DOUGLAS COUNTY
COLORADO

Minor Development Final Plat Staff Report

Date: September 29, 2025

To: Douglas County Board of County Commissioners

Through: Douglas J. DeBord, County Manager

From: Terence T. Quinn, AICP, Director of Community Development TQ

CC: Carolyn Washee-Freeland, AICP, Senior Planner
Jeanette Bare, AICP, Planning Manager
Steven E. Koster, AICP, Assistant Director of Planning Services

Subject: **Antelope Crossing – Minor Development Final Plat**

Project File: **SB2024-066**

Planning Commission Hearing:	**September 22, 2025 @ 6:00 p.m.**
Planning Commission Continuation:	**October 6, 2025 @ 6:00 p.m.**
Board of County Commissioners Hearing:	**October 14, 2025 @ 2:30 p.m.**

I. EXECUTIVE SUMMARY

The applicant requests a Minor Development Final Plat (MDP) to subdivide a 42.61-acre, Large Rural Residential (LRR) zoned parcel into 4 single-family residential lots. A rezoning request to establish the property's LRR zoning is being heard concurrently with the plat and must be approved prior to the determination on this subdivision application.

The property is located on the west side of Delbert Road, approximately one and one-half miles south of E. Parker Road in unincorporated Douglas County. The project site is adjacent to Elbert County. Lots will be served by individual well and septic systems and will take access from a shared private driveway. Each lot will be approximately 10-acres in size. Additional right-of-way for future County highway widening is provided via the plat. The subject property is located within the Northeast Subarea as identified in the Douglas County 2040 Comprehensive Master Plan (CMP).

The Planning Commission will hear the request at its October 6, 2025, public hearing. Staff will provide an update to the Board at its October 14, 2025, Board hearing.

II. APPLICATION INFORMATION

A. Applicant

DCLA-3 LLC
14205 E. Davies Avenue

Centennial, CO 80112

B. Applicant's Representative

CJ Kirst, Tahoe Consulting LLC
9457 S. University Boulevard, Unit 101
Highlands Ranch, CO 80126

C. Request

Approval of a MDP for a 42.61-acre, LRR zoned parcel to establish 4 single-family residential lots. This request is dependent upon approval of a concurrent rezoning application to rezone the parcel from Agricultural One (A-1) to LRR (condition of approval #1).

D. Process

A residential minor development final plat application is processed pursuant to Article 6 of the Douglas County Subdivision Resolution (DCSR). Article 6 states the intent of the process is "to provide a streamlined review process for the creation of ten or fewer single-family residential lots."

1. Per Section 604.08 of the DCSR, "The Board shall evaluate the minor development final plat, staff report, referral agency comments, applicant responses, the Planning Commission recommendation, and public comment and testimony, and shall approve, approve with conditions, continue, table for further study, remand to the Planning Commission, or deny the minor development final plat. The Board's action shall be based on the evidence presented; compliance with adopted County standards, regulations, and policies; and other guidelines."

E. Location

The site is located on the west side of Delbert Road, approximately one and one-half miles south of its intersection with E. Parker Road, in the northeastern portion of the County adjacent to Elbert County. The project vicinity, zoning, and aerial maps are provided in the attachments to this staff report.

F. Project Description

The applicant is requesting a minor development final plat to subdivide a 42.61-acre parcel into 4 lots. If approved for LRR rezoning, the proposed single-family residential lots as shown on the minor development plat will be approximately 10-acres in size, with a gross density of 1 dwelling unit per 10.65 acres. A private off-site driveway connecting to Delbert Road will provide access to each lot within the proposed subdivision.

No-build zones are established over portions of the lots to preserve historic drainage patterns, steep slopes and floodplain areas. Delbert Road right-of-way will be dedicated to the County via the plat. A 60-foot off-site access and utility and drainage easement will be dedicated by separate instrument prior to recordation of the final plat (condition of approval #2). General purpose utility easements will be dedicated by plat for each lot.

Project Details	
Zoning	Subject property is zoned Large Rural Residential (LRR)
Gross Site Acreage	42.61-acres
Residential Lots	The request will subdivide the parcel into 4 single-family residential lots: Lot 1 – 11.08 acres; Lot 2 – 10.29 acres; Lot 3 – 10.05 acres; and Lot 4 – 10.72 acres
Gross Density	1 Dwelling Unit per 10.65 acres

III. PLANNING COMMISSION

The Planning Commission will hear the minor development request at its October 6, 2025, public hearing. Staff will provide an update to the Board at its October 14, 2025, Board hearing.

IV. CONTEXT

A. Background

The subject property was zoned A-1 with the inception of zoning into Douglas County in 1955. Current land use of the property is agricultural with no improvements or developed access to the site. A concurrent rezoning request is being considered on the same hearing agenda as that of the minor development final plat. If the LRR zoning is approved, the proposed gross density as shown on the minor development plat will not exceed 1 dwelling unit (DU) per 10.65-acres as allowed by the LRR zone district standards.

B. Adjacent Land Uses and Zoning

The site is bound by single-family residential development in Elbert County to the east, a 91.25-acre A-1 zoned undeveloped parcel to the north, single family lots zoned A-1 to the west, single-family residential developments zoned A-1, and an LRR parcel to the south. The following table reflects the zone districts and land uses surrounding the project area.

Zoning and Land Use

Direction	Zoning	Land Use
North	Agricultural One	Vacant Land
South	Agricultural One and Large Rural Residential	Single-Family Residential
East	Elbert County Residential	Single-Family Residential
West	Agricultural One	Single-Family Residential

V. PHYSICAL SITE CHARACTERISTICS

A. Site Characteristics and Constraints

Site topography consists of rolling hills, an existing drainageway, and certain areas of steep slope. The drainageway forms the upper reach of Coal Creek Left Tributary. The parcel is vegetated with grasslands and groves of evergreen trees located to the south of the tributary. Contour elevations range between 6,260 to 6,300 feet.

Portions of the project site are located within a FEMA-mapped flood hazard area. In accordance with Douglas County Engineering's requirements, the floodplain limits were further refined through a specific floodplain study which was completed by the applicant's engineer.

B. Access

The main access to the property is from a new 24-foot off-site access drive connecting to Delbert Road, a portion of which falls outside of the bounds of the minor development plat. The private drive will be constructed to Douglas County roadway standards. The access drive will also contain utility and drainage easements to serve the subdivision. Each lot owner within the subdivision will own and maintain the driveway through a private maintenance agreement.

The applicant submitted a traffic letter that was reviewed and accepted by County Engineering.

The applicant will also dedicate additional Delbert Road right-of-way to the County for future widening of the roadway via the plat. Delbert Road is currently a two-lane collector roadway. The Douglas County Transportation Plan indicates that Delbert Road is prioritized as a long-term improvement and will be widened in the future from two lanes to four lanes. It will be designated as a Major Arterial Roadway by the year 2040.

C. Soils and Geology

The Class 3 Geologic Hazards map as described within the Douglas County 2040 Comprehensive Master Plan (CMP) indicates that there are no known Class 3 geologic hazards on the property.

D. Drainage and Erosion

A Phase III Drainage Report, a Grading Erosion Sediment Control (GESC) Plan, and construction plans were reviewed and accepted by Douglas County Engineering Services. No-build zones are located on all the proposed lots to preserve the 100-year floodplain, the drainageway, vegetation, and steep slopes. No structures will be permitted to be located within the no-build zones.

E. Floodplain

The 100-year floodplain is shown on the plat exhibit. The upper reach of Coal Creek Left Tributary drainageway traverses across the property. The site is located within a flood hazard area as shown on FEMA Panel Number 08035C0212F with an effective date of September 30, 2005.

Engineering required the applicant to further analyze the floodplain and refine its limits. The applicant provided a revised Phase III Drainage Report with the results of the analysis, and the revised 100-year floodplain has been shown on the plat. The floodplain and associated erosional setbacks are included within designated no-build zones on Lots 1, 2, and 3.

F. Geologic Hazards

The Colorado Geological Survey (CGS) provided a review and found no geologic hazards are known or suspected to be present that would preclude approval of the minor development as proposed. The no-build zones for Lots 1 through 3 will satisfactorily avoid the 100-year flood hazard limits and steep slopes greater than 20%.

G. Wildlife

The CMP Wildlife Resources Map shows the site as a low habitat value for wildlife. The site is not located within an overland connection, wildlife movement corridor, or wildlife crossing area. Colorado Parks and Wildlife provided a no objection to this subdivision request moving forward.

H. Historic Preservation

Douglas County Historic Preservation provided referral comments on the application. The County Curator reviewed the Class III Cultural Report for the project area and noted that the report stated that new sites were discovered but none are eligible to be listed on the national register. The County Curator had no recommendations and stated that the report satisfies the Curators request. If artifacts are discovered, the Curator recommended the completion of the appropriate Colorado Office of Archaeology and Historic Preservation Data Management and Historic and/or Prehistoric Component forms.

VI. PROVISION OF SERVICES

A. Schools

The Douglas County School District (DCSD) reviewed the request, and it was determined that the amount of land required for school land dedication is not enough to serve as a school site or other school purposes; and cash-in-lieu of land dedication is required. The cash-in-lieu amount for residential minor development is $500 per each additional residential lot created. As condition of approval #3, the applicant will be required to pay the fee prior to plat recordation.

B. Fire Protection

South Metro Fire Rescue (SMFR) provides fire protection services to the site and reviewed the request. The applicant has coordinated with SMFR and the Rattlesnake Fire Protection Department (RFPD) to utilize a RFPD fire cistern for future fire protection of the proposed subdivision. The fire cistern is located at the Meadow Station in Elbert County, approximately 2 miles from the project site. SMFR will require that the applicant to install a Knox Box at the cistern pump controls, that will contain a key for pump activation. SMFR further provided a “no objection” response to the future subdivision. The applicant has obtained a will serve letter to allow SMFR to use the RFPD cistern. As a condition of approval, the applicant will install the required Knox Box prior to building permit issuance (condition of approval #4).

C. Sheriff Services

The Douglas County Sheriff’s Office (DSCO) provides police protection services to the site. No response was received from DCSO and DCSO 911.

D. Water and Sanitation

Each lot within the subdivision will be served by individual well and septic systems. The Denver Basin aquifer water beneath the property was decreed in Case No. 97CW095, with annual quantities of 79.2 acre-feet/year. The County’s presumptive water demand for each lot zoned LRR is 1.0 acre-feet/year per lot, for a total water demand of 4.0 acre per feet for the subdivision. The individual wells for each lot in the subdivision will be constructed in the nontributary Lower Dawson aquifer.

The Colorado Division of Water Resources (CDWR) reviewed the rezoning and minor development plat request and found that there is an existing well (well permit no. 53878) on the property and determined that the applicant must either re-permit the well pursuant to a water court approved plan for augmentation or plug and abandon the well prior to approval of the plat.

The applicant’s water attorney has noted that the owner of the property has not located the well on the site, and further states that the CDWR may consider Well 53878 as abandoned. CDWR reviewed the water attorney’s letter and stated that the proposed water supply is adequate and can be provided without causing injury to decreed water rights. In recent correspondence with the CDWR, clarification was provided regarding the abandonment requirement for well permit no. 53878. CDWR stated that they will not require the well permit to be abandoned, as the well was not found on the property.

The County’s Water Consultant reviewed the applicant’s water supply for compliance with the Douglas County Zoning Resolution Section 18A Water Supply and indicated that there is sufficient water in the Lower Dawson aquifer to support the future subdivision. The applicant has submitted a Declaration of Restrictive Covenants to reserve all water rights on the site for the benefit of the future landowners within the subdivision.

Each lot within the subdivision will be served by individual On-Site Wastewater Treatment Systems (OWTS). The Douglas County Health Department (DCHD) reviewed the application and supports the consideration of the OWTS as the proposed method of sewage disposal.

E. Utilities

Utility Service providers are AT&T, Black Hills Energy, CenturyLink, CORE, and Xcel Energy. Phone and data services are provided by CenturyLink and Comcast. AT&T and CenturyLink had no objections to the proposal; and Black Hills Energy did not respond to the request. CORE reviewed the proposal and requested changes to utility easement widths for the utility easement shown in the off-site access roadway. The applicant revised the plat exhibit to show the required 15-foot CORE utility easement widths.

Xcel Energy did not object to the proposal contingent upon Xcel's ability to maintain all existing rights for future expansion, which includes all present and future accommodations for natural gas transmission and electric transmission-related facilities.

F. Dedications

The applicant will dedicate Delbert Road right-of-way to Douglas County for future road widening. General purpose utility easements will be dedicated to the County for public utility purposes. The utility easements will consist of 10-foot non-exclusive utility easements located along exterior lot lines, and all interior lot lines will be platted with a 5-foot utility easement.

Additionally, a 60-foot off-site access, drainage and utility easement, and two private drainage easements related to the access roadway will be established by separate instrument prior to recordation of the final plat. The easement will be owned and maintained by the individual lot owners per the proposed maintenance agreement.

G. Parks and Trails

Per Article 10 of the DSSR, the applicant will pay $250 per new lot as a cash-in-lieu of land dedication for parks at the time of recordation and is noted as condition of approval #5.

H. Subdivision Improvements

Per the DCSR, specific engineering reports, studies, and construction plans are required to be submitted and accepted or approved by Public Works Engineering with a minor development final plat application. Cost estimates for private improvements related to the access roadway construction are generated from the approved construction plans and incorporated into the subdivision improvements agreement (SIA) for the plat. Per Section 604.07, the SIA must be approved by prior to the Board hearing on the minor development final plat. The applicant's SIA is currently under review and is anticipated to be finally approved prior to the Board hearing on the plat.

VII. PUBLIC NOTICE AND INPUT

Courtesy notices were mailed to abutting property owners. No comments were received regarding the MDP request. Referrals were sent to the Parker View Estates HOA and the Spirit Ridge HOA.

There were no responses received. All referral agency comments are outlined in the Referral Agency Response Report attached to the staff report. The applicant has provided responses to referral comments within a separate letter included in the staff report attachments.

VIII. STAFF ANALYSIS

Per Article 603 of the DCSR, a minor development final plat may be approved upon the finding by the Board that the minor development final plat:

603.01: Conforms with the goals, objectives, and policies of the Master Plan.
Staff Comment: The CMP establishes goals and objectives applicable to development in the County. The application is generally consistent with the CMP policies in Objective 3-3E for the Northeast Subarea. The subdivision will consist of four 10-acre lots and complies with the allowable minimum lot area for lots that will be served by an individual well and septic system in the LRR Zone District. Fire protection and police services are provided to the site and provision for access and utilities have been verified.

603.02: Addresses the design elements established in Section 404 – Preliminary Plan, herein.
Staff Comment: The minor development is in conformance with the design elements as established in the DCSR Section 404 Preliminary Plan. Each of the proposed lots will be accessible to the proposed off-site roadway and Delbert Road, providing opportunities for vehicular and pedestrian access. The proposed lots meet the minimum lot size and setbacks of the LRR zone district. Off-street parking requirements can be met. Geotechnical and individual building analysis will occur at building permit for proposed dwellings. The applicant will assure archaeological or historic resources are identified during construction. Drainage and grading plans are accepted by Douglas County Engineering. The applicant has provided no-build zones throughout the subdivision, of which preserve vegetation, floodplain, historic drainage patterns, and scenic viewsheds.

603.03: Conforms with Section 18A, Water Supply Overlay District, of the Zoning Resolution.
Staff Comment: DCZR Section 1803A establishes approval standards to be used in the evaluation of land use applications reviewed under Section 18A, Water Supply. The water underlying the property is adequate to serve the 4 lots and meets all other approval standards of Section 18A. In accordance with Section 18A, a Declaration of Restrictive Covenants will be recorded concurrent with the minor development final plat to reserve all water rights underlying the subdivision for future uses on the property. The CDWR and the

County's water consultant have reviewed the request and the required water documentation and have determined that the supply is adequate to serve the subdivision.

Below are the water supply approval standards used for evaluating land use applications.

> **1803A.01: The applicant has demonstrated that the water rights can be used for the proposed use(s).**
> *Staff Comment: The CDWR and the County water consultant have reviewed the minor development final plat request and the required water documentation and have determined that the supply is adequate to serve the subdivision without injuring water rights. The Lower Dawson Aquifer will be used to serve residential uses on the lots.*
>
> **1803A.02: The reliability of a renewable water right has been analyzed and is deemed sufficient by the County based on its priority date within the Colorado System of Water Rights Administration.**
> *Staff Comment: No new renewable water rights are proposed to serve the development.*
>
> **1803A.03: The Water Plan is deemed adequate and feasible by the County to ensure that water supply shortages will not occur due to variations in the hydrologic cycle.**
> *Staff Comment: The CDWR has determined that based on the water decree 97CW095, the Water Plan is adequate and feasible to ensure water supply shortages will not occur. Individual wells can be used to supply the lots.*
>
> **1803A.04: The Water Plan is sufficient to meet the demand applicable to the project based on the minimum water demand standards in Section1805A herein.**
> *Staff Comment: Each lot has access to a supply which meets and exceeds the minimum demand standard of 1-acre foot per lot per year as set forth in Section 18A. A Declaration of Restrictive Covenants will be recorded to reserve all Denver Basin groundwater rights for the property (condition of approval #6).*

603.04 Provides for a public wastewater collection and treatment system, and, if other methods of wastewater collection and treatment are proposed, such systems shall comply with State and local laws and regulations.
Staff Comment: Sanitation is provided through OWTS. The DCHD provided a supportive recommendation regarding the proposed method of sewage disposal.

603.05: Identifies all areas of the proposed subdivision which may involve soil or topographical conditions presenting hazards or requiring special precautions and that the proposed uses of these areas are compatible with such conditions.
Staff Comment: Standard geotechnical exploration of individual building sites is required as part of the building permit process. CGS did not require a geotechnical study for the subject property. Future lot owners will need to obtain site specific geotechnical recommendations prior to building permit issuance, before construction on each proposed lot.

603.06: Provides adequate drainage improvements.
Staff Comment: A Phase III Drainage Report, a GESC plan and report, and construction plans have been accepted by Douglas County Engineering Services.

603.07: Provides adequate transportation improvements.
Staff Comment: The applicant's traffic analysis has been reviewed by Douglas County Engineering and found to be acceptable.

603.08: Protects significant cultural, archaeological, natural, and historical resources, and unique landforms.
Staff Comment: No unique site features or artifacts were identified within the applicant's cultural resource survey. During construction activity within the development, the applicant, its successors and assigns shall take all reasonable care to watch for historic resources, paleontological resources, and other cultural history resources and shall immediately notify Douglas County in the event of such discovery.

603.09: Demonstrates the extraction of any known commercial mining deposit shall not be impeded.
Staff Comment: There are no known commercial mining deposits or significant mineral deposits on site per the Douglas County Mineral Extraction Plan.

603.10: Has available all necessary services, including fire and police protection, recreation facilities, utility service facilities, streets, and open space to serve the proposed subdivision.
Staff Comment: The subdivision will be served by SMFR, (through the use of a Rattlesnake Fire Department cistern located in Elbert County) the Douglas County Sheriff's Office, the Douglas County School District, Black Hills Energy, CORE Electric Cooperative, Comcast, CenturyLink, and Xcel Energy. Cash-in-lieu of required park and school land dedication shall be paid prior to plat recordation (conditions of approval #3 and #5).

IX. STAFF ASSESSMENT

Staff has evaluated the minor development final plat request in accordance with Article 6 of the DCSR. The MDP meets the gross density of 1 dwelling unit per 10.65-acres, per the LRR zone district. Should the Board find that the approval standards are met, the following proposed conditions should be considered for inclusion into the motion:

1. Prior to Board final action on the minor development final plat, the request to rezone the property to Large Rural Residential shall be approved.

2. Prior to recordation of the minor development final plat, the applicant shall record the 60-foot off-site access, drainage, and utility easement by separate instrument.

3. Prior to recordation of the minor development final plat, the applicant shall pay $1,500 to the Douglas County School District for cash-in-lieu of school land dedication.

4. The applicant shall install a South Metro Fire & Rescue Knox Box at the cistern pump controls to be approved by both SMFR and the Rattlesnake Fire Department prior to building permit issuance.

5. Prior to recordation of the minor development final plat, the applicant shall pay $750 to Douglas County for cash-in-lieu of park land dedication.

6. Prior to recordation of the minor development final plat, the applicant shall record a Declaration of Restrictive Covenants reserving the water beneath the property for the benefit of future landowners within the subdivision.

7. Prior to recordation of the minor development final plat, technical corrections to the plat exhibit shall be made to the satisfaction of Douglas County.

8. All commitments and promises made by the applicant or the applicant's representative during the public hearing and/or agreed to in writing and included in the public record have been relied upon by the Board of County Commissioners in approving the application; therefore, such approval is conditioned upon the applicant's full satisfaction of all such commitments and promises.

ATTACHMENTS **PAGE**

DOUGLAS COUNTY
COLORADO

Department of Community Development

www.douglas.co.us

Planning Services

LAND USE APPLICATION

Please fill in this application form completely. An incomplete application will not be processed.

Note: Neither the Planning Commission nor the Board of County Commissioners should be contacted regarding an open application.

OFFICE USE ONLY

PROJECT NAME: Antelope Crossing Minor Development Final Plat

PROJECT FILE #: SB2024-066

PROJECT TYPE: **Minor Development**

MARKETING NAME: **Antelope Crossing Filing 1**

SITE ADDRESS: **No Site Address Currently**

OWNER(S):

Name(s): **DCLA-3, LLC**

Address: **14205 E. Davies Avenue, Centennial, CO 80112**

Phone: **(303) 437-9707**

Email: **fgay59@gmail.com**

AUTHORIZED REPRESENTATIVE *(requires notarized letter of authorization if other than owner)*

Name: **CJ Kirst (Tahoe Consulting LLC)**

Address: **9457 S. University Boulevard, Unit 101, Highlands Ranch, CO 80126**

Phone: **(303) 330-8947**

Email: **cjkirst@tahoelandservices.net**

PLANNING FEES: $2,600.00

ENGINEERING FEES:

TOTAL FEES:

RELATED PROJECTS:
PS2023-232
ZR2024-015

LEGAL DESCRIPTION:

Subdivision Name: **N/A**

Filing #: ______ Lot #: ______ Block #: ______ Section #: **28** Township: **6S** Range: **65W**

STATE PARCEL NUMBER(S): **2235-284-00-001**

ZONING:

Present Zoning: **A-1** Proposed Zoning: **LRR** Gross Acreage: **42**

Gross Site Density (DU per AC): **1 du/10Ac** # of Lots or Units Proposed: **4**

SERVICE PROVIDERS:

Fire District: **South Metro** Metro District: **N/A** Gas: **Xcel**

Water: **Well** Sewer: **Septic** Electric: **CORE**

Roads: ☐ Public ☒ Private (please explain): **Internal access road coming off of Delbert Rd. providing access to (4) 10-ac lots, will be private locate road.**

To the best of my knowledge, the information contained on this application is true and correct. ***I have received the County's information sheet regarding the Preble's Meadow Jumping Mouse.***

Kirst

Applicant Signature

12/10/24
Date

100 Third Street, Castle Rock, Colorado 80104 • 303.660.7460

Revised 03.04.2021

ANTELOPE CROSSING FILING 1

PROJECT SUMMARY
MINOR DEVELOPMENT
December 10, 2024
Revised February 1, 2025
Revised July 14, 2025

General Project Concept: To subdivide the 42.61 acres of Large Rural Residential land into four (4) 10+-acre lots. The current use of the land is agricultural. The property does not have any improvements on it.

Parcel No.:	223528400001 (R061999)
Location:	A tract of land situated in the east-half of Section 28, Township 6 South, Range 65 West of the 6th Principal Meridian, Douglas County, Colorado. The property is also described as being located immediately west of the Delbert Road and Meadow Station Road intersection.
Condition:	Currently the subject property has rolling native grasses without structures. The property has a portion of the unmapped Upper Reach Cool Creek Left Tributary running through it.
Land Minerals & Water Owner:	DCLA-3 LLC 14205 E. Davies Avenue Centennial, CO 80112
Authorized Representative:	CJ Kirst, Tahoe Consulting LLC 9457 S. University Boulevard, Unit 101 Highlands Ranch, CO 80126
Engineer:	Eric Tuin, 2N Civil 6 Inverness Court East, Suite 125 Englewood, CO 80112
Surveyor:	Encompass Surveying 2750 S. Wadsworth Blvd., Ste. C202 Denver, CO 80227

Douglas County Subdivision Resolution Section 605.02:

605.02.1 The total land area to be subdivided: 42.61 acres

605.02.2 The total number of lots and proposed use: 4 lots

605.02.3 The residential density: 10.65 du/ac

605.02.4 The total land area to be preserved as open space: 0 acres
605.02.5 Roads, tracts, and easements, including ownership and maintenance responsibility. The proposed local road will be private. Each lot will contain a portion of the road. The road will be maintained by the homeowner's association ("HOA"). The road maintenance will include snow clearing and road base up keep. The HOA will also be responsible for ownership and maintenance of the storm sewer pipes, flared ends and associated rip-rap within drainage easements. There are 10' utility easements on the perimeter of each lot for the benefit of electric and communication utilities.

605.02.6 Land dedications for parks and schools: 0 acres dedicated, requirement to be met with cash-in-lieu.

605.02.7 Provision of water, sewer, and other utilities:

Water: Wells – All water rights will be reserved in perpetuity for the proposed development pursuant to a Declaration of Restrictive Covenants.

Sanitary: Onsite Wastewater Treatment System (OWTS) – each OWTS will be designed and permitted by a licensed geotech/engineer who evaluates current soil characteristics.

Electric: CORE Electric Cooperative

Gas: Propane

Douglas County Subdivision Resolution Section 603 Minor Development Final Plat Approval Standards:

603.01 Conforms with the goals, objectives, and policies of the Master Plan.

Antelope Crossing is within the Non-Urban Northeast Sub Area of the Douglas County Comprehensive Plan ("DCCP") and meets the policies and guidelines of this Sub Area with the following:

- *Objective 3-2C Preserve the visual integrity of significant ridgelines, road viewsheds, horizon lines, views of the mountain backdrop, and other important natural features.*
    - *POLICY 3-2C.1 Locate houses, utilities, and other structures away from important ridgelines and horizon lines.*
      The four lots proposed sit below any ridgelines and horizon lines.

    - *POLICY 3-2C.3 Encourage residential site design and locations that complement the nonurban landscape and minimize the impact of road noise.*
      The site design has been focused on very little change to the existing topography/ existing landscape; this will continue with home construction and therefore will lend to minimizing road noise.

    - *POLICY 3-2C.4 Minimize the impacts of light pollution from commercial and residential uses through lighting standards that support dark-sky principles.*
      Street lights are not being proposed and home lighting will be minimal and downlit, all minimizing impacts to light pollution.

- *Objective 3-3E Ensure development in the Northeast Subarea is consistent with this plan.*

    - *POLICY 3-3E.1 A maximum gross density of one dwelling unit per 2.5 acres is supported in the Northeast Subarea where it is logical infill, where approximately 50 percent of the property boundary is adjacent to zoned lands or parcel sizes consistent with the proposed development, and where site characteristics can generally support it.*

      With the rezoning to LRR the gross density of one dwelling unit per 10-Ac is well above the 1du/2.5ac. density. The site adjacency to zoned lands or parcel sizes = 50.02%. The site's entire southerly and easterly property lines (4,147.88') have this adjacency.

      Since the properties to the south and east (with 5, 6 & 10-ac lot sizes) are consistent with the proposed LRR (10-Ac min.) lot size transition requirements should not be necessary. Similarly infill transition to the north and west does not seem necessary since the owner of this land is the same as this project and the intents with these two properties is identical to this project.

      The adjacent lots to the east are located within Elbert County, more specifically within the Meadows Station subdivision. These lots are zoned RA-1 allowing lot sizes no less than 5.0-acres.

- *POLICY 3-3E.2 A maximum gross density of one dwelling unit per 2.5 acres is supported in the Northeast Subarea where there is adequate public infrastructure to support the proposed development and where the other goals, objectives, and policies of the Plan have been met.*

  The proposed lots will be served individually for water and sewer via wells and OWTS septic systems, respectively. The traffic letter included with this application indicates that the estimated trips generated from these four lots has minimal impact on Delbert Road. The Douglas County Transportation Master Plan designates Delbert Road as a collector status. The average daily traffic for Delbert Road is less than 20,000 vpd. The 38 two-way trips that this project creates is minimal in comparison to the 20,000 vpd that Delbert carries.

  In addition, the Ph. 3 drainage report indicates that the existing 72" CMP pipe under Delbert Road is more than adequate to accommodate the site's flows. The 72" CMP is currently maintained by Douglas County as it lies under Delbert Rd. It is assumed that Douglas County will continue to maintain the pipe. No floodplain mitigation is proposed as discussed previously in this narrative.

- *POLICY 3-3E.3 Encourage connections to central water and sewer district systems, when possible.*

  Existing water and sewer service providers are not in reasonably close proximity of the site.

- *POLICY 3-3E.4 New development within the Northeast Subarea should take measures to protect the existing alluvial wells used as water supply in this area.*

  Each of the 4 lots on the property will be served by an individual well into the NT Lower Dawson Aquifer. Each well will withdraw up to 2 acre-feet per year for 100-years allowing each lot to have residential use in up to 2 houses. The total demand for all 4 wells will be 8 acre-feet per year. The Lower Dawson Aquifer groundwater is non-tributary, therefore an augmentation is not required for its withdrawal and use. The water supply is estimated to last at least 100 years based on calculations from the Colorado Division of Water Resources. There is also additional groundwater quantified in the

97CW095 Decree in other aquifers that could be used as the supply for the Subject Property should the Lower Dawson become unusable.

- *POLICY 3-3E.5 New development within the Northeast Subarea should be designed to minimize the removal of vegetation and to use trees and landforms to screen development, where possible. Additional trees and vegetation should be planted, where necessary and appropriate, to screen development.*

  The only vegetation on the property are native grasses and evergreen trees. The evergreen trees are located south of the existing Tributary. Wetlands are not present in the Tributary. The new private local road coming off of Delbert Rd. that provides access to the site is north of the Tributary. Therefore, we do not expect any existing trees will be removed. These trees remaining will provide screening as-is. The Floodplain report included with this application describes the requirement for foundations to be no less than 2' higher than the 100-year floodplain, and therefore this will be considered a no-build requirement.

- *POLICY 3-3E.6 Maintain natural drainages for wildlife movement, where possible, and provide open space linkages within and between large-lot developments.*

  As stated above, the new private local road coming off of Delbert Rd. that provides access to the site is north of the Tributary. Therefore, we do not expect any existing trees will be removed. We are not proposing to modify the existing Tributary and therefore wildlife movement will not be impacted in this natural drainage.

- *POLICY 3-3E.7 Development along existing roads in the Northeast Subarea should be carefully sited and designed to minimize visual impacts, particularly of distant Front Range mountain views and open meadows.*

  The site slopes west to east and does not currently have a view of the Front Range mountains, however the site's topography in conjunction with the Tributary and existing evergreen trees create a unique environment for each lot and home. Since the property will not be

mass graded the views to the "east" will not be obstructed. The site's non-build zones will be anything below the 2' higher than the 100-year floodplain elevation as well as a few areas along the 100-year floodplain for erosion purposes..

603.02 Addresses the design elements established in Section 404 – Preliminary Plan, herein.

404.01 Lots are of an appropriate size and configuration for the site's characteristics and intended uses, and otherwise capable of meeting minimum zone district standards such as lot size, setbacks, and off-street parking.

The (4) proposed lots range in size from 10.02 to 11.85 acres. The minimum lots sizes for LRR zoning is 10 acres; therefore the lots proposed are in line with the zoning. In addition the existing lot sizes to the south and east (5, 6 & 10-ac lot sizes) that have been subdivided are in conformance with the Antelope Crossing Filing 1 lot sizes. The Antelope Crossing Filing No. 1 lots will meet the minimum setbacks and off-street parking criteria for the LRR zone district.

404.02 Geologic hazards, floodplains, wildfire, or other hazardous conditions are mitigated or avoided.

There is no mapped FEMA floodplain on this site however the 100-year flood elevation is shown on the plat. Finished floor elevations of all structures built will need to be 2' higher than the 100-year flood elevation. In addition no-build easements have been created in specific areas along the 100-year floodline specifically to prevent construction in areas that may be prone to erosion on areas of Loamy Alluvial soils with steep slopes greater than 20%. There are no concerns for wildfireconditions.

404.03 Conflicts between proposed and surrounding land uses are minimized through lot and tract orientation, setbacks, landscaping, or other buffering techniques.

Lots 1-3 will have homes built to the north of Cool Creek drainageway, which will act as a buffer to existing properties to the south. The property to the west and north are owned by the applicant. Delbert Rd. is to the east and serves as a buffer from the four lots to the Elbert County Meadows Station subdivision to the east. Regardless the standard LRR setbacks will be met.

404.04 Streets and stormwater facilities are laid out with the ability to meet the Douglas County Roadway Design and Construction Standards, Storm Drainage Design and Technical Criteria Manual, and other applicable County regulations.

The private access road proposed within the site, coming from Delbert Rd. will be built to meet the County's Rural Local Type IV road section. This road will include a roadside swale on the north side. Due to the topography on the south side of the road sloping down and away, a ditch is not necessary. Road culverts are proposed at two spots under this road to convey water in the roadside ditch to the south side of the road and eventually into Cool Creek. The design of the drainage infrastructure proposed meets the County's standards and regulations.

404.05 Elements of the site's natural terrain, drainageways, riparian areas, and vegetation are preserved or integrated into the subdivision layout.

The only vegetation on the property are native grasses and evergreen trees. The evergreen trees are located south of the existing Tributary. Wetlands are not present in the Tributary. The new private local road coming off of Delbert Rd. that provides access to the site is north of the Tributary. Therefore, we do not expect any existing trees will be removed. These trees remaining will provide screening as-is.

404.06 Archeological and historical resources of special significance are protected.

A 9/13/24 Cultural Resource Study prepared by Kelsey Bibo, Ayuda Companies, Inc. Ayuda conducted a records search, a literature review, and a Class III pedestrian survey of the Property. Archaeologists walked linear transects spaced 30 meters (m) apart along a north-south orientation. Ayuda determined there are no historic properties within the APE that are listed in or considered eligible for listing in the NRHP.

404.07 Opportunities for safe and convenient vehicular, pedestrian, and other connections within the subdivision and adjacent neighborhoods, shopping, employment, and recreational areas are provided.

The local private road proposed for internal access to the four lots will be a dead-end road with turnarounds. Access will come from Delbert Rd. which will serve as the primary road to use for shopping, employment and recreational areas. There are no connections to adjacent neighborhoods.

404.08 Specific recommendations of other required development reports or technical studies are implemented.

An erosion analysis along the Cool Creek Left Tributary was conducted in conjunction with the Colorado Water Conservation Board's Fluvial Hazard Zone GIS mapping tool and a shear stress analysis using site-specific soil engineering properties, topography, slope gradients, and erosion characteristics of the channel material. The result of this indicated specific areas along the outside curves of the tributary that were designated as no-build zones. These no-build zones have been added to the plat.

603.03 Conforms with Section 18A, Water Supply - Overlay District, of the Zoning Resolution.

<u>Water Supply 18A</u>

1803A.01 The applicant has demonstrated that the water rights can be used for the proposed use(s).

The Applicant has the legal right to withdraw and use the Lower Dawson groundwater pursuant to the 97CW095 Decree and the Quit Claim Deed filed on March 26, 2024, at Reception No. 2024011362 in the records of the Douglas County Clerk & Recorder. The Decree states that this water can be used for domestic, agricultural and fire protection purposes at a minimum.

1803A.02 The reliability of a renewable water right has been analyzed and is deemed sufficient by the County based on its priority date within the Colorado System of Water Rights Administration.

Please see the attached and revised 9/16/24 opinion letter prepared by Eric Trout (McGeady Becher P.C.) stating the water's sufficiency.

1803A.03 The Water Plan is deemed adequate and feasible by the County to ensure that water supply shortages will not occur due to variations in the hydrologic cycle.

Please see the attached and revised 9/16/24 opinion letter prepared by Eric Trout (McGeady Becher P.C.) stating the water's sufficiency.

1803A.04 The Water Plan is sufficient to meet the demand applicable to the project based on the minimum water demand standards in Section1805A herein.

Please see the attached 9/16/24 opinion letter prepared by Eric Trout (McGeady Becher P.C.) stating the water's sufficiency.

603.04 Provides for a public wastewater collection and treatment system, and, if other methods of wastewater collection and treatment are proposed, such systems shall comply with State and local laws and regulations.

Each lot will be served by its own Onsite Wastewater Treatment System (OWTS) – each OWTS will be designed in accordance with State and local laws and regulations by a licensed geotech/engineer.

603.05 Identifies all areas of the proposed subdivision which may involve soil or topographical conditions presenting hazards or requiring special precautions and that the proposed uses of these areas are compatible with such conditions.

Only a limited portion of the main roadway built from Delbert Rd. into the site will be built above Type Lo soil. In this area the road will be built 5' +/- above existing grade. The fill soils will be tested during construction to ensure compliance with the recommendations provided in the geotechnical report for suitable soils, compaction and subgrade preparation.

603.06 Provides adequate drainage improvements.

The subject property generally flows from west to east down the middle of the property in a minor drainage way, Upper Reach Cool Creek Left Tributary. It is not anticipated that the project will alter the Tributary alignment as the site has been designed around this alignment. The Tributary onsite is not part of a designated floodplain. The private local road providing access to these four (4) lots gains access off of Delbert Rd. The private local road will have a roadside ditch that will convey flows back to the Tributary. The Tributary flows are conveyed under Delbert Road through an existing 72" CMP pipe.

603.07 Provides adequate transportation improvements.

The traffic letter included with this application indicates that the estimated trips generated from these four lots has minimal impact on Delbert Road. The Douglas County Transportation Master Plan designates Delbert Road as a collector status. The average daily traffic for Delbert Road is less than 20,000 vpd. The 38 two-way trips that this project creates is minimal in comparison to the 20,000 vpd that Delbert carries. Additional right of way along Delbert Road is being dedicated to the County for future widening if ever implemented.

603.08 Protects significant cultural, archaeological, natural, and historical resources, and unique landforms.

Ayuda Companies, Inc. (“Ayuda”) prepared a 9/13/24 Cultural Resource Study of the site. Ayuda conducted a records search, a literature review, and a Class III pedestrian survey of the Property. A Colorado Office of Archaeology and Historic Preservation (OAHP) Compass database search on August 21, 2024 revealed that two surveys have been conducted within a 2.5 mile radius of the Project area, but no surveys have been conducted in the immediate vicinity of the 42-acre parcel. A review of county assessor records indicates that the 42-acre does not contain buildings meeting the 50-year threshold for historic preservation. On August 26, 2024, Ayuda conducted a Class III pedestrian survey of the APE (42acres). Archaeologists walked linear transects spaced 30 meters (m) apart along a north-south orientation. Ayuda determined there are no historic properties within the APE that are listed in or considered eligible for listing in the NRHP.

603.09 Demonstrates the extraction of any known commercial mining deposit shall not be impeded.

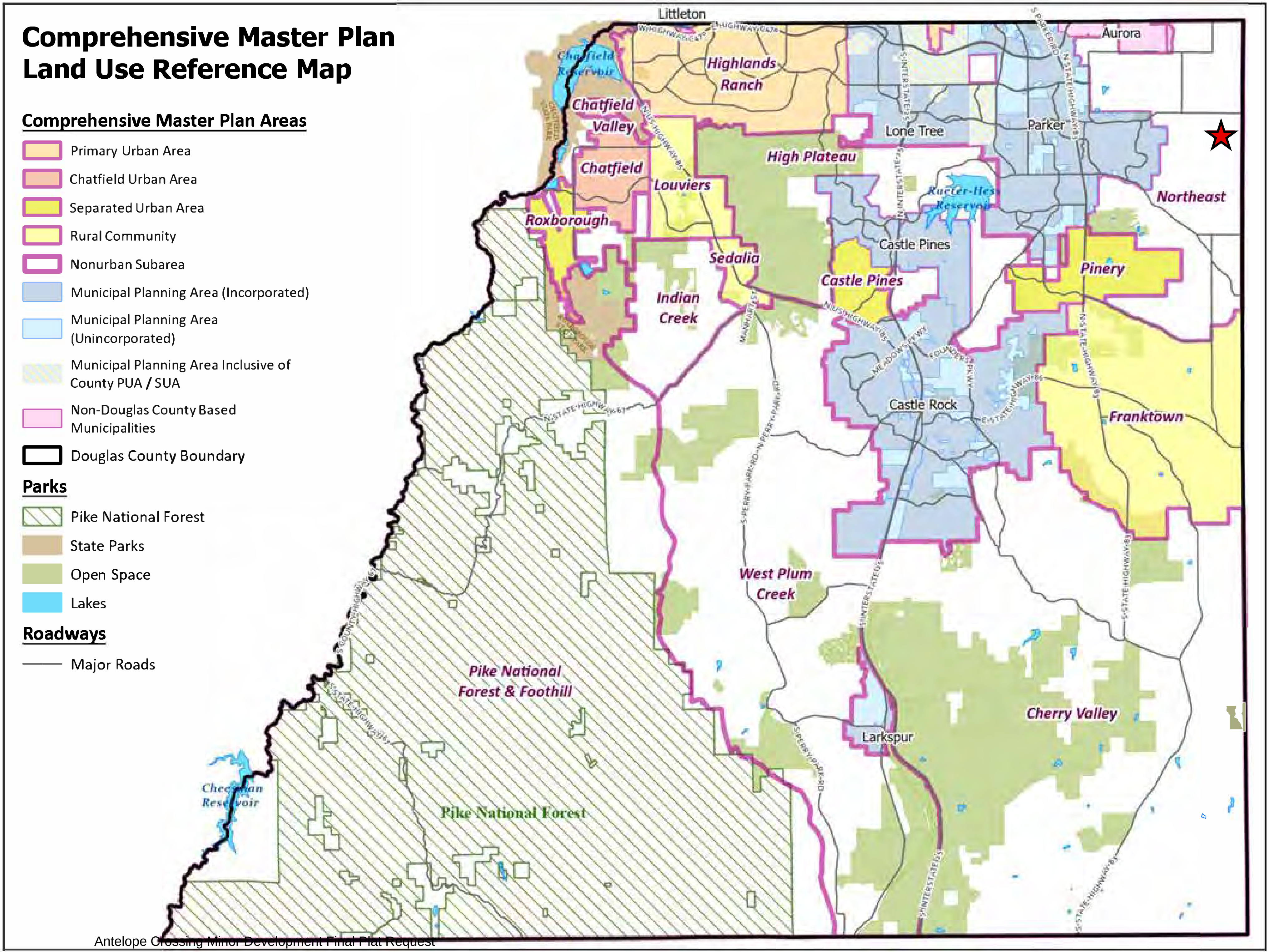
Land owner is also the mineral owner and does not plan to perform any extractions.

603.10 Has available all necessary services, including fire and police protection, recreation facilities, utility service facilities, streets, and open space to serve the proposed subdivision.

We have been working with South Metro Fire Protection District (SMFD) to meet the Water Supply for Rural Fire Fighting requirements. We have also coordinated with Rattlesnake Fire Protection District to obtain a well serve letter (enclosed with the other submittal items) for SMFD to use their cistern located immediately west in the Meadows Station subdivision. This cistern’s capacity allows SMFD to have the required volume necessary to meet the criteria i.e. 250 gallons per minute for 2 hours. In addition, the cistern is located less than 2 miles of travel distance from Antelope Crossings furthest limits. SMFD has accepted this will serve letter. A knock box will be added at the cistern for SMFD.

In summary we are proposing to subdivide the 42.61-ac property known as Antelope Crossing Filing 1 into (4) 10+ acre lots with access coming from Delbert Rd. This subdivision proposal conforms with the Large Rural Residential zoning that is anticipated to be approved prior to the subdivision approval. In addition. each of the proposed four lots will be served by an individual Upper Dawson well as well as an OWTS. The homes in Lots 1-3 will likely be built to the north of the Cool Creek drainageway. Exiting evergreen trees are located south of the Cool Creek drainageway and will act as a natural buffer to the existing properties to the south.

Comprehensive Master Plan Land Use Reference Map



MINOR DEVELOPMENT FINAL PLAT

ANTELOPE CROSSING

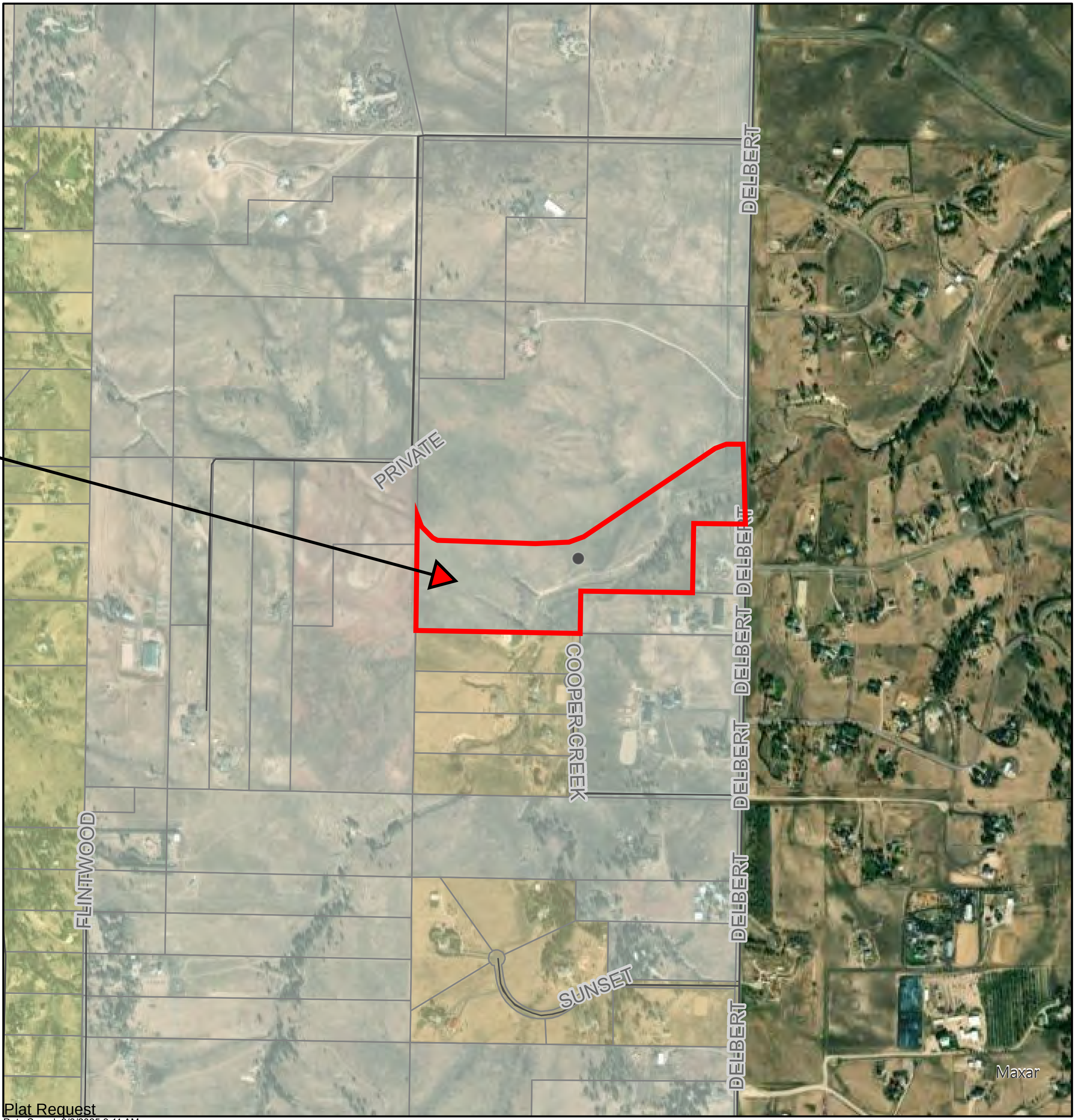
SB2024-066

ZONING

N

LEGEND

- — Roads
- ━ Major Roads
- □ Parcels - PARCELS
- □ A1 - AGRICULTURAL ONE
- ▨ LRR - LARGE RURAL RESIDENTIAL
- ▨ RR - RURAL RESIDENTIAL



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DOUGLAS COUNTY
COLORADO

MINOR DEVELOPMENT FINAL PLAT

ANTELOPE CROSSING

SB2024-066

AERIAL

N

LEGEND

─ Roads

━ Major Roads

▭ Parcels - PARCELS

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DOUGLAS COUNTY
COLORADO

Project Name: Antelope Crossing
Project File #: SB2024-066
Date Sent: 02/27/2025 **Date Due:** 03/27/2025

Agency	Date Received	Agency Response	Response Resolution
Addressing Analyst	03/06/2025	No Comment	No further action necessary
Assessor	03/13/2025	Received: Title block on page 2 needs the same revisions as the title block on page 1. Please round lot acreages to the third decimal.	Applicant has acknowledged referral comments and has addressed all Assessor comments on the plat.
AT&T Long Distance - ROW	02/27/2025	Received: This is in response to your eReferral with a utility map showing any buried AT&T Long Line Fiber Optics near N Delbert Rd Parker, Colorado. The Earth map shows the project area in red. Based on the address and/or map you provided, there should be NO conflicts with the AT&T Long Lines, as we do not have facilities in that area. Ann Barnowski, Clearwater Consulting Group Inc 120 9th Avenue South, Suite 140, Nampa, ID 83651 Annb@cwc64.com	No further action necessary
Black Hills Energy		No Response Received	No further action necessary
Building Services	03/03/2025	No Comment	No further action necessary

Agency	Date Received	Agency Response	Response Resolution
CenturyLink	02/28/2025	Received: We have received your request for an encroachment and have set up a Lumen project accordingly. Your project number is P865078 and it should be referenced in all emails sent in for review. Your project owner is Tom Hoopes and they can be reached by email at Tom.Hoopes@lumen.com with any questions that you may have regarding this project. Cheyanne Hobbs, Project Coordinator, Faulk & Foster, 214 Expo Circle, Suite 7, West Monroe, LA 71291 Cheyanne.Hobbs@lumen.com	Applicant has acknowledged referral comments.

Project Name: Antelope Crossing
Project File #: SB2024-066
Date Sent: 02/27/2025 **Date Due:** 03/27/2025

Agency	Date Received	Agency Response	Response Resolution
Cherry Creek Basin Water Quality Authority	02/27/2025	Received: The Cherry Creek Basin Water Quality Authority (Authority) acknowledges notification from Douglas County that the proposed development plans for SB2024-066, Antelope Crossing Minor Development Plat have been or will be reviewed by Douglas County for compliance with the applicable Regulation 72 construction and post-construction requirements. Based on the Authority's current policy, the Authority will no longer routinely conduct a technical review and instead the Authority will defer to Douglas County's review and ultimate determination that the proposed development plans comply with Regulation 72. If a technical review of the proposed development plan is needed, please contact LandUseReferral@ccbwqa.org . The review may include consultation with the Authority's Technical Manager to address specific questions or to conduct a more detailed Land Use Review, if warranted.	Applicant has coordinated with DC Engineering. No further action necessary.

Project Name: Antelope Crossing
Project File #: SB2024-066
Date Sent: 02/27/2025 **Date Due:** 03/27/2025

Agency	Date Received	Agency Response	Response Resolution
Colorado Division of Water Resources	03/03/2025	Received: DWR previously reviewed this development under ZR2024-015. Since the water supply information is the same, our attached comments still apply. Wenli Dickinson, P.E., Water Resource Engineer wenli.dickinson@state.co.us | (303) 866-3581 x8206, 1313 Sherman St, Suite 821, Denver, CO 80203 dwr.colorado.gov	Applicant has acknowledged CDWR comment letter. The applicant's water attorney issued a letter dated May 15, 2025 stating that the subject well permit 53878 cannot be located and therefore should be considered abandoned. CDWR reviewed the May 15th water attorney letter and stated that they will not require the well permit to be abandoned as the well was not found on the property.

Agency	Date Received	Agency Response	Response Resolution
Colorado Geological Survey	03/27/2025	Received: A tributary of Coal Creek traverses the site, and steep-sided (>50%), incised drainages or eroded stream banks are present on all four proposed lots. The site is within FEMA Zone X, defined as having a 0.2% annual chance of flooding (equivalent to a 500-year flood hazard), or where the 1% annual chance, or 100-year flood, would have an average depth of less than one foot. Although flooding would likely be on the scale of nuisance rather than life-threatening or causing severe damage, CGS recommends against new construction in areas exposed to a flood hazard. The Floodplain Letter, Antelope Crossing (2N Civil Project No. 24001, August 19, 2024) states, "It should be noted that future buildings will require a minimum finished floor elevation to be 2 foot above the floodplain elevation throughout the site." I see no plat note regarding this restriction, so how will this restriction be communicated to lot purchasers and enforced? The Colorado Geological Survey strongly recommends that the 100-year floodplain limits as shown on the Supplemental Exhibit (2N Civil, February 6, 2025) plus an erosion setback be designated on the plat as non-buildable. Jill Carlson, Colorado Geological Survey, carlson@mines.edu	The applicant has acknowledged CGS referral comments. The applicant has delineated no-build zones based on erosional setbacks on the plat exhibit. No further action necessary.

Project Name: Antelope Crossing
Project File #: SB2024-066
Date Sent: 02/27/2025 **Date Due:** 03/27/2025

Agency	Date Received	Agency Response	Response Resolution
Colorado Parks and Wildlife (East DC - Dist 549)	04/03/2025	Received: Thank you for including Colorado Parks and Wildlife in the referral request process for the development proposal listed above. I have reviewed the documents and referral request, and I wanted to inform you that I have no concerns with this development as it pertains to any wildlife concerns. The developer looks to have already conducted a site assessment, and the riparian corridor bordering the property is slated for protection with no or minimal tree removal. If you have any further questions or need more information, do not hesitate to let me or Katie know. Thank you for your time. Justin Olson, District Wildlife Manager – Area 5 303-29-1731 justin,olson@state.co.us cpw.state.co.us	Applicant has acknowledged CPW referral comments. No further action necessary.
Comcast		No Response Received	No further action necessary
CORE Electric Cooperative	03/26/2025	Received: CORE will require changes to easement widths as shown in the attached markup.	Applicant has acknowledged CORE referral comments and made the necessary revisions to the easement widths at the satisfaction of CORE on the plat exhibit. No further action necessary.

Project Name: Antelope Crossing
Project File #: SB2024-066
Date Sent: 02/27/2025 **Date Due:** 03/27/2025

Agency	Date Received	Agency Response	Response Resolution
Douglas County Conservation District	03/26/2025	Summary: the DCCD provided comments regarding soils types, grading recommendations, recommendation for the applicant to complete a noxious weed control plan, and other recommendations related to vehicle tracking control stations, construction best management practices, and precautions regarding development located in or near drainages or development that disturbs wetlands.	Applicant has acknowledged referral comments and has completed a weed management plan, and has coordinated with Douglas County Engineering to address construction plan comments. No further action necessary.
Douglas County Health Department	02/28/2025	Summary: DCHD provided comments regarding fugitive dust control measures, Stormwater impacts, and domestic well water quality analysis. DCHD has no objection to the property being served by an OWTS provided that the system is permitted, inspected and operated in accordance with DCHD's current OWTS Regulation. Based on the applicant's description, a permit for the installation and final approval of the OWTS is required.	The applicant has acknowledged DCHD referral comments. A geotechnical engineer will design the OWTS systems for future lot owners. No further action necessary.

Agency	Date Received	Agency Response	Response Resolution
Douglas County Historic Preservation	03/20/2025	Summary: The Curator has reviewed the completed Class III survey on the project site. New sites were discovered but none are eligible to be listed on the national register. The Class III survey satisfies the Curators request. Should buried artifacts and features be discovered in future phases, we recommend completion of the appropriate Colorado Office of Archaeology and Historic Preservation (OAHP) Data Management and Historic and/or Prehistoric Component forms, following OAHP guidelines, with accompanying sketch maps and photographs. Completed forms are submitted to OAHP to ensure that Douglas County's historic or prehistoric data is included in the Colorado OAHP state-wide database of cultural resources.	The applicant has acknowledged the DC Historic Preservation Office comments. The applicant will notify the Historic Preservation Office if any cultural resources are found on the site.
Douglas County Parks and Trails	03/06/2025	Received: Per article 10 of the Douglas County Subdivision Resolution " the minimum cash-in-lieu fee for a minor development final plot or replats which create ten or fewer residential lots shall be $250 for each new residential lot."	Applicant acknowledged the cash-in-lieu fee requirement and will pay the required cash-in-lieu of land dedication fees.
Douglas County School District RE 1		No Response Received	Applicant acknowledged the cash-in-lieu fee requirement and will pay the required cash-in-lieu of land dedication fees.
DRCOG		No Response Received	No further action necessary
Elbert County Community & Development Services		No Response Received	No further action necessary

Project Name: Antelope Crossing
Project File #: SB2024-066
Date Sent: 02/27/2025 **Date Due:** 03/27/2025

Agency	Date Received	Agency Response	Response Resolution
Engineering Services	03/03/2025	Received: Please see engineering redlines to the MDP exhibit and construction drawings.	Applicant addressed all referral comments to the satisfaction of DC Engineering Services. No further action necessary.
Mile High Flood District		No Response Received	No further action necessary
Office of Emergency Management	03/04/2025	Received: OEM has no issues with this project	No further action necessary
Open Space and Natural Resources	03/05/2025	No Comment	No further action necessary
Parker View Estates HOA		No Response Received	No further action necessary
Rural Water Authority of Douglas County		No Response Received	No further action necessary
Sheriff's Office		No Response Received	No further action necessary
Sheriff's Office E911		No Response Received	No further action necessary

Agency	Date Received	Agency Response	Response Resolution
South Metro Fire Rescue	03/06/2025	Received: South Metro Fire Rescue (SMFR) has reviewed the provided referral packet documents in addition to Construction Plans dated February 6, 2025 provided by Douglas County Engineering. SMFR has no objection to the proposed Minor Development Plat. Per the water supply agreement to utilize the existing Rattlesnake Fire Cistern at Meadow Station to meet the Douglas County Standard for Water Supplies for Rural Firefighting; a SMFR Knox Box is to be installed at the cistern pump controls containing a key for pump activation. This shall be provided and installed by the applicant. Knox Box shall be in place and approved by SMFR and Rattlesnake Fire prior to release of any building construction permits.	Applicant has acknowledged SMFR referral comments. Applicant has agreed to install the SMFR Knox Box at the cistern pump controls.
Spirit Ridge HOA		No Response Received	No further action necessary
Town of Parker Development Review	03/26/2025	No Comment	No further action necessary
Town of Parker Public Works	03/18/2025	No Comment	No further action necessary
Wildfire Mitigation	03/24/2025	Received: Wildfire mitigation has reviewed the proposal. Defensible space requirements will be implemented at the time of building permit. Water storage is required, wildfire mitigation & Building have seen and accept the letter from SMFR indicating use of the Rattlesnake cistern to meet the requirements of this standard.	Applicant has acknowledged referral comments. No further action necessary

Xcel Energy-Right of Way & Permits	03/17/2025	Received: To ensure that adequate utility easements are available within this development, PSCo requests that the following language or plat note be placed on the preliminary and final plats for the subdivision: The utility easements are dedicated to the County of Douglas for the benefit of the applicable utility providers for the installation, maintenance, and replacement of electric, gas, television, cable, and telecommunications facilities (Dry Utilities). Utility easements shall also be granted within any access easements and private streets in the subdivision. Permanent structures, improvements, objects, buildings, wells, water meters and other objects that may interfere with the utility facilities or use thereof (Interfering Objects) shall not be permitted within said utility easements and the utility providers, as grantees, may remove any Interfering Objects at no cost to such grantees, including, without limitation, vegetation. Public Service Company of Colorado (PSCo) and its successors reserve the right to require additional easements and to require the property owner to grant PSCo an easement on its standard form. The property owner/developer/ contractor must complete the application process for any new natural gas service via xcelenergy.com/InstallAndConnect. It is then the responsibility of the developer to contact the Designer assigned to the project for approval of design details.	Applicant has acknowledged referral comments and made the necessary plat notes relative to utility easements. The applicant will coordinate with Xcel Energy should any new Xcel easements become necessary during construction. No further action necessary.

Agency	Date Received	Agency Response	Response Resolution
		Additional easements may need to be acquired by separate document for new facilities. As a safety precaution, PSCo would like to remind the developer to contact Colorado 811 for utility locates prior to construction. Violeta Ciocanu (Chokanu), Right of Way and Permits, Public Service Company of Colorado dba Xcel Energy Office: 303-285-6612 – Email: violeta.ciocanu@xcelenergy.com	

COLORADO
Division of Water Resources
Department of Natural Resources

December 24, 2024

Carolyn Washee-Freeland, AICP, Senior Planner
Douglas County Department of Community Development
Transmitted via email: cfreeland@douglas.co.us

Re: Antelope Crossing Rezoning
Case No. ZR2024-015
Part of N ½ SE ¼ and part of the SE ¼ NE ¼ of Sec. 28, Twp. 6 South, Rng. 65 West, 6th P.M.
Water Division 1, Water Districts 2 & 8
CDWR Assigned Subdivision No. 32410 – 2nd Letter

Dear Carolyn Washee-Freeland:

We have reviewed the re-referral request to rezone approximately 42.24-acres to large rural residential to allow the future subdivision to create four (4) lots. The proposed water supply is individual on lot wells constructed in the nontributary Lower Dawson aquifer operating pursuant to the decree granted by the Division 1 Water Court in case no. 97CW95.

Water Supply Demand

The proposed water demand is 2 acre-feet/year/lot for residential purposes in up to two homes on each lot, or 8 acre-feet/year total.

Source of Water Supply

The proposed water supply is individual on lot wells constructed in the nontributary Lower Dawson aquifer operating pursuant to case no. 97CW95. The allowed average annual amount of withdrawal decreed in case no. 97CW95 from the Lower Dawson aquifer is 38 acre-feet. The proposed uses are allowed by the decree. A quit claim deed dated March 25, 2024 (reception no. 2024011362) transferring all water rights adjudicated in case no. 97CW95 to

1313 Sherman Street, Room 821, Denver, CO 80203 P 303.866.3581 dwr.colorado.gov/
Jared Polis, Governor | Dan Gibbs, Executive Director | Jason T. Ullmann, State Engineer/Director

DCLA-3, LLC (Applicant) was provided with the referral.

The proposed source of water for this subdivision is a bedrock aquifer in the Denver Basin. The State Engineer's Office does not have evidence regarding the length of time for which this source will be a physically and economically viable source of water. According to section 37-90-137(4)(b)(I), C.R.S., "Permits issued pursuant to this subsection (4) shall allow withdrawals on the basis of an aquifer life of one hundred years." Based on this allocation approach, the annual amounts of water decreed in case no. 97CW95 are equal to one percent of the total amount, as determined by rules 8.A and 8.B of the Statewide Nontributary Ground Water Rules, 2 CCR 402-7. Therefore, the water may be withdrawn at a rate of 38 acre-feet/year for a maximum of 100 years, which exceeds the annual demand of 8 acre-feet/year for the subdivision.

Applications for on lot well permits, submitted by an entity other than the current water right holder, must include evidence that the applicant has acquired the right to the portion of water being requested on the application.

A review of our records shows well permit no. 53878 may be located on the subject property. The letter dated September 16, 2024 from Eric K. Trout indicates that a search of the property does not indicate the well is located on the property.

State Engineer's Office Opinion

Based upon the above and pursuant to section 30-28-136(1)(h)(I), C.R.S., it is our opinion that the proposed water supply is adequate and can be provided without causing injury to decreed water rights.

Our opinion that the water supply is adequate is based on our determination that the amount of water required annually to serve the subdivision is currently physically available, based on current estimated aquifer conditions.

Our opinion that the water supply can be provided without causing injury is based on our determination that the amount of water that is legally available on an annual basis, according to the statutory allocation approach, for the proposed uses is greater than the annual amount of water required to supply existing water commitments and the demands of the proposed subdivision.

Our opinion is qualified by the following:

The Division 1 Water Court has retained jurisdiction over the final amount of water available pursuant to the above-referenced decree, pending actual geophysical data from the aquifer.

The amounts of water in the Denver Basin aquifer are based on estimated current aquifer conditions. The source of water is from a non-renewable aquifer, the allocations of which are based on a 100-year aquifer life. The county should be aware that the economic life of a water supply based on wells in a given Denver Basin aquifer may be less than the 100 years used for allocation due to anticipated water level declines. We recommend that the county determine whether it is appropriate to require development of renewable water resources for this subdivision to provide for a long-term water supply.

Please contact Wenli Dickinson at Wenli.Dickinson@state.co.us or 303-866-3581 x8206 with any questions.

Sincerely,

IComaniciu

Ioana Comaniciu, P.E.
Water Resource Engineer

Ec: File for water well permit no. 53878

Carolyn Freeland

From: Wenli Dickinson <wenli.dickinson@state.co.us>
Sent: Wednesday, September 10, 2025 9:36 AM
To: Carolyn Freeland
Cc: Comaniciu - DNR, Ioana
Subject: Re: ZR2024-015 Antelope Crossing Rezoning request, and SB2024-066 Antelope Crossing Minor Development Plat

Hi Carolyn,

Unless they think the well was on the property (which didn't seem to be the case based on their response), they don't need to fill out an abandonment report.

Regards,

Wenli Dickinson, P.E.
Water Resource Engineer
Denver Office Team 456 Supervisor

1313 Sherman St, Suite 821, Denver, CO 80203 | dwr.colorado.gov
Note: I am out of the office every other Friday.
If you are a customer or DWR employee, please feel free to submit feedback for me here.

On Wed, Sep 10, 2025 at 7:59 AM Carolyn Freeland <cfreeland@douglas.co.us> wrote:

> Hi Wenli,
>
> Thank you for looking into this further. Will the applicant need to fill out the abandoned well forms for this well permit?
>
> Sincerely,
>
> **Carolyn Washee-Freeland, AICP** | Senior Planner
>
> **Douglas County Department of Community Development**
>
> **Address** | 100 Third St., Castle Rock, CO 80104
> **Direct** | 303-814-4361

Email | cfreeland@douglas.co.us

From: Wenli Dickinson <wenli.dickinson@state.co.us>
Sent: Tuesday, September 9, 2025 8:10 PM
To: Carolyn Freeland <cfreeland@douglas.co.us>
Cc: Comaniciu - DNR, Ioana <ioana.comaniciu@state.co.us>
Subject: Re: ZR2024-015 Antelope Crossing Rezoning request, and SB2024-066 Antelope Crossing Minor Development Plat

Hi Carolyn,

Apologies for the late reply and thank you for following up. Since the applicant cannot find any evidence of well no. 53878 located on the property, but we are not sure if that well was located on the property at some point, we won't mark the well as abandoned. However, since the well doesn't appear to currently be located on the property, then it appears it's not relevant to our opinion on the subdivision water supply plan. Does that address your question?

Regards,

Wenli Dickinson, P.E.
Water Resource Engineer

Denver Office Team 456 Supervisor

To help protect your privacy, Microsoft Office prevented automatic download of this picture from the Internet.

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Note: I am out of the office every other Friday.

If you are a customer or DWR employee, please feel free to submit feedback for me here.

Douglas County Engineering Referral Comments

ANTELOPE CROSSING

A PORTION OF THE EAST 1/2 OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST,
6TH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO
42.61 ACRES 4 RESIDENTIAL LOTS SB 2024-066

DEDICATION STATEMENT

THE UNDERSIGNED, BEING ALL THE OWNERS, MORTGAGEES, BENEFICIARIES OF DEEDS OF TRUST AND HOLDERS OF OTHER INTERESTS IN THE LAND DESCRIBED HEREIN, HAVE LAID OUT, SUBDIVIDED AND PLATTED SAID LANDS INTO LOTS, AND EASEMENTS AS SHOWN HEREON UNDER THE NAME AND SUBDIVISION OF ANTELOPE CROSSING. THE UTILITY EASEMENTS SHOWN HEREON ARE HEREBY DEDICATED FOR PUBLIC UTILITIES AND CABLE COMMUNICATION SYSTEMS AND OTHER PURPOSES AS SHOWN HEREON. THE ENTITIES RESPONSIBLE FOR PROVIDING THE SERVICES FOR WHICH THE EASEMENTS ARE ESTABLISHED ARE HEREBY GRANTED THE PERPETUAL RIGHT OF INGRESS AND EGRESS FROM AND TO ADJACENT PROPERTIES FOR INSTALLATION, MAINTENANCE AND REPLACEMENT OF UTILITY LINES AND RELATED FACILITIES. THE EASEMENTS SHOWN HEREON ARE DEDICATED AND CONVEYED TO DOUGLAS COUNTY, CO, IN FEE SIMPLE ABSOLUTE, WITH MARKETABLE TITLE, FOR PUBLIC USES AND PURPOSES.

dedication statement & commissioners certification will need to be revised to include the dedication to the County for the Delbert Road ROW

OWNER CERTIFICATE

OWNER: DCLA-3, LLC

______________________AS__________________OF________________, A _______ LIMITED LIABILITY COMPANY
PRINT NAME (MANAGER/MEMBER) COMPANY STATE

STATE OF______________________)
) SS
COUNTY OF____________________)

ACKNOWLEDGED BEFORE ME THIS _____ DAY OF ________ A.D., 20___ BY ________________________________ .
(NAME)

MY COMMISSION EXPIRES: ________________________________

____
NOTARY PUBLIC

BENEFICIARY OF DEED OF TRUST

FIRST WESTERN TRUST BANK

BY: ________________________
TITLE: ________________________

STATE OF______________________)
) SS
COUNTY OF____________________)

ACKNOWLEDGED BEFORE ME THIS _____ DAY OF ________ , 20___ BY ______________________________
AS __________________ OF ________________________.

WITNESS MY HAND AND OFFICIAL SEAL.

MY COMMISSION EXPIRES: ___________________________

____
NOTARY PUBLIC

LEGAL DESCRIPTION

A PARCEL OF PROPERTY LOCATED IN THE EAST HALF OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 28, AND CONSIDERING THE WEST LINE OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SAID SECTION 28 TO BEAR N00°06’02”E WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO; THENCE S89°39’57”E ALONG SOUTH LINE OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SAID SECTION 28 A DISTANCE OF 1322.37 FEET TO THE SOUTHEAST CORNER OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 28, AND THE SOUTHWEST CORNER OF A PARCEL OF PROPERTY AS DESCRIBED IN RECEPTION NO. 2019018412 OF THE DOUGLAS COUNTY RECORDS; THENCE ALONG SAID RECEPTION NO. 2019018412 THE FOLLOWING TWO (2) COURSES;

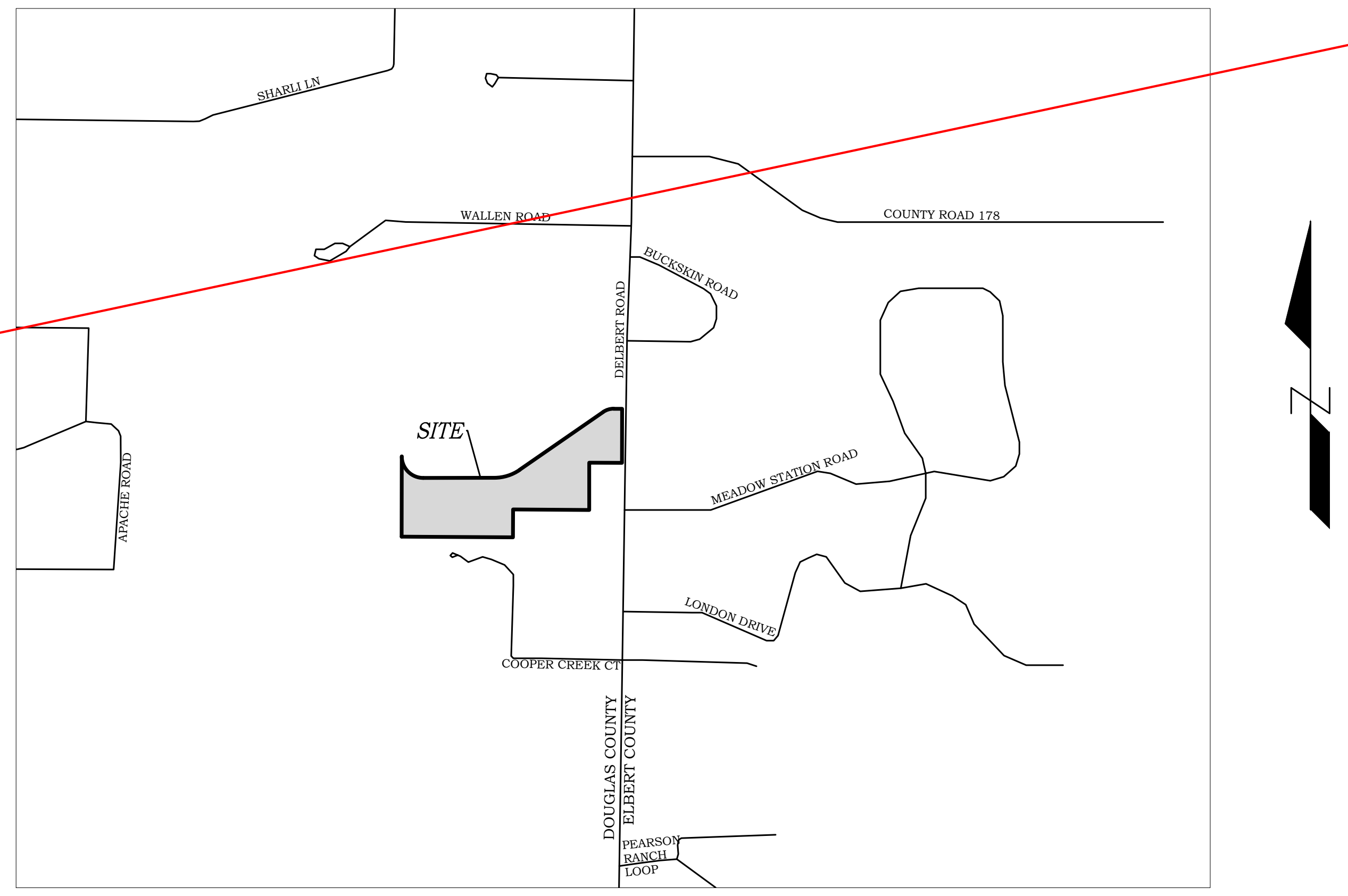
1. N00°06’00”E A DISTANCE OF 330.00 FEET;
2. S89°39’57”E A DISTANCE OF 903.99 FEET, TO THE SOUTHWEST CORNER OF A PARCEL OF PROPERTY AS DESCRIBED IN RECEPTION NO. 1998107726;

THENCE ALONG THE WEST AND NORTH LINE OF SAID RECEPTION NO. 1998107726 THE FOLLOWING TWO (2) COURSES;

1. N00°05’42”E A DISTANCE OF 560.87 FEET;
2. S89°38’54”E A DISTANCE OF 388.43 FEET TO A POINT ON THE WEST RIGHT OF WAY LINE OF DELBERT ROAD AND A POINT 30.00 FEET WEST OF THE EAST LINE OF THE SOUTHEAST 1/4 OF SAID SECTION 28; THENCE N00°05’59”E ALONG SAID WEST RIGHT OF WAY LINE A DISTANCE OF 642.22 FEET;

THENCE N89°54’01”W A DISTANCE OF 100.00 FEET TO A POINT OF CURVE;
THENCE ALONG SAID CURVE TO THE LEFT HAVING A RADIUS OF 220.00 FEET, A CENTRAL ANGLE OF 34°47’26”, AND AN ARC LENGTH OF 133.59 FEET WHOSE CHORD BEARS S72°42’16” W A DISTANCE OF 131.54 FEET;
THENCE S55°18’34”W A DISTANCE OF 1205.17 FEET TO A POINT OF CURVE;
THENCE ALONG SAID CURVE TO THE RIGHT HAVING A RADIUS OF 530.00 FEET, A CENTRAL ANGLE OF 34°32’57” AND AN ARC LENGTH OF 319.59 FEET WHOSE CHORD BEARS S72°35’02”W A DISTANCE OF 314.77 FEET;
THENCE S89°51’31”W A DISTANCE OF 722.70 FEET TO A POINT OF CURVE;
THENCE ALONG SAID CURVE TO RIGHT HAVING A RADIUS OF 375.00 FEET, A CENTRAL ANGLE OF 90°14’31”, AND AN ARC LENGTH OF 590.63 FEET, WHOSE CHORD BEARS N45°01’14”W A DISTANCE OF 531.45 FEET TO A POINT ON THE WEST LINE OF SAID NORTHWEST QUARTER OF THE SOUTHEAST QUARTER; THENCE S00°06’02”W ALONG SAID WEST LINE A DISTANCE OF 1072.53 FEET TO THE POINT OF BEGINNING.

CONTAINING 42.61 ACRES MORE OR LESS



VICINITY MAP
SCALE: 1" = 2000'

PLAT NOTES

1. 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 THE CERTIFICATION SHOWN HEREON.
2. ANY PERSON WHO KNOWINGLY REMOVES, ALTERS OR DEFACES ANY PUBLIC LAND SURVEY, ACCESSORIES, OR LEGAL LAND-BOUND MONUMENT COMMITS O CLASS TWO (2) MISDEMEANOR PURSUANT TO STATE STATUTE 18-4-508, C.R.S.
3. THE LINEAL UNITS USED IN THIS DRAWING ARE U.S. SURVEY FEET.
4. BASIS OF BEARING, CONSIDERING THE SOUTH LINE OF NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 28 TO HAVE AN ASSUMED BEARING OF SOUTH 89°39'57" EAST AND MONUMENTED AS SHOWN HEREON.
5. THIS SURVEY WAS PERFORMED IN THE FIELD ON NOVEMBER 14, 2024.
6. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY ENCOMPASS SERVICES, LLC TO DETERMINE OWNERSHIP OR EASEMENTS OF RECORD. FOR INFORMATION REGARDING EASEMENTS, RIGHTS-OF-WAY AND TITLE OF RECORD, ENCOMPASS SERVICES, LLC RELIED UPON TITLE COMMITMENT NO. HS0831041, WITH AN EFFECTIVE DATE OF APRIL 16, 2024 AT 8:00 A.M. AS PROVIDED BY COMMONWEALTH LAND TITLE INSURANCE COMPANY.
7. ACCORDING TO THE NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP PANEL 080035C0210F WITH AN EFFECTIVE DATE OF SEPTEMBER 30, 2005, THE SUBJECT PROPERTY IS LOCATED IN ZONE "X", AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, ZONE "X" AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1 % ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND ZONE "A" NO BASE FLOOD ELEVATIONS DETERMINED.
8. AS SHOWN HEREON, ALL EXTERIOR LOT LINES ARE HEREBY PLATTED WITH A 10 FOOT PUBLIC UTILITY EASEMENT. ALL INTERIOR LOT LINES ARE HEREBY PLATTED ON EITHER SIDE WITH A 5 FOOT PUBLIC UTILITY EASEMENT UNLESS OTHERWISE NOTED.
9. DURING CONSTRUCTION ACTIVITY WITHIN THE DEVELOPMENT, THE OWNER, ITS SUCCESSORS AND ASSIGNS SHALL TAKE ALL REASONABLE CARE TO WATCH FOR HISTORIC RESOURCES, PALEONTOLOGICAL RESOURCES, AND OTHER CULTURAL HISTORY RESOURCES AND SHALL IMMEDIATELY NOTIFY DOUGLAS COUNTY IN THE EVENT OF SUCH DISCOVERY.
10. UTILITY EASEMENTS AS SHOWN HEREON WILL NOT BE ALLOWED TO BE ENCROACHED UPON BY BUILDINGS, ORNAMENTAL COLUMNS, WINDOW WELLS, COUNTERFORTS, PATIOS, DECKS, ACCESSORY STRUCTURES, MONUMENTS, RETAINING WALLS AND THEIR COMPONENTS.
11. EACH LOT IS SUBJECT TO RESTRICTIONS, COVENANTS, AND MAINTENANCE AGREEMENT BY SEPARATE DOCUMENT - RECORDED BY SEPARATE INSTRUMENT.
12. EACH LOT WILL TAKE ACCESS FROM ANYWHERE ALONG THE LOT'S FRONTAGE TO THE 60' ACCESS AND UTILITY EASEMENT.
13. THE 60' ACCESS & UTILITY EASEMENT SHALL BE OWNED AND MAINTAINED BY THE ANTELOPE CROSSING HOA, IT SUCCESSORS AND ASSIGNS AS A PRIVATE EASEMENT FOR THE BENEFIT OF ANTELOPE CROSSING LOT OWNERS.

Include the standard note that the lowest finish floor elevation (including the basement) needs to be a minimum of 2-ft. above the 100-yr. floodplain

SHEET 1 - COVER SHEET

SHEET 2 - BOUNDARY

BOARD OF COUNTY COMMISSIONERS

THIS PLAT WAS APPROVED FOR FILING BY THE BOARD OF COUNTY COMMISSIONERS OF DOUGLAS COUNTY, CO, ON THE ______DAY OF _______ , 20 ____ , SUBJECT TO ANY CONDITIONS SPECIFIED HEREON. THE DEDICATIONS OF UTILITY EASEMENTS ARE ACCEPTED.

ALL EXPENSES INCURRED WITH RESPECT TO IMPROVEMENTS FOR ALL UTILITY SERVICES, PAVING, GRADING, LANDSCAPING, CURBS, GUTTERS, SIDEWALKS, ROAD LIGHTING, ROAD SIGNS, FLOOD PROTECTION DEVICES, DRAINAGE STRUCTURES, AND ALL OTHER IMPROVEMENTS THAT MAY BE REQUIRED SHALL BE THE RESPONSIBILITY OF THE SUBDIVIDER AND NOT DOUGLAS COUNTY.

THIS ACCEPTANCE DOES NOT GUARANTEE THAT THE SOIL CONDITIONS, SUBSURFACE GEOLOGY, GROUNDWATER CONDITIONS OR FLOODING CONDITIONS OF ANY LOT SHOWN HEREON ARE SUCH THAT A BUILDING PERMIT, WELL PERMIT OR SEWAGE DISPOSAL PERMIT WILL BE ISSUED.

____
CHAIR, BOARD OF DOUGLAS COUNTY COMMISSIONERS

SURVEYORS CERTIFICATE:

I, ELIJAH FRANE, A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THIS PLAT TRULY AND CORRECTLY REPRESENTS THE RESULTS OF A SURVEY MADE ON NOVEMBER 14, 2024, BY ME OR UNDER MY DIRECT SUPERVISION AND THAT ALL MONUMENTS EXIST AS SHOWN HEREON; THAT MATHEMATICAL CLOSURE ERRORS ARE LESS THAN 1:50,000 (SECOND ORDER); AND THAT SAID PLAT HAS BEEN PREPARED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS OF THE STATE OF COLORADO DEALING WITH MONUMENTS, SUBDIVISIONS OR SURVEYING OF LAND AND ALL APPLICABLE PROVISIONS OF THE DOUGLAS COUNTY SUBDIVISION RESOLUTION. THIS CERTIFICATION IS BASED ON MY KNOWLEDGE, INFORMATION, AND BELIEF AND IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESS OR IMPLIED.

I ATTEST THE ABOVE ON THIS ________ DAY OF ______________, 2025.

____
ELIJAH FRANE, COLORADO PLS 38376
FOR AND ON BEHALF OF
ENCOMPASS SERVICES, LLC

TITLE VERIFICATION

WE, _________________ ,DO HEREBY CERTIFY THAT WE HAVE EXAMINED THE TITLE OF ALL LAND PLATTED HEREON AND THAT TITLE IS TO SUCH LAND IS IN THE DEDICATOR(S), FREE AND CLEAR OF ALL LIENS, TAXES AND ENCUMBRANCES:

BY: ____
NAME: DATE

TITLE: ____________________________

STATE OF______________________)
) SS
COUNTY OF____________________)

ACKNOWLEDGED BEFORE ME THIS _____ DAY OF ________ , 20___ BY ______________________AS ___________________ .

WITNESS MY HAND AND OFFICIAL SEAL.

MY COMMISSION EXPIRES: ___________________________

____
NOTARY PUBLIC

PLANNING COMMISSION

THIS MINOR DEVELOPMENT FINAL PLAT (SB2024-066) WAS REVIEWED BY THE PLANNING COMMISSION ON _________________.

____ ______________
PLANNING DIRECTOR, ON BEHALF OF THE PLANNING COMMISSION DATE

CLERK AND RECORDER CERTIFICATE

STATE OF______________________)
) SS
COUNTY OF____________________)

I HEREBY CERTIFY THIS PLAT WAS FILED IN MY OFFICE ON THIS _______ DAY OF ______________. A.D., 20___ AT _________ _____. A.M./P.M. AND WAS RECORDED AT RECEPTION NUMBER __________________.

____
DOUGLAS COUNTY CLERK AND RECORDER

CLIENT:
DCLA-3, LLC
FRANCIS GAY
14205 E. DAVIES AVE.,
CENTENNIAL, CO 80112

ENGINEER:
2N CIVIL
6 INVERNESS CT. E SUITE 125
ENGLEWOOD, CO 80112

REVISIONS:

NO.	DATE	DESCRIPTION
1	01/29/25	1st COUNTY COMMENTS

encompass
Providing Solutions

2750 S. WADSWORTH BLVD, SUITE C-202
DENVER, COLORADO 80227
303-955-6080
WWW.ENCOMPASSSERVICES.COM

DRAWN BY: MBB	PROJECT NO. 65467	SCALE: 1" = 100'
CHECKED BY: ERF	PREPARATION DATE: 11/14/2024	
FIELD WORK COMPLETED: 2/21/2024		SHEET 1 OF 2

ANTELOPE CROSSING FILING NO. 1

A PORTION OF THE EAST 1/2 OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST,
6TH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO
42.61 ACRES ± 4 RESIDENTIAL LOTS SB 2024-066

EASEMENT LINE TABLE

LINE #	DIRECTION	LENGTH
L1	N89°54'01"W	100.00'
L2	S50°18'34"W	311.47'
L3	S55°18'34"W	322.76'
L4	S55°18'34"W	387.18'
L5	S89°51'31"W	429.33'
L6	S89°51'31"W	113.26'
L7	S00°08'29"E	60.00'
L8	S89°51'31"W	662.18'
L9	S55°18'34"W	829.52'
L10	S50°18'34"W	311.47'
L11	N89°54'01"W	100.00'
L12	S00°05'59"W	60.00'

EASEMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD	CHORD LENGTH
C1	194.45'	280.00'	039°47'26"	S70°12'16"W	190.57'
C2	41.02'	470.00'	005°00'00"	N52°48'34"E	41.00'
C3	198.51'	60.00'	189°33'37"	S55°18'34"W	119.58'
C4	301.50'	500.00'	034°32'57"	N72°35'02"E	296.95'
C5	198.51'	60.00'	189°33'37"	S89°51'31"W	119.58'
C6	337.68'	560.00'	034°32'57"	N72°35'02"E	332.59'
C7	46.25'	530.00'	005°00'00"	N52°48'34"E	46.24'
C8	152.78'	220.00'	039°47'26"	S70°12'16"W	149.73'

clarify why this isn't dedicated with this plat??

show the calculated 100-yr. floodplain

The County's 2040 Transportation Plan specifies that Delbert Road will be a 4-lane collector street - based on that, this plat will need to dedicate 32.5-ft. of Right-of-Way for Delbert Road

LEGEND:

▬▬▬▬	PLAT BOUNDARY LINE
──── ─ ─ ────	ADJOINER PROPERTY LINE
─ ─ ─ ─ ─	EASEMENT LINE
─── ─ ─ ─ ───	ROAD RIGHT OF WAY
─ · · ── · · ──	ROAD RIGHT OF WAY
◉	FOUND REBAR
●	SET 5/8x18" REBAR WITH ORANGE PLASTIC CAP LS # 38376
⊞	SECTION CORNER
U.E.	UTILITY EASEMENT
P.O.B.	POINT OF BEGINNING

CLIENT:
DCLA-3, LLC
FRANCIS GAY
14205 E. DAVIES AVE.,
CENTENNIAL, CO 80112

ENGINEER:
2N CIVIL
6 INVERNESS CT. E SUITE 125
ENGLEWOOD, CO 80112

REVISIONS:

NO.	DATE	DESCRIPTION
1	01/29/25	1st COUNTY COMMENTS

encompass
Providing Solutions

2750 S. WADSWORTH BLVD, SUITE C-202
DENVER, COLORADO 80227
303-955-6080
WWW.ENCOMPASSSERVICES.COM

DRAWN BY: MBB	PROJECT NO. 65467	SCALE: 1" = 100'
CHECKED BY: ERF	PREPARATION DATE: 11/14/2024	
FIELD WORK COMPLETED: 2/21/2024		SHEET 2 OF 2

Douglas County Engineering Referral Comments

CONSTRUCTION PLANS FOR

ANTELOPE CROSSING FILING NO. 1

A PORTION OF THE EAST ONE HALF OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST OF THE 6TH P.M.,
COUNTY OF DOUGLAS, STATE OF COLORADO

DOUGLAS COUNTY PROJECT NO. SB2024-066

GENERAL NOTES:

1. THE DOUGLAS COUNTY ENGINEERING DIRECTOR SIGNATURE AFFIXED TO THIS DOCUMENT INDICATES THE ENGINEERING DIVISION HAS REVIEWED THE DOCUMENT AND FOUND IT IN GENERAL CONFORMANCE WITH THE DOUGLAS COUNTY ROADWAY DESIGN AND CONSTRUCTION STANDARDS AND THE DOUGLAS COUNTY SUBDIVISION RESOLUTION OR ACCEPTED VARIANCES TO THOSE REGULATIONS. THE DOUGLAS COUNTY ENGINEERING DIRECTOR, THROUGH ACCEPTANCE OF THIS DOCUMENT, ASSUMES NO RESPONSIBILITY, OTHER THAN STATED ABOVE, FOR THE COMPLETENESS AND/OR ACCURACY OF THESE DOCUMENTS. THE OWNER AND ENGINEER UNDERSTAND THAT THE RESPONSIBILITY FOR THE ENGINEERING ADEQUACY OF THE FACILITIES DEPICTED IN THIS DOCUMENT LIES SOLELY WITH THE PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF COLORADO WHOSE STAMP AND SIGNATURE IS AFFIXED TO THIS DOCUMENT.

2. ALL CONSTRUCTION SHALL CONFORM TO DOUGLAS COUNTY STANDARDS. ANY CONSTRUCTION NOT SPECIFICALLY ADDRESSED BY THESE PLANS AND SPECIFICATIONS WILL BE BUILT IN COMPLIANCE WITH THE LATEST EDITION OF THE MOST STRINGENT OF THE FOLLOWING:
    - THE DOUGLAS COUNTY ROADWAY DESIGN AND CONSTRUCTION STANDARDS
    - THE COLORADO DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
    - THE COLORADO DEPARTMENT OF TRANSPORTATION M STANDARDS

3. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE DOUGLAS COUNTY ENGINEERING DIVISION AS APPLICABLE. THE COUNTY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO ITS STANDARDS AND SPECIFICATIONS.

4. THE CONTRACTOR SHALL NOTIFY THE DOUGLAS COUNTY ENGINEERING INSPECTION DIVISION, 303-660-7487, A MINIMUM OF 24-HOURS AND A MAXIMUM OF 72-HOURS PRIOR TO STARTING CONSTRUCTION. CONTRACTOR SHALL NOTIFY DOUGLAS COUNTY ENGINEERING INSPECTION WHEN WORKING OUTSIDE OF THE PUBLIC RIGHT-OF-WAY ON ANY FACILITY THAT WILL BE CONVEYED TO THE COUNTY, URBAN DRAINAGE & FLOOD CONTROL DISTRICT, OR OTHER SPECIAL DISTRICT FOR MAINTENANCE (STORM SEWER, ENERGY DISSIPATERS, DETENTION OUTLET STRUCTURES, OR OTHER DRAINAGE INFRASTRUCTURES). FAILURE TO NOTIFY THE ENGINEERING INSPECTION DIVISION TO ALLOW THEM TO INSPECT THE CONSTRUCTION MAY RESULT IN NON-ACCEPTANCE OF THE FACILITY/INFRASTRUCTURE BY THE COUNTY AND/OR URBAN DRAINAGE.

5. CONSTRUCTION WILL NOT BEGIN UNTIL ALL APPLICABLE PERMITS HAVE BEEN ISSUED. IF A DOUGLAS COUNTY ENGINEERING INSPECTOR IS NOT AVAILABLE AFTER PROPER NOTICE OF CONSTRUCTION ACTIVITY HAS BEEN PROVIDED, THE PERMITTEE MAY COMMENCE WORK IN THE INSPECTOR'S ABSENCE. HOWEVER, DOUGLAS COUNTY RESERVES THE RIGHT NOT TO ACCEPT THE IMPROVEMENT IF SUBSEQUENT TESTING REVEALS AN IMPROPER INSTALLATION.

6. THE LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ACTUAL CONSTRUCTION. FOR INFORMATION CONTACT: COLORADO 811, AT 1-800-922-1987 (WWW.COLORADO811.ORG).

7. THE CONTRACTOR SHALL HAVE ONE (1) COPY OF THE PLANS SIGNED BY THE DOUGLAS COUNTY ENGINEERING DIRECTOR, ONE (1) COPY OF THE ROADWAY DESIGN AND CONSTRUCTION STANDARDS, AS AMENDED, AND ALL APPLICABLE PERMITS AT THE JOB SITE AT ALL TIMES.

8. ALL PROPOSED STREET CUTS TO EXISTING PAVEMENTS FOR UTILITIES, STORM SEWER OR FOR OTHER PURPOSES ARE LISTED AND REFERENCED BELOW:
   NONE

9. A TRAFFIC CONTROL PLAN, IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, SHALL BE SUBMITTED TO DOUGLAS COUNTY FOR ACCEPTANCE WITH THE RIGHT-OF-WAY USE AND CONSTRUCTION PERMIT APPLICATION. A RIGHT-OF-WAY USE AND CONSTRUCTION PERMIT WILL NOT BE ISSUED WITHOUT AN ACCEPTED TRAFFIC CONTROL PLAN FOR TRAFFIC CONTROL DURING CONSTRUCTION.

10. THE CONSTRUCTION PLANS SHALL BE CONSIDERED VALID FOR THREE (3) YEARS FROM THE DATE OF COUNTY ACCEPTANCE, AFTER WHICH TIME THESE PLANS SHALL BE VOID AND WILL BE SUBJECT TO RE-REVIEW AND RE-ACCEPTANCE BY DOUGLAS COUNTY.

11. DOUGLAS COUNTY STANDARD DETAILS SHALL NOT BE MODIFIED. ANY NON-STANDARD DETAILS WILL BE CLEARLY IDENTIFIED AS SUCH.

12. PAVING, INCLUDING CONSTRUCTION OF CURB AND GUTTER (WHEN USED), SHALL NOT START UNTIL A PAVEMENT DESIGN REPORT AND SUBGRADE COMPACTION TESTS ARE ACCEPTED BY THE ENGINEERING INSPECTION DIVISION FOR ALL PUBLIC AND PRIVATE ROADS.

13. STANDARD DOUGLAS COUNTY HANDICAP RAMPS ARE TO BE CONSTRUCTED AT ALL CURB RETURNS AND AT MID-BLOCK LOCATIONS OPPOSITE OF ONE OF THE CURB RETURNS OF ALL "T" INTERSECTIONS AS IDENTIFIED ON THESE PLANS.

14. ALL STATIONING IS BASED ON CENTERLINE OF ROADWAYS UNLESS OTHERWISE NOTED.

15. ALL ELEVATIONS ARE ON UNITED STATES COAST AND GEODETIC SURVEY (USC&GS) (NAVD-88) DATUM WITH DATE. THE RANGE POINT OR MONUMENTS SHALL BE SHOWN ON CONSTRUCTION DRAWINGS.

16. ALL STORM SEWER IMPROVEMENTS (PUBLIC AND PRIVATE) INCLUDING, BUT NOT LIMITED TO, INLETS, PIPES, CULVERTS, CHANNELS, DITCHES, HYDRAULIC STRUCTURES, RIPRAP, DETENTION BASINS, FOREBAYS, MICROPOOLS, AND WATER QUALITY FACILITIES REQUIRE PERMITTING AND INSPECTIONS. PLEASE CONTACT THE DOUGLAS COUNTY ENGINEERING INSPECTIONS DIVISION AT 303- 660-7487 FOR PERMITTING REQUIREMENTS AND INSPECTIONS SCHEDULING.

17. TWO (2) MANHOLE ACCESS POINTS ARE REQUIRED ON ALL TYPE “R” CURB INLETS GREATER THAN OR EQUAL TO TEN (10) FEET IN LENGTH.

18. EPOXY COATED REBAR IS REQUIRED ON ALL INLETS, MANHOLES AND DRAINAGE STRUCTURES AS PER CDOT'S M & S STANDARDS.

19. DOUGLAS COUNTY REQUIRES CLASS D CONCRETE FOR ALL DRAINAGE STRUCTURES.

20. ALL RCP STORM SEWERS MUST USE ASTM C443 WATERTIGHT GASKETS PER THE CURRENT DOUGLAS COUNTY AND URBAN DRAINAGE DESIGN CRITERIA.

21. ALL RCP SHALL BE CLASS III STORM SEWER PIPE UNLESS OTHERWISE SPECIFIED.

22. JOINT RESTRAINTS ARE REQUIRED FOR A MINIMUM OF THE LAST TWO PIPE JOINTS AND FLARED END SECTION OF AN RCP OUTFALL.

23. PRECAST INLETS AND MANHOLE BASES ARE NOT ALLOWED.

24. TOE WALLS ARE REQUIRED ON FLARED END SECTIONS AT THE OUTLET END OF CULVERTS AND STORM SEWER OUTFALLS.

25. FILTER FABRIC IS REQUIRED UNDER ALL RIPRAP PADS.

26. THE PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF COLORADO, SIGNING THESE PLANS IS RESPONSIBLE FOR ENSURING THAT THE DETAILS INCLUDED ARE COMPATIBLE WITH THE STANDARD DOUGLAS COUNTY DETAILS CONTAINED IN THE LATEST VERSIONS OF THE CRITERIA MANUALS. THIS INCLUDES, BUT IS NOT LIMITED TO:
    - DOUGLAS COUNTY ROADWAY DESIGN AND CONSTRUCTION STANDARDS
    - DOUGLAS COUNTY STORM DRAINAGE DESIGN AND TECHNICAL CRITERIA
    - DOUGLAS COUNTY GRADING, EROSION AND SEDIMENT CONTROL CRITERIA
    - CDOT M & S STANDARDS
    - MUTCD
    - URBAN STORM DRAINAGE CRITERIA MANUAL VOLUMES 1,2 & 3

27. A TEMPORARY CONSTRUCTION ACCESS PERMIT FROM DOUGLAS COUNTY MAY BE REQUIRED FOR ANY PROJECT.

28. DOUGLAS COUNTY SHALL NOT BE RESPONSIBLE FOR THE MAINTENANCE OF ROADWAY AND APPURTENANT IMPROVEMENTS, INCLUDING STORM DRAINAGE INFRASTRUCTURE, FOR THE FOLLOWING PRIVATE STREETS,

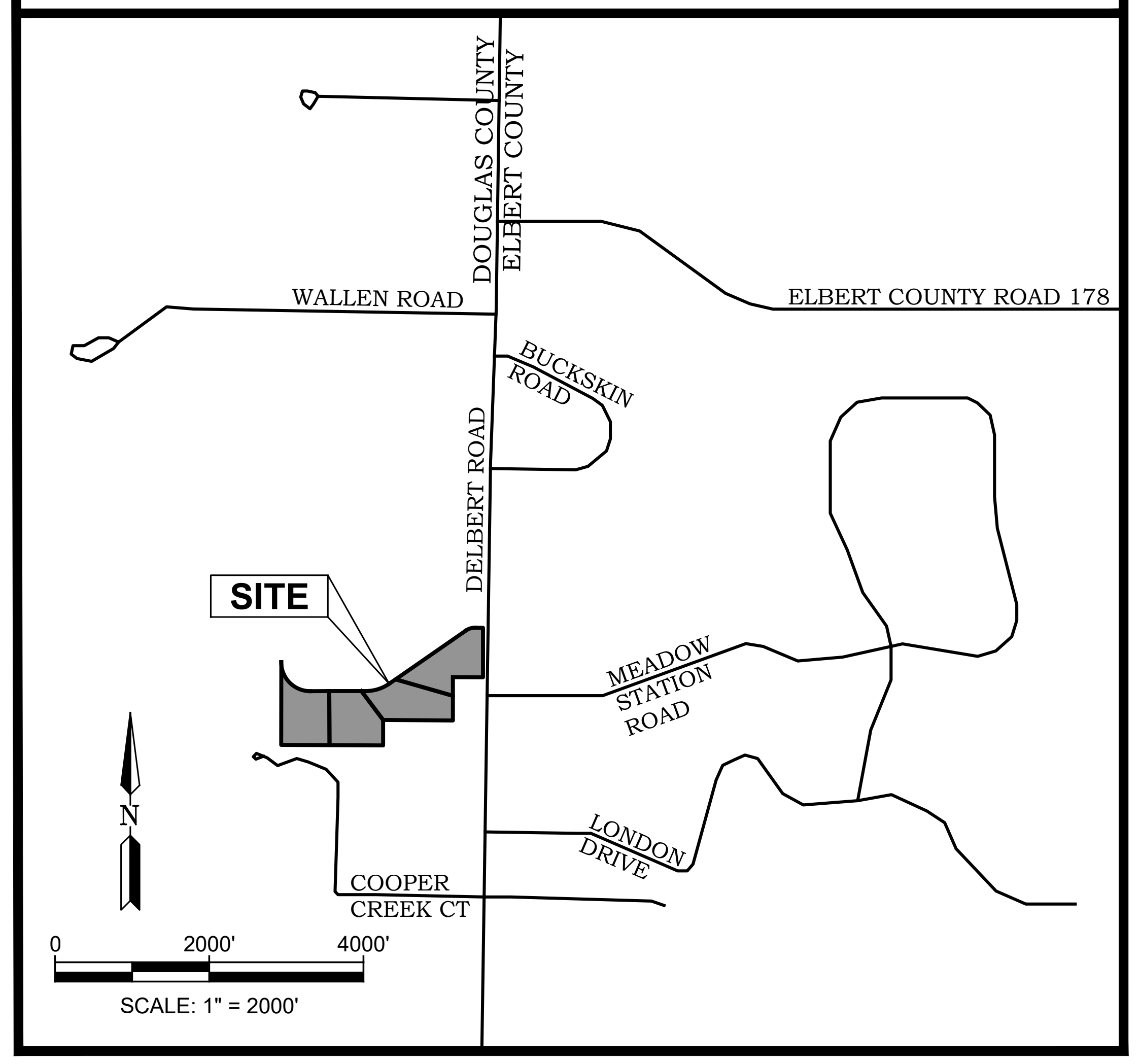
CAUTION: NOTICE TO CONTRACTOR

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

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

\Projects\24\24001\dwg\CD\Cover Sheet.dwg 2/6/2025

VICINITY MAP



SHEET INDEX

1	COVER SHEET
2	SITE PLAN
3	GRADING PLAN
4-5	ROAD PLAN & PROFILE
6	CULVERT PLAN & PROFILES
7-8	EROSION CONTROL PLAN
9-10	EROSION CONTROL DETAILS
11-13	ROAD DETAILS
14	STORM DETAILS

CONTACT LIST

OWNER:

DCLA-3 LLC
14205 E DAVIES AVENUE
CENTENNIAL , CO 80112

APPLICANT:

TAHOE CONSULTING LLC
9457 S. UNIVERSITY BLVD, UNIT 101
HIGHLANDS RANCH, CO 80126
CONTACT: CJ KIRST
PH: (303) 330-8947
EMAIL: CJKIRST@TAHOELANDSERVICES.NET

ENGINEER:

2N CIVIL, LLC
6 INVERNESS COURT EAST
SUITE 125
ENGLEWOOD, CO 80112
PH: (303) 925-0544

CONTACT: TODD WEST, P.E.
PROJECT MANAGER
EMAIL: TODD@2NCIVIL.COM

PUBLIC WORKS ENGINEERING SERVICES

DOUGLAS COUNTY
100 THIRD STREET
CASTLE ROCK, CO 80104
PH: (303) 660-7490

SURVEYOR:

ENCOMPASS
10901 WEST 120TH AVENUE
SUITE 400
BROOMFIELD, CO 80021
PH: (303) 955-6080

CONTACT: ELIJAH FRANE
EMAIL: E.FRANE@ENCOMPASSSERVICES.COM

BENCHMARK

ELEVATIONS ARE BASED ON A PROCESSED OPUS SOLUTION AND REPRESENT NAVD88 ELEVATIONS. A SITE BENCHMARK WILL BE A 5/8” REBAR WITH PLASTIC CAP LS #38151 BEING AT THE NORTHWEST CORNER OF THE INTERSECTION OF DELBERT ROAD AND BUCKSKIN ROAD HAVING AN ELEVATION OF 6289.75'.

BASIS OF BEARINGS

CONSIDERING THE SOUTH LINE OF NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 28 TO HAVE AN ASSUMED BEARING OF S89°39'57"E.

2N CIVIL GENERAL NOTES:

1. THE OWNER/DEVELOPER AND/OR THEIR ASSIGNS IS HEREBY NOTIFIED THAT IT IS TYPICAL AND LIKELY THAT SOME MOVEMENT OF THE SURFACE GRADES WILL OCCUR OVER TIME DUE TO VARIOUS FACTORS THAT ARE NOT IN CONTROL OF THE DESIGNERS. THUS, A ROUTINE AND DILIGENT MAINTENANCE PROGRAM IS REQUIRED TO MAINTAIN THE PROPER GRADING AND DRAINAGE THROUGHOUT THE PROJECT.
2. PROPOSED CONTOURS AND SPOT ELEVATIONS AS SHOWN HEREIN ARE DEFINED AS FINISHED ELEVATION AFTER PAVING, LANDSCAPING, ETC. CONTRACTOR SHALL COORDINATE WITH GEOTECH FOR PAVEMENT THICKNESS AND LANDSCAPE FOR THICKNESS OF TOPSOIL AND SOD.
3. CONTRACTOR SHALL REVIEW THE GEOTECHNICAL REPORT FOR THIS PROJECT FOR PAVEMENT DESIGN AND RECOMMENDATIONS REGARDING EXCAVATION, COMPACTION, EMBANKMENT, AND TOPSOIL REMOVAL AND REPLACEMENT. FINAL PAVEMENT DESIGN TO BE DETERMINED BY THE GEOTECHNICAL ENGINEER FOLLOWING PLACEMENT OF FILLS AND SUBGRADE. CONTRACTOR TO COORDINATE THIS WORK. THE CONSTRUCTION METHODS FOR EXCAVATION/EMBANKMENTS, COMPACTION, AND SUBGRADE PREPARATION SHALL BE IN STRICT CONFORMANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF DISCREPANCIES BETWEEN THE GEOTECHNICAL REPORT RECOMMENDATIONS AND REQUIREMENTS OF THESE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS.
4. EXISTING GRADES AND SPOT ELEVATIONS SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM BEST AVAILABLE INFORMATION AND ARE SHOWN TO THE EXTENT KNOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY EXISTING GRADE CONDITIONS AT THE LIMITS OF CONSTRUCTION AND AT LOCATIONS THAT INTERFACE WITH EXISTING OR PROPOSED BUILDINGS AND NOTIFY THE CIVIL ENGINEER OF ANY DISCREPANCIES THAT CONTRADICT THE CIVIL ENGINEER'S INTENT FOR DRAINAGE PATTERNS, MAXIMUM AND MINIMUM SLOPES, AND PROPOSED ELEVATIONS AS SHOWN ON THE PLAN. THE ENGINEER WILL NOT BE LIABLE FOR ANY COSTS ASSOCIATED WITH CHANGES TO THE DESIGN WITHOUT PROPER NOTIFICATION.
5. EARTHWORK QUANTITIES ARE RAW NUMBERS AND HAVE NOT BEEN ADJUSTED TO ACCOUNT FOR SHRINK, SWELL, COMPACTION, PAVING, UTILITY SPOILS, BUILDING FOUNDATION/BASEMENT ETC. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EARTHWORK VALUES.
6. CONTRACTOR LAYDOWN / MATERIAL AREA, CONCRETE WASHOUT AREA AND STOCKPILE AREA ARE SHOWN FOR INFORMATION ONLY. FINAL LOCATIONS OF THESE AREAS SHALL BE COORDINATED BETWEEN THE CONTRACTOR AND OWNER'S REPRESENTATIVE. STORM WATER MANAGEMENT IS STRICTLY THE CONTRACTOR'S RESPONSIBILITY AND THE CONTRACTOR MUST ADHERE TO LOCAL AND STATE JURISDICTIONAL CRITERIA.
7. SLOPE OF INLET FLOWLINE OR GRATE TO MATCH STREET GRADE UNLESS INLET IS AT A SUMP LOCATION. ALL DIMENSIONS, CURVE DATA AND LINE DATA ARE AT FLOWLINE UNLESS OTHERWISE NOTED.
8. CONTRACTOR TO COORDINATE UTILITY SERVICE CONNECTIONS WITH PLUMBING PLANS PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCY.
9. NOTICE TO BIDDERS - UNLESS APPROVAL BLOCKS ARE SIGNED AND THE PLANS ARE STAMPED BY A PROFESSIONAL ENGINEER., THESE DOCUMENTS ARE PENDING JURISDICTIONAL APPROVAL AND SUBJECT TO CHANGE.
10. SAW CUTTING OF EXISTING PAVEMENT AND CONCRETE, WHERE REQUIRED, SHALL BE DONE TO A NEAT WORK LINE WITH A CUTTING WHEEL ATTACHED TO A BLADE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
11. 2N CIVIL, LLC ASSUMES NO RESPONSIBILITY FOR UTILITY LOCATIONS. THE UTILITIES SHOWN ON THESE DRAWINGS HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
12. THE UTILITIES SHOWN ON THESE PLANS HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY UTILITY LOCATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT EXISTING UTILITIES FROM DAMAGE THROUGHOUT THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL CALL THE UTILITY NOTIFICATION CENTER OF COLORADO FOR UTILITY LOCATIONS 2 WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION.
13. EXISTING SITE FEATURES TO BE DEMOLISHED (INCLUDING BUT NOT LIMITED TO BUILDINGS, CONCRETE SLABS, FENCING, TREES) HAVE BEEN OMITTED FROM THIS CONSTRUCTION DRAWING SET FOR CLARITY.
14. ALL STORM SEWER PIPE SHALL BE CLASS 3 REINFORCED CONCRETE PIPE AND UTILIZING WATER TIGHT JOINTS UNLESS OTHERWISE NOTED.
15. ALL AREAS DISTURBED BEYOND CONSTRUCTION LIMITS SHALL BE RESEEDED/MULCHED AT THE CONTRACTOR'S EXPENSE.
16. IF CONSTRUCTING NEW CURB AND GUTTER ADJACENT TO EXISTING ASPHALT PAVEMENT, CONTRACTOR SHALL REVIEW EXISTING PAVEMENT ELEVATIONS AND PROPOSED GRADES FOR CURB AND GUTTER AND NOTIFY ENGINEER IF MAXIMUM OR MINIMUM CROSS SLOPES ON ASPHALT PATCH ARE NOT WITHIN THE LIMITS INDICATED ON THE PLANS.
17. DRY UTILITY DESIGN INCLUDING, BUT NOT LIMITED TO, ELECTRIC, GAS, AND COMMUNICATIONS LINES SHALL BE BY THEIR RESPECTIVE UTILITY PROVIDER AND ARE SHOWN HEREON FOR REFERENCE ONLY.
18. CLIENT AND CONTRACTOR AGREE THAT 2N CIVIL SHALL NOT PAY FOR ANY BACK-CHARGE FROM THE CLIENT, ITS CONTRACTOR, CONSULTANT OR ANY OTHER PERSON UNLESS BEFORE CONSTRUCTION OF THE BACK-CHARGED ITEMS IS STARTED 2N CIVIL (A) WAS PROMPTLY NOTIFIED OF THE POTENTIAL NEED FOR SUCH BACK-CHARGED WORK, (B) WAS INVOLVED IN DETERMINING THE NEED FOR AND SCOPE OF THE BACK-CHARGED WORK, (C) AGREED THE BACK-CHARGED WORK IS THE RESPONSIBILITY OF 2N CIVIL AND (D) AGREED TO THE FEES INVOLVED FOR THE BACK-CHARGED WORK. CLIENT SHALL INDEMNIFY 2N CIVIL FOR ANY BACK-CHARGES ASSESSED TO 2N CIVIL THAT DO NOT MEET THE CONDITIONS SET FORTH IN THIS NOTE.
19. THESE CONSTRUCTION PLANS FOR ANTELOPE CROSSING FILING NO. 1 SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE ROADWAY DESIGN AND CONSTRUCTION STANDARDS AND THE STORM DRAINAGE DESIGN AND TECHNICAL CRITERIA MANUAL OF THE DOUGLAS COUNTY.

EARTHWORK DISCLAIMER:

2N CIVIL HAS PERFORMED AN EARTHWORK ESTIMATE OF THE SITE UTILIZING AUTOCAD CIVIL 3D SOFTWARE TO ESTIMATE THE AMOUNT OF CUT AND FILL ASSOCIATED WITH THE PROJECT. THE ESTIMATE WAS CONDUCTED TO INFORM THE PROJECT OWNER OF THE PROJECT'S APPROXIMATE EARTHWORK QUANTITIES. ACTUAL EARTHWORK QUANTITIES ARE SUBJECT TO VARIABLES BEYOND 2N CIVIL'S CONTROL. IN ADDITION TO THE FOUNDATIONS, OVER EXCAVATION, THICKNESS OF SLABS OR ROADWAY GRAVEL AND/OR PAVEMENTS, THE AMOUNT/DEPTH OF TOPSOIL ON-SITE, THE IMPORT OF SELECT FILL, AND THE SHRINKAGE OR SWELL POTENTIAL OF THE MATERIAL, THE MEANS AND METHODS OF CONSTRUCTION BECOME SIGNIFICANT FACTORS AFFECTING THE TOTAL AMOUNT OF EARTHWORK NECESSARY FOR THE PROJECT. THIS EARTHWORK ESTIMATE WAS BASED ON THE EXISTING FIELD SURVEY CONTOURS SHOWN AND THE PROPOSED CONTOURS SHOWN ON THE ROAD PLAN AND PROFILES PREPARED BY 2N CIVIL.

2N CIVIL MAKES NO WARRANTY OR GUARANTEE, EITHER EXPRESSED OR IMPLIED, AS TO THE ACCURACY OF THE EARTHWORK QUANTITIES SHOWN. AN EARTHWORK CONTRACTOR SHOULD WORK WITH THE OWNER AND GENERAL CONTRACTOR TO PERFORM A CONTRACTUAL EARTHWORK ANALYSIS AND BUDGET AFTER ALL DESIGN AND CONSTRUCTION ISSUES HAVE BEEN IDENTIFIED.

	CUT (CY)	FILL (CY)	DIFFERENCE (CY)
GROSS E.W. QUANTITIES*	10,622	10,834	212 (FILL)

*GROSS E.W. QUANTITIES INDICATES THE MASS VOLUME BETWEEN THE EXISTING AND FINAL GRADES/CONTOURS.

FOLLOWING IMPORT OF CLASS VI GRAVEL ROAD SURFACE MATERIAL, EARTHWORK IS EXPECTED TO BALANCE ON SITE.

TOTAL AREA OF DISTURBANCE = 5.6 ACRES ±

THESE CONSTRUCTION PLANS FOR ANTELOPE CROSSING FILING NO. 1 WERE PREPARED BY ME (OR UNDER MY DIRECT SUPERVISION) IN ACCORDANCE WITH THE REQUIREMENTS OF DOUGLAS COUNTY'S ROADWAY DESIGN AND CONSTRUCTION STANDARDS, STORM DRAINAGE DESIGN AND TECHNICAL CRITERIA, AND THE GRADING, EROSION AND SEDIMENT CONTROL MANUAL.

TODD WEST, P.E.
2N CIVIL, LLC

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

THESE CONSTRUCTION DRAWINGS HAVE BEEN REVIEWED BY DOUGLAS COUNTY FOR DRAINAGE, GRADING, EROSION AND SEDIMENT CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

2N CIVIL
303.925.0544
www.2ncivil.com

PREPARED FOR:
DCLA-3, LLC
14205 E DAVIES AVE
CENTENNIAL, CO 80112

Cover Sheet
CONSTRUCTION PLANS
ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

REVISIONS:	BY:	DATE:
1.		
2.		
3.		
4.		

PROJECT NUMBER: 24001
ISSUED DATE: 2-6-25
DESIGNED BY: TEW
REVIEWED BY: EPT

Cover Sheet

CONSTRUCTION PLANS FOR

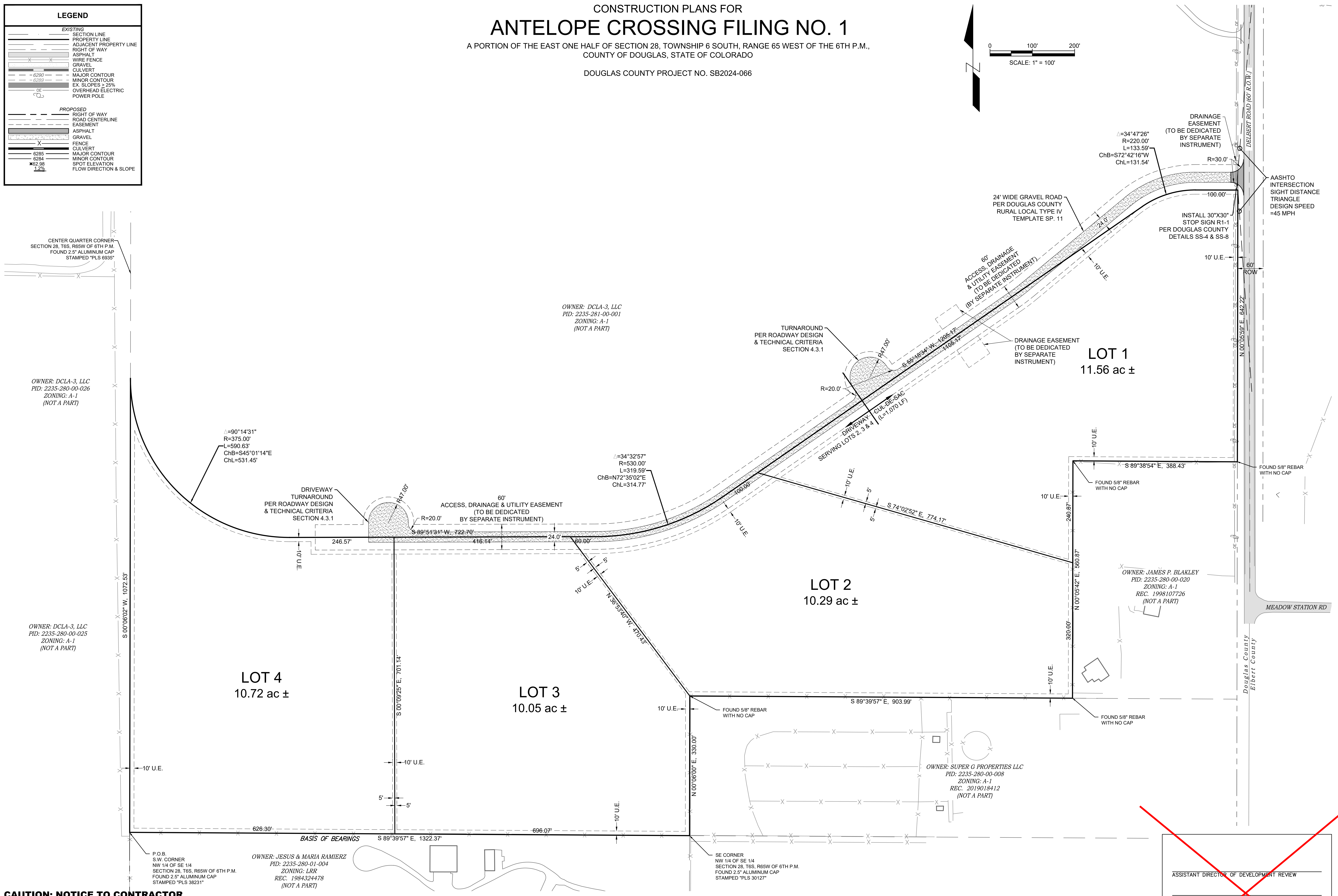
ANTELOPE CROSSING FILING NO. 1

A PORTION OF THE EAST ONE HALF OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST OF THE 6TH P.M.,
COUNTY OF DOUGLAS, STATE OF COLORADO

DOUGLAS COUNTY PROJECT NO. SB2024-066

LEGEND

EXISTING	
	SECTION LINE
	PROPERTY LINE
	ADJACENT PROPERTY LINE
	RIGHT OF WAY
	ASPHALT
	WIRE FENCE
	GRAVEL
	CULVERT
6290	MAJOR CONTOUR
6289	MINOR CONTOUR
	EX. SLOPES ≥ 25%
OE	OVERHEAD ELECTRIC
	POWER POLE
PROPOSED	
	RIGHT OF WAY
	ROAD CENTERLINE
	EASEMENT
	ASPHALT
	GRAVEL
X	FENCE
	CULVERT
6285	MAJOR CONTOUR
6284	MINOR CONTOUR
×62.98	SPOT ELEVATION
1.2%	FLOW DIRECTION & SLOPE



CAUTION: NOTICE TO CONTRACTOR

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

~~ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW~~

~~DATE~~

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PREPARED FOR:
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CENTENNIAL, CO 80112

Site Plan
CONSTRUCTION PLANS
ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

REVISIONS:	BY:	DATE:
1.		
2.		
3.		
4.		

PROJECT NUMBER:	24001
ISSUED DATE:	2-6-25
DESIGNED BY:	TEW
REVIEWED BY:	EPT

Site Plan

2

J:\Projects\24\24001\dwg\CD\Site Plan.dwg 2/6/2025

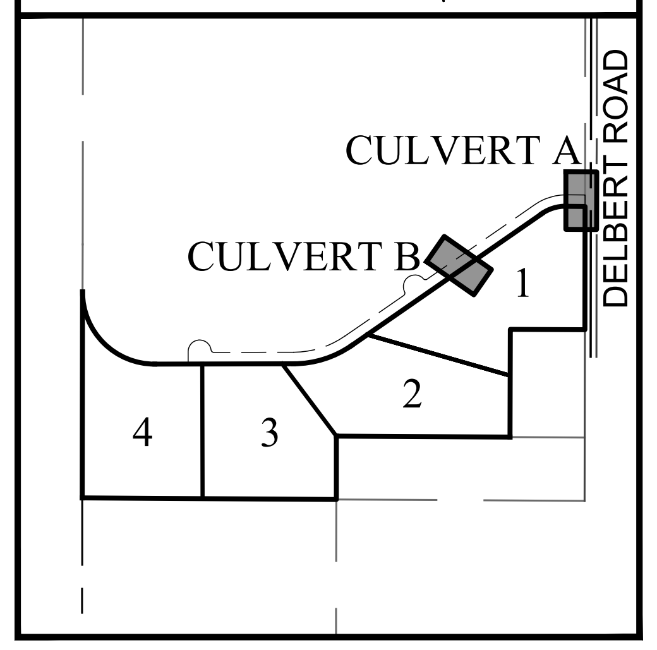
CONSTRUCTION PLANS FOR

ANTELOPE CROSSING FILING NO. 1

A PORTION OF THE EAST ONE HALF OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST OF THE 6TH P.M.,
COUNTY OF DOUGLAS, STATE OF COLORADO

DOUGLAS COUNTY PROJECT NO. SB2024-066

KEYMAP
1"=1000'



0 50' 100'
SCALE: 1" = 50'

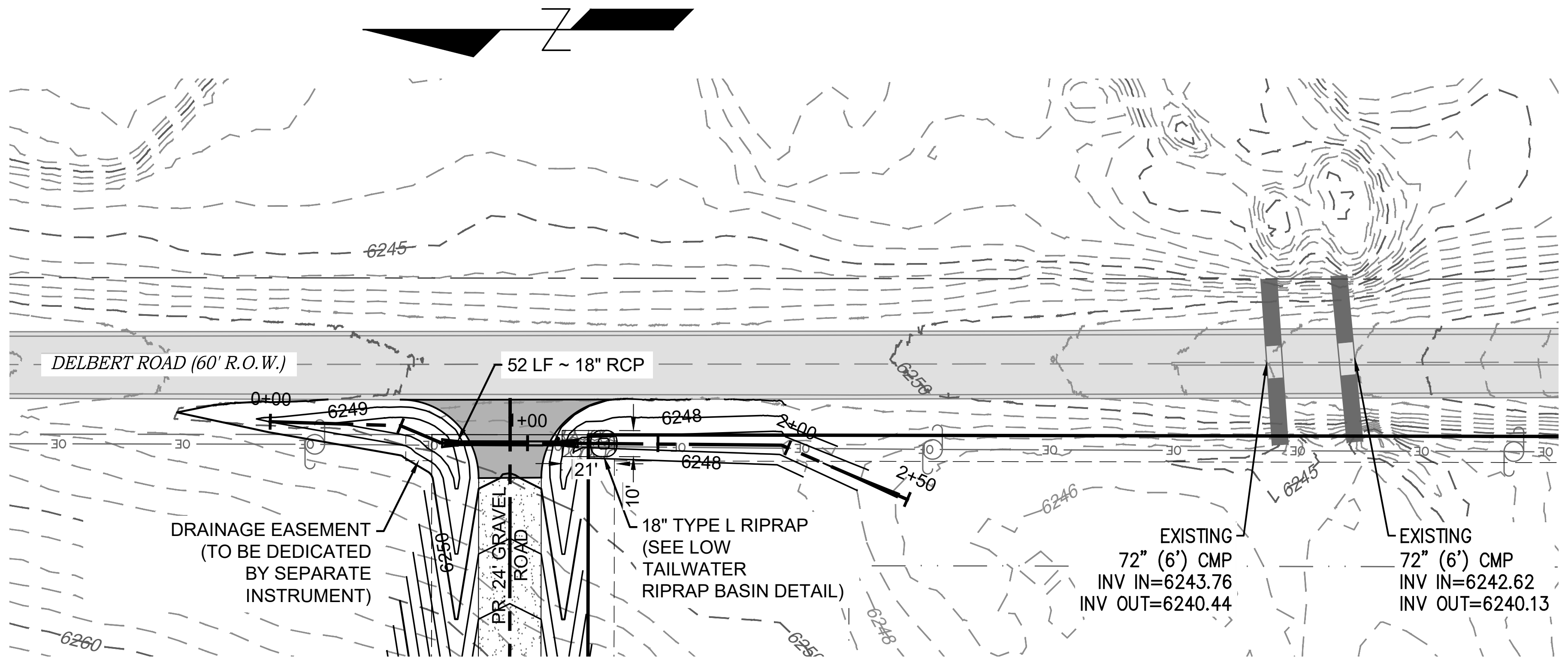
LEGEND

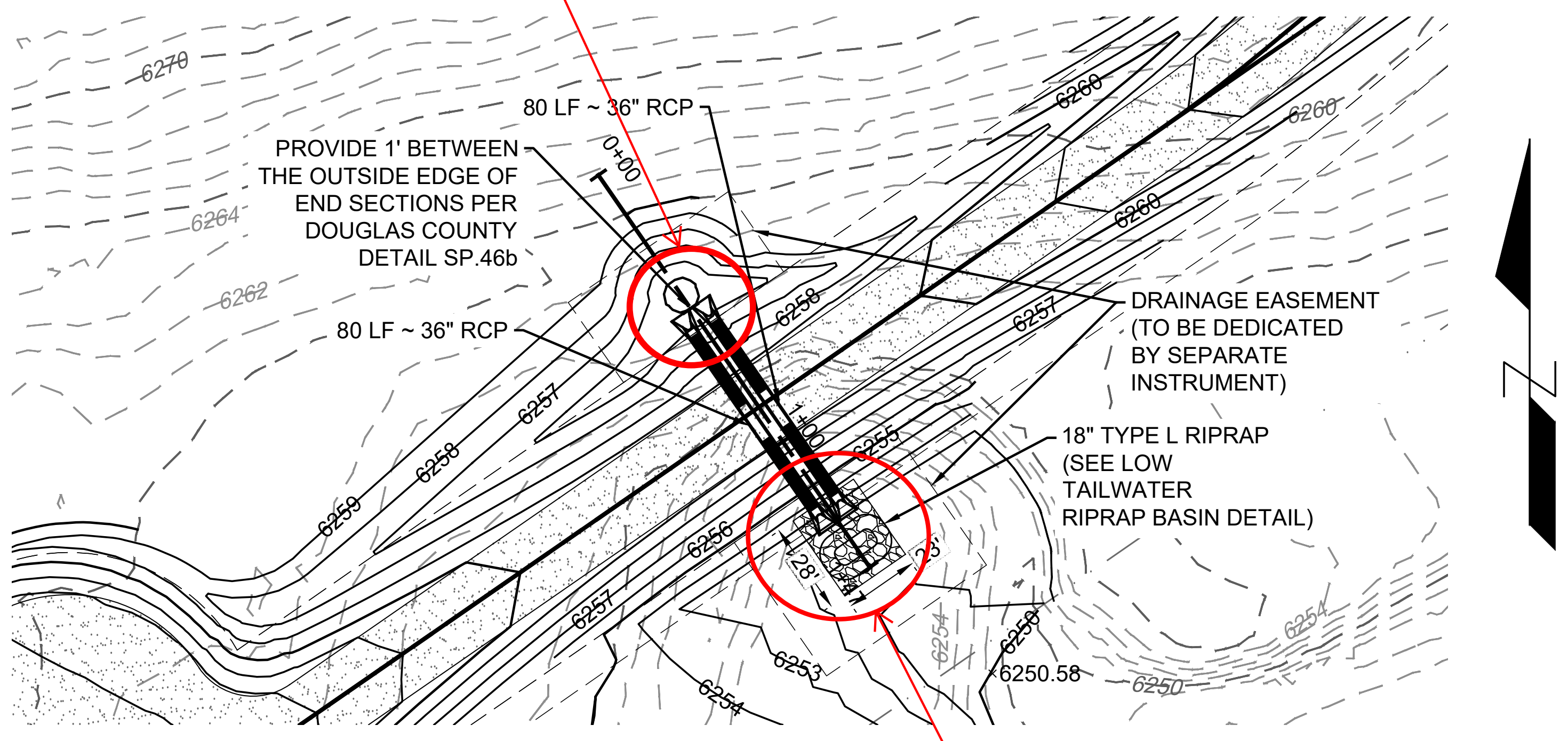
EXISTING

——— · ———	SECTION LINE
▬▬▬	PROPERTY LINE
——— ———	ADJACENT PROPERTY LINE
——— — — ———	RIGHT OF WAY
▭	ASPHALT
—X—X—	WIRE FENCE
▭	GRAVEL
▬	CULVERT
— — 6290 — —	MAJOR CONTOUR
— — 6289 — —	MINOR CONTOUR
▬	EX. SLOPES ≥ 25%
—— OE ——	OVERHEAD ELECTRIC
	POWER POLE

PROPOSED

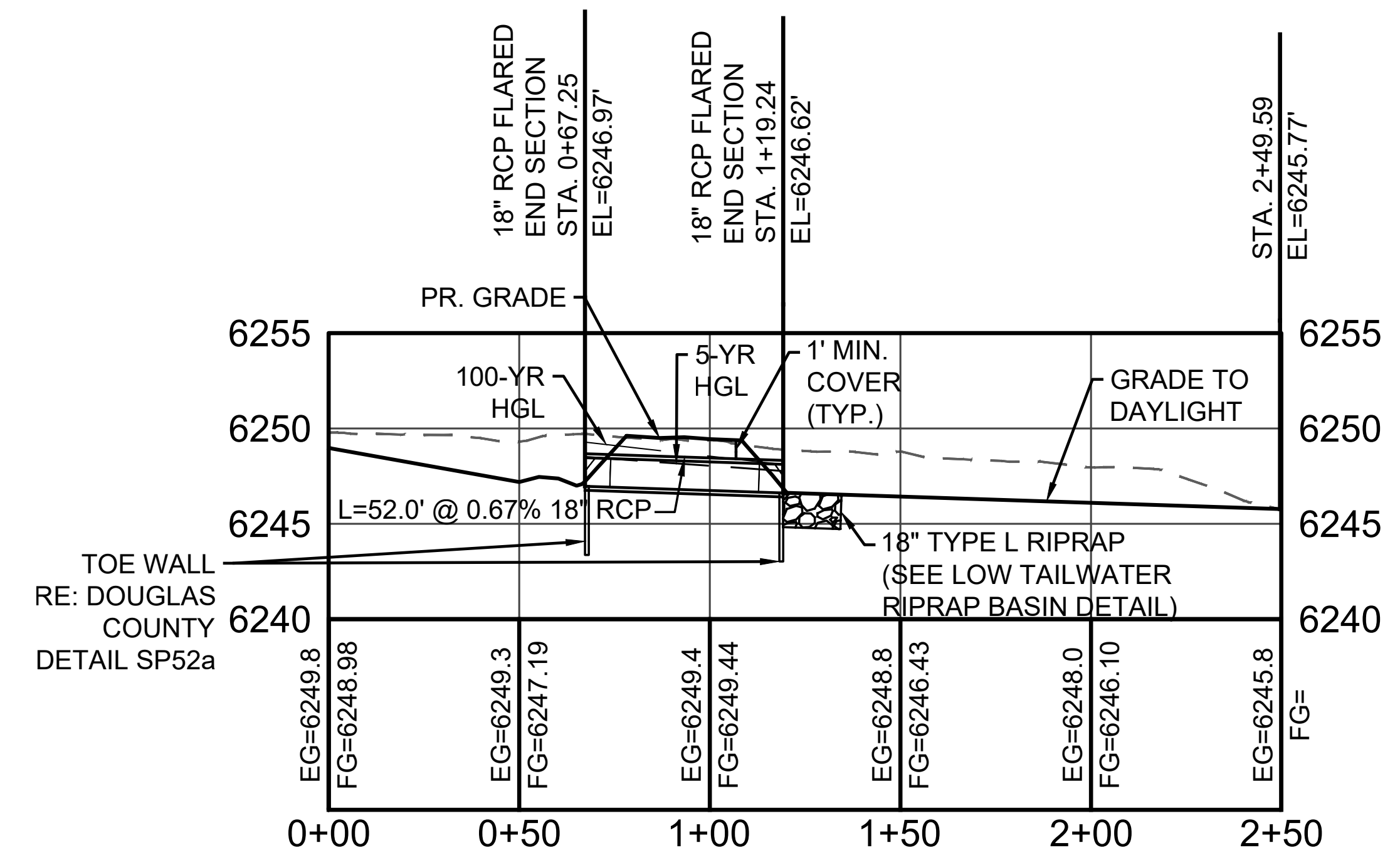
▬▬ — — ▬▬	RIGHT OF WAY
——— — ———	ROAD CENTERLINE
— — — — —	EASEMENT
▭	ASPHALT
▭	GRAVEL
——X——	FENCE
▬	CULVERT
—— 6285 ——	MAJOR CONTOUR
—— 6284 ——	MINOR CONTOUR
×62.98	SPOT ELEVATION
1.2% →	FLOW DIRECTION & SLOPE



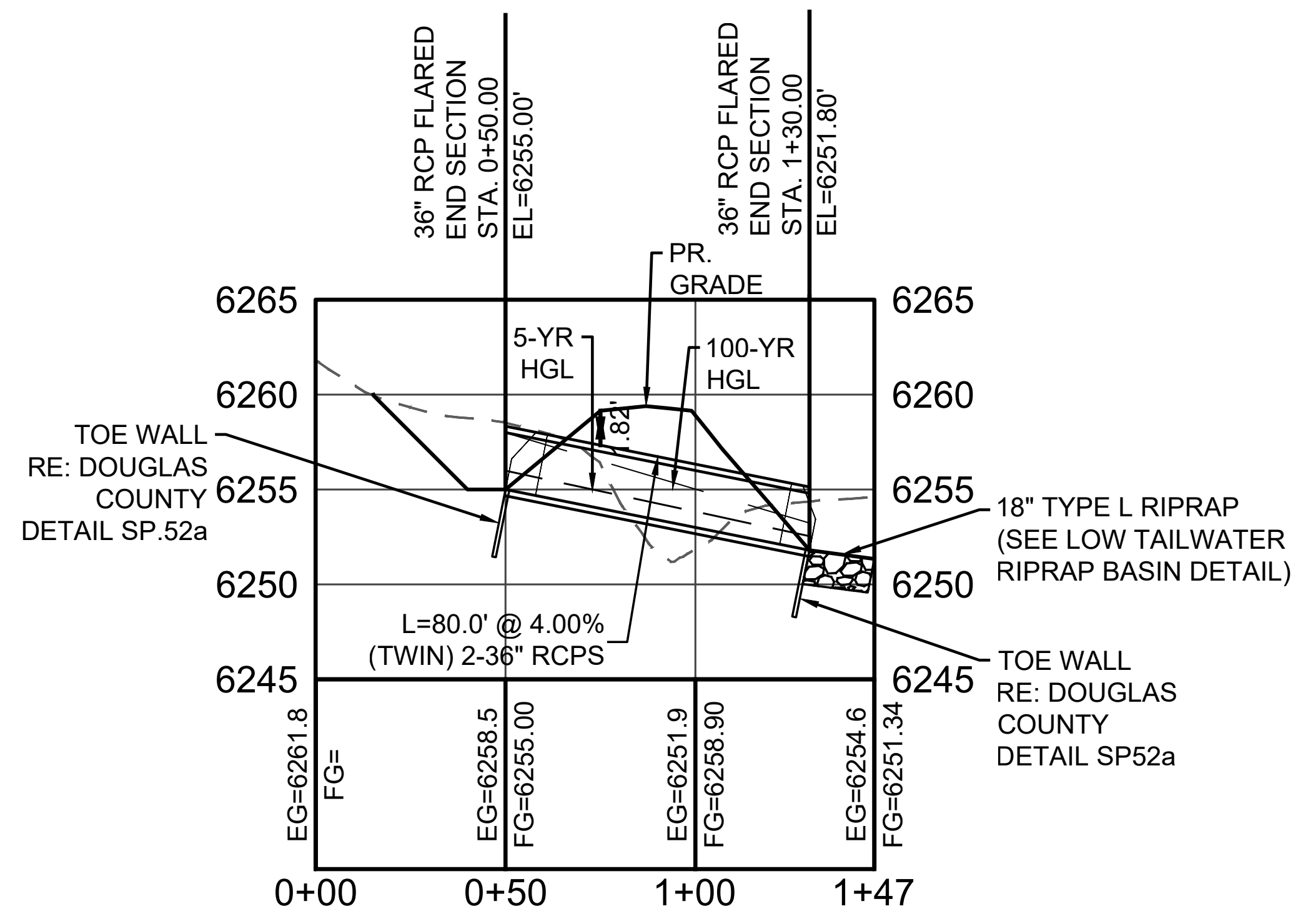


a headwall will be required for the dual pipes

the size of the low tailwater basin will need to be based on a 60-in. culvert



Culvert A PROFILE
SCALE: (H) 1" = 50' (V) 1" = 10'
START STA: 0+00.00, END STA: 2+49.92



Culvert B PROFILE
SCALE: (H) 1" = 50' (V) 1" = 10'
START STA: 0+00.00, END STA: 1+47.11

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811
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ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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ENGINEERING DIVISION ACCEPTANCE BLOCK

2N CIVIL
303.925.0544
www.2ncivil.com

PREPARED FOR:
DCLA-3, LLC
14205 E DAVIES AVE
CENTENNIAL, CO 80112

Culvert Plan & Profiles
CONSTRUCTION PLANS
ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

BY: DATE:

REVISIONS:
1.
2.
3.
4.

PROJECT NUMBER: 24001
ISSUED DATE: 2-6-25
DESIGNED BY: TEW
REVIEWED BY: EPT

Culvert Plan & Profiles

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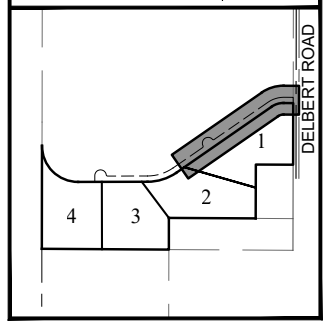
KEYMAP
1"=1000'

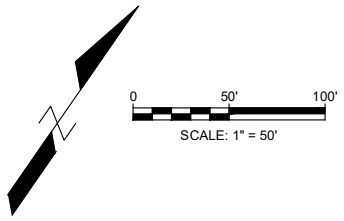


CONSTRUCTION PLANS FOR

ANTELOPE CROSSING FILING NO. 1

A PORTION OF THE EAST ONE HALF OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST OF THE 6TH P.M.,
COUNTY OF DOUGLAS, STATE OF COLORADO

DOUGLAS COUNTY PROJECT NO. SB2024-066



SCALE: 1" = 50'

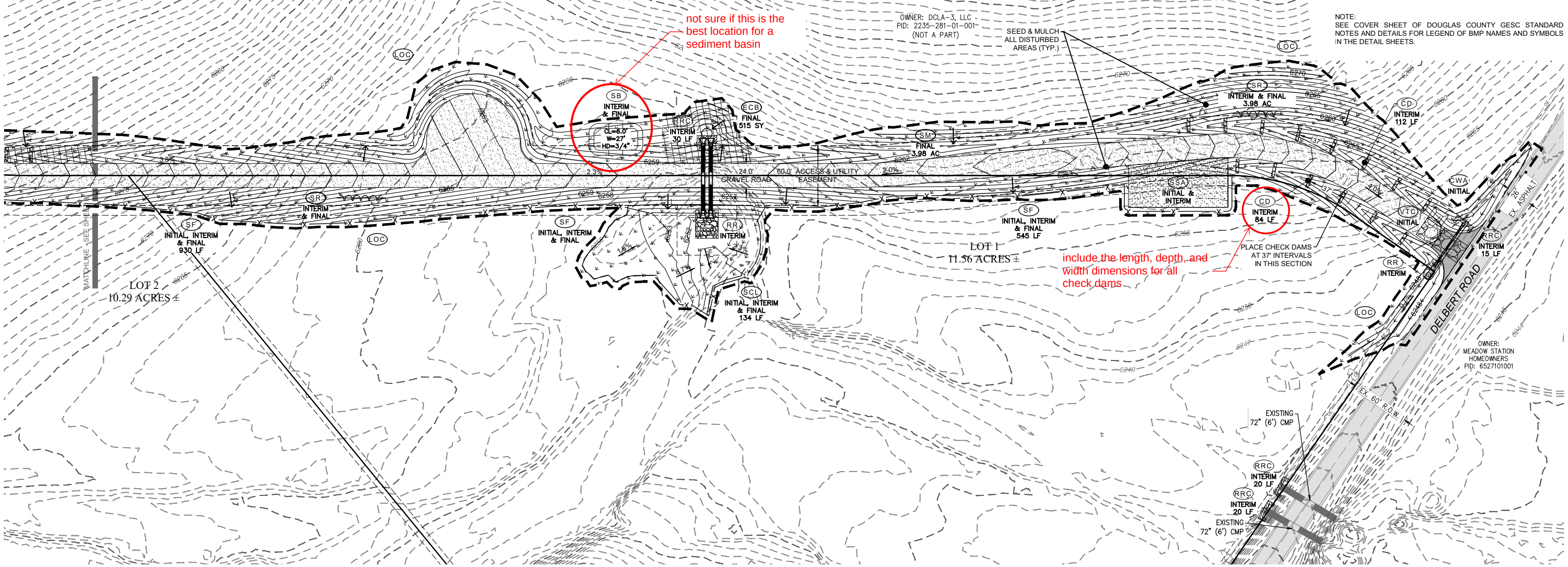
EARTHWORK SUMMARY:
CUT: 10,622 CY
FILL: 10,834 CY
NET: 212 CY (FILL)

FOLLOWING IMPORT OF CLASS VI GRAVEL ROAD SURFACE MATERIAL, EARTHWORK IS EXPECTED TO BALANCE ON SITE.

LEGEND

	———	PROPERTY BOUNDARY
	—— ——	ADJACENT PROPERTY LINE
	—— — — ——	EXISTING RIGHT-OF-WAY
	— — — —	EXISTING EASEMENT
	- - - - - -	PROPOSED EASEMENT
	▭	EXISTING ASPHALT
	▬	PROPOSED ASPHALT
	▒	PROPOSED GRAVEL
	——X——	EXISTING FENCE
	— — -5279- — —	EXISTING MINOR CONTOUR
	— — -5280- — —	EXISTING MAJOR CONTOUR
	——5279——	PROPOSED MINOR CONTOUR
	——5280——	PROPOSED MAJOR CONTOUR
	1.2% →	DIRECTION OF FLOW & GRADIENT
LOC	▬ ▬ ▬ ▬	LIMITS OF CONSTRUCTION
SF SCL	——X——	SILT FENCE OR SEDIMENT CONTROL LOG
DD	——<——	DIVERSION DITCH
VTC	▨	VEHICLE TRACKING CONTROL
SSA	▒	STABILIZED STAGING AREA
RR	▨	RIPRAP
RRC	▨	REINFORCED ROCK BERM CULVERT PROTECTION
SM	▭	SEEDING AND MULCHING
ECB	▩	EROSION CONTROL BLANKET
ST	▨	SEDIMENT TRAP
SB	▢	SEDIMENT BASIN

NOTE:
SEE COVER SHEET OF DOUGLAS COUNTY GESC STANDARD NOTES AND DETAILS FOR LEGEND OF BMP NAMES AND SYMBOLS IN THE DETAIL SHEETS.



not sure if this is the best location for a sediment basin

include the length, depth, and width dimensions for all check dams

BENCHMARK

ELEVATIONS ARE BASED ON A PROCESSED OPUS SOLUTION AND REPRESENT NAVD88 ELEVATIONS. A SITE BENCHMARK WILL BE A 5/8" REBAR WITH PLASTIC CAP LS #38151 BEING AT THE NORTHWEST CORNER OF THE INTERSECTION OF DELBERT ROAD AND BUCKSKIN ROAD HAVING AN ELEVATION OF 6289.75'.

BASIS OF BEARINGS

CONSIDERING THE SOUTH LINE OF NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 28 TO HAVE AN ASSUMED BEARING OF S89°39'57"E.

CAUTION: NOTICE TO CONTRACTOR

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

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provide a copy of the GESC report

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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ENGINEERING DIVISION ACCEPTANCE BLOCK

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PREPARED FOR:
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CENTENNIAL, CO 80112

Grading, Erosion, and Sediment Control Plan
CONSTRUCTION PLANS
ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

REVISIONS:
1.
2.
3.
4.

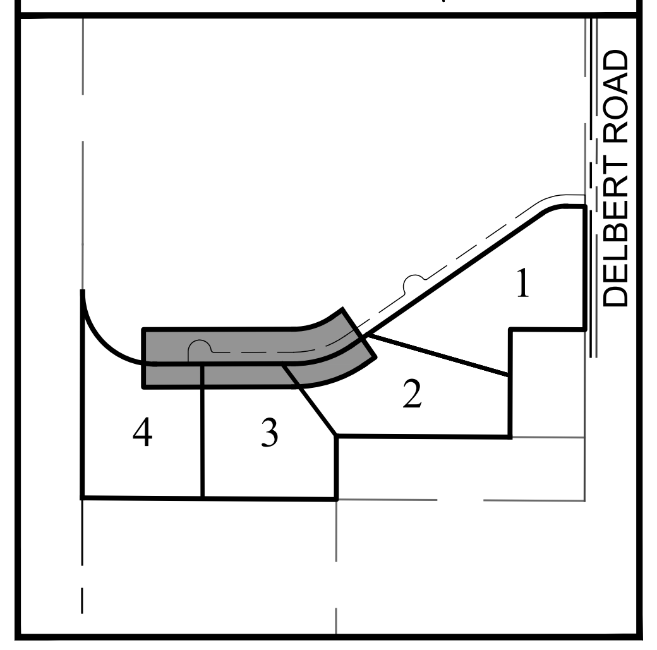
BY: DATE:

PROJECT NUMBER: 24001
ISSUED DATE: 2-6-25
DESIGNED BY: TEW
REVIEWED BY: EPT

Grading, Erosion, and Sediment Control Plan

7

KEYMAP
1"=1000'



CONSTRUCTION PLANS FOR

ANTELOPE CROSSING FILING NO. 1

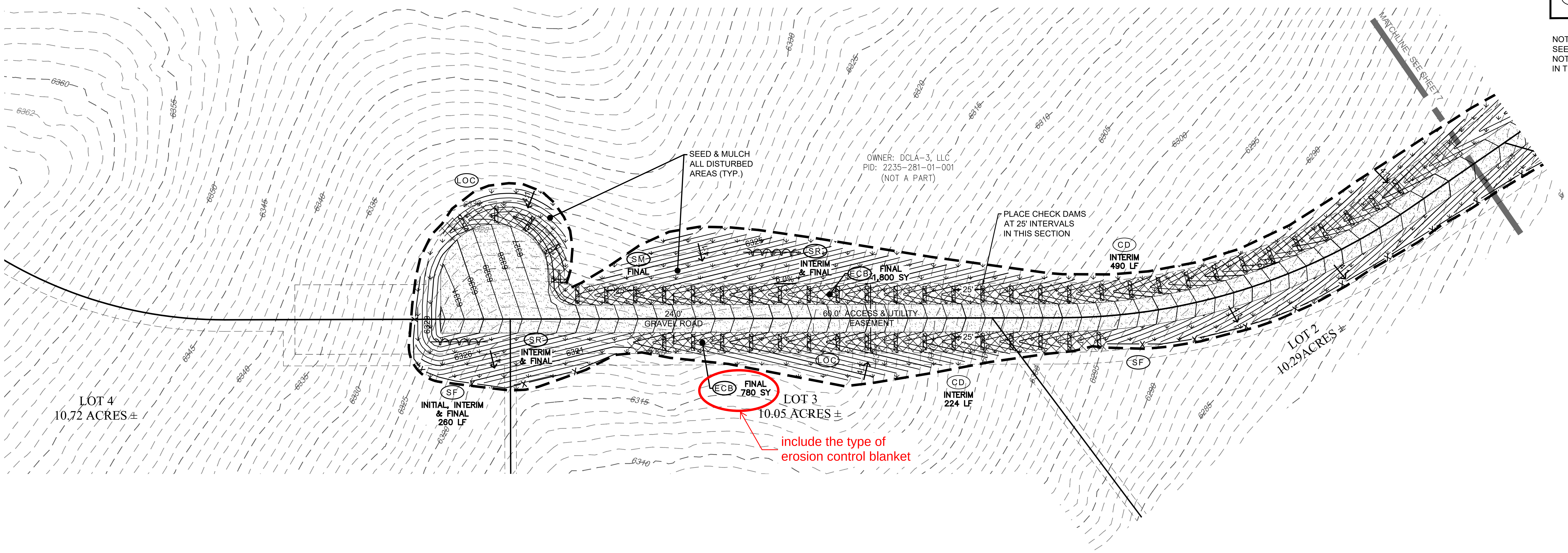
A PORTION OF THE EAST ONE HALF OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST OF THE 6TH P.M.,
COUNTY OF DOUGLAS, STATE OF COLORADO

DOUGLAS COUNTY PROJECT NO. SB2024-066

0 50' 100'
SCALE: 1" = 50'

		LEGEND
	—	PROPERTY BOUNDARY
		ADJACENT PROPERTY LINE
		EXISTING RIGHT-OF-WAY
		EXISTING EASEMENT
		PROPOSED EASEMENT
		EXISTING ASPHALT
		PROPOSED ASPHALT
		PROPOSED GRAVEL
	X	EXISTING FENCE
	5279	EXISTING MINOR CONTOUR
	5280	EXISTING MAJOR CONTOUR
	5279	PROPOSED MINOR CONTOUR
	5280	PROPOSED MAJOR CONTOUR
	1.2%	DIRECTION OF FLOW & GRADIENT
LOC		LIMITS OF CONSTRUCTION
SF SCL	X	SILT FENCE OR SEDIMENT CONTROL LOG
DD		DIVERSION DITCH
VTC		VEHICLE TRACKING CONTROL
SSA		STABILIZED STAGING AREA
RR		RIPRAP
RRC		REINFORCED ROCK BERM CULVERT PROTECTION
SM		SEEDING AND MULCHING
ECB	▨	EROSION CONTROL BLANKET
ST		SEDIMENT TRAP
SB		SEDIMENT BASIN

NOTE:
SEE COVER SHEET OF DOUGLAS COUNTY GESC STANDARD NOTES AND DETAILS FOR LEGEND OF BMP NAMES AND SYMBOLS IN THE DETAIL SHEETS.



BENCHMARK

ELEVATIONS ARE BASED ON A PROCESSED OPUS SOLUTION AND REPRESENT NAVD88 ELEVATIONS. A SITE BENCHMARK WILL BE A 5/8" REBAR WITH PLASTIC CAP LS #38151 BEING AT THE NORTHWEST CORNER OF THE INTERSECTION OF DELBERT ROAD AND BUCKSKIN ROAD HAVING AN ELEVATION OF 6289.75'.

BASIS OF BEARINGS

CONSIDERING THE SOUTH LINE OF NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 28 TO HAVE AN ASSUMED BEARING OF S89°39'57"E.

CAUTION: NOTICE TO CONTRACTOR

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

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

S:\Projects\24\24001\dwg\CD\GESC.dwg 2/6/2025

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

THESE CONSTRUCTION DRAWINGS HAVE BEEN REVIEWED BY DOUGLAS COUNTY FOR DRAINAGE, GRADING, EROSION AND SEDIMENT CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

2N CIVIL
303.925.0544
www.2ncivil.com

PREPARED FOR:
DCLA-3, LLC
14205 E DAVIES AVE
CENTENNIAL, CO 80112

Grading, Erosion, and Sediment Control Plan
CONSTRUCTION PLANS
ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

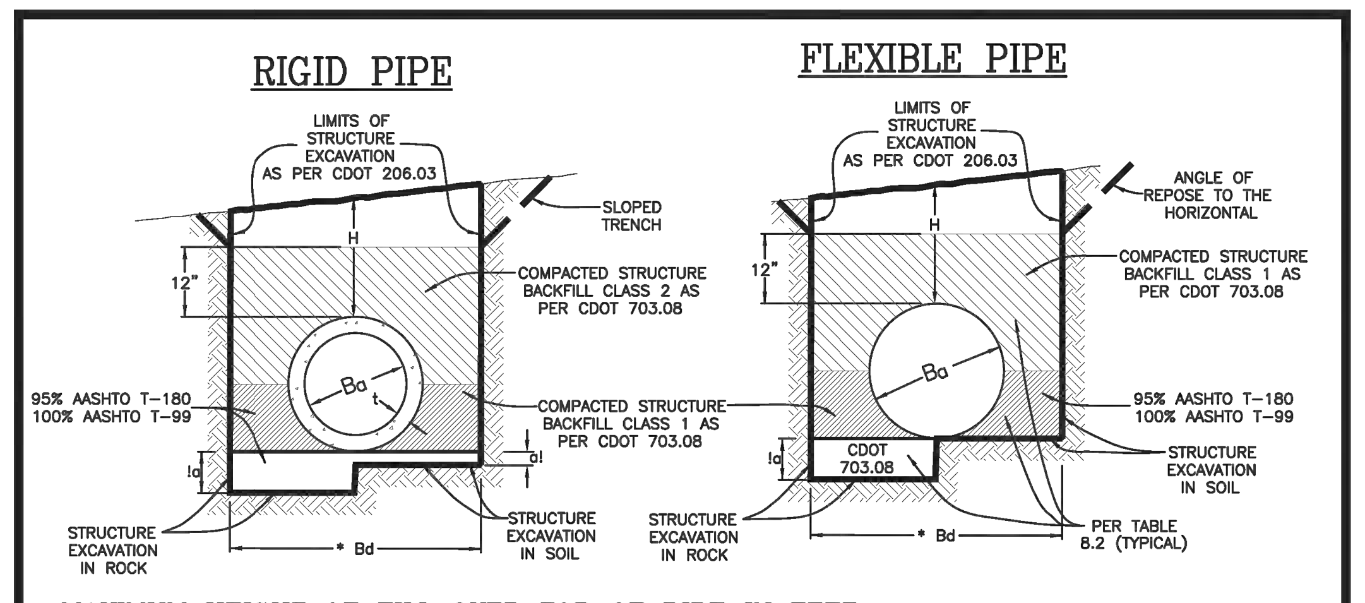
BY: DATE:

REVISIONS:
1.
2.
3.
4.

PROJECT NUMBER: 24001
ISSUED DATE: 2-6-25
DESIGNED BY: TEW
REVIEWED BY: EPT

Grading, Erosion, and Sediment Control Plan

RIGID PIPE / FLEXIBLE PIPE



MAXIMUM HEIGHT OF FILL OVER TOP OF PIPE IN FEET

REINFORCED CONCRETE

Ba in.	Min. Bd in. **	.01 INCH CRACK D-LOAD 1350	2000	3000
		PIPE CLASS III	IV	V
18	35	19	28	43
24	42	18	28	42
30	50	18	28	42
36	59	18	27	41
42	68	18	27	41
48	78	18	27	41
54	89	17	26	40
60	98	17	26	40
66	108	17	26	40
72	117	17	26	40
78	125	17	26	40
84	135	17	26	40
90	154	17	26	40
96	163	17	26	40
108	173	17	26	40
120	191	17	26	40
132	208	17	26	40
144	224	17	26	40

** Based on Bd=1.33(Ba+2t). Wall thickness can vary between manufacturers.

STEEL – 2 2/3" x 1/2" CORRUGATIONS

Ba in.	Bd ft.	H ABOVE TOP OF PIPE IN FEET 1–15	16–20	21–25	26–30	31–35	36–40
		THICKNESS IN INCHES					
18–48	4–7	.064	.064	.064	.064	.064	.064
54	7.50	.079	.079	.079	.079	.079	.079
60	8.00	.079	.079	.079	.079	.109	.109
66	8.50	.079	.079	.109	.109	.138	.138
72	9.00	.079	.109	.109	.138	.168	.168
78	9.50	.109	.138	.138	.168		
84	10.00	.109	.138	.168			

LEGEND

H = Height of fill over top of pipe
Ba = inside diameter (I.D.) of pipe
* Bd = Trench Width
t = Wall thickness of pipe
CLSM = Controlled Low Strength Material
a = Loose granular bedding, as follows:
a=0" for Flexible Culverts in Soil.
a=3" for RCP Culvert in Soil.
a=12" for Culvert in Rock.

* TRENCH WIDTHS
RCP: Bd = Min. of 1.33(Ba+2t), or (Ba+2t)+12" (Per AASHTO Section 17)
CSP: Bd = Min. of Ba+4' (Per AASHTO Section 12)

! Bedding material for SOIL shall be Structural Backfill Class 1 or 2.
! Bedding material for ROCK shall be Structural Backfill Class 1.

GENERAL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS APPLICABLE TO THE PROJECT.
2. ALL TRENCH INSTALLATIONS SHALL BE IN ACCORDANCE WITH OSHA AND COLORADO DEPARTMENT OF TRANSPORTATION REGULATIONS.
3. THE USE OF NON-REINFORCED CONCRETE PIPE WILL NOT BE ALLOWED IN DOUGLAS COUNTY.

RCP DESIGN CRITERIA

Safety Factor = Per ASTM C76
Soil Weight = 120 lb. per cu. ft.
Bedding = Type 2

CSP DESIGN CRITERIA

(3"x1" CORRUGATIONS: 60 TO 84 Pipe shall be .064" thick (16 gauge) to H=40 ft.)

Soil Weight = 120 lb. per cu. ft.
Safety Factor for Seam Strength = 2.00
Bucking Stress Level = 1/2 Yield Strength
Load Factor (Backfill) = 95% Standard Density, AASHTO-T 99 (K=0.86)

ALL UTILITY REPAIRS MUST BE BACKFILLED WITH CLSM. SEE DOUGLAS COUNTY ROADWAY DESIGN AND CONSTRUCTION STANDARDS MANUAL FOR SPECIFIC DETAILS.

NOTE: All trenching shall comply with all State, Federal and O.S.H.A. safety requirements. It will be the responsibility of the Contractor to meet all safety requirements.

TO BE USED IN OPEN FIELDS OR PRIOR TO PAVING ROADS

APPROVED BY DOUGLAS COUNTY
Janet Herman
JANET HERMAN, P.E.
DIRECTOR OF PUBLIC WORKS ENGINEERING
DATE 06/18/2021

PIPE INSTALLATION IN TRENCH

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised: 05/2021
Drawing No. **SP.46a**

NOTES:

1. This trench backfill detail specifies requirements in addition to those specified in the latest edition of the Colorado Department of Transportation's Standard Specifications for Road and Bridge Construction.
2. A construction traffic control plan shall be submitted to and approved by Douglas County prior to issuance of construction permits in the County right-of-way.
3. Trench shall be braced or shored as necessary for the safety of the workers and protection of other utilities or structures in accordance with applicable local, state and federal safety regulations.
4. The trench width shall be confined to those minimum dimensions, which will permit proper installation and acceptable pipe loading, as established by current local, state and federal Safety regulations.
5. Backfill compaction requirements: Minimum density will be determined in accordance with AASHTO T 99 or T 180 as defined by CDOT Standard Specifications Section 203.07 and CDOT 703.03. Except for CLSM.
6. Pavement edges shall be saw-cut. Edges shall be tack coated prior to patching.
7. All storm sewers shall be constructed so that a minimum cover is maintained to withstand AASHTO HS-20 loading on the pipe. The minimum cover to withstand live loading depends upon the pipe size, type and class, and soil bedding condition, but shall be not less than 1-foot at any point along the pipe. Other factors that affect the depth of the pipe are hydraulic grade line elevations, inlet depths, adjacent utilities or utility crossings, including water and sewer services lines along residential streets, and connections to existing storm sewer systems. The roadway subgrade, which supports the pavement section is typically plowed to a certain depth, moisture treated and compacted prior to the placement of the sub-base, base course, and surfacing. There are also instances where the subgrade material must be excavated and replaced or treated to a certain depth to mitigate swelling soils. These efforts can impact the storm sewer system if it has not been designed with adequate depth. The design engineer shall use the best information available, including pavement design or soils reports (if available) to ensure that storm sewer pipes have adequate depth.
8. Changes in design criteria will require compensating change in pipe design.
9. When pipe sewer is to be extended or replaced with pipe of different material, the connections shall conform to the detail shown on plans or be approved through Douglas County Engineering.
10. When two or more conduits are laid side-by-side, they shall be placed so that they are ½ outside diameter, or ½ outside span, or 3' apart, whichever is less. However, if end sections are used, the minimum spacing shall be 1' between the outside edge of end sections.
11. TRENCH INSTALLATION (per OSHA Standards):
    a. Trenches over 5 feet in depth shall be either shored or the trench walls shall be sloped no steeper than 3:1 to the angle of repose. If sloped, the bottom of the slope shall be a minimum of 1 foot above the top of the pipe.
    b. Shoring will be required when the bottom of the slope is more than 3 feet above the bottom of the trench.
    c. All sheeting or shoring to be removed.
12. CLSM may be used in place of Structural Backfill.
13. CLSM shall not exceed a strength over 100 p.s.i.

REFERENCE: Douglas County Drainage Manual and Colorado Department of Transportation "M" Standards.

TO BE USED IN OPEN FIELDS OR PRIOR TO PAVING ROADS

APPROVED BY DOUGLAS COUNTY
Janet Herman
JANET HERMAN, P.E.
DIRECTOR OF PUBLIC WORKS ENGINEERING
DATE 06/18/2021

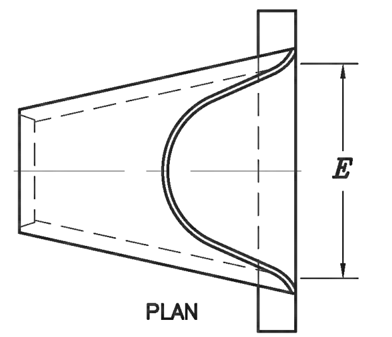
PIPE INSTALLATION IN TRENCH NOTES

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised: 05/2021
Drawing No. **SP.46b**

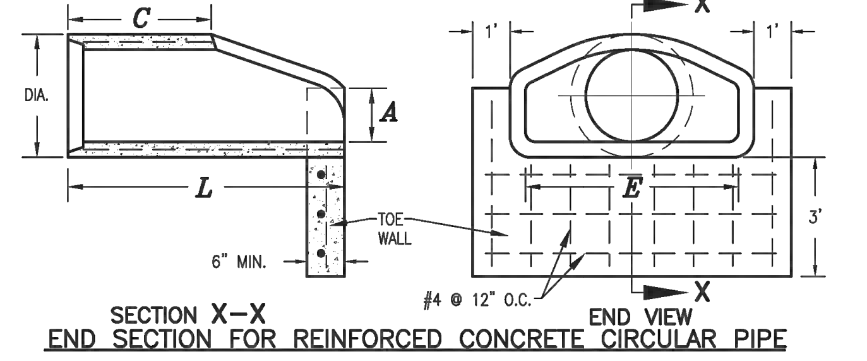
GENERAL NOTES

1. DIMENSIONS OF END SECTIONS MAY VARY SLIGHTLY FROM THOSE SHOWN ON THE TABLES DUE TO DIFFERENT MANUFACTURER'S VARIATIONS.
2. CONCRETE END SECTIONS ARE TO BE FURNISHED WITH TONGUE OR GROOVE AS REQUIRED.
3. DESIGN LENGTH OF CULVERT OR SIDE DRAIN IS BASED ON LENGTH OF END SECTION SHOWN IN TABLE. ANY ADDITIONAL PIPE REQUIRED TO PROVIDE THE DESIGN LENGTH SHALL BE FURNISHED BY AND AT THE EXPENSE OF THE CONTRACTOR.
4. INSIDE CONFIGURATION AND JOINT OF CONCRETE END SECTION END PIPE SHALL MATCH.
5. END SECTIONS FOR CMP ARCH CULVERT SHALL MATCH THE DIMENSIONS OF THE CULVERT SHOWN ON THE PLANS.
6. GALVANIZED TOE PLATE AS SHOWN, WILL BE REQUIRED ON END SECTIONS FOR CORRUGATED STEEL PIPE AND SHALL BE THE SAME THICKNESS AS END SECTIONS. TOE PLATE SHALL BE FIELD-BOLTED TO END SECTION WITH ⅜" GALVANIZED BOLTS, NUTS AND WASHERS.
7. GALVANIZED STEEL SHALL BE IN CONFORMANCE WITH AASHTO M 111, M 218 OR M 232.
8. FOR TYPE SD END SECTIONS, BARS SHALL BE FABRICATED FROM NPS-3 GALVANIZED STEEL SCHEDULE 40 PIPE WHICH SHALL BE IN CONFORMANCE WITH ASTM A 53.
9. FOR A TYPE SD END SECTION, THE INSTALLATION OF ALTERNATIVE 1 OR ALTERNATIVE 2 END SECTION SHALL BE THE CONTRACTOR'S OPTION.
10. CONCRETE PIPE JOINT FASTENERS SHALL BE INSTALLED AT THE FLARED END SECTION AND LAST TWO PIPE JOINTS OF ALL RCP OUTFALLS.
11. CONNECTIONS OF METAL END SECTIONS TO PLASTIC PIPE SHALL BE APPROVED BY THE ENGINEER.
12. CLASS D CONCRETE TOE WALLS ARE REQUIRED AT THE ENDS OF ALL FLARED END SECTIONS.



REINFORCED CONCRETE PIPE

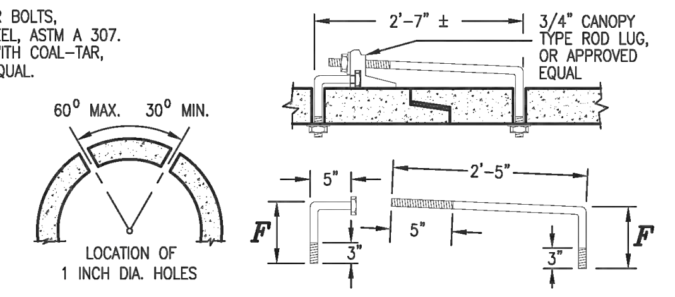
Pipe Inner Diameter (inches)	Wall Thickness (inches)	A (inches)	C (inches)	L (inches)	E (inches)
18	2½	9	46	73	36
24	3	9½	30	73 ½	48
30	3½	12	19 ¾	73 ¾	60
36	4	15	34 ¾	97 ¾	72
42	4½	21	35	98	78
48	5	24	26	98	84
54	5½	27	35	100	90
60	6	30	39	99	96
66	6½	32	21	99	102
72	7	34	21	99	108



END SECTION FOR REINFORCED CONCRETE CIRCULAR PIPE

3/4 INCH GALVANIZED ANCHOR BOLTS, NUTS AND WASHERS, MILD STEEL, ASTM A 307. ROD LUG SHALL BE COATED WITH COAL-TAR, EPOXY PAINT OR APPROVED EQUAL.

PIPE DIAMETER (inches)	F
18 – 30	5
36 – 42	6
48 – 60	7
72 – 84	9



CONCRETE JOINT FASTENER (TWO PER JOINT)

REFERENCE:
CDOT M & S STANDARDS
M-603-10

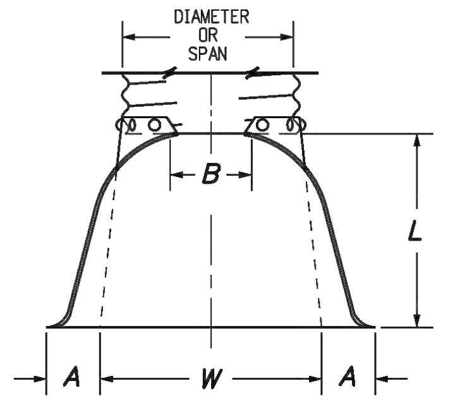
CONCRETE OR METAL END SECTIONS

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised: 09/2017
Drawing No. **SP.52a**

PIPE DIA.	THICKNESS	DIMENSIONS A	B	H	L	W	T
		IN.					
12	0.064	6	6	6	21	24	34
18	0.064	8	10	6	31	36	46
21	0.064	9	12	6	36	42	52
24	0.064	10	13	6	41	48	58
30	0.079	12	16	8	51	60	70
36	0.079	14	19	9	60	72	94
42	0.109	16	22	11	69	84	106
48	0.109	18	27	12	78	90	112
54	0.109	18	30	12	84	102	124
60	0.109	18	33	12	87	114	136
66	0.109	18	36	12	87	120	142
72	0.109	18	39	12	87	126	148
78	0.109	18	42	12	87	132	154
84	0.109	18	45	12	87	138	160

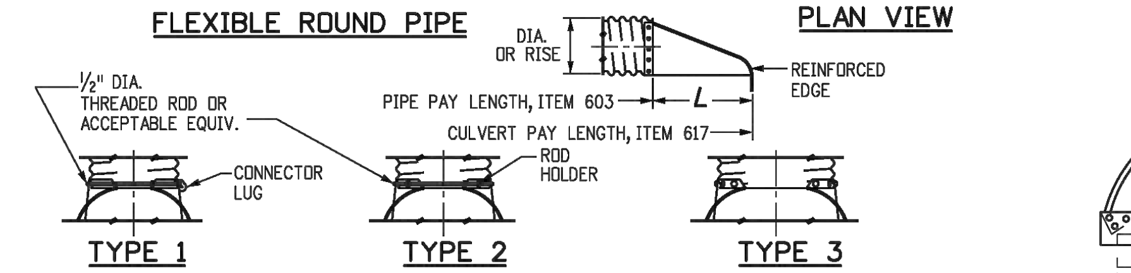
FLEXIBLE ROUND PIPE



PLAN VIEW

PIPE ARCH SPAN x RISE	THICKNESS	DIMENSIONS A (±1")	B (MAX.)	H (±1")	L (±1.5")	W (±2")	T
		IN.					
21 x 15	0.064	7	10	6	23	36	46
24 x 18	0.064	8	12	6	28	42	52
28 x 20	0.064	9	14	6	32	48	58
35 x 24	0.079	10	16	6	39	60	70
42 x 29	0.079	12	18	8	46	75	85
49 x 33	0.109	13	21	9	53	85	103
57 x 38	0.109	18	26	12	63	90	108
64 x 43	0.109	18	30	12	70	102	120
71 x 47	0.109	18	33	12	77	114	132

FLEXIBLE PIPE ARCH

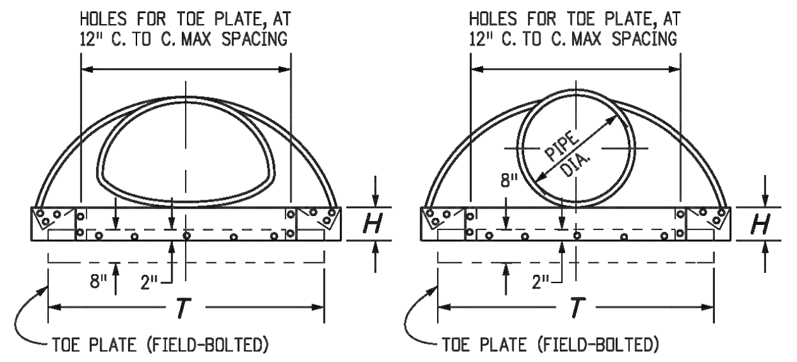


TYPE 1: FOR 18 IN. THRU 24 IN. ROUND PIPE WITH ANNULAR CORRUGATIONS. NOT TO BE USED ON HELICALLY-FORMED PIPE UNLESS RECORRUGATED.

TYPE 2: FOR 30 IN. THRU 36 IN. ROUND PIPE WITH ANNULAR CORRUGATIONS. NOT TO BE USED ON HELICALLY-FORMED PIPE UNLESS RECORRUGATED.

TYPE 3: FOR 42 IN. THRU 84 IN. ROUND PIPE WITH ANNULAR CORRUGATIONS AND ALL SIZES WITH HELICAL CORRUGATIONS AND FOR ALL METAL PIPE ARCH CULVERTS. SHOP ATTACH A 24 IN. MIN. LENGTH OF ANNULAR PIPE WITH GALV. RIVETS OR BOLTS, SPOT WELDS, OR 2 IN. LONG SKIP WELDS ON 8 IN. CTRS. REPAIR BURNT GALVANIZING IN ACCORDANCE WITH SUBSECTION 707.09.

TYPICAL CONNECTIONS

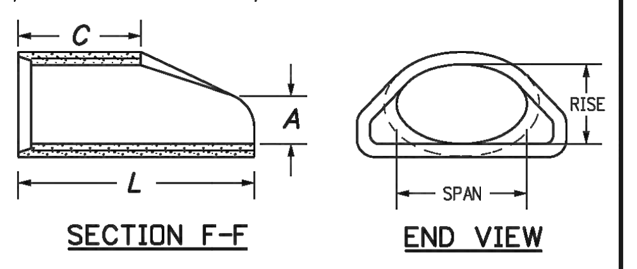


ELEVATIONS

END SECTION AND CONNECTION DETAILS FOR ROUND AND ARCH METAL PIPES

GENERAL NOTES

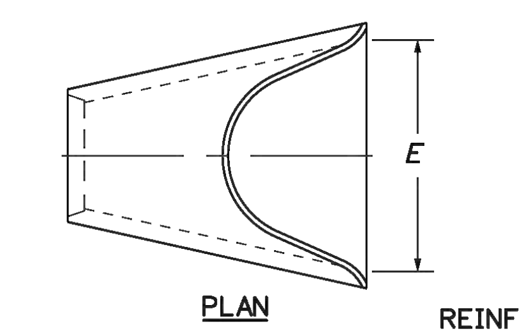
1. DIMENSIONS OF END SECTIONS MAY VARY SLIGHTLY FROM THOSE SHOWN ON THE TABLES DUE TO DIFFERENT MANUFACTURERS' CONFIGURATIONS.
2. CONCRETE END SECTIONS SHALL BE FURNISHED WITH TONGUE OR GROOVE AS REQUIRED.
3. DESIGN LENGTH OF PIPE OR SIDE DRAIN IS BASED ON LENGTH OF END SECTION SHOWN IN TABLE. ANY ADDITIONAL PIPE REQUIRED TO PROVIDE THE DESIGN LENGTH SHALL BE FURNISHED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.
4. THE INSIDE CONFIGURATION AND THE JOINT OF CONCRETE END SECTION AND PIPE SHALL MATCH.
5. END SECTIONS FOR CMP ARCH PIPE SHALL MATCH THE DIMENSIONS OF THE PIPE SHOWN ON THE PLANS.
6. GALVANIZED TOE PLATE AS SHOWN IS REQUIRED ON END SECTIONS FOR CORRUGATED STEEL PIPE AND SHALL BE THE SAME THICKNESS AS END SECTIONS. TOE PLATE SHALL BE FIELD-BOLTED TO END SECTION WITH ⅜ IN. GALVANIZED BOLTS, NUTS AND WASHERS.
7. GALVANIZED STEEL SHALL CONFORM TO AASHTO M 111, M 218 OR M 232.
8. FOR TYPE SD END SECTIONS, BARS SHALL BE FABRICATED FROM NPS-3 GALVANIZED STEEL SCHEDULE 40 PIPE WHICH SHALL CONFORM TO ASTM A 53.
9. FOR A TYPE SD END SECTION, THE INSTALLATION OF ALTERNATIVE 1 OR ALTERNATIVE 2 END SECTION SHALL BE THE CONTRACTOR'S OPTION.
10. CONCRETE PIPE JOINT FASTENERS, WHERE SHOWN ON PLANS, SHALL BE INSTALLED SO THAT A MINIMUM OF 15 LINEAR FEET OF THE OUTLET END OF THE PIPE ARE MECHANICALLY LOCKED TOGETHER. END SECTION LENGTHS WHEN USED, SHALL BE INCLUDED IN THE 15 LF REQUIREMENT.
11. CONNECTIONS OF METAL END SECTIONS TO PLASTIC PIPE SHALL BE APPROVED BY THE ENGINEER. PLASTIC END SECTIONS SHALL NOT BE USED.
12. THE END SECTION STYLE, EITHER REGULAR OR SAFETY, SHALL BE AS SHOWN ON THE PLANS.



SECTION F-F
END VIEW

EQUIVALENT CIRCULAR DIA.	DIMENSIONS NOMINAL SPAN x RISE		A	C	L	E
	IN.					
24	30	19	9	33	72	48
30	38	24	10	18	72	60
36	45	29	12	24	84	72
42	53	34	16	36	96	78
48	60	38	21	36	96	84
54	68	43	26	36	96	90
60	76	48	30	36	96	96

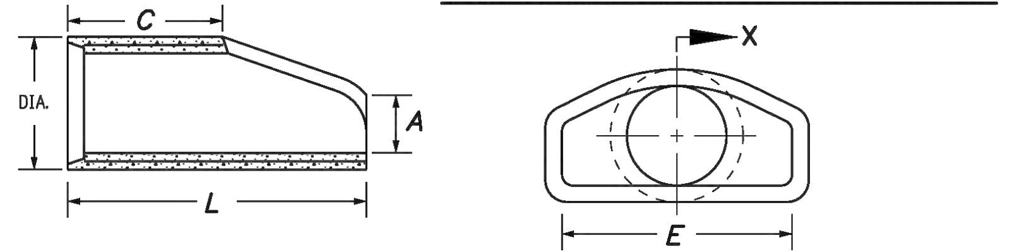
END SECTION FOR REINFORCED CONCRETE ELLIPTICAL PIPE



PLAN

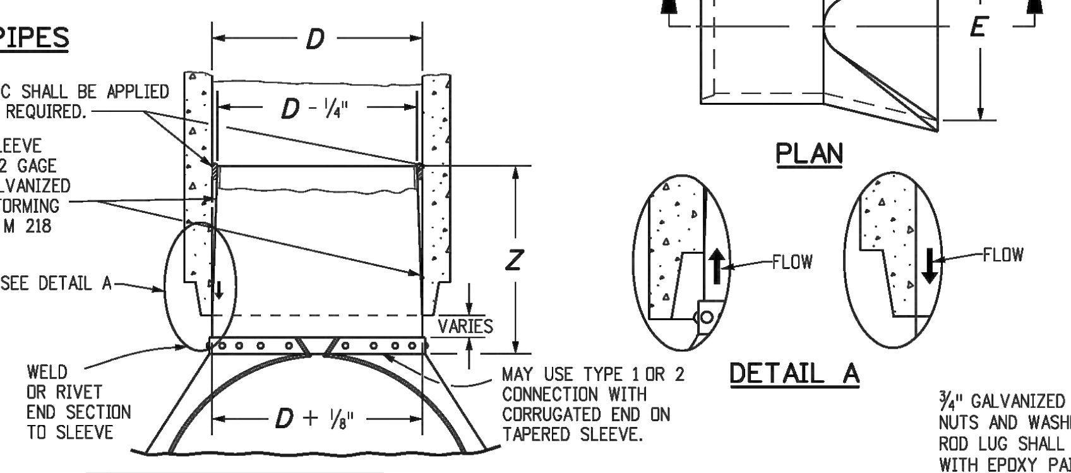
PIPE I.D.	DIMENSIONS A	C	L	E
	IN.			
18	10	48	78	36
24	10	48	78	48
30	14	36	96	60
36	18	36	96	72
42	24	36	96	78
48	28	24	96	84
54	30	36	96	90
60	36	36	96	96
72	34	20	96	108

REINFORCED CONCRETE CIRCULAR PIPE



SECTION X-X
END VIEW

END SECTION FOR REINFORCED CONCRETE CIRCULAR PIPE



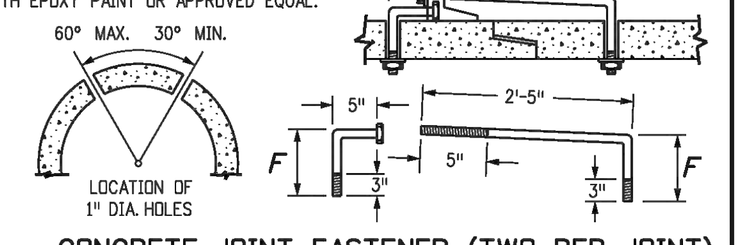
D	Z (MIN.)
IN.	
18 - 24	12
30 AND 36	16
42 AND LARGER	24

NOTE: METAL END SECTION SHALL BE FIRMLY WEDGED INTO PIPE END BEFORE BACKFILLING.

STEEL END SECTION FOR CONCRETE CIRCULAR PIPE
(ALTERNATIVE FOR CONCRETE END SECTION)

¾" GALVANIZED ANCHOR BOLTS, NUTS AND WASHERS, MILD STEEL, ASTM A 307. ROD LUG SHALL BE GALVANIZED OR COATED WITH EPOXY PAINT OR APPROVED EQUAL.

PIPE DIAMETER	F
IN.	
18 - 30	5
36 - 42	6
48 - 60	7
72 - 84	9



CONCRETE JOINT FASTENER (TWO PER JOINT)

Computer File Information	
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Last Modification Date: 07/04/12	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 6010100102.dgn	
CAD Ver.: MicroStation V8 Scale: Not to Scale	Units: English

R-X
R-X
R-X
R-X

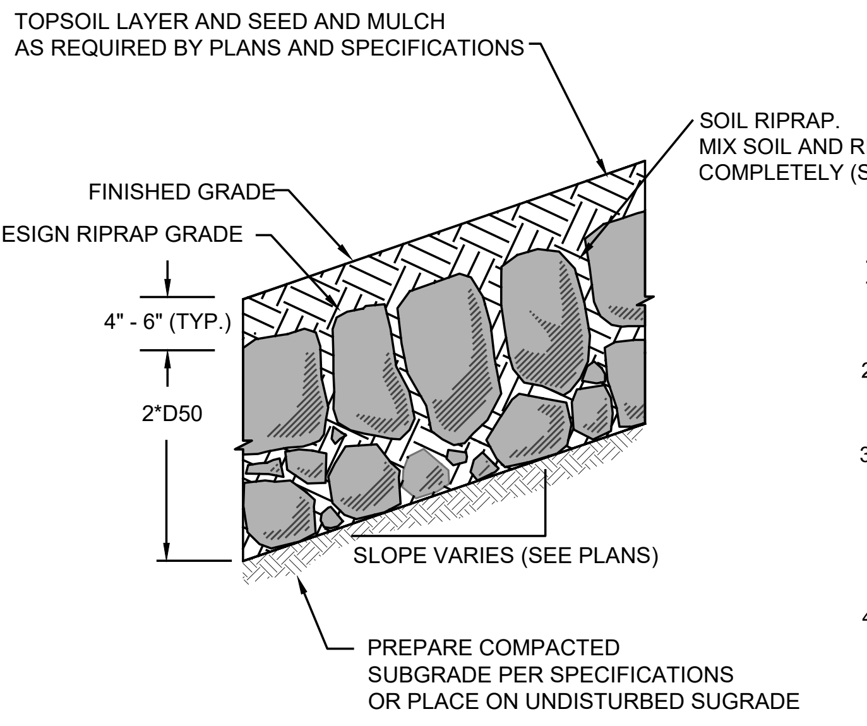
Sheet Revisions Date:	Comments

Colorado Department of Transportation
DOT DEPARTMENT OF TRANSPORTATION
4201 East Arkansas Avenue
Denver, Colorado 80222
Phone: (303) 757-9083
Fax: (303) 757-9820
Project Development Branch DD/LTA

CONCRETE AND METAL END SECTIONS

Issued By: Project Development Branch July 4, 2012

STANDARD PLAN NO.
M-603-10
Sheet No. 1 of 2



NOTES:

1. SOIL RIPRAP DETAILS ARE APPLICABLE TO SLOPED AREAS. REFER TO THE SITE PLAN ACTUAL LOCATION AND LIMITS.
2. MIX UNIFORM ALLY 65% RIPRAP BY VOLUME WITH 35% OF APPROVED SOIL BY VOLUME PRIOR TO PLACEMENT.
3. PLACE STONE-SOIL MIX TO RESULT IN SECURELY INTERLOCKED ROCK AT THE DESIGN THICKNESS AND GRADE. COMPACT AND LEVEL TO ELIMINATE ALL VOIDS AND ROCKS PROJECTING ABOVE DESIGN RIPRAP TOP GRADE.
4. CRIMP OR TACKIFY MULCH OR USE APPROVED HYDROMULCH AS CALLED FOR IN THE PLANS AND SPECIFICATIONS.

TYPICAL SECTION - SOIL RIPRAP WITH MULCH

[redacted]

the construction plans will need to clarify that the twin 36-in. culverts will need to use the 60-in. table for the low tailwater design

2N CIVIL
303.925.0544
www.2ncivil.com

PREPARED FOR:
DCLA-3, LLC
14205 E DAVIES AVE
CENTENNIAL, CO 80112

Storm Details
CONSTRUCTION PLANS
ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

DATE:
BY:

REVISIONS:
1.
2.
3.
4.

PROJECT NUMBER: 24001
ISSUED DATE: 2-6-25
DESIGNED BY: TEW
REVIEWED BY: EPT

Storm Details

S:\Projects\24\24001\dwg\CD\Details.dwg 2/6/2025

CORE Electric Referral Comments

ANTELOPE CROSSING

A PORTION OF THE EAST 1/2 OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST,
6TH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO
42.61 ACRES 4 RESIDENTIAL LOTS SB 2024-066

DEDICATION STATEMENT

THE UNDERSIGNED, BEING ALL THE OWNERS, MORTGAGEES, BENEFICIARIES OF DEEDS OF TRUST AND HOLDERS OF OTHER INTERESTS IN THE LAND DESCRIBED HEREIN, HAVE LAID OUT, SUBDIVIDED AND PLATTED SAID LANDS INTO LOTS, AND EASEMENTS AS SHOWN HEREON UNDER THE NAME AND SUBDIVISION OF ANTELOPE CROSSING. THE UTILITY EASEMENTS SHOWN HEREON ARE HEREBY DEDICATED FOR PUBLIC UTILITIES AND CABLE COMMUNICATION SYSTEMS AND OTHER PURPOSES AS SHOWN HEREON. THE ENTITIES RESPONSIBLE FOR PROVIDING THE SERVICES FOR WHICH THE EASEMENTS ARE ESTABLISHED ARE HEREBY GRANTED THE PERPETUAL RIGHT OF INGRESS AND EGRESS FROM AND TO ADJACENT PROPERTIES FOR INSTALLATION, MAINTENANCE AND REPLACEMENT OF UTILITY LINES AND RELATED FACILITIES. THE EASEMENTS SHOWN HEREON ARE DEDICATED AND CONVEYED TO DOUGLAS COUNTY, CO, IN FEE SIMPLE ABSOLUTE, WITH MARKETABLE TITLE, FOR PUBLIC USES AND PURPOSES.

OWNER CERTIFICATE

OWNER: DCLA-3, LLC

____________________AS________________OF_______________, A _______ LIMITED LIABILITY COMPANY
PRINT NAME (MANAGER/MEMBER) COMPANY STATE

STATE OF____________________)
) SS
COUNTY OF__________________)

ACKNOWLEDGED BEFORE ME THIS _____ DAY OF ________ A.D., 20___ BY ______________________________ .
(NAME)

MY COMMISSION EXPIRES: ______________________________

____
NOTARY PUBLIC

BENEFICIARY OF DEED OF TRUST

FIRST WESTERN TRUST BANK

BY: ________________________
TITLE: ______________________

STATE OF____________________)
) SS
COUNTY OF__________________)

ACKNOWLEDGED BEFORE ME THIS _____ DAY OF ________ , 20___ BY ______________________________
AS __________________ OF __________________________.

WITNESS MY HAND AND OFFICIAL SEAL.

MY COMMISSION EXPIRES: __________________________

____
NOTARY PUBLIC

LEGAL DESCRIPTION

A PARCEL OF PROPERTY LOCATED IN THE EAST HALF OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 28, AND CONSIDERING THE WEST LINE OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SAID SECTION 28 TO BEAR N00°06’02”E WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO; THENCE S89°39’57”E ALONG SOUTH LINE OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SAID SECTION 28 A DISTANCE OF 1322.37 FEET TO THE SOUTHEAST CORNER OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 28, AND THE SOUTHWEST CORNER OF A PARCEL OF PROPERTY AS DESCRIBED IN RECEPTION NO. 2019018412 OF THE DOUGLAS COUNTY RECORDS; THENCE ALONG SAID RECEPTION NO. 2019018412 THE FOLLOWING TWO (2) COURSES;

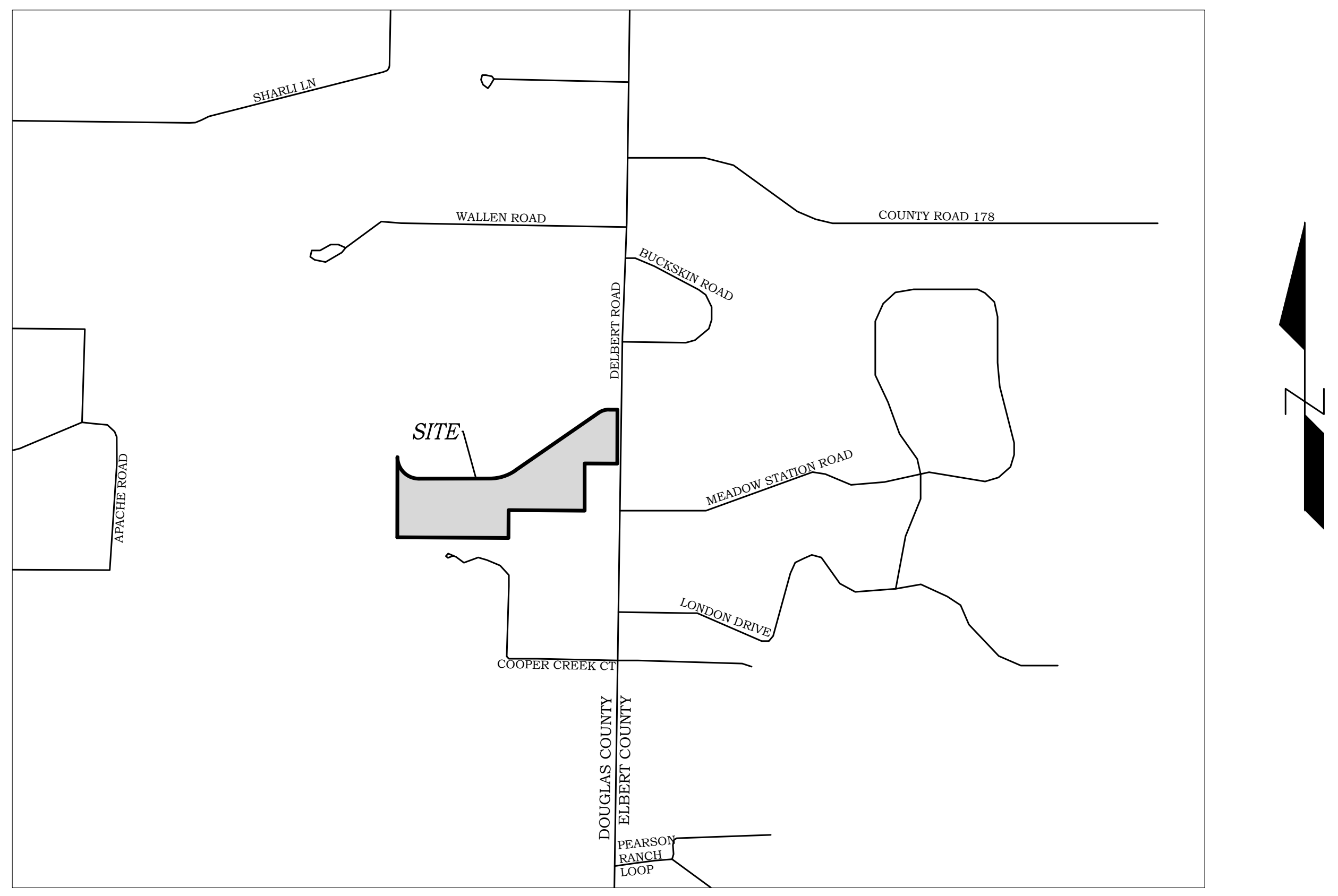
1. N00°06’00”E A DISTANCE OF 330.00 FEET;
2. S89°39’57”E A DISTANCE OF 903.99 FEET, TO THE SOUTHWEST CORNER OF A PARCEL OF PROPERTY AS DESCRIBED IN RECEPTION NO. 1998107726;

THENCE ALONG THE WEST AND NORTH LINE OF SAID RECEPTION NO. 1998107726 THE FOLLOWING TWO (2) COURSES;

1. N00°05’42”E A DISTANCE OF 560.87 FEET;
2. S89°38’54”E A DISTANCE OF 388.43 FEET TO A POINT ON THE WEST RIGHT OF WAY LINE OF DELBERT ROAD AND A POINT 30.00 FEET WEST OF THE EAST LINE OF THE SOUTHEAST 1/4 OF SAID SECTION 28; THENCE N00°05’59”E ALONG SAID WEST RIGHT OF WAY LINE A DISTANCE OF 642.22 FEET;

THENCE N89°54’01”W A DISTANCE OF 100.00 FEET TO A POINT OF CURVE;
THENCE ALONG SAID CURVE TO THE LEFT HAVING A RADIUS OF 220.00 FEET, A CENTRAL ANGLE OF 34°47’26”, AND AN ARC LENGTH OF 133.59 FEET WHOSE CHORD BEARS S72°42’16” W A DISTANCE OF 131.54 FEET;
THENCE S55°18’34”W A DISTANCE OF 1205.17 FEET TO A POINT OF CURVE;
THENCE ALONG SAID CURVE TO THE RIGHT HAVING A RADIUS OF 530.00 FEET, A CENTRAL ANGLE OF 34°32’57” AND AN ARC LENGTH OF 319.59 FEET WHOSE CHORD BEARS S72°35’02”W A DISTANCE OF 314.77 FEET;
THENCE S89°51’31”W A DISTANCE OF 722.70 FEET TO A POINT OF CURVE;
THENCE ALONG SAID CURVE TO RIGHT HAVING A RADIUS OF 375.00 FEET, A CENTRAL ANGLE OF 90°14’31”, AND AN ARC LENGTH OF 590.63 FEET, WHOSE CHORD BEARS N45°01’14”W A DISTANCE OF 531.45 FEET TO A POINT ON THE WEST LINE OF SAID NORTHWEST QUARTER OF THE SOUTHEAST QUARTER; THENCE S00°06’02”W ALONG SAID WEST LINE A DISTANCE OF 1072.53 FEET TO THE POINT OF BEGINNING.

CONTAINING 42.61 ACRES MORE OR LESS



VICINITY MAP
SCALE: 1" = 2000'

PLAT NOTES

1. 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 THE CERTIFICATION SHOWN HEREON.
2. ANY PERSON WHO KNOWINGLY REMOVES, ALTERS OR DEFACES ANY PUBLIC LAND SURVEY, ACCESSORIES, OR LEGAL LAND-BOUND MONUMENT COMMITS O CLASS TWO (2) MISDEMEANOR PURSUANT TO STATE STATUTE 18-4-508, C.R.S.
3. THE LINEAL UNITS USED IN THIS DRAWING ARE U.S. SURVEY FEET.
4. BASIS OF BEARING, CONSIDERING THE SOUTH LINE OF NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 28 TO HAVE AN ASSUMED BEARING OF SOUTH 89°39'57" EAST AND MONUMENTED AS SHOWN HEREON.
5. THIS SURVEY WAS PERFORMED IN THE FIELD ON NOVEMBER 14, 2024.
6. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY ENCOMPASS SERVICES, LLC TO DETERMINE OWNERSHIP OR EASEMENTS OF RECORD. FOR INFORMATION REGARDING EASEMENTS, RIGHTS-OF-WAY AND TITLE OF RECORD, ENCOMPASS SERVICES, LLC RELIED UPON TITLE COMMITMENT NO. HS0831041, WITH AN EFFECTIVE DATE OF APRIL 16, 2024 AT 8:00 A.M. AS PROVIDED BY COMMONWEALTH LAND TITLE INSURANCE COMPANY.
7. ACCORDING TO THE NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP PANEL 080035C0210F WITH AN EFFECTIVE DATE OF SEPTEMBER 30, 2005, THE SUBJECT PROPERTY IS LOCATED IN ZONE "X", AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, ZONE "X" AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1 % ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND ZONE "A" NO BASE FLOOD ELEVATIONS DETERMINED.
8. AS SHOWN HEREON, ALL EXTERIOR LOT LINES ARE HEREBY PLATTED WITH A 10 FOOT PUBLIC UTILITY EASEMENT. ALL INTERIOR LOT LINES ARE HEREBY PLATTED ON EITHER SIDE WITH A 5 FOOT PUBLIC UTILITY EASEMENT UNLESS OTHERWISE NOTED.
9. DURING CONSTRUCTION ACTIVITY WITHIN THE DEVELOPMENT, THE OWNER, ITS SUCCESSORS AND ASSIGNS SHALL TAKE ALL REASONABLE CARE TO WATCH FOR HISTORIC RESOURCES, PALEONTOLOGICAL RESOURCES, AND OTHER CULTURAL HISTORY RESOURCES AND SHALL IMMEDIATELY NOTIFY DOUGLAS COUNTY IN THE EVENT OF SUCH DISCOVERY.
10. UTILITY EASEMENTS AS SHOWN HEREON WILL NOT BE ALLOWED TO BE ENCROACHED UPON BY BUILDINGS, ORNAMENTAL COLUMNS, WINDOW WELLS, COUNTERFORTS, PATIOS, DECKS, ACCESSORY STRUCTURES, MONUMENTS, RETAINING WALLS AND THEIR COMPONENTS.
11. EACH LOT IS SUBJECT TO RESTRICTIONS, COVENANTS, AND MAINTENANCE AGREEMENT BY SEPARATE DOCUMENT - RECORDED BY SEPARATE INSTRUMENT.
12. EACH LOT WILL TAKE ACCESS FROM ANYWHERE ALONG THE LOT'S FRONTAGE TO THE 60' ACCESS AND UTILITY EASEMENT.
13. THE 60' ACCESS & UTILITY EASEMENT SHALL BE OWNED AND MAINTAINED BY THE ANTELOPE CROSSING HOA, IT SUCCESSORS AND ASSIGNS AS A PRIVATE EASEMENT FOR THE BENEFIT OF ANTELOPE CROSSING LOT OWNERS.

SHEET 1 - COVER SHEET

SHEET 2 - BOUNDARY

BOARD OF COUNTY COMMISSIONERS

THIS PLAT WAS APPROVED FOR FILING BY THE BOARD OF COUNTY COMMISSIONERS OF DOUGLAS COUNTY, CO, ON THE ______DAY OF _______ , 20 ____ , SUBJECT TO ANY CONDITIONS SPECIFIED HEREON. THE DEDICATIONS OF UTILITY EASEMENTS ARE ACCEPTED.

ALL EXPENSES INCURRED WITH RESPECT TO IMPROVEMENTS FOR ALL UTILITY SERVICES, PAVING, GRADING, LANDSCAPING, CURBS, GUTTERS, SIDEWALKS, ROAD LIGHTING, ROAD SIGNS, FLOOD PROTECTION DEVICES, DRAINAGE STRUCTURES, AND ALL OTHER IMPROVEMENTS THAT MAY BE REQUIRED SHALL BE THE RESPONSIBILITY OF THE SUBDIVIDER AND NOT DOUGLAS COUNTY.

THIS ACCEPTANCE DOES NOT GUARANTEE THAT THE SOIL CONDITIONS, SUBSURFACE GEOLOGY, GROUNDWATER CONDITIONS OR FLOODING CONDITIONS OF ANY LOT SHOWN HEREON ARE SUCH THAT A BUILDING PERMIT, WELL PERMIT OR SEWAGE DISPOSAL PERMIT WILL BE ISSUED.

____
CHAIR, BOARD OF DOUGLAS COUNTY COMMISSIONERS

SURVEYORS CERTIFICATE:

I, ELIJAH FRANE, A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THIS PLAT TRULY AND CORRECTLY REPRESENTS THE RESULTS OF A SURVEY MADE ON NOVEMBER 14, 2024, BY ME OR UNDER MY DIRECT SUPERVISION AND THAT ALL MONUMENTS EXIST AS SHOWN HEREON; THAT MATHEMATICAL CLOSURE ERRORS ARE LESS THAN 1:50,000 (SECOND ORDER); AND THAT SAID PLAT HAS BEEN PREPARED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS OF THE STATE OF COLORADO DEALING WITH MONUMENTS, SUBDIVISIONS OR SURVEYING OF LAND AND ALL APPLICABLE PROVISIONS OF THE DOUGLAS COUNTY SUBDIVISION RESOLUTION. THIS CERTIFICATION IS BASED ON MY KNOWLEDGE, INFORMATION, AND BELIEF AND IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESS OR IMPLIED.

I ATTEST THE ABOVE ON THIS ________ DAY OF ______________, 2025.

____
ELIJAH FRANE, COLORADO PLS 38376
FOR AND ON BEHALF OF
ENCOMPASS SERVICES, LLC

TITLE VERIFICATION

WE, ________________ ,DO HEREBY CERTIFY THAT WE HAVE EXAMINED THE TITLE OF ALL LAND PLATTED HEREON AND THAT TITLE IS TO SUCH LAND IS IN THE DEDICATOR(S), FREE AND CLEAR OF ALL LIENS, TAXES AND ENCUMBRANCES:

BY: ____
NAME: DATE

TITLE: __________________________

STATE OF____________________)
) SS
COUNTY OF__________________)

ACKNOWLEDGED BEFORE ME THIS _____ DAY OF ________ , 20___ BY ______________________AS ___________________ .

WITNESS MY HAND AND OFFICIAL SEAL.

MY COMMISSION EXPIRES: __________________________

____
NOTARY PUBLIC

PLANNING COMMISSION

THIS MINOR DEVELOPMENT FINAL PLAT (SB2024-066) WAS REVIEWED BY THE PLANNING COMMISSION ON _________________.

____ _____________
PLANNING DIRECTOR, ON BEHALF OF THE PLANNING COMMISSION DATE

CLERK AND RECORDER CERTIFICATE

STATE OF____________________)
) SS
COUNTY OF__________________)

I HEREBY CERTIFY THIS PLAT WAS FILED IN MY OFFICE ON THIS ______ DAY OF ______________. A.D., 20___ AT _________ _____. A.M./P.M. AND WAS RECORDED AT RECEPTION NUMBER _________________.

____
DOUGLAS COUNTY CLERK AND RECORDER

CLIENT:
DCLA-3, LLC
FRANCIS GAY
14205 E. DAVIES AVE.,
CENTENNIAL, CO 80112

ENGINEER:
2N CIVIL
6 INVERNESS CT. E SUITE 125
ENGLEWOOD, CO 80112

REVISIONS:

NO.	DATE	DESCRIPTION
1	01/29/25	1st COUNTY COMMENTS

encompass
Providing Solutions

2750 S. WADSWORTH BLVD, SUITE C-202
DENVER, COLORADO 80227
303-955-6080
WWW.ENCOMPASSSERVICES.COM

DRAWN BY: MBB
PROJECT NO. 65467
SCALE: 1" = 100'
CHECKED BY: ERF
PREPARATION DATE: 11/14/2024
FIELD WORK COMPLETED: 2/21/2024
SHEET 1 OF 2

ANTELOPE CROSSING FILING NO. 1

A PORTION OF THE EAST 1/2 OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST,
6TH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO
42.61 ACRES ± 4 RESIDENTIAL LOTS SB 2024-066

EASEMENT LINE TABLE

LINE #	*DIRECTION*	*LENGTH*
L1	N89°54'01"W	100.00'
L2	S50°18'34"W	311.47'
L3	S55°18'34"W	322.76'
L4	S55°18'34"W	387.18'
L5	S89°51'31"W	429.33'
L6	S89°51'31"W	113.26'
L7	S00°08'29"E	60.00'
L8	S89°51'31"W	662.18'
L9	S55°18'34"W	829.52'
L10	S50°18'34"W	311.47'
L11	N89°54'01"W	100.00'
L12	S00°05'59"W	60.00'

EASEMENT CURVE TABLE

CURVE #	*LENGTH*	*RADIUS*	*DELTA*	*CHORD*	*CHORD LENGTH*
C1	194.45'	280.00'	039°47'26"	S70°12'16"W	190.57'
C2	41.02'	470.00'	005°00'00"	N52°48'34"E	41.00'
C3	198.51'	60.00'	189°33'37"	S55°18'34"W	119.58'
C4	301.50'	500.00'	034°32'57"	N72°35'02"E	296.95'
C5	198.51'	60.00'	189°33'37"	S89°51'31"W	119.58'
C6	337.68'	560.00'	034°32'57"	N72°35'02"E	332.59'
C7	46.25'	530.00'	005°00'00"	N52°48'34"E	46.24'
C8	152.78'	220.00'	039°47'26"	S70°12'16"W	149.73'

LEGEND:

PLAT BOUNDARY LINE
ADJOINER PROPERTY LINE
EASEMENT LINE
ROAD RIGHT OF WAY
ROAD RIGHT OF WAY

◉	FOUND REBAR
●	SET 5/8x18" REBAR WITH ORANGE PLASTIC CAP LS # 38376
⊞	SECTION CORNER
U.E.	UTILITY EASEMENT
P.O.B.	POINT OF BEGINNING

CLIENT:	DCLA-3, LLC FRANCIS GAY 14205 E. DAVIES AVE., CENTENNIAL, CO 80112
ENGINEER:	2N CIVIL 6 INVERNESS CT. E SUITE 125 ENGLEWOOD, CO 80112

REVISIONS:

NO.	DATE	DESCRIPTION
1	01/29/25	1st COUNTY COMMENTS

encompass
Providing Solutions

2750 S. WADSWORTH BLVD, SUITE C-202
DENVER, COLORADO 80227
303-955-6080
WWW.ENCOMPASSSERVICES.COM

DRAWN BY: MBB	PROJECT NO. 65467	SCALE: 1" = 100'
CHECKED BY: ERF	PREPARATION DATE: 11/14/2024	
FIELD WORK COMPLETED: 2/21/2024		SHEET 2 OF 2

DOUGLAS COUNTY
COLORADO
Department of Community Development
www.douglas.co.us
Historic Preservation

March 20, 2025

Carolyn Washee-Freeland, Senior Planner
100 Third Street
Castle Rock, CO 80104

Re: SB2024-066, Antelope Crossing Minor Development Plat

Dear Mrs. Washee-Freeland:

The letter provides comments regarding the request for approval of a Minor Development Plat (MDP) to subdivide a 42.61-acre parcel into 4 Single Family Residential Lots. The property is located immediately west of the Delbert Road and Meadow Station Road intersection. SPN: 2235-284-00-001. There is an active Rezoning application on file for the subject property: ZR2024-015, Antelope Crossing Rezoning to rezone the site from Agricultural One (A-1) to Large Rural Residential (LRR). The applicant previously submitted a cultural resource survey report. A Class III survey was completed upon a previous referral response from the County Curator.

The Curator has reviewed the completed Class III survey on the project site. New sites were discovered but none are eligible to be listed on the national register. The Class III survey satisfies the Curators request.

Should buried artifacts and features be discovered in future phases, we recommend completion of the appropriate Colorado Office of Archaeology and Historic Preservation (OAHP) Data Management and Historic and/or Prehistoric Component forms, following OAHP guidelines, with accompanying sketch maps and photographs. Completed forms are submitted to OAHP to ensure that Douglas County's historic or prehistoric data is included in the Colorado OAHP state-wide database of cultural resources.

Thank you in advance for your attention to the preservation and protection of Douglas County's cultural resources for future generations.

Sincerely,

Brittany Cassell

Brittany Cassell, Curator

100 Third Street, Castle Rock, Colorado 80104 • 303.660.7460

DOUGLAS COUNTY
COLORADO
www.douglas.co.us
Department of Community Development
Planning Services

REFERRAL RESPONSE REQUEST

Date sent: February 27, 2025 **Comments due by: March 27, 2025**

Project Name:	**Antelope Crossing – Minor Development Plat**
Project File #:	**SB2024-066**
Project Summary:	The applicant requests approval of a Minor Development Plat (MDP) to subdivide a 42.61-acre parcel into 4 Single Family Residential Lots. The property is located immediately west of the Delbert Road and Meadow Station Road intersection. SPN: 2235-284-00-001. There is an active Rezoning application on file for the subject property: ZR2024-015, Antelope Crossing Rezoning to rezone the site from Agricultural One (A-1) to Large Rural Residential (LRR). The rezoning has not been approved yet.

Information on the identified development proposal located in Douglas County is enclosed. Please review and comment in the space provided.

☐ No Comment

☐ Please be advised of the following concerns:

☒ See letter attached for detail.

Agency:	Douglas County Conservation District	**Phone #:**	303 218 2622
Your Name:	David Shohet	**Your Signature:**	Signed by: David Shohet 6E6057CEE3D2404...
	(please print)	**Date:**	3/27/25

Agencies should be advised that failure to submit written comments prior to the due date, or to obtain the applicant's written approval of an extension, will result in written comments being accepted for informational purposes only.

Sincerely,

Carolyn Washee-Freeland

Carolyn Washee-Freeland, AICP
Senior Planner, Planning Services
303-660-7460
cfreeland@douglas.co.us

DOUGLAS
—CONSERVES—
DOUGLAS COUNTY CONSERVATION DISTRICT
PO Box 688 / 7519A E. Hwy 86 Franktown, CO 80116 / Phone 303-218-2622

DATE March 27, 2025

RE: SB2024-066 Antelope Crossing

According to U.S.D.A. Natural Resources Conservation Service (NRCS) soils survey, the major units in the area of interest are Lo – Loamy alluvial land and BtE - Bresser-Truckton sandy loams, 5 to 25 percent slopes are poor for dwellings with and without basements, and small commercial buildings due to flooding, shrink-swell soil properties, slope, and depth to hard bedrock. Due to the limitations on the above soils on the site, alternatives to mitigate the limitations of the soil will be required in your engineering design or construction techniques.

According to NRCS soils survey, the BtE - Bresser-Truckton sandy loams, 5 to 25 percent slopes are somewhat limited for streets, roads, and shallow excavations. The Lo - Loamy alluvial land is very limited for roads due to flooding and frost action. Due to the limitations on the above soils on the site, alternatives to mitigate the limitations of the soil will be required in your engineering design or construction techniques.

Topsoil should be stripped to a depth of 6 inches and all stockpiles should have side slopes no steeper than 3:1 and seeded. All disturbed areas should be seeded and mulched with weed free hay mulch at 4,000 lbs. /acre. All disturbed areas should be reseeded between the planting dates of Nov. 1-April 30th. Grass seed should be drilled at a depth of ¼ to ½ inch deep and if broadcasted, double the rate.

The Douglas County Conservation District recommends disturbed land be mulched or revegetated within 45 days of disturbance.

The Conservation District recommends using a phased grading approach. By limiting the area being graded to 15 acres or less and seeding with native grasses the land area disturbed is minimized. The development site is 42.61 acres.

There is no Integrated Noxious Weed Control plan and it is recommended that an integrated weed management program be reviewed and approved by the Douglas County Weed Inspector and/or Weed Advisory board, the County Extension Agent, NRCS, or a qualified weed management professional prior to the land use authority approval.

DOUGLAS
—CONSERVES—
DOUGLAS COUNTY CONSERVATION DISTRICT
PO Box 688 / 7519A E. Hwy 86 Franktown, CO 80116 / Phone 303-218-2622

Vehicle tracking control stations need to be installed at all entrance and exit points on the site. The station should consist of a pad of 3 to 6-inch rock or a vehicle control pad/mat to strip mud from tires prior to vehicles leaving the construction site to prevent spreading of noxious weeds.

Important note, the channels of many of the major streams are not stable and undergo substantial shifts in alignment during flood events. Upstream development increases the magnitude and frequency of local flooding. Floods that exceed the computed 100-year storm do regularly occur. The Conservation District does not support development proposals that are located in or near drainages or development that disturbs wetlands.

Silt fences or other forms of erosion barriers need to be planned and installed as a temporary sediment control device used on construction sites to protect water quality.

The Douglas County Conservation District strongly recommends that Low Impact Development (LID) techniques be implemented for economic and conservation benefits.

Thank you for the opportunity to review this project. Direct any questions to the Heather Kelly, District Manager, at Heather@DouglasConserves.org or (303) 218 – 2622.

United States
Department of
Agriculture

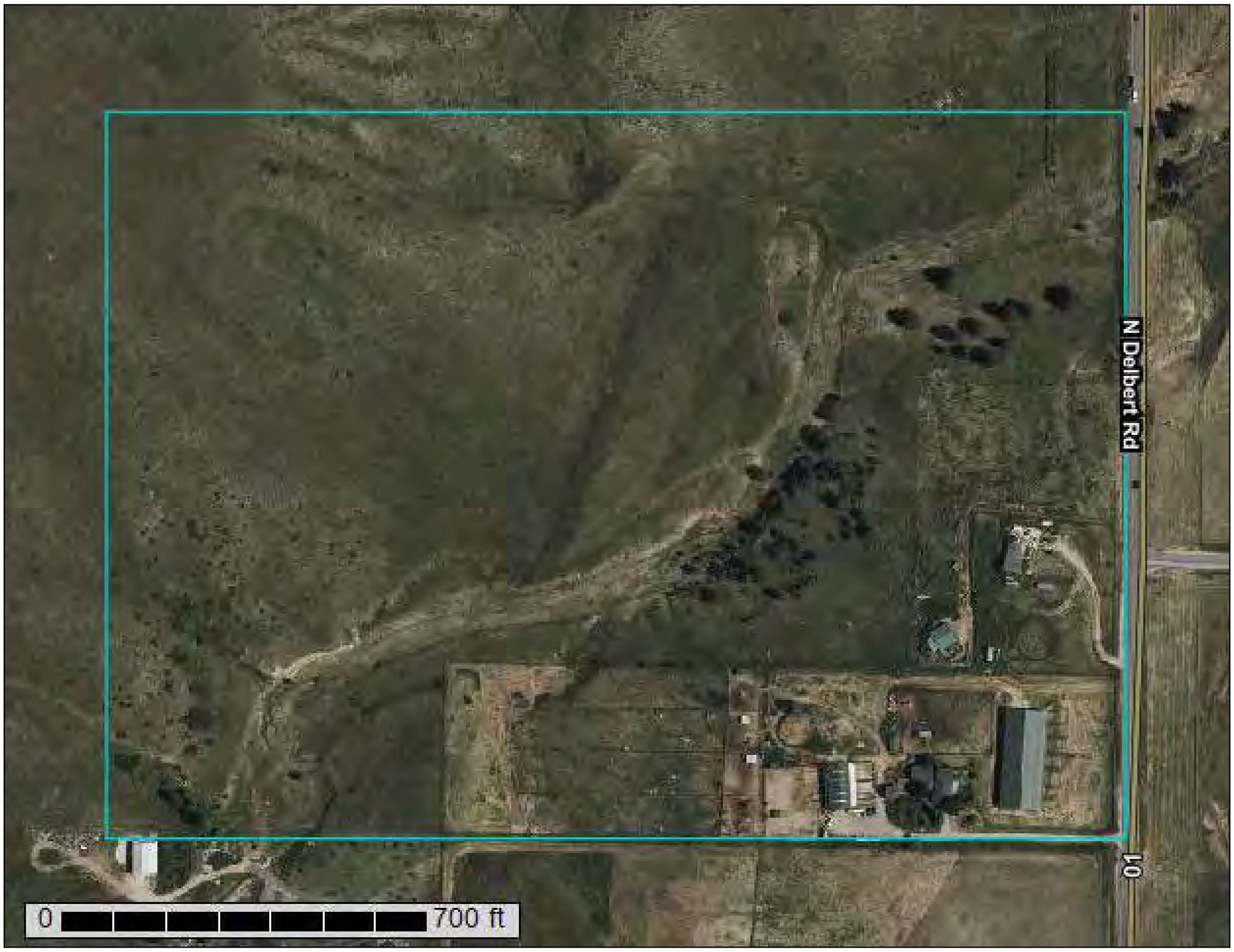
Natural
Resources
Conservation
Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Castle Rock Area, Colorado

SB2024-066 Antelope Crossing



March 21, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Soil Map

Map Scale: 1:3,600 if printed on A landscape (11" x 8.5") sheet.

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)
▭ Area of Interest (AOI)

Soils
▭ Soil Map Unit Polygons
〰 Soil Map Unit Lines
■ Soil Map Unit Points

Special Point Features
◎ Blowout
⊠ Borrow Pit
✱ Clay Spot
◇ Closed Depression
✕ Gravel Pit
∴ Gravelly Spot
⊛ Landfill
Λ Lava Flow
ψ Marsh or swamp
⚒ Mine or Quarry
◎ Miscellaneous Water
○ Perennial Water
∨ Rock Outcrop
+ Saline Spot
⁙ Sandy Spot
⊖ Severely Eroded Spot
◈ Sinkhole
↝ Slide or Slip
▨ Sodic Spot
≡ Spoil Area
◊ Stony Spot
∞ Very Stony Spot
ψ Wet Spot
△ Other
〰 Special Line Features

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 1:20,000.

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: Castle Rock Area, Colorado
Survey Area Data: Version 17, Aug 29, 2024

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

Date(s) aerial images were photographed: Mar 1, 2023—Sep 1, 2023

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BtE	Bresser-Truckton sandy loams, 5 to 25 percent slopes	28.4	45.2%
KtE	Kutch sandy loam, 5 to 20 percent slopes	10.1	16.1%
Lo	Loamy alluvial land	17.9	28.5%
NsE	Newlin-Satanta complex, 5 to 20 percent slopes	6.4	10.3%
Totals for Area of Interest		**62.9**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Castle Rock Area, Colorado

BtE—Bresser-Truckton sandy loams, 5 to 25 percent slopes

Map Unit Setting

National map unit symbol: jqy9
Elevation: 5,500 to 6,600 feet
Mean annual precipitation: 15 to 19 inches
Mean annual air temperature: 47 to 52 degrees F
Frost-free period: 120 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

Bresser and similar soils: 50 percent
Truckton and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bresser

Setting

Landform: Terraces
Landform position (three-dimensional): Riser, tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy eolian deposits

Typical profile

H1 - 0 to 8 inches: sandy loam
H2 - 8 to 30 inches: sandy clay loam
H3 - 30 to 60 inches: loamy sand

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Description of Truckton

Setting

Landform: Terraces
Landform position (three-dimensional): Riser, tread

Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from arkosic sedimentary rock

Typical profile
H1 - 0 to 4 inches: sandy loam
H2 - 4 to 19 inches: sandy loam
H3 - 19 to 60 inches: sandy loam

Properties and qualities
Slope: 10 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 6.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Minor Components

Newlin
Percent of map unit: 5 percent
Hydric soil rating: No

Blakeland
Percent of map unit: 5 percent
Hydric soil rating: No

Stapleton
Percent of map unit: 4 percent
Hydric soil rating: No

Aquic haplustolls
Percent of map unit: 1 percent
Landform: Swales
Hydric soil rating: Yes

KtE—Kutch sandy loam, 5 to 20 percent slopes

Map Unit Setting

National map unit symbol: jqz5

Elevation: 5,500 to 6,800 feet
Mean annual precipitation: 15 to 19 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 120 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

Kutch and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kutch

Setting

Landform: Drainageways, alluvial fans, valley sides
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous fine-loamy clayey shale

Typical profile

H1 - 0 to 6 inches: sandy loam
H2 - 6 to 32 inches: clay
H3 - 32 to 36 inches: weathered bedrock

Properties and qualities

Slope: 5 to 20 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Minor Components

Bresser

Percent of map unit: 7 percent
Hydric soil rating: No

Newlin

Percent of map unit: 7 percent
Hydric soil rating: No

Aquic haplustolls

Percent of map unit: 1 percent

Landform: Swales
Hydric soil rating: Yes

Lo—Loamy alluvial land

Map Unit Setting

National map unit symbol: jqzb
Elevation: 7,000 to 8,000 feet
Mean annual precipitation: 17 to 19 inches
Mean annual air temperature: 44 to 46 degrees F
Frost-free period: 115 to 120 days
Farmland classification: Not prime farmland

Map Unit Composition

Loamy alluvial land: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Loamy Alluvial Land

Setting

Landform: Swales, flood plains
Down-slope shape: Linear
Across-slope shape: Linear

Typical profile

H1 - 0 to 20 inches: sandy loam
H2 - 20 to 40 inches: stratified loamy sand to clay loam
H3 - 40 to 60 inches: sand and gravel

Properties and qualities

Slope: 1 to 5 percent
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: Frequent
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C
Ecological site: R049XY036CO - Overflow
Hydric soil rating: No

Minor Components

Sampson

Percent of map unit: 7 percent
Hydric soil rating: No

Bresser

Percent of map unit: 7 percent
Hydric soil rating: No

Sandy alluvial land

Percent of map unit: 5 percent

Fluvaquentic haplustolls

Percent of map unit: 1 percent
Landform: Terraces
Hydric soil rating: Yes

NsE—Newlin-Satanta complex, 5 to 20 percent slopes

Map Unit Setting

National map unit symbol: jqzh
Elevation: 5,500 to 6,600 feet
Mean annual precipitation: 15 to 19 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 120 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

Newlin and similar soils: 50 percent
Satanta and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Newlin

Setting

Landform: Knobs, drainageways
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Unconformable sandy and gravelly and/or mixed source alluvium

Typical profile

H1 - 0 to 8 inches: gravelly sandy loam
H2 - 8 to 17 inches: gravelly sandy clay loam
H3 - 17 to 22 inches: gravelly sandy loam
H4 - 22 to 60 inches: very gravelly sand

Properties and qualities

Slope: 5 to 20 percent
Depth to restrictive feature: More than 80 inches

Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R049XC202CO - Loamy Foothill Palmer Divide
Hydric soil rating: No

Description of Satanta

Setting

Landform: Knobs, drainageways
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from mixed

Typical profile

H1 - 0 to 9 inches: loam
H2 - 9 to 30 inches: clay loam
H3 - 30 to 60 inches: loam

Properties and qualities

Slope: 5 to 10 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R049XY214CO - Gravelly Foothill
Hydric soil rating: No

Minor Components

Bresser

Percent of map unit: 6 percent
Hydric soil rating: No

Buick

Percent of map unit: 6 percent
Hydric soil rating: No

Truckton

Percent of map unit: 6 percent
Hydric soil rating: No

Aquic haplustolls

Percent of map unit: 2 percent
Landform: Swales
Hydric soil rating: Yes

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Building Site Development

Building site development interpretations are designed to be used as tools for evaluating soil suitability and identifying soil limitations for various construction purposes. As part of the interpretation process, the rating applies to each soil in its described condition and does not consider present land use. Example interpretations can include corrosion of concrete and steel, shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping.

Dwellings With Basements (SB2024-066 Antelope Crossing)

ENG - Engineering

Dwellings are single-family houses of three stories or less. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet.

The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification of the soil. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

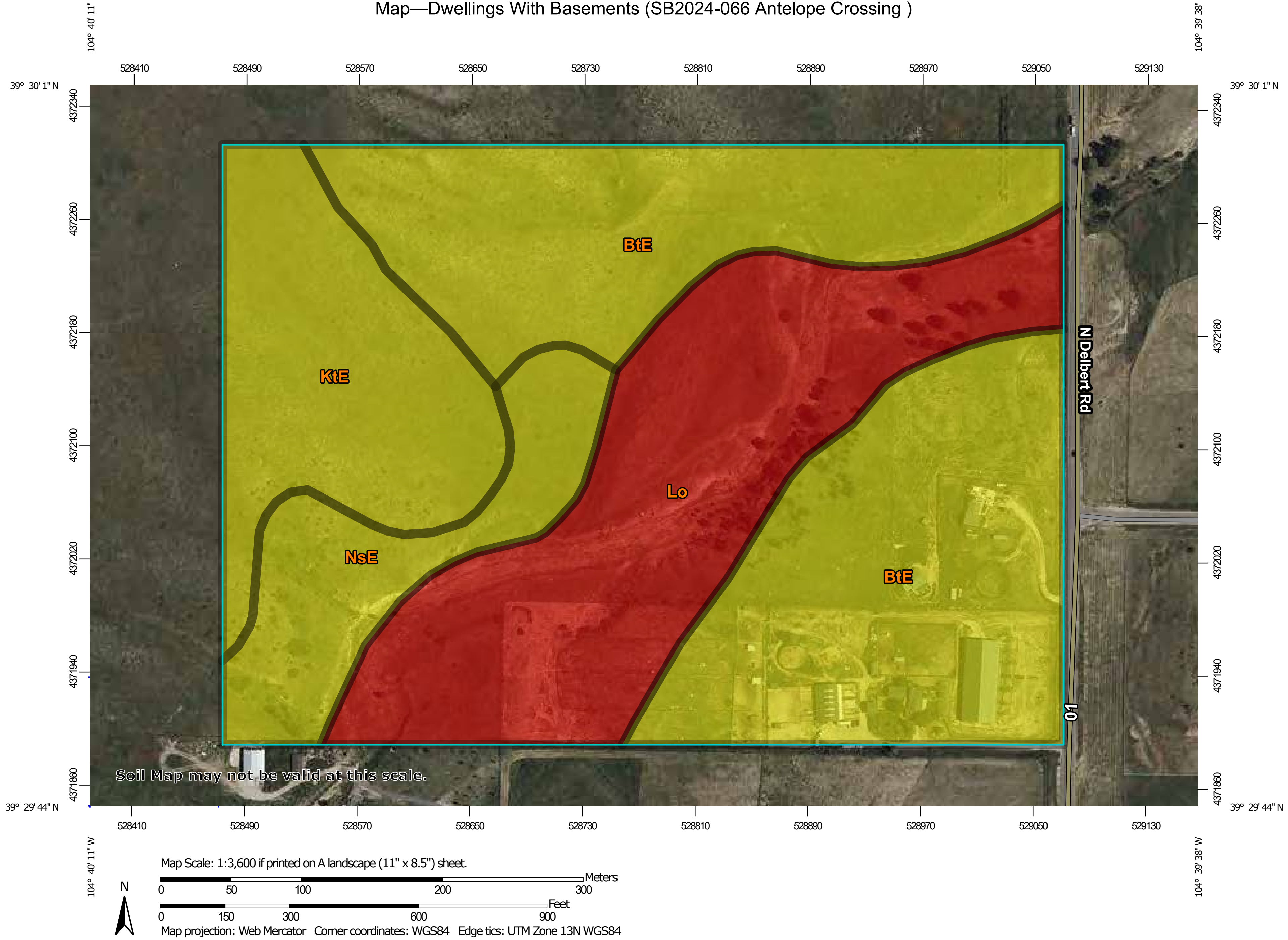
The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
Map—Dwellings With Basements (SB2024-066 Antelope Crossing)



MAP LEGEND

Area of Interest (AOI)

- ⬜ Area of Interest (AOI)

Soils

Soil Rating Polygons

- 🟥 Very limited
- 🟨 Somewhat limited
- 🟩 Not limited
- ⬜ Not rated or not available

Soil Rating Lines

- 〰 Very limited
- 〰 Somewhat limited
- 〰 Not limited
- 〰 Not rated or not available

Soil Rating Points

- 🟥 Very limited
- 🟨 Somewhat limited
- 🟩 Not limited
- ◼ 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 1:20,000.

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: Castle Rock Area, Colorado
Survey Area Data: Version 17, Aug 29, 2024

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

Date(s) aerial images were photographed: Mar 1, 2023—Sep 1, 2023

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.

Tables—Dwellings With Basements (SB2024-066 Antelope Crossing)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
BtE	Bresser-Truckton sandy loams, 5 to 25 percent slopes	Somewhat limited	Bresser (50%)	Slope (0.16)	28.4	45.2%
KtE	Kutch sandy loam, 5 to 20 percent slopes	Somewhat limited	Kutch (85%)	Slope (0.84)	10.1	16.1%
				Shrink-swell (0.50)		
				Depth to soft bedrock (0.29)		
Lo	Loamy alluvial land	Very limited	Loamy alluvial land (80%)	Flooding (1.00)	17.9	28.5%
				Depth to saturated zone (0.15)		
NsE	Newlin-Satanta complex, 5 to 20 percent slopes	Somewhat limited	Newlin (50%)	Slope (0.84)	6.4	10.3%
Totals for Area of Interest					**62.9**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Somewhat limited	45.0	71.5%
Very limited	17.9	28.5%
Totals for Area of Interest	**62.9**	**100.0%**

Rating Options—Dwellings With Basements (SB2024-066 Antelope Crossing)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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DOUGLAS COUNTY
HEALTH DEPARTMENT COLORADO

February 27th, 2025,

Carolyn Washee-Freeland
100 Third St.
Castle Rock, CO 80104

RE: SB2024-066

Dear Mrs. Washee-Freeland,

Thank you for the opportunity to review and comment on the Antelope Crossing project. Douglas County Health Department (DCHD) staff have reviewed the application for compliance with pertinent environmental and public health regulations. After reviewing the application, DCHD has the following comment(s).

Fugitive Dust – Permanent uses

Exposure to air pollution is associated with several health problems including asthma, lung cancer, and heart disease. The Colorado Department of Public Health and Environment Air Pollution Control Division (APCD) regulates air emissions, including fugitive dust. Control measures may be necessary to minimize the amount of fugitive emissions from site activities including haul roads, stockpiles, and erosion. The applicant shall contact the APCD, at (303) 692-3100 for more information. Additional information is available at https://cdphe.colorado.gov/air-emissions-from-business-and-industry.

On-Site Wastewater Treatment System (OWTS) – New or Expanded

Proper wastewater management promotes effective and responsible water use, protects potable water from contaminants, and provides appropriate collection, treatment, and disposal of waste, which protects public health and the environment. DCHD has no objection to the property being served by an OWTS provided that the system is permitted, inspected and operated in accordance with DCHD's current OWTS Regulation. Based on the applicant's description, a permit for the installation and final approval of the OWTS is required. In order to start the process, the applicant may contact DCHD or the local health department with authority over the site at the time of develoment. More information is available at https://www.douglas.co.us/health-department/environmental-health/.

DCHD noted the OWTS comment on the narrative

Stormwater Impacts

Development of the subject parcel will potentially result in an increase of stormwater and snowmelt runoff that may contribute significant pollutant loadings. These pollutants include bacteria, nutrients, metals, and oxygen consuming contaminants.

Domestic Well

Drinking water contaminated with pathogens can cause a variety of illnesses in humans. It is important to protect source water from contamination, and to treat drinking water to eliminate pathogens before it is provided for human consumption. Individual well owners have primary responsibility for the safety of the water drawn from their own wells. Well owners with questions about wells or well water can call the Wellcare® Hotline operated by the Water Systems Council, a national organization focused on well systems not regulated under the Safe Drinking Water Act., at 888-395-1033 or online at www.wellcarehotline.org.

The applicant may want to consider having the well water analyzed for a number of contaminants as a baseline of the water quality. A baseline water quality analysis is valuable for future reference in the case of possible contamination. Certain parameters such as coliform bacteria and nitrate, pH and Total Dissolved Solids (TDS) are recommended to be analyzed annually as these can indicate possible breaches in the well. The Colorado Department of Public Health and Environment (CDPHE), Laboratory Services Division can assist you with water analyses. The CDPHE offers individual water tests as well as testing packages to choose from depending on your needs. The CDPHE laboratory web site is located at: https://cdphe.colorado.gov/laboratory-services/water-testing.

Sincerely,

Caden Thompson
Environmental Health Specialist I
Douglas County Health Department

SOUTH METRO FIRE RESCUE
FIRE MARSHAL’S OFFICE

Carolyn Washee-Freeland, AICP, Senior Planner
Douglas County Department of Community Development, Planning Services
100 Third St
Castle Rock Co 80104
303.660.7460
303.660.9550 Fax

Project Name:	Antelope Crossing – Minor Development Plat
Project File #:	**SB2024-066**
S Metro Review #	REFRP25-00039
Review date:	March 5, 2025
Plan reviewer:	Aaron Miller 720.989.2246 aaron.miller@southmetro.org
Project Summary:	The applicant requests approval of a Minor Development Plat (MDP) to subdivide a 42.61-acre parcel into 4 Single Family Residential Lots. The property is located immediately west of the Delbert Road and Meadow Station Road intersection. SPN: 2235-284-00-001. There is an active Rezoning application on file for the subject property: ZR2024-015, Antelope Crossing Rezoning to rezone the site from Agricultural One (A-1) to Large Rural Residential (LRR). The rezoning has not been approved yet.
Code Reference:	Douglas County Fire Code, 2018 International Fire Code, and 2021 International Building Code with amendments as adopted by Douglas County.

South Metro Fire Rescue (SMFR) has reviewed the provided referral packet documents in addition to Construction Plans dated February 6, 2025 provided by Douglas County Engineering. SMFR has no objection to the proposed Minor Development Plat.

Per the water supply agreement to utilize the existing Rattlesnake Fire Cistern at Meadow Station to meet the Douglas County Standard for Water Supplies for Rural Firefighting; a SMFR Knox Box is to be installed at the cistern pump controls containing a key for pump activation. This shall be provided and installed by the applicant. Knox Box shall be in place and approved by SMFR and Rattlesnake Fire prior to release of any building construction permits.

Xcel Energy℠
PUBLIC SERVICE COMPANY

Right of Way & Permits

1123 West 3rd Avenue
Denver, Colorado 80223
Telephone: 303.285.6612
violeta.ciocanu@xcelenergy.com

March 17, 2025

Douglas County Planning Services
100 Third Street
Castle Rock, CO 80104

Attn: Carolyn Washee-Freeland

Re: Antelope Crossing Minor Development Plat, Case # SB2024-066

Public Service Company of Colorado's (PSCo) Right of Way & Permits Referral Desk has reviewed the request for the **Antelope Crossing Minor Development Plat**.

To ensure that adequate utility easements are available within this development, PSCo requests that the following language or plat note be placed on the preliminary and final plats for the subdivision:

> *The utility easements are dedicated to the County of Douglas for the benefit of the applicable utility providers for the installation, maintenance, and replacement of electric, gas, television, cable, and telecommunications facilities (Dry Utilities). Utility easements shall also be granted within any access easements and private streets in the subdivision. Permanent structures, improvements, objects, buildings, wells, water meters and other objects that may interfere with the utility facilities or use thereof (Interfering Objects) shall not be permitted within said utility easements and the utility providers, as grantees, may remove any Interfering Objects at no cost to such grantees, including, without limitation, vegetation. Public Service Company of Colorado (PSCo) and its successors reserve the right to require additional easements and to require the property owner to grant PSCo an easement on its standard form.*

The property owner/developer/contractor must complete the application process for any new natural gas service via xcelenergy.com/InstallAndConnect. It is then the responsibility of the developer to contact the Designer assigned to the project for approval of design details.

Additional easements may need to be acquired by separate document for new facilities.

As a safety precaution, PSCo would like to remind the developer to contact Colorado 811 for utility locates prior to construction.

Violeta Ciocanu (Chokanu)
Right of Way and Permits
Public Service Company of Colorado dba Xcel Energy
Office: 303-285-6612 – Email: violeta.ciocanu@xcelenergy.com

Carolyn Freeland

From: annb cwc64.com <annb@cwc64.com>
Sent: Thursday, February 27, 2025 1:17 PM
To: Carolyn Freeland
Cc: Pam Choy (pc2914@att.com); duanew cwc64.com; jt cwc64.com
Subject: N Delbert Rd Parker, Colorado Douglas County eReferral #SB2024-066
Attachments: N Delbert Rd 2 Parker, Colorado.jpg

Hi Carolyn,

This is in response to your eReferral with a utility map showing any buried AT&T Long Line Fiber Optics near N Delbert Rd Parker, Colorado. The Earth map shows the project area in red. Based on the address and/or map you provided, there should be NO conflicts with the AT&T Long Lines, as we do not have facilities in that area.

Please feel free to contact us with any questions or concerns.

Ann Barnowski
Clearwater Consulting Group Inc
120 9th Avenue South
Suite 140
Nampa, ID 83651
Annb@cwc64.com

The attached google earth maps are intended to show approximate locations of the buried AT&T long line fiber optic cable. The maps are provided for informational purposes only. In no way should the maps be used for anything other than general guidelines as to where the fiber is or is not and any other use of these maps is strictly prohibited.

-----Original Message-----
From: cfreeland@douglas.co.us <cfreeland@douglas.co.us>
Sent: Thursday, February 27, 2025 11:29 AM
To: annb cwc64.com <annb@cwc64.com>
Subject: Douglas County eReferral (SB2024-066) Is Ready For Review

There is an eReferral for your review. Please use the following link to log on to your account:
https://apps.douglas.co.us/planning/projects/Login.aspx

SB2024-066, Antelope Crossing Minor Development Plat

The applicant requests approval of a Minor Development Plat (MDP) to subdivide a 42.61-acre parcel into 4 Single Family Residential Lots. The property is located immediately west of the Delbert Road and Meadow Station Road intersection. SPN: 2235-284-00-001. There is an active Rezoning application on file for the subject property: ZR2024-015, Antelope Crossing Rezoning to rezone the site from Agricultural One (A-1) to Large Rural Residential (LRR). The rezoning has not been approved yet.

This referral will close on March 27, 2025.

If you have any questions, please contact me.


PROJECT AREA
Delbert Rd
Delbert Rd
Windy Hills
Google Earth
Image Landsat / Copernicus
N

Referral Agency Response Report

Project Name: Antelope Crossing
Project File #: SB2024-066
Date Sent: 02/27/2025 **Date Due:** 03/27/2025

Agency	Date Received	Agency Response	Response Resolution
Addressing Analyst	03/06/2025	No Comment	No action necessary
Assessor	03/13/2025	Received: Title block on page 2 needs the same revisions as the title block on page 1. Please round lot acreages to the third decimal.	Comments provided to applicant Area in title block has been rounded to 3rd decimal place.
AT&T Long Distance - ROW	02/27/2025	Received: This is in response to your eReferral with a utility map showing any buried AT&T Long Line Fiber Optics near N Delbert Rd Parker, Colorado. The Earth map shows the project area in red. Based on the address and/or map you provided, there should be NO conflicts with the AT&T Long Lines, as we do not have facilities in that area. Ann Barnowski, Clearwater Consulting Group Inc 120 9th Avenue South, Suite 140, Nampa, ID 83651 Annb@cwc64.com	No action necessary
Black Hills Energy		No Response Received	No action necessary
Building Services	03/03/2025	No Comment	No action necessary

Project Name: Antelope Crossing
Project File #: SB2024-066
Date Sent: 02/27/2025 **Date Due:** 03/27/2025

Agency	Date Received	Agency Response	Response Resolution
CenturyLink	02/28/2025	Received: We have received your request for an encroachment and have set up a Lumen project accordingly. Your project number is P865078 and it should be referenced in all emails sent in for review. Your project owner is Tom Hoopes and they can be reached by email at Tom.Hoopes@lumen.com with any questions that you may have regarding this project. Cheyanne Hobbs, Project Coordinator, Faulk & Foster, 214 Expo Circle, Suite 7, West Monroe, LA 71291 Cheyanne.Hobbs@lumen.com	Comments forwarded to applicant. No action necessary. Noted.

Project Name: Antelope Crossing
Project File #: SB2024-066
Date Sent: 02/27/2025 **Date Due:** 03/27/2025

Agency	Date Received	Agency Response	Response Resolution
Cherry Creek Basin Water Quality Authority	02/27/2025	Received: The Cherry Creek Basin Water Quality Authority (Authority) acknowledges notification from Douglas County that the proposed development plans for SB2024-066, Antelope Crossing Minor Development Plat have been or will be reviewed by Douglas County for compliance with the applicable Regulation 72 construction and post-construction requirements. Based on the Authority's current policy, the Authority will no longer routinely conduct a technical review and instead the Authority will defer to Douglas County's review and ultimate determination that the proposed development plans comply with Regulation 72. If a technical review of the proposed development plan is needed, please contact LandUseReferral@ccbwqa.org . The review may include consultation with the Authority's Technical Manager to address specific questions or to conduct a more detailed Land Use Review, if warranted.	Comments forwarded to applicant. Noted.
Colorado Division of Water Resources	03/03/2025	Received: DWR previously reviewed this development under ZR2024-015. Since the water supply information is the same, our attached comments still apply. Wenli Dickinson, P.E., Water Resource Engineer wenli.dickinson@state.co.us | (303) 866-3581 x8206, 1313 Sherman St, Suite 821, Denver, CO 80203 dwr.colorado.gov	Comments forwarded to the applicant. DWR water comments have been addressed in previous responses.

Agency	Date Received	Agency Response	Response Resolution
Colorado Geological Survey	03/27/2025	Received: A tributary of Coal Creek traverses the site, and steep-sided (>50%), incised drainages or eroded stream banks are present on all four proposed lots. The site is within FEMA Zone X, defined as having a 0.2% annual chance of flooding (equivalent to a 500-year flood hazard), or where the 1% annual chance, or 100-year flood, would have an average depth of less than one foot. Although flooding would likely be on the scale of nuisance rather than life-threatening or causing severe damage, CGS recommends against new construction in areas exposed to a flood hazard. The Floodplain Letter, Antelope Crossing (2N Civil Project No. 24001, August 19, 2024) states, "It should be noted that future buildings will require a minimum finished floor elevation to be 2 foot above the floodplain elevation throughout the site." I see no plat note regarding this restriction, so how will this restriction be communicated to lot purchasers and enforced? The Colorado Geological Survey strongly recommends that the 100-year floodplain limits as shown on the Supplemental Exhibit (2N Civil, February 6, 2025) plus an erosion setback be designated on the plat as non-buildable. Jill Carlson, Colorado Geological Survey, carlson@mines.edu	Comments forwarded to applicant. An erosion setback designated as non-buildable has been added to the Supplemental Exhibit and Final Plat. A description of the methodology used to determine the setback was reviewed with Douglas County Engineering on 6-3-25 and has been provided in the Final Drainage Report.

Project Name: Antelope Crossing
Project File #: SB2024-066
Date Sent: 02/27/2025 **Date Due:** 03/27/2025

Agency	Date Received	Agency Response	Response Resolution
Colorado Parks and Wildlife (East DC - Dist 549)	04/03/2025	Received: Thank you for including Colorado Parks and Wildlife in the referral request process for the development proposal listed above. I have reviewed the documents and referral request, and I wanted to inform you that I have no concerns with this development as it pertains to any wildlife concerns. The developer looks to have already conducted a site assessment, and the riparian corridor bordering the property is slated for protection with no or minimal tree removal. If you have any further questions or need more information, do not hesitate to let me or Katie know. Thank you for your time. Justin Olson District Wildlife Manager – Area 5 303-29-1731 justin,olson@state.co.us cpw.state.co.us	Comments forwarded to the applicant. No action necessary Colorado Parks and Wildlife has no concerns with this development.
Comcast		No Response Received	No action necessary
CORE Electric Cooperative	03/26/2025	Received: CORE will require changes to easement widths as shown in the attached markup.	Comments forwarded to the applicant. CORE's redline requested have been addressed.

Project Name: Antelope Crossing
Project File #: SB2024-066
Date Sent: 02/27/2025 **Date Due:** 03/27/2025

Agency	Date Received	Agency Response	Response Resolution
Douglas County Conservation District	03/26/2025	Summary: the DCCD provided comments regarding soils types, grading recommendations, recommendation for the applicant to complete a noxious weed control plan, and other recommendations related to vehicle tracking control stations, construction best management practices, and precautions regarding development located in or near drainages or development that disturbs wetlands.	Comments forwarded to the applicant. A qualified and licensed geotechnical engineer will be hired at the time of construction to monitor and direct earthwork related to the road and advise on any soil mitigation requirements. The construction plans include an erosion control plan that calls for erosion control measures like vehicle tracking and other measures. A weed
Douglas County Health Department	02/28/2025	Summary: DCHD provided comments regarding fugitive dust control measures, Stormwater impacts, and domestic well water quality analysis. DCHD has no objection to the property being served by an OWTS provided that the system is permitted, inspected and operated in accordance with DCHD's current OWTS Regulation. Based on the applicant's description, a permit for the installation and final approval of the OWTS is required.	Comments forwarded to the applicant. All OWTS's will be permitted, inspected and operated in accordance with DCHD OWTS regulations.

Agency	Date Received	Agency Response	Response Resolution
Douglas County Historic Preservation	03/20/2025	Summary: The Curator has reviewed the completed Class III survey on the project site. New sites were discovered but none are eligible to be listed on the national register. The Class III survey satisfies the Curators request. Should buried artifacts and features be discovered in future phases, we recommend completion of the appropriate Colorado Office of Archaeology and Historic Preservation (OAHP) Data Management and Historic and/or Prehistoric Component forms, following OAHP guidelines, with accompanying sketch maps and photographs. Completed forms are submitted to OAHP to ensure that Douglas County's historic or prehistoric data is included in the Colorado OAHP state-wide database of cultural resources.	Comments forwarded to applicant. Any artifacts and features that are discovered in the future will follow OAHP guidelines with accompanying maps and photographs.
Douglas County Parks and Trails	03/06/2025	Received: Per article 10 of the Douglas County Subdivision Resolution " the minimum cash-in-lieu fee for a minor development final plot or replats which create ten or fewer residential lots shall be $250 for each new residential lot."	Comments forwarded to the applicant. Understood, cash-in-lieu will be paid for each new residential lot.
Douglas County School District RE 1		No Response Received	Comments may be forthcoming
DRCOG		No Response Received	No action necessary
Elbert County Community & Development Services		No Response Received	No action necessary

Agency	Date Received	Agency Response	Response Resolution
Engineering Services	03/03/2025	Received: Please see engineering redlines to the MDP exhibit and construction drawings.	Comments forwarded to applicant. Please contact engineering for the complete set of redlined CDs. Engineering comment responses provided on separate set of plans
Mile High Flood District		No Response Received	No action necessary
Office of Emergency Management	03/04/2025	Received: OEM has no issues with this project	No action necessary
Open Space and Natural Resources	03/05/2025	No Comment	No action necessary
Parker View Estates HOA		No Response Received	No action necessary
Rural Water Authority of Douglas County		No Response Received	No action necessary
Sheriff's Office		No Response Received	No action necessary
Sheriff's Office E911		No Response Received	No action necessary

Agency	Date Received	Agency Response	Response Resolution
South Metro Fire Rescue	03/06/2025	Received: South Metro Fire Rescue (SMFR) has reviewed the provided referral packet documents in addition to Construction Plans dated February 6, 2025 provided by Douglas County Engineering. SMFR has no objection to the proposed Minor Development Plat. Per the water supply agreement to utilize the existing Rattlesnake Fire Cistern at Meadow Station to meet the Douglas County Standard for Water Supplies for Rural Firefighting; a SMFR Knox Box is to be installed at the cistern pump controls containing a key for pump activation. This shall be provided and installed by the applicant. Knox Box shall be in place and approved by SMFR and Rattlesnake Fire prior to release of any building construction permits.	Comments forwarded to the applicant. A SMFR Knox Box will be installed at the cistern pump controls and will be approved by both SMFR and Rattlsnake Fire prior to release of any building construction permits.
Spirit Ridge HOA		No Response Received	No action necessary
Town of Parker Development Review	03/26/2025	No Comment	No action necessary
Town of Parker Public Works	03/18/2025	No Comment	No action necessary
Wildfire Mitigation	03/24/2025	Received: Wildfire mitigation has reviewed the proposal. Defensible space requirements will be implemented at the time of building permit. Water storage is required, wildfire mitigation & Building have seen and accept the letter from SMFR indicating use of the Rattlesnake cistern to meet the requirements of this standard.	No action necessary

Xcel Energy-Right of Way & Permits	03/17/2025	Received: To ensure that adequate utility easements are available within this development, PSCo requests that the following language or plat note be placed on the preliminary and final plats for the subdivision: The utility easements are dedicated to the County of Douglas for the benefit of the applicable utility providers for the installation, maintenance, and replacement of electric, gas, television, cable, and telecommunications facilities (Dry Utilities). Utility easements shall also be granted within any access easements and private streets in the subdivision. Permanent structures, improvements, objects, buildings, wells, water meters and other objects that may interfere with the utility facilities or use thereof (Interfering Objects) shall not be permitted within said utility easements and the utility providers, as grantees, may remove any Interfering Objects at no cost to such grantees, including, without limitation, vegetation. Public Service Company of Colorado (PSCo) and its successors reserve the right to require additional easements and to require the property owner to grant PSCo an easement on its standard form. The property owner/developer/ contractor must complete the application process for any new natural gas service via xcelenergy.com/InstallAndConnect. It is then the responsibility of the developer to contact the Designer assigned to the project for approval of design details.	Comments forwarded to applicant. The requested note has been added to the plat.

Agency	Date Received	Agency Response	Response Resolution
		Additional easements may need to be acquired by separate document for new facilities. As a safety precaution, PSCo would like to remind the developer to contact Colorado 811 for utility locates prior to construction. Violeta Ciocanu (Chokanu), Right of Way and Permits, Public Service Company of Colorado dba Xcel Energy Office: 303-285-6612 – Email: violeta.ciocanu@xcelenergy.com	Noted.

PHASE III DRAINAGE REPORT

ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

Douglas County No.
ZR2024-015, DV2024-228
SB2024-066

2N Civil Project No. 24001
February 6, 2025
Revised April 15, 2025
Revised June 6, 2025

Owner:
DCLA-3 LLC
14205 E Davies Avenue
Centennial, CO 80112

Owner's Representative:
Tahoe Consulting LLC
9457 S. University Blvd, Unit 101
Highlands Ranch, CO 80126
Contact: CJ Kirst
Ph. 303.330.8947

Engineer:
2N Civil, LLC
6 Inverness Court East, Suite 125
Englewood, Colorado 80112
Contact: Todd West, PE
Ph. 303.925.0544

TABLE OF CONTENTS

APPENDICIES

i. CERTIFICATIONS

Engineer's Certification

This report and plan for the Phase III drainage design of **Antelope Crossing Filing No. 1** was prepared by me (or under my direct supervision) in accordance with the provisions of Douglas County Drainage Design and Technical Criteria for the owners thereof. I understand that Douglas County does not and will not assume liability for drainage facilities designed by others.

SIGNATURE: _________________________________
Todd West, P.E.
Registered Professional Engineer
State of Colorado 37643
(Affix Seal)

DCLA-3, LLC hereby certifies that the drainage facilities for **Antelope Crossing Filing No. 1** shall be constructed according to the design presented in this report. I understand that Douglas County does not and will not assume liability for the drainage facilities designed and/or certified by my engineer and that Douglas County reviews drainage plans pursuant to Colorado Revised Statutes, Title 30, Article 28; but cannot, on behalf of **Antelope Crossing Filing No. 1**, guarantee that final drainage design review will absolve **DCLA-3, LLC** and/or their successors and/or assigns of future liability for improper design. I further understand that approval of the final plat does not imply approval of my engineer's drainage design.

DCLA-3 LLC
Name of Owner

____
Authorized Signature
Francis Gay

II. GENERAL LOCATION AND DESCRIPTION

A. Site Location

1. Vicinity Map (refer to Appendix)

2. Township, Range, Section, and ¼ Section

The site is in the east half of Section 28, Township 6 South, Range 65 West of the 6th Principal Meridian, County of Douglas, State of Colorado.

3. Streets Adjacent to the Proposed Development

The site lies along Delbert Road approximately 1 ½ miles south of its intersection with East Parker Road.

4. Names of Surrounding Developments

The site is surrounded by existing large lot development and vacant land on all sides. Meadow Station Subdivision in Elbert County is located to the east of the site.

B. Description of Property

1. Area in Acres
The parcel is comprised of 42.61 acres.

2. Ground Cover, vegetation, site topography and slopes

The site is currently undeveloped land with natural grasses. The existing terrain slopes towards an existing drainageway that crosses the site at grades ranging from two to twelve percent. This drainageway forms the upper reach of Coal Creek Left Tributary. Refer to the Existing Basin Map included in the Appendix.

3. NRCS Soils Classification Map and Discussion

Onsite soils include Loamy Alluvial (Lo), classified as a Type C soil, across 36.3% of the site, Kutch (KtE and DuD), a type D soil, covering 34.5% of the site, and Newlin-Santana (NsE), a Type B soil, across the remaining 29.2% of the site. Based on this distribution, the soil classification has been assumed as Type C for the site in the analysis of this report. According to the NRCS, Type C soils have a slow infiltration rate when thoroughly wet. A detailed soil type map has been included in the Appendix.

4. Major and Minor Drainageways

The site is tributary to Coal Creek Left Tributary. The tributary flows west to east crossing Delbert Road and joins the main channel of Coal Creek approximately two miles downstream of the site.

5. Floodplains delineated by FHAD studies or on FEMA Firm Maps

Panel number 08035C0212F with an effective date of September 30, 2005, indicates that the drainageway that traverses the site is unregulated by FEMA. Coal Creek Left Tributary is mapped by FEMA downstream of the site as shown on Panel No. 08039C0020C with an effective date of March 17, 2011. These panels are included in the Appendix.

A Flood Hazard Area Delineation (FHAD) was completed for Coal Creek (E. Yale Avenue to E. County Line Road) by Matrix Design Group in August 2014. The proposed development is located within the basin analyzed in the study. Peak flow rates for the reaches near the project area were reviewed in preparation of this Phase 1 study and are generally consistent with the flows determined by the CUHP analysis provided in this report. Excerpts from the FHAD have been included in Appendix C.

A Floodplain Letter was prepared for this project to establish base flood elevations through the proposed development. The FHAD reports slightly higher flows than the CUHP analysis, and thus were used in the floodplain analysis to be conservative.

6. Existing irrigation canals or ditches

There are no known irrigation facilities or ditches on site.

7. Significant geologic features

Based on the United States Geological Survey (USGS) “Geologic Map of Colorado” by Ogden Tweto, 1979, the majority of the site is mapped as being underlain by the Upper Part of Dawson Arkose (Tdu) deposits that are described as including “arkosic sandstone, conglomerate, and shale.” No significant geological features exist on the site.

8. Proposed land use

The site will be developed into a proposed four lot subdivision supporting approximately 10-acre residential lots. A 24 foot wide gravel roadway with a cul-de-sac will serve lot 1 with access from Delbert Road. West of the cul-de-sac, a 24 foot wide gravel driveway will be built to provide access to Lots 2 through 4. The disturbed area for construction of the gravel roadway is approximately 5.6 acres.

III. DRAINAGE BASINS AND SUB-BASINS

A. Major Basin Description

1. On-site and off-site major drainage basin characteristics and flow patterns and paths

A single major basin, EX-1, has been defined for the drainageway that traverses the site. This basin is the upper reach of Coal Creek Left Tributary and extends south approximately two miles to Hilltop Road and encompasses 1,571 acres. The main channel of the basin meanders across large single family homesites and undeveloped land, falling at approximately 2%. Stands of evergreen trees are located sporadically within the depression of the main channel.

The drainage analysis was performed using the CUHP due to the size of basins EX-1 and PR-1. This method is consistent with Mile High Flood District criteria. The NOAA Atlas 14 was utilized to obtain the Point Precipitation Frequency Estimates for 1-,2-,3-, and 6-hour durations to determine the rainfall in this area.

Using the CUHP_201-Release Spreadsheet, the peak runoff was calculated for the 2-year (minor) and 100-year (major) storm events for existing and developed conditions. Calculation Results can be found in the basin descriptions above and in Appendix B.

2. Existing and proposed land uses within the basins if known

The land use within the existing basin is composed of large lot single family homesites and agricultural land. The proposed land use on the subject property is for four single family homes. A public road will provide access through the site.

3. Reference all drainageway planning or floodplain delineation studies that affect the major drainageways, such as FHAD Studies and Master Planning Studies

No studies have been performed for this drainageway upstream of the site. A CLOMR for the Coal Creek Left Tributary was completed in 2019 by this office in association with the County Road 178 road improvements within Elbert County. The study area was located downstream of the site and thus has no impact on this site.

4. Discussion of the impacts of the off-site flow patterns and paths, under fully developed conditions

The site will be developed with a gravel access road to provide access to four single family homesites. The additional impervious surfaces resulting from the development is minimal relative to the large lot size, and thus under developed conditions, no impacts to off-site flow patterns are anticipated.

B. Minor Drainage Basins

1. On-site and off-site minor drainage basin characteristics and flow patterns and paths under historic and developed conditions

Existing Basins
Basin EX-1 is 1,571 acres and has a calculated impervious value of 7.94%. The basin is comprised of rural single family home development, agricultural use, and undeveloped land. Based on the area of this basin, the Colorado Urban Hydrograph Procedure (CUHP) was used to calculate existing and proposed flow values provided in the Appendix. The runoff generated for this basin was calculated to be 20.70 cfs during the 2-year minor storm, and 992.14 cfs during the 100-year major storm. Runoff leaves the site at Design Point 1, where a pair of existing 72" CMP culverts convey drainage past Delbert Road.

Proposed Basins
Basin PR-1 is 1,503 acres, closely following the basin delineation of EX-1 and has a calculated impervious value of 8.53%. Based on the area of this basin, the Colorado Urban Hydrograph Procedure (CUHP) was used to calculate existing and proposed flow values provided in the Appendix. The runoff generated for Basin PR-1 was calculated to be 23.13 cfs during the 2-year minor storm, and 1000.72 cfs during the 100-year major storm. The proposed road embankment creates two additional basins, PR-2 and PR-3, described below.

Basin PR-2 is located north of the proposed road. Runoff will follow historic drainage patterns until it is captured within roadside swale of the proposed road and conveyed west to a proposed culvert, designated Culvert A, at Design Point 2. This basin is comprised of Agricultural and Residential zoned property. A composite value of 15.48% was used for this basin. This value assumes that the proposed road as paved to account for future improvements, and the Agricultural lands transitioning to a Residential (2.5 acres or larger) to consider future land uses in this basin. According to the results from the Rational Method calculations, the runoff generated for this basin at Design Point 2 is 16.43 cfs during the 5-year minor storm, and 101.46 cfs during the 100-year major storm.

Basin PR-3 is also located north of the proposed road and is bound by Delbert Road on the east. Runoff will follow historic drainage patterns until it is captured within roadside swale of the proposed road and Delbert Road and conveyed south and west to a proposed culvert, designated Culvert A, at Design Point 3. This basin is comprised of Agricultural zoned property. A composite value of 14.98% was used for this basin. This value assumes that the proposed road as paved to account for future improvements, and the Agricultural lands transitioning to a Residential (2.5

acres or larger) to consider future land uses in this basin. According to the results from the Rational Method calculations, the runoff generated for this basin at Design Point 3 is 6.99 cfs during the 5-year minor storm, and 44.13 cfs during the 100-year major storm.

IV. EXISTING STORMWATER CONVEYANCE FACILITIES

A. Existing Stormwater Conveyance Facilities

1. Existing conveyance facilities that will be incorporated into the design

The existing natural channel conveys flow through the site to its outfall point at Delbert Road. Existing 72" CMP culverts convey stormwater under Delbert Road.

V. PROPOSED STORMWATER CONVEYANCE FACILITIES

A. Stormwater Conveyance Facilities

1. Discuss general conveyance concepts and proposed drainage paths and patterns

The general conveyance concept for the proposed drainage plan is to maintain historic drainage patterns and discharge rates from the site following development of the four single family lots.

2. Discuss storm sewer design

The proposed storm sewer design for the project will be limited to culverts conveying flow under the proposed roadway. Based on the minimal increase in impervious area and flow over the large 10 acre+ lots, and the implementation of proposed grass lined swales and ditches to provide a measure of water quality treatment, a detention facility is not anticipated to be required for this development.

Culvert A, an 18" reinforced concrete pipe, will convey flow from Basin PR-3. The culvert has been sized to convey the 5-year storm and outfall to the existing drainageway. Flow exceeding the capacity of the pipe will be conveyed in the street before spilling to the existing drainageway.

Culvert B, twin 36" reinforced concrete pipes, will convey flow from Basin PR-2. The culverts have been sized to convey the 5 and 100 year storms to the existing drainageway.

3. Discuss storm sewer outfall locations and design, including energy dissipation

The proposed culverts will outfall to existing drainageways or swales. Scour resulting from turbulent, rapidly decelerating flow at the end of the culvert will be mitigated by the construction of a low tailwater riprap basin designed per MFHD standards. The riprap will be soil riprap or void filled riprap to help establish vegetation to further protect against erosion. Concrete cutoff walls will also be installed at the end of the culverts to further protect against erosion.

4. Discuss open channel and swale designs

Runoff generated from the new impervious area from the shared entrance road will be mitigated by grass lined roadside swales. Providing long, shallow swales that convey flow to a large overland flow condition will promote water quality treatment of the water before it leaves the site.

The capacity of the roadside ditch has also been analyzed in this report. The ditch has a 1-foot flat bottom and 4:1 side slopes, and a minimum depth of 2 feet per Douglas County Detail SP.48. The calculations provided in the Appendix indicate that the 5-year minor storm is fully contained within the roadside ditch with greater than 1 foot of freeboard.

5. Discuss maintenance aspects of the design

Maintenance within the individual lots will be the responsibility of the property owner and will include weed removal, mowing of grasses, debris and litter removal, growing medium replacement, and sediment removal and/or erosion repair. The natural drainageway conveys flow from a large upstream basin with several developed properties. The proposed developed consists of 4 single family homes on 10 acre lots, thus the impact on the channel from this development can be considered negligible. Drainage easements will be granted to the County for access to the drainageway for inspection and maintenance purposes.

VI. WATER QUALITY ENHANCEMENT BEST MANAGEMENT PRACTICES

A. Non-structural Best Management Practices

1. Discussion of non-structural Best Management Practices that will be part of the stormwater management plan

The individual homeowner will be encouraged to implement steps to help prevent erosion and water pollution. Limiting the use of impervious surfaces for walks/patios allows stormwater to soak into the ground instead of running downstream and causing erosion. Redirecting downspouts away from hard surfaces and onto grass or shallow depressed planting beds can help reduce the amount of runoff. Planting native vegetation and minimizing the use of fertilizers and pesticides will help reduce the impact of stormwater on the environment.

B. Structural Best Management Practices

1. Discuss Structural Best Management Practices that will be part of the stormwater management design

The flows generated from the impervious area added by the gravel road will be mitigated by grass lined roadside swales. Portions of the road swales with steeper slopes will be protected with riprap check dams and/or other features that will remain in place until vegetation is fully established. The downstream portions of the roadside swales are sloped at 1%. A sediment trap is proposed at the end of the swale until full vegetation can be established. Having long shallow swales that convey flow to a large overland flow condition will promote water quality treatment before leaving the site.

2. Discuss the operation, maintenance, and access aspects of the design

This drainage concept presented in this report has been prepared in accordance with Douglas County's Storm Drainage Design and Technical Criteria Manual and Criterial Manual referenced herein. The drainage design provides for collection and conveyance of locally generated storm water runoff.

Best Management Practices, detailed in the TESC Plans and Report associated with this project, will be implemented during construction to manage stormwater runoff and remain in effect until final stabilization is attained.

VII. FLOODPLAIN MODIFICATIONS

A. Major Drainageway – Undesignated Floodplain

1. Discuss potential modifications of existing major drainageway floodplains

The development of the four single family lots will introduce new impervious areas within the basin, contributing to a minor increase in flow. The extent of the floodplain limits have been analyzed in the Floodplain Letter for Antelope Crossing submitted as a part of this project.

B. Fluvial Hazard Buffer (FHB)

1. FHB Analysis

An analysis was performed to delineate a buffer adjacent to the upper reach of Coal Creek Tributary that traverses the site. The intent of this buffer is to prohibit building construction in areas beyond the Active Stream Corridor (ASC) that may be susceptible to erosion. The Colorado Water Conservation Board published the *Colorado Fluvial Hazard Zone Delineation Protocol V1.0 and Appendices*, dated

August 2020 (The Protocol) as guidance for mapping the Fluvial Hazard Zone. Section 5 of this Protocol, together with Appendix G: Fluvial Hazard Buffer (FHB) Analysis, was used to define the buffer zones for this project.

Table 5-1 *Recommendations for Fluvial Hazard Buffer Widths* of the Protocol identifies three types of FHB guidelines based on the context of the stream. Based on the criteria, the Type I guideline was selected for this project and is considered the standard approach for most streams in the state. The FHB Factor is based on the level of Valley Confinement, determined from the ratio of Channel Width (C/w) to Valley Width (V/w).

Using the reach-averaged values for C_w and V_w, the ratio was calculated as 13.17, categorized as an Unconfined Channel. Refer to Table FHB.1 below for a summary of C_w and V_w values for the reach analyzed for this project.

	C_w	V_w
STA. 18+00	12	480
STA. 19+00	26	443
STA. 21+00	34	374
STA. 22+00	29	346
STA. 24+00	38	579
STA. 26+00	51	449
STA. 30+00	33	504
STA. 31+00	75	395
STA. 33+00	63	284
STA. 34+00	48	399
STA. 35+00	39	415
STA. 36+00	41	575
STA. 37+00	25	524
STA. 38+00	15	632
STA. 39+00	21	625
STA. 41+00	30	617
Reach Averaged Value:	36	478
	C_w / V_w =	13.17

Table FHB.1 - Reach Averaged C_w / V_w Ratio

The Fluvial Hazard Buffer for an Unconfined Channel is defined as one stream width beyond the margin of the Active Stream Corridor. The Active Stream Corridor (ASC) was determined at each section using both existing site topography and historic aerial imagery from Google Earth. The stream width at each section, applied to the outside of the ASC, defined the limit of the FHB at sections along the reach such as the outer stream bank that are susceptible to erosion.

Appendix F includes channel cross sections and mapping identifying the FHB and no-build zones. These no-build zones will be included on the Final Plat for this project to prevent construction in these areas.

VIII. POTENTIAL PERMITTING REQUIREMENTS

A. Identify other potential local, State and Federal permitting requirements

1. Construction sites that disturb one acre or greater are required to obtain a Construction Stormwater Discharge Permit issued by the Colorado Department of Public Health and Environment (CDPHE). Additional permit requirements such as a Grading Permit will be required by Douglas County.

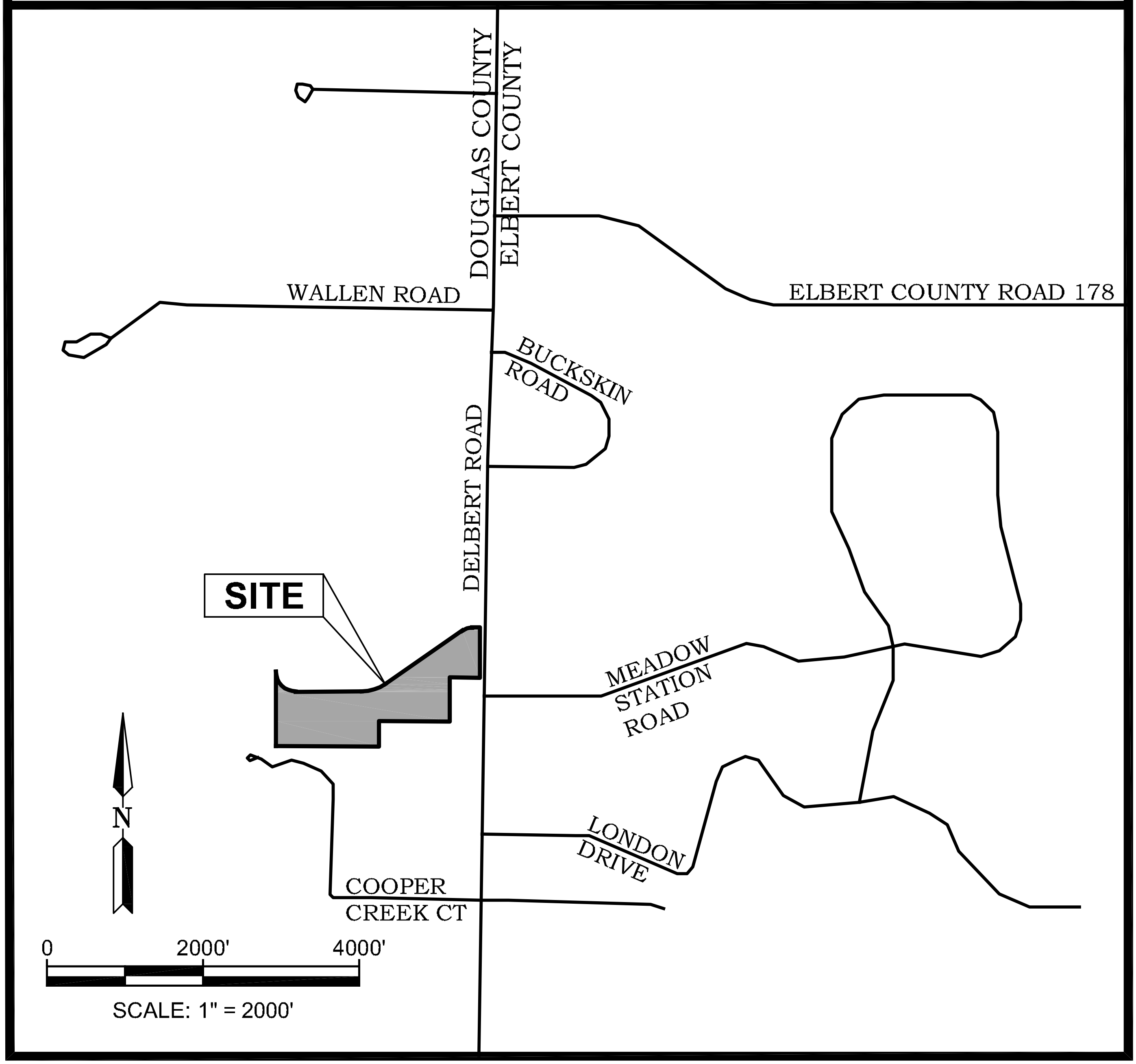
VIII. REFERENCES

1. *Storm Drainage Design and Technical Criteria Manual*, Douglas County, Colorado, 2008.
2. *Drainage Criteria Manual, Volumes 1, 2, & 3, Mile High Flood District*, Volumes 1 & 2 - Updated August 2017/2018; Volume 3 - Updated November 2021.
3. *Flood Insurance Rate Map, Community Panel Number* 08035C0212F*, Douglas County, Colorado*. Federal Emergency Management Agency September 30, 2005.
4. *Web Soil Survey*. United States Department of Agriculture, Natural Resources Conservation Service, September 2022.
5. Coal Creek (E. Yale Avenue to E. County Line Road) Flood Hazard Area Delineation, Matrix Design Group, August 2014.
6. *Colorado Fluvial Hazard Zone Delineation Protocol Version 1.0* and *Appendices*, Colorado Water Conservation Board, dated August 2020.

APPENDIX A

VICINITY MAP, SOILS MAP, FEMA FIRM MAP

VICINITY MAP



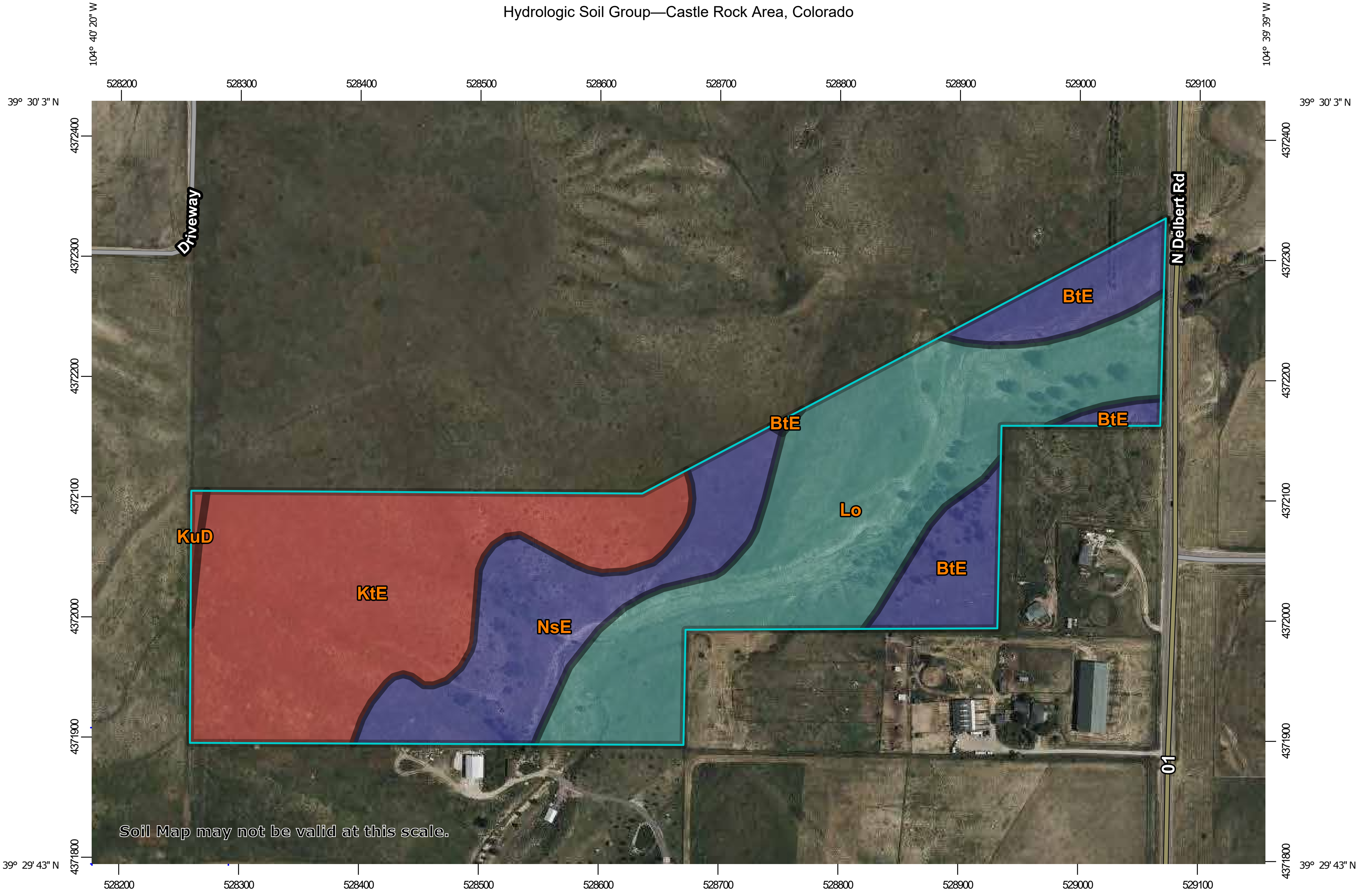
Project Number: 24001
J:\Projects\24\24001\dwg\Drainage\Vicinity Map.dwg

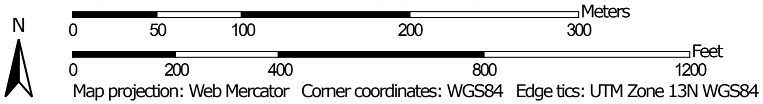
2N Civil, LLC
6 Inverness Ct. E., Suite 125
Englewood, CO 80112
Phone 303-925-0544 Fax 303-925-0547
www.2NCivil.com

VICINITY MAP
ANTELOPE CROSSING

Drawn By: TEW
Checked By: RCE
Revisions: 4-5-24

Hydrologic Soil Group—Castle Rock Area, Colorado





Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

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 1:20,000.

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: Castle Rock Area, Colorado
Survey Area Data: Version 16, Aug 24, 2023

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

Date(s) aerial images were photographed: Mar 1, 2023—Sep 1, 2023

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
BtE	Bresser-Truckton sandy loams, 5 to 25 percent slopes	B	4.6	11.8%
KtE	Kutch sandy loam, 5 to 20 percent slopes	D	13.3	34.1%
KuD	Kutch clay loam, 4 to 8 percent slopes	D	0.2	0.4%
Lo	Loamy alluvial land	C	14.2	36.3%
NsE	Newlin-Satanta complex, 5 to 20 percent slopes	B	6.8	17.3%
Totals for Area of Interest			**39.1**	**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

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) Zone 13. The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988 (NAVD 88). These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. An average offset between NAVD 88 and the National Geodetic Vertical Datum of 1929 (NGVD 29) has been computed for each Douglas County flooding source. This offset was then applied to the NGVD 29 flood elevations that were not revised during the creation of this countywide format FIRM. The offsets for each flooding source shown on this FIRM are shown in the Douglas County Vertical Datum Offset Table below. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

Spatial Reference System Division
National Geodetic Survey, NOAA
Silver Spring Metro Center
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov. For information about additional control points maintained by Douglas County, please visit http://www.publicstaging.douglas.co.us/website/control/viewer.htm.

Base map information shown on this FIRM was provided by the Douglas County GIS Department and the Town of Castle Rock GIS Department. Additional input was provided by the City of Lone Tree and Town of Parker. These data are current as of 2003.

This map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://www.msc.fema.gov.

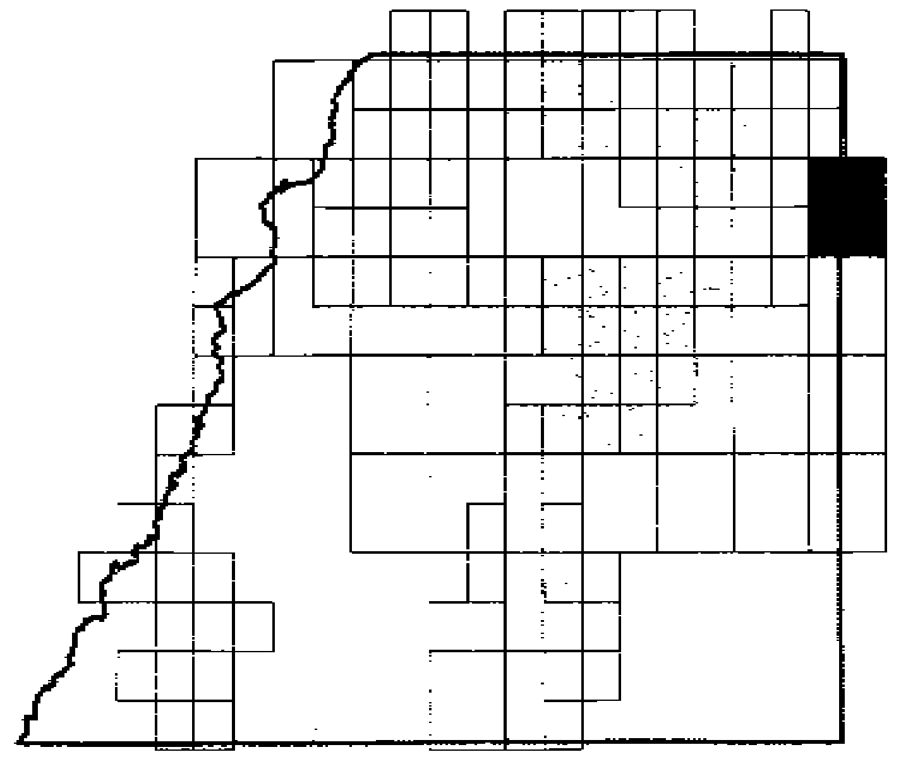
If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.

Douglas County Vertical Datum Offset Table

Flooding Source	Vertical Datum Offset (ft)	Flooding Source	Vertical Datum Offset (ft)
Baldwin Gulch	3.10	Newlin Gulch	3.14
Bayou Gulch	3.22	Plum Creek, Cross Section A to D	3.12
Big Dry Creek Tributary C	3.15	Section 34 Tributary	3.62
Carpenter Creek	3.93	Sellers Gulch	3.43
Cherry Creek, Cross Section BZ to CU	3.23	Sellers Gulch, Unnamed Tributary	3.39
East Plum Creek, Cross Section W to AY	3.26	Sulphur Gulch	3.13
East Plum Creek, Cross Section AZ to CZ	3.49	Tallman Gulch	3.16
East Plum Creek, Cross Section DA to EM	3.71	West Plum Creek, Cross Section W to AM	3.68
Glade Gulch	3.65		
Happy Canyon Creek	3.12		

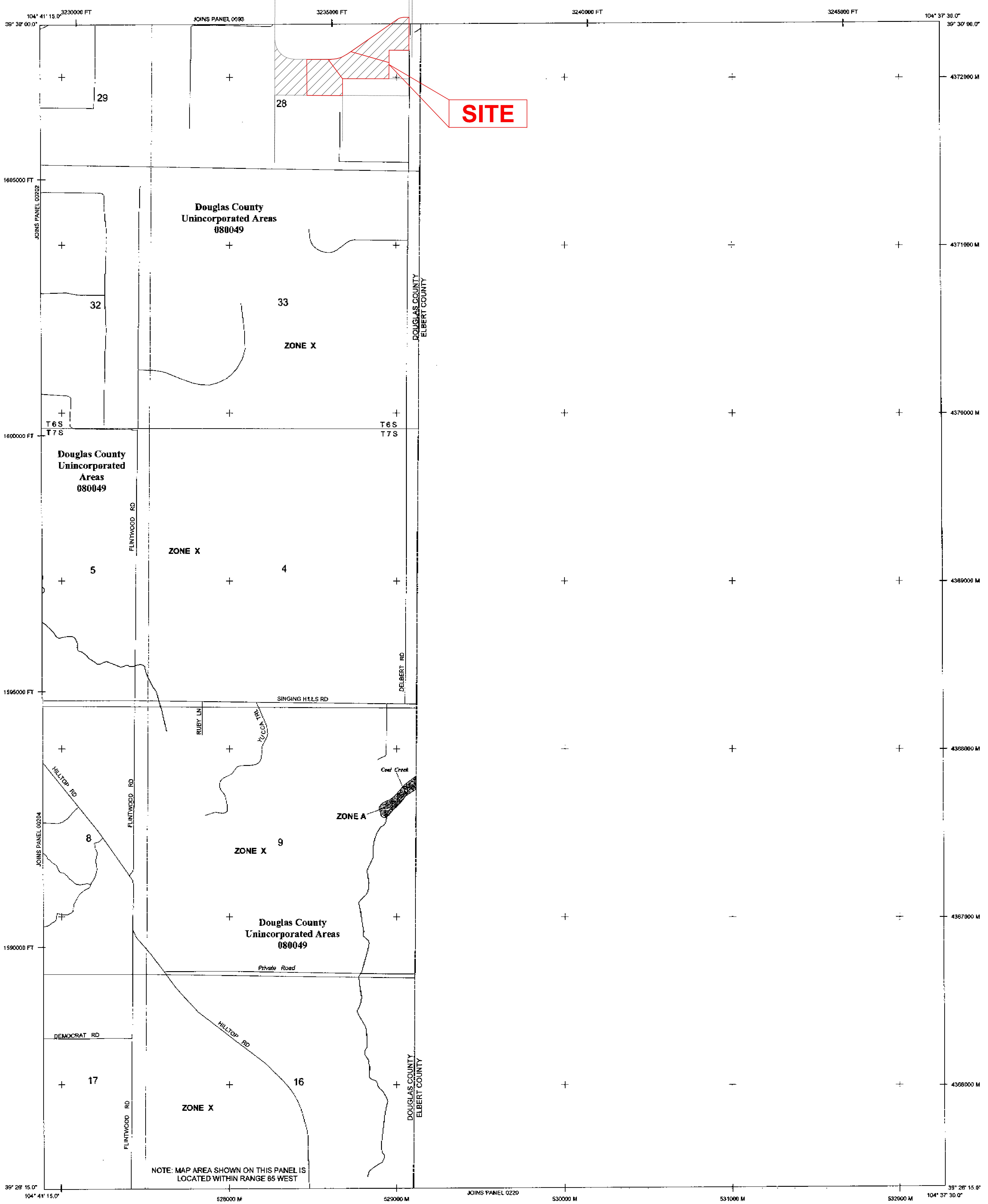
Example: To convert Baldwin Gulch elevations to NAVD 88, 3.10 feet were added to the NGVD 29 elevations.

Panel Location Map



This digital Flood Insurance Rate Map (FIRM) was produced through a cooperative partnership between the State of Colorado Water Conservation Board, the Urban Drainage and Flood Control District, and the Federal Emergency Management Agency (FEMA). The State of Colorado Water Conservation Board and the Urban Drainage and Flood Control District have implemented a long-term approach of floodplain management to reduce the costs associated with flooding. As part of this effort, both the State of Colorado and the Urban Drainage and Flood Control District have joined in Cooperating Technical Partner agreements with FEMA to produce this digital FIRM.

Additional flood hazard information and resources are available from local communities, the Colorado Water Conservation Board, and the Urban Drainage and Flood Control District.



LEGEND

▨ SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

▨ FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

☐ OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

☐ OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

———	Floodplain boundary
— —	Floodway boundary
— —	Zone D boundary
▨	Boundary dividing Special Flood Hazard Area zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
~~ 513 ~~~	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

(A)———(A)	Cross section line
104° 50' 37.5", 39° 30' 00"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4276000 M	1000-meter Universal Transverse Mercator grid ticks, zone 13
3180000 FT	5000-foot ticks: Colorado State Plane coordinate system, central zone (FIPSZONE 502), Lambert Conformal Conic projection
× KK6400	National Geodetic Survey bench mark (see explanation in Notes to Users section of this FIRM panel

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
SEPTEMBER 30, 2005

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0210F

FIRM
FLOOD INSURANCE RATE MAP

DOUGLAS COUNTY,
COLORADO
AND INCORPORATED AREAS

PANEL 210 OF 495
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
DOUGLAS COUNTY	080049	0210	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
08035C0210F

EFFECTIVE DATE:
SEPTEMBER 30, 2005

Federal Emergency Management Agency

APPENDIX B

HYDROLOGIC COMPUTATIONS

Antelope Crossing - Stormwater Calculations

Composite % Impervious Value

Date: January 24, 2025

CUHP Input Values

Basin EX-1

Land Use	Area	% I
Residential 2.5 ac or larger	838.80	12%
Streets	9.60	100%
Undeveloped / Ag	722.50	2%
Sum Area =	1570.89	
Composite % =		**7.94%**

Basin PR-1

Land Use	Area	% I
Residential 2.5 ac or larger	949.11	12%
Streets	12.75	100%
Undeveloped / Ag	610.70	2%
Sum Area =	1572.56	
Composite % =		**8.83%**

Rational Method Input Values

Basin PR-2

Land Use	Area	% I
Residential 2.5 ac or larger	46.38	12%
Streets	1.91	100%
Undeveloped / Ag	0.00	2%
Sum Area =	48.29	
Composite % =		**15.48%**

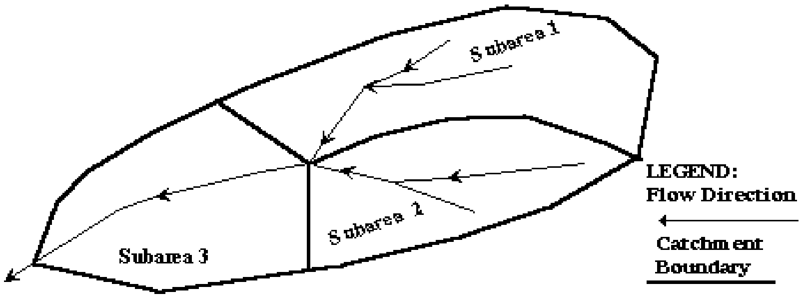
Basin PR-3

Land Use	Area	% I
Residential 2.5 ac or larger	20.637	12%
Streets	0.723	100%
Undeveloped / Ag	0.00	2%
Sum Area =	21.360	
Composite % =		**14.98%**

Area-Weighted Runoff Coefficient Calculations

Version 2.00 released May 2017

Designer: TEW
Company: 2N Civil, LLC
Date: 1/17/2025
Project: Antelope Crossing
Location: Delbert Rd, Douglas County, Colorado



Cells of this color are for required user-input
Cells of this color are for optional override values
Cells of this color are for calculated results based on overrides

Subcatchment Name
PR-2

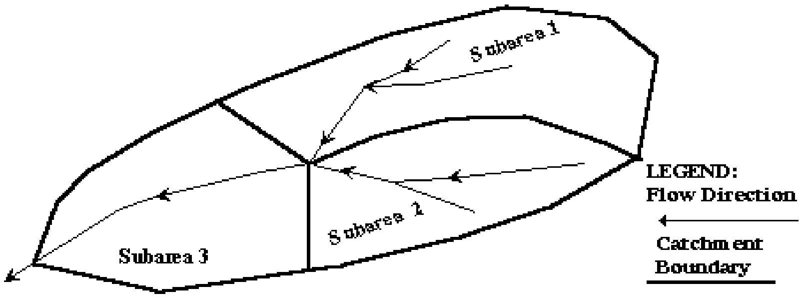
See sheet "Design Info" for imperviousness-based runoff coefficient values.

Sub-Area ID	Area (ac)	NRCS Hydrologic Soil Group	Percent Imperviousness	Runoff Coefficient, C						
				2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr
Res 2.5+	46.38	C	12.0	0.08	0.13	0.22	0.39	0.45	0.53	0.63
Streets	1.91	C	100.0	0.83	0.85	0.87	0.88	0.89	0.89	0.90
Total Area (ac)	**48.29**		**Area-Weighted C**	**0.11**	**0.16**	**0.25**	**0.41**	**0.47**	**0.55**	**0.64**
			Area-Weighted Override C	**0.11**	**0.16**	**0.25**	**0.41**	**0.47**	**0.55**	**0.64**

Area-Weighted Runoff Coefficient Calculations

Version 2.00 released May 2017

Designer: TEW
Company: 2N Civil, LLC
Date: 1/17/2025
Project: Antelope Crossing
Location: Delbert Rd, Douglas County, Colorado



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Cells of this color are for optional override values
Cells of this color are for calculated results based on overrides

Subcatchment Name
PR-3

See sheet "Design Info" for imperviousness-based runoff coefficient values.

Sub-Area ID	Area (ac)	NRCS Hydrologic Soil Group	Percent Imperviousness	Runoff Coefficient, C						
				2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr
Res 2.5+	20.64	C	12.0	0.08	0.13	0.22	0.39	0.45	0.53	0.63
Streets	0.72	C	100.0	0.83	0.85	0.87	0.88	0.89	0.89	0.90
Total Area (ac)	**21.36**		**Area-Weighted C**	**0.10**	**0.16**	**0.24**	**0.40**	**0.47**	**0.55**	**0.64**
			Area-Weighted Override C	**0.10**	**0.16**	**0.24**	**0.40**	**0.47**	**0.55**	**0.64**

Calculation of Peak Runoff using Rational Method

Designer: TEW
Company: 2N Civil, LLC
Date: 1/17/2025
Project: Antelope Crossing
Location: Delbert Rd, Douglas County, Colorado

Version 2.00 released May 2017

Cells of this color are for required user-input
Cells of this color are for optional override values
Cells of this color are for calculated results based on overrides

$$t_i = \frac{0.395(1.1 - C_5)\sqrt{L_i}}{S_i^{0.33}}$$

$$t_t = \frac{L_t}{60K\sqrt{S_t}} = \frac{L_t}{60V_t}$$

$$\text{Computed } t_c = t_i + t_t$$

$$\text{Regional } t_c = (26 - 17i) + \frac{L_t}{60(14i + 9)\sqrt{S_t}}$$

$t_{minimum} = 5$ (urban)
$t_{minimum} = 10$ (non-urban)

$$\text{Selected } t_c = \max\{t_{minimum}, \min(\text{Computed } t_c, \text{Regional } t_c)\}$$

Select UDFCD location for NOAA Atlas 14 Rainfall Depths from the pulldown list OR enter your own depths obtained from the NOAA website (click this link)

	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr
1-hour rainfall depth, P1 (in) =	1.06	1.43	1.66		2.26	2.60	

	a	b	c
Rainfall Intensity Equation Coefficients =	28.50	10.00	0.786

$$I(in/hr) = \frac{a * P_1}{(b + t_c)^c}$$

$$Q(cfs) = CIA$$

				Runoff Coefficient, C							**Overland (Initial) Flow Time**					**Channelized (Travel) Flow Time**						
Subcatchment Name	**Area (ac)**	**NRCS Hydrologic Soil Group**	**Percent Imperviousness**	**2-yr**	**5-yr**	**10-yr**	**25-yr**	**50-yr**	**100-yr**	**500-yr**	**Overland Flow Length L_i (ft)**	**U/S Elevation (ft) (Optional)**	**D/S Elevation (ft) (Optional)**	**Overland Flow Slope S_i (ft/ft)**	**Overland Flow Time t_i (min)**	**Channelized Flow Length L_t (ft)**	**U/S Elevation (ft) (Optional)**	**D/S Elevation (ft) (Optional)**	**Channelized Flow Slope S_t (ft/ft)**	**NRCS Conveyance Factor K**	**Channelized Flow Velocity V_t (ft/sec)**	**Channelized Flow Time t_t (min)**
PR-2	48.29	C	15.48	0.10	0.16	0.25	0.41	0.47	0.55	0.64	300.00	6387.39	6371.27	0.054	16.86	1692.72	6371.27	6259.84	0.066	5	1.28	21.99
PR-3	21.36	C	14.98	0.10	0.16	0.24	0.40	0.47	0.55	0.64	300.00	6374.01	6349.43	0.082	14.73	1693.66	6349.43	6249.92	0.059	5	1.21	23.29

	Time of Concentration			**Rainfall Intensity, I (in/hr)**							**Peak Flow, Q (cfs)**						
Subcatchment Name	**Computed t_c (min)**	**Regional t_c (min)**	**Selected t_c (min)**	**2-yr**	**5-yr**	**10-yr**	**25-yr**	**50-yr**	**100-yr**	**500-yr**	**2-yr**	**5-yr**	**10-yr**	**25-yr**	**50-yr**	**100-yr**	**500-yr**
PR-2	38.85	33.22	33.22	1.57	2.11	2.45		3.34	3.84		7.77	16.43	29.09		75.65	101.46	
PR-3	38.02	33.95	33.95	1.54	2.08	2.42		3.29	3.79		3.27	6.99	12.51		32.85	44.13	

Site-specific conditions may vary from the representative values presented in this chapter. The engineer is responsible for assuring that the selected imperviousness values represent the imperviousness of the catchment or the proposed development. During master planning or in early stages of design, select imperviousness values that are unlikely to be exceeded as final design plans are developed to avoid the need to increase the size of infrastructure during later design stages.

TABLE 6-2. RECOMMENDED IMPERVIOUSNESS BY LAND USE

LAND USE/DENSITY	IMPERVIOUSNESS
Residential	
Single-family Housing (SFH) – Rural (0 – 3 du/ac)	35%
SFH – Low & Medium-density (3 – 5 du/ac)	55%
SFH – High-density (5 - 20 du/ac)	65%
Manufactured Housing (>= 10 du/ac)	65%
Multi-family Housing (MFH) – Medium-density (5 – 20 du/ac)	65%
MFH – High-density MFH (>20 du/ac)	70%
Commercial	
Commercial – Low-density	65%
Commercial – Medium- to High-density	80%
Commercial – Urban Core	90%
Industrial/Institutional	
Schools	55%
Office/institutional	65%
Industrial Areas	75%
Solar Fields, Gravel Cover[1,2]	60%
Solar Fields, Grass Cover[1,2]	45%
Parks and Open Space	
Open Space, Undisturbed Native Grasses	5%
Community Parks	25%
Neighborhood Parks	15%
Golf Courses	30%
Cemeteries	25%

Note: Recommended imperviousness values shown in the table are the minimum imperviousness values for a specific land use. It is the engineer's responsibility to select imperviousness values that appropriately reflect the actual density of the proposed development.

[1] Use these values at the master planning scale or when the specific layout of panels is not known. Use values from the surface type (Table 6-3) at the site planning and design stage when panel width, panel spacing, and panel orientation relative to contours are known.

[2] Assumes 1:1 ratio of panels to aisles. See MHFD's technical memorandum regarding *Determination of Solar Panel Field Runoff Coefficients and Imperviousness Values* for additional information on procedures to reflect other impervious areas such as roads and pads that may be part of a solar field and layouts with wider inter-panel spacing.

TABLE 6-3. RECOMMENDED IMPERVIOUSNESS BY SURFACE TYPES

SURFACE TYPES		IMPERVIOUSNESS
Roadways and Paved Streets		95%
Concrete Driveways and Walks		95%
Roofs		95%
Gravel	No Traffic (Pedestrian Use)	40%
	Low-traffic Areas (Maintenance Paths and Substations)	60%
	High-traffic Areas (Roadways and Parking)	80%
Disturbed Soil (Including Lawns, Managed/Active Turf, Landscaped Areas with Water-Wise Vegetation, and Uncompacted Gravel/Mulch Planting Beds)		20%
Undisturbed or Decompacted Soil (Native Grasses and Open Space Areas)		5%
Artificial Turfs[1]	Landscape Applications (without Subgrade Drainage Layer)	25% – 45%
	Sport Fields (with Underdrain Pipe System)	60% – 80%
Water Surfaces (Lakes/Reservoirs/Irrigation Ponds)		100%
Solar Fields[2]	Grass Cover (Varies with Panel Orientation Relative to Ground Contours)	10% – 45%
	Gravel Cover (Varies with Panel Orientation Relative to Ground Contours)	50% – 75%
Historic Flow Analysis, Greenbelts, Agricultural		5%
Newly Graded Areas		65%
Stormwater Control Measures[3]	Retention Ponds & Constructed Wetland Ponds	100%
	Rooftop Systems – Blue Roofs	95%
	Rooftop Systems – Green Roofs (extensive)	65%
	Rooftop Systems – Green Roofs (intensive)	50%
	Permeable Pavement – CGP/PGP/RGP	55%
	Permeable Pavement – PICP	45%
	Extended Detention Basins	25%
	Receiving Pervious Areas (incl. Grass Buffers & Grass Swales)	20%
	Bioretention & Sand Filters	10%

[1] Consult with the manufacturer to get a recommended value.

[2] Assumes 1:1 ratio of panels to aisles. See MHFD's technical memorandum regarding *Determination of Solar Panel Field Runoff Coefficients and Imperviousness Values* for additional information on procedures for determining percent imperviousness based on panel width, panel spacing, and panel orientation relative to ground contours and how to reflect other impervious areas such as roads and pads that may be part of a solar field and layouts with wider inter-panel spacing.

[3] See MHFD's technical memorandum regarding *Evaluation of Percent Imperviousness for Stormwater Control Measures* for background information.

Chapter. Table 6-1 indicates the one-hour design point rainfall values for each zone.

Zone 1 includes the area from the Douglas/Elbert County line west to the base of the foothills. **Zone 2** includes the area from the base of the foothills west to the South Platte River drainage basin line. **Zone 3** includes the area from the South Platte River drainage basin line west to the Douglas/Jefferson County line.

TABLE 6-1
1-HOUR POINT RAINFALL VALUES FOR DOUGLAS COUNTY (INCHES)

	2- YR	5-YR	10-YR	50-YR	100-YR
ZONE 1	1.06	1.43	1.66	2.26	2.60
ZONE 2	0.98	1.32	1.53	2.07	2.34
ZONE 3	0.72	1.05	1.26	1.78	2.05

If the watershed(s) for a specific project site lies within multiple rainfall zones, runoff calculations shall be based upon the rainfall data from the zone with the greatest precipitation depth. If the watershed is divided into smaller sub-watersheds, the rainfall depth that shall be used is from the zone where the majority of the sub-watershed area is located.

6.1.2 Intensity-Duration Curves. Rainfall intensity based on storm duration for a variety of storm return periods and for the three rainfall zones are shown in Figures 6-2, 6-3, and 6-4, respectively. These curves were developed using distribution factors provided in the NOAA Atlas and also provided in Table RA-4 of the *UDFCD Manual*.

6.1.3 Six-hour Rainfall. In order to use the Colorado Urban Hydrograph Procedure (CUHP), 2-, 3- or 6-hour rainfall distributions are required, depending on watershed area. Table RA-1 in the *UDFCD Manual* summarizes storm durations, area adjustments, and incremental rainfall depths to be used in CUHP based on watershed area. The UD-Raincurve Spreadsheet included in the *UDFCD Manual* shall be used to generate the rainfall distribution curves necessary for a CUHP model. In order to generate these distribution curves, the 1-hour and 6-hour rainfall depths for the design return periods are necessary. Since not all of Douglas County is located within UDFCD boundaries, the rainfall depth-duration-frequency curves provided in the *UDFCD Manual* do not provide rainfall values for the entire County. Therefore these values are provided in these *Criteria*. The 1-hour point values can be found in Table 6-1 of this chapter. The 6-hour point values are as follows:

NOAA Atlas 14, Volume 8, Version 2
Location name: Parker, Colorado, USA*
Latitude: 39.4994°, Longitude: -104.6622°
Elevation: 6247 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)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.230 (0.191-0.280)	0.291 (0.241-0.354)	0.394 (0.325-0.481)	0.484 (0.396-0.592)	0.613 (0.486-0.775)	0.717 (0.554-0.914)	0.826 (0.615-1.07)	0.940 (0.670-1.24)	1.10 (0.750-1.48)	1.22 (0.811-1.66)
10-min	0.337 (0.279-0.410)	0.426 (0.352-0.519)	0.577 (0.476-0.704)	0.708 (0.580-0.867)	0.898 (0.712-1.14)	1.05 (0.811-1.34)	1.21 (0.901-1.57)	1.38 (0.981-1.82)	1.61 (1.10-2.17)	1.79 (1.19-2.43)
15-min	0.411 (0.341-0.500)	0.520 (0.430-0.632)	0.704 (0.580-0.858)	0.864 (0.707-1.06)	1.10 (0.868-1.38)	1.28 (0.989-1.63)	1.47 (1.10-1.91)	1.68 (1.20-2.22)	1.96 (1.34-2.64)	2.18 (1.45-2.96)
30-min	0.526 (0.436-0.640)	0.666 (0.551-0.811)	0.905 (0.746-1.10)	1.11 (0.910-1.36)	1.41 (1.12-1.78)	1.65 (1.27-2.10)	1.90 (1.41-2.46)	2.16 (1.54-2.86)	2.52 (1.72-3.40)	2.80 (1.86-3.81)
60-min	0.652 (0.540-0.793)	0.817 (0.676-0.995)	1.10 (0.909-1.35)	1.36 (1.11-1.66)	1.72 (1.37-2.19)	2.02 (1.57-2.58)	2.34 (1.74-3.04)	2.68 (1.91-3.55)	3.14 (2.15-4.25)	3.51 (2.34-4.78)
2-hr	0.778 (0.647-0.940)	0.968 (0.805-1.17)	1.30 (1.08-1.58)	1.60 (1.32-1.94)	2.04 (1.63-2.57)	2.40 (1.87-3.05)	2.78 (2.09-3.60)	3.19 (2.30-4.21)	3.77 (2.60-5.07)	4.23 (2.83-5.72)
3-hr	0.873 (0.728-1.05)	1.08 (0.895-1.30)	1.43 (1.19-1.73)	1.76 (1.45-2.13)	2.24 (1.80-2.82)	2.64 (2.07-3.35)	3.07 (2.32-3.96)	3.54 (2.55-4.65)	4.19 (2.90-5.62)	4.72 (3.17-6.35)
6-hr	1.07 (0.896-1.28)	1.30 (1.09-1.55)	1.71 (1.42-2.05)	2.08 (1.72-2.50)	2.64 (2.13-3.30)	3.10 (2.44-3.91)	3.60 (2.73-4.62)	4.14 (3.01-5.41)	4.90 (3.42-6.54)	5.52 (3.73-7.39)
12-hr	1.31 (1.11-1.56)	1.58 (1.33-1.88)	2.06 (1.73-2.45)	2.48 (2.07-2.96)	3.11 (2.52-3.85)	3.62 (2.86-4.52)	4.17 (3.18-5.30)	4.75 (3.47-6.16)	5.58 (3.91-7.37)	6.23 (4.24-8.28)
24-hr	1.59 (1.35-1.88)	1.90 (1.61-2.25)	2.44 (2.05-2.88)	2.90 (2.43-3.44)	3.58 (2.91-4.39)	4.13 (3.27-5.10)	4.70 (3.60-5.92)	5.31 (3.90-6.82)	6.15 (4.34-8.06)	6.82 (4.67-9.01)
2-day	1.88 (1.60-2.21)	2.22 (1.89-2.61)	2.79 (2.37-3.28)	3.29 (2.77-3.88)	4.00 (3.27-4.86)	4.57 (3.64-5.61)	5.17 (3.98-6.45)	5.79 (4.27-7.37)	6.65 (4.71-8.64)	7.32 (5.05-9.60)
3-day	2.05 (1.74-2.39)	2.40 (2.05-2.81)	3.01 (2.56-3.52)	3.53 (2.98-4.15)	4.27 (3.50-5.16)	4.86 (3.88-5.93)	5.47 (4.22-6.80)	6.11 (4.52-7.74)	6.98 (4.97-9.03)	7.66 (5.30-10.0)
4-day	2.17 (1.85-2.53)	2.54 (2.17-2.96)	3.17 (2.70-3.70)	3.71 (3.14-4.35)	4.48 (3.67-5.40)	5.09 (4.07-6.19)	5.72 (4.42-7.08)	6.37 (4.73-8.05)	7.26 (5.18-9.36)	7.95 (5.52-10.4)

7-day	**2.48** (2.12-2.87)	**2.87** (2.46-3.33)	**3.55** (3.03-4.12)	**4.12** (3.50-4.80)	**4.95** (4.08-5.93)	**5.61** (4.51-6.78)	**6.28** (4.88-7.74)	**6.99** (5.22-8.78)	**7.96** (5.71-10.2)	**8.71** (6.09-11.3)
10-day	**2.75** (2.37-3.18)	**3.17** (2.72-3.66)	**3.87** (3.32-4.48)	**4.48** (3.81-5.20)	**5.35** (4.42-6.38)	**6.04** (4.87-7.28)	**6.76** (5.27-8.29)	**7.51** (5.62-9.40)	**8.54** (6.15-10.9)	**9.34** (6.55-12.1)
20-day	**3.58** (3.10-4.11)	**4.07** (3.52-4.67)	**4.89** (4.21-5.62)	**5.59** (4.78-6.44)	**6.58** (5.46-7.79)	**7.37** (5.98-8.81)	**8.18** (6.42-9.96)	**9.02** (6.80-11.2)	**10.2** (7.37-12.9)	**11.1** (7.80-14.2)
30-day	**4.33** (3.75-4.94)	**4.91** (4.26-5.61)	**5.88** (5.07-6.73)	**6.69** (5.74-7.68)	**7.81** (6.49-9.18)	**8.69** (7.06-10.3)	**9.57** (7.53-11.6)	**10.5** (7.91-12.9)	**11.7** (8.50-14.8)	**12.6** (8.94-16.1)
45-day	**5.32** (4.63-6.05)	**6.07** (5.27-6.90)	**7.27** (6.30-8.29)	**8.26** (7.11-9.44)	**9.59** (7.97-11.2)	**10.6** (8.62-12.5)	**11.6** (9.12-13.9)	**12.6** (9.51-15.4)	**13.9** (10.1-17.4)	**14.8** (10.5-18.8)
60-day	**6.21** (5.41-7.04)	**7.12** (6.20-8.08)	**8.57** (7.43-9.74)	**9.72** (8.39-11.1)	**11.3** (9.36-13.0)	**12.4** (10.1-14.5)	**13.5** (10.6-16.1)	**14.5** (11.0-17.7)	**15.9** (11.6-19.8)	**16.8** (12.0-21.3)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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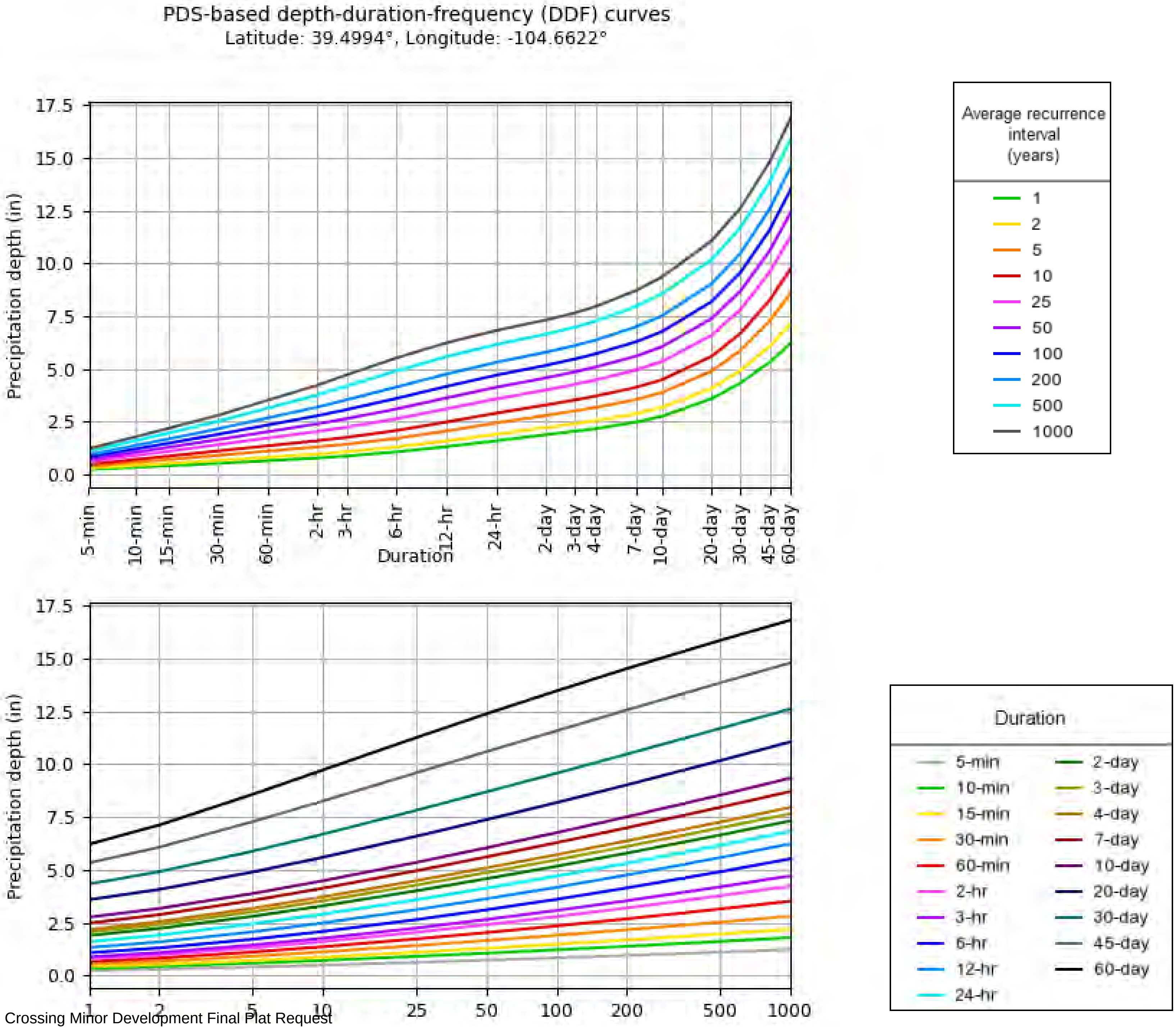
PF graphical


PDS-based depth-duration-frequency (DDF) curves
Latitude: 39.4994°, Longitude: -104.6622°

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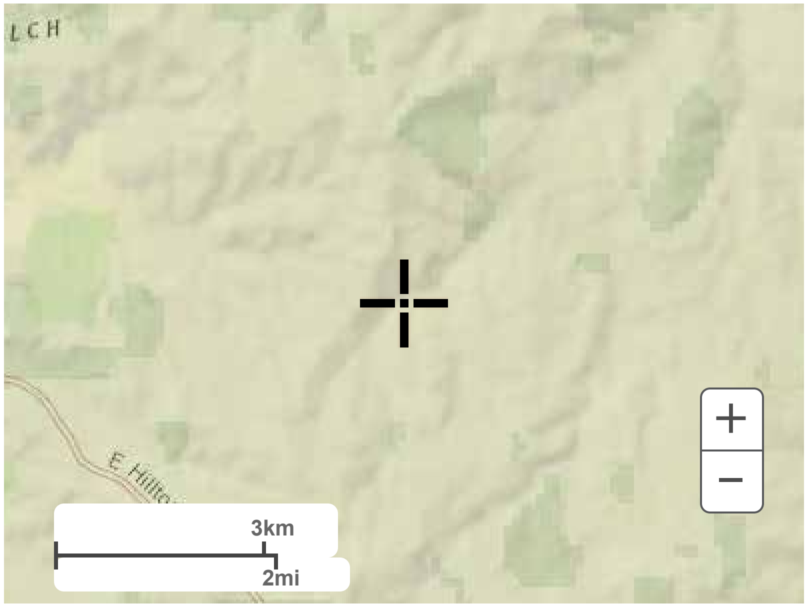
Maps & aerials

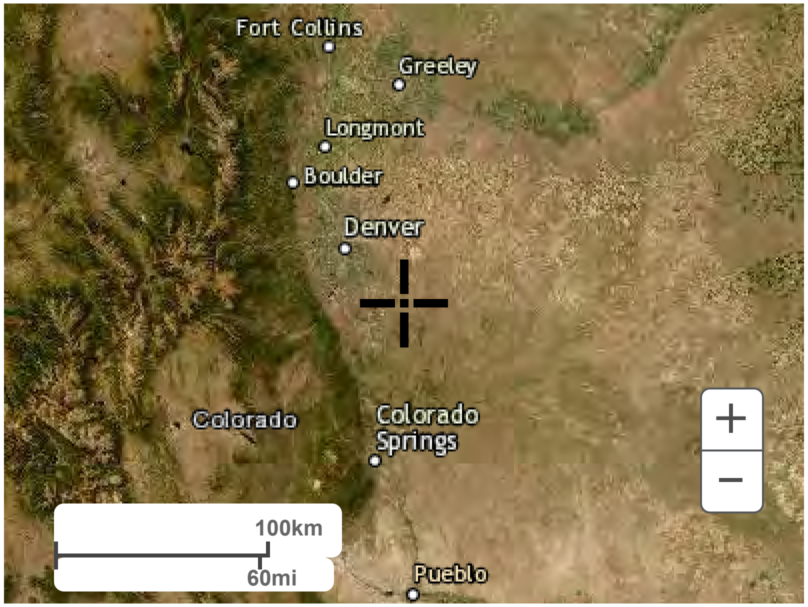
Small scale terrain



Large scale terrain

Large scale map

Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Comment	2 Year NOAA Raingage				
1Hr Depth	0.817	inches	2hr Depth	0.98	inches
6Hr Depth	1.3	inches	3hr Depth	1.11	inches
Correction Area	2.4546875	Sq. Mi.			
Return Period	2	Years			

NOAA Atlas 14 Point Precipitation Frequency Estimates: CO (Note: Use 60-minute recurrence interval depth)

Time	Adjusted Depth	Unadjusted Depth
0:05	0.0163	0.0163
0:10	0.0327	0.0327
0:15	0.0683	0.0686
0:20	0.1279	0.1307
0:25	0.1999	0.2042
0:30	0.1120	0.1144
0:35	0.0512	0.0515
0:40	0.0407	0.0408
0:45	0.0245	0.0245
0:50	0.0245	0.0245
0:55	0.0245	0.0245
1:00	0.0245	0.0245
1:05	0.0245	0.0245
1:10	0.0163	0.0163
1:15	0.0163	0.0163
1:20	0.0163	0.0163
1:25	0.0163	0.0163
1:30	0.0163	0.0163
1:35	0.0163	0.0163
1:40	0.0163	0.0163
1:45	0.0163	0.0163
1:50	0.0163	0.0163
1:55	0.0082	0.0082
2:00	0.0082	0.0082
2:05	0.0000	0.0000
2:10	0.0000	0.0000
2:15	0.0000	0.0000
2:20	0.0000	0.0000
2:25	0.0000	0.0000
2:30	0.0000	0.0000
2:35	0.0000	0.0000
2:40	0.0000	0.0000
2:45	0.0000	0.0000
2:50	0.0000	0.0000
2:55	0.0000	0.0000
3:00	0.0000	0.0000
3:05	0.0000	0.0000
3:10	0.0000	0.0000
3:15	0.0000	0.0000
3:20	0.0000	0.0000
3:25	0.0000	0.0000
3:30	0.0000	0.0000
3:35	0.0000	0.0000
3:40	0.0000	0.0000
3:45	0.0000	0.0000
3:50	0.0000	0.0000
3:55	0.0000	0.0000
4:00	0.0000	0.0000
4:05	0.0000	0.0000
4:10	0.0000	0.0000
4:15	0.0000	0.0000
4:20	0.0000	0.0000
4:25	0.0000	0.0000
4:30	0.0000	0.0000
4:35	0.0000	0.0000
4:40	0.0000	0.0000
4:45	0.0000	0.0000
4:50	0.0000	0.0000
4:55	0.0000	0.0000
5:00	0.0000	0.0000
5:05	0.0000	0.0000
5:10	0.0000	0.0000
5:15	0.0000	0.0000
5:20	0.0000	0.0000
5:25	0.0000	0.0000
5:30	0.0000	0.0000
5:35	0.0000	0.0000
5:40	0.0000	0.0000
5:45	0.0000	0.0000
5:50	0.0000	0.0000
5:55	0.0000	0.0000
6:00	0.0000	0.0000
6:05	0.0000	0.0000

Printouts for Unit Hydrographs

Existing 2-yr Storm

flow in cfs

time in minutes	**EX-1**
5	53.48
10	157.10
15	289.58
20	429.66
25	556.08
30	647.91
35	746.66
40	813.38
45	851.07
50	862.78
55	851.50
60	820.27
65	772.10
70	710.02
75	642.55
80	607.84
85	573.13
90	538.42
95	503.70
100	468.99
105	434.28
110	414.95
115	397.02
120	379.09
125	361.16
130	343.23
135	325.30
140	307.37
145	289.44
150	271.51
155	253.58
160	235.65
165	217.71
170	199.78
175	181.85
180	169.68
185	163.70
190	157.72
195	151.75
200	145.77
205	139.79
210	133.82
215	127.84
220	121.86
225	115.89
230	109.91
235	103.93
240	97.96
245	91.98
250	86.00
255	80.03
260	74.05
265	68.07
270	62.09
275	56.12
280	50.14
285	44.16
290	38.19
295	32.21
300	26.23
305	20.26
310	14.28
315	8.30
320	2.33
325	0.00

Printouts for Storm Hydrographs

Existing 2-yr Storm

flow in cfs

time in minutes	EX-1
5	0.00
10	0.00
15	0.01
20	0.11
25	0.55
30	1.90
35	4.15
40	7.02
45	10.06
50	12.90
55	15.32
60	17.52
65	19.15
70	20.22
75	20.70
80	20.66
85	20.15
90	19.26
95	18.12
100	16.98
105	16.16
110	15.41
115	14.70
120	13.97
125	13.24
130	12.56
135	12.03
140	11.54
145	11.06
150	10.57
155	10.05
160	9.53
165	9.01
170	8.48
175	7.96
180	7.44
185	6.93
190	6.43
195	5.95
200	5.50
205	5.16
210	4.90
215	4.69
220	4.49
225	4.29
230	4.10
235	3.91
240	3.72
245	3.54
250	3.36
255	3.18
260	3.01
265	2.84
270	2.67
275	2.50
280	2.33
285	2.17
290	2.01
295	1.85
300	1.69
305	1.53
310	1.37
315	1.21
320	1.05
325	0.89
330	0.73
335	0.57
340	0.41
345	0.28
350	0.20
355	0.16
360	0.14
365	0.12
370	0.10
375	0.08
380	0.07
385	0.06
390	0.05
395	0.04
400	0.03
405	0.02
410	0.01
415	0.01
420	0.01
425	0.00
430	0.00
435	0.00
440	0.00
445	0.00
450	0.00

Summary of CUHP Input Parameters (Version 2.0.1)

Existing 2-yr Storm

								Depression Storage		Horton's Infiltration Parameters			DCIA Level and Fractions			
Catchment Name/ID	**SWMM Node/ID**	**Raingage Name/ID**	**Area (sq.mi.)**	**Dist. to Centroid (miles)**	**Length (miles)**	**Slope (ft./ft.)**	**Percent Imperv.**	**Pervious (inches)**	**Imperv. (inches)**	**Initial Rate (in./hr.)**	**Final Rate (in.hr.)**	**Decay Coeff. (1/sec.)**	**DCIA Level**	**Dir. Con'ct Imperv. Fraction**	**Receiv. Perv. Fraction**	**Percent Eff. Imperv.**
EX-1	1	RAIN 2	2.455	1.537	3.229	0.020	7.9	0.40	0.10	4.50	0.60	0.0018	0.00	0.16	0.08	5.36

Summary of Unit Hydrograph Parameters Used By Program and Calculated Results (Version 2.0.1)

Existing 2-yr Storm

		Unit Hydrograph Parameters and Results									Excess Precip.		Storm Hydrograph			
Catchment Name/ID	User Comment for Catchment	CT	Cp	W50 (min.)	W50 Before Peak	W75 (min.)	W75 Before Peak	Time to Peak (min.)	Peak (cfs)	Volume (c.f)	Excess (inches)	Excess (c.f.)	Time to Peak (min.)	Peak Flow (cfs)	Total Volume (c.f.)	Runoff per Unit Area (cfs/acre)
EX-1		0.143	0.434	85.4	29.87	44.4	19.97	49.9	863	5,702,730	0.03	152,701	75.0	20.70	152,646	0.01

Existing
Q2=20.70 cfs

Printouts for Unit Hydrographs

Existing 100-yr Storm

flow in cfs

time in minutes	EX-1
5	56.41
10	166.47
15	307.55
20	456.99
25	592.16
30	699.86
35	782.52
40	836.06
45	862.85
50	865.29
55	845.76
60	806.67
65	750.39
70	679.31
75	628.95
80	595.41
85	561.87
90	528.34
95	494.80
100	461.26
105	430.42
110	412.41
115	394.40
120	376.39
125	358.38
130	340.37
135	322.37
140	304.36
145	286.35
150	268.34
155	250.33
160	232.32
165	214.32
170	196.31
175	178.30
180	169.04
185	163.04
190	157.04
195	151.03
200	145.03
205	139.03
210	133.02
215	127.02
220	121.02
225	115.02
230	109.01
235	103.01
240	97.01
245	91.01
250	85.00
255	79.00
260	73.00
265	66.99
270	60.99
275	54.99
280	48.99
285	42.98
290	36.98
295	30.98
300	24.97
305	18.97
310	12.97
315	6.97
320	0.96
325	0.00

Printouts for Storm Hydrographs

Existing 100-yr Storm

flow in cfs

time in minutes	EX-1
5	0.00
10	0.00
15	0.07
20	0.33
25	2.78
30	33.47
35	105.52
40	214.38
45	347.56
50	488.46
55	622.08
60	741.59
65	841.80
70	918.27
75	968.66
80	992.14
85	989.17
90	961.58
95	913.01
100	861.14
105	814.20
110	768.82
115	723.80
120	679.29
125	635.36
130	594.00
135	560.90
140	532.34
145	505.79
150	480.63
155	456.41
160	432.86
165	410.00
170	387.73
175	365.51
180	343.34
185	321.18
190	299.07
195	276.99
200	255.24
205	237.69
210	224.03
215	212.44
220	202.14
225	192.75
230	183.99
235	175.79
240	168.14
245	160.68
250	153.26
255	145.86
260	138.46
265	131.06
270	123.68
275	116.30
280	108.92
285	101.55
290	94.19
295	86.83
300	79.48
305	72.12
310	64.77
315	57.41
320	50.06
325	42.70
330	35.35
335	28.00
340	20.66
345	13.51
350	8.74
355	5.77
360	3.76
365	2.35
370	1.38
375	0.70
380	0.31
385	0.20
390	0.15
395	0.12
400	0.09
405	0.07
410	0.05
415	0.03
420	0.02
425	0.01
430	0.00
435	0.00
440	0.00
445	0.00
450	0.00

Summary of CUHP Input Parameters (Version 2.0.1)

Proposed 100-Yr Storm

								Depression Storage		Horton's Infiltration Parameters			DCIA Level and Fractions			
Catchment Name/ID	SWMM Node/ID	Raingage Name/ID	Area (sq.mi.)	Dist. to Centroid (miles)	Length (miles)	Slope (ft./ft.)	Percent Imperv.	Pervious (inches)	Imperv. (inches)	Initial Rate (in./hr.)	Final Rate (in.hr.)	Decay Coeff. (1/sec.)	DCIA Level	Dir. Con'ct Imperv. Fraction	Receiv. Perv. Fraction	Percent Eff. Imperv.
PR-1	1	RAIN 100	2.455	1.537	3.229	0.020	8.8	0.40	0.10	4.50	0.60	0.0018	0.00	0.18	0.09	7.65

Summary of Unit Hydrograph Parameters Used By Program and Calculated Results (Version 2.0.1)

Existing 100-yr Storm

		Unit Hydrograph Parameters and Results									Excess Precip.		Storm Hydrograph			
Catchment Name/ID	**User Comment for Catchment**	**CT**	**Cp**	**W50 (min.)**	**W50 Before Peak**	**W75 (min.)**	**W75 Before Peak**	**Time to Peak (min.)**	**Peak (cfs)**	**Volume (c.f)**	**Excess (inches)**	**Excess (c.f.)**	**Time to Peak (min.)**	**Peak Flow (cfs)**	**Total Volume (c.f.)**	**Runoff per Unit Area (cfs/acre)**
EX-1		0.137	0.419	84.9	28.80	44.2	20.36	48.0	867	5,702,730	1.23	6,987,222	80.0	992.14	6,987,316	0.63

Existing
Q100=992.14 cfs

Printouts for Unit Hydrographs

Proposed 2-Yr Storm

flow in cfs

time in minutes	PR-1
5	54.31
10	159.87
15	295.79
20	441.21
25	575.25
30	682.54
35	767.18
40	824.47
45	856.16
50	863.99
55	849.71
60	815.06
65	761.80
70	691.65
75	632.46
80	598.95
85	565.44
90	531.93
95	498.42
100	464.91
105	431.74
110	413.80
115	395.86
120	377.91
125	359.97
130	342.03
135	324.09
140	306.15
145	288.21
150	270.27
155	252.33
160	234.38
165	216.44
170	198.50
175	180.56
180	169.44
185	163.46
190	157.48
195	151.50
200	145.52
205	139.54
210	133.56
215	127.58
220	121.60
225	115.62
230	109.64
235	103.66
240	97.68
245	91.70
250	85.72
255	79.74
260	73.76
265	67.78
270	61.80
275	55.81
280	49.83
285	43.85
290	37.87
295	31.89
300	25.91
305	19.93
310	13.95
315	7.97
320	1.99
325	0.00

Printouts for Storm Hydrographs

Proposed 2-Yr Storm

flow in cfs

time in minutes	**PR-1**
5	0.00
10	0.00
15	0.01
20	0.14
25	0.66
30	2.19
35	4.76
40	8.04
45	11.56
50	14.89
55	17.72
60	20.00
65	21.65
70	22.69
75	23.13
80	23.00
85	22.35
90	21.27
95	19.94
100	18.77
105	17.90
110	17.12
115	16.37
120	15.60
125	14.83
130	14.11
135	13.55
140	13.01
145	12.46
150	11.90
155	11.32
160	10.73
165	10.13
170	9.54
175	8.95
180	8.37
185	7.80
190	7.23
195	6.69
200	6.20
205	5.82
210	5.54
215	5.30
220	5.07
225	4.84
230	4.62
235	4.41
240	4.20
245	3.99
250	3.79
255	3.59
260	3.39
265	3.20
270	3.00
275	2.81
280	2.63
285	2.44
290	2.26
295	2.08
300	1.90
305	1.72
310	1.54
315	1.36
320	1.18
325	1.00
330	0.82
335	0.64
340	0.47
345	0.32
350	0.24
355	0.19
360	0.17
365	0.14
370	0.12
375	0.10
380	0.08
385	0.07
390	0.06
395	0.04
400	0.03
405	0.02
410	0.02
415	0.01
420	0.01
425	0.00
430	0.00
435	0.00
440	0.00
445	0.00
450	0.00

Summary of CUHP Input Parameters (Version 2.0.1)

Proposed 2-Yr Storm

								Depression Storage		Horton's Infiltration Parameters			DCIA Level and Fractions			
Catchment Name/ID	SWMM Node/ID	Raingage Name/ID	Area (sq.mi.)	Dist. to Centroid (miles)	Length (miles)	Slope (ft./ft.)	Percent Imperv.	Pervious (inches)	Imperv. (inches)	Initial Rate (in./hr.)	Final Rate (in.hr.)	Decay Coeff. (1/sec.)	DCIA Level	Dir. Con'ct Imperv. Fraction	Receiv. Perv. Fraction	Percent Eff. Imperv.
PR-1	1	RAIN 2	2.455	1.537	3.229	0.020	8.8	0.40	0.10	4.50	0.60	0.0018	0.00	0.18	0.09	5.95

Summary of Unit Hydrograph Parameters Used By Program and Calculated Results (Version 2.0.1)

Proposed 2-Yr Storm

		Unit Hydrograph Parameters and Results									Excess Precip.		Storm Hydrograph			
Catchment Name/ID	**User Comment for Catchment**	**CT**	**Cp**	**W50 (min.)**	**W50 Before Peak**	**W75 (min.)**	**W75 Before Peak**	**Time to Peak (min.)**	**Peak (cfs)**	**Volume (c.f)**	**Excess (inches)**	**Excess (c.f.)**	**Time to Peak (min.)**	**Peak Flow (cfs)**	**Total Volume (c.f.)**	**Runoff per Unit Area (cfs/acre)**
PR-1		0.141	0.428	85.2	29.53	44.3	20.86	49.2	864	5,702,730	0.03	171,546	75.0	23.13	171,546	0.01

Proposed
Q2=23.13 cfs

Printouts for Unit Hydrographs

Proposed 100-Yr Storm

flow in cfs

time in minutes	PR-1
5	58.07
10	171.70
15	316.80
20	469.28
25	605.05
30	713.09
35	793.91
40	844.36
45	867.31
50	865.64
55	842.25
60	800.02
65	741.82
70	670.54
75	626.44
80	592.86
85	559.28
90	525.70
95	492.12
100	458.53
105	429.46
110	411.40
115	393.33
120	375.26
125	357.19
130	339.12
135	321.06
140	302.99
145	284.92
150	266.85
155	248.78
160	230.72
165	212.65
170	194.58
175	176.51
180	168.74
185	162.72
190	156.69
195	150.67
200	144.65
205	138.63
210	132.60
215	126.58
220	120.56
225	114.54
230	108.51
235	102.49
240	96.47
245	90.45
250	84.42
255	78.40
260	72.38
265	66.35
270	60.33
275	54.31
280	48.29
285	42.26
290	36.24
295	30.22
300	24.20
305	18.17
310	12.15
315	6.13
320	0.11
325	0.00

Printouts for Storm Hydrographs

Proposed 100-Yr Storm

flow in cfs

time in minutes	PR-1
5	0.00
10	0.00
15	0.09
20	0.41
25	3.22
30	35.40
35	110.47
40	223.36
45	360.54
50	504.30
55	639.95
60	760.00
65	859.30
70	933.63
75	980.92
80	1000.72
85	994.00
90	963.15
95	912.58
100	862.09
105	815.67
110	770.21
115	725.07
120	680.44
125	636.46
130	595.96
135	563.37
140	534.80
145	508.18
150	482.86
155	458.45
160	434.71
165	411.67
170	389.15
175	366.67
180	344.25
185	321.85
190	299.49
195	277.18
200	255.29
205	238.27
210	224.88
215	213.36
220	203.08
225	193.68
230	184.88
235	176.64
240	168.97
245	161.42
250	153.92
255	146.43
260	138.94
265	131.46
270	123.99
275	116.53
280	109.07
285	101.62
290	94.18
295	86.74
300	79.31
305	71.87
310	64.44
315	57.00
320	49.57
325	42.13
330	34.70
335	27.27
340	19.86
345	12.68
350	8.27
355	5.51
360	3.58
365	2.23
370	1.30
375	0.66
380	0.29
385	0.21
390	0.16
395	0.13
400	0.10
405	0.07
410	0.05
415	0.04
420	0.02
425	0.01
430	0.00
435	0.00
440	0.00
445	0.00
450	0.00

Summary of CUHP Input Parameters (Version 2.0.1)

Proposed 100-Yr Storm

								Depression Storage		Horton's Infiltration Parameters			DCIA Level and Fractions			
Catchment Name/ID	SWMM Node/ID	Raingage Name/ID	Area (sq.mi.)	Dist. to Centroid (miles)	Length (miles)	Slope (ft./ft.)	Percent Imperv.	Pervious (inches)	Imperv. (inches)	Initial Rate (in./hr.)	Final Rate (in.hr.)	Decay Coeff. (1/sec.)	DCIA Level	Dir. Con'ct Imperv. Fraction	Receiv. Perv. Fraction	Percent Eff. Imperv.
PR-1	1	RAIN 100	2.455	1.537	3.229	0.020	8.8	0.40	0.10	4.50	0.60	0.0018	0.00	0.18	0.09	7.65

Summary of Unit Hydrograph Parameters Used By Program and Calculated Results (Version 2.0.1)

Proposed 100-Yr Storm

		Unit Hydrograph Parameters and Results									Excess Precip.		Storm Hydrograph			
Catchment Name/ID	User Comment for Catchment	CT	Cp	W50 (min.)	W50 Before Peak	W75 (min.)	W75 Before Peak	Time to Peak (min.)	Peak (cfs)	Volume (c.f)	Excess (inches)	Excess (c.f.)	Time to Peak (min.)	Peak Flow (cfs)	Total Volume (c.f.)	Runoff per Unit Area (cfs/acre)
PR-1		0.135	0.412	84.7	28.27	44.0	19.98	47.1	869	5,702,730	1.23	7,040,059	80.0	1,000.72	7,039,606	0.64

Proposed
Q100=1,000.72 cfs

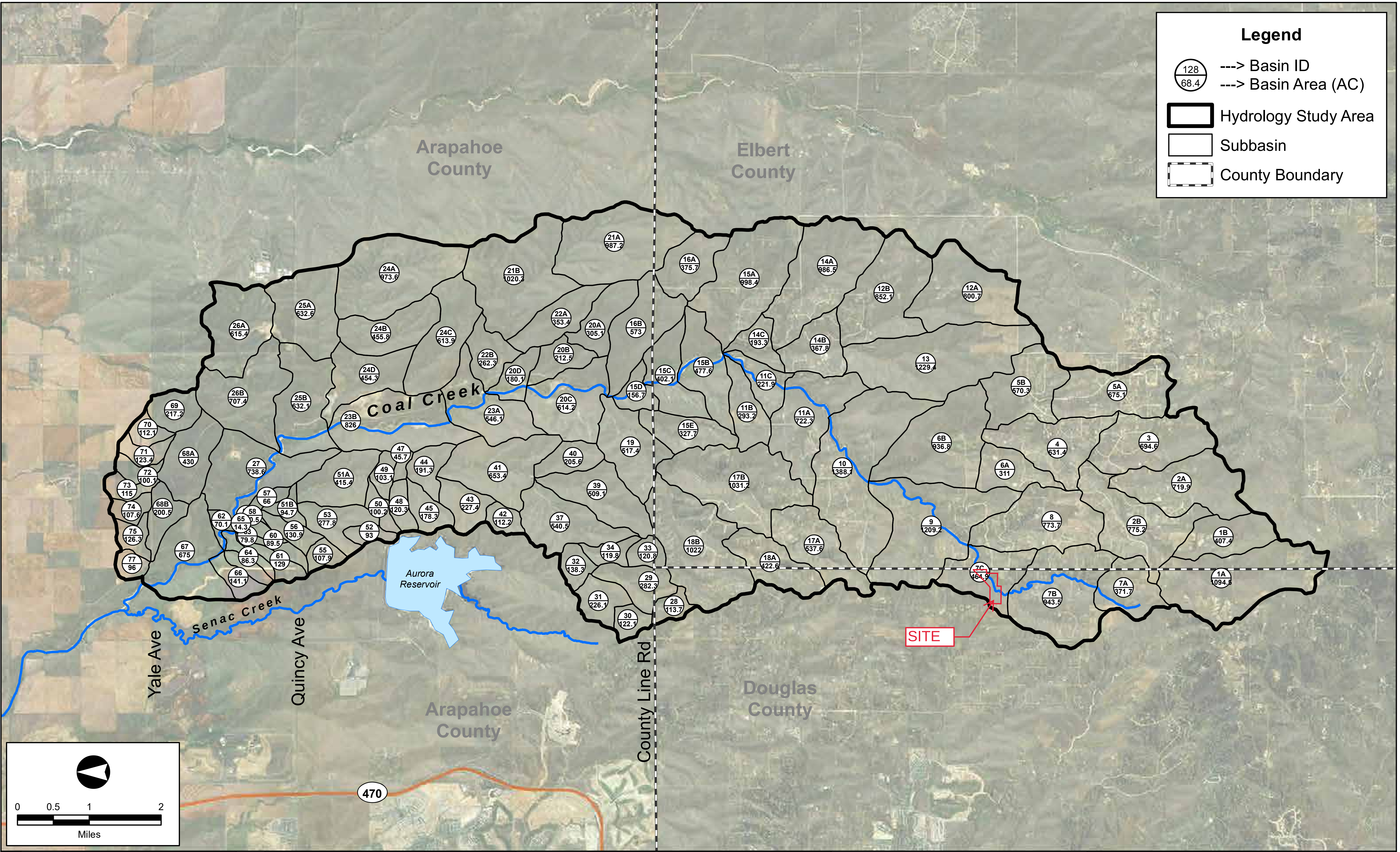
Comment	100 Year NOAA Raingage				
1Hr Depth	2.34	inches	2hr Depth	2.77	inches
6Hr Depth	3.6	inches	3hr Depth	3.09	inches
Correction Area	2.4546875	Sq. Mi.			
Return Period	100	Years			

NOAA Atlas 14 Point Precipitation Frequency Estimates: CO (Note: Use 60-minute recurrence interval depth)

Time	Adjusted Depth	Unadjusted Depth
0:05	0.0234	0.0234
0:10	0.0702	0.0702
0:15	0.1076	0.1076
0:20	0.1872	0.1872
0:25	0.3276	0.3276
0:30	0.5850	0.5850
0:35	0.3276	0.3276
0:40	0.1872	0.1872
0:45	0.1451	0.1451
0:50	0.1170	0.1170
0:55	0.0936	0.0936
1:00	0.0936	0.0936
1:05	0.0936	0.0936
1:10	0.0468	0.0468
1:15	0.0468	0.0468
1:20	0.0281	0.0281
1:25	0.0281	0.0281
1:30	0.0281	0.0281
1:35	0.0281	0.0281
1:40	0.0281	0.0281
1:45	0.0281	0.0281
1:50	0.0281	0.0281
1:55	0.0281	0.0281
2:00	0.0281	0.0281
2:05	0.0000	0.0000
2:10	0.0000	0.0000
2:15	0.0000	0.0000
2:20	0.0000	0.0000
2:25	0.0000	0.0000
2:30	0.0000	0.0000
2:35	0.0000	0.0000
2:40	0.0000	0.0000
2:45	0.0000	0.0000
2:50	0.0000	0.0000
2:55	0.0000	0.0000
3:00	0.0000	0.0000
3:05	0.0000	0.0000
3:10	0.0000	0.0000
3:15	0.0000	0.0000
3:20	0.0000	0.0000
3:25	0.0000	0.0000
3:30	0.0000	0.0000
3:35	0.0000	0.0000
3:40	0.0000	0.0000
3:45	0.0000	0.0000
3:50	0.0000	0.0000
3:55	0.0000	0.0000
4:00	0.0000	0.0000
4:05	0.0000	0.0000
4:10	0.0000	0.0000
4:15	0.0000	0.0000
4:20	0.0000	0.0000
4:25	0.0000	0.0000
4:30	0.0000	0.0000
4:35	0.0000	0.0000
4:40	0.0000	0.0000
4:45	0.0000	0.0000
4:50	0.0000	0.0000
4:55	0.0000	0.0000
5:00	0.0000	0.0000
5:05	0.0000	0.0000
5:10	0.0000	0.0000
5:15	0.0000	0.0000
5:20	0.0000	0.0000
5:25	0.0000	0.0000
5:30	0.0000	0.0000
5:35	0.0000	0.0000
5:40	0.0000	0.0000
5:45	0.0000	0.0000
5:50	0.0000	0.0000
5:55	0.0000	0.0000
6:00	0.0000	0.0000
6:05	0.0000	0.0000

APPENDIX C

Excerpts from FHAD



No.	DATE	DESCRIPTION	APPR

Matrix DESIGN GROUP

designed by:
drawn by: WW
checked by: RK
project no.: 11.155.019
date: 4/7/2014

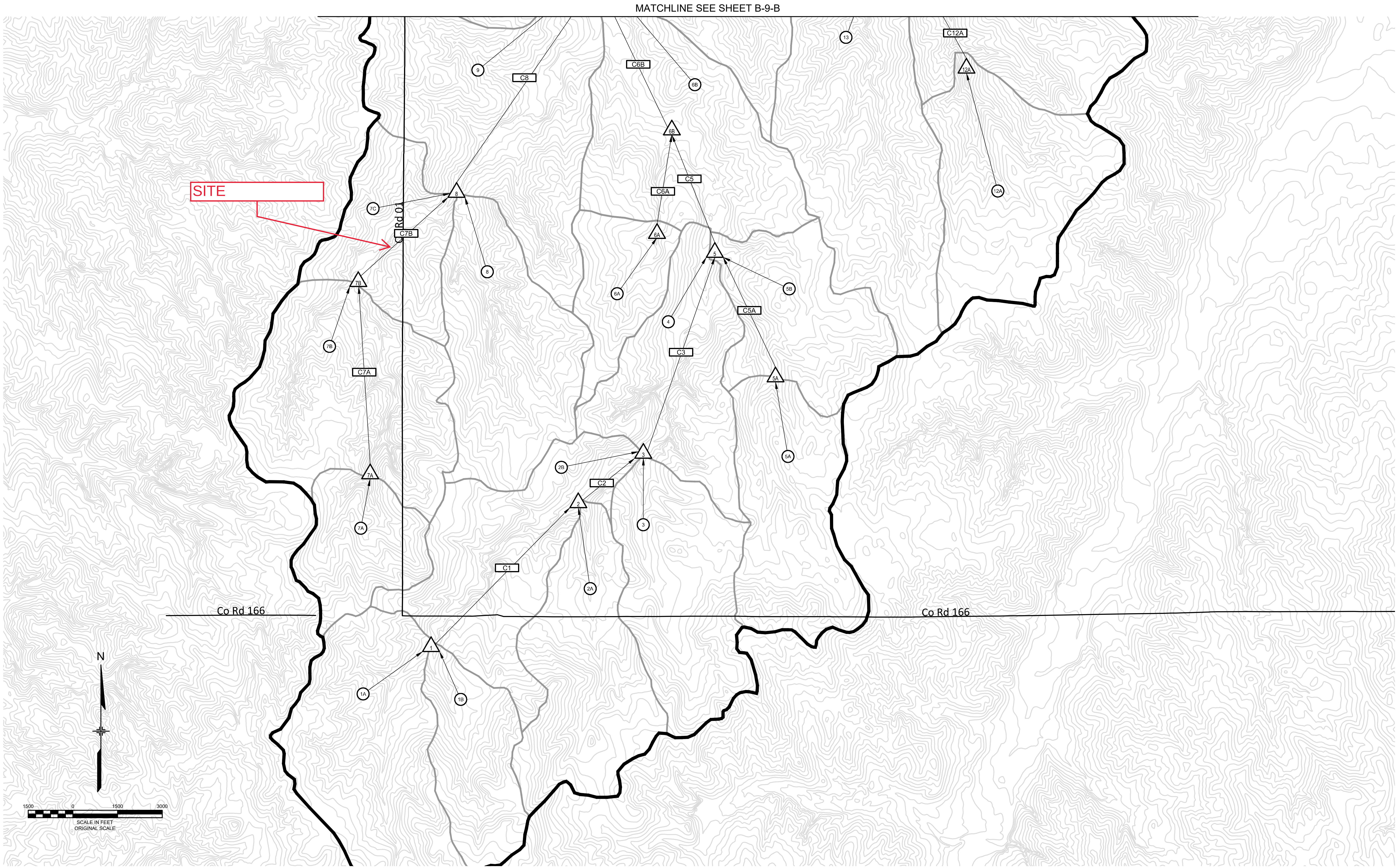
URBAN DRAINAGE AND FLOOD CONTROL DISTRICT AND ARAPAHOE COUNTY

FLOOD HAZARD AREA DELINEATION
COAL CREEK (YALE TO COUNTY LINE RD)

SUBWATERSHED MAP

FIGURE
B-6

FILE: G:\gis_projects\UDFCD_Coal_Creek\activelapps\Report\Fig_B-6_Subbasin_Map.mxd, 5/15/2014, wilson_wheeler



No.	DATE	DESCRIPTION	APPR.

Designed by: HTH
Drawn by: HTH
Checked by: RK
Project no.: 11.155.019
Date: 5/12/2014

URBAN DRAINAGE AND FLOOD CONTROL DISTRICT, ARAPAHOE COUNTY

FLOOD HAZARD AREA DELINEATION COAL CREEK (YALE TO COUNTY LINE RD)

BASIN DELINEATION AND CONVEYANCE ELEMENTS

FIGURE B-9-C

Future 100-Yr Coal Creek (6-hour Rainfall, 30 square mile) SWMM Report

```
  C7B                  CONDUIT   1217.12     0  01:30      4.01    0.01    0.06
  C8                   CONDUIT   2044.07     0  01:45      4.80    0.01    0.08
  C9                   CONDUIT   7376.35     0  02:05      6.82    0.08    0.31
  C6A                  CONDUIT    391.04     0  01:05      4.01    0.02    0.11
  C6B                  CONDUIT   4364.36     0  02:00      5.00    0.08    0.24
  C12A                 CONDUIT    758.87     0  01:20      4.30    0.03    0.14
  C16A                 CONDUIT    327.26     0  01:40      2.66    0.01    0.05
  C18T                 CONDUIT   2573.33     0  01:45      3.62    0.03    0.12
  C15E                 CONDUIT    398.47     0  01:05      1.92    0.00    0.02
  C20A                 CONDUIT    621.56     0  01:00      4.04    0.01    0.08
  C21                  DUMMY     2585.13     0  01:15
  C68A                 CONDUIT    990.69     0  01:05      4.36    0.01    0.09


  *************************
  Conduit Surcharge Summary
  *************************

  ----------------------------------------------------------------------------
                                                          Hours        Hours 
                         --------- Hours Full --------   Above Full   Capacity
  Conduit                Both Ends  Upstream  Dnstream   Normal Flow   Limited
  ----------------------------------------------------------------------------
  C21                         0.01      0.01      0.01      96.08          0.01


  Analysis begun on:  Tue May 13 12:32:36 2014
  Analysis ended on:  Tue May 13 12:32:36 2014
  Total elapsed time: < 1 sec
```

APPENDIX D

HYDRAULIC COMPUTATIONS

Culvert Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Monday, Nov 18 2024

Culvert A, Q5 [18in RCP]

Invert Elev Dn (ft) = 6246.62
Pipe Length (ft) = 52.00
Slope (%) = 0.67
Invert Elev Up (ft) = 6246.97
Rise (in) = 18.0
Shape = Circular
Span (in) = 18.0
No. Barrels = 1
n-Value = 0.013
Culvert Type = Circular Concrete
Culvert Entrance = Groove end projecting (C)
Coeff. K,M,c,Y,k = 0.0045, 2, 0.0317, 0.69, 0.2

Embankment

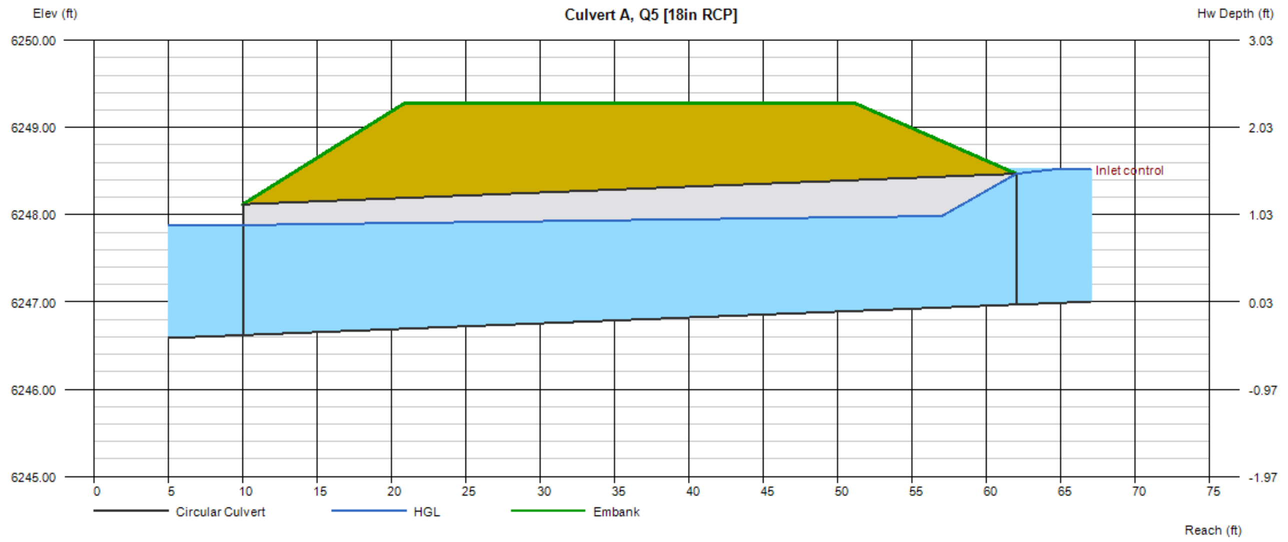
Top Elevation (ft) = 6249.28
Top Width (ft) = 30.24
Crest Width (ft) = 16.00

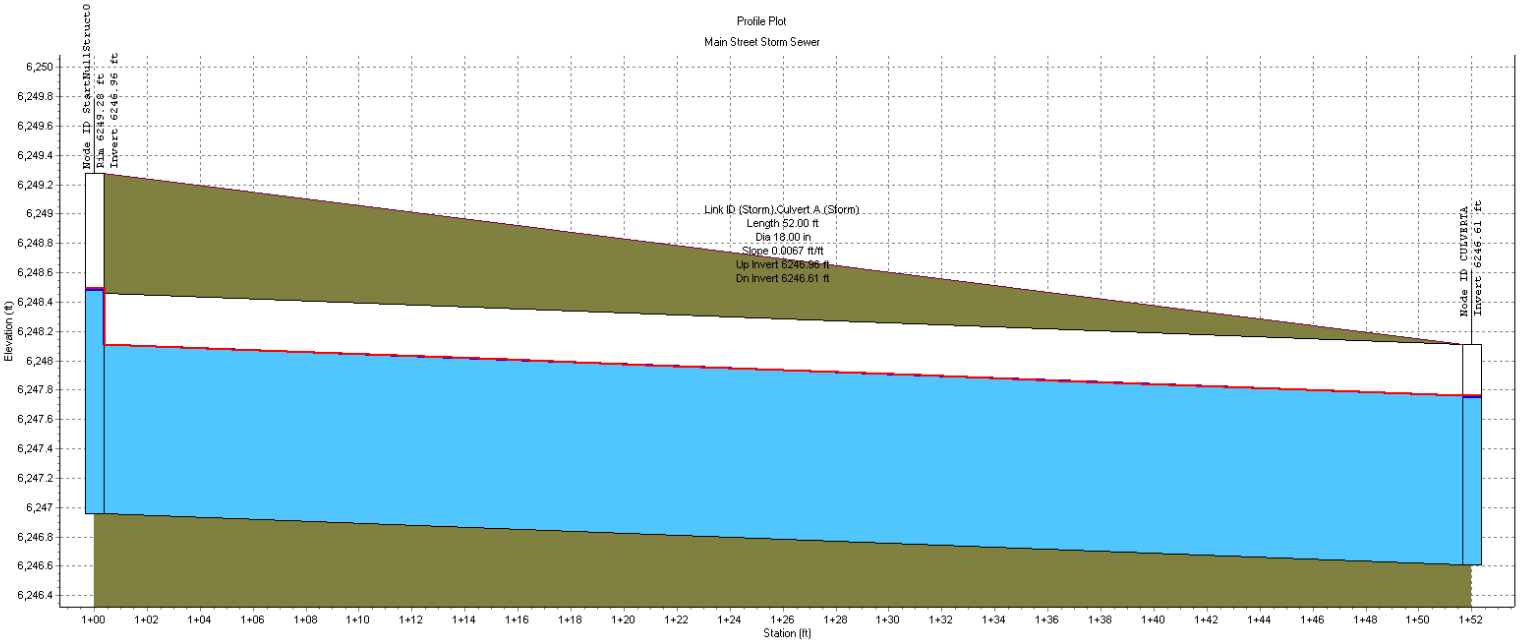
Calculations

Qmin (cfs) = 6.99
Qmax (cfs) = 6.99
Tailwater Elev (ft) = (dc+D)/2

Highlighted

Qtotal (cfs) = 6.99
Qpipe (cfs) = 6.99
Qovertop (cfs) = 0.00
Veloc Dn (ft/s) = 4.41
Veloc Up (ft/s) = 5.43
HGL Dn (ft) = 6247.88
HGL Up (ft) = 6248.00
Hw Elev (ft) = 6248.52
Hw/D (ft) = 1.03
Flow Regime = Inlet Control





Node ID:			CULVERTA
Rim (ft):	6249.28		
Invert (ft):	6246.96		6246.61
Min Pipe Cover (ft):	0.82		
Max HGL (ft):	6248.51		6247.77
Link ID:		{Storm}.Culvert A (Storm)	
Length (ft):		52.00	
Dia (in):		18.00	
Slope (ft/ft):		0.0067	
Up Invert (ft):		6246.96	
Dn Invert (ft):		6246.61	
Max Q (cfs):		7.06	
Max Vel (ft/s):		4.26	
Max Depth (ft):		1.33	

Autodesk Storm and Sanitary Analysis

Culvert Report

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

Friday, Jan 17 2025

Culvert A, Q100 [18in RCP]

Invert Elev Dn (ft) = 6246.62
Pipe Length (ft) = 52.00
Slope (%) = 0.67
Invert Elev Up (ft) = 6246.97
Rise (in) = 18.0
Shape = Circular
Span (in) = 18.0
No. Barrels = 1
n-Value = 0.013
Culvert Type = Circular Concrete
Culvert Entrance = Groove end projecting (C)
Coeff. K,M,c,Y,k = 0.0045, 2, 0.0317, 0.69, 0.2

Embankment

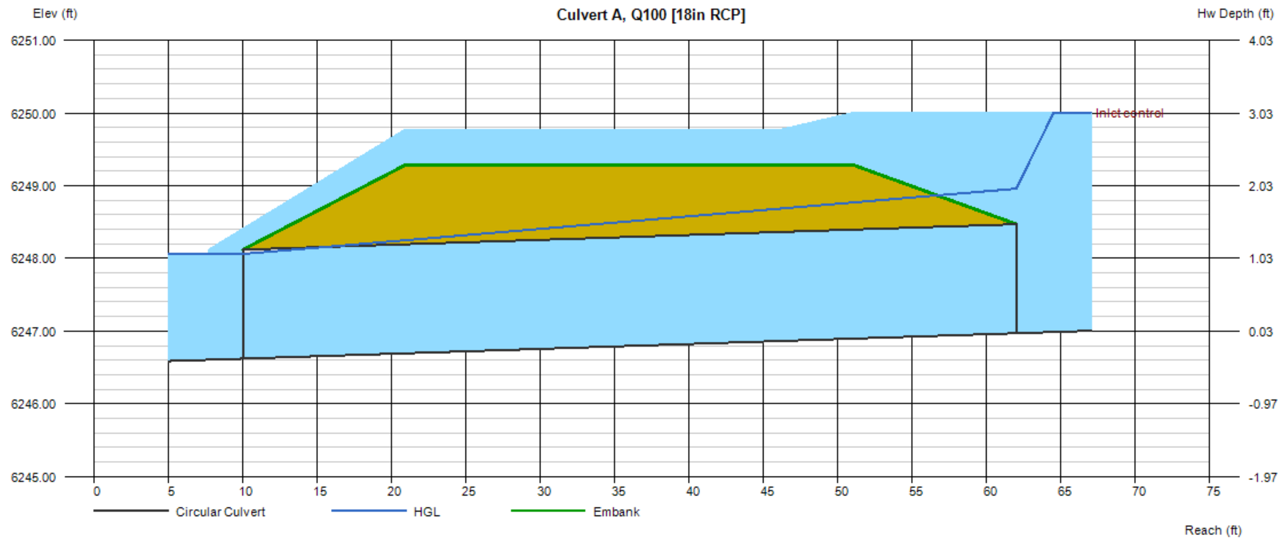
Top Elevation (ft) = 6249.28
Top Width (ft) = 30.24
Crest Width (ft) = 16.00

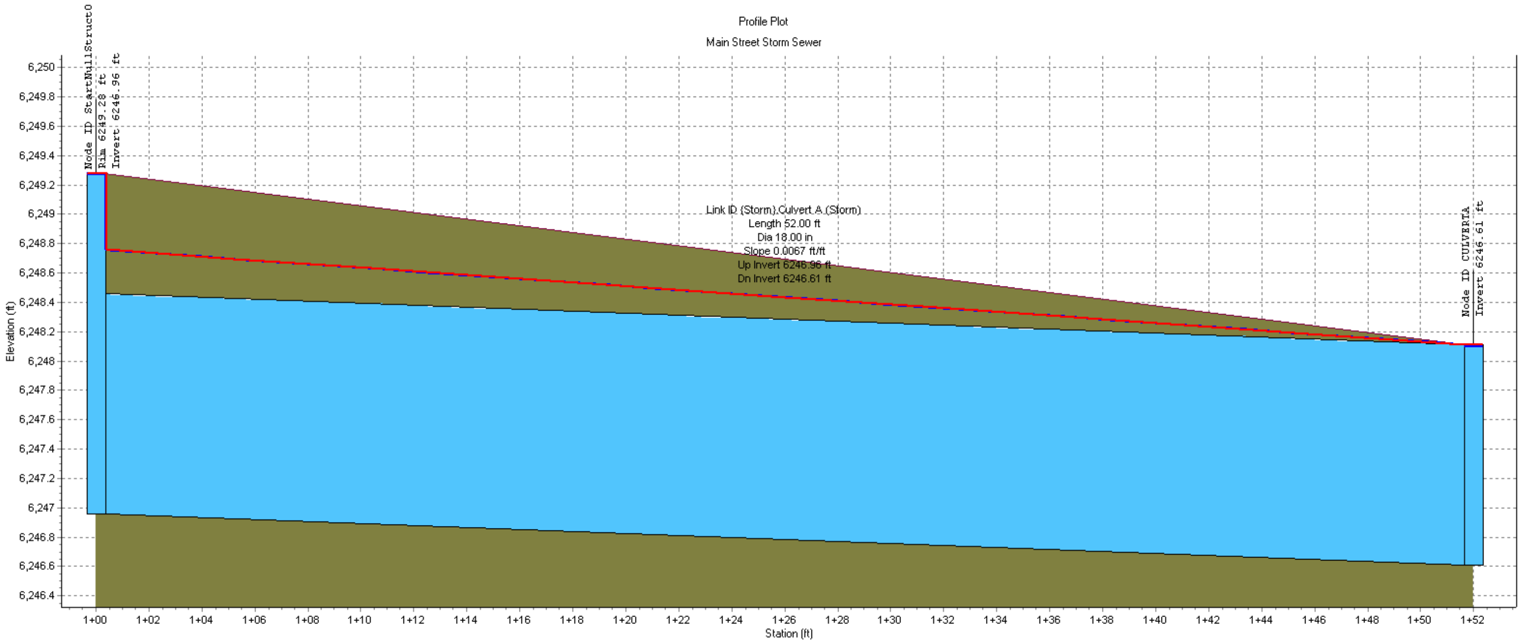
Calculations

Qmin (cfs) = 44.13
Qmax (cfs) = 44.13
Tailwater Elev (ft) = (dc+D)/2

Highlighted

Qtotal (cfs) = 44.13
Qpipe (cfs) = 14.05
Qovertop (cfs) = 30.08
Veloc Dn (ft/s) = 8.06
Veloc Up (ft/s) = 7.95
HGL Dn (ft) = 6248.06
HGL Up (ft) = 6248.96
Hw Elev (ft) = 6250.00
Hw/D (ft) = 2.02
Flow Regime = Inlet Control

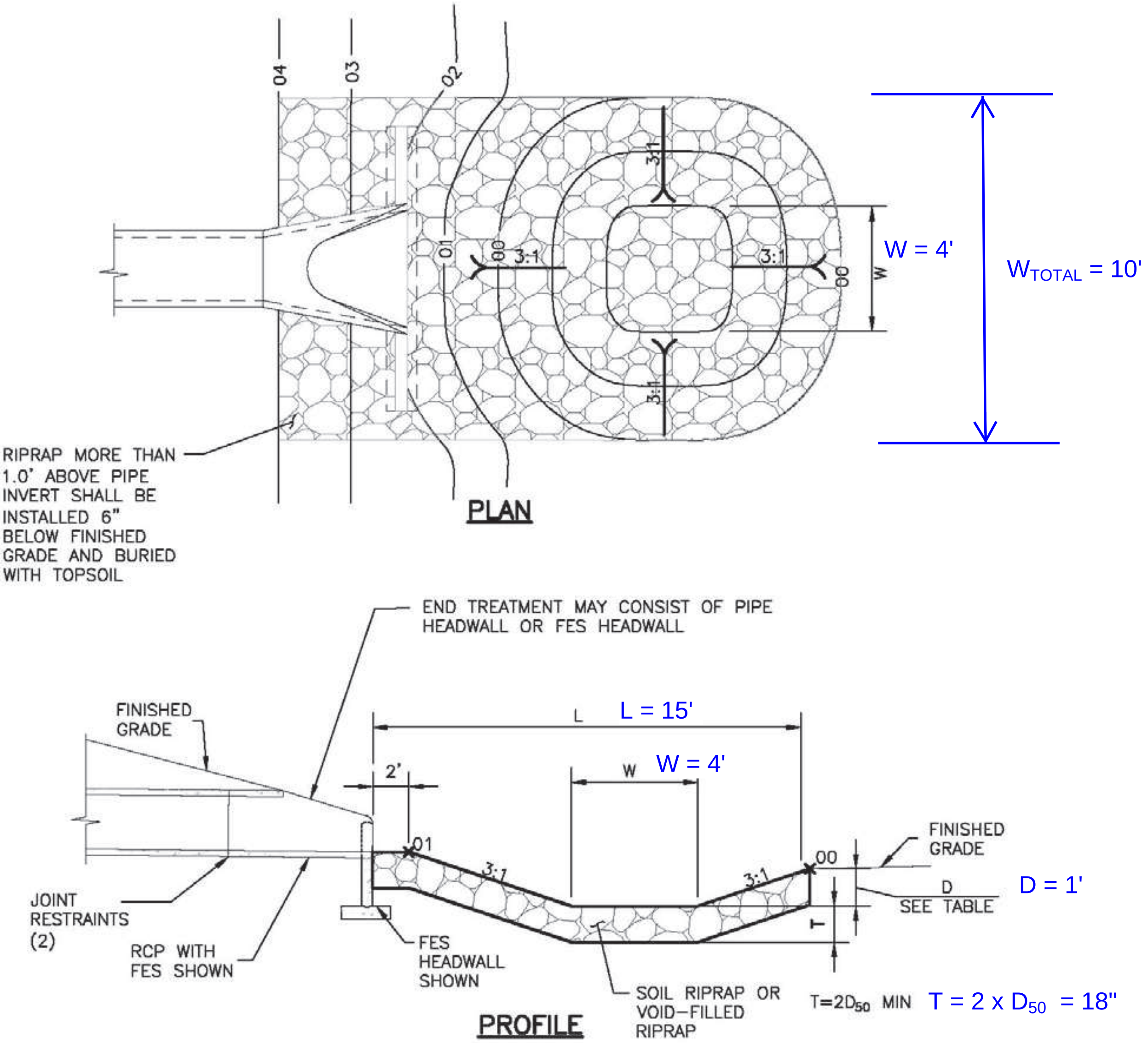




Node ID:			CULVERTA
Rim (ft):	6249.28		
Invert (ft):	6246.96		6246.61
Min Pipe Cover (ft):	0.82		
Max HGL (ft):	6249.28		6248.11
Link ID:		{Storm}.Culvert A (Storm)	
Length (ft):		52.00	
Dia (in):		18.00	
Slope (ft/ft):		0.0067	
Up Invert (ft):		6246.96	
Dn Invert (ft):		6246.61	
Max Q (cfs):		10.21	
Max Vel (ft/s):		5.78	
Max Depth (ft):		1.50	

Autodesk Storm and Sanitary Analysis

DRIVEWAY CULVERT A
[LOCATED AT INTERSX OF ACCESS DRIVE FROM DELBERT ROAD]



PIPE SIZE OR BOX HEIGHT	D	W*	L
18" – 24"	1'–0"	4'	15'
30" – 36"	1'–6"	6'	20'
42" – 48"	2'–0"	7'	24'
54" – 60"	2'–6"	8'	28'
66" – 72"	3'–0"	9'	32'

* IF OUTLET PIPE IS A BOX CULVERT WITH A WIDTH GREATER THAN W, THEN W = CULVERT WIDTH

Figure 9-37. Low tailwater riprap basin

DRIVEWAY CULVERT A
[LOCATED AT INTTERSX OF ACCESS DRIVE FROM DELBERT ROAD]

$$H_a = \frac{(H + Y_n)}{2}$$ Equation 9-19

Where the maximum value of H_a shall not exceed H, and:

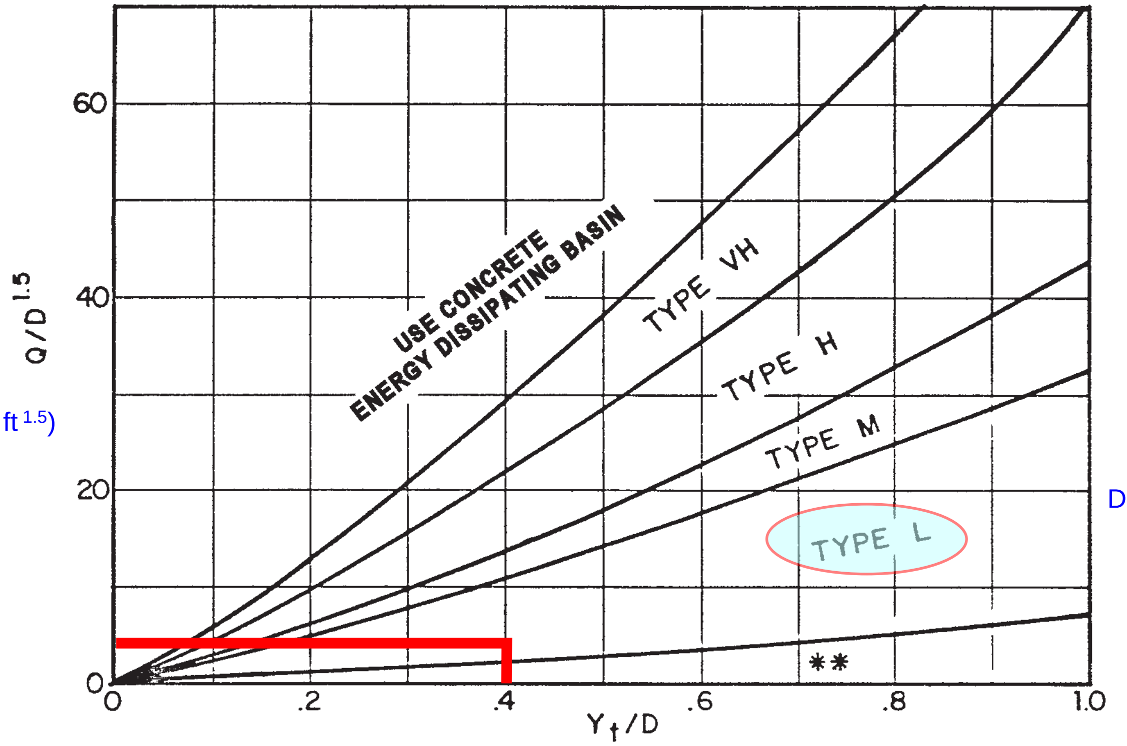
D_a = parameter to use in place of D in Figure 9-38 when flow is supercritical (ft)

D_c = diameter of circular culvert (ft)

H_a = parameter to use in place of H in Figure 9-39 when flow is supercritical (ft)

H = height of rectangular culvert (ft)

Y_n = normal depth of supercritical flow in the culvert (ft)



Q_5 = 6.99 cfs
6.99 cfs / (1.5 ft$^{1.5}$)
= 3.11

D_{50} = 9"

Use D_a instead of D whenever flow is supercritical in the barrel.
** Use Type L for a distance of 3D downstream.

Figure 9-38. Riprap erosion protection at circular conduit outlet (valid for Q/D2.5 ≤ 6.0)

Culvert Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Monday, Mar 31 2025

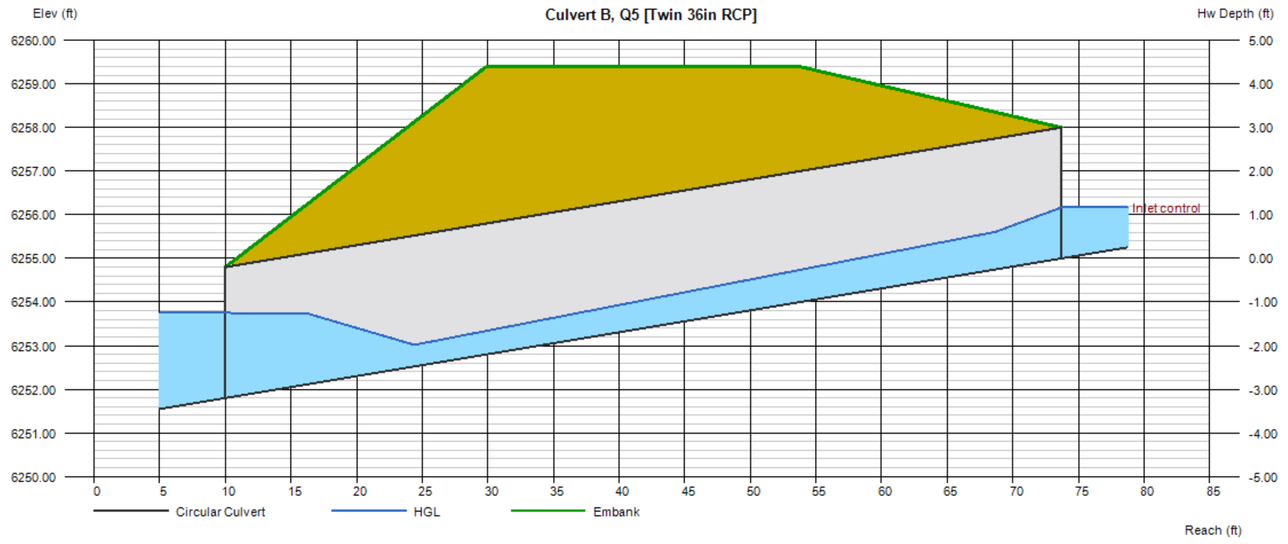
Culvert B, Q5 [Twin 36in RCP]

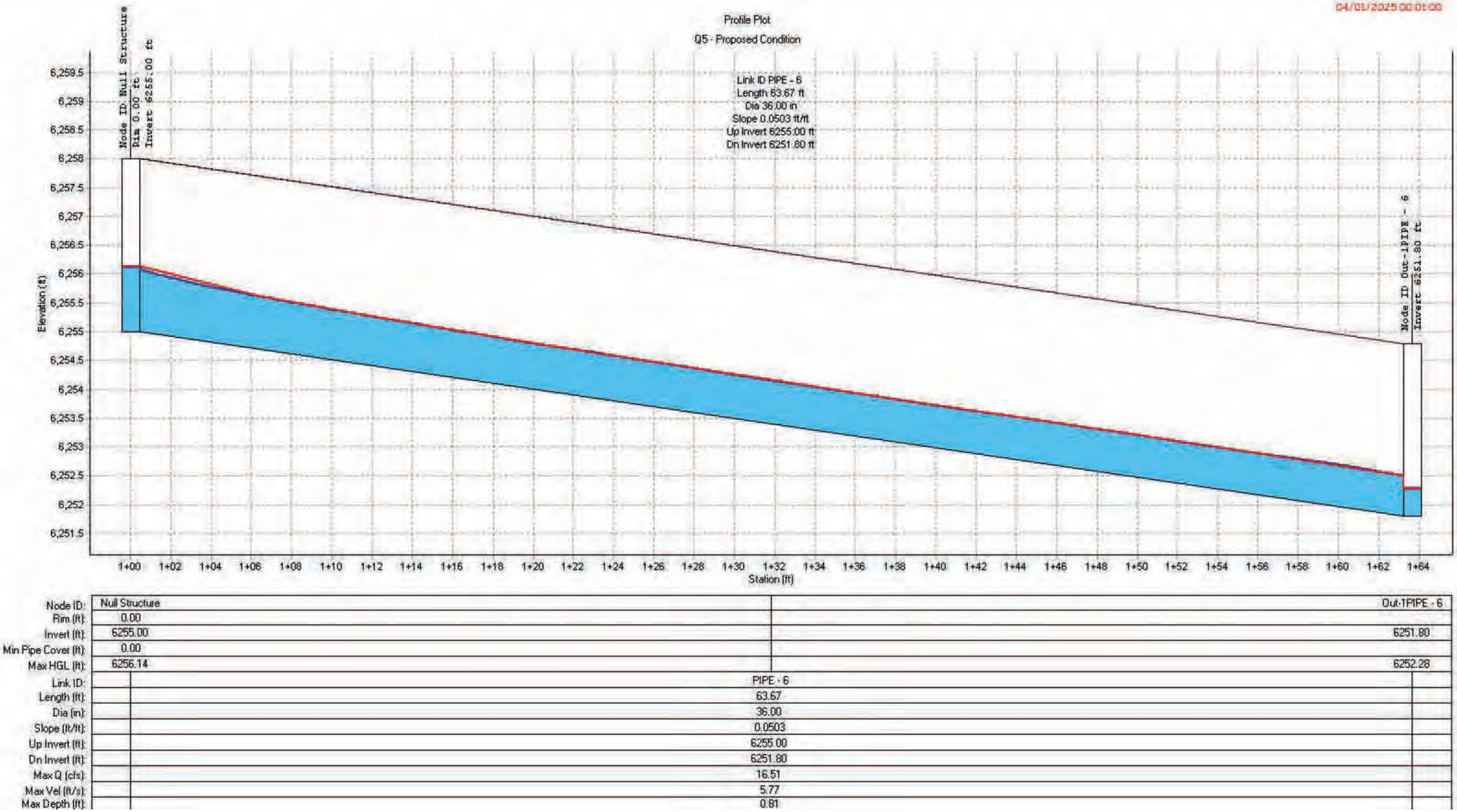
Invert Elev Dn (ft) = 6251.80
Pipe Length (ft) = 63.70
Slope (%) = 5.02
Invert Elev Up (ft) = 6255.00
Rise (in) = 36.0
Shape = Circular
Span (in) = 36.0
No. Barrels = 2
n-Value = 0.013
Culvert Type = Circular Concrete
Culvert Entrance = Square edge w/headwall (C)
Coeff. K,M,c,Y,k = 0.0098, 2, 0.0398, 0.67, 0.5

Embankment
Top Elevation (ft) = 6259.39
Top Width (ft) = 24.00
Crest Width (ft) = 50.00

Calculations
Qmin (cfs) = 16.43
Qmax (cfs) = 16.43
Tailwater Elev (ft) = (dc+D)/2

Highlighted
Qtotal (cfs) = 16.43
Qpipe (cfs) = 16.43
Qovertop (cfs) = 0.00
Veloc Dn (ft/s) = 1.69
Veloc Up (ft/s) = 4.58
HGL Dn (ft) = 6253.75
HGL Up (ft) = 6255.90
Hw Elev (ft) = 6256.17
Hw/D (ft) = 0.39
Flow Regime = Inlet Control





Node ID:	Null Structure	Out-1PIPE - 6
Rim (ft):	0.00	
Invert (ft):	6255.00	6251.80
Min Pipe Cover (ft):	0.00	
Max HGL (ft):	6256.14	6252.28

Link ID:	PIPE - 6
Length (ft):	63.67
Dia (in):	36.00
Slope (ft/ft):	0.0503
Up Invert (ft):	6255.00
Dn Invert (ft):	6251.80
Max Q (cfs):	16.51
Max Vel (ft/s):	5.77
Max Depth (ft):	0.81

Culvert Report

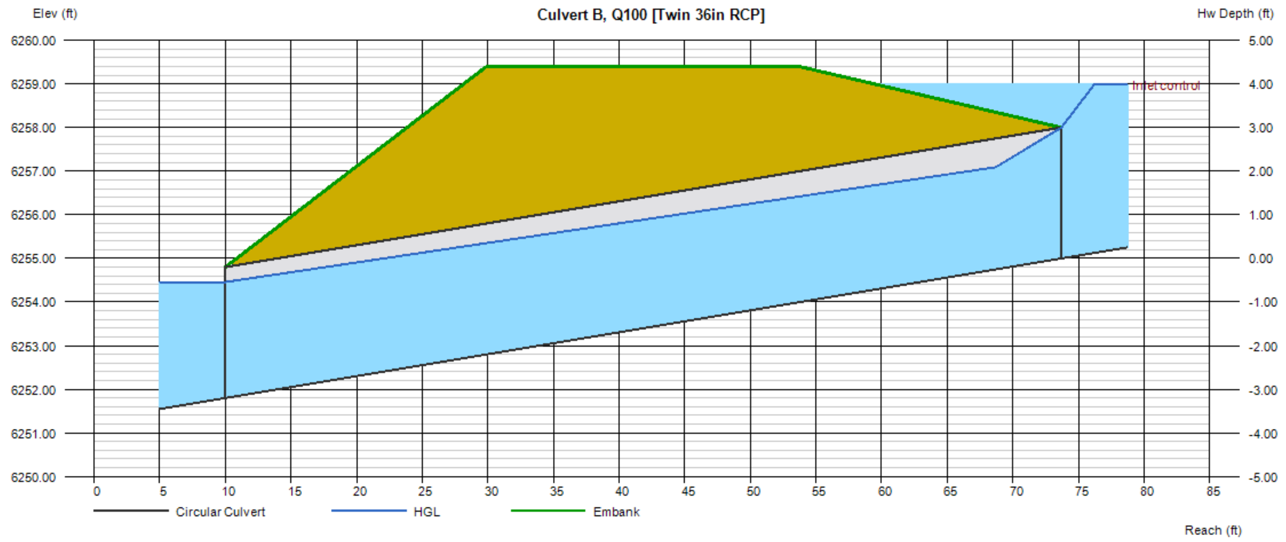
Culvert B, Q100 [Twin 36in RCP]

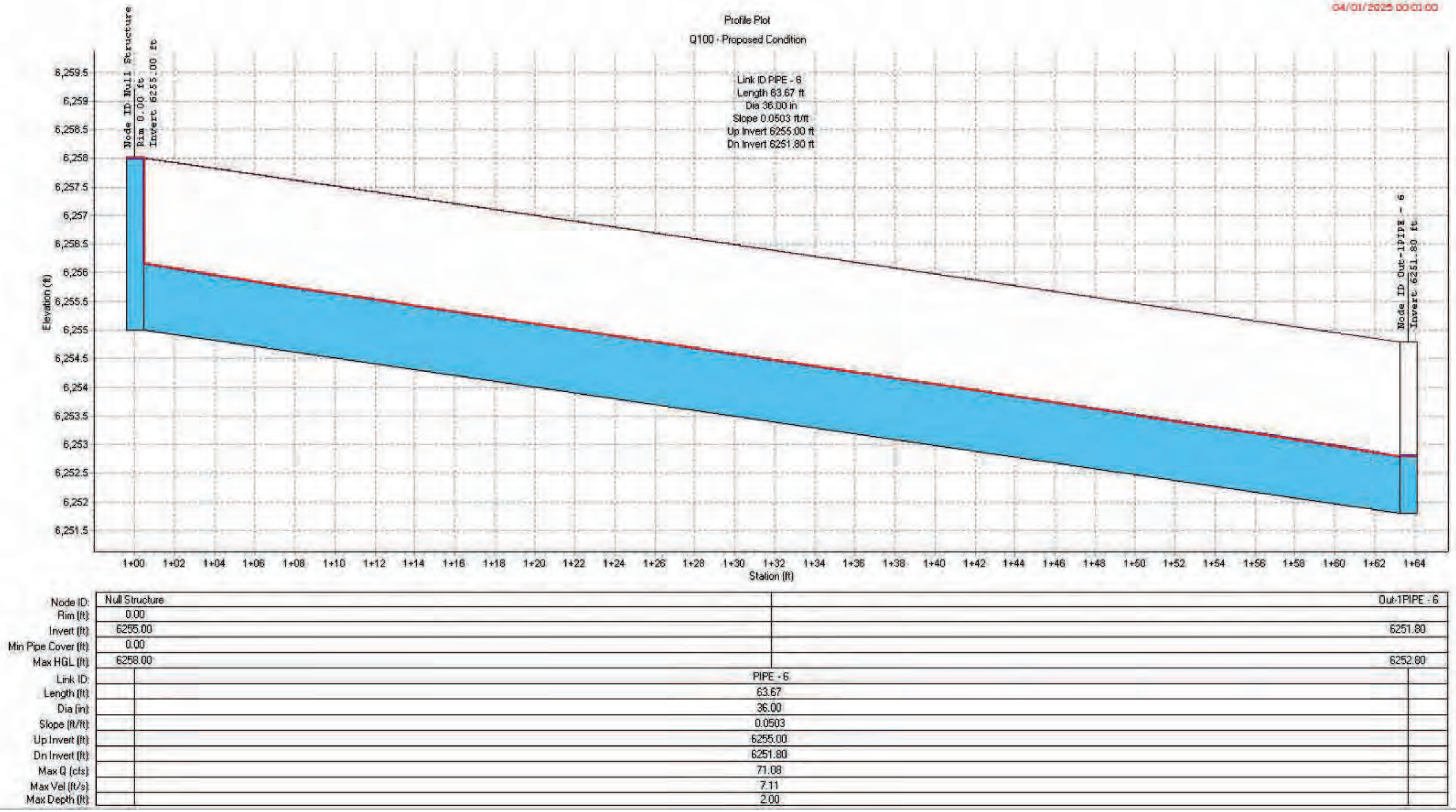
Invert Elev Dn (ft) = 6251.80
Pipe Length (ft) = 63.70
Slope (%) = 5.02
Invert Elev Up (ft) = 6255.00
Rise (in) = 36.0
Shape = Circular
Span (in) = 36.0
No. Barrels = 2
n-Value = 0.013
Culvert Type = Circular Concrete
Culvert Entrance = Square edge w/headwall (C)
Coeff. K,M,c,Y,k = 0.0098, 2, 0.0398, 0.67, 0.5

Embankment
Top Elevation (ft) = 6259.39
Top Width (ft) = 24.00
Crest Width (ft) = 50.00

Calculations
Qmin (cfs) = 101.46
Qmax (cfs) = 101.46
Tailwater Elev (ft) = (dc+D)/2

Highlighted
Qtotal (cfs) = 101.46
Qpipe (cfs) = 101.46
Qovertop (cfs) = 0.00
Veloc Dn (ft/s) = 7.66
Veloc Up (ft/s) = 8.67
HGL Dn (ft) = 6254.46
HGL Up (ft) = 6257.32
Hw Elev (ft) = 6258.98
Hw/D (ft) = 1.33
Flow Regime = Inlet Control

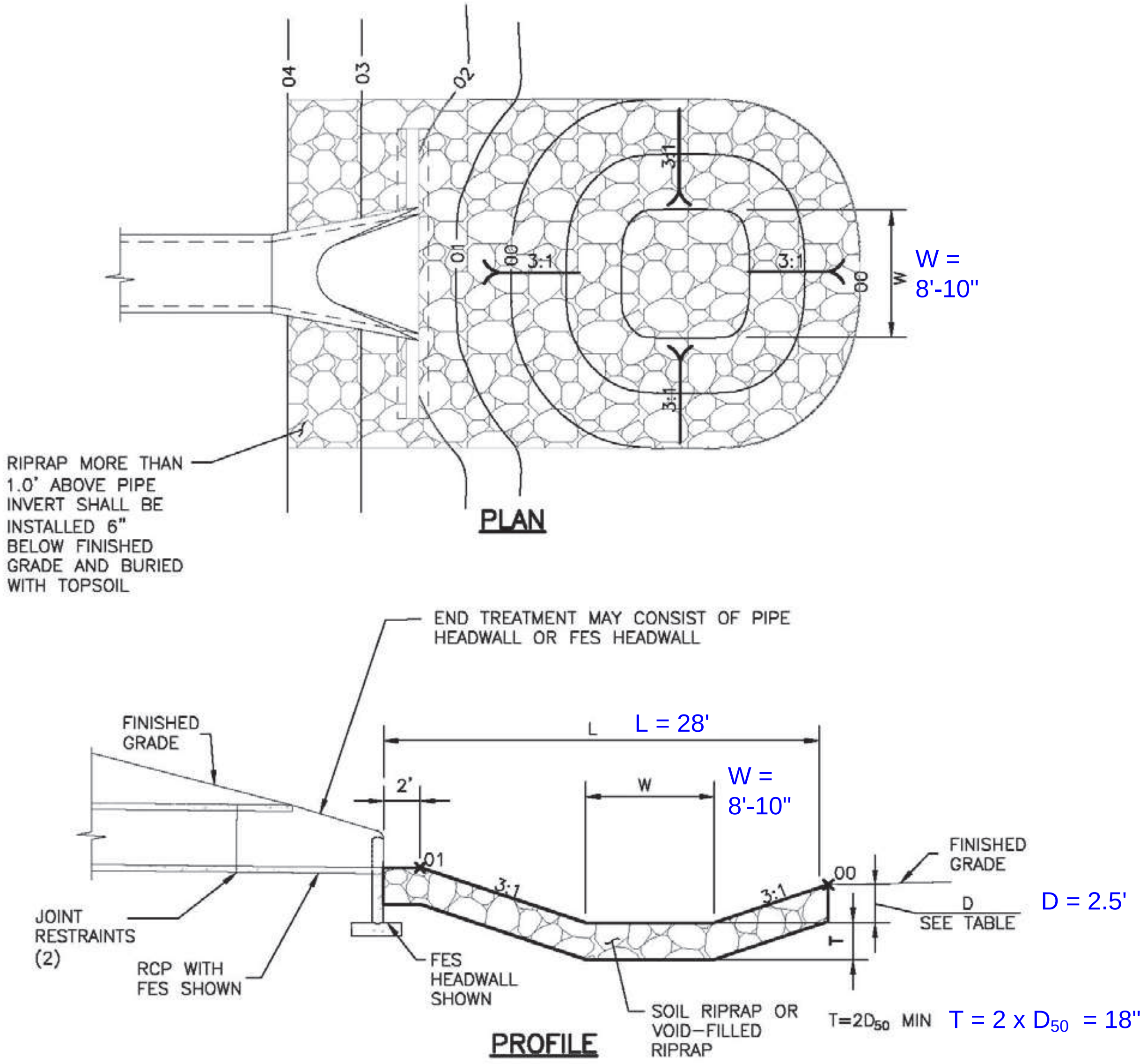




Node ID:	Null Structure	Out-1PIPE - 6
Rim (ft):	0.00	
Invert (ft):	6255.00	6251.80
Min Pipe Cover (ft):	0.00	
Max HGL (ft):	6258.00	6252.80

Link ID:	PIPE - 6
Length (ft):	63.67
Dia (in):	36.00
Slope (ft/ft):	0.0503
Up Invert (ft):	6255.00
Dn Invert (ft):	6251.80
Max Q (cfs):	71.08
Max Vel (ft/s):	7.11
Max Depth (ft):	2.00

DRIVEWAY CULVERT B
[LOCATED ALONG ACCESS ROAD AT NORTHWEST CORNER OF LOT 1]



PIPE SIZE OR BOX HEIGHT	D	W*	L
18" – 24"	1'–0"	4'	15'
30" – 36"	1'–6"	6'	20'
42" – 48"	2'–0"	7'	24'
54" – 60"	2'–6"	8'	28'
66" – 72"	3'–0"	9'	32'

* IF OUTLET PIPE IS A BOX CULVERT WITH A WIDTH GREATER THAN W, THEN W = CULVERT WIDTH

Figure 9-37. Low tailwater riprap basin

DRIVEWAY CULVERT B
[LOCATED ALONG ACCESS ROAD AT NORTHWEST CORNER OF LOT 1]

$$H_a = \frac{(H + Y_n)}{2}$$ Equation 9-19

Where the maximum value of H_a shall not exceed H, and:

D_a = parameter to use in place of D in Figure 9-38 when flow is supercritical (ft)

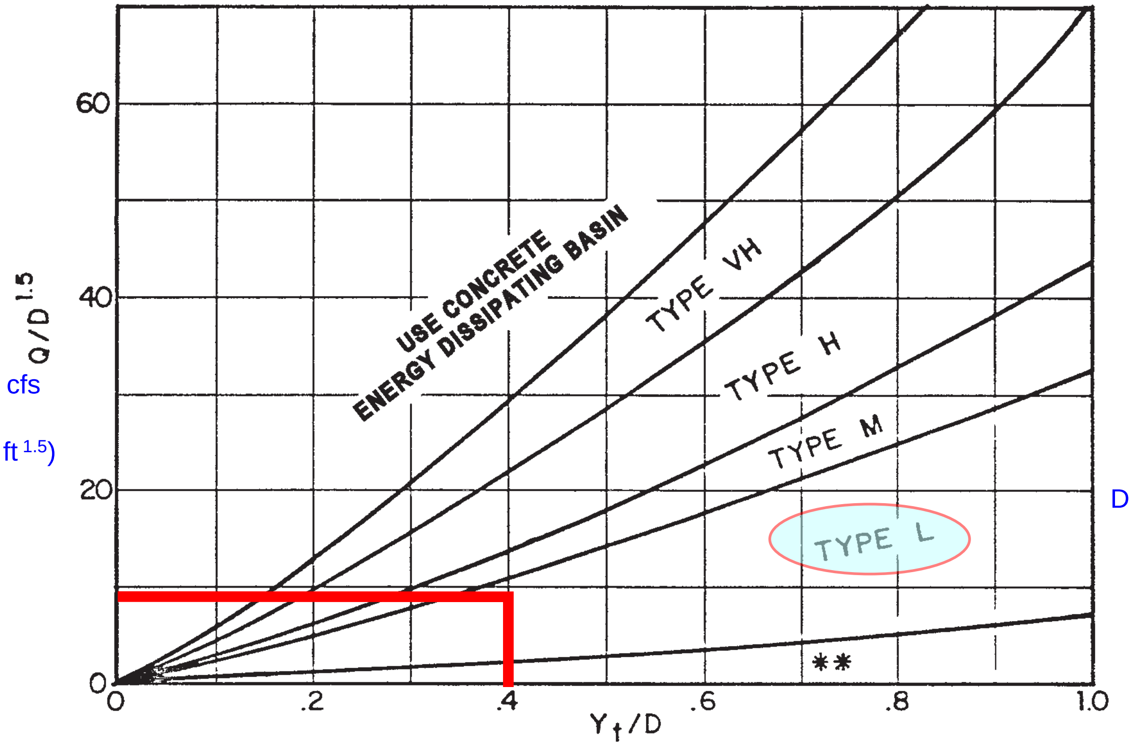
D_c = diameter of circular culvert (ft)

H_a = parameter to use in place of H in Figure 9-39 when flow is supercritical (ft)

H = height of rectangular culvert (ft)

Y_n = normal depth of supercritical flow in the culvert (ft)

Q_{100} = 101.46 cfs
50.73 cfs (2 barrels) / (3.0 ft $^{1.5}$) = 9.8



D_{50} = 9"

Use D_a instead of D whenever flow is supercritical in the barrel.
** Use Type L for a distance of 3D downstream.

Figure 9-38. Riprap erosion protection at circular conduit outlet (valid for Q/D2.5 ≤ 6.0)

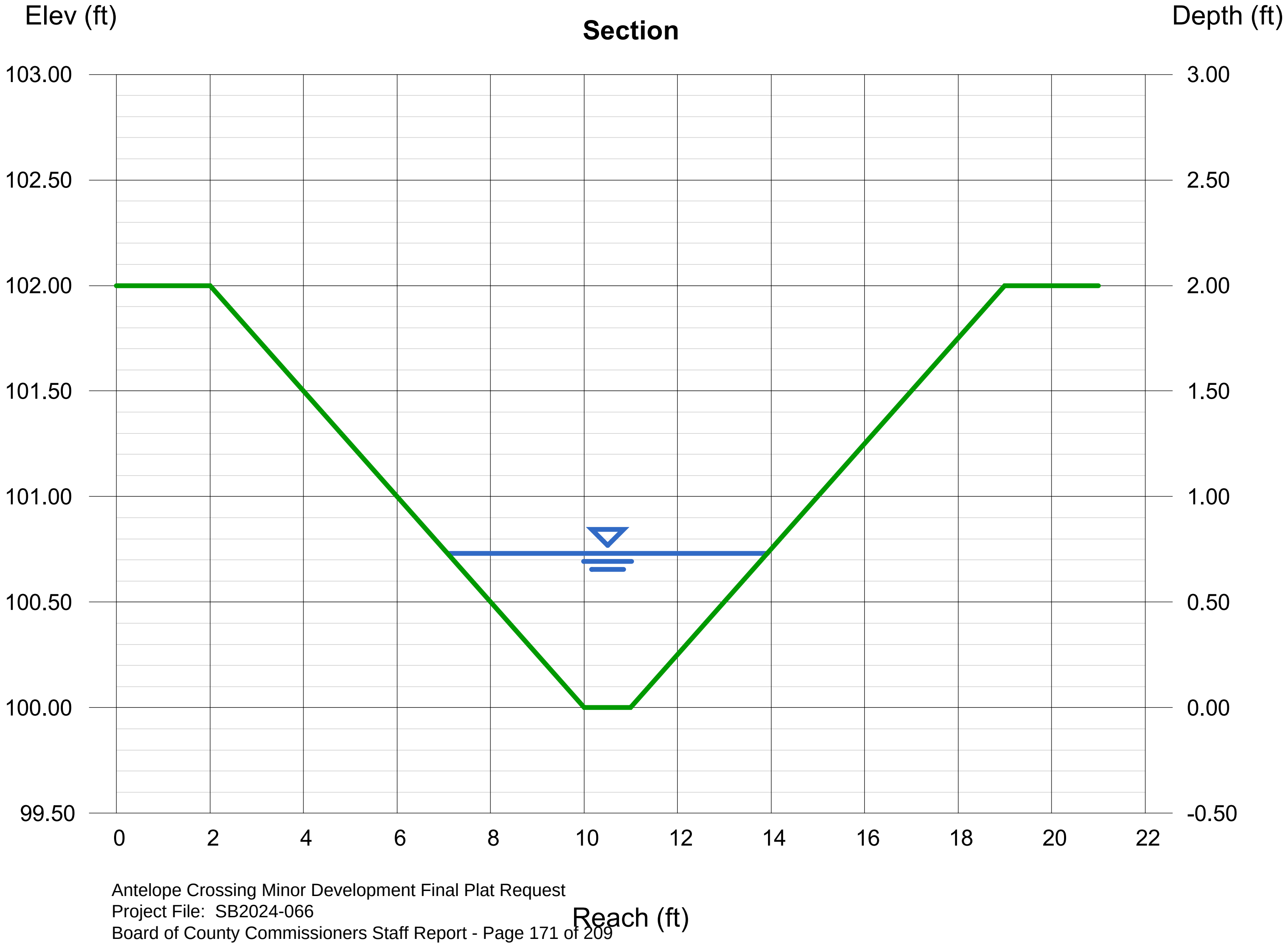
Channel Report

Roadside Ditch Capacity - Basin PR-2, Q5

Trapezoidal
Bottom Width (ft) = 1.00
Side Slopes (z:1) = 4.00, 4.00
Total Depth (ft) = 2.00
Invert Elev (ft) = 100.00
Slope (%) = 3.80
N-Value = 0.027

Calculations
Compute by: Known Q
Known Q (cfs) = 16.43

Highlighted
Depth (ft) = 0.73
Q (cfs) = 16.43
Area (sqft) = 2.86
Velocity (ft/s) = 5.74
Wetted Perim (ft) = 7.02
Crit Depth, Yc (ft) = 0.90
Top Width (ft) = 6.84
EGL (ft) = 1.24



Channel Report

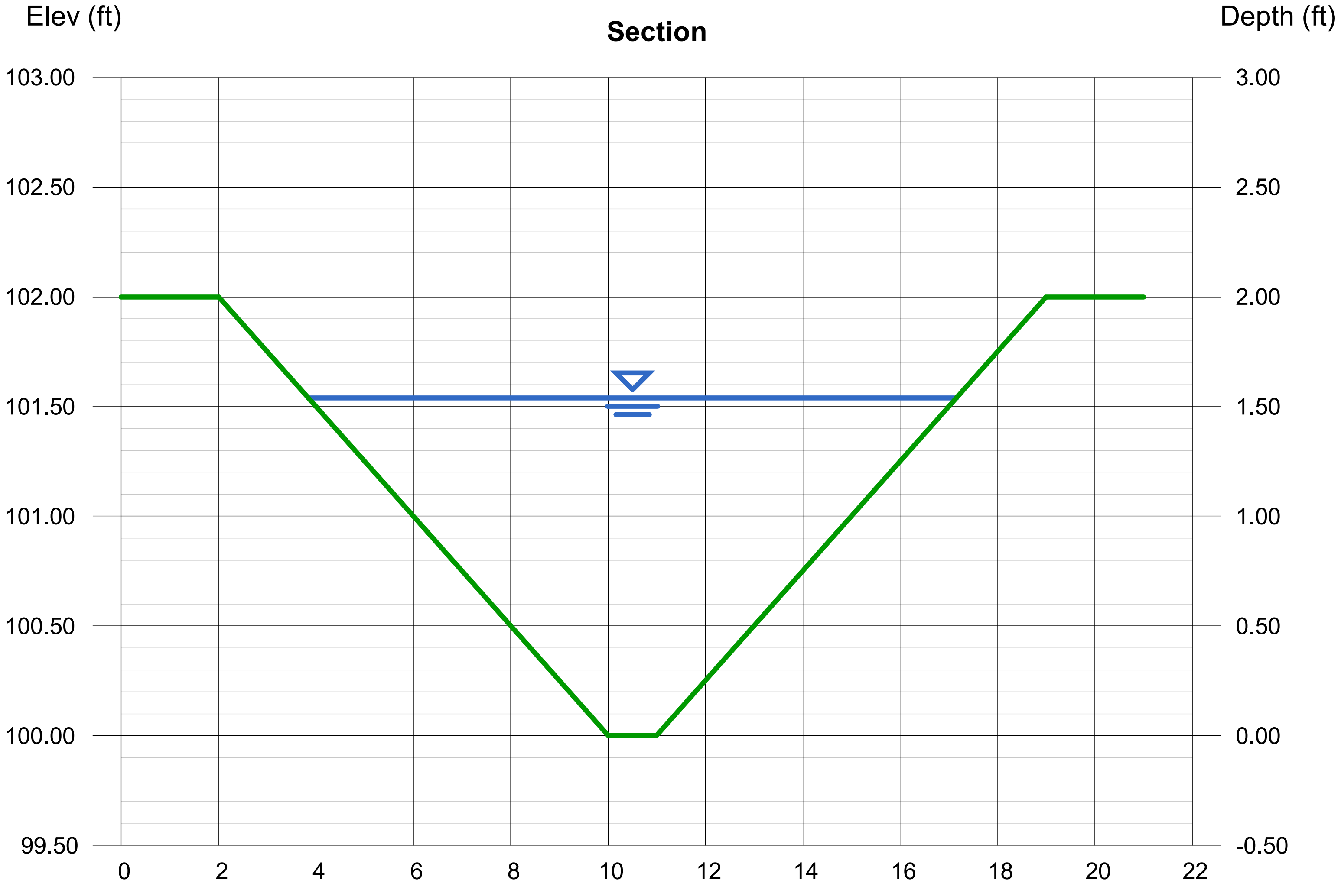
Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Friday, Jan 17 2025

Roadside Ditch Capacity - Basin PR-2, Q100

Trapezoidal
Bottom Width (ft) = 1.00
Side Slopes (z:1) = 4.00, 4.00
Total Depth (ft) = 2.00
Invert Elev (ft) = 100.00
Slope (%) = 3.80
N-Value = 0.027

Calculations
Compute by: Known Q
Known Q (cfs) = 101.46

Highlighted
Depth (ft) = 1.54
Q (cfs) = 101.46
Area (sqft) = 11.03
Velocity (ft/s) = 9.20
Wetted Perim (ft) = 13.70
Crit Depth, Yc (ft) = 1.98
Top Width (ft) = 13.32
EGL (ft) = 2.86



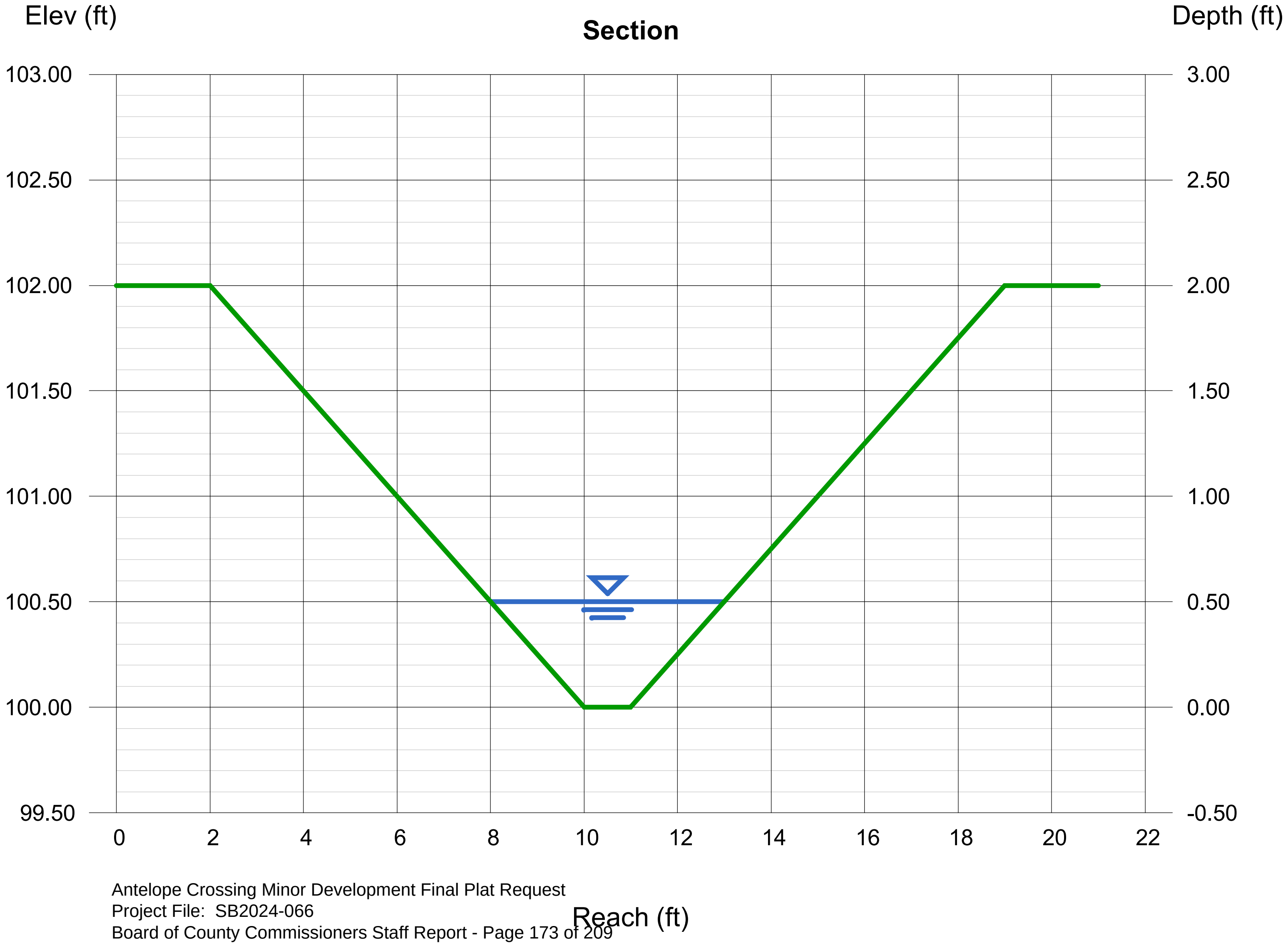
Channel Report

Roadside Ditch Capacity - Basin PR-3, Q5

Trapezoidal
Bottom Width (ft) = 1.00
Side Slopes (z:1) = 4.00, 4.00
Total Depth (ft) = 2.00
Invert Elev (ft) = 100.00
Slope (%) = 4.00
N-Value = 0.027

Calculations
Compute by: Known Q
Known Q (cfs) = 6.99

Highlighted
Depth (ft) = 0.50
Q (cfs) = 6.990
Area (sqft) = 1.50
Velocity (ft/s) = 4.66
Wetted Perim (ft) = 5.12
Crit Depth, Yc (ft) = 0.61
Top Width (ft) = 5.00
EGL (ft) = 0.84



Channel Report

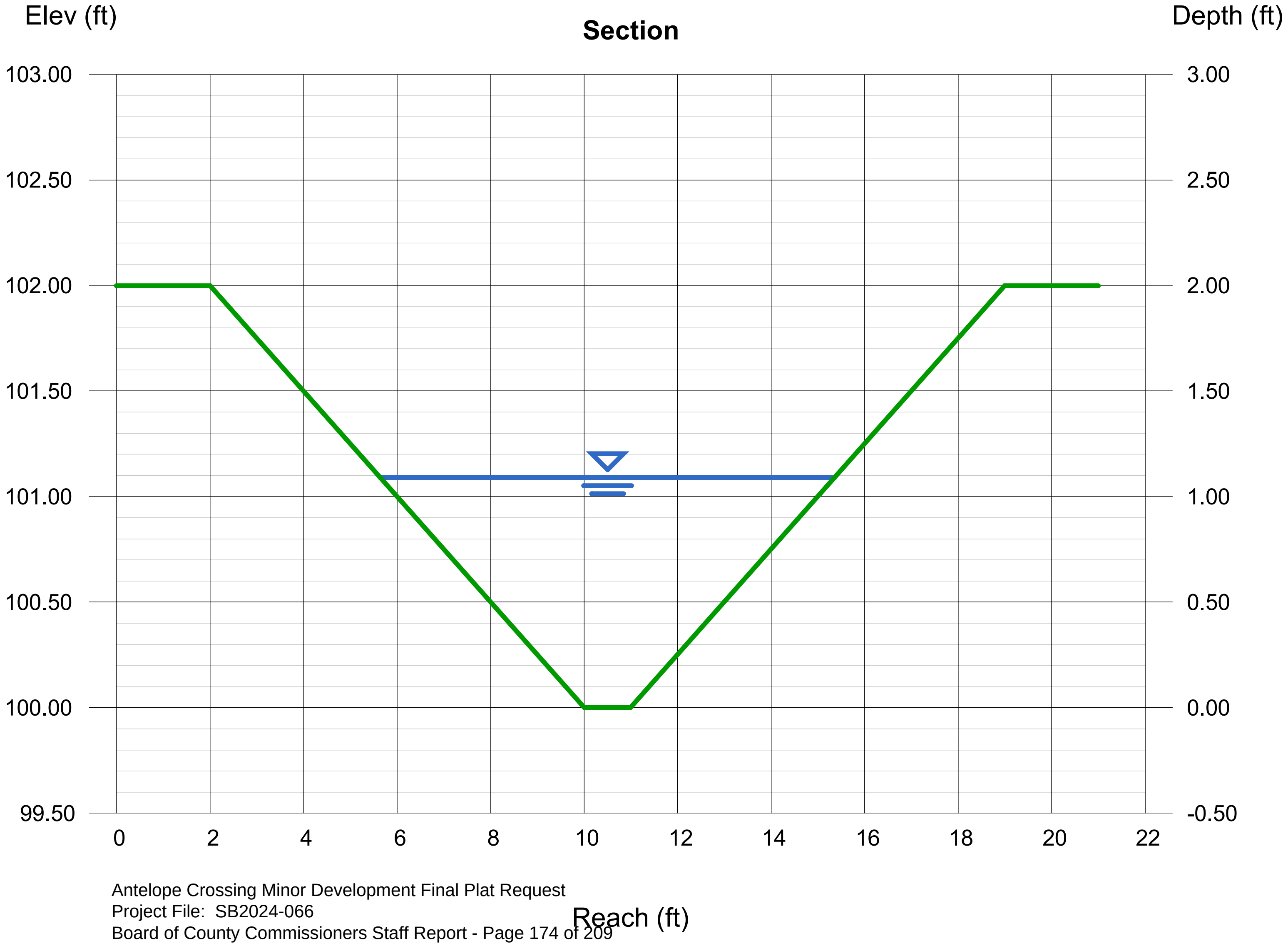
Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc.
Friday, Jan 17 2025

Roadside Ditch Capacity - Basin PR-3, Q100

Trapezoidal
Bottom Width (ft) = 1.00
Side Slopes (z:1) = 4.00, 4.00
Total Depth (ft) = 2.00
Invert Elev (ft) = 100.00
Slope (%) = 4.00
N-Value = 0.027

Calculations
Compute by: Known Q
Known Q (cfs) = 44.13

Highlighted
Depth (ft) = 1.09
Q (cfs) = 44.13
Area (sqft) = 5.84
Velocity (ft/s) = 7.55
Wetted Perim (ft) = 9.99
Crit Depth, Yc (ft) = 1.39
Top Width (ft) = 9.72
EGL (ft) = 1.98



APPENDIX E

FLUVIAL HAZARD BUFFER ANALYSIS

FLUVIAL HAZARD BUFFER ANALYSIS FOR

ANTELOPE CROSSING FILING NO. 1

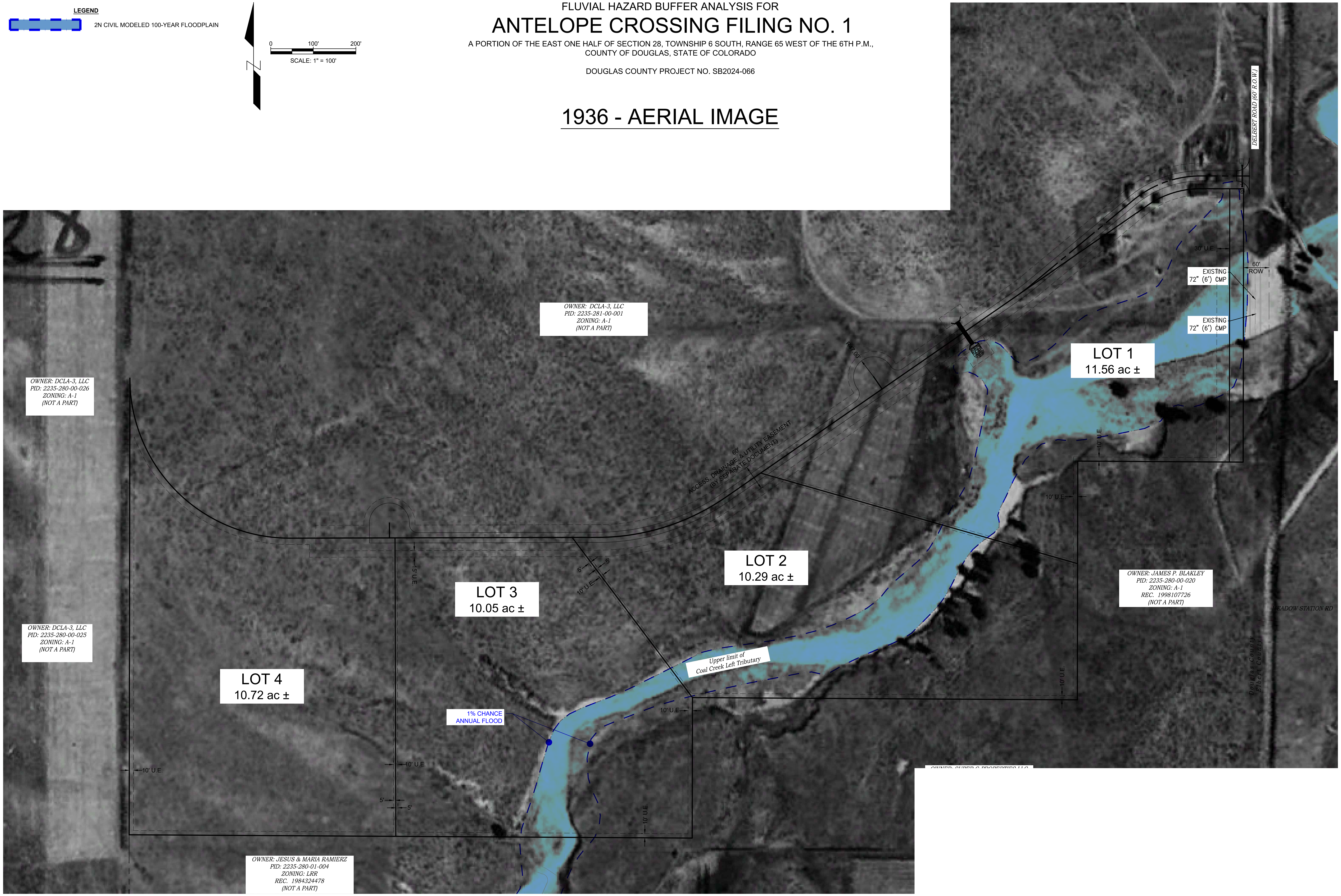
A PORTION OF THE EAST ONE HALF OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST OF THE 6TH P.M.,
COUNTY OF DOUGLAS, STATE OF COLORADO

DOUGLAS COUNTY PROJECT NO. SB2024-066

1936 - AERIAL IMAGE

LEGEND

🟦 2N CIVIL MODELED 100-YEAR FLOODPLAIN



2N CIVIL
303.925.0544
www.2ncivil.com

PREPARED FOR:
DCLA-3, LLC
14205 E DAVIES AVE
CENTENNIAL, CO 80112

FHB Analysis Historic Condition
CONSTRUCTION PLANS
ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

REVISIONS:	BY:	DATE:
1. ADDRESS DOUGLAS COUNTY COMMENTS	TEW	4-18-25
2.		
3.		
4.		

PROJECT NUMBER: 24001
ISSUED DATE: 2-6-25
DESIGNED BY: TEW
REVIEWED BY: EPT

FHB Analysis
Historic
Condition

A

J:\Projects\24\24001\dwg\Drainage\Fluvial Hazard Buffer Analysis.dwg 6/4/2025

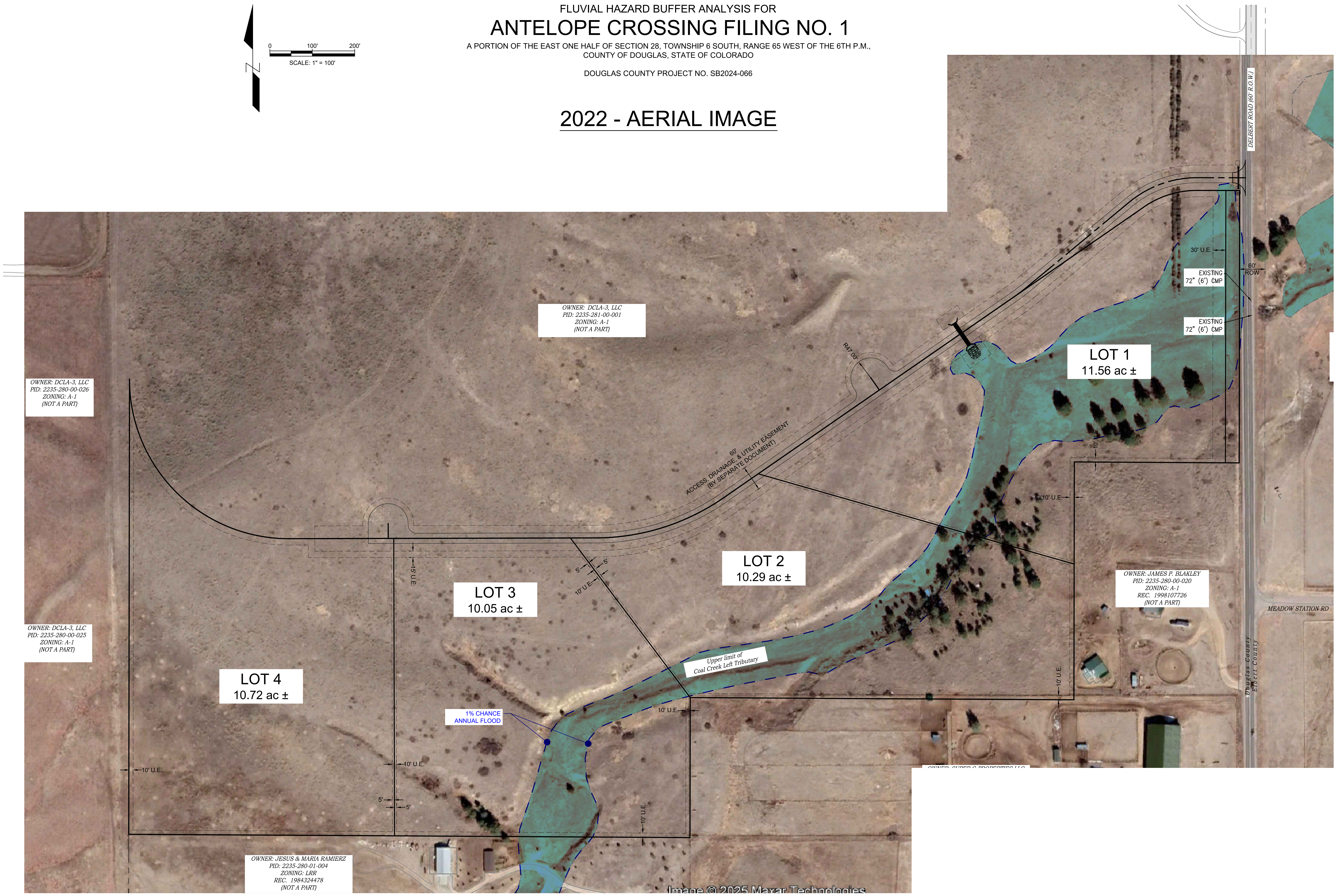
FLUVIAL HAZARD BUFFER ANALYSIS FOR

ANTELOPE CROSSING FILING NO. 1

A PORTION OF THE EAST ONE HALF OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST OF THE 6TH P.M.,
COUNTY OF DOUGLAS, STATE OF COLORADO

DOUGLAS COUNTY PROJECT NO. SB2024-066

2022 - AERIAL IMAGE



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PREPARED FOR:
DCLA-3, LLC
14205 E DAVIES AVE
CENTENNIAL, CO 80112

FHB Analysis Existing Condition
CONSTRUCTION PLANS
ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

REVISIONS:	BY:	DATE:
1. ADDRESS DOUGLAS COUNTY COMMENTS	TEW	4-18-25
2.		
3.		
4.		

PROJECT NUMBER:	24001
ISSUED DATE:	2-6-25
DESIGNED BY:	TEW
REVIEWED BY:	EPT

FHB Analysis
Existing
Condition

B

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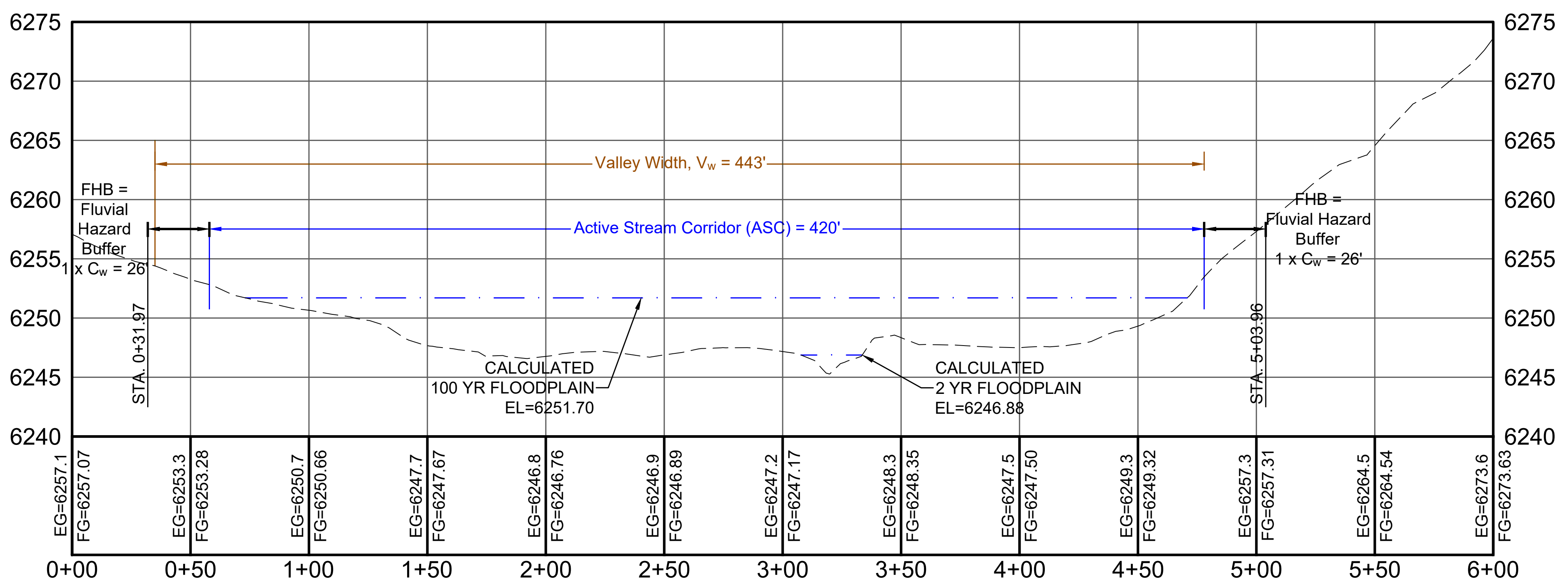

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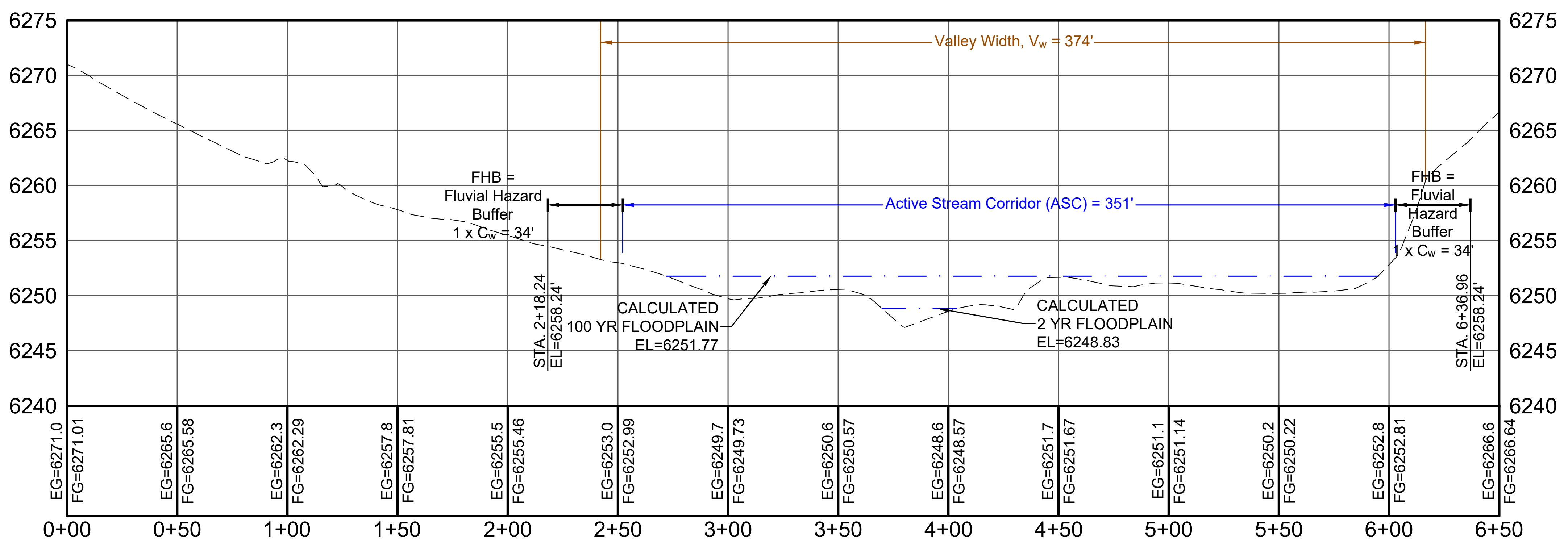

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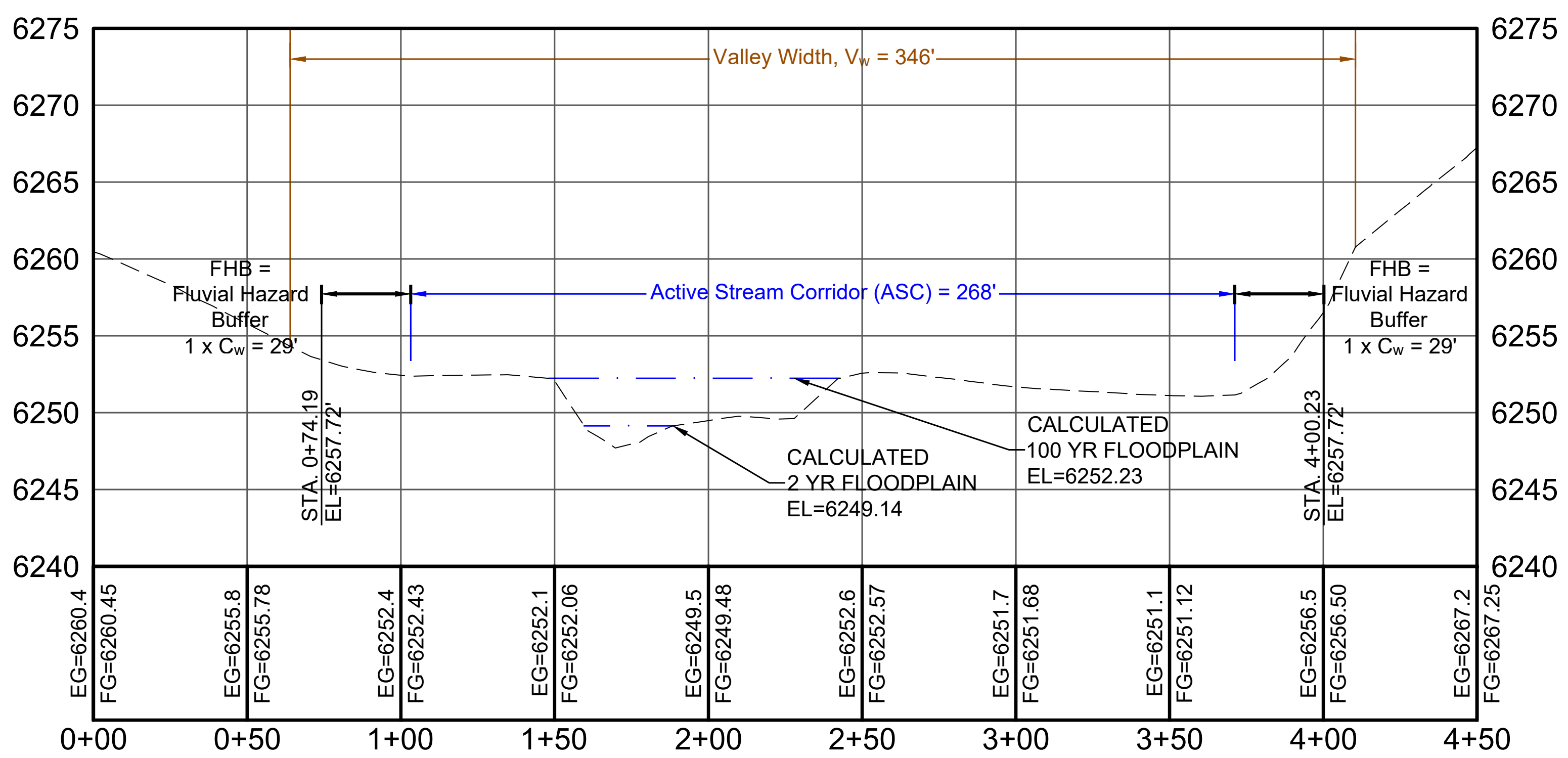

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FHB Analysis Sections
CONSTRUCTION PLANS
ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

REVISIONS:	BY:	DATE:
1. ADDRESS DOUGLAS COUNTY COMMENTS	TEW	4-18-25
2.		
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4.		

PROJECT NUMBER: 24001
ISSUED DATE: 2-6-25
DESIGNED BY: TEW
REVIEWED BY: EPT

FHB Analysis
Sections

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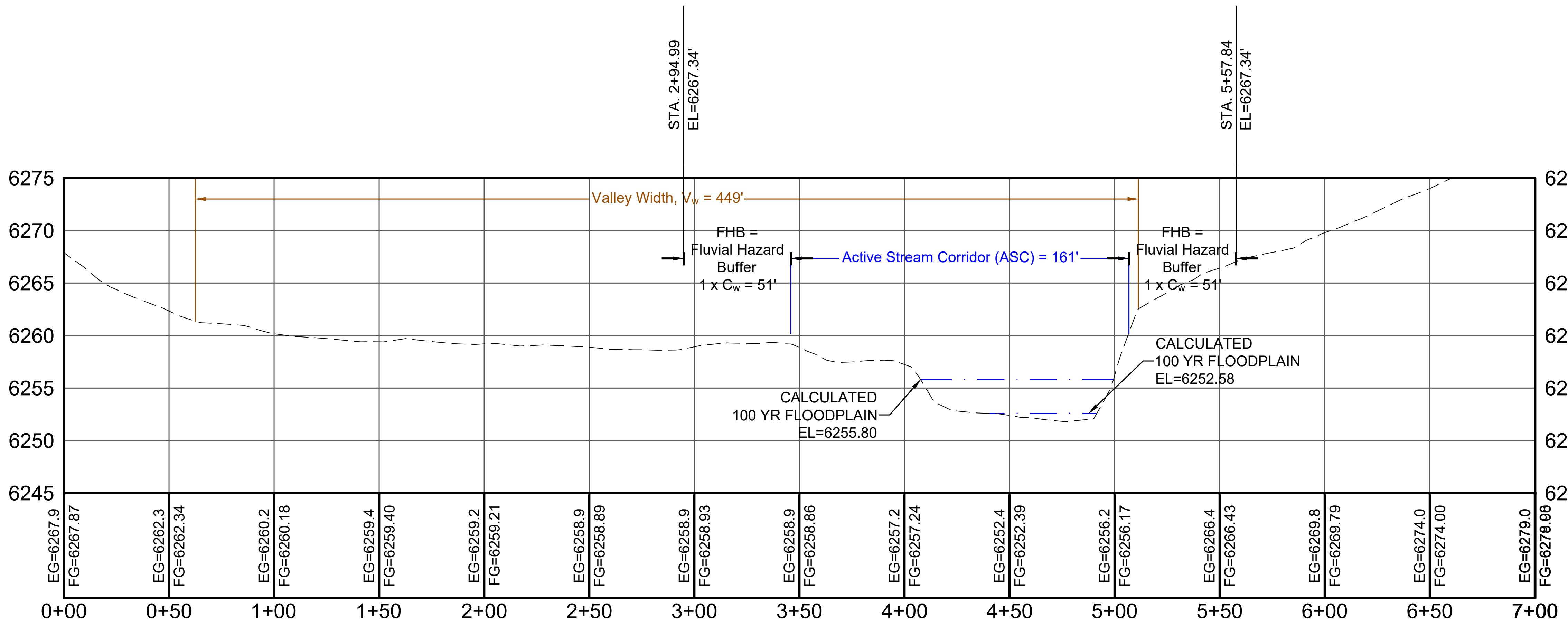

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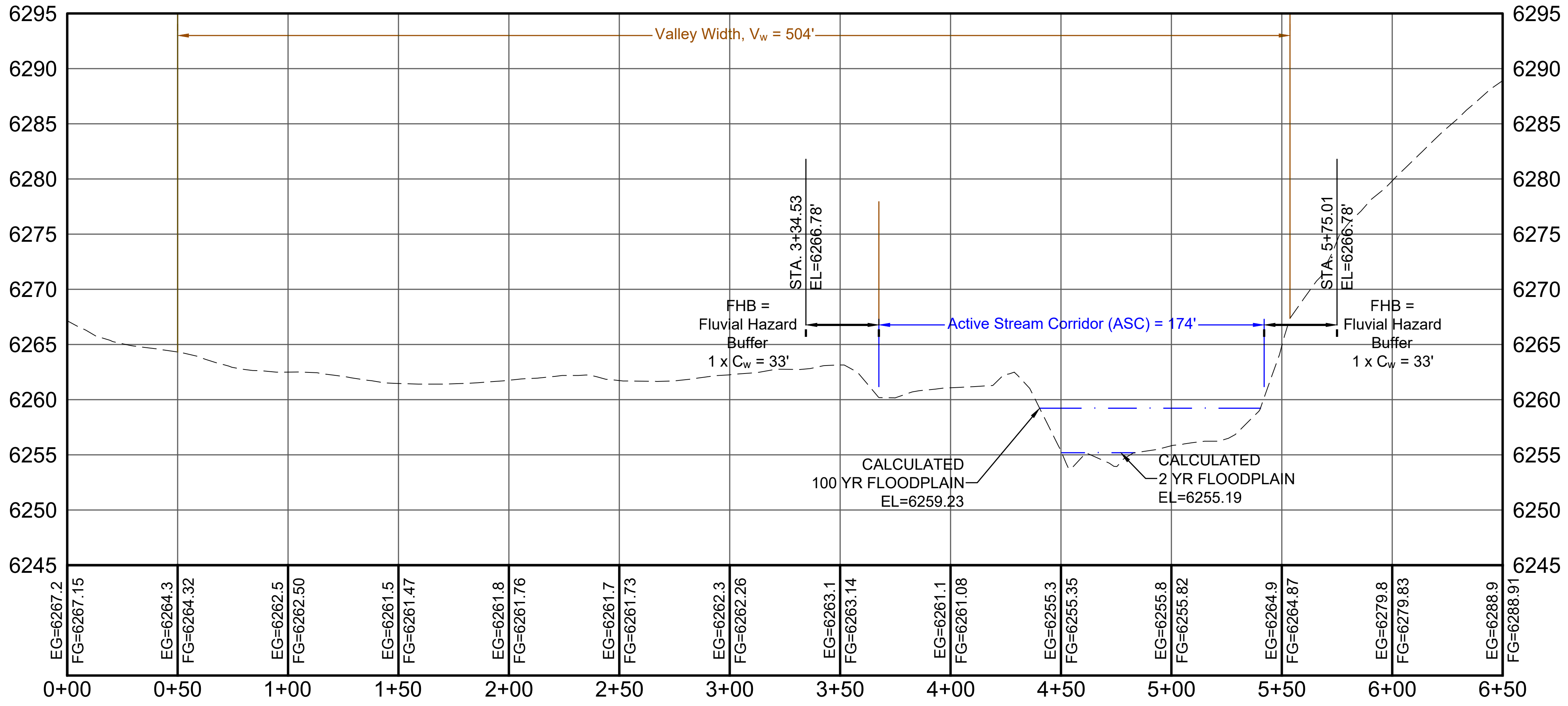

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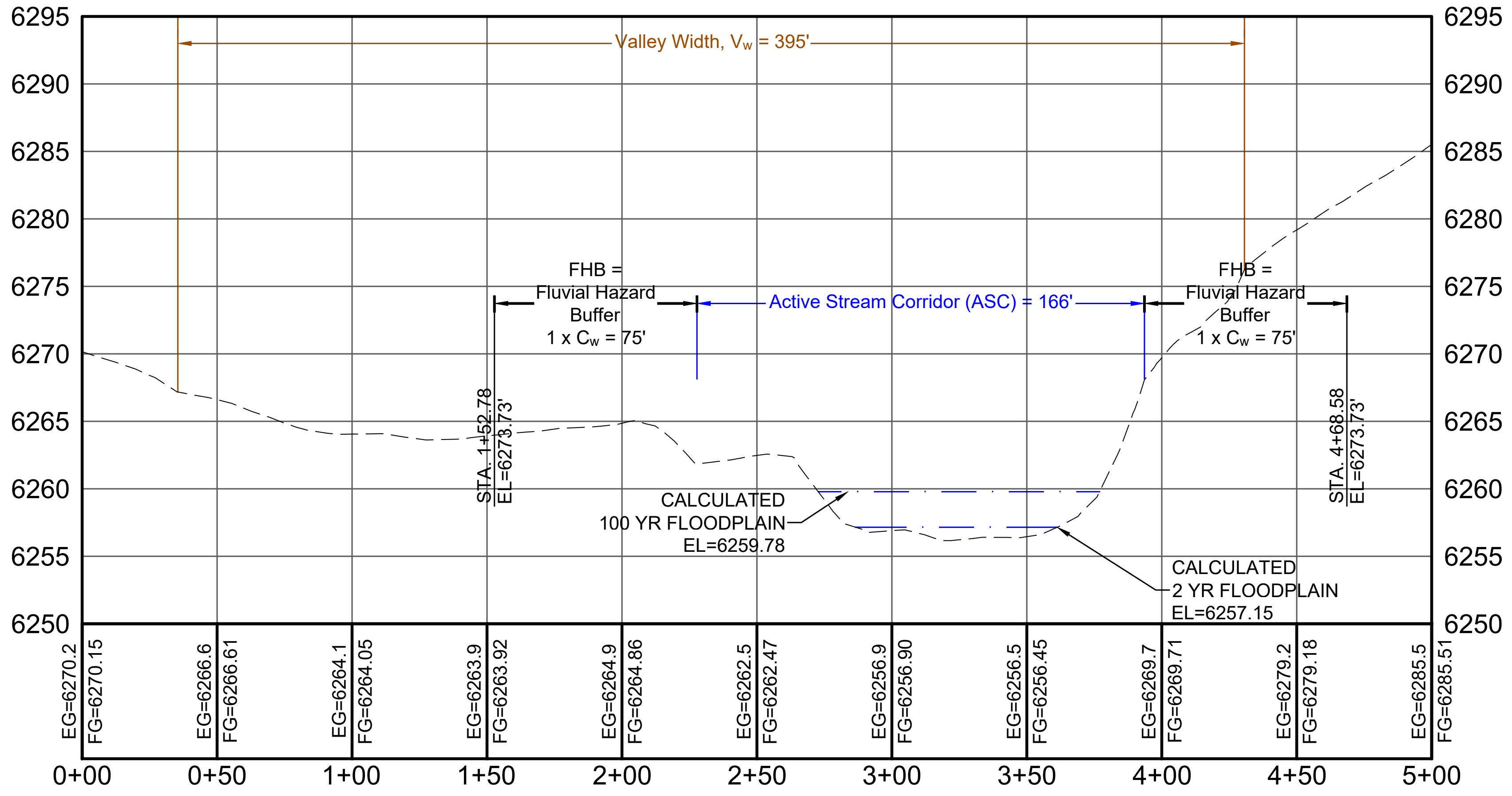

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FHB Analysis Sections
CONSTRUCTION PLANS
ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

REVISIONS:	BY:	DATE:
1. ADDRESS DOUGLAS COUNTY COMMENTS	TEW	4-18-25
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PROJECT NUMBER: 24001
ISSUED DATE: 2-6-25
DESIGNED BY: TEW
REVIEWED BY: EPT

FHB Analysis Sections

3

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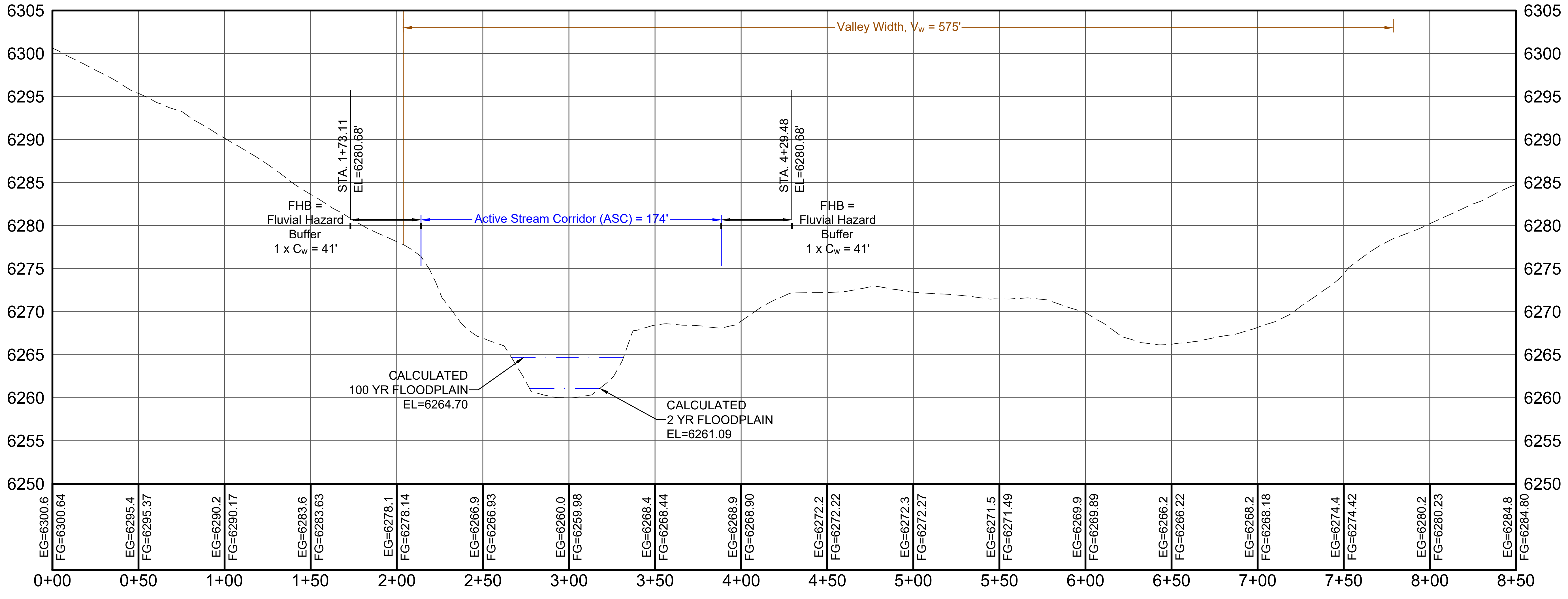

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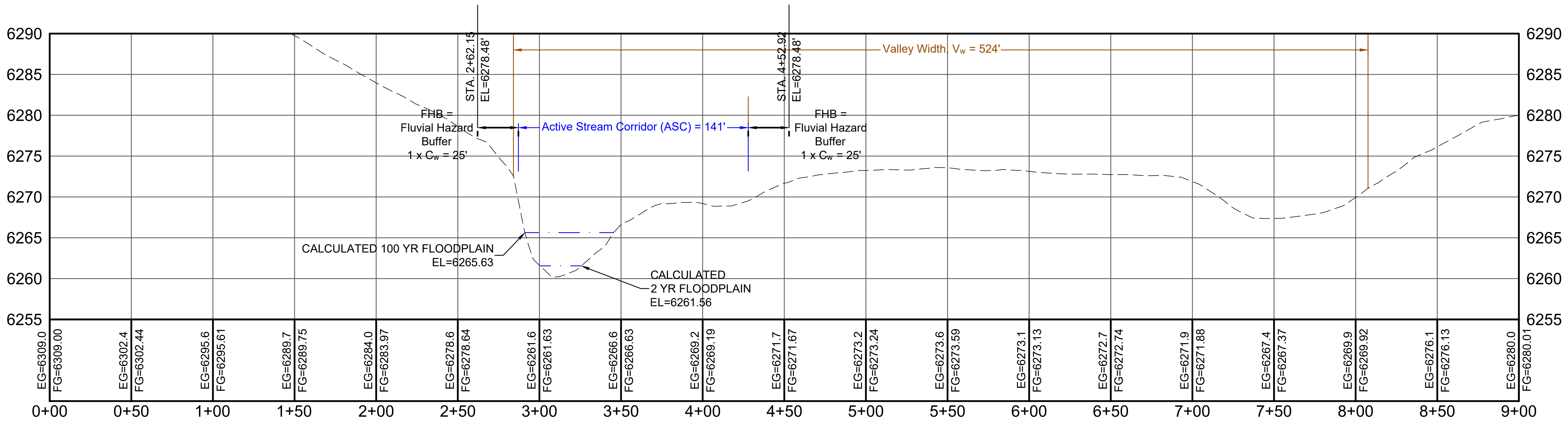

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SCALE: (H) 1" = 50' (V) 1" = 10'
START STA: 0+00.00, END STA: 9+00.00

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FHB Analysis Sections
CONSTRUCTION PLANS
ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

REVISIONS:	BY:	DATE:
1. ADDRESS DOUGLAS COUNTY COMMENTS	TEW	4-18-25
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PROJECT NUMBER: 24001
ISSUED DATE: 2-6-25
DESIGNED BY: TEW
REVIEWED BY: EPT

FHB Analysis Sections

4

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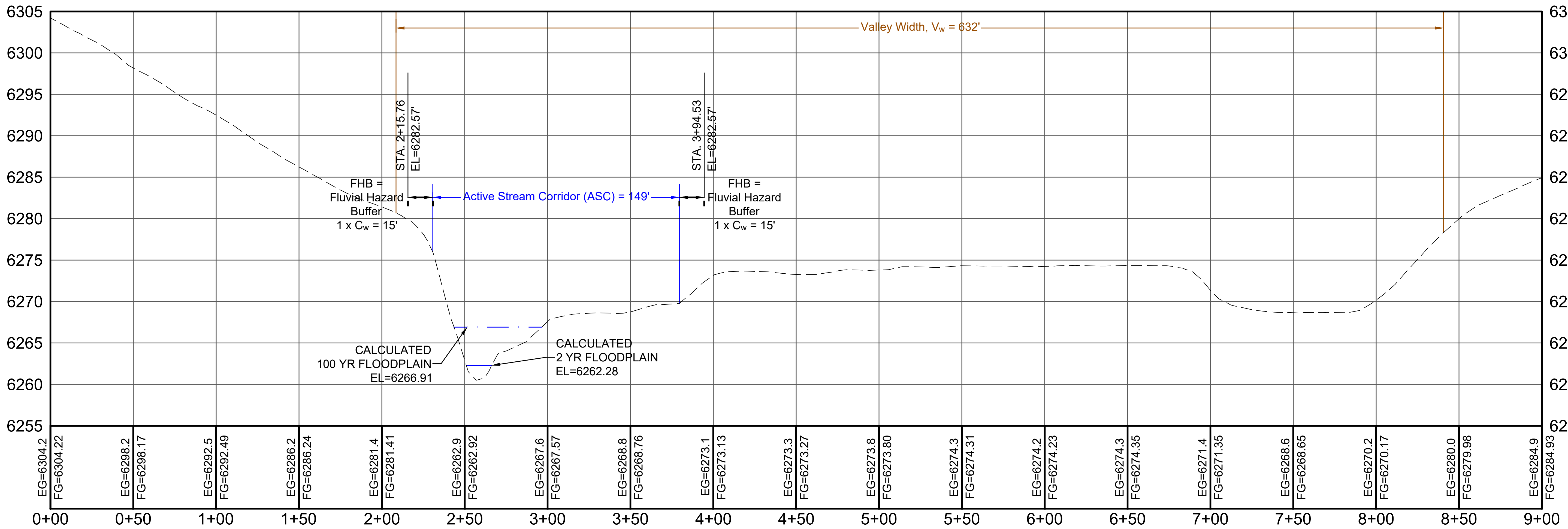

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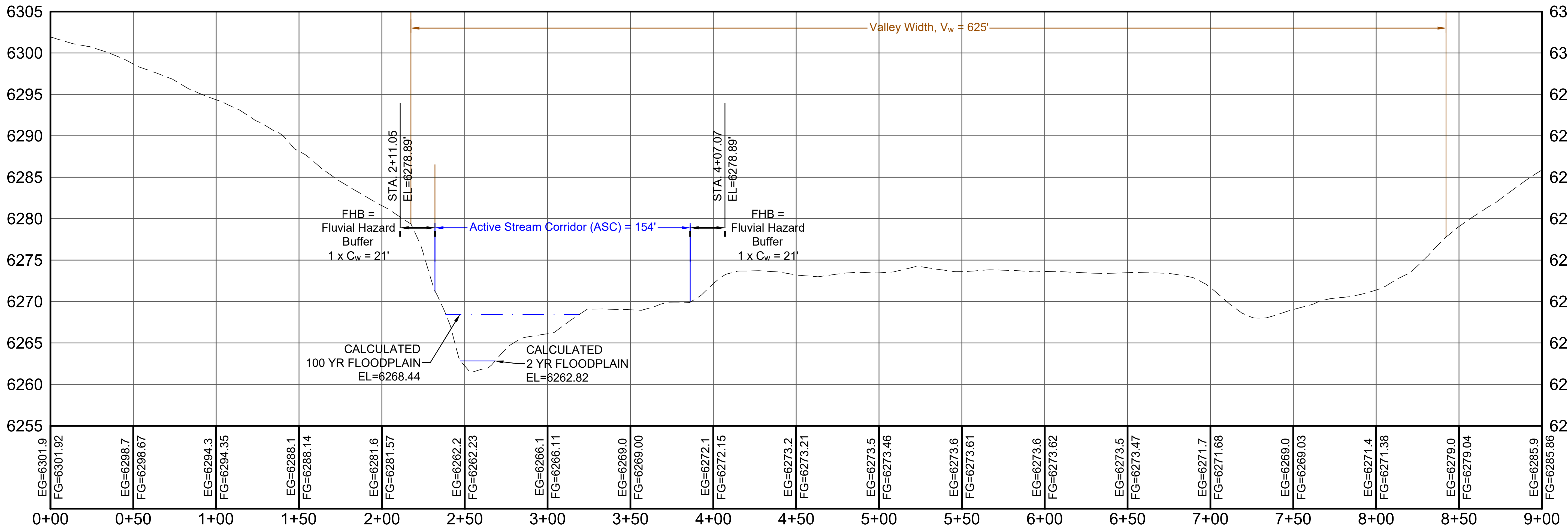

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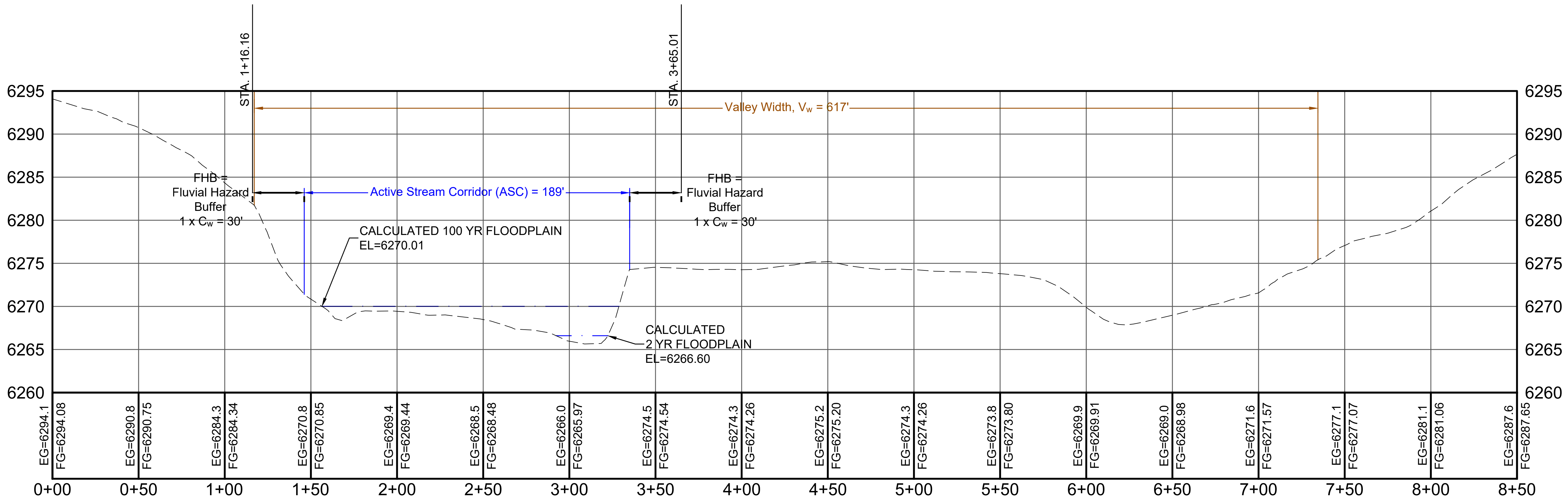

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START STA: 0+00.00, END STA: 8+50.00

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FHB Analysis Sections
CONSTRUCTION PLANS
ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

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FHB Analysis Sections

5

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APPENDIX F

DRAINAGE MAPS

EXISTING DRAINAGE PLAN FOR

ANTELOPE CROSSING

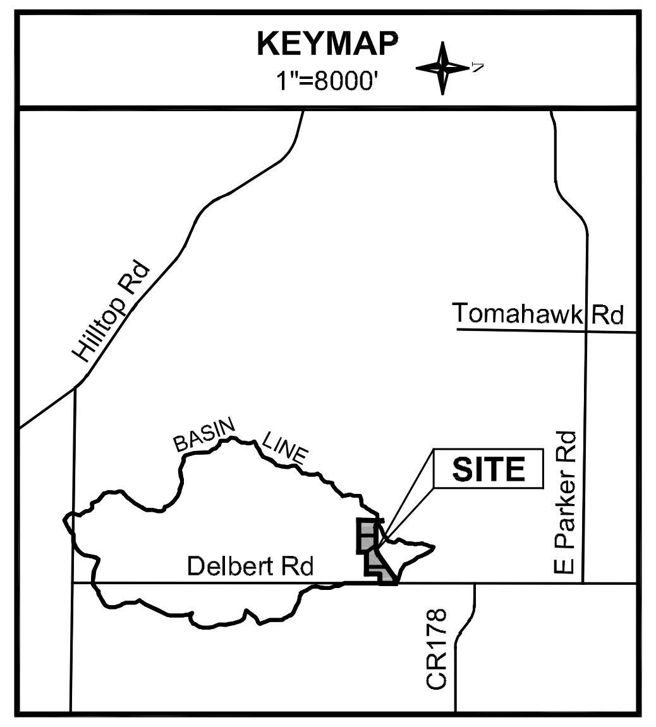
LOCATED IN THE EAST HALF OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST OF THE 6TH P.M.,
COUNTY OF DOUGLAS, STATE OF COLORADO

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING FENCE
- EXISTING MAJOR CONTOUR (5280)
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR (5280)
- PROPOSED MINOR CONTOUR
- EXISTING STORM SEWER PIPE
- PROPOSED STORM SEWER PIPE

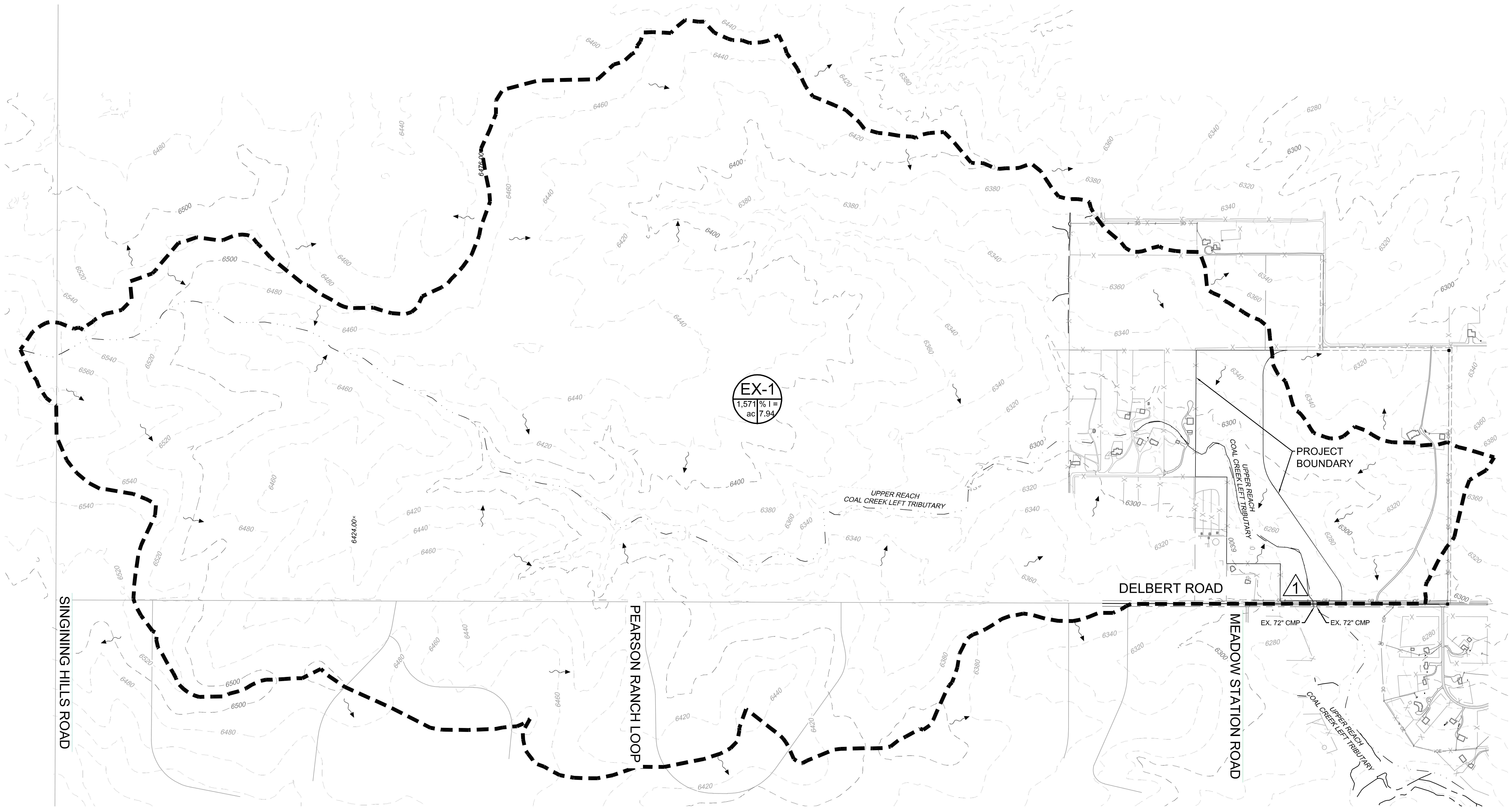
DRAINAGE LEGEND

- PR-1 — BASIN NAME
- 0.0 ac — BASIN AREA
- % I = 0.00 — IMPERVIOUS VALUE
- 1 — BASIN DESIGN POINT
- RUNOFF FLOW ARROW
- EXISTING BASIN LIMIT



0 500' 1000'
SCALE: 1" = 500'

Design Point	Area (ac)	Contributing Basins	Q_2 (cfs)	Q_{100} (cfs)
1	1,570.89	EX-1	20.70	992.14



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EXISTING BASIN PLAN
ANTELOPE CROSSING
DOUGLAS COUNTY, COLORADO

REVISIONS:	BY:	DATE:
1. DOUGLAS COUNTY COMMENTS	TEW	08-23-24
2.		
3.		
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PROJECT NUMBER: 24001
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EXISTING
BASIN PLAN

1

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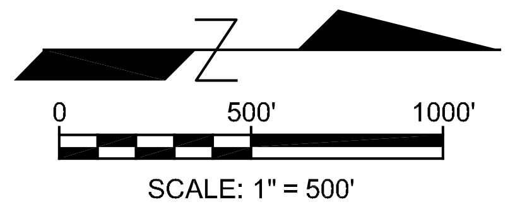
PROPOSED DRAINAGE PLAN FOR

ANTELOPE CROSSING FILING NO. 1

LOCATED IN THE EAST HALF OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST OF THE 6TH P.M.,
COUNTY OF DOUGLAS, STATE OF COLORADO

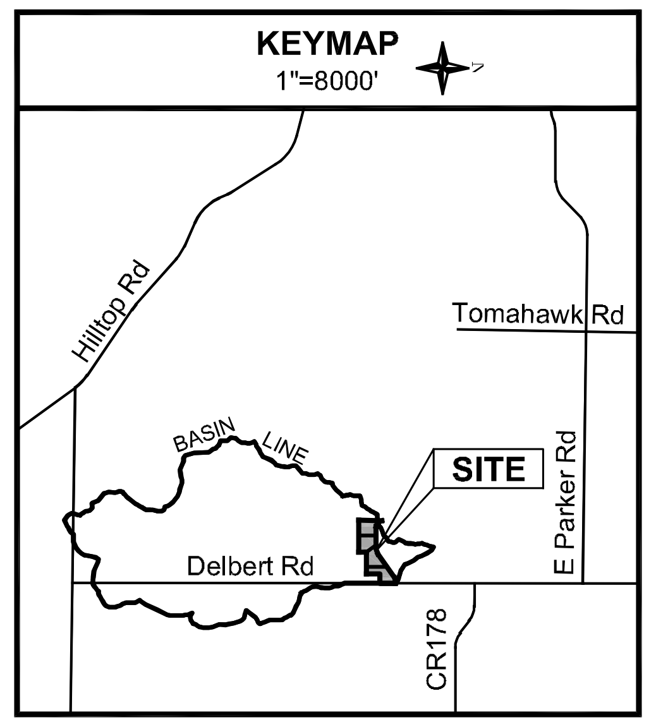
LEGEND

———	PROPERTY LINE
— — —	RIGHT-OF-WAY
— — —	ADJACENT PROPERTY LINE
- - - -	EXISTING EASEMENT
- - - -	PROPOSED EASEMENT
—X—X—	EXISTING FENCE
— — 5280 — —	EXISTING MAJOR CONTOUR
- - - -	EXISTING MINOR CONTOUR
—— 5280 ——	PROPOSED MAJOR CONTOUR
———	PROPOSED MINOR CONTOUR
▬ ▬ ▬	EXISTING STORM SEWER PIPE
▬▬▬	PROPOSED STORM SEWER PIPE

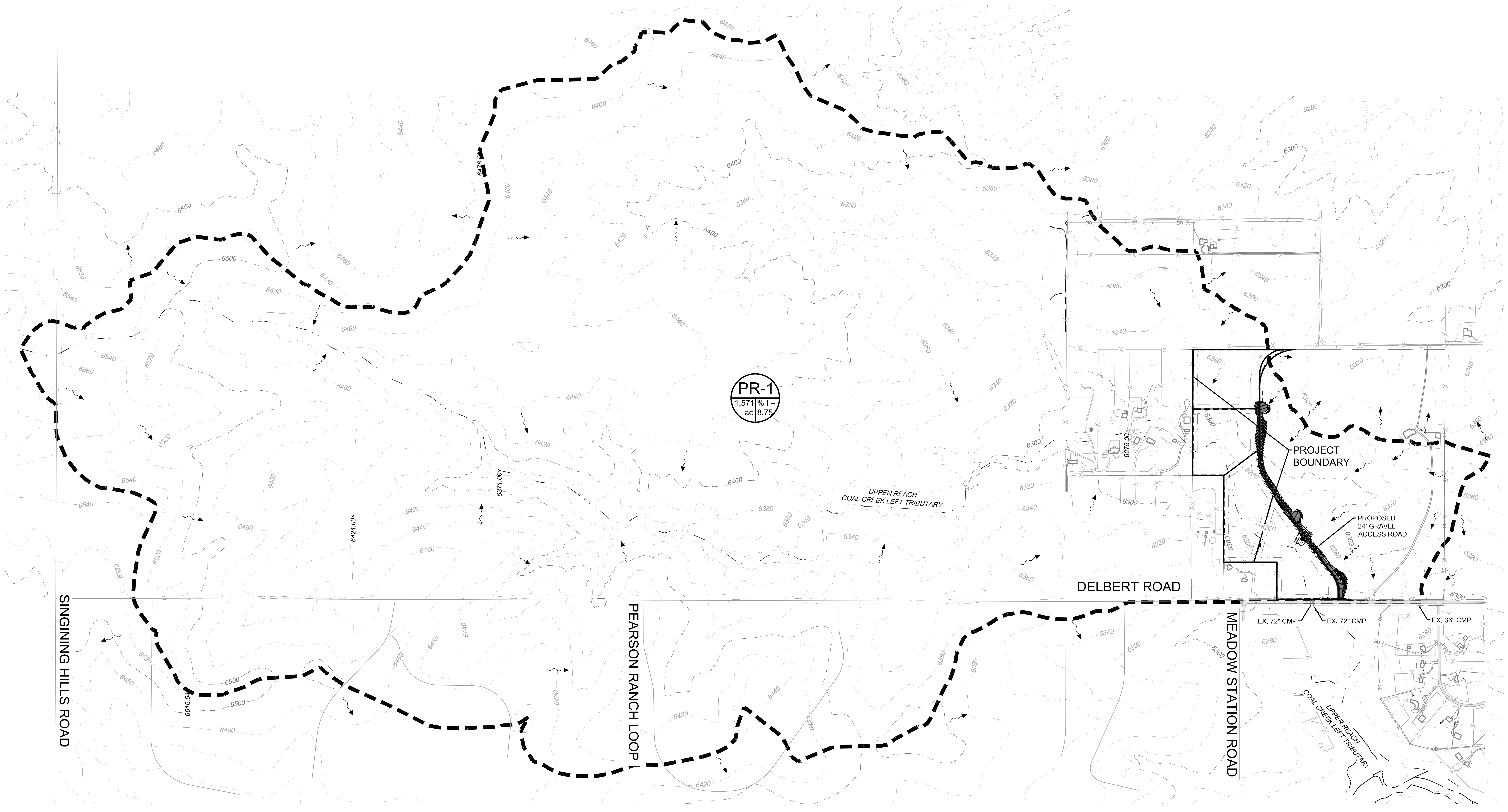


DRAINAGE LEGEND

PR-1 — BASIN NAME
0.0 ac — BASIN AREA
% I = 0.00 — IMPERVIOUS VALUE
△ 1 — BASIN DESIGN POINT
⤳ RUNOFF FLOW ARROW
▬ ▬ ▬ PROPOSED BASIN LIMIT



Design Point	Area (ac)	Contributing Basins	Q_2 (cfs)	Q_{100} (cfs)
1	1,570.89	PR-1	23.13	1,000.72



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PROPOSED BASIN PLAN OVERALL

ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

REVISIONS:	BY:	DATE:
1. DOUGLAS COUNTY COMMENTS	TEW	11-27-24
2.		
3.		
4.		

PROJECT NUMBER: 24001
ISSUED DATE: 08-23-24
DESIGNED BY: TEW
REVIEWED BY: EPT

PROPOSED
BASIN PLAN
OVERALL

PROPOSED DRAINAGE PLAN FOR

ANTELOPE CROSSING FILING NO. 1

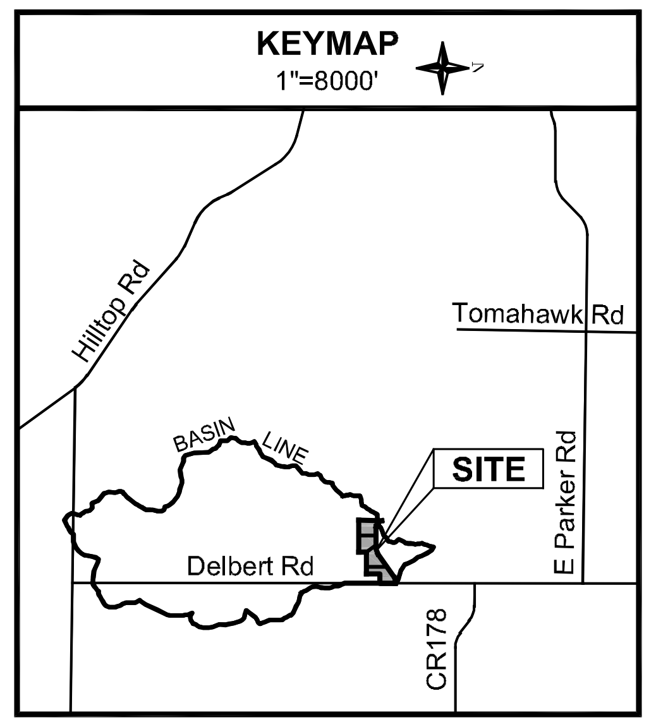
LOCATED IN THE EAST HALF OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST OF THE 6TH P.M.,
COUNTY OF DOUGLAS, STATE OF COLORADO

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING FENCE
- 5280 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 5280 PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISTING STORM SEWER PIPE
- PROPOSED STORM SEWER PIPE

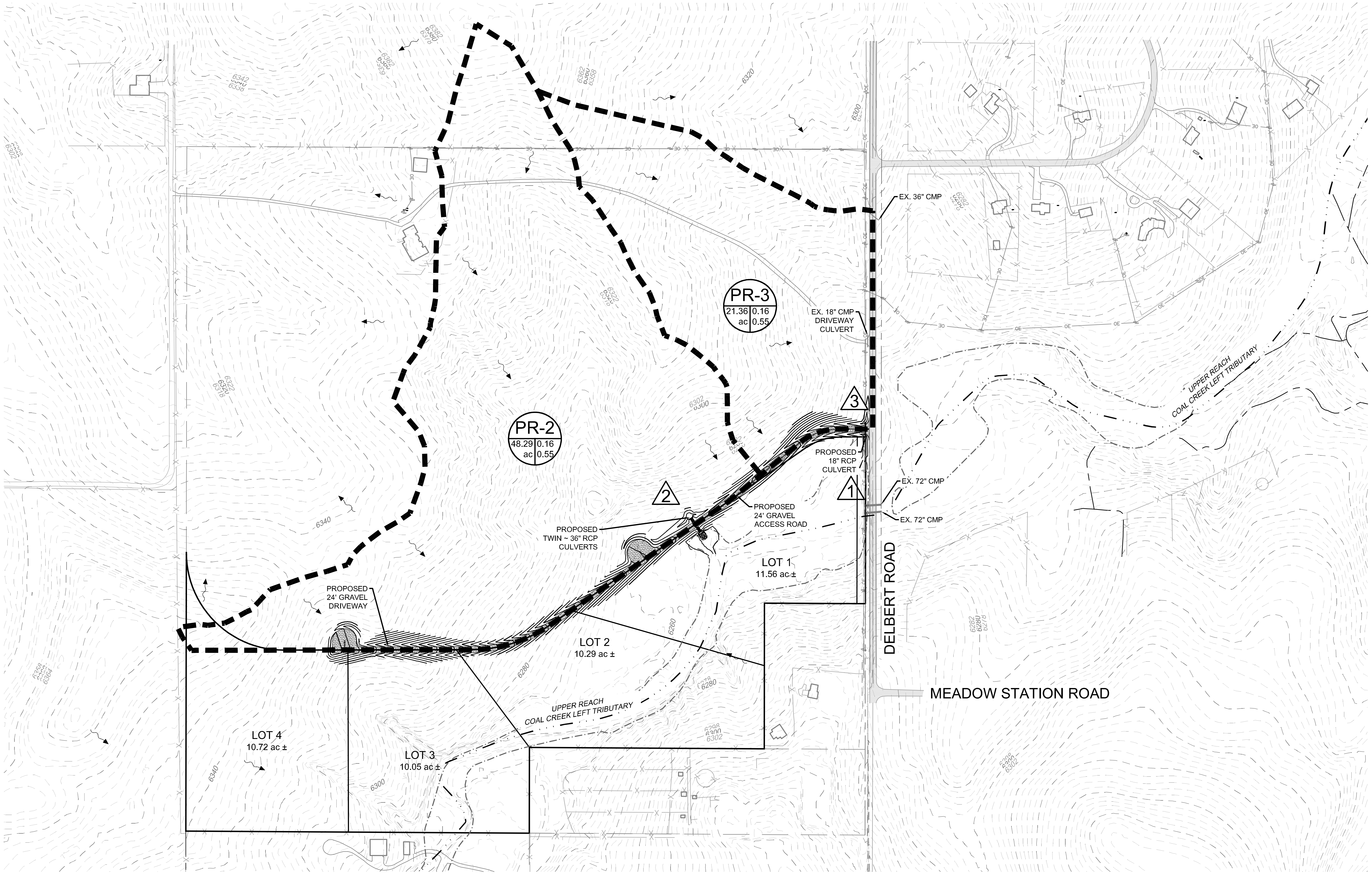
DRAINAGE LEGEND

PR-1 — BASIN NAME
0.0 ac — BASIN AREA
.00 — 2 YR RUNOFF COEFFICIENT
.00 — 100 YR RUNOFF COEFFICIENT
1 — BASIN DESIGN POINT
RUNOFF FLOW ARROW
EXISTING BASIN LIMIT



0 200' 400'
SCALE: 1" = 200'

Design Point	Area (ac)	Contributing Basins	Q_2 (cfs)	Q_5 (cfs)	Q_{100} (cfs)
1	1,572.56	PR-1	23.13		1,000.72
2	48.29	PR-2	7.77	16.43	101.46
3	21.36	PR-3	3.27	6.99	44.13



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PROPOSED DRAINAGE BASIN PLAN DETAIL

ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

REVISIONS:	BY:	DATE:
1. DOUGLAS COUNTY COMMENTS	TEW	11-27-24
2.		
3.		
4.		

PROJECT NUMBER: 24001
ISSUED DATE: 08-23-24
DESIGNED BY: TEW
REVIEWED BY: EPT

PROPOSED DRAINAGE BASIN PLAN DETAIL

3

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Weed
Wranglers

7070 W 117th Ave, Suite D
Broomfield, CO 80020
(303) 798-4090

August 29, 2024

DCLA-3 LLC
14205 E DAVIES AVE
ENGLEWOOD, CO 80112
Attn: Francis Gay
fgay59@gmail.com

Subject: Antelope Crossing – 9541 N Delbert Road, Parker, CO 80138

Hello Francis,

A site visit was conducted at the future Antelope Crossing development on August 22nd, 2024. Weed control recommendations are based on the assumption of soil disturbance creating numerous weed populations. Current weed pressure is low in most areas of the property.

Observed species: Common Mullein, Scotch Thistle, Common Ragweed, Gumweed, Prickly Poppy, Kochia and Diffuse Knapweed.

Available products for use on this site: Milestone, HighNoon, Transline, Telar XP, Escort XP, Vista XRT, TrumpCard, Quinstar 4L, Overdrive, Freelexx, Vision, Tordon 22K, Imazapic 2SL and Detail.

It is the recommendation of Weed Wranglers to apply terrestrial herbicides treatments three times per year (spring, summer and fall) as per label rates and use recommendations. Timing of the applications will be dictated by the progression of the development, weather conditions and seasonal growth cycles. If weed pressure is less than anticipated the number of applications may be reduced to two treatments per parcel, per year.

The use of native drought tolerant grass seeding to disturbed areas will also help to reduce weed populations in the future. Once the reseeding of disturbed areas is installed, herbicide weed control will need to continue to allow new grass growth the ability to mature with limited competition from weeds. On average it will take two to three seasons after development completion to control the majority of the weed population's density by way of herbicide application.

The development can also help mitigate weed pressure by the means of scheduled mowing or cutting of annual weeds prior to seeding out, as well as biennials to slow seed production before herbicide treatment.

Best regards,

David Leon
Operations Manager & Estimator
Department of Agriculture Qualified Supervisor: Categories 103, 106, 107, 108, 109, 206, 207 & 302
davidl@weedwranglers.com
(303) 798-4090 ext. 4

McGEADY
BECHER
CORTESE
WILLIAMS
Special District Law

May 12, 2025

Douglas County Community Development
100 Third St, #220
Castle Rock, CO 80104

Re: DCLA-3, LLC ("Applicant") – 3rd Revised Water Supply Letter and Water Plan

Dear Staff:

The following provides an overview of the proposed water supplies and water plan that will serve a 4-lot residential development on a total of 42.62 acres generally located in part of the E1/2 of Section 28, Township 6 South, Range 65 West of the 6th P. M., in Douglas County ("**Subject Property**"). This letter is based on pro-rata volumes of groundwater adjudicated and quantified in Case No. 1997CW095, District Court, Water Division 1, on April 25, 2000 (the "**97CW095 Decree**"). This letter provides no opinion on the actual physical supply of groundwater available. Each lot will be served by an individual well into the nontributary Lower Dawson Aquifer.

Estimated Available Annual Amounts

The 97CW095 Decree approved the following volumes for use, reuse, and successive use, and after use leased, sold, or otherwise disposed of for municipal, domestic, industrial, agricultural, commercial, irrigation, stock watering, recreational, fish and wildlife, fire protection, and exchange. The groundwater can be withdrawn for immediate application to beneficial use, for storage and subsequent application to beneficial use, for exchange purposes, for sale, exchange or replacement of depletions resulting from the use of water from other sources, and for all other augmentation purposes on the Subject Property. The groundwater in the Lower Dawson, Denver, Arapahoe, and Laramie-Fox Hills aquifers is nontributary ("**NT**") as defined in C.R.S. §§ 37-82-101(2) and 37-92-102(l)(b), and the groundwater in the Upper Dawson is not-nontributary ("**NNT**") as described in C.R.S. §§ 37-90-103(10.7) and 37-90-137(9)(c.5). The amounts are based on an estimated annual withdrawal over a 100-year pumping period and the pro-rata volumes allocated to the Subject Property.

Aquifer	Annual Volume (acre-feet)	Total Volume (acre-feet)
Upper Dawson (NNT)	13.40	1,340
Lower Dawson (NT)	8	800
Denver (NT)	28.69	2,869
Arapahoe (NT)	16.54	1,654
Laramie-Fox Hills (NT)	12.56	1,256

Estimated Water Demand

Each of the 4 lots on the Subject Property will be served by an individual well into the NT Lower Dawson Aquifer. Each well will withdraw up to 2 acre-feet per year for 100-years allowing each lot to have residential use in up to 2 houses. The total demand for all 4 wells will be 8 acre-feet per year. The Lower Dawson Aquifer groundwater is nontributary, therefore an augmentation plan is not required for its withdrawal and use.

Existing Wells

There are no existing wells known to the Applicant on the Subject Property. The Division of Water Resources ("**DWR**") has indicated that Well Permit No. 53878 ("**Well 53878**") may be located on the Subject Property. After several thorough searches of the Subject Property, the Applicant has been unable to find any evidence of the existence of Well 53878. The well permit file for Well 53878 provides only a generic location for the well somewhere in the 40 acres in the NE1/4 of the SE1/4 of Section 28, Township 6 South, Range 65 West of the 6th P.M. There are no distances from the Section lines indicated in the file which would provide a more precise location. Therefore, based on the extensive physical search of the Subject Property, and the vagueness of the permitted location, the Applicant does not believe that Well 53878 is located on the Subject Property. The DWR may consider Well 53878 abandoned, if applicable, but the Applicant has no information on the existence of the well.

Water Plan

In support of the land use application, Applicant provides the following Water Plan pursuant to Doulgas County Zoning Resolution Section 1811A.23, as follows:

1. Source of Water: NT Lower Dawson Aquifer groundwater underlying the Subject Property.

2. Water Delivery System: Each of the 4 lots will have an individual well and water system to be built and installed by a licensed drilling company and plumber.

3. Reliability of Water Supply: The water supply is estimated to last at least 100 years based on calculations from the Colorado Division of Water Resources. There is also additional groundwater quantified in the 97CW095 Decree in other aquifers that could be used as the supply for the Subject Property should the Lower Dawson become unusable.

   The Applicant has the legal right to withdraw and use the Lower Dawson groundwater pursuant to the 97CW095 Decree and the Quit Claim Deed filed on March 26, 2024, at Reception No. 2024011362 in the records of the Douglas County Clerk & Recorder. Both documents are attached to this letter.

   The wells will use a closed pipeline system to supply each home, so during normal operation the estimated systems losses are minimal, if not zero.

4. Proof of Ownership: The deed for the groundwater is attached to this letter.

5. Proof Of Legal Requirements: The 97CW095 Decree is attached to this letter and fully authorizes the proposed use of the Lower Dawson groundwater as proposed in this land use application. *See* Paragraph 7 of the 97CW095 Decree. Well permits will be applied for and obtained prior to drilling any wells or commencing building on any lot.

6. Timing: Applicant expects the lots to sell in the next 12-18 months, then the individual new lot owners will apply for and drill their own wells. Applicant estimates that all 4 lots will be built-out in the next 2-3 years.

7. Estimated Demand: The total estimated demand for the development will be 8 acre-feet per year from the NT Lower Dawson Aquifer.

If you have any questions or comments, please feel free to call.

Very truly yours,

McGEADY BECHER CORTESE WILLIAMS P.C.

Eric K Trout

Eric K. Trout

FILED IN
DISTRICT COURT
APR 03 '00
WELD COUNTY, COLO.

DISTRICT COURT, WATER DIVISION NO. 1, COLORADO

CASE NO. 97CW095

FINDINGS AND RULING OF THE REFEREE AND DECREE OF THE WATER COURT

IN THE MATTER OF THE APPLICATION OF WATER RIGHTS OF

DORA B. D'AMICO,

IN THE NOT NONTRIBUTARY UPPER DAWSON AND THE NONTRIBUTARY LOWER DAWSON, DENVER, ARAPAHOE AND LARAMIE-FOX HILLS AQUIFERS IN ELBERT COUNTY

THIS CLAIM was filed with the Water Clerk, Water Division 1, on February 28, 1997. The Referee being fully advised in the premises does hereby find:

All notice required by law of the filing of this application have been fulfilled, and the Referee has jurisdiction of this application.

No Statement of Opposition to said application was filed and the time for filing such statement has expired.

The Determination of Facts issued by the office of the State Engineer on April 24, 1997 has been considered.

All matters contained in the application were reviewed, and testimony was taken where such testimony was necessary and such corrections made as are indicated by the evidence presented.

IT IS HEREBY THE RULING OF THE WATER REFEREE

1. The name and address of the applicants:

Dora B. D'Amico
P.O. Box 418
Parker, CO 80134-0418.

2. The name of the structures:

D'Amico UD Well
D'Amico LD Well
D'Amico DV Well
D'Amico AR Well
D'Amico LFH Well.

3. The legal description of the structures:

All structures are to be located on applicant's property in the S 1/2 NE 1/4, part of the SE 1/4, and the East 900 feet of Section 28, Township 6 South, Range 65 West of the 6th P.M. Elbert, County. No specific locations for the proposed wells are requested. All wells will be located more than 600 feet from wells on other properties. Specific locations will be provided when applications for well permits are submitted.

4. The source of the water:

UD Well - Upper Dawson Aquifer Not Nontributary
LD Well - Lower Dawson Aquifer Nontributary
DV Well - Denver Aquifer Nontributary
AR Well - Arapahoe Aquifer Nontributary
LFH Well - Laramie-Fox Hills Aquifer Nontributary.

The groundwater to be withdrawn from the Upper Dawson aquifer is not nontributary as defined in CRS 37-90-103(10.5) and 37-90-137(9)(c) and such water may not be withdrawn until such time as a plan for augmentation has been approved by this court.

The groundwater to be withdrawn from the Lower Dawson, Denver, Arapahoe and Laramie-Fox Hills Aquifers through the wells described herein is "nontributary groundwater" as defined in CRS 37-90-103(10.5), and in the Denver Basin Rules, the withdrawal of which will not, within 100 years, deplete the flow of a natural stream, including a natural stream as defined in CRS 37-82-101(2) and 37-92-102(1)(b), at an annual rate greater than 1/10th of one percent of the annual rate of withdrawal. The withdrawal of water from these aquifers in accordance with the terms of this decree will not result in material injury to the vested water rights of others.

5. The date of appropriation:

February 28, 1997, however rights to not nontributary and nontributary ground water need not include a date of initiation of the withdrawal project.

6. The amount of water:

The estimated depth, below land surface, estimated pumping rate, and estimated annual withdrawal for the wells are as follows:

Well Name	Estimated Depths* Top	Estimated Depths* Bottom	Pumping Rate cfs	Pumping Rate (gpm)	Annual Withdrawal Acre-feet
D'Amico UD Well	130	510	0.11	50	64**
D'Amico LD Well	490	730	0.11	50	38
D'Amico DV Well	730	1650	0.44	200	137
D'Amico AR Well	1630	2150	0.56	250	79
D'Amico LFH Well	2400	2800	0.33	150	60

*The depths given indicate a range in which the aquifer is located below the land surface.

**Amount has been reduced by 1 acre foot for well No. 123188.

7. The use of the water:

The ground water claimed herein will be used and reused, successively used, and after use leased, sold or otherwise disposed of for the following beneficial purposes: municipal, domestic, industrial, agricultural, commercial, irrigation, stock watering, recreational, fish and wildlife, fire protection, and exchange. The waters will be withdrawn through the wells described herein for immediate application to beneficial use, for storage and subsequent application to beneficial use, for exchange purposes, for sale, exchange or replacement of depletions resulting from the use of water from other sources, and for all other augmentation purposes.

Augmentation use cannot be made until a court approved plan for augmentation is obtained or the State Engineer has approved a substitute supply plan or exchange, all subject to the provisions of Paragraphs 13 and 14 herein.

8. Applicant claims all groundwater recoverable from the not nontributary and nontributary aquifers underlying 201.8 acres in the S 1/2 NE 1/4, part of the SE 1/4, and the East 900 feet of Section 28, Township 6 South, Range 65 West of the 6th P.M. Elbert, Elbert County. (As described in Exhibit A and shown on attached map)

9. Allowed Average Annual Amount of Withdrawal

The criteria used in determining the allowed average annual amount of withdrawal of groundwater from each aquifer as specified in Paragraph 4, beneath the land described in Paragraph 8 are those criteria prescribed by CRS 37-90-137(4) and the Rules and Regulations adopted by the State Engineer. The values used to calculate the allowed annual amount of withdrawal are:

Aquifer	No. of Acres	Saturated Materials (feet)	Specific Yield	Acre-Feet Per Year
Upper Dawson	20	156	20%	64*
Lower Dawson	20	95	20%	38
Denver	20	400	17%	137
Arapahoe	20	230	17%	79
Laramie-Fox Hills	20	200	15%	60

*Amount has been reduced by one acre foot for Well No. 123188.

These values may be adjusted based on site specific data submitted pursuant to the Statewide Nontributary Groundwater Rules and subject to the retained jurisdiction provisions contained in Paragraph 17.

10. All of the wells located on the land which are completed into the same aquifer, including the additional wells described in paragraph 16 shall constitute a well field. The total amount of water which applicants are entitled to withdraw and use each year from each aquifer may be withdrawn in whole or in part from any well or combination of wells located on the land and completed into the same aquifer, including the additional wells described in paragraph 16, so long as the total amount of water withdrawn in any year through all of the wells completed into the same aquifer does not exceed the total annual amount available for withdrawal from that aquifer by applicants, including such additional withdrawals as are permitted by the provisions of paragraph 11.

11. Applicant has the right to withdraw from the wells decreed in this case an average annual amount of water determined to be available for withdrawal pursuant to Paragraph 9, plus an amount of groundwater in excess of that annual amount; provided that the sum of the total withdrawals from any particular aquifer does not exceed the product of the number of years since the date of the issuance of well permits or of the entry of this decree, whichever occurs first, times the decreed average annual amount for the aquifer.

12. Construction of Wells

For each well constructed pursuant to this decree, Applicant shall comply with the following conditions:

A. The entire length of the open bore hole except the surface casing shall be geophysically surveyed prior to casing and copies of the geophysical log submitted to the Division of Water Resources within 60 days. Applicant may provide a geophysical log from an adjacent well or test hole in accordance with the Statewide Rules and Regulations and acceptable to the State Engineer, which fully penetrates the formation, in satisfaction of the above requirement.

B. The ground water production shall be limited to the aquifer stated in Paragraph (4) herein as defined in the Denver Basin Rules and Regulations. Non-perforated casing must be installed and properly grouted to prevent withdrawal from or intermingling of water between other aquifers.

C. The permit number and name of the aquifer shall be permanently displayed on or near each well at a location easily accessible to water officials.

D. Applicant shall comply with CRS Section 37-91-101, *et seq.*, and the Rules and Regulations promulgated thereto and with such other requirements for constructing and equipping the well as the State Engineer may reasonably require.

E. Unless otherwise authorized by the Division Engineer, applicant shall install a totalizing flow meter on each well. The meter shall be installed according to the manufacturer's recommendations and shall be inspected at least annually, and promptly repaired or recalibrated as needed. If applicant's meter becomes inoperable, it shall be repaired as soon as possible so that measurements can continue. Permission to operate the well without an operational meter must be obtained from the Division Engineer.

F. The applicant shall keep records of the amount of water pumped and perform the calculations necessary to determine whether applicant is in compliance with this decree. Applicant shall supply the Division Engineer with those records at least on an annual basis or upon request by the Division Engineer.

13. Limitation on Consumption of Nontributary Groundwater

Applicant may not consume more than 98% of the annual quantity of the nontributary groundwater withdrawn from each of the Lower Dawson, Denver, Arapahoe and Laramie-Fox Hills aquifers. The relinquishment of 2% of the annual amount of water withdrawn to the stream system, as required by the Denver Basin Rules effective January 1, 1986, may be satisfied by any method selected by the applicant, so long as applicant can demonstrate to the reasonable satisfaction of the State Engineer prior to issuance of the permit that an amount equal to 2% of such annual withdrawals (by volume) will be relinquished to the stream system.

14. Any right to reuse or successive use of water approved herein shall be in accordance with CRS 37-82-106(2).

15. Well Permits

When the Applicant is ready to construct any of the wells decreed herein, an application for a well permit shall be filed pursuant to CRS 37-90-137. The State Engineer shall consider the rights granted herein as valid. If applicant fails to construct any well for which a permit was issued within the period of time authorized by statute, including legally authorized extension of any such time period, then when applicant is ready to drill the well, applicant shall file a second permit application for such well and the State Engineer shall issue a well permit with restrictions no more burdensome than are found in this decree.

16. Additional Wells

In addition to the wells described in paragraph 3, applicant may construct such additional wells as are required to recover the entire amount of nontributary groundwater decreed herein. As additional wells are planned, permit applications shall be filed in accordance with CRS 37-90-137(10), as amended.

17. Retained Jurisdiction

The Court retains jurisdiction to provide for the adjustment of the annual amount of withdrawal to conform to actual local aquifer characteristics as determined from analyses of data obtained when the well was constructed or test hole was drilled. Within 60 days after the completion of such well(s) or test hole(s), the applicant shall file with the State Engineer, and serve each of the parties who have appeared herein, copies of the well logs from such well(s) or test hole(s). Any person including the State Engineer can invoke the Court's retained jurisdiction, upon notification of retained jurisdiction, shall utilize data available to him and make a Final Determination of Water Rights Finding within 4 months and submit same to the Water Court. If no protest to such a filing is made within 60 days, the Final Determination of Water Right shall be incorporated into the decree by the Water Court. In the event of a protest, or in the event the State Engineer makes no determination within 4 months, such final determination shall be made by the Water Court after notice and hearing.

Dated: April 3, 2000

RAYMOND S. LIESMAN
Water Referee
Water Division No. 1

THE COURT FINDS: NO PROTEST WAS FILED IN THIS MATTER.

THE FOREGOING RULING IS CONFIRMED AND APPROVED, AND IS HEREBY MADE THE JUDGMENT AND DECREE OF THIS COURT.

Dated: APR 25 2000

JONATHAN W. HAYS
Water Judge
Water Division No. 1
State of Colorado

97CW095

PARCEL A: THE EAST 990 FEET OF THE SW 1/4 OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST, COUNTY OF DOUGLAS, STATE OF COLORADO.

PARCEL B: THE S 1/2 OF THE NE 1/4, THE NW 1/4 OF THE SE 1/4 AND THE NE 1/4 OF THE SE 1/4 ALL IN SECTION 28, TOWNSHIP 6S, RANGE 65W OF THE 6TH P.M. EXCEPT THE SOUTH 330 FEET OF SAID NE 1/4 OF THE SE 1/4 AND EXCEPT THE FOLLOWING DESCRIBED TRACT OF LAND: A PARCEL OF LAND LOCATED IN THE E 1/2 OF SECTION 28, TOWNSHIP 6S, RANGE 65W OF THE 6TH P.M. MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT THE NE CORNER OF THE S 1/2 OF THE SE 1/4 OF THE NE 1/4 OF THE SE 1/4 OF SAID SECTION 28, SAID CORNER BEING 330 FT. NORTH OF THE SOUTH LINE OF THE NE 1/4 OF THE SE 1/4 OF SAID SECTION 28 AND CONSIDERING THE EAST LINE OF SAID SECTION 28 TO BEAR S 0 DEG 15' 00'' E WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO; THENCE S 89 DEG 59' 37'' W ALONG AND WITH THE NORTH LINE OF SAID S 1/2 OF THE SE 1/4 OF THE NE 1/4 OF SE 1/4 OF SAID SECTION 28, SAID LINE BEING 330 FT. NORTH OF THE SOUTH LINE OF THE NE 1/4 OF THE SE 1/4 OF SAID SECTION 28, A DISTANCE OF 30 FEET; THENCE CONTINUING ALONG SAID LINE S 89 DEG 59' 37'' W A DISTANCE OF 1,292.25 FT. TO THE NW CORNER OF THE S 1/2 OF THE SW 1/4 OF THE NE 1/4 OF THE SE 1/4 OF SAID SECTION 28; THENCE, S 0 DEG 14' 56'' E, A DISTANCE OF 330.05 FT. TO THE SW CORNER OF THE S 1/2 OF THE SW 1/4 OF THE NE 1/4 OF THE SE 1/4 OF SAID SECTION 28; THENCE, S 89 DEG 59' 32'' W ALONG THE SOUTH LINE OF THE NW 1/4 OF THE SE 1/4 OF SAID SECTION 28, A DISTANCE OF 1,322.25 FT. TO THE SW CORNER OF THE N 1/2 OF THE SE 1/4 OF SAID SECTION 28; THENCE, N 0 DEG 14' 51'' W ALONG AND WITH THE WEST LINE OF THE E 1/2 OF SAID SECTION 28, A DISTANCE OF 891.22 FT.; THENCE S 89 DEG 59' 53'' E A DISTANCE OF 2,614.48 FT.; THENCE S 0 DEG 15' 0'' E A DISTANCE OF 560.75 FT. TO THE TRUE POINT OF BEGINNING, COUNTY OF DOUGLAS, STATE OF COLORADO.

EXHIBIT A

97CW095

Parcel C

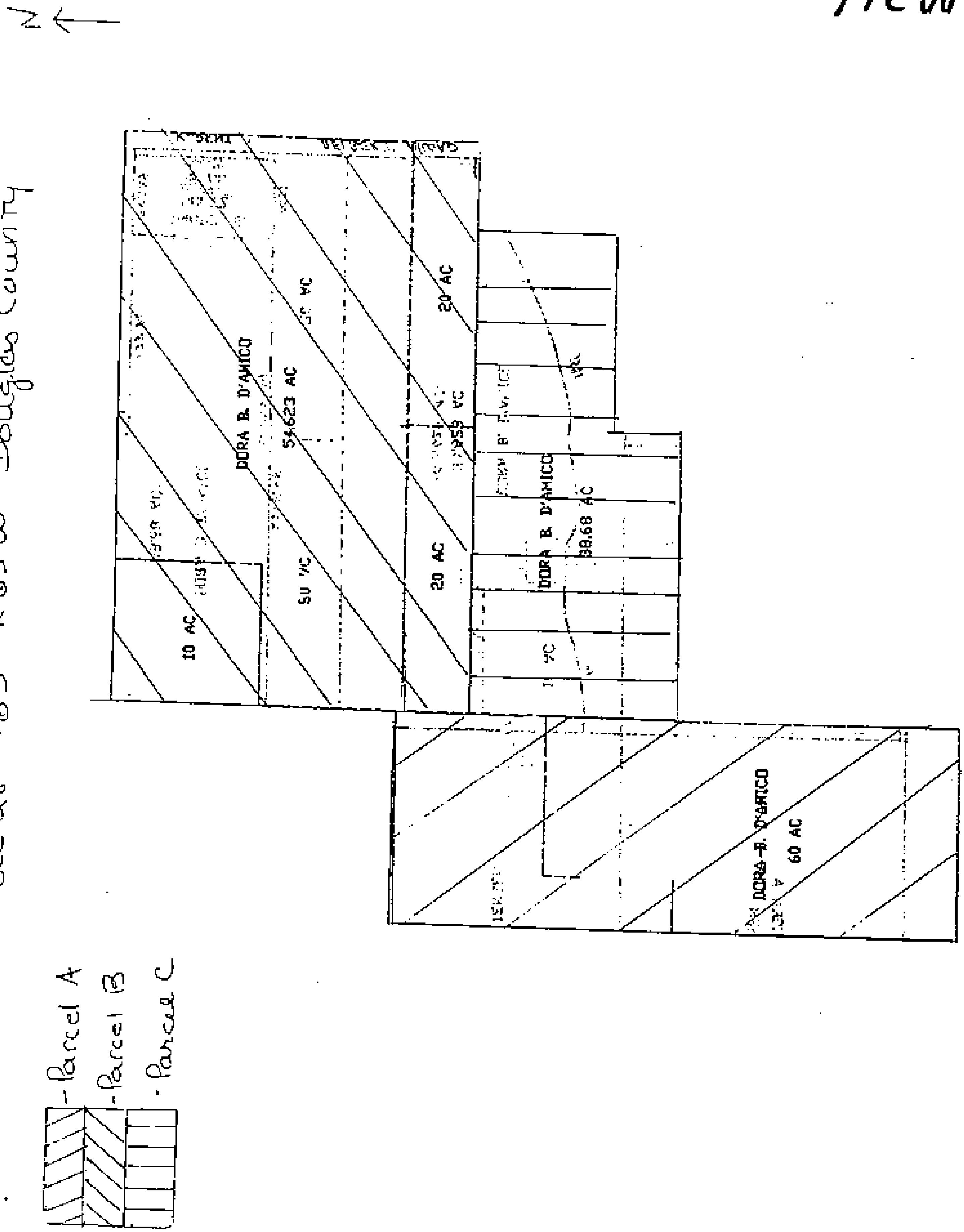
A parcel of land located in the E1/2 of Section 28, Township 6 South, Range 65 West of the 6th P.M., more particularly described as follows:

Beginning at the NE corner of the S1/2 of the SE1/4 of the NE1/4 of the SE1/4 of said Section 28, said corner being 330 feet North of the South line of the NE1/4 of the SE1/4 of said Section 28 and considering the East line of said Section 28 to bear S 0°15'00'' E with all bearings contained herein relative thereto;
thence S 89°59'37'' W along and with the North line of said S1/2 of the SE1/4 of the NE1/4 of SE1/4 of said Section 28, said line being 330 feet North of the South line of the NE1/4 of the SE1/4 of said Section 28, a distance of 30 feet;
THENCE CONTINUING ALONG SAID LINE S 89°59'37'' W a distance of 1,292.25 feet to the NW corner of the S1/2 of the SW1/4 of the NE1/4 of the SE1/4 of said Section 28;
thence, S 0°14'56'' E, a distance of 330.05 feet to the SW corner of the S1/2 of the SW1/4 of the NE1/4 of the SE1/4 of said Section 28;
thence, S 89°59'32'' W along the South line of the NW1/4 of the SE1/4 of said Section 28, a distance of 1,322.25 feet to the SW corner of the N1/2 of the SE1/4 of said Section 28;
thence, N 0°14'51'' W along and with the West line of the E1/2 of said Section 28, a distance of 891.22 feet;
thence, S 89°59'53'' E a distance of 2,614.48 feet;
thence S 0°15'0'' E a distance of 560.75 feet to the true point of the beginning; except the following parcel of land located in the NE1/4 of the SE1/4 of said Section 28, Township 6 South, Range 65 West of the 6th P.M., more particularly described as follows:
Commencing at the NE corner of the S1/2 of the SE1/4 of the NE1/4 of the SE1/4 of said Section 28, and considering the East line of the SE1/4 of said Section 28 to bear S 0°15'00'' E, with all bearings contained herein relative thereto; thence S 89°59'37'' W along and with the North line of said S1/2, SE1/4, NE1/4, SE1/4, a distance of 30.00 feet to the true point of beginning;
thence continuing S 89°59'37'' W along said North line a distance of 388.39 feet,
thence N 0°15'00'' W a distance of 560.82 feet;
thence S 89°59'53'' E a distance of 388.39 feet to a point that is 30.00 feet Westerly from the East line of the SE1/4 of said Section 28;
thence S 0°15'00'' E parallel to the East line of said SE1/4, a distance of 560.75 feet to the true point of beginning;
County of Douglas, State of Colorado.

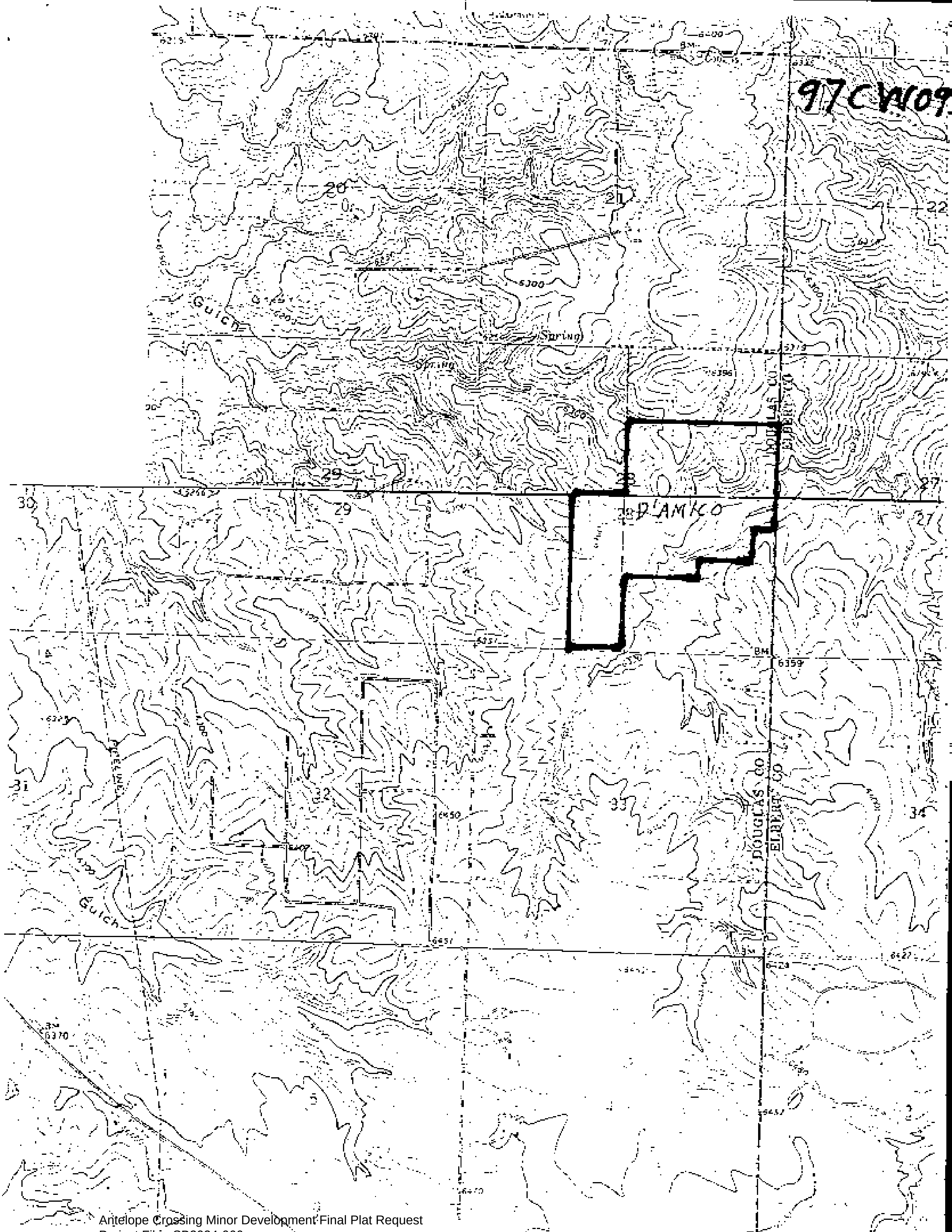
EXHIBIT "A"

97CW095

Sec 28 T6S R65W Douglas County



97CW09



20
21
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Gulch
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Spring
6300
D'AMICO
DOUGLAS CO
ELBERT CO
BM
6359
6370
6450
6451
Gulch

April 5, 2024

Chris Martin
Douglas County Engineering
100 Third St.
Castle Rock, CO 80104

RE: Traffic Impact Letter
Antelope Crossing Subdivision
2N Civil Project No: 22005

This letter serves to outline the traffic impact of the proposed Antelope Crossing Subdivision located along the eastern boundary of Douglas County. The project is located on the west side of Delbert Road, approximately 1 ½ miles south of the intersection of Delbert Road and East Parker Road. The site lies in the East half of Section 28, Township 6 South, Range 65 West of the Sixth Principal Meridian, County of Douglas, State of Colorado.

Delbert Road

The existing public Delbert Road, which this project will gain roadway access from, is categorized as a Collector within the county's 2040 Transportation Master Plan (TMP). The roadway is currently a paved two-lane road with approximately 12-foot-wide travel lanes and 1-2' gravel shoulders. The current right-of-way varies.

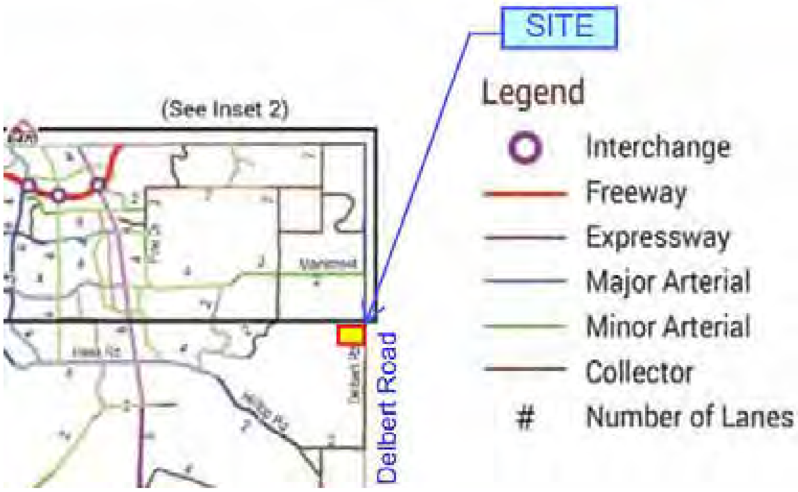


Figure 1: Existing Roadway Network - Douglas County Transportation Master Plan

Section V. Transportation Plan Implementation of the TMP indicates that Delbert Road is prioritized as a long-term improvement and is planned to be widened from two to four lanes and designated as a Major Arterial for the planning horizon of 2031 through 2040.

Driveway Geometry

The private driveway access has been located a minimum of 330 feet from the nearest existing curb opening, a private driveway to the north, in accordance with Section 13.2 Access Requirements and Criteria of the Douglas County Roadway Design and Construction Standards.

The vertical profile of Delbert Road in the vicinity of the private driveway intersection consists of an approximately 1,000 foot long vertical sag curve, with the driveway located near the low point of the curve. Using a design speed of 45 mph (Delbert Road is posted at 40 mph), AASHTO indicates the minimum intersection sight distance (ISD) for a Left Turn from Stop is 500 feet; the existing sag curve provides a sight distance of greater than 900 feet. The ISD for a Right Turn from Stop is 430 feet; the existing road geometry provides a sight distance greater than 1,000 feet.

Trip Generation

Figure 6 of the TMP indicates that the existing average daily traffic volumes for Delbert Road is less than 20,000 vpd.

Trip generation rates for this development were obtained from the ITE Trip Generation Manual, 7th Edition for Land Use 210 (Single-Family Detached Housing). Table 1 shows the Daily, AM peak, and PM peak hour trip generation estimates. The estimated trips generated by this development are 38 two-way trips out of which 3 two-way trips occur in the AM peak hour and 4 two-way trips occur in the PM peak hour. Please see the following table:

Time of Day	Description	ITE Land Use Category	Land Use Code	New Lots	Daily Trip Rate	Daily 2-Way Trips	Directional Distribution IN	Directional Distribution OUT	Daily Trips In (vpd)	Daily Trips Out (vpd)
Daily	SF Housing	SF Housing	210	4	9.57	38	50%	50%	19	19
AM Peak	SF Housing	SF Housing	210	4	0.77	3	26%	74%	1	2
PM Peak	SF Housing	SF Housing	210	4	1.02	4	64%	36%	3	1

Conclusion

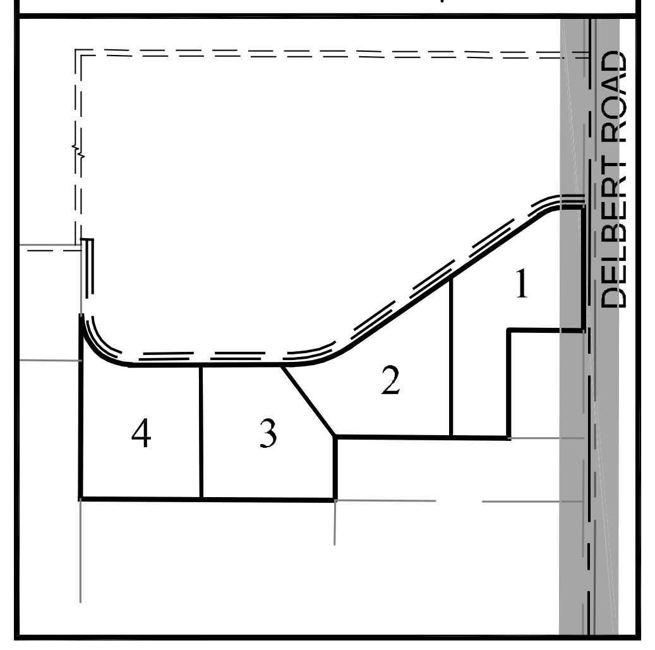
The assumed proposed trips generated will have minimal impact on the traffic on Delbert Road.

Respectfully submitted,

Todd West

Todd West, P.E., LEED®AP
Project Manager

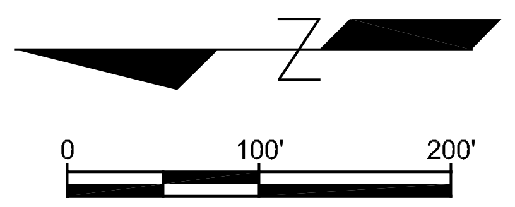
KEYMAP
1"=1000'



ACCESS GEOMETRY EXHIBIT FOR

ANTELOPE CROSSING

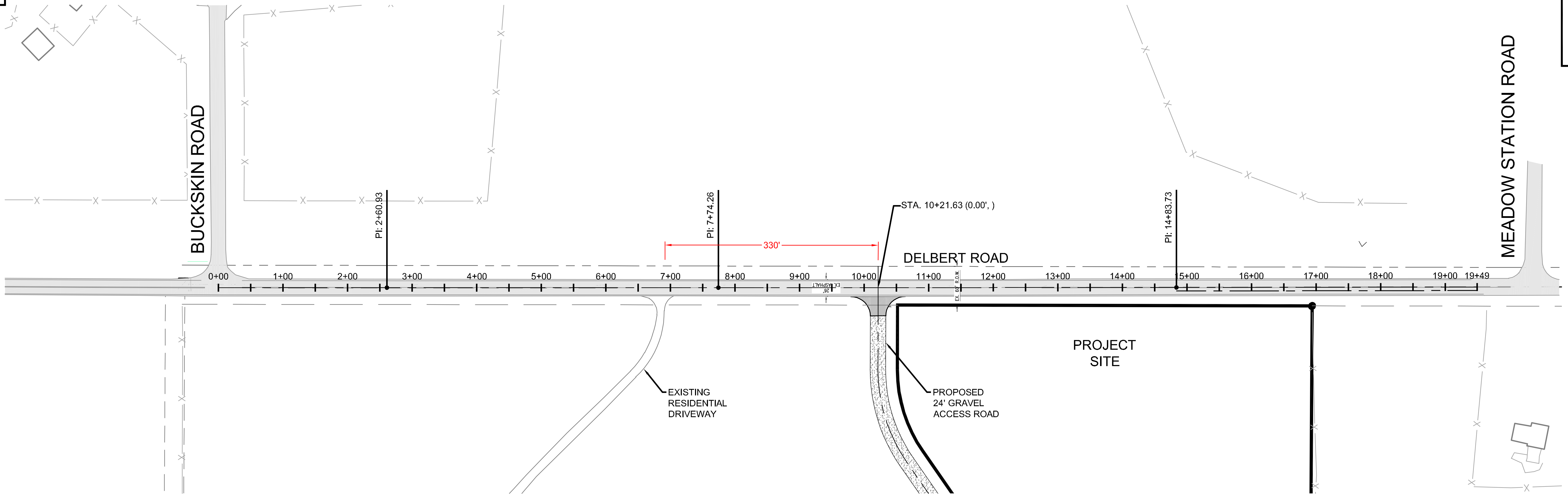
LOCATED IN THE EAST HALF OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST OF THE 6TH P.M.,
COUNTY OF DOUGLAS, STATE OF COLORADO

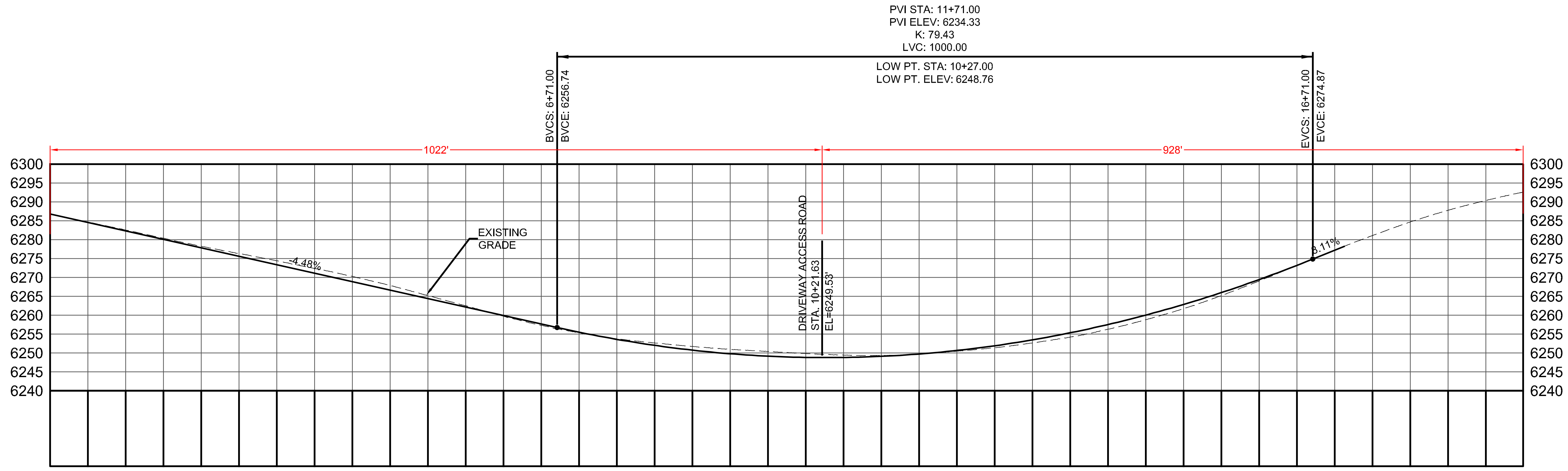


SCALE: 1" = 100'

LEGEND

━━━	PROPERTY BOUNDARY
───	ADJACENT PROPERTY LINE
─ ─ ─	EXISTING RIGHT-OF-WAY
─ ─ ─	EXISTING EASEMENT
- - -	PROPOSED EASEMENT
▭	EXISTING ASPHALT
▨	PROPOSED ASPHALT
▒	PROPOSED GRAVEL
──X──	EXISTING FENCE
5279	EXISTING MINOR CONTOUR
5280	EXISTING MAJOR CONTOUR
5279	PROPOSED MINOR CONTOUR
5280	PROPOSED MAJOR CONTOUR
1.2%	DIRECTION OF FLOW & GRADIENT





Delbert Road PROFILE
SCALE: (H) 1" = 100' (V) 1" = 20'
START STA: 0+00.00, END STA: 19+49.34

2N CIVIL
303.925.0544
www.2ncivil.com

PREPARED FOR:
NEIGHBORHOOD CAR WASH
SMOKEY HILL LLC
14205 E DAVIES AVE
CENTENNIAL, CO 80112

Road Plan & Profile
CONSTRUCTION PLANS
ANTELOPE CROSSING
DOUGLAS COUNTY, COLORADO

BY:
DATE:

REVISIONS:
1.
2.
3.
4.

PROJECT NUMBER: 24001
ISSUED DATE: XX-XX-XXXX
DESIGNED BY: TEW
REVIEWED BY: EPT

Road Plan & Profile

1

J:\Projects\24\24001\dwg\CD\Delbert Rd Exhibit.dwg 4/5/2024

ANTELOPE CROSSING FILING NO. 1

A PORTION OF THE EAST 1/2 OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST,
6TH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO
42.615 ACRES 4 RESIDENTIAL LOTS SB 2024-066

DEDICATION STATEMENT

THE UNDERSIGNED, BEING ALL THE OWNERS, MORTGAGEES, BENEFICIARIES OF DEEDS OF TRUST AND HOLDERS OF OTHER INTERESTS IN THE LAND DESCRIBED HEREIN, HAVE LAID OUT, SUBDIVIDED AND PLATTED SAID LANDS INTO LOTS, AND EASEMENTS AS SHOWN HEREON UNDER THE NAME AND SUBDIVISION OF ANTELOPE CROSSING. THE UTILITY EASEMENTS SHOWN HEREON ARE HEREBY DEDICATED FOR PUBLIC UTILITIES AND CABLE COMMUNICATION SYSTEMS AND OTHER PURPOSES AS SHOWN HEREON. THE ENTITIES RESPONSIBLE FOR PROVIDING THE SERVICES FOR WHICH THE EASEMENTS ARE ESTABLISHED ARE HEREBY GRANTED THE PERPETUAL RIGHT OF INGRESS AND EGRESS FROM AND TO ADJACENT PROPERTIES FOR INSTALLATION, MAINTENANCE AND REPLACEMENT OF UTILITY LINES AND RELATED FACILITIES. THE UTILITY EASEMENTS AND DELBERT ROAD RIGHT-OF-WAY SHOWN HEREON ARE DEDICATED AND CONVEYED TO DOUGLAS COUNTY, CO, IN FEE SIMPLE ABSOLUTE, WITH MARKETABLE TITLE, FOR PUBLIC USES AND PURPOSES.

OWNER: DCLA-3, LLC

____________________AS________________OF______________, A ________ LIMITED LIABILITY COMPANY
PRINT NAME (MANAGER/MEMBER) COMPANY STATE

STATE OF____________________)
) SS
COUNTY OF__________________)

ACKNOWLEDGED BEFORE ME THIS _____ DAY OF ________ A.D., 20___ BY ______________________________ .
(NAME)

MY COMMISSION EXPIRES: ______________________________

____
NOTARY PUBLIC

BENEFICIARY OF DEED OF TRUST

FIRST WESTERN TRUST BANK

BY: ________________________
TITLE: _____________________

STATE OF____________________)
) SS
COUNTY OF__________________)

ACKNOWLEDGED BEFORE ME THIS _____ DAY OF ________ , 20___ BY ______________________________
AS _________________ OF ________________________.

WITNESS MY HAND AND OFFICIAL SEAL.

MY COMMISSION EXPIRES: _________________________

____
NOTARY PUBLIC

ACCEPTANCE CERTIFICATE

THE DEDICATION OF THE 60' ACCESS DRAINAGE AND UTILITY EASEMENT IS HEREBY ACCEPTED FOR OWNERSHIP AND MAINTENANCE
BY THE________________________________ __________ ANTELOPE CROSSING HOMEOWNER'S ASSOCIATION.

____

BY: ________________________________
TITLE:_______________________________

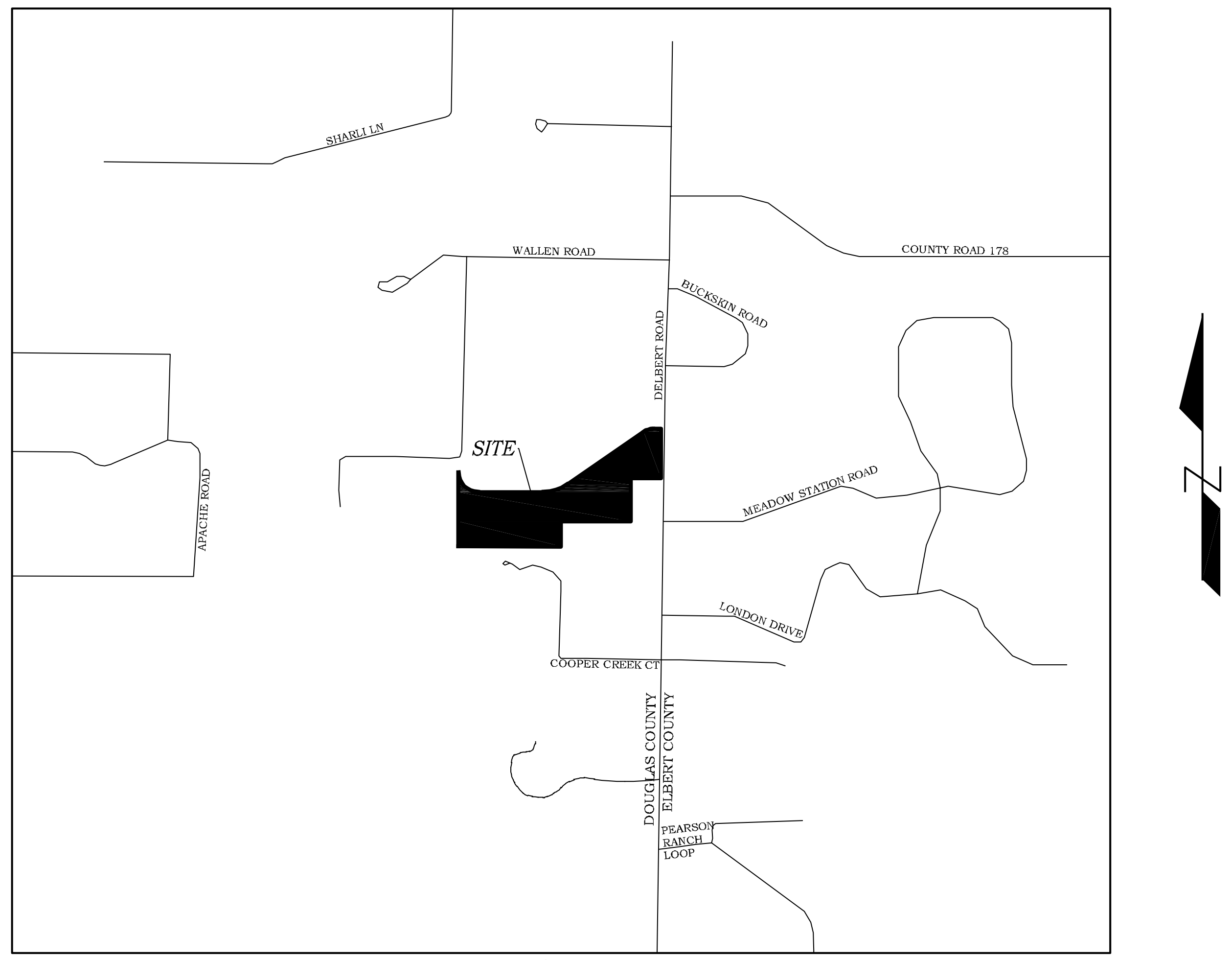
STATE OF____________________)
) SS
COUNTY OF__________________)

ACKNOWLEDGED BEFORE ME THIS _____ DAY OF ________ , 20___ BY ______________________________
AS _________________ OF ________________________.

WITNESS MY HAND AND OFFICIAL SEAL.

MY COMMISSION EXPIRES: _________________________

____
NOTARY PUBLIC



VICINITY MAP
SCALE: 1" = 2000'

LEGAL DESCRIPTION

A PARCEL OF PROPERTY LOCATED IN THE EAST HALF OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 28, AND CONSIDERING THE WEST LINE OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SAID SECTION 28 TO BEAR N00°06'02"E WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO; THENCE S89°39'57"E ALONG SOUTH LINE OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SAID SECTION 28 A DISTANCE OF 1322.37 FEET TO THE SOUTHEAST CORNER OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 28, AND THE SOUTHWEST CORNER OF A PARCEL OF PROPERTY AS DESCRIBED IN RECEPTION NO. 2019018412 OF THE DOUGLAS COUNTY RECORDS; THENCE ALONG SAID RECEPTION NO. 2019018412 THE FOLLOWING TWO (2) COURSES;

1. N00°06'00"E A DISTANCE OF 330.00 FEET;
2. S89°39'57"E A DISTANCE OF 903.99 FEET, TO THE SOUTHWEST CORNER OF A PARCEL OF PROPERTY AS DESCRIBED IN RECEPTION NO. 1998107726;

THENCE ALONG THE WEST AND NORTH LINE OF SAID RECEPTION NO. 1998107726 THE FOLLOWING TWO (2) COURSES;

1. N00°05'42"E A DISTANCE OF 560.87 FEET;
2. S89°38'54"E A DISTANCE OF 388.43 FEET TO A POINT ON THE WEST RIGHT OF WAY LINE OF DELBERT ROAD AND A POINT 30.00 FEET WEST OF THE EAST LINE OF THE SOUTHEAST 1/4 OF SAID SECTION 28; THENCE N00°05'59"E ALONG SAID WEST RIGHT OF WAY LINE A DISTANCE OF 642.22 FEET;

THENCE N89°54'01"W A DISTANCE OF 100.00 FEET TO A POINT OF CURVE;
THENCE ALONG SAID CURVE TO THE LEFT HAVING A RADIUS OF 220.00 FEET, A CENTRAL ANGLE OF 34°47'26", AND AN ARC LENGTH OF 133.59 FEET WHOSE CHORD BEARS S72°42'16" W A DISTANCE OF 131.54 FEET;
THENCE S55°18'34"W A DISTANCE OF 1205.17 FEET TO A POINT OF CURVE;
THENCE ALONG SAID CURVE TO THE RIGHT HAVING A RADIUS OF 530.00 FEET, A CENTRAL ANGLE OF 34°32'57" AND AN ARC LENGTH OF 319.59 FEET WHOSE CHORD BEARS S72°35'02"W A DISTANCE OF 314.77 FEET;
THENCE S89°51'31"W A DISTANCE OF 722.70 FEET TO A POINT OF CURVE;
THENCE ALONG SAID CURVE TO RIGHT HAVING A RADIUS OF 375.00 FEET, A CENTRAL ANGLE OF 90°14'31", AND AN ARC LENGTH OF 590.63 FEET, WHOSE CHORD BEARS N45°01'14"W A DISTANCE OF 531.45 FEET TO A POINT ON THE WEST LINE OF SAID NORTHWEST QUARTER OF THE SOUTHEAST QUARTER; THENCE S00°06'02"W ALONG SAID WEST LINE A DISTANCE OF 1072.53 FEET TO THE POINT OF BEGINNING.

CONTAINING 42.61 ACRES MORE OR LESS

SHEET 1 - COVER SHEET
SHEET 2 - NOTES
SHEET 3 - BOUNDARY

BOARD OF COUNTY COMMISSIONERS

THIS PLAT WAS APPROVED FOR FILING BY THE BOARD OF COUNTY COMMISSIONERS OF DOUGLAS COUNTY, CO, ON THE ______DAY OF _______ , 20 ____ , SUBJECT TO ANY CONDITIONS SPECIFIED HEREON. THE DEDICATIONS OF UTILITY EASEMENTS AND DELBERT ROAD RIGHT-OF-WAY ARE ACCEPTED.

ALL EXPENSES INCURRED WITH RESPECT TO IMPROVEMENTS FOR ALL UTILITY SERVICES, PAVING, GRADING, LANDSCAPING, CURBS, GUTTERS, SIDEWALKS, ROAD LIGHTING, ROAD SIGNS, FLOOD PROTECTION DEVICES, DRAINAGE STRUCTURES, AND ALL OTHER IMPROVEMENTS THAT MAY BE REQUIRED SHALL BE THE RESPONSIBILITY OF THE SUBDIVIDER AND NOT DOUGLAS COUNTY.

THIS ACCEPTANCE DOES NOT GUARANTEE THAT THE SOIL CONDITIONS, SUBSURFACE GEOLOGY, GROUNDWATER CONDITIONS OR FLOODING CONDITIONS OF ANY LOT SHOWN HEREON ARE SUCH THAT A BUILDING PERMIT, WELL PERMIT OR SEWAGE DISPOSAL PERMIT WILL BE ISSUED.

____
CHAIR, BOARD OF DOUGLAS COUNTY COMMISSIONERS

SURVEYORS CERTIFICATE:

I, ELIJAH FRANE, A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THIS PLAT TRULY AND CORRECTLY REPRESENTS THE RESULTS OF A SURVEY MADE ON NOVEMBER 14, 2024, BY ME OR UNDER MY DIRECT SUPERVISION AND THAT ALL MONUMENTS EXIST AS SHOWN HEREON; THAT MATHEMATICAL CLOSURE ERRORS ARE LESS THAN 1:50,000 (SECOND ORDER); AND THAT SAID PLAT HAS BEEN PREPARED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS OF THE STATE OF COLORADO DEALING WITH MONUMENTS, SUBDIVISIONS OR SURVEYING OF LAND AND ALL APPLICABLE PROVISIONS OF THE DOUGLAS COUNTY SUBDIVISION RESOLUTION. THIS CERTIFICATION IS BASED ON MY KNOWLEDGE, INFORMATION, AND BELIEF AND IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESS OR IMPLIED.

I ATTEST THE ABOVE ON THIS ________ DAY OF _____________, 2025.

____
ELIJAH FRANE, COLORADO PLS 38376
FOR AND ON BEHALF OF
ENCOMPASS SERVICES, LLC

TITLE VERIFICATION

WE, ________________ ,DO HEREBY CERTIFY THAT WE HAVE EXAMINED THE TITLE OF ALL LAND PLATTED HEREON AND THAT TITLE IN TO SUCH LAND IS IN THE DEDICATOR(S), FREE AND CLEAR OF ALL LIENS, TAXES AND ENCUMBRANCES:

BY: ____
NAME: DATE

TITLE: _________________________

STATE OF____________________)
) SS
COUNTY OF__________________)

ACKNOWLEDGED BEFORE ME THIS _____ DAY OF ________ , 20___ BY ____________________AS __________________ .

WITNESS MY HAND AND OFFICIAL SEAL.

MY COMMISSION EXPIRES: _________________________

____
NOTARY PUBLIC

PLANNING COMMISSION

THIS MINOR DEVELOPMENT FINAL PLAT (SB2024-066) WAS REVIEWED BY THE PLANNING COMMISSION ON ________________.

____ ____________
PLANNING DIRECTOR, ON BEHALF OF THE PLANNING COMMISSION DATE

CLERK AND RECORDER CERTIFICATE

STATE OF____________________)
) SS
COUNTY OF__________________)

I HEREBY CERTIFY THIS PLAT WAS FILED IN MY OFFICE ON THIS _______ DAY OF ______________. A.D., 20___ AT
_________ _____. A.M./P.M. AND WAS RECORDED AT RECEPTION NUMBER ________________.

____
DOUGLAS COUNTY CLERK AND RECORDER

CLIENT:	DCLA-3, LLC FRANCIS GAY 14205 E. DAVIES AVE., CENTENNIAL, CO 80112
ENGINEER:	2N CIVIL 6 INVERNESS CT. E SUITE 125 ENGLEWOOD, CO 80112

REVISIONS:

NO.	DATE	DESCRIPTION
2	6/12/25	COUNTY COMMENTS
3	7/24/25	COUNTY COMMENTS
4	8/18/25	COUNTY COMMENTS

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Providing Solutions

2750 S. WADSWORTH BLVD, SUITE C-202
DENVER, COLORADO 80227
303-955-6080
WWW.ENCOMPASSSERVICES.COM

DRAWN BY: MBB	PROJECT NO. 65467	SCALE: 1" = 100'
CHECKED BY: ERF	PREPARATION DATE: 11/14/2024	
FIELD WORK COMPLETED: 2/21/2024		SHEET 1 OF 3

ANTELOPE CROSSING FILING NO. 1

A PORTION OF THE EAST 1/2 OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST,
6TH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO
42.615 ACRES 4 RESIDENTIAL LOTS SB 2024-066

PLAT NOTES

1. THE OFFSITE PORTION OF THE ACCESS AND UTILITY EASEMENT FOR ACCESS TO THE LOTS, IS RECORDED AT RECEPTION NO. ______________. EASEMENT OWNERSHIP AND MAINTENANCE RESPONSIBILITIES SHALL BE ASSIGNED TO THE ANTELOPE CROSSING HOMEOWNERS ASSOCIATION AND ITS SUCCESSORS AND ASSIGNS FOR OWNERSHIP AND MAINTENANCE IN ACCORDANCE WITH THE APPROVED SUBDIVISION IMPROVEMENTS AGREEMENT.

2. DURING CONSTRUCTION ACTIVITY WITHIN THE DEVELOPMENT, THE OWNER, ITS SUCCESSORS AND ASSIGNS SHALL TAKE ALL REASONABLE CARE TO WATCH FOR HISTORIC RESOURCES, PALEONTOLOGICAL RESOURCES, AND OTHER CULTURAL HISTORY RESOURCES AND SHALL IMMEDIATELY NOTIFY DOUGLAS COUNTY IN THE EVENT OF SUCH DISCOVERY.

3. NO IMPROVEMENTS THAT CONFLICT WITH OR INTERFERE WITH CONSTRUCTION, MAINTENANCE OR ACCESS TO UTILITIES SHALL BE PLACED WITHIN THE UTILITY EASEMENTS, PROHIBITED IMPROVEMENTS INCLUDE, BUT ARE NOT LIMITED TO, PERMANENT STRUCTURES, BUILDINGS, COUNTER-FORTS DECKS, STAIRS, WINDOW WELLS, AIR CONDITIONING UNITS, RETAINING WALLS/COMPONENTS AND OTHER OBJECTS THAT MAY INTERFERE WITH THE UTILITY FACILITIES OR ACCESS, USE AND MAINTENANCE THEREOF. PROHIBITED IMPROVEMENTS MAY BE REMOVED BY THESE ENTITIES RESPONSIBLE FOR PROVIDING THE UTILITY SERVICES. THE OWNERS AND ITS SUCCESSORS AND ASSIGNS OF THE PROPERTY SUBJECT TO OR ADJACENT TO THE UTILITY EASEMENTS SHOWN HEREIN ARE RESPONSIBLE FOR THE MAINTENANCE AND OPERATION OF SUCH AREAS, WHICH DOES NOT INCLUDE UTILITY LINES AND RELATED FACILITIES. WHEN THE OWNER(S) OR ADJACENT OWNERS FAIL TO ADEQUATELY MAINTAIN SUCH UTILITY EASEMENTS, INCLUDING THE REMOVAL OF PROHIBITED IMPROVEMENTS, THE MAINTENANCE, OPERATION, RECONSTRUCTION AND REMOVAL SHALL BE AT THE COST OF THE OWNER(S).

4. ALL DENVER BASIN AQUIFER WATER BENEATH THIS PROPERTY IS DEDICATED THROUGH A DECLARATION OF RESTRICTIVE COVENANTS RECORDED IN THE DOUGLAS COUNTY CLERK AND RECORDERS OFFICE.

5. WATER WELLS FOR LOTS 1, 2, 3, AND 4 SHALL BE DRILLED FROM THE LOWER DAWSON GROUNDWATER UNDERLYING THE SUBJECT PROPERTY ACCORDING TO WATER DECREE CASE NO. 97CW95.

6. THE ACCESS ROADWAY EASEMENT AS DEPICTED HEREON, SHALL PROVIDE ACCESS TO LOTS 1, 2, 3 AND 4. NO ACCESS FOR LOT 1 SHALL BE TAKEN FROM DELBERT ROAD. ALL LOT OWNERS, THEIR SUCCESSORS, AND ASSIGNS SHALL SHARE MAINTENANCE RESPONSIBILITIES FOR THE ACCESS EASEMENT.

7. THE NO-BUILD ZONES AS DEPICTED HEREON ARE FOR THE PURPOSE OF PRESERVING THE 100-YEAR FLOODPLAIN AND THE ASSOCIATED EROSIONAL SETBACKS. NO BUILD ZONES DEPICTED HEREON INDICATE AREAS IN WHICH NO STRUCTURES SHALL BE ALLOWED.

8. EACH LOT IS SUBJECT TO COVENANTS, CONDITIONS AND RESTRICTIONS, AND A MAINTENANCE AGREEMENT BY SEPARATE DOCUMENT, WHICH IS RECORDED BY SEPARATE INSTRUMENT. DOUGLAS COUNTY IS NOT RESPONSIBLE FOR ENFORCEMENT OF THE COVENANTS, CONDITIONS AND RESTRICTIONS OR THE MAINTENANCE AGREEMENT BY SEPARATE DOCUMENT.

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

10. ANY PERSON WHO KNOWINGLY REMOVES, ALTERS OR DEFACES ANY PUBLIC LAND SURVEY, ACCESSORIES, OR LEGAL LAND-BOUND MONUMENT COMMITS O CLASS TWO (2) MISDEMEANOR PURSUANT TO STATE STATUTE 18-4-508, C.R.S.

11. THE LINEAL UNITS USED IN THIS DRAWING ARE U.S. SURVEY FEET.

12. BASIS OF BEARING, CONSIDERING THE SOUTH LINE OF NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 28 TO HAVE AN ASSUMED BEARING OF SOUTH 89°39'57" EAST AND MONUMENTED AS SHOWN HEREON.

13. THIS SURVEY WAS PERFORMED IN THE FIELD ON NOVEMBER 14, 2024.

14. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY ENCOMPASS SERVICES, LLC TO DETERMINE OWNERSHIP OR EASEMENTS OF RECORD. FOR INFORMATION REGARDING EASEMENTS, RIGHTS-OF-WAY AND TITLE OF RECORD, ENCOMPASS SERVICES, LLC RELIED UPON TITLE COMMITMENT NO. HS0831041, WITH AN EFFECTIVE DATE OF APRIL 16, 2024 AT 8:00 A.M. AS PROVIDED BY COMMONWEALTH LAND TITLE INSURANCE COMPANY.

15. ACCORDING TO THE NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP PANEL 080035C0210F WITH AN EFFECTIVE DATE OF SEPTEMBER 30, 2005, THE SUBJECT PROPERTY IS LOCATED IN ZONE "X", AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, ZONE "X" AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1 % ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND ZONE "A" NO BASE FLOOD ELEVATIONS DETERMINED.

16. THE 100 YEAR FLOODPLAIN SHOWN ON THIS PLAT WAS DERIVED USING GEOHECRAS FLOODPLAIN MODELING SOFTWARE TO PRODUCE A 1% ANNUAL CHANGE FLOODPLAIN BOUNDARY. THE MODEL IS BASED ON AERIAL FIELD TOPOGRAPHY OBTAINED BY ENCOMPASS SURVEYING, INC. IN NOVEMBER 2023, TOGETHER WITH STREAM FLOWS FROM THE FLOOD HAZARD AREA DELINEATION FOR COAL CREEK (E. YALE AVE TO E. COUNTY LINE ROAD) BY MATRIX DESIGN GROUP, AUGUST 2014, STREAM REACH C7B.

17. AS SHOWN HEREON, ALL EXTERIOR LOT LINES ARE HEREBY PLATTED WITH A 10 FOOT PUBLIC UTILITY EASEMENT. ALL INTERIOR LOT LINES ARE HEREBY PLATTED ON EITHER SIDE WITH A 5 FOOT PUBLIC UTILITY EASEMENT UNLESS OTHERWISE NOTED.

18. EACH LOT WILL TAKE ACCESS FROM THE 60' ACCESS AND UTILITY EASEMENT.

19. THE 60' ACCESS & UTILITY EASEMENT AND THE DRAINAGE EASEMENTS SHALL BE OWNED AND MAINTAINED BY THE ANTELOPE CROSSING HOA, ITS SUCCESSORS AND ASSIGNS, AS A PRIVATE EASEMENT FOR THE BENEFIT OF ANTELOPE CROSSING LOT OWNERS.

20. THE LOWEST FINISH FLOOR ELEVATION (INCLUDING THE BASEMENT) NEEDS TO BE A MINIMUM OF 2-FT. ABOVE THE 100-YR. FLOODPLAIN.

SHEET 1 - COVER SHEET
SHEET 2 - NOTES
SHEET 3 - BOUNDARY

CLIENT:	DCLA-3, LLC FRANCIS GAY 14205 E. DAVIES AVE., CENTENNIAL, CO 80112
ENGINEER:	2N CIVIL 6 INVERNESS CT. E SUITE 125 ENGLEWOOD, CO 80112

REVISIONS:

NO.	DATE	DESCRIPTION
2	6/12/25	COUNTY COMMENTS
3	7/24/25	COUNTY COMMENTS
4	8/18/25	COUNTY COMMENTS

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Providing Solutions

2750 S. WADSWORTH BLVD, SUITE C-202
DENVER, COLORADO 80227
303-955-6080
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DRAWN BY: MBB	PROJECT NO. 65467	SCALE: 1" = 100'
CHECKED BY: ERF	PREPARATION DATE: 11/14/2024	
FIELD WORK COMPLETED: 2/21/2024		SHEET 2 OF 3

ANTELOPE CROSSING FILING NO. 1

A PORTION OF THE EAST 1/2 OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST, 6TH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO

42.615 ACRES 4 RESIDENTIAL LOTS SB 2024-066

EASEMENT LINE TABLE

LINE #	DIRECTION	LENGTH
L1	N89°54'01"W	100.00'
L2	S50°18'34"W	311.47'
L3	S55°18'34"W	322.76'
L4	S55°18'34"W	387.18'
L5	S89°51'31"W	429.33'
L6	S89°51'31"W	113.26'
L7	S00°08'29"E	60.00'
L8	S89°51'31"W	662.18'
L9	S55°18'34"W	829.52'
L10	S50°18'34"W	311.47'
L11	N89°54'01"W	100.00'
L12	S00°05'59"W	60.00'

EASEMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD	CHORD LENGTH
C1	194.45'	280.00'	039°47'26"	S70°12'16"W	190.57'
C2	41.02'	470.00'	005°00'00"	N52°48'34"E	41.00'
C3	198.51'	60.00'	189°33'37"	S55°18'34"W	119.58'
C4	301.50'	500.00'	034°32'57"	N72°35'02"E	296.95'
C5	198.51'	60.00'	189°33'37"	S89°51'31"W	119.58'
C6	337.68'	560.00'	034°32'57"	N72°35'02"E	332.59'
C7	46.25'	530.00'	005°00'00"	N52°48'34"E	46.24'
C8	152.78'	220.00'	039°47'26"	S70°12'16"W	149.73'

LEGEND:

PLAT BOUNDARY LINE
ADJOINER PROPERTY LINE
EASEMENT LINE
ROAD RIGHT OF WAY
ROAD RIGHT OF WAY
NO BUILD ZONE
● FOUND REBAR AS NOTED

●	SET 5/8x18" REBAR WITH ORANGE PLASTIC CAP LS # 38376
⊞	SECTION CORNER AS NOTED
U.E.	UTILITY EASEMENT
P.O.B.	POINT OF BEGINNING
(NBZ)	NO BUILD ZONE

CLIENT:
DCLA-3, LLC
FRANCIS GAY
14205 E. DAVIES AVE.,
CENTENNIAL, CO 80112

ENGINEER:
2N CIVIL
6 INVERNESS CT. E SUITE 125
ENGLEWOOD, CO 80112

REVISIONS:

NO.	DATE	DESCRIPTION
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DRAWN BY: MBB	PROJECT NO. 65467	SCALE: 1" = 100'
CHECKED BY: ERF	PREPARATION DATE: 11/14/2024	
FIELD WORK COMPLETED: 2/21/2024		SHEET 3 OF 3

SUPPLEMENTAL EXHIBIT FOR

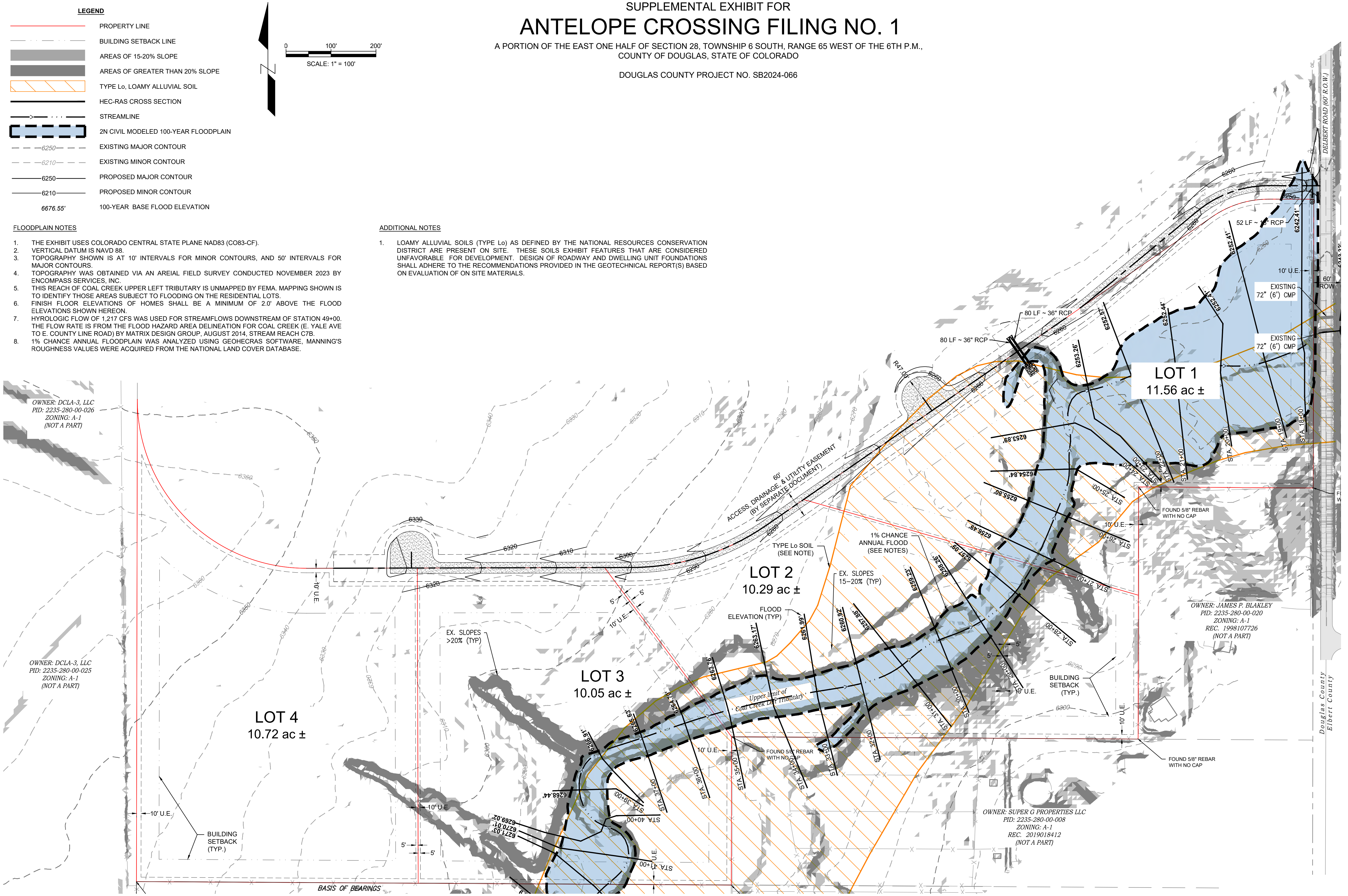
ANTELOPE CROSSING FILING NO. 1

A PORTION OF THE EAST ONE HALF OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST OF THE 6TH P.M.,
COUNTY OF DOUGLAS, STATE OF COLORADO

DOUGLAS COUNTY PROJECT NO. SB2024-066

LEGEND

―	PROPERTY LINE
— · —	BUILDING SETBACK LINE
▨	AREAS OF 15-20% SLOPE
■	AREAS OF GREATER THAN 20% SLOPE
▧	TYPE Lo, LOAMY ALLUVIAL SOIL
―	HEC-RAS CROSS SECTION
—>— · · · —	STREAMLINE
▭	2N CIVIL MODELED 100-YEAR FLOODPLAIN
— —6250— —	EXISTING MAJOR CONTOUR
— —6210— —	EXISTING MINOR CONTOUR
——6250——	PROPOSED MAJOR CONTOUR
——6210——	PROPOSED MINOR CONTOUR
6676.55'	100-YEAR BASE FLOOD ELEVATION



FLOODPLAIN NOTES

1. THE EXHIBIT USES COLORADO CENTRAL STATE PLANE NAD83 (CO83-CF).
2. VERTICAL DATUM IS NAVD 88.
3. TOPOGRAPHY SHOWN IS AT 10' INTERVALS FOR MINOR CONTOURS, AND 50' INTERVALS FOR MAJOR CONTOURS.
4. TOPOGRAPHY WAS OBTAINED VIA AN AREIAL FIELD SURVEY CONDUCTED NOVEMBER 2023 BY ENCOMPASS SERVICES, INC.
5. THIS REACH OF COAL CREEK UPPER LEFT TRIBUTARY IS UNMAPPED BY FEMA. MAPPING SHOWN IS TO IDENTIFY THOSE AREAS SUBJECT TO FLOODING ON THE RESIDENTIAL LOTS.
6. FINISH FLOOR ELEVATIONS OF HOMES SHALL BE A MINIMUM OF 2.0' ABOVE THE FLOOD ELEVATIONS SHOWN HEREON.
7. HYROLOGIC FLOW OF 1,217 CFS WAS USED FOR STREAMFLOWS DOWNSTREAM OF STATION 49+00. THE FLOW RATE IS FROM THE FLOOD HAZARD AREA DELINEATION FOR COAL CREEK (E. YALE AVE TO E. COUNTY LINE ROAD) BY MATRIX DESIGN GROUP, AUGUST 2014, STREAM REACH C7B.
8. 1% CHANCE ANNUAL FLOODPLAIN WAS ANALYZED USING GEOHECRAS SOFTWARE, MANNING'S ROUGHNESS VALUES WERE ACQUIRED FROM THE NATIONAL LAND COVER DATABASE.

ADDITIONAL NOTES

1. LOAMY ALLUVIAL SOILS (TYPE Lo) AS DEFINED BY THE NATIONAL RESOURCES CONSERVATION DISTRICT ARE PRESENT ON SITE. THESE SOILS EXHIBIT FEATURES THAT ARE CONSIDERED UNFAVORABLE FOR DEVELOPMENT. DESIGN OF ROADWAY AND DWELLING UNIT FOUNDATIONS SHALL ADHERE TO THE RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT(S) BASED ON EVALUATION OF ON SITE MATERIALS.

2N CIVIL
303.925.0544
www.2ncivil.com

PREPARED FOR:
DCLA-3, LLC
14205 E DAVIES AVE
CENTENNIAL, CO 80112

Supplemental Exhibit

ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

REVISIONS:	BY:	DATE:
1.		
2.		
3.		
4.		

PROJECT NUMBER:	24001
ISSUED DATE:	2-6-25
DESIGNED BY:	TEW
REVIEWED BY:	EPT

Supplemental Exhibit

1

J:\Projects\24\24001\dwg\CD\Supplemental Exhibit.dwg 2/6/2025