property, Colorado Parks and Wildlife (CPW) recommends adhering to the following best management practices (BMP) to minimize conflicts:

1. During construction, all garbage must be stored in bear-proof containers and disposed of regularly. Maintaining cleanliness on the site is crucial to eliminate attractants for wildlife.
2. Any fencing erected on the property should comply with CPW's wildlife-friendly fencing standards to reduce harm and conflict with wildlife. Residences are permitted to have standard 4-6' wood plank, stone, or composite privacy fencing. However, the use of woven wire, hog panels, cattle panels, or decorative steel panel fencing should be avoided.
3. Landscaping should focus on non-fruiting native trees, shrubs, and flowers, as fruit-bearing plants and ornamental species can attract wildlife and lead to human-wildlife conflicts.
4. Proposed garbage enclosures should incorporate bear-proof dumpsters to address the significant concern of human-bear conflicts in the area.

5. Pets, particularly dogs, should not be allowed to roam freely, as they may chase or prey on wildlife. CPW recommends leashing or kenneling dogs at all times in areas where mountain lions and bears pose a risk. This measure not only protects wildlife but also safeguards pets from becoming prey themselves. Outdoor feeding of pets should be avoided, and all food items must be securely stored.

6. Feeding of wildlife, including birds, should be strictly prohibited. Given the rise in bear conflicts, residents of Garfield County are urged to refrain from feeding birds, as suet and hummingbird feeders are particularly attractive to skunks, raccoons, and bears. Feeding big game animals such as deer, elk, bears, and lions is illegal and should be avoided.

Colorado Parks and Wildlife appreciates the opportunity to submit comments for this project. Adhering to these BMPs will help preserve the delicate balance between development and wildlife conservation in the area. If there are any questions or a need for additional information, please contact District Wildlife Manager Jake Stanton at (970) 366-1908.

Sincerely,



Jake Stanton, District Wildlife Manager

Cc. Kirk Oldham, Area Wildlife Manager



From: Orrin Moon <Orrin.Moon@Crfr.us>
Sent: Tuesday, October 17, 2023 6:39 PM
To: Paul Smith <psmith@newcastlecolorado.org>
Subject: RE: CVR Multifamily Sketch Application Resubmittal

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 CVR Sketch Application and have the following comments:

1. Fire Department Access is good for all the proposed units. I have concerns with the proposed trees that will be planted along the roadway and future overhead clearance on the access roads. I would like to see planning for the future growth of trees and a plan to minimize the overhead obstructions on the roadways. Planning for trees shall be considered when fire hydrant locations are designed to keep trees from obstructing fire hydrants.
2. Trees are concerns around the proposed structures, with the new possible building code being adopted, I am hoping that a landscape plan will show fewer trees around the structures.
3. The plan shows emergency access to the east behind structures. We will need signage in the access areas to keep the areas clear of parking.
4. Developers should consider more ignition-resistant construction on the exterior of the homes, especially the homes on the east side of the development. This may help the owners to obtain better insurance rates.

I have no other concerns for this proposed development.

Thank You,

Orrin D. Moon
Prevention Division Chief/Fire Marshal
Colorado River Fire Rescue
970-625-1243
orrin.moon@crfr.us

From: Cody Smith <smithc@garco911.com>

Sent: Monday, April 15, 2024 11:51 AM

To: Orrin Moon <Orrin.Moon@Crfr.us>

Cc: John Gredig <John.Gredig@Crfr.us>

Subject: RE: New Proposed Road Names

You don't often get email from smithc@garco911.com. [Learn why this is important](#)

Hey Orrin,

No exact matches, these are the closest:

Vista Drive in Glenwood and Silt

Sunset Lane in Rifle

Sunset Ridge Court in Glenwood

Vista Loop is probably okay but Sunset Loop and Sunset Lane is too similar in my opinion.
Up to you!

Thanks!

Cody Smith – IT Administrator

smithc@garco911.com – 970-625-8281

Garfield County Emergency Communications Authority



From: Orrin Moon <Orrin.Moon@Crfr.us>

Sent: Monday, April 15, 2024 9:06 AM

To: Cody Smith <smithc@garco911.com>

Cc: John Gredig <John.Gredig@Crfr.us>

Subject: New Proposed Road Names

Cody,

I just got a new revised plans for a subdivision in New Castle and they have the road names as follows. Please check your data base to see if the road names conflict with others in the county.

Vista Loop

Sunset Loop

From: Chuck Burrows <cburrows@newcastlecolorado.org>
Sent: Wednesday, May 29, 2024 10:18 AM
To: Paul Smith <psmith@newcastlecolorado.org>
Subject: RE: R2 referral reminder

Paul,

We just added a position this year taking our total staffing (Including myself) to 11 sworn officers. The acceptable ratio for law enforcement coverage and safety is approximately 1 sworn officer per 500 citizens, I feel with this ratio we are currently slightly above our citizen to officer ratio even with the additional 300. My biggest concern is with adding a significant increase in population up top is having only 2 evacuation routes in the case of a wildfire , or other natural disaster. I know there is not much we can do about this at this time, however: it should be a consideration in the future.

From: Chuck Burrows <cburrows@newcastlecolorado.org>
Sent: Wednesday, May 29, 2024 9:28 AM
To: Paul Smith <psmith@newcastlecolorado.org>
Subject: RE: R2 referral reminder

Paul sorry for the delay, I have been out of the office. Based on my limited knowledge of the process, I am not seeing any areas of concern at this time. Everything looks very concise and well thought out to me.

Chuck

New Castle Public Works

Referral Comments

To: Paul Smith

From: John Wenzel

Date: May 31, 2024

Re: R2 CVR

The Town of New Castle Public Works Department has had the chance to review the R2 CRV Preliminary Plan Application and has the following comments:

Raw Water Irrigation:

- Minimize bury depth, approximately 2 feet.
- Gravity drains for winterization, located at elevation low points.
- Isolation valves required but not shown.
- The system should be looped.
- Raw water main line pipes to be sized appropriately. Material type to be gasketed bell C900 DR 18, purple in color, with a 14-gage tracer wire.
- Raw water main lines are to be constructed with mechanical joints and a thrust block, or mechanical joints with mega lug connections.
- Whenever possible, raw water main lines should be located in the ROW green belts, between the back of curb and the edge of sidewalk. We would like to minimize having to remove asphalt paving and concrete curb/gutter/sidewalk if future repairs are needed.
- Municipal Code 13.20.130 "Maintenance of service pipes and fixtures" should apply to the raw water taps and service lines.
- Each raw water tap should include a weeping curb stop and drainage.

Water and Sewer Utilities:

- All potable water connections to be protected by a Reduced Pressure Principle Assembly check valve.

- Individual water and sewer service lines for each town home residents, and for each condominium building.
- 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.
- Three main line isolation valves should be installed at each tee location, not shown.
- No 10" hot tap valve. We can isolate with no interruption to service.
- Potable water main line pipe to be C900 DR14, not Ductile Iron
- Pressure reduction valve to be manufactured by Clay-Val
- Fire hydrants to be manufactured by Kennedy. Fire hydrants also need their own isolation valve.
- The manhole spacing, connecting the existing sewer on N. Wildhorse and West Vista Loop (SMH-A2 and SMH-A3), is too great. Maximum spacing 175 ft.

Roadways

- The "Proposed N Wildhorse Parking Street Section" should include a 6-foot sidewalk, 5'-6" green belt, 8 foot parallel parking, 11' travel lanes (2), 19' perpendicular parking, and a 6' sidewalk.
- The "Proposed N Wildhorse Street Section" should include 6' sidewalk, 5'-6" green belt, 8' parking lane, 11' travel lanes (2), 8' parking lane, 5'-6" green belt, 6' sidewalk.
- Parallel parking, both side of the street on N. Wildhorse for the section East of VIX Park.
- The "Loop Road" cross section should conform to the Public Works Manual design standards, including a 58' ROW, two 10' travel lanes and two 8' parking lanes. Exceptions to these standards will be considered at locations without directly adjacent housing.
- Streetlight at intersections for pedestrian safety

May 31, 2023

Mr. Paul Smith, Town Planner
Town of New Castle
P.O. Box 90
New Castle, CO 81647

**RE: Castle Valley Ranch Multifamily – Preliminary Plan
R2 Proposal/CVR 9 North Wild Horse**

Dear Paul,

On October 18, 2023, we reviewed the sketch plan for this project and now have had the opportunity to review the preliminary plan dated March of 2023. Although, the preliminary plan provides an ample amount of information by which the application is described, the drawings do not contain enough information to proceed to construction. We anticipate that as this project proceeds through P and Z and Town Council, more precise information will be provided. With our comments attached and the comments provided by the Public Works Department, we anticipate a more significant level of detail will be provided along with a variety of modifications to the current drawings. To avoid being redundant with the comments made in John Wenzel's Memo to you of 5/31/24. Please note the following:

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.
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.
 - 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.
 - 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.

- 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.
 - 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.
 - 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.
 - g. Fire flows at each hydrant will be necessary to be provided along with the residual pressure being noted.
 - h. Valves in each side of each tee (including hydrants) will be required.
 - i. A cut in tie to the North Wild Horse waterline will be necessary (with tee and valves) in lieu of a hot tap.
 - 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.
 - 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.
 - 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.
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.
 - b. It will be necessary to provide the elevations of water and sewer at each crossing to determine how separation is being made.
 - 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.

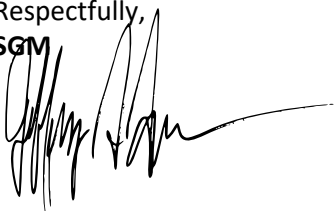
- d. Sewer service line plans and profiles will be necessary to be provided in the subsequent construction drawings. Note that tracer wire is now required with all sewer mains and service lines.
4. This note is repeated from the sketch plan review: *Given the magnitude of the area tributary to the draw 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.*
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.
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.
7. Preliminary stormwater management plans will be necessary to be provided prior to construction.
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?
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.,
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.
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.
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.

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.
14. Anticipated future detail for signage and striping is expected in future submittals.
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.

Upon your receipt and review, if you have questions, please don't hesitate to call.

Respectfully,

SGM



Jefferey S. Simonson, PE
Principal/Town Engineer

From: Jeff Simonson <JeffS@sgm-inc.com>
Sent: Thursday, June 6, 2024 5:14 PM
To: John Petaisto <jpetaisto@sopriseng.com>; Paul Smith <psmith@newcastlecolorado.org>
Cc: Paul Schirmer <paul.schirmer@CDSG-US.COM>; Louis Wilsher <LWilsher@dhmdesign.com>; Jason Jaynes <jjaynes@dhmdesign.com>; cfrancisco@dhmdesign.com; ynichol <ynichol@sopriseng.com>; John Wenzel <jwenzel@newcastlecolorado.org>; Dave Reynolds <dreynolds@newcastlecolorado.org>
Subject: RE: CVR 9NWH Floodplain clarification (33011)

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.

Thanks John,

See below in RED.

Jefferey S. Simonson, PE - CO, UT, WY
Civil Sector Leader/Principal



118 W Sixth St, Suite 200
Glenwood Springs, CO 81601
970.384.9005 / 970.379.4691 cell
www.sgm-inc.com

From: jpetaisto@sopriseng.com <jpetaisto@sopriseng.com>
Sent: Thursday, June 6, 2024 3:08 PM
To: Jeff Simonson <JeffS@sgm-inc.com>; psmith@newcastlecolorado.org
Cc: Paul Schirmer <paul.schirmer@CDSG-US.COM>; Louis Wilsher <LWilsher@dhmdesign.com>; Jason Jaynes <jjaynes@dhmdesign.com>; cfrancisco@dhmdesign.com; ynichol <ynichol@sopriseng.com>
Subject: CVR 9NWH Floodplain clarification (33011)

Hi Jeff,

We have reviewed your 05/31/2023 Preliminary Plan comments for CVR 9 North Wild Horse.

We need clarification and/or additional information regarding your floodplain reference in comment 4 and 13, and also referenced in 2.l and 3.c. As noted, your comments are a repeat from Sketch Plan.

1) Do you have a flood plain map for this drainage? We have not been able to find one. We did review the floodplain map from the Town's website. We do not have a floodplain map for this area other than noting that the subject draw is in a flood prone area which is why we are continuing to make sure we address the concern of making sure that the proposed units and improvements are safe from identifiable flooding. From the Town's Floodplain Regulations (17.90.210.C), the fact that we effectively are greater than 50 lots or five acres does require the data to be generated.

2) If no flood mapping can you respond with what additional information you need for Preliminary plan beyond the items included in our Preliminary engineering report and plans? The main concern that I would have is to make sure the proposed buildings and improvements are safe from the flood hazards (ie., 1 foot above adjacent flood elevation and protected from any associated drainage). I don't believe I need any additional information at this point in time but will ultimately want to see an analysis that reflects that the units and other improvements (discussed below) are safe from the hazards at the time construction drawings are prepared for final plat. Of course, you will want to make sure you are likely comfortable with some preliminary analysis that you can subsequently substantiate for construction and final plat. You may want to do at least some critical depth calculation at the draw locations just upstream and adjacent to the upper units of both the town house units and the live/work units to make sure you are comfortable with the proposed preliminary grading.

- We have a road crossing with culverts sized for the tributary drainage basin above the road. The drainage basin 'OS-01' is discussed in section 3.1 of our engineering report, with supporting calculations in the report Appendix. – I saw that information and concur with your sizing.
- Utility crossings will not change grade. We will definitely need to focus our erosion protection for the disturbed areas. I agree
- We will review and coordinate the landscape path locations and address erosion protection as the design progresses. We will likely focus our erosion protection for the smaller storm events. Note that we do want to note that IF we are proposing an improvement that could get wiped out by the flood hazard, the Town has no definable financial resources at this time to reconstruct that improvement unless, of course, we are talking about an improvement required for emergency services and basic utility services (water, sewer and dry utilities).

Call or email to discuss.

Thanks,
John Petaisto, PE
Sopris Engineering
970-316-5212



Michael J. Sawyer
Partner/Shareholder

Glenwood Springs – Main Office
201 14th Street, Suite 200
P. O. Drawer 2030
Glenwood Springs, CO 81602

Aspen
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Direct: 970.928.2118
Office: 970.945.2261
Fax: 970.945.7336
**Direct Mail to Glenwood Springs*

June 3, 2024

Paul Smith
Town Planner
Sent via email: psmith@newcastlecolorado.org

Re: Comments on R2 Preliminary Plan

Dear Paul:

I have reviewed the materials submitted by R2 Partners for the preliminary plan application. I have the following comments.

1. The traffic study indicates that North Wildhorse Drive will be constructed as part of public improvements for the development. Applicant has submitted an Easement Agreement between CTS Investments and Village Homes to demonstrate the legal ability to construct the road. The Easement Agreement provides that “Each of the Parties agrees to dedicate to the Town any portion on that Party’s Parcel of right of way for Wildhorse Drive . . . within 30 days after written request from the Town or the other party.” Applicant needs to provide a written agreement with CTS Investments committing to dedicate the right of way, in fee, to the Town at the time of final plat recordation. Further, Applicant needs to submit evidence that the engineered location of North Wildhorse Drive (including any construction easements) is located on lands owned by CTS Investments as some portions of CTS’s historic land holdings have been conveyed to third parties. Applicant needs to identify portions of the easement that may have been conveyed to the Town as part of the VIX Park conveyance. CTS conveyed a portion of the right of way to the Town by special warranty deed recorded at Reception No. 733780. At the time of final plat, a title commitment for the right of way area will need to be provided. Conveyance will need to be by special warranty deed with all prior conveyances of the right of way by similar deed.
2. The letter dated May 3, 2024 from attorney Chad Lee discusses the legal water supply. The calculation of the number of EQRs and acres of dry up to be dedicated to the Town (Exhibit B) is incorrect. It does not include dedication for raw water irrigation. Under the Second amendment to the ADA:

Page 2

- iii. For raw water irrigation areas served by a public raw water irrigation system, LDI shall dedicate water rights to the Town: (1) on an acre-per-acre basis for those areas irrigated by flood irrigation, and (2) at the rate of 0.4 EQR for each 6,000 square feet irrigated by automatic sprinkling system. Dedication of water rights under this provision shall not obligate the Town to accept any raw water irrigation system as a public raw water irrigation system.

Exhibit B needs to be updated to include water rights dedication for raw water irrigated areas. Also, Applicant needs to provide a written agreement with CTS Investments committing to dedicate the water rights and dry up by special warranty deed to the Town at the time of final plat recordation.

3. A detailed description of the Workforce Housing needs to be provided to discuss with the P&Z and Council. If the proposed Workforce Housing provisions are accepted by the Town, a covenant will need to be created which will be recorded against title to the property at the time of recordation of the Final Plat.
4. A draft of the Declaration of Covenants will need to be submitted with the Final Plat application.
5. The draft subdivision plat does not have survey calls allowing the lots to be identified and created. For final plat these calls must be included in the plat.

Very truly yours,

KARP NEU HANLON, P.C.



Michael J. Sawyer

MJS:

Re: 9NWH Subdivision New Castle, CO-CDOT access (33011)

From : Killian - CDOT, Brian <brian.killian@state.co.us>

Tue, Apr 23, 2024 09:52 AM

Subject : Re: 9NWH Subdivision New Castle, CO-CDOT access (33011)

To : John Petaisto <jpetaisto@sopriseng.com>

Cc : Aggen <kandis.aggen@state.co.us>, ynichol <ynichol@sopriseng.com>, Karthik Vishwamitra - CDOT <karthik.vishwamitra@state.co.us>

John,

Since this development does not increase traffic by more than 20% over existing volumes at either Castle Valley Blvd or 7th St intersections. No new access permit is required by volume.

Thanks,

Brian Killian
Region 3 Access Program Manager
Traffic & Safety



P 970-683-6284 | C 970-210-1101 | F 970-683-6290
222 S. 6th St, Room 100 Grand Junction, CO 81501
brian.killian@state.co.us | www.codot.gov | www.cotrip.org

On Thu, Apr 18, 2024 at 10:12 AM jpetaisto@sopriseng.com <jpetaisto@sopriseng.com> wrote:
Hi Brian,

We are working on a development application in the existing Castle Valley Ranch PUD subdivision in New Castle, CO. The proposed development is proposing 130 residential units. Kimley Horn has prepared the attached traffic study. Section 5.1 of the traffic study addresses the percentage of project traffic at the two CDOT Highway 6 intersections in New Castle.

- Project traffic represents a 4.3 percent increase during the afternoon peak hour at the US-6 & 7th Street
- Project traffic represents a 7.5 percent increase during the afternoon peak hour at the US-6 & Castle Valley Boulevard

New Castle Town Staff has request the development team reach out to CDOT. Can you please respond with a letter or by email to confirm that a CDOT Access Permit is not required?

Call or email with any questions or if you need additional information.

Thanks,
John Petaisto, PE
Sopris Engineering
970-316-5212



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



April 17, 2024

John Petaisto, PE
Project Manager
Sopris Engineering, LLC

RE: 9 N Wildhorse New Castle, CO 81674

John Petaisto:

Please accept this letter as confirmation of Comcast Cable Corporation ability to provide cable service to the captioned location. The provision of service is contingent upon successful negotiations of an agreement between the developer and Comcast Cable Corporation.

If you have any questions at all, please contact me with the information below.

Sincerely,

Kody Davis
Network Project Manager
Aspen, CO 81611
(970)618-0483

This letter is not intended to give rise to binding obligations for either party. Any contractual relationship between the parties will be the result of formal negotiations and will only become effective upon execution of the contract by representatives of the parties authorized to enter into such agreements. During any negotiations, each party will bear its own costs and will not be responsible for any costs or expenses of the other party, unless separately agreed to in writing.



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](https://www.xcelenergy.com/ConstructionAndInspection).

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](https://www.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



STRATEGIC MULTIFAMILY ANALYSIS

NEW CASTLE APARTMENTS
NEW CASTLE, COLORADO

Prepared for R2 Partners
May 16, 2023

ABOUT RCLCO

Since 1967, RCLCO has been the “first call” for real estate developers, investors, the public sector, and non-real estate companies and organizations seeking strategic and tactical advice regarding property investment, planning, and development.

RCLCO leverages quantitative analytics and a strategic planning framework to provide end-to-end business planning and implementation solutions at an entity, portfolio, or project level. With the insights and experience gained over 50 years and thousands of projects—touching over \$5B of real estate activity each year—RCLCO brings success to all product types across the United States and around the world.

Learn more about RCLCO at www.RCLCO.com.

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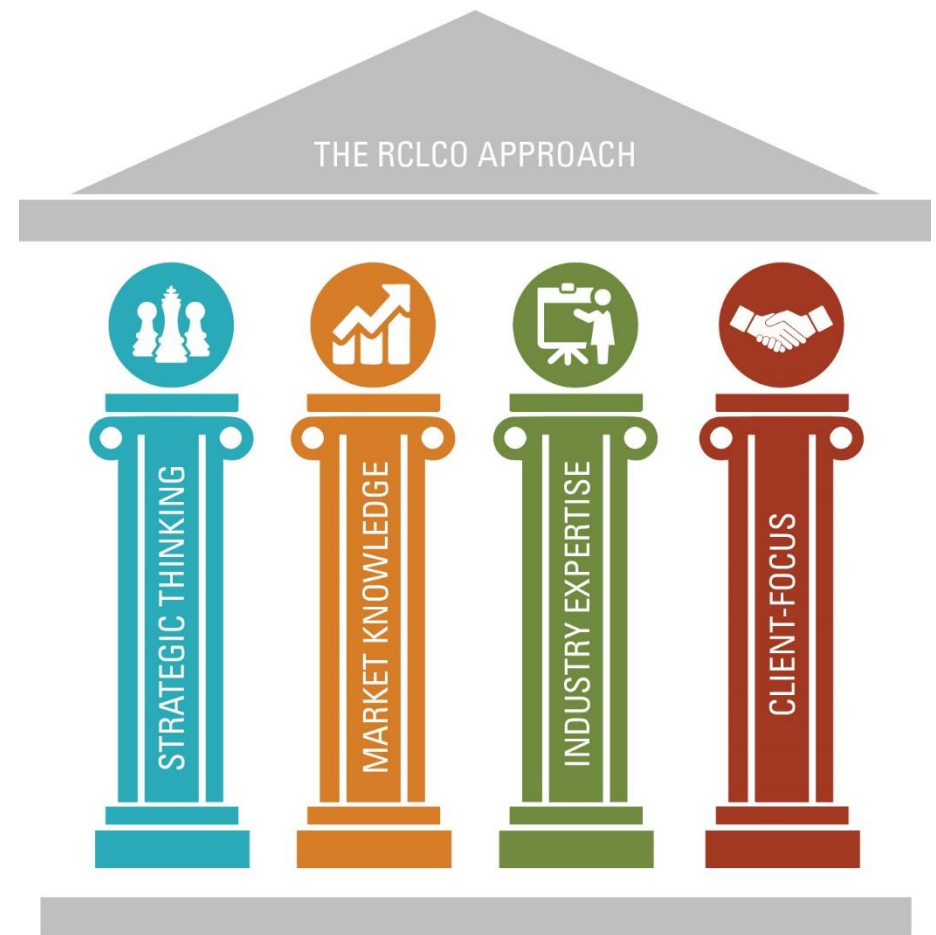
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KEY FINDINGS

- **Regional Market:** Though Roaring Fork Valley has seen substantial economic growth in the past decade, like many mountain markets, it lacks sufficient housing. While the Central Western Slope* has experienced a ramping up of deliveries in the past five years, amounting to a 35% increase in total inventory since 2018, vacancy remains low (3.5% as of May 2023). Further, the rental housing shortage has been exacerbated by the COVID-19 pandemic; as the short-term rental market soared, many conventional rental units were taken off the market to take advantage of elevated short-term rental rates, coupled with a rise in remote workers and part-time residents. The rental housing shortage is also demonstrated by increasing commute times, as workers are forced to commute further distances into communities such as New Castle, in order to find more affordable housing options. Overall, the Roaring Fork Valley has strong market fundamentals, demonstrated not only by low vacancy but strong rent growth of 6.1% from 2018 to 2022.
- **Site Context:** The subject site's location in New Castle, CO benefits from strong access to recreation, reputable schools, and regional hubs throughout the Western Slopes along I-70. Commercial and residential development in New Castle is growing, with a new retail center and grocer planned for near the subject site and additional phases of for-sale homes recently announced for Lakota Canyon Ranch. Against this backdrop, New Castle is primed for new high-end rentals appealing to families, empty nesters, and remote-capable professionals.
- **Competitive Set:** Given the lack of multifamily communities near the subject site in New Castle, RCLCO surveyed eight new communities; five in Glenwood Springs, one in Carbondale, and two in the Vail Valley. Given the anticipated quality and the unique segmentation strategy of the subject site, RCLCO anticipates that the subject site can achieve pricing near the top of the competitive set but at a discount to some well-executed communities located in high home-value areas such as Carbondale and the Vail Valley.

- **Market Depth and Segmentation:** The current program proposes a mix of one- and two-bedroom units with dens/home offices to appeal to young and mature professionals working from home, three-bedroom units tailored for families, and spacious one- and two-bedroom units at premium price points suited for downsizing empty nesters. RCLCO's demand analysis determined that, while there is sufficient market depth for this segmentation strategy, particularly given the dearth of supply in the multifamily and shadow market, a rebalancing of the program to allocate more units towards the live-work model and two-bedroom empty nester units will likely reduce absorption risk and better align with rental demand.
- **RCLCO Program Recommendations:** While RCLCO's empty nester rents are slightly lower than the client-proposed rents, a mix towards larger units and the higher proposed rents for the family and live-work units, where market depth is stronger, results in a higher average asking rent for the subject site. Under this program, RCLCO estimates that the subject site can lease up to 14 units per month and reach stabilization in roughly nine months. RCLCO also recommends exploring the possibility of replacing the three-bedroom family units with a small number (10-12 units) of townhomes sized between 1,600 SF and 1,800 SF, which RCLCO estimates can rent for between \$4,600 and \$5,000 per month.

RCLCO Recommended Unit Mix, Unit Sizes, and Rent Ranges (Q2 2023 \$) Subject Site; May 2023

FLOORPLAN	UNITS	MIX	UNIT SIZE SF	ASKING RENT	
				AVG.	AVG. \$/SF
Empty Nester - 1BR+Den	5	3.8%	800	\$2,905	\$3.63
Empty Nester - 2BR+Den	15	11.5%	1,400	\$4,260	\$3.04
Live-Work - 1BR+Den	34	26.2%	700	\$2,285	\$3.26
Live-Work - 2BR+Den	51	39.2%	1,100	\$3,085	\$2.80
Families - 3BR Multifamily	25	19.2%	1,500	\$4,000	\$2.67
TOTAL/AVG.	130	100.0%	1,095	\$3,180	\$2.90

*Defined here as Garfield, Pitkin, Summit, Eagle counties..

Source: RCLCO

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RECOMMENDED FEATURES AND AMENITIES

DESIGN FEATURES

RCLCO recommends the following unit finishes for the Live-Work and Family units, while the Empty Nesters units are expected to have a high level of quality (higher ceilings, bigger windows, upgraded appliances and surfaces):

- ▶ **Kitchen:** Wood cabinets; quartz countertops; kitchen islands in select units; stainless steel appliances; vinyl plank flooring; open floorplan to living room; glass tile backsplash; integrated lighting and designer light fixtures, USB outlets
- ▶ **Bathrooms:** Vinyl plank or tile flooring; glass-tile accents; quartz or other stone countertops
- ▶ **Bedrooms:** Vinyl plank flooring or carpet; walk-in closets in select units
- ▶ **Smart Home Technology:** Bluetooth sound system; electronic lock system; potential for Alexa and/or Google Home integration
- ▶ **Other:** 9' Ceilings; ceiling fans, in-unit washer/dryer; some balconies/patios if possible

COMMUNITY AMENITIES

- ▶ **Fitness:** Include cardio and weight equipment; spinning or yoga room; on demand fitness training.
- ▶ **Club Room:** Open-style lounge space adjacent to the leasing office; maintain high-quality finish of the building; Wi-Fi offered throughout common areas.
- ▶ **Outdoor Space:** Outdoor terrace with seating areas; grilling stations; fire pits
- ▶ **Storage:** Ski/snowboard storage; bicycle storage; extra on-site personal storage for \$50-\$65 monthly
- ▶ **Pet Amenities:** Pet friendly; dog wash room
- ▶ **Other Amenities:** Room or lockers allowing for 24/7 package pickup for online retail and grocery deliveries; possibly a children's playground or playroom.
- ▶ **Parking:** Free surface parking and/or \$50-\$75 monthly for additional covered or garage parking spaces.

Photos of Recommended Features and Amenities
Vail Valley and Glenwood Springs, 2023



Image Source: Community Websites

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SITE ASSESSMENT

STRENGTHS

- **Recreation Opportunities:** The subject site boasts high-quality recreation opportunities. Situated adjacent to the mountains, this development provides ample trails for hiking, biking, and exploring the surrounding nature. There is an expansive trail network on this 50-acre site that places potential residents in the heart of the natural amenities of New Castle.
- **Nearby Schools:** Providing great convenience for families, the subject site is located within a mile of the co-located Kathryn Senor Elementary School and Riverside Middle School, part of the reputable Garfield School District Re-2. The ability for parents to drop off their children at school in a short five-minute drive and have access to the school's playgrounds and sports fields will enhance the subject site's appeal among family renters.
- **Regional Access:** Providing excellent regional access, the subject site is only four minutes from I-70. Residents may conveniently travel to the East or West while also benefiting from the serenity of a home situated 1.5 miles off from the busy highway and nestled against the mountains. Via I-70, Highway 6, and Highway 82 residents have access to nearby employment hubs in Glenwood Springs, Snowmass and Aspen.

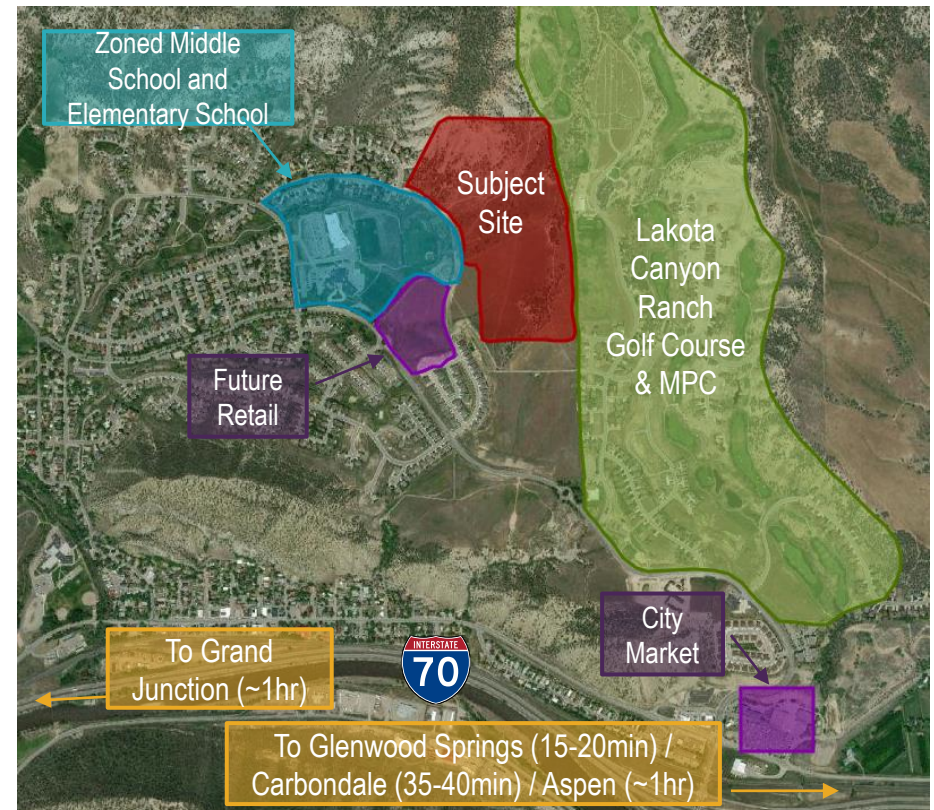
OPPORTUNITIES

- **Future Retail Next to Subject Site:** Due to the small-town character of New Castle, retail offerings are currently relatively limited. However, a retail center with a grocer is in development next to the subject site. Excellent access to new retail will help the subject site compete with other communities in the Roaring Fork Valley.
- **Nearby Development:** The subject site is adjacent to the Lakota Canyon Ranch MPC, home to a golf course and newly built homes. The new owners of this community are currently planning a new phase of 52,000 SF of commercial development and 183 residential units, primarily for-sale offerings. Residents at the subject site will benefit from this increased access to retail, and active for-sale development typically creates additional demand for rentals nearby as families move into the area or rent as they await construction on a new home.

WEAKNESSES

- **Commuting on I-70:** Although the subject site is conveniently located close to I-70, commutes to Glenwood Springs or Aspen are subject to traffic and congestion. Depending on the time of day, drivers may face increased congestion during their commutes. Given the strategic positioning of the subject site with larger units and home offices, any inconveniences from traffic will likely be mitigated by the living opportunities created specifically for remote and hybrid workers.

Aerial Map of the Subject Site



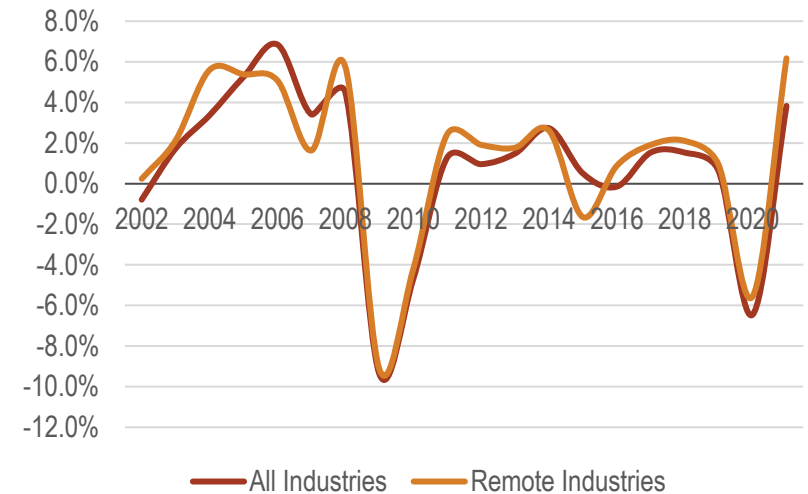
Source: Google Maps; RCLCO

EMPLOYMENT OVERVIEW

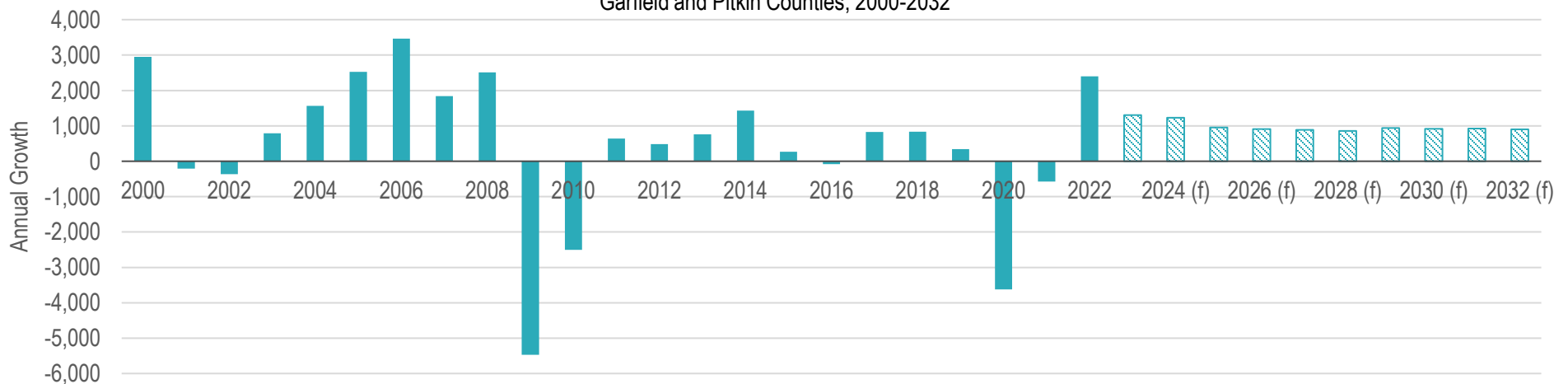
STEADY ECONOMIC GROWTH PROJECTED FOR THE NEXT TEN YEARS, LED BY REMOTE INDUSTRIES

- From 2022 to 2019, Garfield and Pitkin Counties have witnessed relatively steady employment growth, with an average of 612 new jobs added to the economy each year. Over this period the economy expanded by nearly 10%.
- Likely empowered by a shift to remote jobs, projections demonstrate promising and sustainable employment growth in the two counties moving forward. While employment growth in the two counties lagged the Denver MSA over the past ten years, growing at 0.5% compared to 2.4% in the MSA, the two counties are expected to outpace Denver growth over the next five years, with employment in the combined counties expected to grow at 1.9% compared to 1.4%.
- Industries with the capacity for remote work have outperformed the general local economy. In 2020, remote-capable industries proved more resilient to negative economic pressure. Additionally, within Garfield and Pitkin Counties in 2021, industries with the potential for remote work grew by a rate of 6.6%, outpacing the general growth rate of 3.8%. This growth of remote jobs in the region bodes well for the live-work component of the subject site.

Annual Change in Job Growth in Remote Work-Capable Industries*
Garfield and Pitkin Counties, 2001-2021



Historical and Projected Employment Growth
Garfield and Pitkin Counties, 2000-2032



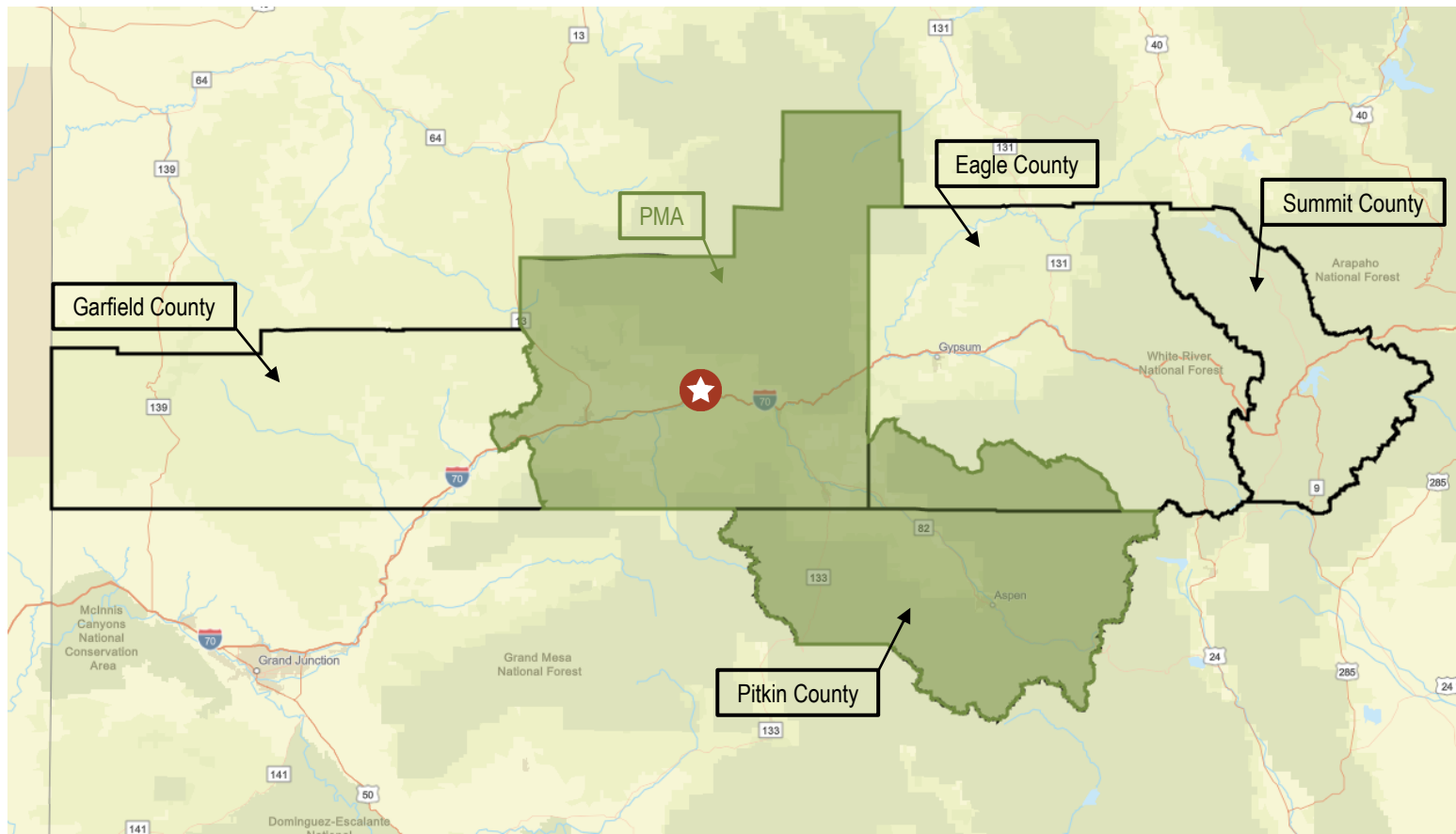
* Remote Work Industries are generally defined by the capability for work-for-home or hybrid schedules and includes the following sectors: Information, Financial Services, Real Estate, Professional Services, Arts/Entertainment, and Other Services

Source: Colorado State Demography Office; RCLCO

PRIMARY MARKET AREA

- The Primary Market Area, from which most demand is expected to emanate, encompasses the majority of the developed land in the Roaring Fork Valley, spanning from Rifle (West) to Glenwood Springs (East), along the I-70 corridor, and covers as far south as Aspen, along Route 82. This area mostly overlaps with the geography studied for the Greater Roaring Fork Regional Housing Study, excluding Gypsum/Eagle (east) and Parachute (west), neither of which feature notable daily commuting traffic to and from Glenwood Springs or Aspen, the area's major commuting cores.

Map of PMA and 4-County Region; CO 2023
Garfield, Pitkin, Eagle, and Summit Counties



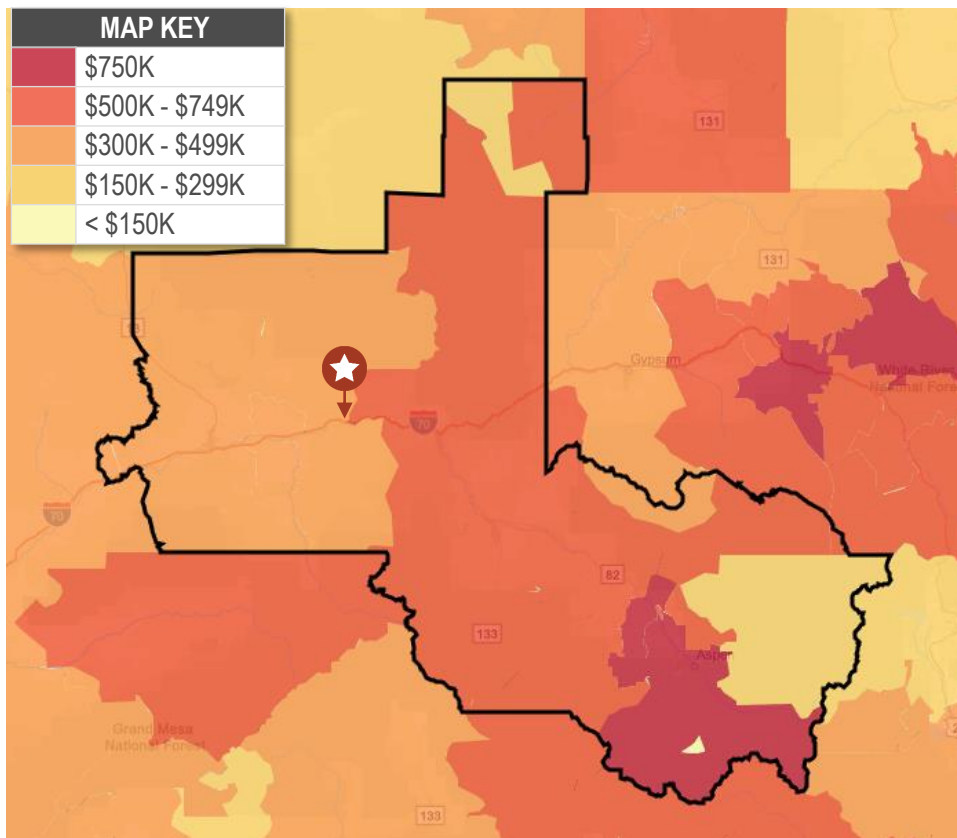
★ = Subject Site

REGIONAL HOME VALUES

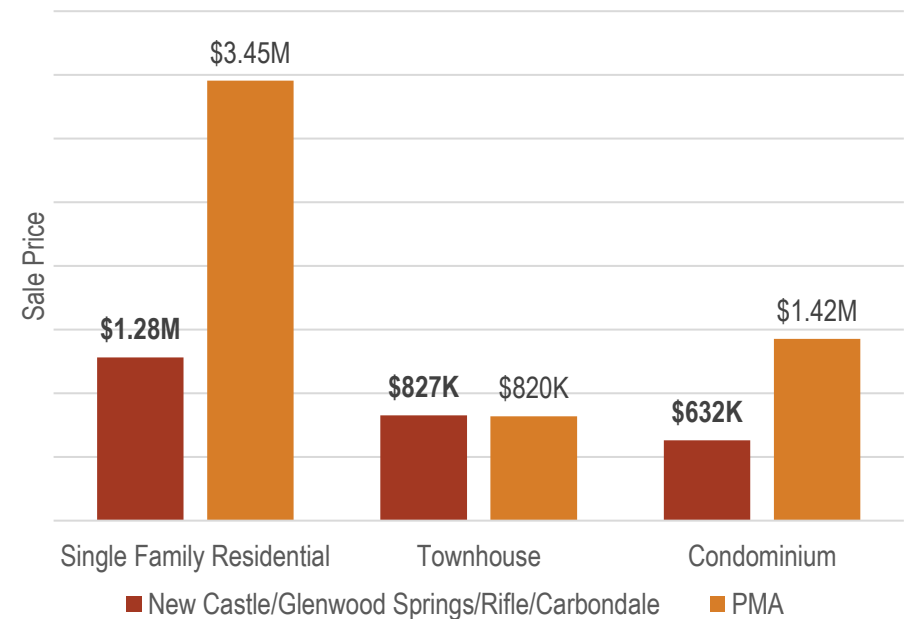
THE ROARING FORK VALLEY COMMANDS HIGH MEDIAN HOME VALUES, AMPLIFYING DEMAND AND CREATING A STRONG OPPORTUNITY TO SUCCESSFULLY DELIVER HIGH-END RENTAL PRODUCT TO THE MARKET

- The PMA and the local area both experience high home values, specifically, east of the subject site near Glenwood Springs and Aspen. Due to inflated home prices in tourist heavy towns such as Aspen, there is an excess of strong demand that extends to nearby areas as potential homeowners are priced out of the market, warranting increased inventory of high-quality rental product throughout the Roaring Fork Valley.

Median Home Value by Zip Code
PMA; 2022



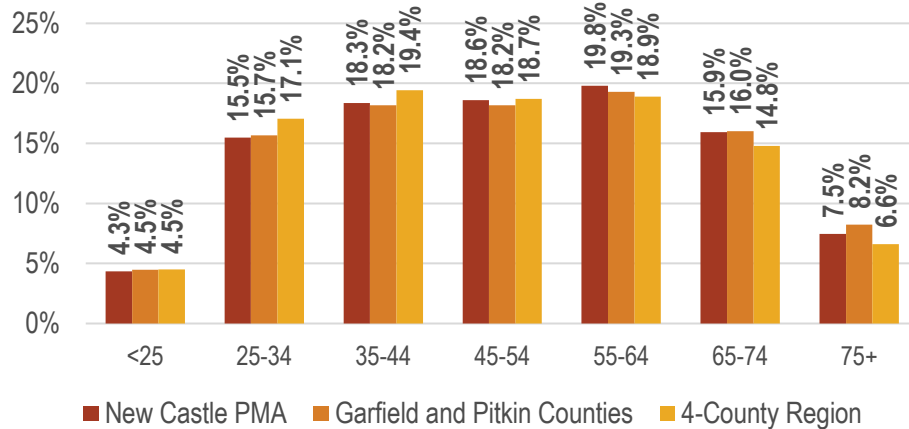
Average Sale Price
Local Area & PMA; May 2022-May 2023



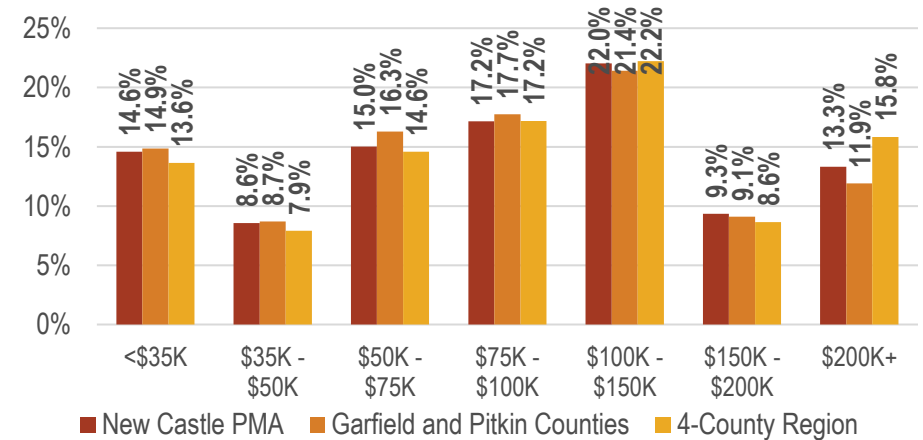
TARGET MARKET DEMOGRAPHICS

THE NEW CASTLE PMA EXHIBITS A DIVERSE AGE RANGE AND A BALANCED INCOME DISTRIBUTION IN LINE WITH REGIONAL TRENDS; LIKELY DUE TO RELATIVE AFFORDABILITY COMPARED TO THE 4-COUNTY REGION

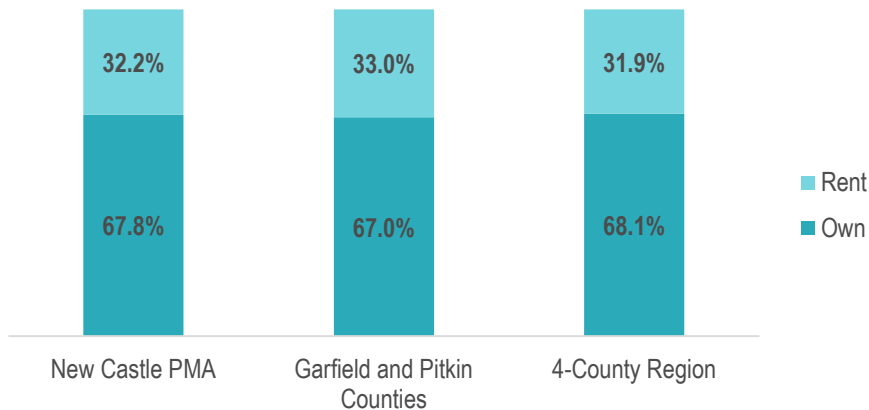
Distribution of Households by Age, 2022
PMA; Garfield and Pitkin Counties; 4-County Region



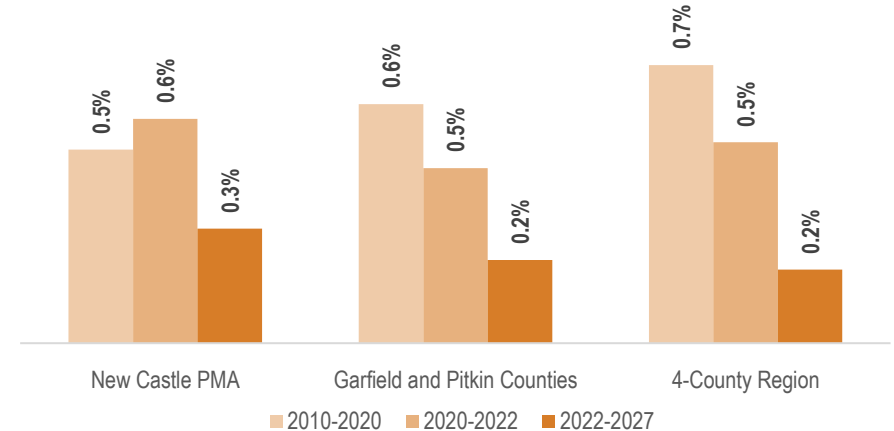
Distribution of Households by Income, 2022
PMA; Garfield and Pitkin Counties; 4-County Region



Tenure of Households, 2022
PMA; Garfield and Pitkin Counties; 4-County Region



Annual Household Growth Rate, 2010-2027*
PMA; Garfield and Pitkin Counties; 4-County Region

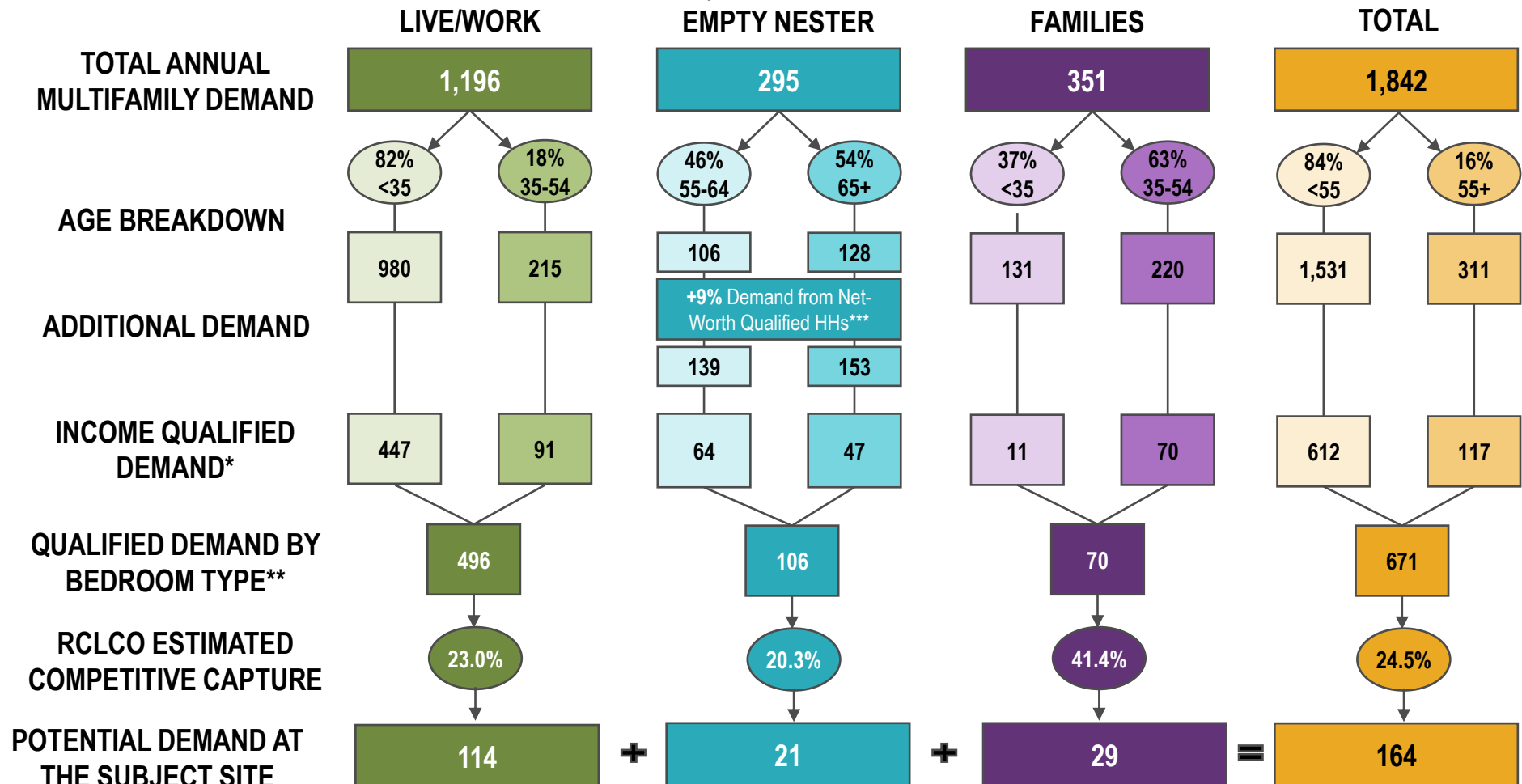


*Note that ESRI reflects lower household growth rates than the Colorado State demographer.
Source: American Community Surveys, Esri; RCLCO

CAPTURE & ABSORPTION POTENTIAL

RCLCO'S STATISTICAL DEMAND MODEL PROJECTS THE HIGHEST ABSORPTION WITH A HEAVY MIX OF LIVE/WORK AND FAMILY-ORIENTED UNITS, WHICH HAVE BEEN UNDERSERVED IN THE MARKET HISTORICALLY, AS WELL AS A SMALLER SHARE OF HIGH-END EMPTY NESTER UNITS

Summary of Capture and Absorption Analysis
Subject Site; 2023-2027



*Live-work units require \$75k income; family and empty nester units require \$100k income threshold; **Based on unit types by product/audience segment

***Incorporates demand from homeowners in turnover with home values over \$750K but earning less than \$100K that may also afford renting at the subject site

ANNUAL DEMAND FOR UNITS

RCLCO ESTIMATES THAT APPROXIMATELY 730 HOUSEHOLDS IN THE PMA WILL BE ABLE TO AFFORD RENTING AT THE SUBJECT SITE ANNUALLY, WITH HIGH CONCENTRATIONS OF YOUNG AND MATURE PROFESSIONAL HOUSEHOLDS

Annual Potential Demand for All Multifamily Units
Primary Market Area; 2022-2027

ECONOMIC SEGMENT	LIFESTAGE					TOTAL
	POST-GRAD	YOUNG PROFESSIONAL	FAMILY	MATURE PROFESSIONAL	EMPTY NESTER	
AFFORDABLE	199	212	199	71	104	785
	11%	12%	11%	4%	6%	43%
WORKFORCE	42	81	71	53	80	327
	2%	4%	4%	3%	4%	18%
MARKET RATE	0	370	58	52	65	545
	0%	20%	3%	3%	4%	30%
LUXURY	0	77	23	39	46	185
	0%	4%	1%	2%	2%	10%
TOTAL	241	739	351	215	295	1,842
	13%	40%	19%	12%	16%	100%
TOTAL INCOME-QUALIFIED*	0	446	81	91	111	730
	0%	61%	11%	13%	15%	40%

*Live-work units require \$75k income; family and empty nester units require \$100k income threshold

Source: Esri: US Census Bureau, RCLCO
R7-15301.07 | May 16, 2023 | 12

INCOME-QUALIFIED DEMAND FOR UNITS BY AUDIENCE AND TYPE

RCLCO ESTIMATES THAT APPROXIMATELY 730 HOUSEHOLDS IN THE PMA WILL BE ABLE TO AFFORD RENTING AT THE SUBJECT SITE ANNUALLY, WITH HIGH CONCENTRATIONS OF YOUNG AND MATURE PROFESSIONAL HOUSEHOLDS

Annual Potential Demand for All Multifamily Units
Primary Market Area; 2022-2027

		AGE											
INCOME	HOUSEHOLD TYPE	UNDER 25		25-34		35-54		55-64		65+		TOTAL	
\$75,000 - \$99,999	Single	0%	0	6%	10	23%	18	36%	8	40%	7	17%	57
	Couple	32%	20	44%	67	15%	12	49%	11	45%	8	32%	107
	Roommates	68%	42	35%	54	0%	0	5%	1	10%	2	30%	99
	Family	0%	0	14%	21	63%	50	10%	2	5%	1	21%	71
\$100,000 - \$149,999	Single	0%	0	2%	2	16%	12	0%	0	0%	0	4%	15
	Couple	32%	13	38%	57	5%	4	42%	18	10%	3	28%	95
	Roommates	68%	27	53%	80	25%	19	42%	18	90%	27	51%	170
	Family	0%	0	7%	11	54%	40	15%	6	0%	0	17%	58
\$150,000 AND OVER	Single	0%	0	0%	0	21%	10	0%	0	20%	3	8%	14
	Couple	32%	3	51%	34	27%	14	100%	28	80%	14	54%	92
	Roommates	68%	5	49%	32	6%	3	0%	0	0%	0	24%	41
	Family	0%	0	0%	0	46%	23	0%	0	0%	0	14%	23
TOTAL INCOME & NET-WORTH QUALIFIED	Single	0%	0	3%	12	26%	41	0%	0	7%	3	8%	56
	Couple	32%	36	46%	158	19%	29	66%	46	35%	17	39%	286
	Roommates	68%	74	48%	166	14%	21	25%	18	57%	27	42%	307
	Family	0%	0	3%	11	41%	64	9%	6	0%	0	11%	81
	Total	15%	110	48%	347	21%	155	10%	70	6%	47	100%	730

Note: Green = Live/work demand, purple = family demand, yellow = empty nester demand segment

Source: Esri: US Census Bureau; RCLCO

PROGRAM RECOMMENDATIONS

RCLCO RECOMMENDS REBALANCING THE PROGRAM IN TERMS OF SEGMENTATION AND UNIT TYPE MIX TO ALIGN WITH THE SOURCES OF DEMAND IN THE MARKET

- In order to evaluate the optimal program, RCLCO analyzed the market capture needed to lease up in a year based on current levels of demand, relative to the market capture needed based on the program and existing levels of competition. From there, RCLCO modified the program based on demand by segment and unit type to optimize the mix, resulting in lower necessary captures (and captures below the project's fair share of competition) that cater to market demand and will likely result in a faster lease up timeline.
- Key program changes include a higher share of 2BRs in terms of Empty Nester units, as well as a stronger mix of Live-Work units given strong young professional market demand. RCLCO recommends a similar mix of 3BR family-oriented units.

Client-Provided Program

Subject Site; May 2023

			Mix			Count			Annual Income-Qualified Market Depth						Capture	
	Mix	Units	1BR	2BR	3BR	1BR	2BR	3BR	Studios	1BR	2BR	3BR	Total	Total In Program	Required Capture*	Competitive Share Capture**
Empty Nester	25%	32	50%	50%	0%	16	16	0	1	29	77	4	111	106	38.4%	28.9%
Families (MF)	25%	33	0%	0%	100%	0	0	33	0	0	11	70	81	70	47.3%	48.2%
Live-Work	50%	65	75%	25%	0%	49	16	0	18	160	336	24	538	496	24.1%	18.6%
Total	100%	130				65	32	33	19	188	424	98	730	671	28.8%	23.3%

RCLCO Revised Program

Subject Site; May 2023

			Mix			Count			Annual Income-Qualified Market Depth						Capture	
	Mix	Units	1BR	2BR	3BR	1BR	2BR	3BR	Studios	1BR	2BR	3BR	Total	Total In Program	Required Capture*	Competitive Share Capture**
Empty Nester	15%	20	25%	75%	0%	5	15	0	1	29	77	4	111	106	18.5%	20.3%
Families (MF)	20%	25	0%	0%	100%	0	0	25	0	0	11	70	81	70	35.8%	41.4%
Live-Work	65%	85	40%	60%	0%	34	51	0	18	160	336	24	538	496	17.6%	23.0%
Total	100%	130				39	66	25	19	188	424	98	730	671	19.7%	24.5%

*Assumes a one-year lease-up period, the equivalent of 11 to 12 units per month

** Competitive Share Capture is the estimated capture of the subject site units of all rental units in the PMA in turnover available at these rent levels by unit type. It also includes any pipeline communities that may be leasing up within a similar timeframe – there are currently approximately 296 units under construction and 240 units planned

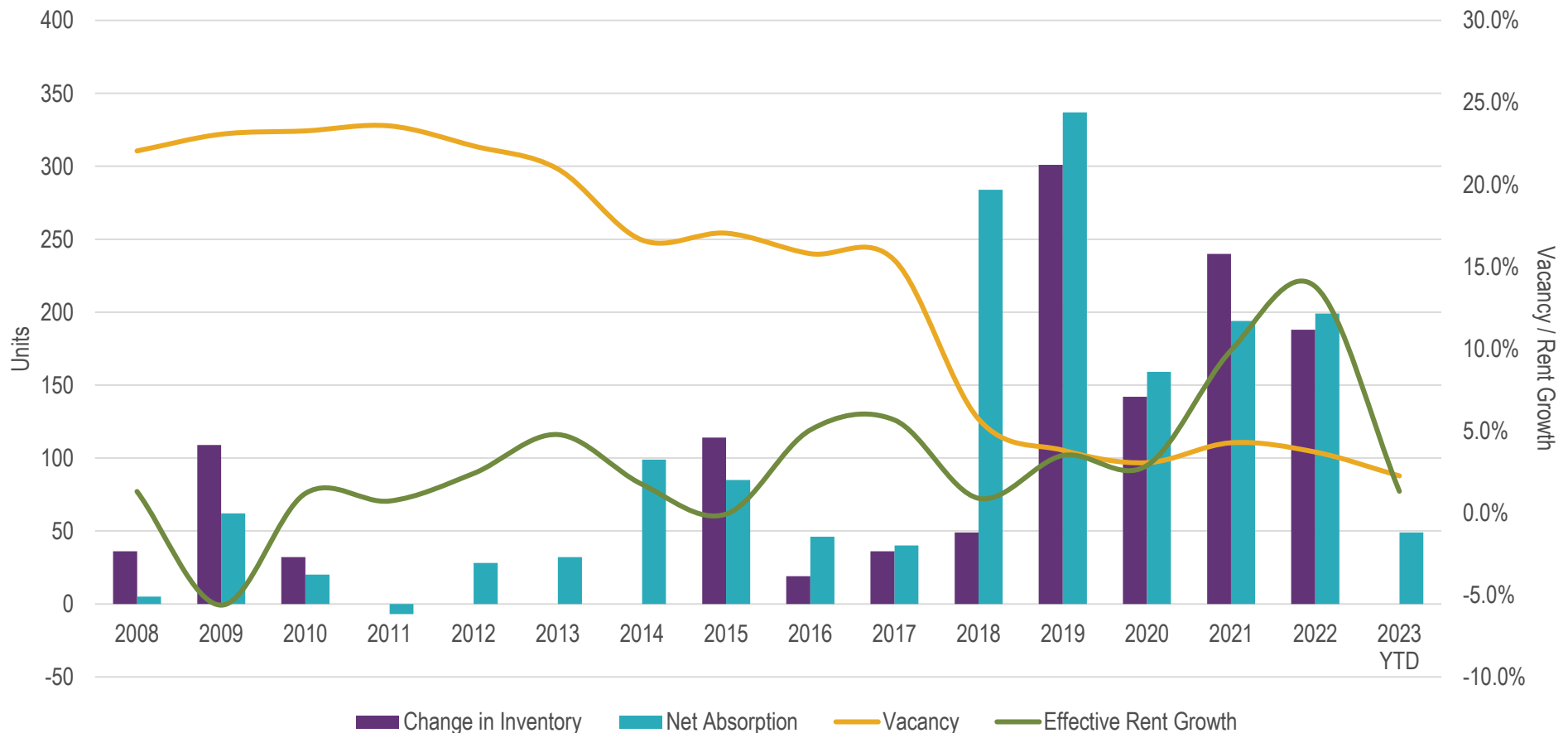
Source: Costar; RCLCO

REGIONAL MULTIFAMILY TRENDS

WITH NET ABSORPTION OUTPACING DELIVERIES, STRUCTURAL DEMAND FOR MULTIFAMILY UNITS IN THE REGION HAS VASTLY EXCEEDED SUPPLY, RESULTING IN LOW VACANCY RATES AND STRONG RENT GROWTH

- **Significant market expansion starting in 2018:** From 2018 to 2022 there were a total of 920 units delivered to the market with an average of 184 new units per year. In this same time frame, 1,173 units were absorbed into the market, averaging 235 units per year. Due to demand outpacing supply, the additional 250 units absorbed into the market during this timeframe was captured by existing inventory. Strong market dynamics and particularly high demand beyond historical absorption levels signals a need for new rental product in the region.

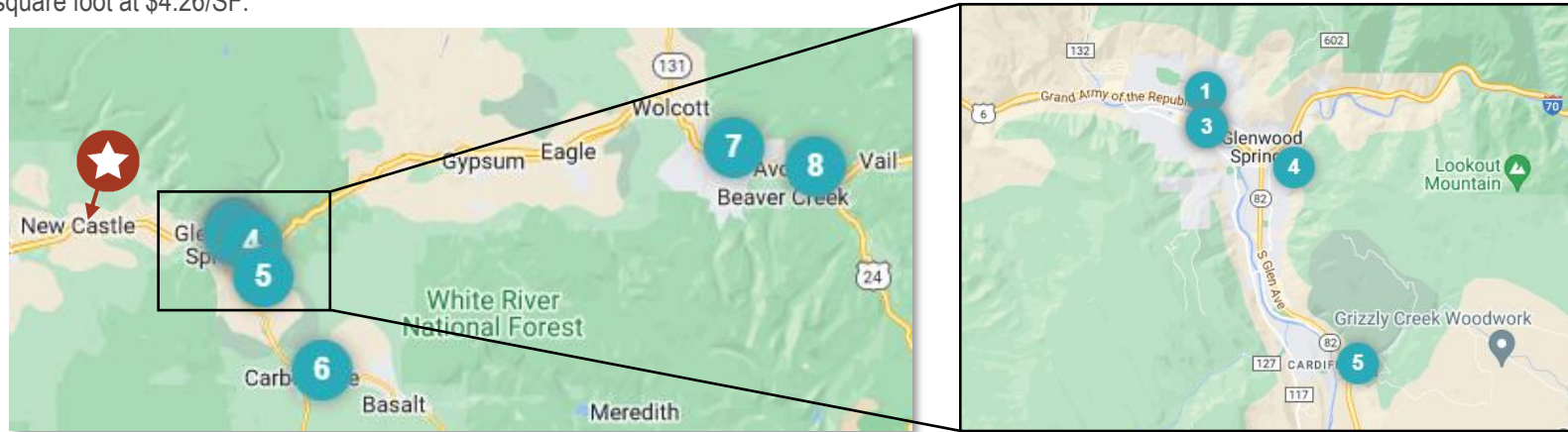
Completions, Absorption, Vacancy, and Rent Growth
Primary Market Area: 2008-2023



REGIONAL COMPETITIVE SUPPLY

THE SUBJECT SITE'S PROPOSED RENTS ARE IN LINE WITH NEW MULTIFAMILY COMMUNITIES IN THE BROADER REGION

- RCLCO evaluated a competitive set of eight other properties in the four-county region* to understand market dynamics and pricing. These communities were completed between 2019 and 2022 and range in size from 27 to 240 units. The average asking rent among the set is \$2,546, which equates to \$3.28/SF. The Piedmont garners the highest rent per square foot at \$4.26/SF.



MAP KEY	COMMUNITY NAME	YEAR BUILT	NUMBER OF STORIES	MARKET RATE UNITS	OCC. RATE	AVG. SIZE (SF)	AVG. ASKING RENT	AVG. ASKING \$/SF
1	Six Canyon	2019	4	116	99%	837	\$2,405	\$2.87
2	L3 at Green Leaf Lofts	2022	4	88	100%	548	\$2,009	\$3.66
3	Green Leaf Lofts	2019	4	181	100%	821	\$2,467	\$3.01
4	Altitude Apartments	2022	3	100	98%	790	\$2,121	\$2.68
5	Buffalo Valley	2021	4	54	100%	913	\$2,515	\$2.75
6	Hayden Place	2021	3	27	21%	846	\$3,336	\$3.94
7	6 West	2019	3	120	100%	826	\$2,264	\$2.74
8	The Piedmont	2021	4	240	99%	729	\$3,106	\$4.26
AVERAGE		2021	4	116	97%	777	\$2,546	\$3.28

*Pitkin, Garfield, Summit and Eagle counties.
Source: Axiometrics; Costar; RCLCO

COMPARABLE PROPERTY PRICING FACTORS RANKING

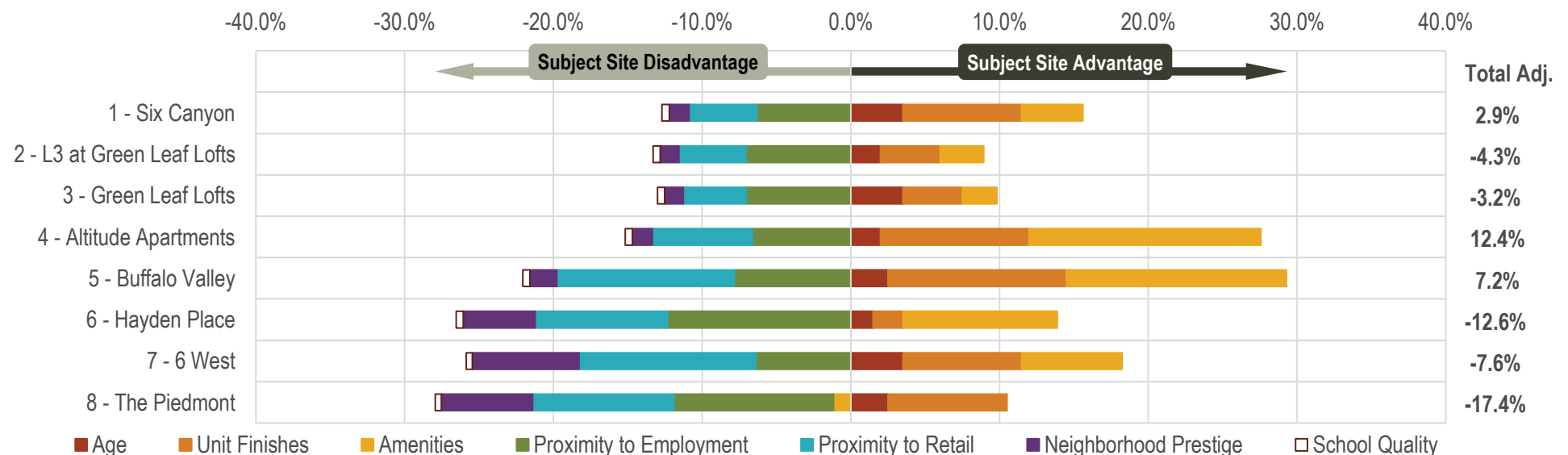
RCLCO COMPARED THE EIGHT COMPETITIVE COMMUNITIES FOR THEIR STRENGTHS AND WEAKNESSES RELATIVE TO THE SUBJECT SITE. THE GRAPH BELOW CONVEYS THE QUANTITATIVE ADJUSTMENTS MADE TO EACH COMMUNITY RELATIVE TO THE ANTICIPATED EXECUTION OF THE SUBJECT SITE

- **Age:** The subject site will attain a premium for its new construction relative to all communities in the set.
- **Unit Finishes:** RCLCO anticipates that the subject site will offer unit finishes superior to most properties in the competitive set to varying degrees. The Empty Nester units will have exceptional finishes not currently found in the market, garnering those units a 15% premium above its base pricing.
- **Community Amenities:** Pricing adjustments assume the subject site will offer a community amenity package significantly better than most properties in the competitive set, with the exception of the Piedmont, which can support more amenities due to its size.
- **Proximity to Employment & Retail:** RCLCO measures the number of employees working within a 45-minute commute of each community and the

value of retail trade and food and beverage sales within a 10-minute drive to adjust for access to employment and retail. As these communities are in Glenwood Springs, Carbondale, and Eagle County, they benefit from better proximity to existing concentrations of employment and retail than the site.

- **Neighborhood Prestige:** To account for locational differences, RCLCO used nearby home values as a proxy for neighborhood prestige. While homes values are rising in New Castle, the area is still priced at a discount to Carbondale and Eagle County.
- **School Quality:** While most zoned school districts are of similar quality, the subject site's Garfield County schools This quality is only factored into the pricing for the family-targeted townhome units, where school quality will likely be a more important factor.

Pricing Adjustments

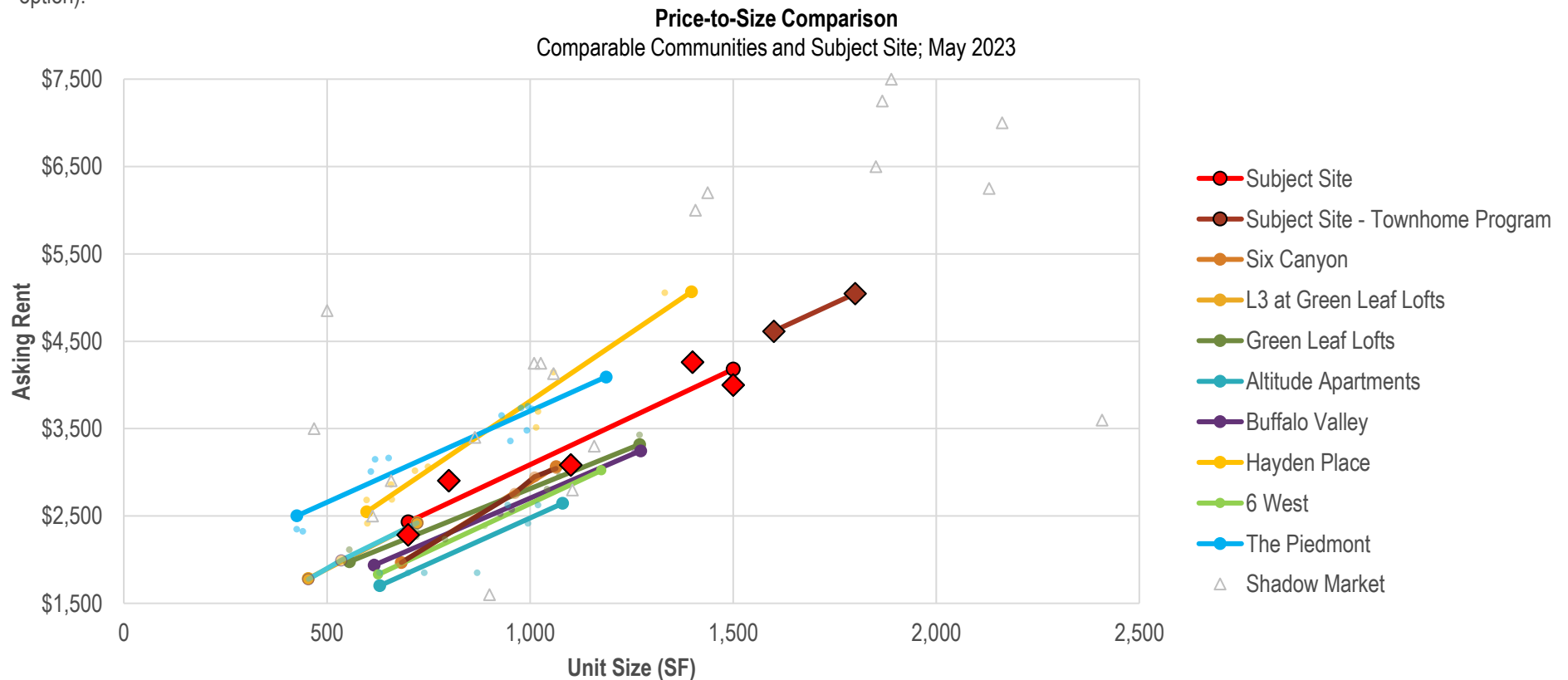


Source: RCLCO

RENT AND SIZE COMPARISON

THE SUBJECT SITE WILL BE POSITIONED NEAR THE TOP OF THE LOCAL MARKET ON AN ABSOLUTE BASIS, GIVEN THE LARGER UNIT SIZES AND ANTICIPATED QUALITY OF FINISHES AND EXECUTION

- The price-to-size chart compares unit sizes and prices at the subject site with those at the comparable communities, as well as the shadow market (Zillow listings), which is dominated by larger, expensive homes today. The chart reveals the typical slope of pricing for various unit sizes in the market and which communities are achieving top of market rents by unit type.
- RCLCO expects the subject site to achieve market rents near the top of the market in the competitive set, below only Hayden Place and The Piedmont, which benefit from their location in high home-value areas. Pricing power at the subject site is driven by the anticipated quality of finishes and community execution, in addition to the dearth of available institutional-quality rental product in the market. The townhome alternate can push pricing beyond the multifamily units at the subject site, given the premium this product type commands on the shadow market relative to multifamily, while providing an option for an underserved segment of the market (see the following page for more on the townhome option).

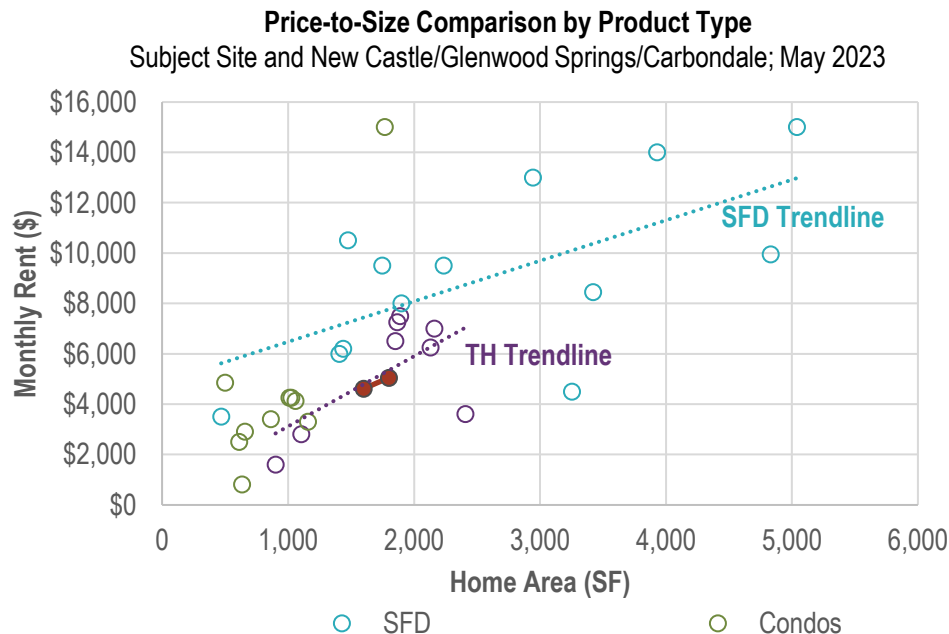


Source: Leasing agent interviews; Property website; AxioMetrics; Zillow; CoStar; RCLCO

TOWNHOME ALTERNATIVE

BASED ON THE PERFORMANCE OF TOWNHOMES IN THE SHADOW MARKET, THE 3BR TOWNHOME OPTION IS LIKELY TO GARNER A ROUGHLY 9% PREMIUM OVER 3BR MULTIFAMILY UNITS IN THE MARKET

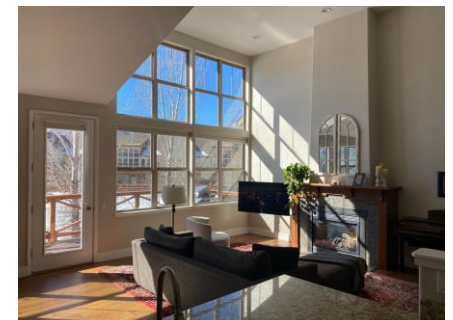
- In addition to the competitive set, RCLCO examined the shadow rental market in the New Castle/Glenwood Springs/Carbondale area, which includes listings for individual single-family homes, townhomes, and condominiums. RCLCO focused on this smaller subset of the PMA to exclude high-priced listings in Aspen and Snowman that typically target a seasonal or short-term renter. At the time of RCLCO's survey in May, there were 32 active shadow market rental listings on Zillow, including 29 listings for units with one to four bedrooms that may be more competitive to the subject site.
- While the majority of the inventory is concentrated in Carbondale and Basalt, which can partially explain their high pricing, the three-bedroom homes in the shadow market command rents significantly higher than three-bedroom multifamily units in market on both an absolute and price per square foot basis. When focusing on three-bedroom townhomes in the shadow market, the price per square foot for these units garners a roughly 9% premium over three-bedroom multifamily units. This is a higher premium than RCLCO normally sees for BFR units and indicates high demand and undersupply for townhomes and single-family detached rentals in this market in particular, which are more spacious and livable for families than multifamily units.
- The subject site offers a promising opportunity to introduce a small number (10-12 units) of townhomes sized between 1,600 SF and 1,800 SF. After integrating 9% townhome premium, RCLCO estimates that these townhomes can rent for between \$4,600 and \$5,000 per month.



Shadow Market Summary (All Product Types) New Castle/Glenwood Springs/Carbondale; May 2023

UNIT TYPE	QUANTITY	AVG. SIZE	AVG. PRICE	AVG. PRICE / SF
1BR	7	662	\$2,795	\$4.22
2BR	6	1,184	\$4,705	\$3.97
3BR	14	2,015	\$9,379	\$4.65
4BR	2	4,126	\$9,200	\$2.23
TOTAL / WTD. AVG.	29	1,662	\$6,810	\$4.10

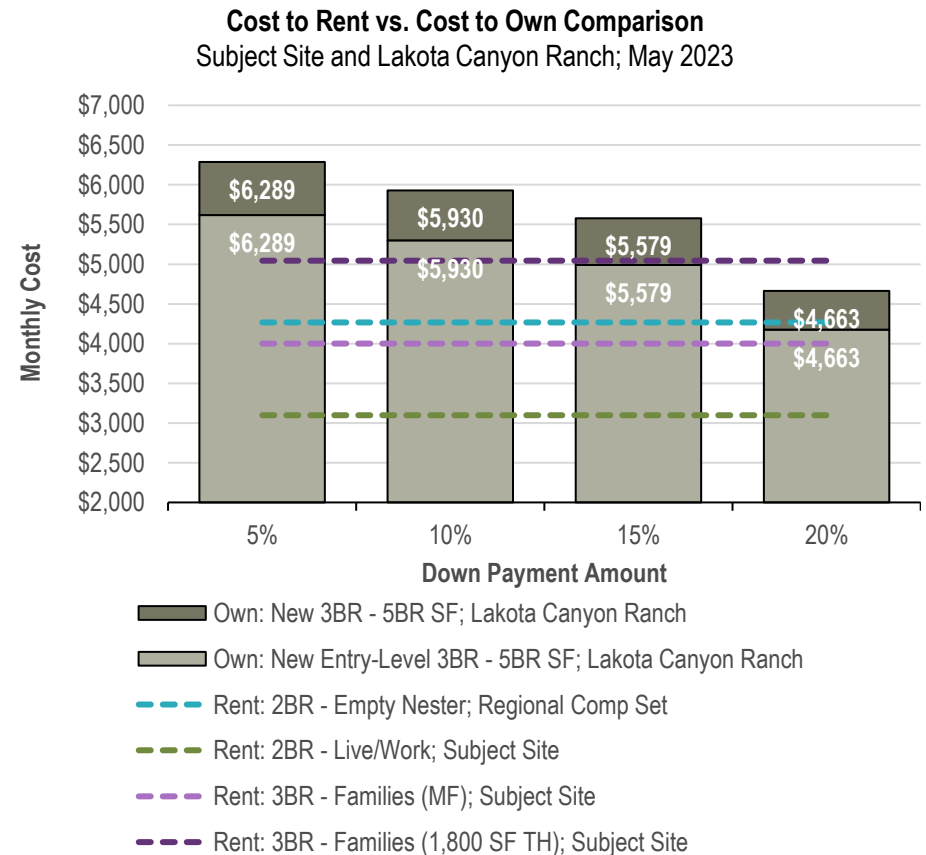
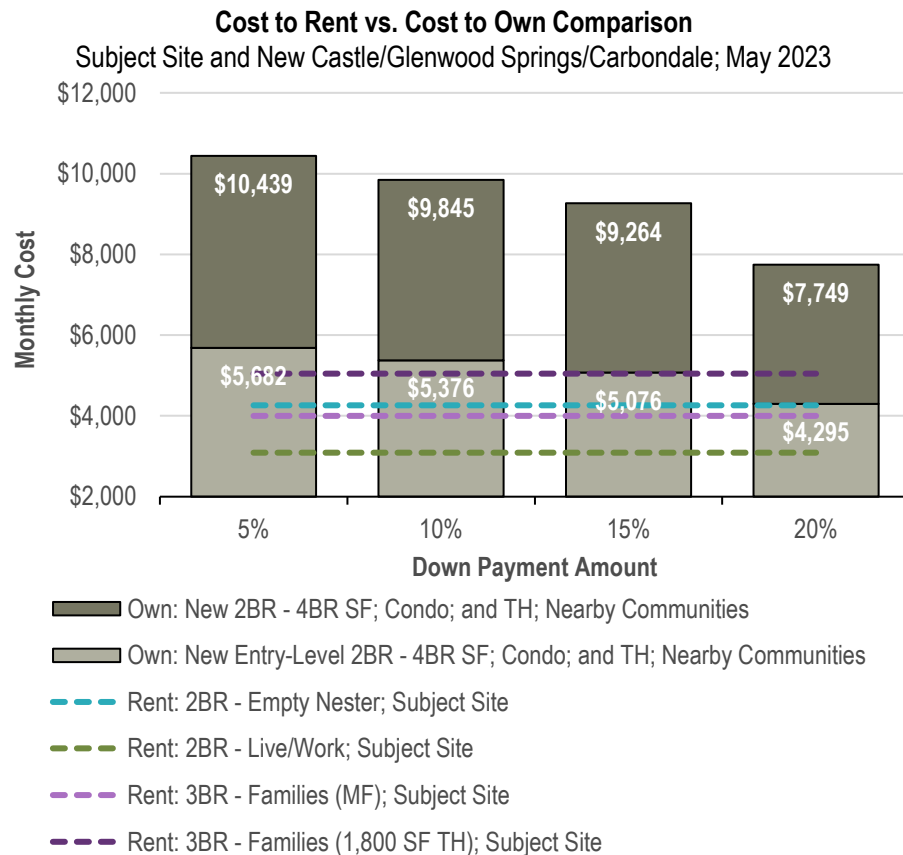
Example of Shadow Market Townhome: 3BR; 1,851SF; \$6,500/month; Basalt, CO



RENT VS. OWN ANALYSIS

MULTIFAMILY UNITS AT THE SUBJECT SITE ARE SIGNIFICANTLY CHEAPER TO RENT FOR FAMILIES AND PROFESSIONAL HOUSEHOLDS THAN OWNING A HOME IN THE AREA (INCLUDING LAKOTA CANYON RANCH), AND SIMILARLY AFFORDABLE FOR EMPTY NESTERS EXCEPT FOR THOSE WITH HIGH DOWN PAYMENTS

- At over \$5,000/month to rent, the three-bedroom family townhomes at the site are priced similarly to the monthly cost of owning an entry-level home in the PMA and homes in the nearby, family-oriented Lakota Canyon Ranch. RCLCO believes this rent may be supportable because of the limited number of units and the fact that young families are less likely to have saved a significant down payment, as well as those that may rent as they await construction on a new home or explore the area before purchasing a home.



Historical sales data from May 2022 to May 2023 per Redfin. Data includes 2BR - 4BR SF; Condo; and TH built since 2010.

Monthly ownership cost assumes: 30-year fixed-rate mortgage at 5.750% to 6.125% APR; \$340/mo HOA; \$125/mo home insurance; a property tax rate of 0.43%; home maintenance of \$150/mo; and PMI of 1.0% below 20% down.

Source: Redfin; RCLCO

COMPETITIVE SUPPLY BY UNIT TYPE

THE SUBJECT SITE'S PROPOSED UNIT SIZES ARE IN LINE WITH NEW MULTIFAMILY COMMUNITIES IN THE REGION; RCLCO PROPOSES A MIX THAT SKEWS MORE TOWARDS 3BR'S THAN THE COMPETITIVE SET, AND SLIGHTLY MORE TOWARDS 2 BR'S

MAP KEY	1	2	3	4	5	6	7	8	TOTAL/ WTD. AVG.	SHADOW MARKET	SUBJECT SITE
COMMUNITY	Six Canyon	L3 at Green	Green Leaf	Altitude	Buffalo Valley	Hayden Place	6 West	The Piedmont			RCLCO Program
YEAR BUILT	2019	2022	2019	2022	2021	2023	2019	2021			
NUMBER OF STORIES	4	4	4	3	4	3	3	4			
OCCUPANCY %	99%	100%	100%	98%	100%	21%	100%	99%			
MARKET RATE UNITS											
Studio		41	25			6		35	107		
1BR	56	47	99	64	10	11	48	110	445	7	
1BR+											39
2BR	60		49	36	38	6	54	89	332	6	
2BR+											66
3BR			8		6	4	18	6	42	14	25
Total	116	88	181	100	54	27	120	240	926	27	130
UNIT MIX											
Studio		47%	14%			22%		15%	12%		
1BR	48%	53%	55%	64%	19%	41%	40%	46%	48%	26%	
1BR+											30%
2BR	52%		27%	36%	70%	22%	45%	37%	36%	22%	
2BR+											51%
3BR			4%		11%	15%	15%	3%	5%	52%	19%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
AVERAGE SIZE (SF)											
Studio		454	555			630		435	481		
1BR	683	630	736	665	616	674	626	615	662	662	
1BR+											713
2BR	981		1,054	1,013	936	1,031	888	954	969	1,184	
2BR+											1,168
3BR			1,270		1,265	1,365	1,176	1,187	1,226	2,015	1,500
Total	837	548	821	790	913	846	826	729	777	1,480	1,095

Source: Axiometrics; Costar; Zillow; RCLCO

COMPETITIVE SUPPLY BY UNIT TYPE

WHILE THE SITE WILL PUSH RENTS FOR SOME UNIT TYPES, SUCH AS THE EMPTY NESTER UNITS WITH ELEVATED FINISHES, THESE ARE A SMALL SHARE OF THE PROGRAM AND MOST UNIT TYPES ARE IN LINE WITH THE COMPETITIVE MARKET

MAP KEY	1	2	3	4	5	6	7	8	TOTAL/ WTD. AVG.	SHADOW MARKET	SUBJECT SITE
COMMUNITY	Six Canyon	L3 at Green Leaf Lofts	Green Leaf Lofts	Altitude Apartments	Buffalo Valley	Hayden Place	6 West	The Piedmont			Client Program
YEAR BUILT	2019	2022	2019	2022	2021	2023	2019	2021			
NUMBER OF STORIES	4	4	4	3	4	3	3	4			
OCCUPANCY %	99%	100%	100%	98%	100%	21%	100%	99%			
AVERAGE SIZE (SF)											
Studio		454	555			630		435	481		
1BR	683	630	736	665	616	674	626	615	662	662	
1BR+											713
2BR	981		1,054	1,013	936	1,031	888	954	969	1,184	
2BR+											1,168
3BR			1,270		1,265	1,365	1,176	1,187	1,226	2,015	1,500
Total	837	548	821	790	913	846	826	729	777	1,480	1,095
AVERAGE ASKING RENT											
Studio		\$1,776	\$2,115			\$2,553		\$2,336	\$2,082		
1BR	\$1,967	\$2,212	\$2,281	\$1,850	\$1,975	\$2,892	\$1,837	\$3,036	\$2,319	\$2,795	
1BR+											\$2,365
2BR	\$2,814		\$2,866	\$2,602	\$2,541	\$3,786	\$2,389	\$3,429	\$2,881	\$4,705	
2BR+											\$3,350
3BR			\$3,428		\$3,250	\$5,055	\$3,026	\$4,083	\$3,479	\$9,379	\$4,000
Total	\$2,405	\$2,009	\$2,467	\$2,121	\$2,515	\$3,336	\$2,264	\$3,106	\$2,546	\$6,633	\$3,180
AVERAGE ASKING \$/SF											
Studio		\$3.91	\$3.81			\$4.05		\$5.37	\$4.33		
1BR	\$2.88	\$3.51	\$3.10	\$2.78	\$3.21	\$4.29	\$2.93	\$4.93	\$3.50	\$4.22	
1BR+											\$3.32
2BR	\$2.87		\$2.72	\$2.57	\$2.71	\$3.67	\$2.69	\$3.59	\$2.97	\$3.97	
2BR+											\$2.87
3BR			\$2.70		\$2.57	\$3.70	\$2.57	\$3.44	\$2.84	\$4.65	\$2.67
Total	\$2.87	\$3.66	\$3.01	\$2.68	\$2.75	\$3.94	\$2.74	\$4.26	\$3.28	\$4.48	\$2.90

Source: Axiometrics; Costar; Zillow; RCLCO

DISCLAIMERS

CRITICAL ASSUMPTIONS

Our conclusions are based on our analysis of the information available from our own sources and from the client as of the date of this report. We assume that the information is correct, complete, and reliable.

We made certain assumptions about the future performance of the global, national, and local economy and real estate market, and on other factors similarly outside either our control or that of the client. We analyzed trends and the information available to us in drawing these conclusions. However, given the fluid and dynamic nature of the economy and real estate markets, as well as the uncertainty surrounding particularly the near-term future, it is critical to monitor the economy and markets continuously and to revisit the aforementioned conclusions periodically to ensure that they are reflective of changing market conditions.

We assume that the economy and real estate markets will continue to recover, albeit at a moderating pace over the next 12 to 24 months. However, stable and moderate growth patterns are historically not sustainable over extended periods of time, the economy is cyclical, and real estate markets are typically highly sensitive to business cycles. Further, it is very difficult to predict when an economic and real estate expansion will end. With the above in mind, we assume that the long-term average absorption rates and price changes will be as projected, realizing that most of the time performance will be either above or below said average rates.

Our analysis does not consider the potential impact of future economic shocks on the national and/or local economy, and does not consider the potential benefits from major "booms" that may occur. Similarly, the analysis does not reflect the residual impact on the real estate market and the competitive environment of such a shock or boom. Also, it is important to note that it is difficult to predict changing consumer and market psychology.

As such, we recommend the close monitoring of the economy and the marketplace, and updating this analysis as appropriate.

Further, the project and investment economics should be "stress tested" to ensure that potential fluctuations in revenue and cost assumptions resulting from alternative scenarios regarding the economy and real estate market conditions will not cause failure.

In addition, we assume that the following will occur in accordance with current expectations:

- ▶ COVID-19 pandemic continues to ease and does not require re-imposition of lockdown measures that could materially impact consumer confidence and the economy
- ▶ GDP, employment, and household growth and other key demographic and economic patterns
- ▶ The cost of development and construction
- ▶ Tax laws, monetary policy, and other major legislation (i.e., property and income tax rates, deductibility of mortgage interest, and so forth)
- ▶ Availability and cost of capital and mortgage financing for real estate developers, owners and buyers
- ▶ Competitive projects will be developed as planned (active and future) and that a reasonable stream of supply offerings will satisfy real estate demand
- ▶ Major public works projects occur and are completed as planned

Should any of the above change, this analysis should be updated, with the conclusions reviewed accordingly (and possibly revised).

GENERAL LIMITING CONDITIONS

Reasonable efforts have been made to ensure that the data contained in this study reflect accurate and timely information and are believed to be reliable. This study is based on estimates, assumptions, and other information developed by RCLCO from its independent research effort, general knowledge of the industry, and consultations with the client and its representatives. No responsibility is assumed for inaccuracies in reporting by the client, its agent, and representatives or in any other data source used in preparing or presenting this study. This report is based on information that to our knowledge was current as of the date of this report, and RCLCO has not undertaken any update of its research effort since such date.

Our report may contain prospective financial information, estimates, or opinions that represent our view of reasonable expectations at a particular time, but such information, estimates, or opinions are not offered as predictions or assurances that a particular level of income or profit will be achieved, that particular events will occur, or that a particular price will be offered or accepted. Actual results achieved during the period covered by our prospective financial analysis may vary from those described in our report, and the variations may be material. Therefore, no warranty or representation is made by RCLCO that any of the projected values or results contained in this study will be achieved.

Possession of this study does not carry with it the right of publication thereof or to use the name of "Robert Charles Lesser & Co." or "RCLCO" in any manner without first obtaining the prior written consent of RCLCO. No abstracting, excerpting, or summarization of this study may be made without first obtaining the prior written consent of RCLCO. This report is not to be used in conjunction with any public or private offering of securities or other similar purpose where it may be relied upon to any degree by any person other than the client without first obtaining the prior written consent of RCLCO. This study may not be used for any purpose other than that for which it is prepared or for which prior written consent has first been obtained from RCLCO.





AUSTIN

100 Congress Avenue, Suite 2000
Austin, TX 78701

LOS ANGELES

11601 Wilshire Boulevard, Suite 1650
Los Angeles, CA 90025

ORLANDO

964 Lake Baldwin Lane, Suite 100
Orlando, FL 32814

WASHINGTON, DC

7200 Wisconsin Avenue, Suite 1110
Bethesda, MD 20814

From: Paul Schirmer <paul.schirmer@CDSG-US.COM>
Sent: Wednesday, May 29, 2024 4:02 PM
To: Paul Smith <psmith@newcastlecolorado.org>
Cc: Jason Jaynes <jjaynes@dhmdesign.com>; Louis Wilsher <LWilsher@dhmdesign.com>; Lauren Prentice <lprentice@newcastlecolorado.org>
Subject: RE: R2 development - all electric?

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,

Yes, we are looking @ an 'all-electric' (no gas) setup; please forward your recommendations regarding equipment /locations.

I'll need to confirm with the ownership team regarding Solar PV. The projects that Barry mentioned that include a significant amount of Solar PV also come with healthy property tax abatement incentives. We're currently researching available incentives in CO; please let us know if you're familiar with any programs. Can we setup a call next week to discuss?

Thanks,

Paul

From: Paul Smith <psmith@newcastlecolorado.org>
Sent: Tuesday, May 28, 2024 5:15 PM
To: Paul Schirmer <paul.schirmer@CDSG-US.COM>
Cc: Jason Jaynes <jjaynes@dhmdesign.com>; Louis Wilsher <LWilsher@dhmdesign.com>; Lauren Prentice <lprentice@newcastlecolorado.org>
Subject: R2 development - all electric?

Hi Paul,

I'm looking through the floor plans and I have recommendations for mechanical equipment and locations that will need to be considered. It will likely cause minor alterations. I'm also wondering whether consideration was given to an all-electric set-up including solar PV roof top. Early on Barry mentioned that the team was considering going that route when net-zero construction was discussed. This item falls under the comprehensive plan Goal EN-7. I do not see anything about this in the packet. There are various options currently used in town. Let me know if you have time to discuss.

Thanks,
Paul

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: June 26, 2024

Time: 7:00 PM

Place of meeting: New Castle Community Center, 423 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 **June 26th, 2022**, regarding a **proposed development** by doing the following:

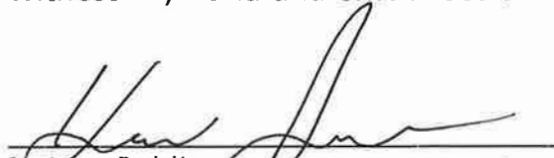
1. At least fifteen **(15) days prior** to such hearing, we sent a copy of the attached Notice of Public Hearing by **certified mail to the owners of all property within two hundred fifty (250) feet** of the subject property and to the Town of New Castle.
2. If required by Chapter 16.10 of the new Castle 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)
COUNTY OF Garfield) ss.

Subscribed and sworn to before me this 13th day of June,
by Louis Wilsher.

Witness my hand and official seal.


Notary Public
My commission expires: 8/21/2027





X-Brace at base to create a break in the architecture and flows with base level.

Single slope gable helps reduce vertical stretch by giving feeling of width.



Two Story building for reference:



Change in door and window style at first level . This move breaks up vertical lines and distinguishes the first level .

Pull fiber cement down and wrap at first floor to establish a base and reduce visual height. This help the building to keep its human and residential scale.

Architecture Elevations



Aerial View



View from Vix Park

From: Louis Wilsher <LWilsher@dhmdesign.com>
Sent: Monday, June 10, 2024 10:27 AM
To: Paul Smith <psmith@newcastlecolorado.org>
Cc: Lauren Prentice <lprentice@newcastlecolorado.org>
Subject: Re: Balcony letter?

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,

The balcony language was sent from me in an email to you on April 17th . Below is the language in that email:

Regarding your question on the architectural changes from our 'Sketch' presentation to the 'Preliminary PD Application,' for design and safety considerations, some of the natural evolution of a large project has occurred. We have replaced the proposed patios/decks from the Live/Work units with shared exterior space (see Landscape Illustrative Plan) and individual enclosed storage areas (see updated Architectural Floor Plans).

From a design perspective, we feel that when smaller porches are offered, they become a magnet for items that belong in a storage facility: bikes, boats, toys, and other equipment that tends to create a 'junky' appearance and occasionally – fuel for fires. By replacing the patios & decks with larger windows, tenants are able to focus more on the spectacular, unobstructed views of New Castle; in addition, we intend to provide an onsite, in-building, secure storage closet for each residential unit and exterior areas per building for outdoor dining/seating. From a safety perspective, tenants often store and use propane grills on their decks, which has been the cause of several fires in other complexes, so eliminating the decks should greatly reduce that concern.

Louis Wilsher

Senior Associate | PLA

DHM DESIGN

Landscape Architecture | Land Planning | Ecological Planning | Urban Design

D: 970.287.5766 | O: 970.963.6520 x124 | C: 970.379.0652

CARBONDALE | DENVER | DURANGO | BOZEMAN



LANDSCAPE ARCHITECTURE | LAND PLANNING | ECOLOGICAL PLANNING | URBAN DESIGN

June 19, 2024

9 North Wild Horse: Preliminary Application

Overview of referral comment responses

To: Paul Smith, Town of New Castle Town Planner & Code Administrator

Lauren Prentice, Assistant Town Planner

Cc: Barry Rosenberg, Paul Shirmer, applicant project team

Submitted via email

Paul & Lauren –

As the project proposal advances through referral review and public hearings, our team is reviewing individual referral comments and refining the plans and development proposal.

Referral comments are included as Exhibits L-W of the P&Z packet. We have compiled referral comments in a table (attached), with responses and/or references to the location in revised application materials the comment is reflected. We recognize that this process is ongoing through Preliminary and Final Application; we will continue to work with Town staff and referrals to resolve outstanding items. Several items specifically requested for the P&Z meeting are addressed below; the remaining items are noted in the attached table.

1. Illustrative Plan Updates: *due to timing, several comments/refinements are not updated in the engineering drawings, but have been reflected in the illustrative plan, or other exhibits, as noted.*
 - a. N Wild Horse Drive refinements @ VIX Park per Public Works comments
 - i. *Parallel parking has been added to the east side of N Wild Horse Drive along the subject property boundary, yielding 30 additional ROW parking spaces.*
 - ii. *An interim street section is proposed for N Wild Horse south of the subject property, connecting to existing asphalt. This will allow for streetscape, parking and access design for N Wild Horse to be responsive to the development proposals for those parcels.*
 - b. Expand driveway widths at townhomes to 18'
 - i. *This has been updated in the illustrative site plan on page 9 of Exhibit A (P&Z packet materials). All townhome driveways are intended to have 2-car capacity, including units with 1-car garages.*
 - c. Update proposed "Seller Lot Line"
 - i. *Updated lot line is reflected in the illustrative site plan on page 9 of Exhibit A. The change is closest to the drainage and Vista Loop and is relatively minor.*
 - d. Show brush truck access extending further up drainage
 - i. *Brush truck access has been refined in the illustrative site plan on page 9 of Exhibit A. The gravel lane looping behind the townhouse units is adjusted to the north and connects to the existing, primitive two-track that extends to the north property line.*

- e. Redundant sidewalks eliminated from plan
 - i. *Revised sidewalks are shown in the illustrative site plan on page 9 of Exhibit A. Specifically, a segment of ROW sidewalk has been eliminated from the far south segment of Vista Loop, where there is no residential unit frontage or on-street parking, and a single ROW sidewalk provides sufficient pedestrian access. Applicant believes this change can be made without compromising pedestrian access convenience, connectivity, or safety.*
- 2. Provide sections of private streets
 - a. *These have been added to the application in Sheet C-1.1, Road Sections; Exhibit A, page 11.*
- 3. Provide typical Town ROW section next to proposed road sections
 - a. *These have been added to the application in Sheet C-1.1, Road Sections; Exhibit A, page 11.*
- 4. Update EQR table to include raw water dedication
 - a. *Applicant is in ongoing discussions with town staff to address raw water dedication.*
- 5. Sunset Loop needs a new name (Sunnyside Loop suggested)
 - a. *This has been updated in the illustrative site plan on page 9 of Exhibit A (P&Z packet materials).*
- 6. Live/Work parking spaces are candidates for assigned parking.
 - a. *Acknowledged. Applicant will determine parking management as a part of the overall property management plan.*
- 7. EV charging: can wait until final for exact placement of EV stations and different varieties.
 - a. *Requirement for EV charging stations acknowledged. Applicant will identify locations for charging stations prior to Final Application submittal.*
- 8. Parking Count chart update: 229 total is correct and townhouses are correct; But, Empty Nesters are 41 required and 50 proposed; Live/work are 136 required and 144 proposed
 - a. *Acknowledged. This information has been updated and summarized on page 11 of Exhibit A.*



Jason Jaynes
Managing Principal
DHM Design

Attachments: Referral Comment Table

9 North Wild Horse Referral Comment Table

Updated: 06-19-2024

Topic	Reviewer	Comment	Reference	Response for Summary Memo (Note: These will be copy and pasted into the response memorandum by DHM)
Roadways				
	Town Engineer (SGM)	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.	pg3 Note 12, SGM Letter dated May 31, 2024	Acknowledged. Project team will advance road section coordination after P&Z meeting.
	Town Engineer (SGM)	Anticipated future detail for signage and striping is expected in future submittals.	pg4 Note 14, SGM Letter dated May 31, 2024	Noted. Applicant will develop signage and striping plan in the next round of refinement of civil planset.
	Public Works	The "Proposed N Wildhorse Parking Street Section" should include a 6-foot sidewalk, 5'-6" green belt, 11' travel lanes (2), 19' parking, and a 6' sidewalk.	pg2,memo dated May 31, 2024	Proposed N Wild Horse Parking Street Section has been modified to meet this requirement. See sheet C-1.1, 'Road Sections,' page 17 of Exhibit A
	Public Works	The "Proposed N Wildhorse Street Section" should include 6' sidewalk, 5'-6" green belt, 8' parking lane, 11' travel lanes (2), 8' parking lane, 5'-6" green belt, 6' sidewalk.	pg2,memo dated May 31, 2024	Applicant has proposed an interim street section and a "future" section to allow for connection of N Wild Horse to existing asphalt, while allowing for future design of streetscape, parking, and access along the undeveloped, private parcels.
	Public Works	Parallel parking, both side of the street on N. Wildhorse for the section East of VIX Park.	pg2,memo dated May 31, 2024	Parallel parking has been added to the east side of N Wild Horse along the subject property frontage, yielding 30 additional parking spaces in the ROW. Perpendicular parking has been retained along the west side of N Wild Horse along VIX Park, with 10 spaces added per town staff request.
	Public Works	The "Loop Road" cross section should conform to the Public Works Manual design standards, including a 58' ROW, two 10' travel lanes and two 8' parking lanes. Exceptions to these standards will be considered at locations without directly	pg2,memo dated May 31, 2024	Proposed Street Sections have been illustrated, with town standard section on sheet C-1.1, 'Road Sections,' page 17 of Exhibit A
	Public Works	Streetlight at intersections for pedestrian safety	pg2,memo dated May 31, 2024	Applicant will work with town staff to identify appropriate pedestrian safety measures at N Wild Horse pedestrain crossings. This may include raised/contrast paving, RRFB, and/or striping. The street section is narrowed to (2) travel lanes at crossings to increase visibility and decrease pedestrian crossing distance.
Grading & Drainage				

9 North Wild Horse Referral Comment Table

Updated: 06-19-2024

Topic	Reviewer	Comment	Reference	Response for Summary Memo (Note: These will be copy and pasted into the response memorandum by DHM)
	Town Engineer (SGM)	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.	pg3 Note 4, SGM Letter dated May 31, 2024	Project team is in coordination with town engineer, and is addressing this drainage and structure protection comment. Applicant will provide additional information at Final Application.
	Town Engineer (SGM)	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.	pg3 Note 5, SGM Letter dated May 31, 2024	Acknowledged.
	Town Engineer (SGM)	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.	pg3 Note 6, SGM Letter dated May 31, 2024	Acknowledged.
	Town Engineer (SGM)	Preliminary stormwater management plans will be necessary to be provided prior to construction.	pg3 Note 7, SGM Letter dated May 31, 2024	Acknowledged.
	Town Engineer (SGM)	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?	pg3 Note 8, SGM Letter dated May 31, 2024	Project team is in coordination with town engineer, and is addressing this drainage and erosion control comment. Applicant will provide additional information at Final Application.
Water System				
	Town Engineer (SGM)	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.	pg1 Note 2, SGM Letter dated May 31, 2024	Acknowledged.
	Town Engineer (SGM)	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.	pg1 Note 2.a., SGM Letter dated May 31, 2024	Project team is in coordination with town engineer, and is addressing this infrastructure comment. Applicant will provide additional information at Final Application.
	Town Engineer (SGM)	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.	pg1 Note 2.b., SGM Letter dated May 31, 2024	Acknowledged.
	Town Engineer (SGM)	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.	pg1 Note 2.c., SGM Letter dated May 31, 2024	Acknowledged.

9 North Wild Horse Referral Comment Table

Updated: 06-19-2024

Topic	Reviewer	Comment	Reference	Response for Summary Memo (Note: These will be copy and pasted into the response memorandum by DHM)
	Town Engineer (SGM)	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.	pg2 Note 2.e., SGM Letter dated May 31, 2024	Project team is in coordination with town engineer, and is addressing this infrastructure comment. Applicant will provide additional information at Final Application.
	Town Engineer (SGM)	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.	pg2 Note 2.f., SGM Letter dated May 31, 2024	Project team is in coordination with town engineer, and is addressing this infrastructure comment. Applicant will provide additional information at Final Application.
	Town Engineer (SGM)	Fire flows at each hydrant will be necessary to be provided along with the residual pressure being noted.	pg2 Note 2.g., SGM Letter dated May 31, 2024	Acknowledged. Applicant assumes this will be evaluated prior to acceptance of the built water system.
	Town Engineer (SGM)	Valves in each side of each tee (including hydrants) will be required.	pg2 Note 2.h., SGM Letter dated May 31, 2024	Project team is in coordination with town engineer, and is addressing this infrastructure comment. Applicant will provide additional information at Final Application.
	Town Engineer (SGM)	A cut in tie to the North Wild Horse waterline will be necessary (with tee and valves) in lieu of a hot tap.	pg2 Note 2.i., SGM Letter dated May 31, 2024	Acknowledged.
	Town Engineer (SGM)	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.	pg2 Note 2.j., SGM Letter dated May 31, 2024	Project team is in coordination with town engineer, and is addressing this infrastructure comment. Applicant will provide additional information at Final Application.
	Town Engineer (SGM)	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.	pg2 Note 2.k., SGM Letter dated May 31, 2024	Acknowledged.
	Town Engineer (SGM)	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.	pg2 Note 2.l., SGM Letter dated May 31, 2024	Project team is in coordination with town engineer, and is addressing this infrastructure comment. Applicant will provide additional information at Final Application.

9 North Wild Horse Referral Comment Table

Updated: 06-19-2024

Topic	Reviewer	Comment	Reference	Response for Summary Memo (Note: These will be copy and pasted into the response memorandum by DHM)
	Public Works	- All potable water connections to be protected by a Reduced Pressure Principle Assembly check valve. - Individual water and sewer service lines for each town home residents, and for each condominium building. - 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. - Three main line isolation valves should be installed at each tee location, not shown. - No 10" hot tap valve. We can isolate with no interruption to service. - Potable water main line pipe to be C900 DR14, not Ductile Iron - Pressure reduction valve to be manufactured by Clay-Val - Fire hydrants to be manufactured by Kennedy. Fire hydrants also need their own isolation valve. - The manhole spacing, connecting the existing sewer on N. Wildhorse and West Vista Loop (SMH-A2 and SMH-A3) is too great. Maximum spacing 175 ft.	pg2, memo dated May 31, 2024	Project team is in coordination with public works and town engineer, and is addressing this infrastructure comment. Applicant will provide additional information at Final Application.
Sewer System				
	Town Engineer (SGM)	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.	pg2 Note 3.a., SGM Letter dated May 31, 2024	Acknowledged.
	Town Engineer (SGM)	It will be necessary to provide the elevations of water and sewer at each crossing to determine how separation is being made.	pg2 Note 3.b., SGM Letter dated May 31, 2024	Acknowledged.
	Town Engineer (SGM)	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.	pg2 Note 3.c., SGM Letter dated May 31, 2024	Acknowledged.
	Town Engineer (SGM)	Sewer service 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.	pg3 Note 3.d., SGM Letter dated May 31, 2024	Project team is in coordination with town engineer, and is addressing this infrastructure comment. Applicant will provide additional information at Final Application. Applicant's civil engineer will confirm the total scope of san. sewer profiles required for Final Application.
Dry Utilities				

9 North Wild Horse Referral Comment Table

Updated: 06-19-2024

Topic	Reviewer	Comment	Reference	Response for Summary Memo (Note: These will be copy and pasted into the response memorandum by DHM)
	Town Engineer (SGM)	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.,	pg3 Note 9, SGM Letter dated May 31, 2024	Acknowledged.
Raw Water				
	Town Engineer (SGM)	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.	pg1 Note 1, SGM Letter dated May 31, 2024	See "Legal" referral comments, below.
	Town Engineer (SGM)	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.	pg3 Note 10, SGM Letter dated May 31, 2024	Acknowledged.
	Public Works	- Minimize bury depth, approximately 2 feet. - Gravity drains for winterization, located at elevation low points. - Isolation valves required but not shown. - The system should be looped. - Raw water main line pipes to be sized appropriately. Material type to be gasketed bell C900 DR 18, purple in color, with a 14-gage tracer wire. - Raw water main lines are to be constructed with mechanical joints and a thrust block, or mechanical joints with mega lug connections. - Municipal Code 13.20.130 "Maintenance of service pipes and fixtures" should apply to the raw water taps and service lines. - Each raw water tap should include a weeping curb stop and drainage.	pg1, memo dated May 31, 2024	Project team is in coordination with town engineer, and is addressing this infrastructure comment. Applicant will provide additional information at Final Application.
	Public Works	Whenever possible, raw water main lines should be located in the ROW green belts, between the back of curb and the edge of sidewalk. We would like to minimize having to remove asphalt paving and concrete curb/gutter/sidewalk if future repairs are needed.	pg1, memo dated May 31, 2024	Acknowledged.
Open Space & Landscape				
	Town Engineer (SGM)	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.	pg3 Note 11, SGM Letter dated May 31, 2024	Acknowledged.

9 North Wild Horse Referral Comment Table

Updated: 06-19-2024

Topic	Reviewer	Comment	Reference	Response for Summary Memo (Note: These will be copy and pasted into the response memorandum by DHM)
	Town Engineer (SGM)	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.	pg4 Note 13, SGM Letter dated May 31, 2024	Project team is in coordination with town engineer, and is addressing this drainage and structure protection comment. Applicant will provide additional information at Final Application.
Emergency Access				
	Town Engineer (SGM)	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.	pg2 Note 2.d., SGM Letter dated May 31, 2024	Applicant's civil engineer recalls request for additional hydrant south of live-work building 2.
	Public Works	• Fire hydrants to be manufactured by Kennedy. Fire hydrants also need their own isolation valve.		Acknowledged.
	Town Engineer (SGM)	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.	pg4 Note 15, SGM Letter dated May 31, 2024	Acknowledged.
	Fire Department (from Sketch Plan)	Fire Department Access is good for all the proposed units. I have concerns with the proposed trees that will be planted along the roadway and future overhead clearance on the access roads. I would like to see planning for the future growth of trees and a plan to minimize the overhead obstructions on the roadways. Planning for trees shall be considered when fire hydrant locations are designed to keep trees from obstructing fire hydrants.		Planting has been adjusted to reflect these requests. Tree locations will be coordinated with civil prior to final to eliminate conflicts with hydrants. Total number of trees in plan have been reduced.
	Fire Department (from Sketch Plan)	Trees are concerns around the proposed structures, with the new possible building code being adopted, I am hoping that a landscape plan will show fewer trees around the structures.		Planting has been adjusted to reflect these requests. Tree locations will be coordinated with civil prior to final to eliminate conflicts with hydrants. Total number of trees in plan have been reduced.
	Fire Department (from Sketch Plan)	The plan shows emergency access to the east behind structures. We will need signage in the access areas to keep the areas clear of parking.		Acknowledged.
	Fire Department (from Sketch Plan)	Developers should consider more ignition-resistant construction on the exterior of the homes, especially the homes on the east side of the development. This may help the owners to obtain better insurance rates.		Acknowledged. Applicant's architect is aware of the fire-resistance requirements of the town's current code.
Legal Misc.				

9 North Wild Horse Referral Comment Table

Updated: 06-19-2024

Topic	Reviewer	Comment	Reference	Response for Summary Memo (Note: These will be copy and pasted into the response memorandum by DHM)
	Town Attorney	The traffic study indicates that North Wildhorse Drive will be constructed as part of public improvements for the development. Applicant has submitted an Easement Agreement between CTS Investments and Village Homes to demonstrate the legal ability to construct the road. The Easement Agreement provides that "Each of the Parties agrees to dedicate to the Town any portion on that Party's Parcel of right of way for Wildhorse Drive . . . within 30 days after written request from the Town or the other party." Applicant needs to provide a written agreement with CTS Investments committing to dedicate the right of way, in fee, to the Town at the time of final plat recordation. Further, Applicant needs to submit evidence that the engineered location of North Wildhorse Drive (including any construction easements) is located on lands owned by CTS Investments as some portions of CTS's historic land holdings have been conveyed to third parties. Applicant needs to identify portions of the easement that may have been conveyed to the Town as part of the VIX Park conveyance. CTS conveyed a portion of the right of way to the Town by special warranty deed recorded at Reception No. 733780. At the time of final plat, a title commitment for the right of way area will need to be provided. Conveyance will need to be by special warranty deed with all prior conveyances of the right of way by similar deed.	pg1, letter dated June 3, 2024	Coordination on the N Wild Horse ROW is ongoing between applicant's counsel and town attorney.
	Town Attorney	The letter dated May 3, 2024 from attorney Chad Lee discusses the legal water supply. The calculation of the number of EQRs and acres of dry up to be dedicated to the Town (Exhibit B) is incorrect. It does not include dedication for raw water irrigation. Under the Second amendment to the ADA:		Applicant is in ongoing discussions with town staff to address raw water dedication.
		iii. For raw water irrigation areas served by a public raw water irrigation system, LDI shall dedicate water rights to the Town: (1) on an acre-per-acre basis for those areas irrigated by flood irrigation, and (2) at the rate of 0.4 EQR for each 6,000 square feet irrigated by automatic sprinkling system. Dedication of water rights under this provision shall not obligate the Town to accept any raw water irrigation system as a public raw water irrigation system.		
		Exhibit B needs to be updated to include water rights dedication for raw water irrigated areas.		
	Town Attorney	Also, Applicant needs to provide a written agreement with CTS Investments committing to dedicate the water rights and dry up by special warranty deed to the Town at the time of final plat recordation.		Applicant is in ongoing discussions with town staff to address raw water dedication.
	Town Attorney	A detailed description of the Workforce Housing needs to be provided to discuss with the P&Z and Council. If the proposed Workforce Housing provisions are accepted by the Town, a covenant will need to be created which will be recorded against title to the property at the time of recordation of the Final Plat.	pg2, letter dated June 3, 2024	Applicant has provided a letter outlining the workforce housing plan. See Exhibit H, "Workforce Housing Proposal" in the P&Z packet.
	Town Attorney	A draft of the Declaration of Covenants will need to be submitted with the Final Plat application.	pg2, letter dated June 3, 2024	Acknowledged.

9 North Wild Horse Referral Comment Table

Updated: 06-19-2024

Topic	Reviewer	Comment	Reference	Response for Summary Memo (Note: These will be copy and pasted into the response memorandum by DHM)
	Town Attorney	The draft subdivision plat does not have survey calls allowing the lots to be identified and created. For final plat these calls must be included in the plat.	pg2, letter dated June 3, 2024	Acknowledged.
	Town Attorney	Mike Sawyer added one more item..."I had a chance to speak with Jeff (Simonson) this morning about comments on the preliminary plat materials. One other thing we noted is that the materials do not show existing easements across the property to be subdivided. Without this information, we cannot assess conflicts between existing legal rights and proposed development."	Email from Paul Smith dated June 4, 2024	There are not any existing easements found on this parcel. The preliminary plat is based on recorded documents listed in Preliminary Plat Survey Note 5, and is also based on the title commitment for this property listed in Preliminary Plat Survey Note 6.
CO Parks and Wildlife (CPW)				
	CPW	1. Bear-proof containers required during construction.	Letter from CPW	Acknowledged.
	CPW	2. Fencing should comply with CPW's wildlife-friendly fencing standards; 4-6' plank privacy fences are acceptable with limitations noted in the letter.	Letter from CPW	Acknowledged.
	CPW	3. Avoid fruit-bearing landscape plants.	Letter from CPW	Acknowledged.
	CPW	4. Garbage enclosures should incorporate bear-proof dumpsters.	Letter from CPW	Acknowledged.
	CPW	5. Pets should be leashed at all times.	Letter from CPW	Acknowledged.
	CPW	6. Prohibit feeding of wildlife by residents.	Letter from CPW	Acknowledged.
CDOT				
		(No comments received during referral period)		
RE-2 Schools				
		(No comments received during referral period)		

**TOWN OF NEW CASTLE, COLORADO
RESOLUTION NO. PZ 2024-4**

**A RESOLUTION OF THE NEW CASTLE PLANNING AND ZONING
COMMISSION APPROVING A PRELIMINARY PUD DEVELOPMENT PLAN
AND PRELIMINARY SUBDIVISION PLAT FOR NUMBER 212329300194 (R2
PARTNERS)**

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 (collectively, the “Application” as further defined below);

WHEREAS, the Applicant seeks to use the Property as MF-2 per the Castle Valley Ranch PUD; and

WHEREAS, the Application proposes the construction of 130 residential units as rental apartments and townhomes; and

WHEREAS, the Town of New Castle Planning & Zoning Commission (“Commission”) held a duly noticed public hearing on June 26, 2024 to consider the Application; 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 16.16.020(G) and 17.100.050(H) 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 June 26, 2024.
3. Action regarding Preliminary Plan: The Preliminary 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 document included in the Application.

The Planning Commission hereby approves the Preliminary Plan and Preliminary Plat, subject to compliance with all conditions set forth in Section 5 of this Resolution.

4. Zoning. Upon approval of a final PUD plan for the Property, 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 following road designs for proposed public rights-of-way:

Vista Loop: ~52' ROW

- 6' sidewalks
- 5.5' green belts
- 10' drive lanes
- 8' parking lane inner radius (as illustrated in Exhibit A site plan)

N Wild Horse Dr adjacent to VIX Park: ~66.5' ROW

- 6' sidewalks
- 5.5' green belts
- 11' drive lanes
- 19' perpendicular parking @ VIX
- 8' parallel parking lane east side of NWH Dr.

N Wild Horse Dr south of VIX Park: ~58' Town standard

- 6' sidewalks
 - 5.5' green belts
 - 11' drive lanes
 - 8' parallel parking lane
- b. 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. 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. 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.
- 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.
- 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.
- 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.
- 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.
- j. All trash dumpsters shall be located within an approved trash enclosure that extends six feet high and includes a bear resistant latching mechanism.

- k. A declaration of covenants for the common interest community that are to the satisfaction of the Town Attorney.
- 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”.
- m. The Applicant shall submit a memorandum proposing Netzero building strategies to be included with the development.
- n. A subdivision improvements agreement containing an engineer’s stamped cost estimate of public improvements, to the satisfaction of the Town Attorney.
- o. 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;
- p. Landscaping shall incorporate native grasses and plants that minimize maintenance, moving, 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.
- q. All disturbed areas in the project shall be revegetated and maintained in a predominantly weed free condition.
- r. Reach agreement with the Town about ownership and maintenance of roadways, trails, and sidewalks.
- 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.
- 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.

- u. Request approval of street names through Garfield County Communications to avoid any duplication of names in the county dispatch area.
 - 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.
 - 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.
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 ___ day of _____, 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 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 S89°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

EXHIBIT B
Preliminary PUD Application Materials

- A. Applicant Preliminary Plan Submittal – May 3, 2024
- B. Geotechnical Study – June 12, 2006
- C. Traffic Impact Study – April 4, 2024
- D. Easement Agreement for Wildhorse Drive – April 17, 2007
- E. Applicant Engineering Report – March 22, 2024
- F. Legal Water Supply – May 3, 2024
- G. Fiscal Impact Study – April 10, 2024
- H. Workforce Housing Proposal
- I. Brief Description of Proposed Covenants
- J. Adjacent Property Owners within 250 feet
- K. Land Title Commitment
- L. CPW Comments – May 8, 2024
- M. CRFR Fire Marshal Referral, Orrin Moon – Oct. 17, 2023
- N. Garfield County Road Name Comments – April 15, 2024
- O. Town Police Chief Referral, Chuck Burrows – May 29, 2024
- P. Town Public Works Director Referral, John Wenzel – May 31, 2024
- Q. Town Engineer Referral, Jeff Simonson – May 31, 2024
- R. Floodplain Updates, needed prior to Final – June 6, 2024
- S. Town Attorney Referral, Michael Sawyer – June 3, 2024
- T. CDOT Referral Letter – April 23, 2024
- U. CenturyLink/Lumen Will Serve Letter – July 11, 2023
- V. Comcast Will Serve Letter – April 17, 2024
- W. Xcel Will Serve Letter – July 13, 2023
- X. Strategic Multifamily Analysis – May 16, 2023
- Y. Net Zero Proposed – May 29, 2024
- Z. P&Z Public Hearing Notice for June 26, 2024, with Legal Description
- AA. Notarized Affidavit of Notice of Public Hearing – June 13, 2024
- AB. Pages from Sketch Plan, revised site plan – January 24, 2024
- AC. Applicant Explanation of Architectural Changes – April 17, 2024
- AD. Applicant Referral Comment Review Memo – June 19, 2024
- AE. Applicant Referral Comment Table – June 19, 2024

**New Castle, Colorado
Planning and Zoning Commission
Wednesday, May 8, 2024, 7:00 PM**

Call to Order

Commission Chair Apostolik called the meeting to order at 7:00 p.m.

Roll Call

Present	Chair Apostolik
	Commissioner Carey
	Alternate Commission Rittner
	Alternate Commissioner Parks
	Commissioner Sass
	Commissioner Cotey
	Commissioner Westerlind
Absent	Commissioner McDonald
	Commissioner Martinez

Also present at the meeting was Town Planner Paul Smith, Assistant Town Attorney Haley Carmer, 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

Oaths of Office –

Commissioner Sass, Commissioner Cotey and Commissioner Westerlind.

Deputy Clerk Bordelon conducted the oaths of office.

Consider Appointing Commissioner Vice Chair

MOTION: Chair Apostolik made a motion to appoint Commissioner Cotey as the Vice Chair. Commissioner Sass seconded the motion and it passed unanimously.

Public Hearing

Chair Apostolik opened the public hearing at 7:04 p.m.

Consider Resolution PZ 2024-3, A Resolution Recommending Approval of a Conditional Use Permit for Utility Transmission Line and Towers on Property Located in the Industrial Zone District.

Town Planner Paul Smith said the resolution was intended to consider a conditional use

permit (CUP) for Xcel Energy's replacement of the powerline poles located in the industrial zone on the south side of the Colorado River. He clarified that the CUP only pertained to the poles located within town limits. He added that the project of transmission poles replacement was a multi-municipal project.

Planner Smith introduced Xcel's representatives. He shared the background history of the transmission line and said the poles were constructed in the 1940s-1960s. He added that the particular use of the transmission poles was not on the prohibited or permitted list for the Town of New Castle and was therefore considered as a conditional use permit. He reminded the commission that a CUP had 30 days for a decision to deny, approve, or approve with conditions. He said that decision would then be sent to Council as a recommendation for their consideration.

Planning Commission – Public Hearing
Wednesday, May 8th, 2024
Resolution PZ 2024-3
Staff Report

Name of Applicant	<i>Public Service Company of Colorado, a Colorado corporation conducting business as Xcel Energy; Contact: Jennifer Chester</i>
Mailing Address	<i>1800 Larimer Street, Suite 400, Denver, CO 80202</i>
Property Address	<i>Multiple, see attached list</i>
Name of Property Owner	<i>Multiple, see attached list</i>
Existing Zoning	<i>Industrial</i>
Surrounding Zoning	<i>Industrial; Open Space</i>
Surrounding Land Uses	<i>Storage; Factory and industrial, low hazard; Park & boat ramp</i>
Existing use of property	<i>Existing 69kV Electric Transmission Line ROW Easement</i>
Proposed use of property	<i>Rebuild the existing Mitchell Creek to Rifle Ute 69kV Transmission Line and increase ROW easements.</i>
Property size	<i>N/A</i>

I. Background:

The Applicant proposes rebuilding the New Castle portion of the 69 kilovolt (kV) transmission line (Transmission Line 6584) located along the Grand Hogback between Mitchell Creek to Rifle Ute substations (~25 miles). According to the project narrative, Transmission Line 6584 was originally constructed between the 1940s through the 1960s and has reached the end of its serviceable life. New power lines and poles will be installed and the easement expanded all to improve the integrity and resiliency of the power grid.

The Applicant's proposed utility transmission line and tower use is eligible for conditional use review because it is not listed as a permitted or prohibited use under Section 17.52.050. Also, because the transmission line existed prior to the effective date of Municipal Code (MU) Title 17, the following procedural requirements are necessary before work commences:

- 1) In accordance with MU Section 17.84.080, "Any use that legally existed prior to the effective date of Title 17 shall continue as an approved conditional use upon written request of the owner." To date, no written request for a conditional use permit has been made. The current application shall serve as the request.*
- 2) In accordance with Section 17.84.070, "No approved conditional use may be altered, structurally enlarged, (...) or expanded in ground area unless the site plan is*

amended and approved in accordance with the procedures applicable to approval of a conditional use". In addition to #1 above, the application proposes several alterations as part of the conditional use approval:

- i. The existing transmission line easement will be enlarged from approximately 40ft to a standard of 60ft to improve the powerline alignment and meet industry safety requirements.
- ii. Existing poles and cables will be upgraded. Taller poles, allowing for longer powerline span, will reduce the total pole count from 20 to 18. Steel monopoles will replace the existing wood poles. Existing wood poles, averaging 40ft in height, will be replaced by rusted steel averaging 80ft in height. The Applicant has included a new site plan for the proposed rebuild, (**Exhibit A, pages 29-38**), and an example image (**Exhibit A, pg. 46**).
- iii. The easement terrain will be modified with vegetation management and grading.

As a conditional use application, the Planning Commission (P&Z) is required to hold a public hearing in accordance with the procedures set forth in Municipal Code Chapter 16.08.040. The hearing has been noticed, (**Exhibits D & E**). Within 30 days of the public hearing, P&Z must make one of these three recommendations to Town Council:

- 1) Approve the CUP unconditionally;
- 2) Approve the CUP with conditions;
- 3) Deny the CUP.

Xcel Representative Cory Miller shared a presentation to the commission regarding Transmission Line 6584 as a rebuild project (Exhibit A). He introduced Project Lead Engineer Johnathan Johnson and Burns & McDonnell Attorney Brook Heins. Mr. Miller said the overall project stretched from Rifle to Glenwood Springs, approximately 25 miles of transmission line. He said the purpose for rebuilding 69kV transmission lines was due to the wildfire mitigation plan with the State of Colorado. He said this project was statewide to ensure the transmission lines were 'fire hardened.' He said the transmission line within town limits extended approximately one mile with 20 poles.

Mr. Miller said Xcel would enter into temporary construction easement agreements with landowners where they would need access to the project site, and he verified that the agreements would sunset at the end of the project. Planner Smith asked if temporary access roads would exist for each property. Mr. Miller said there would only be a few points of access needed. Commissioner Parks asked if any of the roads would be kept as permanent access. Mr. Miller confirmed that one or two roads would be permanent, and Xcel would work with those property owners. He added that vehicles could park under the transmission line, however structures would not be permitted to build within the transmission line right-of-way. Mr. Miller acknowledged that agreements with property owners would have to be signed and submitted to the town before construction could begin. Commissioner Cotey proposed timing the Xcel transmission pole replacement before or after the Colorado Department of Transportation roundabout construction as both occupy a portion of the bridge and would affect traffic.

Mr. Miller said the replacement transmission poles would be steel monopoles of a height of 62-100 feet tall with a sixty-foot right-of-way easement. Mr. Miller said the

land would be reclaimed to its pre-construction state once construction was complete. He shared the designs of the monopoles and discussed the phases of construction. He added that the transmission poles would be equipped with static protection from lightning strikes which the previous poles were lacking. He said the static wire would also carry fiberoptic communication wires that would communicate with Xcel facilities for a quick response to line defects. Commissioner Carey asked if parts of New Castle would be without power during portions of construction. Mr. Miller clarified that a temporary powerline would continue to feed the substation, so no planned outages or disruptions in service would occur. Mr. Miller shared the community outreach contact information for any questions or concerns, found on page 11 of Exhibit A, as well as public outreach meeting dates to better inform the public of the project. Commissioner Sass asked if all the old poles would be replaced. Mr. Miller confirmed all poles would be removed. Commissioner Parks asked if concrete would be poured at the base of the poles. Mr. Miller confirmed one pole, site 332DE, would have a permanent structure and the rest of the poles would be positioned in a prepared hole that would be backfilled and compacted. Commissioner Westerlind asked why the pole height had increased. Mr. Johnson explained that the regulation comes from the National Electric Safety Code requiring a certain distance from transmission lines which sags and includes spacing requirements for the shield wire.

Commissioner Cotey asked how the vegetation management would impact the landscape from the construction and expanded easements. Mr. Miller explained the expanded easements accommodated sway from the conductor line. He said within the 'wire zone,' trees would be pruned. He added that ground vegetation could grow to a moderate size, anything under eight feet, before any vegetation management would take place. Mr. Miller said the restoration plan included reseeding disturbed ground to avoid soil erosion. Commissioner Rittner asked about raptor nests in the area, and Mr. Miller confirmed Xcel was working with Colorado Parks and Wildlife requirements and regulations concerning wildlife, specifically raptor nests.

Mr. Miller described the planned steps of construction as: digging of the holes, assembly of the poles, setting the poles in the holes and affixing the conductor wire to the crossarms of the transmission poles. He said helicopter use was anticipated during construction due to the steep terrain. He said the fully assembled transmission poles would be delivered to the construction site by helicopter. Mr. Miller said Xcel had to get approval from the Federal Aviation Administration (FAA) with a permit prior to construction. He said part of the FAA regulations included the inability to fly over structures including homes and businesses. He said project construction was scheduled to begin at the end of 2024. Planner Smith estimated Xcel would begin construction work in New Castle in 2025. Mr. Miller confirmed that was the most likely scenario. Commissioner Carey suggested considering the impact of noise in the area from both the jackhammers digging the holes as well as the helicopters. Mr. Miller said the helicopters would fly in the new poles and fly the old poles back, estimating a total time of one week. Commissioner Carey suggested notifying the public prior to the use of the helicopters and ensuring the public would have Xcel's contact information. Mr. Miller agreed.

Chair Apostolik asked Planner Smith about staff recommendations for Xcel to provide their construction management plan (CMP) before the conditional use permit and

asked what verbal commitments were exchanged. Planner Smith explained that the verbal commitments to the construction management plan were: storage, bathroom locations, access to private properties, vehicle parking, and related topics. Chair Apostolik stressed the size of Xcel's construction management plan for the overall project. Mr. Miller clarified that Xcel would draft a CMP unique for the Town of New Castle and verified the town's requirement that any storage outside of the permitted area would have to be removed. Mr. Miller added that dumpsters and bathrooms would be located at the 'laydown yard,' off site of New Castle. Commissioner Carey asked for the locations of the laydown yards. Mr. Miller referred to the staging yard map found on page 2 of Exhibit A. Commissioner Rittner asked if any night lighting would be utilized. Mr. Miller said no lighting would be needed and the yards were unlit. He said at most there may be a security trailer at the laydown yards.

II. Application Requirements:

The purpose of this conditional use review is to determine if the nature of the proposed use is appropriate to the location and character of the New Castle Industrial Zone.

1) Site Plan:

- e. *Adjacent land uses and location of adjacent structures;
Adjacent land uses include storage (Intermountain, Gabossi), low hazard industrial (National Propane, Bramco Bld.), factory use (Blue Barrel cabinetry shop, Granite Shop), business (All Dogs and Cats), and open space (Breslin Park).*
- f. *Boundary and size of lot;
The project spans numerous lots and parcels in the county. Within New Castle, the application proposes widening easements to 60ft across 10 lots. Temporary access roads will use existing egress points for ground access for construction and pulling/tensioning sites (**Exhibit A, pg. 29**). Private easement agreements are being negotiated with private landowners affected.*
- g. *Building location, height and setbacks;
All utility infrastructure will lie within easement boundaries. Although transmission poles are exempt from building height restrictions per Section 17.72.040 of the Code, the packet summarizes the height variation between existing poles and replacements in Table 2-2 (**Exhibit A, pg. 15**). Heights and locations of each pole are provided in the Site Plan, (**Exhibit A, pages 29-38**).*
- h. *Off-street parking and loading areas;
Temporary access routes off Colorado River Road (County Road 335) will allow for construction vehicles and equipment to access pole locations and tensioning stations. Temporary tensioning stations will be situated at the far west Town boundary. The application does not currently comment on offsite delivery/loading/storage of materials or daily construction parking. However, the Applicant has verbally committed to providing a construction management plan prior to issuance of a conditional use certificate.*
- i. *Points of ingress and egress;
Except for various access road driveways (**see Exhibit A, pages 29, 34, 37, and 38**), the replacement work will be conducted in the updated utility easement. CR 335 will serve as the primary access to each lot. Nine poles will be placed by helicopter assist and coordinated with the FAA. A Health and Safety Plan has also been provided (**Exhibit G**) per the request of Colorado River Fire Rescue (CRFR).*
- j. *Service and refuse areas;*

The Application omits plans for waste/sanitation management and staging of materials and equipment existing poles. The Applicant will provide a construction management plan prior to construction.

k. Signs and exterior lighting;
Permanent signage and exterior lighting are not anticipated with the project. However, temporary traffic control signs along CR 335 can be expected during the replacement process. Traffic control plans are subject to a ROW permit as regulated by the Public Works Department.

l. Fencing, landscaping and screening;
Fence screening is required for lots operating fabrication, repair, or storage facilities. Additionally, property lines adjacent to public parks shall have tree and shrub screening. Neither case obtains with the current application, hence, no fencing or landscape screening is proposed.

m. Compliance with performance standards;
Performance Standards are a commitment from the Applicant to minimize potential nuisances. The Applicant has signed the Performance Standards, (Exhibit F).

n. Anticipated utility requirements;
The project creates no additional demand for water, sewer, or electricity.

2) Development Timeline:

The Applicant provided an anticipated schedule of development (Exhibit A, pg. 14). Project construction located in New Castle, Segment 2, is anticipated to begin in Spring 2025, pending permit approvals. Materials would be delivered to the site approximately January 2025. If that schedule is tracking, construction and restoration activities are expected to be completed by late Fall 2025 and restoring service on Segment 2 of the transmission line by January 2026.

III. Approval Criteria:

A decision on a conditional use application shall be made based on the following criteria:

- 1) Is eligible for conditional review under § 17.72.040;
Staff Comment – The application is eligible for conditional review subject to sections 17.84.070 & 17.84.080 as discussed above.
- 2) Is generally compatible with adjacent land uses;
Staff Comment – The existing transmission line pre-dates New Castle's industrial zone by several decades (platted in 2000). The utility's consistency with other industrial uses in the area has generally been taken as a given. Nevertheless, consistency with surrounding uses has been a priority with the Applicant. The transmission line replacements will retain the same general appearance as the existing conductors. Replacement poles will remain brown though made of rusted steel rather than wood. Easements will be widened, following the general path of the existing easement, which will make minimal difference to the look of the landscape. Notably, new poles will significantly exceed the height of existing poles. Typically, this would be considered incompatible with adjacent land uses. However, heights for transmission towers are excluded from height considerations per Section 17.84.040.
- 3) Meets all requirements of § 17.84.020, is in compliance with Title 17 of the Code, and minimizes potential adverse impact of the conditional use on adjacent properties and traffic flow;

Staff Comment – The application demonstrates compliance with Section 17.84.020 as overviewed in Section II above. The Applicant should also satisfy all recommendations specified in the referral comments submitted by the Town engineer and Colorado River Fire Rescue as provided in **Exhibits B & C**.

4) Is consistent with the comprehensive plan and

Staff Comment – The Comprehensive Plan provides guidance on impacts to the natural environment (**Goals EN 1-2**). Other than pole material and height, the transmission line project should retain the general appearance of the existing lines. Furthermore, though short-term impacts to the environment will be necessary during the replacement process, compliance with the Town Engineer's recommendations should help keep those impacts to a minimum.

5) The Town has the capacity to serve the proposed use with water, sewer, and fire and police protection.

Staff Comment – The replacement project will not have any new impacts on water, sewer, and police protection. The Applicant has provided a health and safety plan which overviews fire mitigation and life safety strategies (**Exhibit G, pages 6 & 9**).

Planner Smith reviewed the five approval criteria for the application. He stated that Xcel's application was unique in the sense that it was an already existing permitted use. Planner Smith stated that utility pole heights were exempt. He said Town Engineer Jeff Simonson was comfortable moving forward with the project and he was in the process of reviewing the application and providing comments. He said once the project moved closer to construction, Engineer Simonson would provide his final feedback. Planner Smith said Fire Marshall Orrin Moon had reviewed the application and provided a safety plan, that was included in the packet.

IV. Staff Recommendations:

Staff recommends approval of Resolution 2024-3 with the following conditions:

1. No construction shall begin until a conditional use certificate has been issued by the Town Planner subject to Section 17.84.040.
2. No construction shall begin until the Applicant has obtained new or revised easements from all Property owners. Applicant shall provide recorded copies of all such easement agreements to the Town at the pre-construction meeting called for in Condition E, below;
3. Prior to issuance of the conditional use certificate, the Applicant shall demonstrate conformance with recommendations provided by the Town Engineer and CRFR (**Exhibits B & C**).
4. Prior to the issuance of a conditional use certificate, a construction management plan shall be provided for review and approval by Town staff. A construction management plan shall include, but is not be limited to, the identification of off-site storage & delivery locations, any contractor off-site parking, refuse management, and bathroom locations.
5. The Applicant shall conduct a pre-construction meeting with Town staff and relevant agencies at least 14 days prior to the beginning of construction.
6. The Applicant shall apply for any right-of-way permits through the Town's Public Works Department.
7. Easement adjustments shall be consistent with the site plan (staff report Exhibit A, page 15), as approved by Town Council. A revised boundary plat showing all altered easements shall be provided prior to the issuance of a conditional use certificate;
8. Applicant shall comply with all applicable building and municipal code requirements, including all signage permitting, and county licensing requirements.

- 329 9. *No approved conditional use may be altered, structurally enlarged, expanded in parking area*
330 *or expanded in ground area unless the site plan is amended and approved in accordance*
331 *with the procedures applicable to approval of a conditional use as set out in § 17.84.070 of*
332 *the Code;*
- 333 10. *In the event the Town receives any complaints about the use of the site or observes or*
334 *becomes aware of any violations of the conditional use approval, the Applicant and/or*
335 *owner may be summoned before the Town Council in a public meeting to show cause why*
336 *the permit should not be revoked, suspended, or additional conditions imposed. Such show-*
337 *cause hearing shall be open to the public and the applicant or owner may present testimony*
338 *or offer other evidence on its behalf.*
- 339 11. *All representations of the Applicant in written and verbal presentations submitted to the*
340 *Town or made at public hearings before the Planning Commission or Town Council shall be*
341 *considered part of the application and binding on the Applicant.*
- 342 12. *The Applicant shall reimburse the Town for any and all expenses incurred by the Town*
343 *regarding this approval, including without limitation all costs incurred by the Town's outside*
344 *consultants such as legal and engineering costs.*
345

346 Planner Smith stated the conditional use certificate would not be issued until some of
347 the open-ended matters were resolved following final comments from Engineer
348 Simonson. He clarified that the application process may move forward, and staff would
349 work with Xcel to resolve any pending matters before construction could begin. Planner
350 Smith noted the potential noise nuisance violation with construction and use of
351 helicopters. He said he had spoken with Assistant Town Attorney Hailey Carmer and
352 discussed a potential condition to exempt the noise violation.
353

354 **V. Application Exhibits:**

- 355 A. *Land Development Application*
356 B. *CRFR Referral – Kurt Lundin, January 23, 2024*
357 C. *Town Engineer Referral – Jeff Simonson, January 24, 2024*
358 D. *Public Notice*
359 E. *Notarized Affidavit of Notice*
360 F. *Signed Performance Standards*
361 G. *Health and Safety Plan*
362

363 Rubin Vigil, a resident of Garfield County, stated he owned a land lot on the hillside
364 across from the Riverpark Condominiums. He asked if Xcel could relocate the
365 transmission line further up the hillside or closer to the road as it was currently
366 planned to run directly through his property which would restrict any structure from
367 being built. Mr. Miller said he would provide an Xcel contact for them to reach out to as
368 his role was strictly involved with the municipal permitting process. He clarified that
369 there was a separate land use application for Garfield County that he would speak with
370 him about, after the meeting concluded.
371

372 Jose Gonzales, a resident of Garfield County, stated he owned a land lot on the hillside
373 as well and asked for the transmission line to be relocated so they could build on the
374 property. He said the current location of the transmission line proposed condemned his
375 property.
376

Commissioner Cotey said consideration of the location of the transmission line was a valid point as it was limiting the development of the community with the line running through the middle of properties instead of the edge boundary. Planner Smith clarified that the original transmission line ran through the same area. Commissioner Cotey stated the expanded easement from thirty feet to sixty feet was a significant difference. Commissioner Parks asked if it would be possible to shift the easement of specific properties. Mr. Miller explained that the property owner would be compensated for the expanded easement. He added that Xcel keeps contract negotiations with property owners private. He said, prior to construction, Xcel would be submitting a final copy of the property agreements to the town. Commissioner Cotey asked what would happen to the project if Xcel did not get an agreement for the signed Xcel line. Mr. Miller said there were a few options that included trying to work on an agreement with the property owner, referring to the existing easement, or as a last resort, acquiring the land if needed. Commissioner Carey stressed the importance of considering property owners who would be impacted by the expanded easement instead of just the simple solution of monetary compensation. Mr. Miller said Xcel tries to maintain existing land rights to the greatest extent possible and would continue to work with the property owners.

Chair Apostolik closed the public hearing at 8:12 p.m.

Assistant Attorney Carmer stated the resolution recommended approval of the application and the proposed property use of location and operation of an electric transmission line and related poles, towers, facilities and equipment. She added the recommendation of section three of the resolution included the same conditions as what Planner Smith reviewed in the staff report. Assistant Attorney Carmer said a condition may be added, as condition M, to exempt the potential construction noise from the nuisance violations of the town as well as the need to perform replacements or maintenance.

MOTION: Chair Apostolik made a motion to approve Resolution PZ 2024-3, A Resolution Recommending Approval of a Conditional Use Permit for Utility Transmission Line and Towers on Property Located in the Industrial Zone District with the added condition, line M, to exempt project noise from the town's violations. Commissioner Westerlind seconded the motion, and it passed on a roll call vote: Commissioner Westerlind: Yes; Alternate Commissioner Parks: Yes; Commissioner Carey: Yes; Commissioner Sass: Yes; Chair Apostolik: Yes; Alternate Commissioner Rittner: Yes; Commissioner Cotey: Yes.

Staff Reports

Planner Smith reported the preliminary meeting for R2 Partners was scheduled for June 26, 2024. Deputy Clerk Bordelon informed the commission of the scheduled attorney work session on the topic of water rights. She added that the town had scheduled a community ice cream social for public outreach and asked if the commission was interested in participating. The commission expressed interest.

Commission Comments and Reports

Commissioner Parks reported Historic Preservation Commission held their open house for the community on May 2, 2024. He said it was a light turnout, however Lindsey Flewelling attended from History Colorado. He stated the commission learned a lot regarding incentives for designation at the open house.

Review Minutes from Previous Meeting

MOTION: Chair Apostolik made a motion to approve the April 10, 2024 meeting minutes. Alternate Commissioner Cotey seconded the motion and it passed unanimously.

MOTION: Chair Apostolik made a motion to adjourn the meeting. Commissioner Westerlind seconded the motion and it passed unanimously.

The meeting adjourned at 8:28 p.m.

Respectfully Submitted,

Chuck Apostolik, Chair

Remi Bordelon, Deputy Town Clerk

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478

Exhibit A

Xcel Presentation Packet

DRAFT



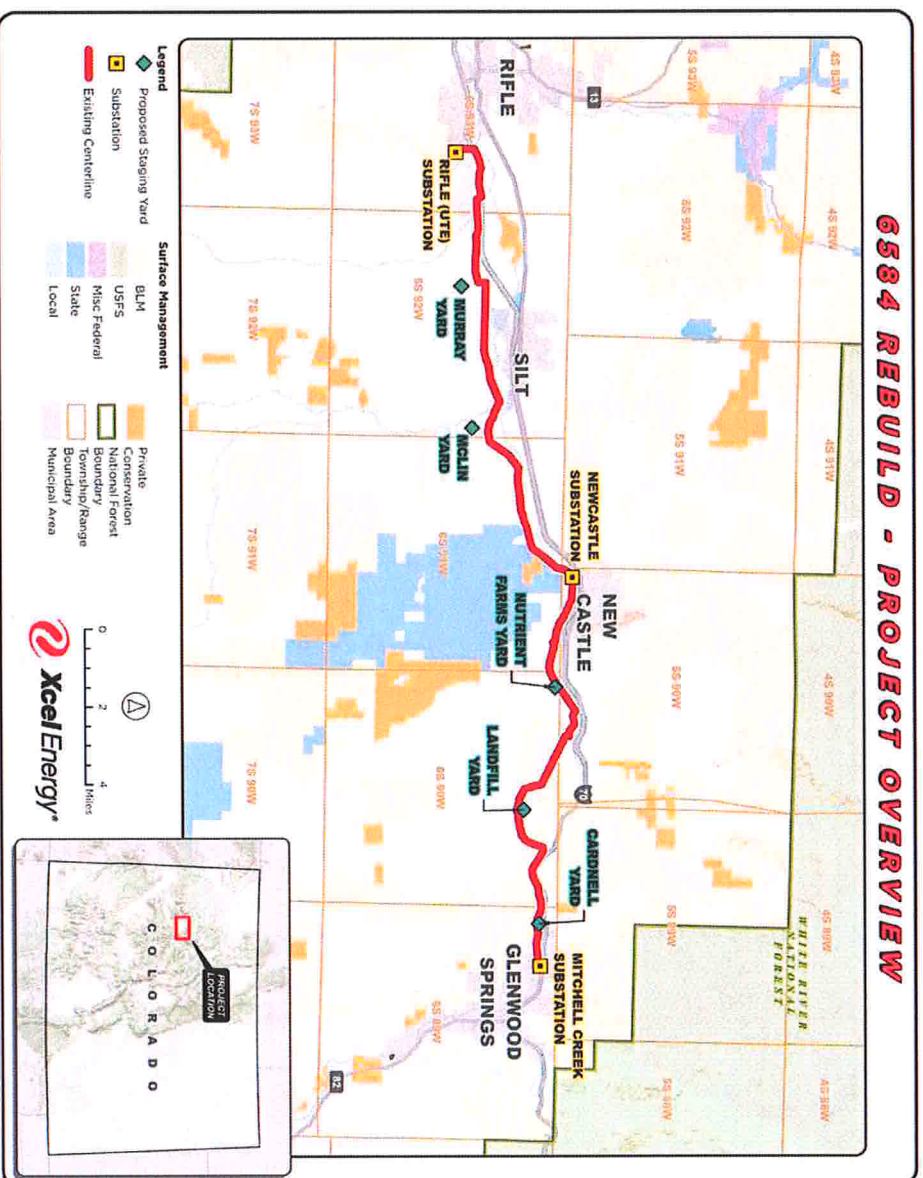
TRANSMISSION LINE 6584 REBUILD PROJECT CONDITIONAL USE PERMIT

Hearing Presentation to Town of New Castle Planning Commission

May 8, 2024

Project Purpose and Need

- Xcel Energy is proposing to rebuild the existing 69 kV transmission line to replace aging infrastructure and maintain system reliability.
- The transmission line will be rebuilt to current design standards that include additional measures to reduce wildfire risk.
- Approximately 25 miles of Transmission Line will be rebuilt. The total mileage within New Castle ~ 1 mile.
- The line will be rebuilt within a 60' Right-of-Way.



Project Overview – New Castle

Temporary Components

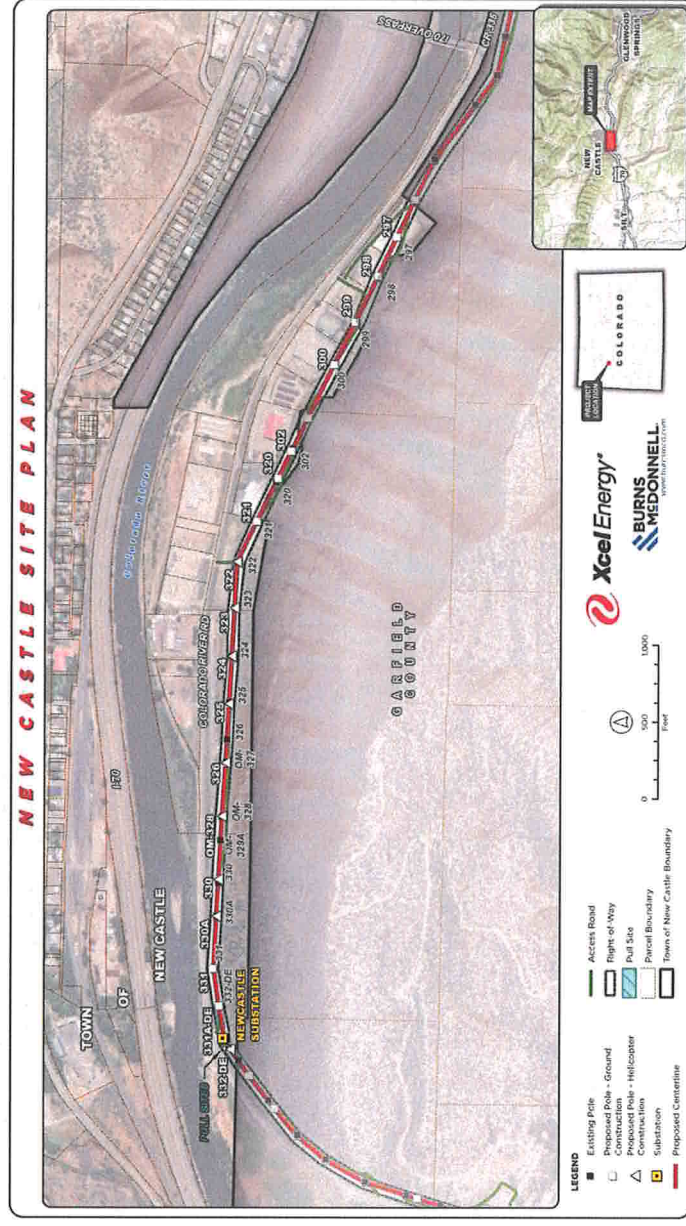
Temporary construction easements (TCE)

- Areas used during construction for placement of equipment to install poles
- Tensioning sites (pull sites) will be located at dead end structures
- No staging yards / helicopter yards are in New Castle – helicopters will be used for pole setting in the Town boundary

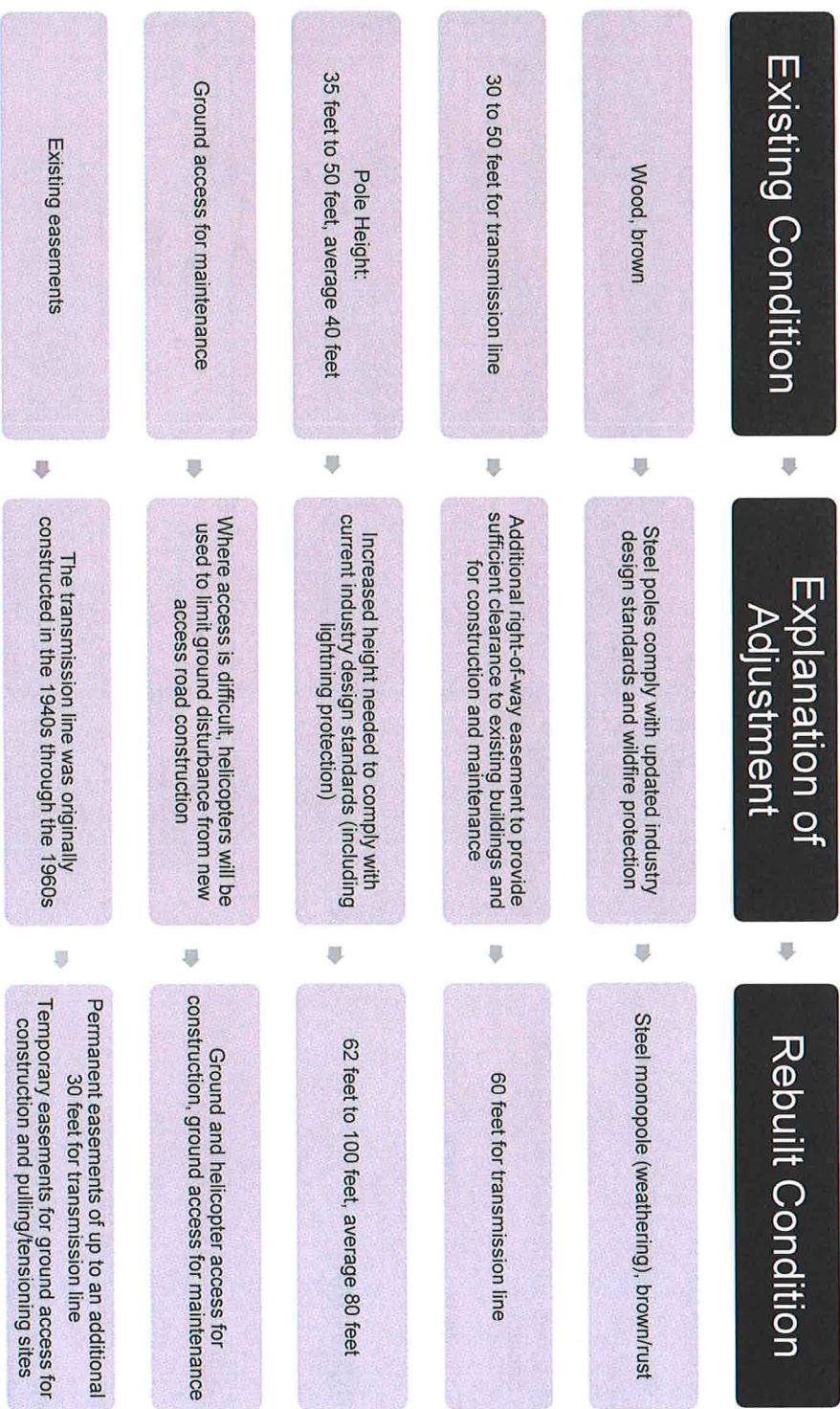
Access routes – Both walk-in and truck access routes are required during construction

Permanent components

- Transmission poles and line
- Some access routes for operations and maintenance
- Graded areas at some pole locations
- Xcel Energy will work with the project Engineer to ensure compliance with Town's standards



Existing and Planned Transmission Equipment / Right-of-Way



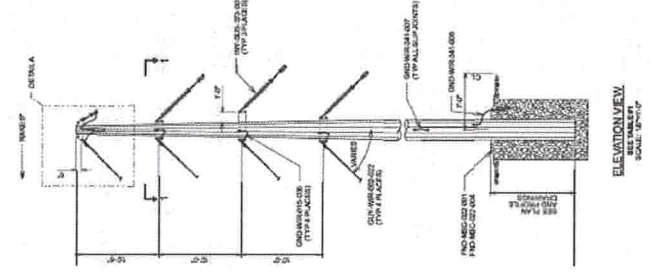
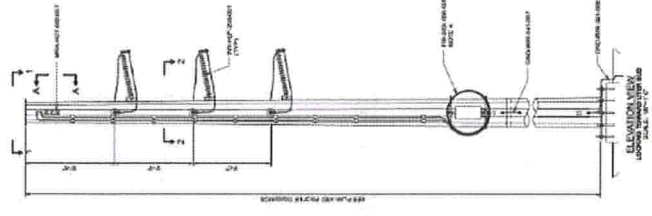
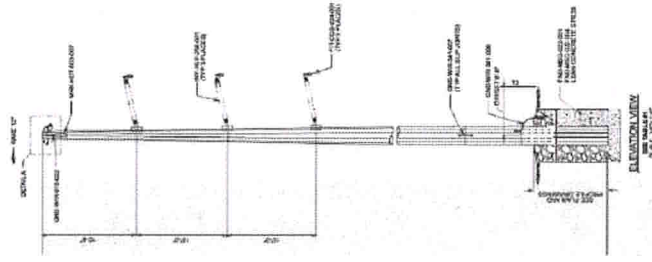
Typical Pole Types – Steel Monopoles

Electric Transmission Line

- Operated at 69-kilovolts (kV)

Transmission Structures (Poles)

- Different pole types depending on location, terrain, soil conditions
- Weathering (brown) steel poles
- Foundation and direct embed



Vegetation Management

- Vegetation removal will be limited given that the existing right-of-way is already maintained for vegetation.
- Pruning, mowing and removal are necessary to create a safe, working, operational space around facilities. However, most impacts to vegetation will be temporary and limited to the right-of-way and TCEs.
- Once construction has been completed, TCEs and the right-of-way will be restored in a manner generally similar to their condition prior to construction.
- Xcel Energy is communicating with landowners where vegetation will need to be removed.



Construction Access

- Where practicable, existing public roads and private roads will be utilized during Project construction and operation.
- Some access routes on private property may require improvements.
- Some new access routes will need to be constructed to accommodate construction equipment and long-term maintenance.
- Construction access road improvements
 - Ground and helicopter access needed for construction
 - Permanent ground access needed for operation and maintenance



Construction Methods

Temporary Construction Easements (TCE)

- TCEs will be used for the following activities:
 - Stage construction equipment and materials
 - Provide space for assembling poles and stringing and pulling conductor wire
- Multiple TCEs will be used as helicopter fly yards – all are located in Garfield County
 - 1 specifically in Glenwood Springs

Traditional Crane

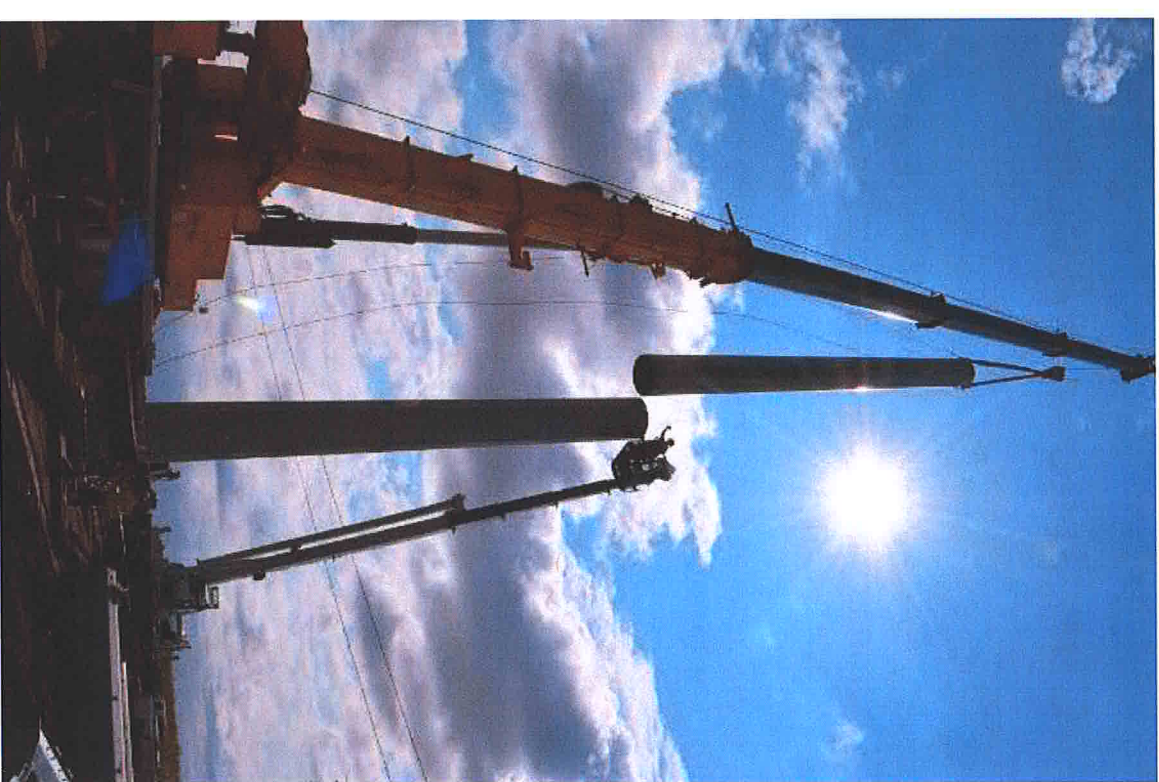
- Trucks will transport materials to pole locations
- Crane are used to lift poles into place

Conductor Wire Installation

- Temporary pulley system pulls the conductor wire to each pole
- Some TCEs are required at specific angles to ensure wire is pulled in line with poles
- Conductor wire attached to insulators

Restoration

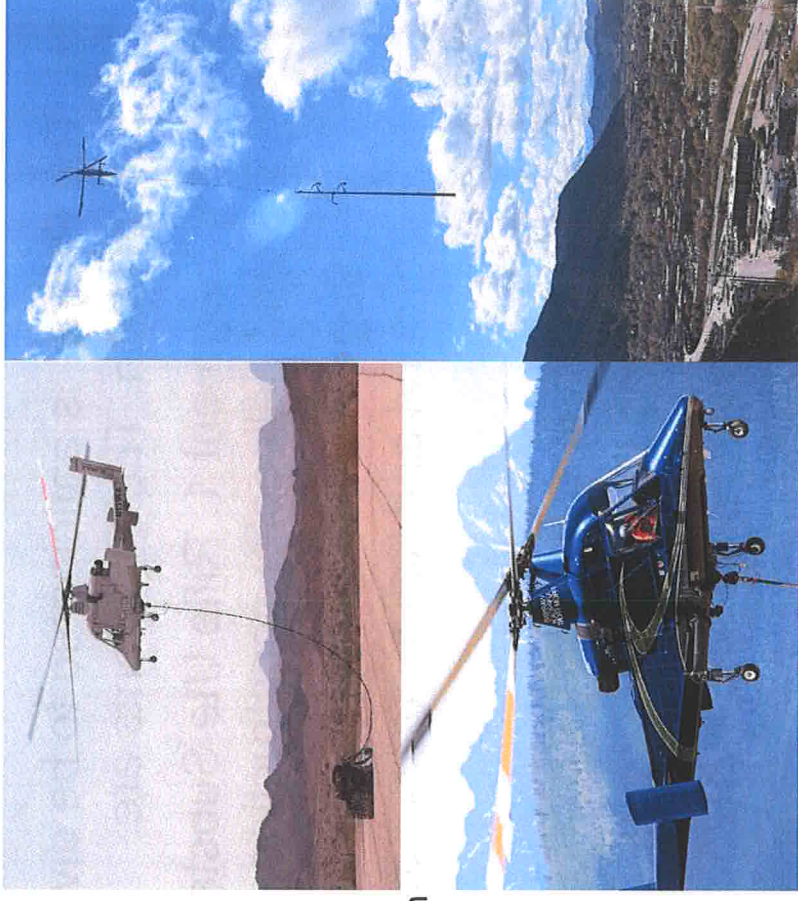
- Restoration will be completed for areas disturbed by construction



Helicopter Use and Construction

Helicopters are used for pole installation in areas with steep terrain and limited access.

- Helicopter access is likely to be required during construction of the lines in steep terrain
- Helicopters will travel to the construction staging area to land and collect construction materials, including poles
- No helicopter landing areas (fly yards) are proposed in New Castle
- This helicopter use is regulated by the Federal Aviation Administration (FAA)
- We will coordinate with the FAA and follow all regulations and safety requirements
- There are FAA restrictions on flying over occupied buildings
- No interruption to electrical service is anticipated
- Construction crews will coordinate with our land agents to provide impacted landowners with advanced notice of evacuations if needed



Construction Schedule

- The Project is anticipated to be divided into two main segments of construction. The segments are:
 - Segment 1: Rifle Ute Substation to Newcastle Substation – ground and helicopter construction, approximately 12 miles.
 - Segment 2: Newcastle Substation to Mitchell Creek Substation – ground and helicopter construction, approximately 13 miles.
- Construction is scheduled for:
 - Q3 2024 through Q4 2025
 - In-service date of Q4 2025

Community Outreach Channels

Channel Type	Contact Method	Description
Website	https://www.transmission.xcelenergy.com/Projects/Colorado/mitchelltoute	The website hosts information on the Project, public engagement, schedule, safety, and methods to contact the Project team.
Email Address	MitchellCrtoUteRifle@xcelenergy.com	The Project email address is checked daily to ensure all inquiries are addressed in a timely manner. Messages are typically responded to within 24 hours by Project representatives.
Hotline	303-571-7472	The Project hotline provides brief information about the Project and alternate Project communication channels that are available. The hotline allows stakeholders to leave voice messages with questions, comments, or concerns for the Project team. Messages are responded to as soon as possible by Project representatives.

Community Engagement Meetings

Date	Location
Wednesday, December 6, 2023	Glenwood Springs Recreation Center - 100 Wulfsohn Rd, Glenwood Springs, CO 81601
Tuesday, February 27, 2024	Glenwood Springs Recreation Center - 100 Wulfsohn Rd, Glenwood Springs, CO 81601
Wednesday, February 28, 2024	Rifle City Hall – 202 Railroad Ave, Rifle, CO
Wednesday, March 13, 2024	Garfield Public Library – 244 Grand Valley Way, Parachute, CO



Town of New Castle – Conditional Use Approval Criteria

Section 17.84.050.A: A conditional use application shall be approved only if the town council finds that the application:

- ✓ Is eligible for conditional review under Section 17.84.040
- ✓ Is generally compatible with adjacent land uses
- ✓ Meets all requirements of Section 17.84.020, is in compliance with this title and minimizes potential adverse impact of the conditional use on adjacent properties and traffic flow
- ✓ Is consistent with the comprehensive plan
- ✓ The town has the capacity to serve the proposed use with water, sewer, and fire and police protection.

