PLANNING COMMISSION REGULAR MEETING
MONDAY, OCTOBER 6, 2025
AGENDA

Monday, October 6, 2025 **6:00 PM** **Hearing Room**

Disclaimer - This packet is provided for informational purposes only and is subject to change. Some documents may have been unavailable at the time this agenda was prepared. For additional information, contact the responsible staff person.

Instructions to access the video or audio of the meeting are available here: https://www.douglas.co.us/board-county-commissioners/boards-commissions/planning-commission/ To submit written public comment and/or exhibits for a Planning Commission meeting, please send them, in advance, to planningcommission@douglas.co.us. Instructions for providing audio comments at the remote meeting are available at the webpage above.

1. Call to Order

a. Pledge of Allegiance

b. Roll Call

c. Attorney Certification of the Agenda

d. Planning Commission Disclosures

2. Approval of Minutes

a. Unofficial Minutes from September 22, 2025. **4011**

Attachments: Unofficial Minutes from September 22, 2025

3. Land Use Hearing Items

a. River Canyon Filing 2, 3rd Amendment, Lot 2A-1 - Location and Extent - Project File LE2025-018. **3990**
Trevor Bedford, AICP, Senior Planner — *Department of Community Development*

Attachments: Staff Report - LE2025-018
Supplemental Info - LE2025-018

b. Antelope Crossing – Rezoning from Agricultural One to Large Rural Residential – Project File: ZR2024-015. **3946**
Carolyn Washee-Freeland, AICP, Senior Planner — *Department of Community Development*

Attachments: Staff Report - ZR2024-015
Supplemental Memo - ZR2024-015

Continued from September 22, 2025

c. Antelope Crossing – Minor Development Final Plat – Project File: SB2024-066. **3945**
Carolyn Washee-Freeland, AICP, Senior Planner — *Department of Community Development*

Attachments: Staff Report - SB2024-066
Supplemental Memo - ZR2024-015

Continued from September 22, 2025

4. Adjournment

The Next Regular Meeting Will be Held on Monday, October 20, 2025 @ 6:00 p.m.

MEETING DATE: October 6, 2025

DESCRIPTION: Unofficial Minutes from September 22, 2025.

ATTACHMENTS:

Unofficial Minutes from September 22
2025

PLANNING COMMISSION REGULAR MEETING
MONDAY, SEPTEMBER 22, 2025
MINUTES

Monday, September 22, 2025 **6:00 PM** **Hearing Room**

1. Call to Order

Commissioner Gilmartin presented virtual hearing instructions.

a. Pledge of Allegiance

b. Roll Call

PRESENT
Commissioner Len Abruzzo
Commissioner Stephen Allen
Commissioner Jack Gilmartin
Commissioner Michael McKesson
Commissioner Edward Rhodes
Commissioner Jim Smallwood
Alternate Mark Witkiewicz
EXCUSED
Commissioner Calvin Downs

c. Attorney Certification of the Agenda

Chris Pratt, County Attorney, stated that all items on today's agenda have been reviewed by the County Attorney's Office, they have been properly noticed and the Commission has jurisdiction to hear them.

d. Planning Commission Disclosures

None.

2. Approval of Minutes

a. Unofficial Minutes from September 8, 2025.

Commissioner Stephen Allen moved that the Commission approve the Minutes from September 8, 2025.

RESULT: APPROVED
MOVER: Stephen Allen
SECONDER: Mark Witkiewicz
AYES: Len Abruzzo, Stephen Allen, Jack Gilmartin, Ed Rhodes, Mark Witkiewicz

ABSTAIN: Jim Smallwood, Mike McKesson

3. Land Use Hearing Items

Items g. and h. were moved to the beginning of the Hearing so that they may be continued to a later date.

Commissioner Stephen Allen moved to continue the Antelope Crossing – Rezoning from Agricultural One to Large Rural Residential – Project File: ZR2024-015 and Antelope Crossing – Minor Development Final Plat – Project File: SB2024-066, to October 6th, 2025 meeting at 6:00pm.

RESULT:	APPROVED
MOVER:	Stephen Allen
SECONDER:	Mike McKesson
AYES:	Len Abruzzo, Stephen Allen, Jack Gilmartin, Mike McKesson, Ed Rhodes, Jim Smallwood, Mark Witkiewicz
NAYS:	None

a. 3663 Timber Mill Parkway – Location and Extent – Project File: LE2025-013.

Trevor Bedford, AICP, Senior Planner - Department of Community Development - presented the proposed application.

The applicant's representative, Dereck Holscher, Ulteig, Operations, LLC – provided additional information.

Commissioner Gilmartin opened public comment.

Tom Bowles, Franktown, CO – provided public comment.

Commissioner Gilmartin closed public comment.

Commissioner Gilmartin opened Planning Commission discussion.

Commissioner Mark Witkiewicz moved to approve the 3663 Timber Mill Parkway – Location and Extent – Project File: LE2025-013.

RESULT:	APPROVED
MOVER:	Mark Witkiezicz
SECONDER:	Len Abruzzo
AYES:	Len Abruzzo, Stephen Allen, Jack Gilmartin, Mike McKesson, Ed Rhodes, Jim Smallwood, Mark Witkiewicz
NAYS:	None

b. 6523 N. State Highway 83 – Pinery Water and Wastewater – Location and Extent – Project File: LE2025-014.

Mike Pesicka, AICP, Principal Planner - Department of Community Development - presented the proposed application.

The applicant's representative, Robin Kriss, JVA, Inc., - provided additional information.

Commissioner Gilmartin opened public comment.

There was no public comment.

Commissioner Gilmartin closed public comment.

Commissioner Gilmartin opened Planning Commission discussion.

Richard Krulish, The Pinery – provided additional information.

Commissioner Ed Rhodes moved to approve the 6523 N. State Highway 83 – Pinery Water and Wastewater – Location and Extent – Project File: LE2025-014.

RESULT:	APPROVED
MOVER:	Ed Rhodes
SECONDER:	Len Abruzzo
AYES:	Len Abruzzo, Stephen Allen, Jack Gilmartin, Mike McKesson, Ed Rhodes, Jim Smallwood, Mark Witkiewicz
NAYS:	None

c. Sterling Ranch Filing 1, Tract P – Location and Extent – Project File: LE2025-015.

Eric Pavlinek, Principal Planner - Department of Community Development - presented the proposed application.

The applicant's representative, Jackie Millet– provided additional information.

Commissioner Gilmartin opened public comment.

There was no public comment.

Commissioner Gilmartin closed public comment.

Commissioner Gilmartin opened Planning Commission discussion.

Commissioner Len Abruzzo moved to approve the Sterling Ranch Filing 1, Tract P – Location and Extent – Project File: LE2025-015.

RESULT:	APPROVED
MOVER:	Len Abruzzo
SECONDER:	Stephen Allen
AYES:	Len Abruzzo, Stephen Allen, Jack Gilmartin, Mike McKesson, Ed Rhodes, Jim Smallwood, Mark Witkiewicz
NAYS:	None

d. Piney Lake Trails, Tracts A, B, and C – Location and Extent – Project File: LE2025-016.

Heather Scott, AICP, Principal Planner - Department of Community Development - presented the proposed application.

The applicant's representative, Clark Reid – provided additional information.

Commissioner Gilmartin opened public comment.

There was no public comment.

Commissioner Gilmartin closed public comment.

Commissioner Gilmartin opened Planning Commission discussion.

Commissioner Jim Smallwood moved to approve the Piney Lake Trails, Tracts A, B, and C – Location and Extent – Project File: LE2025-016.

RESULT:	APPROVED
MOVER:	Jim Smallwood
SECONDER:	Mark Witkiewicz
AYES:	Len Abruzzo, Stephen Allen, Jack Gilmartin, Mike McKesson, Ed Rhodes, Jim Smallwood, Mark Witkiewicz
NAYS:	None

e. Solstice Filing 4 and 5, Tracts A, B, and C – Location and Extent – Project File: LE2025-017.

Brett Thomas, AICP, Chief Planner - Department of Community Development - presented the proposed application.

The applicant's representative, Jessica Ricalde – provided additional information.

Commissioner Gilmartin opened public comment.

Jane Brautigam, Douglas County – provided public comment.

James Widrig, Douglas County – provided public comment.

Michael Cohen, Douglas County – provided public comment.

Amy Larson, Douglas County – provided public comment.

Commissioner Gilmartin closed public comment.

Commissioner Gilmartin opened Planning Commission discussion.

The applicant's representative, Ryan McDermed – provided additional information.

Commissioner Ed Rhodes moved to approve the Solstice Filing 4 and 5, Tracts A, B, and C – Location and Extent – Project File: LE2025-017.

RESULT:	APPROVED
MOVER:	Ed Rhodes
SECONDER:	Stephen Allen
AYES:	Len Abruzzo, Stephen Allen, Jack Gilmartin, Mike McKesson, Ed Rhodes, Jim Smallwood, Mark Witkiewicz
NAYS:	None

f. Sundown Oaks Metropolitan District – New Service Plan – Project File: SV2025-005.

DJ Beckwith, Principal Planner - Department of Community Development - presented the proposed application.

The applicant's representative, Nicole Peykov – provided additional information.

Commissioner Gilmartin opened public comment.

Diana Love, Franktown, CO – provided public comment.

Debra Bowman, Douglas County, CO – provided public comment.

Tom Bowles, Franktown, CO – provided public comment.

James Rogers, Douglas County, CO – provided public comment.

Malcom Bledel, Douglas County, CO – provided public comment.

Richard Love, Franktown, CO – provided public comment.

Jack Schuler, Douglas County, CO – provided public comment.

Doug Ausby, Douglas County, CO – provided public comment.

Joe Varablick, Franktown, CO – provided public comment.

Jim Garcia, Castle Rock, CO – provided public comment.

David Jacobs, Douglas County, CO – provided public comment.

Fred Call, Franktown, CO – provided public comment.

Patrick Naper, Douglas County, CO – provided public comment.

Commissioner Gilmartin closed public comment.

Commissioner Gilmartin opened Planning Commission discussion.

Commissioner Stephen Allen moved to recommend approval of the Sundown Oaks Metropolitan District – New Service Plan – Project File: SV2025-005 with the condition as stated at the hearing.

RESULT:	APPROVED
MOVER:	Stephen Allen
SECONDER:	Mark Witkiewicz
AYES:	Len Abruzzo, Stephen Allen, Jack Gilmartin, Mike McKesson, Ed Rhodes, Jim Smallwood, Mark Witkiewicz
NAYS:	None

4. Adjournment

The meeting was adjourned at 9:14 p.m.

_____

Calvin Downs, Secretary

_____

Samantha Hutchison, Recording Secretary

MEETING DATE: October 6, 2025

STAFF PERSON RESPONSIBLE: Trevor Bedford, AICP, Senior Planner

DESCRIPTION: River Canyon Filing 2, 3rd Amendment, Lot 2A-1 - Location and Extent - Project File LE2025-018.

SUMMARY: Dominion Water and Sanitation District requests approval of a Location and Extent for the proposed refurbishment and expansion of the Chatfield Basin Water Reclamation Facility to provide wastewater treatment and surface water discharge to the South Platte River.

STAFF ASSESSMENT: Staff evaluated the application in accordance with Section 32 of the Douglas County Zoning Resolution. Should the Planning Commission approve the Location and Extent request, the applicant will be required to receive approval of all necessary permits prior to commencement of the project.

REVIEW:

Steven E Koster	Approve	9/24/2025
Samantha Hutchison - FYI	Notified - FYI	9/24/2025

ATTACHMENTS:

Staff Report - LE2025-018
Supplemental Info - LE2025-018

DOUGLAS COUNTY
COLORADO

Location and Extent Staff Report

Date: September 24, 2025

To: Douglas County Planning Commission

From: Trevor Bedford, AICP, Senior Planner TB
Jeanette Bare, AICP, Planning Manager SK for JB
Steven E. Koster, AICP, Assistant Director of Planning Services SK

Subject: **River Canyon Filing 2, 3rd Amendment, Lot 2A-1 – Location and Extent**

Project File: **LE2025-018**

Planning Commission Hearing: **October 6, 2025 @ 6:00 p.m.**

I. EXECUTIVE SUMMARY

Dominion Water and Sanitation District (DWSD) requests approval of a Location and Extent (L&E) for the proposed refurbishment and expansion of the Chatfield Basin Water Reclamation Facility (CBWRF) to provide wastewater treatment and surface water discharge to the South Platte River. The project is located between Caretaker Road and the High Line Canal, approximately 1,200 feet southwest of the intersection of Dante Drive and Waterton Road in the Roxborough area. The applicant states that the project is necessary to provide Sterling Ranch, The Range, and Louviers communities with reliable wastewater services.

The property is approximately 10 acres and is zoned General Industrial and Planning Area 2 (Industrial) of the River Canyon Planned Development. The property is located within the Pike National Forest Subarea as identified by the 2040 Comprehensive Master Plan.

II. APPLICATION INFORMATION

A. Applicant

Andrea Cole
Dominion Water and Sanitation District
9250 E Costilla Avenue
Greenwood Village, CO 80012

B. Applicant's Representative

Matt Padgett
Dominion Water and Sanitation District
9250 E Costilla Avenue
Greenwood Village, CO 80012

C. Request

The applicant requests approval of an L & E for the refurbishment and expansion of the Chatfield Basin Water Reclamation Facility (CBWRF).

D. Location

The project is located between Caretaker Road and the High Line Canal, approximately 1,200 feet southwest of the intersection of Dante Drive and Waterton Road in the Roxborough area. The attached vicinity map, zoning map, and aerial map highlight site location and existing conditions.

E. Project Description

DWSD proposes to refurbish and expand the Chatfield Basin Water Reclamation Facility (CBWRF). The improvements will allow the existing system to increase treatment capacity from 0.6 million gallons per day to 0.9 million gallon per day and incorporate treatment systems to produce higher quality effluent. No physical changes are proposed to the existing off-site discharge point.

The project includes two new metal pre-fabricated buildings; a 6,300-square-foot building for a membrane bioreactor and a 1,500-square-foot building for a fine screening area. Existing buildings will be refurbished, but the existing footprints are not expected to be expanded.

The site will be accessed via an improved gravel driveway connection to Caretaker Road. Additional site improvements include internal gravel drive and parking areas, grading, and stormwater management. An existing stormwater detention system will be retained and refurbished. The project will have exterior lighting for access and buildings. All exterior lighting will be required to comply with the Douglas County Zoning Resolution.

The applicant has proposed to mitigate odors with odor control systems. Noise impacts will be mitigated by enclosing the aeration blower in the proposed 6,300-square-foot building.

Construction is anticipated to begin with partial demolition of an aeration basin in October 2025. Most construction activities are planned to start in January 2026, with peak activity in Spring of 2026 with completion anticipated before the end of 2027. Construction is anticipated to be scheduled on weekdays from 6:00 a.m. to 5:00 p.m. During construction, approximately 22 workers will be on the site. During construction, equipment including a crane, concrete pump trucks, and forklifts will be delivered to the site. Post construction, four employees will be on site seven days a week with occasional deliveries to the site.

The project is located within the Pike National Forest Nonurban Subarea as identified by the Douglas County Comprehensive Master Plan 2040 (CMP) Section 3. Policy 3-3I.2 is to minimize the impact of development and respect the distinct character of the

Pike National Forest during development review. This project consists of upgrades to an existing wastewater treatment facility site.

III. CONTEXT

A. Background

The CBWRF was previously owned by the Roxborough Water and Sanitation District (RWSD) and was decommissioned in 2010. DWSD purchased the site with the intention of refurbishing and expanding the facility to provide service to Sterling Ranch and other customers within its service area.

B. Adjacent Land Uses and Zoning

Adjacent properties include the High Line Canal, vacant properties, and a roadway tract.

Zoning and Land Use

Direction	Zoning	Land Use
North	River Canyon Planned Development and General Industrial	Roadway tract and vacant
South	Agricultural One	High Line Canal
East	River Canyon Planned Development and General Industrial	Vacant
West	River Canyon Planned Development and General Industrial	Vacant

IV. PHYSICAL SITE CHARACTERISTICS

A. Site Characteristics and Constraints

The site is developed with an existing, decommissioned wastewater treatment facility. There is 100-year floodplain along the eastern property line.

B. Access

Access to the site will be via an existing driveway from Caretaker Road. The applicant proposes to refurbish the driveway with gravel.

D. Drainage and Erosion

The applicant provided a drainage report for review and has proposed to use and refurbish an existing detention ponds. Engineering had not yet responded to the referral request at the writing of this staff report. Approval of any necessary plans and permits including GESC and construction plans will be required prior to commencement of construction.

E. Floodplain

There is 100-year floodplain located along the eastern property line. Douglas County Engineering will review the project for any potential impacts and had not yet

responded to the referral request at the writing of this staff report. If any floodplain permits are necessary, approval of these will be required prior to commencement of construction.

V. PROVISION OF SERVICES

A. Schools

This is a nonresidential project that will not impact school services.

B. Fire Protection

West Metro Fire Protection District (WMFD) provides fire and emergency services for the site. A referral request was also sent to South Metro Fire Rescue (SMFR) who may also provide services within the area. At the writing of this staff report, WMFD and SMFR had not provided a response to the application. The applicant will be required to obtain any approvals or permits necessary from WMFD and SMFR prior to commencement of construction.

C. Sheriff Services

The Douglas County Sheriff's Office (DCSO) will provide police protection to the site. The Office of Emergency Management responded to the referral request with no comment. At the writing of this staff report, responses had not been received from E911 or DCSO.

D. Water and Sanitation

The purpose of the project is to provide wastewater services to nearby communities including Sterling Ranch, the Range, and Louviers.

E. Utilities

Area utility service providers were provided a referral on this application. CORE Electric Cooperative responded to the referral request that the project is outside of their service area. At the writing of this staff report, no other utility provider issued comments on the application.

F. Other Required Processes and Permits

In addition to the L & E approval, the following permits and other approvals may be required prior to commencement of construction:

- Engineering: Construction Drawings approval, GESC report and plans approval, approval of any other necessary plans and permits.
- Colorado Department of Public Health and Environment: Discharge permit, site application permit.
- Building Division: Building permits.
- West Metro Fire Department: Any necessary permits.
- South Metro Fire Department: Any necessary permits.

VI. PUBLIC NOTICE AND INPUT

Courtesy notices of an application in progress were sent to adjacent property owners. At the preparation of the staff report, no members of the public had responded to the courtesy notices. Any comments received will be provided prior to the hearing. Referral response requests were sent to required referral agencies on September 19, 2025. Referral responses are due at the conclusion of the referral period on October 2, 2025, or prior to the Planning Commission Hearing.

Referral agency responses received to date are attached to the staff report for reference. The Chatfield Community Association provided a referral response with concerns that approving the project prior to CDPHE permits and discharge permits being finalized is premature and noted concerns about water quality due to proximity to the floodplain. Further responses received through the end of the referral period will be provided to the Planning Commission prior to the hearing and added to the project record.

VII. STAFF ASSESSMENT

Staff evaluated the application in accordance with Section 32 of the DCZR. Should the Planning Commission approve the L & E request, the applicant will be required to receive approval of all necessary permits prior to commencement of the project.

ATTACHMENTS **PAGE**

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Comprehensive Master Plan Map 53
Zoning Map 54
Aerial Map 55
Referral Agency Response Report 56
Referral Response Letters 58
Location and Extent Exhibit 60

LAND USE APPLICATION

Please complete, sign, and date this application. Return it with the required items listed on the Submittal Checklist to planningsubmittals@douglas.co.us. Submittals may also be mailed or submitted in person to Planning Services. *NOTE: The Planning Commission or the Board of County Commissioners should not be contacted regarding an open application*.

OFFICE USE ONLY

PROJECT TITLE: River Canyon Filing 2, 3rd Amendment, Lot 2A-1

PROJECT NUMBER: LE2025-018

PROJECT TYPE: Location and Extents

MARKETING NAME: Chatfield Basin Water Reclamation Facility Refurbishment

PRESUBMITTAL REVIEW PROJECT NUMBER: PS2024-215 (updated from PS2023-126)

PROJECT SITE:

Address: 11310 Caretaker Road, Littleton, CO 80125

State Parcel Number(s): 2227-344-05-001

Subdivision/Block#/Lot# *(if platted)*: River Canyon Filing 2, 3rd AMD, Lot 2A-1

PROPERTY OWNER(S):

Name(s): Dominion Water & Sanitation District

Address: 9250 E Costilla Avenue, Greenwood Village, CO 80012

Phone: (720) 556-6840

Email: andrea.cole@dominionwsd.com

AUTHORIZED REPRESENTATIVE: *(Notarized Letter of Authorization is required from the property owner, unless the owner is acting as the representative)*

Name: Matt Padgett

Address: 9250 E Costilla Avenue, Greenwood Village, CO 80012

Phone: (720) 446-9141

Email: matt.padgett@dominionwsd.com

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*.

Signed by: Matt Padgett 067109D22B52400...

Applicant Signature-Matthew Padgett

August 25, 2025

Date

PREBLE'S MEADOW JUMPING MOUSE

What is the Preble's Meadow Jumping Mouse?
The Preble's Meadow Jumping Mouse is a rare mouse designated by the United States Fish and Wildlife Service as a "threatened species" under the Endangered Species Act. The federal threatened species designation prohibits the unlawful "take" of the Preble's Meadow Jumping Mouse or its habitat.

Where does the mouse live?
The Preble's Meadow Jumping Mouse lives primarily in heavily vegetated riparian habitats. In Douglas County, the mouse has been located in or near many drainages, including tributaries and the mainstream reaches of East and West Plum Creek. However, any stream reach or potential habitat within Douglas County may be subject to the requirements of the Endangered Species Act. The mouse has also been found in Boulder, Elbert, El Paso, Jefferson, and Larimer counties and in parts of Wyoming.

What activities may be considered a violation of the Endangered Species Act?
In its listing decision, the United States Fish and Wildlife Service identified activities that may result in violation of the Endangered Species Act to include:

1. Unauthorized or unpermitted collection, handling, harassing, or taking of the species;

2. Activities that directly or indirectly result in the actual death or injury death of the mouse, or that modify the known habitat of the species, thereby significantly modifying essential behavioral patterns (e.g., plowing, mowing, or cutting; conversion of wet meadow or riparian habitats to residential, commercial, industrial, recreational areas, or cropland; overgrazing; road and trail construction; water development or impoundment; mineral extraction or processing; off-highway vehicle use; and, hazardous material cleanup or bioremediation); and;

3. The application or discharge of agrichemicals or other pollutants and pesticides onto plants, soil, ground water, or other surfaces in violation of label directions or any use following Service notification that such use, application or discharge is likely to harm the species; would be evidence of unauthorized use, application or discharge.

How to determine if a proposed activity would violate the Endangered Species Act.
Any questions regarding whether an activity will impact the Preble's Meadow Jumping Mouse or its habitat should be directed to:

Field Office Supervisor
USFWS Colorado ES Field Office (MS 65412)
Denver Federal Center
PO Box 25486
Denver, CO 80225-0486
303-236-4773
ColoradoES@fws.gov

Where to find more information on the Preble's Meadow Jumping Mouse.
More information can be found at the US Fish and Wildlife Service website at:
https://ecos.fws.gov/ecp/species/4090

Any approval given by Douglas County does not obviate the need to comply with applicable federal, state, or local laws and/or regulations.

Location and Extents Report – Chatfield Basin Water Reclamation Facility

Douglas County, Colorado

Stantec

Prepared for:
Douglas County

Prepared by:
Dominion Water & Sanitation District &
Stantec Consulting Services Inc.

August 26, 2025

Project/File:
181301899

Stantec Consulting Services Inc.

Revision Schedule

Revision	Description	Author	Date	Independent Review	Date
0	For Approval	S. Cihelka	8/18/2025	M. Reimann	8/20/25

Disclaimer

The conclusions in the Report titled Location and Extents Report - Douglas County are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from Dominion Water & Sanitation District (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided by the Client to applicable authorities having jurisdiction and to other third parties in connection with the project, Stantec disclaims any legal duty based upon warranty, reliance or any other theory to any third party, and will not be liable to such third party for any damages or losses of any kind that may result.

Prepared by:

Signature

Susan Cihelka

Reviewed by:

Anni Santos

Printed Name

Approved by:

Signature

Matt Reimann, PE

Printed Name

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List of Appendices

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Appendix D - Stormwater Detention and Infiltration Design Data Sheet (Water Quality) ……..D-1

Engineer's Letter

August 26, 2025

Douglas County
Department of Community Development – Planning Services
100 Third Street,
Castle Rock, CO 80104

RE: Dominion Water and Sanitation District - Chatfield Basin Water Reclamation Facility Refurbishment and Expansion Location & Extents Planning and Engineering Review Application (PS2024-215 – River Canyon #2-3rd Amendment – Lot 2A-1)

To Whom It May Concern,

Dominion Water and Sanitation District (DWSD) requests for Douglas County to review and approve the Location and Extents Permit Application for the refurbishment and expansion of Chatfield Basin Water Reclamation Facility (CBWRF). On behalf of DWSD, Stantec Consulting Services Inc. (Stantec) has prepared the requested documents from the Pre-Submittal Review (PS2024-215, updated from PS2023-126) meeting held on October 17, 2024. The Grading Erosion and Sedimentation Control (GESC) Permit Application, Preliminary Plan and Report have been submitted for concurrent review is preliminary and grading and elevations may change as design progresses.

This is a progressive design-build project, in which Stantec is serving as the designer, with PCL Construction, Inc. (PCL) serving as the contractor for the detailed design and construction of the project. This project is broken into four (4) work packages to streamline the design and construction process.

- Work Package 1 (WP1) includes partial demolition of the Aeration Basin structure above ground and refurbishment of concrete structure below grade. WP1 will also include temporary equalization bypass modifications for the Roxborough Water Sanitation District (RWSD) Lift Station. The demolition permit is being completed separately by the demolition sub-contractor. A Small Utilities GESC was submitted for review to Douglas County on August 21, 2025.

- Work Package 2 (WP2) is for early procurement of long-lead equipment and does not involve any construction activity.

- Work Package 3 (WP3) consists of the civil grading, stormwater management, buried utilities and any other work not associated with new or existing structures on the site. It also includes partial demolition inside existing structures in preparation for the new work under Work Package 4.

- Work Package 4 (WP4) consists all of the new work associated with the refurbishment project across all new and existing structures. This includes upgrading fixtures and utility connections and installation of two new pre-engineered metal buildings for new wastewater treatment processes and installation of a new enclosed internal power distribution housing.

A more detailed outline of the proposed treatment and site improvements are provided in the Project Narrative of this report.

DWSD appreciates the County's input and guidance in support of this Project. If you have any questions or require additional information, please contact me.

Respectfully,

Matthew Reimann, P.E.
Project Manager

C: (720) 365-9396
E: Matthew.Reimann@Stantec.com

cc:

Pamela Grover
Dominion WSD
(303) 325-6457
Pamela.Grover@DominionWSD.com

Acronyms / Abbreviations

Acronym / Abbreviation	Full Name
CBWRF	Chatfield Basin Water Reclamation Facility
CDPHE	Colorado Department of Public Health and Environment
DWSD	Dominion Water Sanitation District
EDB	Extended Detention Basin
GESC	Grading, Erosion, and Sediment Control
MBR-AS	Membrane Bioreactor Activated Sludge
mgd	Million Gallons per Day
RWSD	Roxborough Water Sanitation District
SPRWRRF	South Platte Renew Water Resource Recovery Facility
WQCC	Water Quality Control Commission

1 Project Narrative

On behalf of Dominion Water & Sanitation District (DWSD), Stantec has prepared the project narrative in accordance with the Location and Extent submission to Douglas County for the proposed refurbishment and expansion of Chatfield Basin Water Reclamation Facility (CBWRF), located in Littleton, Douglas County, Colorado to provide wastewater treatment and surface water discharge to the South Platte River. In addition to typical wastewater effluent criteria stipulated by the Colorado Department of Public Health and Environment (CDPHE). The expansion of the wastewater treatment facility will provide Sterling Ranch, The Range, and Louvier communities with reliable wastewater services. Louvier is a small, unincorporated community in Douglas County that currently does not have reliable water or wastewater services.

CBWRF is owned and operated by DWSD, formerly owned by Roxborough Water and Sanitation District (RWSD). It was decommissioned prior to 2010 and was replaced with a lift station. The lift station conveys wastewater to a City of Littleton interceptor, which eventually flows into the South Platte Renew Water Resource Recovery Facility (SPRWRRF) for treatment. DWSD purchased the abandoned CBWRF from RWSD with the intention of refurbishing and expanding the facility to provide wastewater treatment.

The discharge easement was purchased by DWSD at the time of purchase of the wastewater treatment facility. The agreement requires the easement to be assigned to DWSD by Denver Water. DWSD is still working toward this assignment. In addition to the discharge easement, an easement with Xcel also exists for the utility power feed for the site.

The CBWRF has an existing discharge permit (CO0041645, administratively extended in May 2016) for 0.6 MGD which will allow for discharge to the South Platte River. A permit modification has been filed with the Colorado Department of Public Health and Environment (CDPHE), Water Quality Control Commission (WQCC) to expand the discharge permit to 0.9 MGD. The permit modification will be secured prior to the plant exceeding 0.6 MGD capacity. In addition, the site application has been filed with CDPHE and is currently under review. Other necessary permits will be submitted later during the course of design as needed.

This is a design-build project that will expand the existing wastewater treatment capacity of CBWRF, in which Stantec Consulting Services Inc. (Stantec) is serving as the designer, with PCL Construction, Inc. (PCL) serving as the contractor for the detailed design and construction of the project, which is broken into four (4) work packages to streamline the design and construction process.

- Work Package 1 includes partial demolition of the Aeration Basin structure and temporary equalization bypass modifications for the Roxborough Water Sanitation District (RWSD) Lift Station. The partial demotion includes removing the walls and roof while leaving the below-grade tankage intact. The CMU walls are in poor structural condition, however the concrete structure below grade is in good condition and will be refurbished. The demolition permit is being completed separately by the demolition sub-contractor.

- Work Package 2 is for early procurement of long-lead equipment and does not involve any construction activity.

- Work Package 3 consists of the civil grading, stormwater management, buried utilities and any other work not associated with new or existing structures on the site. It also includes partial demolition inside existing structures in preparation for the new work under Work Package 4. This includes demolition of existing HVAC equipment, electrical and mechanical equipment along with minor structure and architectural work such as removing knockout panels, roofing membranes and corroded metal doors.

- Work Package 4 consists all of the new work associated with the refurbishment project across all new and existing structures. This includes installation of new roofing, doors, electrical, plumbing, HVAC and mechanical equipment in the existing structures, two new pre-engineered metal buildings for new wastewater treatment processes and installation of a new “E-House” which is a pre-fabricated enclosure housing switchboards that distribute utility power across the site.

The existing wastewater treatment process at the CBWRF consisted of coarse screening and aerated grit removal, conventional activated sludge biological nutrient removal supplemented with chemical phosphorus removal, secondary clarifier, and disinfection with sodium hypochlorite before release into the South Platte River. Waste solids were aerobically digested before either wet sludge hauling or drying before final disposal. The facility has been out of service for over a decade and the proposed improvements consist of re-using or re-purposing all hydraulic structures on the site while replacing the mechanical equipment and adding two new treatment processes/buildings to meet expected effluent discharge limits.

The proposed improvements will update the existing wastewater treatment system to increase the treatment capacity of the plant from 0.6 million gallons per day (mgd) to 0.9 mgd, while producing higher quality effluent. The following existing buildings will be refurbished and feature utility enhancements, but the building’s existing footprint are not to be expanded: Headworks (Area 10), Biological Nutrient Removal (BNR) (Area 20), Equalization Tank (Area 18, re-purposed aerobic digester), Chlorine Contact Tank and Chemical Storage (Area 80). The proposed prefabricated Electrical Utility Room (E-House) and transformer will be placed on the site of the existing Aeration Basin Blower Room. Proposed new building additions will include a Fine Screening (Area 15) – 1,500-sqft building, Membrane Bioreactor (Area 30) – 6,300-sqft and installation of a packaged odor control system (Area 70) will mitigate odors stemming from the untreated wastewater around the primary treatment and flow equalization processes. The odor control system servicing the influent splitter structure and Areas 10, 15 & 18 will treat foul air and ferric chloride dosing will also reduce the amount of hydrogen sulfide produced. The aeration blowers will be located inside the new Area 30 building to mitigate noise pollution, with the discharge air piping passing over to the Area 20 BNR tanks. A Backup Generator to support wastewater treatment efforts during emergency outages. The proposed Locations & Extents Plan Exhibit is included in (**Appendix A)**.

The existing preliminary treatment system is to retain and refurbish the existing headworks building to include pre-screening and grit removal upstream of a new Fine Screening building. The existing secondary bioreactor basins and clarifiers will be converted to a Membrane Bioreactor – Activated Sludge (MBR-AS) process tankage to provide high-quality effluent. The mixed liquor will be pumped into a pre-fabricated MBR tank where the membrane permeate will be sent for disinfection before final outfall. The existing chemical storage and pumping and piping facilities will be replaced in the existing chemical building with the addition of a supplemental carbon source feed system to enhance nitrate removal.

CBWRF is a private facility, and public improvements will be minimal. All proposed improvements will be contained on the project site. Site improvements will feature exterior lighting to new proposed buildings, and concrete pads at the access points. A pole-mounted light will be added adjacent to the Electrical Transformers and Backup Generators to provide visibility to facility staff. Other project improvements will include utilizing site lighting that seeks to minimize light pollution while providing a safe working environment for DWSD personnel. All proposed exterior lighting will conform to Douglas County's Zoning Resolution standards as detailed in Section 30. No landscaping, parking lots, paved sidewalks will be added on site. The existing gravel lot will be restored post construction. The access driveway through the site will also allow for large delivery vehicles to navigate the site without having to reverse.

This project was developed in compliance with the Comprehensive Master Plan for Douglas County.

2 Location and Extents Report

2.1 Community Impact Report

The objective of this project is to refurbish and expand the existing wastewater treatment capacity of Chatfield Basin Water Reclamation Facility. The expansion of the treatment facility will provide the communities of Sterling Ranch and Louviers more stable wastewater treatment while providing critical infrastructure to support the continued development of the Sterling Ranch Subdivision and ensure development occurs concurrently with necessary services and infrastructure.

Stormwater Detention is currently provided and the improvements proposed in this project will retain and improve them to continue treating stormwater runoff as required by the County. To reduce runoff, paved surfaces will be kept to a minimum and will be limited to landings adjacent doorways for foot and vehicle access.

2.2 Drainage Improvements

The proposed site improvements will result in an overall increase in the impervious area draining to the South Platte River. The existing stormwater detention system, permitted in 2008 was designed to accommodate 100-year design flows will be retained, and overall drainage patterns within the site will change minimally. Proposed improvements to the project site will restore the existing contours and raise the top of the bank six inches to restore the grade to meet the original permit for the Storm Water Detention Basin. A channel will be created to connect Basins 5 and 6 to flow into the overflow pond. The Phase III Drainage Report and Appendices (**Appendix C** of the GESC Report) lays out additional details how the runoff generated from the increased impervious area will be accommodated with the existing permitted system with minimal modifications. The Phase III Drainage Report is in accordance with the requirements of the Douglas County Storm Drainage and Design and Technical Criteria Manual, as required.

2.3 Traffic Impact

Existing and future traffic conditions are anticipated to have nominal impacts to future traffic or roadway infrastructure outside construction, with 12 trips per hour projected as the maximum total peak hour trips occurring in future conditions. During peak construction (March 2026), there will be increased traffic due to construction workers and facility operators accessing the project site. The maximum total peak hour number of trips is anticipated to be 38 trips per hour peak construction. No lane closures are anticipated as part of this project. A traffic narrative is included as **Appendix C**.

2.4 Stormwater Quality Recommendations

Douglas County requires post-construction control measures to prevent or reduce the discharge of pollutants into Douglas County's storm drain system. To satisfy this requirement, the configuration of new impervious areas are being proposed to (1) minimize directly connected impervious area by allowing for pervious areas to receive runoff from unconnected impervious areas before the extended detention basin (EDB) receives runoff, and (2) the proposed modifications to the existing EDB are intended to "Implement Control Measures with Water Quality Capture Volume with Slow Release" by designing the outfall control structure and pond volume for Full Spectrum Detention, with controlled release rates for the required Water Quality Capture Volume and 100-year detention volume, per Chapter 13 of the Douglas County Storm Drainage Design and Technical Criteria Manual.

2.5 Water Quality On Site

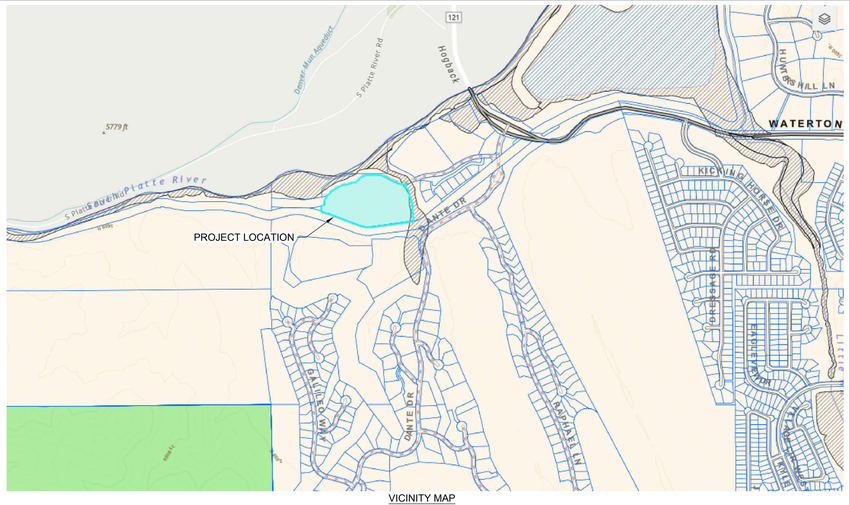
The Stormwater Detention and Infiltration Design Data Sheet for Chatfield Basin WRF (Facility ID: SWDF-20250619094037) was completed by Stantec and submitted to the Colorado Stormwater Council for review on June 19, 2025. The Stormwater Detention and Infiltration Design Data Sheet and submittal confirmation have been provided in **Appendix D**.

2.6 Construction Activities

Construction activities will be wide ranging within the existing site. Partial demolition of the aeration basin structure is scheduled to begin in October of 2025 and the main construction activities begin in January 2026, peaking in late spring 2026 for the structural work to construct the new building foundations and erect the new structures. Construction activities will continue through majority of 2027, wrapping up in the fall. Startup and commissioning are scheduled to be completed by the end of 2027. During the course of the construction, the work will take place on weekdays beginning October 2025 and be completed by December 2027. Construction activities will take place during construction hours 6:00am to 5:00pm, Monday through Friday to minimize noise pollution to neighboring properties. Any work conducted after hours would be considered special circumstances requiring work outside of normal hours as needed to relieve project constraints. A Grading, Erosion, and Sediment Control (GESC) Plan and report will be provided during the Engineering Services Review process.

Appendix A

Location & Extents Plan Exhibit



VICINITY MAP

LEGAL DESCRIPTION

A PARCEL OF LAN BEING A PART OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 6 SOUTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY DOUGLAS, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

LOT 2A, RIVER CANYON FILING NO. 2, 1ST AMENDMENT RECORDED AT RECEPTION NO. 201600108 IN THE OFFICIAL RECORDS OF DOUGLAS COUNTY, COLRADO CLERK AND RECORDER'S OFFICE.

CONTAINING AN AREA OF 12.530 ACRES, (545,803 SQUARE FEET), MORE OR LESS.

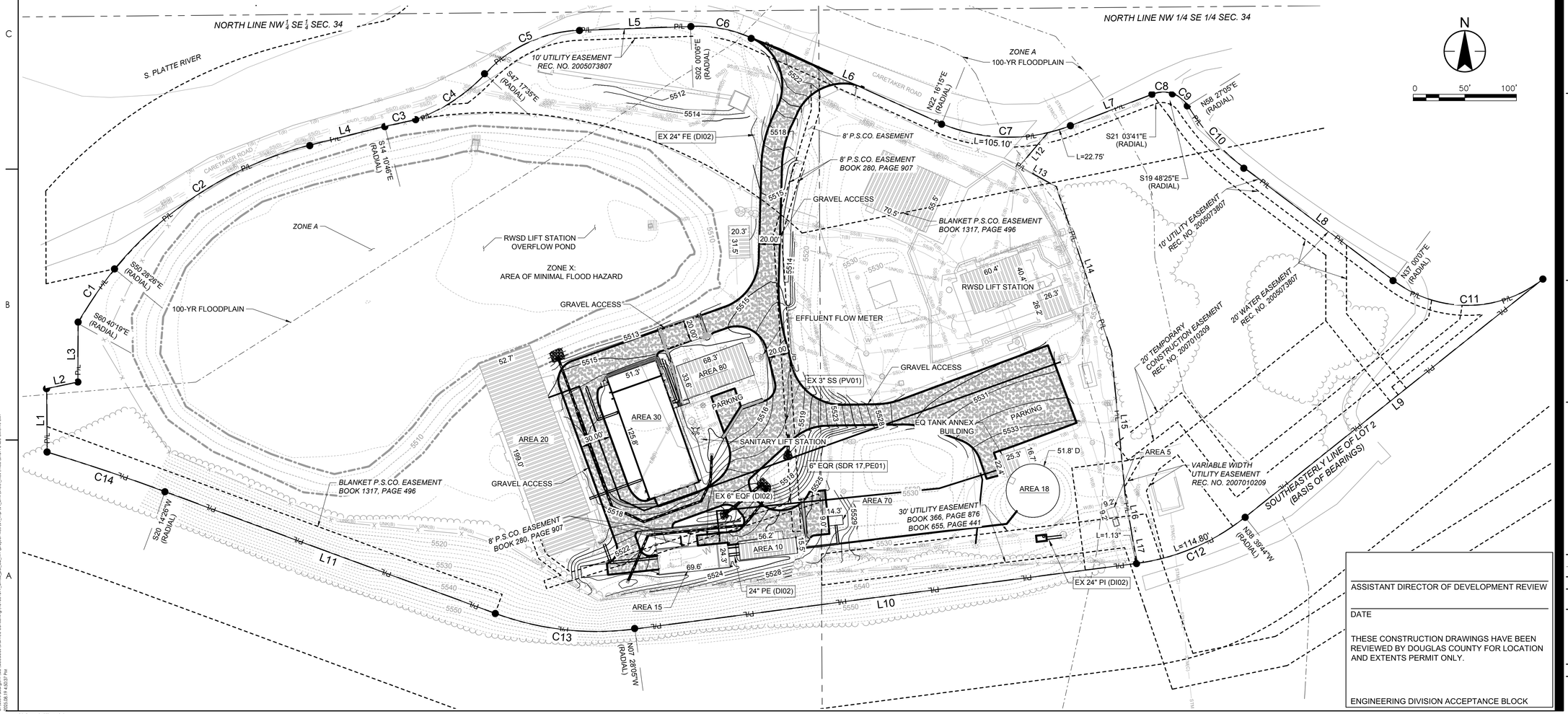
BUILDING DESCRIPTION			
AREA	BUILDING DESCRIPTION	BLDG ELEVATION (FT)	BLDG HEIGHT (FT)
5	ELECTRICAL HOUSING	5528.86	5540.86
10	HEADWORKS	5525.68	5541.01
15	FINE SCREENING*	5524.50	5546.50
18	EQUALIZATION TANK	5534.00	5543.25
20	BIOLOGICAL NUTRIENT REMOVAL	5518.69	5518.69
30	MEMBRANE BIOREACTOR*	5518.00	5549.00
70	ODOR CONTROL	5526.00	5535.00
80	CCT, CHEMICAL, STORAGE AND DOSING	5516.23	5527.15

*pending manufacturer details

WATER & SEWAGE MANAGEMENT	
WATER	DENVER WATER
SEWAGE	ROXBOUROUGH WATER & SANITATION DISTRICT

LINE TABLE		
LINE	BEARING	LENGTH
L1	N00 19'04"W	61.46'
L2	N77 48'26"E	30.71'
L3	N00 19'04"W	57.32'
L4	N75 47'21"E	75.00'
L5	N87 59' 55"E	107.92'
L6	S65 43'43"E	202.28'
L7	N68 56'07"E	84.84'
L8	D52 59' 57"E	180.99'
L9	S51 20'16"W	369.46'
L10	S82 31'56"W	490.08'
L11	N69 45' 34"W	340.87'
L12	N40 23'22"E	42.66'
L13	N60 55'09"W	40.98'
L14	N18 31'24"W	168.00'
L15	N05 26'55"W	139.83'
L16	N09 45'41"W	36.76'
L17	N10 31'12"W	30.87'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C1	10 11'51"	359.50'	63.98'
C2	36 15'46"	359.50'	227.53'
C3	4 00'02"	436.91'	30.51'
C4	27 31'31"	169.00'	81.19'
C5	45 17'32"	131.00'	103.56'
C6	26 18'24"	131.00'	60.15'
C7	43 20'37"	169.00'	127.85'
C8	40 51'56"	28.00'	19.97'
C9	38 38'45"	28.00'	18.89'
C10	21 27'00"	219.00'	81.99'
C11	75 12'50"	119.00'	156.22'
C12	31 11'40"	212.94'	115.93'
C13	27 42'31"	284.25'	137.47'
C14	3 28'28"	1985.08'	120.38'



ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

THESE CONSTRUCTION DRAWINGS HAVE BEEN REVIEWED BY DOUGLAS COUNTY FOR LOCATION AND EXTENTS PERMIT ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

Stantec
Stantec
410 17th Street, Suite 1400
Denver, CO 80202
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www.stantec.com

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No.	Issued	By	Appd	YYYY.MM.DD
1	Revision			
2				

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-LOC-EXTENTS-EXH
Scale: 1"=50'

ZS	SC	RM	2025.08.19
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
LOCATION AND EXTENTS - EXHIBIT

Revision:001

Drawing No.
LOE-EXH

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8/25/2025 11:42:57 PM

ORIGINAL SHEET - ANSI D

Appendix B

Construction Plan

CHATFIELD BASIN WATER RECLAMATION FACILITY REFURBISHMENT
WORK PACKAGE 3
AUGUST 2025

SHEET	DRAWING NUMBER	DRAWING TITLE
L&E		
1	G-001	COVER
2	G-002	ABBREVIATIONS
3	G-003	SYMBOLS
4	C-001	GENERAL NOTES AND SYMBOLS
5	C-002	STANDARD DETAILS -I
6	C-003	STANDARD DETAILS -I
7	C-004	LOCATION CONTROL PLAN
8	C-101	OVERALL SITE PLAN
9	C-102	ENLARGED SITE PLAN - AREA 1
10	C-103	ENLARGED SITE PLAN - AREA 2
11	C-104	ENLARGED SITE PLAN - AREA 3
12	CG-101	OVERALL GRADING PLAN
13	CG-102	ENLARGED GRADING PLAN - AREA 1
14	CG-103	ENLARGED GRADING PLAN - AREA 2
15	CG-104	ENLARGED GRADING PLAN - AREA 3
16	CU-101	OVERALL YARD PIPING KEYMAP
17	CU-102	ENLARGED UTILITY PLAN AREA 1
18	CU-103	ENLARGED UTILITY PLAN AREA 2
19	C-202	PIPING PROFILES 1-3
20	C-203	PIPING PROFILES 4-6
21	C-204	PIPING PROFILE
22	C-205	PIPING PROFILE
23	C-207	PIPING PROFILE
24	C-208	PIPING PROFILE

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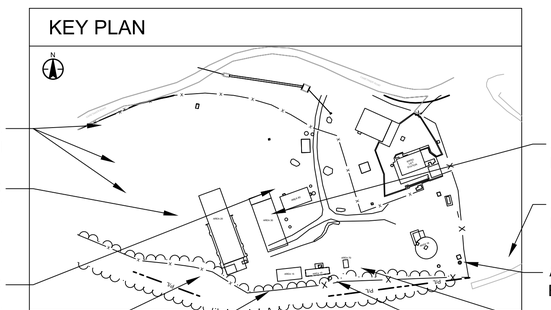
JEFF SCHEBLE (PROJECT MANAGER)
EMAIL: JSCHEBLE@PCL.COM
PHONE: (720) 840-3271

LOCATION PLAN
SCALE: N.T.S



AREA KEY PLAN
SCALE: N.T.S

THE CONSTRUCTION PLANS INCLUDED HEREIN WERE PREPARED UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH THE REQUIREMENTS OF THE ROADWAY DESIGN AND CONSTRUCTION STANDARDS AND STORM DRAINAGE DESIGN AND TECHNICAL CRITERIA OF DOUGLAS COUNTY, AS AMENDED.

CIVIL CONSTRUCTION PLANS PREPARED BY:

ZAK SARGENT, PE STANTEC	AUG 18, 2025	66476
	DATE	PE NUMBER

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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No.	Revision	By	Appd	YYYY.MM.DD
0				

No.	Issued	By	Appd	YYYY.MM.DD
B	IFP - L&E	SSC	ZS	2025.08.29
A	WORK PACKAGE 3 DRAFT	CLC	SRT	2025.06.XX

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899_G000_001-TEMP
Scale: NTS

KN	MCR	SRT	2025.08.01
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
GENERAL
COVER

Revision:
Drawing No.
G-001

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A

A	AIR/ AMPERE
A/C	AIR CONDITIONING
A/R	AIR RELEASE
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS
AB	ANCHOR BOLT
ABAN	ABANDON
ABND	ABANDONED
ABBR	ABBREVIATION
ABS	ABSOLUTE TEMPERATURE
AC	ACTIVATED CARBON/ ASPHALTIC CONC/ ALTERNATING CURRENT
ACI	AMERICAN CONCRETE INTERNATIONAL
ACOUS	ACOUSTIC/ ACOUSTICAL
ACP	ASBESTOS CEMENT PIPE/ ASPHALTIC CONCRETE PAVEMENT
ADD	ADDITIONAL
ADH	ADHESIVE
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONST
ALT	ALTERNATE
ALUM	ALUMINUM/ ALUM
AMB	AMBIENT
ANSI	AMERICAN NATIONAL STANDARDS INST
API	AMERICAN PETROLEUM INSTITUTE
APPD	APPROVED
APPROX	APPROXIMATE
APPURTS	APPURTENANCES
ARCH	ARCHITECTURE
ASME	AMERICAN SOCIETY OF MECHANICAL ENG
ASPH	ASPHALT
ASTM	AMERICAN SOCIETY FOR TEST & MATERIALS
AT	ACOUSTICAL TILE
ATM	ATMOSPHERE
AV/AR	AIR VACUUM AND AIR RELEASE VALVE
AVE	AVENUE
AWPA	AMERICAN WOOD PRESERVERS ASSOC
AWS	AMERICAN WELDING SOCIETY
AWWA	AMERICAN WATER WORKS ASSOCIATION

B

B&S	BELL AND SPIGOT
B/W	BACK OF WALL/ BACK OF WALK
BC	BEGIN CURVE/ BOLT CIRCLE/ BETWEEN CENTERS/ BACK OF CURVE
BCR	BEGIN CURB RETURN
BD	BOARD
BDRY	BOUNDARY
BF	BLIND FLANGE/ BOTTOM OF FOOTING
BFP	BACK FLOW PREVENTER
BFV	BUTTERFLY VALVE
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BLK	BLACK/ BLOCK
BLKG	BLOCKING
BLVD	BOULEVARD
BM	BEAM/ BENCH MARK
BO	BLOW-OFF ASSEMBLY
BOD	BIOCHEMICAL OXYGEN DEMAND
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BPV	BACK PRESSURE VALVE
BRK	BRICK/ BREAK
BSMT	BASEMENT
BT	BOLT
BTU	BRITISH THERMAL UNIT
BV	BALL VALVE
BVC	BEGIN VERTICAL CURVE
BWV	BACK WATER VALVE

C

C	CENTIGRADE/ CHANNEL/ CEMENT
C&G	CURB AND GUTTER
CAB	CABINET/ CRUSHED AGGREGATE BASE
CAP	CAPACITY
CATS	CASING TEST STATION
CATV	CABLE TELEVISION
CB	CATCH BASIN/ CHALKBOARD/ CURB
CBWRF	CHATFIELD BASIN WATER RECLAMATION FACILITY
CC	CLOSED CIRCUIT TV/ CENTER TO CENTER
CD	CEILING DIFFUSER
CEM	CEMENT
CF	CURB FACE/ CUBIC FOOT
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CHEM	CHEMICAL
CHG	CHANGE
CHKD	CHECKERED
CI	CAST IRON
CIP	CAST IRON PIPE/ CAST IN PLACE
CIPP	CAST IN PLACE PIPE
CJ	CONSTRUCTION JOINT
CL	CENTERLINE
CL2	CHLORINE
CLF	CHAIN LINK FENCE
CLG	CEILING
CLOS	CLOSET
CLR	CLEAR/ CLEARANCE
CMB	CRUSHED MISCELLANEOUS BASE
CMC	CEMENT MORTAR-COATED
CML	CEMENT MORTAR-LINED
CML&C	CEMENT MORTAR-LINED AND COATED
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
COMM	COMMUNICATIONS CABLE
COMP	COMPRESSOR
CONC	CONCRETE/ CONCENTRIC
COND	CONDENSER/ CONDENSATE
CONN	CONNECTION
CONST	CONSTRUCT/ CONSTRUCTION
CONT	CONTINUED/ CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
COR	CORNER
COTG	CLEANOUT TO GRADE
CPLG	COUPLING
CPVC	CHLORINATED POLYVINYL CHLORIDE
CS	CAST STEEL
CSP	CORRUGATED STEEL PIPE
CSTS	CURRENT SPAN TEST STATION
CT	CERAMIC TILE
CTR	CENTER
CTS	CORROSION TEST STATION
CTSK	COUNTERSUNK
CU	COPPER/ CUBIC
CULV	CULVERT
CV	CHECK VALVE
CY	CUBIC YARD
CYL	CYLINDER

D

d	PENNY
DAD	DOUBLE ACTING DOOR
DAFT	DISSOLVED AIR FLOTATION THICKENER
DB	DIRECT BURY
DBL	DOUBLE
DC	DIRECT CURRENT
DEG	DEGREE
DET	DETAIL
DF	DRINKING FOUNTAIN/ DOUGLAS FIR
DG	DOOR GRILL
DH	DOUBLE HUNG
DI	DUCTILE IRON
DIA	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIFF	DIFFUSER/ DIFFERENTIAL
DIP	DUCTILE IRON PIPE
DIR	DIRECTION
DISCH	DISCHARGE
DISP	DISPENSER
DL	DEAD LOAD
DMH	DROP MANHOLE
DN	DOWN
DO	DISSOLVED OXYGEN/ DITTO
DR	DOOR/ DRAIN
DS	DRENCH SHOWER AND EYE WASH
DT	DRAIN TILE
DWG	DRAWING
DWLS	DOWELS
DWSD	DOMINION WATER AND SANITATION DISTRICT
DWY	DRIVEWAY

E

E	EAST
E/O	EAST OF
EA	EACH
EB	EXPANSION BOLT OR ANCHOR
EC	END CURVE
ECC	ECCENTRIC
ECR	END CURB RETURN
EF	EACH FACE/ EXHAUST FAN
EFF	EFFLUENT
EG	EXIST GRADE/ EDGE OF GUTTER/ EXHAUST GRILLE
EGL	ENERGY GRADE LINE
EL	ELEVATION
ELEC	ELECTRICAL/ ELECTRONIC
EN	EDGE NAILING
ENCL	ENCLOSURE
ENG	ENGINE
ENGR	ENGINEER
ENT	ENTRANCE
EP	EDGE OF PAVEMENT
EPT	ETHYLENE PROPYLENE
EQ	EQUAL
EQUIP	EQUIPMENT
ESMT	EASEMENT
ETB	EMULSION TREATED BASE
ETC	ET CETERA
EVAP	EVAPORATOR
EVC	END VERTICAL CURVE
EW	EACH WAY/ EYE WASH
EX	EXISTING
EXC	EXCAVATION
EXH	EXHAUST
EX-HY	EXTRA HEAVY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR/ EXTENSION
EXTR	EXTRUDED

F

F	FAHRENHEIT/ FINISH
F TO F	FACE TO FACE
F&C	FRAME AND COVER
F&I	FURNISH AND INSTALL
FAB	FABRICATE/ FABRICATION/ FABRICATED
FAI	FRESH AIR INTAKE
FB	FLAT BAR/ FLOOR BEAM/ FIELD BOOK
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDR	FEEDER
FE	FIRE EXTINGUISHER/ FINAL EFFLUENT
FEM	FEMALE (PIPE THREAD)
FF	FLAT FACE/ FAR FACE/ FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT/ FLAT HEAD
FIG	FIGURE
FIN	FINISHED
FIX	FIXTURE
FL	FLOWLINE/ FLOOR
FLEX	FLEXIBLE
FLG	FLANGE/ FLOORING
FLGD	FLANGED
FLOCC	FLOCCULATOR/ FLOCCULATION
FLR	FLOOR
FLSG	FLASHING
FM	FACTORY MUTUAL (LAB APPRVD)/ FORCE MAIN
FMH	FLEXIBLE METAL HOSE
FN	FIELD NAILING
FND	FOUNDATION
FOC	FACE OF CONCRETE/ FIBER OPTIC CABLE
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FOW	FACE OF WALL
FPC	FLEXIBLE PIPE COUPLING
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FPTS	FOREIGN PIPE TEST STATION
FR	FRAME
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FINISHED SURFACE/ FAR SIDE/ FLOOR SINK / FORGED STEEL
FT	FEET/ FOOT
FTG	FOOTING
FUR	FURRING
FUT	FUTURE
FV	FIELD VERIFY
FWD	FORWARD

G

G	GAS
GA	GAGE / GAUGE
GAL	GALLON
GALV	GALVANIZED
GANC	GUY ANCHOR
GB	GRADE BREAK
GEN	GENERAL / GENERATOR
GFA	GROOVED FLANGE ADAPTER
GI	GALVANIZED IRON
GIP	GALVANIZED IRON PIPE
GL	GLASS / GROUND LINE / GRADE LINE
GLB	GLUE LAMINATED BEAM / GLULAM
GLV	GLOBE VALVE
GM	GAS METER
GP	GUY POLE
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRADE
GRD	GRADE / GROUND
GRTG	GRATING
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
GYP	GYPSUM

H

H	HIGH / HEIGHT
H&V	HEATING AND VENTILATING
H/B	HOSE BIBB
HC	HOUSE CONNECTION
HDR	HEADER
HDW	HARDWARE
HDWL	HEADWALL
HEX	HEXAGONAL
Hg	MERCURY
HGL	HYDRAULIC GRADE LINE
HGR	HANGER
HM	HOLLOW METAL
HORZ	HORIZONTAL
HP	HIGH POINT / HORSE POWER / HIGH PRESSURE
HPG	HIGH PRESSURE GAS
HR	HEAT RETURN / HOUR
HSL	HORIZONTALLY SLOTTED
HSS	HOLLOW STRUCTURAL SECTION
HTG	HEATING
HTR	HEATER
HV	HORIZONTAL AND VERTICAL CONTROL POINT
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HW	HOT WATER / HEADWORK
HWD	HARDWOOD
HWL	HIGH WATER LEVEL
HWO	HANDWHEEL OPERATED
HYD	HYDRAULIC / HYDRANT

I

I/O	INPUT/OUTPUT
I&O	INSIDE AND OUTSIDE
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IF	INSIDE FACE
IJTS	INSULATING JOINT TEST STATION
IN	INCH
INCL	INCLUDE / INCLUDING
INFL	INFLUENT
INSL	INSULATION / INSULATING / INSULATED
INSP	INSPECTION
INST	INSTRUMENT
INT	INTERIOR
INV	INVERT
IP	IRON PIPE
IPS	IRON PIPE SIZE
IRRG	IRRIGATION

J

JAN	JANITOR
JC	JUNCTION CHAMBER
JCT	JUNCTION
JS	JUNCTION STRUCTURE
JSTS	JOISTS
JT	JOINT

K

k	KILO
K	KELVIN/ KARAT
kg	KILOGRAM
km	KILOMETER
kV	KILOVOLT
KVA	KILOVOLT AMPERE
kW	KILOWATT
kWh	KILOWATT HOUR

L

L	LITER/ LENGTH/ ANGLE
LAB	LABORATORY
LAM	LAMINATED
LAT	LATERAL
LAV	LAVATORY
LB	POUND
LCP	LOCAL CONTROL PANEL
LCS	LOCAL CONTROL STATION
LD	LOCAL DEPRESSION
LDG	LANDING
LEV	LEVEL
LF	LINEAR FOOT
LG	LENGTH/ LONG
LH	LAMP HOLE/ LEFT HAND
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION
LOL	LAYOUT LINE
LONG	LONGITUDINAL
LP	LOW POINT/ LOW PRESSURE/ LAMP POST
LPG	LIQUID PETROLEUM GAS
LT	LEFT/ LIGHT
LTS	LIME TREATED SOIL
LW	LOW WATER
LWL	LOW WATER LEVEL
LWR	LOWER

M

m	METER
M	MALE (PIPE THREAD)
mA	MILLIAMPS
MACH	MACHINE
MAG	MAGNETIC
MAINT	MAINTENANCE
MAN	MANUAL
MAS	MASONRY
MAT	MATERIAL
MAX	MAXIMUM
MB	MAIL BOX/ MACHINE BOLT
MCC	MOTOR CONTROL CENTER
MCR	MIDDLE OF CURB RETURN
MEAS	MEASURE
MECH	MECHANICAL
MED	MEDIUM
MEMB	MEMBER
MFR	MANUFACTURER
MFRD	MANUFACTURED
MGD	MILLION GALLONS PER DAY
MH	MANHOLE/ MAINTENANCE HOLE
MHT	MEAN HIGH TIDE
MHW	MEAN HIGH WATER
MI	MALLEABLE IRON/ MILE
MICRON	1/1,000,000 METER
MIL	MILITARY/ 1/1,000TH INCH
MIN	MINIMUM/ MINUTE
MIR	MIRROR
MISC	MISCELLANEOUS
MK	MARK
MLW	MEAN LOW WATER
mm	MILLIMETER
MO	MOTOR OPERATED/ MASONRY OPENING
MOD	MODEL
MON	MONUMENT
MOR	MORTAR
MS	MOP SINK
MSL	MEAN SEA LEVEL
MTC	MECHANICAL-TYPE COUPLING
MTD	MOUNTED
MTG	MOUNTING
MTL	METAL
MTR	MOTOR

N

N	NORTH
NaOCl	SODIUM HYPOCHLORITE
NaOH	SODIUM HYDROXIDE (CAUSTIC SODA)
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NF	NEAR FACE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NG	NATURAL GRADE/ NATURAL GAS
NIC	NOT IN CONTRACT
NO	NUMBER/ NORMALLY OPEN
NOM	NOMINAL
NPS	NOMINAL PIPE SIZE
NPT	NATIONAL PIPE THREAD
NRCP	NON-REINFORCED CONCRETE PIPE
NRS	NON-RISING STEM
NS	NEAR SIDE
NTS	NOT TO SCALE

O

OBJ	OBJECT
OC	ON CENTER/ OVER-CROSSING
OD	OUTSIDE DIAMETER/ OVERALL DIMENSION
OE	OUTER EDGE
OF	OVERFLOW/ OUTSIDE FACE
OFD	OVERFLOW DRAIN
OFF	OFFICE
OH	OVER HEAD
OHW	OVERHEAD WIRES
OPER	OPERATOR/ OPERATING
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
OS&Y	OUTSIDE SCREW AND YOKE
OSA	OUTSIDE AIR
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OWG	OIL. WATER. GAS
OZ	OUNCE

P

P	POLE/ PAGE/ PIPE
P/S	POLE AND SHELF
PA	PLANTING AREA
PART	PARTITION
PAVMT	PAVEMENT
PB	POLYBUTYLENE/ PULL BOX
PC	POINT OF CURVATURE/ PRIMARY CLARIFIER/ PORTLAND CEMENT
PCC	PORTLAND CEMENT CONCRETE/ POINT OF COMPOUND CURVE
PCOTG	PRESSURE CLEANOUT TO GRADE
PCVC	POINT OF COMPOUND VERTICAL CURVE
PE	PLANT EFFLUENT/ POLYETHYLENE/ POLYELECTROLYTE POLYMER
PG	PRESSURE GAGE
pH	RECIPROCAL LOG OF HYDROGEN ION CONCENTRATION
PI	PLANT INFLUENT/ POINT OF INTERSECTION
PK	PARKING
PL	PLATE/ PROPERTY LINE/ PLACE
PLAS	PLASTER/ PLASTIC
PLT	PLANT
PLWD	PLYWOOD
PM	PRESSED METAL

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

THESE CONSTRUCTION DRAWINGS HAVE BEEN REVIEWED BY DOUGLAS COUNTY FOR LOCATION AND EXTENTS PERMIT ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

P CONT'D

PNEU	PNEUMATIC
PNL	PANEL
POB	POINT OF BEGINNING
POC	POINT OF CONNECTION
POT	POINT OF TANGENT
PP	POWER POLE/ POLYPROPYLENE
PPD	POUNDS PER DAY
PPH	POUNDS PER HOUR
PPM	POUNDS PER MINUTE
PR	PAIR
PRC	POINT OF REVERSE CURVE
PRCT	PRECAST
PREFAB	PREFABRICATED
PRESS	PRESSURE
PROF	PROFILE
PRV	PRESSURE REGULATING, RELIEF OR REDUCING VALVE
PRVC	POINT OF REVERSE VERTICAL CURVE
PS	PRESSURE SWITCH
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	POINT OF TANGENCY/ PAINT/ PRESSURE
PTFE	POLYTETRAFLUOROETHYLENE (TEFLON)
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PVDF	POLYVINYLIDENE FLUORIDE (KYNAR)
PW	POTABLE WATER

Q

QT	QUARRY TILE
QTY	QUANTITY
QUAD	QUADRANGLE/ QUADRANT

R

R	RADIUS/ RISER / RATE OF SLOPE
R&O	ROCK AND OIL
R/W	RIGHT OF WAY
RAC	RECYCLED ASPHALT CONCRETE
RAG	RETURN AIR GRILLE
RAP	RECLAIMED ASPHALT PAVEMENT
RAS	RETURN ACTIVATED SLUDGE
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD/ ROOF DRAIN/ ROUND
RED	REDUCER/ REDUCING
REF	REFERENCE/ REFER/ REFRIGERATOR
REG	REGULATING
REINF	REINFORCE/ REINFORCED
REQD	REQUIRED
RESIL	RESILIENT
RET	RETAINING/ RETURN
REV	REVISION
REW	RECLAIMED WATER
RF	ROOF/ RAISED FOUNDATION/ ROUGH FACE
RFG	ROOFING
RGE	REGISTERED GEOTECHNICAL ENGINEER
RH	REDHEAD / RIGHT HAND
RM	ROOM
RO	ROUGH OPENING
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RS	RISING STEM
RSL	RAW SLUDGE
RT	RIGHT
RTP	REINFORCED THERMOSETTING PLASTIC
RTU	REMOTE TERMINAL UNIT
RW	REDWOOD
RWL	RAINWATER LEADER
RWSD	ROXBOROUGH WATER AND SANITATION DISTRICT

S

S	SOUTH/SCUM/SINK/SECOND/SLOPE
S/O	SOUTH OF
SAM	SAMPLE
SAN	SANITARY
SBR	STYRENE BUTADIENE (RUBBER)
SC	SECONDARY CLARIFIER
SCCP	STEEL CYLINDER CONCRETE PIPE
SCD	SCREWED
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SD	SANITARY DRAIN/ SMOKE DETECTOR
SDR	STANDARD THERMOPLASTIC PIPE DIMENSION RATIO/STORM DRAIN
SEC	SECONDARY/ SECTION
SER	SERIES
SETT	SETTING
SF	SQUARE FOOT
SH	SHOWER
SHELV	SHELVING
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SL	SLUDGE
SLDG	SLIDING
SLG	SLUICE GATE
SOG	SLAB ON GRADE
SOLN	SOLUTION
SP	STATIC PRESSURE/ SPARE CHEMICAL
SPEC	SPECIFICATION
SPK	SPIKE
SQ	SQUARE
SS	STAINLESS STEEL/ SANITARY SEWER/ SERVICE SINK
SSB	SELECT SUB-BASE
SSPWC	STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION
SSU	SECONDS SAYBOLT UNIVERSAL
ST	STREET/ STATE
STA	STATION
STC	SLEEVE-TYPE COUPLING
STD	STANDARD
STK	STAKE
STL	STEEL
STM	STEAM
STR	STRAIGHT/ STRUCTURAL
SU	STEAM LINE
SUCT	SUCTION
SV	SOLENOID VALVE
SW	SIDEWALK
SWD	SIDEWALK DRAIN
SWGR	SWITCHGEAR
SWR	SIDEWALL REGISTER
SY	SQUARE YARD
SYM	SYMMETRICAL/ SYMBOL
SYS	SYSTEM

T

T	THERMOSTAT/ TREAD OF STAIR/ TANGENT
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TAN	TANGENT
TB	TACK BOARD
TBE	THREAD BOTH ENDS
TBM	TEMPORARY BENCH MARK
TC	TOP OF CURB
TCV	TEMPERATURE CONTROL VALVE
TEL	TELEPHONE
TEMP	TEMPERATURE/ TEMPORARY
TF	TOP OF FOOTING
TH	TEST HOLE
THK	THICK/ THICKNESS
THR	THRESHOLD
THR'D	THREADED
TK	TANK/ TACK
TL	TRAVERSE LINE
TOC	TOP OF CONCRETE
TOE	THREAD ONE END
TOL	TOILET
TOM	TOP OF MASONRY
TOP	TOP OF PIPE
TOPO	TOPOGRAPHIC
TOS	TOP OF STEEL
TOW	TOP OF WALL
TP	TELEPHONE POLE
TR	TRACT
TRANS	TRANSMITTER/ TRANSITION /TRANSMISSION
TS	TRAFFIC SIGNAL
TSB	TOP SET BASE
TSC	TRAFFIC SIGNAL CONDUIT
TV	THERMOSTATIC VALVE/ TELEVISION
TW	THERMOMETER WELL /TRAVELED WAY
TYP	TYPICAL

U

UB	UNION BONNET
UBC	UNIFORM BUILDING CODE
UC	UNDER-CROSSING
UG	UNDERGROUND
UGC	UNDERGROUND CONDUIT
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNID	UNIDENTIFIED
UNO	UNLESS NOTED OTHERWISE
UOI	UNLESS OTHERWISE INDICATED
UPS	UNINTERRUPTABLE POWER SUPPLY
UR	URINAL
USA	UNDERGROUND SERVICE ALERT
USGS	UNITED STATES GEOLOGICAL SURVEY
UV	ULTRAVIOLET
UW	UTILITY WATER

V

V	VALVE/ VERTICAL/ VENT/ VOLT/ VOLUME
VAC	VACUUM
VAR	VARIES/ VARIABLE
VB	VALVE BOX
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VOL	VOLUME
VPI	VERTICAL POINT OF INTERSECTION
VSL	VERTICALLY SLOTTED
VTC	VENT TO CEILING
VTR	VENT THROUGH ROOF
VWC	VINYL WALL COVERING
VWM	VERIFY WITH MANUFACTURE

W

W	WEST/ WASTE/ WIDTH/ WIDE FLANGE/ WATER
W/	WITH
W/O	WEST OF / WITHOUT
WC	WATER COLUMN / WATER CLOSET
WCO	WALL CLEANOUT
WD	WOOD
WDW	WINDOW
WH	WATER HEATER
WI	WROUGHT IRON
WM	WATER METER
WOG	WATER, OIL, OR GAS
WP	WATERPROOFING/ WORKING PRESSURE/ WORK POINT
WPJ	WEAKEN PLANE JOINT
WS	WATER SURFACE
WSTP	WATERSTOP
WT	WEIGHT
WWF	WELDED WIRE FABRIC
WWP	WATER WORKING PRESSURE

X

XCONN	CROSS CONNECTION
XS	EXTRA STRONG
XSEC	CROSS SECTION
XXS	DOUBLE EXTRA STRONG

Y

YD	YARD
YR	YEAR

Z

Z	ZERO/ ZONE
ZN	ZINC
#	POUND
&	AND
@	AT

FOR ADDITIONAL ABBREVIATIONS SEE:

GENERAL: PIPING SCHEDULES (MATERIAL AND FLUID)
CIVIL: GENERAL CIVIL SHEET
INSTRUMENTATION: GENERAL I&C SHEETS
BUILDING MECHANICAL: GENERAL HVAC, PLUMBING AND FIRE PROTECTION SHEETS
ELECTRICAL: GENERAL ELECTRICAL SHEETS

OTHER ABBREVIATIONS CONFORM TO ANSI STANDARD ABBREVIATIONS Z32.2.3

REV 010119

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Revision	By	Appd	YYYY.MM.DD
0			

Issued	By	Appd	YYYY.MM.DD
A	SSC	ZS	2025.08.20
B	CLC	SRT	2025.09.XX
IFP - LKE			
WORK PACKAGE 3 DRAFT			

Permit/Seal

PRELIMINARY
NOT FOR
CONSTRUCTION

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Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF
11290 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899_G000_002

Scale: NTS

KN	MCR	SRT	2025.04.07
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
GENERAL
ABBREVIATIONS

Revision: Sheet: of XX

Drawing No.
G-002

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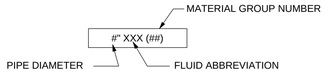
TYPICAL PIPE DESIGNATION:



GENERAL SHEET NOTES

1. ALTHOUGH SEVERAL PIPE MATERIAL GROUPS MAY BE LISTED ON THIS SHEET FOR A GIVEN FLUID SERVICE, CONTRACTOR SHALL PROVIDE ONLY THE PIPE MATERIAL GROUP SHOWN ON THE DRAWINGS AND SPECIFIED FOR THAT FLUID SERVICE.
2. CHANGE IN PIPING MATERIAL GROUP NUMBER IS INDICATED THUS:
3. PROVIDE DOUBLE CONTAINMENT FOR ALL CHEMICAL PIPING PER CODE REQUIREMENTS.

SHEET KEYNOTES

A. PROPRIETARY NAMES HAVE BEEN QUOTED FOR IDENTIFICATION PURPOSES ONLY. SUBSTITUTIONS WILL BE PERMITTED SUBJECT TO PROVISIONS OF THE SPECIFICATIONS.

B. NO SUBSTITUTIONS UNLESS ACCEPTED BY THE ENGINEER PER THE SPECIFICATIONS.

C. FOR VALVES 8" AND LARGER, SEE VALVE SCHEDULE. FOR SPECIAL VALVES, SEE SPECIFICATIONS. FOR PIPE LINING AND COATING, SEE SPECIFICATIONS.

D. PIPE MATERIALS SHALL BE PER THE REFERENCE STANDARDS AS MODIFIED BY THE CONTRACT SPECIFICATIONS. FOR PIPE LINING AND COATING, SEE SPECIFICATIONS.

PIPING MATERIAL SCHEDULE (B)

FLUID ABBREVIATION	FUNCTION THIS LIST INCLUDES SOME LINES NOT USED IN THIS PROJECT (D)	PIPING MATERIALS (SEE GENERAL NOTES AT THE RIGHT AND PIPE MATERIAL SHEET)				FIELD TEST REQUIREMENTS (B) (C)		
		EXPOSED PIPING (K)		BURIED PIPING (J)		MINIMUM TEST PRESSURE (PSI)	TEST MEDIUM	LEAKAGE ALLOWANCE (A)
		4" DIA AND SMALLER	6" DIA AND LARGER	4" DIA AND SMALLER	6" DIA AND LARGER			
A	AERATION	CS01, PV01, FR01	CS05, DI01, PV01, FR01	CS01, PV01, FR01	CS05, DI01, PV01, FR01	25	AIR	(A)(D)
FA	FOUL AIR	--	FR01	--	FR01	10	AIR	(A)(D)
FEC	FERRIC CHLORIDE	PE01, PV02	PE01, PV02	PE01, PV02	PE01, PV02	125	WATER	(A)
FP	FIRE PROTECTION	(H)	(H)	(H)	(H)	(H)	WATER	--
MP	MEMBRANE PERMEATE	SS02, PV02	SS02, PV02	--	--	125	WATER	(A)
OF	OVERFLOW	-	-	PE01, PE05	-	25	WATER	(A)
PE	PRIMARY EFFLUENT	--	CS08, DI02	--	CS08, DI02	25	WATER	(A)
PI	PLANT INFLUENT	--	CY02, DI02	--	CY02, DI02	(E)	WATER	(B)
PLE	PLANT EFFLUENT	--	CS08	--	CS08	50	WATER	(A)
PW	POTABLE WATER	CS02, DI01, PV01, CU01	CS02, CS08, DI01, PV01	CS02, DI01, PV01, CU01	CS02, CS08, DI01, PV01, PV03, PV04	125	WATER	RC05, CS02, CS08, DI01, PV01, CU01(A) PV03, PV04(B)
RAS	RETURN ACTIVATED SLUDGE	CS08, DI02	CS08, DI02	CS08, DI02	CS08, DI02	50	WATER	(A)
S	SCUM	--	DI03	--	DI03	50	WATER	(A)
SDH	SODIUM HYDROXIDE (CAUSTIC SODA)	CS06, SS01, PE01	CS06, SS01, PE01	CS06, SS01, PE01	CS06, SS01, PE01	125	WATER	(A)
SDR	STORM DRAIN	--	CS08	--	RC01, RC05	(E)	WATER	CS08, RC05(A) RC01(C)
SE	SECONDARY EFFLUENT	--	CS08, DI02	--	CS08, DI02	50	WATER	(A)
SS	SANITARY SEWER	PV06, PV01	PE01, PE05	-	-	(F)	--	--
WAS	WASTE ACTIVATED SLUDGE	--	DI02	--	DI02	50	WATER	(A)

GROUP NO	PIPE (D)	FITTINGS	VALVES, 6" AND SMALLER (A) (C)
DI02	DUCTILE IRON, ANSI A21.51, (AWWA C151), ENDS BELL AND SPIGOT, MECHANICAL JOINTS OR 125 PSI FLANGED. (TYPICAL SERVICE - SLUDGE AND SEWAGE LINES).	DUCTILE IRON AWWA C110, BELL AND SPIGOT JOINTS (RESTRAINED OR NON-RESTRAINED), MECHANICAL COUPLINGS, ASME B16.1 FLANGES, OR MECHANICAL JOINTS.	ECC PLUG, SYNTHETIC RUBBER FACED: DEZURIK PEC, CAST IRON OR MILLIKEN 601. SWING TYPE CHECK: CRANE #383 OR POWELL FIG 559. BALL: PRATT OR APCO-WILLAMETTE.
PE01	POLYETHYLENE PIPE, ASTM D3350, SDR AS SPECIFIED.	THERMAL BUTT-FUSED FLANGE CONNECTIONS AT ALL VALVES AND TRANSITIONS.	AS INDICATED ON DRAWINGS.
PE05	POLYETHYLENE, PRESSURE PIPE, AWWA C906.	POLYETHYLENE THERMAL BUTT-FUSED JOINTS, FLANGED JOINTS AT VALVES AND TRANSITIONS.	AS INDICATED ON DRAWINGS.
PE06	FLEXIBLE RUBBER HOSE, EPDM/SBR RUBBER. TEXTILE PLY WITH HELICAL STEEL WIRE REINFORCEMENT. 150 PSI.	BARBED SHANK FOR CONVERSION TO QUICK COUPLING OR THREADED END .	AS INDICATED ON DRAWINGS.
PV01	POLYVINYL CHLORIDE (PVC), ASTM D1785, SCH 80, TYPE I.	PVC, SCH 80, TYPE I, SOCKET SOLVENT WELD JOINTS, ASTM D2467. SOLVENT SHALL BE COMPATIBLE WITH FLUID SERVICE.	PVC, BALL, DIAPHBRAGM, BUTTERFLY, OR LIFT CHECK: NIBCO/CHEMTROL, MCCANNA-MARPAC, OR GEORGE FISCHER SLOANE

GENERAL SYMBOLOGY

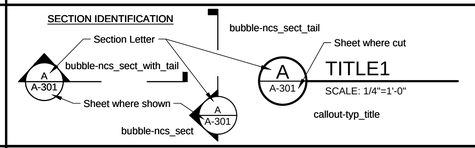
- NEW CONSTRUCTION
- EXISTING (SCREENED)
- FUTURE (PHANTOM)
- EXISTING TO BE REMOVED OR DEMOLISHED

MATERIAL SYMBOLOGY

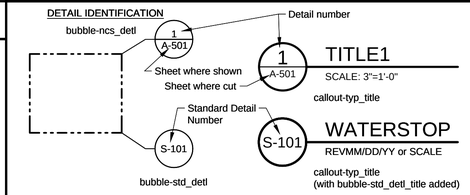
- CONCRETE (PLAN AND SECTION)
- GROUT OR SAND (PLAN AND SECTION)
- BRICK (PLAN AND SECTION)
- CMU (PLAN AND SECTION)
- STEEL/METAL/FRP (SMALL SCALE SECTION)
- CHECKER PLATE OR SOLID FRP GRATING (PLAN)
- CHECKER PLATE (SECTION)
- GRATING (PLAN)
- GRATING OR SOLID FRP GRATING (SECTION)
- SAFETY GRATING (PLAN)
- SAFETY GRATING (SECTION)
- RAILING (PLAN)
- WOOD (PLAN OR ELEVATION)
- LUMBER/ FRAMING - NOMINAL
- LUMBER - TRIMMED (BLOCKING OR SHIMS)
- OR — GLULAM (SECTION)
- GLULAM (ELEVATION)
- OR — PLYWOOD (SMALL SCALE)
- FINISHED GRADE
- GRAVEL/ DRAINROCK/ AGGREGATE BASE

REFERENCE SYMBOLS

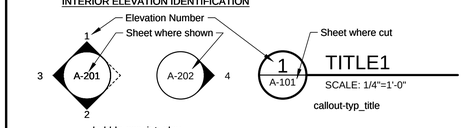
SECTION IDENTIFICATION



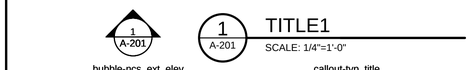
DETAIL IDENTIFICATION



INTERIOR ELEVATION IDENTIFICATION

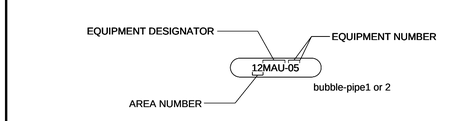


EXTERIOR ELEVATION IDENTIFICATION



EQUIPMENT IDENTIFICATION

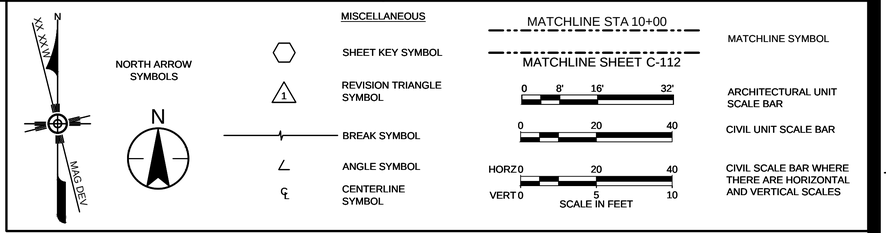
SEE EQUIPMENT SCHEDULE/SPECIFICATIONS



PLEASE NOTE:

DISCIPLINE SPECIFIC SYMBOLS ARE SHOWN ON THE DISCIPLINE GENERAL DRAWINGS.

FOR WELDING SYMBOLS USE AMERICAN WELDING SOCIETY STANDARD SYMBOLS.



ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

THESE CONSTRUCTION DRAWINGS HAVE BEEN REVIEWED BY DOUGLAS COUNTY FOR LOCATION AND EXTENTS PERMIT ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

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No.	Revision	By	Appd	YYYY.MM.DD
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No.	Issued	By	Appd	YYYY.MM.DD
A	WORK PACKAGE 3 DRAFT	SSC	ZS	2025.06.XX
B	IPP - L&E	CLC	SRT	2025.08.20

Permit/Seal

PRELIMINARY
NOT FOR CONSTRUCTION

Not for permits, pricing or other official purposes. This document has not been completed or checked and is for general information or comment only.

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF
11290 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899_G000_003

Scale:

KN	MCR	SRT	2025.04.07
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
GENERAL SYMBOLS

Revision: Sheet: of XX

Drawing No.
G-003

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DOUGLAS COUNTY STANDARD 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:

EXAMPLES: WATER TIE-IN	SHEET 3
STORM SEWER CONNECTION	SHEET 6

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 DRAINAGE STRUCTURES.
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

NOTES - CONTINUED

GENERAL

1. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING IMPROVEMENTS WHICH ARE TO REMAIN IN PLACE FROM DAMAGE. ALL IMPROVEMENTS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE EXPEDITIOUSLY REPAIRED OR RECONSTRUCTED AT THE CONTRACTOR'S EXPENSE WITHOUT ADDITIONAL COMPENSATION.
2. THE CONTRACTOR SHALL PROPERLY DISPOSE OF ALL DEBRIS FROM DEMOLITION AT CONTRACTORS EXPENSE.
3. ALL BUILDING COORDINATES ARE TO OUTSIDE CORNER OF COLUMN OR BUILDING.
4. THE CONTRACTOR SHALL DISPOSE OF ALL NON-ORGANIC WASTES SUCH AS OLD GUNITE, PIPING, ROCK RUBBLE ETC... AT AN APPROVED LANDFILL OR, OTHER SUITABLE DISPOSAL SITES AT THE CONTRACTOR'S EXPENSE.
5. CONTRACTOR SHALL RESTORE ALL SURVEY MONUMENTS THAT ARE DAMAGED OR DESTROYED DURING CONSTRUCTION.

UTILITIES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL POTHOLE FOR EXISTING UTILITIES PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FOR POINTS OF CONNECTIONS.
2. THE CONTRACTOR SHALL PROTECT ALL REMAINING EXISTING UTILITIES.
3. LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR SHALL VERIFY ALL LOCATIONS AND ELEVATIONS AND SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT UTILITY LINES WHETHER SHOWN OR NOT SHOWN.
4. PRIOR TO ANY CONNECTION TO AN EXISTING UTILITY, THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY OWNER. PRIOR TO ANY EXCAVATION IN THE VICINITY OF ANY EXISTING UNDERGROUND FACILITIES, INCLUDING ALL WATER, SEWER, STORM DRAIN, GAS, PETROLIUM PRODUCTS, OR OTHER PIPELINES; ALL BURIED ELECTRIC POWER, COMMUNICATIONS, OR TELEVISION CABLES; ALL TRAFFIC SIGNAL AND STREET LIGHTING FACILITIES; AND ALL ROADWAY, STATE HIGHWAY, AND RAILROAD RIGHTS-OF-WAY, THE CONTRACTOR SHALL NOTIFY THE RESPECTIVE AUTHORITIES REPRESENTING THE OWNERS OR AGENCIES RESPONSIBLE FOR SUCH FACILITIES NOT LESS THAN 3 DAYS NOR MORE THAN 7 DAYS PRIOR TO EXCAVATION SO THAT A REPRESENTATIVE OF SAID OWNERS OR AGENCIES CAN BE PRESENT DURING SUCH WORK IF THEY SO DESIRE. IN THE CASE OF THE UNDERGROUND UTILITY SERVICE ALERT CENTER, THIS NOTICE WILL GIVE THEM TIME TO MARK THE LOCATION OF THE UTILITIES. THE CONTRACTOR SHALL ALSO NOTIFY THE REGIONAL OR LOCAL UNDERGROUND SERVICE ALERT COMPANY AT LEAST 3 DAYS, BUT NO MORE THAN 7 DAYS, PRIOR TO SUCH EXCAVATION.

SURVEY AND CONTROL

SURVEY CONTROL IS BASED IN NSRS 2011 COLORADO STATE PLANES, CENTRAL ZONE, US FOOT.

SEE SHEET C-004 FOR LOCAL SURVEY CONTROL POINTS LOCATIONS.

HORIZONTAL CONTROL IS BASED ON THE PROJECT CONTROL INFORMATION OF THE TOPOGRAPHIC SURVEY PERFORMED BY PRECISION SURVEY & MAPPING INC. ON AUGUST 2, 2018.

BASIS OF ELEVATION IS BASED ON THE PROJECT CONTROL INFORMATION OF THE TOPOGRAPHIC SURVEY PERFORMED BY PRECISION SURVEY & MAPPING INC. ON AUGUST 2, 2018 BEING POINT #10, A RED PLASTIC CAP, WITH A PUBLISHED ELEVATION OF 5517.39'.

ADDITIONAL PROJECT CONTROL POINTS BASED ON FIELD WORK PERFORMED ON OCTOBER 21, 2024.

PIPING

1. THE CONTRACTOR SHALL COMPLY WITH THE STATE DEPARTMENT OF HEALTH SERVICES CRITERIA FOR THE SEPARATION OF WATER MAINS AND SANITARY SEWERS.
2. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 36 INCHES OF COVER ON ALL PIPELINES UNLESS OTHERWISE SHOWN OR DIRECTED.
3. STRAIGHT SLOPES SHALL BE MAINTAINED BETWEEN INVERT ELEVATIONS SHOWN OR SPECIFIED.
4. THE CONTRACTOR SHALL ADJUST ALL VALVE BOXES, PULL BOXES AND MANHOLES TO FINISHED GRADE UNLESS OTHERWISE SHOWN OR SPECIFIED. MANHOLES IN OPEN FIELDS SHALL BE SET ONE FOOT ABOVE GRADE. APPROXIMATE RIM ELEVATIONS ARE SHOWN ON DRAWINGS.
5. ALL PIPE TRENCHING AND BACKFILL SHALL BE IN ACCORDANCE WITH DETAIL C-602 FOR RIGID PIPE AND C-601 FOR FLEXIBLE PIPE. THE PIPING SHOWN ON THESE PLANS SHALL BE RESTRAINED JOINT DESIGN AT ALL SLEEVE TYPE COUPLINGS.
6. THE CONTRACTOR SHALL PROVIDE TWO FLEXIBLE SLEEVE TYPE COUPLINGS WITH RESTRAINED JOINTS FOR EACH PIPE PENETRATING STRUCTURE (EXCLUDING MANHOLES). THE COUPLINGS AND FLEXIBLE JOINTS SHALL BE 3-FEET AND 8-FEET AWAY FROM THE STRUCTURE. ALL PIPING SHALL BE RESTRAINED JOINT DESIGN UNLESS INDICATED OTHERWISE. COUPLINGS AND RESTRAINED JOINTS SHALL BE PROVIDED WHETHER SHOWN ON THE DRAWINGS OR NOT. STEEL PIPE RESTRAINED HARNESS SETS SHALL BE PROVIDED IN ACCORDANCE WITH AWWA M-11. ALL OTHER PIPES, COUPLINGS AND RESTRAINED JOINTS SHALL BE APPROVED BY THE ENGINEER. ALL RESTRAINED JOINTS SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURERS' RECOMMENDATIONS.

EROSION CONTROL

1. THE CONTRACTOR SHALL SUBMIT AN EROSION CONTROL PLAN FOR WORK DURING THE CONSTRUCTION, SIGNED AND STAMPED BY A REGISTERED CIVIL ENGINEER PRIOR TO THE START OF CONSTRUCTION.
   a. ALL SLOPES SHALL BE PROTECTED FROM EROSION DURING ROUGH GRADING OPERATIONS AND THEREAFTER, UNTIL INSTALLATION OF FINAL GROUNDCOVER (SEE LANDSCAPE PLANS FOR FINAL GROUNDCOVER).
   b. ALL SLOPE PROTECTION SWALES SHALL BE CONSTRUCTED AT THE SAME TIME AS BANKS ARE GRADED.
   c. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION AND MAINTENANCE OF EROSION CONTROL MEASURES CONTAINED WITHIN THE CONTRACT SPECIFICATIONS OR AS REQUIRED BY THE CITY, DISTRICT, OR OTHER REGULATORY AUTHORITY. THE CONTRACTOR SHALL ALSO PROVIDE ANY ADDITIONAL EROSION CONTROL MEASURES (E.G. HYDROSEEDING, MULCHING OF STRAW, SAND BAGGING, DIVERSION DITCHES, ETC.) DICTATED BY FIELD CONDITIONS TO PREVENT EROSION OR THE INTRODUCTION OF DIRT, MUD, OR DEBRIS INTO EXISTING PUBLIC STREETS, WATERWAYS, OR ONTO ADJACENT PROPERTIES DURING ANY PHASE OF CONSTRUCTION OPERATIONS.

GENERAL CIVIL SYMBOLS

- 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.

NEW
EXISTING
FUTURE
EXISTING TO BE REMOVED OR DEMOLISHED
CENTERLINE
EARTH (IN SECTION)
COMPACTED EARTH (IN SECTION)
S=0.0123 — SLOPE ON PAVED SURFACE
3:1 — BERM SLOPE (HORZ TO VERT)

TOPOGRAPHY AND MAPPING SYMBOLS

125 — MAJOR CONTOURS
MINOR CONTOURS
TOP OF SLOPE
TOE OF SLOPE
P/L — PROPERTY LINE
R/W — RIGHT-OF-WAY LINE
GB — GRADE BREAK
R — RIDGE LINE
ESMT — EASEMENT LINE
TEMP ESMT — TEMPORARY EASEMENT LINE
TRAIL OR DIRT ROAD
FLOW LINE
FLOOD HAZARD AREA
EDGE OF WETLANDS
RAILROAD
GUARDRAIL (PERMANENT)
GUARDRAIL (REMOVABLE)
VEGETATION
WELL

DRAINAGE SYMBOLS

RIPRAP
HAY BALE
SILT FENCE

GEOTECHNICAL SYMBOLS

B-X — SOIL BORING LOCATION
TEST PIT LOCATION
XX — OBSERVATION HOLE
MW — MONITORING WELL

PIPING AND UTILITIES

UTILITIES (SINGLE LINE) SEE PIPE SCHEDULE FOR ADDITONAL PIPING INFO

UTILITIES (SIZE WHERE NOTED)
G — UNDERGROUND

G	NATURAL GAS LINE
HPG	HIGH PRESSURE GAS LINE
LPG	LIQUID PETROLIUM GAS LINE
W	WATER
PW	POTABLE WATER
FIRE	FIRE SUPPLY WATER LINE
REW	RECLAIMED WATER
UW	UTILITY / NON-POTABLE WATER
IRRG	IRRIGATION LINE
SDR	STORM DRAIN
SS	SANITARY SEWER
STM	STEAM LINE
TEL	TELEPHONE
COMM	COMMUNICATIONS LINE
FOC	FIBER OPTIC CABLE
CATV	CABLE TV
E	POWER
UNID	UNIDENTIFIED
ABND	ABANDONED UTILITY

BUMPED HEAD
PP — POWER POLE
BURIED ACCESS MANOLE (IN PLAN) LOCATE ON SIDE SHOWN
BURIED ACCESS MANHOLE (IN PROFILE)
AV/AR VALVE (IN PLAN)
AV/AR VALVE (IN PROFILE)
A/R VALVE (IN PLAN) LOCATE ON SIDE SHOWN
BLOWOFF (IN PROFILE) LOCATE ON SIDE SHOWN
BLOWOFF (IN PLAN)
BLOWOFF (IN PROFILE)
FIRE HYDRANT (IN PLAN)
FH — FIRE HYDRANT (IN PROFILE)
MH — MANHOLE (IN PLAN)
MH — MANHOLE (IN PROFILE)
COTG PCOTG — CLEANOUT TO GRADE OR PRESSURE CLEANOUT TO GRADE (IN PLAN)
COTG PCOTG — CLEANOUT TO GRADE OR PRESSURE CLEANOUT TO GRADE (IN PROFILE)
GATE VALVE
BUTTERFLY VALVE
ECCENTRIC PLUG VALVE
LUBRICATED PLUG VALVE

ROAD AND PAVING SYMBOLS

ASPHALT CEMENT PAVING
CONCRETE PAVING
GRAVEL PAVING
CONCRETE CURB
CONCRETE CURB AND GUTTER
DROP INLET CATCH BASIN
CURBSIDE DROP INLET CATCH BASIN WITH LOCAL DEPRESSION
SIDE INLET CATCH BASIN WITH LOCAL DEPRESSION
CONCRETE WALK
DRIVEWAY/ACCESS RAMP

CONTROL SYMBOLS

CP-XX — CONTROL P OINT
— SITE COORDINATES (SEE TABLE ON DRAWINGS)
N XXXXXXX, E XXXXXXX — SITE COORDINATES
EL XXXX.XX — MONUMENT
HORIZONTAL CONTROL POINT
VERTICAL CONTROL POINT
XXX — HORZ AND VERT CONTROL POINT
XXX.XX — FINISHED ELEVATION
(XXX.XX) — EXISTING ELEVATION
DELTA

STRUCTURES

SITE OR RETAINING WALL
X — X — FENCE (CHAINLINK)
FENCE (WOOD)
STRUCTURE
STRUCTURE (BELOW GRADE)
CB CB — CATCH BASIN

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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ENGINEERING DIVISION ACCEPTANCE BLOCK

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No.	Issued	By	Appd	YYYY.MM.DD
B	IFP - L&E	SSC	ZS	2025.08.20

Revision

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-000-001-TEMP
Scale:

Dwn.	Dsgn.	Chkd.	YYYY.MM.DD
			2025.08.01

Title
GENERAL NOTES AND SYMBOLS

Revision: 1
Drawing No.
C-001

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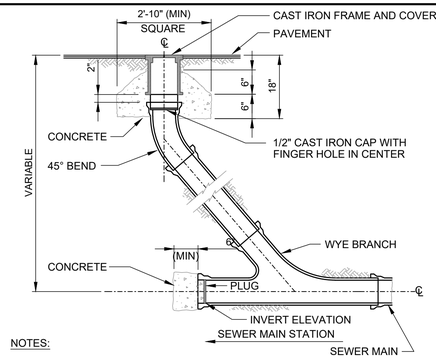
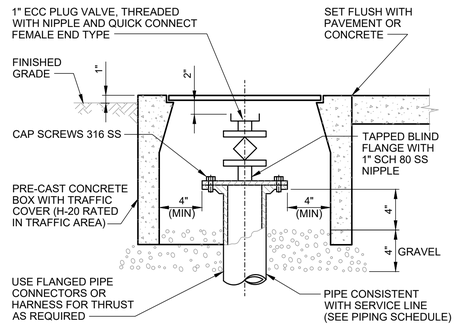


NOTES:

1. IF IN UNIMPROVED AREA TOP SHALL BE 6" ABOVE GRADE.
2. SEE PLAN FOR STATION AND INVERT ELEVATION. PIPE AND FITTINGS SHALL BE OF THE SAME MATERIAL AS THE MAIN LINE SEWER.

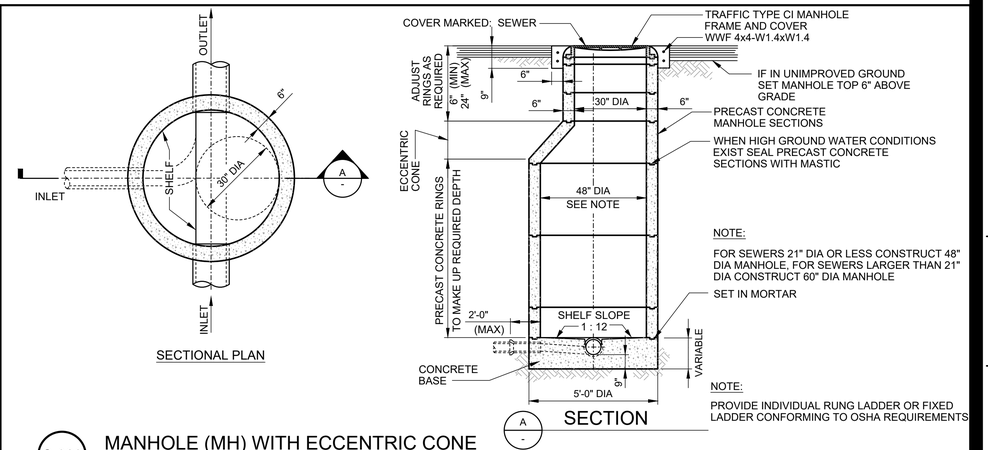
C-302 CLEANOUT TO GRADE (COTG)

REV 010119



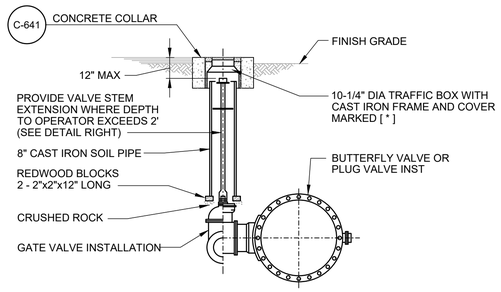
C-305 PRESSURIZED SYSTEM CLEANOUT TO GRADE (PCOTG)

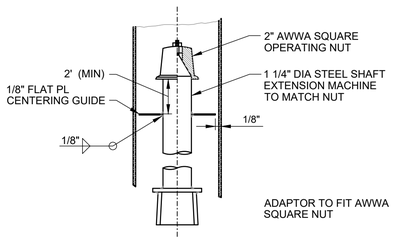
REV 010119



C-320 MANHOLE (MH) WITH ECCENTRIC CONE

REV 010119



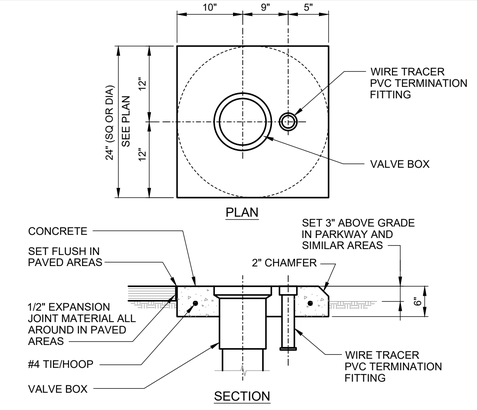


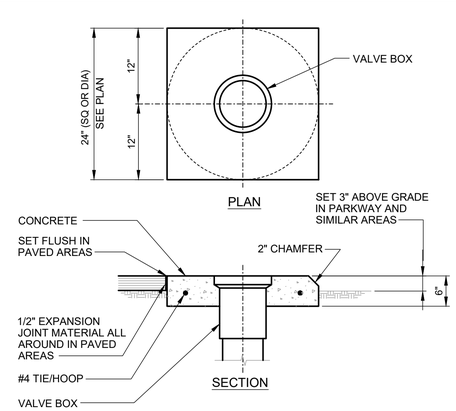
NOTES:

PROVIDE PROTECTIVE COATING TO EXTERIOR SURFACE OF VALVE BODY IN ACCORDANCE WITH SPECS.
FOR LUBRICATED PLUG VALVE, EXTEND LUBRICATION LINE TO GRADE PER MANUFACTURES INSTRUCTIONS.

C-640 BURIED VALVE INSTALLATION

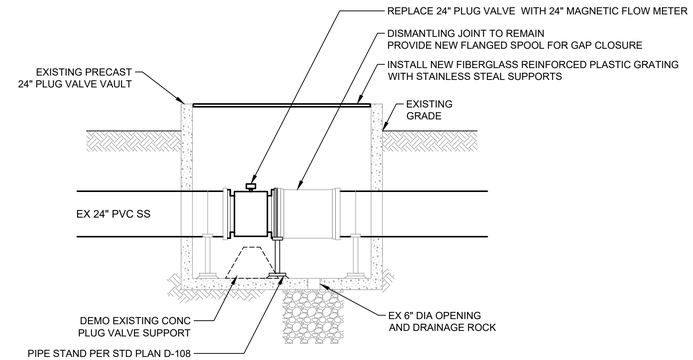
REV 010119



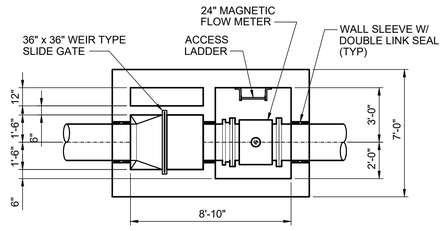


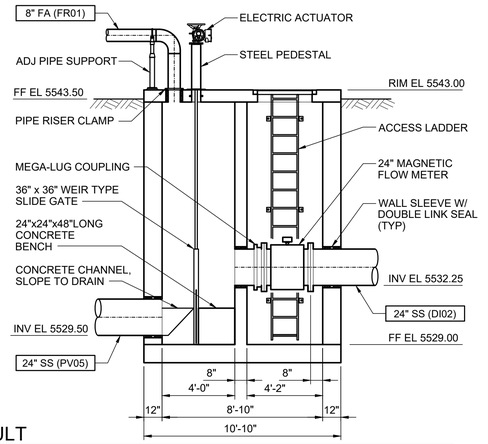
C-641 VALVE BOX COLLAR

REV 010119



C-642 COMBINED INFLUENT FLOW METERING VAULT





C-643 CBWRF INFLUENT FLOW METERING VAULT

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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Consultant

No.	By	Appd	YYYY.MM.DD
B	RP - L&E		Issued
1	SC	JS	2025.08.20
A			YYYY.MM.DD

Revision

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT

CHATFIELD BASIN WRF REFURBISHMENT

11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899

File Name: 0189PC-000-002

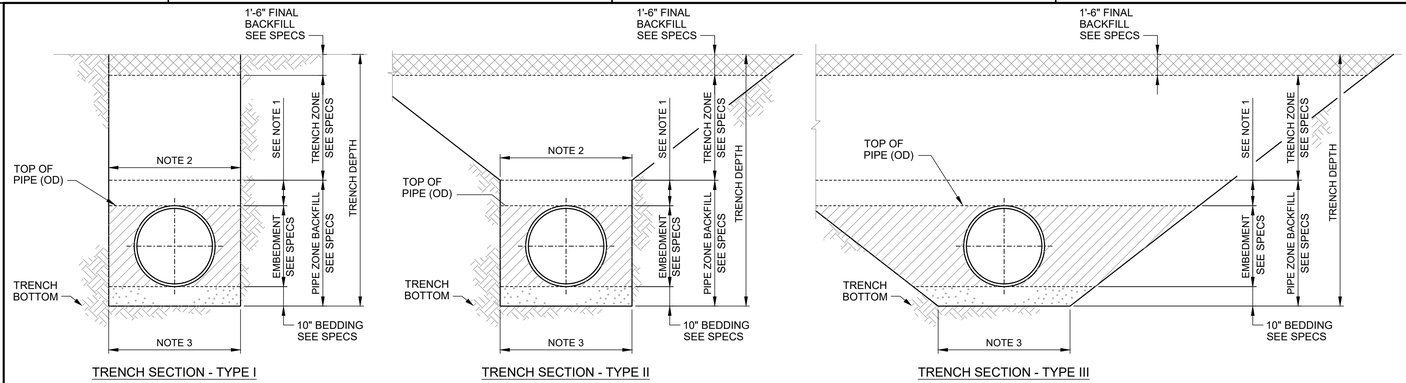
Scale:

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
STANDARD DETAILS - I

Revision: 2

Drawing No.
C-002



TRENCH SECTION - TYPE I | TRENCH SECTION - TYPE II | TRENCH SECTION - TYPE III

NOTES:

1. 6" MIN FOR PIPE DIAMETER < 24"
   12" MIN FOR PIPE DIAMETER > 24"
2. MAX TRENCH WIDTH @ TOP OF PIPE:
   OD + 36" FOR, 18" AND LARGER PIPE OD
   OD + 24" FOR LESS THAN 18"
3. MIN TRENCH BOTTOM WIDTH:
   OD + 24" FOR MECHANICAL COMPACTION

A. FLEXIBLE PIPE REFERS TO ALL STEEL, DUCTILE-IRON, AND PLASTIC PIPES.

B. TYPICAL TRENCH SECTIONS (I, II AND III) ARE TO BE USED ONLY WHERE STABLE, COMPACT SOIL CONDITIONS EXIST. IF BOULDERS OR LARGE OBSTRUCTIONS ARE ENCOUNTERED, TRENCH SECTIONS MAY BE DEEPER OR WIDER THAN SHOWN. THE ENGINEER SHALL BE ADVISED SHOULD THIS OCCUR.

C. THE NEED FOR PROTECTIVE SYSTEMS AND EXCAVATION SLOPES SHALL BE DETERMINED CONSIDERING APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS, AND GEOTECHNICAL CONSULTANTS' RECOMMENDATIONS.

D. PROTECTIVE SYSTEMS SHALL BE DESIGNED AND BUILT IN ACCORDANCE WITH THE APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS.

E. SUPPORTING DOCUMENTATION SHALL BE SUBMITTED TO THE ENGINEER REGARDING PIPE DESIGN AND COMPLIANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS.

F. UNSUPPORTED VERTICAL AND/OR SLOPING TRENCH WALL SLOPES SHALL NOT BE STEEPER THAN ALLOWED BY APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS, UNLESS SUPPORTING DOCUMENTATION IS SUBMITTED, ACCORDING TO AFOREMENTIONED SAFETY STANDARDS.

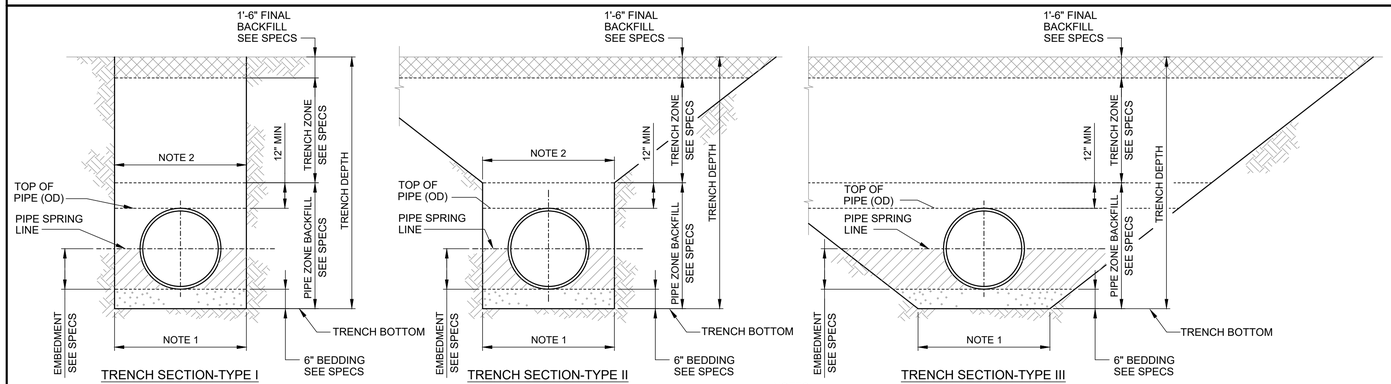
G. TRENCH SECTIONS OTHER THAN THE TYPICAL SECTIONS SHOWN MAY BE UTILIZED PROVIDED THEY COMPLY WITH APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS. DOCUMENTATION SUPPORTING THIS COMPLIANCE AND PIPE DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER.

H. IF OVER-EXCAVATION DUE TO POOR FOUNDATION MATERIAL IS ORDERED BY THE ENGINEER, THE BACKFILL MATERIAL SHALL BE ACCORDING TO THE EARTHWORK SECTION OF THE SPECIFICATIONS ARTICLE ENTITLED, "FILL AND BACKFILL MATERIAL REQUIREMENTS."

I. IF DURING CONSTRUCTION, THE WATER TABLE IS DISCOVERED TO BE ABOVE THE TRENCH BOTTOM, THE ENGINEER SHALL BE NOTIFIED, AND APPROPRIATE DEWATERING SHALL BE IMPLEMENTED TO LOWER THE WATER LEVEL BELOW THE TRENCH BOTTOM. THE BACKFILL MATERIAL SHALL BE ACCORDING TO THE EARTHWORK SECTIONS OF THE SPECIFICATIONS, OR AS ORDERED BY THE ENGINEER.

C-601 TRENCH SECTION FLEXIBLE PIPE

REV 010119



TRENCH SECTION-TYPE I | TRENCH SECTION-TYPE II | TRENCH SECTION-TYPE III

NOTES:

1. MIN TRENCH BOTTOM WIDTH:
   OD + 24" FOR MECHANICAL COMPACTION
   OD + 18" FOR WATER CONSOLIDATION
2. MAX TRENCH WIDTH @ TOP OF PIPE:
   OD + 36" FOR, 18" AND LARGER PIPE OD
   OD + 24" FOR LESS THAN 18" PIPE OD

A. RIGID PIPE REFERS TO ALL TYPES OF REINFORCED AND UN-REINFORCED CONCRETE PIPE AND VITRIFIED CLAY PIPE.

B. TYPICAL TRENCH SECTIONS (I, II AND III) ARE TO BE USED ONLY WHERE STABLE, COMPACT SOIL CONDITIONS EXIST. IF BOULDERS OR LARGE OBSTRUCTIONS AREENCOUNTERED, TRENCH SECTIONS MAY BE DEEPER OR WIDER THAN SHOWN.THE ENGINEER SHALL BE ADVISED SHOULD THIS OCCUR.

C. THE NEED FOR PROTECTIVE SYSTEMS, AND EXCAVATION SLOPES SHALL BE DETERMINED CONSIDERING APPLICABLE LOCAL, STATE AND FEDERAL (OSHA)SAFETY STANDARDS AND REGULATIONS, AND GEOTECHNICAL CONSULTANTS' RECOMMENDATIONS.

D. PROTECTIVE SYSTEMS SHALL BE DESIGNED AND BUILT IN ACCORDANCE WITH THE APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS.

E. SUPPORTING DOCUMENTATION SHALL BE SUBMITTED TO THE ENGINEER REGARDING PIPE DESIGN AND COMPLIANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS.

F. UNSUPPORTED VERTICAL AND/OR SLOPING TRENCH WALL SLOPES SHALL NOT BE STEEPER THAN ALLOWED BY APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS, UNLESS SUPPORTING DOCUMENTATION IS SUBMITTED, ACCORDING TO AFOREMENTIONED SAFETY STANDARDS.

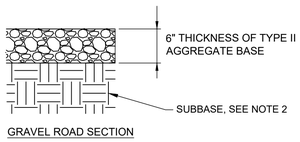
G. IF OVER-EXCAVATION DUE TO POOR FOUNDATION MATERIAL IS ORDERED BY THE ENGINEER, THE BACKFILL MATERIAL SHALL BE ACCORDING TO THE EARTHWORK SECTION OF THE SPECIFICATIONS ARTICLE ENTITLED, "FILL AND BACKFILL MATERIAL REQUIREMENTS."

H. IF DURING CONSTRUCTION, THE WATER TABLE IS DISCOVERED TO BE ABOVE THE TRENCH BOTTOM, THE ENGINEER SHALL BE NOTIFIED, AND APPROPRIATE DEWATERING SHALL BE IMPLEMENTED TO LOWER THE WATER LEVEL BELOW THE TRENCH BOTTOM. THE BACKFILL MATERIAL SHALL BE ACCORDING TO THE EARTHWORK SECTIONS OF THE SPECIFICATIONS, OR AS ORDERED BY THE ENGINEER.

I. TRENCH SECTIONS OTHER THAN THE TYPICAL SECTIONS SHOWN MAY BE UTILIZED PROVIDED THEY COMPLY WITH APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS, DOCUMENTATION SUPPORTING THIS COMPLIANCE AND PIPE DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER.

C-602 TRENCH SECTION RIGID PIPE

REV 010119

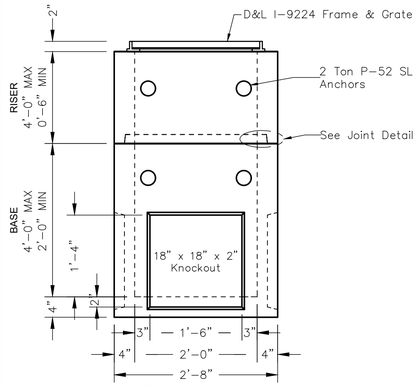


GRAVEL ROAD SECTION

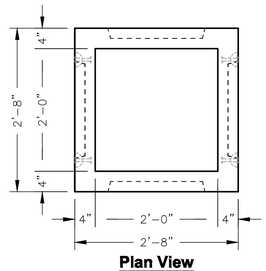
NOTES:

1. AGGREGATE BASE MATERIAL SHALL ADHERE TO SPECIFICATION SECTION 32 11 13.
2. COMPACT UPPER 8-INCHES OF ROAD SUBGRADE TO 95% RELATIVE COMPACTION.

C-902 GRAVEL PAVEMENT



Elevation View



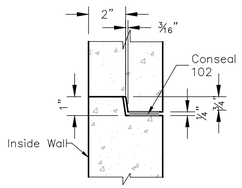
Plan View

A. PRODUCT SHOWN IS OLDCASTLE PRECAST 2x2-CB MANUFACTURED IN LITTLETON, CO.

B. INLET IS MANUFACTURED ACCORDING TO ASTM C913 AND IS SUITABLE FOR HS-20 LOADING.

C. BASES ARE AVAILABLE WITH FLAT TOP OR JOINT KEYWAY.

C-100 2'x2' PRECAST CATCH BASIN



Joint Detail

2X2 STANDARD HEIGHTS	
BASE	RISER
2' - 0"	0' - 6"
2' - 6"	1' - 0"
3' - 0"	1' - 6"
4' - 0"	2' - 0"
-	2' - 6"
-	3' - 0"
-	4' - 0"

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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B	IFP - L&E			Issued
JSC	JS	Appd	2025.08.20 YYYY.MM.DD	

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-WP3-000-003

Scale:

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
STANDARD DETAILS - II

Revision: 3
Drawing No.
C-003

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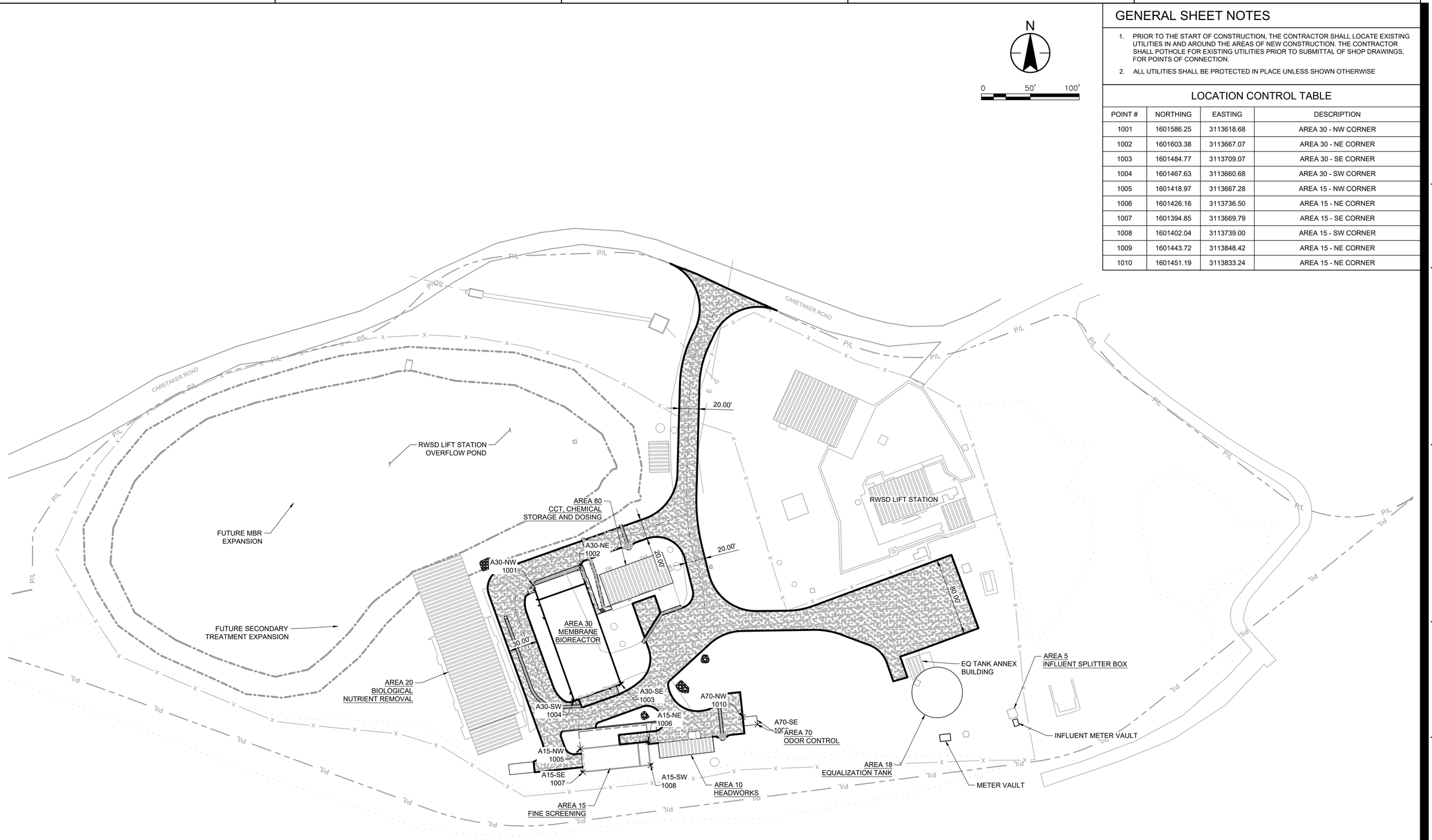
2025.08.20 8:44:46 PM

GENERAL SHEET NOTES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL POTHOLE FOR EXISTING UTILITIES PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FOR POINTS OF CONNECTION.
2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE

LOCATION CONTROL TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
1001	1601586.25	3113618.68	AREA 30 - NW CORNER
1002	1601603.38	3113667.07	AREA 30 - NE CORNER
1003	1601484.77	3113709.07	AREA 30 - SE CORNER
1004	1601467.63	3113660.68	AREA 30 - SW CORNER
1005	1601418.97	3113667.28	AREA 15 - NW CORNER
1006	1601426.16	3113736.50	AREA 15 - NE CORNER
1007	1601394.85	3113669.79	AREA 15 - SE CORNER
1008	1601402.04	3113739.00	AREA 15 - SW CORNER
1009	1601443.72	3113848.42	AREA 15 - NE CORNER
1010	1601451.19	3113833.24	AREA 15 - NE CORNER



ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD.
LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-WP3-000-004
Scale:

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
LOCATION CONTROL PLAN

Revision: 4
Drawing No.
C-004

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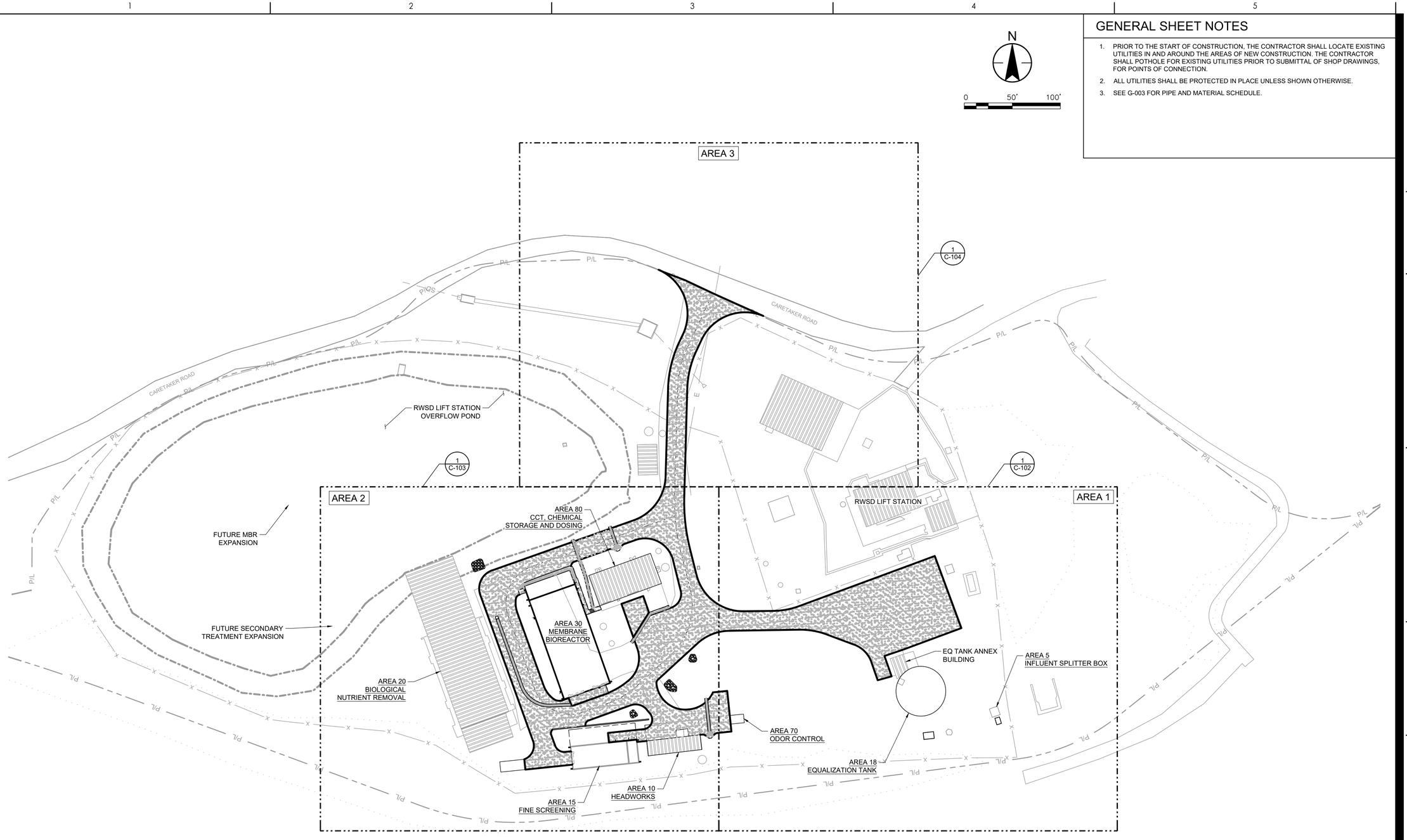
GENERAL SHEET NOTES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL POTHOLE FOR EXISTING UTILITIES PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FOR POINTS OF CONNECTION.
2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE.
3. SEE G-003 FOR PIPE AND MATERIAL SCHEDULE.



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B	IFP - LA,E	SSC	ZS	2025.08.20

Revision

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Client/Project
DOMINION WATER SANITATION DISTRICT

CHATFIELD BASIN WRF REFURBISHMENT

11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899

File Name: 01899C-WP3-100-101

Scale: SCALE

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
OVERALL SITE PLAN

Revision: 5

Drawing No.
C-101

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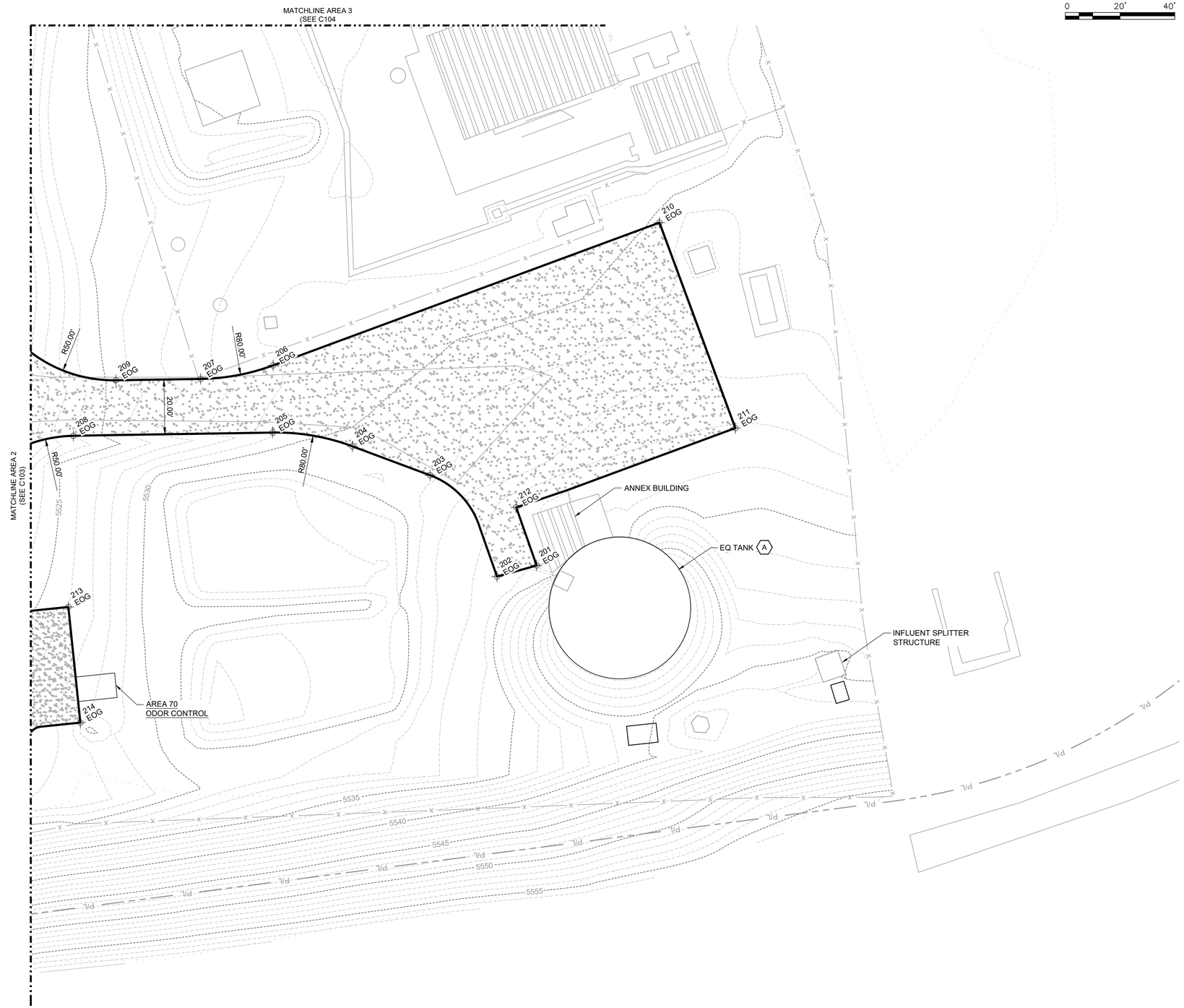
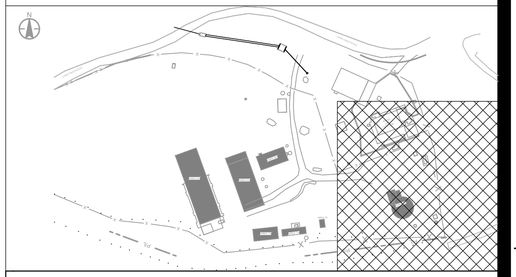


1 C-101 ENLARGED AREA 1 SITE PLAN
SCALE: 3"=1'-0"

KEY PLAN



GENERAL SHEET NOTES

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2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE.

SHEET KEYNOTES

A. AEROBIC DIGESTER TO BE RE-PURPOSED AS EQUALIZATION (EQ) TANK

POINT TABLE

POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
201	5533.97	1601491.94	3114001.69	EOG
202	5533.54	1601487.89	3113987.22	EOG
203	5532.29	1601524.88	3113962.78	EOG
204	5530.86	1601535.46	3113934.38	EOG
205	5529.42	1601540.49	3113905.21	EOG
206	5529.37	1601565.03	3113905.40	EOG
207	5528.00	1601560.08	3113878.92	EOG
208	5521.90	1601539.32	3113832.40	EOG
209	5524.11	1601559.60	3113847.93	EOG
210	5530.27	1601617.18	3114046.58	EOG
211	5533.13	1601542.14	3114074.30	EOG
212	5533.85	1601513.16	3113994.25	EOG
213	5526.20	1601476.79	3113830.58	EOG
214	5526.63	1601434.55	3113834.96	EOG

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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No.	Revision	By	Appd	YYYY.MM.DD
B	IFP - L&E	JSSC	ZS	2025.08.20
Issued				

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-WP3-100-102-104

Scale: SCALE

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
ENLARGED SITE PLAN - AREA 1

Revision: 6

Drawing No.
C-102

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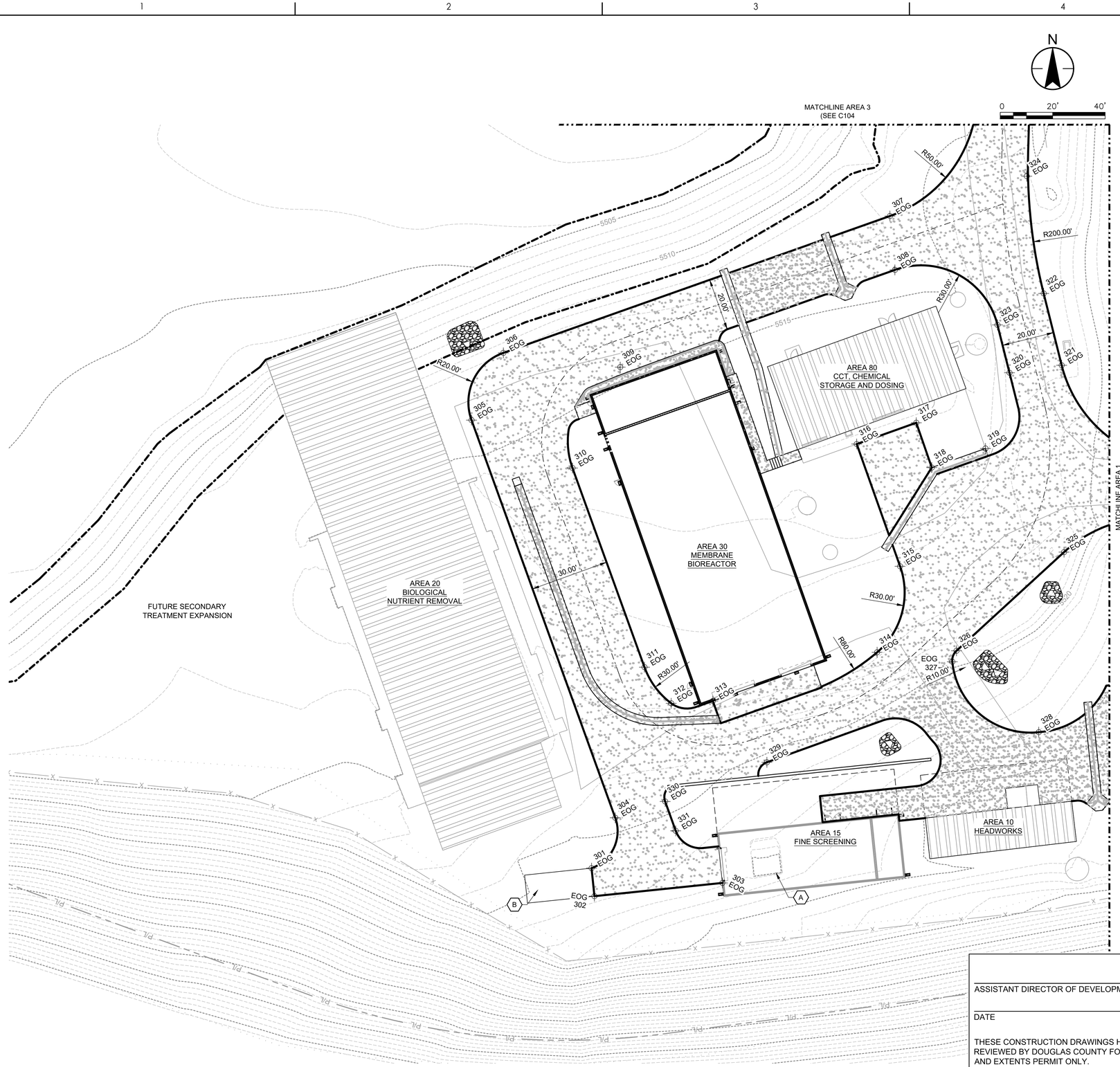
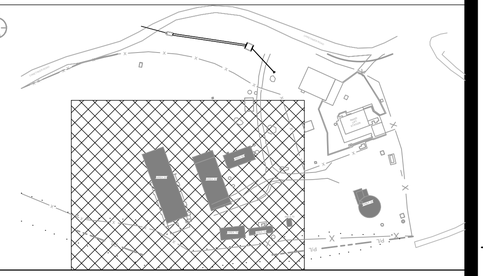


1 C-101 ENLARGED AREA 2 SITE PLAN

SCALE: 3"=1'-0"

KEY PLAN



GENERAL SHEET NOTES

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2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE.

SHEET KEYNOTES

A. REMOVE GRIT DRYING BED.
B. REMOVE EXISTING CONCRETE SLAB.

POINT TABLE

POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
301	5523.35	1601405.62	3113619.37	EOG
302	5523.35	1601394.93	3113620.48	EOG
303	5524.45	1601399.99	3113669.25	EOG
304	5520.95	1601424.84	3113628.41	EOG
305	5515.60	1601576.52	3113573.60	EOG
306	5514.72	1601602.17	3113585.74	EOG
307	5514.63	1601654.36	3113733.15	EOG
308	5514.95	1601633.82	3113735.06	EOG
309	5515.31	1601596.73	3113630.30	EOG
310	5516.93	1601558.26	3113612.10	EOG
311	5517.46	1601482.29	3113639.55	EOG
312	5517.50	1601468.50	3113649.74	EOG
313	5518.00	1601469.39	3113665.63	EOG
314	5519.22	1601487.96	3113728.27	EOG
315	5516.09	1601520.76	3113737.02	EOG
316	5515.98	1601567.39	3113720.49	EOG
317	5516.00	1601575.51	3113743.20	EOG
318	5515.81	1601558.44	3113749.12	EOG
319	5515.69	1601565.70	3113769.59	EOG
320	5517.08	1601594.57	3113778.75	EOG
321	5518.08	1601597.44	3113798.65	EOG
322	5516.94	1601624.83	3113791.79	EOG
323	5516.70	1601612.84	3113774.17	EOG
324	5515.41	1601669.57	3113785.34	EOG
325	5518.70	1601526.17	3113799.55	EOG
326	5519.38	1601488.53	3113758.54	EOG
327	5519.85	1601484.36	3113756.95	EOG
328	5524.94	1601457.48	3113789.90	EOG
329	5518.28	1601446.00	3113686.24	EOG
330	5521.30	1601431.05	3113647.43	EOG
331	5522.78	1601419.85	3113651.48	EOG

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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B	IFP - L&E	JSsc	ZS	2025.08.20

Issued

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT

CHATFIELD BASIN WRF REFURBISHMENT

11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899

File Name: 01899C-WP3-100-102-104

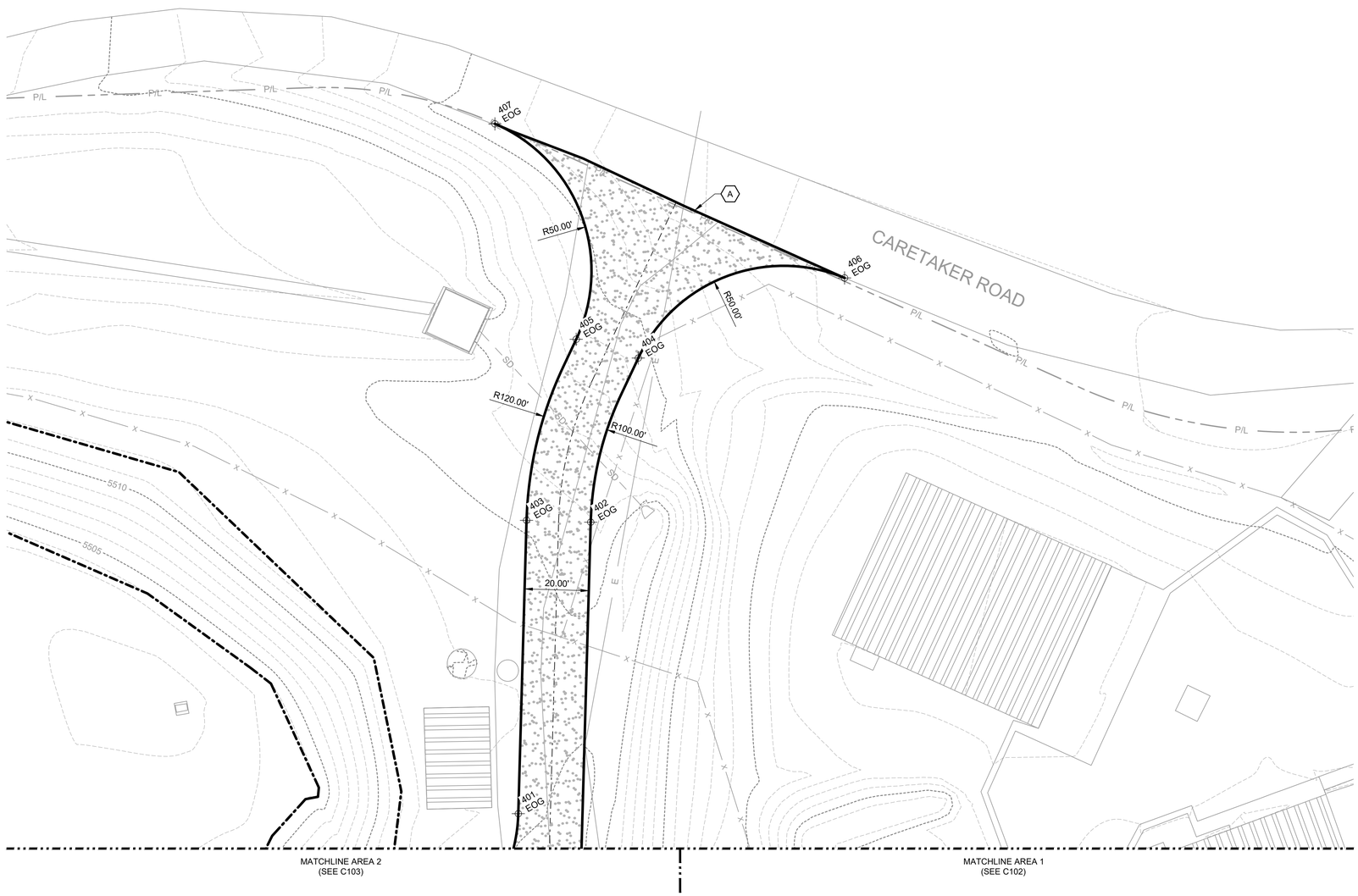
Scale: SCALE

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
ENLARGED SITE PLAN - AREA 2

Revision: 7

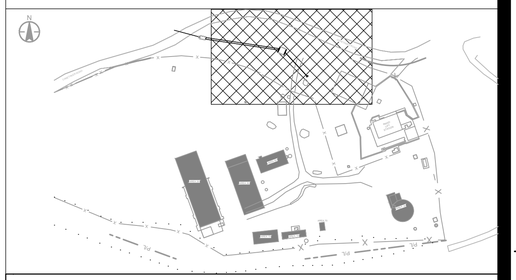
Drawing No.
C-103



1 C-101 ENLARGED AREA 3 SITE PLAN

SCALE: 3"=1'-0"

KEY PLAN



GENERAL SHEET NOTES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL POTHOLE FOR EXISTING UTILITIES PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FOR POINTS OF CONNECTION.
2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE.

SHEET KEYNOTES

A. MATCH EXISTING EDGE OF ROAD.

POINT TABLE

POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
401	5514.26	1601700.09	3113766.45	EOG
402	5515.99	1601790.97	3113789.01	EOG
403	5515.99	1601791.53	3113769.02	EOG
404	5519.47	1601842.11	3113803.84	EOG
405	5519.23	1601847.96	3113784.49	EOG
406	5524.33	1601867.07	3113868.11	EOG
407	5520.34	1601915.10	3113759.16	EOG

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

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Issued	By	Appd	YYYY.MM.DD

Revision

ZSSC		ZS	2025.08.20
By		Appd	YYYY.MM.DD

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-WP3-100-102-104

Scale: SCALE

Dwn.	Dsgn.	Chkd.
		2025.08.01 YYYY.MM.DD

Title
ENLARGED SITE PLAN - AREA 3

Revision: 8

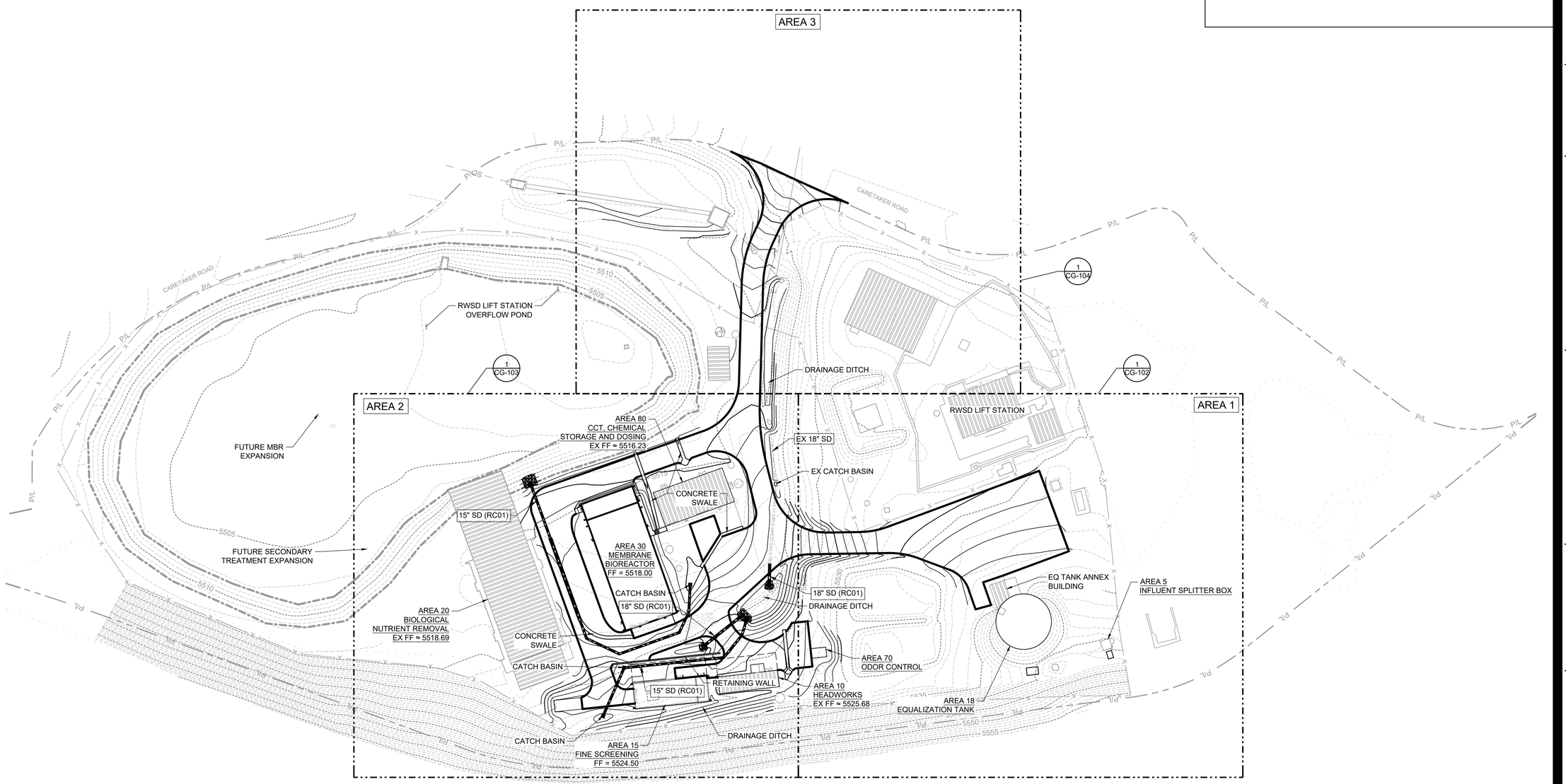
Drawing No.
C-104

GENERAL SHEET NOTES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL POTHOLE FOR EXISTING UTILITIES PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FOR POINTS OF CONNECTION.
2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE.
3. SEE G-003 FOR PIPE AND MATERIAL SCHEDULE.

N

0 50' 100'



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B	IFP - L&E	SSC	ZS	2025.08.20
A	Issued	SSC	ZS	2025.08.20

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT

CHATFIELD BASIN WRF REFURBISHMENT

11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899

File Name: 01899C-WP3-CG100-CG101

Scale: 1:50

Dwn.	Dsgn.	Chkd.	YYYY.MM.DD
			2025.08.01

Title
OVERALL GRADING PLAN

Revision: 9

Drawing No.
CG-101

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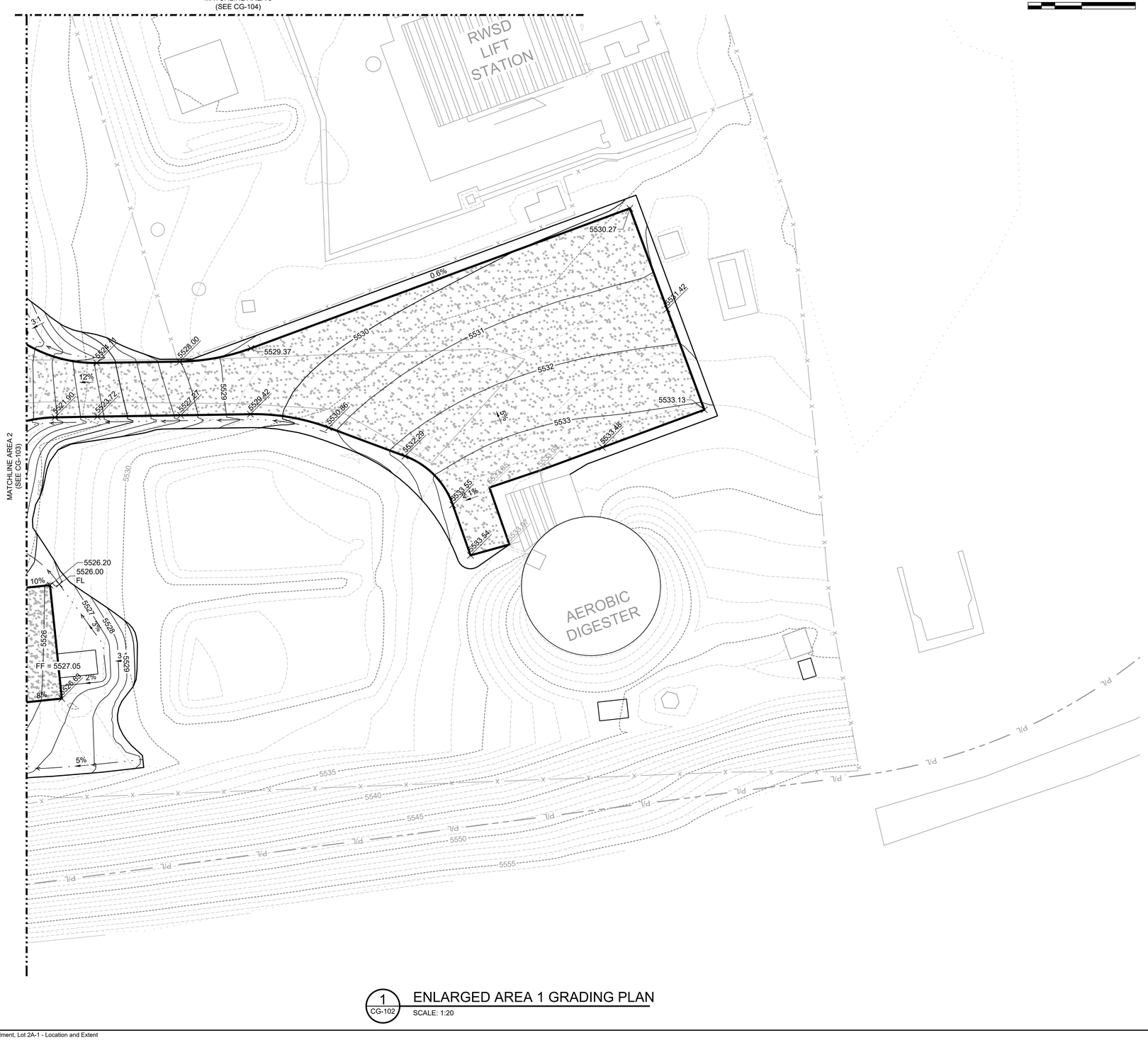
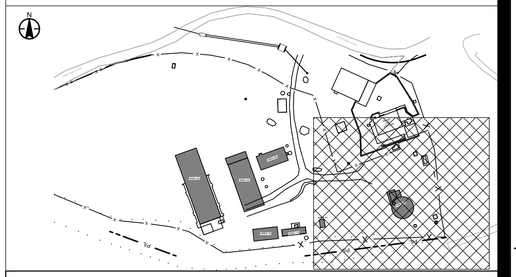


1 CG-102 ENLARGED AREA 1 GRADING PLAN
SCALE: 1:20

N
0 20' 40'

KEY PLAN



GENERAL SHEET NOTES

1. NOTE

SHEET KEYNOTES

A. NOTE

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DATE

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B	FP - L&E		Issued

	By	Appd	YYYY.MM.DD
	JSSC	ZS	2025.08.20

Revision

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Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-WP3-CG100-CG102-104
Scale: 1:20

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
ENLARGE GRADING PLAN - AREA 1

Revision: 10
Drawing No.
CG-102

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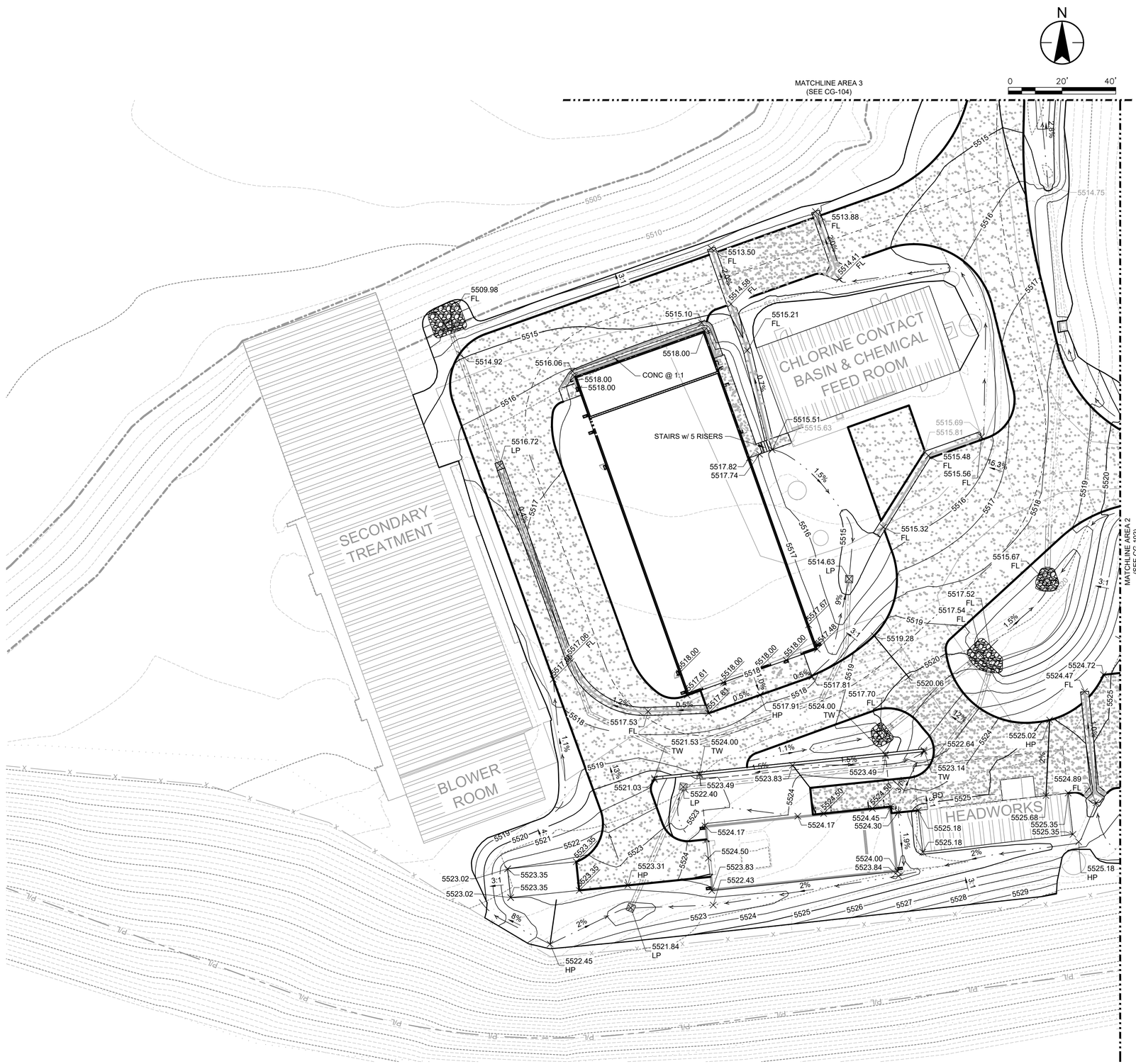
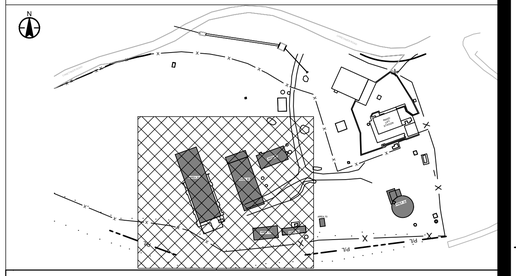


1 CG-103 ENLARGED AREA 2 GRADING PLAN

SCALE: 1:20

KEY PLAN



GENERAL SHEET NOTES

1. NOTE

SHEET KEYNOTES

A. XXXXX

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DATE

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DOMINION WATER SANITATION DISTRICT

CHATFIELD BASIN WRF REFURBISHMENT

11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899

File Name: 01899C-WP3-CG100-CG102-104

Scale: 1:20

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD
SSC	ZS		

Title
ENLARGED GRADING PLAN - AREA 2

Revision: 11

Drawing No.
CG-103

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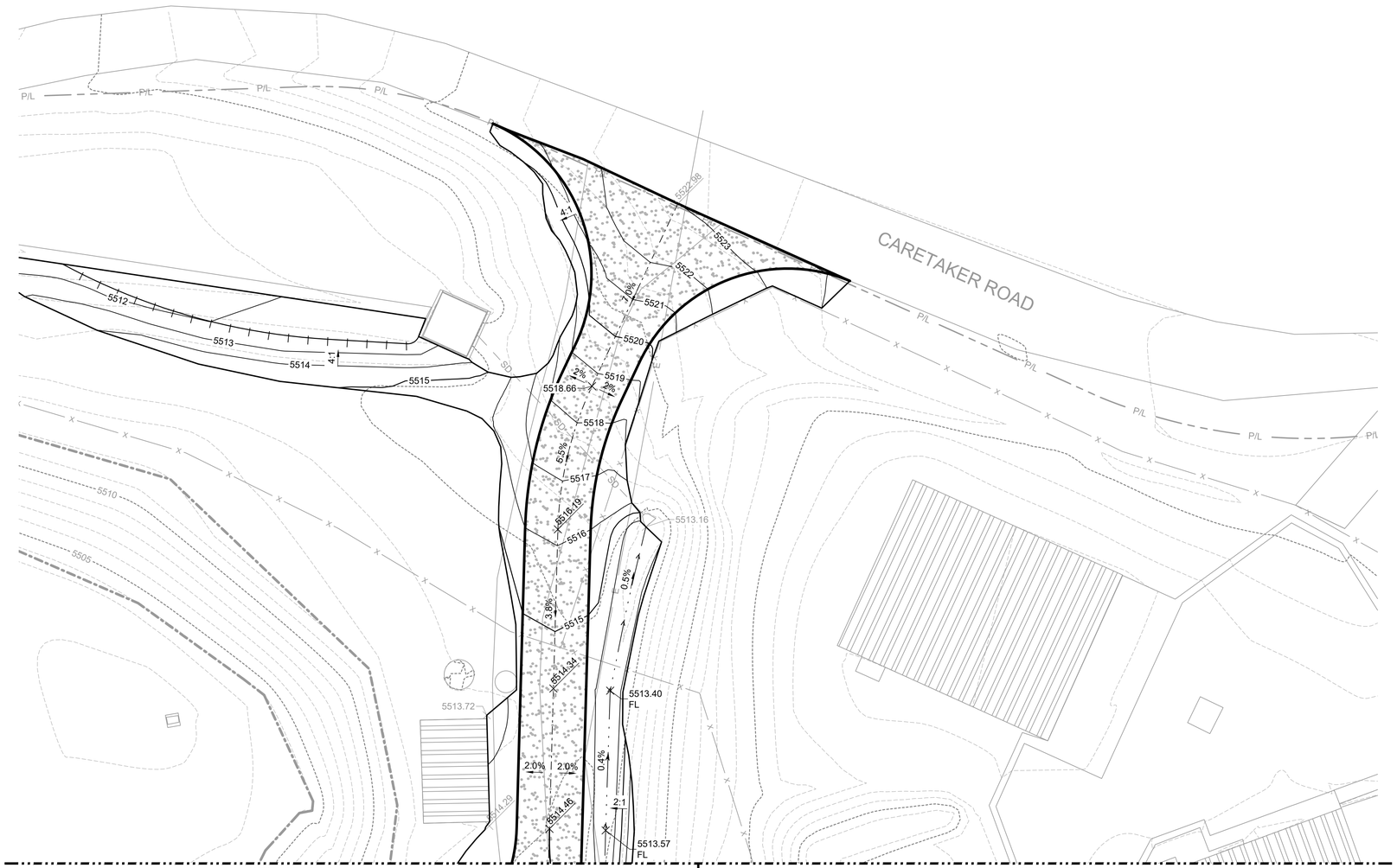


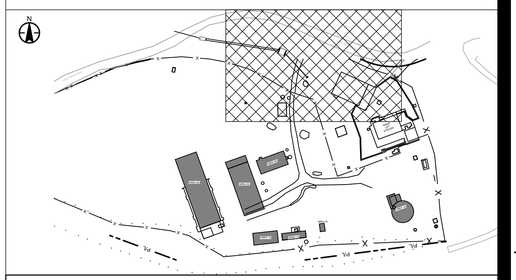
1 CG-104 ENLARGED AREA 3 GRADING PLAN

SCALE: 1:20

N

0 20' 40'

KEY PLAN



GENERAL SHEET NOTES

1. NOTE

SHEET KEYNOTES

A. XXXXX

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Revision			

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DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-WP3-CG100-CG102-104

Scale: 1:20

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
ENLARGED GRADING PLAN - AREA 3

Revision: 12

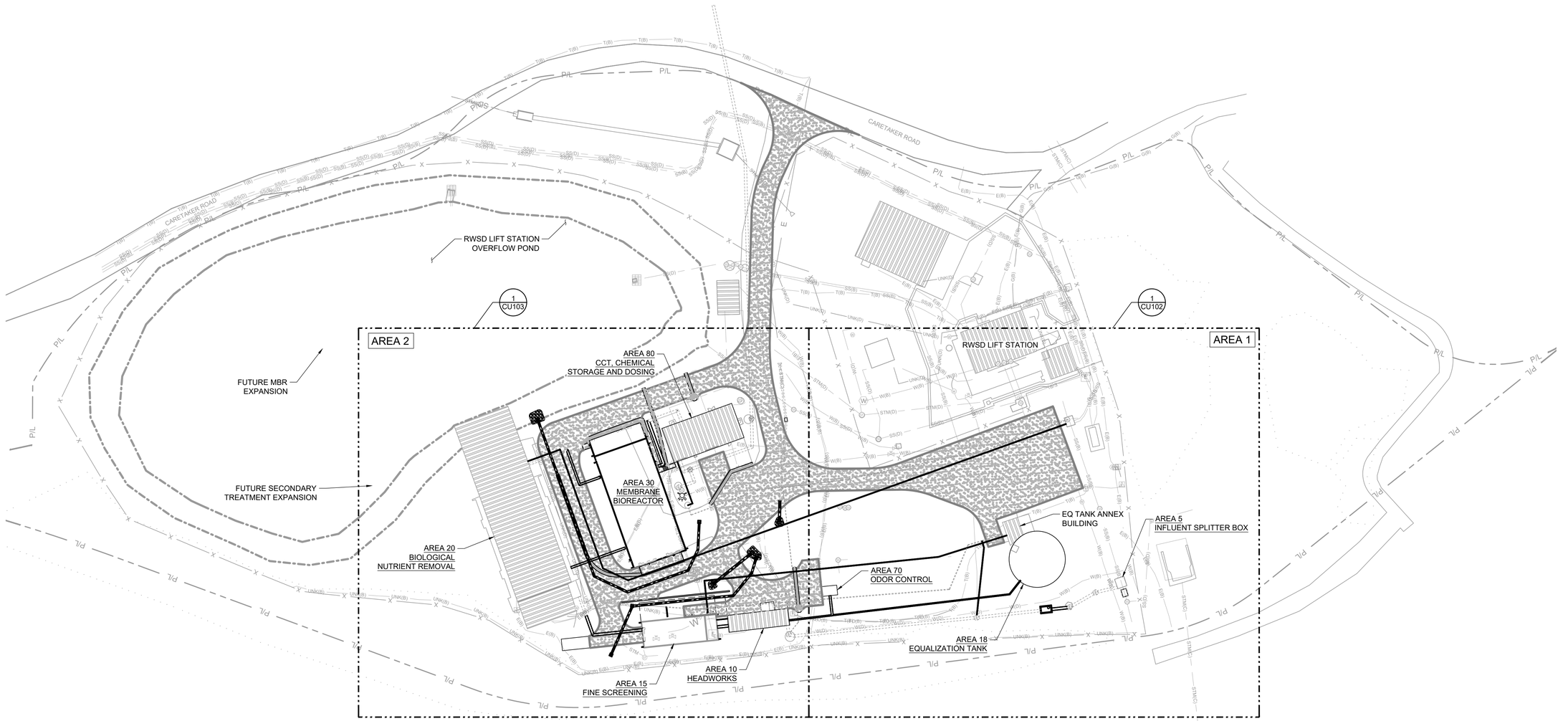
Drawing No.
CG-104

GENERAL SHEET NOTES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL POTHOLE FOR EXISTING UTILITIES PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FOR POINTS OF CONNECTION.
2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE.
3. SEE G-003 FOR PIPE AND MATERIAL SCHEDULE.

N

0 50' 100'



ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

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Revision

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Client/Project
DOMINION WATER SANITATION DISTRICT

CHATFIELD BASIN WRF REFURBISHMENT

11310 CARETAKER RD.
LITTLETON, CO 80125

Project No.: 181301899

File Name: 01899C-WP3-CU100-CU101

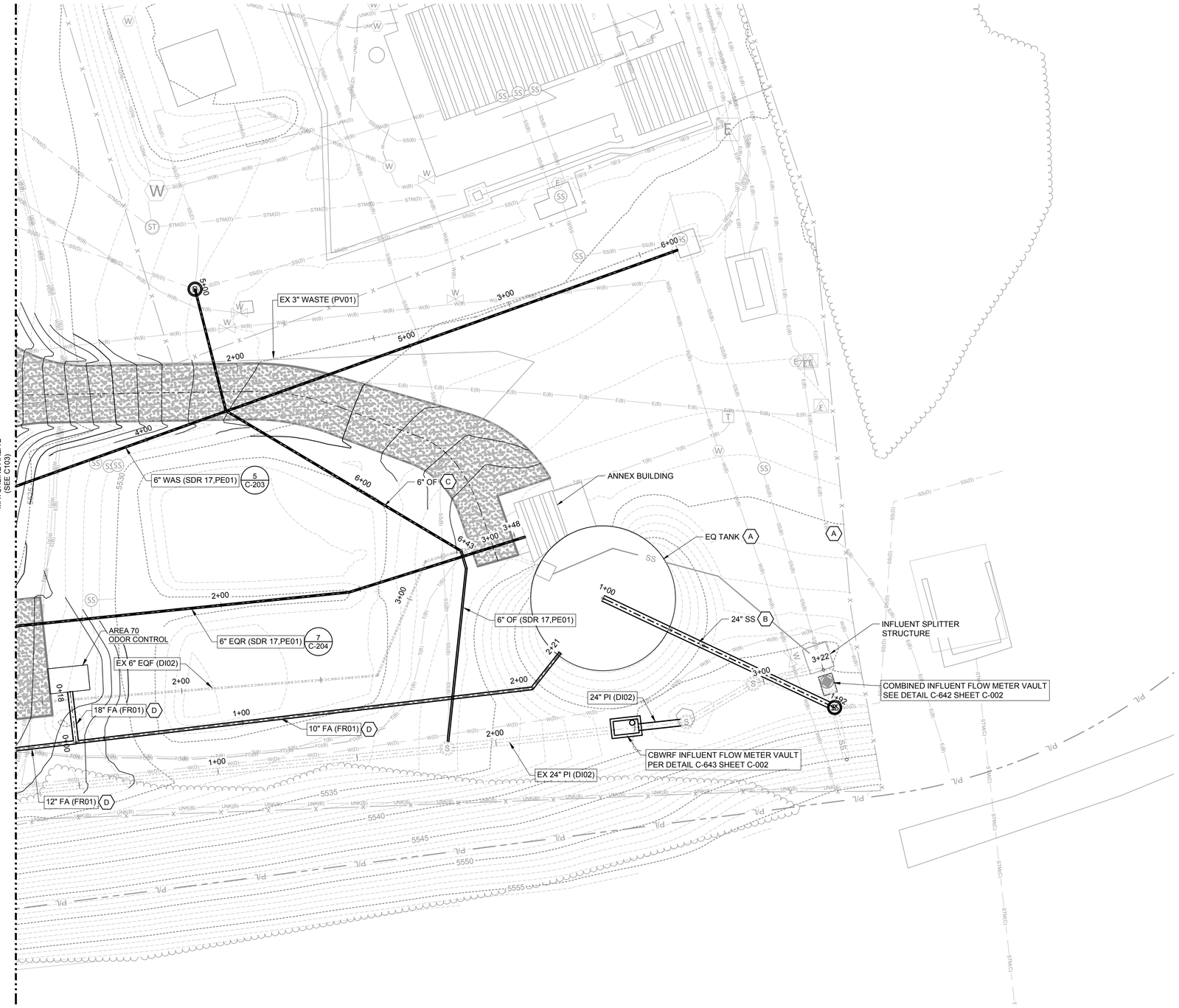
Scale: SCALE

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
OVERALL YARD PIPING KEYMAP

Revision: 13

Drawing No.
CU-101



1 C-102 ENLARGED AREA 1 UTILITY PLAN
SCALE: 1:20

KEY PLAN

GENERAL SHEET NOTES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL POTHOLE FOR EXISTING UTILITIES PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FOR POINTS OF CONNECTION.
2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE.
3. SEE G-003 FOR PIPE AND MATERIAL SCHEDULE.

SHEET KEYNOTES

A. AEROBIC DIGESTER TO BE RE-PURPOSED AS EQUALIZATION (EQ) TANK.
B. 24" SS INSTALLED IN WP1, REMOVE AT END OF CONSTRUCTION.
C. 6" OF INSTALLED IN WP1, REMOVE AT END OF CONSTRUCTION.
D. FOUL AIR (FA) PIPE SHALL BE PLACED ABOVE GRADE WITH CONCRETE SADDLE SUPPORTS OR AN APPROVED EQUAL SUPPORT SYSTEM.

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD.
LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-WP3-CU100-CU102-103
Scale: 1:20

EP	ZS	MW	~~2025.06.09~~
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
ENLARGED UTILITY PLAN
AREA 1

Revision: ___ 14
Drawing No.
CU102

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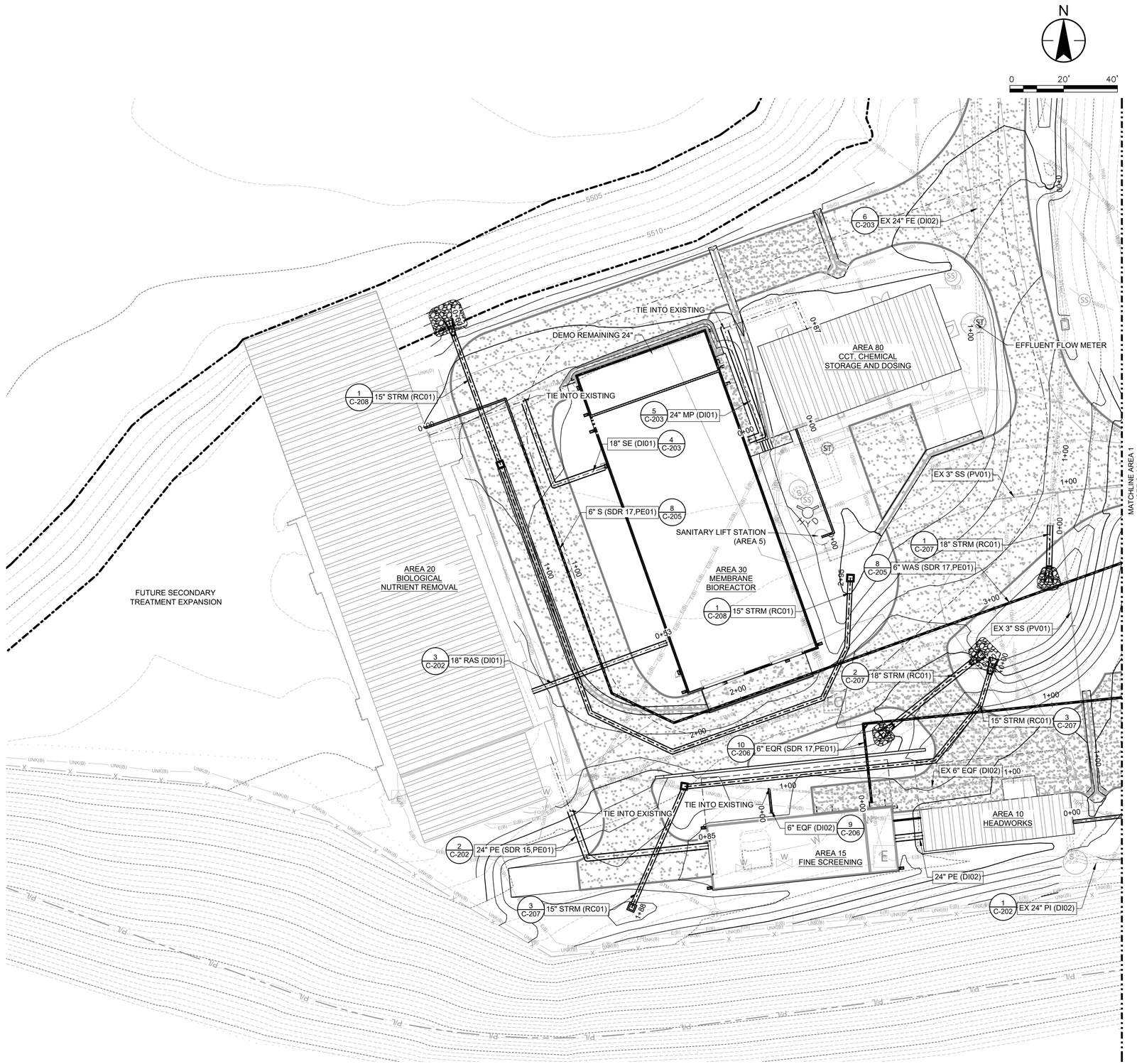
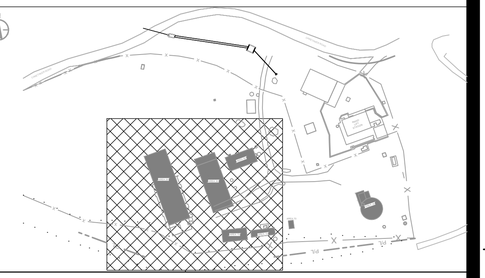


1 C-103 ENLARGED AREA 2 UTILITY PLAN

SCALE: 1:20

KEY PLAN



GENERAL SHEET NOTES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL POTHOLE FOR EXISTING UTILITIES PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FOR POINTS OF CONNECTION.
2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE.

SHEET KEYNOTES

A. XXXXX

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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B	EP - L&E	2025.08.20	Issued
ZS	ZS	2025.08.20	
SSC			

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT

CHATFIELD BASIN WRF REFURBISHMENT

11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899

File Name: 01899C-WP3-CU100-CU102-103

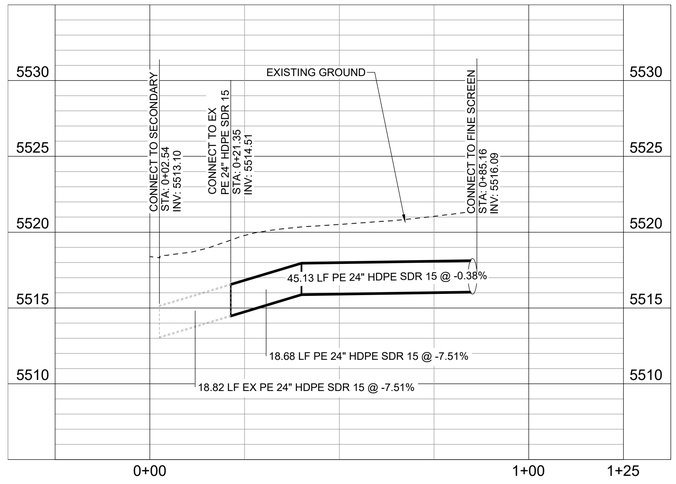
Scale: 1:20

EP	ZS	MW	2025.08.20
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
ENLARGED UTILITY PLAN
AREA 2

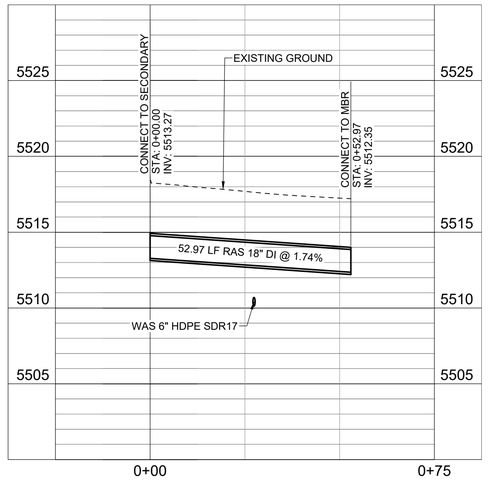
Revision: ___ 15

Drawing No.
CU103



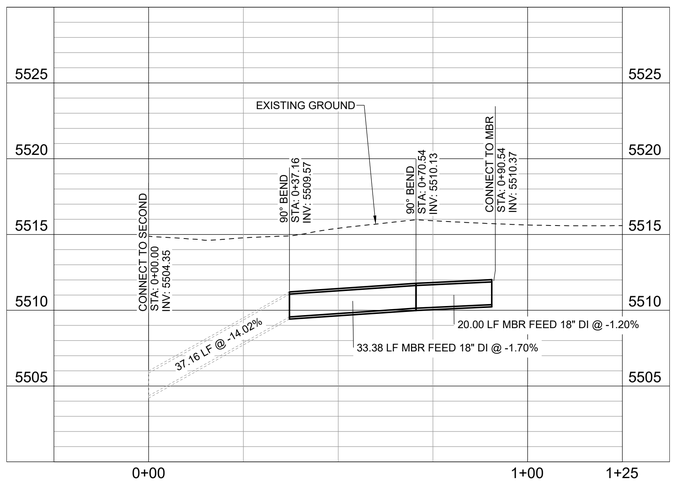
1 C-102 **24" HDPE - PRIMARY EFFLUENT**

HOR: 1"=20' VERT:1"=4'



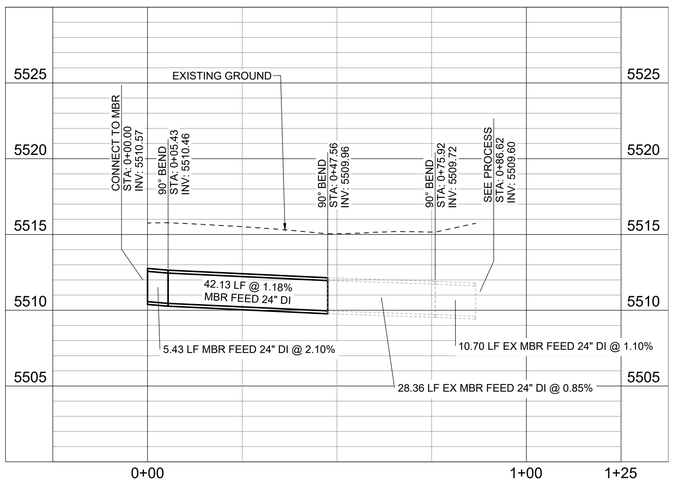
2 C-102 **18" DUCTILE IRON - RETURN ACTIVATED SLUDGE**

HOR: 1"=20' VERT:1"=4'



3 C-102 **18" DUCTILE IRON - MEMBRANE FEED**

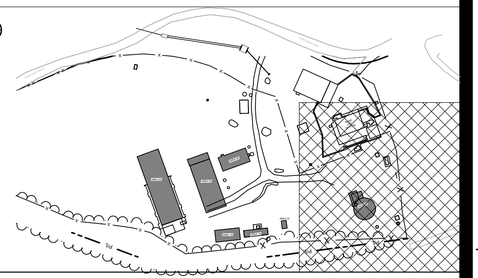
HOR: 1"=20' VERT:1"=4'



4 C-102 **24" DUCTILE IRON - MEMBRANE FEED**

HOR: 1"=20' VERT:1"=4'

KEY PLAN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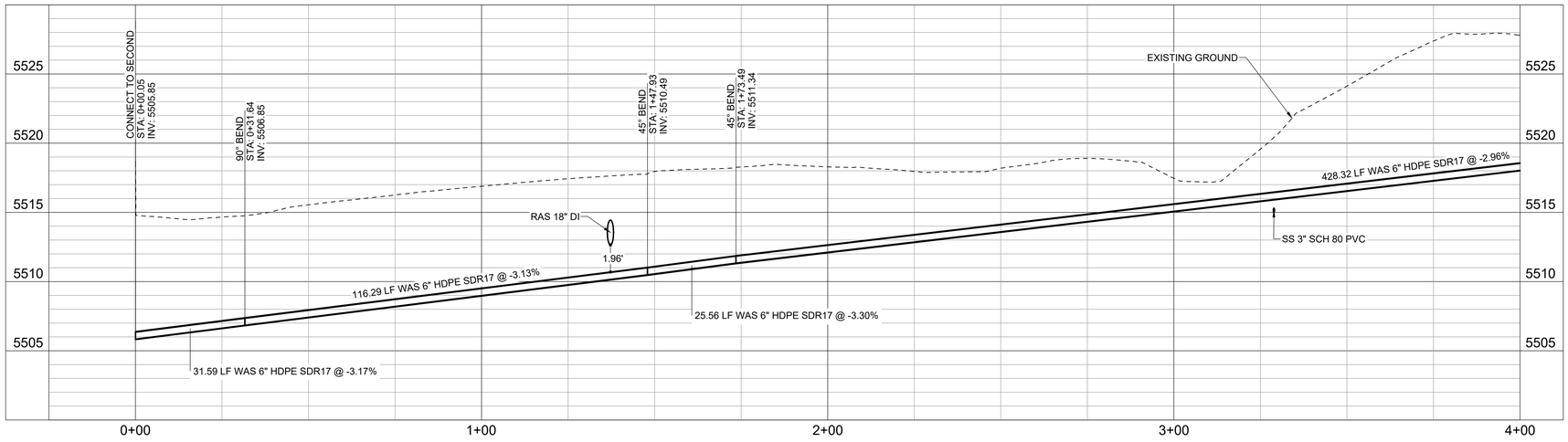
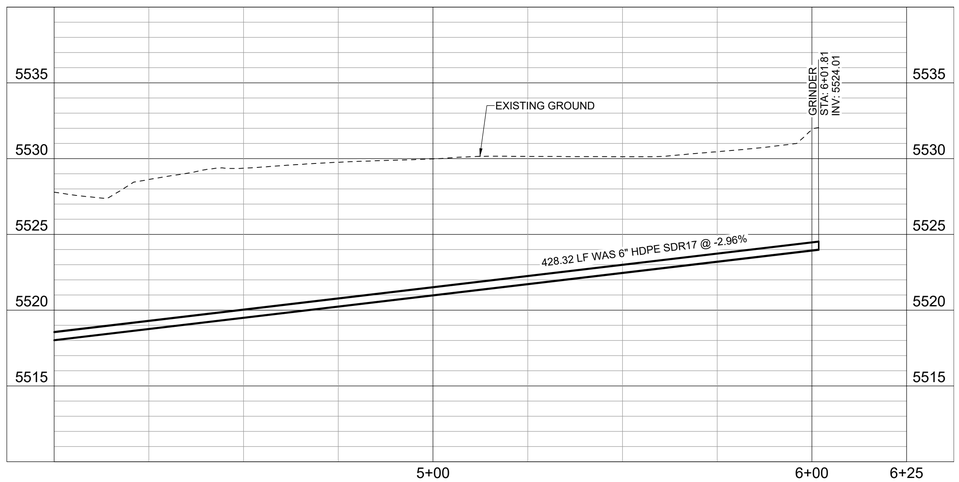


5 C-102 6" HDPE SDR 17 - WASTE ACTIVATED SLUDGE

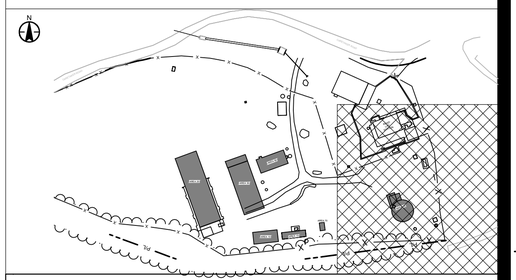
HOR: 1"=20' VERT:1"=4'



5 C-102 6" HDPE SDR 17 - WASTE ACTIVATED SLUDGE

CONTINUED - SEE BELOW HOR: 1"=20' VERT:1"=4'

KEY PLAN



GENERAL SHEET NOTES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL POTHOLE FOR EXISTING UTILITIES PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FOR POINTS OF CONNECTION.
2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE.
3. SEE G-003 FOR PIPE AND MATERIAL SCHEDULE.

SHEET KEYNOTES

A. REMOVE COVER AND ECCENTRIC CONE. ADD NEW PRECAST MANHOLE SECTION WITH 24" PENETRATION FOR BYPASS TO EQUALIZATION TANK.

B. ROUTE 24" GRAVITY BYPASS TO OPENING IN ROOF. REFER TO 18D-301 FOR TANK CONNECTION DETAIL.

C. AEROBIC DIGESTER TO BE RE-PURPOSED AS EQUALIZATION (EQ) TANK.

D. REROUTE 6" TANK OVERFLOW TO LIFT STATION OVERFLOW MANHOLE.

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

THESE CONSTRUCTION DRAWINGS HAVE BEEN REVIEWED BY DOUGLAS COUNTY FOR LOCATION AND EXTENTS PERMIT ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

Stantec
410 17th Street, Suite 1400
Denver, CO, 80202
Tel: +1.303.295.1717
www.stantec.com

The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing. Any discrepancies must be reported to the Consultant immediately.
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Consultant

No.	By	Appd	YYYY.MM.DD	Revision
B	IPP - LA E	SSC	ZS	2025.08.20	Issued

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD.
LITTLETON, CO 80125

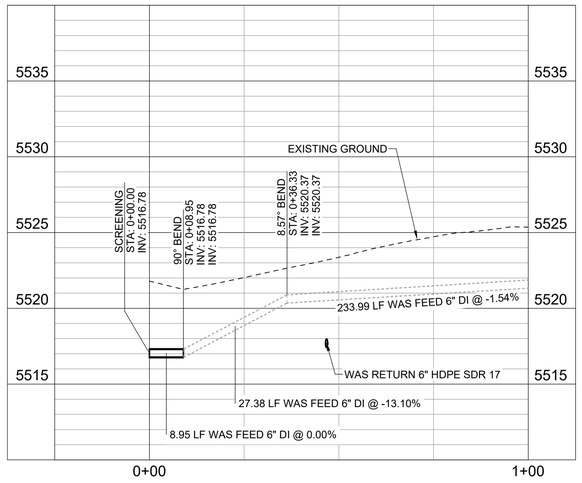
Project No.: 181301899
File Name: 01899C-WP3-CU200-CU202-CU208
Scale: SCALE

Dwn.	Dsgn.	Chkd.
		2025.08.01 YYYY.MM.DD

Title
PIPING PROFILES 4-6

Revision: 17
Drawing No.
C-203

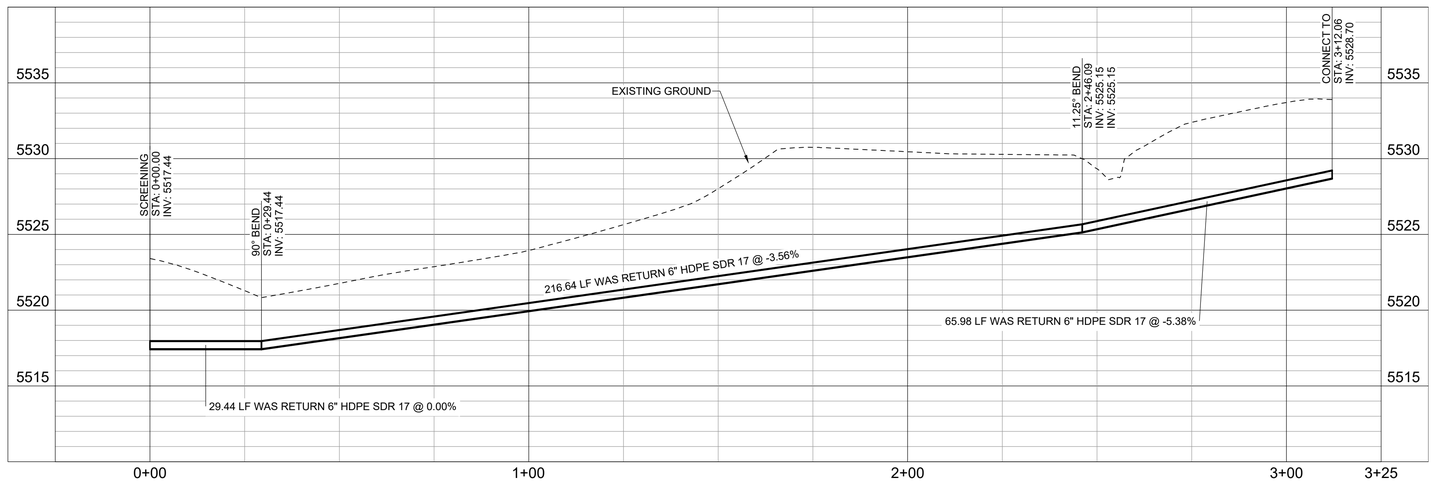
C:\Users\jzamzow\OneDrive - Stantec\Documents\Projects\181301899_dwg\181301899_sheet_pcd_D5_wwtp.dwg, 2025.08.20 2:55:14 PM, C:\Users\jzamzow\OneDrive - Stantec\Documents\Projects\181301899_dwg\04_civil\sheet files\01-899C-wp3-cu200-cu202-cu208



6 C-102

6" DUCTILE IRON - WASTE ACTIVATED SLUDGE FEED

HOR: 1"=20' VERT:1"=4'



7 C-102

6" HDPE SDR 17 - WASTE ACTIVATED SLUDGE RETURN

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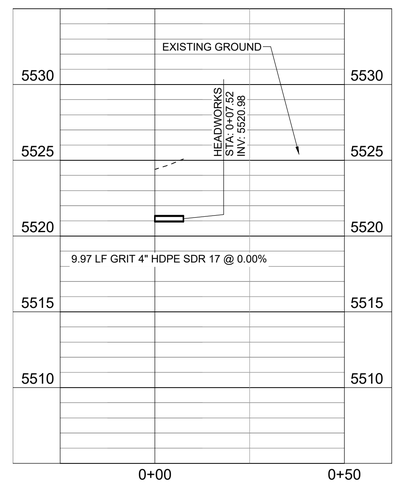


8 C-102

4" HDPE SDR 17 - GRIT

HOR: 1"=20' VERT:1"=4'

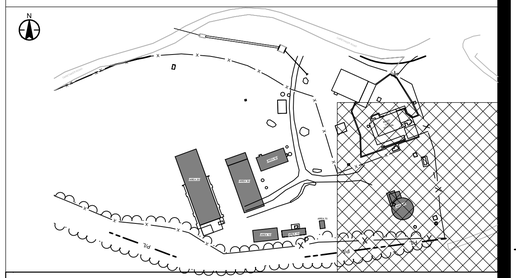
ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

THESE CONSTRUCTION DRAWINGS HAVE BEEN REVIEWED BY DOUGLAS COUNTY FOR LOCATION AND EXTENTS PERMIT ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

KEY PLAN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ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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ENGINEERING DIVISION ACCEPTANCE BLOCK

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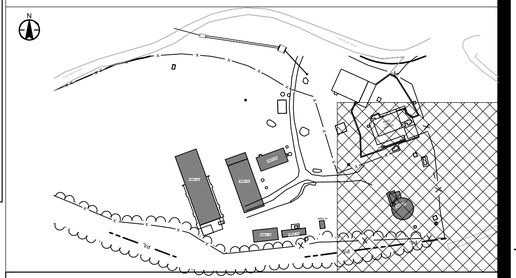
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ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

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THESE CONSTRUCTION DRAWINGS HAVE BEEN REVIEWED BY DOUGLAS COUNTY FOR LOCATION AND EXTENTS PERMIT ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

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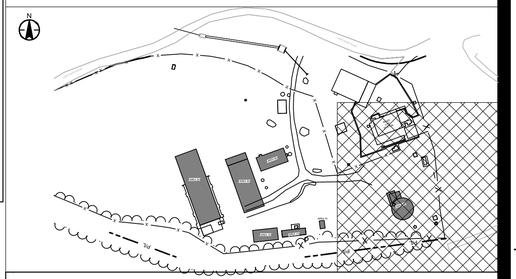
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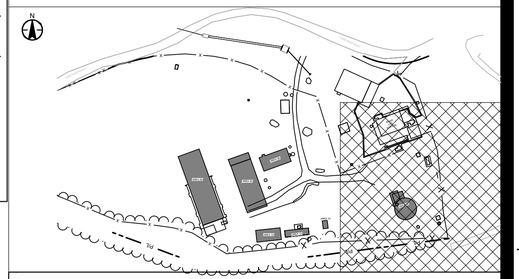
ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

THESE CONSTRUCTION DRAWINGS HAVE BEEN REVIEWED BY DOUGLAS COUNTY FOR LOCATION AND EXTENTS PERMIT ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

KEY PLAN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Appendix C

Traffic Narrative

Stantec

Memo

To:	Douglas County	From:	Stantec Consulting Services, Inc.
File:	CBWRF	Date:	June 13, 2025

Reference: Chatfield Basin WRF Traffic Narrative

1 Background

Planned improvements at the Chatfield Basin site, located at 11310 Caretaker Rd, Littleton, and within Douglas County, warrant the need for a traffic narrative to discuss any potential impacts. At the time of this report the CBWRF is in the process of updating the address. Previously the address for this site was 11290 Caretaker Rd, however the physical location is unchanged. All information included in this narrative was provided by the contractor, unless otherwise noted.

2 Existing Conditions

While this facility is not currently in operation or continuously manned, two lab employees enter the site three days a week for sampling, resulting in two peak hour trips. There are no deliveries occurring during this time. The limited number of vehicles accessing the site has negligible impacts on existing traffic and roadway infrastructure.

3 Construction Conditions

Construction trips will consist exclusively of daily workers and operating equipment. During peak construction (March 2026) there will be 22 workers accessing the site. In addition to these workers, there will be two lab employees accessing the site for sampling. All workers and employees are expected to access the site during the AM peak hour and depart during the PM peak hour. Details regarding frequency and timeline of construction equipment trips are described below.

- **90-ton Boom Crane (Swing Seat):** One peak hour trip occurring six times throughout the construction period is required for scheduled installations. The crane will arrive onsite during the AM peak hour and depart during the PM peak hour. These trips will not occur on the same days as those associated with the Concrete Pump Truck.
- **18-Wheeler with Lowboy Trailer (50’ long):** It is estimated that the peak day will experience four total deliveries. Assuming that half of these will arrive and depart from the site during a single peak hour, this results in four total peak hour trips

- **10,000-lb RT Forklift:** Two forklifts will be brought to the site at the beginning of construction and remain until construction operations are complete. These trips will not contribute to totals during the peak month.
- **Concrete Pump Truck:** A maximum of 25 concrete trucks will access the site over the course of five hours. Assuming an even arrival rate, five of these will arrive and depart during a single peak hour, resulting in 10 peak hour trips. These trips will last for one or two days and will not occur on the same days as those associated with the 90-ton Boom Crane.

Trip Type	Peak Hour Trips	Peak Construction	Off-Peak Construction	Notes
Workers/Employees	24	X		
90-ton Boom Crane	1	X		No overlap with concrete trucks
18-Wheeler	4	X		
10k-lb RT Forklift	2		X	Beginning of construction
Concrete Pump Truck	10	X		No overlap with boom crane

Based on the information described above, a maximum of 38 peak hour trips will occur during the peak month of construction. Depending on departure rates from the site, the existing northbound-left storage lane along Dante Dr may be insufficient. Additionally, the Waterton Road median storage area is likely too short to accommodate the larger construction equipment and may pose safety and operation concerns when attempting to perform a left-turn maneuver. Because of this, right-turn movements onto and off of Waterton Road are advised when possible.

4 Future Conditions

After construction operations are completed, there will be four employees at the site for seven days a week. These employees are expected to arrive at the site during the AM peak hour and depart from the site during the PM peak hour. In addition to these employees, there will be up to four deliveries occurring every other week. It is assumed that each delivery will arrive and depart within the same hour. It is not expected that all four deliveries will occur during a single peak hour; however, even if they did all occur during a single peak hour, this would result in eight peak hour trips. The maximum number of total peak hour trips occurring during the Future Conditions is twelve. It is not expected that this number of peak hour trips will have significant impacts on future traffic and roadway infrastructure.

Regards,

Stantec Consulting Services Inc.

Brent Hypnarowski, PE
Traffic Engineer
Phone: (303) 285-4532
brent.hypnarowski@stantec.com

Appendix D

Stormwater Detention and Infiltration Design Data Sheet (Water Quality)

Stormwater Detention and Infiltration Design Data Sheet

SDI-Design Data v2.00, Released January 2020

Stormwater Facility Name: **Chatfield Basin Water Reclamation Facility Refurbishment Project**

Facility Location & Jurisdiction: **11310 Caretaker Road, Littleton CO. Douglas County**

User Input: Watershed Characteristics

Extended Detention Basin (EDB)	EDB	
Watershed Area =	3.80	acres
Watershed Length =	700	ft
Watershed Length to Centroid =	300	ft
Watershed Slope =	0.008	ft/ft
Watershed Imperviousness =	39.00%	percent
Percentage Hydrologic Soil Group A =	73.00%	percent
Percentage Hydrologic Soil Group B =	0.0%	percent
Percentage Hydrologic Soil Groups C/D =	27.00%	percent
Target WQCV Drain Time =	40.0	hours

Location for 1-hr Rainfall Depths (use dropdown):

User Input

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

Once CUHP has been run and the Stage-Area-Discharge information has been provided, click 'Process Data' to interpolate the Stage-Area-Volume-Discharge data and generate summary results in the table below. Once this is complete, click 'Print to PDF'.

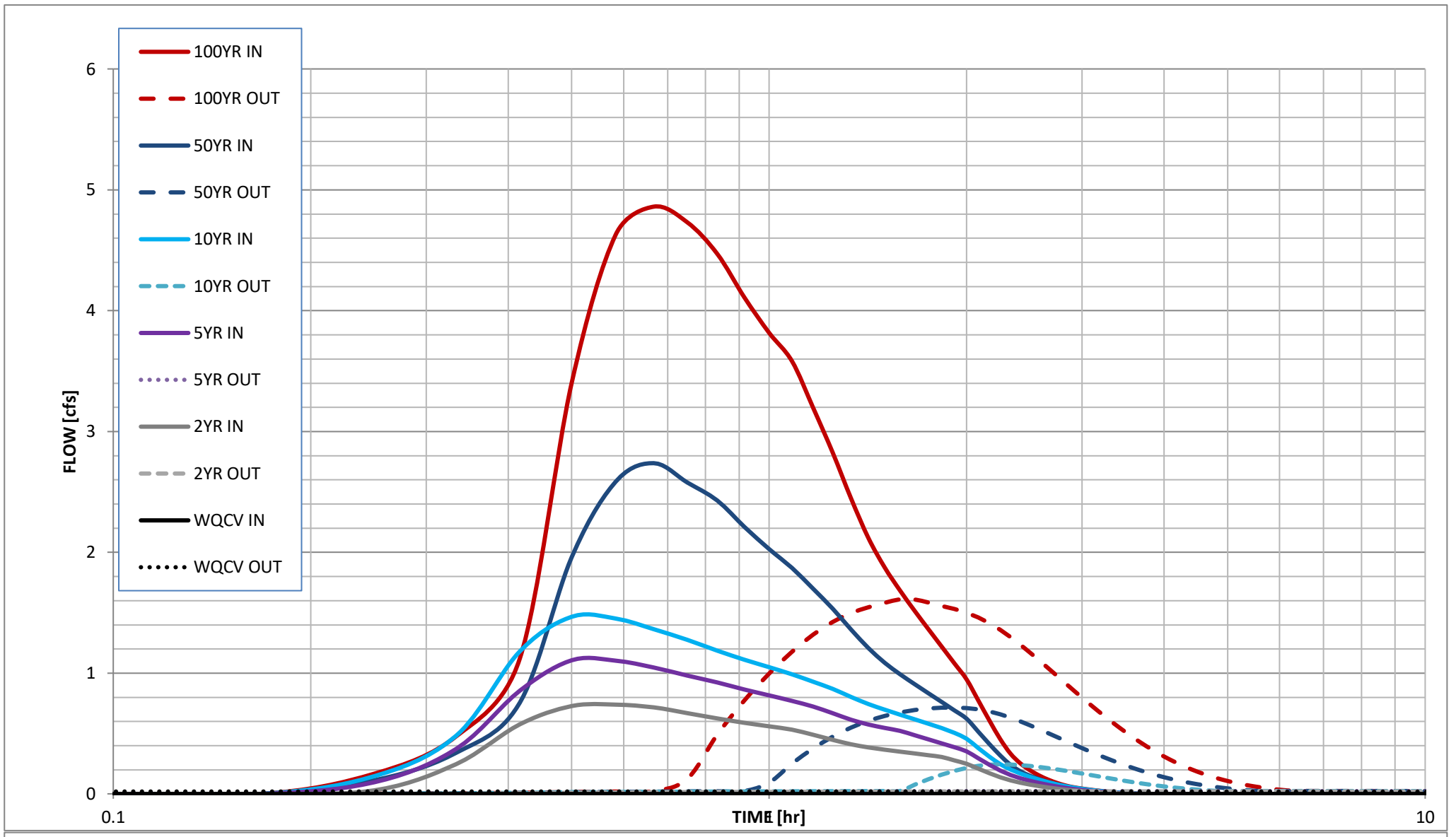
User Defined Stage [ft]	User Defined Area [ft^2]	User Defined Stage [ft]	User Defined Discharge [cfs]
0.00	21	0.00	0.000
0.80	1,838	0.80	0.015
1.80	6,138	1.80	0.025
2.61	9,307	2.61	1.566
2.80	10,050	2.80	2.531
3.80	12,900	3.80	4.866

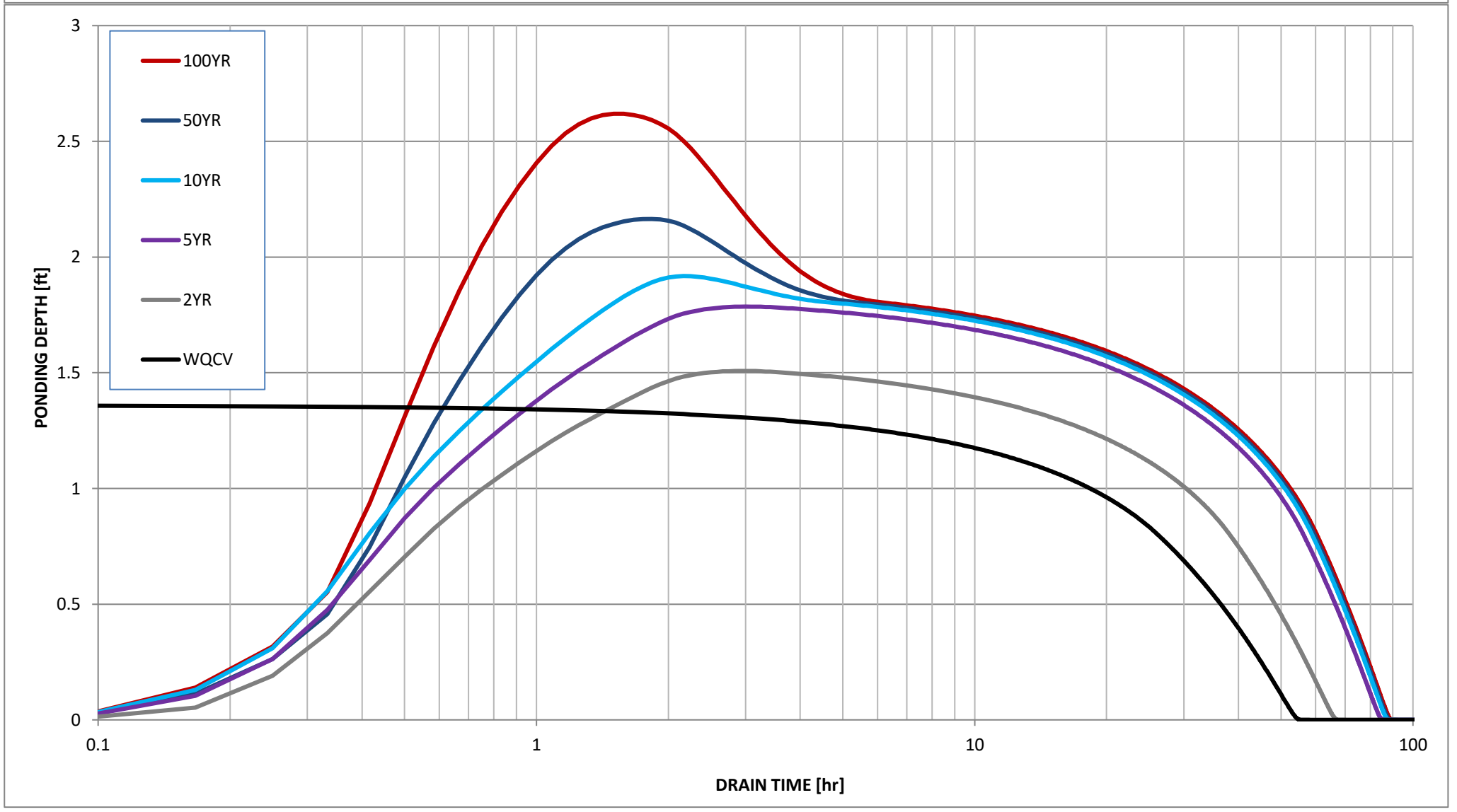
After completing and printing this worksheet to a pdf, go to:
https://maperture.digitaldataservices.com/gvh/?viewer=cswdif
Create a new stormwater facility, and attach the PDF of this worksheet to that record.

Routed Hydrograph Results

Design Storm Return Period =	WQCV	2 Year	5 Year	10 Year	50 Year	100 Year	
One-Hour Rainfall Depth =	N/A	0.82	1.10	1.35	1.99	2.29	in
CUHP Runoff Volume =	0.056	0.076	0.112	0.146	0.232	0.406	acre-ft
Inflow Hydrograph Volume =	N/A	0.076	0.112	0.146	0.232	0.406	acre-ft
Time to Drain 97% of Inflow Volume =	45.3	55.8	**71.7**	72.6	69.6	64.7	hours
Time to Drain 99% of Inflow Volume =	49.1	60.3	77.0	78.6	77.2	**74.6**	hours
Maximum Ponding Depth =	1.36	1.51	1.79	1.92	2.16	2.62	ft
Maximum Ponded Area =	0.10	0.11	0.14	0.15	0.17	**0.21**	acres
Maximum Volume Stored =	0.056	0.072	0.106	0.125	0.165	0.253	acre-ft

Stormwater Detention and Infiltration Design Data Sheet





From: mailer@digitaldataservices.com
To: Corby, Jordan
Subject: Stormwater Detention and Infiltration Facility - Chatfield Basin WRF
Date: Thursday, June 19, 2025 10:40:42 AM

You don't often get email from mailer@digitaldataservices.com. Learn why this is important

Thank you for submitting to the Colorado Stormwater Detention and Infiltration database. Your facility has been recorded and the local jurisdiction has been notified.

Facility ID:	SWDF-20250619094037
Name:	Chatfield Basin WRF
Division:	South Platte
Jurisdiction:	DouglasCo
Design Storm:	Full Spectrum
Water Surface Acres:	0.30
Edit Key:	e8486d7b304f276c24cd643f6b151553

If you wish to edit the facility in the future, you will need the Edit Key listed above. If you lose the key, you will not be able to edit the facility information in the future.

Caution: This email originated from outside of Stantec. Please take extra precaution.

Attention: Ce courriel provient de l'extérieur de Stantec. Veuillez prendre des précautions supplémentaires.

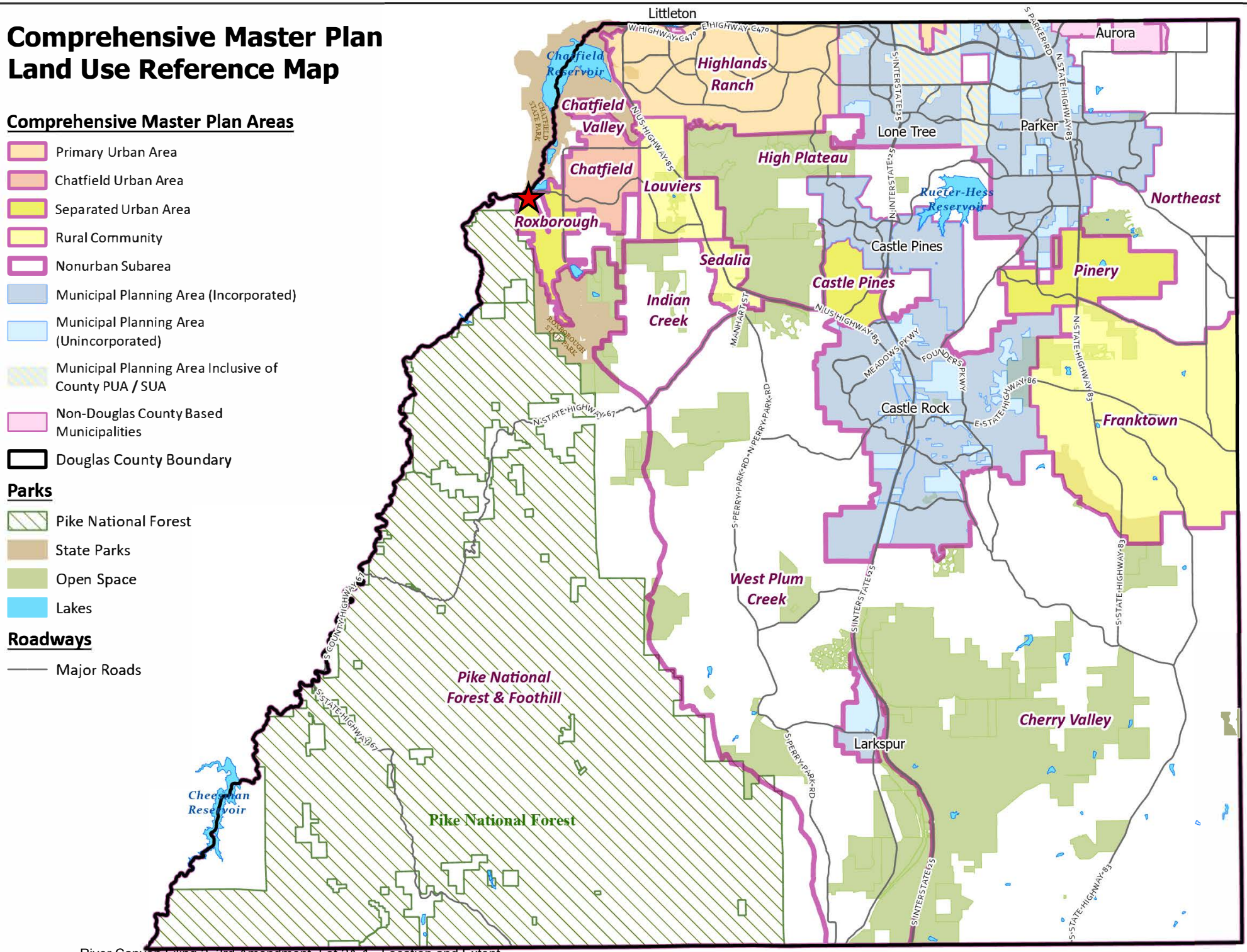
Atención: Este correo electrónico proviene de fuera de Stantec. Por favor, tome precauciones adicionales.

With every community, we redefine what's possible.

Stantec is a global leader in sustainable engineering, architecture, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.

Stantec Consulting Services Inc.
410 17th Street, Suite 1500
Denver CO 80202-4427
stantec.com

Comprehensive Master Plan Land Use Reference Map

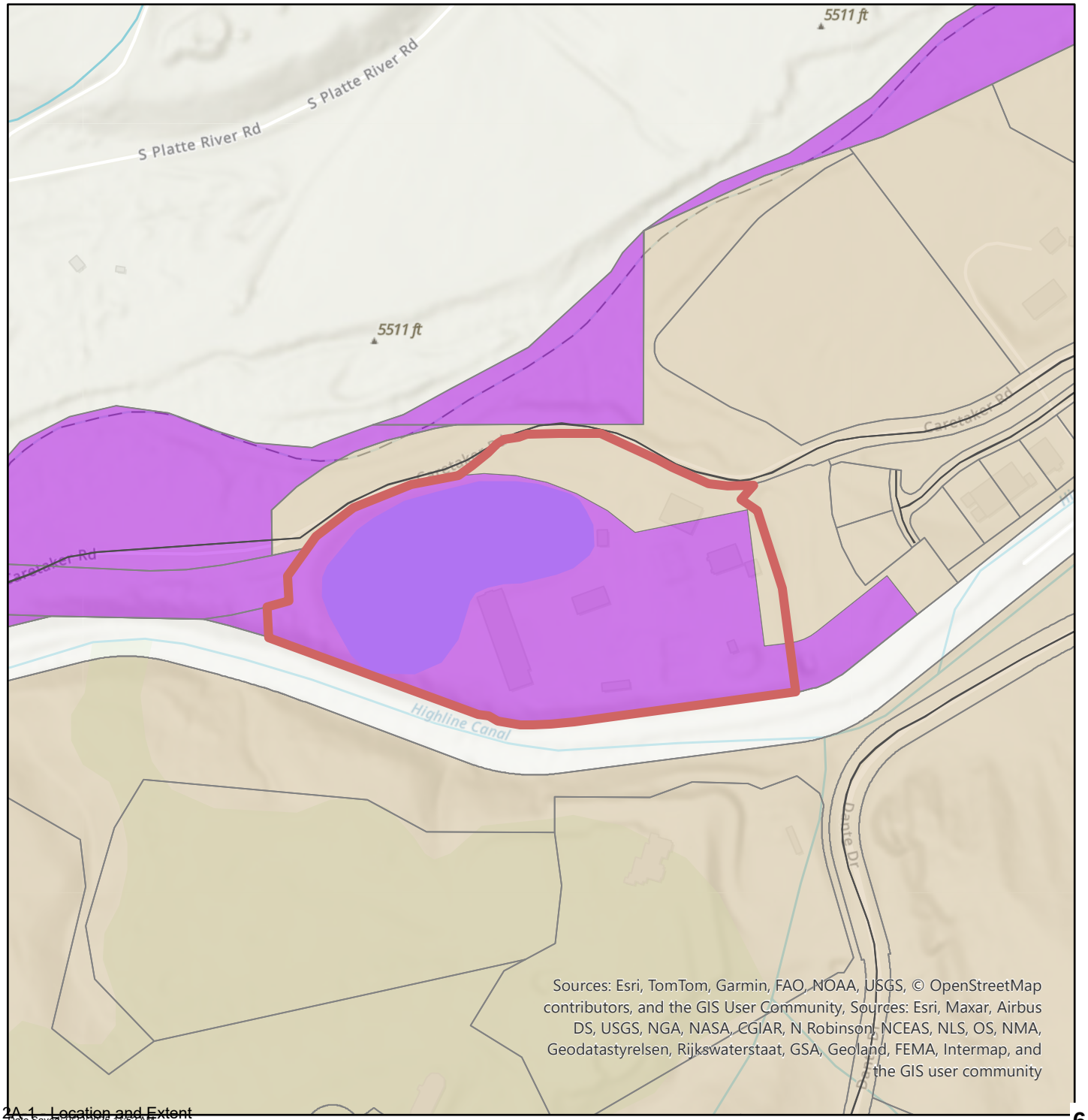


River Canyon Filing 2, 3rd Amendment, Lot 2A-1

LE2025-018
Zoning Map

N

LEGEND
- Roads
- Major Roads
- Parcels - PARCELS
- A1 - AGRICULTURAL ONE
- GI - GENERAL INDUSTRIAL
- PD - PLANNED DEVELOPMENT



River Canyon Filing 2, 3rd Amendment, Lot 2A-1

LE2025-018
Aerial Map

N

LEGEND
- Roads
- Major Roads
- Parcels - PARCELS

Source: https://apps.douglas.co.us/gisportal/apps/webappviewer/index.html?id=9cd173c692b7436891bd0bd0

Project Name: River Canyon Filing 2, 3rd Amendment, Lot 2A-1
Project File #: LE2025-018
Date Sent: 09/19/2025 **Date Due:** 10/02/2025

Agency	Date Received	Agency Response	Response Resolution
AT&T Long Distance - ROW		Awaiting referral response	Awaiting referral response
Addressing Analyst	09/19/2025	New addresses have been assigned to the two additional buildings proposed with this project. The entire site was recently re-addressed per request from Dominion Water and Sanitation District. See below and the attached address map for details. Current Addresses 11300 Caretaker Road 11306 Caretaker Road 11310 Caretaker Road 11314 Caretaker Road 11324 Caretaker Road New Addresses 11318 Caretaker Road 11320 Caretaker Road Contact DCAddressing@douglas.co.us or 303.660.7449 with questions.	Information provided to applicant
Assessor		Awaiting referral response	Awaiting referral response
Black Hills Energy		Awaiting referral response	Awaiting referral response
Building Services		Awaiting referral response	Awaiting referral response
Comcast		Awaiting referral response	Awaiting referral response
Engineering Services		Awaiting referral response	Awaiting referral response
CORE Electric Cooperative	09/22/2025	We have received the above-referenced referral request. We have reviewed our records and find that this property is not in our service territory.	No response necessary
Jefferson County Planning and Zoning		Awaiting referral response	Awaiting referral response
Office of Emergency Management	09/19/2025	No comment	No response necessary
Douglas County Health Department		Awaiting referral response	Awaiting referral response
Mile High Flood District		Awaiting referral response	Awaiting referral response
CenturyLink		Awaiting referral response	Awaiting referral response
Sheriff's Office		Awaiting referral response	Awaiting referral response
Sheriff's Office E911		Awaiting referral response	Awaiting referral response
US Army Corp of Engineers		Awaiting referral response	Awaiting referral response
South Metro Fire Rescue		Awaiting referral response	Awaiting referral response
West Metro Fire Protection District		Awaiting referral response	Awaiting referral response
Arrowhead Shores		Awaiting referral response	Awaiting referral response

Project Name: River Canyon Filing 2, 3rd Amendment, Lot 2A-1
Project File #: LE2025-018
Date Sent: 09/19/2025 **Date Due:** 10/02/2025

Chatfield Community Association	09/20/2025	See attached letter. Summary: Concerns regarding water quality and that it may be premature to approve prior to CDPHE and Denver Water approvals	Comments forwarded to applicant
Chatfield Farms 1-A		Awaiting referral response	Awaiting referral response
Chatfield Farms 1-B HOA		Awaiting referral response	Awaiting referral response
Ravenna Homeowners Master Association		Awaiting referral response	Awaiting referral response
Roxborough Park Foundation		Awaiting referral response	Awaiting referral response
Roxborough Ridge HOA		Awaiting referral response	Awaiting referral response
Roxborough Village Filing 14B HOA		Awaiting referral response	Awaiting referral response
Roxborough Village First HOA		Awaiting referral response	Awaiting referral response
Ravenna Metro District		Awaiting referral response	Awaiting referral response
CDPHE – All Referrals		Awaiting referral response	Awaiting referral response
CDPHE – Water Quality Control Division		Awaiting referral response	Awaiting referral response
Roxborough Water & Sanitation District		Awaiting referral response	Awaiting referral response
Denver Water Board		Awaiting referral response	Awaiting referral response
Rural Water Authority of Douglas County		Awaiting referral response	Awaiting referral response
Xcel Energy-Right of Way & Permits		Awaiting referral response	Awaiting referral response
High Line Canal Conservancy		Awaiting referral response	Awaiting referral response

Trevor Bedford

From: Chatfield Community Association <chatfieldcommunity@gmail.com>
Sent: Saturday, September 20, 2025 12:02 PM
To: Trevor Bedford
Subject: Referral LE2025-018, Dominion Wastewater Treatment Plant

Chatfield Community Association Mission

The mission of CCA is to preserve the character of the Chatfield Basin, and to ensure that development in the area at least meets all state and county regulations, has adequate water, doesn't adversely impact existing residents, and hopefully blends well with the existing semi-rural nature.

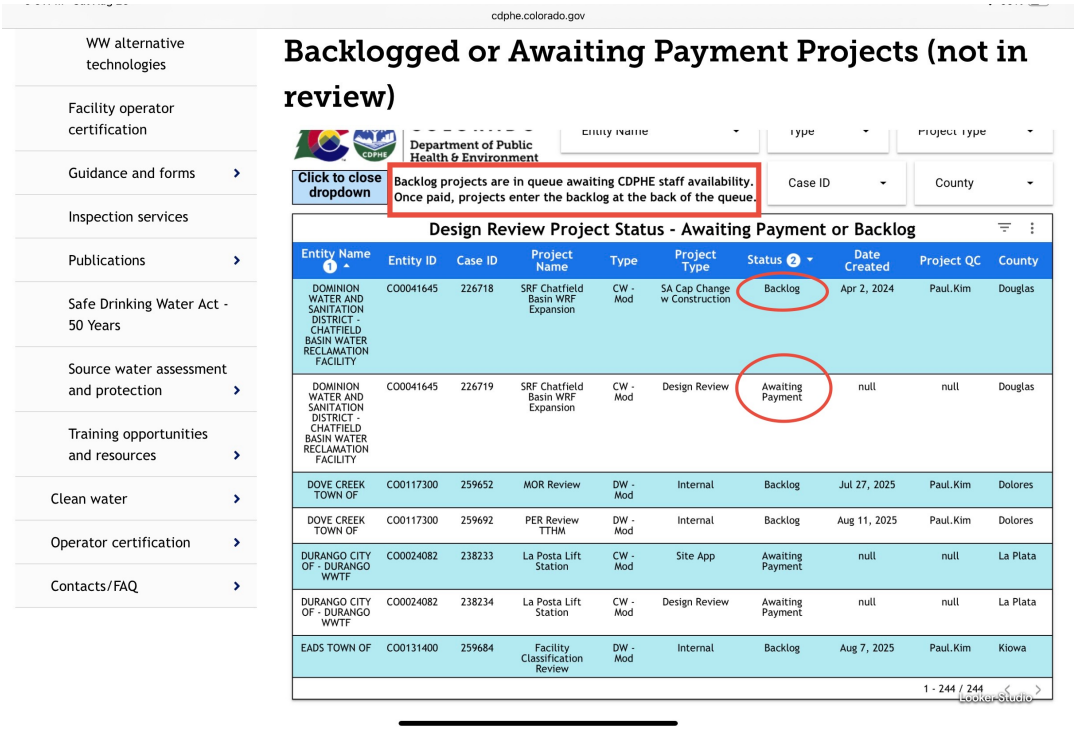
We emphasize objective, factual referral and public hearing comments when possible. But some views are inevitably subjective regarding quality of life, rural life, dark skies, and the like

tbedford@douglas.co.us
Trevor Bedford
Referral LE2025-018
River Canyon Filing 2, 3rd Amendment, Lot 2A-1

Trevor Bedford,

We have the following concerns and questions regarding the Chatfield Basin Water Reclamation Facility proposed refurbishment.

Approval of this application seems premature in as much as Dominion Water and Sanitation District (DWSD) does not appear to have a permit for the wastewater facility. Rules and regulations for the South Platte Basin are being updated, so plans submitted to the county may not meet new regulations when and if a permit is given to DWSD.



Entity Name	Entity ID	Case ID	Project Name	Type	Project Type	Status	Date Created	Project QC	County
DOMINION WATER AND SANITATION DISTRICT - CHATFIELD BASIN WATER RECLAMATION FACILITY	CO0041645	226718	SRF Chatfield Basin WRF Expansion	CW - Mod	SA Cap Change w Construction	Backlog	Apr 2, 2024	Paul.Kim	Douglas
DOMINION WATER AND SANITATION DISTRICT - CHATFIELD BASIN WATER RECLAMATION FACILITY	CO0041645	226719	SRF Chatfield Basin WRF Expansion	CW - Mod	Design Review	Awaiting Payment	null	null	Douglas
DOVE CREEK TOWN OF	CO0117300	259652	MOR Review	DW - Mod	Internal	Backlog	Jul 27, 2025	Paul.Kim	Dolores
DOVE CREEK TOWN OF	CO0117300	259692	PER Review TTHM	DW - Mod	Internal	Backlog	Aug 11, 2025	Paul.Kim	Dolores
DURANGO CITY OF - DURANGO WWTF	CO0024082	238233	La Posta Lift Station	CW - Mod	Site App	Awaiting Payment	null	null	La Plata
DURANGO CITY OF - DURANGO WWTF	CO0024082	238234	La Posta Lift Station	CW - Mod	Design Review	Awaiting Payment	null	null	La Plata
EADS TOWN OF	CO0131400	259684	Facility Classification Review	DW - Mod	Internal	Backlog	Aug 7, 2025	Paul.Kim	Kiowa

1 - 244 / 244

We have not seen an agreement with the State or Denver Water for a discharge permit. Plans submitted to the county may not meet requirements by the State or Denver Water for water quality. The location of the discharge facility could change from the submitted plan depending on the agreement with the State and Denver Water.

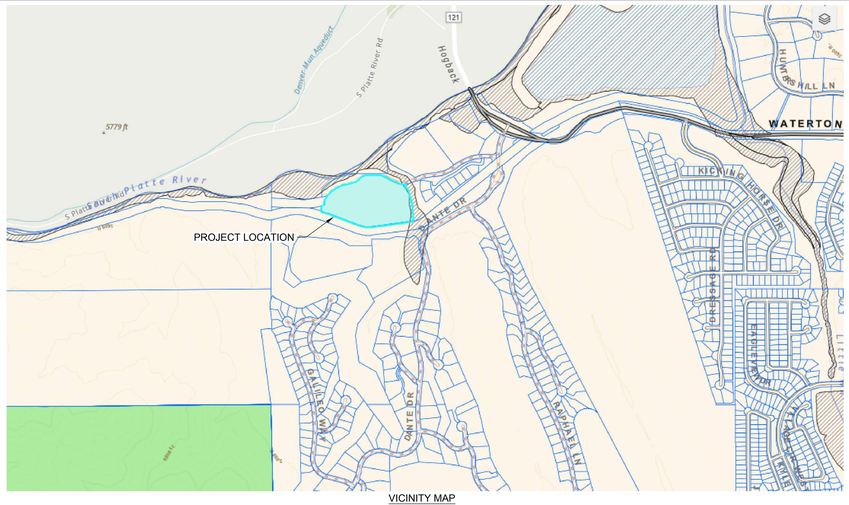
Is DWSD allowed to begin construction on the wastewater treatment plant prior to approval by the State?

How can the requirements from the county Douglas County Storm Drainage and Design be certain to be adequate when it does not appear that the State has issued requirements for the facility? A 100 year floodplain area boarders part of the DWSD property. Shouldn't DWSD build their wastewater facility to a standard higher than 100 years? In the 2013 flood in Larimer and Boulder counties, several wastewater facilities were affected, causing water contamination for miles downstream. Plans for DWSD's wastewater plant should be built to a higher standard than 100 years in order to protect Chatfield Reservoir drinking water and waters downstream.

We do not see any discussion in this application about plans for reuse of wastewater. If wastewater is discharged into the Platte which has nearby diversions for drinking water and additional discharge water will flow into Chatfield Reservoir, a drinking water supply for a number of districts, we would think any discharge would have to be of a high quality. It is disappointing there is not a more forward thinking facility being designed such as a plan for a closed loop system for reuse. DWSD shows reuse water on only some of their water supply charts, making it unclear if DWSD will actually reuse any of their wastewater discharge. We do not see a permit for a diversion for DWSD to get their wastewater off of the Platte for that reuse.

Until regulations are finalized and permits are issued, this application seems premature and should not be approved.

Team CCA



VICINITY MAP

LEGAL DESCRIPTION

A PARCEL OF LAN BEING A PART OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 6 SOUTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY DOUGLAS, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

LOT 2A, RIVER CANYON FILING NO. 2, 1ST AMENDMENT RECORDED AT RECEPTION NO. 201600108 IN THE OFFICIAL RECORDS OF DOUGLAS COUNTY, COLRADO CLERK AND RECORDER'S OFFICE.

CONTAINING AN AREA OF 12.530 ACRES, (545,803 SQUARE FEET), MORE OR LESS.

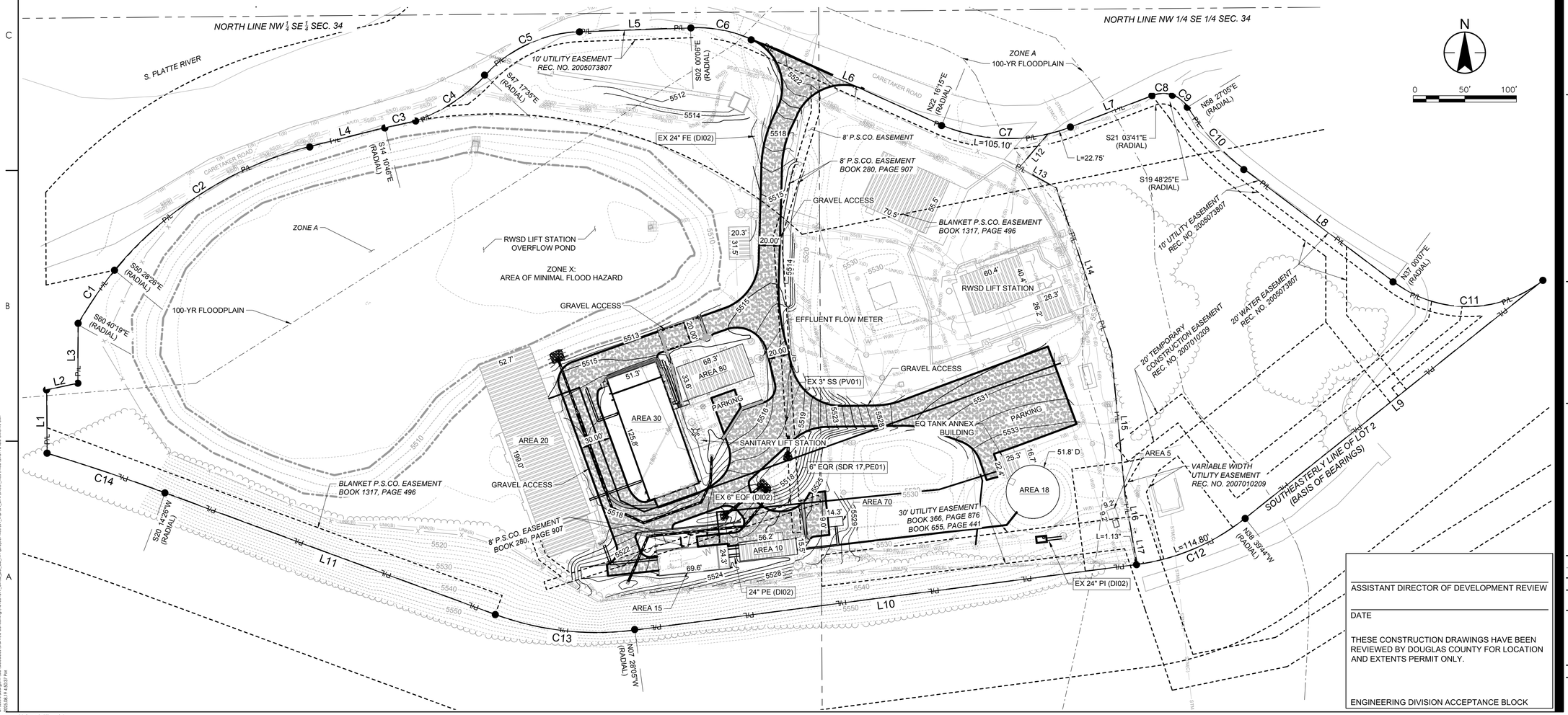
BUILDING DESCRIPTION			
AREA	BUILDING DESCRIPTION	BLDG ELEVATION (FT)	BLDG HEIGHT (FT)
5	ELECTRICAL HOUSING	5528.86	5540.86
10	HEADWORKS	5525.68	5541.01
15	FINE SCREENING*	5524.50	5546.50
18	EQUALIZATION TANK	5534.00	5543.25
20	BIOLOGICAL NUTRIENT REMOVAL	5518.69	5518.69
30	MEMBRANE BIOREACTOR*	5518.00	5549.00
70	ODOR CONTROL	5526.00	5535.00
80	CCT, CHEMICAL, STORAGE AND DOSING	5516.23	5527.15

*pending manufacturer details

WATER & SEWAGE MANAGEMENT	
WATER	DENVER WATER
SEWAGE	ROXBOUROUGH WATER & SANITATION DISTRICT

LINE TABLE		
LINE	BEARING	LENGTH
L1	N00 19'04"W	61.46'
L2	N77 48'26"E	30.71'
L3	N00 19'04"W	57.32'
L4	N75 47'21"E	75.00'
L5	N87 59' 55"E	107.92'
L6	S65 43'43"E	202.28'
L7	N68 56'07"E	84.84'
L8	D52 59' 57"E	180.99'
L9	S51 20'16"W	369.46'
L10	S82 31'56"W	490.08'
L11	N69 45' 34"W	340.87'
L12	N40 23'22"E	42.66'
L13	N60 55'09"W	40.98'
L14	N18 31'24"W	168.00'
L15	N05 26'55"W	139.83'
L16	N09 45'41"W	36.76'
L17	N10 31'12"W	30.87'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C1	10 11'51"	359.50'	63.98'
C2	36 15'46"	359.50'	227.53'
C3	4 00'02"	436.91'	30.51'
C4	27 31'31"	169.00'	81.19'
C5	45 17'32"	131.00'	103.56'
C6	26 18'24"	131.00'	60.15'
C7	43 20'37"	169.00'	127.85'
C8	40 51'56"	28.00'	19.97'
C9	38 38'45"	28.00'	18.89'
C10	21 27'00"	219.00'	81.99'
C11	75 12'50"	119.00'	156.22'
C12	31 11'40"	212.94'	115.93'
C13	27 42'31"	284.25'	137.47'
C14	3 28'28"	1985.08'	120.38'



ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

THESE CONSTRUCTION DRAWINGS HAVE BEEN REVIEWED BY DOUGLAS COUNTY FOR LOCATION AND EXTENTS PERMIT ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

Stantec
Stantec
410 17th Street, Suite 1400
Denver, CO 80202
Tel: 303.291.2277
www.stantec.com

The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay. Copyright reserved. The information contained in this drawing is the property of Stantec. Unauthorized reproduction or use for any purpose other than that authorized by Stantec is forbidden.

Consultant

No.	Revision	By	Appd	YYYY.MM.DD
1	Issued			YYYY.MM.DD

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-LOC-EXTENTS-EXH
Scale: 1"=50'

ZS	SC	RM	2025.08.19
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
LOCATION AND EXTENTS - EXHIBIT

Revision:001

Drawing No.
LOE-EXH

C:\Users\Dungan.rob.cscocloco\Stantec consulting\181301899_dwgs_pcd_cls_surf\project files\01_wip\04_civil\sheet_files\misc\181899c-exterior.dwg
2025.08.19 4:25:57 PM

ORIGINAL SHEET - ANSI D

DOUGLAS COUNTY
COLORADO

Staff Report Addendum

Date: October 3, 2025

To: Douglas County Planning Commission

From: Trevor Bedford, AICP, Senior Planner TB
Jeanette Bare, AICP, Planning Manager SK for JB
Steven E. Koster, AICP, Assistant Director of Planning Services SK

Subject: **River Canyon Filing 2, 3rd Amendment, Lot 2A-1**

Project File: **LE2025-018**

Planning Commission Hearing: **October 6, 2025 @ 6:00 p.m.**

Additional referral responses and public comment have been received since the staff report was written and are attached to this addendum.

The applicant has indicated that it will provide responses to comments prior to or at the Planning Commission Hearing.

ATTACHMENT **PAGE**

Referral Agency Response Report 2
Referral Letters 6
Additional Comment 56

Project Name: River Canyon Filing 2, 3rd Amendment, Lot 2A-1
Project File #: LE2025-018
Date Sent: 09/19/2025 **Date Due:** 10/02/2025

Agency	Date Received	Agency Response	Response Resolution
AT&T Long Distance - ROW	09/24/2025	This is in response to your eReferral with a utility map showing any buried AT&T Long Line Fiber Optics near Caretaker Rd Littleton, Colorado. The Earth map shows the project area in red and the buried AT&T Long Line Fiber Optics in yellow. Based on the address and/or map you provided, there should be NO conflicts with the AT&T Long Line facilities.	Forwarded to applicant
Addressing Analyst	09/19/2025	New addresses have been assigned to the two additional buildings proposed with this project. The entire site was recently re-addressed per request from Dominion Water and Sanitation District. See below and the attached address map for details. Current Addresses 11300 Caretaker Road 11306 Caretaker Road 11310 Caretaker Road 11314 Caretaker Road 11324 Caretaker Road New Addresses 11318 Caretaker Road 11320 Caretaker Road Contact DCAddressing@douglas.co.us or 303.660.7449 with questions.	Forwarded to applicant
Assessor	09/29/2025	Please be aware of the following Comments: None	No response necessary
Black Hills Energy	09/25/2025	No comment	No response necessary
Building Services		No response received	
Comcast		No response received	
Engineering Services	10/01/2025	See attached letter Summary: **Comment #1-**Engineering doesn't have any concerns regarding the proposed location & extent. **Comment #2-**The following items will need to be submitted for review and approval prior to permits being issued for the project: Construction Plans (submitted and redlines are provided) Phase III Drainage Report (submitted and acceptable as submitted) GESC Plans (submitted and redlines are provided) GESC Report (submitted and acceptable as submitted)	Forwarded to applicant

Project Name: River Canyon Filing 2, 3rd Amendment, Lot 2A-1
Project File #: LE2025-018
Date Sent: 09/19/2025 **Date Due:** 10/02/2025

CORE Electric Cooperative	09/22/2025	We have received the above-referenced referral request. We have reviewed our records and find that this property is not in our service territory.	No response necessary
Jefferson County Planning and Zoning		No response received	
Office of Emergency Management	09/19/2025	No comment	No response necessary
Douglas County Health Department	09/24/2025	See attached letter Summary: Provided information regarding abandoning on site wastewater treatment systems.	Forwarded to applicant
Mile High Flood District		No response received	
CenturyLink		No response received	
Sheriff's Office		No response received	
Sheriff's Office E911		No response received	
US Army Corp of Engineers		No response received	
South Metro Fire Rescue	10/01/2025	South Metro Fire Rescue (SMFR) has reviewed the provided documents and determined that this project is not within the district boundaries of SMFR.	No response necessary
West Metro Fire Protection District	10/2/2025	See attached letter Summary: Future permitting and inspections will be required. West Metro has had discussions with the applicant.	Forwarded to applicant
Arrowhead Shores		No response received	
Chatfield Community Association	09/20/2025	See attached letter. Summary: Concerns regarding water quality and that it may be premature to approve prior to CDPHE and Denver Water approvals	Forwarded to applicant
Chatfield Farms 1-A		No response received	
Chatfield Farms 1-B HOA		No response received	
Ravenna Homeowners Master Association		No response received	
Roxborough Park Foundation		No response received	
Roxborough Ridge HOA		No response received	
Roxborough Village Filing 14B HOA		No response received	

Project Name: River Canyon Filing 2, 3rd Amendment, Lot 2A-1
Project File #: LE2025-018
Date Sent: 09/19/2025 **Date Due:** 10/02/2025

Roxborough Village First HOA		See attached letter Summary: Concerns that a lawsuit with Denver Water and other permitting is still needed. Concerns with ARPA funding and proximity to floodplain.	Forwarded to applicant
Ravenna Metro District		No response received	
CDPHE – All Referrals	09/23/2025	See attached letter Summary: Provided information regarding air quality control measures that may apply.	Forwarded to applicant
CDPHE – Water Quality Control Division		No response received	
Roxborough Water & Sanitation District	10/1/2025	See attached letter Summary: **Exhibit LOE-EXH** 1. The new membrane bioreactor building increases impervious area which will lead to more stormwater runoff potentially entering the RWSD Wastewater Overflow Pond with no method for diverting it away from the Overflow Pond. 2. The new storm line is not allowed to be discharged to Overflow Pond. The Overflow Pond use for emergency wastewater storage only. Also with gravel drive, the increase in potential sediment load into the Overflow Pond is not acceptable. **Construction Drawing No. CG-101** 1. Confirm revised grading at existing Roxborough utilities will maintain a pipe cover of at least 5 feet.	Forwarded to applicant
Denver Water Board		See attached letter Summary: Concerns regarding lawsuit between Dominion and Denver Water related to this project. Concerns regarding pending permits with NEPA and CDPHE. Concerns that the L&E does not show the full scope of work. Concerns that development may impact Denver Water property. Requested additional information on the plans	Forwarded to applicant
Rural Water Authority of Douglas County		No response received	

Project Name: River Canyon Filing 2, 3rd Amendment, Lot 2A-1
Project File #: LE2025-018
Date Sent: 09/19/2025 **Date Due:** 10/02/2025

Xcel Energy-Right of Way & Permits	09/30/2025	See attached letter Summary: Noted existing facilities along and within the property lines. Provided information regarding required clearances, permitting, and easements.	
High Line Canal Conservancy		No response received	

Trevor Bedford

From: Chatfield Community Association <chatfieldcommunity@gmail.com>
Sent: Saturday, September 20, 2025 12:02 PM
To: Trevor Bedford
Subject: Referral LE2025-018, Dominion Wastewater Treatment Plant

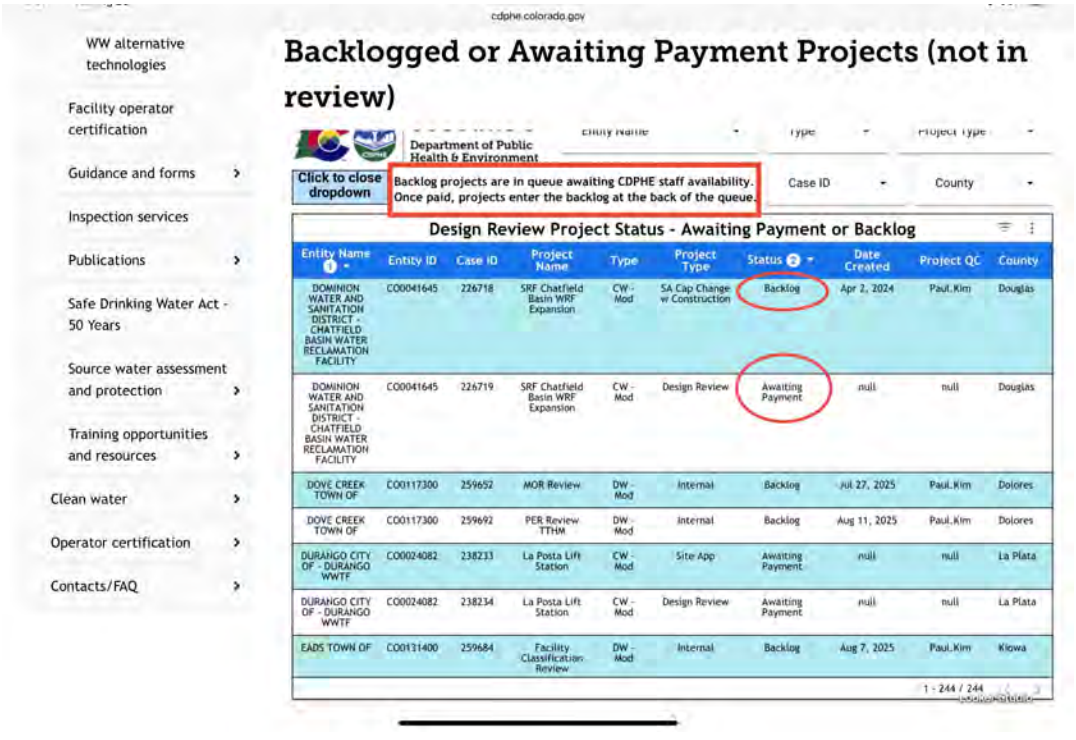
> **Chatfield Community Association Mission**
>
> *The mission of CCA is to preserve the character of the Chatfield Basin, and to ensure that development in the area at least meets all state and county regulations, has adequate water, doesn't adversely impact existing residents, and hopefully blends well with the existing semi-rural nature.*
>
> *We emphasize objective, factual referral and public hearing comments when possible. But some views are inevitably subjective regarding quality of life, rural life, dark skies, and the like*

tbedford@douglas.co.us
Trevor Bedford
Referral LE2025-018
River Canyon Filing 2, 3rd Amendment, Lot 2A-1

Trevor Bedford,

We have the following concerns and questions regarding the Chatfield Basin Water Reclamation Facility proposed refurbishment.

Approval of this application seems premature in as much as Dominion Water and Sanitation District (DWSD) does not appear to have a permit for the wastewater facility. Rules and regulations for the South Platte Basin are being updated, so plans submitted to the county may not meet new regulations when and if a permit is given to DWSD.



We have not seen an agreement with the State or Denver Water for a discharge permit. Plans submitted to the county may not meet requirements by the State or Denver Water for water quality. The location of the discharge facility could change from the submitted plan depending on the agreement with the State and Denver Water.

Is DWSD allowed to begin construction on the wastewater treatment plant prior to approval by the State?

How can the requirements from the county Douglas County Storm Drainage and Design be certain to be adequate when it does not appear that the State has issued requirements for the facility? A 100 year floodplain area boarders part of the DWSD property. Shouldn't DWSD build their wastewater facility to a standard higher than 100 years? In the 2013 flood in Larimer and Boulder counties, several wastewater facilities were affected, causing water contamination for miles downstream. Plans for DWSD's wastewater plant should be built to a higher standard than 100 years in order to protect Chatfield Reservoir drinking water and waters downstream.

We do not see any discussion in this application about plans for reuse of wastewater. If wastewater is discharged into the Platte which has nearby diversions for drinking water and additional discharge water will flow into Chatfield Reservoir, a drinking water supply for a number of districts, we would think any discharge would have to be of a high quality. It is disappointing there is not a more forward thinking facility being designed such as a plan for a closed loop system for reuse. DWSD shows reuse water on only some of their water supply charts, making it unclear if DWSD will actually reuse any of their wastewater discharge. We do not see a permit for a diversion for DWSD to get their wastewater off of the Platte for that reuse.

Until regulations are finalized and permits are issued, this application seems premature and should not be approved.

Team CCA

DOUGLAS COUNTY
COLORADO

Address changes have been recorded in the Douglas County address database. Existing facilities were transferred from Roxborough Water and Sanitation District to Dominion Water and Sanitation District. As a result, addresses have been revised.

DOMINION FACILITIES

Address Changes

~~11292~~ 11300 Caretaker Road
~~11284~~ 11306 Caretaker Road
~~11290~~ 11310 Caretaker Road
~~11276~~ 11314 Caretaker Road
~~11288~~ 11324 Caretaker Road

New Addresses

11318 Caretaker Road
11320 Caretaker Road

ROXBOROUGH FACILITIES

Existing Addresses

11280 Caretaker Road
11282 Caretaker Road

Moved Address

11290 Caretaker Road

Contact Douglas County at DCAddressing@douglas.co.us or 303.660.7411 with questions.

N
W E
S

DATE: 5/20/25

DENVER WATER

1600 West 12th Ave
Denver, CO 80204-3412
303.628.6000
denverwater.org

October 2, 2025

Douglas County
Department of Community Development
Attn: Trevor Bedford, by email to:
100 Third Street
Castle Rock, CO 80104

REFERRAL COMMENTS CASE NO. LE2025-018

Dear Trevor Bedford:

Denver Water staff has reviewed the Location and Extent referral for the Chatfield Basin Water Reclamation Facility and is providing the following comments. We own and operate property that is immediately adjacent to this plant and will be directly impacted by this project. Based on our review, we object to approval of LE2025-018 until the following comments have been resolved.

These comments are based on Denver Water's current understanding of the project and its current extent and design. Any modifications or changes to the project may/or more likely will impact Denver Water's comments. Moreover, Denver Water reserves the right to supplement and/or modify these comments to the extent further or different information becomes available to Denver Water. As a general matter, Denver Water objects to this project as it is incompatible with Denver Water's facilities and operations and to the extent it results in added costs to Denver Water rate payers to address negative impacts to its facilities and operations.

Comments:

Permits:

- The applicant is requesting to start work this month. We recommend Douglas County not approve any phase of the L&E until all NEPA and CDPHE permits are approved. Pending permits could have impacts on future phases.
- DWSD has initiated legal proceedings against Denver Water that impact the adjacent property and connected storm sewer, and effluent outfall easements that are pertinent to the work included in LE2025-018. Legal proceedings are active and related approvals should remain pending until the uses contended in LE2025-018 have been resolved.
- DWSD is proposing a S. Platte River diversion that will have major impacts on Denver Water property, facilities and operations (including a federal HCP) that will be tied into this treatment plant. These plans do not reflect the full scope of infrastructure proposed by DWSD associated with this project. A full project L&E should be prepared prior to approval.

Land Use:

- No parking, staging or storing related to this work shall occur on Caretaker Road (aka Tract D) and must be contained within the project site. DWSD shall keep Caretaker Road free and clear at all times. Heavy equipment, including a 90-ton crane and concrete trucks, are proposed to use Caretaker Road for this project. DWSD shall provide a mitigation plan for how to address dirt road maintenance needs at regular intervals during construction. DWSD will need to coordinate with Denver Water staff to maintain and restore the road to pre-existing conditions.
- No additional grading of Caretaker Road or Denver Water property is permitted. Dirt driveway improvements shall match existing grade at edge of road. Any new cut/fill over Caretaker Road will require a cross section to show amount of disturbance and additional approvals may be necessary.
- We cannot find evidence of an approved license across Denver Water property for the existing 18" RCP culvert and FES with riprap, connected to the stormwater pond with trickle channel. If no agreement was completed, a portion of this 18" pipe and culvert was installed on Denver Water property without authorization and may be removed. Identification of historic flow, existing discharge and proposed discharge on or across Denver Water property and all related facilities must be submitted for review and approval.
- We request additional clarification and location of a referenced 2nd storm sewer pipe on Denver Water property, for existing storm sewer flows from the lift station.
- Any new activity including utility installation, new access points, grading, landscaping, erosion control or similar activities on our property will require Denver Water's review and approval.

Wastewater Discharge:

- Denver Water has water quality concerns about the discharges from this plant. The drainage report does not adequately show that emergency overflow and water quality treatment will not adversely impact the S. Platte River and users.
- The application does not contain details regarding water quality treatment including PFAS treatment.

Other Impacts:

- We request a copy of the odor control plan.
- Lighting was not shown on the site plan. If any new lighting is proposed, we request updated site plan information regarding lights/photometry for review.

Please circulate these comments to the applicant. Additionally, please let us know when we can expect a response and an estimated timeline of this L&E process.

Sincerely,

Gina Begly
Real Estate Sr. Specialist
Property Management
gina.begly@denverwater.org
303-628-6219

REFERRAL RESPONSE REQUEST – LOCATION AND EXTENT

Date sent: September 18, 2025 Comments due by: October 2, 2025

Project Name:	River Canyon Filing 2, 3rd Amendment, Lot 2A-1– Location and Extent
Project File #:	LE2025-018
Project Summary:	Dominion Water & Sanitation District requests approval of a Location and Extent for the refurbishment and expansion of the Chatfield Basin Water Reclamation Facility.

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: Roxborough Village First HOA	**Phone #:** 720-854-4714
Your Name: Debbie McInnis	**Your Signature:**
(please print)	**Date: 10/1/2025**

A public hearing on this request will be held before the Douglas County Planning Commission on Monday, October 6, 2025, at 6:00 pm. ***This public hearing will be held on-line and in person. See the County website or contact the Planning Department for more information.***

Sincerely,

Trevor Bedford, AICP, Senior Planner

September 30, 2025

Mr. Trevor Bedford

Planning Services

100 Third Street

Castle Rock, Colorado 80104

tbedford@douglas.co.us

Re: LE2025-18, River Canyon Filing 2, 3rd Amendment, Lot 2A-1

Dear Mr. Bedford and the Douglas County Commissioners,

The Roxborough Village First HOA is concerned about the proposed Chatfield Basin Water Reclamation Facility refurbishment. It is our understanding that Dominion Water and Sanitation District does not have a permit for the wastewater facility and is currently involved in a lawsuit with Denver Water for access. We feel that Dominion needs to resolve these issues prior to this application to being considered. We know that they are trying to expedite the logistics of this project to take advantage of ARPA funds. Why are ARPA funds being used to fund the Dominion Wastewater Treatment Plant? Since Louviers was a part of the ARPA agreement, why are the funds still available since Dominion has walked away from the water agreement with Louviers? It is our understanding that those funds should support projects that help the entire County. Will Dominion be allowed to begin this project prior to having approval by the State?

We are also very concerned about this facility being located near a 100-year floodplain and what design measures will be taken to ensure the wastewater facility won't be impacted during a significant rain event. Our weather is becoming more and more unpredictable and it's very probable that we could see even a 1,000-year storm. We are very concerned about water contamination from this facility and how it will impact Chatfield Reservoir and those downstream.

We request that this application not be approved until the permit is issued from the State and the eminent domain case is resolved with Denver Water.

Sincerely,

Deborah McInnis

Roxborough Village First HOA

DOUGLAS COUNTY
HEALTH DEPARTMENT COLORADO

September 24, 2025

Trevor Bedford
100 Third St.
Castle Rock, CO 80104

RE: LE2025-018

Dear Trevor Bedford,

Thank you for the opportunity to review and comment on the referenced Location and Extent application. 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.

On-Site Wastewater Treatment System (OWTS) – Abandonment
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. The proposal by Stantec on behalf of the Dominion Water and Sanitation District (DWSD) to refurbish and expand the Chatfield Basin Water Reclamation Facility (CBWRF) to provide wastewater treatment and surface water discharge for the communities of Sterling Ranch, The Range, and Louvier is beneficial. Our records indicate the presence of multiple On-Site Wastewater Treatment Systems (OWTS) within the aforementioned communities that may be intended to connect into this water district. Any existing OWTS shall be abandoned in accordance with the current regulations adopted by the local Board of Health. DCHD must be notified in writing once the system has been properly abandoned. For more information, or to submit the notification, the applicant may contact Douglas County Health Department at the time of development. More information is available at https://www.douglas.co.us/health-department/environmental-health/.

Please feel free to contact me at 720-643-2488 or ssicard@douglas.co.us if you have any questions about our comments.

Sincerely,

Skyler Sicard
Assistant Director of Environmental Health
Douglas County Health Department

Right of Way & Permits

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

September 30, 2025

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

Attn: Trevor Bedford

RE: River Canyon Filing 2, 3rd Amendment, Lot 2A-1 - Location and Extent
Case # LE2025-018

Public Service Company of Colorado's (PSCo) Right of Way & Permits Referral Desk has reviewed the documentation for **the above-mentioned project**. Please be aware PSCo owns and operates existing both overhead and underground electric distribution facilities along and within property lines.

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

Note that proper clearances must be maintained including ground cover over buried facilities that should not be modified from original depths. In other words, if the original cover is changed (by less or more), PSCo facilities must be raised or lowered to accommodate that change. Bear in mind structures are not allowed over buried facilities. Contact Colorado 811 for locates before excavating. Use caution and hand dig when excavating within 18-inches of each side of the marked facilities. Please be aware that all risk and responsibility for this request are unilaterally that of the Applicant/Requestor

If additional easements need to be acquired by separate PSCo document (i.e. transformer), a Right-of-Way Agent will need to be contacted by the Designer.

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

AT&T LONG LINE FIBER OPTICS
PROJECT AREA
Platte Canyon
Platte Canyon Creek
Brush Creek
Platte Canyon Reservoir
South Platte River
Waterton Rd
W Waterton Rd
High Line Canal
Google Earth
Image Landsat / Copernicus
N
85

October 1, 2025

Douglas County Planning Services
Attention: Trevor Bedford
100 Third Street
Castle Rock, CO 80104

RE: LE2025-018, River Cayon Filing 2, 3rd Amendment, Lot 2A-1

Dear Mr. Pesicka,

TST Infrastructure, LLC (TST) is the Roxborough Water and Sanitation District Engineer. TST has reviewed the Location and Extent documents submitted for referral review. The documents were reviewed for impacts to existing facilities. The following are comments on the documents reviewed:

Exhibit LOE-EXH

1. The new membrane bioreactor building increases impervious area which will lead to more stormwater runoff potentially entering the RWSD Wastewater Overflow Pond with no method for diverting it away from the Overflow Pond.
2. The new storm line is not allowed to be discharged to Overflow Pond. The Overflow Pond use for emergency wastewater storage only. Also with gravel drive, the increase in potential sediment load into the Overflow Pond is not acceptable.

Construction Drawing No. CG-101

1. Confirm revised grading at existing Roxborough utilities will maintain a pipe cover of at least 5 feet.

Should you have any questions, please feel free to contact me at 303-799-5197.

Sincerely,

Michael J. Gerstner, P.E.
TST Infrastructure, LLC

CC: Mike Marcum, General Manager for Roxborough Water and Sanitation District

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

VIA EMAIL
RE: Douglas County eReferral (Project Number LE2025-018) Is Ready For Review

Dear Trevor Bedford,

The Colorado Department of Public Health and Environment's Air Pollution Control Division (APCD or Division) received a request for an air quality administrative review concerning the proposed Chatfield Basin Water Reclamation Facility project as described in your correspondence dated September 19, 2025. The Division has reviewed the project letter and respectfully offers the following comments. Please note that the following Air Quality Control Commission (AQCC) regulations may not be inclusive of the regulations the proposed project will be subject to. It is the responsibility of the involved parties to determine what regulations they are subject to and follow them accordingly.

VOC and Hazardous Air Pollutants (HAPS) Analysis for Small Wastewater Projects
An Air Pollutant Emissions Notice (APEN) for VOC and HAPS may be required depending on the existing and new throughput of your facility. Municipal wastewater projects may use the following chart to estimate VOC and HAPs emissions in order to determine if they are required to submit an APEN under Regulation Number 3.

Pollutant	Emission Factor Lb/MM gallon	Reporting Threshold
VOC	3.49414	1 ton/year OR 2 ton/year
Hexamine	0.41207	250 lbs/year
Perchloroethylene	0.00890	
Benzene	0.22873	
Toluene	0.00267	
Total Xylene	0.00267	
Ammonia	19.0000	

Odor
All businesses in Colorado are subject to AQCC Regulation Number 2 (Odor Emission) and a permit may be required for the installation of odor control equipment. Please refer to AQCC Number 2 for guidance on odor suppression actions. You may also view the complete regulatory language at https://cdphe.colorado.gov/aqcc-regulations.

Land Development

We also note that projects similar to this proposal often involve land development. Under Colorado air quality regulations, land development refers to all land clearing activities, including but not limited to land preparation such as excavating or grading, for residential, commercial or industrial development. Land development activities release fugitive dust, a pollutant regulation by the Division. Small land development activities are not subject to the same reporting and permitting requirements as large land activities. Specifically, land development activities that are less than 25 contiguous acres and less than 6 months in duration do not need to report air emissions to the Division. It is important to note that even if a permit is not required, fugitive dust control measures including the Land Development APEN Form APCD-223 must be followed at the site. Fugitive dust control techniques commonly included in the plan are included in the table below.

Control Options for Unpaved Roadways	
Watering	Use of chemical stabilizer
Paving	Controlling vehicle speed
Graveling	
Control Options for Mud and Dirt Carry-Out Onto Paved Surfaces	
Gravel entry ways	Washing vehicle wheels
Covering the load	Not overfilling trucks
Control Options for Disturbed Areas	
Watering	Application of a chemical stabilizer
Revegetation	Controlling vehicle speed
Compaction	Furrowing the soil
Wind Breaks	Minimizing the areas of disturbance
	Synthetic or Natural Cover for Slopes

Please refer to the website https://cdphe.colorado.gov/apens-and-air-permits for information on land use APENs and permit forms. Click on “Land Development” to access the land development specific APEN form. Please contact KC Houlden, Construction Permits Unit Supervisor, at 303-692-4092, kenneth.houlden@state.co.us if you have any specific questions about APENs and permit forms.

Demolition and Redevelopment

In Colorado there are regulations regarding the appropriate removal and handling of asbestos and lead-based paint as part of a demolition, renovation, or remodeling project. These regulations are presented AQCC Number 8 (asbestos) and Number 19 (lead-based paint) https://cdphe.colorado.gov/aqcc-regulations.

These regulations may require the use of, or inspection by, companies or individuals that are certified to inspect or remove these hazards prior to renovation or demolition. The Division must also be notified prior to beginning any asbestos abatement or demolition activities. For additional guidance on these regulations and lists of certified companies and individuals, please visit www.colorado.gov/cdphe/asbestos and www.colorado.gov/cdphe/lead for lead-based paint. An asbestos renovation and demolition fact sheet, inspection flowchart, and brochure are attached to my email response for your review. If you have any questions about Colorado’s asbestos and lead-based paint regulations or are unsure whether you are subject to them please call the Indoor Environment Program at cdphe.asbestos@state.co.us or 720-507-5136.

If you have any other questions or need additional information, please use the contact info listed above, or e-mail or call me directly. Thank you for contacting the Air Pollution Control Division about your project.

Sincerely,
Brendan Cicione
Air Quality and Transportation Planner
General SIP Unit
Air Pollution Control Division
Colorado Department of Public Health and Environment
303-691-4104 // brendan.cicione@state.co.us

Colorado Department of Public Health
& Environment

Air Pollution Control Division
Indoor Environment Program

4300 Cherry Creek Drive South,
Denver, Colorado, 80246

303-692-3100
303-782-0278, fax

cdphe.asbestos@state.co.us

www.colorado.gov/cdphe/asbestos

Colorado law requires asbestos testing prior to renovation or Demolition!

COLORADO
Department of Public Health & Environment

www.colorado.gov/cdphe/asbestos

What is asbestos?

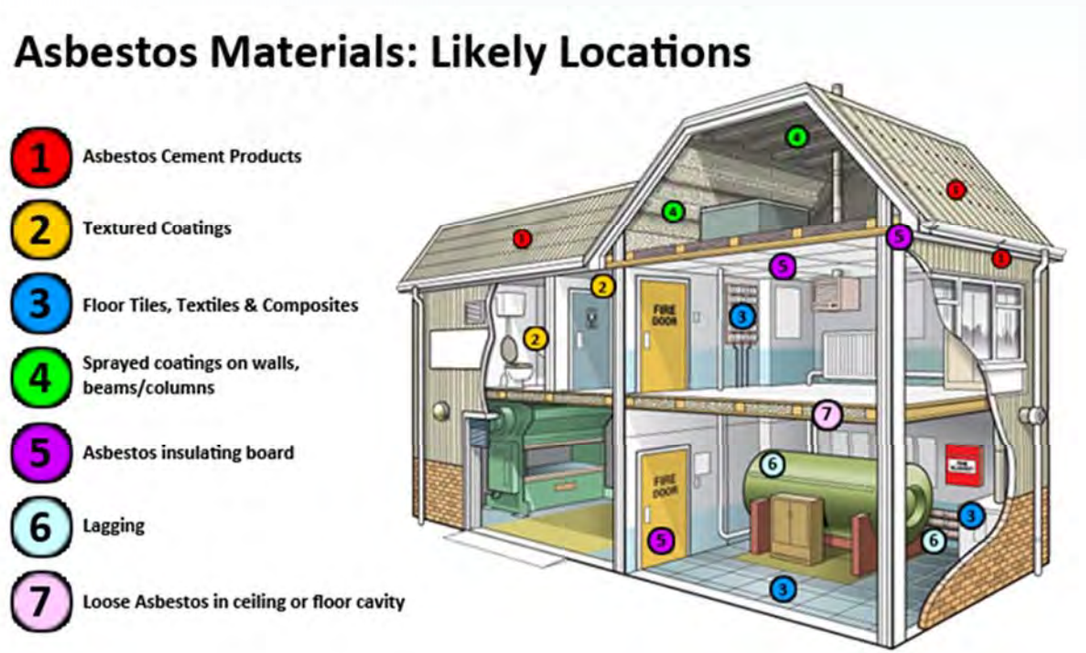
- Asbestos is a naturally occurring mineral fiber mined for its useful properties.
- Asbestos is a known carcinogen and can cause respiratory disease.
- There is a common misconception that asbestos use was completely banned in the United States.
- It is currently legal to manufacture certain asbestos containing materials (ACMs) and some ACMs are still being imported today.
- Asbestos fibers have been added to many different building materials regardless of the date of construction.

How to get your building tested:

- Building materials require asbestos testing or must be assumed to be asbestos containing.
- Testing must be done by a Colorado certified Asbestos Building Inspector who can be found through: www.colorado.gov/cdphe/asbestos-consulting-firms
- Contact CDPHE to determine if testing is required. In most cases, testing will be required.

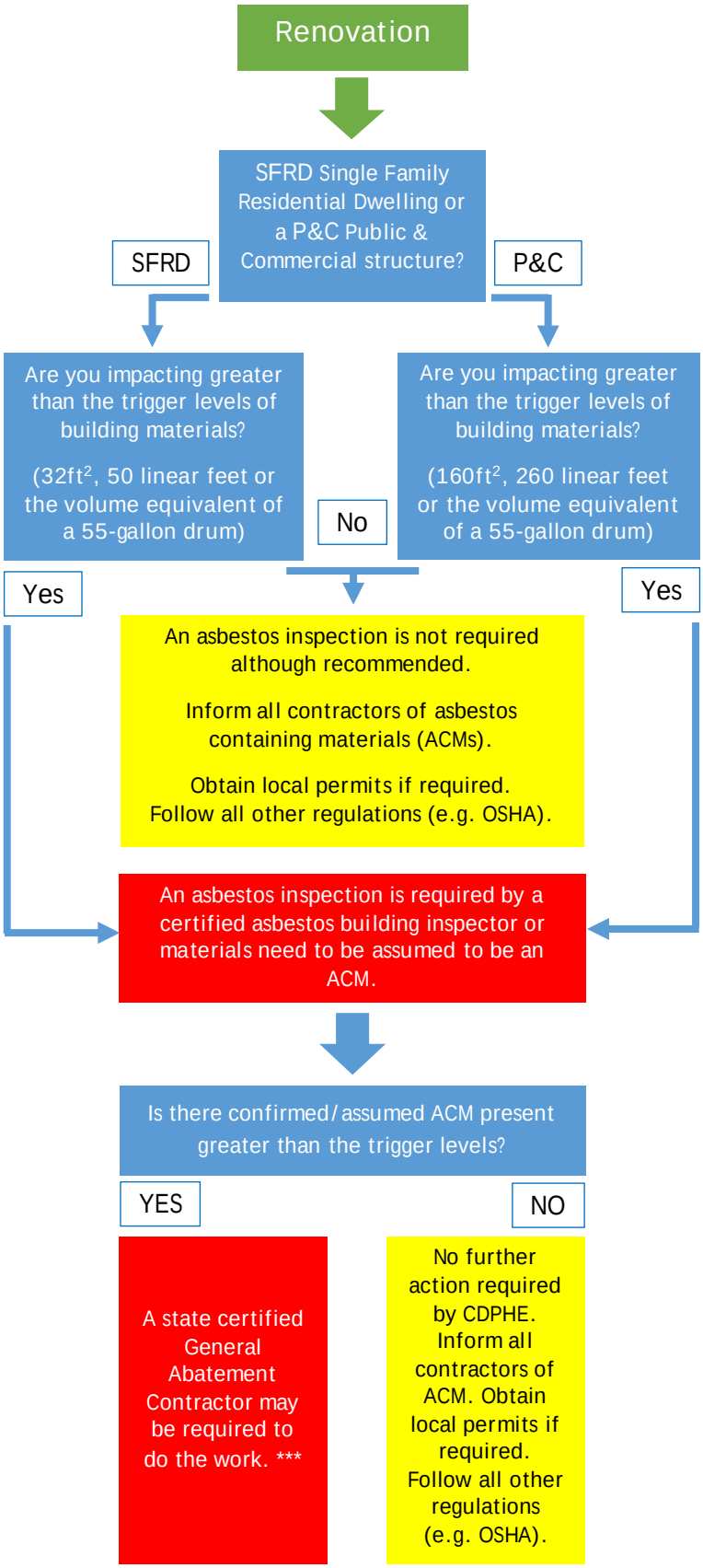
Some places asbestos containing materials can be found:

1. Cement like products such as shingles and siding.
2. Walls/ceilings (drywall, plaster, etc.), skim coating, texturing, joint compounds and acoustical texturing “popcorn ceiling”.
3. Floor tiles, sheet vinyl, linoleum and their associated adhesives.
4. Sprayed on fireproofing seen on structural beams and decking.
5. Ceiling tiles, fire doors and soffits.
6. Insulation on pipes and boilers, including pipe/duct wrap.
7. Blown in insulation such as vermiculite.



Is an Asbestos Inspection Required?

COLORADO
Department of Public Health & Environment



Definitions and Links:

Renovation – Altering in any way one or more components in or on a facility. Operations in which load-supporting structural members are wrecked or removed are demolitions Examples of renovation work include to replacement or repair of mechanical ventilation systems, pipes, ceilings, walls, flooring (including floor tiles) and insulating materials. Renovation may also include the construction of additions or the modification of existing components where tie-ins, joints or other intersection may occur.

Demolition – The wrecking or removal of any load-supporting structural member of a facility together with any handling of debris related to the demolition, the intentional burning of any facility, or moving a facility from a permanent foundation.

Asbestos Consulting Firms & Asbestos Building Inspectors can be found at: https://www.colorado.gov/cdphe/asbestos-consulting-firms

Demolition notification application forms can be found under the forms tab at: https://www.colorado.gov/cdphe/asbestos

*** Some ACMs may only require notification or may be exempt from the regulation. Homeowners who do not intend to rent, sell or demolish their primary residence may have additional options. Please contact CDPHE for further details.

4300 Cherry Creek Drive South, Denver CO, 80246 | 303-692-3100 | Fax: 303-782-0278 | www.colorado.gov/cdphe/asbestos | cdphe.asbestos@state.co.us

ASBESTOS - RENOVATION AND DEMOLITION

Are you Remodeling, Renovating or Demolishing?

You may be subject to State and Federal Regulations requiring an inspection for asbestos.
Avoid penalties and delays: If you are impacting greater than the trigger levels of suspect asbestos-containing materials ("ACM") – you must have your project inspected for ACM by a Colorado-certified asbestos building inspector before commencing work.

It is Dangerous and Illegal to Improperly Disturb ACM!

Asbestos can be found in these and many other common building materials: Ceiling textures, vinyl floor coverings and mastic, boiler and pipe insulation, heating and cooling duct insulation, ceiling tile, roofing products, clapboard shingles, etc. These materials may be regulated - a certified asbestos building inspector can determine which materials contain asbestos and which are regulated.

For ALL Renovation Projects:

- Buildings of ***any*** age may contain ACM; even those newly built may have ACM.
- **Inspection:** If the structures/components to be disturbed exceed the trigger levels, they ***must be inspected for asbestos*** by a Colorado-certified asbestos building inspector, unless the building was built after October 12, 1988, **AND** the architect or engineer who built it signs and submits documentation showing that no ACM was specified or used in the construction of the building – then no inspection is needed. Asbestos Consulting Firms and asbestos building inspectors can be found in the yellow pages of most telephone books under the heading "Asbestos Consulting and Testing" or go to our web site for a current list: www.colorado.gov/cdphe/asbestos.
- If the amount of ACM to be disturbed exceeds the following trigger levels, then an asbestos abatement contractor must remove the material:
    - **Single-Family Residential Dwellings ("SFRD")** - the trigger levels are: 50 linear feet on pipes; 32 square feet on other surfaces; or the volume equivalent of a 55-gallon drum.
    - **Public and Commercial Buildings** (other than SFRDs) - the trigger levels are: 260 linear feet on pipes; 160 square feet on other surfaces; or the volume equivalent of a 55-gallon drum.
- Under many circumstances, a Colorado-certified General Abatement Contractor (GAC) must remove ACM that is regulated or may become regulated before it is disturbed by renovation or demolition activities. GACs can be found in the yellow pages of most telephone books under the heading, "Asbestos Abatement" or go to our web site for a current list.
- **Notification:** A written application to CDPHE for a notice/permit may be required, along with payment of a fee and a **ten (10) working-day notification period (emergencies may be excluded)** before the removal (abatement) of regulated asbestos-containing materials. **ALL** ACM waste must be disposed of at an approved asbestos waste disposal site – regardless of the quantity or the necessity for a notice/permit.

Demolitions, Destructive Salvage, House Moving

If you demolish, perform destructive salvage, perform de-construction, burn, destroy, dismantle, dynamite, implode, knock down, level, pull down, pulverize, raze, tear down, wreck all of a structure or structural components, or you move a house, you may be subject to State and Federal regulations **even when there is NO asbestos in the facility. Demolition means:** the wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

For ALL Demolition Projects:

- **Inspection:** the building or area of the building to be demolished ***must be inspected for asbestos*** by a Colorado-certified asbestos inspector. Asbestos Consulting Firms and asbestos building inspectors can be found in the yellow pages of most telephone books under the heading "Asbestos Consulting and Testing" or go to our web site for a current list:
- **Asbestos Removal** (if necessary) may have to be performed by a Colorado-certified GAC. Removal, in accordance with Regulation No. 8, Part B, is required if the amount of asbestos-containing material that is friable or will become friable during demolition exceeds the trigger levels.
- **A Demolition Notification Application Form** must be submitted to the CDPHE, **even if no asbestos was found during the inspection,** along with payment of a notification fee and a **ten (10) working-day notification period** that is required before the demolition can commence.

During Demolition:

- Recycling of materials, such as concrete or wood, that are bonded or contaminated with asbestos-containing material (ACM), such as floor tile or mastic, is NOT permitted.
- Demolition of a building that has non-friable asbestos-containing vinyl asbestos tile (VAT) or tar-impregnated roofing materials remaining must be completed without causing the asbestos-containing materials to become friable. Concrete floors covered with floor tile shall be removed in large sections if possible. Operations such as crushing, pneumatic jacking, etc. of materials containing asbestos are not permitted.
- When imploding or burning a structure, ALL asbestos-containing material, regardless of type or quantity, **MUST** be removed prior to demolition.

For More Information or Forms, please contact:

Asbestos Compliance Assistance Group
Phone: (303) 692-3100
Fax: (303) 782-0278
Toll Free: 1-800-886-7689
Web page: http://www.colorado.gov/cdphe/asbestos
Email address: cdphe.asbestos@state.co.us

Have your project inspected by a Colorado-certified asbestos building inspector before you begin renovation or demolition activities

Violation of asbestos regulations can result in monetary penalties and project delays.

October 1, 2025

Matt Padgett
Authorized Representative
Dominion Water & Sanitation District
9250 East Costilla Avenue
Greenwood Village, CO 80012

DV 2025-425

Subject: River Canyon Filing #2 – 3rd Amendment – Lot 2A-1 – Location & Extent

Dear Matt,

Plan Review Summary:

Submitted to Engineering	-	9/18/25
Comments Sent Out	-	10/1/25

Engineering has reviewed this project and have the following concerns and comments:

Location & Extent Comments

Comment #1-Engineering doesn't have any concerns regarding the proposed location & extent.

Comment #2-The following items will need to be submitted for review and approval prior to permits being issued for the project:

- Construction Plans (submitted and redlines are provided)
- Phase III Drainage Report (submitted and acceptable as submitted)
- GESC Plans (submitted and redlines are provided)
- GESC Report (submitted and acceptable as submitted)

If you have any questions, please give me a call.

Sincerely,

Chuck Smith
Development Review Engineer

cc: Trevor Bedford, AICP; Senior Planner

DV25425

GRADING, EROSION AND SEDIMENT CONTROL PLAN (GESC)
CHATFIELD BASIN WATER RECLAMATION FACILITY REFURBISHMENT
WORK PACKAGE 3 & 4 - IFC
AUGUST 2025

N

LOCATION PLAN
SCALE: 1"=1,000'

SITUATED IN THE NORTH HALF OF THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 6 SOUTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO

OWNER

DOMINION WATER & SANITATION DISTRICT
9250 E COSTELLA AVE, STE 400
GREENWOOD VILLAGE, CO 80112

THE GRADING. EROSION AND SEDIMENT CONTROL PLAN INCLUDED HERIN HAS BEEN PLACED IN THE DOUGLAS COUNTY FILE FOR THE PROJECT AND APPEARS TO FULFILL APPLICABLE DOUGLAS COUNTY GRADING, EROSION AND SEDIMENT CONTROL CRITERIA. ADDITIONAL GRADING, EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED OF THE OWNER OF HIS OF HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT FUNCTION AS INTENDED. THE REQUIREMENTS OF THIS PLAN SHALL RUN WITH THE LAND SHALL BE THE OBLIGATION OF THE LANDOWNER, OR HIS OR HER DESIGNATED REPRESENTATIVE, UNTIL SUCH TIME AS THE PLAN IS PROPERLY COMPLETED, MODIFIED OR VOIDED.

THE GRADING, EROSION AND SEDIMENT CONTROL PLAN INCLUDED HEREIN HAS BEEN PREPARED UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH THE REQUIREMENTS OF THE GRADING, EROSION, AND SEDIMENT CONTROL (GESC) MANUAL OF DOUGLAS COUNTY.

GESC PLANS PREPARED BY:

ZAK SARGENT, PE	STANTEC	AUG 18, 2025	66476
		DATE	PE NUMBER

THE CONSTRUCTION PLANS INCLUDED HEREIN WERE PREPARED UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH THE REQUIREMENTS OF THE ROADWAY DESIGN AND CONSTRUCTION STANDARDS AND STORM DRAINAGE DESIGN AND TECHNICAL CRITERIA OF DOUGLAS COUNTY, AS AMENDED.

CIVIL CONSTRUCTION PLANS PREPARED BY:

ZAK SARGENT, PE	STANTEC	AUG 18, 2025	66476
		DATE	PE NUMBER

Drawing Number	Drawing Title
	GESC
G-001	GESC COVER SHEET
G-002	INITIAL GESC SITE PLAN
G-003	INTERIM GESC SITE PLAN
G-004	FINAL GESC SITE PLAN
SHEET 1 OF 3	GESC PLAN STANDARD NOTES AND DETAILS - 1
SHEET 2 OF 3	GESC PLAN STANDARD NOTES AND DETAILS - 2
SHEET 3 OF 3	GESC PLAN STANDARD NOTES AND DETAILS - 3

Submit the GESC Plans separate from the GESC Report

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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

ENGINEERING DIVISION ACCEPTANCE BLOCK

Stantec
410 17th Street, Suite 1400
Denver, CO 80202
Tel: 303.291.2277
www.stantec.com

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Consultant

No.	Revision	By	Appd	YYYY.MM.DD
A	WORK PACKAGE 3 & 4 IFC	CJC	SRT	2025.08.01

Issued

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899_WP3_GESC_001
Scale: NTS

JCS	JCS	SRT	2025.08.01
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
GESC
COVER SHEET

Revision:
Drawing No.
G-001

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ORIGINAL SHEET - ANSI D

GENERAL SHEET NOTES

1. SEE COVER SHEET OF DOUGLAS COUNTY GESC STANDARD NOTES AND DETAILS (SHEET 1 OF 3) FOR LEGEND OF BMP NAMES AND SYMBOLS.
2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE.

N

0 50' 100'

BENCHMARK
C-E 1/16 SECTION 34, T5S, R69W, 6TH P.M. FOUND 3" BRASS CAP IN 5" PIPE STAMPED AS SHOWN 1.1' ABOVE GROUND

TRACT D RIVER CANYON - FILING NO. 2

LOT 3 RIVER CANYON - FILING NO. 2

CARETAKE ROAD (45.5' WIDE PUBLIC ROW)

LOT 1 RIVER CANYON - FILING NO. 2

LOT 2A-1

LOT 2A-2

if the RRC's are existing they need to be labeled if they are proposed - include the length & depth dimensions

RWSD LIFT STATION OVERFLOW POND

AREA 80 CCT, CHEMICAL STORAGE AND DOSING

RWSD LIFT STATION

AREA 20 BIOLOGICAL NUTRIENT REMOVAL

AREA 18 EQUALIZATION TANK

STOCKPILE AREA

EQ TANK ANNEX BUILDING

AREA 05 INFLUENT SPLITTER BOX

MANHOLE 0-2

AREA 10 HEADWORKS

HIGHLINE CANAL (100' WIDE PUBLIC ROW)

TRACT Y RIVER CANYON - FILING NO. 1-A, 1ST AMENDMENT

TRACT Q-1 RIVER CANYON - FILING NO. 1-A, 1ST AMENDMENT

TRACT R-1A RIVER CANYON - FILING NO. 1-A, 2ND AMENDMENT

10' UTILITY EASEMENT

8' P.S.CO. EASEMENT

BLANKET P.S.CO. EASMENT

20' WATER EASEMENT

20' TEMPORARY CONSTRUCTION EASEMENT

VARIABLE WIDTH UTILITY EASEMENT

DENVER WATER EASEMENT

30' UTILITY EASEMENT

GESC PLANS PREPARED BY:

ZAK SARGENT, PE STANTEC	AUG 18, 2025	66476
	DATE	PE NUMBER

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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

ENGINEERING DIVISION ACCEPTANCE BLOCK

ORIGINAL SHEET - ANSI D

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No.	Revision	By	Appd	YYYY.MM.DD
A	WORK PACKAGE 1 IFC	CLC	SRT	2025.08.18

Issued

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT

CHATFIELD BASIN WRF REFURBISHMENT

11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899_WP3_GESC_002
Scale: NTS

ZCS	ZCS	SRT	2025.08.01
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
INITIAL GESC SITE PLAN

Revision: ___ ----

Drawing No.
G-002

GENERAL SHEET NOTES

1. SEE COVER SHEET OF DOUGLAS COUNTY GESC STANDARD NOTES AND DETAILS (SHEET 1 OF 3) FOR LEGEND OF BMP NAMES AND SYMBOLS.
2. SHADED BMPS WERE INSTALLED IN THE INITIAL STAGE AND SHALL BE LEFT IN PLACE IN INTERIM STAGE UNLESS OTHERWISE NOTED.
3. ALL INTERIM EROSION AND SEDIMENT CONTROL BMPS INCLUDING DRILL SEEDING AND CRIMP MULCHING OF DISTURBED AREAS, MUST BE INSTALLED, INSPECTED, AND APPROVED BY THE COUNTY PRIOR TO THE ISSUANCE OF A RIGHT-OF-WAY USE AND CONSTRUCTION PERMIT FOR THE PURPOSE OF PAVING OR INSTALLING OF CURB AND GUTTER.
4. SEE CONSTRUCTION PLANS FOR DETAILS OF PERMANENT DRAINAGE FACILITIES SUCH AS DETENTION FACILITIES, CULVERTS, STORM DRAINS, AND OUTLET PROTECTION.

GESC PLANS PREPARED BY:

ZAK SARGENT, PE STANTEC | AUG 18, 2025 DATE | 66476 PE NUMBER

AREA AND VOLUME TABLE

(IN SITU)	
AREA	79,166 SF (1.8 ACRES)
CUT (EXCAVATION)	1,078 CUBIC YARDS
FILL (EMBANKMENT)	1,072 CUBIC YARDS
NET (CUT)	6 CUBIC YARDS (~BALANCED SITE)

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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

ENGINEERING DIVISION ACCEPTANCE BLOCK

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410 17th Street, Suite 1400
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Consultant

No.	Revision	By	Appd	YYYY.MM.DD
0	WORK PACKAGE 1 IFC	CLC	SRT	2025.08.18

Issued

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899_WP3_GESC_003
Scale: NTS

ZCS	ZCS	SRT	2025.08.01
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
INTERIM GESC SITE PLAN

Revision: ___ ----

Drawing No.
G-003

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ORIGINAL SHEET - ANSI D

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GENERAL SHEET NOTES

1. SEE COVER SHEET OF DOUGLAS COUNTY GESC STANDARD NOTES AND DETAILS (SHEET 1 OF 3) FOR LEGEND OF BMP NAMES AND SYMBOLS.
2. SHADED BMPs WERE INSTALLED IN THE INITIAL OR INTERIM GESC DRAWING AND, UNLESS OTHERWISE INDICATED, SHALL BE LEFT IN PLACE IN UNTIL REVEGETATION ESTABLISHMENT IS APPROVED BY THE COUNTY.
3. SEE CONSTRUCTION PLANS FOR DETAILS OF PERMANENT DRAINAGE FACILITIES SUCH AS DETENTION FACILITIES, CULVERTS, STORM DRAINS, AND OUTLET PROTECTION.

BENCHMARK
C-E 1/16 SECTION 34, T5S, R69W, 6TH P.M. FOUND 3" BRASS CAP IN 5" PIPE STAMPED AS SHOWN 1.1' ABOVE GROUND

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LOT 2A-1

LOT 2A-2

HIGHLINE CANAL (100' WIDE PUBLIC ROW)

TRACT Q-1 RIVER CANYON - FILING NO. 1-A, 1ST AMENDMENT

TRACT R-1A RIVER CANYON - FILING NO. 1-A, 2ND AMENDMENT

TRACT Y RIVER CANYON - FILING NO. 1-A, 1ST AMENDMENT

PROPERTY LINE

10' UTILITY EASEMENT

8' P.S.CO. EASEMENT

BLANKET P.S.CO. EASMENT

20' WATER EASEMENT

20' TEMPORARY CONSTRUCTION EASEMENT

VARIABLE WIDTH UTILITY EASEMENT

DENVER WATER EASEMENT

30' UTILITY EASEMENT

RWSD LIFT STATION OVERFLOW POND

RWSD LIFT STATION

AREA 80 CCT, CHEMICAL STORAGE AND DOSING

AREA 30 MEMBRANE BIOREACTOR

AREA 20 BIOLOGICAL NUTRIENT REMOVAL

AREA 15 FINE SCREENING

AREA 10 HEADWORKS

AREA 70 ODOR CONTROL

AREA 18 EQUALIZATION TANK

AREA 05 INFLUENT SPLITTER BOX

EQ TANK ANNEX BUILDING

COMBINED INFLUENT FLOW METER VAULT

CBWRF INFLUENT FLOW METER VAULT

STOCKPILE AREA REMOVE

MANHOLE 0-2

REMOVE TEMP RRC, INSTALL PERMANENT RIPRAP PER PLANS

REMOVE TEMP RRC, INSTALL PERMANENT RIPRAP PER PLANS

REMOVE ST

REMOVE VTC

REMOVE RRC

REMOVE IP

REMOVE SF

REMOVE SSA

LOC

SM

24" MP (DI01)

18" SE (DI01)

18" RAS (DI01)

6" S (SDR 17,PE01)

18" RCP

15" RCP

24" PE (SDR 15,PE01)

6" WAS (SDR 17,PE01)

6" EQR (SDR 17,PE01)

6" OF (SDR 17,PE01)

10" FA (FR01)

24" SS

24" PI (DI02)

25.8%

29.7%

12.0%

15.0%

5.6%

5.3%

8.6%

4.6%

6.9%

8.0%

17.4%

12.2%

3.0%

2.8%

1.1%

0.6%

5.1%

4.1%

2.7%

2.0%

1.5%

4.4%

25.3%

4.3%

5.8%

2.4%

1.4%

5.2%

3.5%

1.7%

1.6%

5.5%

5.0%

5.4%

5.7%

5.9%

5.8%

5.7%

5.6%

5.5%

5.4%

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4.0%

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2.7%

2.6%

2.5%

2.4%

2.3%

2.2%

2.1%

2.0%

1.9%

1.8%

1.7%

1.6%

1.5%

1.4%

1.3%

1.2%

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GESC PLANS PREPARED BY:

ZAK SARGENT, PE	STANTEC	AUG 18, 2025	66476
		DATE	PE NUMBER

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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

ENGINEERING DIVISION ACCEPTANCE BLOCK

ORIGINAL SHEET - ANSI D

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No.	Revision	By	Appd	YYYY.MM.DD
A	WORK PACKAGE I IFC	CJC	SRT	2025.08.18

Issued

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT

CHATFIELD BASIN WRF REFURBISHMENT

11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899_WP3_GESC_004

Scale: NTS

ZCS	ZCS	SRT	2025.08.01
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
FINAL GESC SITE PLAN

Revision: ___ ----

Drawing No.
G-004

CHATFIELD BASIN WATER RECLAMATION FACILITY REFURBISHMENT
WORK PACKAGE 3
AUGUST 2025

SHEET	DRAWING NUMBER	DRAWING TITLE
L&E		
1	G-001	COVER
2	G-002	ABBREVIATIONS
3	G-003	SYMBOLS
4	C-001	GENERAL NOTES AND SYMBOLS
5	C-002	STANDARD DETAILS -I
6	C-003	STANDARD DETAILS -I
7	C-004	LOCATION CONTROL PLAN
8	C-101	OVERALL SITE PLAN
9	C-102	ENLARGED SITE PLAN - AREA 1
10	C-103	ENLARGED SITE PLAN - AREA 2
11	C-104	ENLARGED SITE PLAN - AREA 3
12	CG-101	OVERALL GRADING PLAN
13	CG-102	ENLARGED GRADING PLAN - AREA 1
14	CG-103	ENLARGED GRADING PLAN - AREA 2
15	CG-104	ENLARGED GRADING PLAN - AREA 3
16	CU-101	OVERALL YARD PIPING KEYMAP
17	CU-102	ENLARGED UTILITY PLAN AREA 1
18	CU-103	ENLARGED UTILITY PLAN AREA 2
19	C-202	PIPING PROFILES 1-3
20	C-203	PIPING PROFILES 4-6
21	C-204	PIPING PROFILE
22	C-205	PIPING PROFILE
23	C-207	PIPING PROFILE
24	C-208	PIPING PROFILE

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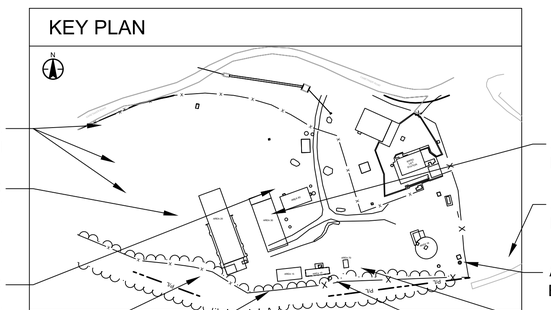
LOCATION PLAN
SCALE: N.T.S



FUTURE EXPANSION
AREA 20 BIOLOGICAL NUTRIENT REMOVAL
AREA 80 CCT AND CHEMICAL STORAGE
AREA 05 E-HOUSE, TRANSFORMER AND BACKUP GENERATOR
AREA 15 FINE SCREENS
AREA 30 MEMBRANE BIOREACTOR
AREA 05 INFLUENT SPLITTER
AREA 18 EQUALIZATION TANK
AREA 70 ODOR CONTROL
AREA 10 HEADWORKS

AREA KEY PLAN
SCALE: N.T.S

THE CONSTRUCTION PLANS INCLUDED HEREIN WERE PREPARED UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH THE REQUIREMENTS OF THE ROADWAY DESIGN AND CONSTRUCTION STANDARDS AND STORM DRAINAGE DESIGN AND TECHNICAL CRITERIA OF DOUGLAS COUNTY, AS AMENDED.

CIVIL CONSTRUCTION PLANS PREPARED BY:

ZAK SARGENT, PE STANTEC	AUG 18, 2025	66476
	DATE	PE NUMBER

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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No.	Revision	By	Appd	YYYY.MM.DD
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No.	Issued	By	Appd	YYYY.MM.DD
B	IFP - L&E	SSC	ZS	2025.08.29
A	WORK PACKAGE 3 DRAFT	CLC	SRT	2025.06.XX

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899_G000_001-TEMP

Scale: NTS

KN	MCR	SRT	2025.08.01
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
GENERAL
COVER

Revision:

Drawing No.
G-001

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ORIGINAL SHEET - ANSI D

A

A	AIR/ AMPERE
A/C	AIR CONDITIONING
A/R	AIR RELEASE
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS
AB	ANCHOR BOLT
ABAN	ABANDON
ABND	ABANDONED
ABBR	ABBREVIATION
ABS	ABSOLUTE TEMPERATURE
AC	ACTIVATED CARBON/ ASPHALTIC CONC/ ALTERNATING CURRENT
ACI	AMERICAN CONCRETE INTERNATIONAL
ACOUS	ACOUSTIC/ ACOUSTICAL
ACP	ASBESTOS CEMENT PIPE/ ASPHALTIC CONCRETE PAVEMENT
ADD	ADDITIONAL
ADH	ADHESIVE
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONST
ALT	ALTERNATE
ALUM	ALUMINUM/ ALUM
AMB	AMBIENT
ANSI	AMERICAN NATIONAL STANDARDS INST
API	AMERICAN PETROLEUM INSTITUTE
APPD	APPROVED
APPROX	APPROXIMATE
APPURTS	APPURTENANCES
ARCH	ARCHITECTURE
ASME	AMERICAN SOCIETY OF MECHANICAL ENG
ASPH	ASPHALT
ASTM	AMERICAN SOCIETY FOR TEST & MATERIALS
AT	ACOUSTICAL TILE
ATM	ATMOSPHERE
AV/AR	AIR VACUUM AND AIR RELEASE VALVE
AVE	AVENUE
AWPA	AMERICAN WOOD PRESERVERS ASSOC
AWS	AMERICAN WELDING SOCIETY
AWWA	AMERICAN WATER WORKS ASSOCIATION

B

B&S	BELL AND SPIGOT
B/W	BACK OF WALL/ BACK OF WALK
BC	BEGIN CURVE/ BOLT CIRCLE/ BETWEEN CENTERS/ BACK OF CURVE
BCR	BEGIN CURB RETURN
BD	BOARD
BDRY	BOUNDARY
BF	BLIND FLANGE/ BOTTOM OF FOOTING
BFP	BACK FLOW PREVENTER
BFV	BUTTERFLY VALVE
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BLK	BLACK/ BLOCK
BLKG	BLOCKING
BLVD	BOULEVARD
BM	BEAM/ BENCH MARK
BO	BLOW-OFF ASSEMBLY
BOD	BIOCHEMICAL OXYGEN DEMAND
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BPV	BACK PRESSURE VALVE
BRK	BRICK/ BREAK
BSMT	BASEMENT
BT	BOLT
BTU	BRITISH THERMAL UNIT
BV	BALL VALVE
BVC	BEGIN VERTICAL CURVE
BWV	BACK WATER VALVE

C

C	CENTIGRADE/ CHANNEL/ CEMENT
C&G	CURB AND GUTTER
CAB	CABINET/ CRUSHED AGGREGATE BASE
CAP	CAPACITY
CATS	CASING TEST STATION
CATV	CABLE TELEVISION
CB	CATCH BASIN/ CHALKBOARD/ CURB
CBWRF	CHATFIELD BASIN WATER RECLAMATION FACILITY
CC	CLOSED CIRCUIT TV/ CENTER TO CENTER
CD	CEILING DIFFUSER
CEM	CEMENT
CF	CURB FACE/ CUBIC FOOT
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CHEM	CHEMICAL
CHG	CHANGE
CHKD	CHECKERED
CI	CAST IRON
CIP	CAST IRON PIPE/ CAST IN PLACE
CIPP	CAST IN PLACE PIPE
CJ	CONSTRUCTION JOINT
CL	CENTERLINE
CL2	CHLORINE
CLF	CHAIN LINK FENCE
CLG	CEILING
CLOS	CLOSET
CLR	CLEAR/ CLEARANCE
CMB	CRUSHED MISCELLANEOUS BASE
CMC	CEMENT MORTAR-COATED
CML	CEMENT MORTAR-LINED
CML&C	CEMENT MORTAR-LINED AND COATED
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
COMM	COMMUNICATIONS CABLE
COMP	COMPRESSOR
CONC	CONCRETE/ CONCENTRIC
COND	CONDENSER/ CONDENSATE
CONN	CONNECTION
CONST	CONSTRUCT/ CONSTRUCTION
CONT	CONTINUED/ CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
COR	CORNER
COTG	CLEANOUT TO GRADE
CPLG	COUPLING
CPVC	CHLORINATED POLYVINYL CHLORIDE
CS	CAST STEEL
CSP	CORRUGATED STEEL PIPE
CSTS	CURRENT SPAN TEST STATION
CT	CERAMIC TILE
CTR	CENTER
CTS	CORROSION TEST STATION
CTSK	COUNTERSUNK
CU	COPPER/ CUBIC
CULV	CULVERT
CV	CHECK VALVE
CY	CUBIC YARD
CYL	CYLINDER

D

d	PENNY
DAD	DOUBLE ACTING DOOR
DAFT	DISSOLVED AIR FLOTATION THICKENER
DB	DIRECT BURY
DBL	DOUBLE
DC	DIRECT CURRENT
DEG	DEGREE
DET	DETAIL
DF	DRINKING FOUNTAIN/ DOUGLAS FIR
DG	DOOR GRILL
DH	DOUBLE HUNG
DI	DUCTILE IRON
DIA	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIFF	DIFFUSER/ DIFFERENTIAL
DIP	DUCTILE IRON PIPE
DIR	DIRECTION
DISCH	DISCHARGE
DISP	DISPENSER
DL	DEAD LOAD
DMH	DROP MANHOLE
DN	DOWN
DO	DISSOLVED OXYGEN/ DITTO
DR	DOOR/ DRAIN
DS	DRENCH SHOWER AND EYE WASH
DT	DRAIN TILE
DWG	DRAWING
DWLS	DOWELS
DWSD	DOMINION WATER AND SANITATION DISTRICT
DWY	DRIVEWAY

E

E	EAST
E/O	EAST OF
EA	EACH
EB	EXPANSION BOLT OR ANCHOR
EC	END CURVE
ECC	ECCENTRIC
ECR	END CURB RETURN
EF	EACH FACE/ EXHAUST FAN
EFF	EFFLUENT
EG	EXIST GRADE/ EDGE OF GUTTER/ EXHAUST GRILLE
EGL	ENERGY GRADE LINE
EL	ELEVATION
ELEC	ELECTRICAL/ ELECTRONIC
EN	EDGE NAILING
ENCL	ENCLOSURE
ENG	ENGINE
ENGR	ENGINEER
ENT	ENTRANCE
EP	EDGE OF PAVEMENT
EPT	ETHYLENE PROPYLENE
EQ	EQUAL
EQUIP	EQUIPMENT
ESMT	EASEMENT
ETB	EMULSION TREATED BASE
ETC	ET CETERA
EVAP	EVAPORATOR
EVC	END VERTICAL CURVE
EW	EACH WAY/ EYE WASH
EX	EXISTING
EXC	EXCAVATION
EXH	EXHAUST
EX-HY	EXTRA HEAVY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR/ EXTENSION
EXTR	EXTRUDED

F

F	FAHRENHEIT/ FINISH
F TO F	FACE TO FACE
F&C	FRAME AND COVER
F&I	FURNISH AND INSTALL
FAB	FABRICATE/ FABRICATION/ FABRICATED
FAI	FRESH AIR INTAKE
FB	FLAT BAR/ FLOOR BEAM/ FIELD BOOK
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDR	FEEDER
FE	FIRE EXTINGUISHER/ FINAL EFFLUENT
FEM	FEMALE (PIPE THREAD)
FF	FLAT FACE/ FAR FACE/ FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT/ FLAT HEAD
FIG	FIGURE
FIN	FINISHED
FIX	FIXTURE
FL	FLOWLINE/ FLOOR
FLEX	FLEXIBLE
FLG	FLANGE/ FLOORING
FLGD	FLANGED
FLOCC	FLOCCULATOR/ FLOCCULATION
FLR	FLOOR
FLSG	FLASHING
FM	FACTORY MUTUAL (LAB APPRVD)/ FORCE MAIN
FMH	FLEXIBLE METAL HOSE
FN	FIELD NAILING
FND	FOUNDATION
FOC	FACE OF CONCRETE/ FIBER OPTIC CABLE
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FOW	FACE OF WALL
FPC	FLEXIBLE PIPE COUPLING
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FPTS	FOREIGN PIPE TEST STATION
FR	FRAME
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FINISHED SURFACE/ FAR SIDE/ FLOOR SINK / FORGED STEEL
FT	FEET/ FOOT
FTG	FOOTING
FUR	FURRING
FUT	FUTURE
FV	FIELD VERIFY
FWD	FORWARD

G

G	GAS
GA	GAGE / GAUGE
GAL	GALLON
GALV	GALVANIZED
GANC	GUY ANCHOR
GB	GRADE BREAK
GEN	GENERAL / GENERATOR
GFA	GROOVED FLANGE ADAPTER
GI	GALVANIZED IRON
GIP	GALVANIZED IRON PIPE
GL	GLASS / GROUND LINE / GRADE LINE
GLB	GLUE LAMINATED BEAM / GLULAM
GLV	GLOBE VALVE
GM	GAS METER
GP	GUY POLE
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRADE
GRD	GRADE / GROUND
GRTG	GRATING
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
GYP	GYPSUM

H

H	HIGH / HEIGHT
H&V	HEATING AND VENTILATING
H/B	HOSE BIBB
HC	HOUSE CONNECTION
HDR	HEADER
HDW	HARDWARE
HDWL	HEADWALL
HEX	HEXAGONAL
Hg	MERCURY
HGL	HYDRAULIC GRADE LINE
HGR	HANGER
HM	HOLLOW METAL
HORZ	HORIZONTAL
HP	HIGH POINT / HORSE POWER / HIGH PRESSURE
HPG	HIGH PRESSURE GAS
HR	HEAT RETURN / HOUR
HSL	HORIZONTALLY SLOTTED
HSS	HOLLOW STRUCTURAL SECTION
HTG	HEATING
HTR	HEATER
HV	HORIZONTAL AND VERTICAL CONTROL POINT
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HW	HOT WATER / HEADWORK
HWD	HARDWOOD
HWL	HIGH WATER LEVEL
HWO	HANDWHEEL OPERATED
HYD	HYDRAULIC / HYDRANT

I

I/O	INPUT/OUTPUT
I&O	INSIDE AND OUTSIDE
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IF	INSIDE FACE
IJTS	INSULATING JOINT TEST STATION
IN	INCH
INCL	INCLUDE / INCLUDING
INFL	INFLUENT
INSL	INSULATION / INSULATING / INSULATED
INSP	INSPECTION
INST	INSTRUMENT
INT	INTERIOR
INV	INVERT
IP	IRON PIPE
IPS	IRON PIPE SIZE
IRRG	IRRIGATION

J

JAN	JANITOR
JC	JUNCTION CHAMBER
JCT	JUNCTION
JS	JUNCTION STRUCTURE
JSTS	JOISTS
JT	JOINT

K

k	KILO
K	KELVIN/ KARAT
kg	KILOGRAM
km	KILOMETER
kV	KILOVOLT
KVA	KILOVOLT AMPERE
kW	KILOWATT
kWh	KILOWATT HOUR

L

L	LITER/ LENGTH/ ANGLE
LAB	LABORATORY
LAM	LAMINATED
LAT	LATERAL
LAV	LAVATORY
LB	POUND
LCP	LOCAL CONTROL PANEL
LCS	LOCAL CONTROL STATION
LD	LOCAL DEPRESSION
LDG	LANDING
LEV	LEVEL
LF	LINEAR FOOT
LG	LENGTH/ LONG
LH	LAMP HOLE/ LEFT HAND
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION
LOL	LAYOUT LINE
LONG	LONGITUDINAL
LP	LOW POINT/ LOW PRESSURE/ LAMP POST
LPG	LIQUID PETROLEUM GAS
LT	LEFT/ LIGHT
LTS	LIME TREATED SOIL
LW	LOW WATER
LWL	LOW WATER LEVEL
LWR	LOWER

M

m	METER
M	MALE (PIPE THREAD)
mA	MILLIAMPS
MACH	MACHINE
MAG	MAGNETIC
MAINT	MAINTENANCE
MAN	MANUAL
MAS	MASONRY
MAT	MATERIAL
MAX	MAXIMUM
MB	MAIL BOX/ MACHINE BOLT
MCC	MOTOR CONTROL CENTER
MCR	MIDDLE OF CURB RETURN
MEAS	MEASURE
MECH	MECHANICAL
MED	MEDIUM
MEMB	MEMBER
MFR	MANUFACTURER
MFRD	MANUFACTURED
MGD	MILLION GALLONS PER DAY
MH	MANHOLE/ MAINTENANCE HOLE
MHT	MEAN HIGH TIDE
MHW	MEAN HIGH WATER
MI	MALLEABLE IRON/ MILE
MICRON	1/1,000,000 METER
MIL	MILITARY/ 1/1,000TH INCH
MIN	MINIMUM/ MINUTE
MIR	MIRROR
MISC	MISCELLANEOUS
MK	MARK
MLW	MEAN LOW WATER
mm	MILLIMETER
MO	MOTOR OPERATED/ MASONRY OPENING
MOD	MODEL
MON	MONUMENT
MOR	MORTAR
MS	MOP SINK
MSL	MEAN SEA LEVEL
MTC	MECHANICAL-TYPE COUPLING
MTD	MOUNTED
MTG	MOUNTING
MTL	METAL
MTR	MOTOR

N

N	NORTH
NaOCl	SODIUM HYPOCHLORITE
NaOH	SODIUM HYDROXIDE (CAUSTIC SODA)
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NF	NEAR FACE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NG	NATURAL GRADE/ NATURAL GAS
NIC	NOT IN CONTRACT
NO	NUMBER/ NORMALLY OPEN
NOM	NOMINAL
NPS	NOMINAL PIPE SIZE
NPT	NATIONAL PIPE THREAD
NRCP	NON-REINFORCED CONCRETE PIPE
NRS	NON-RISING STEM
NS	NEAR SIDE
NTS	NOT TO SCALE

O

OBJ	OBJECT
OC	ON CENTER/ OVER-CROSSING
OD	OUTSIDE DIAMETER/ OVERALL DIMENSION
OE	OUTER EDGE
OF	OVERFLOW/ OUTSIDE FACE
OFD	OVERFLOW DRAIN
OFF	OFFICE
OH	OVER HEAD
OHW	OVERHEAD WIRES
OPER	OPERATOR/ OPERATING
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
OS&Y	OUTSIDE SCREW AND YOKE
OSA	OUTSIDE AIR
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OWG	OIL. WATER. GAS
OZ	OUNCE

P

P	POLE/ PAGE/ PIPE
P/S	POLE AND SHELF
PA	PLANTING AREA
PART	PARTITION
PAVMT	PAVEMENT
PB	POLYBUTYLENE/ PULL BOX
PC	POINT OF CURVATURE/ PRIMARY CLARIFIER/ PORTLAND CEMENT
PCC	PORTLAND CEMENT CONCRETE/ POINT OF COMPOUND CURVE
PCOTG	PRESSURE CLEANOUT TO GRADE
PCVC	POINT OF COMPOUND VERTICAL CURVE
PE	PLANT EFFLUENT/ POLYETHYLENE/ POLYECTHYLENE POLYMER
PG	PRESSURE GAGE
pH	RECIPROCAL LOG OF HYDROGEN ION CONCENTRATION
PI	PLANT INFLUENT/ POINT OF INTERSECTION
PK	PARKING
PL	PLATE/ PROPERTY LINE/ PLACE
PLAS	PLASTER/ PLASTIC
PLT	PLANT
PLWD	PLYWOOD
PM	PRESSED METAL

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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ENGINEERING DIVISION ACCEPTANCE BLOCK

P CONT'D

PNEU	PNEUMATIC
PNL	PANEL
POB	POINT OF BEGINNING
POC	POINT OF CONNECTION
POT	POINT OF TANGENT
PP	POWER POLE/ POLYPROPYLENE
PPD	POUNDS PER DAY
PPH	POUNDS PER HOUR
PPM	POUNDS PER MINUTE
PR	PAIR
PRC	POINT OF REVERSE CURVE
PRCT	PRECAST
PREFAB	PREFABRICATED
PRESS	PRESSURE
PROF	PROFILE
PRV	PRESSURE REGULATING, RELIEF OR REDUCING VALVE
PRVC	POINT OF REVERSE VERTICAL CURVE
PS	PRESSURE SWITCH
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	POINT OF TANGENCY/ PAINT/ PRESSURE
PTFE	POLYTETRAFLUOROETHYLENE (TEFLON)
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PVDF	POLYVINYLIDENE FLUORIDE (KYNAR)
PW	POTABLE WATER

Q

QT	QUARRY TILE
QTY	QUANTITY
QUAD	QUADRANGLE/ QUADRANT

R

R	RADIUS/ RISER / RATE OF SLOPE
R&O	ROCK AND OIL
R/W	RIGHT OF WAY
RAC	RECYCLED ASPHALT CONCRETE
RAG	RETURN AIR GRILLE
RAP	RECLAIMED ASPHALT PAVEMENT
RAS	RETURN ACTIVATED SLUDGE
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD/ ROOF DRAIN/ ROUND
RED	REDUCER/ REDUCING
REF	REFERENCE/ REFER/ REFRIGERATOR
REG	REGULATING
REINF	REINFORCE/ REINFORCED
REQD	REQUIRED
RESIL	RESILIENT
RET	RETAINING/ RETURN
REV	REVISION
REW	RECLAIMED WATER
RF	ROOF/ RAISED FOUNDATION/ ROUGH FACE
RFG	ROOFING
RGE	REGISTERED GEOTECHNICAL ENGINEER
RH	REDHEAD / RIGHT HAND
RM	ROOM
RO	ROUGH OPENING
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RS	RISING STEM
RSL	RAW SLUDGE
RT	RIGHT
RTP	REINFORCED THERMOSETTING PLASTIC
RTU	REMOTE TERMINAL UNIT
RW	REDWOOD
RWL	RAINWATER LEADER
RWSD	ROXBOROUGH WATER AND SANITATION DISTRICT

S

S	SOUTH/SCUM/SINK/SECOND/SLOPE
S/O	SOUTH OF
SAM	SAMPLE
SAN	SANITARY
SBR	STYRENE BUTADIENE (RUBBER)
SC	SECONDARY CLARIFIER
SCCP	STEEL CYLINDER CONCRETE PIPE
SCD	SCREWED
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SD	SANITARY DRAIN/ SMOKE DETECTOR
SDR	STANDARD THERMOPLASTIC PIPE DIMENSION RATIO/STORM DRAIN
SEC	SECONDARY/ SECTION
SER	SERIES
SETT	SETTING
SF	SQUARE FOOT
SH	SHOWER
SHELV	SHELVING
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SL	SLUDGE
SLDG	SLIDING
SLG	SLUICE GATE
SOG	SLAB ON GRADE
SOLN	SOLUTION
SP	STATIC PRESSURE/ SPARE CHEMICAL
SPEC	SPECIFICATION
SPK	SPIKE
SQ	SQUARE
SS	STAINLESS STEEL/ SANITARY SEWER/ SERVICE SINK
SSB	SELECT SUB-BASE
SSPWC	STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION
SSU	SECONDS SAYBOLT UNIVERSAL
ST	STREET/ STATE
STA	STATION
STC	SLEEVE-TYPE COUPLING
STD	STANDARD
STK	STAKE
STL	STEEL
STM	STEAM
STR	STRAIGHT/ STRUCTURAL
SU	STEAM LINE
SUCT	SUCTION
SV	SOLENOID VALVE
SW	SIDEWALK
SWD	SIDEWALK DRAIN
SWGR	SWITCHGEAR
SWR	SIDEWALL REGISTER
SY	SQUARE YARD
SYM	SYMMETRICAL/ SYMBOL
SYS	SYSTEM

T

T	THERMOSTAT/ TREAD OF STAIR/ TANGENT
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TAN	TANGENT
TB	TACK BOARD
TBE	THREAD BOTH ENDS
TBM	TEMPORARY BENCH MARK
TC	TOP OF CURB
TCV	TEMPERATURE CONTROL VALVE
TEL	TELEPHONE
TEMP	TEMPERATURE/ TEMPORARY
TF	TOP OF FOOTING
TH	TEST HOLE
THK	THICK/ THICKNESS
THR	THRESHOLD
THR'D	THREADED
TK	TANK/ TACK
TL	TRAVERSE LINE
TOC	TOP OF CONCRETE
TOE	THREAD ONE END
TOL	TOILET
TOM	TOP OF MASONRY
TOP	TOP OF PIPE
TOPO	TOPOGRAPHIC
TOS	TOP OF STEEL
TOW	TOP OF WALL
TP	TELEPHONE POLE
TR	TRACT
TRANS	TRANSMITTER/ TRANSITION /TRANSMISSION
TS	TRAFFIC SIGNAL
TSB	TOP SET BASE
TSC	TRAFFIC SIGNAL CONDUIT
TV	THERMOSTATIC VALVE/ TELEVISION
TW	THERMOMETER WELL /TRAVELED WAY
TYP	TYPICAL

U

UB	UNION BONNET
UBC	UNIFORM BUILDING CODE
UC	UNDER-CROSSING
UG	UNDERGROUND
UGC	UNDERGROUND CONDUIT
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNID	UNIDENTIFIED
UNO	UNLESS NOTED OTHERWISE
UOI	UNLESS OTHERWISE INDICATED
UPS	UNINTERRUPTABLE POWER SUPPLY
UR	URINAL
USA	UNDERGROUND SERVICE ALERT
USGS	UNITED STATES GEOLOGICAL SURVEY
UV	ULTRAVIOLET
UW	UTILITY WATER

V

V	VALVE/ VERTICAL/ VENT/ VOLT/ VOLUME
VAC	VACUUM
VAR	VARIES/ VARIABLE
VB	VALVE BOX
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VOL	VOLUME
VPI	VERTICAL POINT OF INTERSECTION
VSL	VERTICALLY SLOTTED
VTC	VENT TO CEILING
VTR	VENT THROUGH ROOF
VWC	VINYL WALL COVERING
VWM	VERIFY WITH MANUFACTURE

W

W	WEST/ WASTE/ WIDTH/ WIDE FLANGE/ WATER
W/	WITH
W/O	WEST OF / WITHOUT
WC	WATER COLUMN / WATER CLOSET
WCO	WALL CLEANOUT
WD	WOOD
WDW	WINDOW
WH	WATER HEATER
WI	WROUGHT IRON
WM	WATER METER
WOG	WATER, OIL, OR GAS
WP	WATERPROOFING/ WORKING PRESSURE/ WORK POINT
WPJ	WEAKEN PLANE JOINT
WS	WATER SURFACE
WSTP	WATERSTOP
WT	WEIGHT
WWF	WELDED WIRE FABRIC
WWP	WATER WORKING PRESSURE

X

XCONN	CROSS CONNECTION
XS	EXTRA STRONG
XSEC	CROSS SECTION
XXS	DOUBLE EXTRA STRONG

Y

YD	YARD
YR	YEAR

Z

Z	ZERO/ ZONE
ZN	ZINC
#	POUND
&	AND
@	AT

FOR ADDITIONAL ABBREVIATIONS SEE:

GENERAL: PIPING SCHEDULES (MATERIAL AND FLUID)
CIVIL: GENERAL CIVIL SHEET
INSTRUMENTATION: GENERAL I&C SHEETS
BUILDING MECHANICAL: GENERAL HVAC, PLUMBING AND FIRE PROTECTION SHEETS
ELECTRICAL: GENERAL ELECTRICAL SHEETS

OTHER ABBREVIATIONS CONFORM TO ANSI STANDARD ABBREVIATIONS Z32.2.3

REV 010119

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Revision	By	Appd	YYYY.MM.DD
0			
1	SSC	ZS	2025.08.20
2	CLC	SBT	2025.09.XX
A	IFP - L&E	Appd	YYYY.MM.DD
B	WORK PACKAGE 3 DRAFT	By	

Issued

Permit/Seal

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Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF
11290 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899_G000_002

Scale: NTS

KN	MCR	SRT	2025.04.07
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
GENERAL ABBREVIATIONS

Revision: Sheet: of XX

Drawing No.
G-002

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ORIGINAL SHEET - ANSI D

TYPICAL PIPE DESIGNATION:

MATERIAL GROUP NUMBER

#" XXX (##)

PIPE DIAMETER — FLUID ABBREVIATION

GENERAL SHEET NOTES

1. ALTHOUGH SEVERAL PIPE MATERIAL GROUPS MAY BE LISTED ON THIS SHEET FOR A GIVEN FLUID SERVICE, CONTRACTOR SHALL PROVIDE ONLY THE PIPE MATERIAL GROUP SHOWN ON THE DRAWINGS AND SPECIFIED FOR THAT FLUID SERVICE.
2. CHANGE IN PIPING MATERIAL GROUP NUMBER IS INDICATED THUS: ——◆——
3. PROVIDE DOUBLE CONTAINMENT FOR ALL CHEMICAL PIPING PER CODE REQUIREMENTS.

SHEET KEYNOTES

A. PROPRIETARY NAMES HAVE BEEN QUOTED FOR IDENTIFICATION PURPOSES ONLY. SUBSTITUTIONS WILL BE PERMITTED SUBJECT TO PROVISIONS OF THE SPECIFICATIONS.

B. NO SUBSTITUTIONS UNLESS ACCEPTED BY THE ENGINEER PER THE SPECIFICATIONS.

C. FOR VALVES 8" AND LARGER, SEE VALVE SCHEDULE. FOR SPECIAL VALVES, SEE SPECIFICATIONS. FOR PIPE LINING AND COATING, SEE SPECIFICATIONS.

D. PIPE MATERIALS SHALL BE PER THE REFERENCE STANDARDS AS MODIFIED BY THE CONTRACT SPECIFICATIONS. FOR PIPE LINING AND COATING, SEE SPECIFICATIONS.

FLUID ABBREVIATION	FUNCTION THIS LIST INCLUDES SOME LINES NOT USED IN THIS PROJECT (D)	PIPING MATERIALS (SEE GENERAL NOTES AT THE RIGHT AND PIPE MATERIAL SHEET)				FIELD TEST REQUIREMENTS (B) (C)		
		EXPOSED PIPING (K)		BURIED PIPING (J)		MINIMUM TEST PRESSURE (PSI)	TEST MEDIUM	LEAKAGE ALLOWANCE (A)
		4" DIA AND SMALLER	6" DIA AND LARGER	4" DIA AND SMALLER	6" DIA AND LARGER			
A	AERATION	CS01, PV01, FR01	CS05, DI01, PV01, FR01	CS01, PV01, FR01	CS05, DI01, PV01, FR01	25	AIR	(A)(D)
FA	FOUL AIR	--	FR01	--	FR01	10	AIR	(A)(D)
FEC	FERRIC CHLORIDE	PE01, PV02	PE01, PV02	PE01, PV02	PE01, PV02	125	WATER	(A)
FP	FIRE PROTECTION	(H)	(H)	(H)	(H)	(H)	WATER	--
MP	MEMBRANE PERMEATE	SS02, PV02	SS02, PV02	--	--	125	WATER	(A)
OF	OVERFLOW	-	-	PE01, PE05	-	25	WATER	(A)
PE	PRIMARY EFFLUENT	--	CS08, DI02	--	CS08, DI02	25	WATER	(A)
PI	PLANT INFLUENT	--	CY02, DI02	--	CY02, DI02	(E)	WATER	(B)
PLE	PLANT EFFLUENT	--	CS08	--	CS08	50	WATER	(A)
PW	POTABLE WATER	CS02, DI01, PV01, CU01	CS02, CS08, DI01, PV01	CS02, DI01, PV01, CU01	CS02, CS08, DI01, PV01, PV03, PV04	125	WATER	RC05, CS02, CS08, DI01, PV01, CU01(A) PV03, PV04(B)
RAS	RETURN ACTIVATED SLUDGE	CS08, DI02	CS08, DI02	CS08, DI02	CS08, DI02	50	WATER	(A)
S	SCUM	--	DI03	--	DI03	50	WATER	(A)
SDH	SODIUM HYDROXIDE (CAUSTIC SODA)	CS06, SS01, PE01	CS06, SS01, PE01	CS06, SS01, PE01	CS06, SS01, PE01	125	WATER	(A)
SDR	STORM DRAIN	--	CS08	--	RC01, RC05	(E)	WATER	CS08, RC05(A) RC01(C)
SE	SECONDARY EFFLUENT	--	CS08, DI02	--	CS08, DI02	50	WATER	(A)
SS	SANITARY SEWER	PV06, PV01	PE01, PE05	-	-	(F)	--	--
WAS	WASTE ACTIVATED SLUDGE	--	DI02	--	DI02	50	WATER	(A)

PIPING MATERIAL SCHEDULE (B)

GROUP NO	PIPE (D)	FITTINGS	VALVES, 6" AND SMALLER (A) (C)
DI02	DUCTILE IRON, ANSI A21.51, (AWWA C151), ENDS BELL AND SPIGOT, MECHANICAL JOINTS OR 125 PSI FLANGED. (TYPICAL SERVICE - SLUDGE AND SEWAGE LINES).	DUCTILE IRON AWWA C110, BELL AND SPIGOT JOINTS (RESTRAINED OR NON-RESTRAINED), MECHANICAL COUPLINGS, ASME B16.1 FLANGES, OR MECHANICAL JOINTS.	ECC PLUG, SYNTHETIC RUBBER FACED: DEZURIK PEC, CAST IRON OR MILLIKEN 601. SWING TYPE CHECK: CRANE #383 OR POWELL FIG 559. BALL: PRATT OR APCO-WILLAMETTE.
PE01	POLYETHYLENE PIPE, ASTM D3350, SDR AS SPECIFIED.	THERMAL BUTT-FUSED FLANGE CONNECTIONS AT ALL VALVES AND TRANSITIONS.	AS INDICATED ON DRAWINGS.
PE05	POLYETHYLENE, PRESSURE PIPE, AWWA C906.	POLYETHYLENE THERMAL BUTT-FUSED JOINTS, FLANGED JOINTS AT VALVES AND TRANSITIONS.	AS INDICATED ON DRAWINGS.
PE06	FLEXIBLE RUBBER HOSE, EPDM/SBR RUBBER. TEXTILE PLY WITH HELICAL STEEL WIRE REINFORCEMENT. 150 PSI.	BARBED SHANK FOR CONVERSION TO QUICK COUPLING OR THREADED END .	AS INDICATED ON DRAWINGS.
PV01	POLYVINYL CHLORIDE (PVC), ASTM D1785, SCH 80, TYPE I.	PVC, SCH 80, TYPE I, SOCKET SOLVENT WELD JOINTS, ASTM D2467. SOLVENT SHALL BE COMPATIBLE WITH FLUID SERVICE.	PVC, BALL, DIAPHBRAGM, BUTTERFLY, OR LIFT CHECK: NIBCO/CHEMTROL, MCCANNA-MARPAC, OR GEORGE FISCHER SLOANE

GENERAL SYMBOLOGY

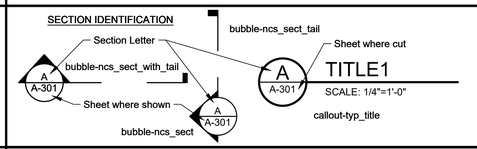
- NEW CONSTRUCTION
- EXISTING (SCREENED)
- FUTURE (PHANTOM)
- EXISTING TO BE REMOVED OR DEMOLISHED

MATERIAL SYMBOLOGY

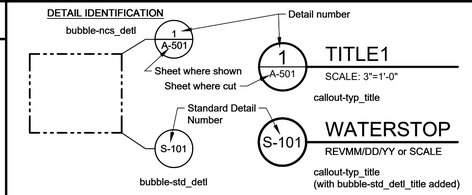
- CONCRETE (PLAN AND SECTION)
- GROUT OR SAND (PLAN AND SECTION)
- BRICK (PLAN AND SECTION)
- CMU (PLAN AND SECTION)
- STEEL/METAL/FRP (SMALL SCALE SECTION)
- CHECKER PLATE OR SOLID FRP GRATING (PLAN)
- CHECKER PLATE (SECTION)
- GRATING (PLAN)
- GRATING OR SOLID FRP GRATING (SECTION)
- SAFETY GRATING (PLAN)
- SAFETY GRATING (SECTION)
- RAILING (PLAN)
- WOOD (PLAN OR ELEVATION)
- LUMBER/ FRAMING - NOMINAL
- LUMBER - TRIMMED (BLOCKING OR SHIMS)
- OR — GLULAM (SECTION)
- GLULAM (ELEVATION)
- OR — PLYWOOD (SMALL SCALE)
- FINISHED GRADE
- GRAVEL/ DRAINROCK/ AGGREGATE BASE

REFERENCE SYMBOLS

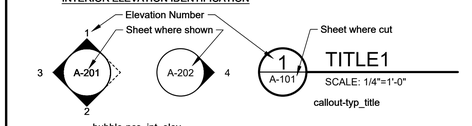
SECTION IDENTIFICATION



DETAIL IDENTIFICATION



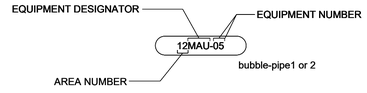
INTERIOR ELEVATION IDENTIFICATION



EXTERIOR ELEVATION IDENTIFICATION

EQUIPMENT IDENTIFICATION

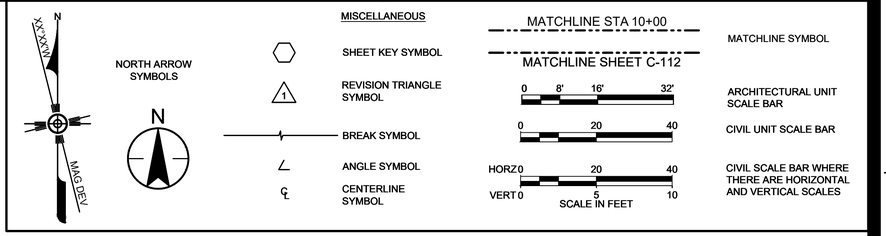
SEE EQUIPMENT SCHEDULE/SPECIFICATIONS



PLEASE NOTE:

DISCIPLINE SPECIFIC SYMBOLS ARE SHOWN ON THE DISCIPLINE GENERAL DRAWINGS.

FOR WELDING SYMBOLS USE AMERICAN WELDING SOCIETY STANDARD SYMBOLS.



ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

THESE CONSTRUCTION DRAWINGS HAVE BEEN REVIEWED BY DOUGLAS COUNTY FOR LOCATION AND EXTENTS PERMIT ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

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No.	Revision	By	Appd	YYYY.MM.DD
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No.	Issued	By	Appd	YYYY.MM.DD
B	IPP - L&E	SSC	ZS	2025.08.20
A	WORK PACKAGE 3.1 30% ATT	CLC	SRT	2025.04.XX

Permit/Seal

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Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF
11290 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899

File Name: 01899_G000_003

Scale:

KN	MCR	SRT	2025.04.07
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
GENERAL SYMBOLS

Revision: Sheet: of XX

Drawing No.
G-003

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ORIGINAL SHEET - ANSI D

DOUGLAS COUNTY STANDARD 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:

   EXAMPLES: WATER TIE-IN SHEET 3
   STORM SEWER CONNECTION SHEET 6

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 DRAINAGE STRUCTURES.
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

NOTES - CONTINUED

GENERAL

1. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING IMPROVEMENTS WHICH ARE TO REMAIN IN PLACE FROM DAMAGE. ALL IMPROVEMENTS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE EXPEDITIOUSLY REPAIRED OR RECONSTRUCTED AT THE CONTRACTOR'S EXPENSE WITHOUT ADDITIONAL COMPENSATION.
2. THE CONTRACTOR SHALL PROPERLY DISPOSE OF ALL DEBRIS FROM DEMOLITION AT CONTRACTORS EXPENSE.
3. ALL BUILDING COORDINATES ARE TO OUTSIDE CORNER OF COLUMN OR BUILDING.
4. THE CONTRACTOR SHALL DISPOSE OF ALL NON-ORGANIC WASTES SUCH AS OLD GUNITE, PIPING, ROCK RUBBLE ETC... AT AN APPROVED LANDFILL OR, OTHER SUITABLE DISPOSAL SITES AT THE CONTRACTOR'S EXPENSE.
5. CONTRACTOR SHALL RESTORE ALL SURVEY MONUMENTS THAT ARE DAMAGED OR DESTROYED DURING CONSTRUCTION.

UTILITIES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL POTHOLE FOR EXISTING UTILITIES PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FOR POINTS OF CONNECTIONS.
2. THE CONTRACTOR SHALL PROTECT ALL REMAINING EXISTING UTILITIES.
3. LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR SHALL VERIFY ALL LOCATIONS AND ELEVATIONS AND SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT UTILITY LINES WHETHER SHOWN OR NOT SHOWN.
4. PRIOR TO ANY CONNECTION TO AN EXISTING UTILITY, THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY OWNER. PRIOR TO ANY EXCAVATION IN THE VICINITY OF ANY EXISTING UNDERGROUND FACILITIES, INCLUDING ALL WATER, SEWER, STORM DRAIN, GAS, PETROLIUM PRODUCTS, OR OTHER PIPELINES; ALL BURIED ELECTRIC POWER, COMMUNICATIONS, OR TELEVISION CABLES; ALL TRAFFIC SIGNAL AND STREET LIGHTING FACILITIES; AND ALL ROADWAY, STATE HIGHWAY, AND RAILROAD RIGHTS-OF-WAY, THE CONTRACTOR SHALL NOTIFY THE RESPECTIVE AUTHORITIES REPRESENTING THE OWNERS OR AGENCIES RESPONSIBLE FOR SUCH FACILITIES NOT LESS THAN 3 DAYS NOR MORE THAN 7 DAYS PRIOR TO EXCAVATION SO THAT A REPRESENTATIVE OF SAID OWNERS OR AGENCIES CAN BE PRESENT DURING SUCH WORK IF THEY SO DESIRE. IN THE CASE OF THE UNDERGROUND UTILITY SERVICE ALERT CENTER, THIS NOTICE WILL GIVE THEM TIME TO MARK THE LOCATION OF THE UTILITIES. THE CONTRACTOR SHALL ALSO NOTIFY THE REGIONAL OR LOCAL UNDERGROUND SERVICE ALERT COMPANY AT LEAST 3 DAYS, BUT NO MORE THAN 7 DAYS, PRIOR TO SUCH EXCAVATION.

SURVEY AND CONTROL

SURVEY CONTROL IS BASED IN NSRS 2011 COLORADO STATE PLANES, CENTRAL ZONE, US FOOT.

SEE SHEET C-004 FOR LOCAL SURVEY CONTROL POINTS LOCATIONS.

HORIZONTAL CONTROL IS BASED ON THE PROJECT CONTROL INFORMATION OF THE TOPOGRAPHIC SURVEY PERFORMED BY PRECISION SURVEY & MAPPING INC. ON AUGUST 2, 2018.

BASIS OF ELEVATION IS BASED ON THE PROJECT CONTROL INFORMATION OF THE TOPOGRAPHIC SURVEY PERFORMED BY PRECISION SURVEY & MAPPING INC. ON AUGUST 2, 2018 BEING POINT #10, A RED PLASTIC CAP, WITH A PUBLISHED ELEVATION OF 5517.39'.

ADDITIONAL PROJECT CONTROL POINTS BASED ON FIELD WORK PERFORMED ON OCTOBER 21, 2024.

PIPING

1. THE CONTRACTOR SHALL COMPLY WITH THE STATE DEPARTMENT OF HEALTH SERVICES CRITERIA FOR THE SEPARATION OF WATER MAINS AND SANITARY SEWERS.
2. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 36 INCHES OF COVER ON ALL PIPELINES UNLESS OTHERWISE SHOWN OR DIRECTED.
3. STRAIGHT SLOPES SHALL BE MAINTAINED BETWEEN INVERT ELEVATIONS SHOWN OR SPECIFIED.
4. THE CONTRACTOR SHALL ADJUST ALL VALVE BOXES, PULL BOXES AND MANHOLES TO FINISHED GRADE UNLESS OTHERWISE SHOWN OR SPECIFIED. MANHOLES IN OPEN FIELDS SHALL BE SET ONE FOOT ABOVE GRADE. APPROXIMATE RIM ELEVATIONS ARE SHOWN ON DRAWINGS.
5. ALL PIPE TRENCHING AND BACKFILL SHALL BE IN ACCORDANCE WITH DETAIL C-602 FOR RIGID PIPE AND C-601 FOR FLEXIBLE PIPE. THE PIPING SHOWN ON THESE PLANS SHALL BE RESTRAINED JOINT DESIGN AT ALL SLEEVE TYPE COUPLINGS.
6. THE CONTRACTOR SHALL PROVIDE TWO FLEXIBLE SLEEVE TYPE COUPLINGS WITH RESTRAINED JOINTS FOR EACH PIPE PENETRATING STRUCTURE (EXCLUDING MANHOLES). THE COUPLINGS AND FLEXIBLE JOINTS SHALL BE 3-FEET AND 8-FEET AWAY FROM THE STRUCTURE. ALL PIPING SHALL BE RESTRAINED JOINT DESIGN UNLESS INDICATED OTHERWISE. COUPLINGS AND RESTRAINED JOINTS SHALL BE PROVIDED WHETHER SHOWN ON THE DRAWINGS OR NOT. STEEL PIPE RESTRAINED HARNESS SETS SHALL BE PROVIDED IN ACCORDANCE WITH AWWA M-11. ALL OTHER PIPES, COUPLINGS AND RESTRAINED JOINTS SHALL BE APPROVED BY THE ENGINEER. ALL RESTRAINED JOINTS SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURERS' RECOMMENDATIONS.

EROSION CONTROL

1. THE CONTRACTOR SHALL SUBMIT AN EROSION CONTROL PLAN FOR WORK DURING THE CONSTRUCTION, SIGNED AND STAMPED BY A REGISTERED CIVIL ENGINEER PRIOR TO THE START OF CONSTRUCTION.
   a. ALL SLOPES SHALL BE PROTECTED FROM EROSION DURING ROUGH GRADING OPERATIONS AND THEREAFTER, UNTIL INSTALLATION OF FINAL GROUNDCOVER (SEE LANDSCAPE PLANS FOR FINAL GROUNDCOVER).
   b. ALL SLOPE PROTECTION SWALES SHALL BE CONSTRUCTED AT THE SAME TIME AS BANKS ARE GRADED.
   c. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION AND MAINTENANCE OF EROSION CONTROL MEASURES CONTAINED WITHIN THE CONTRACT SPECIFICATIONS OR AS REQUIRED BY THE CITY, DISTRICT, OR OTHER REGULATORY AUTHORITY. THE CONTRACTOR SHALL ALSO PROVIDE ANY ADDITIONAL EROSION CONTROL MEASURES (E.G. HYDROSEEDING, MULCHING OF STRAW, SAND BAGGING, DIVERSION DITCHES, ETC.) DICTATED BY FIELD CONDITIONS TO PREVENT EROSION OR THE INTRODUCTION OF DIRT, MUD, OR DEBRIS INTO EXISTING PUBLIC STREETS, WATERWAYS, OR ONTO ADJACENT PROPERTIES DURING ANY PHASE OF CONSTRUCTION OPERATIONS.

GENERAL CIVIL SYMBOLS

- 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.

NEW
EXISTING
FUTURE
EXISTING TO BE REMOVED OR DEMOLISHED
CENTERLINE
EARTH (IN SECTION)
COMPACTED EARTH (IN SECTION)
S=0.0123 — SLOPE ON PAVED SURFACE
3:1 — BERM SLOPE (HORZ TO VERT)

TOPOGRAPHY AND MAPPING SYMBOLS

125 — MAJOR CONTOURS
MINOR CONTOURS
TOP OF SLOPE
TOE OF SLOPE
P/L — PROPERTY LINE
R/W — RIGHT-OF-WAY LINE
GB — GRADE BREAK
R — RIDGE LINE
ESMT — EASEMENT LINE
TEMP ESMT — TEMPORARY EASEMENT LINE
TRAIL OR DIRT ROAD
FLOW LINE
FLOOD HAZARD AREA
EDGE OF WETLANDS
RAILROAD
GUARDRAIL (PERMANENT)
GUARDRAIL (REMOVABLE)
VEGETATION
WELL

DRAINAGE SYMBOLS

RIPRAP
HAY BALE
SILT FENCE

GEOTECHNICAL SYMBOLS

B-X — SOIL BORING LOCATION
TEST PIT LOCATION
XX — OBSERVATION HOLE
MW — MONITORING WELL

PIPING AND UTILITIES

UTILITIES (SINGLE LINE) SEE PIPE SCHEDULE FOR ADDITONAL PIPING INFO

UTILITIES (SIZE WHERE NOTED)
G — UNDERGROUND

G	NATURAL GAS LINE
HPG	HIGH PRESSURE GAS LINE
LPG	LIQUID PETROLIUM GAS LINE
W	WATER
PW	POTABLE WATER
FIRE	FIRE SUPPLY WATER LINE
REW	RECLAIMED WATER
UW	UTILITY / NON-POTABLE WATER
IRRG	IRRIGATION LINE
SDR	STORM DRAIN
SS	SANITARY SEWER
STM	STEAM LINE
TEL	TELEPHONE
COMM	COMMUNICATIONS LINE
FOC	FIBER OPTIC CABLE
CATV	CABLE TV
E	POWER
UNID	UNIDENTIFIED
ABND	ABANDONED UTILITY

BUMPED HEAD
PP — POWER POLE
BURIED ACCESS MANOLE (IN PLAN) LOCATE ON SIDE SHOWN
BURIED ACCESS MANHOLE (IN PROFILE)
AV/AR VALVE (IN PLAN)
AV/AR VALVE (IN PROFILE)
A/R VALVE (IN PLAN) LOCATE ON SIDE SHOWN
BLOWOFF (IN PROFILE) LOCATE ON SIDE SHOWN
BLOWOFF (IN PLAN)
BLOWOFF (IN PROFILE)
FIRE HYDRANT (IN PLAN)
FH — FIRE HYDRANT (IN PROFILE)
MH — MANHOLE (IN PLAN)
MH — MANHOLE (IN PROFILE)
COTG PCOTG — CLEANOUT TO GRADE OR PRESSURE CLEANOUT TO GRADE (IN PLAN)
COTG PCOTG — CLEANOUT TO GRADE OR PRESSURE CLEANOUT TO GRADE (IN PROFILE)
GATE VALVE
BUTTERFLY VALVE
ECCENTRIC PLUG VALVE
LUBRICATED PLUG VALVE

ROAD AND PAVING SYMBOLS

ASPHALT CEMENT PAVING
CONCRETE PAVING
GRAVEL PAVING
CONCRETE CURB
CONCRETE CURB AND GUTTER
DROP INLET CATCH BASIN
CURBSIDE DROP INLET CATCH BASIN WITH LOCAL DEPRESSION
SIDE INLET CATCH BASIN WITH LOCAL DEPRESSION
CONCRETE WALK
DRIVEWAY/ACCESS RAMP

CONTROL SYMBOLS

CP-XX — CONTROL P OINT
— SITE COORDINATES (SEE TABLE ON DRAWINGS)
N XXXXXXX E XXXXXXX — SITE COORDINATES
EL XXXX.XX — MONUMENT
HORIZONTAL CONTROL POINT
VERTICAL CONTROL POINT
XXX — HORZ AND VERT CONTROL POINT
XXX.XX — FINISHED ELEVATION
(XXX.XX) — EXISTING ELEVATION
DELTA

STRUCTURES

SITE OR RETAINING WALL
X X — FENCE (CHAINLINK)
FENCE (WOOD)
STRUCTURE
STRUCTURE (BELOW GRADE)
CB CB — CATCH BASIN

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

THESE CONSTRUCTION DRAWINGS HAVE BEEN REVIEWED BY DOUGLAS COUNTY FOR LOCATION AND EXTENTS PERMIT ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

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Consultant

No.	Issued	By	Appd	YYYY.MM.DD
B	IFP - L&E	SSC	ZS	2025.08.20

Revision

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-000-001-TEMP
Scale:

Dwn.	Dsgn.	Chkd.	YYYY.MM.DD
			2025.08.01

Title
GENERAL NOTES AND SYMBOLS

Revision: 1
Drawing No.
C-001

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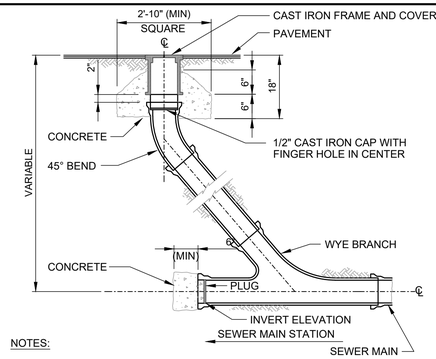
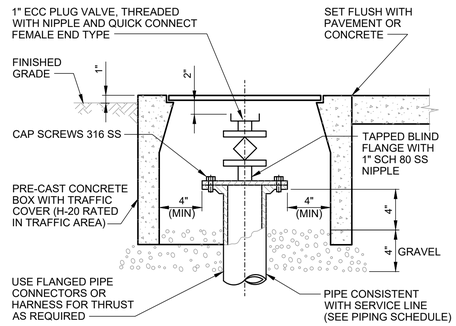


NOTES:

1. IF IN UNIMPROVED AREA TOP SHALL BE 6" ABOVE GRADE.
2. SEE PLAN FOR STATION AND INVERT ELEVATION. PIPE AND FITTINGS SHALL BE OF THE SAME MATERIAL AS THE MAIN LINE SEWER.

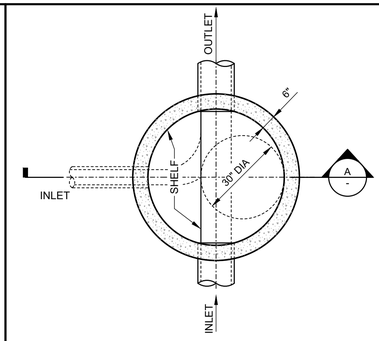
C-302 CLEANOUT TO GRADE (COTG)

REV 010119

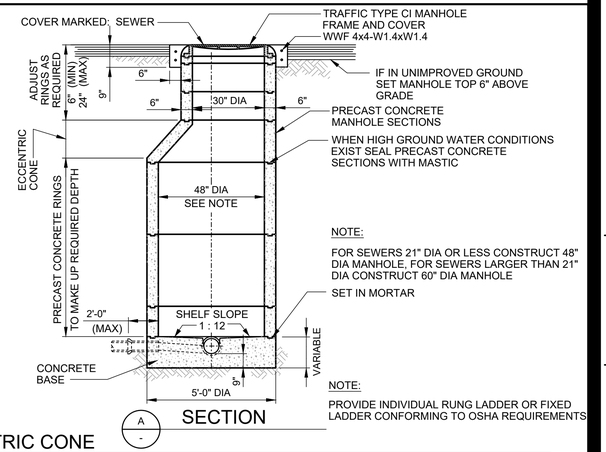


C-305 PRESSURIZED SYSTEM CLEANOUT TO GRADE (PCOTG)

REV 010119

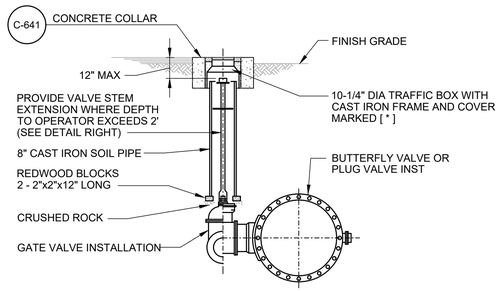


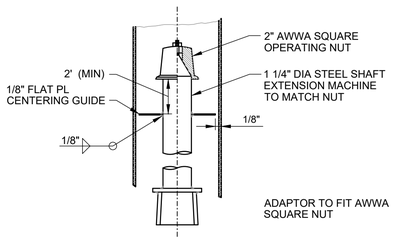
SECTIONAL PLAN



C-320 MANHOLE (MH) WITH ECCENTRIC CONE

REV 010119



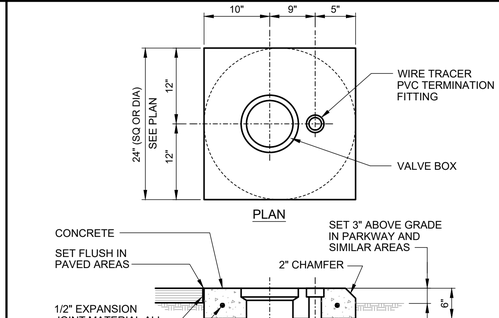


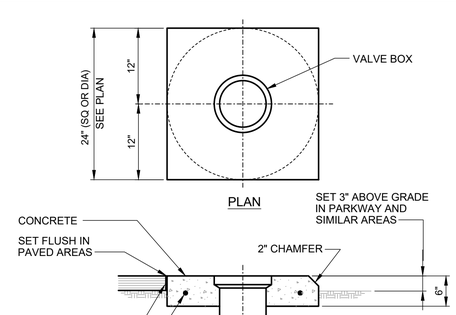
NOTES:

PROVIDE PROTECTIVE COATING TO EXTERIOR SURFACE OF VALVE BODY IN ACCORDANCE WITH SPECS.
FOR LUBRICATED PLUG VALVE, EXTEND LUBRICATION LINE TO GRADE PER MANUFACTURES INSTRUCTIONS.

C-640 BURIED VALVE INSTALLATION

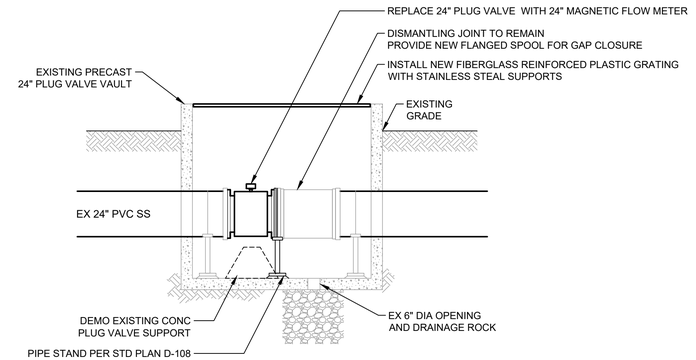
REV 010119



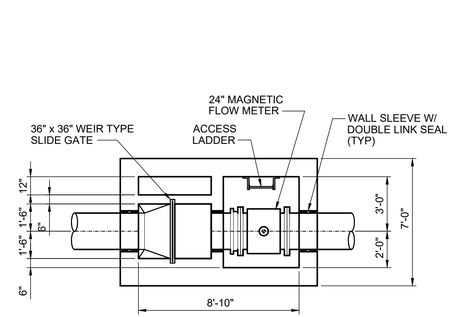


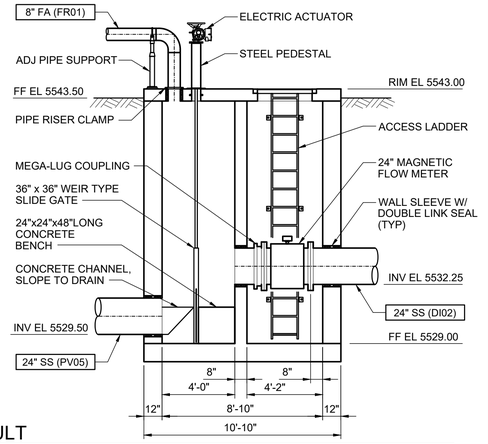
C-641 VALVE BOX COLLAR

REV 010119



C-642 COMBINED INFLUENT FLOW METERING VAULT





C-643 CBWRF INFLUENT FLOW METERING VAULT

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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ENGINEERING DIVISION ACCEPTANCE BLOCK

ORIGINAL SHEET - ANSI D

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No.	By	Appd	YYYY.MM.DD	Revision
2	ZS	Appd	2025.08.20	
1	JSSC	By	YYYY.MM.DD	
B	RP - L&E			Issued

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 0189PC-000-002

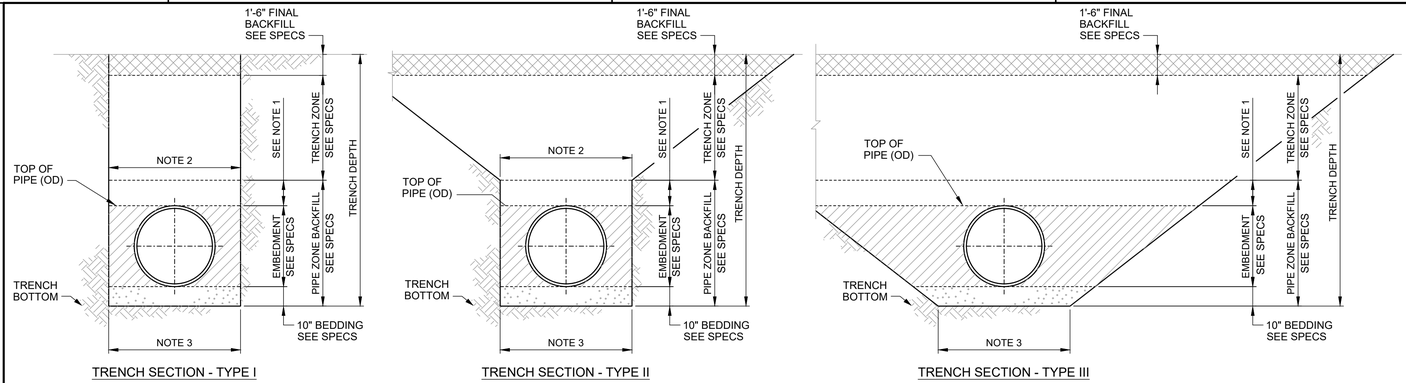
Scale:

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
STANDARD DETAILS - I

Revision: 2

Drawing No.
C-002



NOTES:

1. 6" MIN FOR PIPE DIAMETER < 24"
   12" MIN FOR PIPE DIAMETER > 24"
2. MAX TRENCH WIDTH @ TOP OF PIPE:
   OD + 36" FOR, 18" AND LARGER PIPE OD
   OD + 24" FOR LESS THAN 18"
3. MIN TRENCH BOTTOM WIDTH:
   OD + 24" FOR MECHANICAL COMPACTION

A. FLEXIBLE PIPE REFERS TO ALL STEEL, DUCTILE-IRON, AND PLASTIC PIPES.

B. TYPICAL TRENCH SECTIONS (I, II AND III) ARE TO BE USED ONLY WHERE STABLE, COMPACT SOIL CONDITIONS EXIST. IF BOULDERS OR LARGE OBSTRUCTIONS ARE ENCOUNTERED, TRENCH SECTIONS MAY BE DEEPER OR WIDER THAN SHOWN. THE ENGINEER SHALL BE ADVISED SHOULD THIS OCCUR.

C. THE NEED FOR PROTECTIVE SYSTEMS AND EXCAVATION SLOPES SHALL BE DETERMINED CONSIDERING APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS, AND GEOTECHNICAL CONSULTANTS' RECOMMENDATIONS.

D. PROTECTIVE SYSTEMS SHALL BE DESIGNED AND BUILT IN ACCORDANCE WITH THE APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS.

E. SUPPORTING DOCUMENTATION SHALL BE SUBMITTED TO THE ENGINEER REGARDING PIPE DESIGN AND COMPLIANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS.

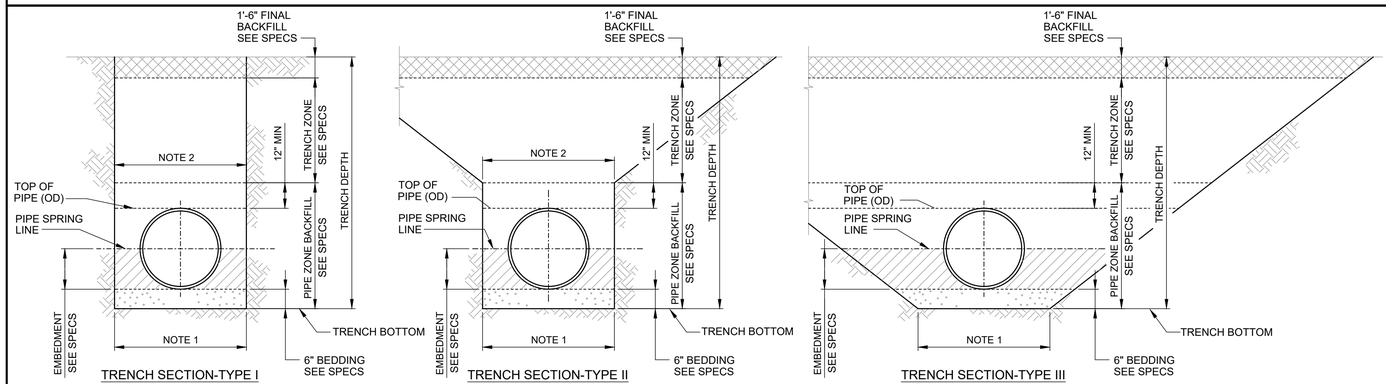
F. UNSUPPORTED VERTICAL AND/OR SLOPING TRENCH WALL SLOPES SHALL NOT BE STEEPER THAN ALLOWED BY APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS, UNLESS SUPPORTING DOCUMENTATION IS SUBMITTED, ACCORDING TO AFOREMENTIONED SAFETY STANDARDS.

G. TRENCH SECTIONS OTHER THAN THE TYPICAL SECTIONS SHOWN MAY BE UTILIZED PROVIDED THEY COMPLY WITH APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS. DOCUMENTATION SUPPORTING THIS COMPLIANCE AND PIPE DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER.

H. IF OVER-EXCAVATION DUE TO POOR FOUNDATION MATERIAL IS ORDERED BY THE ENGINEER, THE BACKFILL MATERIAL SHALL BE ACCORDING TO THE EARTHWORK SECTION OF THE SPECIFICATIONS ARTICLE ENTITLED, "FILL AND BACKFILL MATERIAL REQUIREMENTS."

I. IF DURING CONSTRUCTION, THE WATER TABLE IS DISCOVERED TO BE ABOVE THE TRENCH BOTTOM, THE ENGINEER SHALL BE NOTIFIED, AND APPROPRIATE DEWATERING SHALL BE IMPLEMENTED TO LOWER THE WATER LEVEL BELOW THE TRENCH BOTTOM. THE BACKFILL MATERIAL SHALL BE ACCORDING TO THE EARTHWORK SECTIONS OF THE SPECIFICATIONS, OR AS ORDERED BY THE ENGINEER.

C-601 TRENCH SECTION FLEXIBLE PIPE
REV 010119



NOTES:

1. MIN TRENCH BOTTOM WIDTH:
   OD + 24" FOR MECHANICAL COMPACTION
   OD + 18" FOR WATER CONSOLIDATION
2. MAX TRENCH WIDTH @ TOP OF PIPE:
   OD + 36" FOR, 18" AND LARGER PIPE OD
   OD + 24" FOR LESS THAN 18" PIPE OD

A. RIGID PIPE REFERS TO ALL TYPES OF REINFORCED AND UN-REINFORCED CONCRETE PIPE AND VITRIFIED CLAY PIPE.

B. TYPICAL TRENCH SECTIONS (I, II AND III) ARE TO BE USED ONLY WHERE STABLE, COMPACT SOIL CONDITIONS EXIST. IF BOULDERS OR LARGE OBSTRUCTIONS AREENCOUNTERED, TRENCH SECTIONS MAY BE DEEPER OR WIDER THAN SHOWN.THE ENGINEER SHALL BE ADVISED SHOULD THIS OCCUR.

C. THE NEED FOR PROTECTIVE SYSTEMS, AND EXCAVATION SLOPES SHALL BE DETERMINED CONSIDERING APPLICABLE LOCAL, STATE AND FEDERAL (OSHA)SAFETY STANDARDS AND REGULATIONS, AND GEOTECHNICAL CONSULTANTS' RECOMMENDATIONS.

D. PROTECTIVE SYSTEMS SHALL BE DESIGNED AND BUILT IN ACCORDANCE WITH THE APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS.

E. SUPPORTING DOCUMENTATION SHALL BE SUBMITTED TO THE ENGINEER REGARDING PIPE DESIGN AND COMPLIANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS.

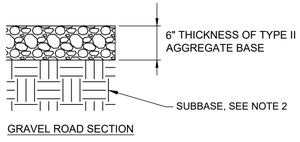
F. UNSUPPORTED VERTICAL AND/OR SLOPING TRENCH WALL SLOPES SHALL NOT BE STEEPER THAN ALLOWED BY APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS, UNLESS SUPPORTING DOCUMENTATION IS SUBMITTED, ACCORDING TO AFOREMENTIONED SAFETY STANDARDS.

G. IF OVER-EXCAVATION DUE TO POOR FOUNDATION MATERIAL IS ORDERED BY THE ENGINEER, THE BACKFILL MATERIAL SHALL BE ACCORDING TO THE EARTHWORK SECTION OF THE SPECIFICATIONS ARTICLE ENTITLED, "FILL AND BACKFILL MATERIAL REQUIREMENTS."

H. IF DURING CONSTRUCTION, THE WATER TABLE IS DISCOVERED TO BE ABOVE THE TRENCH BOTTOM, THE ENGINEER SHALL BE NOTIFIED, AND APPROPRIATE DEWATERING SHALL BE IMPLEMENTED TO LOWER THE WATER LEVEL BELOW THE TRENCH BOTTOM. THE BACKFILL MATERIAL SHALL BE ACCORDING TO THE EARTHWORK SECTIONS OF THE SPECIFICATIONS, OR AS ORDERED BY THE ENGINEER.

I. TRENCH SECTIONS OTHER THAN THE TYPICAL SECTIONS SHOWN MAY BE UTILIZED PROVIDED THEY COMPLY WITH APPLICABLE LOCAL, STATE AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS. DOCUMENTATION SUPPORTING THIS COMPLIANCE AND PIPE DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER.

C-602 TRENCH SECTION RIGID PIPE
REV 010119

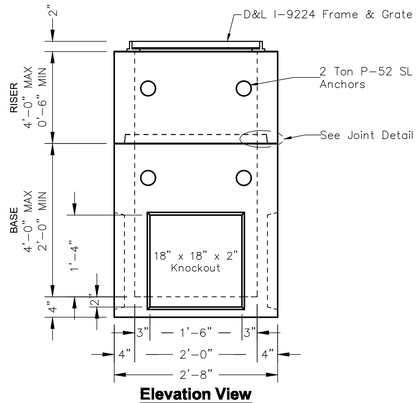


GRAVEL ROAD SECTION

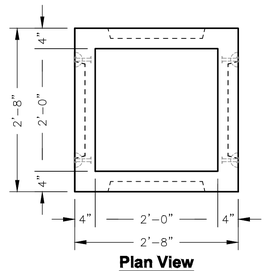
NOTES:

1. AGGREGATE BASE MATERIAL SHALL ADHERE TO SPECIFICATION SECTION 32 11 13.
2. COMPACT UPPER 8-INCHES OF ROAD SUBGRADE TO 95% RELATIVE COMPACTION.

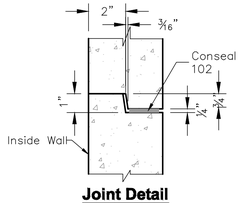
C-902 GRAVEL PAVEMENT



Elevation View



Plan View



Joint Detail

2X2 STANDARD HEIGHTS	
BASE	RISER
2' - 0"	0' - 6"
2' - 6"	1' - 0"
3' - 0"	1' - 6"
4' - 0"	2' - 0"
-	2' - 6"
-	3' - 0"
-	4' - 0"

A. PRODUCT SHOWN IS OLDCASTLE PRECAST 2x2-CB MANUFACTURED IN LITTLETON, CO.

B. INLET IS MANUFACTURED ACCORDING TO ASTM C913 AND IS SUITABLE FOR HS-20 LOADING.

C. BASES ARE AVAILABLE WITH FLAT TOP OR JOINT KEYWAY.

C-100 2'x2' PRECAST CATCH BASIN

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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No.	By	Appd	YYYY.MM.DD	Revision
B	IFP - L&E			Issued
1	JSC	JS	2025.08.20	

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-WP3-000-003

Scale:

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
STANDARD DETAILS - II

Revision: 3
Drawing No.
C-003

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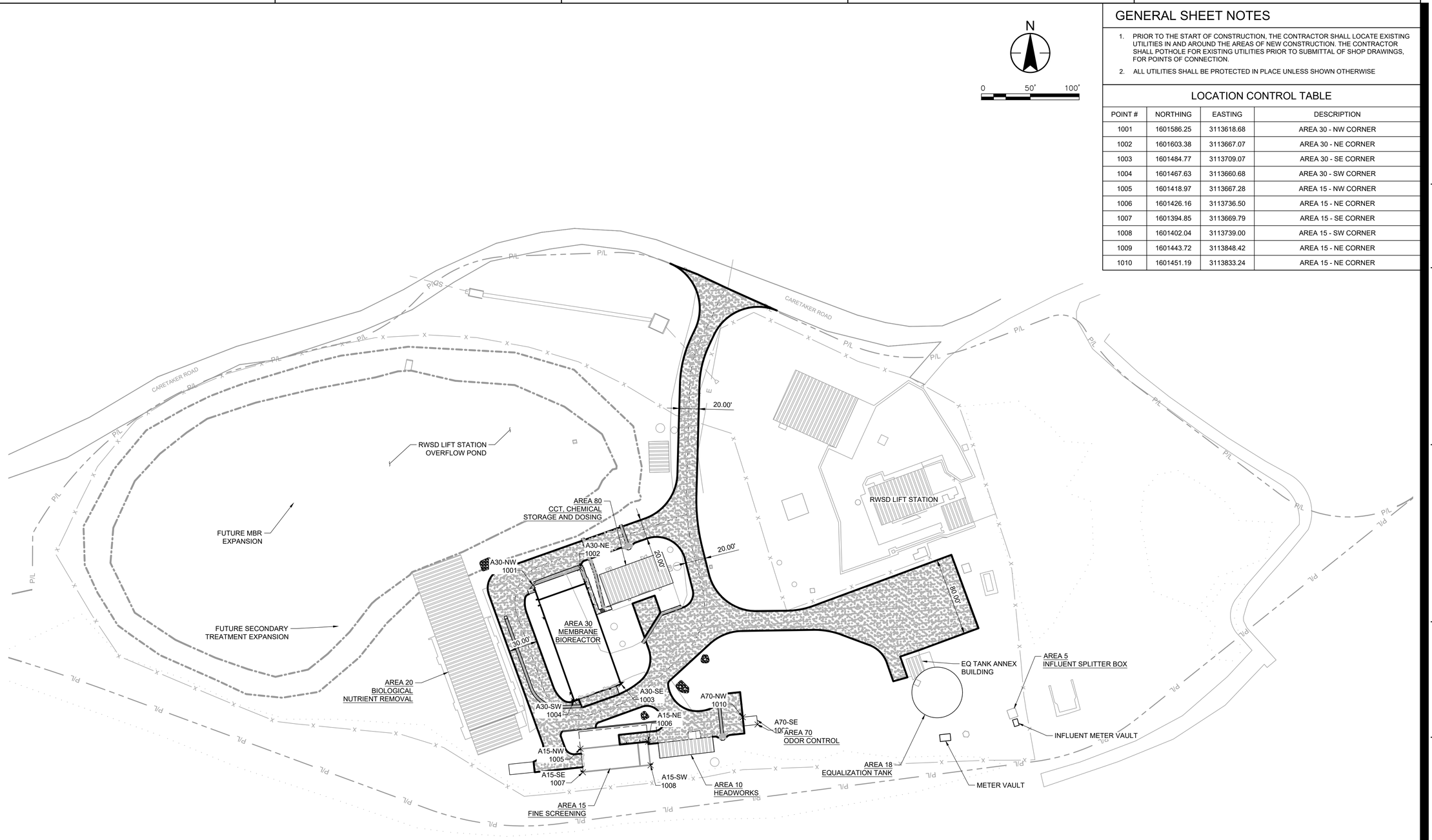
ORIGINAL SHEET - ANSI D

GENERAL SHEET NOTES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL POTHOLE FOR EXISTING UTILITIES PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FOR POINTS OF CONNECTION.
2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE

LOCATION CONTROL TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
1001	1601586.25	3113618.68	AREA 30 - NW CORNER
1002	1601603.38	3113667.07	AREA 30 - NE CORNER
1003	1601484.77	3113709.07	AREA 30 - SE CORNER
1004	1601467.63	3113660.68	AREA 30 - SW CORNER
1005	1601418.97	3113667.28	AREA 15 - NW CORNER
1006	1601426.16	3113736.50	AREA 15 - NE CORNER
1007	1601394.85	3113669.79	AREA 15 - SE CORNER
1008	1601402.04	3113739.00	AREA 15 - SW CORNER
1009	1601443.72	3113848.42	AREA 15 - NE CORNER
1010	1601451.19	3113833.24	AREA 15 - NE CORNER



ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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B	IFP - LAE	SSC	JS	2025.08.20
	Issued			YYYY.MM.DD

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD.
LITTLETON, CO 80125

Project No.: 181301899
File Name: 0189?C-WP3-000-004
Scale:

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
LOCATION CONTROL PLAN

Revision: 4
Drawing No.
C-004

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ORIGINAL SHEET - ANSI D

GENERAL SHEET NOTES

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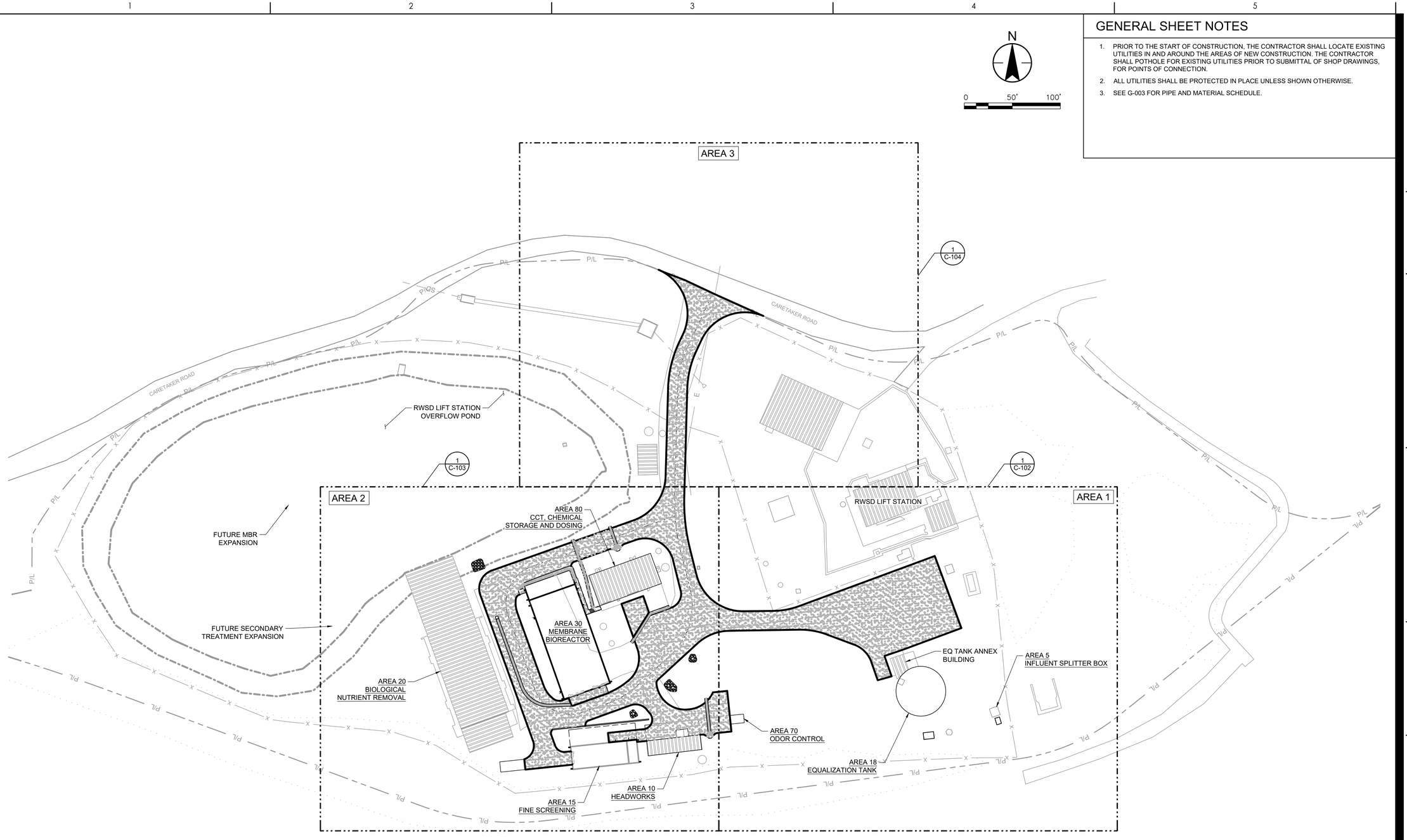
2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE.
3. SEE G-003 FOR PIPE AND MATERIAL SCHEDULE.



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1	Revision	By	Appd	YYYY.MM.DD

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT

CHATFIELD BASIN WRF REFURBISHMENT

11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899

File Name: 01899C-WP3-100-101

Scale: SCALE

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
OVERALL SITE PLAN

Revision: 5

Drawing No.
C-101

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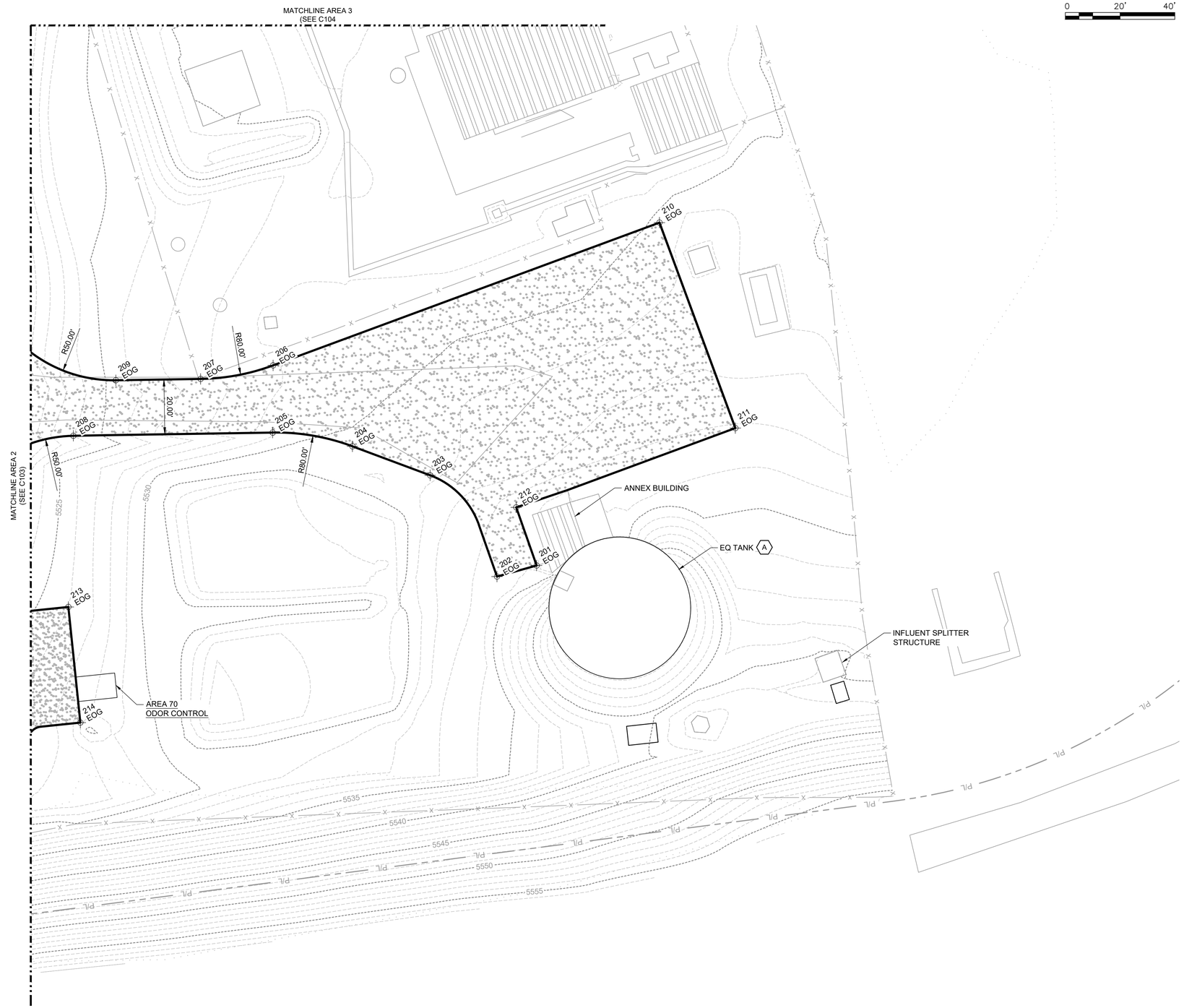
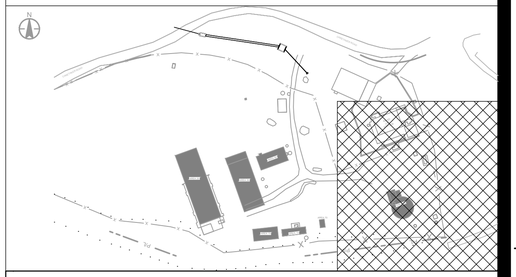


1 C-101 ENLARGED AREA 1 SITE PLAN
SCALE: 3"=1'-0"

KEY PLAN



GENERAL SHEET NOTES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL POTHOLE FOR EXISTING UTILITIES PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FOR POINTS OF CONNECTION.
2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE.

SHEET KEYNOTES

A. AEROBIC DIGESTER TO BE RE-PURPOSED AS EQUALIZATION (EQ) TANK

POINT TABLE

POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
201	5533.97	1601491.94	3114001.69	EOG
202	5533.54	1601487.89	3113987.22	EOG
203	5532.29	1601524.88	3113962.78	EOG
204	5530.86	1601535.46	3113934.38	EOG
205	5529.42	1601540.49	3113905.21	EOG
206	5529.37	1601565.03	3113905.40	EOG
207	5528.00	1601560.08	3113878.92	EOG
208	5521.90	1601539.32	3113832.40	EOG
209	5524.11	1601559.60	3113847.93	EOG
210	5530.27	1601617.18	3114046.58	EOG
211	5533.13	1601542.14	3114074.30	EOG
212	5533.85	1601513.16	3113994.25	EOG
213	5526.20	1601476.79	3113830.58	EOG
214	5526.63	1601434.55	3113834.96	EOG

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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B	IFP - L&E	JSC	ZS	2025.08.20
Issued				

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Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-WP3-100-102-104

Scale: SCALE

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
ENLARGED SITE PLAN - AREA 1

Revision: 6
Drawing No.
C-102

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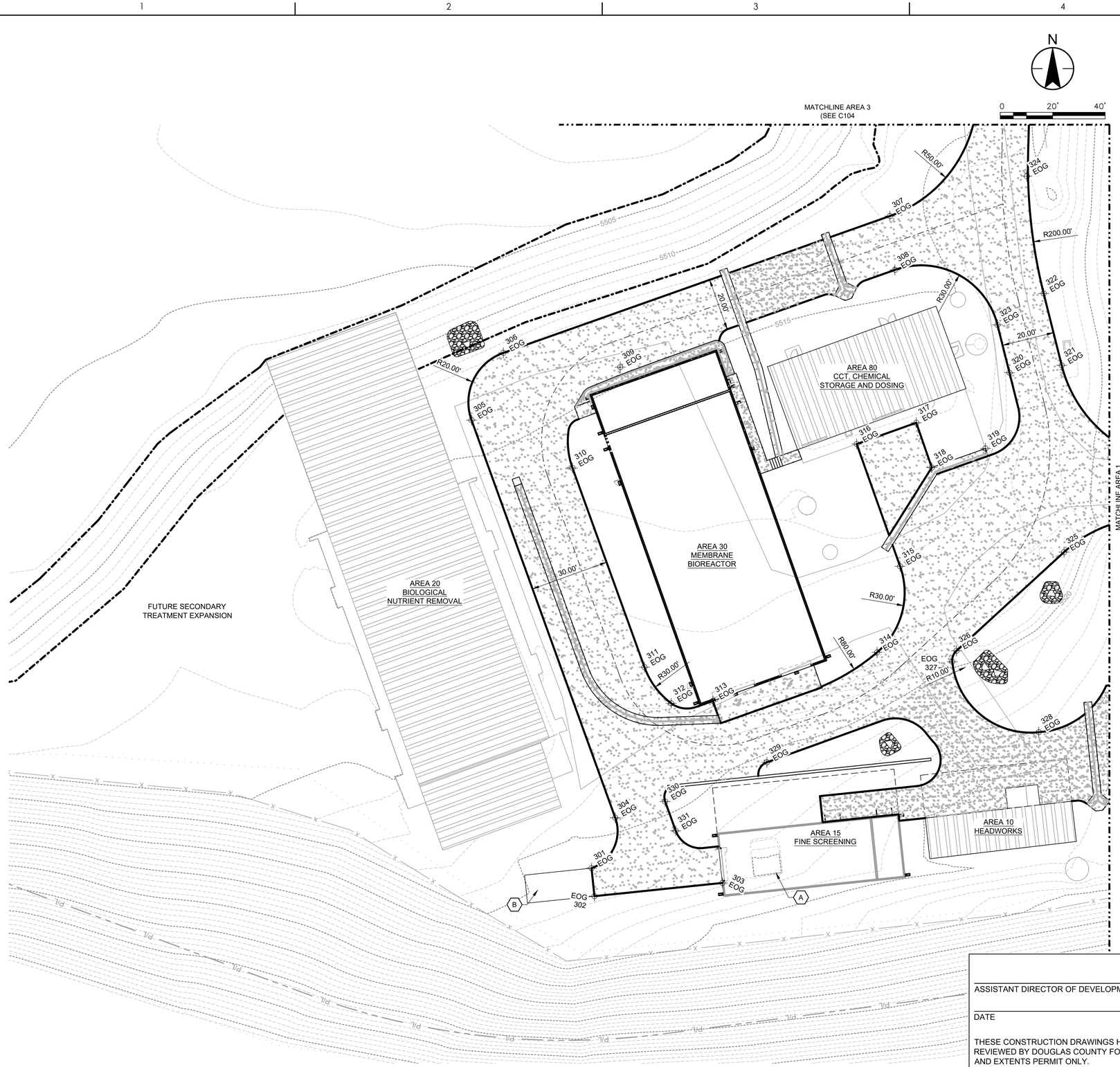
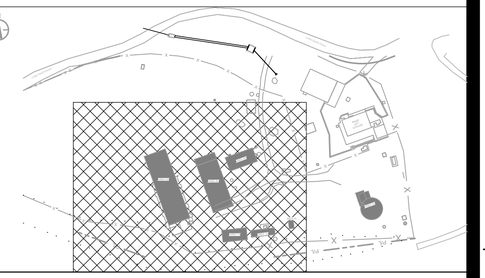


KEY PLAN



GENERAL SHEET NOTES

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2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE.

SHEET KEYNOTES

A. REMOVE GRIT DRYING BED.
B. REMOVE EXISTING CONCRETE SLAB.

POINT TABLE

POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
301	5523.35	1601405.62	3113619.37	EOG
302	5523.35	1601394.93	3113620.48	EOG
303	5524.45	1601399.99	3113669.25	EOG
304	5520.95	1601424.84	3113628.41	EOG
305	5515.60	1601576.52	3113573.60	EOG
306	5514.72	1601602.17	3113585.74	EOG
307	5514.63	1601654.36	3113733.15	EOG
308	5514.95	1601633.82	3113735.06	EOG
309	5515.31	1601596.73	3113630.30	EOG
310	5516.93	1601558.26	3113612.10	EOG
311	5517.46	1601482.29	3113639.55	EOG
312	5517.50	1601468.50	3113649.74	EOG
313	5518.00	1601469.39	3113665.63	EOG
314	5519.22	1601487.96	3113728.27	EOG
315	5516.09	1601520.76	3113737.02	EOG
316	5515.98	1601567.39	3113720.49	EOG
317	5516.00	1601575.51	3113743.20	EOG
318	5515.81	1601558.44	3113749.12	EOG
319	5515.69	1601565.70	3113769.59	EOG
320	5517.08	1601594.57	3113778.75	EOG
321	5518.08	1601597.44	3113798.65	EOG
322	5516.94	1601624.83	3113791.79	EOG
323	5516.70	1601612.84	3113774.17	EOG
324	5515.41	1601669.57	3113785.34	EOG
325	5518.70	1601526.17	3113799.55	EOG
326	5519.38	1601488.53	3113758.54	EOG
327	5519.85	1601484.36	3113756.95	EOG
328	5524.94	1601457.48	3113789.90	EOG
329	5518.28	1601446.00	3113686.24	EOG
330	5521.30	1601431.05	3113647.43	EOG
331	5522.78	1601419.85	3113651.48	EOG

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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ENGINEERING DIVISION ACCEPTANCE BLOCK

1 C-101 ENLARGED AREA 2 SITE PLAN
SCALE: 3"=1'-0"

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B	IFP - L&E	JSSc	ZS	2025.08.20
Issued				

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT

CHATFIELD BASIN WRF REFURBISHMENT

11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-WP3-100-102-104
Scale: SCALE

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
ENLARGED SITE PLAN - AREA 2

Revision: 7
Drawing No.
C-103

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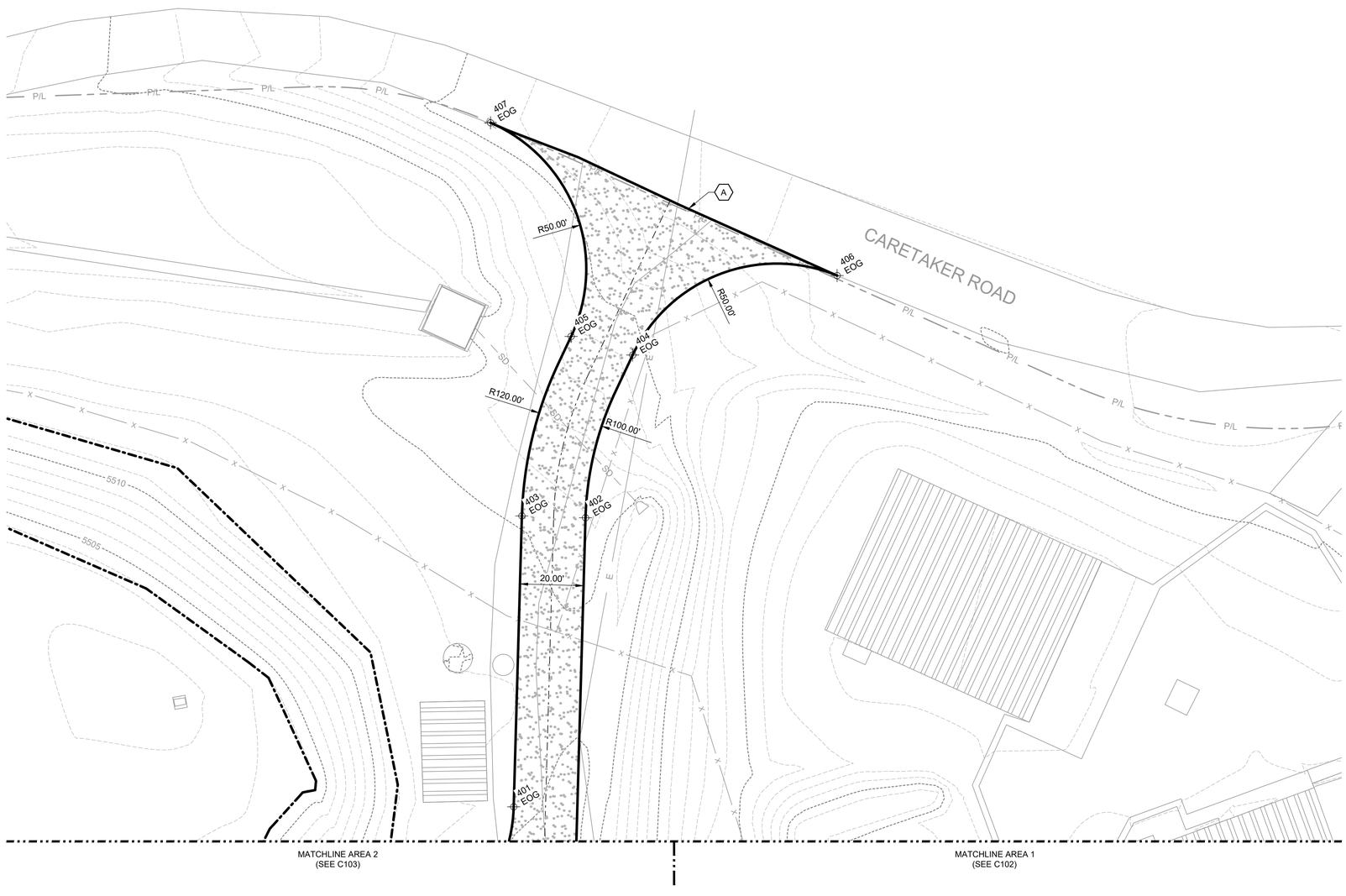
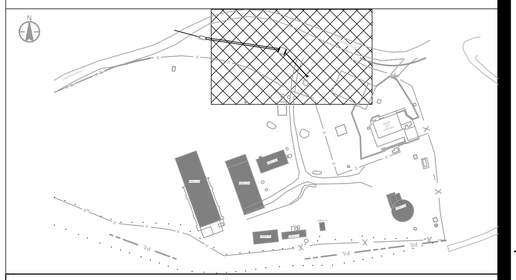
ORIGINAL SHEET - ANSI D



1 C-101 ENLARGED AREA 3 SITE PLAN

SCALE: 3"=1'-0"

KEY PLAN



GENERAL SHEET NOTES

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2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE.

SHEET KEYNOTES

A. MATCH EXISTING EDGE OF ROAD.

POINT TABLE

POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
401	5514.26	1601700.09	3113766.45	EOG
402	5515.99	1601790.97	3113789.01	EOG
403	5515.99	1601791.53	3113769.02	EOG
404	5519.47	1601842.11	3113803.84	EOG
405	5519.23	1601847.96	3113784.49	EOG
406	5524.33	1601867.07	3113868.11	EOG
407	5520.34	1601915.10	3113759.16	EOG

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

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Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-WP3-100-102-104

Scale: SCALE

Dwn.	Dsgn.	Chkd.
		2025.08.01 YYYY.MM.DD

Title
ENLARGED SITE PLAN - AREA 3

Revision: 8
Drawing No.
C-104

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ORIGINAL SHEET - ANSI D

GENERAL SHEET NOTES

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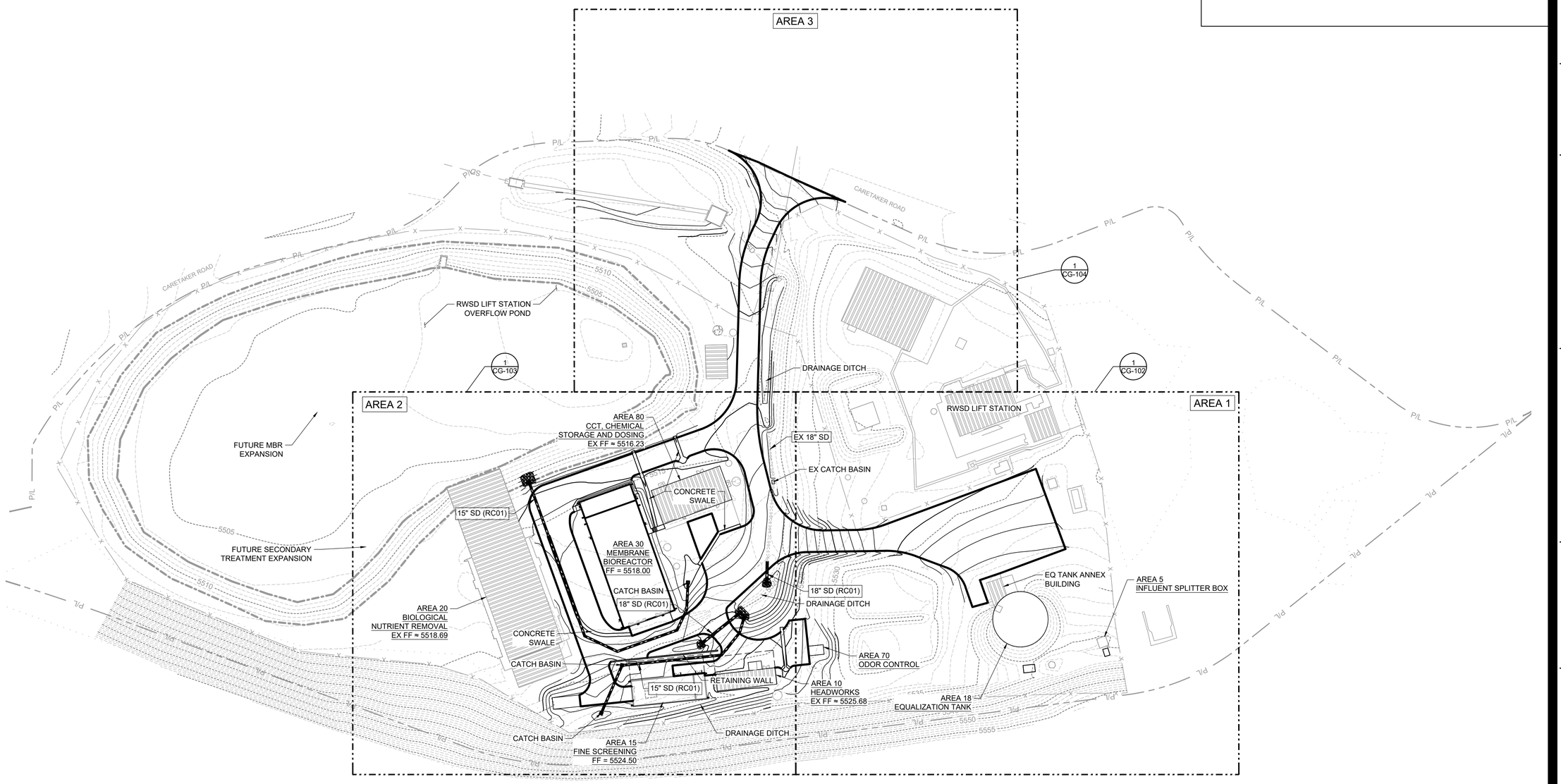
2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE.
3. SEE G-003 FOR PIPE AND MATERIAL SCHEDULE.

N

0 50' 100'



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Revision

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DOMINION WATER SANITATION DISTRICT

CHATFIELD BASIN WRF REFURBISHMENT

11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899

File Name: 01899C-WP3-CG100-CG101

Scale: 1:50

Dwn.	Dsgn.	Chkd.	YYYY.MM.DD
			2025.08.01

Title
OVERALL GRADING PLAN

Revision: 9

Drawing No.
CG-101

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

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ENGINEERING DIVISION ACCEPTANCE BLOCK

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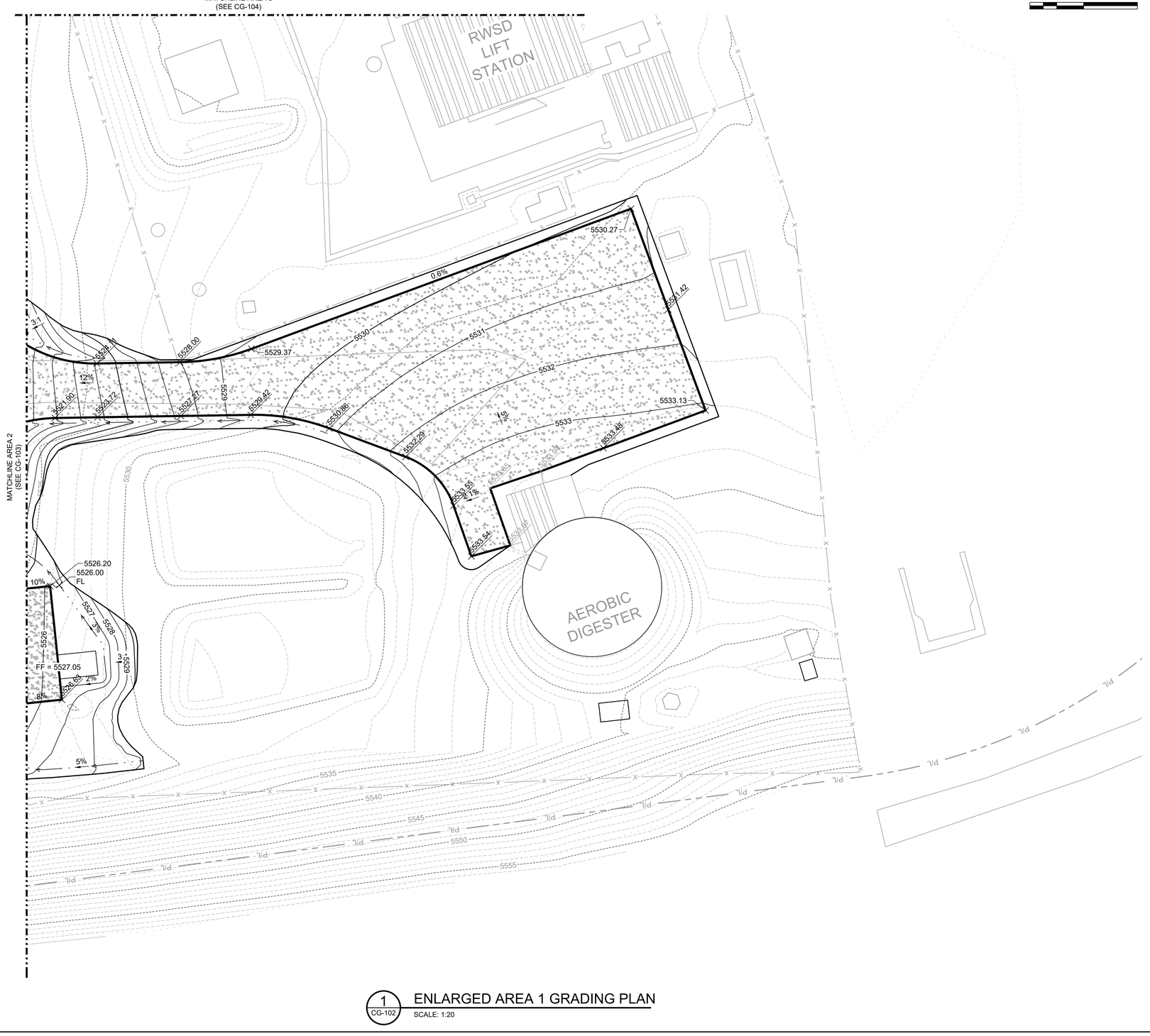
ORIGINAL SHEET - ANSI D



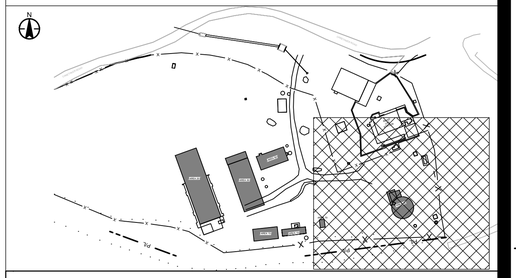
1 CG-102 ENLARGED AREA 1 GRADING PLAN

SCALE: 1:20

N

0 20' 40'

KEY PLAN



GENERAL SHEET NOTES

1. NOTE

SHEET KEYNOTES

A. NOTE

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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B	FFP - L&E			
1	Revision		ZS	2025.08.20
		SSC	ZS	YYYY.MM.DD

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899

File Name: 01899C-WP3-CG100-CG102-104

Scale: 1:20

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
ENLARGE GRADING PLAN - AREA 1

Revision: 10

Drawing No.
CG-102
112

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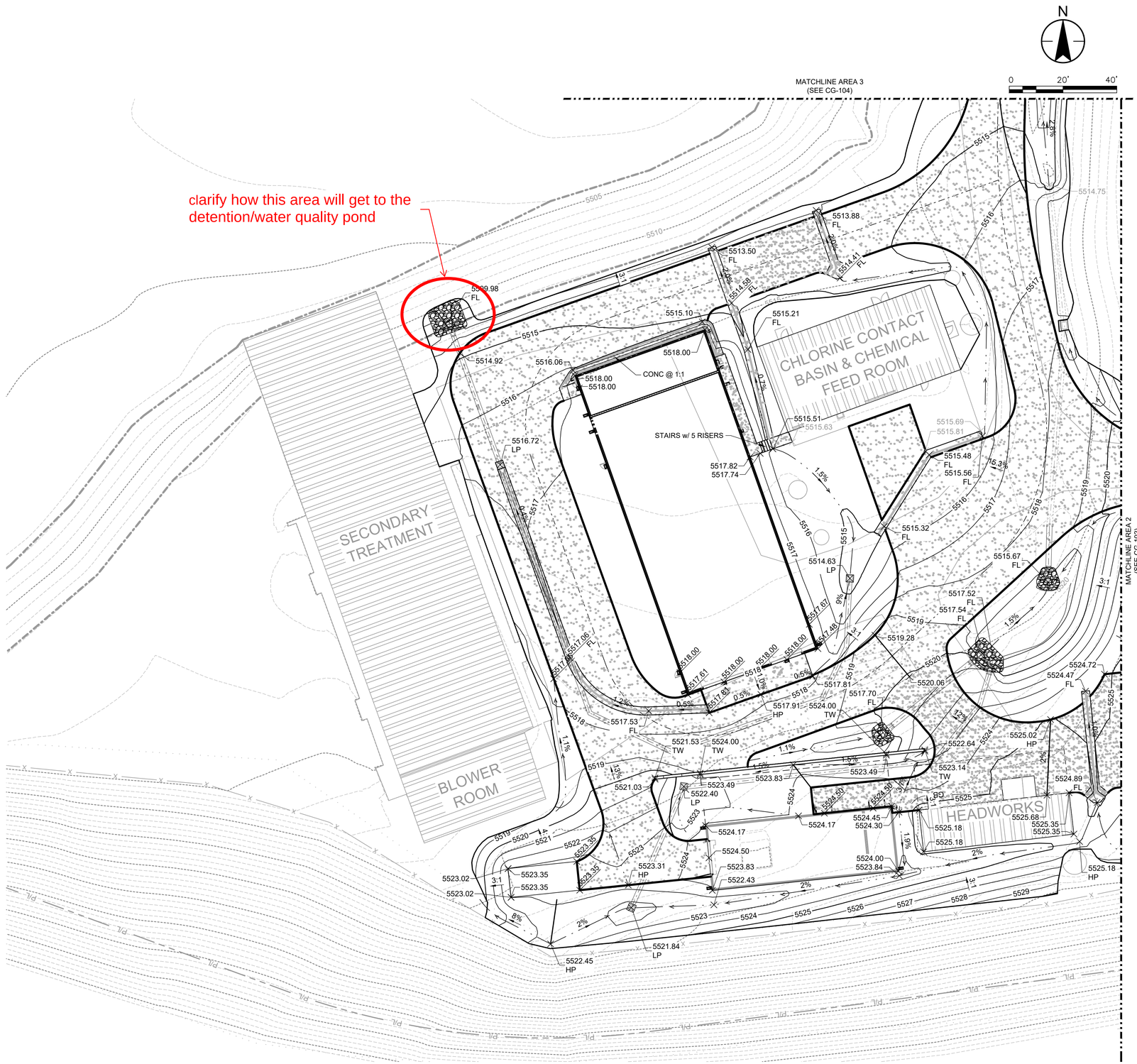
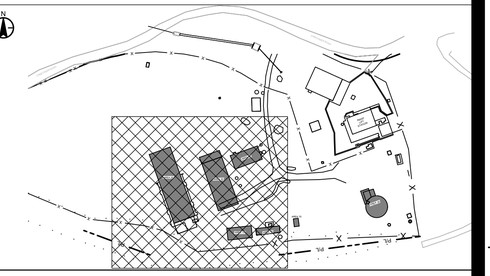
ORIGINAL SHEET - ANSI D

clarify how this area will get to the detention/water quality pond



1 CG-103 ENLARGED AREA 2 GRADING PLAN
SCALE: 1:20

KEY PLAN



GENERAL SHEET NOTES

1. NOTE

SHEET KEYNOTES

A. XXXXX

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

THESE CONSTRUCTION DRAWINGS HAVE BEEN REVIEWED BY DOUGLAS COUNTY FOR LOCATION AND EXTENTS PERMIT ONLY.

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No.	Issued	By	Appd	YYYY.MM.DD
B	IFP - L&E			
	Revision			
1	ISSC	SS	Appd	2025.08.20 YYYY.MM.DD

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-WP3-CG100-CG102-104
Scale: 1:20

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
ENLARGED GRADING PLAN - AREA 2

Revision: 11
Drawing No.
CG-103
113

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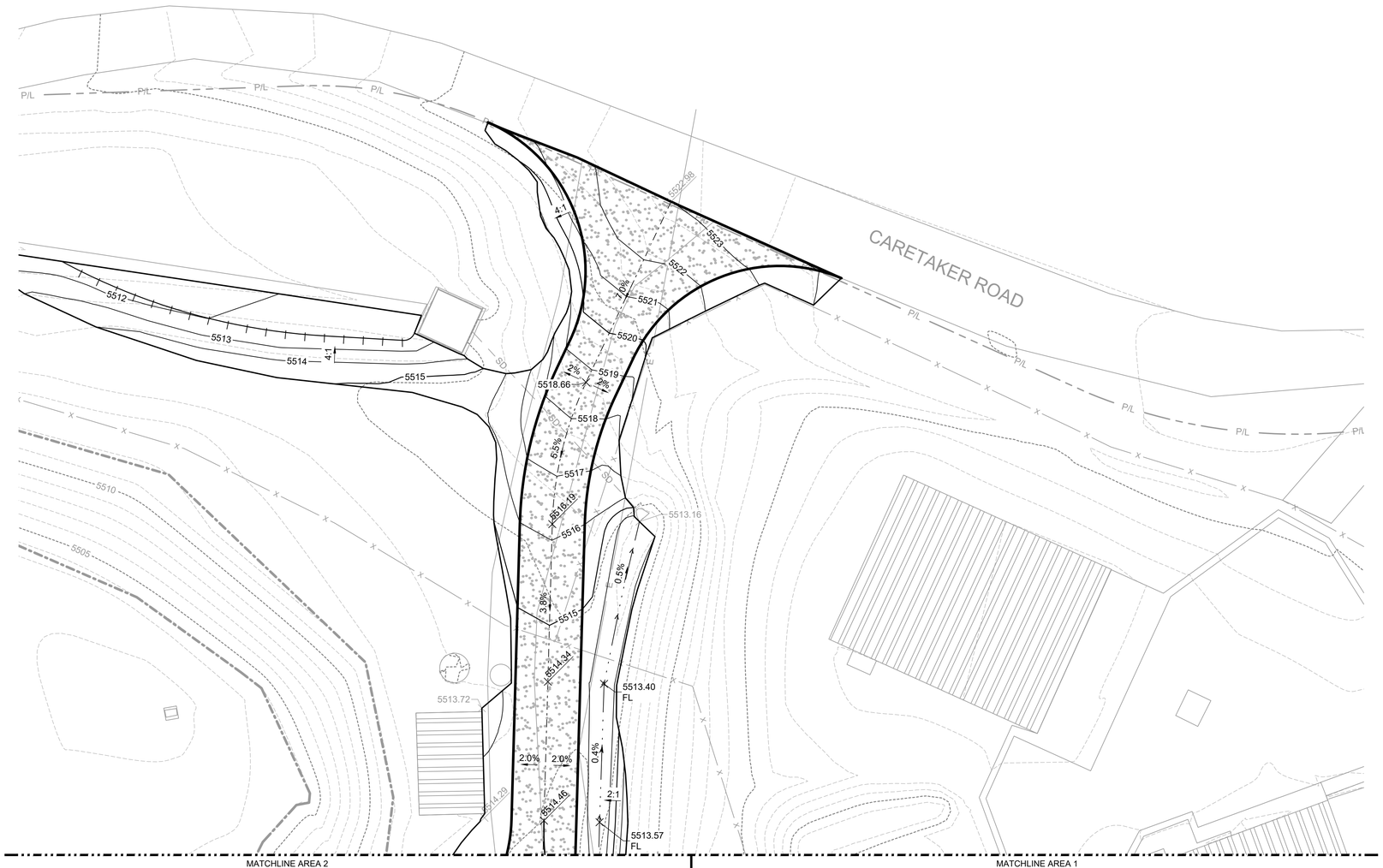
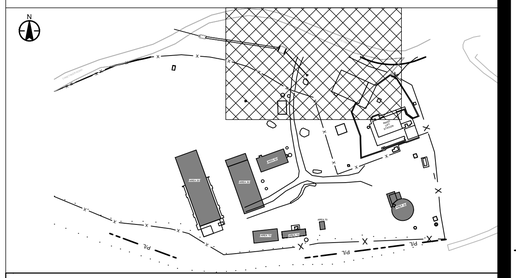


1 CG-104 ENLARGED AREA 3 GRADING PLAN

SCALE: 1:20

KEY PLAN



GENERAL SHEET NOTES

1. NOTE

SHEET KEYNOTES

A. XXXXX

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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No.	Revision	By	Appd	YYYY.MM.DD
B	IFP - L&E	SSC	JS	2025.08.20
A	Issued	By	Appd	YYYY.MM.DD

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-WP3-CG100-CG102-104

Scale: 1:20

Dwn.	Dsgn.	Chkd.	YYYY.MM.DD
			2025.08.01

Title
ENLARGED GRADING PLAN - AREA 3

Revision: 12

Drawing No.
CG-104

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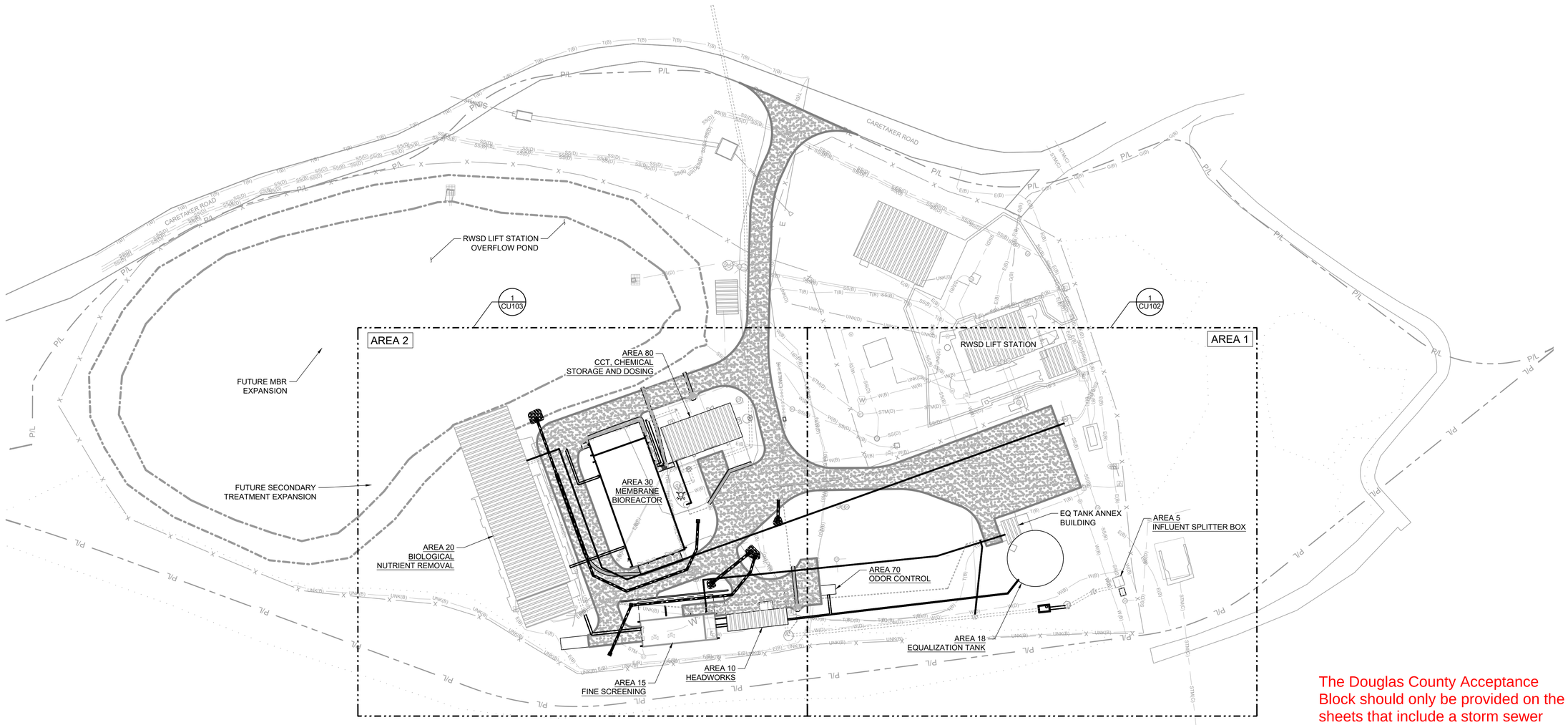
ORIGINAL SHEET - ANSI D

GENERAL SHEET NOTES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL POTHOLE FOR EXISTING UTILITIES PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FOR POINTS OF CONNECTION.
2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE.
3. SEE G-003 FOR PIPE AND MATERIAL SCHEDULE.

N

0 50' 100'



The Douglas County Acceptance Block should only be provided on the sheets that include a storm sewer system (between sheets CU-101 - C-208)

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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B	IFP - LAE	SSC	JS	2025.08.20

Revision

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT

CHATFIELD BASIN WRF REFURBISHMENT

11310 CARETAKER RD.
LITTLETON, CO 80125

Project No.: 181301899

File Name: 01899C-WP3-CU100-CU101

Scale: SCALE

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
OVERALL YARD PIPING KEYMAP

Revision: 13

Drawing No.
CU-101

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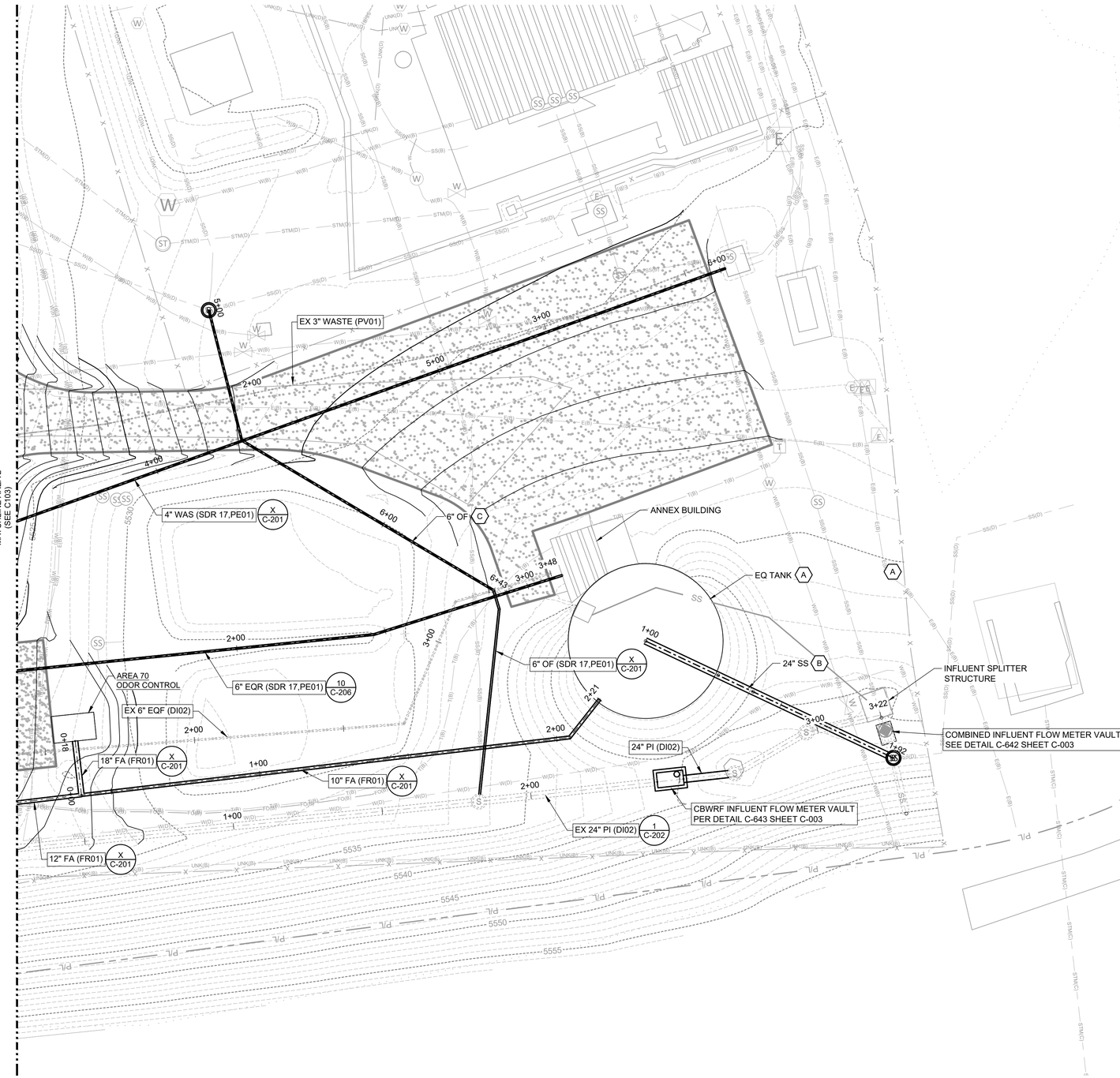
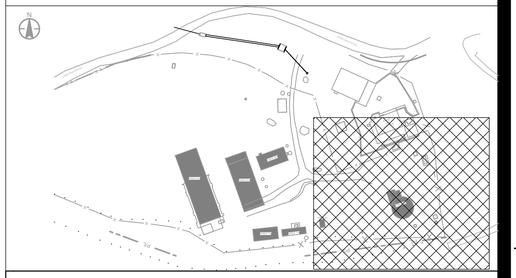


KEY PLAN



GENERAL SHEET NOTES

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2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE.
3. SEE G-003 FOR PIPE AND MATERIAL SCHEDULE.

SHEET KEYNOTES

A. AEROBIC DIGESTER TO BE RE-PURPOSED AS EQUALIZATION (EQ) TANK.
B. 24" SS INSTALLED IN WP1, REMOVE AT END OF CONSTRUCTION.
C. 6" OF INSTALLED IN WP1, REMOVE AT END OF CONSTRUCTION.

1 C-102 ENLARGED AREA 1 UTILITY PLAN
SCALE: 1:20

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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			Issued

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-WP3-CU100-CU102-103
Scale: 1:20

EP	ZS	MW	2025/06/09
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
ENLARGED UTILITY PLAN
AREA 1

Revision: ___ 14
Drawing No.
CU102

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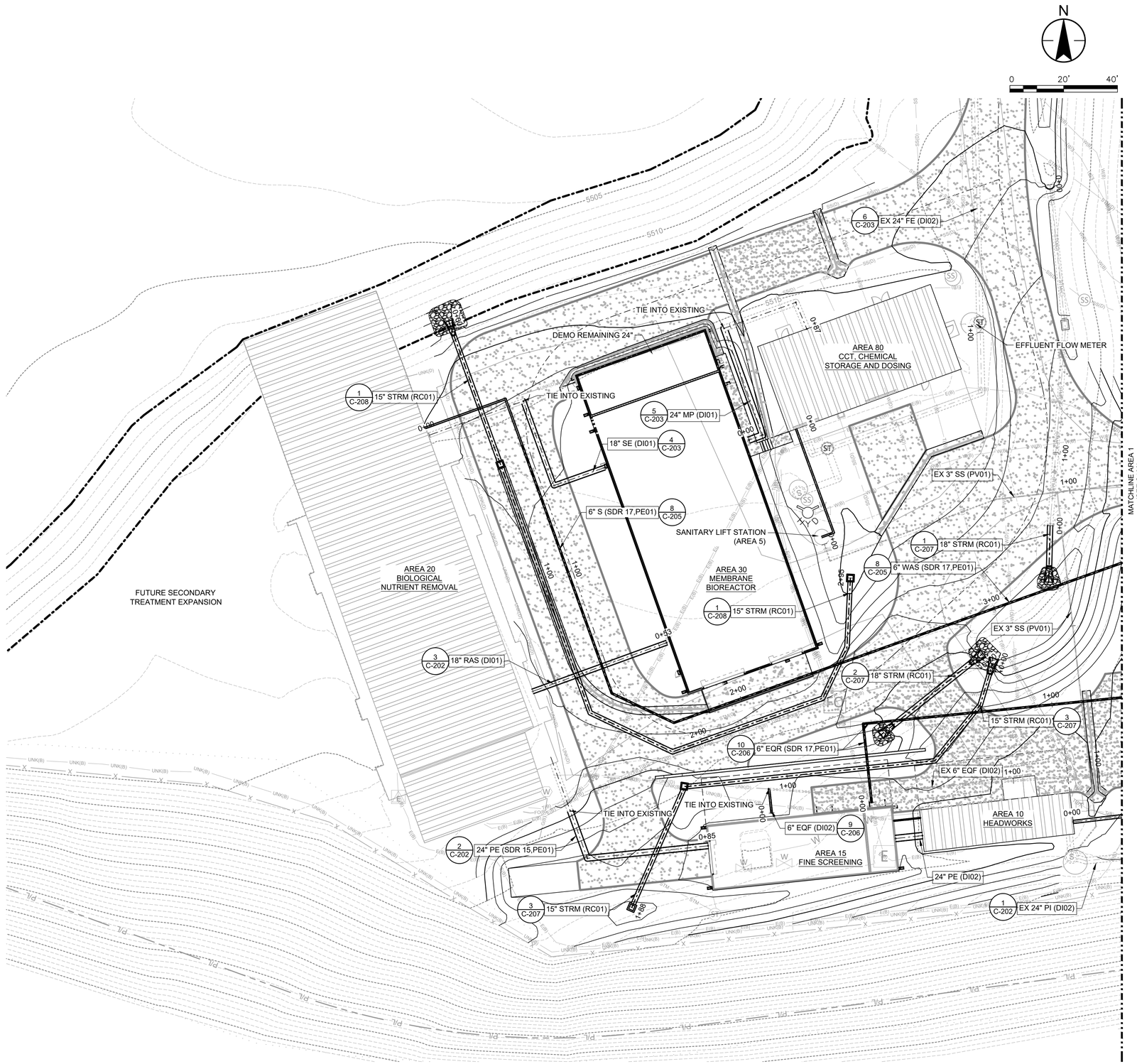
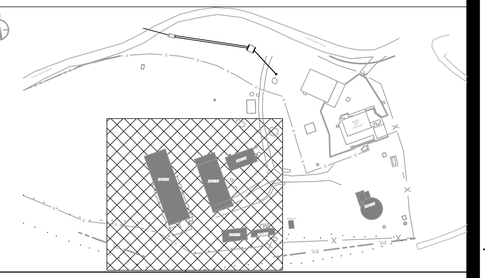


1 C-103 ENLARGED AREA 2 UTILITY PLAN

SCALE: 1:20

KEY PLAN



GENERAL SHEET NOTES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES IN AND AROUND THE AREAS OF NEW CONSTRUCTION. THE CONTRACTOR SHALL POTHOLE FOR EXISTING UTILITIES PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FOR POINTS OF CONNECTION.
2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE.

SHEET KEYNOTES

A. XXXXX

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

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B	EP - L&E		2025.08.20	Issued
	ZS	ZS	2025.08.20	

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT

CHATFIELD BASIN WRF REFURBISHMENT

11310 CARETAKER RD, LITTLETON, CO 80125

Project No.: 181301899

File Name: 01899C-WP3-CU100-CU102-103

Scale: 1:20

EP	ZS	MW	2025.08.20
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
ENLARGED UTILITY PLAN
AREA 2

Revision: ___ 15

Drawing No.
CU103

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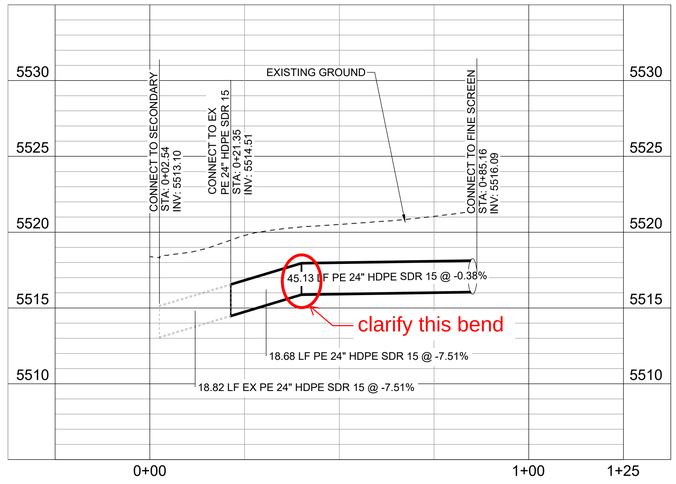
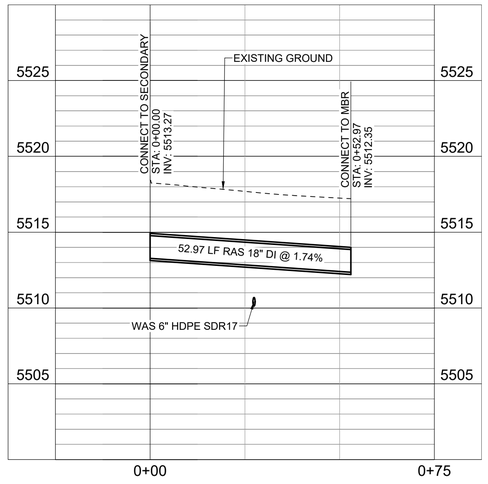


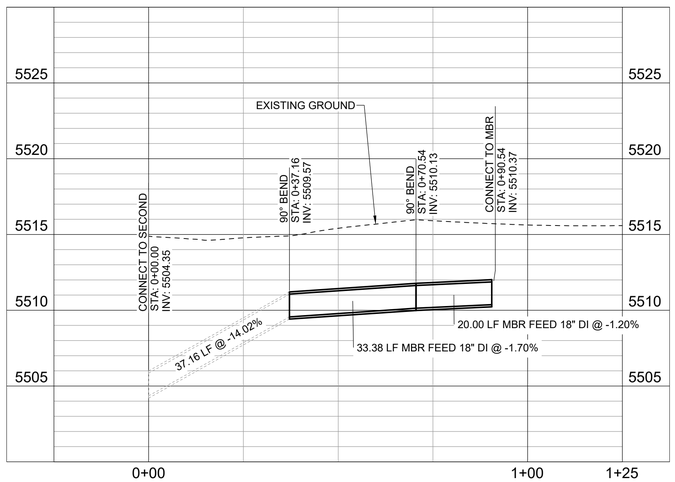
1 C-102 **24" HDPE - PRIMARY EFFLUENT**

HOR: 1"=20' VERT:1"=4'



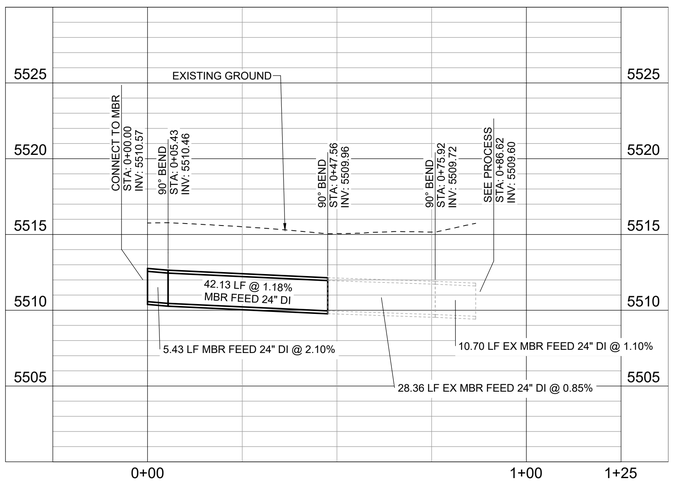
2 C-102 **18" DUCTILE IRON - RETURN ACTIVATED SLUDGE**

HOR: 1"=20' VERT:1"=4'



3 C-102 **18" DUCTILE IRON - MEMBRANE FEED**

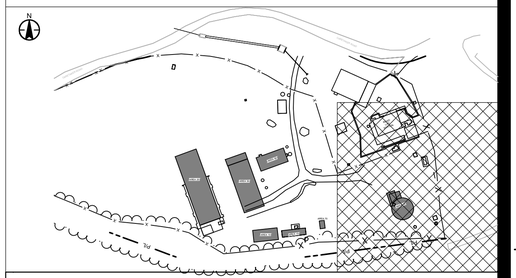
HOR: 1"=20' VERT:1"=4'



4 C-102 **24" DUCTILE IRON - MEMBRANE FEED**

HOR: 1"=20' VERT:1"=4'

KEY PLAN



GENERAL SHEET NOTES

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2. ALL UTILITIES SHALL BE PROTECTED IN PLACE UNLESS SHOWN OTHERWISE.
3. SEE G-003 FOR PIPE AND MATERIAL SCHEDULE.

SHEET KEYNOTES

A. REMOVE COVER AND ECCENTRIC CONE. ADD NEW PRECAST MANHOLE SECTION WITH 24" PENETRATION FOR BYPASS TO EQUALIZATION TANK.

B. ROUTE 24" GRAVITY BYPASS TO OPENING IN ROOF. REFER TO 18D-301 FOR TANK CONNECTION DETAIL.

C. AEROBIC DIGESTER TO BE RE-PURPOSED AS EQUALIZATION (EQ) TANK.

D. REROUTE 6" TANK OVERFLOW TO LIFT STATION OVERFLOW MANHOLE.

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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A		JS	YYYY.MM.DD	

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT

CHATFIELD BASIN WRF REFURBISHMENT

11310 CARETAKER RD.
LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-WP3-CU200-CU202-CU208

Scale: SCALE

Dwn.	Dsgn.	Chkd.
		2025.08.01 YYYY.MM.DD

Title
PIPING PROFILES 1-3

Revision: 16

Drawing No.
C-202

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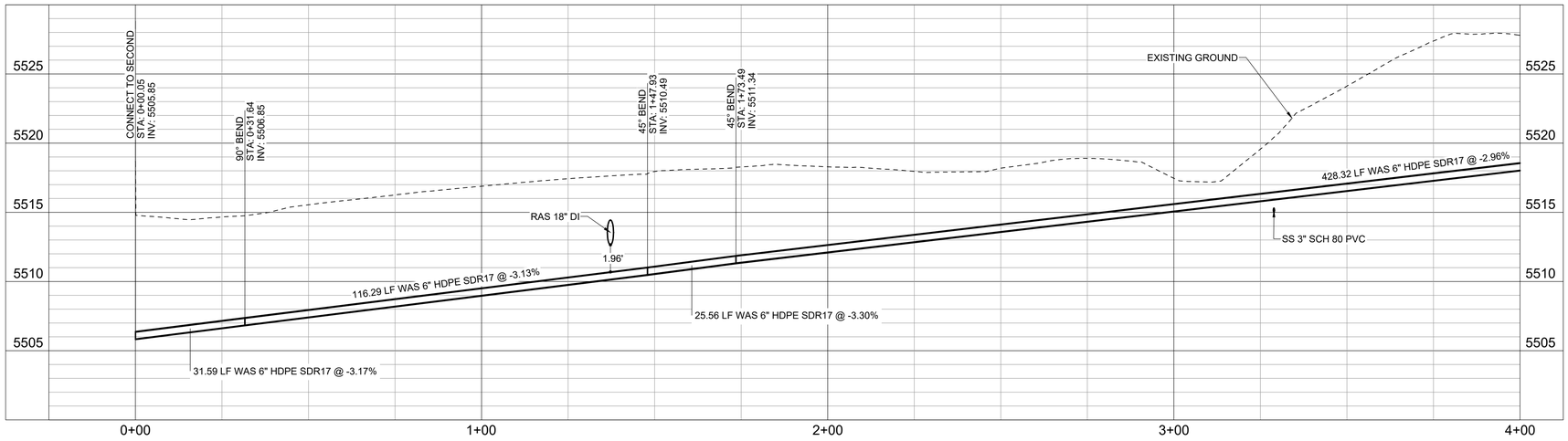
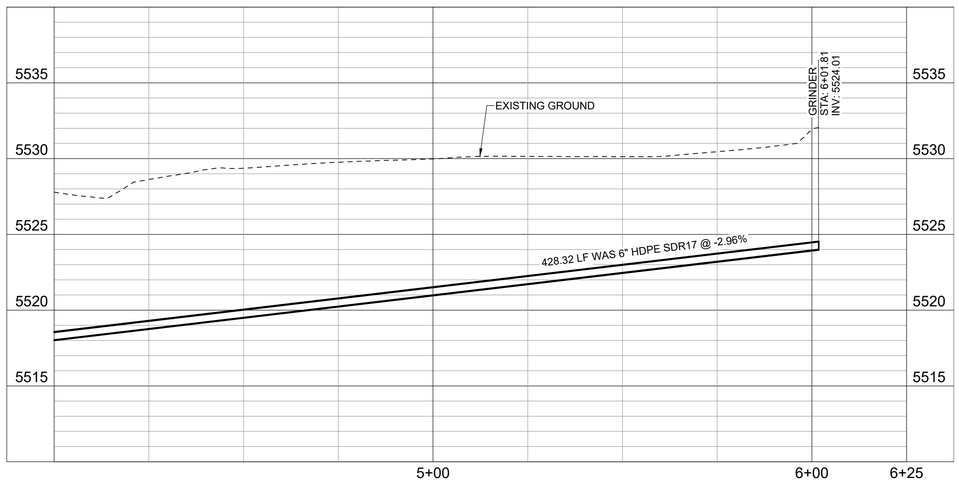


5 C-102 **6" HDPE SDR 17 - WASTE ACTIVATED SLUDGE**

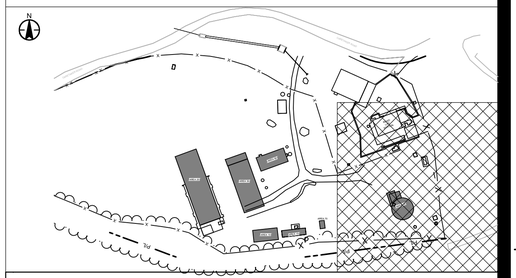
HOR: 1"=20' VERT:1"=4'



5 C-102 **6" HDPE SDR 17 - WASTE ACTIVATED SLUDGE**

CONTINUED - SEE BELOW HOR: 1"=20' VERT:1"=4'

KEY PLAN



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3. SEE G-003 FOR PIPE AND MATERIAL SCHEDULE.

SHEET KEYNOTES

A. REMOVE COVER AND ECCENTRIC CONE. ADD NEW PRECAST MANHOLE SECTION WITH 24" PENETRATION FOR BYPASS TO EQUALIZATION TANK.

B. ROUTE 24" GRAVITY BYPASS TO OPENING IN ROOF. REFER TO 18D-301 FOR TANK CONNECTION DETAIL.

C. AEROBIC DIGESTER TO BE RE-PURPOSED AS EQUALIZATION (EQ) TANK.

D. REROUTE 6" TANK OVERFLOW TO LIFT STATION OVERFLOW MANHOLE.

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

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B	IPP - L&E	SSC	2025.08.20	Issued

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD.
LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-WP3-CU200-CU202-CU208
Scale: SCALE

Dwn.	Dsgn.	Chkd.
		2025.08.01 YYYY.MM.DD

Title
PIPING PROFILES 4-6

Revision: 17
Drawing No.
C-203

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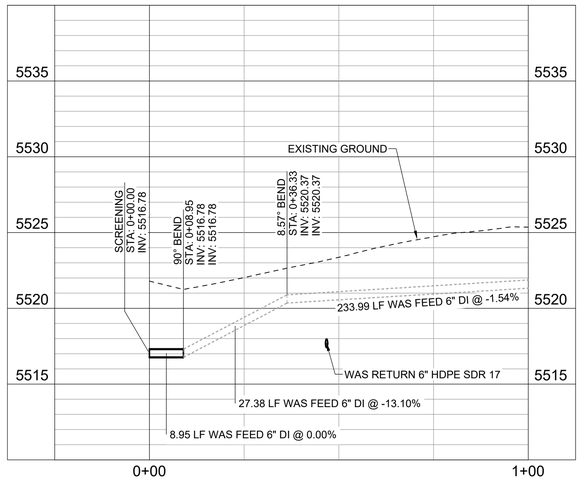
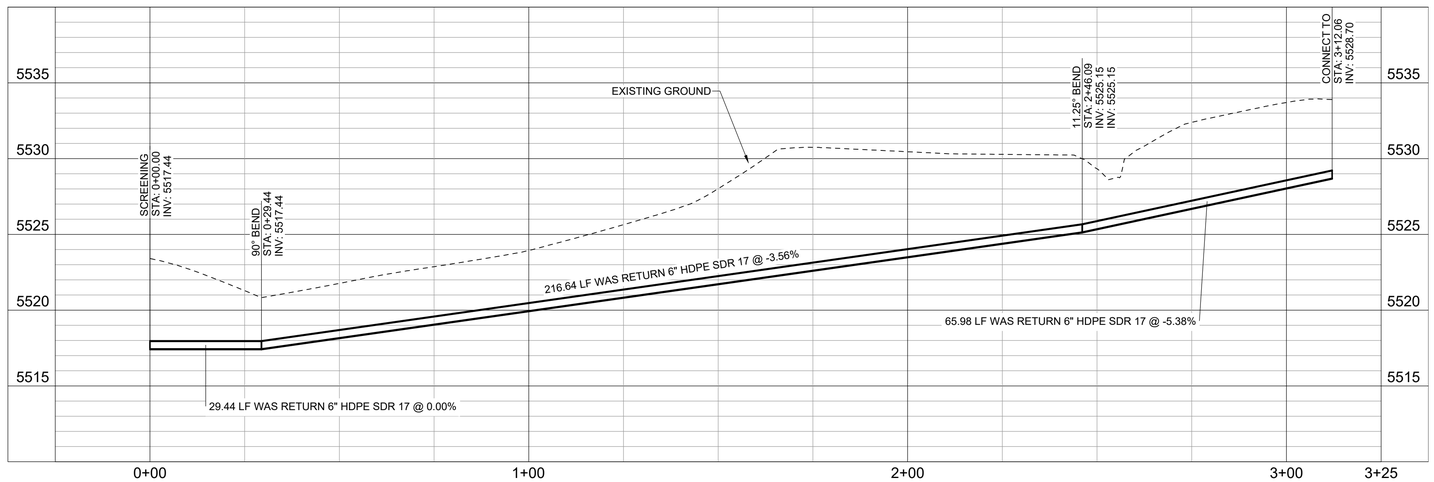


6 C-102

6" DUCTILE IRON - WASTE ACTIVATED SLUDGE FEED

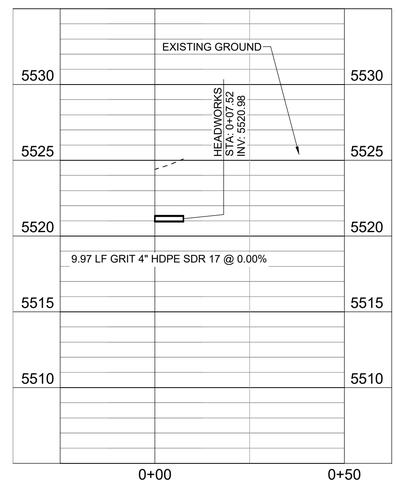
HOR: 1"=20' VERT:1"=4'



7 C-102

6" HDPE SDR 17 - WASTE ACTIVATED SLUDGE RETURN

HOR: 1"=20' VERT:1"=4'



8 C-102

4" HDPE SDR 17 - GRIT

HOR: 1"=20' VERT:1"=4'

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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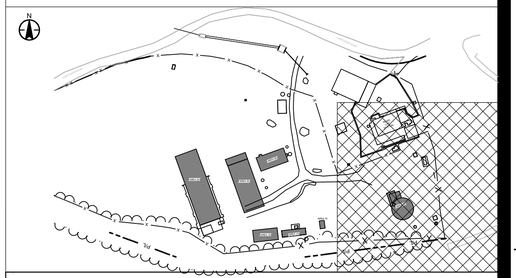
ENGINEERING DIVISION ACCEPTANCE BLOCK

KEY PLAN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ADMIN
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STORE
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PUMP
PUMP
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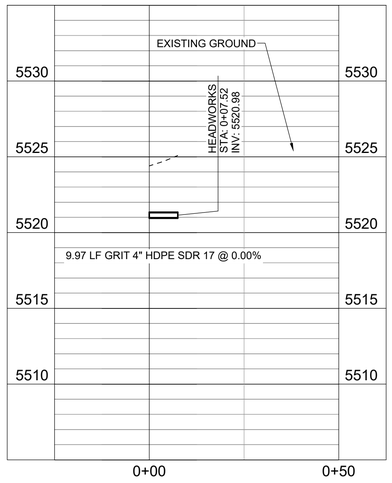
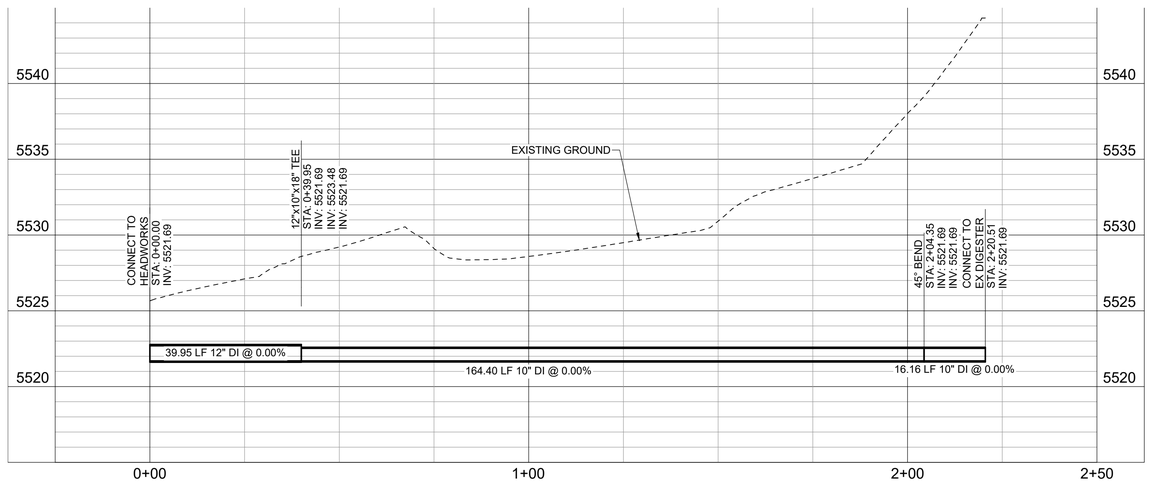


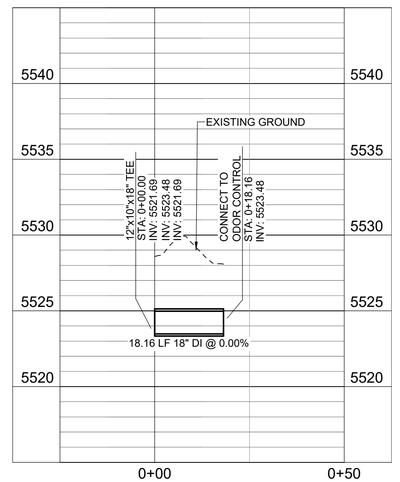
8 C-102 — 4" HDPE SDR 17 - GRIT

HOR: 1"=20' VERT:1"=4'



9 C-102 — 12" TO 10" FIBERGLASS REINFORCED PLASTIC (FR01) - FOUL AIR

HOR: 1"=20' VERT:1"=4'



10 C-102 — 18" FIBERGLASS REINFORCED PLASTIC (FR01) - FOUL AIR

HOR: 1"=20' VERT:1"=4'

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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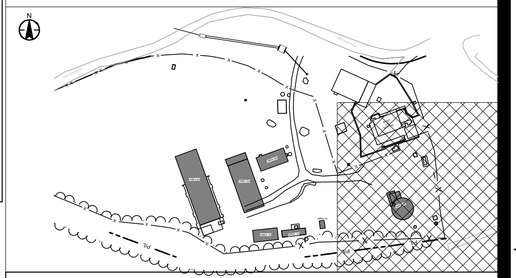
ENGINEERING DIVISION ACCEPTANCE BLOCK

KEY PLAN



GENERAL SHEET NOTES

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3. SEE G-003 FOR PIPE AND MATERIAL SCHEDULE.

SHEET KEYNOTES

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B. ROUTE 24" GRAVITY BYPASS TO OPENING IN ROOF. REFER TO 18D-301 FOR TANK CONNECTION DETAIL.

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D. REROUTE 6" TANK OVERFLOW TO LIFT STATION OVERFLOW MANHOLE.

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No.	By	Appd	YYYY.MM.DD	Revision
B	IFP - L&E			Issued
	SSC	ZS	2025.08.20	

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD.
LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-WP3-CU200-CU202-CU208

Scale:

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
PIPING PROFILES

Revision: 19
Drawing No.
C-205

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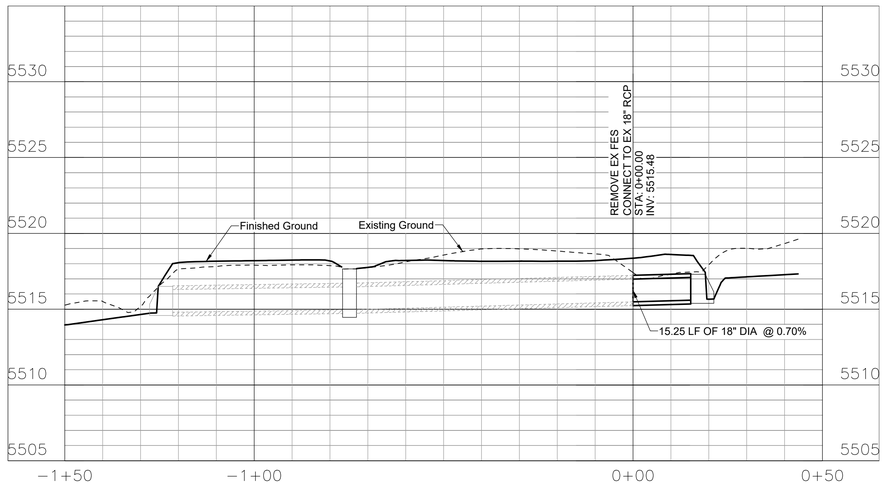
ORIGINAL SHEET - ANSI D



1 C-103 EX STORM 01 - STORM 01

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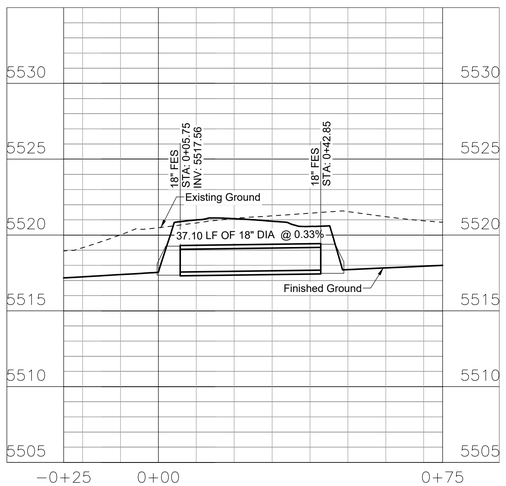

2 C-103 STORM 02

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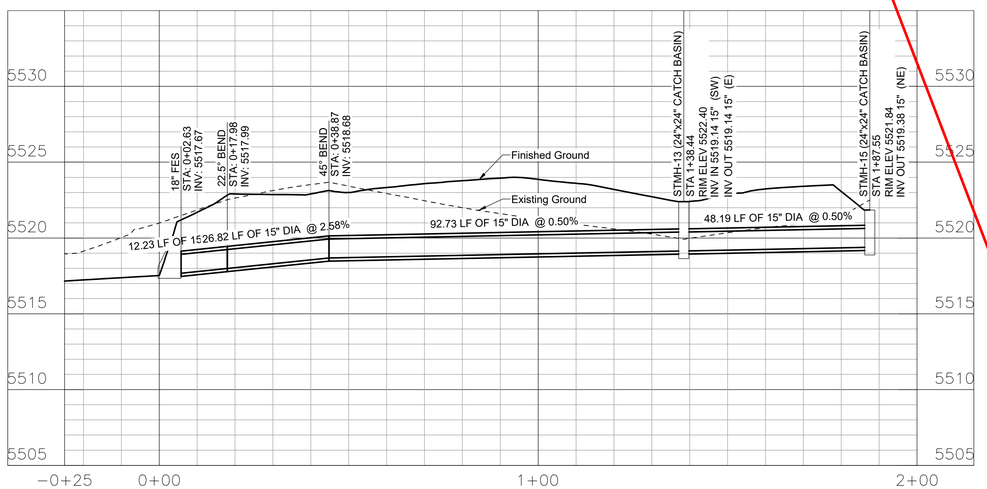

3 C-103 STORM 03

HOR: 1"=20' VERT:1"=4'

Specify the pipe material (typical comment)

Relocate the Douglas County Acceptance Block to the lower right corner of the sheets (typical comment)

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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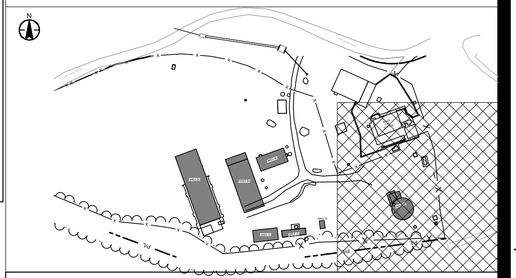
ENGINEERING DIVISION ACCEPTANCE BLOCK

KEY PLAN



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B	IFP - 1&E	SSC	ZS	2025.08.20
A	Issued			

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT

CHATFIELD BASIN WRF REFURBISHMENT

11310 CARETAKER RD.
LITTLETON, CO 80125

Project No.: 181301899

File Name: 01899C-WP3-CU200-CU202-CU208

Scale:

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
PIPING PROFILE

Revision: 21

Drawing No.
C-207

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ORIGINAL SHEET - ANSI D

ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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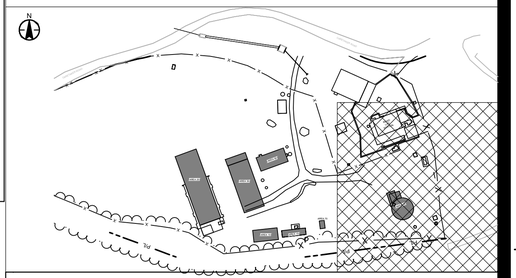
ENGINEERING DIVISION ACCEPTANCE BLOCK

KEY PLAN



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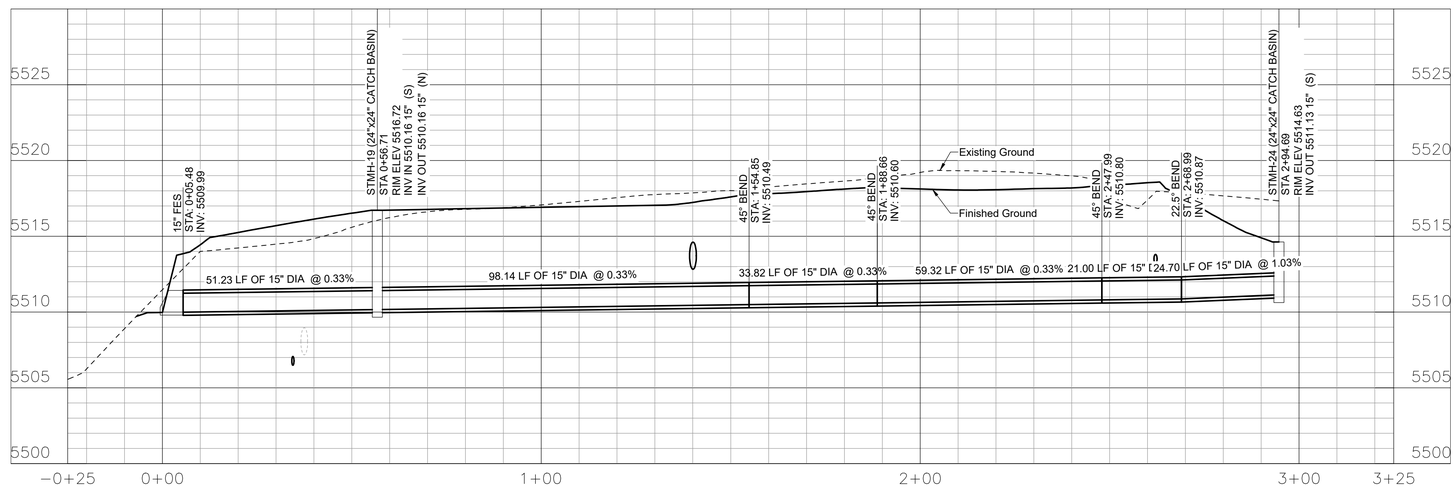

1 C-103 STORM 04

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Revision			
B	IFP - 1&E		2025.08.01
A	ISSC	ZS	2025.08.20
Issued			

Permit/Seal

Client/Project
DOMINION WATER SANITATION DISTRICT
CHATFIELD BASIN WRF REFURBISHMENT
11310 CARETAKER RD.
LITTLETON, CO 80125

Project No.: 181301899
File Name: 01899C-WP3-CU200-CU202-CU208
Scale: SCALE

Dwn.	Dsgn.	Chkd.	2025.08.01 YYYY.MM.DD

Title
PIPING PROFILE

Revision: 22
Drawing No.
C-208

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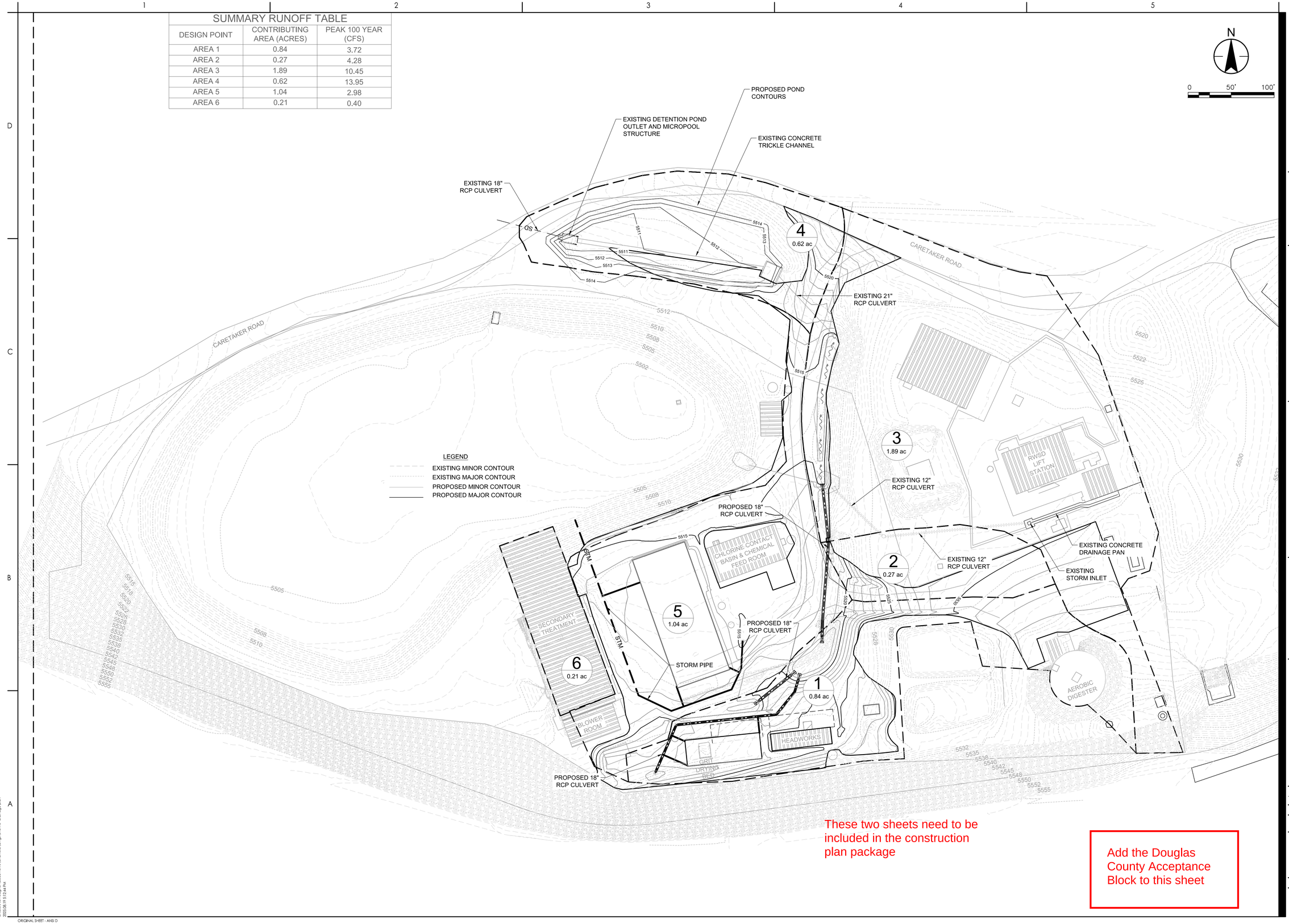
ORIGINAL SHEET - ANSI D

SUMMARY RUNOFF TABLE		
DESIGN POINT	CONTRIBUTING AREA (ACRES)	PEAK 100 YEAR (CFS)
AREA 1	0.84	3.72
AREA 2	0.27	4.28
AREA 3	1.89	10.45
AREA 4	0.62	13.95
AREA 5	1.04	2.98
AREA 6	0.21	0.40



These two sheets need to be included in the construction plan package

Add the Douglas County Acceptance Block to this sheet

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Revision	By	Appd	YYYY.MM.DD
Issued			

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Client/Project
DOMINION WATER SANITATION DISTRICT
WATER RECLAMATION FACILITY
CHATFIELD BASIN

Project No.: 181301899
File Name: 01899C- DRAINAGE PLAN
Scale: SCALE

EM	EM	JC	2025.08.18
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
DRAINAGE PLAN

Revision: __ Sheet: 1 of 1
Drawing No.
C10X

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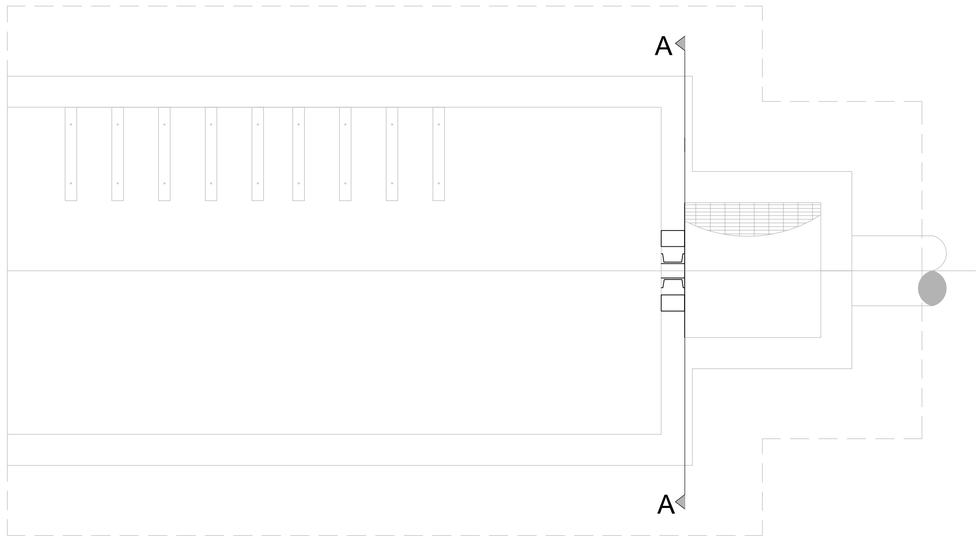
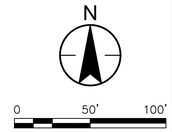
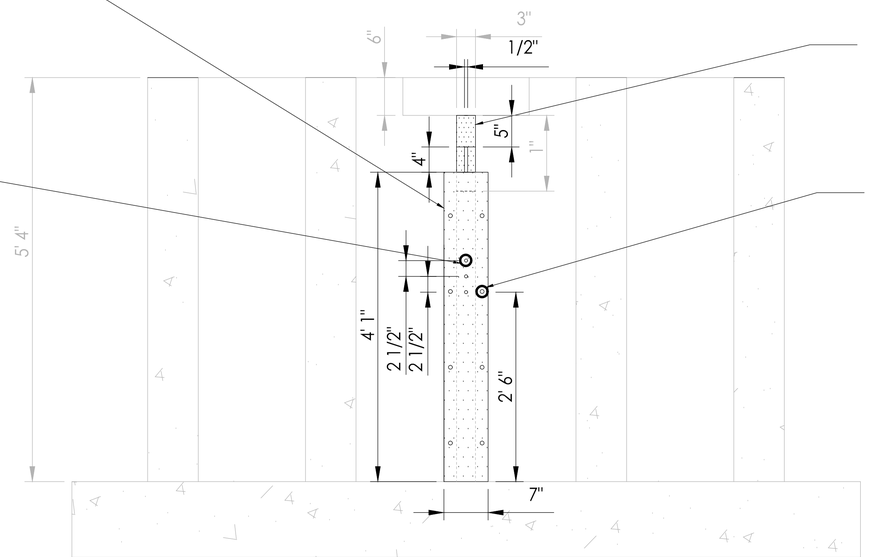


WATER QUALITY OUTLET AND MICROPOOL STRUCTURE PLAN VIEW
NTS
1
-



REMOVE EXISTING PLATE AND REPLACE WITH NEW 1/4" ALUMINUM WATER QUALITY PLATE W/ 1/4" NEOPRENE GASKET CUT TO FIT PLATE

DRILL (3) 1/2" DIAMETER OUTLET HOLES THROUGH PLATE



FORM AND FILL EXISTING WEIR TO PROPOSED WIDTH AND HEIGHT

DRILL $\frac{5}{8}$" HOLES, SPACE MIN. 12" THROUGH PLATE AND UNDERLYING C-CHANNEL. CAST INTO CONCRETE $\frac{1}{2}$" DIAMETER STAINLESS ALL THREADS AND BOLTS. IMBED ALL THREADS MIN 5" INTO CONCRETE.

WATER QUALITY OUTLET AND MICROPOOL STRUCTURE MODIFICATION DETAILS
NTS
A
-

Add the Douglas County Acceptance Block to this sheet

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By	Appd	YYYY.MM.DD	Issued

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Client/Project
DOMINION WATER SANITATION DISTRICT
WATER RECLAMATION FACILITY
CHATFIELD BASIN

Project No.:
File Name: 01899C- DRAINAGE DETAILS

Scale: SCALE

##	##	##	##########
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
OUTLET STRUCTURE MODIFICATION DETAILS

Revision: __ Sheet: 1 of 1

Drawing No.
C10X

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ORIGINAL SHEET - ANSI D

Trevor Bedford

From: Michael Gerstner <MGerstner@tstinfrastructure.com>
Sent: Friday, September 26, 2025 11:59 AM
To: Sarah Shepherd; Matthew Collitt; Mason Kiefer; Trevor Bedford
Subject: RE: Douglas County eReferral (Project Number LE2025-018) Is Ready For Review

Follow Up Flag: Follow up
Flag Status: Flagged

Trevor,

Please see the following comment on behalf of Louviers Water and Sanitation District:

"There is no current agreement in place for Louviers "the District" to be served and Dominion Water and Sanitation District (DWSD), and DWSD is not responding to requests for discussion. The statement that Louviers 'does not have reliable water or wastewater services' is neither pertinent to this application and is not accurate. The District would welcome a discussion with the applicant and Douglas County to correct this assertion."

Please let me know if you have any questions.

Thank you,

Michael Gerstner, PE
Principal
TST Infrastructure
5655 S Yosemite St, Suite 101
Greenwood Village, CO 80111
Tel: 303.799.5197
tstinfrastructure.com

From: Sarah Shepherd <sees@ccrider.us>
Sent: Friday, September 19, 2025 11:16 AM
To: Matthew Collitt <mcollitt@louvierswsd.org>; Mason Kiefer <mkiefer@tstinfrastructure.com>; Michael Gerstner <MGerstner@tstinfrastructure.com>
Subject: Fwd: Douglas County eReferral (Project Number LE2025-018) Is Ready For Review

---------- Forwarded message ---------
From: <tbedford@douglas.co.us>
Date: Fri, Sep 19, 2025 at 10:08 AM
Subject: Douglas County eReferral (Project Number LE2025-018) Is Ready For Review
To: <sees@ccrider.us>

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

Project number LE2025-018, River Canyon Filing 2, 3rd Amendment, Lot 2A-1 - Location and Extent

Dominion Water & Sanitation District requests approval of a Location and Extent for the refurbishment and expansion of the Chatfield Basin Water Reclamation Facility.

This referral will close on Thursday, October 2, 2025.

If you have any questions, please contact me.

Sincerely,

Trevor Bedford, AICP
Planning Services
100 Third Street
Castle Rock, CO 80104
303-660-7460 (main)

--
Sarah E E Shepherd
District/Authority Manager

Chief Executive Officer
Littleton Mailing Address: P.O. Box 359, Littleton, CO 80160
Tele.: 303-482-1002
sees@ccrider.us

MEETING DATE: October 6, 2025

STAFF PERSON RESPONSIBLE: Carolyn Washee-Freeland, AICP, Senior Planner

DESCRIPTION: Antelope Crossing - Rezoning from Agricultural One to Large Rural Residential - Project File: ZR2024-015.

SUMMARY: The request is for a rezoning of a 42.61-acrea parcel from A-1 to Large Rural Residential.

STAFF ASSESSMENT: Staff evaluated the rezoning request in accordance with the Douglas County Comprehensive Master Plan policies with Section 25 of the Zoning Resolution. The applicant submitted a Declaration of Restrictive Covenants to reserve the water supply in perpetuity for the benefit of future property owners. Should the Planning Commission find that the approval standards have been met, it may recommend approval of the rezoning to the Board of County Commissioners.

REVIEW:

Steven E Koster	Approve	9/10/2025
Samantha Hutchison - FYI	Notified - FYI	9/10/2025

ATTACHMENTS:

Staff Report - ZR2024-015
Supplemental Memo - ZR2024-015

DOUGLAS COUNTY
COLORADO

Rezoning Staff Report

Date:	September 9, 2025
To:	Douglas County Planning Commission
From:	Carolyn Washee-Freeland, AICP, Senior Planner CWF Curtis J. Weitkunat, AICP, Planning Manager CW Steven E. Koster, AICP, Assistant Director of Planning Services SK
Subject:	**Antelope Crossing – A Rezoning from Agricultural One to Large Rural Residential**
Project File:	**ZR2024-015**

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

I. EXECUTIVE SUMMARY

The applicant requests a rezoning of a 42.61-acre parcel from Agricultural One (A-1) to Large Rural Residential (LRR) to allow for future development of four single-family lots. A concurrent Minor Development Final Plat (MDP) request to subdivide the property is being heard concurrently with this rezoning request. This rezoning request must be approved prior to the determination of the MDP subdivision application.

The parcel is located on the west side of Delbert Road, approximately one and one-half miles south of E. Parker Road. The project site directly abuts Elbert County. The subject property is located within the Northeast Subarea as identified in the Douglas County 2040 Comprehensive Master Plan (CMP).

The property is currently undeveloped land. The rezoning to LRR would allow for development of up to four single-family lots at a density of 1 dwelling unit per 10 acres.

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

The applicant requests to rezone a 42.61-acre parcel from A-1 to LRR.

D. Process

A rezoning application is processed pursuant to Section 2504 of the Douglas County Zoning Resolution (DCZR).

Per Section 2504.06, "The Planning Commission shall evaluate the rezoning request, staff report, referral agency comments, applicant responses, and public comment and testimony, and make a recommendation to the Board of County Commissioners to approve, approve with conditions, continue, table for further study, or deny the amendment request. The Planning Commission's decision shall be based on the evidence presented, compliance with the adopted County standards, regulations, 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. The project vicinity, zoning, and aerial maps are provided in the attachments to this staff report.

III. CONTEXT

A. Background

The subject parcel was zoned A-1 with the inception of zoning into the County in 1955. The unplatted property is approximately 42.61-acres in size and is undeveloped. The proposed gross density will not exceed 1 dwelling unit (DU) per 10-acres, for future development of four 10-acre lots. The lots will be served by individual well and septic systems. The site is bound by single-family residential development in Elbert County to the east; undeveloped land zoned A-1 to the north, single family lots zoned A-1 to the west; and A-1 single-family parcels, as well as a LRR zoned parcel, to the south.

B. Adjacent Land Uses and Zoning

The project site is zoned A-1. 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

IV. PHYSICAL SITE CHARACTERISTICS

A. Site Characteristics and Constraints

The topography of the site is composed of rolling hills ranging from 6,260 feet to 6,300 feet in elevation, and steep slopes greater than 20-percent along the drainageway areas. The property contains a tributary of Coal Creek that runs throughout the site. The parcel is vegetated with grasses and groves of evergreen trees located to the south of the tributary.

B. Access

A 60-foot access roadway is proposed for access to the site. The proposed roadway will take access directly from Delbert Road and will run from east to west, on north side of the project site to provide access to each of the proposed lots. 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.

The applicant contracted with 2N Civil to complete a traffic letter for the project. The traffic letter evaluated the future roadway conditions adjacent to and near the project site. Douglas County Engineering reviewed the traffic letter and concurred with the findings which state that the rezoning will have minimal impacts on the area roadways and no additional analysis is needed.

A review of access and roadway improvements was also completed with the concurrent Minor Development Final Plat request.

C. Hazards

The Colorado Geological Survey (CGS) did not provide referral comments on the proposed rezoning. Further site investigation and engineering will occur during the subdivision and building permit phases.

D. Drainage and Floodplain

A Phase III drainage report was submitted with the rezoning request. The existing topography of the site contains elevations that slope southward towards an existing drainageway. The drainageway flows west to east, and crosses under Delbert Road, to the main channel of Coal Creek located two miles downstream, in Elbert County.

FEMA maps dated September 30, 2005 indicate that unregulated floodplain exists on the site. Further review of the unmapped floodplain areas will be accomplished at the time of subdivision.

V. PROVISION OF SERVICES

A. Schools

The County's *Subdivision Resolution* standards require school land dedications. During referral agency review, the Douglas County School District (DCSD) requested cash-in-lieu fees due to the size of the subject property. The applicant has agreed to pay cash-in-lieu fees which will be assessed at the time of subdivision.

B. Fire Protection

South Metro Fire Rescue (SMFR) provides fire protection services to the site and has no objection to the proposed rezoning. The applicant has indicated that they have coordinated with the Rattlesnake Fire Protection District (RFPD) to obtain a will serve letter to allow SMFR to use an existing RFPD water cistern located east of the site in the Meadows Station subdivision. The Meadows Station subdivision is located in Elbert County and is situated on the east side of Delbert Road. Fire suppression and access will be addressed further at the time of the subdivision and the building permit process.

C. Sheriff Services

The Douglas County Sheriff's Office (DSCO) provides police protection services to the site. No referral comments were received from DCSO or DCSO 911.

D. Water and Sanitation

The proposed water supply for the future subdivision will come from individual wells constructed in the nontributary Lower Dawson aquifer, a bedrock aquifer in the Denver Basin, as per water decree 97CW095. The Colorado Division of Water Resources (CDWR) reviewed the rezoning request and commented on the potential for the subdivision of the property in the future. CDWR 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 a final plat. The applicant's water attorney has noted that the owner of the property has not located the well on the site, and may consider well permit no. 53878 as abandoned. CDWR provided a second review of the request and determined that the proposed water supply is adequate and can be provided without causing injury to decreed water rights.

The County's Water Consultant, Lytle Water Solutions (LWS), reviewed the applicant's water supply for compliance with the Douglas County Zoning Resolution, Section 18A Water Supply. LWS indicated that there is sufficient water in the Lower Dawson aquifer to support the proposed rezoning and future subdivision. LWS recommended that all the Denver Basin aquifer water underlying the property be reserved in perpetuity through a Declaration of Restrictive Covenants.

The Douglas County Water Commission also reviewed the rezoning request at its March 2025 meeting and provided a "no comment" on the project.

The applicant has indicated that the future lots will contain individual Onsite Wastewater Treatment Systems (OWTS), and each OWTS will be designed by a licensed Geotechnical Engineer. The Douglas County Health Department (DCHD) provided a referral comment on the rezoning request. DCHD provided a favorable recommendation regarding the proposed method of sewage disposal. DCHD also provided suggestions for the future subdivision regarding home design for radon resistance and suggested that future lot owners should have individual water wells analyzed for contaminants as a baseline for water quality. The applicant has acknowledged DCHD comments and will take their suggestions into consideration during the subdivision process.

F. Utilities

Utility Service providers are AT&T, Black Hills Energy, CenturyLink, CORE Electric Cooperative, and Xcel Energy. AT&T, CORE Electric Cooperative, and CenturyLink had no objections to the rezoning. Black Hills Energy did not respond to the request.

Xcel Energy had no objections to the rezoning request 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. Further, Xcel Energy stated that additional easements may be required for new facilities. Any additional easements will be reviewed during the subdivision process.

VI. PUBLIC NOTICE AND INPUT

A. Public Notice

DCZR Section 2508 requires mailed, published, and posted notice of the public hearing.

B. Public Comments

Notifications of an application in process were sent to all abutting landowners. Staff received three comments from neighboring property owners regarding the proposed rezoning. Neighbors were concerned that the proposed rezoning would allow access from Cooper Creek Court, which is a private access drive owned and maintained by the Cooper Creek HOA, located directly south of the project site. The applicant contacted these neighbors and explained that access to the future subdivision will be taken directly from Delbert Road. The applicant does not intend to provide access from the property to the adjacent Cooper Creek Court.

Other concerns related to the proposed density for future subdivision, and whether future development would remain in character of the existing neighborhood.

C. Referral Comments

All referral agency comments outlined in the Referral Agency Response Report are attached to the staff report. The applicant has provided responses to referral comments.

Referrals were sent to the Parker View Estates HOA and the Spirit Ridge HOA. There were no responses received.

In response to written public comments from abutting landowners, the applicant provided a written response to each comment in the attachments to the staff report. The applicant acknowledged the community comments and will consider these issues during the design of the future subdivision.

VII. STAFF ANALYSIS

The following criteria shall be considered by the Planning Commission in the review of all rezoning applications:

2502.01: Whether the application is in compliance with the requirements of this Resolution and the Douglas County Comprehensive Master Plan.

Staff Comment: The applicant indicated the future subdivision will be served by individual water well and OWTS septic systems. Fire protection and police services are provided to the site and provision for access and utilities have been verified. The application is generally consistent with the CMP policies in Objective 3-3E for the Northeast Subarea.

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.

Staff Comment: Approximately 50 percent of the 42.61-acre project site is adjacent to existing A-1 and LRR zoned single-family residential lots that are five and ten acres in size. The remaining acreage located north of the subject property is a single 91.25-acre parcel which is zoned A-1, and is currently undeveloped, and a single-family residential development with lot sizes of five acres, which is located in Elbert County directly to the east.

The applicant notes that the proposed zoning would allow for a similar density to what is already found in the Northeast subarea. The site characteristics of the Antelope Crossing property are rural in nature, and adjacent to similarly sized parcels with similar site characteristics that are consistent and complementary with the proposed LRR zoning.

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.
Staff Comment: The applicant proposes to rezone a 42.61-acre parcel from A-1 to LRR zoning, at a gross density of 1 dwelling unit per 10 acres. Information provided with the application indicates that public infrastructure will be adequate to support the proposed development.

Policy 3-3E.3 – Encourage connections to central water and sewer district systems, when possible.
Staff Comment: The applicant indicated that existing water and sewer service providers are not in reasonably close proximity to the site. The nearest water provider is Parker Water & Sanitation District (PWSD). The Antelope Crossing property is located approximately two and one-half miles east of the PWSD service area.

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.
Staff Comment: Future development on the site will not utilize any existing alluvial wells for water supply. The property will be developed with four residential lots with each lot to be served by an individual water well. The future lots will be served by the Lower Dawson aquifer as decreed in Case No. 97CW095.

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.
Staff Comment: The rezoning request should not adversely impact existing vegetation, and trees present on the site. The site contains grasses and evergreen trees located south of the existing Tributary. The applicant indicated that the trees will be preserved to the extent possible and serve to screen future development on the site from adjacent properties.

Policy 3-3E.6 – Maintain natural drainages for wildlife movement, where possible, and provide open space linkages within and between large-lot developments.
Staff Comment: The applicant states that future development will not modify the existing Tributary and wildlife movement will not be impacted in the natural drainageway. The applicant will utilize no-build zones in lot design to protect the drainageway and wildlife movement within and between the large-lot developments.

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.
Staff Comment: Information provided with the application indicates that the on-site natural drainageway will be preserved within the new development. The site slopes from west to east, and the Front Range mountains are not viewable from the site. The applicant will utilize no-build zones to protect views of open meadows from the site.

2502.02 Whether the application is in compliance with all applicable statutory provisions.
Staff Comment: The application complies with applicable provisions of the Colorado Revised Statutes.

2502.03 Whether there has been a substantial change in the character of the neighborhood since the land was last zoned.
Staff Comment: The subject property has been zoned A-1 since the inception of zoning in Douglas County in 1955. The parcel has not been subdivided and lies adjacent to existing single-family residential developments to the east, west, and south. A large agricultural parcel is located to the north. The surrounding Lincoln Property Subdivision consists of single-family lots and was subdivided in 1984.

2502.04 Whether the application demonstrates public facilities and services necessary to accommodate the proposed development will be available concurrently with the impacts of such development.
Staff Comment: Public facilities and services will be available to the proposed development. Utility infrastructure will be provided to the site by CORE, Xcel Energy, and CenturyLink. Fire protection and emergency services will be provided by SMFR and the Douglas County Sheriff's Office. The Douglas County School District will provide access to public schools. All entities can provide service and will continue to assess potential impacts during any future phases of residential development.

2502.05 Whether the roadway capacity necessary to maintain the adopted roadway level-of-service for the proposed development will be available concurrently with the impacts of such development.
Staff Comment: Douglas County Engineering determined that Delbert Road will have the capacity necessary to maintain the adopted level-of-service with a maximum of four future residential lots. The site will take access off of Delbert Road through a new driveway.

2502.06 Whether the application is in conformance with Section 18A, Water Supply Overlay District, herein.
Staff Comment: The application is consistent with the requirements of Section 18A for a rezoning. CDWR provided a referral comment letter dated December 24, 2024, stating that the proposed water supply is adequate and can be provided without causing injury to decreed water rights in case no. 97CW095.

The County's water consultant provided a water supply review of the rezoning request and concluded that there is sufficient water in the Lower Dawson aquifer to support the proposed rezoning and future subdivision. The water consultant recommended that the Denver Basin aquifer water underlying the property be reserved in perpetuity through a Declaration of Restrictive Covenants. The applicant committed to providing the Declaration of Restrictive Covenants prior to the Board of County Commissioners hearing.

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 applicant submitted adjudicated water decree 97CW095 which states that the water can be used for domestic, agricultural and fire protection purposes. The four lots will be served by Lower Dawson aquifer wells. CDWR provided a referral comment letter dated December 24, 2024, stating that the proposed water supply is adequate and can be provided without causing injury to decreed water rights.

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: Per the water documentation, o renewable water rights are proposed for development with this application.

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 applicant provided a letter from their water attorney dated May 12, 2025, which states that the water source for individual wells for the four lots will be from the Lower Dawson aquifer groundwater underlying the subject property.

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: The water demand standards for the LRR Zone District are 1 acre-feet/year/residence. The applicant's water attorney letter states that future development of four residential lots with individual water wells will each withdraw up to 2 acre-feet per year for 100-years. The total demand for four wells will be 8 acre-feet per year.

2502.07 Whether the proposed rezoning is compatible with the surrounding land uses.
Staff Comment: The subject property has been zoned A-1 since the inception of zoning in Douglas County in 1955. The parcel has not been subdivided and lies adjacent to existing single-family residential developments to the east, west, and south. A 91.25-acre agricultural parcel is located to the north. The neighboring Lincoln Property Subdivision located to the south of the subject property, consists of single-family residential development that was subdivided in 1984.

2502.08 Whether the subject land is suitable for the intended use.
Staff Comment: Other large lot residential developments are in proximity, the subject parcel may be suitable for the intended residential use.

VIII. STAFF ASSESSMENT

Staff evaluated the rezoning request in accordance with the Douglas County Comprehensive Master Plan policies with Section 25 of the Zoning Resolution. The applicant submitted a Declaration of Restrictive Covenants to reserve the water supply in

perpetuity for the benefit of future property owners. Should the Planning Commission find that the approval standards have been met, it may recommend approval of the rezoning to the Board of County Commissioners.

ATTACHMENTS **PAGE**

Douglas County Land Use Application 11
Applicant's Narrative 12
CMP, Zoning, and Aerial Maps 22
Referral Agency Response Report 25
Referral Response Letters 36
Applicant Response to Referral Comments 95
Community Comments 105
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Adjacency Exhibit 120

DOUGLAS COUNTY
COLORADO

Department of Community Development
Planning Services

www.douglas.co.us

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 Rezoning

PROJECT FILE #: ZR2021-015

PROJECT TYPE: **Rezoning**

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:

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:

PLANNING FEES: $5,056.00

ENGINEERING FEES:

TOTAL FEES:

RELATED PROJECTS: PS2023-232, SB2024-066

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 future 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.***

Applicant Signature

4/24/24
Date

ANTELOPE CROSSING FILING 1

PROJECT SUMMARY
REZONING FROM A-1 TO LRR
April 26, 2024, Rev. July 2, 2024, Rev. 10/28/24, Rev. 7/25/25

Section 2506.01
General Project Concept: To re-zone 42.61 acres of Agricultural One land to Large Rural Residential. The current use of the land is agricultural. The property does not have any improvements on it.

The proposed gross density on the property will not exceed 1du/10ac and will likely include four (4) 10+ acre lots. The lots will be served by individual well and septic systems.

Access to the property will come from Delbert Road via a new private all weather local road that will run up through the property to the northwest and will provide access to the new four (lots). 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.

The 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.

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.

Section 2506.02

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
Surveyor:	Encompass Surveying 2750 S. Wadsworth Blvd., Ste. C202 Denver, CO 80227

PROJECT SUMMARY
REZONING
FOR
ANTELOPE CROSSING FILING 1 FROM A-1 TO LRR

Section 2506.03
Purpose of this request: To re-zone 42.61 acres of Agricultural One land to Large Rural Residential.

Section 2506.04
Proposed development staging and time frame: A minor plat has been submitted as well for the subdivision of four (4) 10+ acre lots. Subsequent to a minor plat recordation the Owner expects to start development in the summer of 2025 with the first home building permits being issued later that year.

Section 2506.05
How it relates to the existing land uses and abutting land uses:

Site Zoning: Current Site Zoning – Agricultural One (A-1)
Proposed Zoning – Large Rural Residential (LRR)

Adjacent Properties Zoning –

CONTIGUOUS

Boundary Segment	Adjacent Acreage	Length (ft)	Percentage of Adjacency	Zone District	Max. Gross Density Allowed
East (Elbert County RA-1 Zoning)	6.00	642.22	7.7%	RA-1*	1 du / 5 ac
East (A-1 Zoning)	5	388.43	4.7%	A-1	1 du / 35 ac
South (A-1 Zoning)	5	560.87	6.8%	A-1	1 du / 35 ac
South (A-1 Zoning)	10	903.99	10.9%	A-1	1 du / 35 ac
East (A-1 Zoning)	10	330.00	4.0%	A-1	1 du / 35 ac
South (LRR Zoning)	10.035	1322.37	15.9%	LRR	1 du / 10 ac
Totals	46.04	4,147.88	50.02%		

* = Elbert County (Meadows Station)

Section 2506.06
Description of the availability and adequacy of public services and facilities.

Fire Protection:
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.

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
School District:	Douglas County – Applicant acknowledges the fee-in-lieu of land will be $500 for each now residential lot and will make this payment at the time of platting.

Section 2506.07
An analysis of the site characteristics related to the proposal, including any environmentally hazardous, sensitive or natural resource areas. Describe any man-made hazards.

Currently the site is non-habited. The terrain is mostly rolling plains with unmapped Upper Reach Cool Creek Left Tributary ("Tributary") running through the property. The Ph. 1 drainage study and the floodplain letter (both prepared by 2NCivil) with this application outlines detailed information about the Tributary. A CLOMR/LOMR is not anticipated since the annual floodplain boundary change is minimal (1%). There are no mitigation improvements required. Evergreen trees are located to the south of the Tributary. There are no known environmentally hazardous, sensitive or natural resource areas on the property.

Section 2506.08
Impacts on existing flora and fauna.

The development activity that will occur will involve grading in the access road from Delbert Road. No overlot activity will occur. Lots will be sold and custom home construction will take place on each lot. The lot construction by the home builder will mostly include a driveway, home, domestic well, OWTS (septic system) and possibly an accessory building. The disturbance areas impacted by any new development will be reseeded with native seed mix in accordance with Doug. Co. standards. Furthermore, proper erosion control measures will be installed to prevent erosion. The Comprehensive Master Plan Wildlife Map designates this area as a Moderate Habitat Value area. The habitat observed in and around the property are antelope, deer and rabbits.

Due to the minimal disturbance, we do not expect any impact to native wildlife.

Section 2506.09
Denver Regional Council of Government's Metro Vision Plan –The site is located just at the edge or immediately outside of the Urban Growth Boundary. The Metro Vision Plan identifies the area as Semi-Urban Residential as it is located in groupings of 10 or more residential parcels

with an average residential lot size greater than or equal to 1 acre and less than 10 acres. This application will comply with this as each lot will be greater than 2 acres and less than 10 acres.

1041 regulations don't apply to rural communities.

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

- *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. The adjacent land to the north and west is owned by the same owner as this property and it is their intent to subsequently rezone and subdivide these two properties to LRR and create 10-ac lots through subdivision.

    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.*

LRR zoning of this property will yield four (4) 10-acre lots. The 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. 1 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 nontributary, 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. A slope analysis of the property will be conducted at the time of subdivision. 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 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.

Section 2506.10

Phase I Drainage and Water Quality Study – 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 the future LRR 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.

Section 2506.11
Description of recreation facilities, including existing and proposed park sites, open space and accessibility to parks and open space areas – the subject property will not be constructing parks and therefore the applicant will pay the required cash-in-lieu fees. The closest Douglas County local park is Pinery Park (which is approximately 5-miles away as the crow flies). And the closest local Town/Metropolitan District parks are Tallman and O'Brien Parks (which are approximately 4 and 6-miles away respectively as the crow flies).

Section 2506.12
Changes in the character of the neighborhood, since the land was last zoned, to substantiate a rezoning – the majority of the land in and around the subject property has been zoned agricultural and large rural residential for quite some time, including the 5-ac lots to the east in Elbert County known as Meadows Station. The adjacency to the A-1 and LRR (both 10-acre) lots to the south and the 5 & 6-acre Meadow Station lots to the east are used similar to the uses proposed herein. It appears that Meadows Station was platted in Elbert County in the 1980's.

Rezoning – Section 2502

2502.01 Whether the application is in compliance with the requirements of this Resolution and the Douglas County Comprehensive 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 as evidenced earlier in this narrative by complying with Policies 3-3E.1 – E.7.

2502.02 Whether the application is in compliance with all applicable statutory provisions;

The proposed application complies with the applicable statutory provisions of the Colorado Revised Statutes C.R.S. § 31-23-303(1): "… in accordance with a comprehensive plan and designed to lessen congestion in the streets; to secure safety from fire, panic, floodwaters, and other dangers; to promote health and general welfare; to provide adequate light and air; to prevent the overcrowding of land; to avoid undue concentration of population; to promote energy conservation; and to facilitate the adequate provision of transportation, water, sewerage,

schools, parks, and other public requirements. Such regulations shall be made with reasonable consideration, among other things, as to the character of the district and its peculiar suitability for particular uses and with a view to conserving the value of buildings and encouraging the most appropriate use of land throughout such municipality."

2502.03 Whether there has been a substantial change in the character of the neighborhood, since the land was last zoned;

The property is located adjacent to existing LRR, RR and A-1 zoned land. The greater Northeast Subarea has continued to develop into semi-rural residential uses.

2502.04 Whether the application demonstrates public facilities and services necessary to accommodate the proposed development will be available concurrently with the impacts of such development

This rezoning will not adversely impact the provision of public facilities and services; utility infrastructure will be provided to the site. It is served by South Metro Fire Protection District, the Douglas County Sheriff's Office and the Douglas County School District. We expect all entities will be capable of providing service, as this will be determined during the referral review process.

2502.05 Whether the roadway capacity necessary to maintain the adopted roadway level-of-service for the proposed development will be available concurrently with the impacts of such development;

This rezoning will not adversely impact the roadway capacity. The site's traffic was analyzed by 2NCivil in their 4/5/24 traffic letter. The site will gain access off of Delbert Road at a new driveway location. The location is at the bottom of a vertical sag and therefore the site distance is well more than is required. The site will generate 38 trips per day in and out of Delbert Road which is classified as a 2-lane collector. As stated previously the 4/5/24 2NCivil traffic letter indicates that the estimated trips generated from these four lots has minimal impact on Delbert Road.

2502.06 Whether the application is in conformance with Section 18A, Water Supply - Overlay District, herein

The subject land contains a water supply that is adequate for the intended use. Please see the attached 5/29/24 opinion letter prepared by Eric Trout (McGeady Becher P.C.) stating the water's sufficiency which includes the decree evidencing the allowed uses for the water.

2502.07 Whether the proposed rezoning is compatible with the surrounding land Uses

The property is located adjacent to existing LRR, RR and A-1 zoned land. 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.

2502.08 Whether the subject land is suitable for the intended use

The proposed rezone of the subject land is similar in nature to other parcels that are in close proximity and therefore is suitable for the proposed intended use.

Water Supply 18A

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.

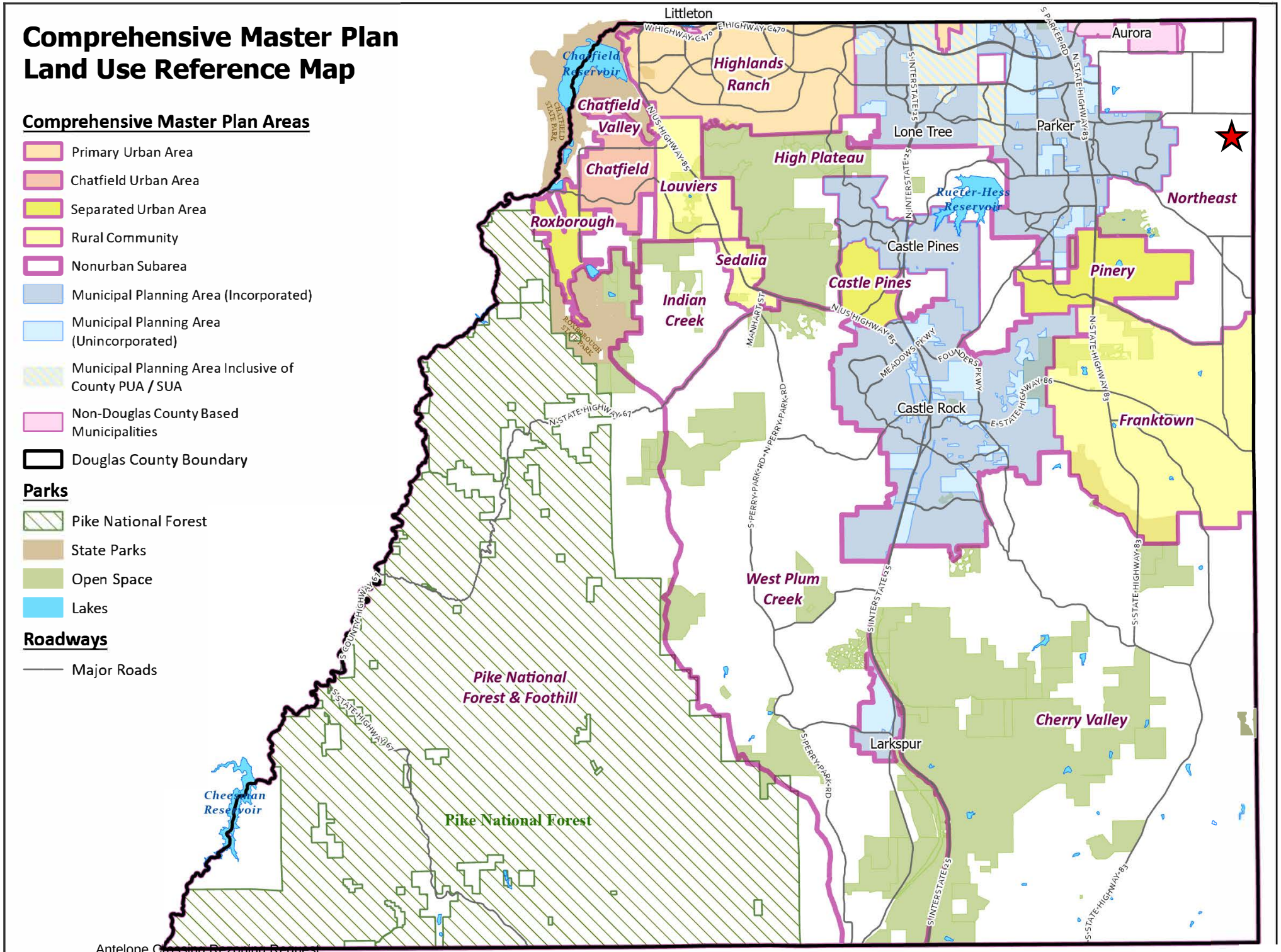
Please see the attached 9/16/24 opinion letter prepared by Eric Trout (McGeady Becher P.C.) stating the water's sufficiency.

In summary we are proposing to rezone the 42.61-ac property known as Antelope Crossing Filing 1 from A-1 to LRR. This rezoning proposal meets the Northeast Sub-Area criteria for "no

more than one dwelling unit per 2.5-ac so long as 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." Furthermore, the rezoning of this property is logical for the surrounding area considering similar lot sizes to the south and east.

Note: A community meeting has not been conducted as it is voluntary. Furthermore, a meeting with Elbert County has not been conducted as the property is not in Elbert County.

Comprehensive Master Plan Land Use Reference Map



Comprehensive Master Plan Areas

- Primary Urban Area
- Chatfield Urban Area
- Separated Urban Area
- Rural Community
- Nonurban Subarea
- Municipal Planning Area (Incorporated)
- Municipal Planning Area (Unincorporated)
- Municipal Planning Area Inclusive of County PUA / SUA
- Non-Douglas County Based Municipalities
- Douglas County Boundary

Parks

- Pike National Forest
- State Parks
- Open Space
- Lakes

Roadways

- Major Roads

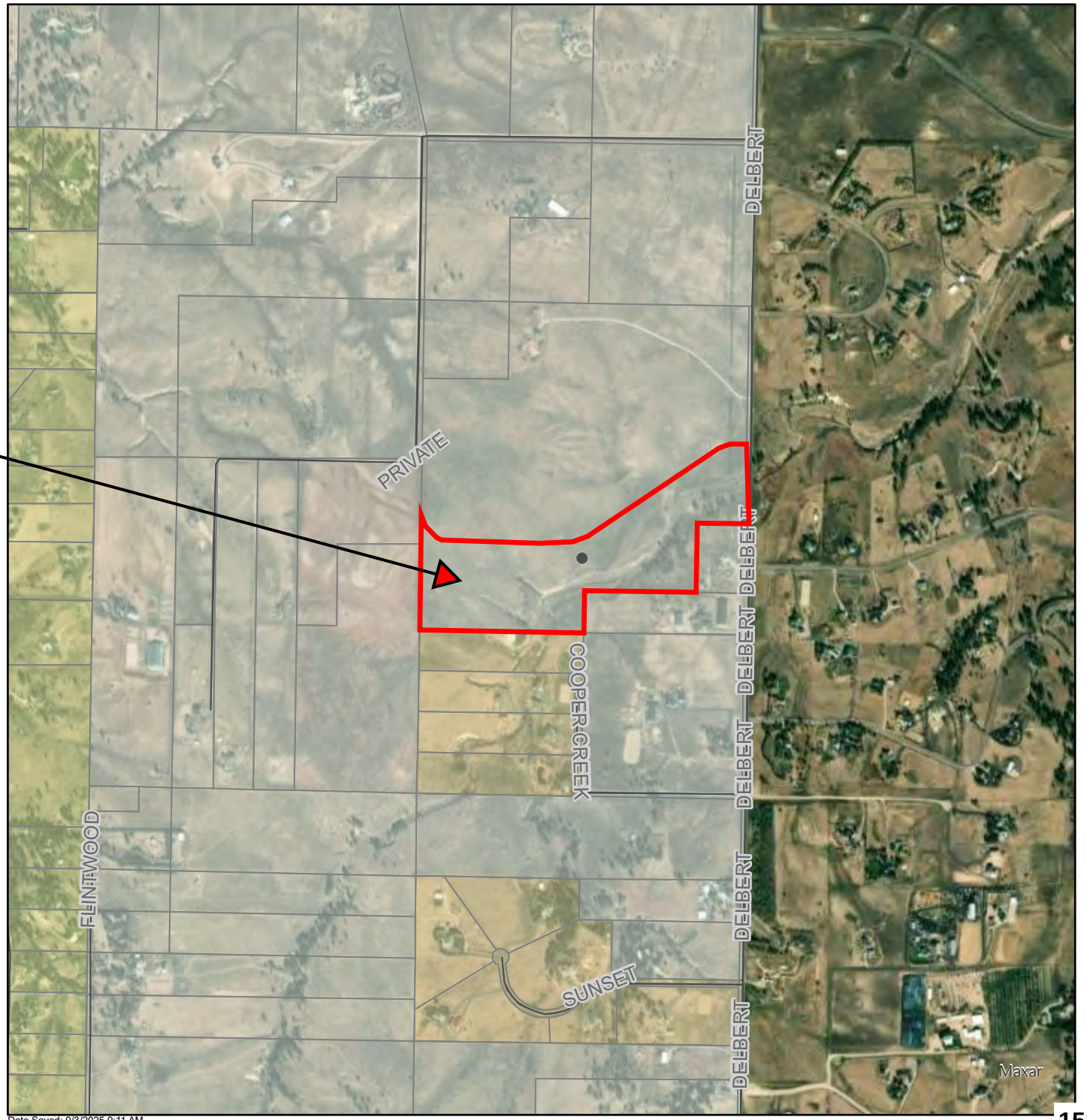
REZONING

ANTELOPE CROSSING

ZR2024-015
ZONING

LEGEND

- Roads
- Major Roads
- Parcels - PARCELS
- A1 - AGRICULTURAL ONE
- LRR - LARGE RURAL RESIDENTIAL
- RR - RURAL RESIDENTIAL



Date Saved: 9/3/2025 9:11 AM

Source: https://apps.douglas.co.us/gisportal/apps/webappviewer/index.html?id=9cd173c692b7436891bd0

REZONING

ANTELOPE CROSSING
ZR2024-015
AERIAL

N

LEGEND
- Roads
- Major Roads
- Parcels - PARCELS

Date Saved: 9/3/2025 9:14 AM

Source: https://apps.douglas.co.us/gisportal/apps/webappviewer/index.html?id=9cd173c692b7436891bd0

Project Name: Antelope Crossing
Project File #: ZR2024-015
Date Sent: 07/11/2024 **Date Due:** 08/01/2024

Agency	Date Received	Agency Response	Response Resolution
Addressing Analyst	07/11/2024	No Comment	No further action necessary
Assessor	07/30/2024	Received: No	No further action necessary
AT&T Long Distance - ROW	07/17/2024	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	07/16/2024	No Comment	No further action necessary
CenturyLink	07/23/2024	Received: CenturyLink of Colorado, Inc. d/b/a CENTURYLINK (“CenturyLink”) has reviewed the request for the subject rezone and has determined that it has no objections with respect to the areas proposed for rezone as shown and/or described on Exhibit “A”, said Exhibit “A” attached hereto and incorporated by this reference. It is the intent and understanding of CenturyLink that this rezone shall not reduce our rights to any other existing easement or rights we have on this site or in the area. This rezone response is submitted WITH THE STIPULATION that if CenturyLink facilities are found and/or damaged within the rezoned area as described, the Applicant will bear the cost of relocation and repair of said facilities.	Applicant has acknowledged the referral comment

		If you have any questions please contact Phil Hackler at (432) 288-8418 or Phil.Hackler@lumen.com . CenturyLink Right of Way Team	
Cherry Creek Basin Water Quality Authority	07/16/2024	Received: The Cherry Creek Basin Water Quality Authority (Authority) acknowledges notification from Douglas County that the proposed development plans for ZR2024-015, Antelope Crossing - Rezoning Request 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 acknowledged the referral comment and will coordinate with Douglas County Engineering at subdivision.
Colorado Division of Water Resources	07/18/2024	Summary of Comments: 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. 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. The proposed water supply is individual on lot wells constructed in the nontributary Lower Dawson	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. The applicant will address referral comments pertaining to subdivision during the minor development plat process.

		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. The proposed source of water for this subdivision is a bedrock aquifer in the Denver Basin. A review of our records shows well permit no. 53878 may be located on the subject property. The well under permit no. 53878 was constructed on May 23, 1972 and is permitted to be used for domestic purposes. The well is constructed in the not-nontributary Upper Dawson aquifer. Section 37-92-602(3)(b)(III), C.R.S. requires that the cumulative effect of all wells in a subdivision be considered when evaluating material injury to decreed water rights. As such, an augmentation plan is required to offset depletions caused by the pumping of the well or the well must be plugged and abandoned upon subdivision approval. State Engineer's Office Opinion Based upon the above and pursuant to section 30-28-136(1)(h)(I), C.R.S., this office has not received sufficient information to render an opinion regarding whether the proposed water supply is adequate and can be provided without causing injury to decreed water rights. Prior to further review, the Applicant must clarify if well no. 53878 is located on the subject property, and if so, identify the augmentation plan under which the well will operate or plug and abandon the well upon subdivision approval. Please contact Wenli Dickinson at Wenli.Dickinson@state.co.us or 303-607-8206 with any questions.	

		Sincerely, Ioana Comaniciu, P.E. Water Resource Engineer	
Colorado Geological Survey	07/29/2024	No Comment	No further action necessary
Colorado Parks and Wildlife (East DC - Dist 549)	07/31/2024	Received: Colorado Parks and Wildlife (CPW) has no objections to the application moving forward as planned. Thank you, Katie Doyle District Wildlife Manager Parker/Castle Rock East- Area 5 P 303.291.7139 | C 720.930.8039 6060 Broadway, Denver, CO 80216 katie.doyle@state.co.us | cpw.state.co.us	No further action necessary
Comcast		No Response Received	No further action necessary
CORE Electric Cooperative	07/31/2024	No Comment	No further action necessary
Douglas County Conservation District	07/31/2024	Summary of Comment Letter: Letter addresses limitations on buildings, roads, excavations, and floodplain.	Applicant has acknowledged referral comments and has provided the suggested weed management plan. The applicant will address referral comments pertaining to subdivision during the minor development plat process.
Douglas County Health Department	08/01/2024	Received: Thank you for the opportunity to review and comment on the A-1 to a large rural development. 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. On-Site Wastewater Treatment System (OWTS) – New or Expanded (Rezoning) Proper wastewater	Applicant has acknowledged DCHD referral comments and will consider DCHD recommendations during the subdivision process.

		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 subject property being served by OWTS given the proposed use provided that the system is permitted, inspected and operated in accordance with DCHD's current OWTS Regulation. More information is available at https://www.douglas.co.us/health-department/environmentalhealth/. Radon is a naturally occurring radioactive gas that is present at high levels in all parts of Colorado due to the presence of uranium in the soil. Radon can enter homes and long-term exposure causes lung cancer. In order to prevent radon from infiltrating the home, DCHD recommends designing new homes so that they are radon resistant. This includes laying a barrier beneath the flooring system, installing a gas-tight venting pipe from the gravel level through the roof and sealing and caulking the foundation thoroughly. More information regarding radon and radon-resistant construction techniques can be found here: https://www.epa.gov/radon/building-new-home-have-you-considered-radon . Domestic Well 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 . Please feel free to contact me at 720-907-4897 or smccain@douglas.co.us if you have any questions about our comments. Sincerely, Shania McCain Environmental Health Specialist I	
Douglas County Historic Preservation	08/01/2024	Received: The letter provides comments regarding the request for approval to rezone a 42.24-acre parcel from Agricultural-One (A-1) to Large Rural Residential (LRR), to allow for future development of single-family residential lots. The subject property is located immediately west of the Delbert Road and Meadow Station Road intersection. Upon researching the cultural resources on the property and the surrounding area, it has been determined that the property has not been surveyed for cultural resources. There is potential for buried archaeological resources related to prehistoric activities in the project area and potential for the discovery of subsurface cultural deposits during ground moving activities. As a result, more specific analysis to address these	The applicant has acknowledged the DC Historic Preservation Office comments. During the subdivision process, the applicant will notify the Historic Preservation Office if any cultural resources are found on the site.

		resources will be necessary at future phases of development, including a Class II cultural resource survey of the property, will need to be addressed if development occurs in the future. Should buried artifacts and features be discovered, 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, Curator	
Douglas County Parks and Trails	07/31/2024	Received: Applicant will be responsible for meeting park land dedication standard as outlined in article 10 of the Douglas County Subdivision Resolution.	The applicant has acknowledged the referral comment and will address required parks dedication requirements at subdivision.
Douglas County School District RE 1	07/12/2024	Received: Summary (see comment letter): Should the future subdivision of the property be deemed and processed by Douglas County as a minor development plat, DCSD requests a cash-in-lieu of land dedication in accordance with Section 1004.05.04 of the Douglas County Subdivision Resolution. This section states, "For residential minor development final plat or replats creating 10 or fewer residential lots, the minimum cash-in-	The applicant has acknowledged the referral comment and will address required DCSD cash-in-lieu of land fee requirements at subdivision.

		lieu fee shall be $500 per each new residential lot." Assuming the applicant and Douglas County agree with the updated calculation and payment of these fee requirements at the time of final plat, DCSD has no objection to approval of this application. Thank you for your support of our mutual constituents Sincerely, Shavon Caldwell Planning Manager, DCSD Planning & Construction scaldwell2@dcsdk12.org office: 303.387.0417	
DRCOG		No Response Received	No further action necessary
Elbert County Community & Development Services	07/30/2024	Received: Seems like some of the property owners within a small radius on the Elbert County side might have been left out of the mailing notice list. I do not see Meadow Station Homeowners who are directly across the street. Other than noticing, consider contacting Elbert County R&B concerning the proximity of access points. Danny Klibaner 303-621-3135 Danny.Klibaner@elbertcounty-co.gov	The applicant has acknowledged Elbert County comments and address future access to the subdivision during the minor development final plat process.
Engineering Services	07/24/2024	Received: Flood District criteria requires a CUHP analysis with a 2-year storm duration rather than the Streamstats analysis (streamstats uses a 6-hour storm duration and typically relatively low flow rates). Comment #2-Our traffic engineers have reviewed the trip generation analysis and concur with the findings that the project will have minimal impacts on the area roadways and no additional analysis is needed. Comment #3-Please keep in mind if this rezoning is approved, the County's	The applicant has acknowledged referral comments and has coordinated with engineering to resolve the floodplain analysis issues.

		criteria for a single point of access to the subdivision cannot exceed 1200-ft. without a second point of access. If you have any questions, please give me a call. Chuck Smith Development Review Engineer	
Mile High Flood District	08/01/2024	Received: This letter is in response to the request for our comments concerning the referenced project. We have reviewed this proposal only as it relates to maintenance eligibility of major drainage features, in this case: - Coal Creek In general, we do not object to the proposed rezoning, but we have the following comments to offer on the drainage report and floodplain letter for clarification: 1) Drainage report (Page 8) – Maintenance aspects of the design – Who will have the ultimate maintenance responsibility over the existing Coal Creek channel? 2) Drainage report – There are both CUHP and SWMM runoff analysis provided within the drainage report that seem to be in conflict. The CUHP output in the 100-year storm event for basin PR-1 shows a peak flow rate of 1000.72 cfs, while the SWMM model only shows a peak flow of 290.63 cfs. It should be noted that the MHFD Manual states that CUHP should be used for runoff evaluation while SWMM is only utilized for proposed routing of several CUHP basins. Since there is only one CUHP basin, the SWMM analysis is not needed. Please provide all the CUHP inputs and outputs as part of the drainage report. 3) Floodplain Letter – Please help us understand why Streamstats flow rates are being used for this analysis when there are more detailed CUHP	The applicant has acknowledged MHFD referral comments and has coordinated with Douglas County Engineering to resolve issues raised regarding the Phase III Drainage Report.

		analysis being done as part of this report? Also, please note that the proposed development's basin was included as part of the hydrologic analysis done for the Coal Creek (Yale to County Line) FHAD of 2014. While the FHAD did not include delineation of floodplains south of County Line, it did establish peak flow rates for these reaches. Please review and reference as necessary. MHFD requires responses to the review comments, please include these responses with any future submittal. We appreciate the opportunity to review this proposal. Please feel free to contact me with any questions or concerns. Sincerely, Derek Clark, PE Project Manager Mile High Flood District	
Office of Emergency Management	07/12/2024	Received: OEM has no issues with this project	No further action necessary
Open Space and Natural Resources	07/31/2024	Received: Open Space has no concerns.	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
South Metro Fire Rescue	07/17/2024	Received: South Metro Fire Rescue (SMFR) has reviewed the provided documents and has no objection to the proposed rezoning. Applicants are encouraged to reach out to SMFR to discuss applicable requirements for access and fire protection water supplies prior to design for further development.	Applicant has acknowledged SMFR referral comments and will coordinate with the agency during subdivision.
Spirit Ridge HOA		No Response Received	No further action necessary
Town of Parker Development Review	07/24/2024	No Comment	No further action necessary
Town of Parker Public Works	07/11/2024	No Comment	No further action necessary
Wildfire Mitigation		No Response Received	No further action necessary

Xcel Energy-Right of Way & Permits	07/30/2024	Received: Public Service Company has no objection to this proposed rezone, contingent upon PSCo's ability to maintain all existing rights and this amendment should not hinder our ability for future expansion, including all present and any future accommodations for natural gas transmission and electric transmission related facilities, and that our current use/enjoyment of the area would continue to be an accepted use on the property and that it be "grandfathered" into these changes. 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	Applicant has acknowledged Xcel Energy referral comments and will coordinate with the agency during subdivision.

Carolyn Freeland

From: annb cwc64.com <annb@cwc64.com>
Sent: Wednesday, July 17, 2024 12:55 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 #ZR2024-015
Attachments: N Delbert Rd 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, July 11, 2024 2:16 PM
To: annb cwc64.com <annb@cwc64.com>
Subject: Douglas County eReferral (ZR2024-015) 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

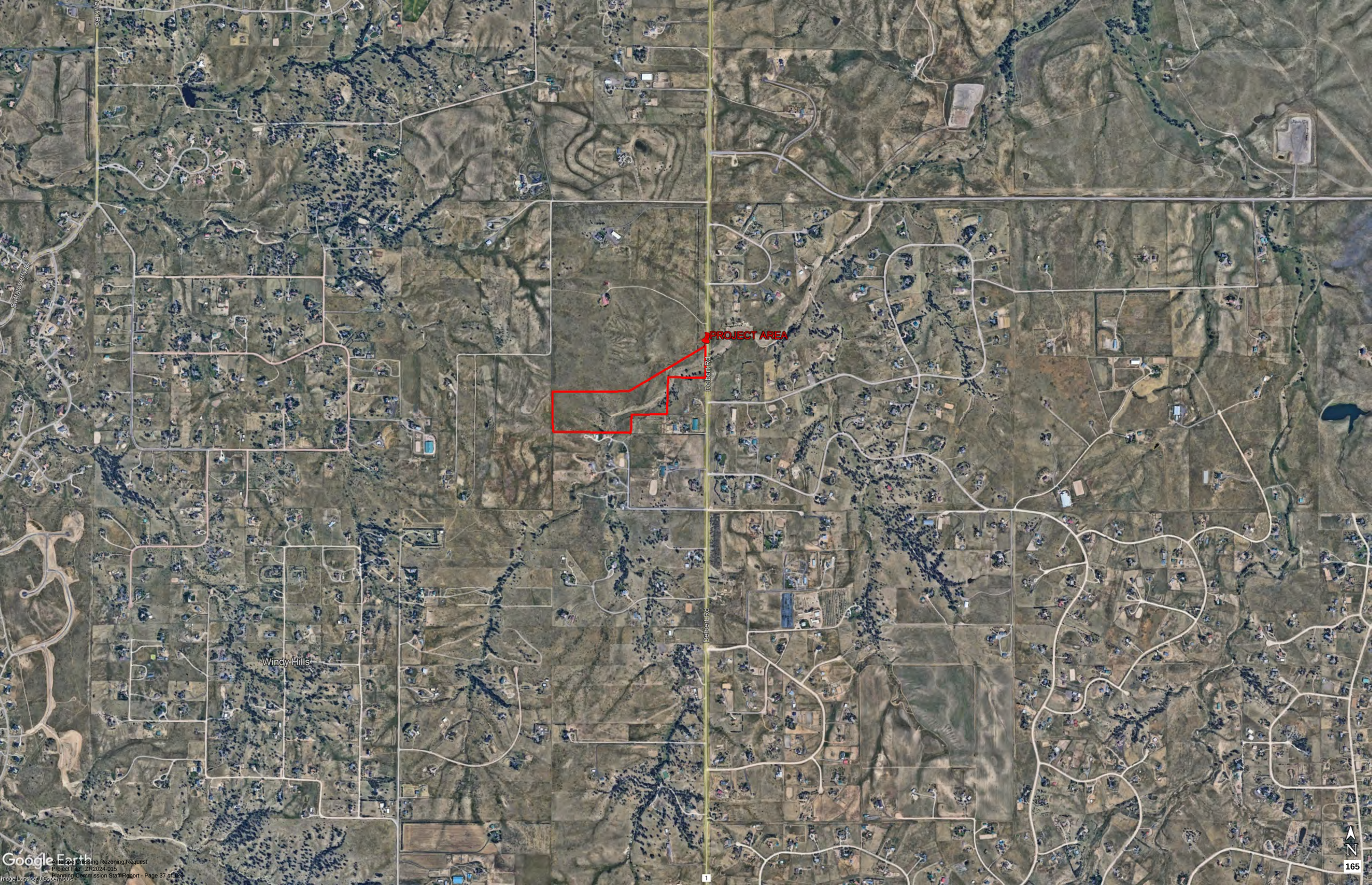
ZR2024-015, Antelope Crossing - Rezoning Request

The applicant requests approval to rezone a 42.24-acre parcel from Agricultural-One (A-1) to Large Rural Residential (LRR), to allow for future development of single-family residential lots. The subject property is located immediately west of the Delbert Road and Meadow Station Road intersection, SPN: 2235-284-00-001.

This referral will close on August 1, 2024.

If you have any questions, please contact me.

Sincerely,


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

COLORADO
Division of Water Resources
Department of Natural Resources

July 17, 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

Dear Carolyn Washee-Freeland:

We have reviewed the referral request to rezone approximately 42.24-acres to large rural residential to allow the future subdivision of 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 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 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.

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.

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 well under permit no. 53878 was constructed on May 23, 1972 and is permitted to be used for domestic purposes. The well is constructed in the not-nontributary Upper Dawson aquifer. Section 37-92-602(3)(b)(III), C.R.S. requires that the cumulative effect of all wells in a subdivision be considered when evaluating material injury to decreed water rights. As such, an augmentation plan is required to offset depletions caused by the pumping of the well or the well must be plugged and abandoned upon subdivision approval.

State Engineer's Office Opinion

Based upon the above and pursuant to section 30-28-136(1)(h)(I), C.R.S., this office has not received sufficient information to render an opinion regarding whether the proposed water supply is adequate and can be provided without causing injury to decreed water rights. Prior to further review, the Applicant must clarify if well no. 53878 is located on the subject property, and if so, identify the augmentation plan under which the well will operate or plug and abandon the well upon subdivision approval.

Please contact Wenli Dickinson at Wenli.Dickinson@state.co.us or 303-607-8206 with any questions.

Sincerely,

Ioana Comaniciu, P.E.
Water Resource Engineer

Ec: File for water well permit no. 53878

WRJ-26-72

THIS FORM MUST BE SUBMITTED WITHIN 60 DAYS OF COMPLETION OF THE WORK DESCRIBED HEREON. TYPE OR PRINT IN BLACK INK.

COLORADO DIVISION OF WATER RESOURCES

101 Columbine Bldg., 1845 Sherman St.
Denver, Colorado 80203

WELL COMPLETION AND PUMP INSTALLATION REPORT

PERMIT NUMBER 53878

RECEIVED
JUN 27 '72
WATER RESOURCES
STATE ENGINEER
COLO.

WELL OWNER DAVID A. LINCOLN

ADDRESS 741 KEARNEY ST. DENVER COLO.

DATE COMPLETED MAY 23, 19 72

NE ¼ of the SE ¼ of Sec. 28,

T. 6 S, R. 65 W, 6 P.M.

WELL LOG

From	To	Type and Color of Material	Water Loc.
0	12	clay	
12	97	sand and clay	
97	107	clay	
107	172	shale	
172	306	sand and clay streakes	X
306			

TOTAL DEPTH 306

Use additional pages necessary to complete log.

HOLE DIAMETER

6 in. from 0 to 306 ft.

____ in. from ____ to ____ ft.

____ in. from ____ to ____ ft.

CASING RECORD:

Plain Casing

Size 5 9/16 & kind steel from 0 to 12 ft.

Size 4½ & kind steel from 12 to 222 ft.

Size ____ & kind ____ from ____ to ____ ft.

Perforated Casing

Size 4½ & kind steel from 222 to 306 ft.

Size ____ & kind ____ from ____ to ____ ft.

Size ____ & kind ____ from ____ to ____ ft.

GROUTING RECORD

Material cement

Intervals constant

Placement Method pumped

GRAVEL PACK: Size ____

Interval ____

TEST DATA

Date Tested MAY 23, 19 72

Static Water Level Prior to Test 174 ft.

Type of Test Pump bailed

Length of Test 2hrs.

Sustained Yield (Metered) 15 GPM

Final Pumping Water Level ____

PUMP INSTALLATION REPORT

Pump Make _____

Type _____

Powered by _____ HP _____

Pump Serial No. _____

Motor Serial No. _____

Date Installed _____

Pump Intake Depth _____

Remarks _____

_____

WELL TEST DATA WITH PERMANENT PUMP

Date Tested _____

Static Water Level Prior to Test _____

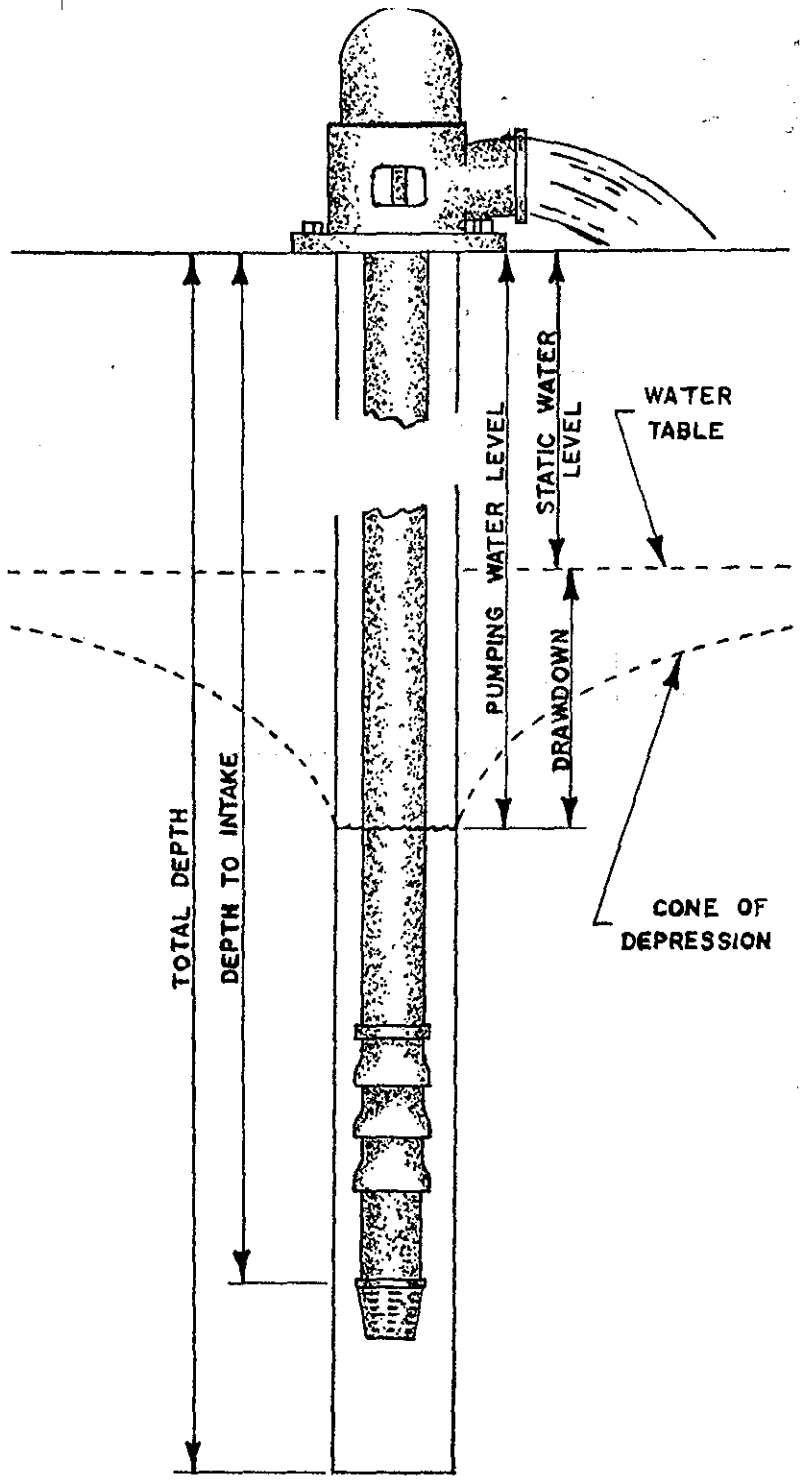
Length of Test _____ Hours

Sustained yield (Metered) _____ GPM

Pumping Water Level _____

Remarks _____

_____



CONTRACTORS STATEMENT

The undersigned, being duly sworn upon oath, deposes and says that he is the contractor of the well or pump installation described hereon; that he has read the statement made hereon; knows the content thereof, and that the same is true of his own knowledge.

Signature Roger Schocke License No. 403

State of Colorado, County of Adams SS

Subscribed and sworn to before me this 26 day of June, 1972.

My Commission expires: My Commission expires May 21, 1975, 19__.

Notary Public Violet M. Schocke

FORM TO BE MADE OUT IN QUADRUPLICATE: WHITE FORM must be an original copy on both sides and signed. WHITE AND GREEN copies must be filed with the State Engineer. PINK COPY is for the Owner and YELLOW COPY is for the Driller.

WRJ-5-71

COLORADO DIVISION OF WATER RESOURCES
101 Columbine Bldg., 1845 Sherman Street, Denver, Colorado 80203

RECEIVED
MAR 13 '72
STATE ENGINEER

TYPE OR PRINT IN BLACK INK. APPLICATION MUST BE COMPLETED BEFORE ACCEPTANCE.

APPLICATION FOR:
- ____ A PERMIT TO USE GROUND WATER
- ✓ A PERMIT TO CONSTRUCT A WELL
- ____ REPLACEMENT FOR NO. ____
- ____ A PERMIT TO INSTALL A PUMP
- ____ OTHER ____

APPLICANT David A. Lincoln

Street Address 741 Kearney St.

City & State Denver Colo.

Telephone No. 377-0113

NAME OF AQUIFER GROUND WATER IS TO BE OBTAINED FROM: ____

PROPOSED TOTAL DEPTH OF WELL 200 Ft.

ESTIMATED MAXIMUM PUMPING RATE 15 GPM

AVERAGE ANNUAL AMOUNT OF GROUND WATER TO BE APPROPRIATED ____ Acre-feet

ANTICIPATED GROUT PROGRAM

Material ____

Intervals ____

Placement Method ____

PROPOSED CASING:

Plain 6 in. from 0 ft. to 40 ft.
____ in. from ____ ft. to ____ ft.
Perf. 4 in. from 40 ft. to 200 ft.
____ in. from ____ ft. to ____ ft.

Driller Roger Schocke No. 403

Address 6500 E. 88th Ave

GROUND WATER TO BE USED FOR:
- ✓ DOMESTIC (1)
- ____ LIVESTOCK (2)
- ____ MUNICIPAL (8)
- ____ OTHER ____
- ____ COMMERCIAL (4)
- ____ INDUSTRIAL (5)
- ____ IRRIGATION (6)

WELL LOCATION
COUNTY Douglas

NE ¼ of the SE ¼ of Section 28

T. 6 So., R. 65 W., 6 P.M.

IN ADDITION TO THE ABOVE, THE WELL MUST BE LOCATED WITH REFERENCE TO GOVERNMENT SURVEY CORNERS, MONUMENTS OR SECTION LINES BY DISTANCE AND BEARING (DOMESTIC WELLS MAY BE LOCATED BY LOT, BLOCK, & SUBDIVISION.)

____ ft. from ____ (North or South) section line

____ ft. from ____ (East or West) section line

LOT ____ BLOCK ____ FILING # ____

SUBDIVISION ____

Ground Water Basin ____

Water Mgmnt. Dist. ____

Anticipated drilling date Mar. 1972

Owner of land on which well is located: David A Lincoln

Other water rights on this land ____

David A. Lincoln
Signature of Applicant

IF WELL IS USED FOR IRRIGATION, BACK SIDE OF THIS APPLICATION MUST BE COMPLETED. 22277

FOR OFFICE USE ONLY

CONDITIONS OF APPROVAL

APPLICATION APPROVED: VALID FOR ONE (1) YEAR AFTER DATE ISSUED UNLESS EXTENDED FOR GOOD CAUSE SHOWN TO THE ISSUING AGENCY.

PERMIT NO. 53878

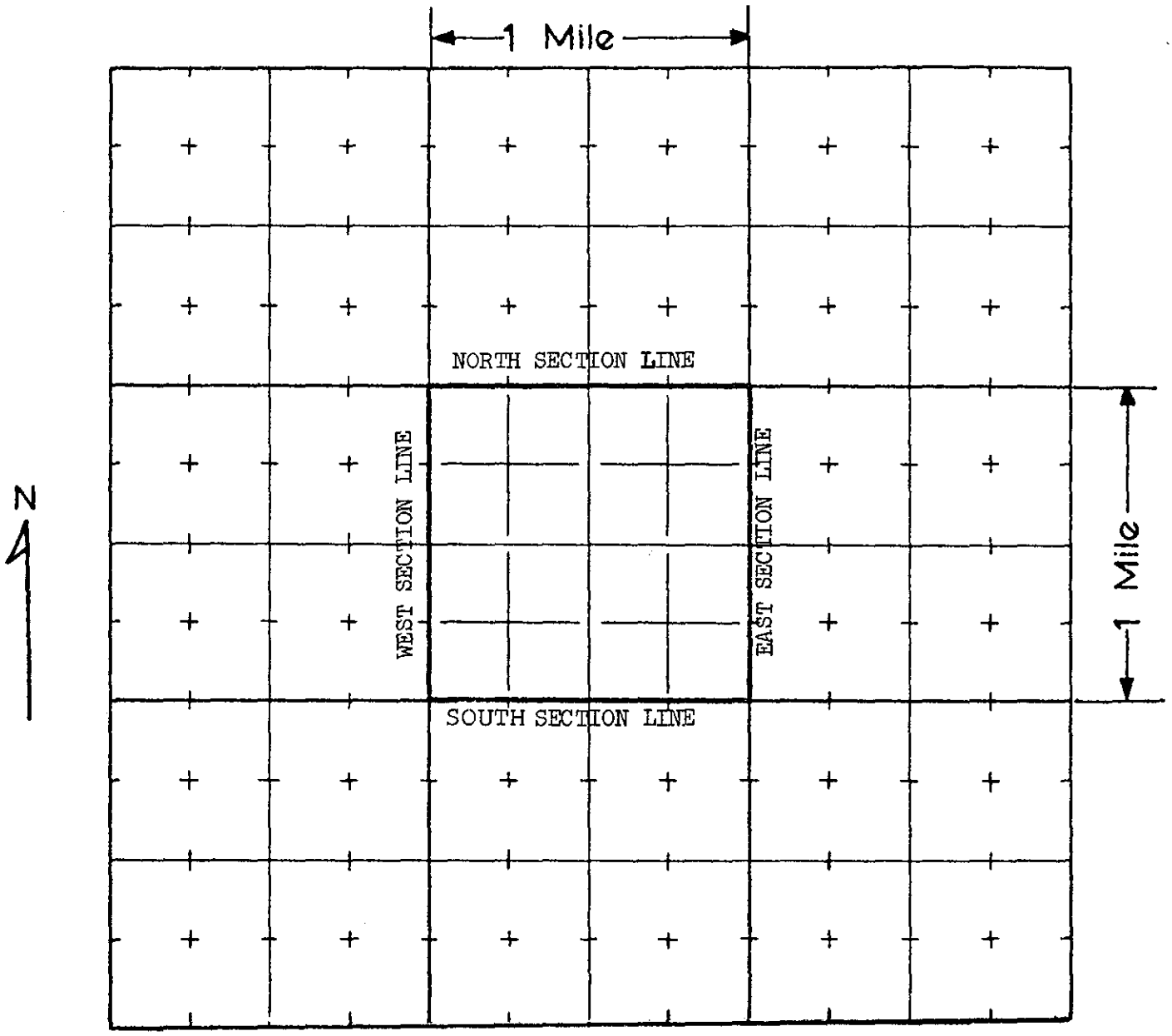
DATE ISSUED MAR 23 1972

E. J. Hansler
STATE ENGINEER

BY Dolan W. Erker

THE LOCATION OF THE PROPOSED WELL MUST BE SHOWN AND THE AREA TO BE IRRIGATED MUST BE SHADED OR CROSS-HATCHED ON THE DIAGRAM BELOW

This diagram represents nine (9) sections. Use the CENTER SQUARE (one section) to indicate the location of the well, if possible.



THE SCALE OF THE DIAGRAM IS TWO INCHES EQUALS ONE-MILE

Owner of irrigated land _____ Number of acres to be irrigated _____

Legal description of irrigated land _____

WATER EQUIVALENTS TABLE (Rounded Figures)

An acre-foot covers 1 acre of land 1 foot deep.
1 cubic foot per second (cfs) .... 449 gallons per minute
1 acre-foot .... 43,560 cubic feet .... 325,900 gallons.
1,000 gpm pumped continuously for one day produces 4.42 acre-feet.
100 gpm pumped continuously for one year produces 160 acre-feet.

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

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,

Ioana Comaniciu, P.E.
Water Resource Engineer

Ec: File for water well permit no. 53878

8/6/2024

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

P862659
No Reservations/No Objection

SUBJECT: Request for approval to rezone a 42.24-acre parcel from Agricultural-One (A-1) to Large Rural Residential (LRR) at Sec. 28, T6S, R65W, Parker, CO.

To Whom It May Concern:

CenturyLink of Colorado, Inc. d/b/a CENTURYLINK ("CenturyLink") has reviewed the request for the subject rezone and has determined that it has no objections with respect to the areas proposed for rezone as shown and/or described on Exhibit "A", said Exhibit "A" attached hereto and incorporated by this reference.

It is the intent and understanding of CenturyLink that this rezone shall not reduce our rights to any other existing easement or rights we have on this site or in the area.

This rezone response is submitted WITH THE STIPULATION that if CenturyLink facilities are found and/or damaged within the rezoned area as described, the Applicant will bear the cost of relocation and repair of said facilities.

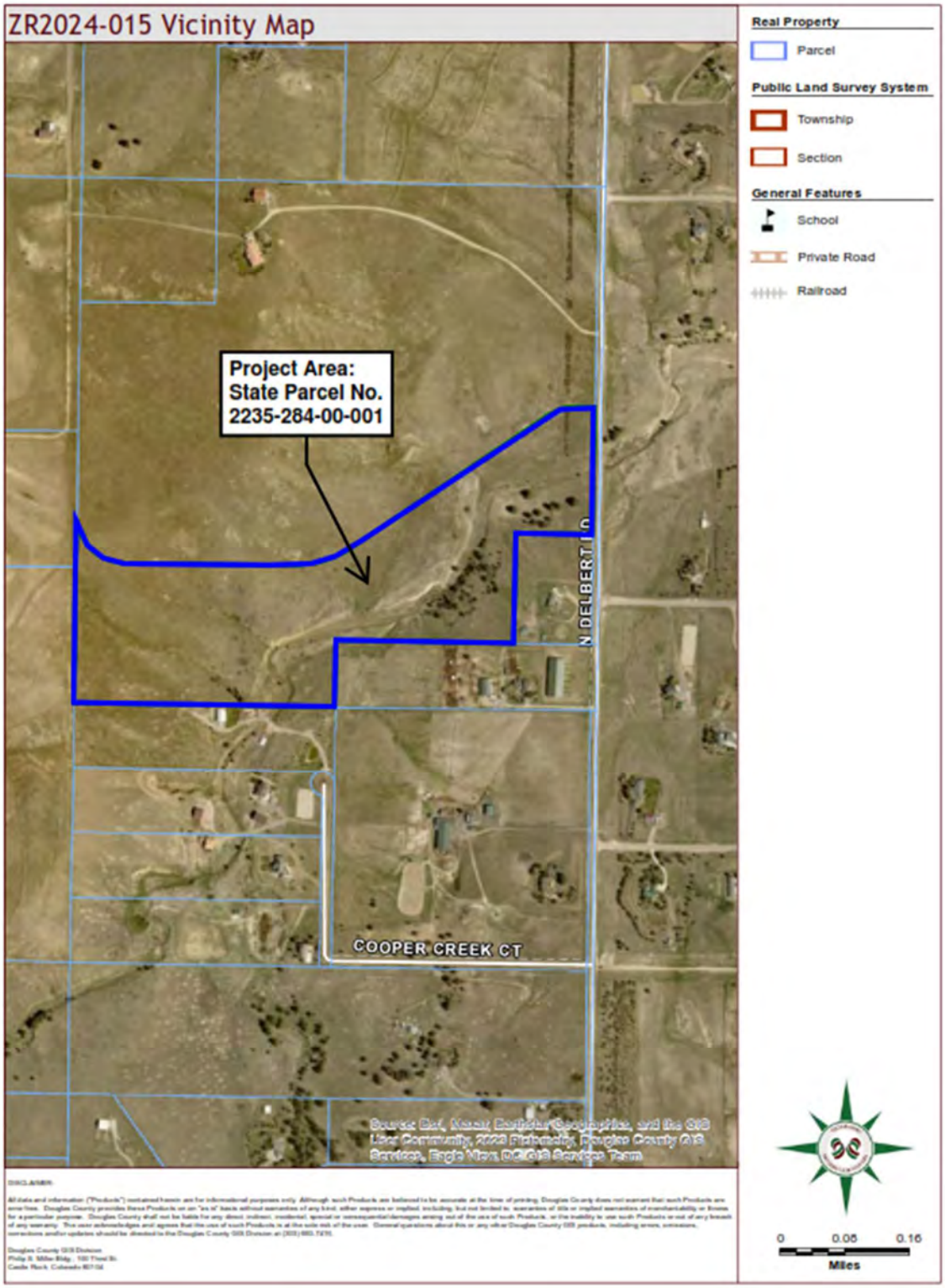
If you have any questions please contact Phil Hackler at (432) 288-8418 or Phil.Hackler@lumen.com.

Sincerely yours,

/s/

CenturyLink Right of Way Team

EXHIBIT A


ZR2024-015 Vicinity Map
Project Area:
State Parcel No.
2235-284-00-001
N DELBERT LN
COOPER CREEK CT
Real Property
Parcel
Public Land Survey System
Township
Section
General Features
School
Private Road
Railroad
0
0.05
0.10
Miles

July 24, 2024

CJ Kirst
Authorized Representative
Tahoe Consulting, LLC
9457 South University Blvd., Unit 101
Highlands Ranch, CO 80126

DV 2024-228

Subject: Antelope Crossing - Rezoning

Dear CJ,

Plan Review Summary:

Submitted to Engineering	-	7/11/24
Comments Sent Out	-	7/24/24

Engineering has reviewed the above referenced submittal and have the following comments:

Rezoning Comments

Comment #1-Regarding the Floodplain Analysis, Douglas County and Mile High Flood District criteria requires a CUHP analysis with a 2-year storm duration rather than the Streamstats analysis (streamstats uses a 6-hour storm duration and typically relatively low flow rates).

Comment #2-Our traffic engineers have reviewed the trip generation analysis and concur with the findings that the project will have minimal impacts on the area roadways and no additional analysis is needed.

Comment #3-Please keep in mind if this rezoning is approved, the County's criteria for a single point of access to the subdivision cannot exceed 1200-ft. without a second point of access.

If you have any questions, please give me a call.

Sincerely,

Chuck Smith
Development Review Engineer

cc: Carolyn Washee-Freeland, AICP, Senior Planner

DV24228

August 1, 2024

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

Re: ZR2024-015, Antelope Crossing- Rezoning Request

Dear Mrs. Washee-Freeland:

The letter provides comments regarding the request for approval to rezone a 42.24-acre parcel from Agricultural-One (A-1) to Large Rural Residential (LRR), to allow for future development of single-family residential lots. The subject property is located immediately west of the Delbert Road and Meadow Station Road intersection.

Upon researching the cultural resources on the property and the surrounding area, it has been determined that the property has not been surveyed for cultural resources. There is potential for buried archaeological resources related to prehistoric activities in the project area and potential for the discovery of subsurface cultural deposits during ground moving activities. As a result, more specific analysis to address these resources will be necessary at future phases of development, including a Class II cultural resource survey of the property, will need to be addressed if development occurs in the future.

Should buried artifacts and features be discovered, 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

Docusign Envelope ID: 7A152075-E81E-4266-969B-A8A3BF6C5534

REFERRAL RESPONSE REQUEST

Date sent July 11, 2024 Comments due by **August 1, 2024**

Project Name:	Antelope Crossing - Rezoning
Project File #:	ZR2024-015
Project Summary:	The applicant requests approval to rezone a 42.24-acre parcel from Agricultural-One (A-1) to Large Rural Residential (LRR), to allow for future development of single-family residential lots. The subject property is located immediately west of the Delbert Road and Meadow Station Road intersection, SPN: 2235-284-00-001.

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, President	**Your Signature:** Signed by: David.Shohet 6E6057CEE3D2404...
(please print)	**Date:** 7/31/2024

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

Docusign Envelope ID: 7A152075-E81E-4266-969B-A8A3BF6C5534

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

July 31, 2024

RE: ZR2024-015 Antelope Crossing

According to the Natural Resources Conservation Service (NRCS) soils survey, the Kutch, Bresser-Truckton, and Newlin-Satanta complex, is “somewhat limited” for dwellings with and without basements, and small commercial buildings due to shrink-swell and depth to soft 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 the NRCS the Loamy Alluvial land along the riparian zone is ‘Very Limited’ for building and roads.

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 42.24 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.

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.

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

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.

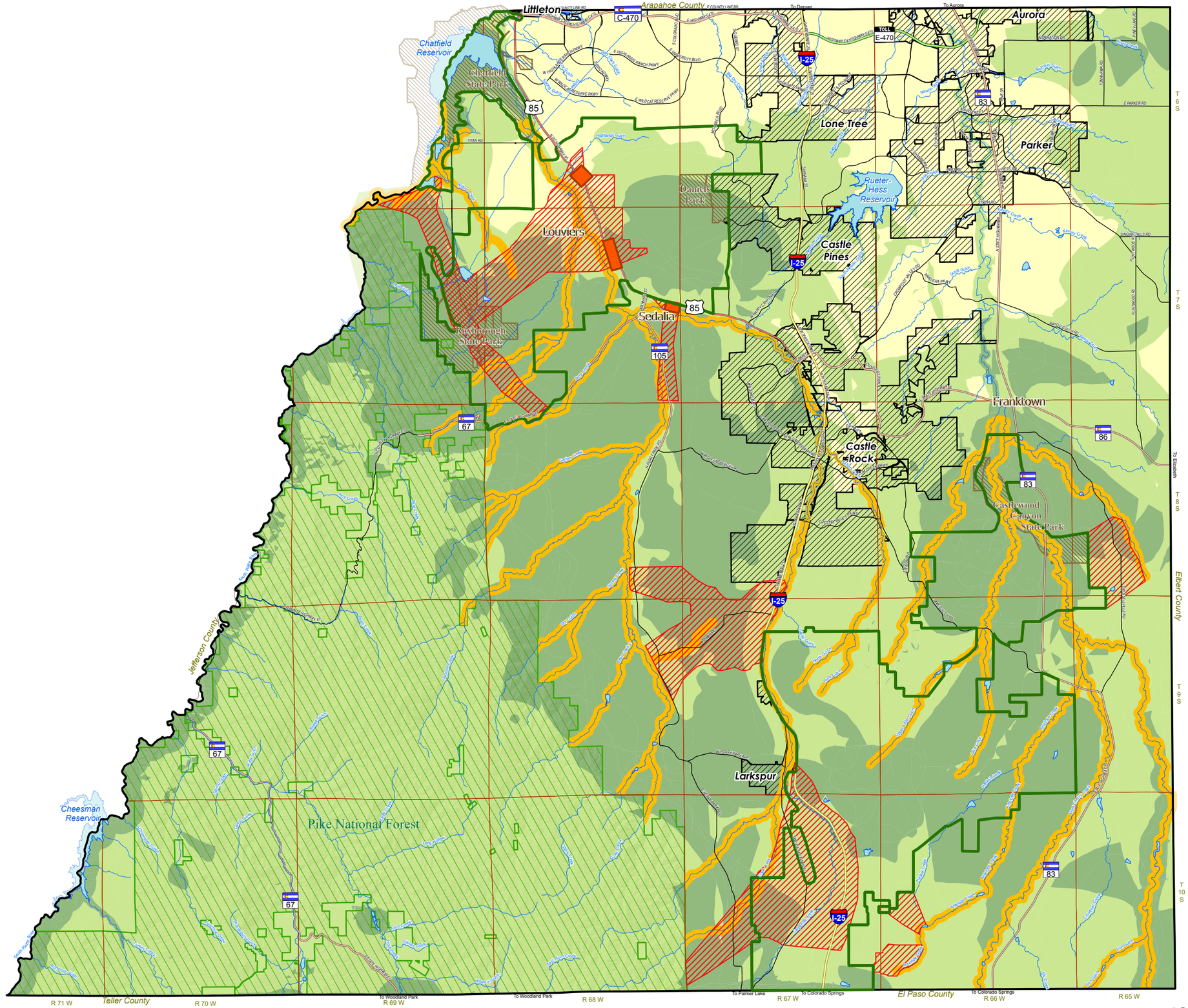
With respect to the Comprehensive Master Plan Wildlife Map designates this area as a Moderate Habitat Value area.

Thank you for the opportunity to respond.

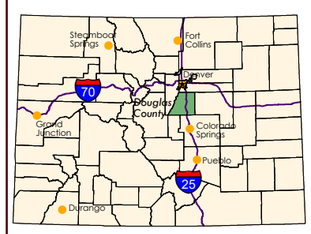
Docusign Envelope ID: 7A152075-E81E-4266-969B-A8A3BF6C5534

Map 9.1 Wildlife Resources
Comprehensive Master Plan 2040

- Wildlife Habitat Conservation Area
- Overland Connection
- Wildlife Movement Corridor
- Low Habitat Value
- Moderate Habitat Value
- High habitat Value
- Wildlife Crossing Area
- Parks
- Pike National Forest
- Municipalities
- Townships
- Douglas County Boundary
- Streams
- Interstate
- US Highway
- State Highway
- Toll Highway
- Major Road



Vicinity Map
State of Colorado



0 0.25 0.5
Miles

Note:
For information pertaining to our Douglas County GIS data use disclaimer, see Land Use map 1.1, for more information.

Path: S:\PROJECTS\CMP2040\CMP2040.aprx Date : 7/18/2019 5:15 PM

Docusign Envelope ID: 7A152075-E81E-4266-969B-A8A3BF6C5534

United States Department of Agriculture

NRCS

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

Docusign Envelope ID: 7A152075-E81E-4266-969B-A8A3BF6C5534

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

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alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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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

Docusign Envelope ID: 7A152075-E81E-4266-969B-A8A3BF6C5534

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

Docusign Envelope ID: 7A152075-E81E-4266-969B-A8A3BF6C5534

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

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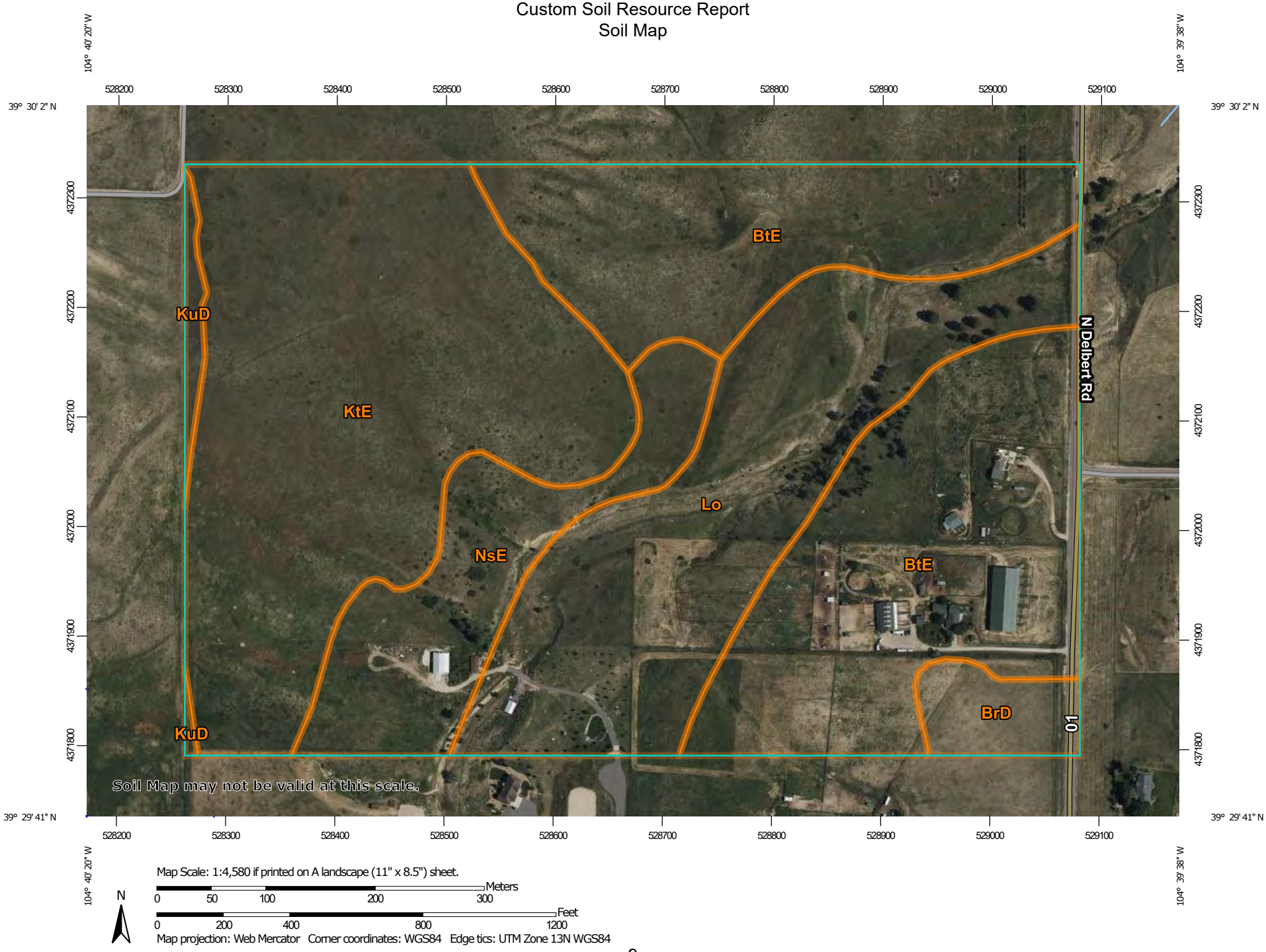
Soil Map

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.

Custom Soil Resource Report
Soil Map



Docusign Envelope ID: 7A152075-E81E-4266-969B-A8A3BF6C5534

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
- Lava Flow
- 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
- 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 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.

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Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BrD	Bresser sandy loam, cool, 5 to 9 percent slopes	2.8	2.5%
BtE	Bresser-Truckton sandy loams, 5 to 25 percent slopes	37.5	34.1%
KtE	Kutch sandy loam, 5 to 20 percent slopes	34.4	31.4%
KuD	Kutch clay loam, 4 to 8 percent slopes	1.0	0.9%
Lo	Loamy alluvial land	23.2	21.1%
NsE	Newlin-Satanta complex, 5 to 20 percent slopes	11.0	10.0%
Totals for Area of Interest		**109.8**	**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

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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.

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Castle Rock Area, Colorado

BrD—Bresser sandy loam, cool, 5 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2tlpk
Elevation: 5,500 to 6,960 feet
Mean annual precipitation: 15 to 19 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 100 to 130 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Bresser, Cool

Setting

Landform: Interfluves
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Tertiary aged alluvium derived from arkose

Typical profile

Ap - 0 to 5 inches: sandy loam
Bt1 - 5 to 8 inches: sandy loam
Bt2 - 8 to 27 inches: sandy clay loam
Bt3 - 27 to 36 inches: sandy loam
C - 36 to 80 inches: loamy coarse sand

Properties and qualities

Slope: 5 to 9 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 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.1 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

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Minor Components

Ascalon

Percent of map unit: 10 percent
Landform: Interfluves
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Truckton

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

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

Docusign Envelope ID: 7A152075-E81E-4266-969B-A8A3BF6C5534

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

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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: Valley sides, alluvial fans, drainageways
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

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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

KuD—Kutch clay loam, 4 to 8 percent slopes

Map Unit Setting

National map unit symbol: jqz6
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: Hills, mesas, erosion remnants
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Linear

Docusign Envelope ID: 7A152075-E81E-4266-969B-A8A3BF6C5534

Parent material: Calcareous fine-loamy clayey shale

Typical profile

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

Properties and qualities

Slope: 4 to 8 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: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: R049XB208CO - Clayey Foothill
Hydric soil rating: No

Minor Components

Fondis

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

Loamy alluvial land

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

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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: Flood plains, swales
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

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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: Drainageways, knobs
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 14-19 PZ
Hydric soil rating: No

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Description of Satanta

Setting

Landform: Drainageways, knobs
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

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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 (ZR2024-015)

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.

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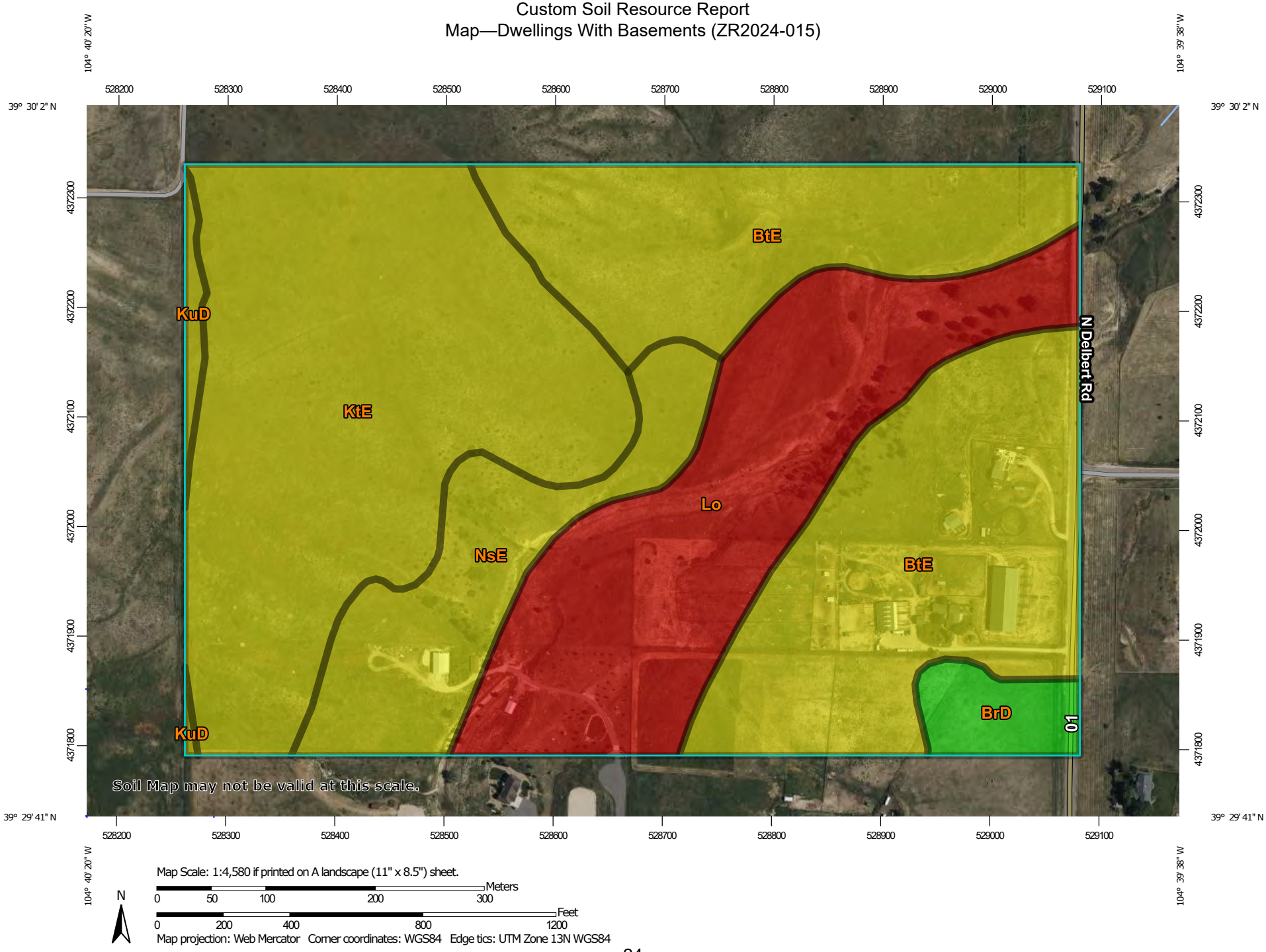
The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance 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 (ZR2024-015)



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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
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Background
- Aerial Photography

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Web Soil Survey URL:
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Survey Area Data: Version 16, Aug 24, 2023

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Docusign Envelope ID: 7A152075-E81E-4266-969B-A8A3BF6C5534

Tables—Dwellings With Basements (ZR2024-015)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
BrD	Bresser sandy loam, cool, 5 to 9 percent slopes	Not limited	Bresser, cool (85%)		2.8	2.5%
			Ascalon (10%)			
			Truckton (5%)			
BtE	Bresser-Truckton sandy loams, 5 to 25 percent slopes	Somewhat limited	Bresser (50%)	Slope (0.16)	37.5	34.1%
KtE	Kutch sandy loam, 5 to 20 percent slopes	Somewhat limited	Kutch (85%)	Slope (0.84)	34.4	31.4%
				Shrink-swell (0.50)		
				Depth to soft bedrock (0.29)		
KuD	Kutch clay loam, 4 to 8 percent slopes	Somewhat limited	Kutch (85%)	Shrink-swell (0.50)	1.0	0.9%
				Depth to soft bedrock (0.29)		
Lo	Loamy alluvial land	Very limited	Loamy alluvial land (80%)	Flooding (1.00)	23.2	21.1%
				Depth to saturated zone (0.15)		
NsE	Newlin-Satanta complex, 5 to 20 percent slopes	Somewhat limited	Newlin (50%)	Slope (0.84)	11.0	10.0%
Totals for Area of Interest					**109.8**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Somewhat limited	83.9	76.4%
Very limited	23.2	21.1%
Not limited	2.8	2.5%
Totals for Area of Interest	**109.8**	**100.0%**

Rating Options—Dwellings With Basements (ZR2024-015)

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute

Docusign Envelope ID: 7A152075-E81E-4266-969B-A8A3BF6C5534

being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Docusign Envelope ID: 7A152075-E81E-4266-969B-A8A3BF6C5534

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DOUGLAS COUNTY
HEALTH DEPARTMENT COLORADO

August 1, 2024

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

RE: ZR2024-015

Dear Carolyn Washee-Freeland,

Thank you for the opportunity to review and comment on the A-1 to a large rural development. 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.

On-Site Wastewater Treatment System (OWTS) – New or Expanded (Rezoning)
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 subject property being served by OWTS given the proposed use provided that the system is permitted, inspected and operated in accordance with DCHD's current OWTS Regulation. More information is available at https://www.douglas.co.us/health-department/environmental-health/.

Radon
Radon is a naturally occurring radioactive gas that is present at high levels in all parts of Colorado due to the presence of uranium in the soil. Radon can enter homes and long-term exposure causes lung cancer. In order to prevent radon from infiltrating the home, DCHD recommends designing new homes so that they are radon resistant. This includes laying a barrier beneath the flooring system, installing a gas-tight venting pipe from the gravel level through the roof, and sealing and caulking the foundation thoroughly. More information regarding radon and radon-resistant construction techniques can be found here: https://www.epa.gov/radon/building-new-home-have-you-considered-radon.

Domestic Well
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.

Please feel free to contact me at 720-907-4897 or smccain@douglas.co.us if you have any questions about our comments.

Sincerely,

Shania McCain
Environmental Health Specialist I
Douglas County Health Department

620 Wilcox Street
Castle Rock, Colorado 80104

July 12th, 2024

Carolyn Washee-Freeland, AICP
Senior Planner, Douglas County Planning Services
100 Third Street
Castle Rock, CO 80104

RE: Antelope Crossing Rezone (ZR2024-015)

Dear Ms. Washee-Freeland,

Thank you for the opportunity to respond to the above referenced application. It is our understanding that the applicant is seeking approval to rezone a parcel of approximately 42 acres from A1 to LRR (Large Rural Residential) for future subdivision and residential development. The property is generally located ½ mile north of the intersection of Delbert Road and Copper Creek Court and is located within the Mountain View and Northeast Elementary School attendance area.

It is our understanding that per Douglas County zoning regulations, LRR zoning allows for a maximum residential density of 1 dwelling unit for every 10-acres. Based on this residential density, DCSD anticipates that 5 students will be generated from this development requiring a total land dedication of 0.108 acres. Since this amount of land dedication is smaller than DCSD's minimum site requirements DCSD requests a cash-in-lieu of land dedication. Please be aware that DCSD standard student generation ratios (and pursuant land dedication estimates) are based on residential density and will be updated at the time of final plat to reflect final, proposed residential densities.

Pursuant to Section 1004.05.3 of the Douglas County Subdivision Resolution, "The cash-in-lieu fee shall be equivalent to the full market value of the acreage required for school land dedication. Value shall be based on anticipated market value after completion of platting. The applicant shall submit a proposal for the cash-in-lieu fee and supply the information necessary for the Board to evaluate the adequacy of the proposal. This information shall include at least one appraisal of the property by a qualified appraiser."

Should the future subdivision of the property be deemed and processed by Douglas County as a minor development plat, DCSD requests a cash-in-lieu of land dedication in accordance with Section 1004.05.04 of the Douglas County Subdivision Resolution. This section states, "For residential minor development final plat or replats creating 10 or fewer residential lots, the minimum cash-in-lieu fee shall be $500 per each new residential lot."

Assuming the applicant and Douglas County agree with the updated calculation and payment of these fee requirements at the time of final plat, DCSD has no objection to approval of this application. Thank you for your support of our mutual constituents

Sincerely,

Shavon Caldwell
Planning Manager, DCSD Planning & Construction
scaldwell2@dcsdk12.org
office: 303.387.0417

DCSD Estimated Student Generation and Land Dedication

CASH-IN-LIEU CALCULATION
STUDENT GENERATION

PROJECT NAME: ANTELOPE CROSSING REZONE (ZR2024-015)					
DU/	ACRES		DENSITY		
4	42		0.10		
			Generation	Number	
STUDENT GENERATION RATES	No. of DU's		Rate	of Students	
ELEMENTARY	4	X	0.5	2	
MIDDLE SCHOOL	4	X	0.2	1	
HIGH SCHOOL	4	X	0.4	2	
				Required	
			School	Land	
	Number		Acreage	Dedication	
SCHOOL LAND DEDICATION	of Students		Per Student	Acreage	
ELEMENTARY	2	X	0.018	0.036	
MIDDLE SCHOOL	1	X	0.030	0.024	
HIGH SCHOOL	2	X	0.030	0.048	
			TOTAL	0.108	

REFERRAL RESPONSE REQUEST

Date sent July 11, 2024 Comments due by **August 1, 2024**

Project Name:	Antelope Crossing - Rezoning
Project File #:	ZR2024-015
Project Summary:	The applicant requests approval to rezone a 42.24-acre parcel from Agricultural-One (A-1) to Large Rural Residential (LRR), to allow for future development of single-family residential lots. The subject property is located immediately west of the Delbert Road and Meadow Station Road intersection, SPN: 2235-284-00-001.

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:

Seems like some of the property owners within a small radius on the Elbert County side might have been left out of the mailing notice list. I do not see Meadow Station ~~Homeowners who are directly across the street. Other than noticing, consider~~ contacting Elbert County R&B conceringing the proximity of access points.

☐ See letter attached for detail.

Agency: Elbert County Planning	**Phone #:** 303-621-3135
Your Name: Danny Klibaner	**Your Signature:** DJK
(please print)	**Date:** July 30, 2024

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

REFERRAL RESPONSE REQUEST

Date sent July 11, 2024 Comments due by **August 1, 2024**

Project Name:	Antelope Crossing - Rezoning
Project File #:	ZR2024-015
Project Summary:	The applicant requests approval to rezone a 42.24-acre parcel from Agricultural-One (A-1) to Large Rural Residential (LRR), to allow for future development of single-family residential lots. The subject property is located immediately west of the Delbert Road and Meadow Station Road intersection, SPN: 2235-284-00-001.

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: Mile High Flood District	**Phone #:** 720-642-7332
Your Name: Derek Clark, PE	**Your Signature:**
(please print)	**Date:** August 1, 2024

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

MILE HIGH FLOOD DISTRICT
2480 W. 26th Ave Suite 156-B | Denver, CO 80211
TEL 303 455 6277 | FAX 303 455 7880
www.mhfd.org

MAINTENANCE ELIGIBILITY PROGRAM (MEP)

MHFD Referral Review Comments

For Internal MHFD Use Only.	
MEP ID:	106664
Submittal ID:	10012866
Partner ID:	ZR2024-015
MEP Phase:	Referral

Date: August 1, 2024

To: **Carolyn Washee-Freeland, AICP**
Via Douglas County Website

RE: MHFD Referral Review Comments

Project Name:	Antelope Crossing – Rezoning
Location:	Doulgas County
Drainageway:	Coal Creek

This letter is in response to the request for our comments concerning the referenced project. We have reviewed this proposal only as it relates to maintenance eligibility of major drainage features, in this case:

- Coal Creek

In general, we do not object to the proposed rezoning, but we have the following comments to offer on the drainage report and floodplain letter for clarification:

1) Drainage report (Page 8) – Maintenance aspects of the design – Who will have the ultimate maintenance responsibility over the existing Coal Creek channel?
2) Drainage report – There are both CUHP and SWMM runoff analysis provided within the drainage report that seem to be in conflict. The CUHP output in the 100-year storm event for basin PR-1 shows a peak flow rate of 1000.72 cfs, while the SWMM model only shows a peak flow of 290.63 cfs. It should be noted that the MHFD Manual states that CUHP should be used for runoff evaluation while SWMM is only utilized for proposed routing of several CUHP basins. Since there is only one CUHP basin, the SWMM analysis is not needed. Please provide all the CUHP inputs and outputs as part of the drainage report.
3) Floodplain Letter – Please help us understand why Streamstats flow rates are being used for this analysis when there are more detailed CUHP analysis being done as part of this report? Also, please note that the proposed development's basin was included as part of the hydrologic analysis done for the Coal Creek (Yale to County Line) FHAD of 2014. While the FHAD did not include delineation of floodplains south of County Line, it did establish peak flow rates for these reaches. Please review and reference as necessary.

MHFD requires responses to the review comments, please include these responses with any future submittal.

We appreciate the opportunity to review this proposal. Please feel free to contact me with any questions or concerns.

Sincerely,

Derek Clark, PE
Project Manager
Mile High Flood District

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
Project File #:	**ZR2024-015**
S Metro Review #	REFXRP24-00123
Review date:	July 17, 2024
Plan reviewer:	Aaron Miller 720.989.2246 aaron.miller@southmetro.org
Project Summary:	The applicant requests approval to rezone a 42.24-acre parcel from Agricultural-One (A-1) to Large Rural Residential (LRR), to allow for future development of single-family residential lots. The subject property is located immediately west of the Delbert Road and Meadow Station Road intersection, SPN: 2235-284-00-001.
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 documents and has no objection to the proposed rezoning.

Applicants are encouraged to reach out to SMFR to discuss applicable requirements for access and fire protection water supplies prior to design for further development.

Right of Way & Permits

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

July 30, 2024

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

Attn: Carolyn Washee-Freeland

Re: Antelope Crossing, Case # ZR2024-015

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

Public Service Company has no objection to this proposed rezone, contingent upon PSCo's ability to maintain all existing rights and this amendment should not hinder our ability for future expansion, including all present and any future accommodations for natural gas transmission and electric transmission related facilities, and that our current use/enjoyment of the area would continue to be an accepted use on the property and that it be "grandfathered" into these changes.

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

November 6, 2024

Ms. Carolyn Washee-Freeland
Community and Development Services
100 Third Street
Castle Rock, Colorado 80104

Re: Referral Agency, Response Letter
Antelope Crossing Rezoning Request, Post Referral Review Letter
Project Numbers: ZR2024-015, DV2024-228

Dear Carolyn,
We are submitting this letter to respond to the Referral Agency and County's comments on the Rezoning submittal for the project referenced above. Referral Agency comments are included and our response thereafter.

CENTURYLINK (Referral Comment 7/23/24)

CenturyLink of Colorado, Inc. d/b/a CENTURYLINK ("CenturyLink") has reviewed the request for thE subject rezone and has determined that it has no objections with respect to the areas proposed for rezone as shown and/or described on Exhibit "A", said Exhibit "A" attached hereto and incorporated by this reference. It is the intent and understanding of CenturyLink that this rezone shall not reduce our rights to any other existing easement or rights we have on this site or in the area. This rezone response is submitted WITH THE STIPULATION that if CenturyLink facilities are found and/or damaged within the rezoned area as described, the Applicant will bear the cost of relocation and repair of said facilities.

Response: Applicant will comply this condition.

CHERRY CREEK BASIN WATER QUALITY AUTHORITY (Letter 7/16/24)

The Cherry Creek Basin Water Quality Authority (Authority) acknowledges notification from Douglas County that the proposed development plans for ZR2024-015, Antelope Crossing – Rezoning Request 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.

Response: Per our correspondence with Chuck Smith with DC Engineering, we will work with Engineering on meeting compliance with Reg 72.

COLORADO DIVISION OF WATER RESOURCES (Letter 7/17/24)

Summary of Comment Letter: A review of our records shows well permit no. 53878 may be located on the subject property. The well under permit no. 53878 was constructed on May 23, 1972 and is permitted to be used for domestic purposes. The well is constructed in the not-nontributary Upper Dawson aquifer. Section 37-92-602(3)(b)(III), C.R.S. requires that the cumulative effect of all wells in a subdivision be considered when evaluating material injury to decreed water rights. As such, an augmentation plan is required to offset depletions caused by the pumping of the well or the well must be plugged and abandoned upon subdivision approval.

Response: Please see the attached updated 9/16/24 Water Supply Letter & Water Plan (prepared by Eric Trout, McGeady Becher Cortese & Williams P.C.). Mr. Trout states "after thorough inspection of the property the Owner has not located 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 the6th 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 Owner does not believe that Well 53878 is located on the Subject Property." Mr. Trout then states that "the Division of Water Resources may consider Well 53878 abandoned, if applicable…"

DOUGLAS COUNTY CONSERVATION DISTRICT (Letter 7/31/24)

Summary of Comment Letter: Letter addresses limitations on buildings, roads, excavations, floodplain & weed mitigation plan.

Response: The Applicant acknowledges these comments. One specific comment stated that *"according to the NRCS the Loamy Alluvial land along the riparian zone is 'Very Limited' for building and roads."* Only a limited portion of the roadway will be built above the Type Lo soil. The road in this area 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. An exhibit has been provided with this resubmittal showing the area of concern. Weed mitigation plan is included with this resubmittal.

DOUGLAS COUNTY HEALTH DEPARTMENT (Letter 8/1/24)

Summary of Comment Letter:

On-Site Wastewater Treatment System (OWTS) – New or Expanded (Rezoning) - DCHD has no objection to the subject property being served by OWTS given the proposed use provided that the system is permitted, inspected and operated in accordance with DCHD's current OWTS Regulation.

Response: All OWTS (new or expanded) will be permitted, inspected and operated in accordance with DCHD's current OWTS Regulation.

Radon - In order to prevent radon from infiltrating the home, DCHD recommends designing new homes so that they are radon resistant.

Response: This will be communicated to the homebuilders for each lot.

Domestic Well - The applicant may want to consider having the well water analyzed for a number of contaminants as a baseline of the water quality.

Response: This will be communicated to the future lot owners that will hire the well driller for their lot.

DOUGLAS COUNTY HISTORIC PRESERVATION (Letter 8/1/24)

Upon researching the cultural resources on the property and the surrounding area, it has been determined that the property has not been surveyed for cultural resources. There is potential for buried archaeological resources related to prehistoric activities in the project area and potential for the discovery of subsurface cultural deposits during ground moving activities. As a result, more specific analysis to address these resources will be necessary at future phases of development, including a Class II cultural resource survey of the property, will need to be addressed if development occurs in the future.

Response: Please see the attached 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. 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.

DOUGLAS COUNTY PARKS & TRAILS (Referral Comment 7/31/24)

Applicant will be responsible for meeting park land dedication standard as outlined in article 10 of the Douglas County Subdivision Resolution.

Response: Applicant acknowledges that they are responsible for meeting park land dedication as stated in article 10 of the County's Subdivision Reg's.

DOUGLAS COUNTY SCHOOL DISTRICT (Letter 7/12/24)

Summary of Comment Letter: Should the future subdivision of the property be deemed and processed by Douglas County as a minor development plat, DCSD requests a cash-in-lieu of land dedication in accordance with Section 1004.05.04 of the Douglas County Subdivision Resolution. This section states, "For residential minor development final plat or replats creating 10 or fewer residential lots, the minimum cash-in-lieu fee shall be $500 per each new residential lot."

Response: Applicant acknowledges the fee-in-lieu of land will be $500 for each now residential lot and will make this payment at the time of platting.

ELBERT COUNTY COMMUNITY & DEVELOPMENT SERVICES (Comment Response 7/1/24)

Comment: Seems like some of the property owners within a small radius on the Elbert County side might have been left out of the mailing notice list. I do not see Meadow Station Homeowners who are directly across the street. Other than noticing, consider contacting Elbert County R&B concerning the proximity of access points.

Response: The Applicant did not prepare notification to property owners, this was completed by Douglas County. Per 2NCivil's correspondence with Dale Guillen, P.E., County Engineer, the spacing does meet Elbert Counties road spacing requirements.

DOUGLAS COUNTY ENGINEERING SERVICES (Letter 7/24/24)

Comment #1*-Regarding the Floodplain Analysis, Douglas County and Mile High Flood District criteria requires a CUHP analysis with a 2-year storm duration rather than the Streamstats analysis (streamstats uses a 6-hour storm duration and typically relatively low flow rates).*

Response: The Streamstats analysis has been removed from the Phase I drainage report. MHFD's comments indicate that this development's basin was analyzed as part of the FHAD completed by Matrix Design for Coal Creek dated August 2014. The Floodplain Letter for this project has been revised to utilize the 100-year flow published in the FHAD. The CUHP analysis completed for this project will remain a part of the Phase I report, indicating general consistency with flows provided in the FHAD study.

Comment #2*-Our traffic engineers have reviewed the trip generation analysis and concur with the findings that the project will have minimal impacts on the area roadways and no additional analysis is needed.*

No response required.

Comment #3*-Please keep in mind if this rezoning is approved, the County's criteria for a single point of access to the subdivision cannot exceed 1200-ft. without a second point of access.*

Response: The road design for the subdivision provides a 1,040 foot long public road and cul-de-sac for access to lots 1 and 2. Lots 3 and 4 are served from a private driveway that connects to the cul-de-sac. The

County's regulations for Typical Residential Driveway Construction allow for up to 3 lots or parcels to be shared by a driveway with a minimum 16-foot-wide all-weather driving surface. In response to this proposed layout, Chuck Smith with DC Engineering responded 8/15-16, "*you are correct – the length cannot exceed 1200-ft., however you can access up to 3-lots on a driveway – thanks.*"

MILE HIGH FLOOD DISTRICT (Letter 8/01/24)

1) Drainage report (Page 8) – Maintenance aspects of the design – Who will have the ultimate maintenance responsibility over the existing Coal Creek channel?
Response: 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.

2) Drainage report – There are both CUHP and SWMM runoff analysis provided within the drainage report that seem to be in conflict. The CUHP output in the 100-year storm event for basin PR-1 shows a peak flow rate of 1000.72 cfs, while the SWMM model only shows a peak flow of 290.63 cfs. It should be noted that the MHFD Manual states that CUHP should be used for runoff evaluation while SWMM is only utilized for proposed routing of several CUHP basins. Since there is only one CUHP basin, the SWMM analysis is not needed. Please provide all the CUHP inputs and outputs as part of the drainage report.

Response: The SWMM analysis has been removed from the Phase I report. The CUHP analysis completed for this project will remain a part of the Phase I report, indicating general consistency with flows provided in the FHAD study, but will not be used in the design of any storm improvements. Additional input/output information from CUHP has been provided.

3) Floodplain Letter – Please help us understand why Streamstats flow rates are being used for this analysis when there are more detailed CUHP analysis being done as part of this report? Also, please note that the proposed development's basin was included as part of the hydrologic analysis done for the Coal Creek (Yale to County Line) FHAD of 2014. While the FHAD did not include delineation of floodplains south of County Line, it did establish peak flow rates for these reaches. Please review and reference as necessary.

Response: We were not aware that a FHAD was available for this reach, thus Streamstats flow rates were used for the initial study. The Floodplain Letter for this project has been revised to utilize the 100-year flow rate published in the FHAD.

SOUTH METRO FIRE DISTRICT (Letter 7/17/24)

Summary of Letter: Applicants are encouraged to reach out to SMFR to discuss applicable requirements for access and fire protection water supplies prior to design for further development.

Response: The Applicant has been in communication with Aaron Miller (SMFD) regarding access and fire protection water supplies and believes they are satisfied. The narrative has been updated to reflect how the project will meet the County's Water Supply for Rural Fire Fighting requirements.

XCEL ENERGY (Letter 7/30/24)

Summary of Letter: 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.

Response: The Applicant/Owner/Developer acknowledges that an application for new natural gas is required and that it is their responsibility to contact the Xcel Designer for approval design standards. In addition, the Applicant/Owner/Developer acknowledges that additional easements may be needed for new facilities.

We appreciate your time in reviewing this information. Please feel free to contact us with any questions or concerns.

Sincerely,

CJ Kirst
Authorized Representative

February 10, 2025

Ms. Carolyn Washee-Freeland
Community and Development Services
100 Third Street
Castle Rock, Colorado 80104

Re: Referral Agency, Response Letter
Antelope Crossing Rezoning Request, 2nd Post Referral Review Letter
Project Numbers: ZR2024-015, DV2024-228

Dear Carolyn,
We are submitting this letter to respond to your 12/17/24 2nd Post Referral Review Letter and are providing the following responses to these below.

DECLARATION OF PROTECTIVE COVENANTS

The applicant is required to execute a Declaration of Restrictive Covenants for the rezoning request. This request is to rezone approximately 42 acres from Agricultural One (A-1) to Large Rural Residential (LRR). Confirm that the legal description as shown on the rezoning exhibit depicts the correct acreage for this request. The DORC will need to be executed for only the water under the 42.61-acre parcel.

Response: Applicant will comply this condition.

FIRE PROTECTION CAPACITY

The resubmittal materials and narrative indicated that the applicant intends to purchase and utilize additional water capacity/supply from the Rattlesnake Fire District's water cistern located near the Antelope Crossing property. Please provide documentation from South Metro Fire & Rescue (SMFR) stating that they will accept this water supply in the event of a fire within the proposed development. The SMFR letter should be depicted on SMFR letter head.

Response: Please see the attached 1/29/25 letter from South Metro Fire stating their acceptance of the suitability of use for the Rattlesnake Fire existing cistern location across the street from the project in the Meadows Station subdivision.

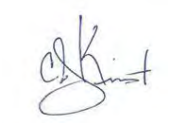
SECTION 18A WATER SUPPLY

Thank you for providing the revised water supply letter from your water attorney. In review of the letter, a copy of the 1997CW095 Adjudicated Water Decree was referenced, however it was not included with this resubmittal. Please send a copy of the water decree with the next resubmittal.

Response: The water decree is included with this resubmittal.

We appreciate your time in reviewing this information. Please feel free to contact us with any questions or concerns.

Sincerely,



CJ Kirst
Authorized Representative

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
Project File #: **ZR2024-015**

Date: January 29, 2025

Plan reviewer: Aaron Miller
720.989.2246
aaron.miller@southmetro.org

Antelope Crossing under Douglas County Project ZR2024-015 has proposed utilizing the existing cistern located at 125 Meadow Station, Rattlesnake Fire Station 253 as the water supply meeting the Douglas County Standard for Water Supplies for Rural Fire Fighting.

Attached letter from Chief Kilduff of Rattle Snake Fire confirms they are accepting the use of their fire protection water supply and conditions applicable to the refill of such use.

SMFR has inspected this fill site and confirmed its suitability for use by SMFR as a usable water supply meeting the requirements. This water supply is located approximately 1.3 road miles from the access to the most remote proposed lot.

Prior to any construction or combustible materials brought onsite for Antelope Crossing, the applicant shall coordinate with Chief Kilduff to install a KnoxBox at the fill site at 125 Meadow Station which shall be dual keyed with SMFR and Rattlesnake Knox keys and contain a key for activating the pump at the fill site unless other approved arrangements are made.

Thank you,

Aaron Miller
Plan Reviewer

Mr. Aaron Miller
South Metropolitan Fire District ("SMFD")
9195 E. Mineral Avenue
Centennial, CO 80112

September 30, 2024

Re: Antelope Crossing, Douglas County, CO ("Property") – Meadows Station Cistern Will Serve

Dear Mr. Miller:

This letter is in response to the overall Antelope Crossing rezoning and subdivision that is being proposed by the property owner, DCLA-3 LLC in Douglas County. The Antelope Crossing project in total is 203 acres, will include (16) residential lots ranging from 10-20 acres and is located approximately 1.3 miles south of E. Parker Road on the west side of Delbert Rd. (more particularly located in the east half of Section 28, Township 6 South, Range 65 West of the 6th P.M.).

We have been in discussion with the Property Owner's representative CJ Kirst, Tahoe Consulting LLC, regarding the possibility of allowing SMFD use of our Meadows Station 30,000 gal. cistern located directly east of Antelope Crossing. We have determined that we can provide SMFD with the use of this cistern so long as the property owner agrees to pay for the water used at a rate of $20/1,000 gallons if the cistern is used to suppress a fire in Antelope Crossing.

Please let me know if you have any questions or need anything further from us at this time.

Sincerely,

Chief Cass Kilduff
Rattlesnake Fire Protection District

DCLA-3 LLC hereby agrees to reimburse Rattlesnake Fire Protection District at a rate of $20/1,000 gallons in the event that the Meadows Station cistern is utilized to suppress a fire in the Antelope Crossing subdivision at stated above.

DCLA-3 LLC 10-8-24 Date

Carolyn Freeland

From: Carolyn Freeland
Sent: Monday, July 22, 2024 3:19 PM
To: CJ Kirst; CJ Kirst
Cc: Curt Weitkunat
Subject: ZR2024-015 - Antelope Crossing Rezoning - Abutting Property Owner

Hi CJ,

An abutting property owner came in the Community Development office this afternoon and wanted more information on the Antelope Crossing rezoning project and the proposed access into the property. His contact information is as follows:

David Brooks
9015 Cooper Creek Ct
720-979-8141
jldbbrooks@msn.com

Please give him a call to discuss your proposed project. He was concerned about potential access into the property through Cooper Creek Ct, which is a private access drive.

Let me know the outcome of your discussion, so I can add to the public record for the project. Thank you.

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

Carolyn Freeland

From: Jonathan Horowitz <jjhorowitz@gmail.com>
Sent: Wednesday, July 31, 2024 11:27 AM
To: Carolyn Freeland
Subject: Antelope Crossing - Rezoning

Hi Carolyn,

I want to thank you for taking the time to talk with me on Monday about the Antelope Crossing - Rezoning (ZR2024-015). We live at 9255 N Delbert Rd, Parker, CO 80138 to the south and east of the project area. Given what you said about how the proposed plan is to subdivide the 42.24-acre parcel into up to four parcels with LRR zoning, that maintains the essence of what Delbert Rd represents in terms of the ability to have animals, agriculture, and rural residences. We believe it's a special setup that we affectionately refer to as "the edge of nowhere," meaning that it offers a lifestyle in the country with easy access to resources offered in Parker or other easily accessible areas in Denver metro. I'm not sure that quality would continue if the plan were to subdivide the parcel to build, for example, 50 single-family homes, but the subdivision into up to 4 single-family residential lots will maintain the character of what the area represents to us.

All the best,

Jonathan Horowitz
9255 N Delbert Rd, Parker, CO 80138
(949) 246-7075

Carolyn Freeland

From: Kelly and Stephan Rank <kelnstef@gmail.com>
Sent: Thursday, August 1, 2024 8:40 PM
To: Carolyn Freeland
Subject: Re: ZR2024-015

And one more thing...
I don't know if this is some sort of ploy to be able to build more higher density housing on the north side of the proposed parcel. I seem to recall something about lot size and the amount property line feet that is near other property determining the size of the lots. If there is something that says already what the size of the lots should be and its bigger than what is being proposed then I want the bigger lot size. And I do not want smaller lots built to the north of the proposed parcel...I smell something sneaky afoot.

Kelly

On Thu, Aug 1, 2024 at 7:47 PM Kelly and Stephan Rank <kelnstef@gmail.com> wrote:

> Hello Sirs and Madams,
>
> I may be a day late in submitting my comments, my apologies. My youngest daughter ended up in the hospital on Tuesday and my mind has been elsewhere.
>
> In regards the notice sent regarding rezoning, here are my comments/thoughts:
>
> 1) No
> 2) Realistically I get it. We moved out to the country and chose this area because it had some neighbors, not tons of neighbors. I would be happier with 3 lots, not 4.
> 3) Houses should be built away from the northern/western property lines on the western/northern property lines of the new parcel, no larger than 4,500 sq/ft.
> One barn, one shop to be built on the front 5 acres with the house, leaving pasture connecting the lots to still create that sense of country.
> 4) Our private road is not available for use. They will need to build their own road.
> 5) No interference with Coal Creek, except for improvements to drainage.
> 6) It has become clear over the last 10 years we have lived out here that Douglas County really doesn't care about the way of life we have carved out here. There continue to be large acreages bought, divided and gigantic houses built with no regard for the way of country life all up along this northern section, east to west of the county lines.
> 7) The light pollution allowed in this area is unreal. I do not want to see a ton of houses lit up with lights all over the place. We enjoy being in the dark at night and reveling in the stars. I have seen a new house that was allowed to be built over by E. Parker Rd near Rosie's Ranch and their lights are polluting the sky every night, dimming the beauty for those living around it.
> 8) And then there is Elbert County...don't even get me started about what they are allowing.
>
> I look forward to hearing more about this project.
> Thank you for your time.
>
> Kelly Hering-Rank
> 9085 Cooper Creek Ct. Parker

Carolyn Freeland

From: Kelly and Stephan Rank <kelnstef@gmail.com>
Sent: Saturday, March 29, 2025 9:43 PM
To: Carolyn Freeland
Subject: Sb2024-066

Sorry to be late. I just found the information I was looking for. There are current guidelines allow for you to split a property to no smaller than the size of at least 50% of the adjacent properties. They add up the borders and that's required to be 50% at least. I don't know what it adds up to. I make up it isn't enough to let them build 10 acre lots. So I say no. This seems to be an end around to build more.

Thanks,

Kelly Hering-Rank
9085 Cooper Creek Ct

Carolyn Freeland

From: CJ Kirst <cjkirst@tahoelandservices.net>
Sent: Friday, August 2, 2024 9:42 AM
To: Carolyn Freeland
Cc: Kelly and Stephan Rank; Curt Weitkunat
Subject: Re: ZR2024-015

Ms. Rank - thank you for your questions. I spoke with another property owner regarding use of Cooper Creek Ct., we are not using this for access. We are requesting rezoning to LRR which restricts us to no lot being less than 10-ac. The LRR zoning identifies many things that we are bound to like setbacks. We go through an extensive review process with the County and other referral agencies before we are allowed to proceed to hearings.

Thank you,
-CJ

On Fri, Aug 2, 2024 at 9:37 AM Carolyn Freeland <cfreeland@douglas.co.us> wrote:

> Hi Kelly,
>
> Thank you for your correspondence regarding ZR2024-015, Antelope Crossing Rezoning project. Your comments will be included in the public record and will be provided to the Planning Commission and the Board of County Commissioners as part of their consideration of the rezoning request. I have copied the applicant to address your concerns.
>
> 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: Kelly and Stephan Rank <kelnstef@gmail.com>
Sent: Thursday, August 1, 2024 8:40 PM
To: Carolyn Freeland <cfreeland@douglas.co.us>
Subject: Re: ZR2024-015

And one more thing...

I don't know if this is some sort of ploy to be able to build more higher density housing on the north side of the proposed parcel. I seem to recall something about lot size and the amount property line feet that is near other property determining the size of the lots. If there is something that says already what the size of the lots should be and its bigger than what is being proposed then I want the bigger lot size. And I do not want smaller lots built to the north of the proposed parcel...I smell something sneaky afoot.

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8) And then there is Elbert County...don't even get me started about what they are allowing.

I look forward to hearing more about this project.

Thank you for your time.

Kelly Hering-Rank

9085 Cooper Creek Ct. Parker

--
Thanks,
CJ Kirst
(303) 330-8947
Tahoe Consulting
LAND & DEVELOPMENT

Carolyn Freeland

From: CJ Kirst <cjkirst@tahoelandservices.net>
Sent: Friday, June 6, 2025 3:42 PM
To: Carolyn Freeland
Cc: Kelly and Stephan Rank
Subject: Re: Sb2024-066
Attachments: Contiguous Exhibit.pdf

Mrs. Rank - we are complying with the County rezoning guidelines stating that you have to be adjacent to like zoning or similar lot sizes with at least 50% of your property proposed for rezone. The attached contiguity map illustrates this.
-CJ

On Mon, Mar 31, 2025 at 11:53 AM Carolyn Freeland <cfreeland@douglas.co.us> wrote:

> Thank you for your email. This correspondence will be placed in public record in the project file. I have also copied the applicant, CJ Kirst to address your concerns and answer any further questions you may have about this project.
>
> CJ, please contact Mr. and Mrs. Rank and address their concerns. Thank you.
>
> 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: Kelly and Stephan Rank <kelnstef@gmail.com>
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To: Carolyn Freeland <cfreeland@douglas.co.us>
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Thanks,

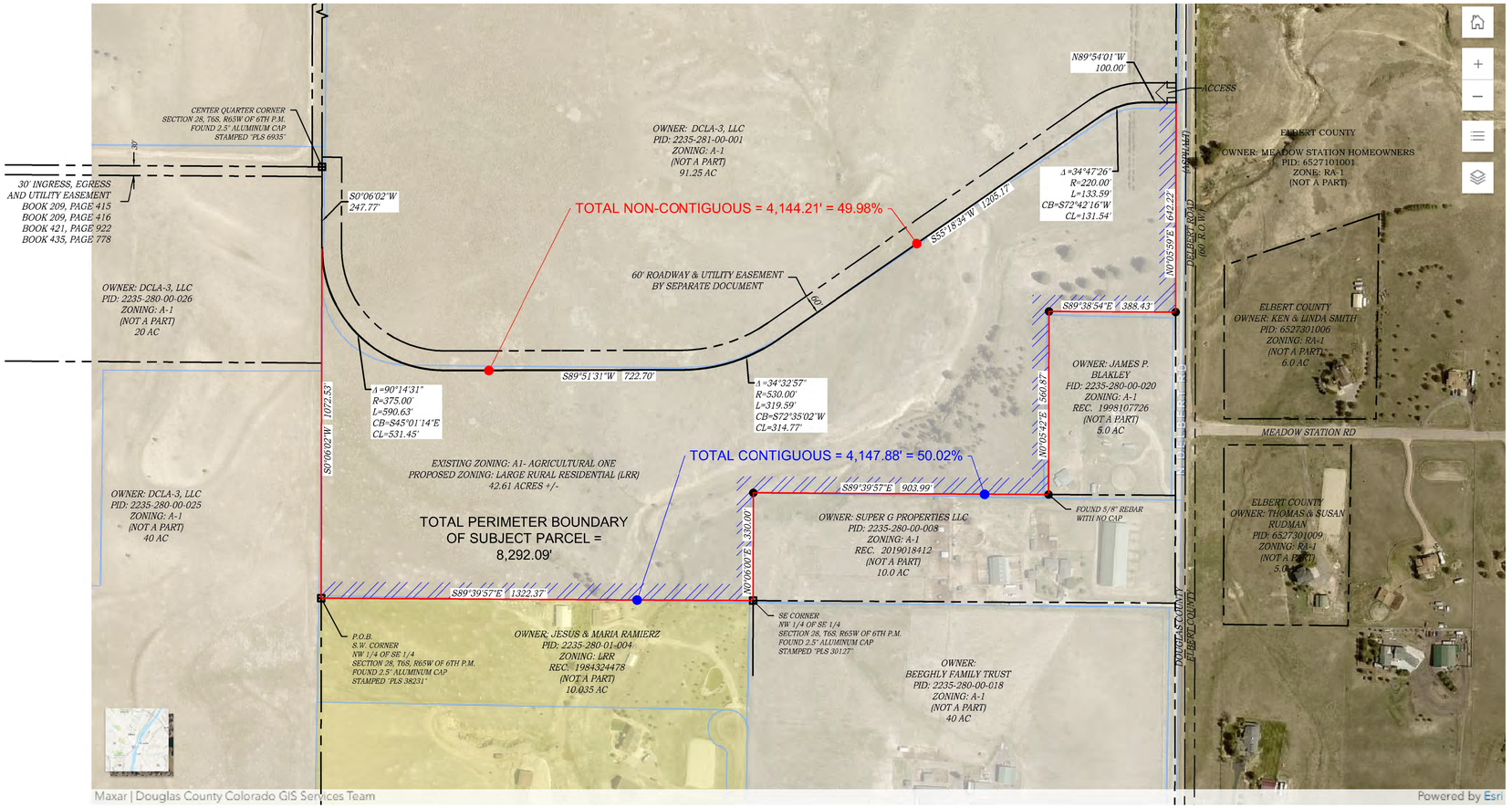
Kelly Hering-Rank

9085 Cooper Creek Ct

--
Thanks,
CJ Kirst
(303) 330-8947

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 ±



Direction	Total Acreage	Percent of Adjacency	Zone District	Max. Gross Density Allowed
North	91.25	0	A-1	1 du / 35 ac
South (LRR Zoning)	10.035	15.9%	LRR	1 du / 10 ac
South (A-1 Zoning)	15.00	15.6%	A-1	1 du / 35 ac
East (Elbert County RA-1 Zoning)	6.00	7.7%	RA-1*	1 du / 5 ac
East (A-1 Zoning)	15.00	10.7%	A-1	1 du / 35 ac
West	60	0.0%	A-1	1 du / 35 ac
Total Adjacency		50.02%		

* = Elbert County (Meadows Station)

LEGEND

- SUBJECT PROPERTY LINE
- ADJACENCY
- ADJOINER PROPERTY LINE
- EASEMENT LINE
- CENTERLINE OF ROAD
- ROAD RIGHT OF WAY

NORTH

0 200 400 600
SCALE: 1" = 200'

J:\PROJECTS\24\24001\DWG\01 CONTIGUOUS EXHIBIT.DWG

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.

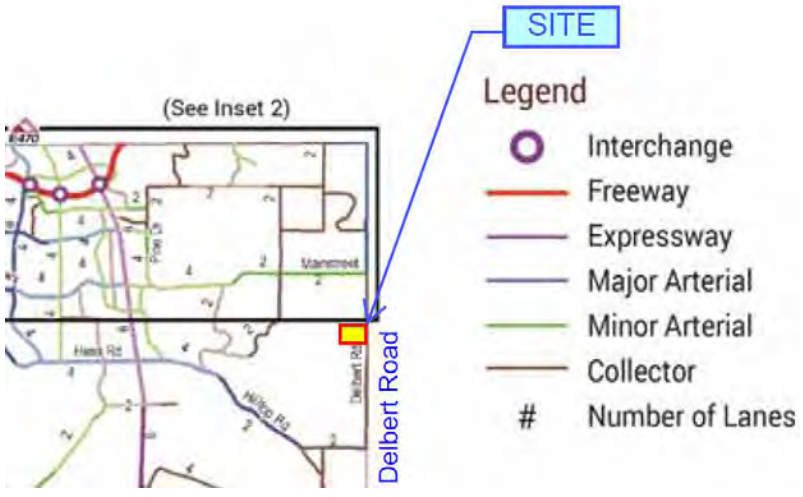


Figure 1: Existing Roadway Network - Douglas County Transportation Master Plan

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.

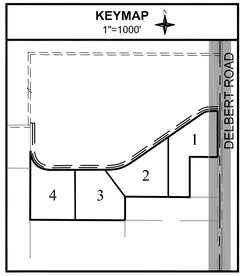
Respectfully submitted,

Todd West, P.E., LEED®AP
Project Manager

ACCESS GEOMETRY EXHIBIT FOR

ANTELOPE CROSSING

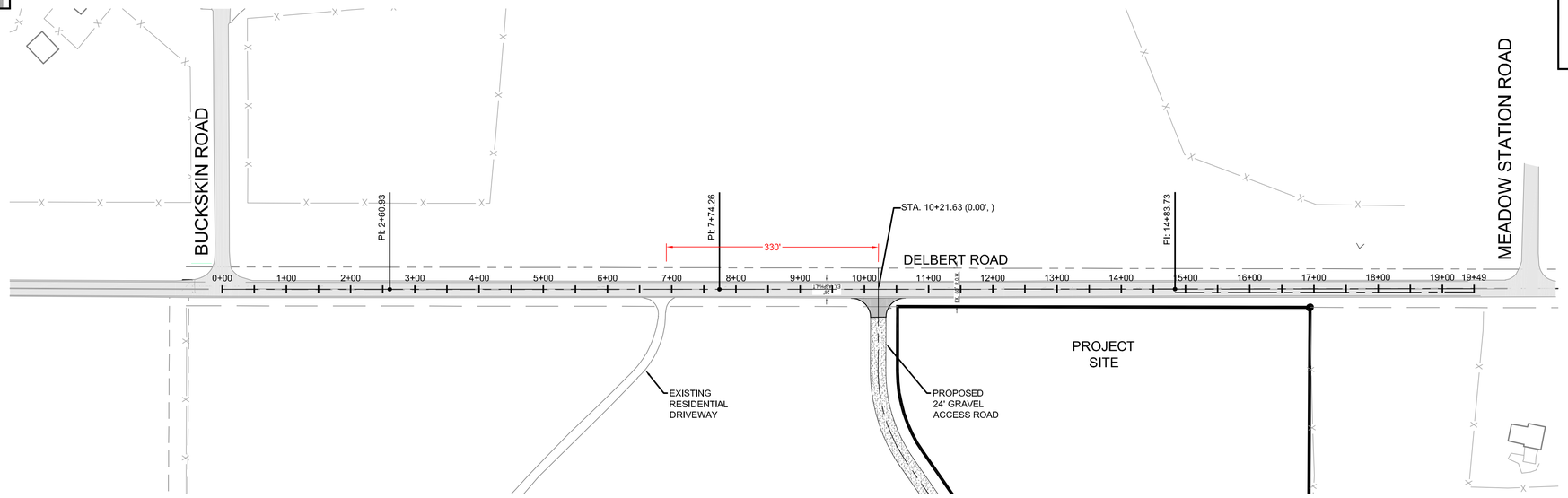
LOCATED IN THE EAST HALF OF SECTION 28, TOWNSHIP 6 SOUTH, RANGE 65 WEST OF THE 6TH P.M.,
COUNTY OF DOUGLAS, STATE OF COLORADO

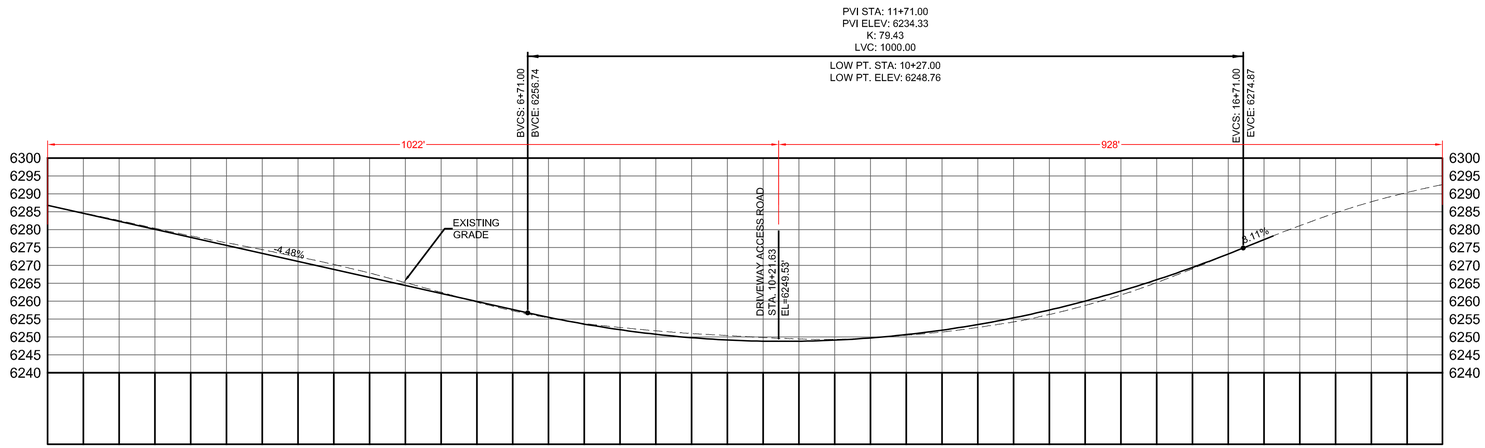


0 100' 200'
SCALE: 1" = 100'

LEGEND

- PROPERTY BOUNDARY
- ADJACENT PROPERTY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING ASPHALT
- PROPOSED ASPHALT
- PROPOSED GRAVEL
- 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

DATE:
BY:

REVISIONS:
1.
2.
3.
4.

PROJECT NUMBER: 24001
ISSUED DATE: XX-XX-XXXX
DESIGNED BY: TEW
REVIEWED BY: EPT

Road Plan & Profile

1

ANTELOPE CROSSING FILING NO. 1

ZONING PLAN

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 ±

ZR2024-015

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;

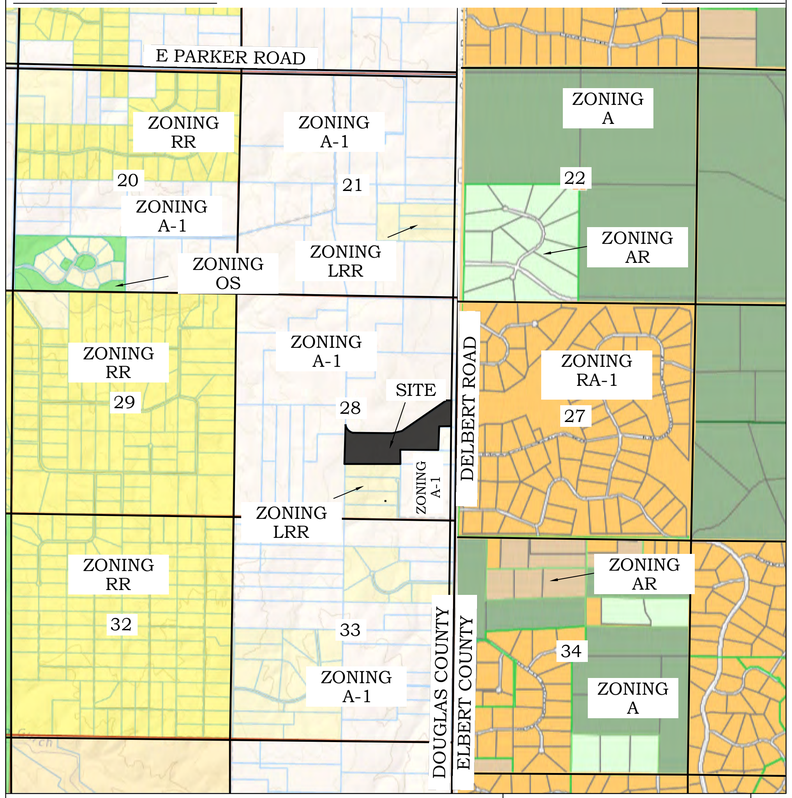
THENCE ALONG THE WEST AND NORTH LINE OF SAID RECEPTION NO. 1998107726 THE FOLLOWING TWO (2) COURSES;

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

VICINTY ZONING MAP **SCALE N.T.S.**

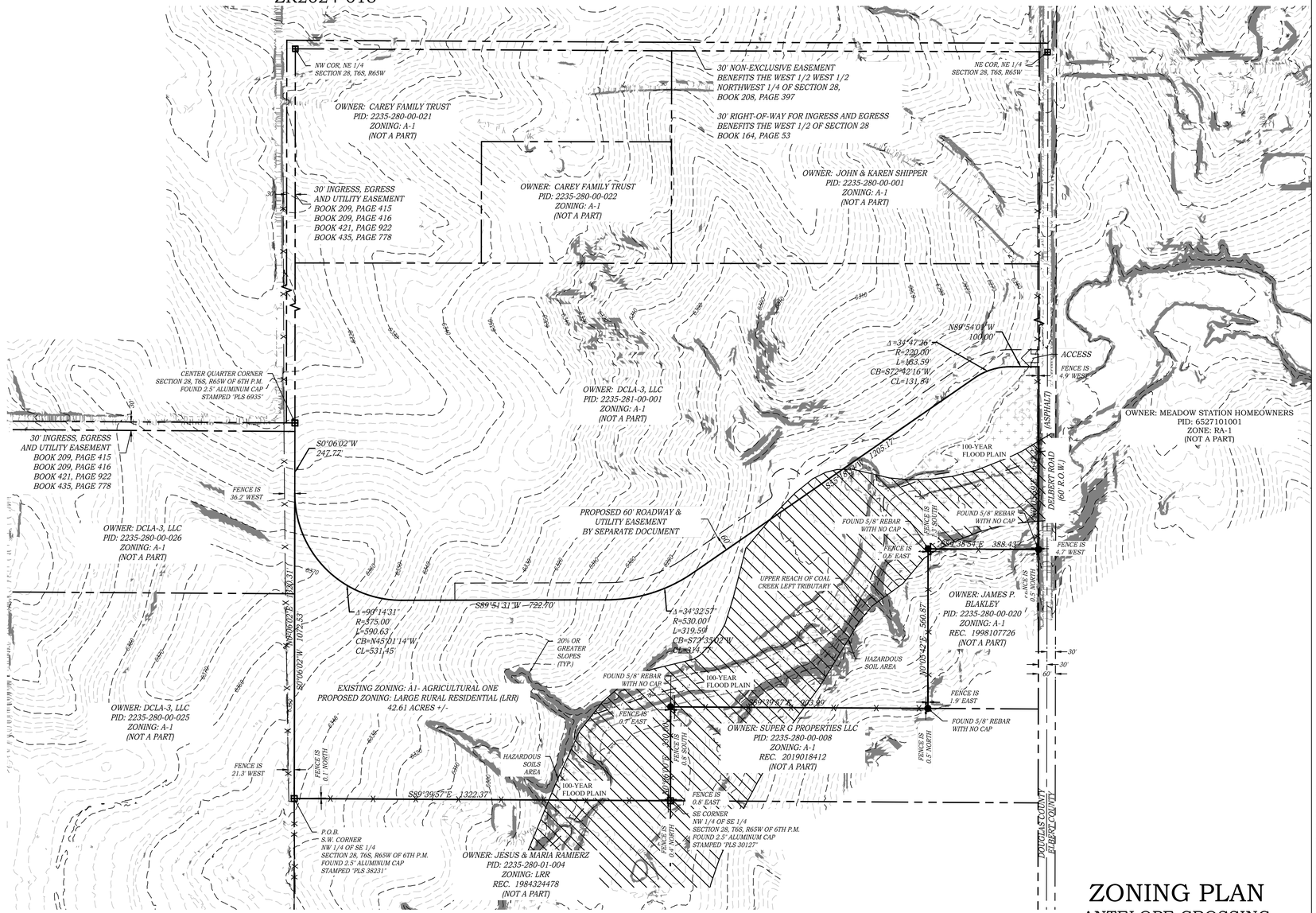


LEGEND:

- SUBJECT PROPERTY LINE
- ADJOINER PROPERTY LINE
- EASEMENT LINE
- CENTERLINE OF ROAD
- ROAD RIGHT OF WAY
- EXISTING FENCE
- WATER COURSE
- MAJOR CONTOUR LINE
- MINOR CONTOUR LINE
- FOUND REBAR
- FOUND ALUMINUM CAP
- [P.O.B.] POINT OF BEGINNING
- 100 YR FLOODPLAIN
- HAZARDOUS SOILS AREA
- SLOPE GREATER THAN 20%

ZONING MAP LEGEND:

A-1	AGRICULTURAL ONE
LRR	LARGE RURAL RESIDENTIAL
RA-1	RESIDENTIAL AGRICULTURE-ONE
RR	RURAL RESIDENTIAL
OS	ZONED OPEN SPACE CONSERVATION
A	AGRICULTURE
AR	AGRICULTURE RESIDENTIAL



ZONING PLAN

ANTELOPE CROSSING

OWNER
DCLA-3, LLC
14205 E. DAVIES AVE.,
CENTENNIAL, CO 80112

DEVELOPER/APPLICANT
DCLA-3, LLC
FRANCIS GAY
14205 E. DAVIES AVE.,
CENTENNIAL, CO 80112

SURVEYOR
ELIJAH FRANE
ENCOMPASS SERVICES, LLC
2750 S. WADSWORTH BLVD, SUITE C-202
DENVER, CO 80227
TEL (303)-955-6080

ENGINEER
ERIC TUIN
2N CIVIL
6 INVERNESS CT E, STE 125
ENGLEWOOD, CO 80112

DOUGLAS COUNTY, COLORADO

JOB NO.	65467
DATE	2-13-24
REVISIONS	5-31-24
REVISIONS	10-31-24
REVISIONS	7-25-25

SHEET 1 OF 1

NORTH

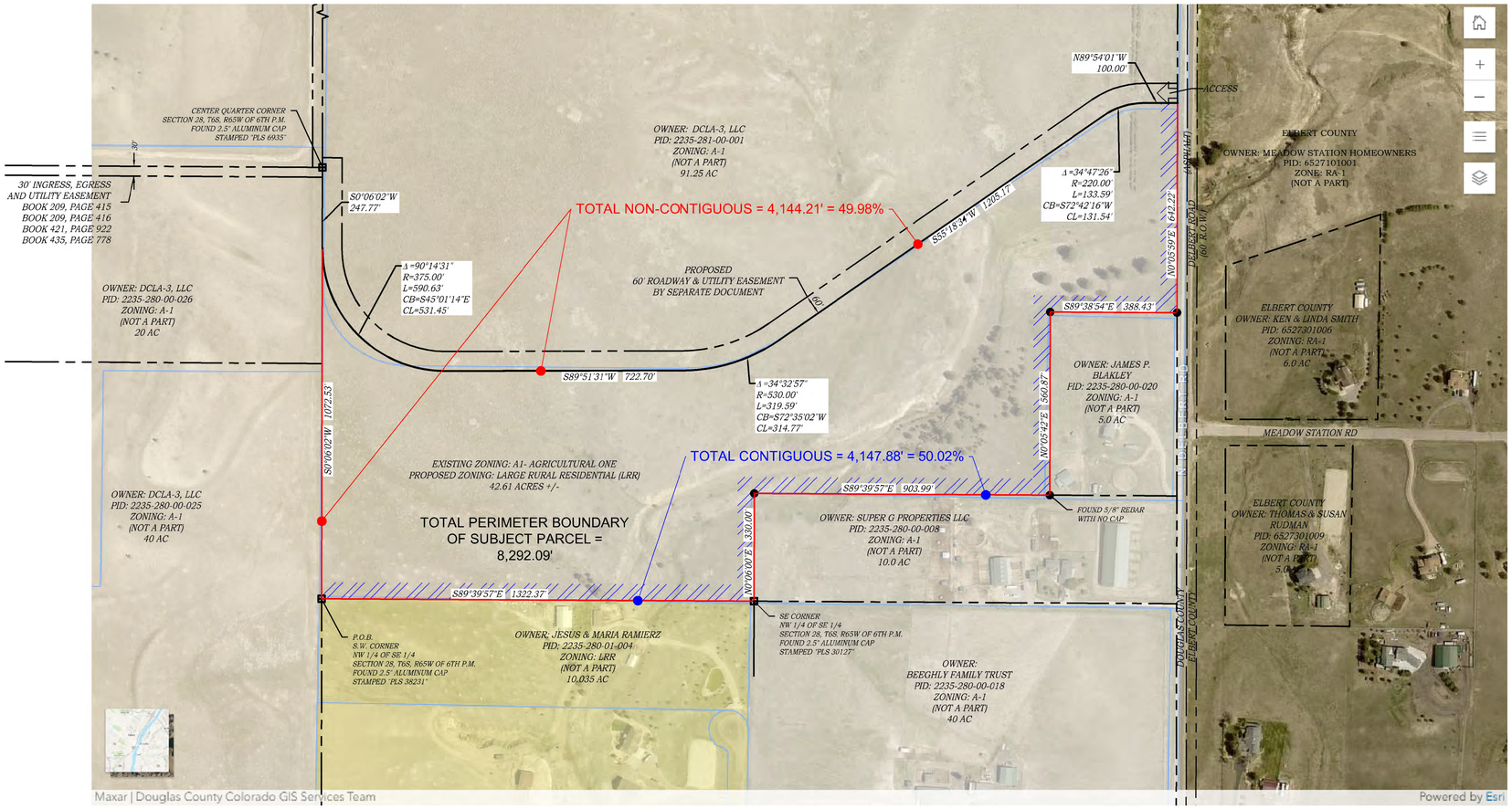
SCALE: 1" = 200'

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

J:\PROJECTS\24\24001\3RD PARTY\ENCOMPASS\REZONING AND CONTIGUOUS EXHIBIT\65467 - REZONING-REV 1.DWG

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 ±



ADJACENCY EXHIBIT

CONTIGUOUS

Boundary Segment	Adjacent Acreage	Length (ft)	Percentage of Adjacency	Zone District	Max. Gross Density Allowed
East (Elbert County RA-1 Zoning)	6.00	642.22	7.7%	RA-1*	1 du / 5 ac
East (A-1 Zoning)	5	388.43	4.7%	A-1	1 du / 35 ac
South (A-1 Zoning)	5	560.87	6.8%	A-1	1 du / 35 ac
South (A-1 Zoning)	10	903.99	10.9%	A-1	1 du / 35 ac
East (A-1 Zoning)	10	330.00	4.0%	A-1	1 du / 35 ac
South (LRR Zoning)	10.035	1322.37	15.9%	LRR	1 du / 10 ac
Totals	46.04	4,147.88	50.02%		

* = Elbert County (Meadows Station)

Total Length of Perimeter
Boundary of Subject Parcel (ft) = 8,292.09

LEGEND

- SUBJECT PROPERTY LINE
- ADJACENCY
- ADJOINER PROPERTY LINE
- EASEMENT LINE
- CENTERLINE OF ROAD
- ROAD RIGHT OF WAY

NORTH

0 200 400 600
SCALE: 1" = 200'

J:\PROJECTS\24\24001\DWG\CD\CONTIGUOUS EXHIBIT.DWG REV 8/18/25

DOUGLAS COUNTY
COLORADO

Supplemental Memo

Date: October 02, 2025

To: Douglas County Planning Commission

From: Carolyn Washee-Freeland, AICP, Senior Planner CWF
Curtis J. Weitkunat, AICP, Planning Manager CW
Jeanette Bare, AICP, Planning Manager JB
Steven E. Koster, AICP, Assistant Director of Planning Services SK

Subject: **Antelope Crossing – Rezoning, and Minor Development Final Plat - Supplemental Information**

Project File: **ZR2024-015 and SB2024-066**

Planning Commission Hearing:	**September 22, 2025 @ 6:00 p.m.**
Planning Commission Hearing Continued:	**October 06, 2025 @6:00 p.m.**
Board of County Commissioners Hearing:	**October 14, 2025 @2:30 p.m.**

Attached is additional correspondence received from the Colorado Division of Water Resources (CDWR) regarding the well permit #53878. CDWR has determined that the well permit #53878 does not need to be abandoned. Therefore, the following proposed condition of approval will be removed from the Minor Development Final Plat:

5. Prior to recordation of the minor development final plat, the applicant shall provide evidence of completed CDWR Well Abandonment forms for Well Permit 53878, or other documentation from CDWR releasing the applicant from this requirement.

Attachments

- Email from Wenli Dickinson, P.E., Water Resource Engineer, CDWR dated September 10, 2025

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

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 Tue, Sep 9, 2025 at 11:39 AM Carolyn Freeland <cfreeland@douglas.co.us> wrote:

Hi Wenli and Ioana,

This is a follow up to your referral comment letter for both ZR2024-015 Antelope Crossing Rezoning request, and SB2024-066 Antelope Crossing Minor Development Plat request. Staff is finalizing staff reports for upcoming hearings for both of these projects. In looking through the CDWR comment letter, it does not address whether CDWR agrees with the water attorney's letter (see attached) in regards to an abandoned well. The water attorney's letter states that the property owner cannot locate the well permit 53878 on the property; and the water attorney says that CDWR can consider the well abandoned. Is the case?

Can you please take a look at these documents and update the CDWR comment letter to reflect CDWR decision on this? If possible, can you review this asap by today? Please advise.

I'm sorry for the short notice!

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

MEETING DATE: October 6, 2025

STAFF PERSON RESPONSIBLE: Carolyn Washee-Freeland, AICP, Senior Planner

DESCRIPTION: Antelope Crossing - Minor Development Final Plat - Project File: SB2024-066.

SUMMARY: The request is for approval of a Minor Development Final Plat for a 42.61-acre, Large Rural Residential zoned parcel to establish 4 single-family residential lots.

STAFF ASSESSMENT: Staff has evaluated the minor development final plat request in accordance with Article 6 of the Douglas County Subdivision Resolution. Should the Planning Commission find that the approval standards have been met, it may recommend approval of the minor development final plat to the Board of County Commissioners subject to the following proposed conditions.

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 South Metro Fire Rescue and the Rattlesnake Fire Department prior to building permit issuance.

5. Prior to recordation of the minor development final plat, the applicant shall provide evidence of completed Colorado Division of Water

Resources Well Abandonment forms for Well Permit 53878, or other documentation from Colorado Division of Water Resources releasing the applicant from this requirement.

6. 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.

7. 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.

REVIEW:

Steven E Koster	Approve	9/10/2025
Samantha Hutchison - FYI	Notified - FYI	9/10/2025

ATTACHMENTS:

Staff Report - SB2024-066
Supplemental Memo - ZR2024-015

DOUGLAS COUNTY
COLORADO

Minor Development Final Plat Staff Report

Date: September 9, 2025

To: Douglas County Planning Commission

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

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

Project File: **SB2024-066**

Planning Commission Hearing:	**September 22, 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 concurrent rezoning request to establish the property's LRR rezoning 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).

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."

Per Section 604.06 of the DCSR, "The Planning Commission shall evaluate the minor development final plat, staff report, referral agency comments, applicant responses, and public comment and testimony, and make a recommendation to the Board to approve, approve with conditions, continue, table for further study, or deny the minor development request. The Planning Commission's decision 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. 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 plat. If the LRR zoning is approved, the proposed gross density as shown on the minor development plan 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

IV. 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.

V. 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 (condition of approval #5).

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.

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 #6.

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.

VI. 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.

VII. 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 #7).

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 #6).

VIII. STAFF ASSESSMENT

Staff has evaluated the minor development final plat request in accordance with Article 6 of the DCSR. Should the Planning Commission find that the approval standards have been met, it may recommend approval of the minor development final plat to the Board of County Commissioners subject to the following proposed conditions.

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 provide evidence of completed CDWR Well Abandonment forms for Well Permit 53878, or other documentation from CDWR releasing the applicant from this requirement.

6. 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.

7. 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.

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

ATTACHMENTS **PAGE**

Douglas County Land Use Application 12
Applicant's Narrative 13
CMP, Zoning and Aerial Maps 24
Referral Agency Response Report 27
Referral Response Letters 39
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Phase III Drainage Report 100
Weed Management Plan 185
Water Attorney's Letter 186
Water Supply Documentation 189
Traffic Letter 200
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Supplemental Exhibit 207

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:

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:

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.***

Applicant Signature

12/10/24
Date

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.

o *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.

Water Supply 18A

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.

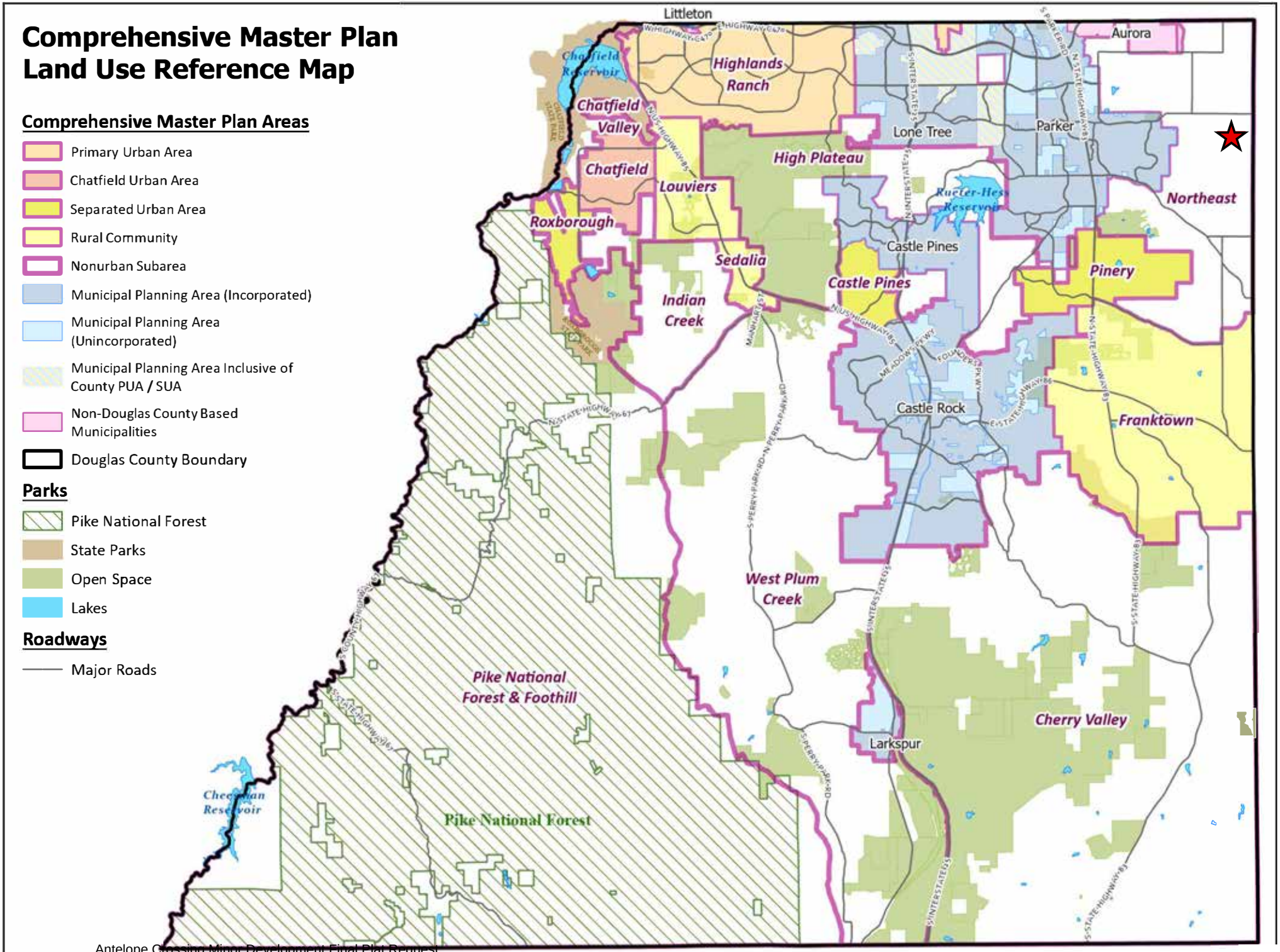
603.10 Has available all necessary services, including fire and police protection, recreation facilities, utility service facilities, streets, and open space to serve the proposed subdivision.

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

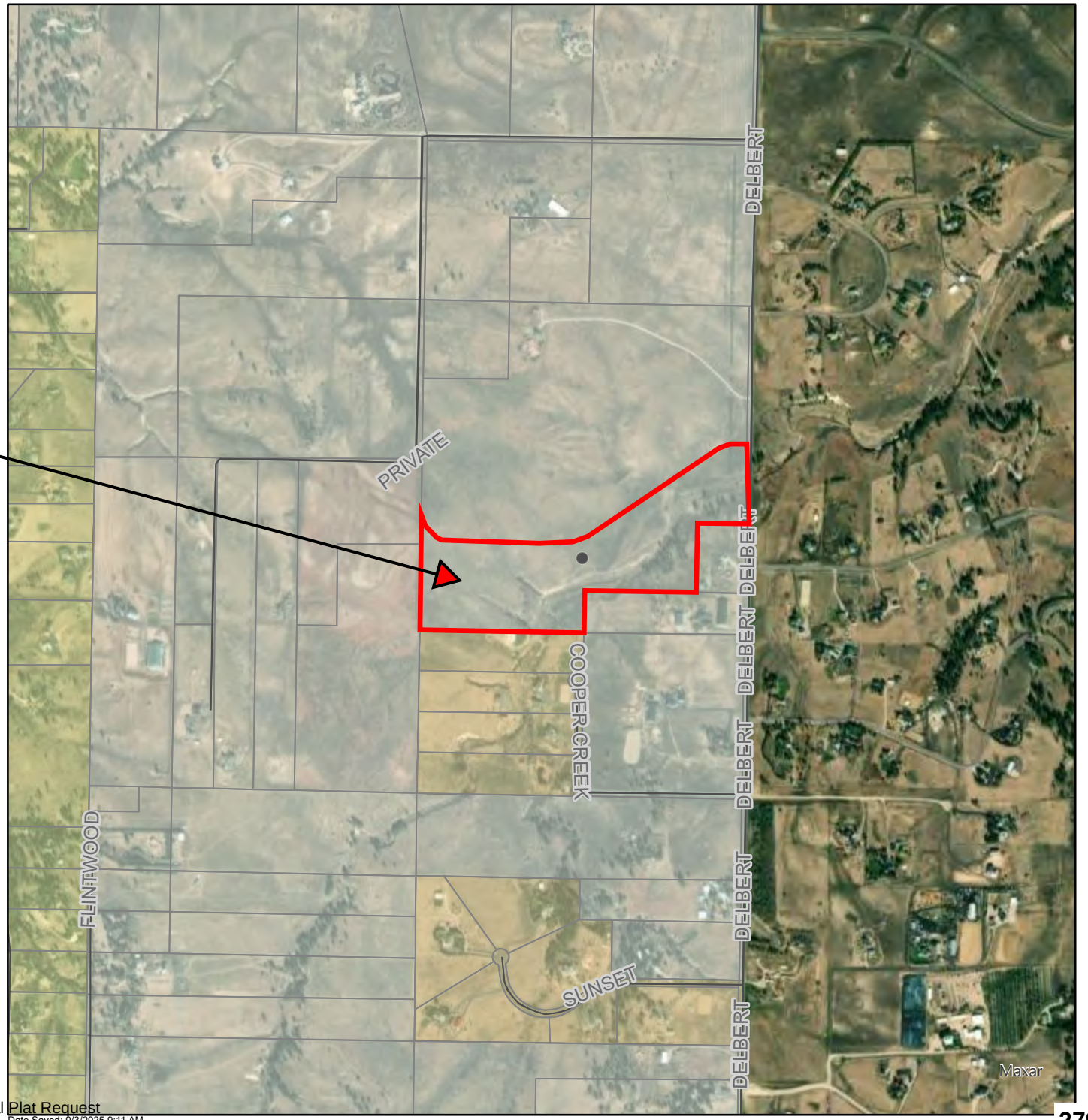


MINOR DEVELOPMENT FINAL PLAT

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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MINOR DEVELOPMENT FINAL PLAT

ANTELOPE CROSSING

SB2024-066

AERIAL

LEGEND

- Roads
- Major Roads
- Parcels - PARCELS

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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	Received: *Following approval and recordation of the minor development plat, addresses on DELBERT ROAD may be requested. Due to the size and configuration of these lots, prior to addressing, a proposed home and driveway location must be confirmed. Submit requests by email to DCAddressing@douglas.co.us. Contact the Addressing Specialist at 303.660.7411 with questions.*	Addressing of the proposed lots will occur during the building permit process. The applicant will be required to submit a site plan showing proposed home and driveway locations.
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

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	The plat establishes general purpose utility easements. No encroachments are anticipated.

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.

Agency	Date Received	Agency Response	Response Resolution
Colorado Division of Water Resources	03/03/2025	Received: Summary: The Colorado Division of Water Resources (CDWR) reviewed the rezoning request and commented on the potential for the subdivision of the property in the future. CDWR 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 a final plat. DWR previously reviewed this development under ZR2024-015, and stated that since the water supply information is the same, their 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	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. As a condition of approval, the applicant will provide evidence of completed CDWR Well Abandonment forms for Well Permit 53878, or other documentation from CDWR releasing the applicant from this requirement prior to plat recordation.

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 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	No build zones based on the floodplain and associated erosional setbacks have been defined on the plat. A note regarding the floodplain and home construction has been added to the plat.

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	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 revised easement widths to the satisfaction of CORE on the plat exhibit.
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 completed a weed management plan and has coordinated with Douglas County Engineering to address construction plan 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
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.	A geotechnical engineer will design the OWTS systems for future lot owners at the time of building permit application. Future OWTS systems for each lot will comply with DCHD OWTS regulations and permitting process.
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.	A note has been added to the plat which requires notification to the Historic Preservation Office if any cultural resources are found on the site.

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 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."	Cash-in-lieu fee will be paid prior to plat recordation.
Douglas County School District RE 1		No Response Received	Cash-in-lieu fee will be paid prior to plat recordation.
DRCOG		No Response Received	No further action necessary
Elbert County Community & Development Services		No Response Received	No further action necessary
Engineering Services	03/03/2025	Received: Please see engineering redlines to the MDP exhibit and construction drawings.	Engineering comments have been fully addressed with all resubmittals.
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

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
Sheriff's Office		No Response Received	No further action necessary
Sheriff's Office E911		No Response Received	No further action necessary
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 will install the SMFR Knox Box at the cistern pump controls as required.
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

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
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.	Plat notes and easement changes have been made to address Xcel's comments. The applicant will coordinate with Xcel Energy should any new Xcel easements become necessary during construction.

Project Name: Antelope Crossing
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Date Sent: 02/27/2025 **Date Due:** 03/27/2025

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	

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

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,

Ioana Comaniciu, P.E.
Water Resource Engineer

Ec: File for water well permit no. 53878

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;

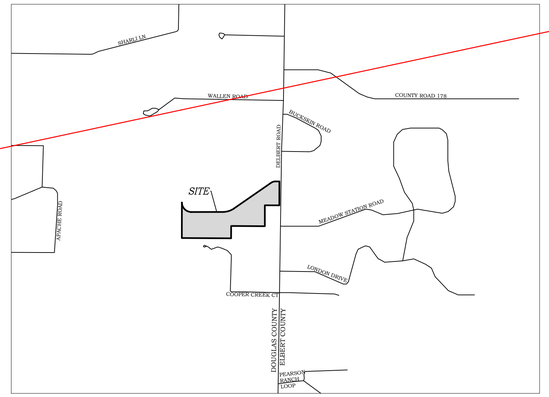
1. N00°06'00"E A DISTANCE OF 330.00 FEET;
2. S89°39'57"E A DISTANCE OF 903.99 FEET, TO THE SOUTHWEST CORNER OF A PARCEL OF PROPERTY AS DESCRIBED IN RECEPTION NO. 1998107726;

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	S55°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	S55°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'

N

0 100 200 300

SCALE: 1" = 100'

CENTER QUARTER CORNER
SECTION 28, T6S, R65W OF 6TH P.M.
FOUND 2.5" ALUMINUM CAP
STAMPED "PLS 6935"

S0°06'02"W 247.77'

OWNER: DCLA-3, LLC
PID: 2235-280-00-026
ZONING: A-1
(NOT A PART)

L=590.63'
R=375.00'
Δ=090°14'31"

OWNER: DCLA-3, LLC
PID: 2235-281-00-001
ZONING: A-1
(NOT A PART)

60' ACCESS, DRAINAGE & UTILITY EASEMENT TO BE DEDICATED BY SEPARATE INSTRUMENT

10' DRAINAGE EASEMENT TO BE DEDICATED BY SEPARATE INSTRUMENT

30'X60' DRAINAGE EASEMENT TO BE DEDICATED BY SEPARATE INSTRUMENT

L=133.59'
R=220.00'
Δ=034°47'26"

N89°54'01"W
100.00'

N55°18'34"E 1105.17'

50'X60' DRAINAGE EASEMENT TO BE DEDICATED BY SEPARATE INSTRUMENT

60' ACCESS,DRAINAGE & UTILITY EASEMENT TO BE DEDICATED BY SEPARATE INSTRUMENT

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

N55°18'34"E 100.00'

L=319.59'
R=530.00'
Δ=034°32'57"

N89°51'31"E 60.00'

S89°51'31"W 246.57'

S89°51'31"W 722.70'
416.14'

S74°02'52"E 774.17'

LOT 1
11.55 ACRES ±

BUILDING SETBACKS (TYP)

N89°38'54"W 388.43'

FOUND 5/8" REBAR WITH NO CAP

S0°05'42"W 240.87'

S0°05'42"W 320.00'

S0°05'59"W 642.22'

OWNER: MEADOW STATION HOMEOWNERS
PID: 6527101001
ZONE: RA-1
(NOT A PART)

DELBERT ROAD (60' R.O.W.)

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

LOT 2
10.29 ACRES ±

OWNER: JAMES P. BLAKLEY
PID: 2235-280-00-020
ZONING: A-1
REC. 1998107726
(NOT A PART)

show the calculated 100-yr. floodplain

OWNER: DCLA-3, LLC
PID: 2235-280-00-025
ZONING: A-1
(NOT A PART)

S0°06'02"W 1072.53'

LOT 4
10.72 ACRES ±

S0°09'25"E 701.14'

LOT 3
10.05 ACRES ±

N0°36'40"W 470.45'

N0°06'00"E 330.00'

S89°39'57"E 903.99'

626.30'

696.07'

S89°39'57"E 1322.37'

OWNER: SUPER G PROPERTIES LLC
PID: 2235-280-00-008
ZONING: A-1
REC. 2019018412
(NOT A PART)

OWNER: JESUS & MARIA RAMIERZ
PID: 2235-280-01-004
ZONING: LRR
REC. 1984324478
(NOT A PART)

P.O.B.
S.W. CORNER
NW 1/4 OF SE 1/4
SECTION 28, T6S, R65W OF 6TH P.M.
FOUND 2.5" ALUMINUM CAP
STAMPED "PLS 38231"

SE CORNER
NW 1/4 OF SE 1/4
SECTION 28, T6S, R65W OF 6TH P.M.
FOUND 2.5" ALUMINUM CAP
STAMPED "PLS 30127"

LEGEND:

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

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DRAWN BY: MBB	PROJECT NO. 65467
CHECKED BY: ERF	PREPARATION DATE: 11/19/2024
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.

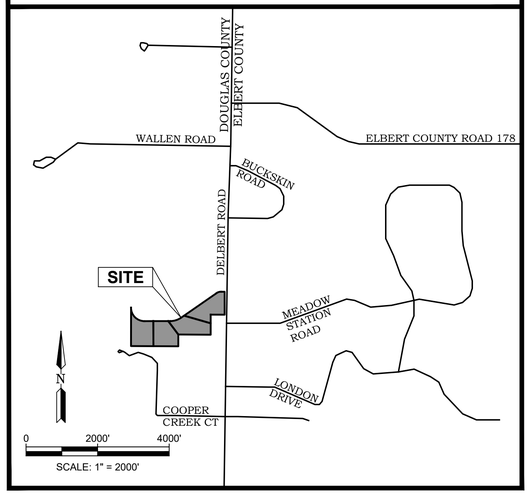
28. DOUGLAS COUNTY SHALL NOT BE RESPONSIBLE FOR THE MAINTENANCE OF ROADWAY AND APPURTENANT IMPROVEMENTS, INCLUDING STORM DRAINAGE INFRASTRUCTURE, FOR THE FOLLOWING PRIVATE STREETS,

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.

VICINITY MAP



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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

BY: DATE:

REVISIONS:
1.
2.
3.
4.

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

Cover Sheet

1

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
- ~6280 MINOR CONTOUR
- EX. SLOPES ≥ 25%
- OE OVERHEAD ELECTRIC
- POWER POLE

PROPOSED
- RIGHT OF WAY
- ROAD CENTERLINE
- EASEMENT
- ASPHALT
- GRAVEL
- FENCE
- CULVERT
- 6285 MAJOR CONTOUR
- 6284 MINOR CONTOUR
- ×62.98 SPOT ELEVATION
- 1.2% FLOW DIRECTION & SLOPE

N

0 100' 200'

SCALE: 1" = 100'

CENTER QUARTER CORNER
SECTION 28, T6S, R65W OF 6TH P.M.
FOUND 2.5" ALUMINUM CAP
STAMPED "PLS 6935"

OWNER: DCLA-3, LLC
PID: 2235-280-00-026
ZONING: A-1
(NOT A PART)

OWNER: DCLA-3, LLC
PID: 2235-281-00-001
ZONING: A-1
(NOT A PART)

OWNER: DCLA-3, LLC
PID: 2235-280-00-025
ZONING: A-1
(NOT A PART)

OWNER: JESUS & MARIA RAMIERZ
PID: 2235-280-01-004
ZONING: LRR
REC. 1984324478
(NOT A PART)

OWNER: SUPER G PROPERTIES LLC
PID: 2235-280-00-008
ZONING: A-1
REC. 20190018412
(NOT A PART)

OWNER: JAMES P. BLAKLEY
PID: 2235-280-00-020
ZONING: A-1
REC. 1998107726
(NOT A PART)

DELBERT ROAD (60' R.O.W.)

MEADOW STATION RD

Douglas County
Elbert County

LOT 1
11.56 ac ±

LOT 2
10.29 ac ±

LOT 3
10.05 ac ±

LOT 4
10.72 ac ±

△=34°47'26"
R=220.00'
L=133.59'
ChB=S72°42'16"W
ChL=131.54'

R=30.0'

DRAINAGE EASEMENT
(TO BE DEDICATED
BY SEPARATE
INSTRUMENT)

AASHTO
INTERSECTION
SIGHT DISTANCE
TRIANGLE
DESIGN SPEED
=45 MPH

24' WIDE GRAVEL ROAD
PER DOUGLAS COUNTY
RURAL LOCAL TYPE IV
TEMPLATE SP. 11

INSTALL 30"X30"
STOP SIGN R1-1
PER DOUGLAS COUNTY
DETAILS SS-4 & SS-8

100.00'

24.0'

10' U.E.

60'
ROW

60'
ACCESS, DRAINAGE
& UTILITY EASEMENT
(TO BE DEDICATED
BY SEPARATE INSTRUMENT)

TURNAROUND
PER ROADWAY DESIGN
& TECHNICAL CRITERIA
SECTION 4.3.1

R47.00'

R=20.0'

S 55°18'34" W, 1295.17'

1408.17'

DRAINAGE EASEMENT
(TO BE DEDICATED
BY SEPARATE
INSTRUMENT)

DRIVEWAY
SERVING LOTS 2, 3 & 4

CUL-DE-SAC
(L=1,070' LF)

△=34°32'57"
R=530.00'
L=319.59'
ChB=N72°35'02"E
ChL=314.77'

S 74°02'52" E, 774.17'

5'

5'

N 36°53'40" W, 470.43'

N 00°05'59" E, 642.22'

S 89°38'54" E, 388.43'

FOUND 5/8" REBAR
WITH NO CAP

240.87'

N 00°05'42" E, 560.87'

320.00'

S 89°39'57" E, 903.99'

N 00°06'00" E, 330.00'

△=90°14'31"
R=375.00'
L=590.63'
ChB=S45°01'14"E
ChL=531.45'

DRIVEWAY
TURNAROUND
PER ROADWAY DESIGN
& TECHNICAL CRITERIA
SECTION 4.3.1

R47.00'

R=20.0'

60'
ACCESS, DRAINAGE & UTILITY EASEMENT
(TO BE DEDICATED
BY SEPARATE INSTRUMENT)

S 89°51'31" W, 722.70'

246.57'

416.14'

24.0'

60.00'

S 00°06'02" W, 1072.53'

S 00°09'25" E, 701.14'

626.30'

696.07'

BASIS OF BEARINGS

S 89°39'57" E, 1322.37'

P.O.B.
S.W. CORNER
NW 1/4 OF SE 1/4
SECTION 28, T6S, R65W OF 6TH P.M.
FOUND 2.5" ALUMINUM CAP
STAMPED "PLS 38231"

SE CORNER
NW 1/4 OF SE 1/4
SECTION 28, T6S, R65W OF 6TH P.M.
FOUND 2.5" ALUMINUM CAP
STAMPED "PLS 30127"

CAUTION: NOTICE TO CONTRACTOR

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ASSISTANT DIRECTOR OF DEVELOPMENT REVIEW

DATE

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PREPARED FOR:
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14205 E DAVIES AVE
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

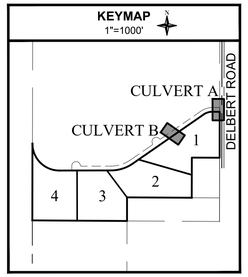
2

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

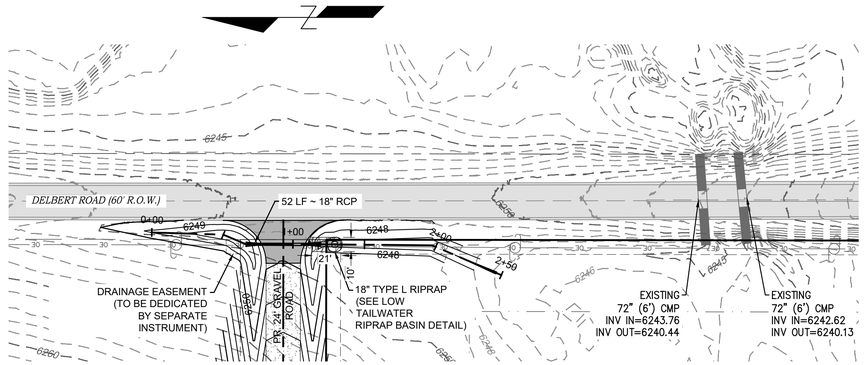


0 50' 100'
SCALE: 1" = 50'

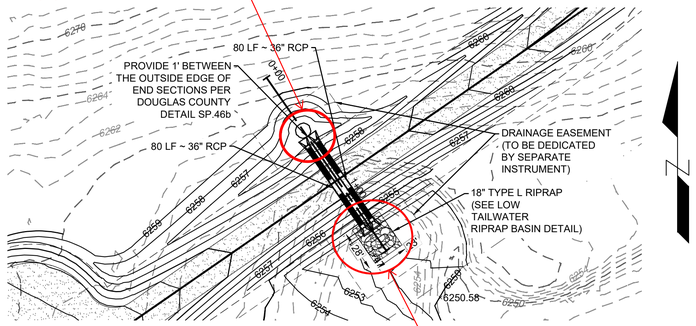
LEGEND

EXISTING
- SECTION LINE
- PROPERTY LINE
- ADJACENT PROPERTY LINE
- RIGHT OF WAY
- ASPHALT
- WIRE FENCE
- GRAVEL
- CULVERT
- 6280 MAJOR CONTOUR
- 6283 MINOR CONTOUR
- EX. SLOPES > 25%
- OE OVERHEAD ELECTRIC
- POWER POLE

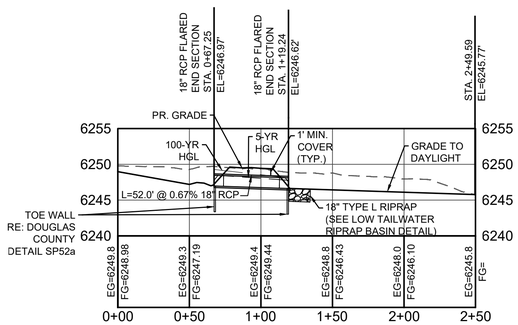
PROPOSED
- RIGHT OF WAY
- ROAD CENTERLINE
- EASEMENT
- ASPHALT
- GRAVEL
- FENCE
- CULVERT
- 6285 MAJOR CONTOUR
- 6284 MINOR CONTOUR
- 6282.98 SPOT ELEVATION
- 1.2% FLOW DIRECTION & SLOPE



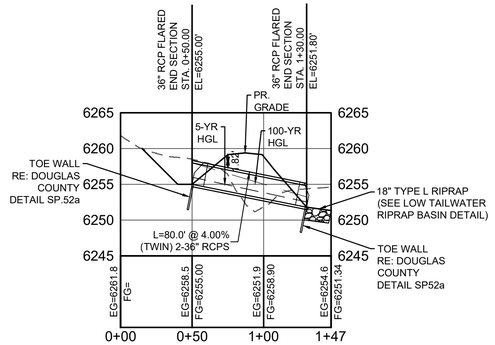
a headwall will be required for the dual pipes



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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DATE

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PREPARED FOR:
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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

6

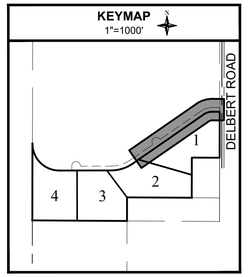
CONSTRUCTION PLANS FOR

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

- PROPERTY BOUNDARY
- ADJACENT PROPERTY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING ASPHALT
- PROPOSED ASPHALT
- PROPOSED GRAVEL
- 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 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

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.

NOTE:
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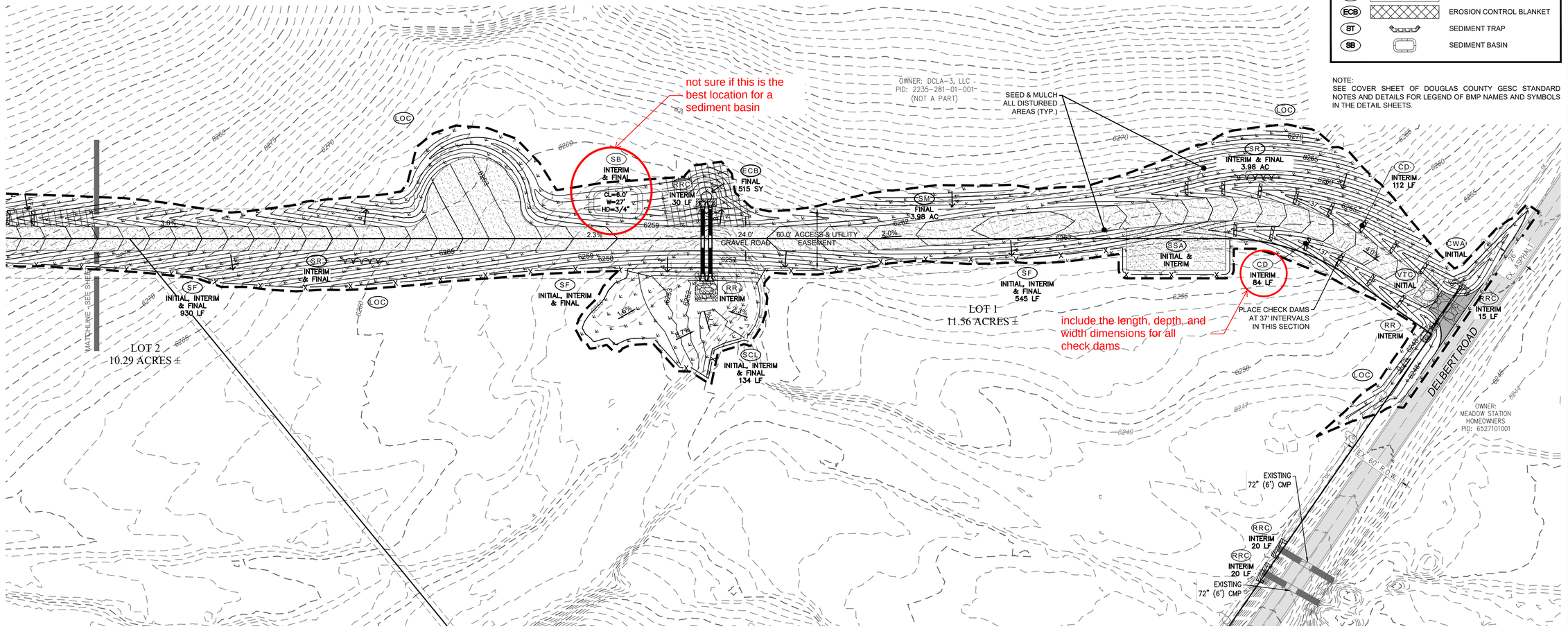

BENCHMARK

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

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

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

Grading, Erosion, and Sediment Control Plan

7

CONSTRUCTION PLANS FOR

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DOUGLAS COUNTY PROJECT NO. SB2024-066

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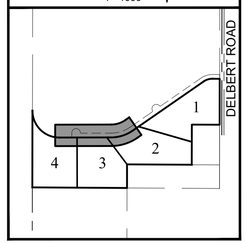

N

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
- 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
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NOTE:
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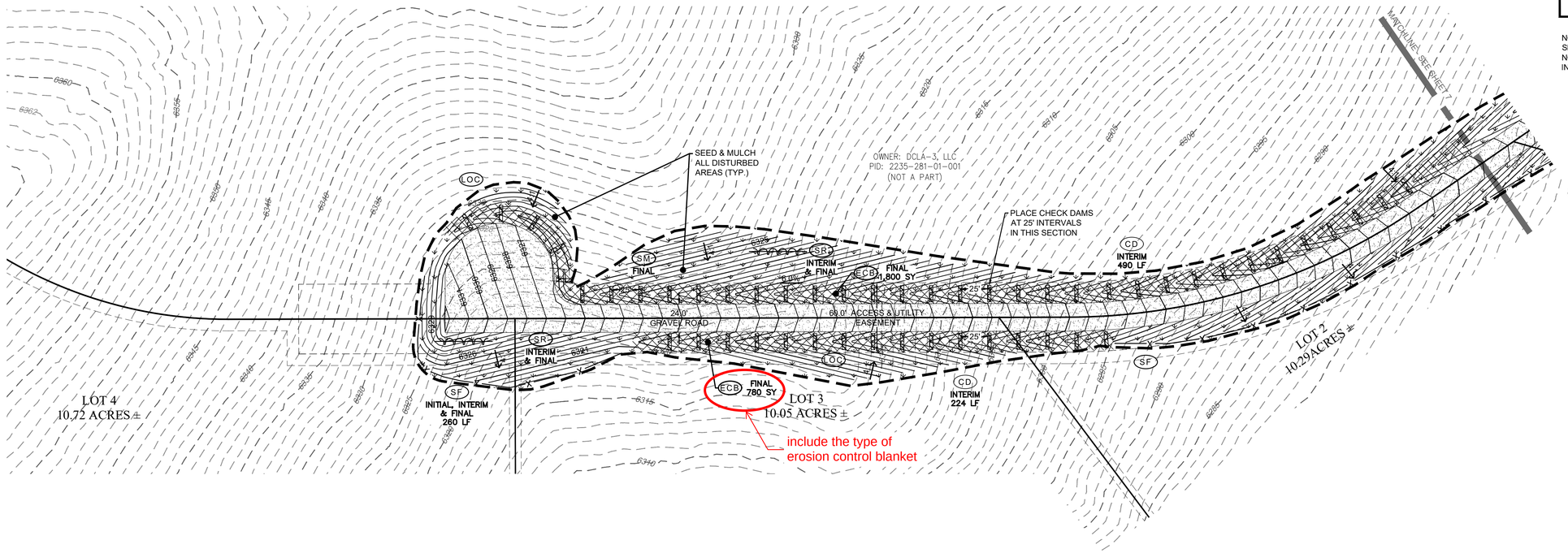

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CONSIDERING THE SOUTH LINE OF NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 28 TO HAVE AN ASSUMED BEARING OF S89°39'57"E.

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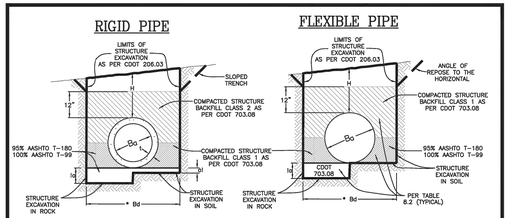
Grading, Erosion, and Sediment Control Plan

8

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

RIGID PIPE



FLEXIBLE PIPE

MAXIMUM HEIGHT OF FILL OVER TOP OF PIPE IN FEET

REINFORCED CONCRETE

Bc In.	Min Bd In.	.01 INCH CRACK D-LOAD 1350	2000	3000
		PIPE CLASS ** II	V	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	76	18	27	41
54	89	17	26	40
60	96	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(Bc+2). Wall thickness can vary between manufacturers.

STEEL – 2 2/3" x 1/2" CORRUGATIONS

Bc 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
Bc = Inside diameter (I.D.) of pipe
* Bd = Trench Width
t = Wall thickness of pipe
CLSM = Controlled Low Strength Material
α = Loose granular bedding, as follows:
α=90° for RCP Culvert in Soil.
α=2π for RCP Culvert in Rock.
α=120° for Culvert in Rock.

* TRENCH WIDTH
RCP: Bd = Min. of 1.33(Bc+2), or (Bc+2)+12" (Per AASHTO Section 17)
CSP: Bd = Min. of Bc+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
Buckling 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 effect 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

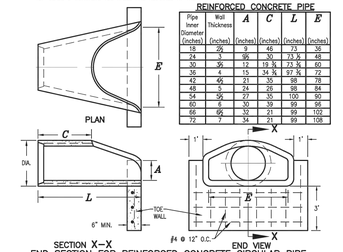
APPROVED BY DOUGLAS COUNTY *Janet Herman* JANET HERMAN, P.E. DIRECTOR OF PUBLIC WORKS ENGINEERING DATE 06/18/2021	**PIPE INSTALLATION IN TRENCH NOTES** DOUGLAS COUNTY COLORADO	Issued: 05/2013 Revised: 05/2021 Drawing No. **SP.46b**

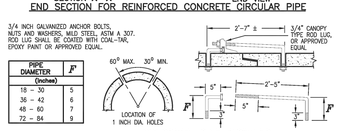
GENERAL NOTES

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" DIA. 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 ¾	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

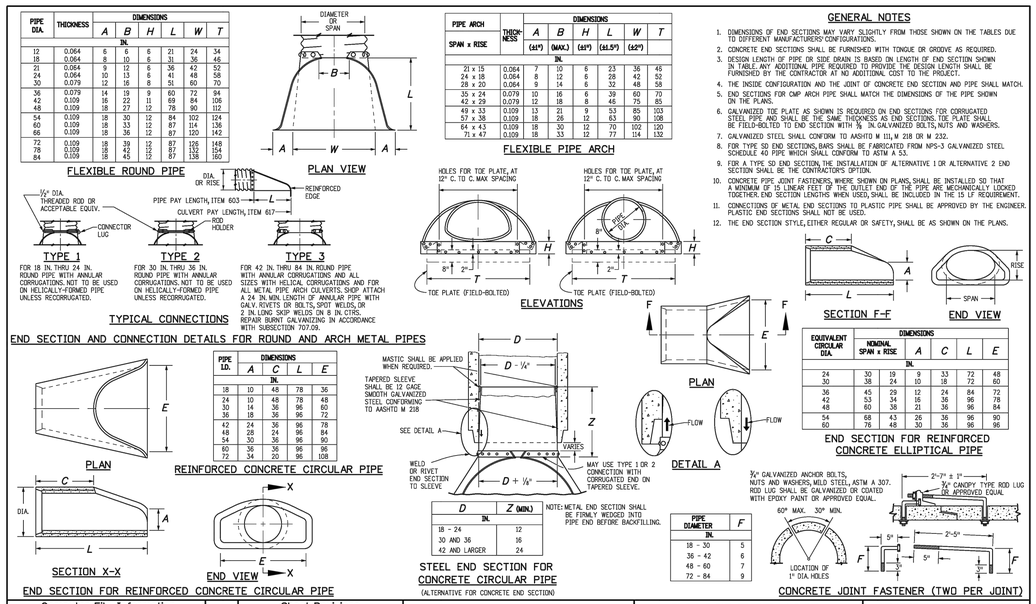




REFERENCE:
CDOT M & S STANDARDS
M–603–10

CONCRETE OR METAL END SECTIONS
DOUGLAS COUNTY COLORADO

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

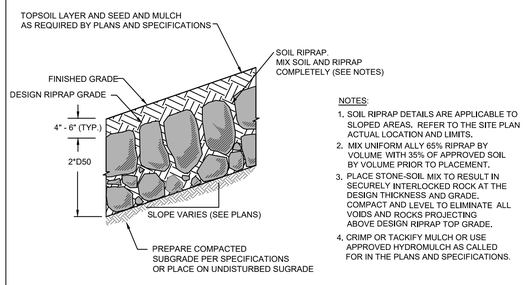


Computer File Information		Sheet Revisions		
Creation Date: 07/04/12 Initials: DD		Date:	Comments	
Last Modification Date: 07/04/12 Initials: LTA				
Full Path: www.coloradodot.info/business/designsupport				
Drawing File Name: 6010100102.dgn				
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English				

Colorado 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



TYPICAL SECTION – SOIL RIPRAP WITH MULCH

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

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

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

Storm Details

14

I:\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;

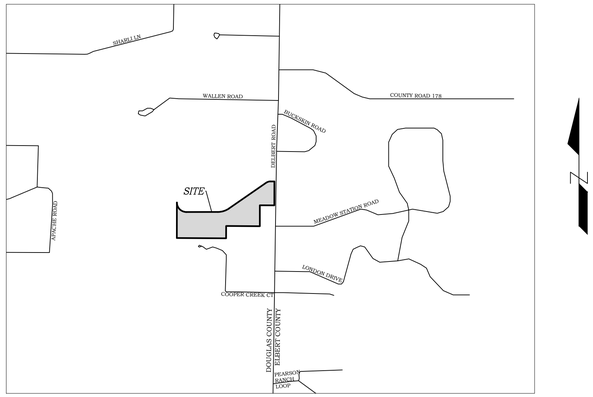
1. N00°06'00"E A DISTANCE OF 330.00 FEET;
2. S89°39'57"E A DISTANCE OF 903.99 FEET, TO THE SOUTHWEST CORNER OF A PARCEL OF PROPERTY AS DESCRIBED IN RECEPTION NO. 1998107726;

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	S55°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	S55°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'

CHANGE FRONT LOT UE TO 15-FOOT WIDE

CHANGE TO 30-FOOT UE ALONG DELBERT ROAD

N

0 100 200 300
SCALE: 1" = 100'

CENTER QUARTER CORNER
SECTION 28, T6S, R65W OF 6TH P.M.
FOUND 2.5" ALUMINUM CAP
STAMPED "PLS 6935"

S0°06'02"W 247.77'

OWNER: DCLA-3, LLC
PID: 2235-280-00-026
ZONING: A-1
(NOT A PART)

OWNER: DCLA-3, LLC
PID: 2235-281-00-001
ZONING: A-1
(NOT A PART)

60' ACCESS, DRAINAGE & UTILITY EASEMENT TO BE DEDICATED BY SEPARATE INSTRUMENT

10' DRAINAGE EASEMENT TO BE DEDICATED BY SEPARATE INSTRUMENT

30'X60' DRAINAGE EASEMENT TO BE DEDICATED BY SEPARATE INSTRUMENT

50'X60' DRAINAGE EASEMENT TO BE DEDICATED BY SEPARATE INSTRUMENT

60' ACCESS,DRAINAGE & UTILITY EASEMENT TO BE DEDICATED BY SEPARATE INSTRUMENT

L=590.63'
R=375.00'
Δ=090°14'31"

L=319.59'
R=530.00'
Δ=034°32'57"

L=133.59'
R=220.00'
Δ=034°47'26"

N89°54'01"W
100.00'

N55°18'34"E
100.00'

N89°51'31"E
60.00'

S74°02'52"E 774.17'

N55°18'34"E 1105.17'

S89°51'31"W 246.57'

S89°51'31"W 722.70'
416.14'

N89°55'40"W 470.45'

S89°39'57"E 903.99'

S89°39'57"E 1322.37'

626.30'

696.07'

S0°09'25"E 701.14'

S0°06'00"E 330.00'

N89°38'54"W 388.43'

S0°05'42"W 240.87'

S0°05'42"W 320.00'

S0°05'59"W 642.22'

LOT 1
11.55 ACRES ±

LOT 2
10.29 ACRES ±

LOT 3
10.05 ACRES ±

LOT 4
10.72 ACRES ±

BUILDING SETBACKS (TYP)

10' U.E.

50'

30'

60'

FOUND 5/8" REBAR WITH NO CAP

OWNER: MEADOW STATION HOMEOWNERS
PID: 6527101001
ZONE: RA-1
(NOT A PART)

OWNER: JAMES P. BLAKLEY
PID: 2235-280-00-020
ZONING: A-1
REC. 1998107726
(NOT A PART)

OWNER: DCLA-3, LLC
PID: 2235-280-00-025
ZONING: A-1
(NOT A PART)

OWNER: JESUS & MARIA RAMIERZ
PID: 2235-280-01-004
ZONING: LRR
REC. 1984324478
(NOT A PART)

OWNER: SUPER G PROPERTIES LLC
PID: 2235-280-00-008
ZONING: A-1
REC. 2019018412
(NOT A PART)

DELBERT ROAD
(60' R.O.W.)

DOUGLAS COUNTY
ELBERT COUNTY

P.O.B.
S.W. CORNER
NW 1/4 OF SE 1/4
SECTION 28, T6S, R65W OF 6TH P.M.
FOUND 2.5" ALUMINUM CAP
STAMPED "PLS 38231"

SE CORNER
NW 1/4 OF SE 1/4
SECTION 28, T6S, R65W OF 6TH P.M.
FOUND 2.5" ALUMINUM CAP
STAMPED "PLS 30127"

LEGEND:

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

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

Docusign Envelope ID: 28872DB1-FC18-4EC5-8576-5B83C61588A3

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

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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.

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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.

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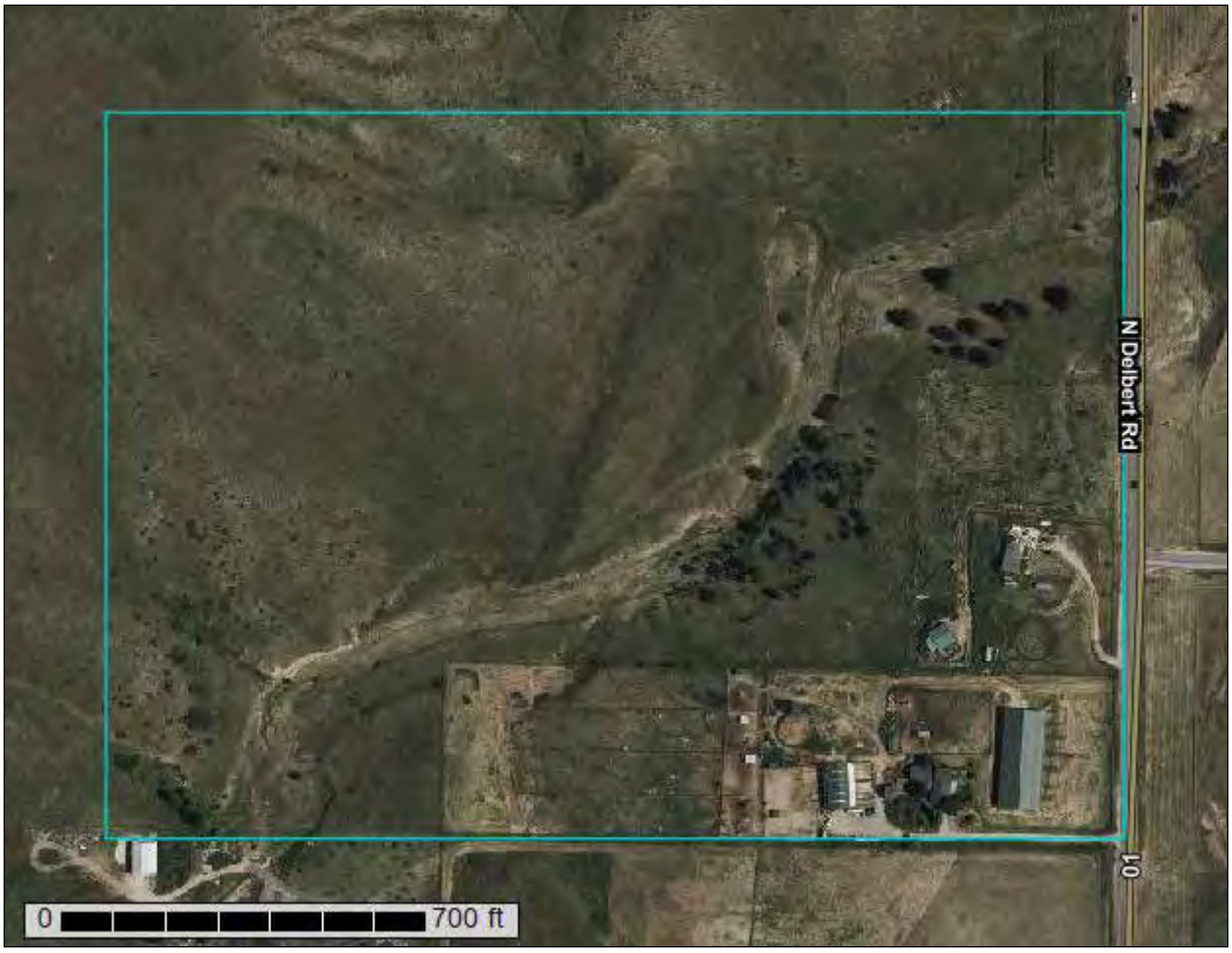
United States Department of Agriculture

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



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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.

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alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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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

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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

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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

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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.

Custom Soil Resource Report
Soil Map

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

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

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

9

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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
- Lava Flow
- 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
- 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.

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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

Docusign Envelope ID: 28872DB1-FC18-4EC5-8576-5B83C61588A3

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.

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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

Docusign Envelope ID: 28872DB1-FC18-4EC5-8576-5B83C61588A3

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

Docusign Envelope ID: 28872DB1-FC18-4EC5-8576-5B83C61588A3

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

Docusign Envelope ID: 28872DB1-FC18-4EC5-8576-5B83C61588A3

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

Docusign Envelope ID: 28872DB1-FC18-4EC5-8576-5B83C61588A3

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

Docusign Envelope ID: 28872DB1-FC18-4EC5-8576-5B83C61588A3

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

Docusign Envelope ID: 28872DB1-FC18-4EC5-8576-5B83C61588A3

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

Docusign Envelope ID: 28872DB1-FC18-4EC5-8576-5B83C61588A3

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.

Docusign Envelope ID: 28872DB1-FC18-4EC5-8576-5B83C61588A3

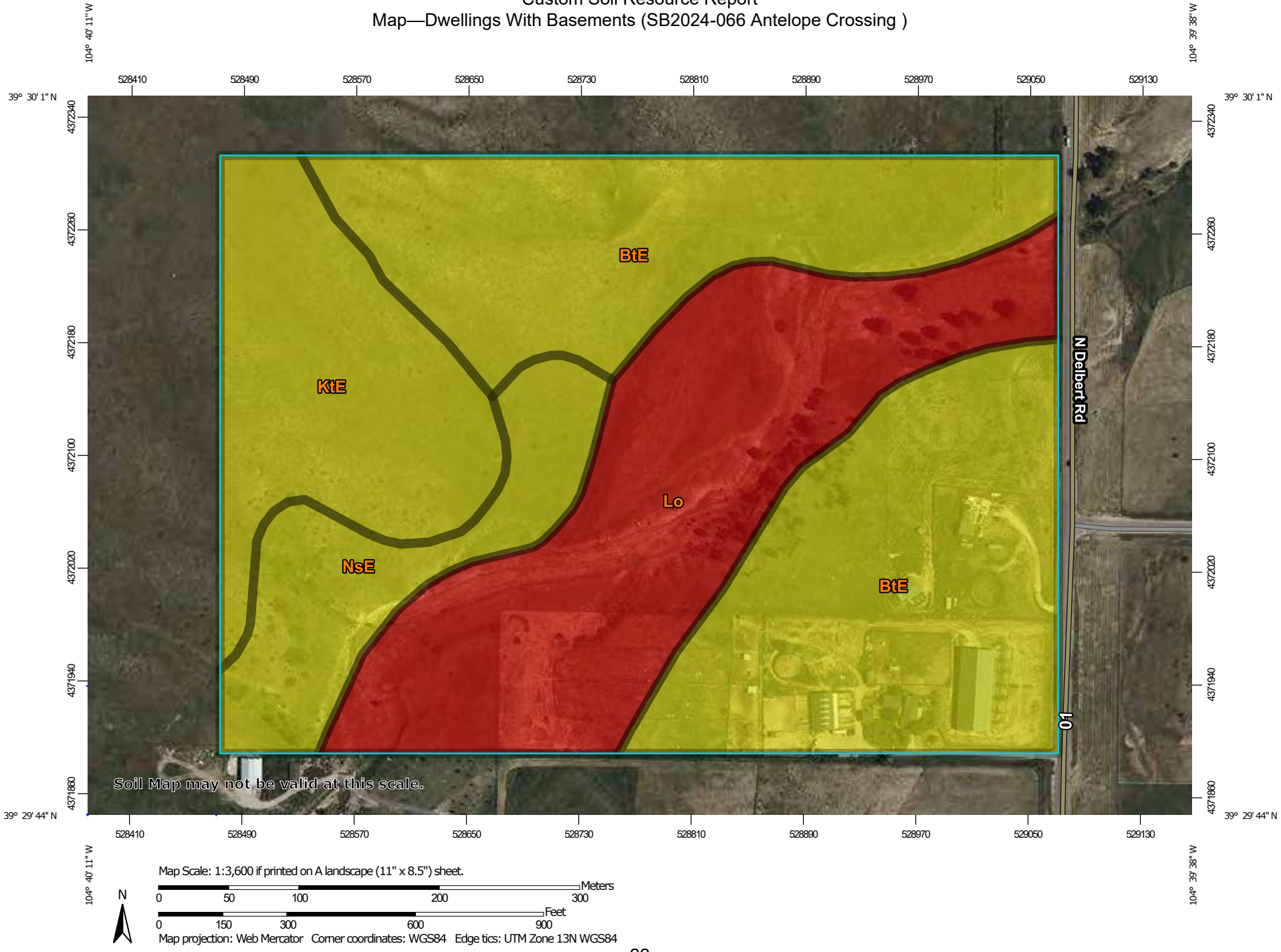
The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance 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)



Docusign Envelope ID: 28872DB1-FC18-4EC5-8576-5B83C61588A3

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.

Docusign Envelope ID: 28872DB1-FC18-4EC5-8576-5B83C61588A3

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

Docusign Envelope ID: 28872DB1-FC18-4EC5-8576-5B83C61588A3

References

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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.

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

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.

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 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.

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 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

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.	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

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
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.

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
		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

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Appendix A	Vicinity Map, Soils Map, FEMA FIRM Map
Appendix B	Hydrologic Computations
Appendix C	Excerpts from FHAD study
Appendix D	Hydraulic Computations
Appendix E	Fluvial Hazard Buffer Analysis
Appendix F	Drainage Maps

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.

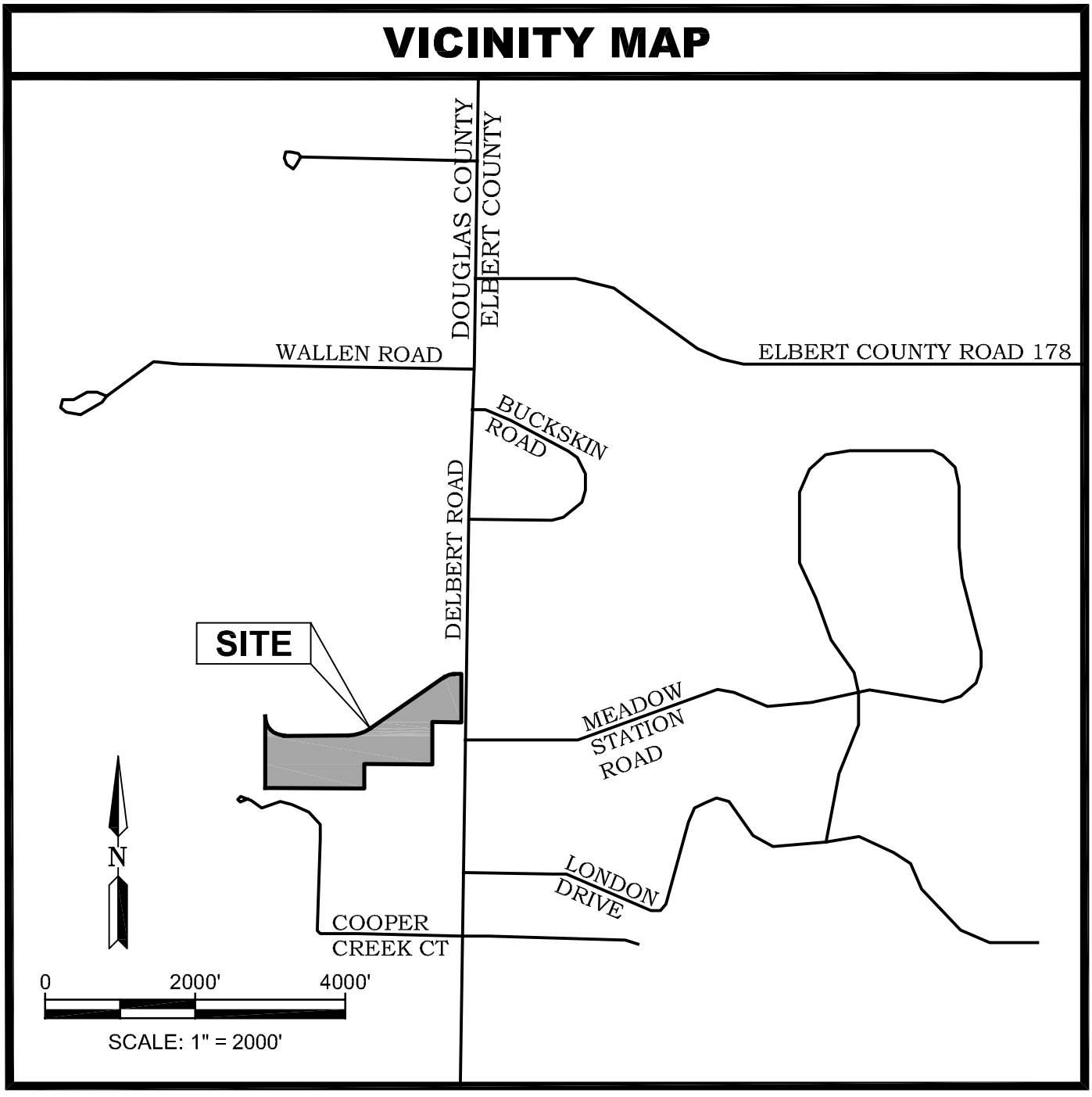
5. Coal Creek (E. Yale Avenue to E. County Line Road) Flood Hazard Area Delineation, Matrix Design Group, August 2014.

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

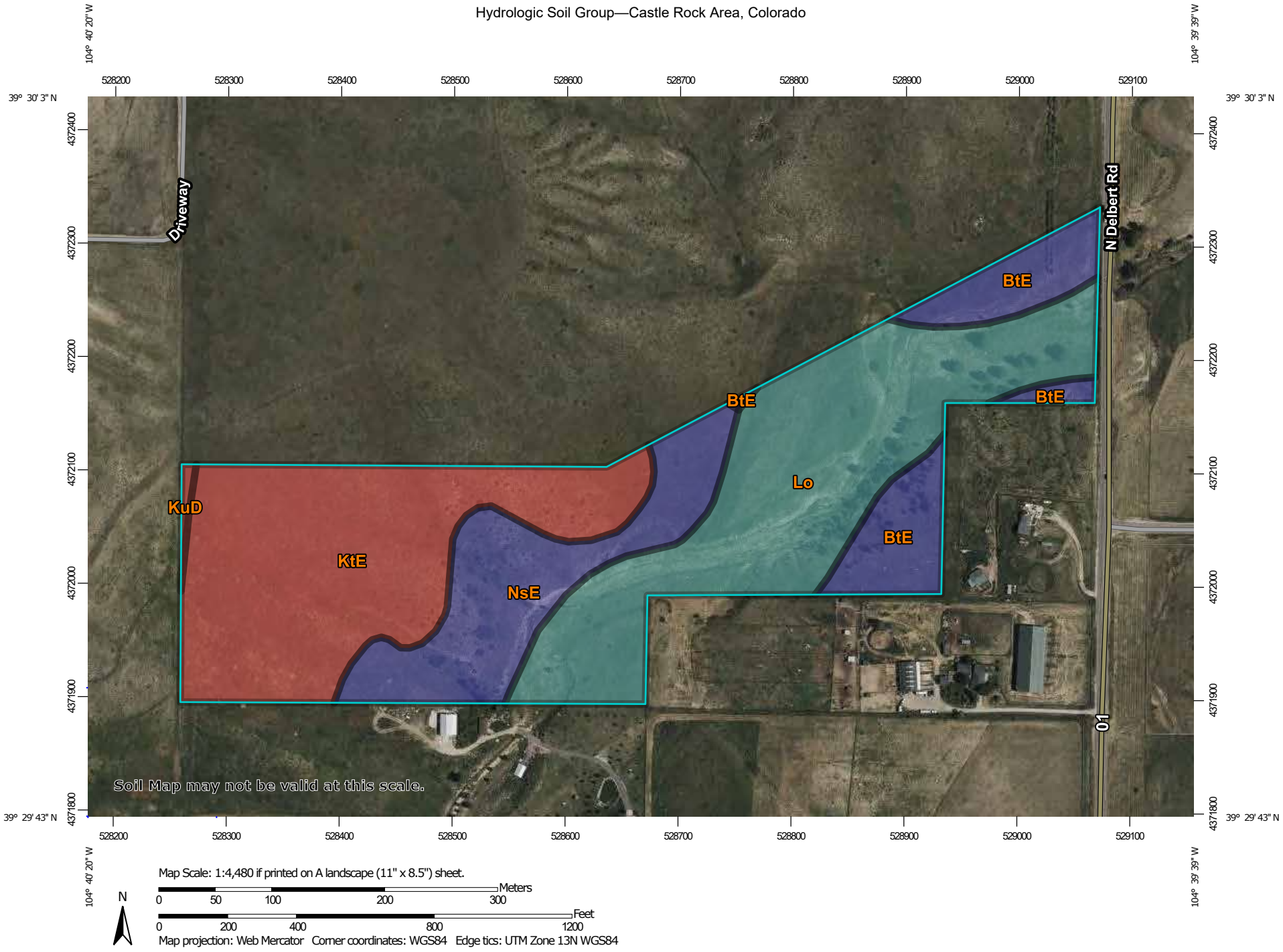


2N Civil, LLC
6 Inverness Ct. E., Suite 125
Englewood, CO 80112
Phone 303-925-0544 Fax 303-925-0547
www.2NCivil.com

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

VICINITY MAP
ANTELOPE CROSSING

Drawn By: TEW
Checked By: RCE



USDA Natural Resources Conservation Service

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.

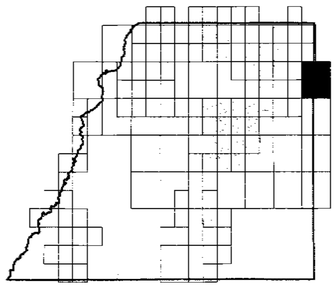
If you have **questions about** this map or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.

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	3.48	Tallman Gulch	3.15
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		

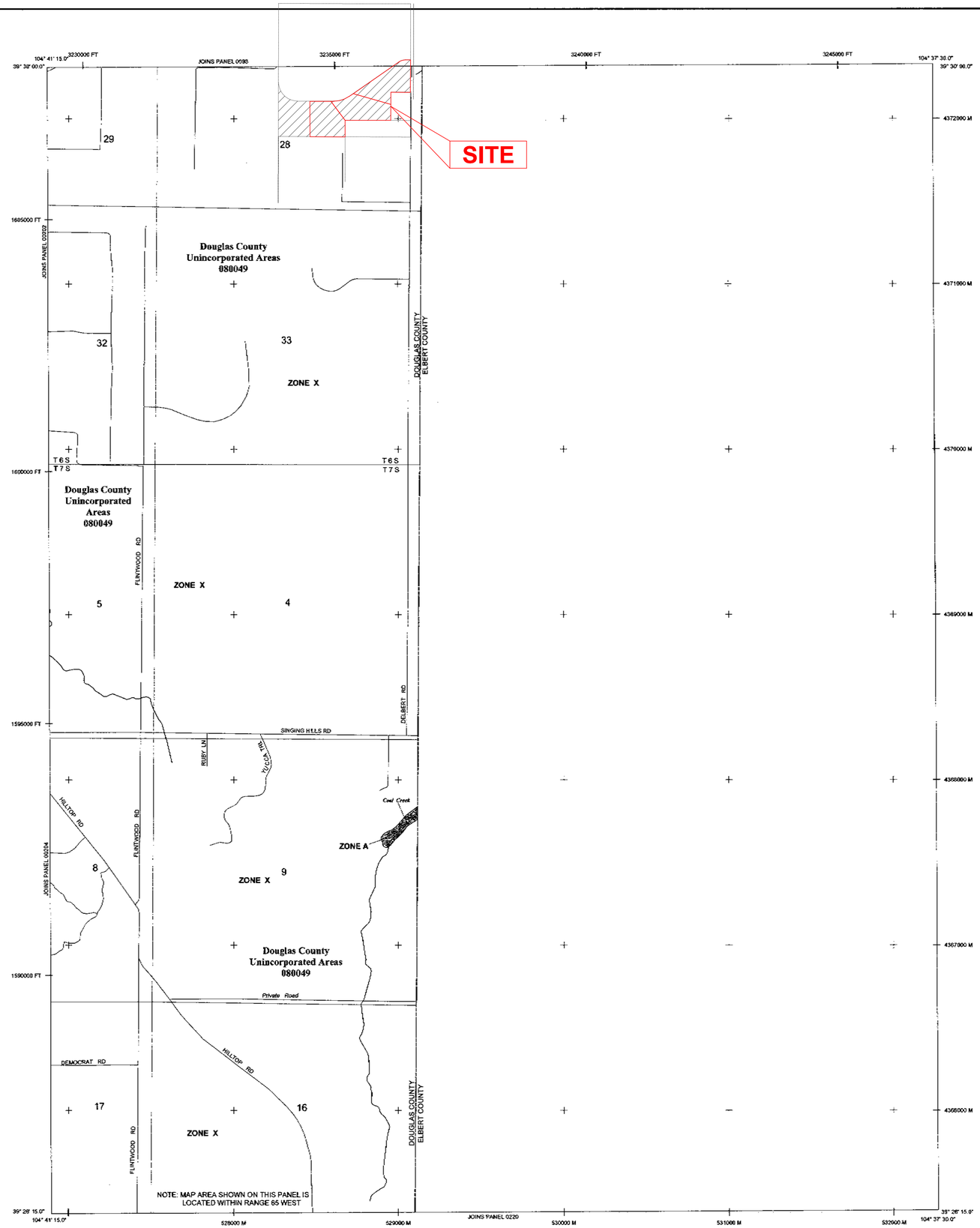
Example: To convert Baldwin Gulch elevations to NAVD 88, 3.10 feet were added to the NGVD 29 elevations.

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 equalled 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° 60' 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

× KK5400 — 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

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

NATIONAL FLOOD INSURANCE PROGRAM

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%**

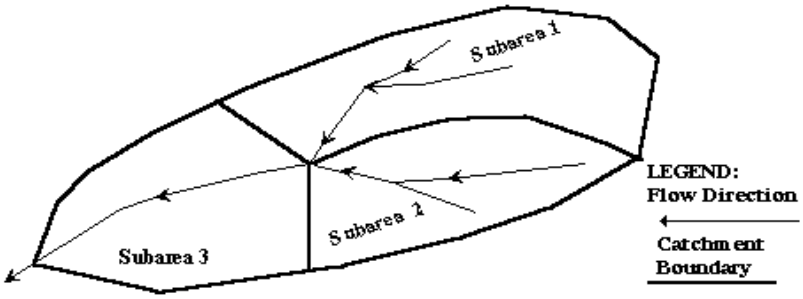
Basin PR-3

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



Subcatchment Name
PR-2

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

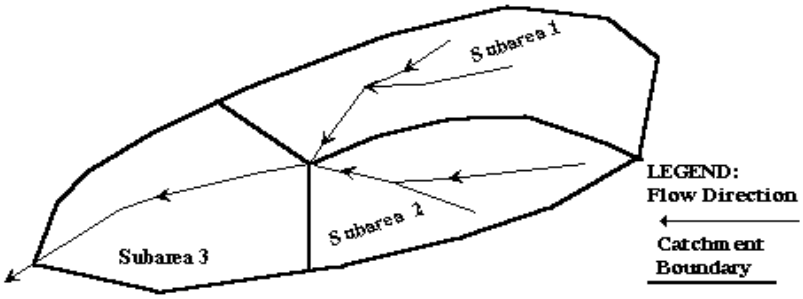
See sheet "Design Info" for imperviousness-based runoff coefficient values.

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



Subcatchment Name
PR-3

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

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

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

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

Computed $t_c = t_i + t_t$

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

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

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				

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

$$Q(cfs) = CIA$$

Subcatchment Name	Area (ac)	NRCS Hydrologic Soil Group	Percent Imperviousness	Runoff Coefficient, C							Overland (Initial) Flow Time					Channelized (Travel) Flow Time							Time of Concentration			Rainfall Intensity, I (in/hr)							Peak Flow, Q (cfs)						
				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)	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	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	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	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	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.

Antelope Crossing Minor Development Final Plat Request
Project File: SB2024-066
Planning Commission Staff Report - Page 125 of 207

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.

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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, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[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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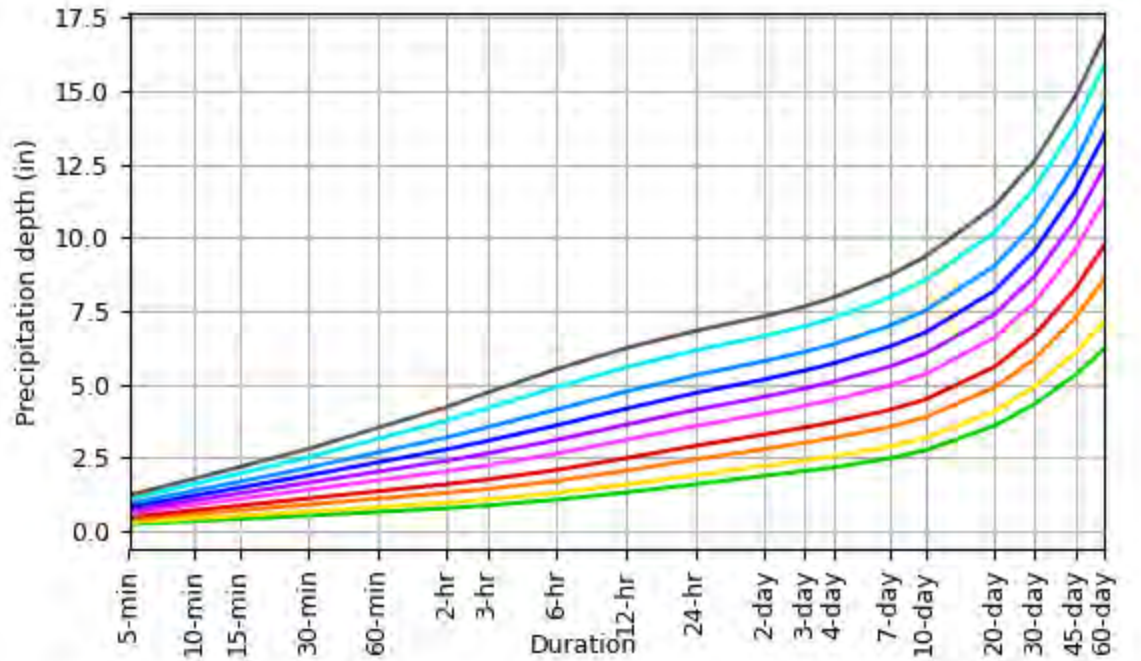
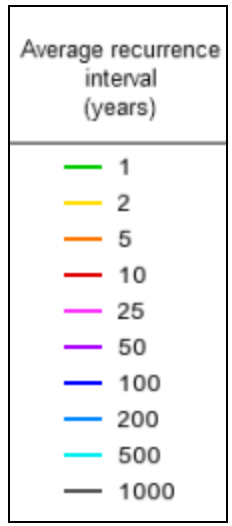
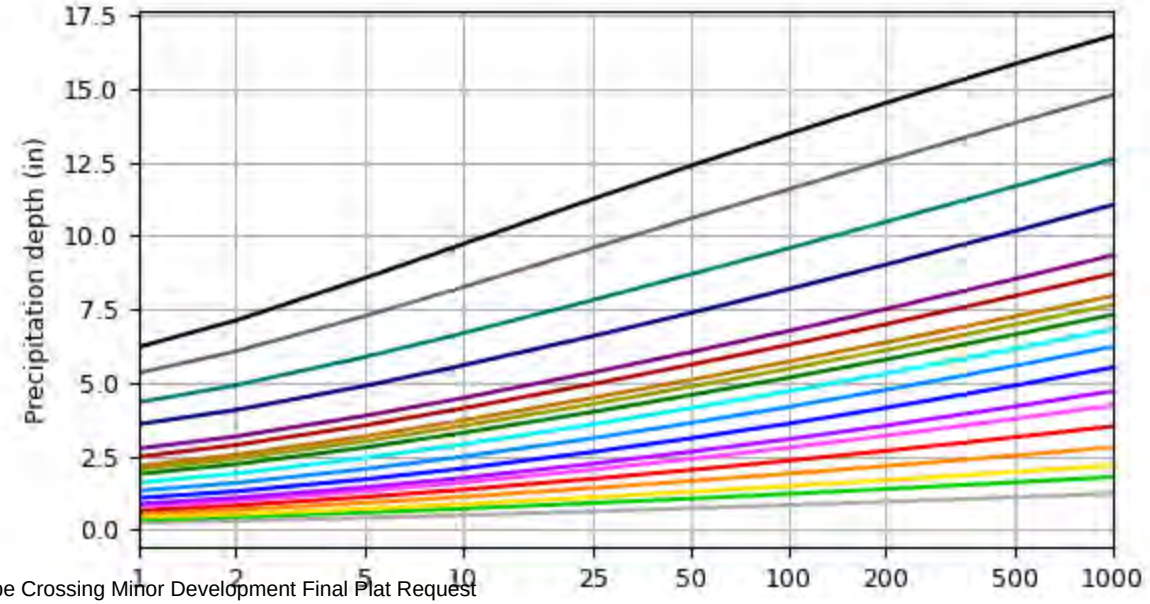
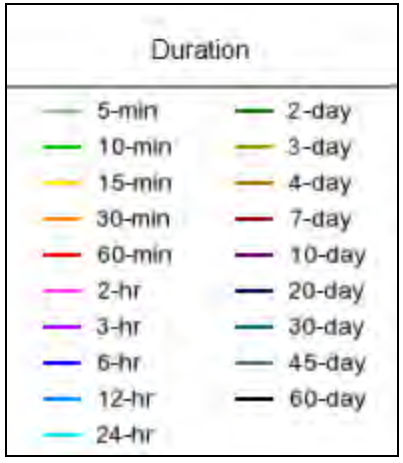
PF graphical

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









Average recurrence interval (years)

NOAA Atlas 14, Volume 8, Version 2 Created (GMT): Fri Feb 9 16:59:55 2024

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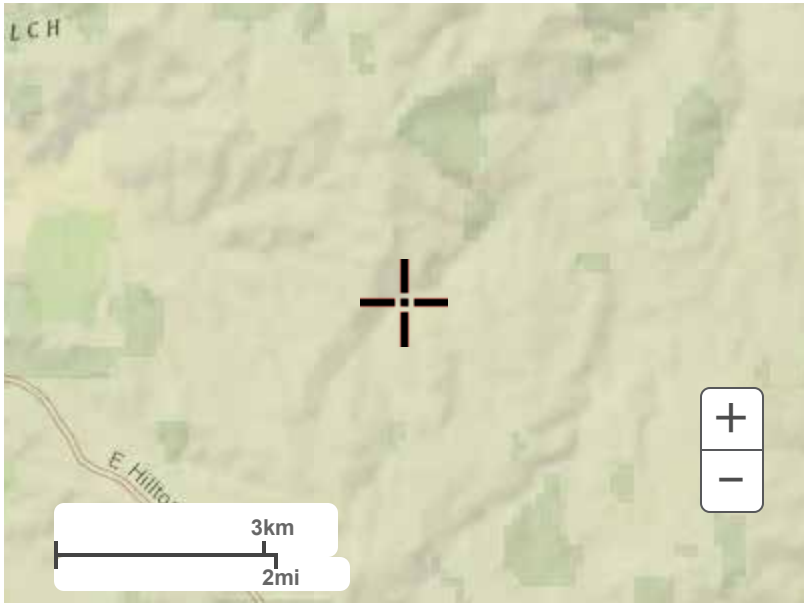
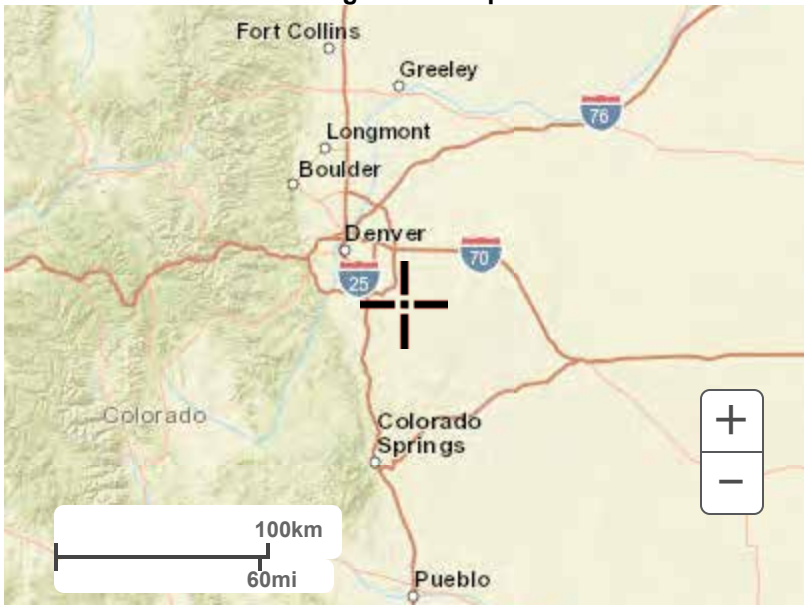
Maps & aerials

Small scale terrain

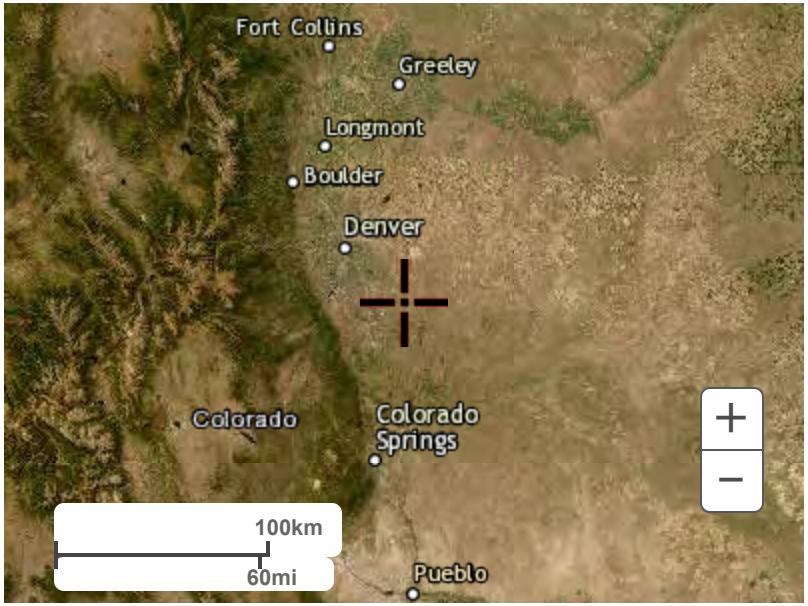


Large scale terrain

Large scale map



Large scale aerial



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

Disclaimer

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)

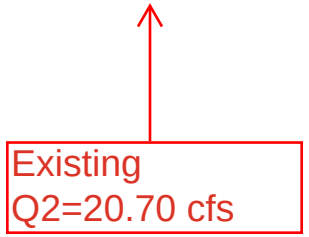
Existing 2-yr Storm

								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



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)

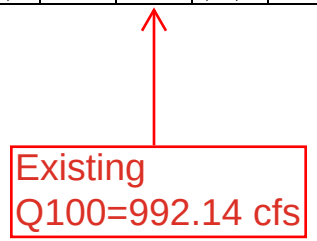
Proposed 100-Yr Storm

								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



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)

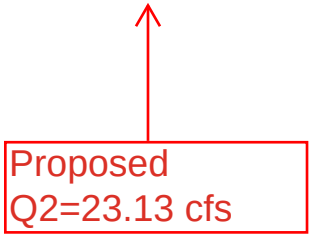
Proposed 2-Yr Storm

								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



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)

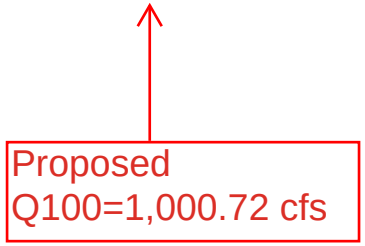
Proposed 100-Yr Storm

								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



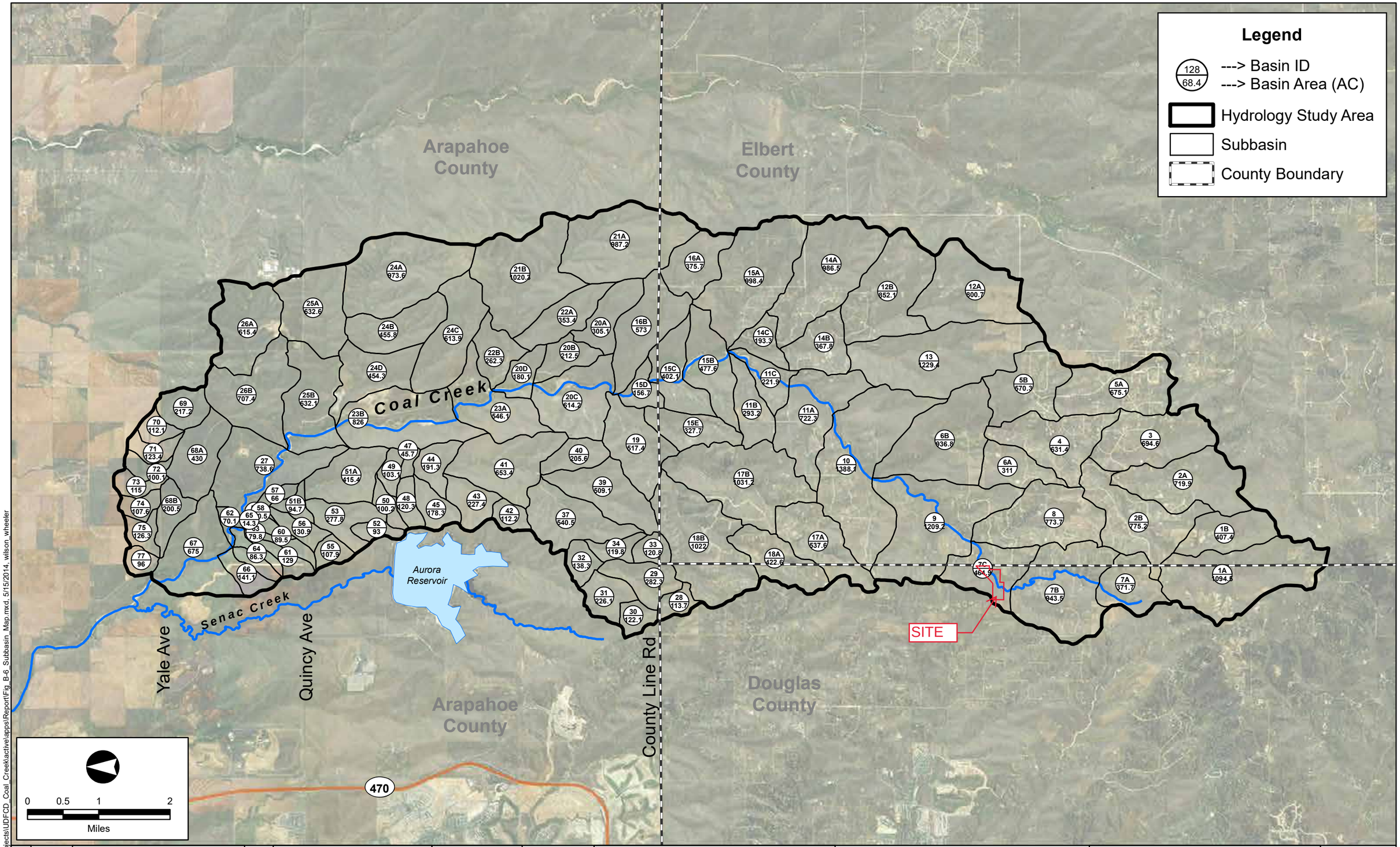
Comment	100 Year NOAA Raingage				
1Hr Depth	2.34	inches	2hr Depth	2.77	inches
6Hr Depth	3.6	inches	3hr Depth	3.09	inches
Correction Area	2.4546875	Sq. Mi.			
Return Period	100	Years			

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



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

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

MATCHLINE SEE SHEET B-9-B

SITE

Co Rd 01

Co Rd 166

Co Rd 166

C12A
C6B
C8
C7B
C6A
C5
C5A
C3
C2
C1
C7A

N

1500 0 1500 3000
SCALE IN FEET
ORIGINAL SCALE

No.	DATE	DESCRIPTION	APPR.

Matrix DESIGN GROUP

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

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
****

Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity 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

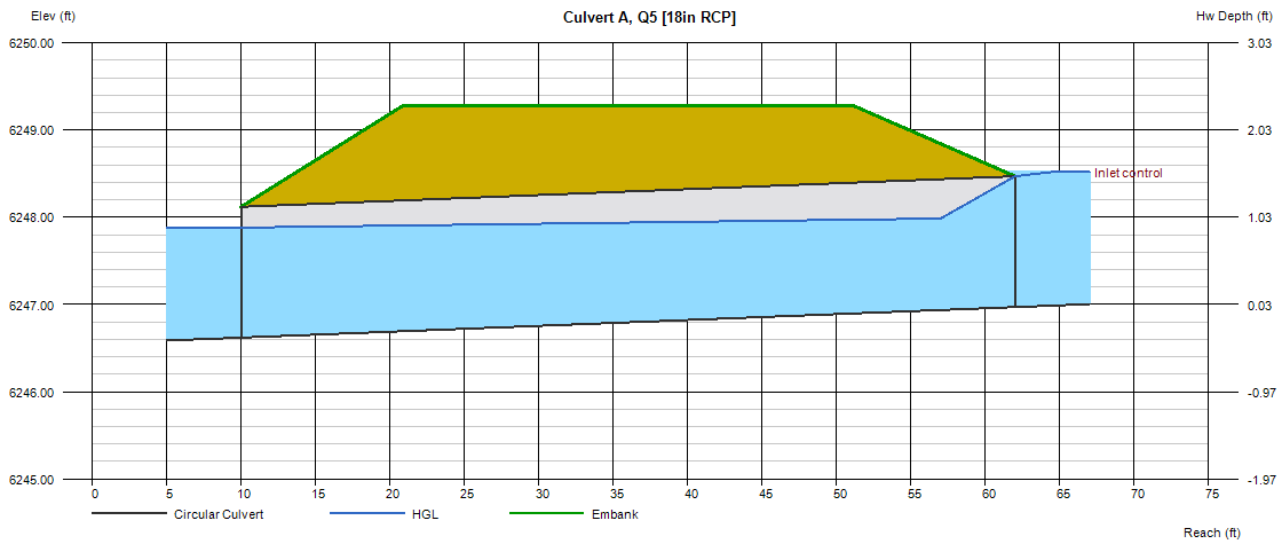
Top Elevation (ft)	=	6249.28
Top Width (ft)	=	30.24
Crest Width (ft)	=	16.00

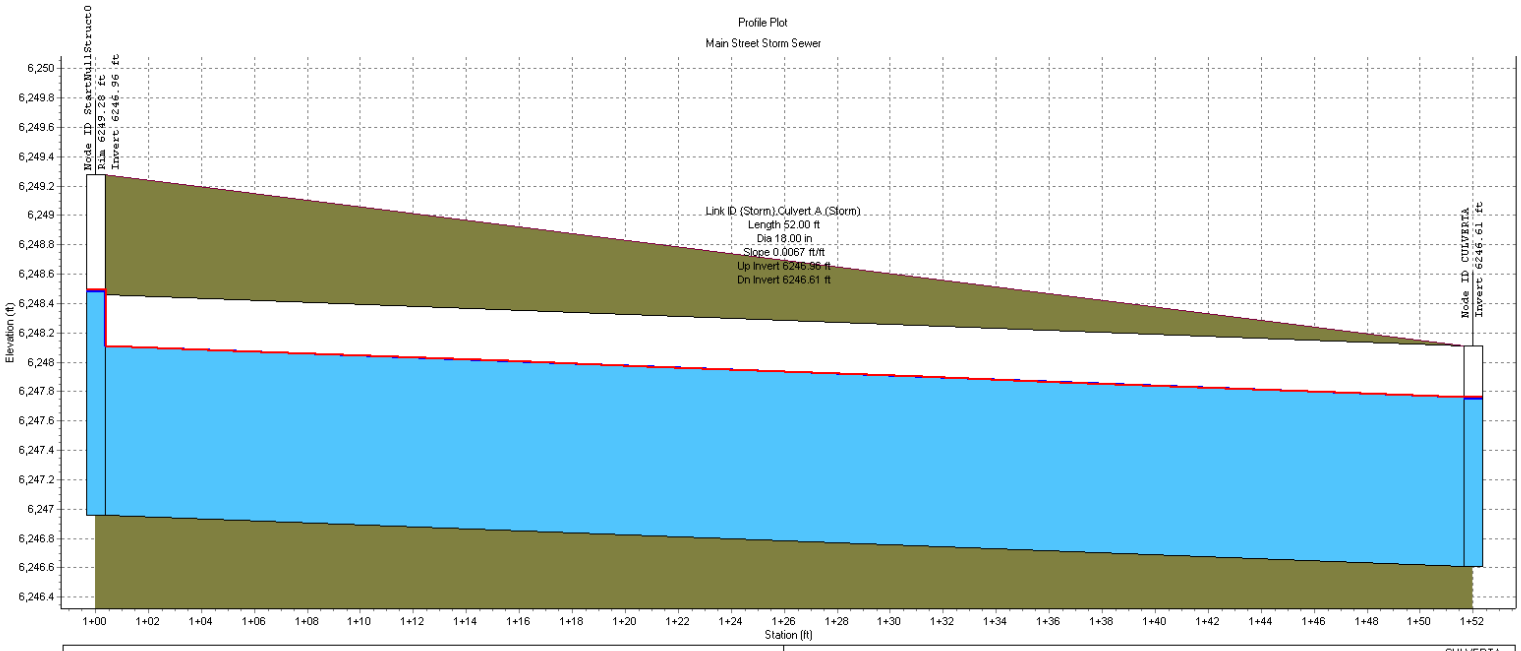
Calculations

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

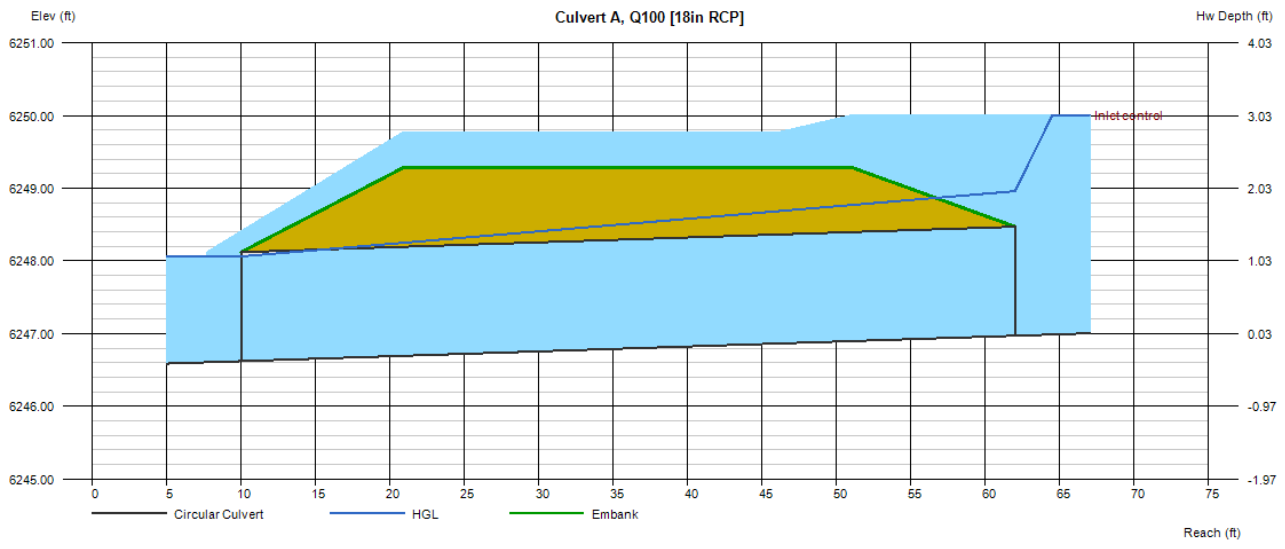
Top Elevation (ft)	=	6249.28
Top Width (ft)	=	30.24
Crest Width (ft)	=	16.00

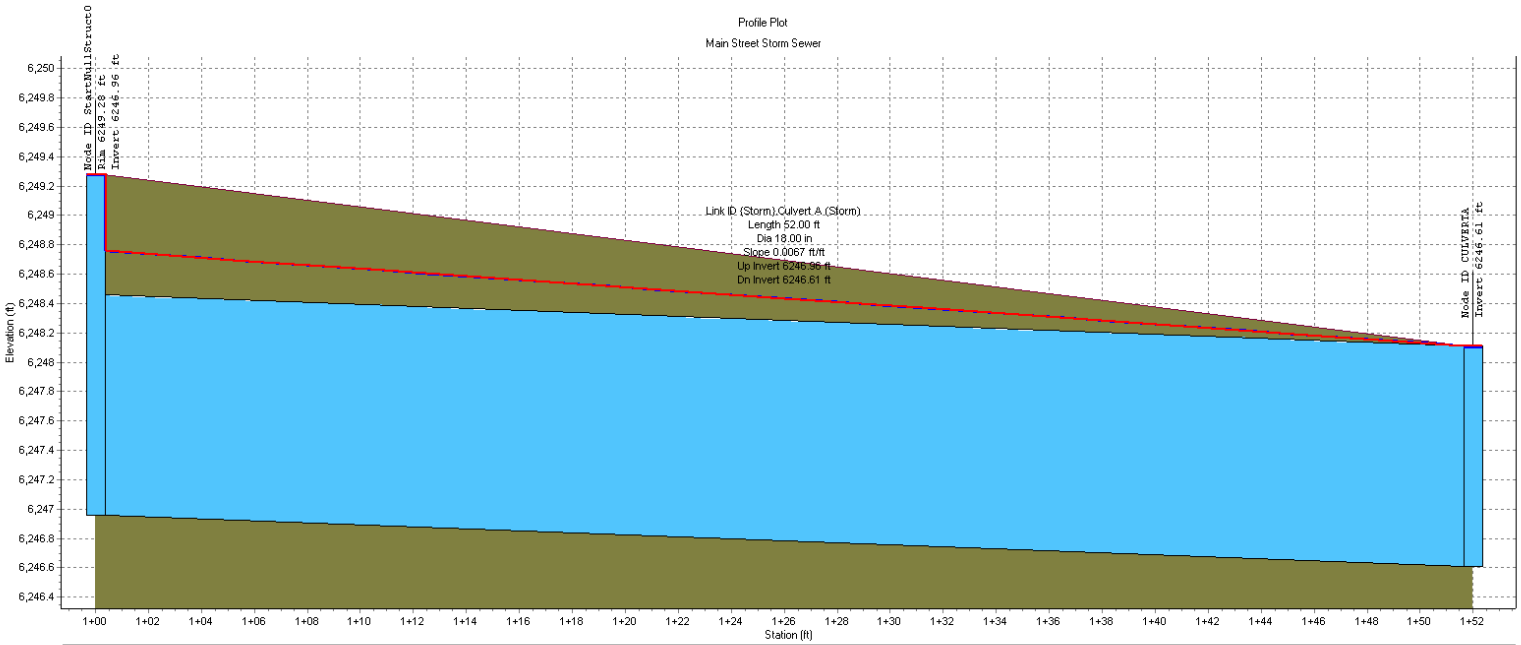
Calculations

Qmin (cfs)	=	44.13
Qmax (cfs)	=	44.13
Tailwater Elev (ft)	=	(dc+D)/2

Highlighted

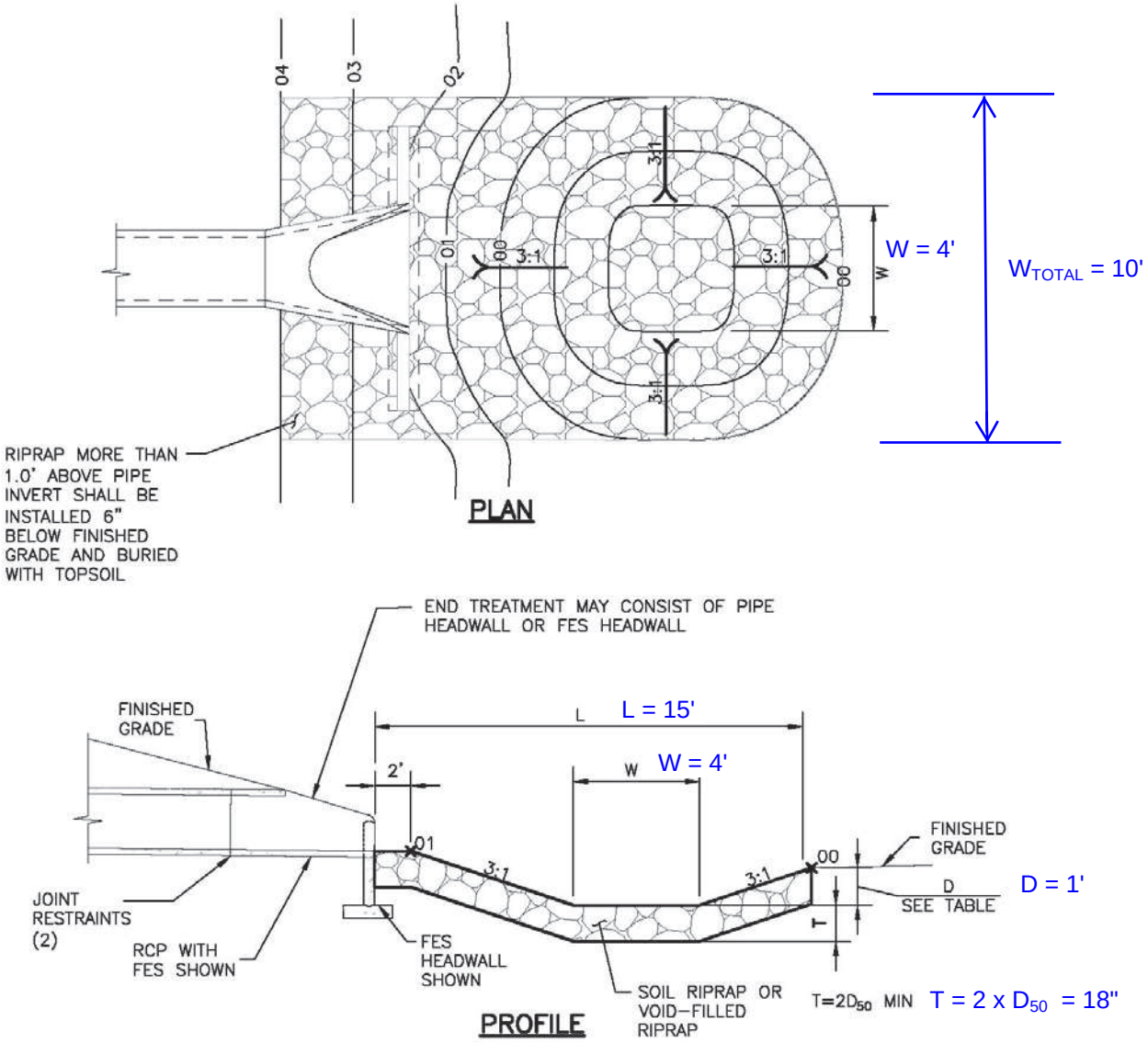
Qtotal (cfs)	=	44.13
Qpipe (cfs)	=	14.05
Qovertop (cfs)	=	30.08
Veloc Dn (ft/s)	=	8.06
Veloc Up (ft/s)	=	7.95
HGL Dn (ft)	=	6248.06
HGL Up (ft)	=	6248.96
Hw Elev (ft)	=	6250.00
Hw/D (ft)	=	2.02
Flow Regime	=	Inlet Control





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



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

$$H_a = \frac{(H + Y_n)}{2}$$ 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)

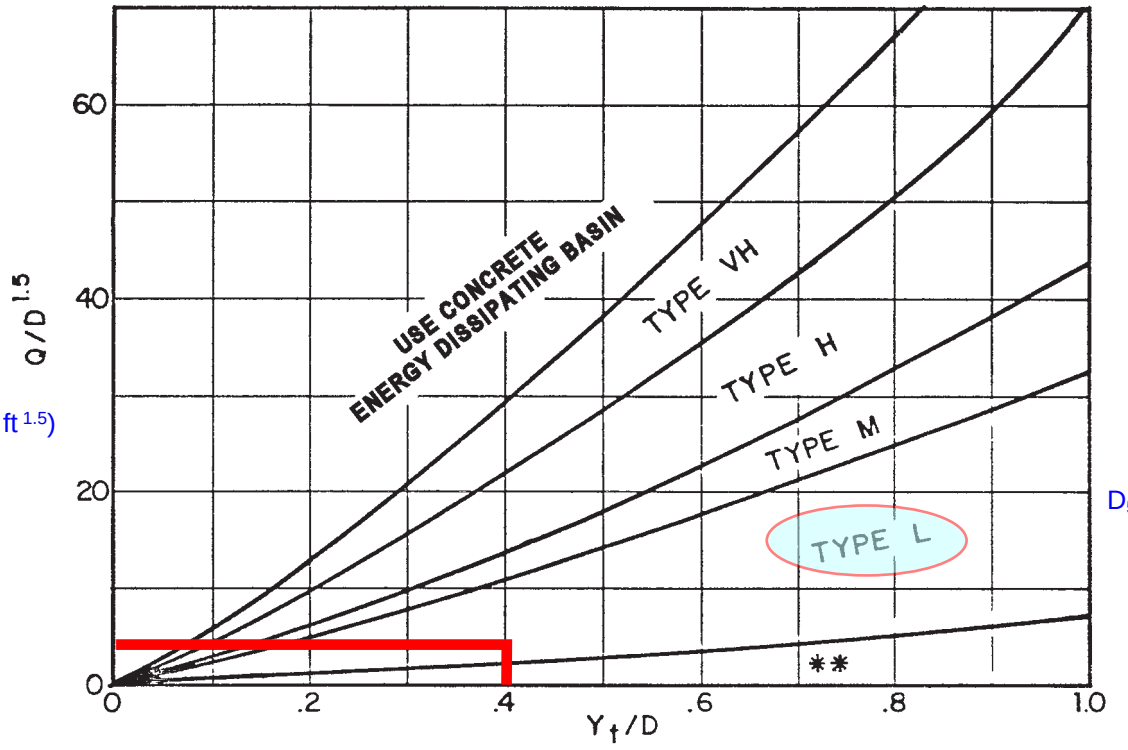
D_c = diameter of circular culvert (ft)

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

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

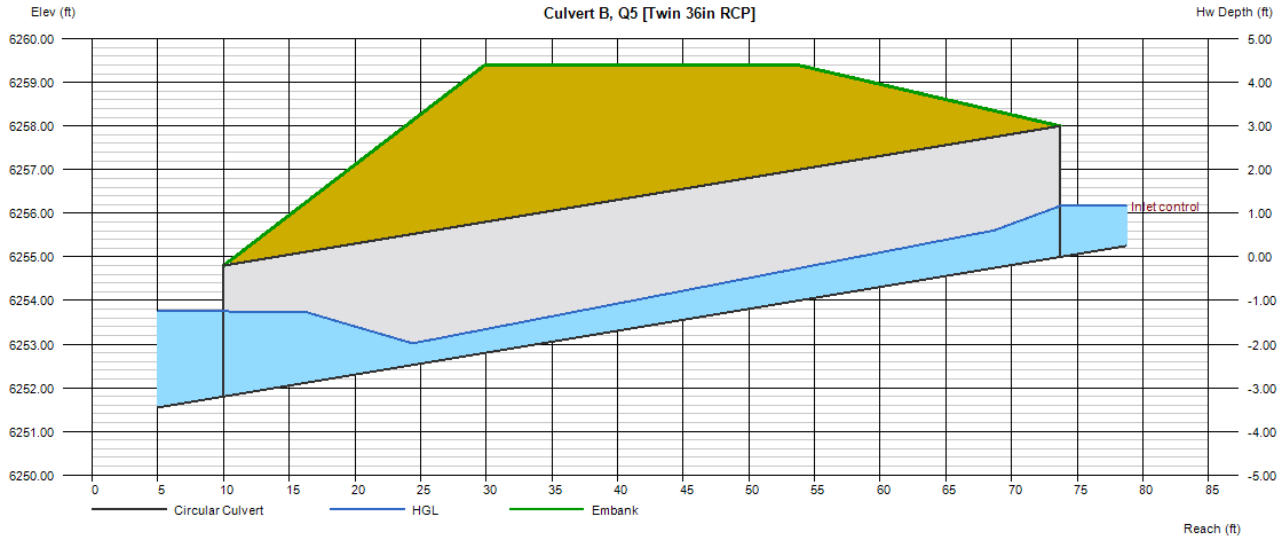
Top Elevation (ft)	=	6259.39
Top Width (ft)	=	24.00
Crest Width (ft)	=	50.00

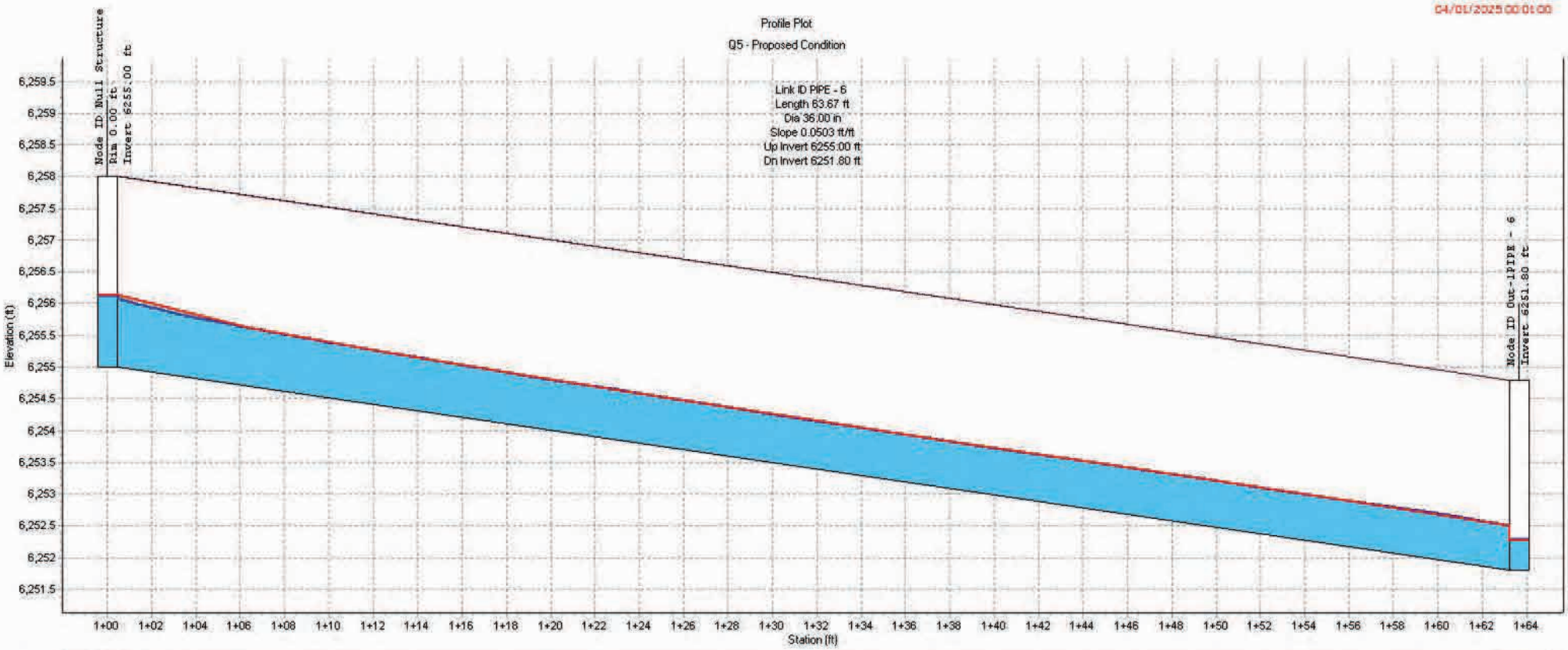
Calculations

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

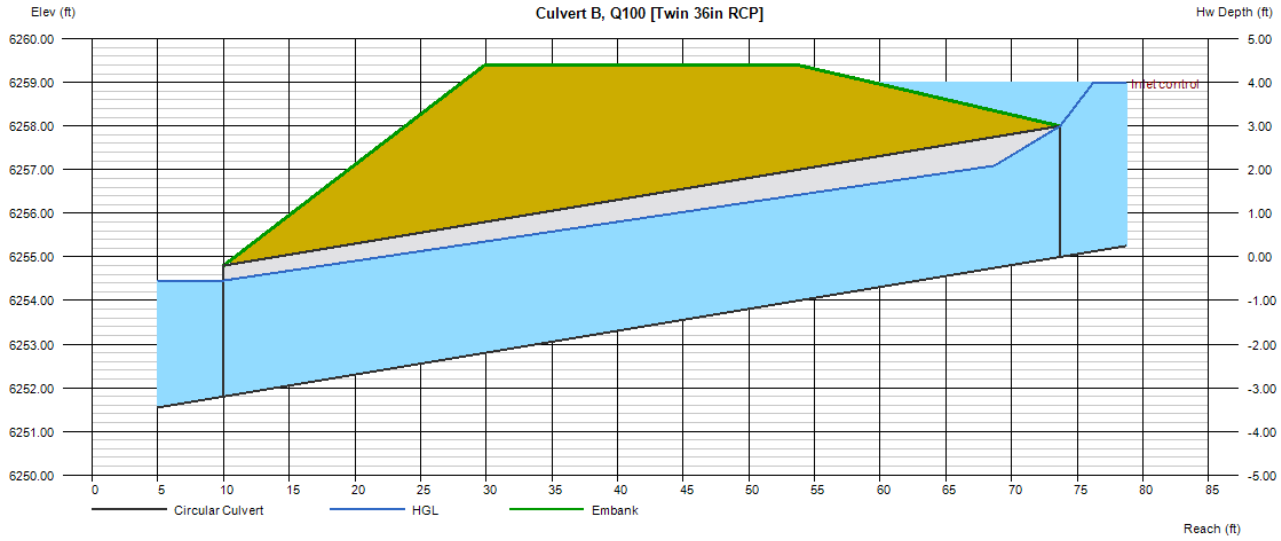
Top Elevation (ft)	=	6259.39
Top Width (ft)	=	24.00
Crest Width (ft)	=	50.00

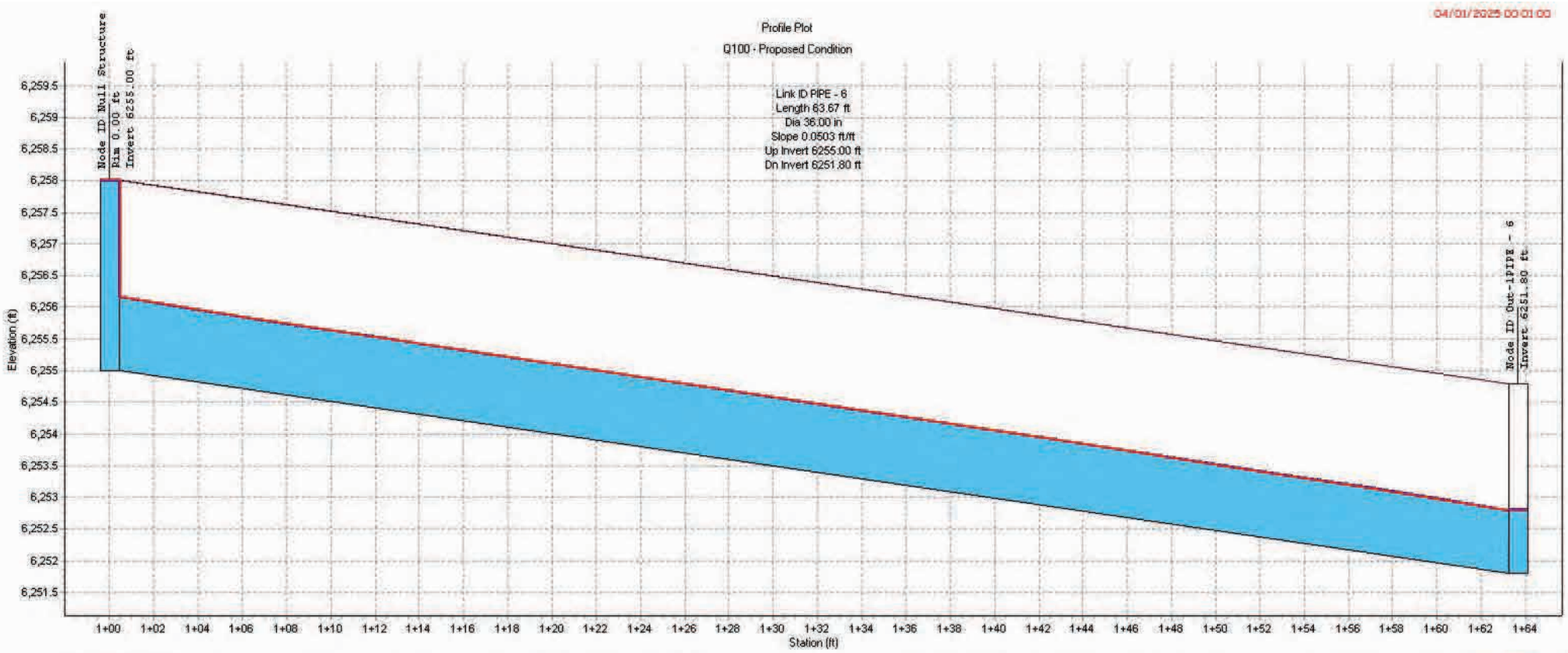
Calculations

Qmin (cfs)	=	101.46
Qmax (cfs)	=	101.46
Tailwater Elev (ft)	=	(dc+D)/2

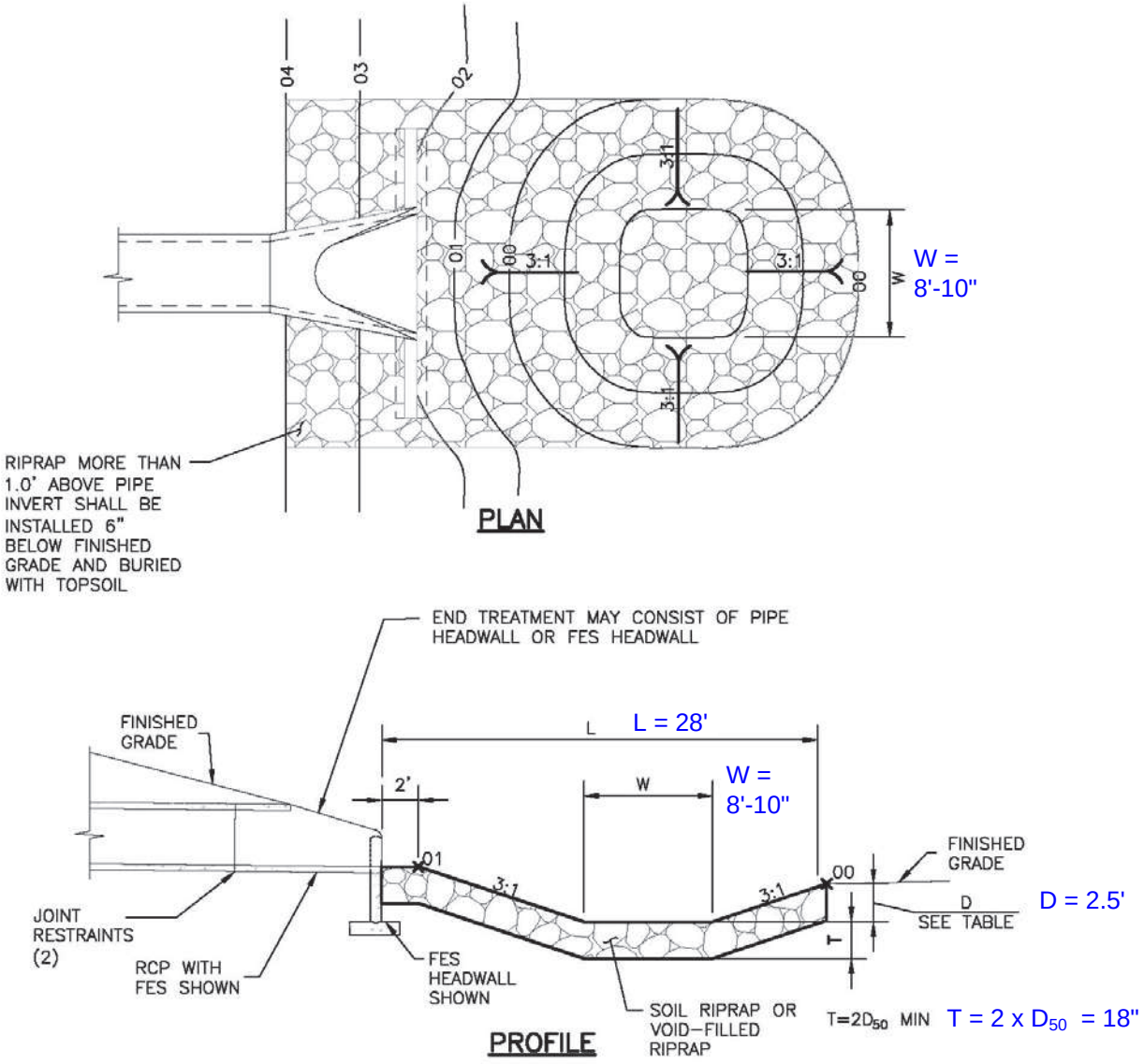
Highlighted

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	



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

$$H_a = \frac{(H + Y_n)}{2}$$ 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)

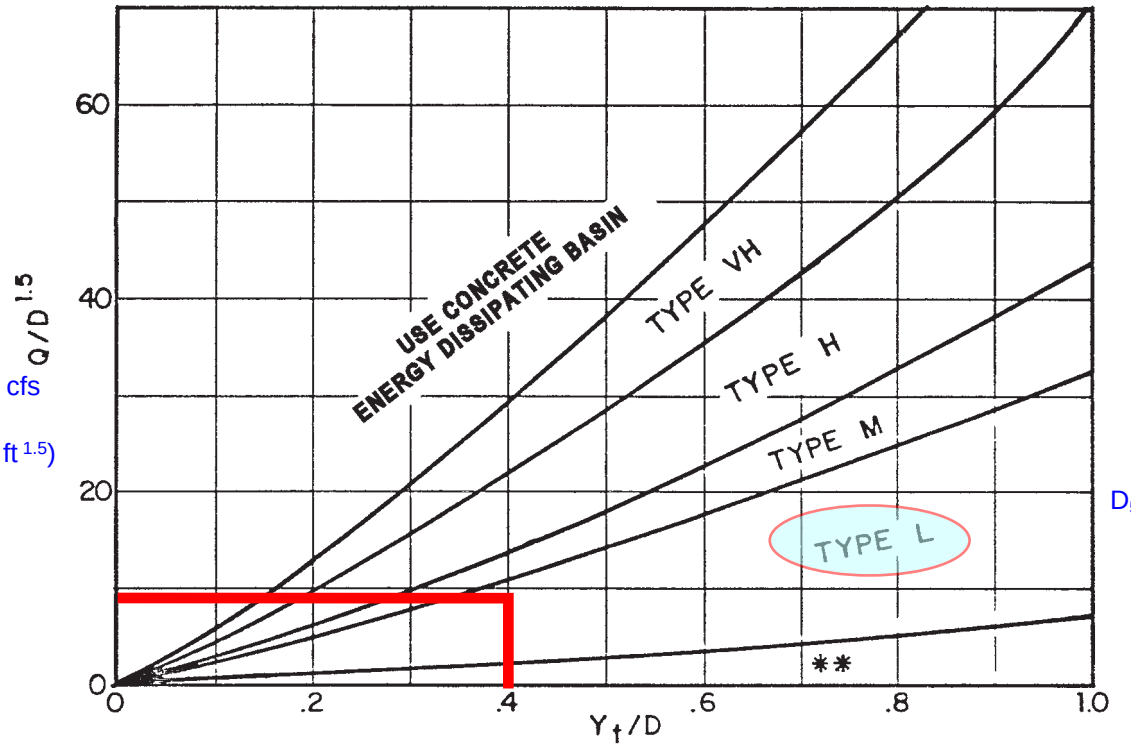
D_c = diameter of circular culvert (ft)

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

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Friday, Jan 17 2025

Roadside Ditch Capacity - Basin PR-2, Q5

Trapezoidal

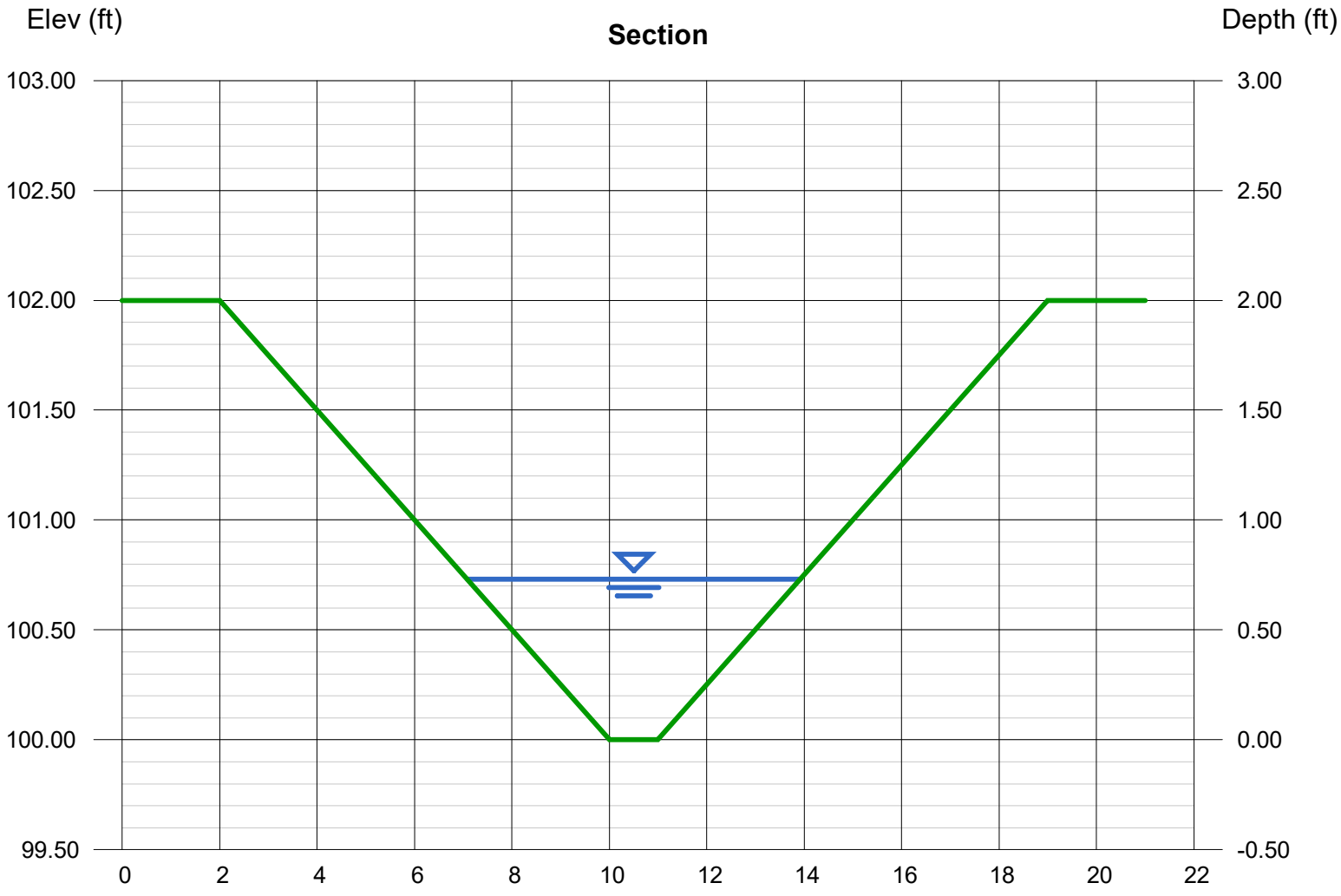
Bottom Width (ft)	= 1.00
Side Slopes (z:1)	= 4.00, 4.00
Total Depth (ft)	= 2.00
Invert Elev (ft)	= 100.00
Slope (%)	= 3.80
N-Value	= 0.027

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

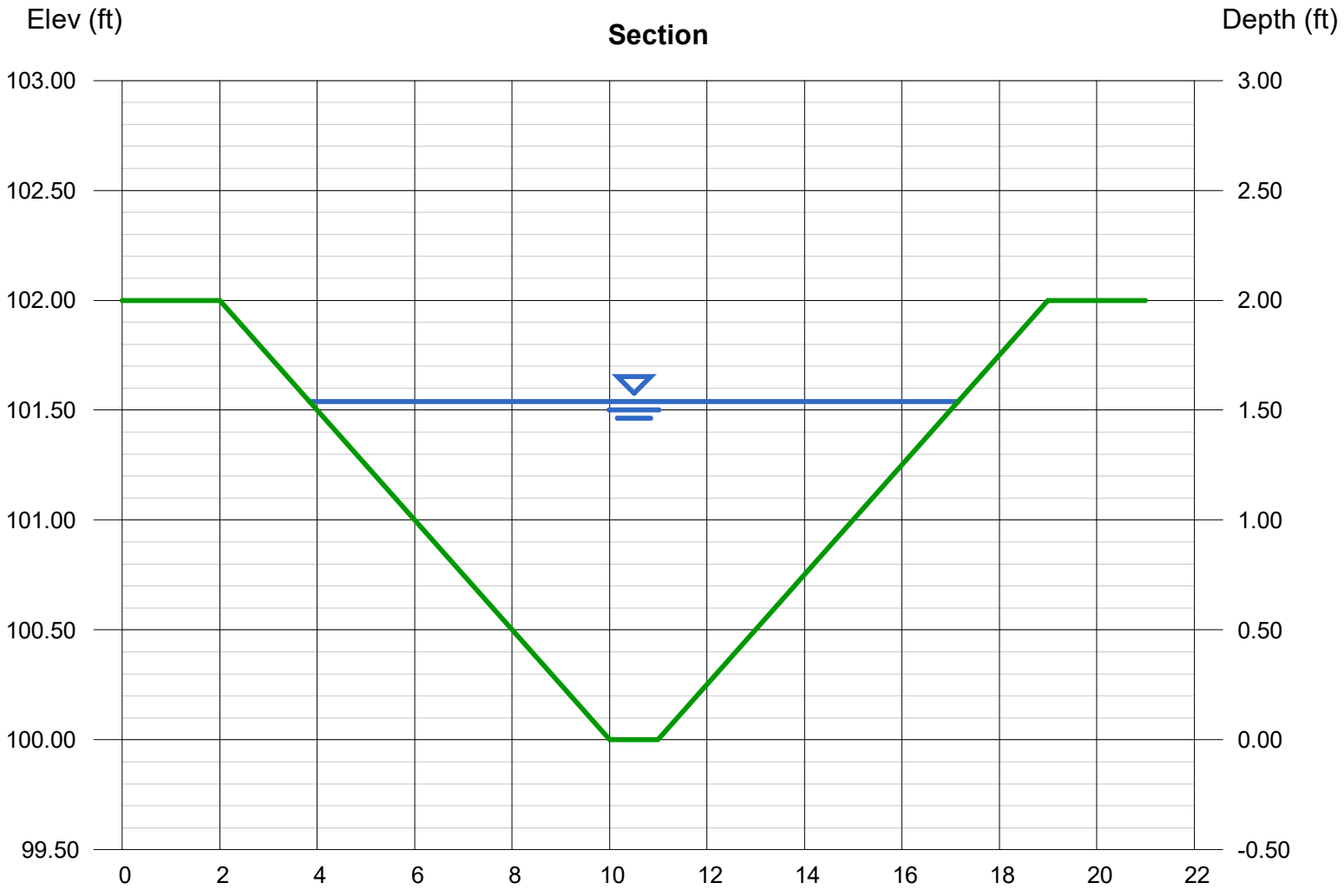
Bottom Width (ft)	= 1.00
Side Slopes (z:1)	= 4.00, 4.00
Total Depth (ft)	= 2.00
Invert Elev (ft)	= 100.00
Slope (%)	= 3.80
N-Value	= 0.027

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

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

Roadside Ditch Capacity - Basin PR-3, Q5

Trapezoidal

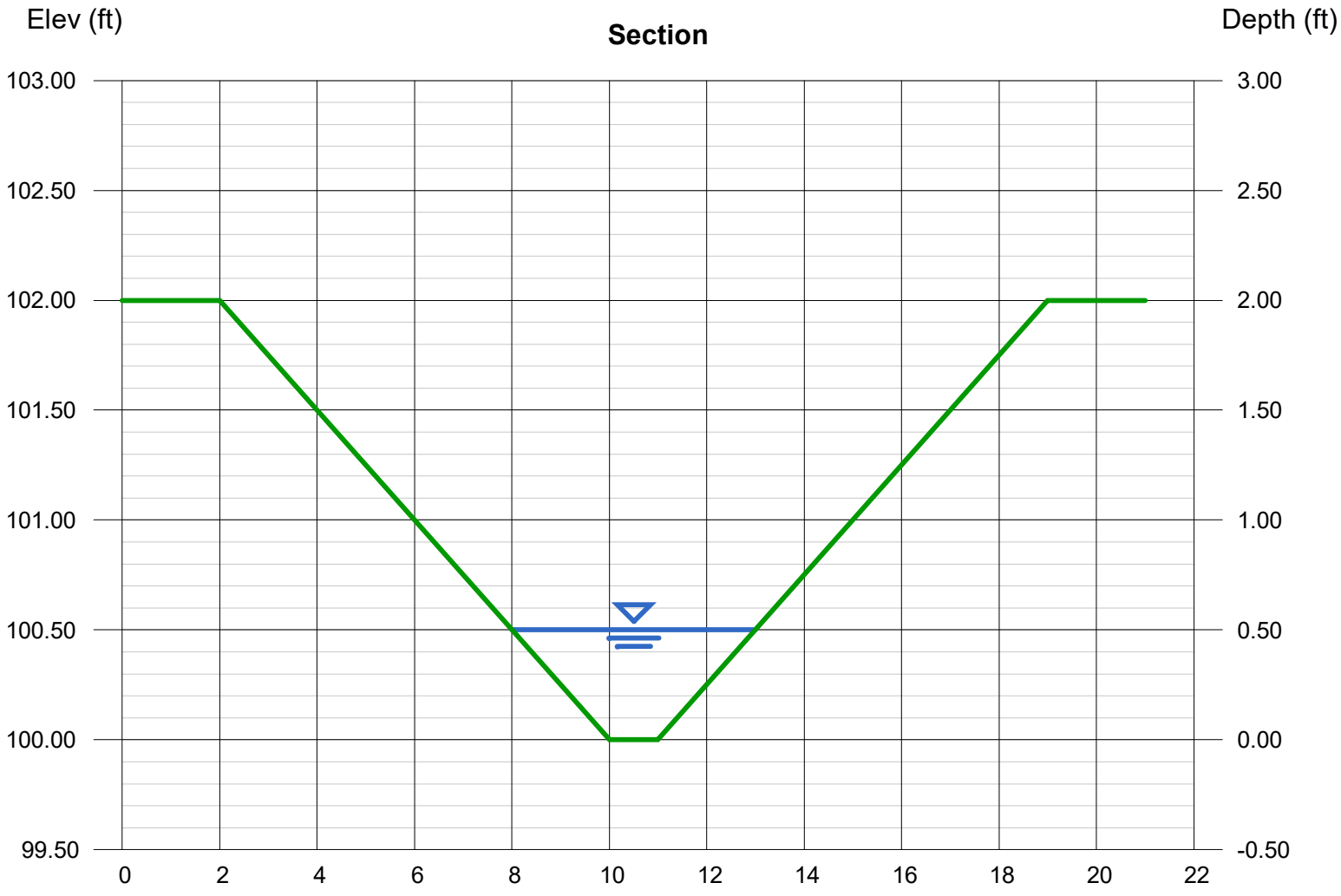
Bottom Width (ft)	= 1.00
Side Slopes (z:1)	= 4.00, 4.00
Total Depth (ft)	= 2.00
Invert Elev (ft)	= 100.00
Slope (%)	= 4.00
N-Value	= 0.027

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

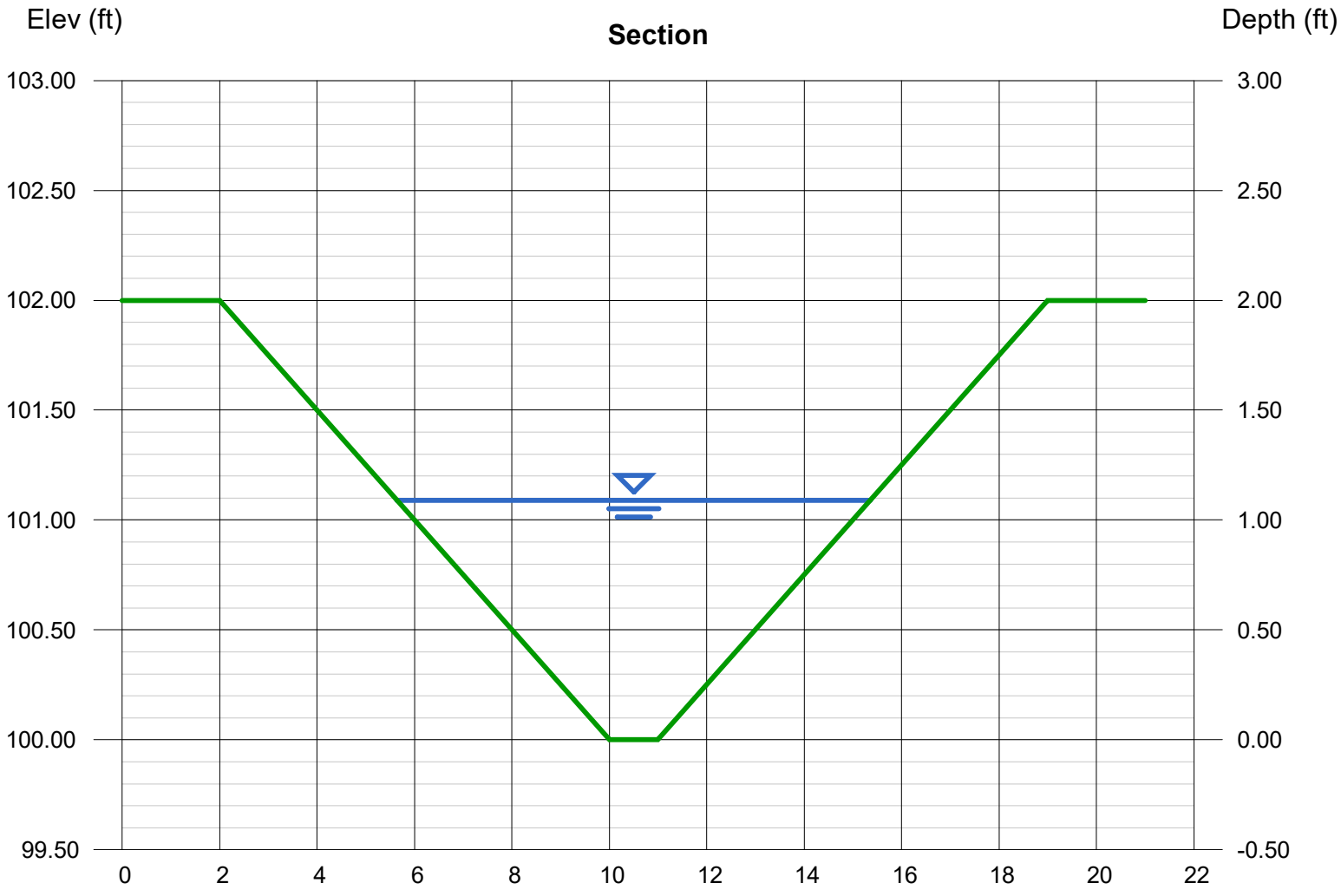
Bottom Width (ft)	= 1.00
Side Slopes (z:1)	= 4.00, 4.00
Total Depth (ft)	= 2.00
Invert Elev (ft)	= 100.00
Slope (%)	= 4.00
N-Value	= 0.027

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

LEGEND

2N CIVIL MODELED 100-YEAR FLOODPLAIN

0 100' 200'

SCALE: 1" = 100'

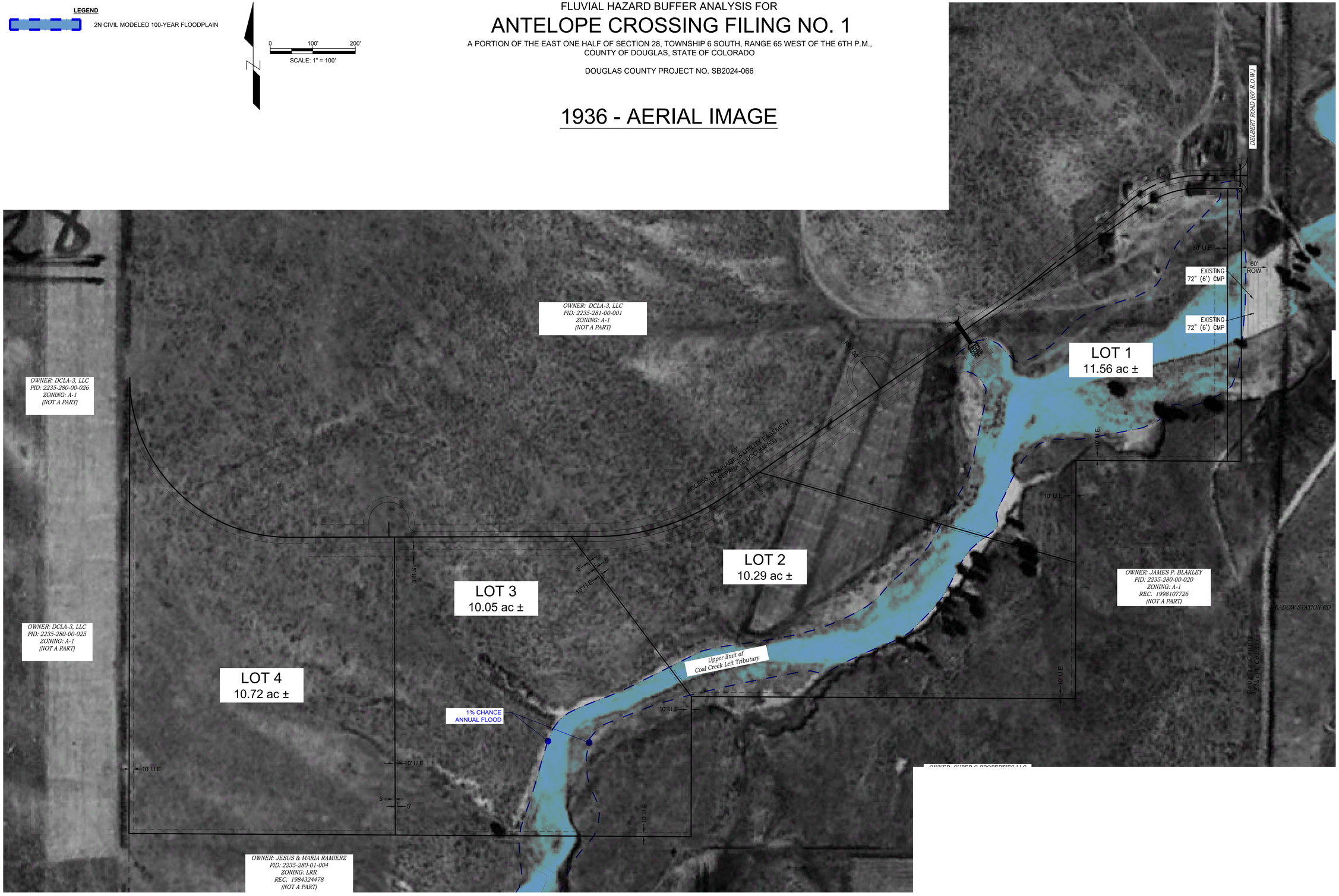
FLUVIAL HAZARD BUFFER ANALYSIS FOR

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



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:
1. ADDRESS DOUGLAS COUNTY COMMENTS — BY: TEW — DATE: 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

C:\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

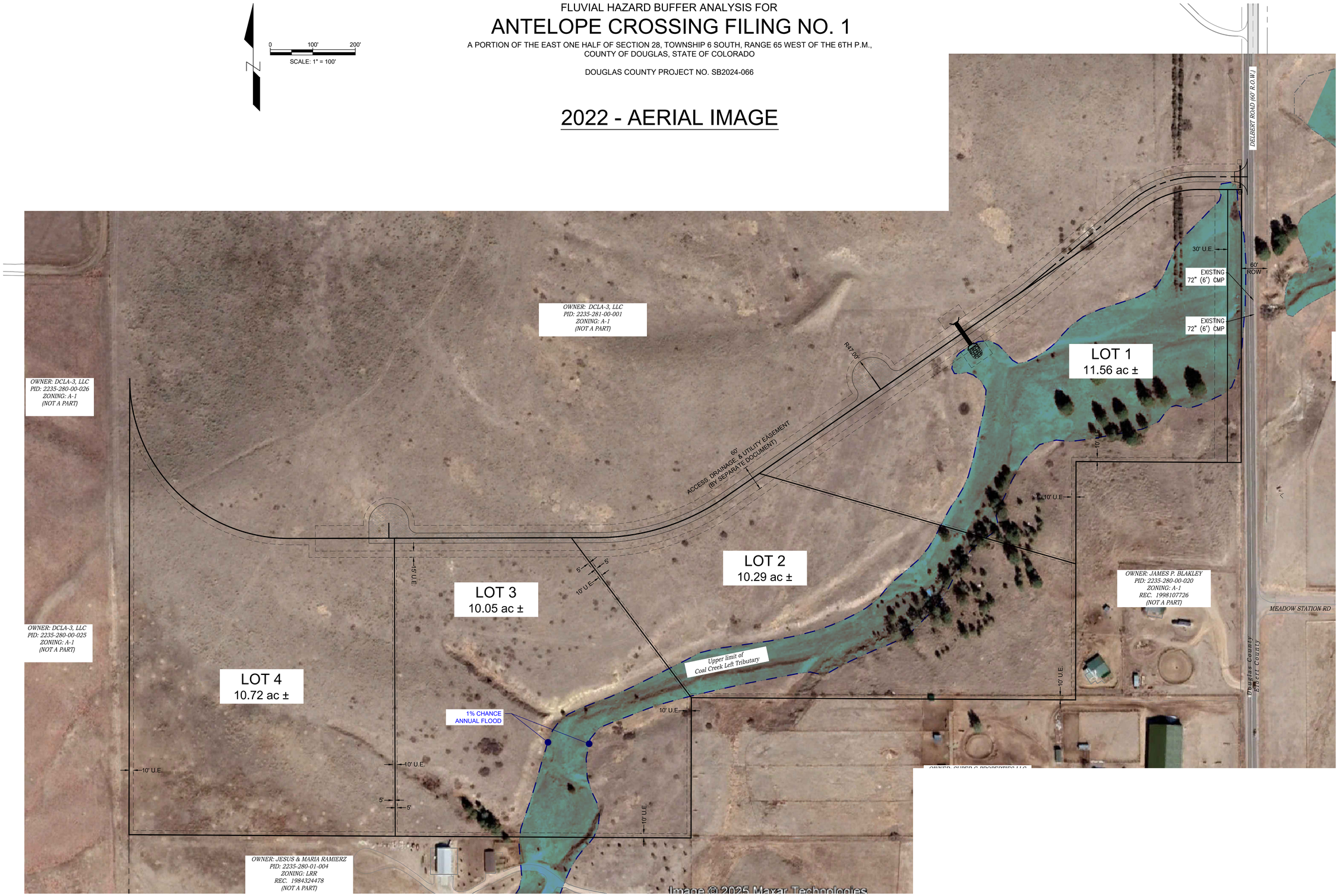
DOUGLAS COUNTY PROJECT NO. SB2024-066

2022 - AERIAL IMAGE

N

0 100' 200'

SCALE: 1" = 100'



2N CIVIL
303.925.0544
www.2ncivil.com

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

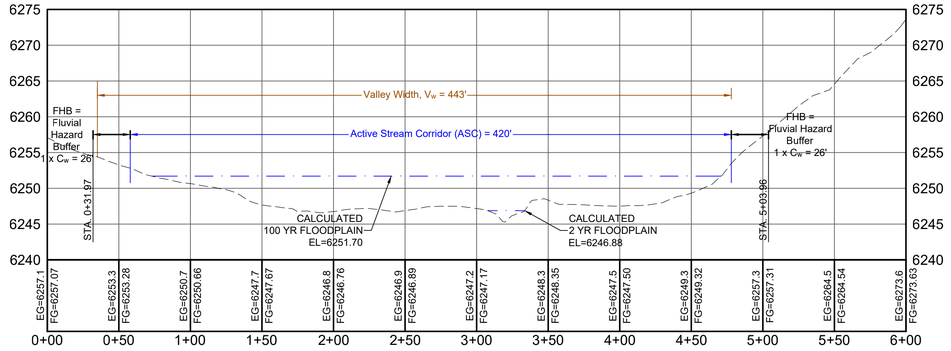
REVISIONS: BY: DATE:
1. ADDRESS DOUGLAS COUNTY COMMENTS TEW 4-18-25
2.
3.
4.

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

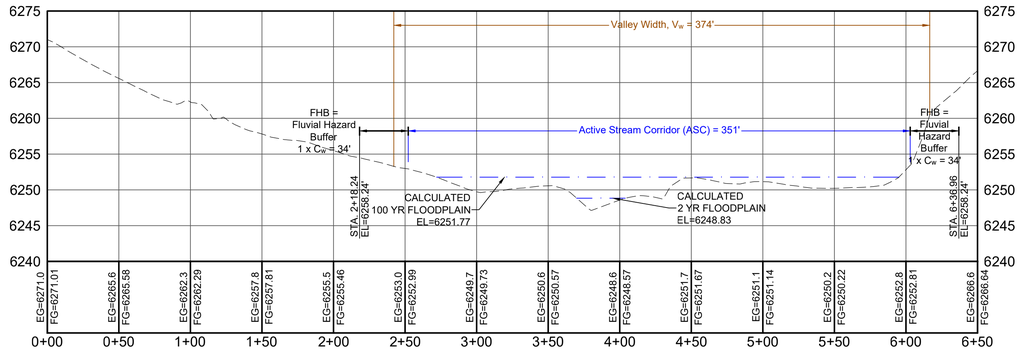
FHB Analysis Existing Condition

B

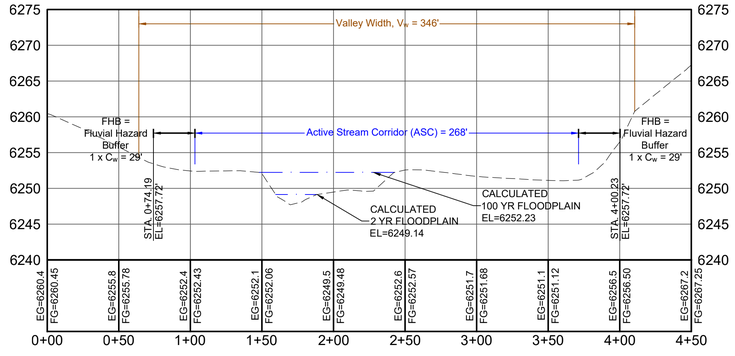
J:\Projects\24001\dwg\Drainage\Fluvial Hazard Buffer Analysis.dwg 6/4/2025



STA. 19+00 PROFILE
SCALE: (H) 1" = 50' (V) 1" = 10'
START STA: 0+00.00, END STA: 6+00.00



STA. 21+00 PROFILE
SCALE: (H) 1" = 50' (V) 1" = 10'
START STA: 0+00.00, END STA: 6+50.00



STA. 22+00 PROFILE
SCALE: (H) 1" = 50' (V) 1" = 10'
START STA: 0+00.00, END STA: 4+50.00

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

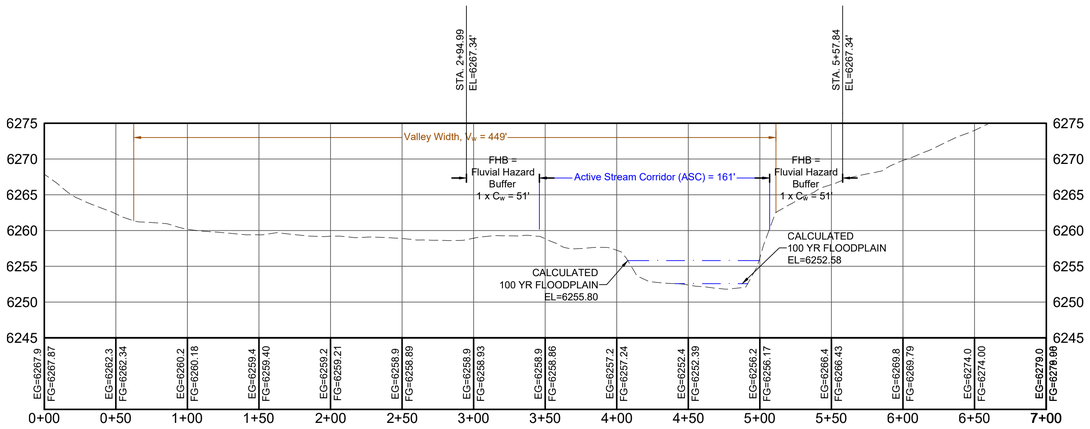
FHB Analysis Sections
CONSTRUCTION PLANS
ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

REVISIONS:	BY:	DATE:
1. ADDRESS DOUGLAS COUNTY COMMENTS	TEW	4-18-25
2.		
3.		
4.		

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

FHB Analysis Sections

2



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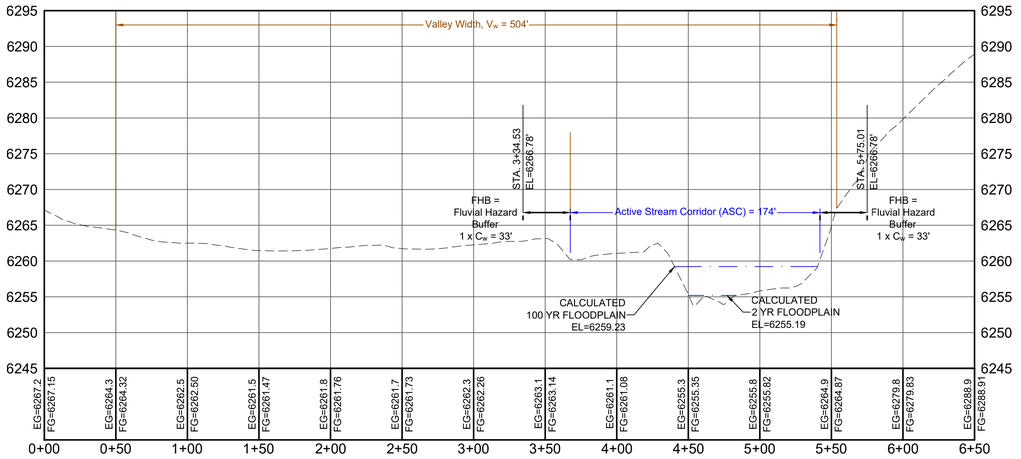

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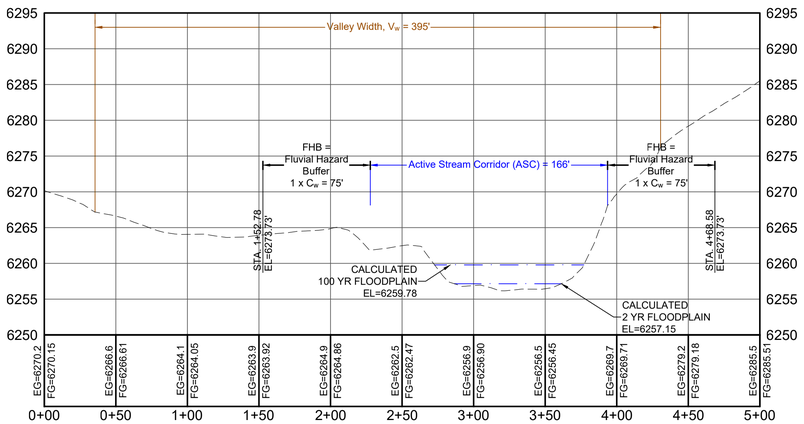

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PREPARED FOR:
DCLA-3, LLC
14205 E DAVIES AVE
CENTENNIAL, CO 80112

FHB Analysis Sections
CONSTRUCTION PLANS
ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

REVISIONS:
1. ADDRESS DOUGLAS COUNTY COMMENTS
2.
3.
4.

BY: TEW
DATE: 4-18-25

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

FHB Analysis Sections

3

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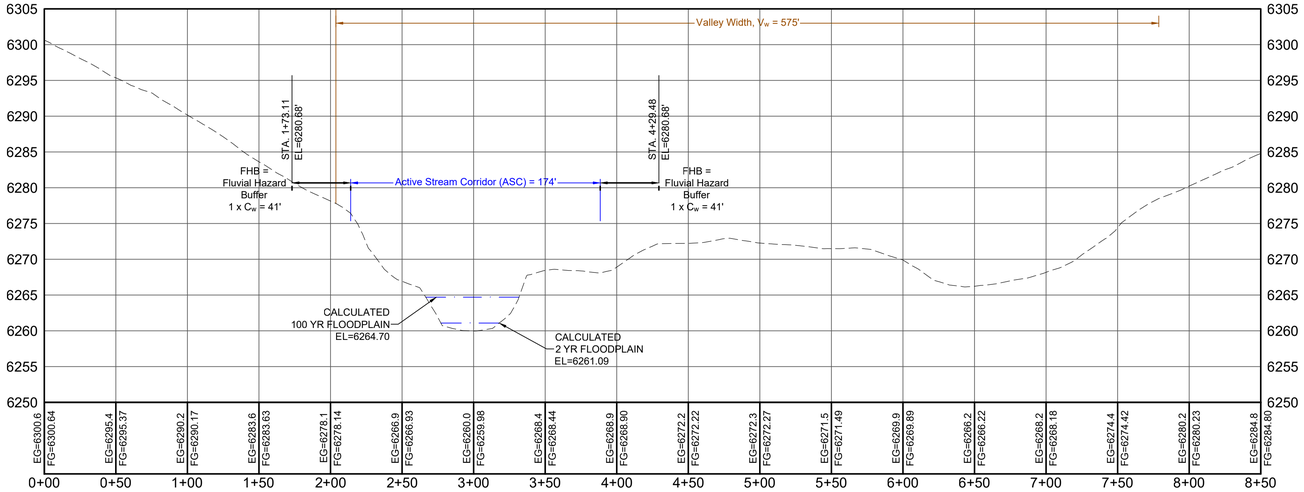

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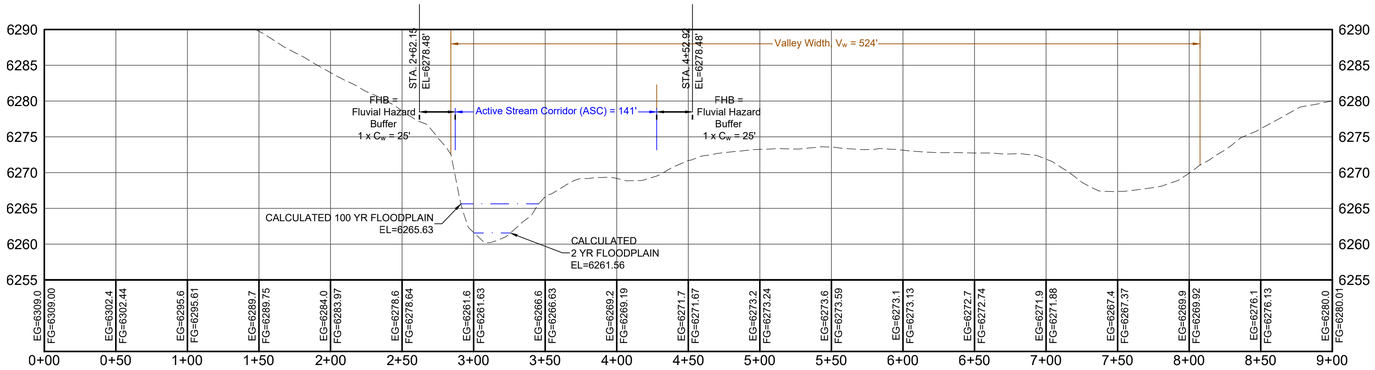

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FHB Analysis Sections
CONSTRUCTION PLANS
ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

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1. ADDRESS DOUGLAS COUNTY COMMENTS	TEW	4-18-25
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3.		
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PROJECT NUMBER:	24001		
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DESIGNED BY:	TEW	REVIEWED BY:	EPT

FHB Analysis Sections

4

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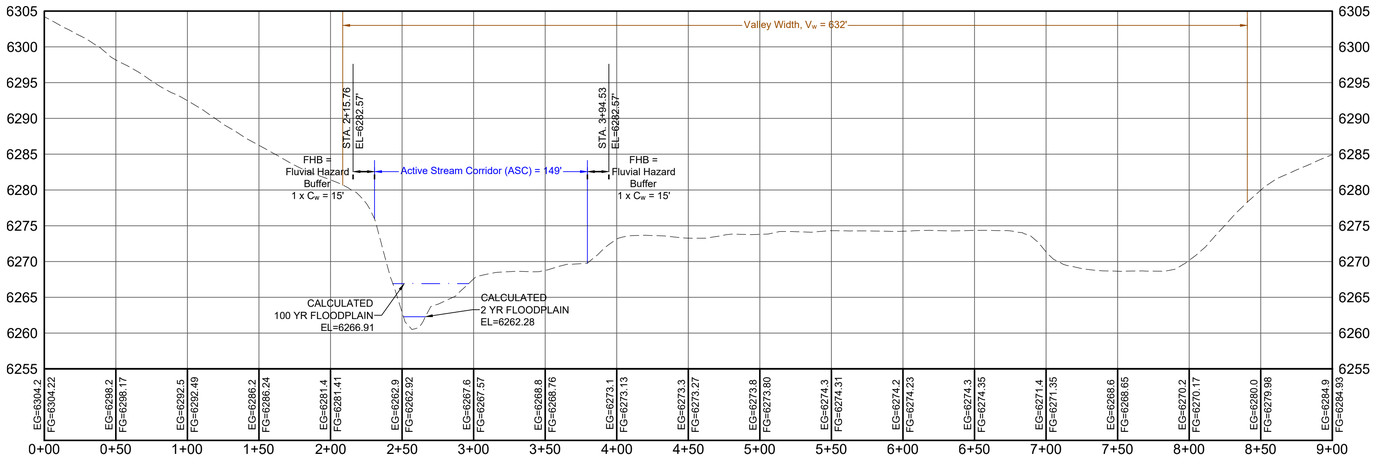

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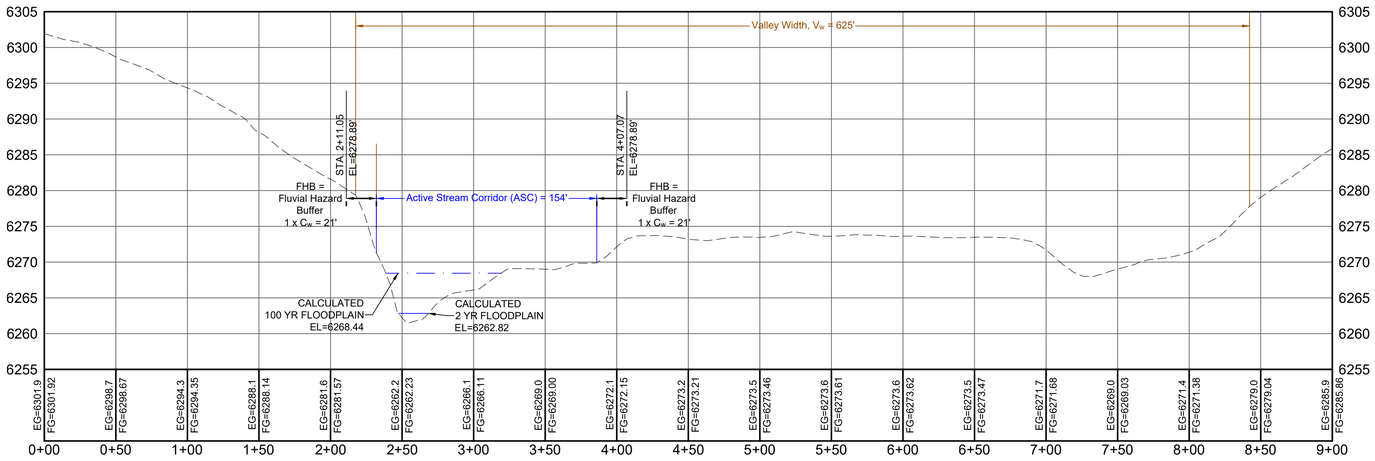

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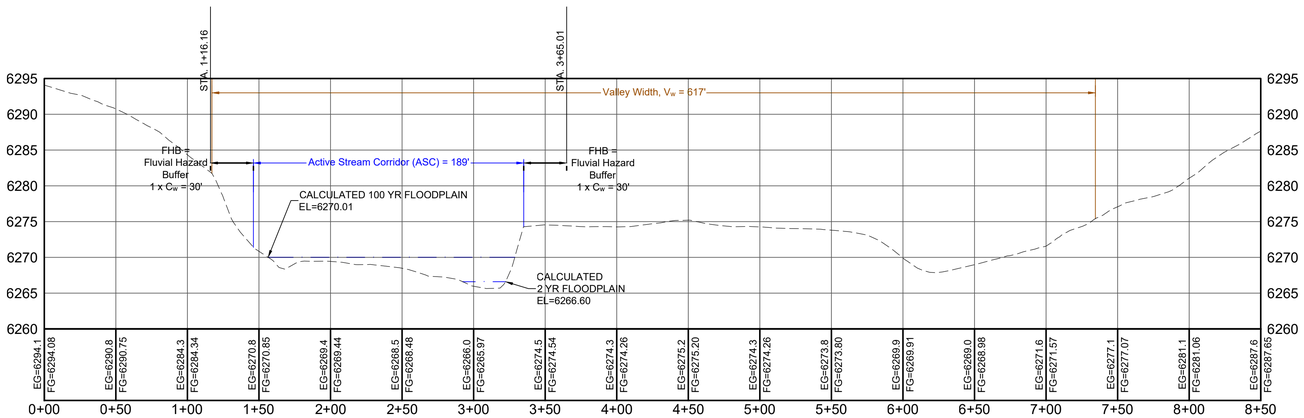

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START STA: 0+00.00, END STA: 8+50.00

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FHB Analysis Sections
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BY: TEW DATE: 4-18-25

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

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

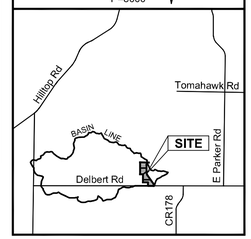
LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING FENCE
- 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 | % I = 0.00 — IMPERVIOUS VALUE
- BASIN AREA
- 1 — BASIN DESIGN POINT
- RUNOFF FLOW ARROW
- EXISTING BASIN LIMIT

KEYMAP
1"=8000'



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

EX-1
1,571 ac | % I = 7.94

UPPER REACH COAL CREEK LEFT TRIBUTARY

PROJECT BOUNDARY

DELBERT ROAD

SINGINING HILLS ROAD

PEARSON RANCH LOOP

MEADOW STATION ROAD

EX. 72" CMP

EX. 72" CMP

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

EXISTING BASIN PLAN
ANTELOPE CROSSING
DOUGLAS COUNTY, COLORADO

BY: TEW DATE: 06-23-24

REVISIONS:
1. DOUGLAS COUNTY COMMENTS
2.
3.
4.

PROJECT NUMBER: 24001
ISSUED DATE: 06-23-24
DESIGNED BY: TEW
REVIEWED BY: EPT

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

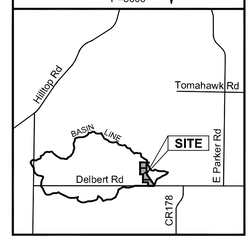
LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- 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 | % I = 0.00 — IMPERVIOUS VALUE
- BASIN AREA
- 1 — BASIN DESIGN POINT
- RUNOFF FLOW ARROW
- PROPOSED BASIN LIMIT

KEYMAP 1"=8000'



0 500' 1000'
SCALE: 1" = 500'

Design Point	Area (ac)	Contributing Basins	Q_2 (cfs)	Q_{100} (cfs)
1	1,570.89	PR-1	23.13	1,000.72

PR-1
1,571 ac | % I = 8.75

SINGINING HILLS ROAD
PEARSON RANCH LOOP
DELBERT ROAD
MEADOW STATION ROAD
PROJECT BOUNDARY
PROPOSED 24' GRAVEL ACCESS ROAD
UPPER REACH COAL CREEK LEFT TRIBUTARY
EX. 72" CMP
EX. 72" CMP
EX. 36" CMP
6424.00
6371.00
6516.55
6275.00

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PROPOSED BASIN PLAN OVERALL

ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

REVISIONS:
1. DOUGLAS COUNTY COMMENTS
2.
3.
4.

BY: TEW DATE: 11-27-24

PROJECT NUMBER: 24001
ISSUED DATE: 08-23-24
DESIGNED BY: TEW
REVIEWED BY: EPT

PROPOSED BASIN PLAN OVERALL

2

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

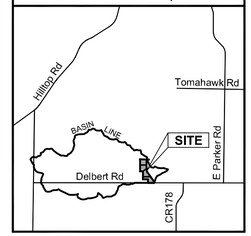
LEGEND

- 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 | 0.0 ac | .00 | .00
BASIN NAME
2 YR RUNOFF COEFFICIENT
100 YR RUNOFF COEFFICIENT
BASIN AREA
1 BASIN DESIGN POINT
RUNOFF FLOW ARROW
EXISTING BASIN LIMIT

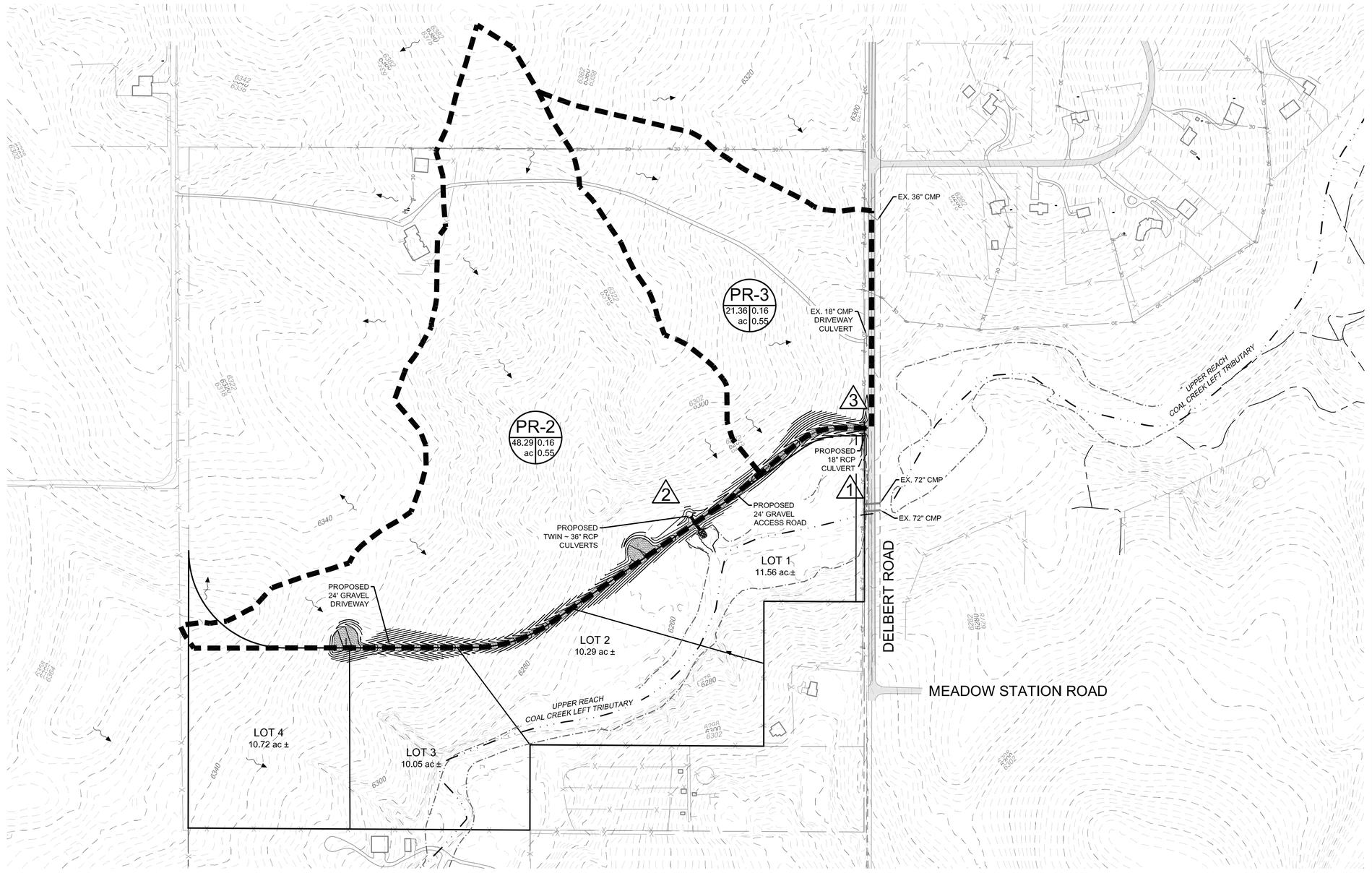
KEYMAP
1"=8000'



N

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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PREPARED FOR:
DCLA-3 LLC
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CENTENNIAL, CO 80112

PROPOSED DRAINAGE BASIN PLAN DETAIL

ANTELOPE CROSSING FILING NO. 1
DOUGLAS COUNTY, COLORADO

BY: TEW DATE: 11-27-24

REVISIONS:
1. DOUGLAS COUNTY COMMENTS
2.
3.
4.

PROJECT NUMBER: 24001
ISSUED DATE: 08-23-24
DESIGNED BY: TEW
REVIEWED BY: EPT

PROPOSED DRAINAGE BASIN PLAN DETAIL

3

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

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	Bottom	Pumping Rate cfs	(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.

CENTRAL FILES

RECEIVED
APR 27 2000
WATER RESOURCES
STATE ENGINEER
COLO.

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

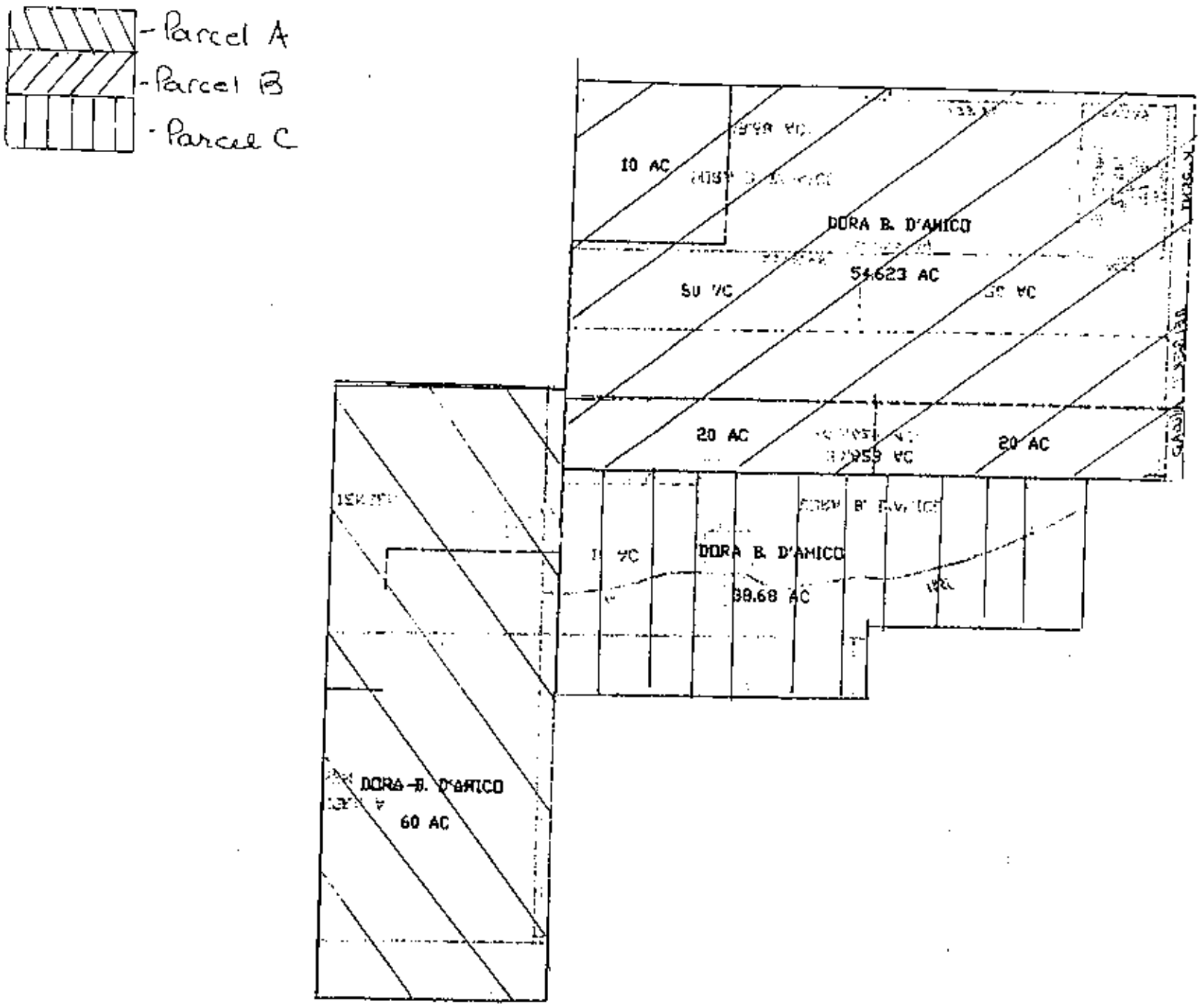
97CW095

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"


Sec 28 T6S R65W Douglas County
- Parcel A
- Parcel B
- Parcel C
N
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DORA B. D'AMICO
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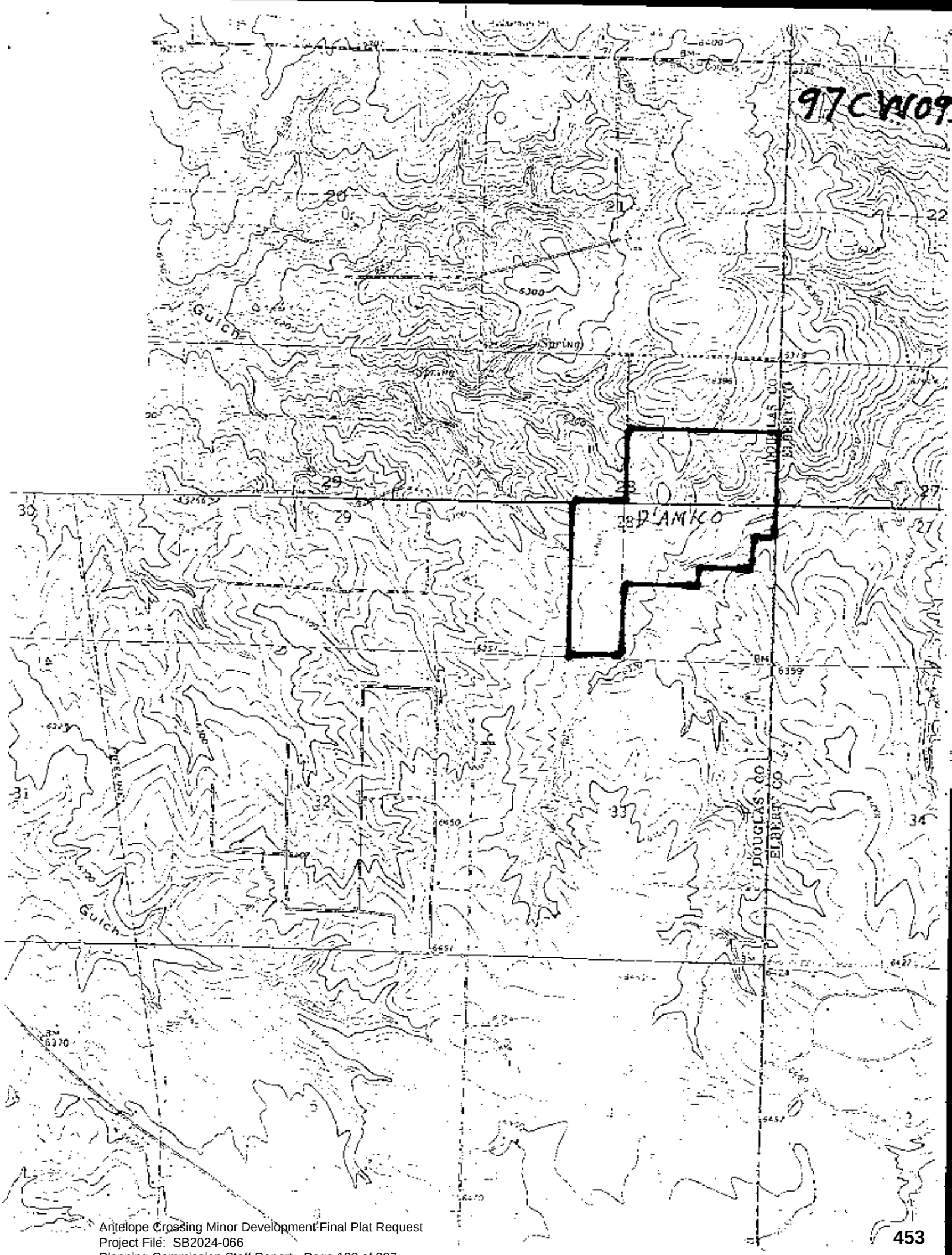
20 AC
20 AC
DORA B. D'AMICO
38.68 AC
DORA B. D'AMICO
60 AC

97CW095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Spring
DOUGLAS CO
ELBERT CO
BM
6359
6370

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.

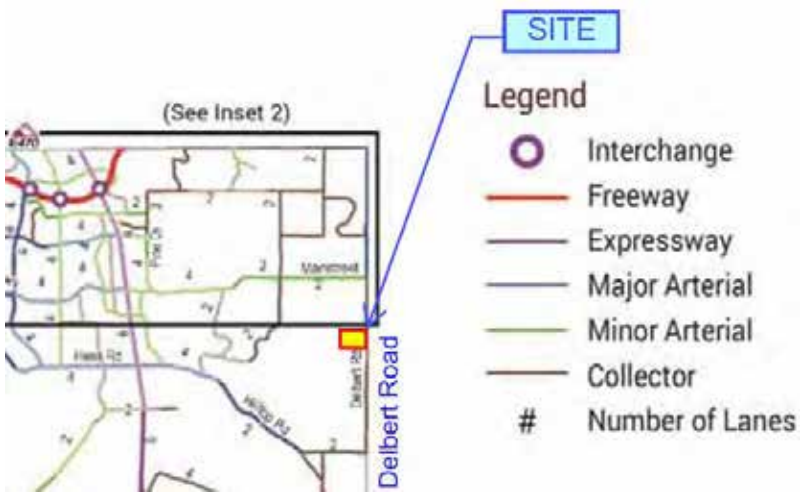


Figure 1: Existing Roadway Network - Douglas County Transportation Master Plan

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.

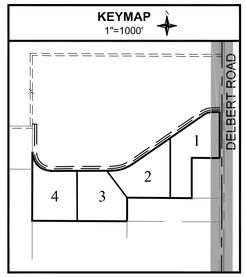
Respectfully submitted,

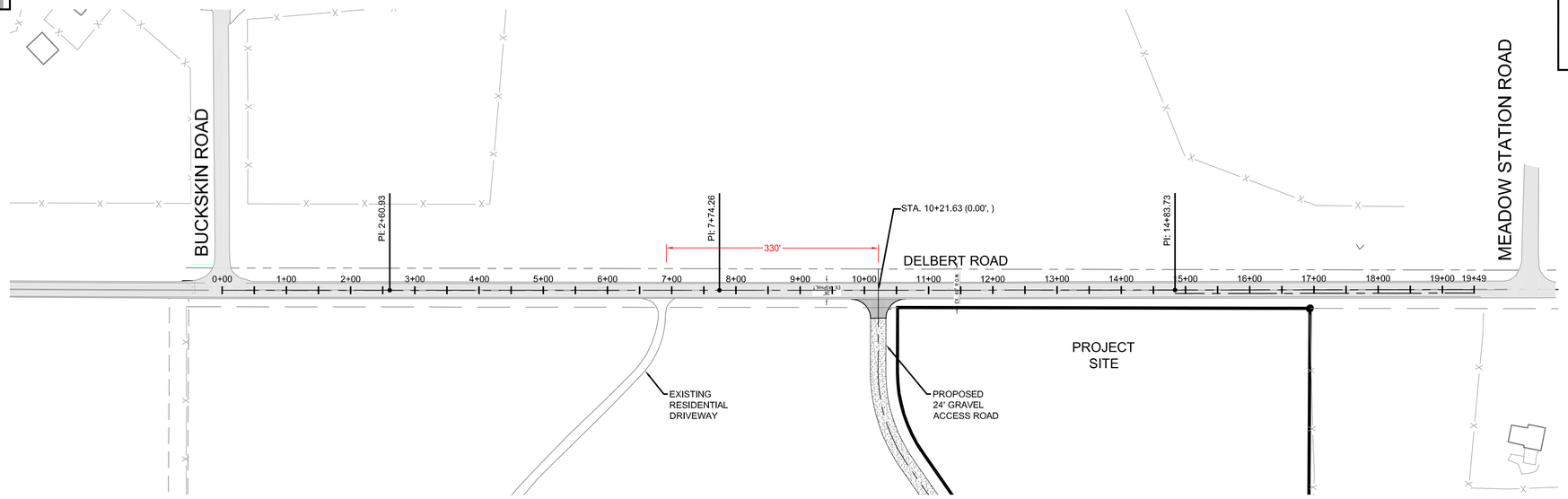
Todd West, P.E., LEED®AP
Project Manager

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

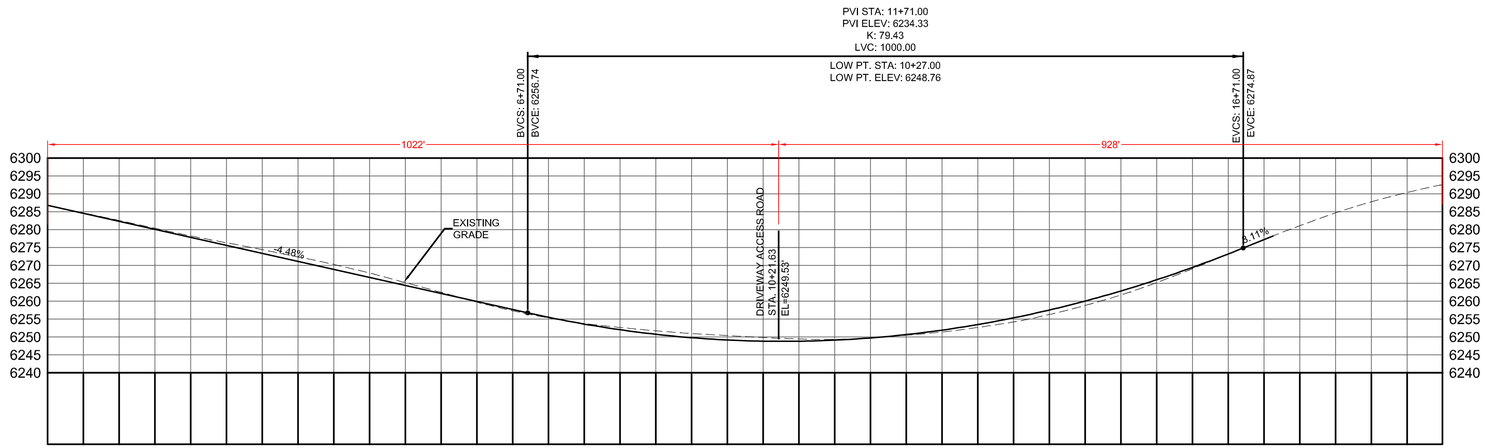




0 100' 200'
SCALE: 1" = 100'

LEGEND

- PROPERTY BOUNDARY
- ADJACENT PROPERTY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING ASPHALT
- PROPOSED ASPHALT
- PROPOSED GRAVEL
- 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

DATE:
BY:

REVISIONS:
1.
2.
3.
4.

PROJECT NUMBER: 24001
ISSUED DATE: XX-XX-XXXX
DESIGNED BY: TEW
REVIEWED BY: EPT

Road Plan & Profile

1

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:_____

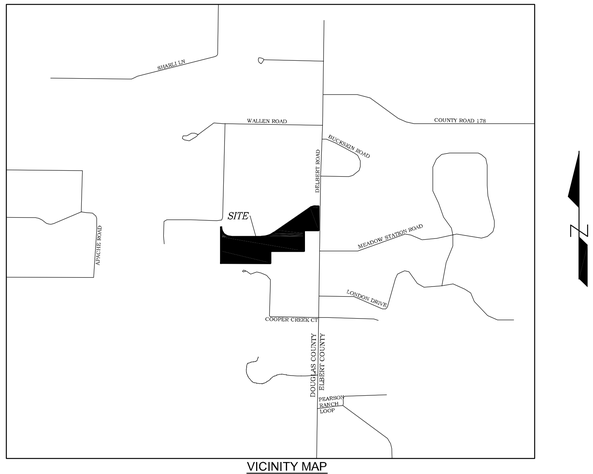
STATE OF_____)
) SS
COUNTY OF_____)

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

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 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 08035C0210F 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
WWW.ENCOMPASSSERVICES.COM

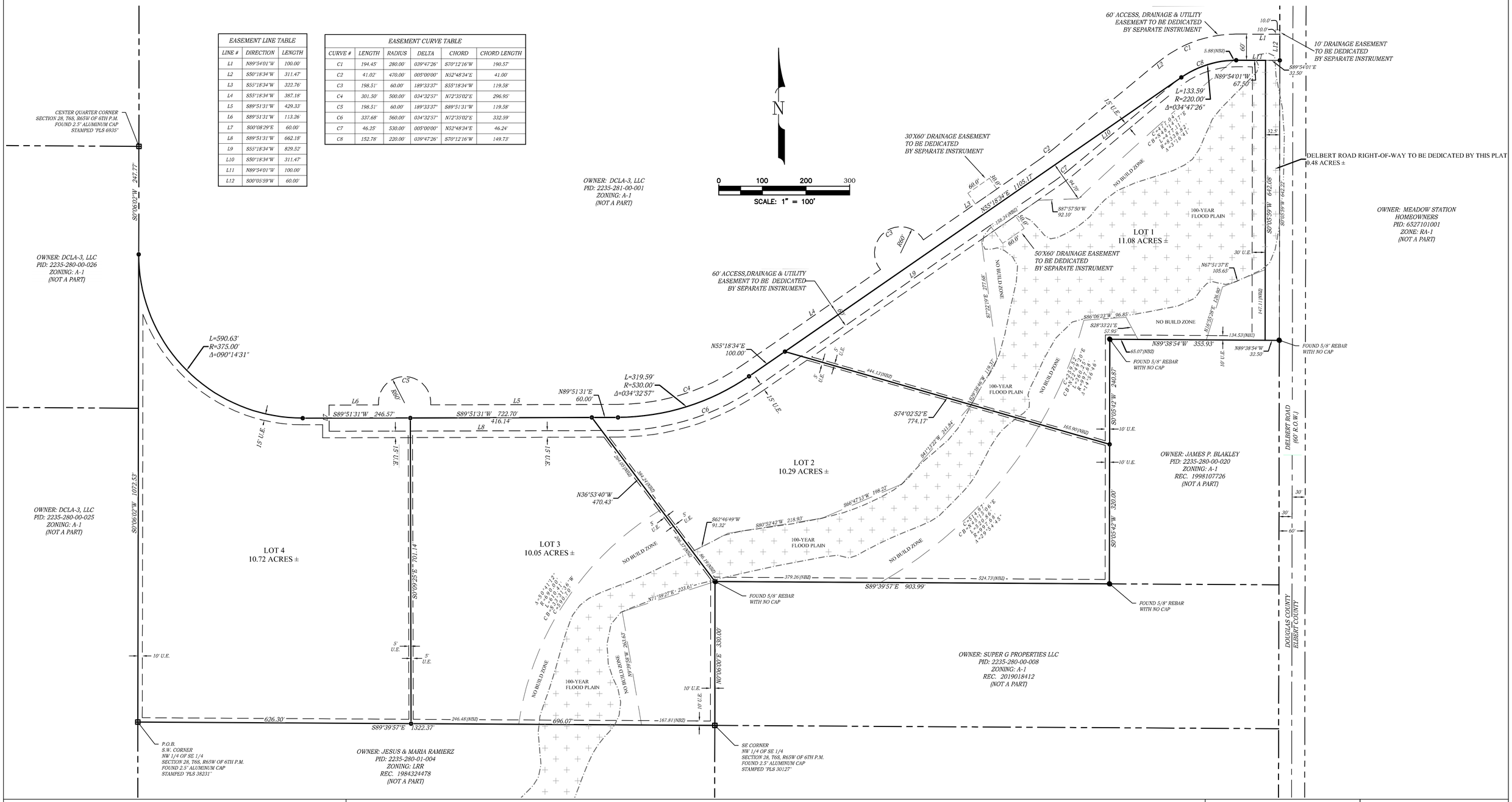
DRAWN BY: MBB	PROJECT NO: 65467	SCALE: 1" = 100'
CHECKED BY: ESF	PREPARATION DATE: 11/14/2024	
FIELD WORK COMPLETED: 2/21/2024		SHEET 2 OF 3

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	S55°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	S55°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
2	6/12/25	COUNTY COMMENTS
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DRAWN BY: MBB	PROJECT NO. 65467
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

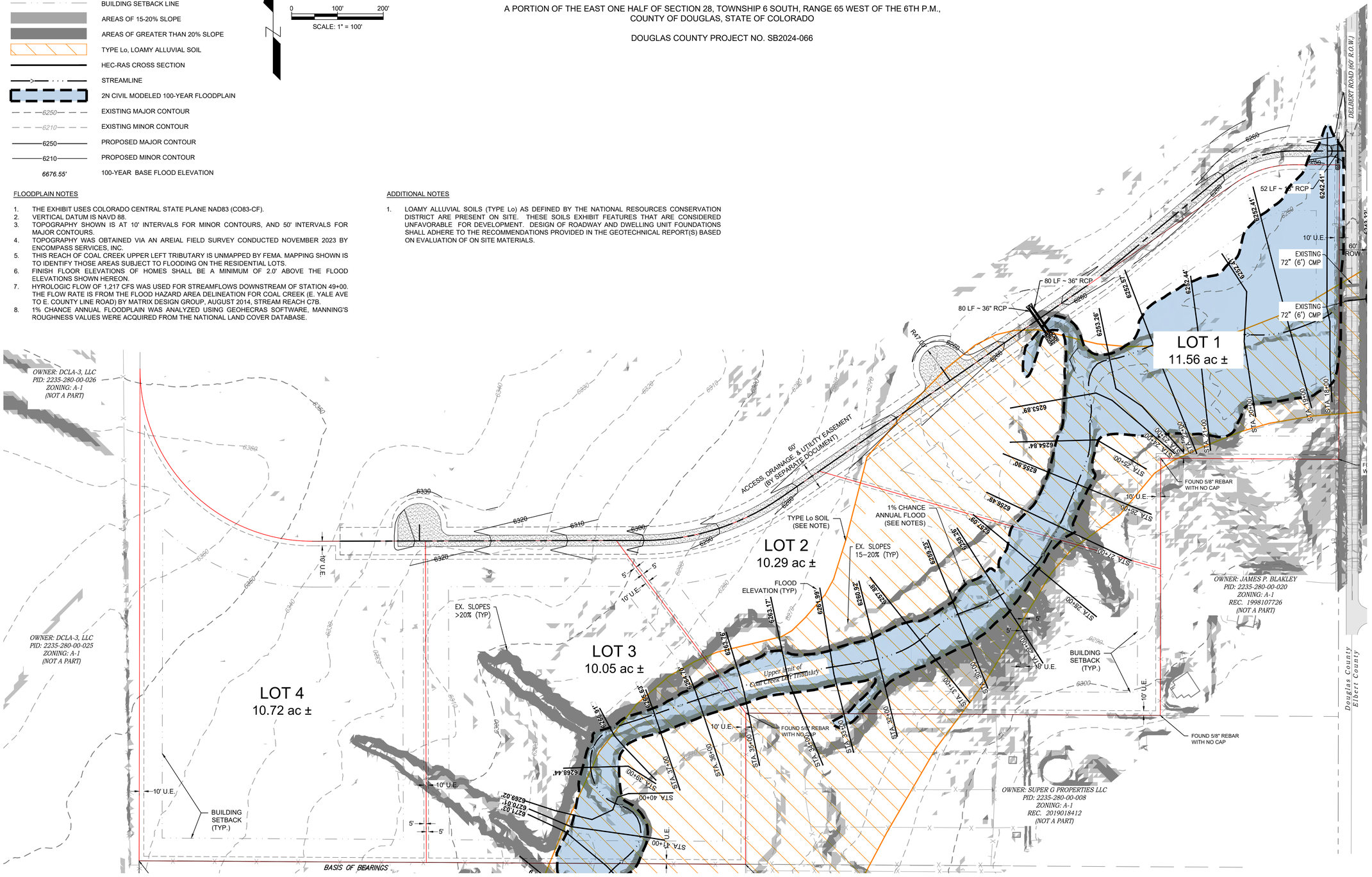
0 100' 200'
SCALE: 1" = 100'

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

DOUGLAS COUNTY
COLORADO

Supplemental Memo

Date: October 02, 2025

To: Douglas County Planning Commission

From: Carolyn Washee-Freeland, AICP, Senior Planner CWF
Curtis J. Weitkunat, AICP, Planning Manager CW
Jeanette Bare, AICP, Planning Manager JB
Steven E. Koster, AICP, Assistant Director of Planning Services SK

Subject: **Antelope Crossing – Rezoning, and Minor Development Final Plat - Supplemental Information**

Project File: **ZR2024-015 and SB2024-066**

Planning Commission Hearing:	**September 22, 2025 @ 6:00 p.m.**
Planning Commission Hearing Continued:	**October 06, 2025 @6:00 p.m.**
Board of County Commissioners Hearing:	**October 14, 2025 @2:30 p.m.**

Attached is additional correspondence received from the Colorado Division of Water Resources (CDWR) regarding the well permit #53878. CDWR has determined that the well permit #53878 does not need to be abandoned. Therefore, the following proposed condition of approval will be removed from the Minor Development Final Plat:

5. Prior to recordation of the minor development final plat, the applicant shall provide evidence of completed CDWR Well Abandonment forms for Well Permit 53878, or other documentation from CDWR releasing the applicant from this requirement.

Attachments

- Email from Wenli Dickinson, P.E., Water Resource Engineer, CDWR dated September 10, 2025

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

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 Tue, Sep 9, 2025 at 11:39 AM Carolyn Freeland <cfreeland@douglas.co.us> wrote:

Hi Wenli and Ioana,

This is a follow up to your referral comment letter for both ZR2024-015 Antelope Crossing Rezoning request, and SB2024-066 Antelope Crossing Minor Development Plat request. Staff is finalizing staff reports for upcoming hearings for both of these projects. In looking through the CDWR comment letter, it does not address whether CDWR agrees with the water attorney's letter (see attached) in regards to an abandoned well. The water attorney's letter states that the property owner cannot locate the well permit 53878 on the property; and the water attorney says that CDWR can consider the well abandoned. Is the case?

Can you please take a look at these documents and update the CDWR comment letter to reflect CDWR decision on this? If possible, can you review this asap by today? Please advise.

I'm sorry for the short notice!

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