Black Hills Energy
Squirrel Creek Gas Installation Project
Fountain, CO

STORMWATER MANAGEMENT PLAN (SWMP) REPORT

Project No.: 096826014
EPC EDARP File No.: CDR2322
Fountain Project No.: 1176492

Prepared for:

Black Hills Energy
Contact: Austin Belcher
(Sr Environmental Professional)
(719) 393-6639

Prepared by:

Kimley-Horn and Associates, Inc.
2 North Nevada Avenue, Suite 900
Colorado Springs, Colorado 80903
Contact: Joseph Menke (P.E.)
(719) 453-0181

JANUARY 2024

Kimley»Horn

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CONTACT INFORMATION

PERMITTEE

Name: Austin Belcher

Phone Number: (719) 393-6639

Address: 7060 Alegre Street, Fountain, CO 80817

Email Address: Austin.Belcher@blackhillscorp.com

QUALIFIED STORMWATER MANAGER / SWMP/TESC ADMINISTRATOR

Name: Austin Belcher

Phone Number: (719) 393-6639

Address: 7060 Alegre Street, Fountain, CO 80817

Email Address: Austin.Belcher@blackhillscorp.com

PREPARING ENGINEER

Name: Joseph Menke, P.E.

Phone Number: (719) 453-0180

Address: 2 North Nevada Avenue, Suite 900, Colorado Springs, CO 80903

Email Address: joseph.menke@kimley-horn.com

CERTIFICATION

ENGINEER CERTIFICATION

"This Stormwater Management Plan (SWMP) Report was prepared under my direction and supervision and is correct to the best of my knowledge and belief. If such work is performed in accordance with the grading and erosion control plan, the work will not become a hazard to life and limb, endanger property, or adversely affect the safety, use, or stability of a public way, drainage channel, or other property."

Printed Name: Joseph Menke Date: January 17, 2024

Phone Number: (719) 453-0180

[Seal]

PERMITTEE / OPERATOR RESPONSIBILITIES

This Stormwater Management Plan (SWMP) Report is prepared for Black Hills Energy (the "Owner") to meet the Construction Activities Stormwater Management Plan requirements for the City of Fountain (the "City"), El Paso County (the "County), and the Colorado Department of Public Health and Environment (CDPHE) Colorado Discharge Permit System (CDPS) general permit for the installation (upsizing) of a gas main in the Squirrel Creek area (the "Project"). This narrative, in conjunction with the Grading and Erosion Control Plans included in the **Appendix**, examines measures taken onsite to improve stormwater quality leaving the site, and also addresses important erosion control measures implemented prior to and during construction. A general overview of the procedures outlined in the SWMP which the Operator (the "Contractor") shall follow is provided below for reference.

	Operator
1. Submit and Receive the CDPS General Permit through CDPHE	☐
2. Complete the Permittee / Operator SWMP Certifications provided within the SWMP Narrative.	☐
3. Complete the Operator / Qualified Stormwater Manager Contact Information identified in the SWMP Narrative.	☐
4. Post the Site in accordance with the requirements identified on the SWMP Site Map included in the appendices of this report.	☐
5. Commence CCM installation and construction in accordance with the Phased CCM Implementation.	☐
6. Complete Land Disturbance / CCM / Site Stabilization Log, a copy of which is included in the appendices of this report.	☐
7. Complete Inspections in accordance with the SWMP Inspection Schedule and Procedures outlined within the SWMP Narrative.	☐
8. Complete field maintenance or field modifications to Stormwater Management Practices based upon the results of the Inspection.	☐
9. Maintain current records of the SWMP Inspections in accordance with the Inspection Record Keeping identified in the SWMP Narrative.	☐
10. Maintain current records of the Land Disturbance / CCM / Site Stabilization Log, a copy of which is included in the appendices of this report.	☐
11. Maintain current records of the CCM Corrective Action Log, a copy of which is included in the appendices of this report.	☐
12. Maintain current records of the SWMP Amendment Log, a copy which is included in the appendices of this report.	☐
13. Achieve Final Stabilization in accordance with the Final Stabilization practices outlined within the SWMP Narrative.	☐
14. File the City/County Request for Final Site Release Inspection.	☐
15. Final Site Inspection and any needed corrective actions	☐

This summary is provided for Permittee / Operator convenience only and shall not be considered all-inclusive with respect to stormwater management responsibilities. The Permittee / Operator shall familiarize themselves with the CDPS General Permit and SWMP and implement stormwater management strategies based upon the recommendations identified herein and varying site conditions.

PERMITEE CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner / Authorized Agent: Date: January 17, 2024

On behalf of:

OPERATOR CERTIFICATION

I certify under penalty of law that a complete Grading and Erosion Control Plan, has been prepared for my activity. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the Grading and Erosion Control Plan is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for falsely certifying the completion of said SWMP, including the possibility of fine and imprisonment for knowing violations.

Austin Belcher

Qualified Stormwater Manager Date: January 17, 2024

Austin Belcher / Sr Environmental Professional

(Print Name / Title)

Black Hills Energy

(Print Organization)

INTRODUCTION

INTRODUCTION AND PURPOSE

This Stormwater Management Plan ("SWMP") Report is provided in addition to the GEC Plans. This report, in conjunction with the GEC Plans in the **Appendix**, provides a site and project understanding along with guidelines for implementation and maintenance of erosion, sediment and stormwater quality control measures prior to and during construction of the Project.

The primary goal of pollution prevention efforts during Project construction is to control sediment and pollutants that originate from the project disturbance and prevent them from flowing to surface waters. A successful pollution prevention program also relies upon careful inspection and adjustments during the construction process to enhance its effectiveness. It is the intent of this plan to implement stormwater control measures, also referred to as Construction Control Measures (CCMs) for enhancing the quality of stormwater discharges associated with the construction activity. Control measures designs are based on the criteria set forth by the General Permit and the Mile High Flood District's (MHFD) Urban Storm Drainage Criteria Manual (USDCM), Volume 3.

This plan must be implemented before construction begins on the site. It primarily addresses the impact of storm rainfall and runoff on areas of the ground surface disturbed during the construction process. In addition, there are recommendations for controlling other sources of pollution that could accompany the major construction activities. Applicability of this plan shall be terminated when disturbed areas are stabilized, temporary erosion controls are removed, construction activities covered herein have ceased and the permit has been inactivated.

PERMIT COVERAGE AND APPLICATIONS

Based upon a Site Disturbance Area of one (1) acre or more, this site requires the issuance of a Colorado Discharge Permit System (CDPS) - Stormwater Discharge Associated with Construction Activities Permit (General Permit) through the Colorado Department of Public Health and Environment (CDPHE). A copy of the CDPS General Permit is included in **Appendix B** of this report.

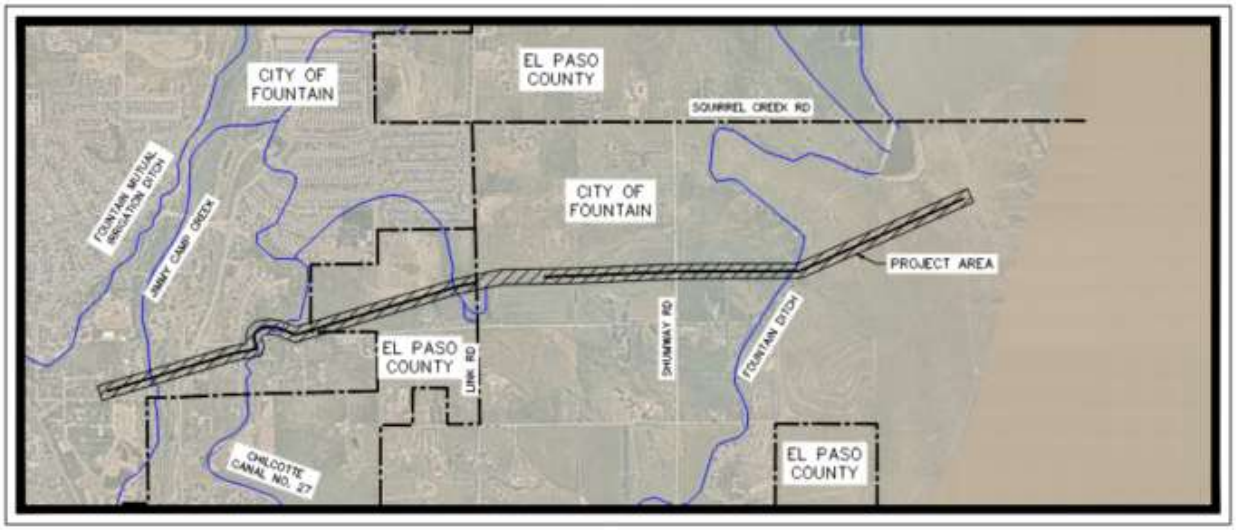
GENERAL LOCATION

PROJECT LOCATION

The project is generally located along the eastern boundary of the City of Fountain and extends beyond city boundaries, into El Paso County, before returning into the City of Fountain's jurisdiction. More specifically, the project is located within Sections 3, 4, and 5 of Township 16 South, Range 65 West of the 6th P.M.

See Vicinity Map below for project location details:

VICINITY MAP



(NOT TO SCALE)

SITE DESCRIPTION

GENERAL PROJECT DESCRIPTION

The project is located in the City of Fountain and El Paso County, Colorado and consists of the installation of approximately 11,391 LF of 8” steel gas main, replacing the existing 2” and 4” gas main (to be abandoned in place). Construction activities are anticipated to start in January of 2024 and conclude in the March of 2024. The project location consists of existing paved residential roads, unpaved access roads, and hilly terrain. The disturbance to asphalt roadways is limited to the driveway east of Jimmy Camp Road. The proposed line will tie-in to existing Black Hills Energy Natural Gas infrastructure located near 708 E Ohio Ave, north of Metcalf Park (38.684167, -104.691528) to the west; and a BHE utility shed south of Squirrel Creek Road and east of the Fountain Ditch (38.691278, -104.650444) to the east. Subdivisions near the project area includes the Cumberland Green Subdivision east of Jimmy Camp Road, the Lender Subdivision north of E Ohio Ave, Aspen Ranch Subdivision east of Link Road, and the Fountain Valley Land and Irrigation Company Subdivsion east of Crescent Moon Drive. The limits of construction include ±16.23 acres, with direct ground disturbance of 11.43 acres. No grading is anticipated for the project. Earthwork associated with the project consists of minor utility trench excavation and backfilling. In locations where trenching must occur over pavement, sawcutting will take place for installation. For bored sections, a standard bore-pit will be dug on either side of the length of the bore. Re-filling, compaction, and pavement patching will occur thereafter if necessary. All ground surfacing is to return to existing conditions after construction has occurred.

EXISTING SITE CONDITIONS

The existing site contains varied terrain consisting of primarily grassland and agricultural land, with limited paved residential roads and unpaved access roads. Land area between the edge of road and right-of-way boundary is classified as “Short Pasture and Lawns” per MHFD USDCM Volume 1. In the land area between

the existing edge of road/shoulder is short prairie grasses and occasional brush. Across the entire project area, there is an approximate vegetative cover between 50 and 75%, as confirmed visually by a qualified environmental scientist during the Environmental survey completed for the project.

The FEMA Flood Insurance Rate Map (FIRM) Panel Nos. 08041C0958G, 08041C0959G, 08041C0962G, 08041C0966G (all revised December 7, 2018), shows that portions of the project vicinity to be within the boundary of the 100-year flood plains. These FIRM panels are included in **Appendix C.**

The following is a list of all disturbed parcels (identified by TSN) that will be impacted by the project, and their respective landowners:

5605401010	CORRAL MAYRA MELISSA
5605401004	BLACK HILLS/COLO GAS UTILITY CO, C/O BLACK HILLS CORP, TAX DEPARTMENT 7TH FLOOR
5605401016	MINJAREZ NITA C, MINJAREZ MANUEL JR, MANN DELORES H E
5605401014	BIRKS DEBRA L
5605401015	JIMMY CAMP DEVELOPMENT INC
5605407001	CITY OF FOUNTAIN
5605408001	MESA ENRIQUE R JR, MESA MARIA M
5605408002	PORTERFIELD RORY Q, PORTERFIELD TAMMY I
5605400001	REDLIN MICHELLE A DOUGLAS L
5605111018	CHILCOTT DITCH COMPANY
5604004001	ALLEN EARLE A III, ALLEN NATALIE A
5604004004	MAKO ALEXANDER P
5604207009	CUMBERLAND GREEN METRO DISTRICT, ATTN: JAMES MCGRADY
5604004009	RHOADS STEVEN A
5604000044	IBT PIMA LLC
5604102044	VIVA LAND VENTURES LP
5604106029	VIVA LAND VENTURES LP
5604101012	VIVA LAND VENTURES LP
5604000008	MCNIECE MICHAEL K, MCNIECE JOAN HIGHLAND
5603000005	THIBAULT ROBERT E, THIBAULT BARBARA J
5603000004	CORUNDUM PROPERTIES V LLC
5603000006	CORUNDUM PROPERTIES V LLC
5603000007	CORUNDUM PROPERTIES V LLC
5600000002	CORUNDUM PROPERTIES V LLC

Coordination with all properties has taken place as a part of Black Hills Energy's Due Diligence for the project.

ULTIMATE DISCHARGE

The Squirrel Creek surrounding areas drain into a variety of drainage channels and creeks. The limits of this project are tributary to the Fountain Ditch, Chilcotte Canal No. 27, and Jimmy Camp Creek (and minor branches thereof). Runoff accumulated in the rural and residential parts of the City/County, in the immediate vicinity of the project, generally sheet flow toward these established drainageways.

SITE SOILS

According to the Soil Survey of the project area, prepared by the U.S. Department of Agriculture Natural Resources Conservation Service, the site is underlain by Soil Types A, B, and D.

No.	Soil Type	Map Unit Name	Acres in AOI	Percent of AOI
2	B	Ascalon sandy loam, 1 to 3 percent slopes	11.8	12.9%
3	B	Ascalon sandy loam, 3 to 9 percent slopes	37.2	40.8%
28	A	Ellicott loamy coarse sand, 0 to 5 percent slopes	12.5	13.8%
97	A	Truckton sandy loam, 3 to 9 percent slopes	5.9	6.5%
101	B	Ustic Torrifluvents, loamy	8.0	8.8%
102	A	Valent sand, 1 to 12 percent slopes, dry	7.4	8.1%
127	D	Midway-Razor clay loams, dry, 1 to 18 percent slopes	8.3	9.1%
Totals for Area of Interest			**91.2**	**100.0%**

Due to the extents of the project area and the map scale, the soil reporting area is larger than the actual project construction limits but is typically representative of the soil types in the project area. Please reference **Appendix D** for NRCS Soil Survey for further site soil information.

According to publicly available data from NRCS, the majority of the project site has little to no erosion concerns. The highest susceptibility to erosion from wind and water will be in areas with Soil No. 102 (Valent Sands). In these areas, additional measures may be taken to ensure erosion does not occur throughout the disturbed area, including (but not limited to) compaction of stored soils and ground surface watering as needed. The Qualified Stormwater Manager shall document these methods on the field copy of the Grading and Erosion Control Plans. Due to the inclusion of CCMs along the disturbed areas, it is not anticipated that any soil erosion would cause negative impacts on stormwater discharge from the project area.

DISTURBANCE AREAS AND INSTALLATION METHODS

The total anticipated project disturbance area is approximately 11.43 acres. Construction methods include utility trenching and boring (lengths of each section type and their jurisdiction are outlined in the table below), and ground surface is to return to existing conditions. No additional grading is required or proposed for the project, and as a result, there is no net cut/fill volumes.

Section Type	Total Length (LF)	*City of Fountain (LF)*	*El Paso County (LF)*
Trenched Section	9,725	*7,452*	*2,273*
Bored Section	1,666	*1,632*	*34*
Total:	**11,391**	***9,084***	***2,307***

The proposed pipeline will cross Jimmy Camp Creek, the Chillcotte Canal No. 27, and the Fountain Mutual Irrigation Company Ditch. All stream crossings will be bored pipe sections rather than open cut trenches. Bore Pit locations can be viewed on the GEC Plans in the Appendix.

TIMING AND PHASING SCHEDULE

The Operator shall utilize the following general CCMs which are required throughout the project at locations shown on the GEC Plan or as dictated by construction activities, to be field fitted by the contractor. Any changes to the GEC Plan shall be documented by the Contractor. Construction is to begin January 2024 and end in March of 2024.

- Temporary Erosion Control Measures – temporary compacted berm (TCB), sediment control logs (SCL), and silt Fence (SF)
- Permanent Erosion Control Measures – Seeding and mulching, where necessary for permanent stabilization.
- Clearing and Grubbing – The area to be disturbed for construction will be cleared and grubbed as necessary for proper trenching and boring endeavors.
- Trash and Debris Removal – Existing trash and debris shall be removed from the site and hauled to a designated receiving facility.
- Street Sweeping (SS), where required.
- Vehicle Tracking Control (VTC) at designated construction entrances.
- Housekeeping – Routine site trash pickup and routine CCM inspection and maintenance. All petroleum storage areas in the staging area should be checked daily for leaks. Leaks should be reported to the site foreman for cleanup. All workers on site shall be briefed as to where the spill cleanup materials can be found if a spill should occur. The spill plan shall be produced by the Operator. The Operator shall coordinate with the Town/State to obtain the necessary contacts in the case that a spill occurs.

These practices shall remain active and operational throughout the duration of construction and be identified on the GEC Plan. Due to any phasing required for the Project, it is understood that these control measures may be relocated as needed to facilitate construction operations. The Operator shall locate and identify the original and current location of these control measures on the GEC Plan throughout the construction of the Project. An updated copy of the GEC Plan shall be kept onsite throughout construction of the Project.

General construction sequencing and activities associated with this project are described below. They are presented in the order (or sequence) they are expected to begin, but each activity will not necessarily be completed before the next begins.

The anticipated construction start time is January 2024 and the anticipated construction completion time is March 2024. This schedule may vary due to entitlements, processing, and construction activity.

GEC COMPLETION SCHEDULE AND INITIAL PHASING

The first phase of GEC activities completion shall consist of applying for and receiving the CDPS General Permit as well as construction/installation of temporary control measures to minimize potential for erosion and sediment transfer while mobilizing and preparing the site for construction activities. Per the linear nature of this project, temporary control measures vary per the section of construction and existing infrastructure. All temporary control measures shall be installed per any applicable Standard Details. Per The Operator shall complete the anticipated phasing sequencing as follows:

1. Prepare and submit the State of Colorado, Colorado Department of Public Health and Environment (CDPHE) Colorado Discharge Permit System (CDPS) General Permit.
2. Contractor to install all temporary erosion control measures per GEC Plan, including TCB parallel to the trench, SCL around the bore pit and SF upstream of major drainage land features.
3. Contractor to set temporary location of staging area / laydown yards as needed per the plans.
4. Upon completion of the control measure installation, per the Initial GEC Plan, the contractor shall hold a meeting with the inspector prior to the pre-construction meeting.
5. The Contractor shall schedule a Pre-Construction Meeting with inspector/administrator to confirm control measures installed are adequate prior to proceeding with additional land disturbing activities.

FINAL PHASE

The final phase shall consist of the removal of construction equipment, filling of utility trenches and bore-pits, and final stabilization of the Site. The Operator shall complete the anticipated final phase sequencing as follows:

1. Confirm existing control measures from the first phase of GEC completion which are to be maintained throughout construction, are in working order and compliant with applicable regulations.
2. Repair and/or replace any existing control measures which are deemed inadequate.
3. Complete installation of utility lines (natural gas pipeline).
4. Permanently stabilize areas to be vegetated as they are brought to final grade (return to existing grade and surface treatment).
5. Prepare site for paving/patching, if necessary
6. Pave/patch site, if necessary
7. Street sweeping shall take place consistently throughout construction as land disturbance occurs.
8. Complete installation of final stabilization over all areas in accordance with the approved construction plans for the project
9. Remove temporary CCMs such as SCL and SF.
10. Proceed with filing the Notice of Termination with CDPHE.

STORMWATER MANAGEMENT PLAN

GEC PLAN

The GEC Plan for this project is included within the **Appendix** of this report and meets the following minimum requirements:

- Construction Site Boundaries
- Location of Structural Control Measures
- Location of Springs, Streams, Wetlands or other Surface Waters (As Applicable)
    - All stream crossings will be bored sections of pipe rather than open cut trenches
- Location of All Stream Crossings Located Within the Construction Site Boundary (As Applicable)

STORMWATER MANAGEMENT CONTROLS

QUALIFIED STORMWATER MANAGER / SWMP/TESC ADMINISTRATOR

The Qualified Stormwater Manager (Operator) is the Operator selected for the project. The Qualified Stormwater Manager is an individual knowledgeable in the principles and practices of erosion and sediment control and pollution prevention, and with the skills to assess the effectiveness of stormwater controls implemented to meet the requirements of the General Permit. The Qualified Stormwater Manager is responsible for developing, implementing, maintaining, and revising the GEC Plan. The activities and responsibilities of the Qualified Stormwater Manager shall address all aspects of the facility's GEC Plan. The terms Qualified Stormwater Manager and GEC Administrator imply the same individuals and these terms may be used interchangeably.

Company:	Black Hills Energy
Contact:	Austin Belcher
Address:	7060 Alegre Street
	Fountain, CO 80817
Phone:	(719) 393-6639
Email:	Austin.Belcher@blackhillscorp.com

SITE SPECIFIC POLLUTION SOURCES

Further identification of site-specific pollutants that fall within the categories outlined in the next section may be field noted using the corresponding log included in **Appendix E** of this report. The logs are intended to record site specific pollutants, the date of arrival on the site, the date removed from the site, and the methods of treatment.

IDENTIFICATION OF POLLUTANT SOURCES

Evaluation of general sediment and non-sediment pollution sources associated with site construction activities, as outlined within the General Permit, consist of the following:

- **Disturbed and Stored Soils** – Earth disturbing activities (grading, excavation, etc.) will be necessary for this project; therefore, the potential exists for disturbed site soils to contribute sediment to stormwater discharges.

- **Vehicle Tracking and Sediment** – Construction traffic will be entering and exiting the Site; therefore, the potential exists for vehicle tracking to contribute sediment to stormwater discharges.

- **Management of Contaminated Soils** – Contaminated soils are not anticipated on this Site. If encountered, the Qualified Stormwater Manager shall take appropriate containment and treatment measures.

- **Loading and Unloading Operations** – Loading and unloading operations will be taking place at the Site; therefore, the potential exists for these operations to introduce sediment and non-sediment pollutants to stormwater discharges.

- **Outdoor Storage of Materials** – Limited outdoor storage of materials is anticipated with construction of this Site; however, outdoor storage of chemicals, fertilizers, etc. is not anticipated.

  Whenever precipitation is predicted, any construction materials stored on site shall be covered with a non-porous cover, anchored on all sides to prevent its removal by wind, preventing the leaching out of potential pollutants from the covered materials.

- **Vehicle and Equipment Maintenance and Fueling** – Routine maintenance and fueling of vehicles and equipment is anticipated with this Site; therefore, the potential exists for pollutants associated with these activities to contribute pollutants to stormwater discharges.

  Designated fueling areas shall be located a minimum of 100 feet from all drainage courses, whenever possible. If the fueling area is located on porous soil, the area shall be covered with a non-porous lining to prevent soil contamination and any spillage shall be cleaned up immediately.

- **Significant Dust or Particulate Generating Processes** – Earth disturbing activities (grading, excavation, etc.) will be necessary for this project; therefore, the potential exists for windblown site soils to contribute sediment to stormwater discharges.

- **Routine Maintenance** – Routine maintenance involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc., other than those identified within Vehicle and Equipment Maintenance and Fueling are not anticipated with this project. If encountered, the Qualified Stormwater Manager shall take appropriate containment and treatment measures.

- **Onsite Waste Management** – Waste management consisting of solid waste piles, liquid wastes, dumpsters, etc. are anticipated onsite; therefore, the potential exists for these operations to introduce sediment and non-sediment pollutants to stormwater discharges.

- **Concrete Truck / Equipment Washing** – Concrete truck and equipment washing are not anticipated with this project.

- **Dedicated Asphalt and Concrete Batch Plants** – Dedicated asphalt and/or concrete batch plants are not anticipated. The Qualified Stormwater Manager shall take appropriate containment and treatment measures and document as necessary.

- **Non-Industrial Waste Sources** – Non-Industrial waste sources limited to portable sanitary facilities are anticipated with this project.

- **Additional Pollutant Sources** – Additional areas or procedures where potential spills could occur are not anticipated with this project.

Logs for the identification of pollutant sources are included in the **Appendix** for reference and use.

Based on the following, the potential to contribute pollutants to stormwater discharges is not significant for most of the pollutants identified above:

- Relatively Low Frequency of the Activities

- The Ability to Schedule Activities During Dry Weather
- Existing Site Topography
- The Ability to Implement Primary and Secondary Containment for Product Storage
- The Ability to Locate Activities Away from Drainage Ways

Potential pollutant sources noted below shall be mitigated by use of CCMs as noted in the following sections:

- Disturbed and Stored Soils
- Vehicle Tracking and Sediment
- Loading and Unloading Operations
- Outdoor Storage
- Vehicle Equipment and Maintenance Fueling
- Significant Dust or Particulate Generating Processes
- Non-Industrial Waste Sources

NON-STORMWATER DISCHARGE COMPONENTS

Only specifically authorized non-stormwater discharges are allowed to enter the storm sewer and all authorized non-stormwater discharges shall be eliminated or reduced to the extent practical. Appropriate control measures shall be used to minimize the discharge of pollutants. Such control measures will be strictly followed to ensure any impacts from non-stormwater discharges are reduced or eliminated. Appropriate control measures are:

- Emergency Fire Fighting Activities
- Uncontaminated ground water or spring water
  If possible, direct uncontaminated ground water or spring water to stabilized points of discharge. If discharged to a disturbed area, assure measures to control erosive velocities and sediment control measures are implemented. Velocity control measures include riprap aprons and other conveyance measures. Sediment control measures might include rock check dams, sediment traps and basins. If uncontaminated ground water is discharged off-site, a Construction Dewatering Permit will be required. This Permit will not apply if dewatering is not performed or if water is not discharged off-site.

CONTROL MEASURES FOR STORMWATER POLLUTION PREVENTION

There are three general types of control measures that will be utilized for the Project: Erosion Control, Sediment Control, and Site/Material Management control measures. Erosion Control measures are used to limit the amount and extent of erosion. Sediment Control measures are designed to capture eroded sediments prior to their conveyance offsite. Site/Material Management control measures are related to construction access and staging. Several control measures described below may be categorized into more than one of the types described above. Also, these control measures may be categorized into one or more of the following construction phases which pertain to the phase of development in which they may be implemented. Initial Stage control measures shall be installed on existing grades at the outset of construction. Final Stage control measures shall be installed on proposed grades and drainage features after initial site grading. Construction of the identified improvements will take place under two phases of construction anticipated as identified within the construction sequencing included within this report.

Refer to the GEC Plans for the location and implementation of erosion control measures for the phases of the Project. The following is a brief description of temporary sediment and erosion control measures to be utilized on this Site and the application those control measures are treating.

EROSION CONTROL

Protection of steep slopes is not anticipated on this project. Steep slopes are defined as slopes greater than 3:1 that are higher than 5-feet vertically. Temporary slopes during construction that are greater than 3:1 need to be addressed along with any permanent slopes which are greater than 3:1. The Permittee may need to implement the use of diversion ditches to reroute the storm runoff, terrace the grades to break up the flow of incidental runoff down slopes, compost mulch to protect the exposed soil or another control measure as approved by the inspector. Slopes steeper that 3:1 shall be protected with an erosion control blanket. No un-protected final grades shall be allowed greater than 2:1.

Stabilization via temporary and permanent erosion control measures should be implemented for all slopes, channels, ditches, or any disturbed land area within fourteen (14) calendar days after final grading or the final earth disturbances have been completed. All temporary soil erosion control measures shall be maintained until permanent soil erosion measures are implemented.

All disturbed areas shall be stabilized as soon as possible. Seeding and Mulching (SM), to provide protection against rain and wind erosion, shall be performed temporarily, as needed, during the pre-construction, initial/interim phases and maintained until final stabilization is completed. All disturbed areas which are either final graded or will remain inactive for a period of more than 30 days shall be required to be stabilized within 14 days of the completion of the grading activities.

SITE/MATERIAL MANAGEMENT

A stabilized staging area/laydown yard (SSA) is allowed and is to be located as needed. This will be designated by the Contractor as an area for construction staging and material storage. The SSA provides a controlled area for staging of construction materials and equipment, placement of any job trailers, and Contractor parking, etc. The location of the SSA shall be marked and updated on the field copy of the GEC Plans.

Street Sweeping (SS) is necessary for any site that may track-out onto adjacent sites or roadways. Paved and impervious surfaces which are adjacent to construction sites must be swept on a weekly basis or as needed during the week, when sediment and other materials are tracked or discharged onto them. Either sweeping by hand or use of street sweepers is acceptable. Street sweepers using water while sweeping is preferred in order to minimize dust. Scraped or swept material shall not be deposited in the storm sewer. Materials collected by the inlet protection shall be removed and shall not be deposited in the storm sewer. Street sweeping is the responsibility of the Operator, to meet the requirements of this Plan.

OTHER POTENTIAL POLLUTION CONSIDERATIONS

MATERIALS HANDLING AND SPILL PREVENTION

Any hazardous or potentially hazardous material that is brought onto the construction site shall be handled properly to reduce the potential for stormwater pollution. In an effort to minimize the potential for a spill of

petroleum product or hazardous materials to come in contact with stormwater, the following steps shall be implemented:

- All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, additives for soil stabilization, concrete, curing compounds and additives, etc.) shall be stored in a secure location, under cover and in appropriate, tightly sealed containers when not in use.
- The minimum practical quantity of all such materials shall be kept on the job site and scheduled for delivery as close to time of use as practical.
- A spill control and containment kit shall be provided on the construction site and location(s) shown on site Maps.
- All products shall be stored in and used from the original container with the original product label and used in strict compliance with the instructions on the product label.
- The disposal of excess or used products shall be in strict compliance with instructions on the product label.

Fueling for construction is anticipated to be conducted with a fuel truck. If utilized, temporary onsite fuel tanks for construction vehicles shall meet all state and federal regulations. Tanks shall have approved spill containment with the capacity required by the applicable regulations. From NFPA 30: All tanks shall be provided with secondary containment (i.e. containment external to and separate from primary containment). Secondary containment shall be constructed of materials of sufficient thickness, density and composition, so as not to be structurally weakened as a result of contact with the fuel stored and capable of containing discharged fuel for a period of time equal to or longer than the maximum anticipated time sufficient to allow recovery of discharged fuel.

The tanks shall be in sound condition free of rust or other damage which might compromise containment. Fuel storage areas shall meet all Environmental Protection Agency (EPA), OSHA and other regulatory requirements for signage, fire extinguisher, etc. Hoses, valves, fittings, caps, filler nozzles and associated hardware shall be maintained in proper working condition at all times. The location of fuel tanks shall be shown on the site Maps and shall be located to minimize exposure to weather and surface water drainage features.

The Operator shall develop and implement a Materials Handling and Spill Prevention Plan (MHSPP) in accordance with the EPA and State of Colorado requirements. In the event of an accidental spill, immediate action shall be undertaken by the Operator to contain and remove the spilled material. All hazardous materials, including contaminated soil, shall be disposed of by the Operator in the manner specified by federal, state and local regulations and by the manufacturer of such products. As soon as possible, the spill shall be reported to the appropriate agencies. As required under the provisions of the Clean Water Act, any spill or discharge entering waters of the United States shall be properly reported. The Operator shall prepare a written record of any spill and associated clean-up activities of petroleum products or hazardous materials in reportable quantities. A copy of the Spill Report Form is included in the **Appendix** of this report.

Accidental spills shall be handled expeditiously as outlined in CDPHE guidance. Any spills of petroleum products or hazardous materials in excess of Reportable Quantities as defined by EPA or the state or local agency regulations, shall be immediately reported to the Colorado Department of Public Health and Environment spill reporting lines.

- CDPHE Environmental Release and Incident Reporting Line (877) 518-5608.

- National Response Center - (800) 424-8802

VEHICLE TRACKING AND DUST CONTROL

Vehicle Tracking Control measures (structural and non-structural) shall be implemented in order to control potential sediment discharges from vehicle tracking. Practices shall be implemented for all areas of potential vehicle tracking which include but are not limited to reduced site access, utilization of designated haul routes, and street sweeping.

Areas of soil that are denuded of vegetation and have little protection from particles being picked up and carried by wind should be protected with a temporary cover or kept under control with water or other soil adhering products to limit wind transported particles exiting the site perimeter.

WASTE MANAGEMENT AND DISPOSAL

An effective first step towards preventing pollution in stormwater from work sites involves using a common-sense approach to improve the facility's basic housekeeping methods. Poor housekeeping practices result in increased waste and potential for stormwater contamination.

No solid materials are allowed to be discharged from the Site with stormwater. All solid waste, including disposable materials incidental to the construction activities, must be collected and placed in containers. Secure covers for the containers shall be provided if required by state and local requirements. The location of solid waste receptacles shall be identified on the GEC Plan by the Operator.

Concrete waste is not anticipated with this project; therefore, a dedicated concrete washout is not required. The Qualified Stormwater Manager shall take appropriate containment and treatment measures and document as necessary.

GROUNDWATER AND STORMWATER DEWATERING

Except as noted below, all discharges covered by this permit shall be composed entirely of stormwater associated with construction activity.

- Emergency Fire Fighting Activities
- Uncontaminated Spring Water

Groundwater dewatering is not anticipated. If groundwater is encountered during construction, the Operator shall file for appropriate dewatering permits (Permit No. COG070000) with the CDPHE.

STABILIZATION AND STORMWATER MANAGEMENT

TEMPORARY STABILIZATION AND SHORT-TERM STORMWATER MANAGEMENT

The State considers the completion of minor grading operations / improvements, by definition, to be substantially complete; therefore, all areas that will be dormant for more than 30 days after the completion of the minor grading will require temporary seeding within 14 days of establishment. This does not preclude the 7-day requirement for areas fully completed in the future. At a minimum, in ensuring that this requirement is followed, adequate phasing/scheduling will be required. All Construction Control Measures

will be owned and maintained by the applicant (Black Hills Energy), as all construction is to occur within a BHE Permanent Utilities (or Temporary Construction) Easement. No control measures will be owned or operated by any other entities for this project.

FINAL STABILIZATION AND LONG-TERM STORMWATER MANAGEMENT

In the natural condition, the site soil is stabilized by means of native vegetation. The final stabilization technique to be used at this project for stabilizing soils shall be to provide a protective cover of landscaping vegetation, pavement, and granular stabilization material. Seeding should be conducted after final grade is achieved and soils are prepared to take advantage of soil moisture and seed germination.

Final site stabilization is achieved when vegetative cover provides permanent stabilization with a density equal to or greater than 70 percent of the pre-disturbance levels, or equivalent permanent, physical erosion reduction methods have been employed over the entire area to be stabilized by vegetative cover. Noxious weeds do not count for the 70% vegetative cover providing permanent stabilization. This area is exclusive of areas that are covered with rock (crushed granite, gravel, etc.) or landscape mulch, paved or have a building or other permanent structure on them.

INSPECTION AND MAINTENANCE

Inspections shall be the responsibility of the Qualified Stormwater Manager throughout the construction process.

INSPECTION SCHEDULE REQUIREMENTS

Inspection and maintenance of erosion control measures shall comply with the criteria set forth by the General Permit (COR400000), or the following, whichever is more stringent.

The Permittee or Operator shall make routine checks of all erosion control measures to determine if repairs or sediment removal is necessary. Written inspection records a minimum of once biweekly and within 24 hours after every significant precipitation event or after every significant precipitation event that causes surface erosion. All necessary maintenance and repair shall be completed immediately. If more frequent inspections are required to ensure that control measures are properly maintained and operated, the inspection schedule shall be modified to meet this need.

When snow cover exists over the entire site for an extended period, inspections are not always feasible. This condition should be documented, including date of snowfall and date of melting conditions to bring awareness of and preparation for areas where melting conditions may pose a risk of surface erosion.

A copy of the GEC shall be maintained at the site at all times. Any degradation of the control measures described in the GEC or excessive accumulation of sediments shall be remedied immediately upon discovery. The Operator shall record all storm events on the Storm Event Log included in the **Appendix**.

INSPECTION PROCEDURES

The inspection shall include observations of:

- The Construction Site Perimeter and Discharge Points;
- All Disturbed Areas;
- Vehicles and Equipment;

- Areas Used for Material / Waste Storage That are Exposed to Precipitation;
- Other Areas Determined to Have a Significant Potential for Stormwater Pollution;
- Erosion and Sediment Control Measures Identified in the GEC; and
- Any Other Structural Control Measures That May Require Maintenance.

The inspection must determine if there is evidence of, or the potential for, pollutants entering the drainage system. Control measures should be reviewed to determine if they still meet the design intent and operational criteria in the GEC and if they continue to adequately control pollutants at the site. Any control measures not operating in accordance with the GEC must be addressed as soon as possible, immediately in most cases, to minimize the discharge of pollutants and the GEC must be updated and inspections must be documented.

Examples of specific items to evaluate during site inspections are listed below. This list is not intended to be comprehensive. Ultimately, it is the responsibility of the Operator to assure the adequacy of site pollutant discharge controls. Actual physical site conditions or Contractor practices could make it necessary to install more controls than are shown on the plans. Assessing the need for additional controls and implementing them or adjusting existing controls will be an ongoing requirement until the site achieves final stabilization.

1. Vehicle Tracking Control - Locations where vehicles enter and exit the site shall be inspected for evidence of offsite sediment tracking. Exits shall be maintained as necessary to prevent the release of sediment from vehicles leaving the site. Any sediment deposited on the adjacent roadway shall be removed as necessary throughout the day or at the end of every day and disposed of in an appropriate manner. Sediment shall not be washed into storm sewer systems.
2. Erosion Control Devices - Rolled erosion control products (nets, blankets, turf reinforcement mats) and marginally vegetated areas (areas not meeting required vegetative densities for final stabilization) must be inspected frequently. Riling, rutting and other signs of erosion indicate the erosion control device is not functioning properly and additional erosion control devices are warranted.
3. Sediment Control Devices - Sediment barriers (silt fence, sediment control logs, etc.), traps and basins must be inspected, and they must be cleaned out at such time as their original capacity has been reduced by 50 percent. All material excavated from behind sediment barriers or in traps and basins shall be incorporated into onsite soils or spread out on an upland portion of the site and stabilized. To minimize the potential for sediment releases from the Project, site perimeter control devices shall be inspected with consideration given to changing up-gradient conditions.
4. Material Storage Areas - Material storage areas should be located to minimize exposure to weather. Inspections shall evaluate disturbed areas and areas used for storing materials that are exposed to rainfall for evidence of, or the potential for, pollutants entering the drainage system or discharging from the site. If necessary, the materials must be covered, or original covers must be repaired or supplemented. Also, protective berms must be constructed, if needed, in order to contain runoff from material storage areas. All state and local regulations pertaining to material storage areas shall be adhered to.
5. Vegetation - Seed/Sod shall be free of weedy species and appropriate for site soils and regional climate. Seeding, sodding, tacking, and mulching shall be completed, in accordance with the requirements outlined within the Project Manual and locations identified within the plans, immediately after topsoil is applied and final grade is reached. Grassed areas shall be inspected to confirm that a healthy stand of grass is maintained. Rip-rap, mulch, gravel, decomposed granite or other equivalent permanent stabilization measures may be employed in lieu of vegetation based onsite-specific conditions and State approval.
6. Discharge Points - All discharge points must be inspected to determine whether erosion and sediment control measures are effective in preventing discharge of sediment from the site or impacts to receiving waters.

Based on the inspection results, all necessary maintenance and repair shall be completed immediately and in no cases longer than seventy-two (72) hours after identification. The inspection reports must be completed after each inspection. An important aspect of the inspection report is the description of additional measures that need to be taken to enhance plan effectiveness. The inspection report must identify whether the site was in compliance with the GEC at the time of inspection and specifically identify all incidents of non-compliance.

The Qualified Stormwater Manager shall ensure that, at a minimum, the following is recorded for each inspection and kept onsite for reference:

a. The inspector's name (must be a Qualified Stormwater Manager),
b. The date and type of the inspection (regular inspection vs. post-storm inspection),
c. Weather conditions at the time of the inspection,
d. Phase of construction at the time of the inspection,
e. Estimated acreage of disturbance at the time of inspection,
f. The minimum frequency of inspections chosen,
g. Location(s) of discharges of sediment or other pollutants from the site,
h. Location(s) of control measures needing maintenance,
i. Location(s) and identification of inadequate control measures
j. Location(s) and identification of additional control measures are needed that were not in place at the time of inspection, and
k. Any corrective actions taken.

If repairs are needed to any control measures, they shall be completed immediately. After adequate corrective action(s) and maintenance have been taken, or where a report does not identify any incidents requiring corrective action or maintenance, the report shall contain a statement stating the following:

"I verify that, to the best of my knowledge and belief, all corrective action and maintenance items identified during the inspection are complete, and the site is currently in compliance with the permit."

This statement must be signed by a Qualified Stormwater Manager. If it is infeasible to install or repair of control measure immediately after discovering the deficiency, the following information must be documented and kept on record:

1. Describe why it is infeasible to initiate the installation or repair immediately; and
2. Provide a schedule for installing or repairing the control measure and returning it to an effective operating condition as soon as possible.

The use and maintenance of logbooks, photographs, field notebooks, drawings or maps should also be included in the GEC records when appropriate. Copies of the Inspection and Sampling Report Forms have been included in **Appendix I** for reference and use. Additional information relating to the amendment of the SWMP Report or GEC Plans can be found in the "Plan Modifications" section of this report.

CONTROL MEASURE MAINTENANCE / REPLACEMENT AND FAILED CONTROL MEASURES

Site inspection procedures noted above must address maintenance of control measures that are found to no longer function as needed and designed, as well as preventive measures to proactively ensure continued operation.

The Qualified Stormwater Manager shall implement a preventative maintenance program to ensure that control measure breakdowns and failures are handled proactively. Site inspections should uncover any

conditions which could result in the discharge of pollutants to storm sewers and surface waters and shall be rectified. For example, sediment shall be removed from silt fences on a regular basis to prevent failure of the control measure. Sediment shall be removed to an appropriate location so that it will not become an additional pollutant source.

The inspection process must also include replacement of control measures when needed or the addition of new control measures in order to adequately manage the pollutant sources at the Site.

Any control measure deficiencies, replacement or additional control measures that may be required shall be documented on the Stormwater Management Site Map and on the appropriate Inspection Form. If amendments to the GEC are required, these amendments shall be documented on the GEC Amendment Log included in **Appendix J** for reference and use.

DISPOSITION OF TEMPORARY MEASURES

Most temporary erosion and sediment control measures must be removed within 30 days after final site stabilization is achieved. Trapped sediment and disturbed soil areas resulting from the disposal of temporary measures must be returned to final plan grades and permanently stabilized to prevent further soil erosion.

PLAN MODIFICATIONS

This SWMP Report and the associated GEC Plans are to be considered a living document throughout construction, continuously being reviewed and modified. The Qualified Stormwater Manager shall make updates in the field and amend this report and the plans accordingly, based on any changes to the stated control plan based on varied site conditions or changes in construction methods. This includes the installation and removal of any Construction Control Measures, proposed or otherwise.

Plan revisions made prior to or following a change(s) onsite, including revisions to sections addressing site conditions and control measures, a notation must be included in the plan the identifies:

- Date of site change,
- The control measure removed or modified,
- The location(s) of those control measures, and
- Any changes to the control measures

PERMITTING

Please note that a CDPHE state permit is required prior to the commencement of construction activities.

REFERENCES

Colorado Discharge Permit System (CDPS) – Stormwater Discharge Associated with Construction Activities Application - Prepared by Water Quality Control Division, Colorado Department of Public Health and Environment; Revised April 2019.

Colorado Discharge Permit System (CDPS) General Permit – Stormwater Discharges Associated with Construction Activity - Prepared by Water Quality Control Division, Colorado Department of Public Health and Environment; signed and issued on May 31, 2007 and administratively continued effective July 1, 2012.

NRCS Web Soil Survey - Website: http://websoilsurvey.nrcs.usda.gov, accessed October 17, 2023.

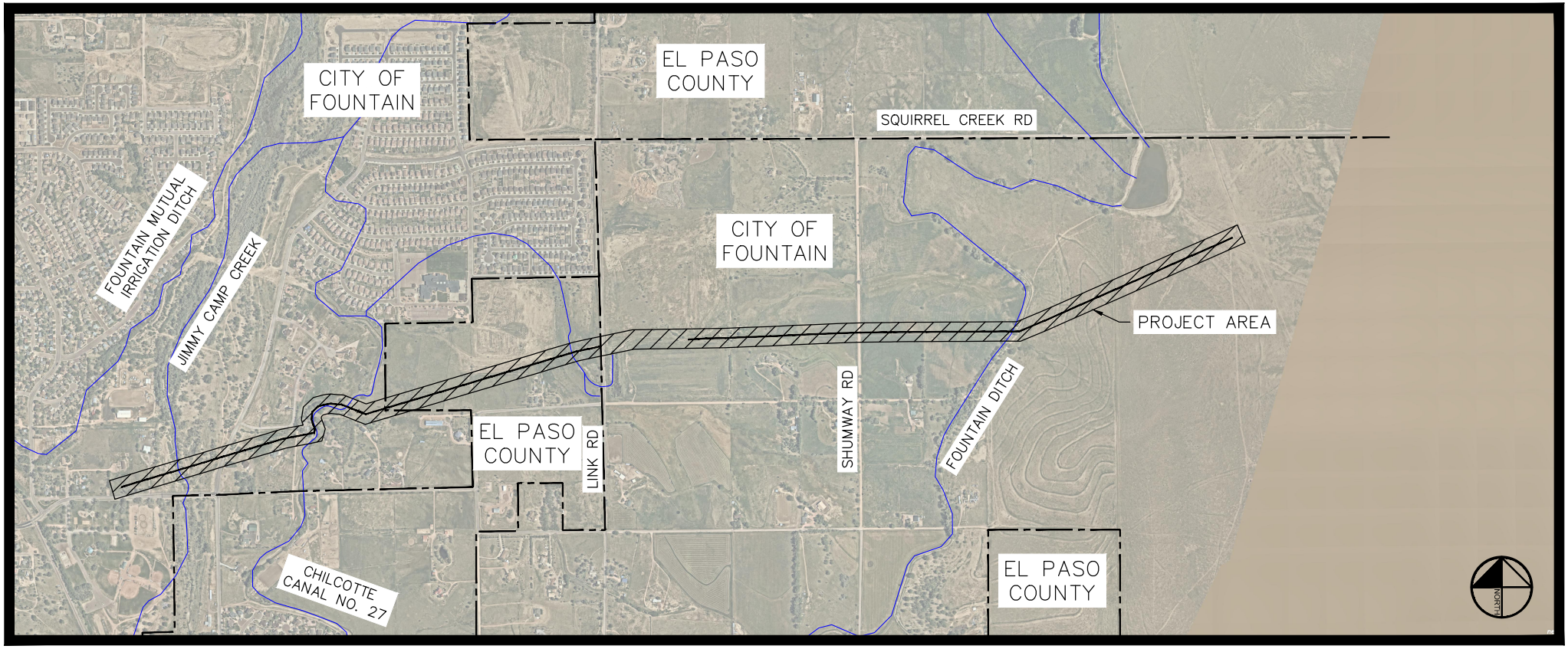
Stormwater Discharges Associated with Construction Activity – Stormwater Management Plan Preparation Guidance - Prepared by Water Quality Control Division, Colorado Department of Public Health and Environment; Revised April 2011.

Mile High Storm Drainage Criteria Manual, Volume 1 – Mile High Flood Control District, Denver, CO.; November 2010.

Mile High Storm Drainage Criteria Manual, Volume 3 – Mile High Flood Control District, Denver, CO.; November 2010.

APPENDIX

APPENDIX A – VICINITY MAP



Vicinity Map
(N.T.S.)

APPENDIX B – NRCS SOILS INFORMATION

United States Department of Agriculture

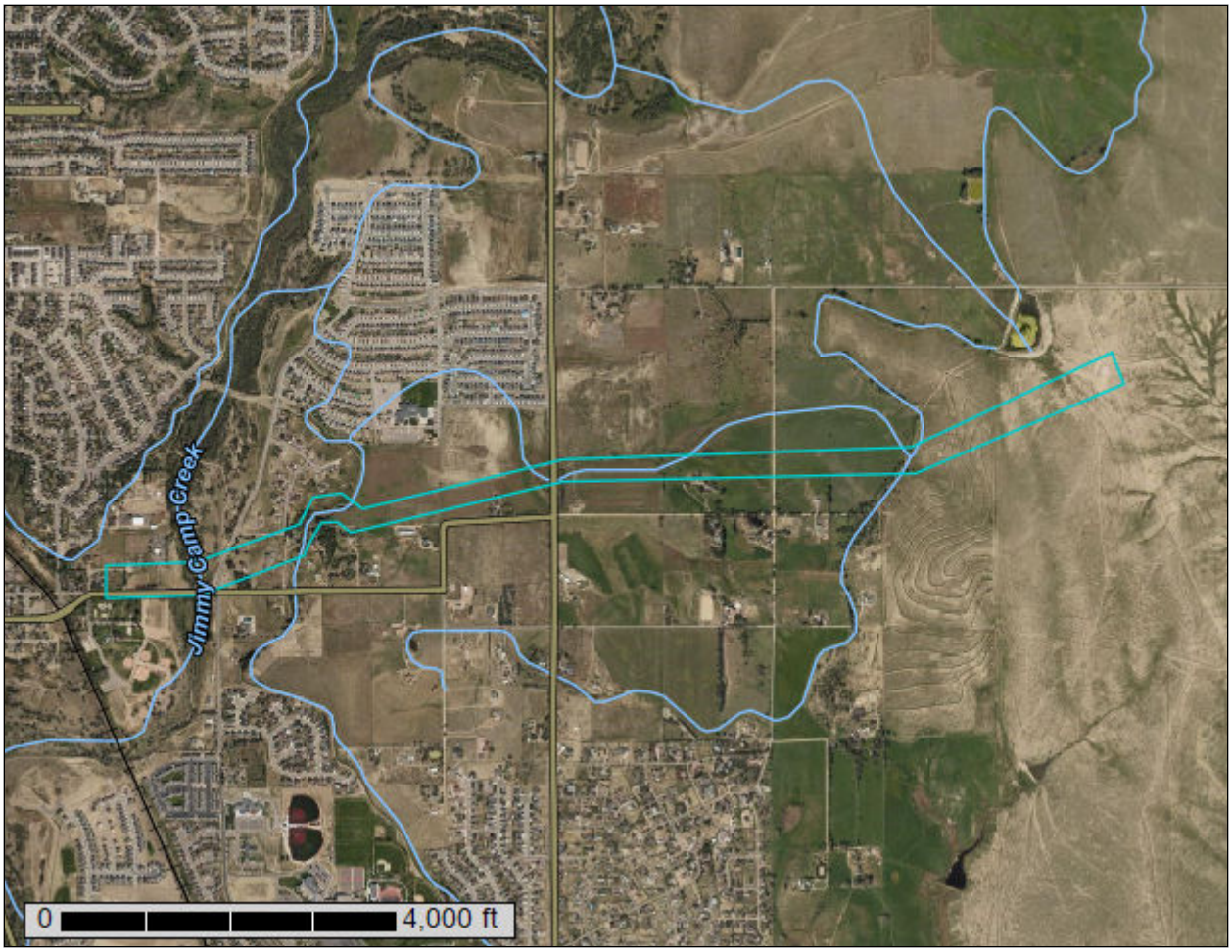
NRCS

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

El Paso County Area, Colorado



October 17, 2023

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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How Soil Surveys Are Made

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

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

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

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

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

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

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

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

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

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

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

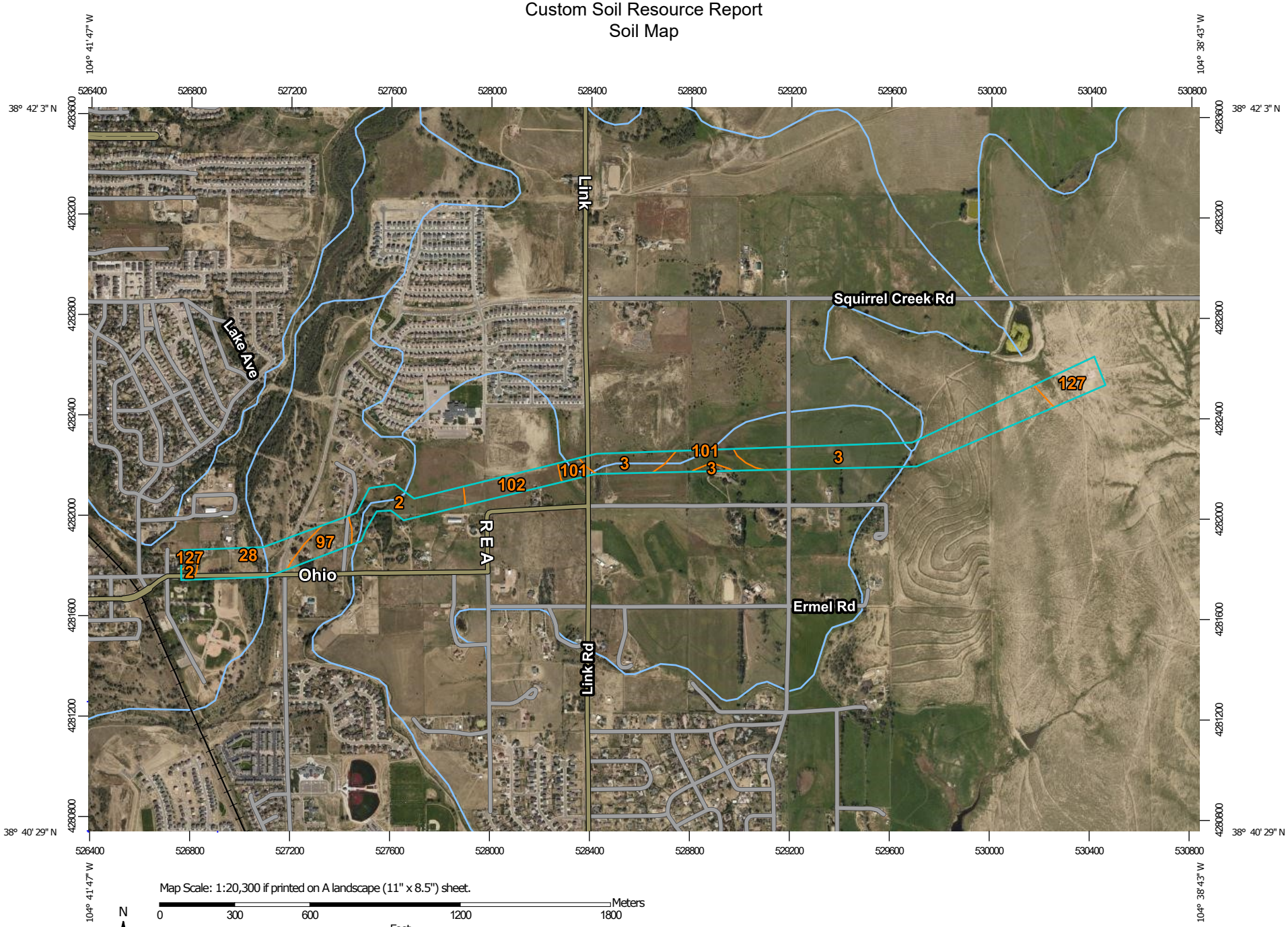
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

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

Custom Soil Resource Report
Soil Map



Map Scale: 1:20,300 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 300 600 1200 1800

Feet: 0 500 1000 2000 3000

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

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- 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 1:24,000.

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: El Paso County Area, Colorado
Survey Area Data: Version 21, 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: Aug 14, 2018—Sep 23, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

No.	Soil Type	Map Unit Name	Acres in AOI	Percent of AOI
2	B	Ascalon sandy loam, 1 to 3 percent slopes	11.8	12.9%
3	B	Ascalon sandy loam, 3 to 9 percent slopes	37.2	40.8%
28	A	Ellicott loamy coarse sand, 0 to 5 percent slopes	12.5	13.8%
97	A	Truckton sandy loam, 3 to 9 percent slopes	5.9	6.5%
101	B	Ustic Torrifluvents, loamy	8.0	8.8%
102	A	Valent sand, 1 to 12 percent slopes, dry	7.4	8.1%
127	D	Midway-Razor clay loams, dry, 1 to 18 percent slopes	8.3	9.1%
Totals for Area of Interest			**91.2**	**100.0%**

Map Unit Descriptions

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

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

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

components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

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

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

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

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

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

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

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

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

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

El Paso County Area, Colorado

2—Ascalon sandy loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 367q
Elevation: 5,500 to 6,500 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 130 to 150 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Ascalon and similar soils: 98 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ascalon

Setting

Landform: Flats
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium and/or eolian deposits

Typical profile

A - 0 to 8 inches: sandy loam
Bt - 8 to 21 inches: sandy clay loam
BC - 21 to 27 inches: sandy loam
Ck1 - 27 to 48 inches: sandy loam
Ck2 - 48 to 60 inches: loamy sand

Properties and qualities

Slope: 1 to 3 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): 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
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R069XY026CO - Sandy Plains
Other vegetative classification: SANDY PLAINS (069BY026CO)
Hydric soil rating: No

Minor Components

Other soils

Percent of map unit: 1 percent
Hydric soil rating: No

Pleasant

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

3—Ascalon sandy loam, 3 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2tlny
Elevation: 3,870 to 5,960 feet
Mean annual precipitation: 13 to 18 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 95 to 155 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Ascalon

Setting

Landform: Interfluves
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Wind-reworked alluvium and/or calcareous sandy eolian deposits

Typical profile

Ap - 0 to 6 inches: sandy loam
Bt1 - 6 to 12 inches: sandy clay loam
Bt2 - 12 to 19 inches: sandy clay loam
Bk1 - 19 to 35 inches: fine sandy loam
Bk2 - 35 to 80 inches: fine sandy loam

Properties and qualities

Slope: 3 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 5.98 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline (0.1 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Minor Components

Olnest

Percent of map unit: 10 percent
Landform: Interfluves
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Vona

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

28—Ellicott loamy coarse sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 3680
Elevation: 5,500 to 6,500 feet
Mean annual precipitation: 13 to 15 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 125 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Ellicott and similar soils: 97 percent
Minor components: 3 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ellicott

Setting

Landform: Flood plains, stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy alluvium

Typical profile

A - 0 to 4 inches: loamy coarse sand
C - 4 to 60 inches: stratified coarse sand to sandy loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: NoneFrequent
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A
Ecological site: R069XY031CO - Sandy Bottomland
Other vegetative classification: SANDY BOTTOMLAND (069AY031CO)
Hydric soil rating: No

Minor Components

Fluvaquentic haplaquoll

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

Other soils

Percent of map unit: 1 percent
Hydric soil rating: No

Pleasant

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

97—Truckton sandy loam, 3 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2x0j2
Elevation: 5,300 to 6,850 feet
Mean annual precipitation: 14 to 19 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 85 to 155 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Truckton

Setting

Landform: Interfluves, hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Re-worked alluvium derived from arkose

Typical profile

A - 0 to 4 inches: sandy loam
Bt1 - 4 to 12 inches: sandy loam
Bt2 - 12 to 19 inches: sandy loam
C - 19 to 80 inches: sandy loam

Properties and qualities

Slope: 3 to 9 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
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline (0.1 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R049XB210CO - Sandy Foothill

Hydric soil rating: No

Minor Components

Blakeland

Percent of map unit: 8 percent
Landform: Interfluves, hillslopes
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Bresser

Percent of map unit: 7 percent
Landform: Interfluves, low hills
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

101—Ustic Torrifluvents, loamy

Map Unit Setting

National map unit symbol: 3673
Elevation: 5,500 to 7,000 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 47 to 52 degrees F
Frost-free period: 125 to 155 days
Farmland classification: Not prime farmland

Map Unit Composition

Ustic torrifluvents and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ustic Torrifluvents

Setting

Landform: Flood plains, stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy, clayey, stratified loamy

Typical profile

A - 0 to 6 inches: variable
C - 6 to 60 inches: stratified loamy sand to clay loam

Properties and qualities

Slope: 0 to 3 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): 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
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R069XY037CO - Saline Overflow
Other vegetative classification: OVERFLOW (069BY036CO)
Hydric soil rating: No

Minor Components

Other soils

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

Pleasant

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

102—Valent sand, 1 to 12 percent slopes, dry

Map Unit Setting

National map unit symbol: 2rgs5
Elevation: 4,000 to 6,200 feet
Mean annual precipitation: 10 to 14 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 130 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Valent, Dry

Setting

Landform: Dunes
Parent material: Eolian sands

Typical profile

A - 0 to 6 inches: sand
AC - 6 to 21 inches: sand
C1 - 21 to 36 inches: sand
C2 - 36 to 79 inches: sand

Properties and qualities

Slope: 1 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very high (19.99 to 42.51 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.1 to 0.2 mmhos/cm)
Sodium adsorption ratio, maximum: 0.1
Available water supply, 0 to 60 inches: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R069XY019CO - Deep Sand
Forage suitability group: Not Suited (G069XW000CO)
Other vegetative classification: Not Suited (G069XW000CO)
Hydric soil rating: No

Minor Components

Vonid

Percent of map unit: 10 percent
Landform: Sand sheets
Ecological site: R069XY026CO - Sandy Plains
Other vegetative classification: Not Suited (G069XW000CO), Sandy Plains (069XY026CO_1)
Hydric soil rating: No

Olney

Percent of map unit: 5 percent
Landform: Sand sheets
Ecological site: R069XY026CO - Sandy Plains
Other vegetative classification: Not Suited (G069XW000CO), Sandy Plains (069XY026CO_1)
Hydric soil rating: No

127—Midway-Razor clay loams, dry, 1 to 18 percent slopes

Map Unit Setting

National map unit symbol: 2t52f
Elevation: 3,700 to 6,400 feet
Mean annual precipitation: 12 to 14 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 130 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Midway, dry, and similar soils: 46 percent
Razor, dry, and similar soils: 44 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Midway, Dry

Setting

Landform: Ridges, hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium and/or residuum weathered from shale

Typical profile

A - 0 to 3 inches: clay loam
AC - 3 to 9 inches: clay
C - 9 to 16 inches: paragravelly clay
Cr - 16 to 79 inches: bedrock

Properties and qualities

Slope: 3 to 18 percent
Depth to restrictive feature: 11 to 20 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.21 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: 5 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 7.9 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): 6e

Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: R069XY046CO - Shaly Plains
Hydric soil rating: No

Description of Razor, Dry

Setting

Landform: Pediments, hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Slope alluvium and/or residuum weathered from shale

Typical profile

A - 0 to 4 inches: clay loam
Bw - 4 to 15 inches: silty clay
Bky - 15 to 30 inches: clay
Cr - 30 to 79 inches: bedrock

Properties and qualities

Slope: 1 to 9 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.21 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: 5 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 7.9 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: R069XY047CO - Alkaline Plains
Hydric soil rating: No

Minor Components

Manzanola

Percent of map unit: 9 percent
Landform: Fan remnants, hillslopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R069XY042CO - Clayey Plains
Other vegetative classification: Loamy Plains #6 (069XY006CO_2)
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Hydric soil rating: No

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APPENDIX C – FEMA FIRM MAP

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.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

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 NAD83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones 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 (NAVD88)**. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. 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:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

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/.

Base Map information shown on this FIRM was provided in digital format by El Paso County, Colorado Springs Utilities, and Anderson Consulting Engineers, Inc. These data are current as of 2008.

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. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. 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. The profile baselines depicted on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables if applicable, in the FIS report. As a result, the profile baselines may deviate significantly from the new base map channel representation and may appear outside of the floodplain.

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.

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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/business/nfip.

El Paso County Vertical Datum Offset Table

Flooding Source	Vertical Datum Offset (ft)
REFER TO SECTION 3.3 OF THE EL PASO COUNTY FLOOD INSURANCE STUDY FOR STREAM BY STREAM VERTICAL DATUM CONVERSION INFORMATION	

Panel Location Map

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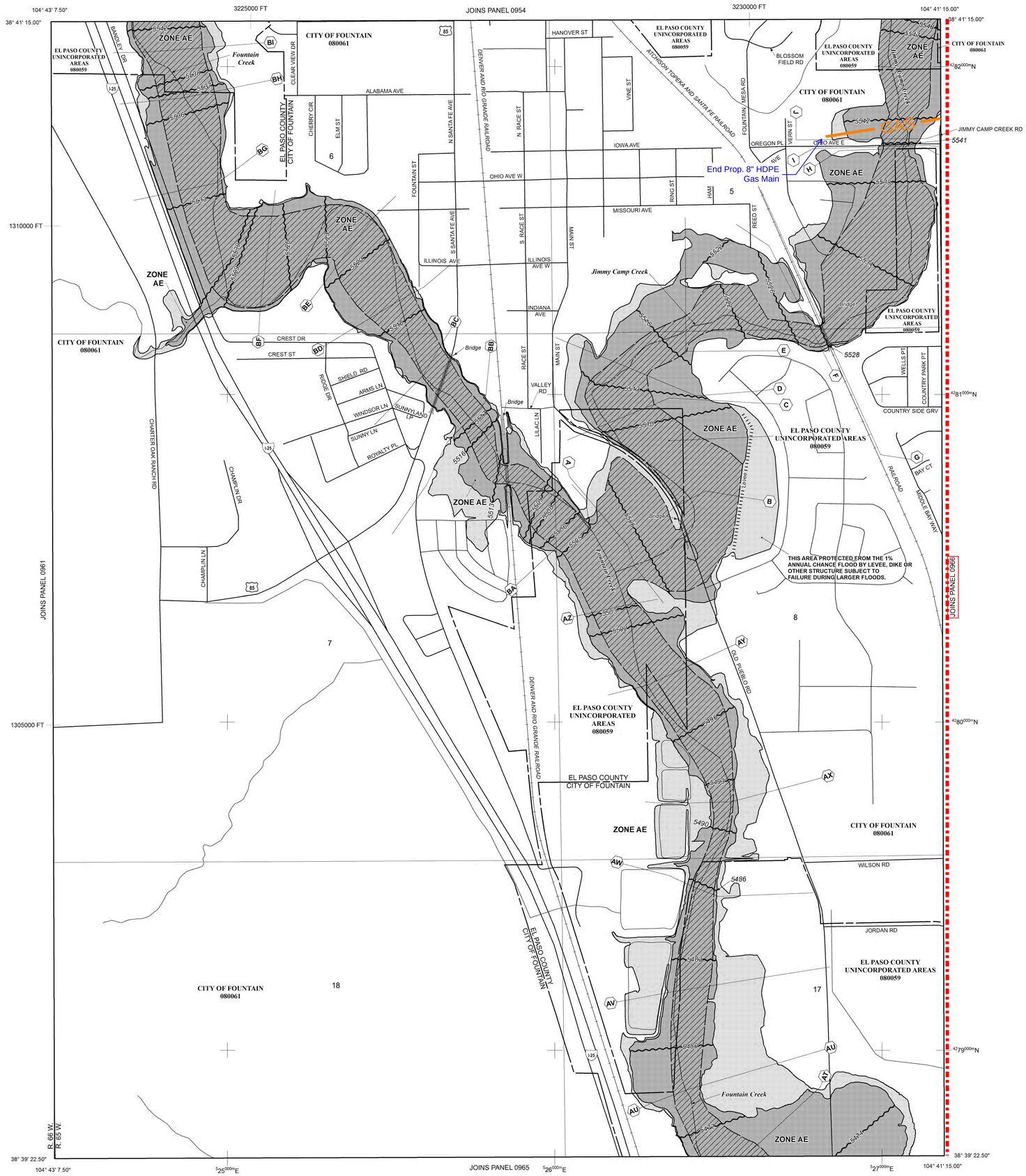

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 16 SOUTH, RANGE 65 WEST.

LEGEND

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

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

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area 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.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); 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.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	Floodplain boundary
	Floodway boundary
	Zone D Boundary
	CBRS and OPA boundary
	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 (NAVD 88)

A — A	Cross section line
23 - - - - 23	Transect line
97° 07' 30.00" 32° 22' 30.00"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4275000mN	1000-meter Universal Transverse Mercator grid ticks, zone 13
6000000 FT	5000-foot grid ticks: Colorado State Plane coordinate system, central zone (FIPSZONE 0502), Lambert Conformal Conic Projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
MARCH 17, 1997

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
DECEMBER 7, 2018 - to update corporate limits, to change Base Flood Elevations and Special Flood Hazard Areas, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

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" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0962G

FIRM
FLOOD INSURANCE RATE MAP
EL PASO COUNTY, COLORADO
AND INCORPORATED AREAS

PANEL 962 OF 1300

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EL PASO COUNTY	080059	0962	G
FOUNTAIN, CITY OF	080061	0962	G

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
08041C0962G

MAP REVISED
DECEMBER 7, 2018

Federal Emergency Management Agency

NOTES TO USERS

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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.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

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 NAD83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones 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 (NAVD88)**. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. 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:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

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El Paso County Vertical Datum Offset Table

Flooding Source	Vertical Datum Offset (ft)
REFER TO SECTION 3.3 OF THE EL PASO COUNTY FLOOD INSURANCE STUDY FOR STREAM BY STREAM VERTICAL DATUM CONVERSION INFORMATION	

Panel Location Map

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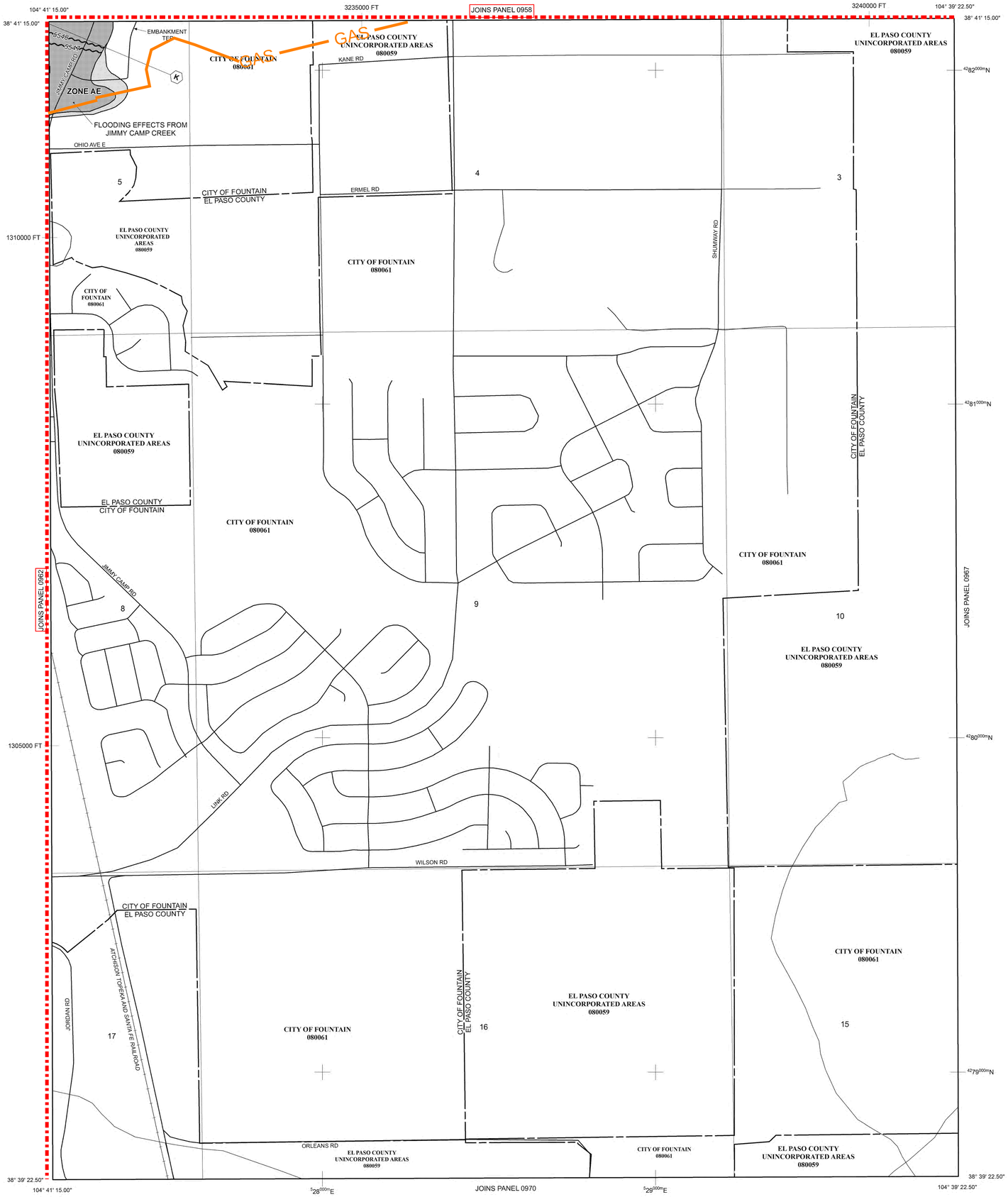

LEGEND

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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.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

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	Floodplain boundary
	Floodway boundary
	Zone D Boundary
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EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
MARCH 17, 1997

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150 0 150 300 METERS

NFIP

PANEL 0966G

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
EL PASO COUNTY, COLORADO
AND INCORPORATED AREAS

PANEL 966 OF 1300

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EL PASO COUNTY	080059	0966	G
FOUNTAIN, CITY OF	080061	0966	G

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MAP NUMBER
08041C0966G

MAP REVISED
DECMEBER 7, 2018

Federal Emergency Management Agency

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El Paso County Vertical Datum Offset Table

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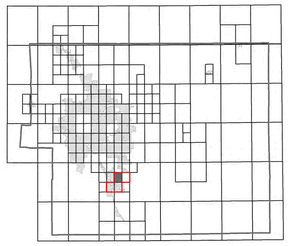
Panel Location Map



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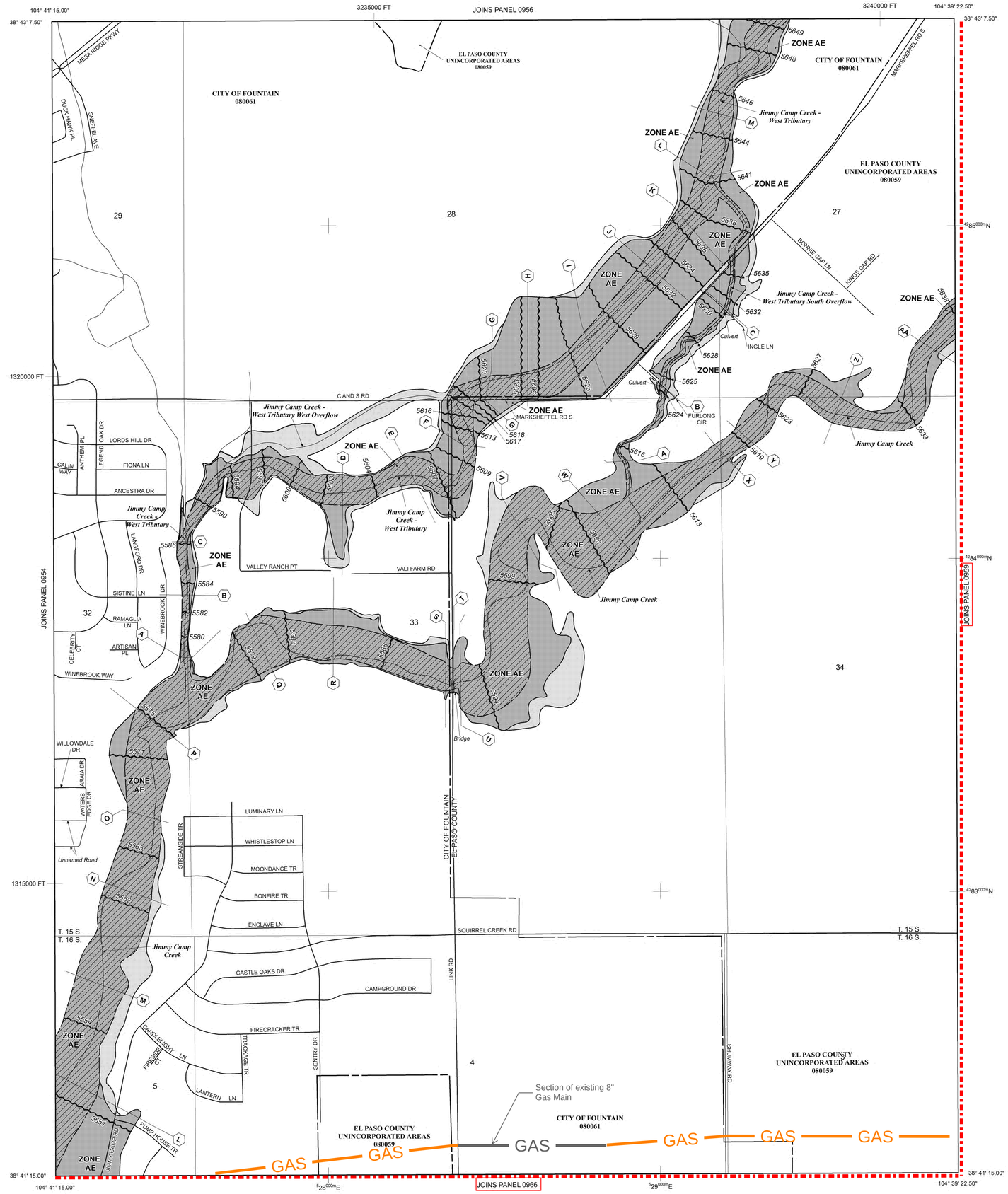

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 15 SOUTH, RANGE 65 WEST, AND TOWNSHIP 16 SOUTH, RANGE 65 WEST.

LEGEND

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

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FLOODWAY AREAS IN ZONE AE

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OTHER FLOOD AREAS

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COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

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MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
MARCH 17, 1997

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250 0 500 1000 FEET

150 0 150 300 METERS

NFIP

PANEL 0958G

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
EL PASO COUNTY, COLORADO
AND INCORPORATED AREAS

PANEL 958 OF 1300

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EL PASO COUNTY	080059	0958	G
FOUNTAIN, CITY OF	080061	0958	G

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MAP NUMBER
08041C0958G

MAP REVISED
DECEMBER 7, 2018

Federal Emergency Management Agency

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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 NAD83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones 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 (NAVD88)**. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. 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:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

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/.

Base Map information shown on this FIRM was provided in digital format by El Paso County, Colorado Springs Utilities, and Anderson Consulting Engineers, Inc. These data are current as of 2008.

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. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. 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. The profile baselines depicted on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables if applicable, in the FIS report. As a result, the profile baselines may deviate significantly from the new base map channel representation and may appear outside of the floodplain.

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.

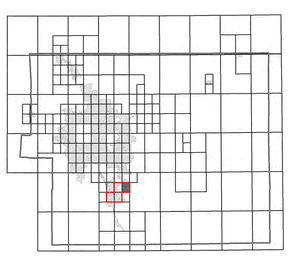
Contact **FEMA Map Service Center** (MSC) via the FEMA Map Information eXchange (FMIX) 1-877-336-2627 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. The MSC 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/business/nfip.

El Paso County Vertical Datum Offset Table

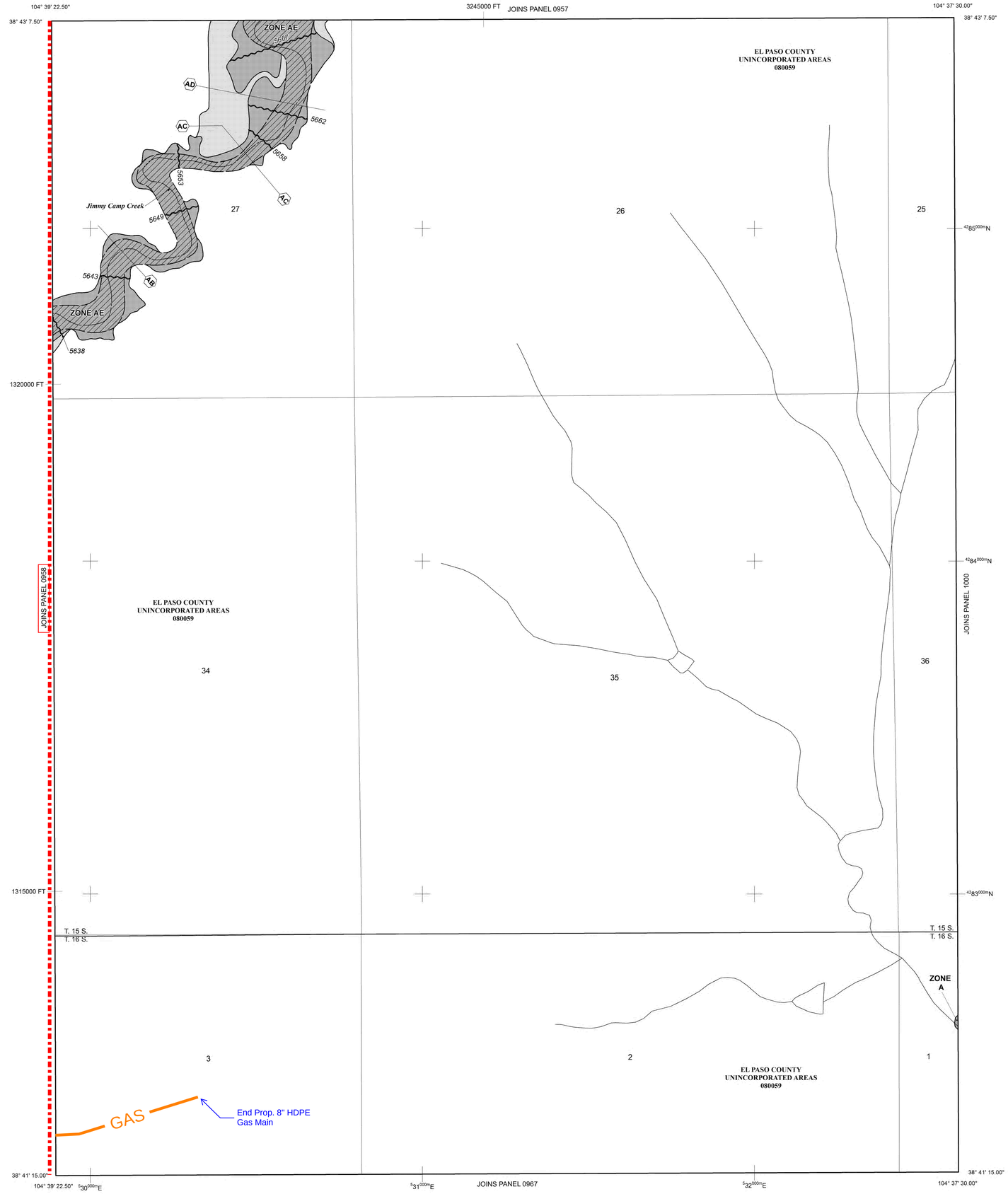
Flooding Source	Vertical Datum Offset (ft)
REFER TO SECTION 3.3 OF THE EL PASO COUNTY FLOOD INSURANCE STUDY FOR STREAM BY STREAM VERTICAL DATUM CONVERSION INFORMATION	

Panel Location Map



This Digital Flood Insurance Rate Map (DFIRM) was produced through a Cooperating Technical Partner (CTP) agreement between the State of Colorado Water Conservation Board (CWCB) and the Federal Emergency Management Agency (FEMA).

Additional Flood Hazard information and resources are available from local communities and the Colorado Water Conservation Board.



NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 15 SOUTH, RANGE 65 WEST, AND TOWNSHIP 16 SOUTH, RANGE 65 WEST.

LEGEND

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

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

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area 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.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); 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.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	Floodplain boundary
	Floodway boundary
	Zone D Boundary
	CBRS and OPA boundary
	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 (NAVD 88)

A — A	Cross section line
23 - - - - 23	Transect line
97° 07' 30.00" 32° 22' 30.00"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4275000mN	1000-meter Universal Transverse Mercator grid ticks, zone 13
6000000 FT	5000-foot grid ticks: Colorado State Plane coordinate system, central zone (FIPSZONE 0502), Lambert Conformal Conic Projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
MARCH 17, 1997

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
DECEMBER 7, 2018 - to update corporate limits, to change Base Flood Elevations and Special Flood Hazard Areas, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

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" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NFIP

PANEL 0959G

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

EL PASO COUNTY, COLORADO

AND INCORPORATED AREAS

PANEL 959 OF 1300

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EL PASO COUNTY	080059	0959	G

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
08041C0959G

MAP REVISED
DECEMBER 7, 2018

Federal Emergency Management Agency

APPENDIX D – IDENTIFICATION OF POLLUTANT SOURCES

Outdoor Storage of Materials Log

Identification of Pollutant	Date Onsite	Date Removed	Containment Method

Vehicle Equipment Maintenance and Fueling Log

Identification of Pollutant	Date Onsite	Date Removed	Containment Method

Routine Maintenance Log

Identification of Pollutant	Date Onsite	Date Removed	Containment Method

Onsite Waste Management Log

Identification of Pollutant	Date Onsite	Date Removed	Containment Method

Non-Industrial Waste Sources Log

Identification of Pollutant	Date Onsite	Date Removed	Containment Method

Additional Pollutant Sources Log

Identification of Pollutant	Date Onsite	Date Removed	Containment Method

APPENDIX E – LAND DISTURBANCE / CONTROL MEASURE / STABILZATION LOG

Land Disturbance / BMP Installation / Stabilization Log

Date Initiated	Description of Activity	Date Ceased	Identification of BMP / Stabilization Method	Date Implemented	Date Removed

APPENDIX F – CDPHE ENVIRONMENTAL SPILL REPORTING

involving a radioactive or infectious material, or there is a release of a marine pollutant.

Spills and incidents that have or may result in a spill along a highway must be reported to the nearest law enforcement agency immediately. The Colorado State Patrol and CDPHE must also be notified as soon as possible. In the event of a spill of hazardous waste at a transfer facility, the transporter must notify CDPHE within 24 hours if the spill exceeds 55 gallons or if there is a fire or explosion.

The National Response Center should be notified as soon as possible after discovery of a release of a hazardous liquid or carbon dioxide from a pipeline system if a person is killed or injured, there is a fire or explosion, there is property damage of $50,000 or more, or any nearby water body is contaminated.

The National Response Center and the Colorado Public Utilities Commission Gas Pipeline Safety Section must be notified as soon as possible, but not more than two hours after discovery of a release of gas from a natural gas pipeline or liquefied natural gas facility if a person is killed or injured, there is an emergency shutdown of the facility, or there is property damage of $50,000 or more. The Colorado Public Utilities Commission should also be notified if there is a gas leak from a pipeline, liquefied natural gas system, master meter system or a propane system that results in the evacuation of 50 or more people from an occupied building or the closure of a roadway.

Oil and Gas Exploration

All Class I major events on federal lands, including releases of hazardous substances in excess of the CERCLA reportable quantity and spills of more than 100 barrels of fluid and/or 500 MCF of gas released, must be reported to the Bureau of Land Management (BLM) immediately. Spills of oil, gas, salt water, toxic liquids and waste materials must also be reported to the BLM and the surface management agency.

Spills of exploration and production (E&P) waste on state or private lands in excess of 20 barrels, and spills of any size that impact or threaten to impact waters of the state, an occupied structure, or public byway must be reported to the Colorado Oil and Gas Conservation Commission as soon as practicable, but not more than 24 hours after discovery. Spills of any size that impact or threaten to impact waters of the state must be reported to CDPHE immediately. Spills that impact or threaten to impact a surface water intake must be reported to the emergency contact for that facility immediately after discovery. Spills of more than five (5) barrels of E&P waste must be reported in writing to the Oil and Gas Conservation Commission within 10 days of discovery.

REPORTING NUMBERS

National Response Center (24-hour)
1-800-424-8802

CDPHE Colorado Environmental Release and Incident Reporting Line (24-hour)
1-877-518-5608

Radiation Incident Reporting Line (24-hour)
303-877-9757

Colorado State Patrol (24-hour)
303-239-4501

Division of Oil and Public Safety
(business hours)
303-318-8547

Oil and Gas Conservation Commission
(business hours)
303-894-2100

Colorado Public Utilities Commission Gas Pipeline Safety Section (business hours)
303-894-2851

Local Emergency Planning Committees
(to obtain list, business hours)
720-852-6603

Colorado Department of Public Health and Environment

Environmental Spill Reporting

Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, CO 80246-1530

http://www.cdphe.state.co.us

January 2009

When a release of a hazardous material or other substance occurs to the environment, there are a number of reporting and notification requirements that must be followed by the company or individual responsible for the release. Most spills are covered by more than one reporting requirement, and **all** requirements must be met. In addition to verbal notification, written reports are generally required. This brochure briefly explains the major requirements. A more detailed description is provided in the “Reporting Environmental Releases in Colorado” Guidance Document, available on the web.

Releases that must be reported to the Colorado Department of Public Health and Environment (CDPHE) may be reported to the Colorado Environmental Release and Incident Reporting Line.

ENVIRONMENTAL SPILL REPORTING

CERCLA, EPCRA and RCRA

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Emergency Planning and Community Right-to-Know Act (EPCRA) require that a release of a reportable quantity or more of a hazardous substance to the environment be reported immediately to the appropriate authorities when the release is discovered.

Under CERCLA, reportable quantities were established for hazardous substances listed or designated under other environmental statutes. These include:

- all hazardous air pollutants (HAPs) listed under Section 112(b) of the Clean Air Act.
- all toxic pollutants designated under Section 307(a) or Section 311(b)(2)(A) of the Clean Water Act.
- all Resource Conservation and Recovery Act (RCRA) characteristic and listed hazardous wastes.
- any element, compound, or substance designated under Section 102 of CERCLA.

EPCRA established a list of extremely hazardous substances (EHS) that could cause serious irreversible health effects from accidental releases. Many substances appear on both the CERCLA and EPCRA lists. EPCRA extremely hazardous substances that are also CERCLA hazardous substances have the same reportable quantity (RQ) as under CERCLA. EPCRA extremely hazardous substances that are not listed under CERCLA have a reportable quantity that is equal to their threshold planning quantity (TPQ). A list of CERCLA reportable quantities is included in 40 CFR Section 302.4. A list of EPCRA threshold planning quantities is included in 40 CFR Part 355 Appendices A & B.

CERCLA-reportable releases must be reported immediately to the National Response Center (NRC), while EPCRA-reportable releases must be reported immediately to the National Response Center, the State Emergency Response Commission (SERC) and the affected Local Emergency Planning Committee (LEPC). If the release is an EPCRA extremely hazardous substance, but not a CERCLA hazardous substance, and there is absolutely no potential to affect off-site persons, then only the State Emergency Planning Commission (represented by CDPHE for reporting purposes) and the Local Emergency Planning Committee need to be notified.

In the case of a release of hazardous waste stored in tanks, RCRA-permitted facilities and large quantity generators must also notify CDPHE within 24 hours of any release to the environment that is greater than one (1) pound.

Radiation Control

Each licensee or registrant must report to the Radiation Incident Reporting Line in the event of lost, stolen or missing licensed or registered radioactive materials or radiation machines, releases of radioactive materials, contamination events, and fires or explosions involving radioactive materials. Releases of radionuclides are reportable under CERCLA.

Clean Water Act

The Clean Water Act requires the person in charge of a facility or vessel to immediately report to the National Response Center all discharges of oil or designated hazardous substances to water. Oil means oil of any kind or form. Designated hazardous substances are included in the CERCLA list.

The Clean Water Act also requires that facilities with a National Pollutant Discharge Elimination System (NPDES) permit report to the National Response Center within 24 hours of becoming aware of any unanticipated bypasses or upsets that cause an exceedance of the effluent limits in their permit and any violations of their maximum daily discharge limits for pollutants listed in their permit.

A release of any chemical, oil, petroleum product, sewage, etc., which may enter waters of the state of Colorado (which include surface water, ground water and dry gullies and storm sewers leading to surface water) must be reported immediately to CDPHE. Any accidental discharge to the sanitary sewer system must be reported immediately to the local sewer authority and the affected wastewater treatment plant. For additional regarding releases to water, please see "Guidance for Reporting Spills under the Colorado Water Quality Control Act and Colorado Discharge Permits" at http://www.cdphe.state.co.us/op/wqcc/Resources/Guidance/spillguidance.pdf.

Clean Air Act

Hazardous air pollutants (HAPs) are designated as hazardous substances under CERCLA. If a facility has an air permit but the permit does not allow for or does not specify the release of a substance, or if the facility does not have an air permit, then all releases in excess of the CERCLA / EPCRA reportable quantity for that substance must be reported to the National Response Center and CDPHE. If the facility releases more of a substance than is allowed under its air permit, the facility must also report the release. Discharges of a substance that are within the allowable limits specified in the facility's permit do not need to be reported.

Regulated Storage Tanks

Owners and operators of regulated storage tank systems must report a release or suspected release of regulated substances to the Division of Oil and Public Safety at the Colorado Department of Labor and Employment within 24 hours. Under this program, the reportable quantity for petroleum releases is 25 gallons or more, or any amount that causes a sheen on nearby surface water. Spills of less than 25 gallons of petroleum must be immediately contained and cleaned up. If cleanup cannot be accomplished within 24 hours, the Division of Oil and Public Safety must be notified immediately.

Spills of hazardous substances from tanks in excess of the CERCLA or EPCRA reportable quantity must be reported immediately to the National Response Center, CDPHE and the local fire authority, and to the Division of Oil and Public Safety within 24 hours.

Transportation and Pipelines

The person in physical possession of a hazardous material must notify the National Response Center as soon as practical, but not to exceed 12 hours after the incident, if as a direct result of the hazardous material, a person is killed or injured, there is an evacuation of the general public lasting more than an hour, a major transportation artery is shut down for an hour or more, the flight pattern of an aircraft is altered, there is fire, spillage or suspected contamination

APPENDIX G – STORM EVENT LOG

Rain Gauge Data		
Date:	**Location:**	**Reading in decimal fraction of inches**

APPENDIX H – SWMP INSPECTION REPORTS

CONSTRUCTION STORMWATER SITE INSPECTION REPORT

Facility Name		Permittee	
Date of Inspection		Weather Conditions	
Permit Certification #		Disturbed Acreage	
Phase of Construction		Inspector Title	
Inspector Name			

	YES	NO
Is the above inspector a qualified stormwater manager? (permittee is responsible for ensuring that the inspector is a qualified stormwater manager)	☐	☐

INSPECTION FREQUENCY	
Check the box that describes the minimum inspection frequency utilized when conducting each inspection	
At least one inspection every 7 calendar days	☐
At least one inspection every 14 calendar days, with post-storm event inspections conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosions	☐
• This is this a post-storm event inspection. Event Date: _____	☐
Reduced inspection frequency - Include site conditions that warrant reduced inspection frequency	☐
• Post-storm inspections at temporarily idle sites	☐
• Inspections at completed sites/area	☐
• Winter conditions exclusion	☐
Have there been any deviations from the minimum inspection schedule? If yes, describe below.	YES ☐ NO ☐

INSPECTION REQUIREMENTS*
i. Visually verify all implemented control measures are in effective operational condition and are working as designed in the specifications
ii. Determine if there are new potential sources of pollutants
iii. Assess the adequacy of control measures at the site to identify areas requiring new or modified control measures to minimize pollutant discharges
iv. Identify all areas of non-compliance with the permit requirements, and if necessary, implement corrective action
*Use the attached **Control Measures Requiring Routine Maintenance** and **Inadequate Control Measures Requiring Corrective Action** forms to document results of this assessment that trigger either maintenance or corrective actions

AREAS TO BE INSPECTED			
Is there evidence of, or the potential for, pollutants leaving the construction site boundaries, entering the stormwater drainage system or discharging to state waters at the following locations?			
	NO	YES	If "YES" describe discharge or potential for discharge below. Document related maintenance, inadequate control measures and corrective actions **Inadequate Control Measures Requiring Corrective Action** form
Construction site perimeter	☐	☐	
All disturbed areas	☐	☐	
Designated haul routes	☐	☐	
Material and waste storage areas exposed to precipitation	☐	☐	
Locations where stormwater has the potential to discharge offsite	☐	☐	
Locations where vehicles exit the site	☐	☐	
Other: _____	☐	☐	

CONTROL MEASURES REQUIRING ROUTINE MAINTENANCE

Definition: Any control measure that is still operating in accordance with its design and the requirements of the permit, but requires maintenance to prevent a breach of the control measure. These items are not subject to the corrective action requirements as specified in Part I.B.1.c of the permit.

Are there control measures requiring maintenance?	NO	YES	
	☐	☐	If "YES" document below

Date Observed	Location	Control Measure	Maintenance Required	Date Completed

INADEQUATE CONTROL MEASURES REQUIRING CORRECTIVE ACTION

Definition: Any control measure that is not designed or implemented in accordance with the requirements of the permit and/or any control measure that is not implemented to operate in accordance with its design. This includes control measures that have not been implemented for pollutant sources. If it is infeasible to install or repair the control measure immediately after discovering the deficiency the reason must be documented and a schedule included to return the control measure to effective operating condition as possible.

Are there inadequate control measures requiring corrective action?	NO	YES	
	☐	☐	If "YES" document below

Are there additional control measures needed that were not in place at the time of inspection?	NO	YES	
	☐	☐	If "YES" document below

Date Discovered	Location	Description of Inadequate Control Measure	Description of Corrective Action	Was deficiency corrected when discovered? YES/NO if "NO" provide reason and schedule to correct	Date Corrected

REPORTING REQUIREMENTS

The permittee shall report the following circumstances orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances, and shall mail to the division a written report containing the information requested within five (5) working days after becoming aware of the following circumstances. The division may waive the written report required if the oral report has been received within 24 hours.

All Noncompliance Requiring 24-Hour Notification per Part II.L.6 of the Permit

a. Endangerment to Health or the Environment

Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident (See Part II.L.6.a of the Permit)

This category would primarily result from the discharge of pollutants in violation of the permit

b. Numeric Effluent Limit Violations

- Circumstances leading to any unanticipated bypass which exceeds any effluent limitations (See Part II.L.6.b of the Permit)
- Circumstances leading to any upset which causes an exceedance of any effluent limitation (See Part II.L.6.c of the Permit)
- Daily maximum violations (See Part II.L.6.d of the Permit)

Numeric effluent limits are very uncommon in certifications under the COR400000 general permit. This category of noncompliance only applies if numeric effluent limits are included in a permit certification.

Has there been an incident of noncompliance requiring 24-hour notification?	NO	YES	
	☐	☐	If "YES" document below

Date and Time of Incident	Location	Description of Noncompliance	Description of Corrective Action	Date and Time of 24 Hour Oral Notification	Date of 5 Day Written Notification *

*Attach copy of 5 day written notification to report. Indicate if written notification was waived, including the name of the division personnel who granted waiver.

After adequate corrective action(s) and maintenance have been taken, or where a report does not identify any incidents requiring corrective action or maintenance, the individual(s) designated as the Qualified Stormwater Manager, shall sign and certify the below statement:

"I verify that, to the best of my knowledge and belief, all corrective action and maintenance items identified during the inspection are complete, and the site is currently in compliance with the permit."

Name of Qualified Stormwater Manager	Title of Qualified Stormwater Manager
Signature of Qualified Stormwater Manager	Date

Notes/Comments

APPENDIX I – CCM CORRECTIVE ACTION LOG

BMP Corrective Action Log

Date Identified	Inspector	Description of BMP Deficiency	Corrective Action Taken	Date Completed

APPENDIX J – SWMP AMENDMENT LOG

AMENDMENT LOG

Amendment No.	Date	Brief Description of Amendment	Prepared By

APPENDIX K – GEC OPINION OF PROBABLE COST

2023 Financial Assurance Estimate Form

Updated: 1/31/23

PROJECT INFORMATION		
BHE - Squirrel Creek Gas Line (City of Fountain)	1/3/2023	Joseph Menke
Project Name	Date	Engineer

Description	Quantity	Units	Unit Cost		Total
SECTION 1 - GRADING AND EROSION CONTROL (Construction and Permanent BMPs)					
Earthwork					
less than 1,000; $5,300 min	0	CY	$ 8.00	=	$ 5,300.00
1,000-5,000; $8,000 min		CY	$ 6.00	=	$ -
5,001-20,000; $30,000 min		CY	$ 5.00	=	$ -
20,001-50,000; $100,000 min		CY	$ 3.50	=	$ -
50,001-200,000; $175,000 min		CY	$ 2.50	=	$ -
greater than 200,000; $500,000 min		CY	$ 2.00	=	$ -
Permanent Erosion Control Blanket		SY	$ 8.00	=	$ -
Permanent Seeding (inc. noxious weed mgmt.) & Mulching	7.1	AC	$ 1,875.00	=	$ 13,286.03
Permanent Pond/BMP (provide engineer's estimate)		EA		=	$ -
Concrete Washout Basin		EA	$ 1,089.00	=	$ -
Inlet Protection		EA	$ 202.00	=	$ -
Rock Check Dam		EA	$ 605.00	=	$ -
Safety Fence		LF	$ 3.00	=	$ -
Sediment Basin		EA	$ 2,132.00	=	$ -
Sediment Trap		EA	$ 500.00	=	$ -
Silt Fence	4,835	LF	$ 3.00	=	$ 14,505.00
Slope Drain		LF	$ 40.00	=	$ -
Straw Bale		EA	$ 31.00	=	$ -
Straw Wattle/Rock Sock (Sediment Control Log)	740	LF	$ 7.00	=	$ 5,180.00
Surface Roughening		AC	$ 250.00	=	$ -
Temporary Erosion Control Blanket		SY	$ 3.00	=	$ -
Temporary Seeding and Mulching		AC	$ 1,666.00	=	$ -
Vehicle Tracking Control	2	EA	$ 2,867.00	=	$ 5,734.00
				=	$ -
[insert items not listed but part of construction plans]				=	$ -
MAINTENANCE (25% of Construction BMPs)				=	$ 6,354.75
Section 1 Subtotal				**=**	**$ 50,359.78**

SECTION 2 - PUBLIC IMPROVEMENTS

ROADWAY IMPROVEMENTS

Construction Traffic Control		LS		=	$	-
Aggregate Base Course (135 lbs/cf)		Tons	$ 34.00	=	$	-
Aggregate Base Course (135 lbs/cf)		CY	$ 61.00	=	$	-
Asphalt Pavement (3" thick)		SY	$ 17.00	=	$	-
Asphalt Pavement (4" thick)		SY	$ 23.00	=	$	-
Asphalt Pavement (6" thick)		SY	$ 35.00	=	$	-
Asphalt Pavement (147 lbs/cf) __" thick		Tons	$ 106.00	=	$	-
Raised Median, Paved		SF	$ 10.00	=	$	-
Regulatory Sign/Advisory Sign		EA	$ 364.00	=	$	-
Guide/Street Name Sign		EA		=	$	-
Epoxy Pavement Marking		SF	$ 16.00	=	$	-
Thermoplastic Pavement Marking		SF	$ 28.00	=	$	-
Barricade - Type 3		EA	$ 241.00	=	$	-
Delineator - Type I		EA	$ 29.00	=	$	-
Curb and Gutter, Type A (6" Vertical)		LF	$ 35.00	=	$	-
Curb and Gutter, Type B (Median)		LF	$ 35.00	=	$	-
Curb and Gutter, Type C (Ramp)		LF	$ 35.00	=	$	-
4" Sidewalk (common areas only)		SY	$ 58.00	=	$	-
5" Sidewalk		SY	$ 72.00	=	$	-
6" Sidewalk		SY	$ 87.00	=	$	-
8" Sidewalk		SY	$ 116.00	=	$	-
Pedestrian Ramp		EA	$ 1,390.00	=	$	-
Cross Pan, local (8" thick, 6' wide to include return)		LF	$ 73.00	=	$	-
Cross Pan, collector (9" thick, 8' wide to include return)		LF	$ 111.00	=	$	-
Curb Opening with Drainage Chase		EA	$ 1,790.00	=	$	-
Guardrail Type 3 (W-Beam)		LF	$ 60.00	=	$	-
Guardrail Type 7 (Concrete)		LF	$ 87.00	=	$	-
Guardrail End Anchorage		EA	$ 2,538.00	=	$	-
Guardrail Impact Attenuator		EA	$ 4,556.00	=	$	-
Sound Barrier Fence (CMU block, 6' high)		LF	$ 95.00	=	$	-
Sound Barrier Fence (panels, 6' high)		LF	$ 97.00	=	$	-
Electrical Conduit, Size =		LF	$ 20.00	=	$	-
Traffic Signal, (provide engineer's estimate)		EA		=	$	-
				=	$	-
[insert items not listed but part of construction plans]				=	$	-

STORM DRAIN IMPROVEMENTS

Concrete Box Culvert (M Standard), Size (W x H)		LF		=	$	-
18" Reinforced Concrete Pipe		LF	$ 76.00	=	$	-
24" Reinforced Concrete Pipe		LF	$ 91.00	=	$	-
30" Reinforced Concrete Pipe		LF	$ 114.00	=	$	-
36" Reinforced Concrete Pipe		LF	$ 140.00	=	$	-
42" Reinforced Concrete Pipe		LF	$ 187.00	=	$	-
48" Reinforced Concrete Pipe		LF	$ 228.00	=	$	-
54" Reinforced Concrete Pipe		LF	$ 297.00	=	$	-
60" Reinforced Concrete Pipe		LF	$ 348.00	=	$	-
66" Reinforced Concrete Pipe		LF	$ 402.00	=	$	-
72" Reinforced Concrete Pipe		LF	$ 460.00	=	$	-
18" Corrugated Steel Pipe		LF	$ 98.00	=	$	-
24" Corrugated Steel Pipe		LF	$ 112.00	=	$	-
30" Corrugated Steel Pipe		LF	$ 143.00	=	$	-
36" Corrugated Steel Pipe		LF	$ 171.00	=	$	-
42" Corrugated Steel Pipe		LF	$ 197.00	=	$	-
48" Corrugated Steel Pipe		LF	$ 207.00	=	$	-
54" Corrugated Steel Pipe		LF	$ 304.00	=	$	-
60" Corrugated Steel Pipe		LF	$ 328.00	=	$	-
66" Corrugated Steel Pipe		LF	$ 397.00	=	$	-
72" Corrugated Steel Pipe		LF	$ 467.00	=	$	-
78" Corrugated Steel Pipe		LF	$ 537.00	=	$	-
84" Corrugated Steel Pipe		LF	$ 642.00	=	$	-

Flared End Section (FES) RCP Size = (unit cost = 6x pipe unit cost)		EA		=	$	-
Flared End Section (FES) CSP Size = (unit cost = 6x pipe unit cost)		EA		=	$	-
End Treatment- Headwall		EA		=	$	-
End Treatment- Wingwall		EA		=	$	-
End Treatment - Cutoff Wall		EA		=	$	-
Curb Inlet (Type R) L=5', Depth < 5'		EA	$ 6,703.00	=	$	-
Curb Inlet (Type R) L=5', 5' ≤ Depth < 10'		EA	$ 8,715.00	=	$	-
Curb Inlet (Type R) L =5', 10' ≤ Depth < 15'		EA	$ 10,092.00	=	$	-
Curb Inlet (Type R) L =10', Depth < 5'		EA	$ 9,224.00	=	$	-
Curb Inlet (Type R) L =10', 5' ≤ Depth < 10'		EA	$ 9,507.00	=	$	-
Curb Inlet (Type R) L =10', 10' ≤ Depth < 15'		EA	$ 11,901.00	=	$	-
Curb Inlet (Type R) L =15', Depth < 5'		EA	$ 11,995.00	=	$	-
Curb Inlet (Type R) L =15', 5' ≤ Depth < 10'		EA	$ 12,858.00	=	$	-
Curb Inlet (Type R) L =15', 10' ≤ Depth < 15'		EA	$ 14,061.00	=	$	-
Curb Inlet (Type R) L =20', Depth < 5'		EA	$ 12,783.00	=	$	-
Curb Inlet (Type R) L =20', 5' ≤ Depth < 10'		EA	$ 14,109.00	=	$	-
Grated Inlet (Type C), Depth < 5'		EA	$ 5,611.00	=	$	-
Grated Inlet (Type D), Depth < 5'		EA	$ 6,931.00	=	$	-
Storm Sewer Manhole, Box Base		EA	$ 14,061.00	=	$	-
Storm Sewer Manhole, Slab Base		EA	$ 7,734.00	=	$	-
Geotextile (Erosion Control)		SY	$ 8.00	=	$	-
Rip Rap, d50 size from 6" to 24"		Tons	$ 97.00	=	$	-
Rip Rap, Grouted		Tons	$ 115.00	=	$	-
Drainage Channel Construction, Size (W x H)		LF	$ -	=	$	-
Drainage Channel Lining, Concrete		CY	$ 689.00	=	$	-
Drainage Channel Lining, Rip Rap		CY	$ 135.00	=	$	-
Drainage Channel Lining, Grass		AC	$ 1,776.00	=	$	-
Drainage Channel Lining, Other Stabilization				=	$	-
				=	$	-
[insert items not listed but part of construction plans]				=	$	-
WATER SYSTEM IMPROVEMENTS						
Water Main Pipe (PVC), Size 6"		LF	$ 70.00	=	$	-
Gate Valves, 6"		EA	$ 2,000.00	=	$	-
Water Main Pipe (PVC), Size 8"		LF	$ 85.00	=	$	-
Gate Valves, 8"		EA	$ 3,000.00	=	$	-
Water Main Pipe (PVC), Size 12"		LF	$ 130.00	=	$	-
Gate Valves, 12"		EA	$ 6,000.00	=	$	-
Fire Hydrant Assembly, w/ all valves		EA	$ 15,500.00	=	$	-
Water Service Line Installation, inc. tap and valves		EA	$ 1,850.00	=	$	-
Fire Service Line Installation, inludes tap and valves		EA	$ 8,500.00	=	$	-
				=	$	-
[insert items not listed but part of construction plans]				=	$	-
		Section 2 Subtotal		**=**	**$**	**-**

SECTION 3 - COMMON DEVELOPMENT IMPROVEMENTS (Private or District, NOT City)*

ROADWAY IMPROVEMENTS

				=	$	-
				=	$	-
				=	$	-
				=	$	-
				=	$	-
				=	$	-

STORM DRAIN IMPROVEMENTS (Exception: Permanent Pond/BMP shall be itemized under Section 1)

				=	$	-
				=	$	-
				=	$	-
				=	$	-
				=	$	-
				=	$	-

WATER SYSTEM IMPROVEMENTS

				=	$	-
				=	$	-
				=	$	-
				=	$	-
				=	$	-
				=	$	-

* Section 3 is not subject to defect warranty requirements

Section 3 Subtotal = $ -

Grading and Erosion Control Financial Assurance $ 50,359.78
(Sum of Section 1 - Amount to be provided as a seperate financial assurance)

Public and Common Development Improvements Financial Assurance $ -
(Sum of Sections 2 and 3 - Amount to be provided separately from the Grading and Erosion Control financial assurance)

Total Defect Warranty Financial Assurance $ -
(20% of Section 2 Public Improvements. To be collateralized at time of preliminary acceptance)

Approvals

I hereby certify that this is an accurate and complete estimate of costs for the work as shown on the Grading and Erosion Control Plan and Construction Drawings associated with the Project.

COLORADO LICENSED
JOSEPH W. MEYER
63168
01/17/24
PROFESSIONAL ENGINEER

Engineer (P.E. Seal Required) — Date: January 17, 2024

Approved by Owner / Applicant — Date

Approved by City Engineer — Date

2023 Financial Assurance Estimate Form
(with pre-plat construction)

Updated: 12/8/2022

PROJECT INFORMATION		
BHE - Squirrel Creek Gas Line (El Paso County)	1/3/2023	CDR2322
Project Name	Date	PCD File No.

Description	Quantity	Units	Unit Cost		Total	(with Pre-Plat Construction) % Complete	Remaining	
SECTION 1 - GRADING AND EROSION CONTROL (Construction and Permanent BMPs)								
Earthwork								*
less than 1,000; $5,300 min	0	CY	$ 8.00	=	$ 5,300.00		$ 5,300.00	*
1,000-5,000; $8,000 min		CY	$ 6.00	=	$ -		$ -	*
5,001-20,000; $30,000 min		CY	$ 5.00	=	$ -		$ -	*
20,001-50,000; $100,000 min		CY	$ 3.50	=	$ -		$ -	*
50,001-200,000; $175,000 min		CY	$ 2.50	=	$ -		$ -	*
greater than 200,000; $500,000 min		CY	$ 2.00	=	$ -		$ -	*
Permanent Erosion Control Blanket		SY	$ 8.00	=	$ -		$ -	*
Permanent Seeding (inc. noxious weed mgmnt.) & Mulching	4.1	AC	$ 1,875.00	=	$ 7,681.22		$ 7,681.22	*
Permanent Pond/BMP (provide engineer's estimate)		EA		=	$ -		$ -	*
Concrete Washout Basin		EA	$ 1,089.00	=	$ -		$ -	
Inlet Protection		EA	$ 202.00	=	$ -		$ -	
Rock Check Dam		EA	$ 605.00	=	$ -		$ -	
Safety Fence		LF	$ 3.00	=	$ -		$ -	
Sediment Basin		EA	$ 2,132.00	=	$ -		$ -	
Sediment Trap		EA	$ 500.00	=	$ -		$ -	
Silt Fence	1,165	LF	$ 3.00	=	$ 3,495.00		$ 3,495.00	
Slope Drain		LF	$ 40.00		$ -		$ -	
Straw Bale		EA	$ 31.00	=	$ -		$ -	
Straw Wattle/Rock Sock (Sediment Control Log)	75	LF	$ 7.00	=	$ 525.00		$ 525.00	
Surface Roughening		AC	$ 250.00		$ -		$ -	
Temporary Erosion Control Blanket		SY	$ 3.00	=	$ -		$ -	
Temporary Seeding and Mulching		AC	$ 1,666.00	=	$ -		$ -	
Vehicle Tracking Control	1	EA	$ 2,867.00	=	$ 2,867.00		$ 2,867.00	
				=	$ -		$ -	
[insert items not listed but part of construction plans]				=	$ -		$ -	
MAINTENANCE (35% of Construction BMPs)				=	$ 2,410.45		$ 2,410.45	
* - Subject to defect warranty financial assurance. A minimum of 20% shall be retained until final acceptance (MAXIMUM OF 80% COMPLETE ALLOWED)		**Section 1 Subtotal**		**=**	**$ 22,278.67**		**$ 22,278.67**	
SECTION 2 - PUBLIC IMPROVEMENTS *								
ROADWAY IMPROVEMENTS								*
Construction Traffic Control		LS		=	$ -		$ -	*
Aggregate Base Course (135 lbs/cf)		Tons	$ 34.00	=	$ -		$ -	*
Aggregate Base Course (135 lbs/cf)		CY	$ 61.00		$ -		$ -	*
Asphalt Pavement (3" thick)		SY	$ 17.00		$ -		$ -	*
Asphalt Pavement (4" thick)		SY	$ 23.00		$ -		$ -	*
Asphalt Pavement (6" thick)		SY	$ 35.00		$ -		$ -	*
Asphalt Pavement (147 lbs/cf) __" thick		Tons	$ 106.00	=	$ -		$ -	*
Raised Median, Paved		SF	$ 10.00	=	$ -		$ -	*
Regulatory Sign/Advisory Sign		EA	$ 364.00	=	$ -		$ -	*
Guide/Street Name Sign		EA		=	$ -		$ -	*
Epoxy Pavement Marking		SF	$ 16.00	=	$ -		$ -	*
Thermoplastic Pavement Marking		SF	$ 28.00	=	$ -		$ -	*
Barricade - Type 3		EA	$ 241.00	=	$ -		$ -	*
Delineator - Type I		EA	$ 29.00	=	$ -		$ -	*
Curb and Gutter, Type A (6" Vertical)		LF	$ 35.00	=	$ -		$ -	*
Curb and Gutter, Type B (Median)		LF	$ 35.00	=	$ -		$ -	*
Curb and Gutter, Type C (Ramp)		LF	$ 35.00	=	$ -		$ -	*
4" Sidewalk (common areas only)		SY	$ 58.00	=	$ -		$ -	*
5" Sidewalk		SY	$ 72.00	=	$ -		$ -	*
6" Sidewalk		SY	$ 87.00	=	$ -		$ -	*
8" Sidewalk		SY	$ 116.00		$ -		$ -	*
Pedestrian Ramp		EA	$ 1,390.00	=	$ -		$ -	*
Cross Pan, local (8" thick, 6' wide to include return)		LF	$ 73.00	=	$ -		$ -	*
Cross Pan, collector (9" thick, 8' wide to include return)		LF	$ 111.00		$ -		$ -	*
Curb Opening with Drainage Chase		EA	$ 1,790.00	=	$ -		$ -	*
Guardrail Type 3 (W-Beam)		LF	$ 60.00	=	$ -		$ -	*
Guardrail Type 7 (Concrete)		LF	$ 87.00	=	$ -		$ -	*
Guardrail End Anchorage		EA	$ 2,538.00	=	$ -		$ -	*
Guardrail Impact Attenuator		EA	$ 4,556.00	=	$ -		$ -	*
Sound Barrier Fence (CMU block, 6' high)		LF	$ 95.00		$ -		$ -	*
Sound Barrier Fence (panels, 6' high)		LF	$ 97.00	=	$ -		$ -	*
Electrical Conduit, Size =		LF	$ 20.00	=	$ -		$ -	*
Traffic Signal, (provide engineer's estimate)		EA		=	$ -		$ -	*

PROJECT INFORMATION			
BHE - Squirrel Creek Gas Line (El Paso County)	1/3/2023		CDR2322
Project Name	Date		PCD File No.

Description	Quantity	Units	Unit Cost		Total	(with Pre-Plat Construction) % Complete	Remaining	
				=	$ -		$ -	
[insert items not listed but part of construction plans]				=	$ -		$ -	*
STORM DRAIN IMPROVEMENTS								*
Concrete Box Culvert (M Standard), Size (W x H)		LF		=	$ -		$ -	*
18" Reinforced Concrete Pipe		LF	$ 76.00	=	$ -		$ -	*
24" Reinforced Concrete Pipe		LF	$ 91.00	=	$ -		$ -	*
30" Reinforced Concrete Pipe		LF	$ 114.00	=	$ -		$ -	*
36" Reinforced Concrete Pipe		LF	$ 140.00	=	$ -		$ -	*
42" Reinforced Concrete Pipe		LF	$ 187.00	=	$ -		$ -	*
48" Reinforced Concrete Pipe		LF	$ 228.00	=	$ -		$ -	*
54" Reinforced Concrete Pipe		LF	$ 297.00	=	$ -		$ -	*
60" Reinforced Concrete Pipe		LF	$ 348.00	=	$ -		$ -	*
66" Reinforced Concrete Pipe		LF	$ 402.00	=	$ -		$ -	*
72" Reinforced Concrete Pipe		LF	$ 460.00	=	$ -		$ -	*
18" Corrugated Steel Pipe		LF	$ 98.00	=	$ -		$ -	*
24" Corrugated Steel Pipe		LF	$ 112.00	=	$ -		$ -	*
30" Corrugated Steel Pipe		LF	$ 143.00	=	$ -		$ -	*
36" Corrugated Steel Pipe		LF	$ 171.00	=	$ -		$ -	*
42" Corrugated Steel Pipe		LF	$ 197.00	=	$ -		$ -	*
48" Corrugated Steel Pipe		LF	$ 207.00	=	$ -		$ -	*
54" Corrugated Steel Pipe		LF	$ 304.00	=	$ -		$ -	*
60" Corrugated Steel Pipe		LF	$ 328.00	=	$ -		$ -	*
66" Corrugated Steel Pipe		LF	$ 397.00	=	$ -		$ -	*
72" Corrugated Steel Pipe		LF	$ 467.00	=	$ -		$ -	*
78" Corrugated Steel Pipe		LF	$ 537.00	=	$ -		$ -	*
84" Corrugated Steel Pipe		LF	$ 642.00	=	$ -		$ -	*
Flared End Section (FES) RCP Size = (unit cost = 6x pipe unit cost)		EA		=	$ -		$ -	*
Flared End Section (FES) CSP Size = (unit cost = 6x pipe unit cost)		EA		=	$ -		$ -	*
End Treatment- Headwall		EA		=	$ -		$ -	*
End Treatment- Wingwall		EA		=	$ -		$ -	*
End Treatment - Cutoff Wall		EA		=	$ -		$ -	*
Curb Inlet (Type R) L=5', Depth < 5'		EA	$ 6,703.00	=	$ -		$ -	*
Curb Inlet (Type R) L=5', 5' ≤ Depth < 10'		EA	$ 8,715.00	=	$ -		$ -	*
Curb Inlet (Type R) L =5', 10' ≤ Depth < 15'		EA	$ 10,092.00	=	$ -		$ -	*
Curb Inlet (Type R) L =10', Depth < 5'		EA	$ 9,224.00	=	$ -		$ -	*
Curb Inlet (Type R) L =10', 5' ≤ Depth < 10'		EA	$ 9,507.00	=	$ -		$ -	*
Curb Inlet (Type R) L =10', 10' ≤ Depth < 15'		EA	$ 11,901.00	=	$ -		$ -	*
Curb Inlet (Type R) L =15', Depth < 5'		EA	$ 11,995.00	=	$ -		$ -	*
Curb Inlet (Type R) L =15', 5' ≤ Depth < 10'		EA	$ 12,858.00	=	$ -		$ -	*
Curb Inlet (Type R) L =15', 10' ≤ Depth < 15'		EA	$ 14,061.00	=	$ -		$ -	*
Curb Inlet (Type R) L =20', Depth < 5'		EA	$ 12,783.00	=	$ -		$ -	*
Curb Inlet (Type R) L =20', 5' ≤ Depth < 10'		EA	$ 14,109.00	=	$ -		$ -	*
Grated Inlet (Type C), Depth < 5'		EA	$ 5,611.00	=	$ -		$ -	*
Grated Inlet (Type D), Depth < 5'		EA	$ 6,931.00	=	$ -		$ -	*
Storm Sewer Manhole, Box Base		EA	$ 14,061.00	=	$ -		$ -	*
Storm Sewer Manhole, Slab Base		EA	$ 7,734.00	=	$ -		$ -	*
Geotextile (Erosion Control)		SY	$ 8.00	=	$ -		$ -	*
Rip Rap, d50 size from 6" to 24"		Tons	$ 97.00	=	$ -		$ -	*
Rip Rap, Grouted		Tons	$ 115.00	=	$ -		$ -	*
Drainage Channel Construction, Size (W x H)		LF	$ -	=	$ -		$ -	*
Drainage Channel Lining, Concrete		CY	$ 689.00	=	$ -		$ -	*
Drainage Channel Lining, Rip Rap		CY	$ 135.00	=	$ -		$ -	*
Drainage Channel Lining, Grass		AC	$ 1,776.00	=	$ -		$ -	
Drainage Channel Lining, Other Stabilization				=	$ -		$ -	*
				=	$ -		$ -	
[insert items not listed but part of construction plans]				=	$ -		$ -	
* - Subject to defect warranty financial assurance. A minimum of 20% shall be retained until final acceptance (MAXIMUM OF 80% COMPLETE ALLOWED)		**Section 2 Subtotal**		**=**	**$ -**		**$ -**	

PROJECT INFORMATION			
BHE - Squirrel Creek Gas Line (El Paso County)	1/3/2023		CDR2322
Project Name	Date		PCD File No.

Description	Quantity	Units	Unit Cost		Total	(with Pre-Plat Construction) % Complete	Remaining
SECTION 3 - COMMON DEVELOPMENT IMPROVEMENTS (Private or District and NOT Maintained by EPC)**							
ROADWAY IMPROVEMENTS							
				=	$ -		$ -
				=	$ -		$ -
				=	$ -		$ -
				=	$ -		$ -
				=	$ -		$ -
				=	$ -		$ -
STORM DRAIN IMPROVEMENTS	(Exception: Permanent Pond/BMP shall be itemized under Section 1)						
				=	$ -		$ -
				=	$ -		$ -
				=	$ -		$ -
				=	$ -		$ -
				=	$ -		$ -
				=	$ -		$ -
WATER SYSTEM IMPROVEMENTS							
Water Main Pipe (PVC), Size 8"		LF	$ 78.00	=	$ -		$ -
Water Main Pipe (Ductile Iron), Size 8"		LF	$ 91.00	=	$ -		$ -
Gate Valves, 8"		EA	$ 2,247.00	=	$ -		$ -
Fire Hydrant Assembly, w/ all valves		EA	$ 7,978.00	=	$ -		$ -
Water Service Line Installation, inc. tap and valves		EA	$ 1,601.00	=	$ -		$ -
Fire Cistern Installation, complete		EA		=	$ -		$ -
				=	$ -		$ -
[insert items not listed but part of construction plans]				=	$ -		$ -
SANITARY SEWER IMPROVEMENTS							
Sewer Main Pipe (PVC), Size 8"		LF	$ 78.00	=	$ -		$ -
Sanitary Sewer Manhole, Depth < 15 feet		EA	$ 5,305.00	=	$ -		$ -
Sanitary Service Line Installation, complete		EA	$ 1,696.00	=	$ -		$ -
Sanitary Sewer Lift Station, complete		EA		=	$ -		$ -
				=	$ -		$ -
[insert items not listed but part of construction plans]				=	$ -		$ -
LANDSCAPING IMPROVEMENTS	(For subdivision specific condition of approval, or PUD)						
		EA		=	$ -		$ -
		EA		=	$ -		$ -
		EA		=	$ -		$ -
		EA		=	$ -		$ -
		EA		=	$ -		$ -
** - Section 3 is not subject to defect warranty requirements			**Section 3 Subtotal**	**=**	**$ -**		**$ -**

PROJECT INFORMATION			
BHE - Squirrel Creek Gas Line (El Paso County)	1/3/2023		CDR2322
Project Name	Date		PCD File No.

Description	Quantity	Units	Unit Cost		Total	(with Pre-Plat Construction) % Complete	Remaining
AS-BUILT PLANS (Public Improvements inc. Permanent WQCV BMPs)		LS		=	$ -		$ -
POND/BMP CERTIFICATION (inc. elevations and volume calculations)		LS		=	$ -		$ -

Total Construction Financial Assurance **$ 22,278.67**

(Sum of all section subtotals plus as-builts and pond/BMP certification)

Total Remaining Construction Financial Assurance (with Pre-Plat Construction) **$ 22,278.67**

(Sum of all section totals less credit for items complete plus as-builts and pond/BMP certification)

Total Defect Warranty Financial Assurance **$ 2,596.24**

(20% of all items identified as (*). To be collateralized at time of preliminary acceptance)

Approvals

I hereby certify that this is an accurate and complete estimate of costs for the work as shown on the Grading and Erosion Control Plan and Construction Drawings associated with the Project.

COLORADO LICENSED
JOSEPH W. MERKE
63168
01/17/24
PROFESSIONAL ENGINEER

Engineer (P.E. Seal Required)

January 17, 2024

Approved by Owner / Applicant — Date

Approved by El Paso County Engineer / ECM Administrator — Date

APPENDIX L – GEC ADMINISTRATOR CERTIFICATION

EnviroCert International, Inc.
3054 Fite Circle, Suite 108, Sacramento, CA 95827
(279) 888-6911 | www.envirocert.org

Austin Belcher

CPESC

Certified Professional in Erosion and Sediment Control

9834	22-Dec-2023
CERTIFICATION NO.	EXPIRES

ENVIROCERT International, Inc.®

CESSWI™ CPMSM™ CPESC™ CPSWQ™ CPISM™

CPSWI™ CPWPC™ QSM™ ENVIROCERT

NATIONAL GREEN INFRASTRUCTURE ngicp CERTIFICATION PROGRAM

NOTICE:

All certified professionals are required to adhere strictly to the Code of Conduct and Ethics and are responsible for maintaining their active status with ECI to exercise the rights and privileges under this certification.

APPENDIX M – FLOODPLAIN DEVELOPMENT PERMIT

Pikes Peak Regional Building Department

Permit # 23072 **FLOOD PLAIN DEVELOPMENT PERMIT** **Date 25-Aug-2023**

Owner Information

Name: BLACK HILLS ENERGY **Phone: (719) 393-6639**

Address: 7060 ALEGRE ST.
FOUNTAIN , CO 80817
Attention: AUSTIN BELCHER

Project Location

Address: BLACK HILLS ENERGY OHIO AVE GAS MAIN

,

Location/Directions: BLACK HILLS ENERGY East Ohio Ave gas main

Contractor/Engineer: Kimley-Horn Frans Lambrechtsen, PE, CFM Phone: (720) 484-4558

Project Description

Single Family Residential:	[ ]	Addition/Remodel (<50%):	[ ]
Multi-Family Residential:	[ ]	Rehabilitation	[ ]
Manufactured Home:	[ ]	Subst. (>50 Appraisal) Imprv:	[ ]
Non-Residential	[ ]	Fill	[X]
New Construction	[ ]	Bridge/Culvert	[ ]
Watercourse Modification:	[ ]	Levee:	[ ]

Project Cost: $0.00 Structure Market Value: $0.00

Creek: jimmy camp creek

Description of work: The project consists of the installation of 12,150 linear feet (LF) of 8-inch steel pipe from East Ohio Ave east of Fountain Mesa Road to Squirrel Creek Road 1.2 miles east of Link Road. The pipe will be installed via trenching and the ground will be re-compacted and placed back to original grade after the installation. Directly beneath watercourses, roads, and other developed areas, the contractor will directional drill the pipe,

Flood Hazard Data

Location: Flood Fringe
Base (1%) Flood Elevation: varies
Lowest Floor Elevation: na
Floodproofing Level: na
Source Document:

Permit Action

Permit Granted (Y/N): Yes Variance Granted (Y/N): No
Action Comments:

Compliance Section

Elevation Certificate: N Date:

LOMA: N Date: CLOMR: N Date: LOMR: N Date:

Site Inspection:
Preliminary Required: N Date:
Final Required: N Date:

Compliance Comments:

Regional Floodplain Division: Date 25-Aug-2023

NOTE: This permit expires twelve (12) months from the date it is issued.

APPENDIX N – CDPHE PERMIT

COLORADO
Department of Public Health & Environment

Dedicated to protecting and improving the health and environment of the people of Colorado

Chris Downey, Director Colorado Gas Operations
Black Hills Colorado Gas, Inc.
7060 Alegre St
Fountain, CO 80817

Austin Belcher, Sr Environmental Professional
Black Hills Energy
7060 Alegre St
Fountain, CO 80817

DATE: 2023-11-22

MEMO RE: Certification, Colorado Discharge Permit System
Permit No., COR400000, Certification Number: COR422139

DIVISION CONTACTS: Joseph Sturgeon, 303-691-4019, Joseph.Sturgeon@state.co.us

ATTACHMENTS: Certification COR422139, COR400000 General Permit

The Water Quality Control Division (the Division) has reviewed the application submitted for the Squirrel Creek facility and determined that it qualifies for coverage under the CDPS General Permit for Stormwater Discharges Associated with Construction Activities (the permit). Enclosed please find a copy of the permit certification, which was issued under the Colorado Water Quality Control Act.

FEE INFORMATION: 12 acres

An application fee of $175 (50% of the annual fee) will be assessed for all new applications. Beginning July 1, 2019 an annual fee of $350 category 7, subcat – Stormwater Construction 1-30 acres disturbed [per CRS 25-8-502] will be assessed and invoiced every July for as long as the permit certification is in effect.

It is the responsibility of the permittee to submit a termination application when the permit is no longer needed. Fees are assessed and invoiced for every permit that is active July 1 of the fiscal year. Permits for which termination applications are received by June 30 of the current fiscal year will not be invoiced for the new fiscal year.

CERTIFICATION RECORDS INFORMATION:

The following information is what the Division records show for this certification.
For any changes to Contacts – Owner, Operator, Facility, or Billing – a "Notice of Change of Contacts form" must be managed through the Division's new platform called the Colorado Environmental Online Services (CEOS). The Notice of Change of Contacts form must be electronically signed by both the owner and the operator.

Facility: Squirrel Creek — El Paso County
Construction Activities Pipeline and Utilities (including natural gas, electricity, water and communications)
Owner (*receives all legal documentation pertaining to the permit certification):*
Chris Downey, Director Colorado Gas Operations — Phone number: (719) 393-6677
Black Hills Colorado Gas, Inc. — Email: chris.downey@blackhillscorp.com
7060 Alegre St
Fountain, CO 80817
Operator (*receives all legal documentation pertaining to the permit certification):*
Austin Belcher, Sr Environmental Professional — Phone number: (719) 393-6639
Black Hills Energy — Email: austin.belcher@blackhillscorp.com
7060 Alegre St
Fountain, CO 80817
Facility Contact *(contacted for general inquiries regarding the facility):*
Ryan Kurtz, Supervisor Gas Operations — Phone number: (719) 469-2216
Black Hills Colorado Gas, Inc. — Email: ryan.kurtz@blackhillscorp.com
7060 Alegre St
Fountain, CO 80817
Billing Contact *(receives the invoice pertaining to the permit certification):*

Austin Belcher, Sr Environmental Professional
Black Hills Energy
7060 Alegre St
Fountain, CO 80817

Phone number: (719) 393-6639
Email: austin.belcher@blackhillscorp.com

COLORADO
Department of Public Health & Environment

CERTIFICATION TO DISCHARGE
UNDER
CDPS GENERAL PERMIT COR400000
STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES

Certification Number: **COR422139**

This Certification to Discharge specifically authorizes:

Owner Black Hills Colorado Gas, Inc.
Operator Black Hills Energy
to discharge stormwater from the facility identified as

Squirrel Creek

To the waters of the State of Colorado, including, but not limited to:

Jimmy Camp Creek, Fountain Creek

Facility Activity :	Pipeline and Utilities (including natural gas, electricity, water and communications)
Disturbed Acres:	12 acres
Facility Located at:	Link Road and Kane Road Fountain CO 80817 El Paso County Latitude 38.687837 Longitude -104.674041
Specific Information (if applicable):	

Certification is issued and effective: 11/22/2023
Expiration date of general permit: 3/31/2024

This certification under the permit requires that specific actions be performed at designated times. The certification holder is legally obligated to comply with all terms and conditions of the permit.

This certification was approved by:
Randi Johnson-Hufford, Permits Unit 1 Manager
Permits Section
Water Quality Control Division

APPENDIX O – GRADING AND EROSION CONTROL PLANS

BLACK HILLS ENERGY
SQUIRREL CREEK - 8" GAS MAIN
CITY OF FOUNTAIN AND EL PASO COUNTY, COLORADO

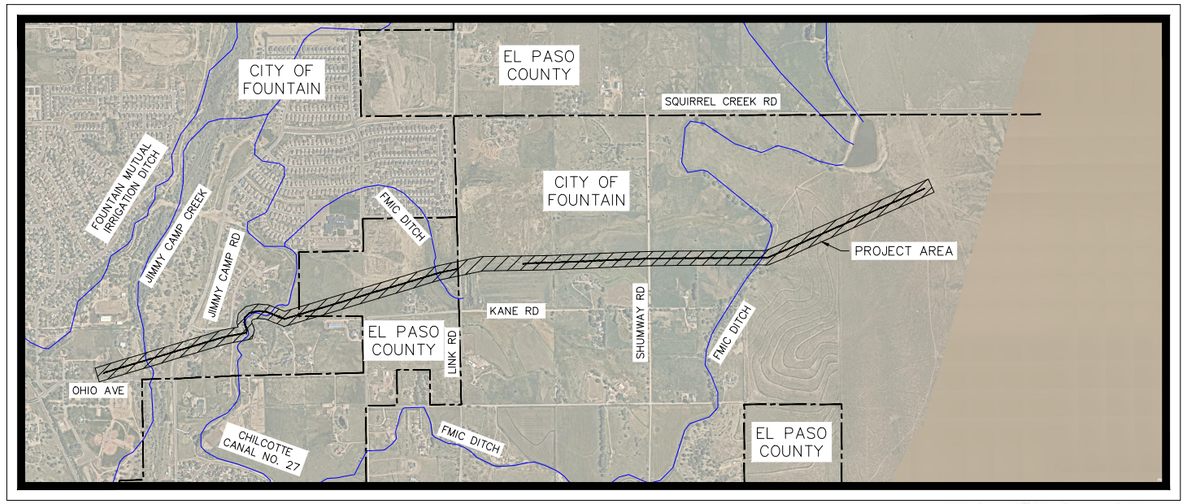
LIMITS OF CONSTRUCTION:
TOTAL LAND DISTURBANCE: 10.81 ACRES

TOTAL CONSTRUCTION AREA: 17.79 ACRES

TENTATIVE DURATION OF DISTURBANCE:
ANTICIPATED START DATE: JANUARY 2024
ANTICIPATED END DATE (FINAL STABILIZATION): MARCH 2024

RECEIVING WATER:
THIS SITE IS TRIBUTARY TO THE FOUNTAIN DITCH, CHILCOTTE CANAL NO. 27, AND JIMMY CAMP CREEK

NOTES:
1. FOR ADDITIONAL INFORMATION NOT INCLUDED IN THESE PLANS, PLEASE REFER TO THE PLAN AND PROFILE CONSTRUCTION DRAWINGS SUBMITTED BY BLACK HILLS ENERGY. THESE PLANS INCLUDE MORE DETAILED INFORMATION ON UTILITY CROSSINGS, BURY DEPTHS, AND ALIGNMENTS/PROFILES.
2. AERIAL IMAGERY OBTAINED FROM 'NEARMAP' ONLINE RESOURCE, ACCESSED 8/29/2023 AND 12/14/2023. EXACT DATE OF CAPTURE FOR AERIAL IMAGES VARIES.
3. TERRAIN DATA FOR THE PROJECT WERE OBTAINED VIA BENTLY INFRAWORKS (ACCESSED 8/29/2023) SOURCED FROM USGS DIGITAL ELEVATION MODELS (DEM), BASED ON THE NATIONAL ELEVATION DATASET (NED).
4. PLAN APPROVAL FROM EL PASO COUNTY AND CITY OF FOUNTAIN SHALL BE OBTAINED. EACH JURISDICTION IS RESPONSIBLE FOR THE REVIEW AND APPROVAL OF THE SECTION OF THE PROJECT THAT FALLS WITHIN THE COUNTY OR CITY BOUNDARY, RESPECTIVELY.



VICINITY MAP
(1" = 2000')

AGENCY CONTACTS
CITY OF FOUNTAIN:
ENGINEERING
CONTACT: BEN SHEETS
PHONE: 719.393.4935
EMAIL: BSHEETS@FOUNTAINCOLORADO.ORG

EL PASO COUNTY:
EL PASO COUNTY – PCD DEPARTMENT
2880 INTERNATIONAL CIRCLE, SUITE 110
COLORADO SPRINGS, CO 80910
PHONE: (719) 520–6300
EMAIL: JOSHUA PALMER, P.E.

CONTACTS
OWNER:
BLACK HILLS ENERGY
CONTACT: CHRIS DOWNEY
PHONE: 719.393.6677
EMAIL: CHRIS.DOWNEY@BLACKHILLSCORP.COM

APPLICANT:
BLACK HILLS ENERGY
CONTACT: AUSTIN BELCHER
PHONE: 719.393.6639
EMAIL: AUSTIN.BELCHER@BLACKHILLSCORP.COM

ENGINEER:
KIMLEY–HORN & ASSOCIATES
CONTACT: STEPHEN MEYERS
PHONE: 719.581.7962
EMAIL: STEPHEN.MEYERS@KIMLEY–HORN.COM

EPC GEC COST ESTIMATE

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
	Grading & Erosion Control CCM's for BHE Squirrel Creek Gas Line (El Paso County)				
1	Earthwork		MIN	$5,300.00	$5,300
2	Permanent Seeding	4.10	AC	$1,875.00	$7,681
3	Silt Fence	1165	LF	$3.00	$3,495
4	Straw Waddle / Rock Socks / Sediment Control Log	75	LF	$7.00	$525
5	Vehicle Tracking Control	1	EA	$2,867.00	$2,867
		Subtotal:			$19,868
		Contingency (%,+/-)		35% (Const.)	$2,410
		Project Total:			**$22,279**

FOUNTIAN GEC COST ESTIMATE

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
	Grading & Erosion Control CCM's for BHE Squirrel Creek Gas Line (Fountain)				
1	Earthwork		MIN	$5,300.00	$5,300
2	Permanent Seeding	7.09	AC	$1,875.00	$13,286
3	Silt Fence	4835	LF	$3.00	$14,505
4	Straw Waddle / Rock Socks / Sediment Control Log	740	LF	$7.00	$5,180
5	Vehicle Tracking Control	2	EA	$2,867.00	$5,734
		Subtotal:			$44,005
		Contingency (%,+/-)		25% (Const.)	$6,355
		Project Total:			**$50,360**

ENGINEER'S STATEMENT
THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. IF SUCH WORK IS PERFORMED IN ACCORDANCE WITH THE GRADING AND EROSION CONTROL PLAN, THE WORK WILL NOT BECOME A HAZARD TO LIFE AND LIMB, ENDANGER PROPERTY, OR ADVERSELY AFFECT THE SAFETY, USE, OR STABILITY OF A PUBLIC WAY, DRAINAGE CHANNEL, OR OTHER PROPERTY.

PRINTED NAME: Joseph Menke DATE: 01/17/2024
PHONE NUMBER: (719) 453-0180
SEAL: COLORADO LICENSED JOSEPH W. MENKE 63168 01/17/24 PROFESSIONAL ENGINEER

OWNER'S SIGNATURE BLOCK
I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN..

January 17, 2024
[NAME, TITLE] DATE
[BUSINESS NAME]
[ADDRESS]

ENGINEER'S STATEMENT (FOR STANDALONE GEC PLAN)
THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSION CONTROL PLANS. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS, OR OMISSIONS ON MY PART IN PREPARING THIS PLAN.

Joseph Menke 01/17/2023
JOSEPH MENKE, PE – KIMLEY–HORN AND ASSOCIATES, INC. DATE

EL PASO COUNTY REVIEW STATEMENT
COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN DIMENSIONS AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTIONS DISCRETION.

JOSHUA PALMER, P.E. COUNTY ENGINEER DATE

SHEET SET INDEX

Sheet Number	Sheet Title
C4.0	GEC COVER SHEET
C4.1	STANDARD GEC NOTES
C4.2	EL PASO COUNTY – GEC NOTES
C4.3	INDEX SHEET
C4.4	INITIAL PHASE – 1
C4.5	INITIAL PHASE – 2
C4.6	INITIAL PHASE – 3
C4.7	FINAL PHASE – 1
C4.8	FINAL PHASE – 2
C4.9	FINAL PHASE – 3
C4.10	GEC STANDARD DETAILS

CITY OF FOUNTAIN CITY ENGINEERING DEPARTMENT

THE PLANS SUBMITTED APPEAR TO BE IN CONFORMANCE WITH THE CITY OF FOUNTAIN SUBMITTAL REQUIREMENTS, AND STANDARD ENGINEERING PRINCIPLES AND PRACTICES APPEAR TO HAVE BEEN FOLLOWED. THE PROFESSIONAL ENGINEER SUBMITTING AND SEALING THE PLANS IS SOLELY RESPONSIBLE FOR THEIR ACCURACY AND VALIDITY. THE ACCEPTANCE IS ONLY VALID FOR ONE (1) YEAR FROM THE DATE BELOW.

(APPLICABLE ONLY TO THE GRADING AND EROSION CONTROL AND STORM SEWER PLANS)

Date

CONTRACTOR'S STATEMENT
I WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN/CSWMP INCLUDING CONSTRUCTION CONTROL MEASURE INSPECTION REQUIREMENTS AND FINAL STABILIZATION REQUIREMENTS. I ACKNOWLEDGE THE RESPONSIBILITY TO DETERMINE WHETHER THE CONSTRUCTION ACTIVITIES ON THESE PLANS REQUIRE COLORADO DISCHARGE PERMIT SYSTEM (CDPS) PERMITTING FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY.

NAME OF CONTRACTOR: Ryan Kurtz
AUTHORIZED SIGNATURE: Ryan Kurtz DATE: January 17, 2024
TITLE: Operations Supervisor
PHONE NUMBER: (719) 469-2216
ADDRESS: 7060 Alegre St., Fountain, CO 80817
EMAIL ADDRESS: ryan.kurtz@blackhillscorp.com

OWNER'S STATEMENT
THE OWNER SHALL COMPLY WITH THE REQUIREMENTS OF THIS GRADING AND EROSION CONTROL PLAN INCLUDING CONSTRUCTION CONTROL MEASURE INSPECTION REQUIREMENTS AND FINAL STABILIZATION REQUIREMENTS ACCORDING TO THE CITY OF COLORADO SPRINGS STORMWATER CONSTRUCTION MANUAL. I ACKNOWLEDGE THE RESPONSIBILITY TO DETERMINE WHETHER THE CONSTRUCTION ACTIVITIES ON THESE PLANS REQUIRE COLORADO DISCHARGE PERMIT SYSTEM (CDPS) PERMITTING FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY.

OWNER SIGNATURE: DATE: January 17, 2024
NAME OF OWNER: Chris Downey PHONE: (719) 828-2206
TITLE: General Manager, Colorado Gas Operations EMAIL: chris.downey@blackhillscorp.com

CITY OF FOUNTAIN GRADING AND EROSION CONTROL REVIEW
THIS GRADING AND EROSION CONTROL PLAN IS FILED IN ACCORDANCE WITH CITY CODE. THIS PLAN IS REVIEWED IN ACCORDANCE WITH THE STORMWATER CONSTRUCTION MANUAL; LATEST REVISIONS.

DATE:

NOTES:

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
2024 KIMLEY–HORN AND ASSOCIATES, INC.
2 North Nevada Avenue, Suite 900
Colorado Springs, Colorado 80903 (719) 453–0180

DESIGNED BY: GMP
DRAWN BY: GMP
CHECKED BY: JWM
DATE: 01/17/2024

BLACK HILLS ENERGY - SQUIRREL CREEK
GRADING AND EROSION CONTROL PLANS
GEC COVER SHEET

COLORADO LICENSED JOSEPH W. MENKE 63168 01/17/24 PROFESSIONAL ENGINEER

PROJECT NO. 096826014
SHEET C4.0

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BLACK HILLS ENERGY
SQUIRREL CREEK - 8" GAS MAIN
CITY OF FOUNTAIN AND EL PASO COUNTY, COLORADO

CITY OF FOUNTAIN STANDARD GEC PLAN NOTES
(APPLICABLE TO AREAS WITHIN THE CITY OF FOUNTAIN LIMITS)

1. NO CLEARING, GRADING, EXCAVATION, OR OTHER LAND DISTURBING ACTIVITIES SHALL BE ALLOWED (EXCEPT FOR WORK DIRECTLY RELATED TO THE INSTALLATION OF INITIAL CONTROL MEASURES) UNTIL A CITY GEC PERMIT HAS BEEN ISSUED.
2. ALL LAND DISTURBING ACTIVITIES MUST BE PERFORMED IN ACCORDANCE WITH AND THE APPROVED GEC PLAN AND CSWMP.
3. INITIAL CONTROL MEASURES SHALL BE INSTALLED AND INSPECTED PRIOR TO ANY LAND DISTURBANCE ACTIVITIES TAKING PLACE. AN INITIAL SITE INSPECTION WILL NOT BE SCHEDULED UNTIL A CITY GEC PERMIT HAS BEEN "CONDITIONALLY APPROVED." CALL CITY STORMWATER INSPECTIONS, 719-659-3393, AT LEAST 48 HOURS PRIOR TO CONSTRUCTION TO SCHEDULE AN INITIAL INSPECTION AND OBTAIN FULL PERMIT APPROVAL.
4. INDIVIDUALS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, CRS) AND THE "CLEAN WATER ACT" (33 USC 1344), INCLUDING REGULATIONS PROMULGATED AND CERTIFICATIONS OR PERMITS ISSUED, IN ADDITION TO THE REQUIREMENTS INCLUDED IN THE CITY'S MS4 PERMIT, STORMWATER CONSTRUCTION MANUAL. IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND WATER QUALITY CONTROL LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL OR STATE AGENCIES, THE MORE RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.
5. STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS.
6. ALL CONSTRUCTION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION MEASURES ARE IMPLEMENTED. TEMPORARY CONSTRUCTION CONTROL MEASURES MUST BE REMOVED PRIOR TO PERMIT CLOSEOUT.
7. CONCRETE WASH WATER SHALL NOT BE DISCHARGED TO OR ALLOWED TO RUNOFF TO STATE WATERS OR ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.
8. BUILDING, CONSTRUCTION, EXCAVATION, OR OTHER WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. CONSTRUCTION CONTROL MEASURES MAY BE REQUIRED BY THE GEC INSPECTOR IF DEEMED NECESSARY BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES (E.G., ESTIMATED TIME OF EXPOSURE, SEASON OF THE YEAR, ETC.).
9. ALL WASTES COMPOSED OF BUILDING MATERIALS MUST BE REMOVED FROM THE CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.
10. THE PERMITTEE SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, AND SAND THAT MAY ACCUMULATE IN THE STORM SEWER OR OTHER DRAINAGE CONVEYANCE SYSTEM AS A RESULT OF CONSTRUCTION ACTIVITIES.
11. THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS. MATERIALS SHALL NOT BE STORED IN A LOCATION WHERE THEY MAY BE CARRIED BY STORMWATER RUNOFF INTO THE STORM SEWER SYSTEM AT ANY TIME.
12. SPILL PREVENTION AND CONTAINMENT MEASURES SHALL BE USED AT ALL STORAGE, EQUIPMENT FUELING, AND EQUIPMENT SERVICING AREAS SO AS TO CONTAIN ALL SPILLS AND PREVENT ANY SPILLED MATERIAL FROM ENTERING THE MS4, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITY. BULK STORAGE STRUCTURES FOR PETROLEUM PRODUCTS AND OTHER CHEMICALS SHALL HAVE SECONDARY CONTAINMENT OR EQUIVALENT ADEQUATE PROTECTION. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY, OR CONTAINED UNTIL APPROPRIATE CLEANUP METHODS CAN BE EMPLOYED. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE FOLLOWED, ALONG WITH PROPER DISPOSAL METHODS.
13. SEDIMENT (MUD AND DIRT) TRANSPORTED ONTO A PUBLIC ROAD, REGARDLESS OF THE SIZE OF THE SITE, SHALL BE CLEANED AS SOON AS POSSIBLE AFTER DISCOVERY.
14. NO CHEMICALS ARE TO BE ADDED TO THE DISCHARGE UNLESS PERMISSION FOR THE USE OF A SPECIFIC CHEMICAL IS GRANTED BY THE STATE. IN GRANTING THE USE OF SUCH CHEMICALS, SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
15. CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN FOURTEEN (14) CALENDAR DAYS AFTER FINAL GRADING OR FINAL LAND DISTURBANCE HAS BEEN COMPLETED. DISTURBED AREAS WHICH ARE NOT AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN FOURTEEN (14) DAYS SHALL BE ROUGHENED, MULCHED, TACKIFIED, OR STABILIZED WITH TARPS WITHIN FOURTEEN (14) DAYS AFTER INTERIM GRADING. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THAN SIXTY (60) DAYS SHALL ALSO BE SEEDED, UNLESS AN ALTERNATIVE STABILIZATION MEASURE IS ACCEPTED AT THE INSPECTOR'S DISCRETION. ALL TEMPORARY CONSTRUCTION CONTROL MEASURES SHALL BE MAINTAINED UNTIL FINAL STABILIZATION IS ACHIEVED.
16. THE GEC PLAN WILL BE SUBJECT TO RE-REVIEW AND RE-ACCEPTANCE BY THE CITY OF FOUNTAIN SHOULD ANY OF THE FOLLOWING OCCUR: GRADING DOES NOT COMMENCE WITHIN TWELVE (12) MONTHS OF THE CITY'S ACCEPTANCE OF THE PLAN, THE CONSTRUCTION SITE IS IDLE FOR TWELVE (12) CONSECUTIVE MONTHS, A CHANGE IN PROPERTY OWNERSHIP OCCURS, THE PLANNED DEVELOPMENT CHANGES, OR ANY OTHER MAJOR MODIFICATIONS ARE PROPOSED AS DEFINED IN THE STORMWATER CONSTRUCTION MANUAL.
17. IT IS NOT PERMISSIBLE FOR ANY PERSON TO MODIFY THE GRADE OF THE EARTH ON ANY UTILITY EASEMENT OR UTILITY RIGHT-OF-WAY WITHOUT WRITTEN APPROVAL FROM THE UTILITY OWNER. CITY ACCEPTANCE OF THE GEC PLAN AND CSWMP DOES NOT SATISFY THIS REQUIREMENT. THE PLAN SHALL NOT INCREASE OR DIVERT WATER TOWARDS UTILITY FACILITIES. ANY CHANGES TO EXISTING UTILITY FACILITIES TO ACCOMMODATE THE PLAN MUST BE APPROVED BY THE AFFECTED UTILITY OWNER PRIOR TO IMPLEMENTING THE PLAN. THE COST TO RELOCATE OR PROTECT EXISTING UTILITIES OR TO PROVIDE INTERIM ACCESS SHALL BE AT THE APPLICANT'S EXPENSE.
18. APPLICANT REPRESENTS AND WARRANTS THAT THEY HAVE THE LEGAL AUTHORITY TO GRADE AND/OR CONSTRUCT IMPROVEMENTS ON ADJACENT PROPERTY. THE CITY HAS NOT REVIEWED THE DEVELOPER'S AUTHORITY TO MODIFY ADJACENT PROPERTY. AN APPROVED GEC PERMIT DOES NOT PROVIDE APPROVAL FOR THE APPLICANT TO PERFORM WORK ON ADJACENT PROPERTY.
19. "ALL UTILITY INSTALLATIONS WITHIN THE LIMITS OF DISTURBANCE SHOWN ON THIS PLAN ARE COVERED UNDER THIS PLAN. LOCATIONS OF UTILITIES WITHIN THE LIMITS OF DISTURBANCE MAY BE MODIFIED AFTER PLAN APPROVAL AS A FIELD CHANGE. UTILITY INSTALLATIONS RELATED TO THE PRIVATE DEVELOPMENT THAT EXTEND BEYOND THE LIMITS OF DISTURBANCE SHOWN ON THIS PLAN ARE CONSIDERED TO BE PART OF THE LARGER DEVELOPMENT, AND THEREFORE REQUIRE A PLAN MODIFICATION OR SEPARATE PLAN FOR THE ADDITIONAL DISTURBANCE AREA."

ENGINEERING GRADING NOTES

1. GROUND TREATMENT OF ALL DISTURBED AREAS WITHIN THE PROJECT SITE IS TO RETURN TO EXISTING CONDITIONS IF DISTURBED.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF DUST AND DIRT RISING AND SCATTERING IN THE AIR DURING CONSTRUCTION AND SHALL PROVIDE WATER SPRINKLING OR OTHER SUITABLE METHODS OF CONTROL. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.
3. THE CONTRACTOR SHALL GRADE THE SITE TO THE EXISTING GRADE ELEVATIONS AND SHALL RE-GRADE WASHOUTS WHERE THEY OCCUR AFTER EVERY RAINFALL UNTIL A GRASS STAND OR OTHER FINAL LANDSCAPE PLANTING IS WELL ESTABLISHED.
4. AS THE PROJECT AREA IS OVER EXISTING UTILITIES, NO NOTABLE TREES OR VEGETATION EXIST WITHIN THE AREA OF DISTURBANCE (AS CONFIRMED BY AERIAL IMAGERY AND SITE VISITS). ALL VEGETATION SHALL BE RESTORED TO EXISTING CONDITIONS AS A PART OF FINAL STABILIZATION FOR THE PROJECT.

GRADING AND EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE TO INSURE THAT ALL SLOPES, STREETS, UTILITIES, AND STORM SEWERS ARE BUILT IN ACCORDANCE WITH THESE PLANS. IF THERE IS ANY QUESTION REGARDING THESE PLANS OR FIELD STAKES, THE CONTRACTOR SHALL REQUEST AN INTERPRETATION BEFORE DOING ANY WORK BY CALLING THE ENGINEER OF WORK AT 719-453-0180. THE CONTRACTOR SHALL ALSO TAKE THE NECESSARY STEPS TO PROTECT THE PROJECT AND ADJACENT PROPERTY FROM ANY EROSION AND SILTATION THAT RESULT FROM HIS OPERATIONS BY APPROPRIATE MEANS (SAND BAGS, HAY BALES, TEMPORARY DESILTING BASINS, DIKES, SHORING, ETC.) UNTIL SUCH TIME THAT THE PROJECT IS COMPLETED AND ACCEPTED FOR MAINTENANCE BY WHATEVER OWNER, AGENCY, OR ASSOCIATION IS TO BE ULTIMATELY RESPONSIBLE FOR MAINTENANCE.
2. EXCEPT AS NOTED HEREON ALL UTILITY SERVICES WITHIN THIS DEVELOPMENT ARE UNDERGROUND INSTALLATIONS. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO STARTING WORK NEAR THEIR FACILITIES, AND SHALL COORDINATE HIS WORK WITH COMPANY REPRESENTATIVES. FOR UTILITY MARK-OUT SERVICE, CALL 811.
3. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED FROM A SEARCH OF THE AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE THERE ARE NO OTHER EXISTING UTILITIES EXCEPT AS SHOWN ON THESE PLANS. NO REPRESENTATION IS MADE AS TO THE ACCURACY OR COMPLETENESS OF SAID UTILITY INFORMATION. THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN HEREON AND ANY OTHERS NOT OF RECORD OR NOT SHOWN ON THESE PLANS. ALL DAMAGES THERETO CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO THE APPROPRIATE SPECIFICATIONS AND STANDARDS AT THE EXPENSE OF THE CONTRACTOR.
4. LOCATION AND ELEVATION OF EXISTING IMPROVEMENTS SHALL BE CONFIRMED BY FIELD MEASUREMENTS PRIOR TO CONSTRUCTION OF NEW WORK.
5. CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS AND LOCATE EXISTING UNDERGROUND FACILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF REVISIONS ARE NECESSARY BECAUSE OF ACTUAL LOCATION OF EXISTING FACILITIES.
6. FOR ALL UTILITY TRENCHES, SOILS REPORTS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD BY A QUALIFIED SOILS ENGINEER WHICH CERTIFY THAT TRENCH BACKFILL WAS COMPACTED AS DIRECTED BY THE SOILS ENGINEER IN ACCORDANCE WITH THE ON-SITE EARTHWORK SPECIFICATIONS.
7. ANY WORK DONE WITHOUT INSPECTION OR MATERIALS TESTING IS SUBJECT TO REMOVAL OR CORRECTION.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ANY DAMAGE TO THE EXISTING IMPROVEMENTS AND REPLACEMENT TO THE SATISFACTION OF THE FIELD ENGINEER.
9. PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL JOIN CONDITIONS FOR GRADING, DRAINAGE AND UNDERGROUND FACILITIES, INCLUDING LOCATION AND ELEVATION OF EXISTING UNDERGROUND FACILITIES AT CROSSINGS WITH PROPOSED UNDERGROUND FACILITIES. IF CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLANS THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND SHALL NOT BEGIN CONSTRUCTION UNTIL THE CHANGED CONDITIONS HAVE BEEN EVALUATED.
10. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF/HERSELF WITH THE PLANS, THE SOILS AND/OR GEOLOGY REPORTS, AND THE SITE CONDITIONS PRIOR TO COMMENCING WORK.
11. SHOULD CONFLICTING INFORMATION BE FOUND ON THE PLANS OR IN THE FIELD, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AT KIMLEY-HORN BEFORE PROCEEDING WITH THE WORK IN QUESTION.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SURVEY MONUMENTS AND/OR VERTICAL CONTROL BENCHMARKS WHICH ARE DISTURBED OR DESTROYED BY CONSTRUCTION. A LAND SURVEYOR MUST FIELD LOCATE, REFERENCE, AND/OR PRESERVE ALL HISTORICAL OR CONTROLLING MONUMENTS PRIOR TO ANY EARTHWORK. IF DESTROYED, A LAND SURVEYOR SHALL REPLACE SUCH MONUMENTS WITH APPROPRIATE MONUMENTS. A CORNER RECORD OR RECORD OF SURVEY, AS APPROPRIATE, SHALL BE FILED AS REQUIRED BY THE PROFESSIONAL LAND SURVEYORS ACT. IF ANY VERTICAL CONTROL IS TO BE DISTURBED OR DESTROYED, THE JEFFERSON COUNTY FIELD SURVEY SECTION MUST BE NOTIFIED, IN WRITING, AT LEAST 3 DAYS PRIOR TO THE CONSTRUCTION. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE COST OF REPLACING ANY VERTICAL CONTROL BENCHMARKS DESTROYED BY THE CONSTRUCTION.
13. DEVIATIONS FROM THESE PLANS SIGNED PLANS WILL NOT BE ALLOWED UNLESS THE CITY ENGINEER APPROVES A CONSTRUCTION CHANGE OR THE CITY/AGENCY INSPECTOR REQUIRES THE CHANGE.
14. AS-BUILT DRAWINGS MUST BE SUBMITTED TO THE ENGINEER PRIOR TO ACCEPTANCE OF THIS PROJECT.
15. THE AREA WHICH IS DEFINED AS A NON GRADING AREA AND WHICH IS NOT TO BE DISTURBED SHALL BE STAKED PRIOR TO START OF THE WORK. THE PERMIT APPLICANT AND ALL OF THEIR REPRESENTATIVES OR CONTRACTORS SHALL COMPLY WITH THE REQUIREMENTS FOR PROTECTION OF THIS AREA AS REQUIRED BY ANY APPLICABLE AGENCY. ISSUANCE OF THE CITY'S GRADING PERMIT SHALL NOT RELIEVE THE APPLICANT OR ANY OF THEIR REPRESENTATIVES OR CONTRACTORS FROM COMPLYING WITH ANY STATE OR FEDERAL REQUIREMENTS BY AGENCIES INCLUDING BUT NOT LIMITED TO COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT OR COLORADO DIVISION OF WILDLIFE. COMPLIANCE MAY INCLUDE OBTAINING PERMITS, OTHER AUTHORIZATIONS, OR COMPLIANCE WITH MANDATES BY ANY APPLICABLE STATE OR FEDERAL AGENCY.
16. NOTES AND DETAILS DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
17. IF AT ANY TIME DURING THE GRADING OPERATION, ANY UNFAVORABLE GEOLOGICAL CONDITIONS ARE ENCOUNTERED, GRADING IN THAT AREA SHALL STOP UNTIL APPROVED CORRECTIVE MEASURES ARE OBTAINED.
18. STRAIGHT GRADE SHALL BE MAINTAINED BETWEEN CONTOUR LINES AND SPOT ELEVATIONS UNLESS OTHERWISE SHOWN ON THE PLANS. THE CONTRACTOR SHALL TAKE ADDITIONAL CARE TO ENSURE POSITIVE DRAINAGE AWAY FROM THE STRUCTURE WHILE MEETING MINIMUM AND MAXIMUM PAVEMENT SLOPES AS DEFINED IN THE CRITERIA.
19. ALL DEBRIS AND FOREIGN MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT APPROVED DISPOSAL SITES. THE CONTRACTOR SHALL OBTAIN NECESSARY PERMITS FOR THE TRANSPORTATION OF MATERIAL TO AND FROM THE SITE.
20. DIMENSIONS TO PIPELINES ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
21. CONSTRUCTION STAKING FOR IMPROVEMENTS SHOWN IN THESE PLANS SHALL BE PERFORMED BY A LICENSED LAND SURVEYOR.
22. ALL DIMENSIONS ARE IN FEET OR DECIMALS THEREOF.
23. SPOT GRADES ARE TO FLOWLINE OR FINISH PAVEMENT GRADE UNLESS OTHERWISE NOTED.
24. CONTRACTOR TO BE AWARE OF ALL OVERHEAD LINES AT ALL TIMES, SO AS NOT TO DISTURB THEM.
25. WATER SHALL BE PROVIDED ONSITE AND USED TO CONTROL DUST DURING DEMOLITION AND CONSTRUCTION OPERATIONS.
26. STORM DRAINAGE SYSTEMS SHOWN ON THESE PLANS HAVE BEEN DESIGNED FOR THE FINAL SITE CONDITION AT COMPLETION OF THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE OF THE SITE, DURING INTERIM CONDITIONS OF CONSTRUCTION.
27. RETAINING WALLS LOCATED CLOSER TO THE PROPERTY LINE THAN THE HEIGHT OF THE WALL SHALL BE BACKFILLED NOT LATER THAN 10 DAYS AFTER CONSTRUCTION OF THE WALL AND NECESSARY STRUCTURAL SUPPORTING MEMBERS UNLESS RECOMMENDED OTHERWISE BY RESPONSIBLE ENGINEER.

NO.	REVISION	BY	DATE	APPR

Kimley»Horn
2024 KIMLEY-HORN AND ASSOCIATES, INC.
2 North Nevada Avenue, Suite 900
Colorado Springs, Colorado 80903 (719) 453-0180

DESIGNED BY: GMP
DRAWN BY: GMP
CHECKED BY: JWM
DATE: 01/17/2024

BLACK HILLS ENERGY - SQUIRREL CREEK
GRADING AND EROSION CONTROL PLANS
STANDARD GEC NOTES

COLORADO LICENSED
JOSEPH W. MEYER
63168
01/17/24
PROFESSIONAL ENGINEER

PROJECT NO.
096826014

SHEET
C4.1

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BLACK HILLS ENERGY
SQUIRREL CREEK - 8" GAS MAIN
CITY OF FOUNTAIN AND EL PASO COUNTY, COLORADO

STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS:

1. STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF SITE WATERS, INCLUDING WETLANDS.
2. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS TO REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.
3. A SEPARATE STORMWATER MANAGEMENT PLAN (SMWP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. MANAGEMENT OF THE SWMP DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OR CERTIFIED EROSION CONTROL INSPECTOR. THE SWMP SHALL BE LOCATED ON SITE AT ALL TIMES DURING CONSTRUCTION AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.
4. ONCE THE ESQCP HAS BEEN APPROVED AND A "NOTICE TO PROCEED" HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL MEASURES AS INDICATED ON THE APPROVED GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY STAFF.
5. CONTROL MEASURES MUST BE INSTALLED PRIOR TO COMMENCEMENT OF ACTIVITIES THAT COULD CONTRIBUTE POLLUTANTS TO STORMWATER. CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, AND DISTURBED LAND AREAS SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF THE DISTURBANCE.
6. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED AND REMAIN IN EFFECTIVE OPERATING CONDITION UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND FINAL STABILIZATION IS ESTABLISHED. ALL PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL ASSESS THE ADEQUACY OF CONTROL MEASURES AT THE SITE AND IDENTIFY IF CHANGES TO THOSE CONTROL MEASURES ARE NEEDED TO ENSURE THE CONTINUED EFFECTIVE PERFORMANCE OF THE CONTROL MEASURES. ALL CHANGES TO TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES MUST BE INCORPORATED INTO THE STORMWATER MANAGEMENT PLAN.
7. TEMPORARY STABILIZATION SHALL BE IMPLEMENTED ON DISTURBED AREAS AND STOCKPILES WHERE GROUND DISTURBING CONSTRUCTION ACTIVITY HAS PERMANENTLY CEASED OR TEMPORARILY CEASED FOR LONGER THAN 14 DAYS.
8. FINAL STABILIZATION MUST BE IMPLEMENTED AT ALL APPLICABLE CONSTRUCTION SITES. FINAL STABILIZATION IS ACHIEVED WHEN ALL GROUND DISTURBING ACTIVITIES ARE COMPLETE AND ALL DISTURBED AREAS EITHER HAVE A UNIFORM VEGETATIVE COVER WITH INDIVIDUAL PLAN DENSITY OF 70 PERCENT OF PRE-DISTURBANCE LEVELS ESTABLISHED OR EQUIVALENT PERMANENT ALTERNATIVE STABILIZATION METHOD IS IMPLEMENTED. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON FINAL STABILIZATION AND BEFORE PERMIT CLOSURE.
9. ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DESIGNED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT EFFECT THE DESIGN OR FUNCTION OF PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.
10. EARTH DISTURBANCES SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME. PRE-EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED WITHIN 50 HORIZONTAL FEET OF A WATERS OF THE STATE, UNLESS SHOWN TO BE INFEASIBLE AND SPECIFICALLY REQUESTED AND APPROVED.
11. COMPACTION OF SOIL MUST BE PREVENTED IN AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES OR WHERE FINAL STABILIZATION WILL BE ACHIEVED BY VEGETATIVE COVER. AREAS DESIGNATED FOR INFILTRATION CONTROL SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED. IF COMPACTION PREVENTION IS NOT FEASIBLE DUE TO SITE CONSTRAINTS, ALL AREAS DESIGNATED FOR INFILTRATION AND VEGETATION CONTROL MEASURES MUST BE LOOSENED PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).
12. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE A STABILIZED CONVEYANCE DESIGNED TO MINIMIZE EROSION AND THE DISCHARGE OF SEDIMENT OFF SITE.
13. CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO ENTER STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES. CONCRETE WASHOUT SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY, CREEK, OR STREAM.
14. DURING DEWATERING OPERATIONS OF UNCONTAMINATED GROUND WATER MAY BE DISCHARGED ON SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.
15. EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE COSNTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.
17. WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. CONTROL MEASURES MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
18. TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
19. THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, SOIL, AND SAND THAT MAY ACCUMULATE IN ROADS, STORM DRAINS AND OTHER DRAINAGE CONVEYANCE SYSTEMS AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.
20. THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS.
21. NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ONSITE UNLESS PERMISSION FOR THE USE OF SUCH CHEMICAL(S) IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING APPROVAL FOR THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
22. BULK STORAGE OF PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS ONSITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.
23. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.
24. OWNER/DEVELOPER AND THEIR AGENTS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT"(TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT"(33 USC 1344), IN ADDITION TO THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE, DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (1041, NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND OTHER LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, LOCAL OR COUNTY AGENCIES, THE MOST RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.
25. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
26. PRIOR TO CONSTRUCTION THE PERMITEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
27. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND SHALL BE UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
28. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY KUMAR AND ASSOCIATES, INC., DATED 9/10/2020 AND SHALL BE CONSIDERED A PART OF THESE PLANS.
29. AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB ONE (1) ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:

    COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
    WATER QUALITY CONTROL DIVISION
    WQCD -PERMITS
    4300 CHERRY CREEK DRIVE SOUTH
    DENVER, CO 80246-1530
    ATTN: PERMITS UNIT

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
2024 KIMLEY-HORN AND ASSOCIATES, INC.
2 North Nevada Avenue, Suite 900
Colorado Springs, Colorado 80903 (719) 453-0180

DESIGNED BY: GMP
DRAWN BY: GMP
CHECKED BY: JWM
DATE: 01/17/2024

BLACK HILLS ENERGY - SQUIRREL CREEK
GRADING AND EROSION CONTROL PLANS
EL PASO COUNTY - GEC
NOTES

COLORADO LICENSED
JOSEPH W. MEYER
63168
01/17/24
PROFESSIONAL ENGINEER

PROJECT NO.
096826014

SHEET
C4.2

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BLACK HILLS ENERGY
SQUIRREL CREEK - 8" GAS MAIN
CITY OF FOUNTAIN AND EL PASO COUNTY, COLORADO

NORTH

GRAPHIC SCALE IN FEET
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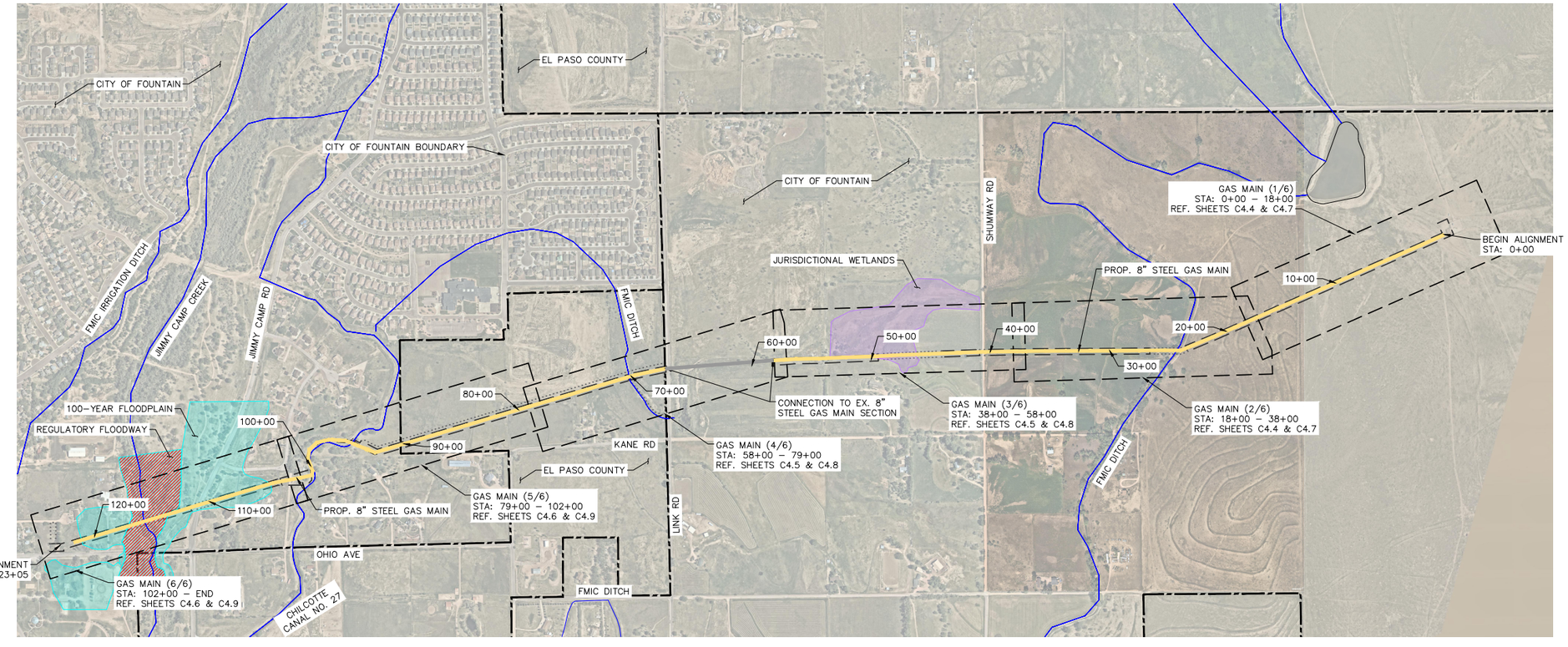

Know what's **below.**
Call before you dig.

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Kimley»Horn
2024 KIMLEY-HORN AND ASSOCIATES, INC.
2 North Nevada Avenue, Suite 900
Colorado Springs, Colorado 80903 (719) 453-0180

DESIGNED BY: GMP
DRAWN BY: GMP
CHECKED BY: JWM
DATE: 01/17/2024

BLACK HILLS ENERGY - SQUIRREL CREEK
GRADING AND EROSION CONTROL PLANS
INDEX SHEET

COLORADO LICENSED
JOSEPH W. MEISEL
#63168
01/17/24
PROFESSIONAL ENGINEER

PROJECT NO.
096826014

SHEET
C4.3

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BLACK HILLS ENERGY
SQUIRREL CREEK - 8" GAS MAIN
CITY OF FOUNTAIN AND EL PASO COUNTY, COLORADO

NORTH

GRAPHIC SCALE IN FEET
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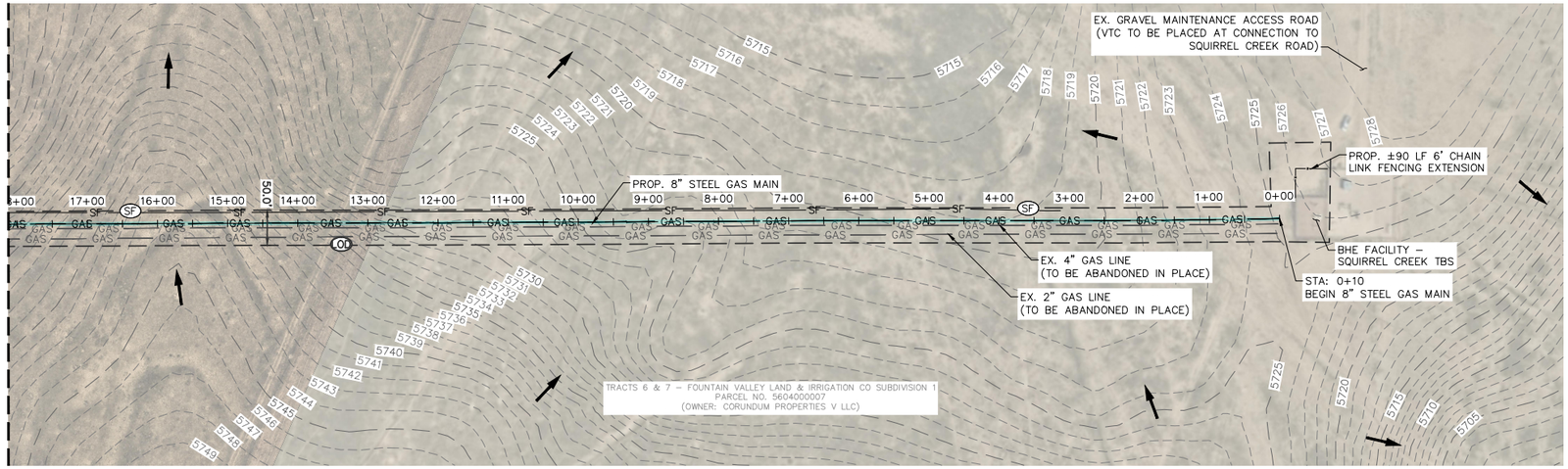
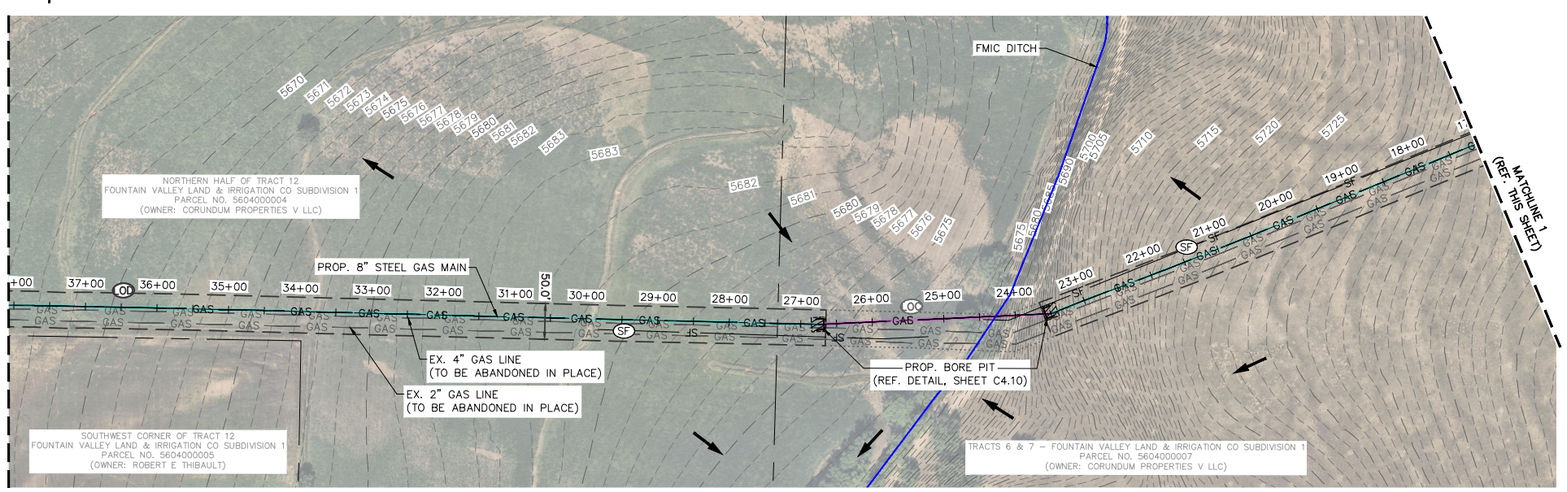
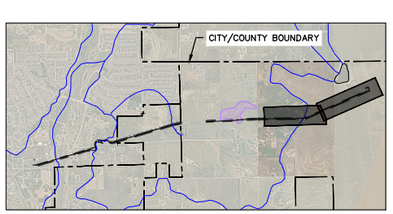






LEGEND

- CITY/COUNTY BOUNDARY
- PROPERTY LINES
- EXISTING MAJOR CONTOUR (6550)
- EXISTING MINOR CONTOUR (6551)
- EXISTING GAS LINE
- PROPOSED GAS LINE
- PIPE TRENCHED SECTION
- PIPE BORED SECTION
- LOC — LIMITS OF CONSTRUCTION (TEMPORARY 50' CONSTRUCTION EASEMENT)
- LOD — LIMITS OF GROUND DISTURBANCE (LOD = LOC WHERE UNDEFINED)
- SF — SILT FENCE (INIT/INTER)
- SCL — SEDIMENT CONTROL LOG (INIT/INTER)
- BP — BORE PIT (REF. DETAIL, SHEET C4.10)
- VTC — VEHICLE TRACKING CONTROL (INIT/INTER)
- EXISTING FLOW DIRECTION ARROW
- JURISDICTIONAL WETLAND AREA
- 100-YEAR FLOODPLAIN (AREA AE)
- 100-YEAR FLOODPLAIN (AREA AE, REGULATORY FLOODWAY)

NOTES

1. THE INTENT OF THIS PLAN IS TO IDENTIFY THE EROSION CONTROL PRACTICES RECOMMENDED. THE CONTRACTOR SHALL REFERENCE ADDITIONAL CONSTRUCTION PLANS FOR DEMOLITION OF EXISTING AND CONSTRUCTION OF PROPOSED IMPROVEMENTS.
2. CONTRACTOR / BLACK HILLS ENERGY TO SET LAYDOWN YARD (STAGING AREA) AS NEEDED DURING CONSTRUCTION. MATERIALS, EQUIPMENT, PERSONNEL, AND PERSONAL VEHICLE PARKING TO BE COORDINATED ACCORDINGLY.
3. CONSTRUCTION/DISTURBANCE LIMITS TO REMAIN INSIDE OF THE LIMITS OF THE ESTABLISHED 50' TEMPORARY CONSTRUCTION EASEMENT (25' OFFSET FROM THE PROPOSED GAS MAIN ALIGNMENT). CONSTRUCTION SHALL NOT NEGATIVELY IMPACT ADJACENT PROPERTIES OR PRIVATE PROPERTY NEIGHBORING THE PROJECT SITE.
4. ALL WORK IN THE ROW REQUIRES A ROW PERMIT FROM THE GOVERNING JURISDICTION. CONTRACTOR IS RESPONSIBLE FOR APPLYING FOR AND OBTAINING ALL NECESSARY ROW PERMITS.
5. CONTRACTOR TO NOTE PROXIMITY OF EXISTING IMPROVEMENTS ADJACENT TO THE SITE AND PROVIDE NECESSARY MEASURES TO PROTECT ALL FACILITIES AND STRUCTURES IN PLACE.
6. CONTRACTOR SHALL MAINTAIN STABILIZED STAGING AREA (SSA) AND VEHICLE TRACKING CONTROL (VTC) AT THE CONSTRUCTION ENTRANCE AT ALL TIMES. CONTRACTOR SHALL UPDATE THE EROSION CONTROL PLAN IN THE FIELD TO INDICATE THE LOCATION OF THE SSA AND VTC CCM'S AS EXCAVATION SEQUENCING DICTATES.
7. CONTRACTOR MAY SUBSTITUTE SEDIMENT CONTROL LOGS (SCL) FOR SILT FENCE (SF) AS PERIMETER CONTROL, DEPENDING UPON SITE CONDITIONS. SCL, AND SF MAY BE INTERCHANGED DEPENDING ON SITE CONDITIONS.
8. TRENCHING AND BORING LOCATIONS ARE APPROXIMATED BY BLACK HILLS ENERGY. CONTRACTOR TO MODIFY TRENCHING AND BORING LOCATIONS AS NEEDED IN THE FIELD.
9. TEMPORARY COMPACTED BERM TO BE INSTALLED PARALLEL TO TRENCH SECTION PER TYPICAL SECTION AND STORMWATER ENTERPRISE STANDARD DETAIL (REF. SHEET C4.10).
10. SEEDING AND MULCHING TO TAKE PLACE OVER THE ENTIRETY OF THE DISTURBED PERVIOUS/LANDSCAPING AREA. ALL DISTURBED AREA IS TO BE RETURNED TO EXISTING GROUND COVER.
11. REMOVAL OF CONTROL MEASURES SHALL NOT OCCUR WITHOUT THE APPROVAL OF THE STORMWATER INSPECTOR.
12. ALL PAVED SURFACES, INCLUDING ADJACENT STREETS AND SIDEWALKS, SHALL BE KEPT CLEAN AND FREE OF SEDIMENT AND/OR DEBRIS AT ALL TIMES. CONTRACTOR SHALL PERFORM STREET SWEEPING AT ALL TIMES DURING ACTIVE TRACKING AND AT A MINIMUM ON A DAILY BASIS AT THE END OF EACH CONSTRUCTION DAY.
13. STABILIZATION OF GROUND SURFACE SHALL BE IMPLEMENTED WITHIN THE DISTURBED PORTIONS OF THE PROJECT SITE NO LATER THAN 14 DAYS FOLLOWING THE CEASE OF CONSTRUCTION ACTIVITIES WITHIN THE DISTURBED AREAS. ALL REQUIREMENTS OUTLINED IN THE ACCOMPANYING SWMP REPORT SHALL BE ADHERED TO.
14. CONTRACTOR SHALL UTILIZE ROLLED EROSION CONTROL PRODUCTS ON ALL SLOPES 3H:1V OR GREATER TO ACHIEVE REQUIRED STABILIZATION.
15. CONTRACTOR SHALL MAINTAIN ACCEPTABLE EROSION CONTROL PRACTICES WITHIN THE ANTICIPATED LIMITS OF CONSTRUCTION IDENTIFIED HEREIN. CONSTRUCTION CONTROL MEASURES AND FINAL STABILIZATION SHALL BE COMPLETED AS IDENTIFIED HEREIN IN ACCORDANCE WITHIN OWNER REQUIREMENTS.
16. AQUATIC RESOURCES CONTINUE BEYOND PROJECT BOUNDARIES.

LIMITS OF CONSTRUCTION

CONSTRUCTION AREA	= ±16.23 ACRES
(LAND DISTURBANCE AREA	= ±11.43 ACRES)

GAS LINE CONSTRUCTION METHOD & JURISDICTION

TRENCHED SECTION	= ±9,725 LF (7,452 LF CITY OF FOUNTAIN) (2,273 LF EL PASO COUNTY)
BORED SECTION	= ±1,666 LF (1,632 LF CITY OF FOUNTAIN) (34 LF EL PASO COUNTY)
TOTAL	= ±11,391 LF (9,084 LF CITY OF FOUNTAIN) (2,307 LF EL PASO COUNTY)

UTILITY CROSSING NOTE:

ALL UTILITY CROSSINGS ARE SHOWN IN THE PLAN AND PROFILE SHEETS, SUBMITTED BY BLACK HILLS ENERGY, AND SHALL CONFORM TO LOCAL REGULATIONS FOR CLEARANCES OR APPROPRIATE CONTAINMENT METHODS.

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

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
2024 KIMLEY-HORN AND ASSOCIATES, INC.
2 North Nevada Avenue, Suite 900
Colorado Springs, Colorado 80903 (719) 453-0180

DESIGNED BY: GMP
DRAWN BY: GMP
CHECKED BY: JWM
DATE: 01/17/2024

BLACK HILLS ENERGY - SQUIRREL CREEK
GRADING AND EROSION CONTROL PLANS
INITIAL (INTERIM) PHASE - 1

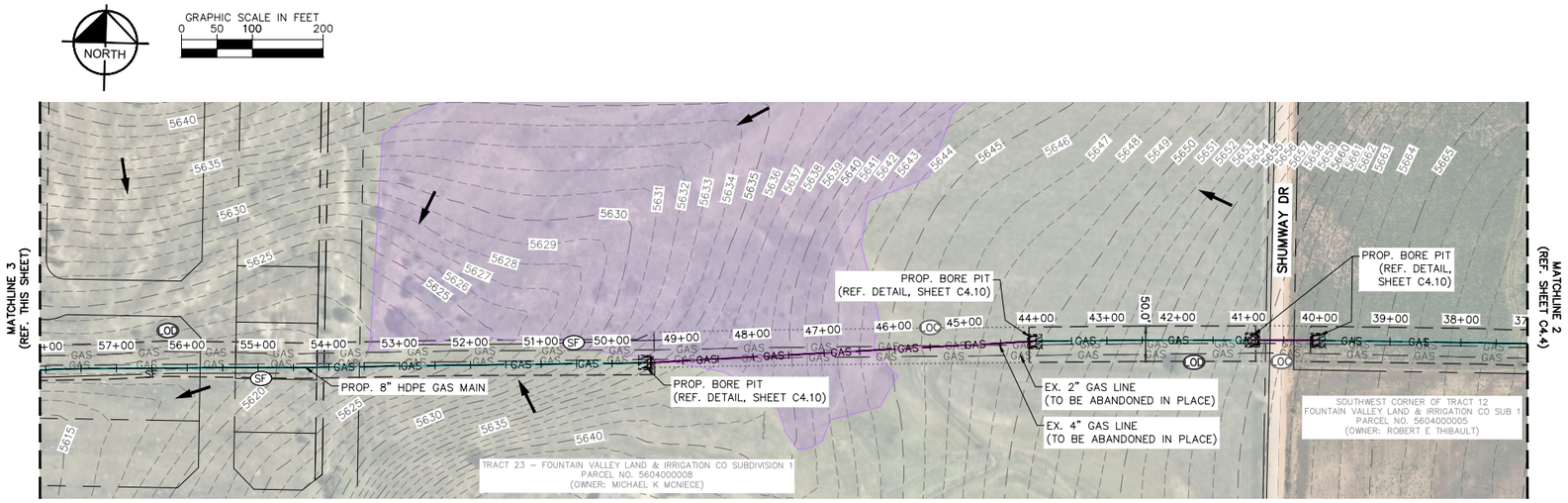
COLORADO LICENSED PROFESSIONAL ENGINEER JOSEPH W. MEURI #63168 01/17/24

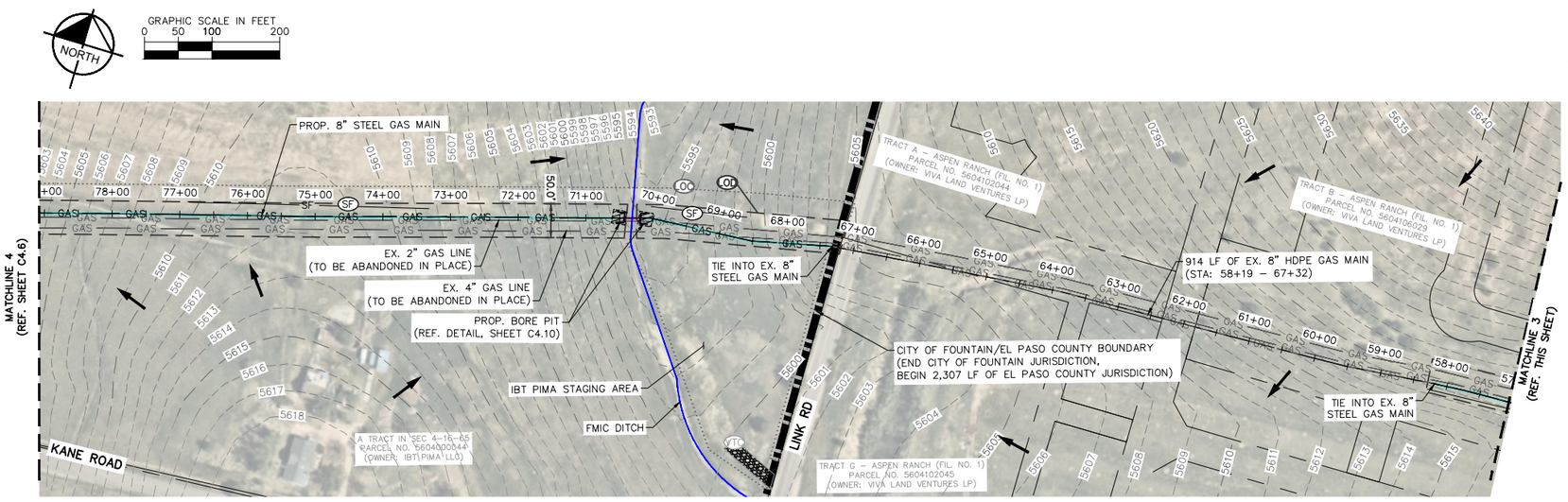
PROJECT NO. 096826014

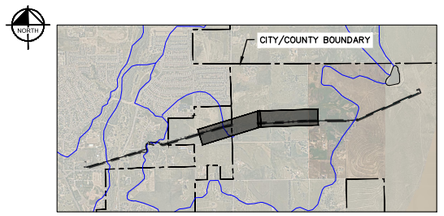
SHEET C4.4

K:\COS_Civil\096826014_BHE Squirrel Creek\CADD\PlanSheets\GEC\GEC_EC_INIT.dwg Petik, Grant 1/17/2024 1:24 PM

BLACK HILLS ENERGY
SQUIRREL CREEK - 8" GAS MAIN
CITY OF FOUNTAIN AND EL PASO COUNTY, COLORADO







LEGEND

- CITY/COUNTY BOUNDARY
- PROPERTY LINES
- 6550 — EXISTING MAJOR CONTOUR
- 6551 — EXISTING MINOR CONTOUR
- GAS — EXISTING GAS LINE
- GAS — PROPOSED GAS LINE
- PIPE TRENCHED SECTION
- PIPE BORED SECTION
- LOC — LIMITS OF CONSTRUCTION (TEMPORARY 50' CONSTRUCTION EASEMENT)
- LOD — LIMITS OF GROUND DISTURBANCE (LOD = LOC WHERE UNDEFINED)
- SF — SILT FENCE (INIT/INTER)
- SCL — SEDIMENT CONTROL LOG (INIT/INTER)
- BP — BORE PIT (REF. DETAIL, SHEET C4.10)
- VTC — VEHICLE TRACKING CONTROL (INIT/INTER)
- EXISTING FLOW DIRECTION ARROW
- JURISDICTIONAL WETLAND AREA
- 100-YEAR FLOODPLAIN (AREA AE)
- 100-YEAR FLOODPLAIN (AREA AE, REGULATORY FLOODWAY)

NOTES

1. THE INTENT OF THIS PLAN IS TO IDENTIFY THE EROSION CONTROL PRACTICES RECOMMENDED. THE CONTRACTOR SHALL REFERENCE ADDITIONAL CONSTRUCTION PLANS FOR DEMOLITION OF EXISTING AND CONSTRUCTION OF PROPOSED IMPROVEMENTS.
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16. AQUATIC RESOURCES CONTINUE BEYOND PROJECT BOUNDARIES.

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BLACK HILLS ENERGY - SQUIRREL CREEK
GRADING AND EROSION CONTROL PLANS
INITIAL (INTERIM) PHASE - 2

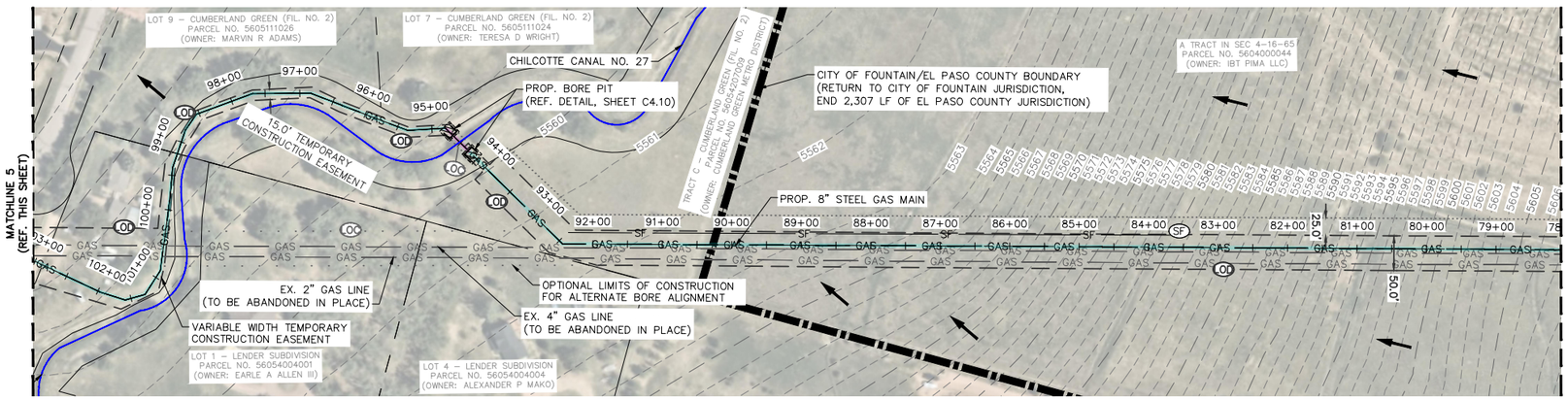
COLORADO LICENSED JOSEPH W. MEINE 763168 01/17/24 PROFESSIONAL ENGINEER

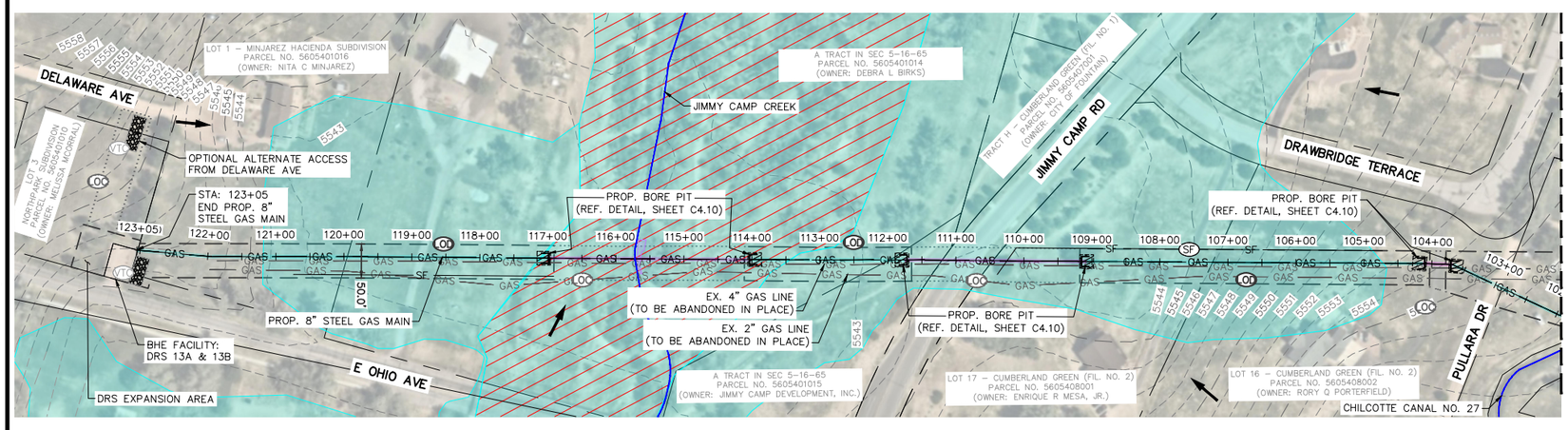
PROJECT NO. 096826014

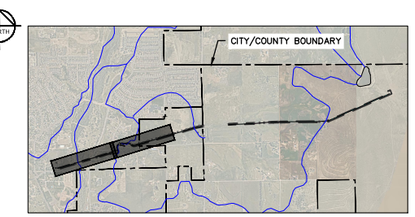
SHEET C4.5

K:\COS_Civil\096826014_BHE Squirrel Creek\CADD\PlanSheets\GEC\GEC_EC_INIT.dwg Petik, Grant 1/17/2024 1:25 PM

BLACK HILLS ENERGY
SQUIRREL CREEK - 8" GAS MAIN
CITY OF FOUNTAIN AND EL PASO COUNTY, COLORADO







LEGEND

- CITY/COUNTY BOUNDARY
- PROPERTY LINES
- EXISTING MAJOR CONTOUR (6550)
- EXISTING MINOR CONTOUR (6551)
- EXISTING GAS LINE (GAS)
- PROPOSED GAS LINE (GAS)
- PIPE TRENCHED SECTION
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- LIMITS OF CONSTRUCTION (TEMPORARY 50' CONSTRUCTION EASEMENT) (LOC)
- LIMITS OF GROUND DISTURBANCE (LOD = LOC WHERE UNDEFINED) (LOD)
- SILT FENCE (INIT/INTER) (SF)
- SEDIMENT CONTROL LOG (INIT/INTER) (SCL)
- BORE PIT (REF. DETAIL, SHEET C4.10) (BP)
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Colorado Springs, Colorado 80903 (719) 453-0180

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BLACK HILLS ENERGY - SQUIRREL CREEK
GRADING AND EROSION CONTROL PLANS
INITIAL (INTERIM) PHASE - 3

COLORADO LICENSED PROFESSIONAL ENGINEER JOSEPH W. MESA 63168 01/17/24

PROJECT NO. 096826014

SHEET C4.6

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BLACK HILLS ENERGY
SQUIRREL CREEK - 8" GAS MAIN
CITY OF FOUNTAIN AND EL PASO COUNTY, COLORADO

GRAPHIC SCALE IN FEET
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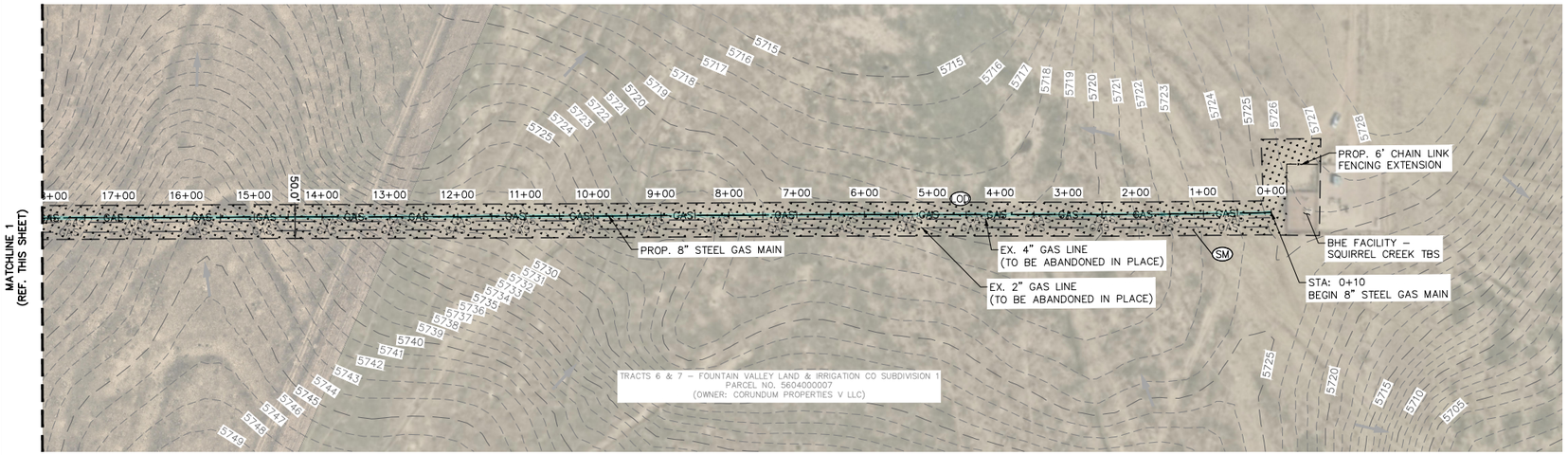

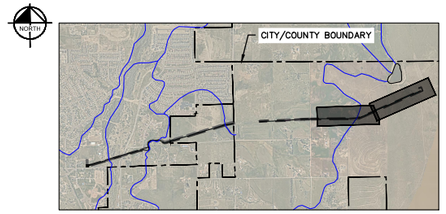

LEGEND

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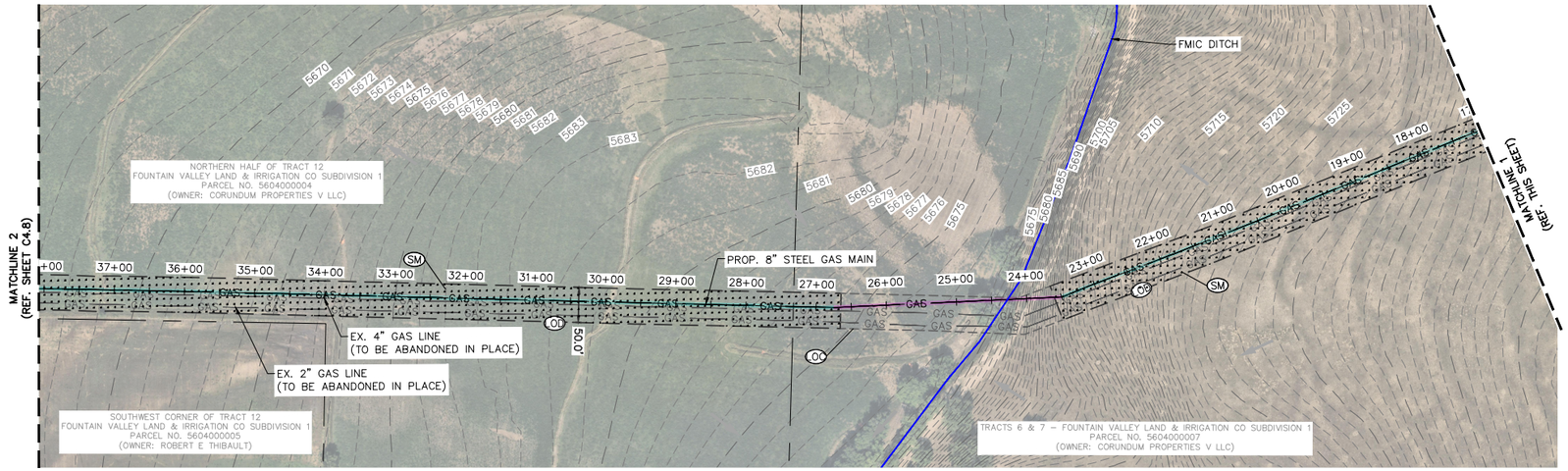

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DATE: 01/17/2024

BLACK HILLS ENERGY - SQUIRREL CREEK
GRADING AND EROSION CONTROL PLANS
FINAL PHASE - 1

COLORADO LICENSED
JOSEPH W. MEYER
#63168
01/17/24
PROFESSIONAL ENGINEER

PROJECT NO.
096826014

SHEET
C4.7

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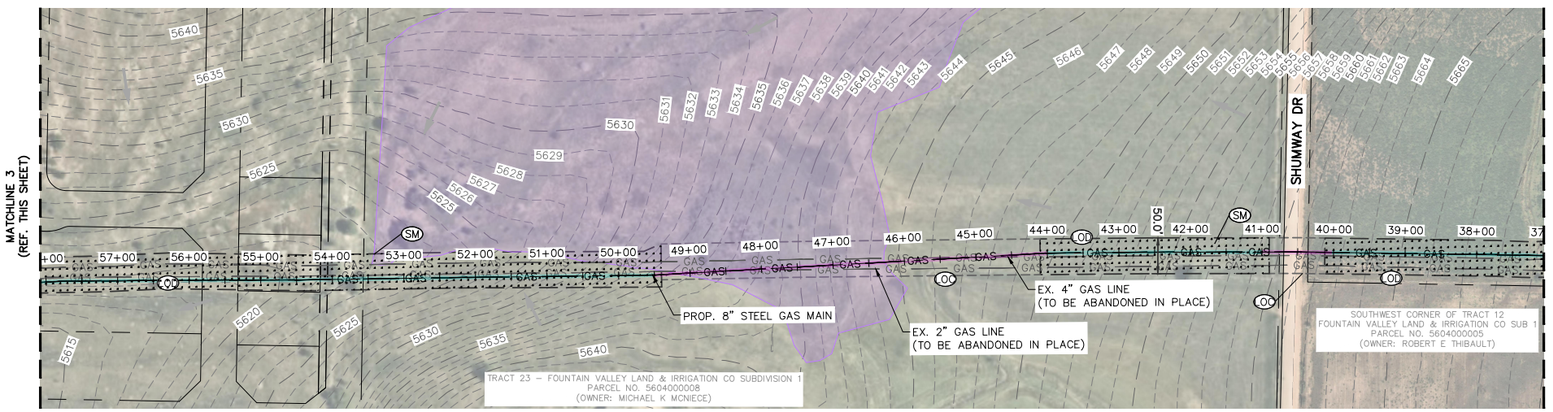
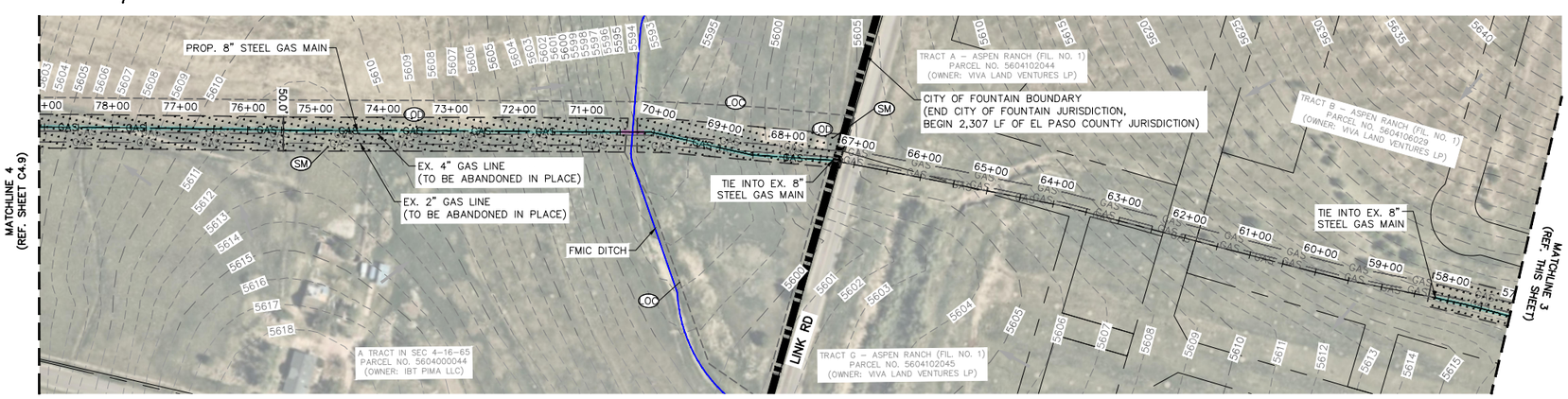
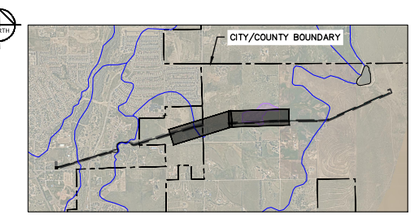
BLACK HILLS ENERGY
SQUIRREL CREEK - 8" GAS MAIN
CITY OF FOUNTAIN AND EL PASO COUNTY, COLORADO







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- 100-YEAR FLOODPLAIN (AREA AE, REGULATORY FLOODWAY)

NOTES

1. THE INTENT OF THIS PLAN IS TO IDENTIFY THE EROSION CONTROL PRACTICES RECOMMENDED. THE CONTRACTOR SHALL REFERENCE ADDITIONAL CONSTRUCTION PLANS FOR DEMOLITION OF EXISTING AND CONSTRUCTION OF PROPOSED IMPROVEMENTS.
2. CONTRACTOR / BLACK HILLS ENERGY TO SET LAYDOWN YARD (STAGING AREA) AS NEEDED DURING CONSTRUCTION. MATERIALS, EQUIPMENT, PERSONNEL, AND PERSONAL VEHICLE PARKING TO BE COORDINATED ACCORDINGLY.
3. CONSTRUCTION/DISTURBANCE LIMITS TO REMAIN INSIDE OF THE LIMITS OF THE ESTABLISHED 50' TEMPORARY CONSTRUCTION EASEMENT (25' OFFSET FROM THE PROPOSED GAS MAIN ALIGNMENT). CONSTRUCTION SHALL NOT NEGATIVELY IMPACT ADJACENT PROPERTIES OR PRIVATE PROPERTY NEIGHBORING THE PROJECT SITE.
4. ALL WORK IN THE ROW REQUIRES A ROW PERMIT FROM THE GOVERNING JURISDICTION. CONTRACTOR IS RESPONSIBLE FOR APPLYING FOR AND OBTAINING ALL NECESSARY ROW PERMITS.
5. CONTRACTOR TO NOTE PROXIMITY OF EXISTING IMPROVEMENTS ADJACENT TO THE SITE AND PROVIDE NECESSARY MEASURES TO PROTECT ALL FACILITIES AND STRUCTURES IN PLACE.
6. CONTRACTOR SHALL MAINTAIN STABILIZED STAGING AREA (SSA) AND VEHICLE TRACKING CONTROL (VTC) AT THE CONSTRUCTION ENTRANCE AT ALL TIMES. CONTRACTOR SHALL UPDATE THE EROSION CONTROL PLAN IN THE FIELD TO INDICATE THE LOCATION OF THE SSA AND VTC CCM'S AS EXCAVATION SEQUENCING DICTATES.
7. CONTRACTOR MAY SUBSTITUTE SEDIMENT CONTROL LOGS (SCL) FOR SILT FENCE (SF) AS PERIMETER CONTROL, DEPENDING UPON SITE CONDITIONS. SCL, AND SF MAY BE INTERCHANGED DEPENDING ON SITE CONDITIONS.
8. TRENCHING AND BORING LOCATIONS ARE APPROXIMATED BY BLACK HILLS ENERGY. CONTRACTOR TO MODIFY TRENCHING AND BORING LOCATIONS AS NEEDED IN THE FIELD.
9. TEMPORARY COMPACTED BERM TO BE INSTALLED PARALLEL TO TRENCH SECTION PER TYPICAL SECTION AND STORMWATER ENTERPRISE STANDARD DETAIL (REF. SHEET C4.10).
10. SEEDING AND MULCHING TO TAKE PLACE OVER THE ENTIRETY OF THE DISTURBED PERVIOUS/LANDSCAPING AREA. ALL DISTURBED AREA IS TO BE RETURNED TO EXISTING GROUND COVER.
11. REMOVAL OF CONTROL MEASURES SHALL NOT OCCUR WITHOUT THE APPROVAL OF THE STORMWATER INSPECTOR.
12. ALL PAVED SURFACES, INCLUDING ADJACENT STREETS AND SIDEWALKS, SHALL BE KEPT CLEAN AND FREE OF SEDIMENT AND/OR DEBRIS AT ALL TIMES. CONTRACTOR SHALL PERFORM STREET SWEEPING AT ALL TIMES DURING ACTIVE TRACKING AND AT A MINIMUM ON A DAILY BASIS AT THE END OF EACH CONSTRUCTION DAY.
13. STABILIZATION OF GROUND SURFACE SHALL BE IMPLEMENTED WITHIN THE DISTURBED PORTIONS OF THE PROJECT SITE NO LATER THAN 14 DAYS FOLLOWING THE CEASE OF CONSTRUCTION ACTIVITIES WITHIN THE DISTURBED AREAS. ALL REQUIREMENTS OUTLINED IN THE ACCOMPANYING SWMP REPORT SHALL BE ADHERED TO.
14. CONTRACTOR SHALL UTILIZE ROLLED EROSION CONTROL PRODUCTS ON ALL SLOPES 3H:1V OR GREATER TO ACHIEVE REQUIRED STABILIZATION.
15. CONTRACTOR SHALL MAINTAIN ACCEPTABLE EROSION CONTROL PRACTICES WITHIN THE ANTICIPATED LIMITS OF CONSTRUCTION IDENTIFIED HEREIN. CONSTRUCTION CONTROL MEASURES AND FINAL STABILIZATION SHALL BE COMPLETED AS IDENTIFIED HEREIN IN ACCORDANCE WITHIN OWNER REQUIREMENTS.
16. AQUATIC RESOURCES CONTINUE BEYOND PROJECT BOUNDARIES.

LIMITS OF CONSTRUCTION

CONSTRUCTION AREA	= ±16.23 ACRES
(LAND DISTURBANCE AREA	= ±11.43 ACRES)

GAS LINE CONSTRUCTION METHOD & JURISDICTION

TRENCHED SECTION	= ±9,725 LF (7,452 LF CITY OF FOUNTAIN) (2,273 LF EL PASO COUNTY)
BORED SECTION	= ±1,666 LF (1,632 LF CITY OF FOUNTAIN) (34 LF EL PASO COUNTY)
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UTILITY CROSSING NOTE:

ALL UTILITY CROSSINGS ARE SHOWN IN THE PLAN AND PROFILE SHEETS, SUBMITTED BY BLACK HILLS ENERGY, AND SHALL CONFORM TO LOCAL REGULATIONS FOR CLEARANCES OR APPROPRIATE CONTAINMENT METHODS.

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

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
2024 KIMLEY-HORN AND ASSOCIATES, INC.
2 North Nevada Avenue, Suite 900
Colorado Springs, Colorado 80903 (719) 453-0180

DESIGNED BY: GMP
DRAWN BY: GMP
CHECKED BY: JWM
DATE: 01/17/2024

BLACK HILLS ENERGY - SQUIRREL CREEK
GRADING AND EROSION CONTROL PLANS
FINAL PHASE - 2

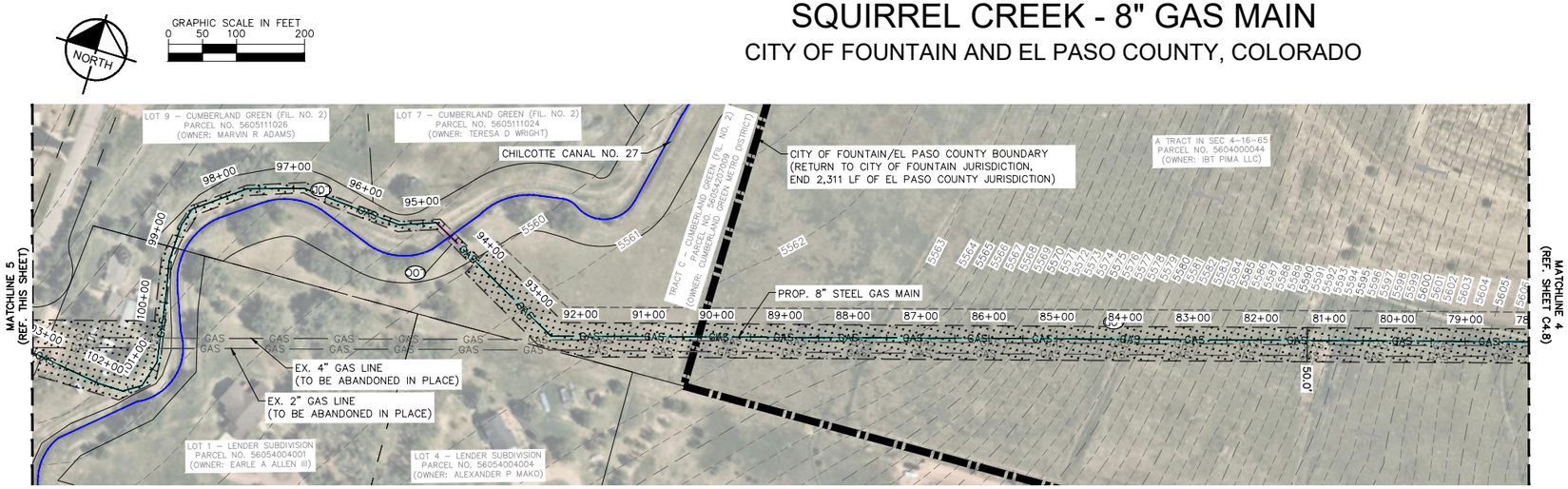
COLORADO LICENSED PROFESSIONAL ENGINEER JOSEPH W. MEIER 963168 01/17/24

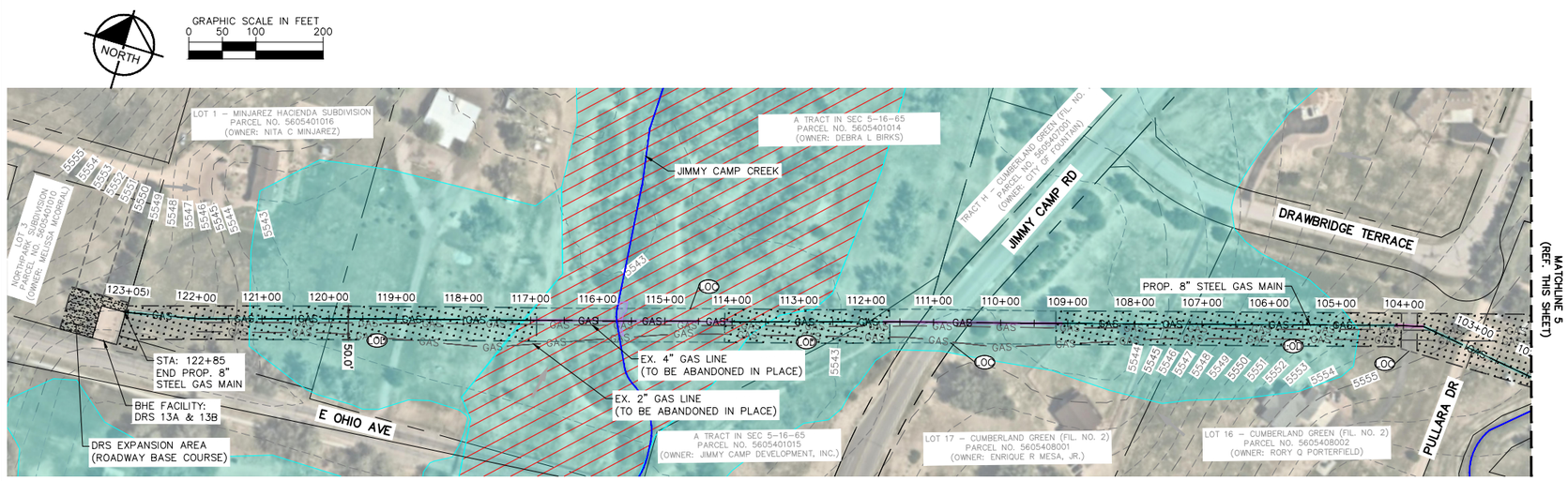
PROJECT NO. 096826014

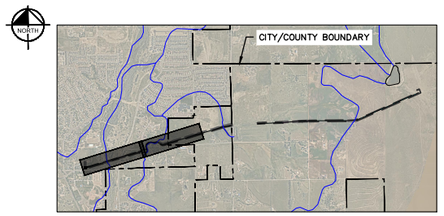
SHEET C4.8

K:\COS_Civil\096826014_BHE Squirrel Creek\CADD\PlanSheets\GEC\GEC_EC_VERT.dwg Petik, Grant 1/17/2024 1:57 PM

BLACK HILLS ENERGY
SQUIRREL CREEK - 8" GAS MAIN
CITY OF FOUNTAIN AND EL PASO COUNTY, COLORADO







LEGEND

- CITY/COUNTY BOUNDARY
- PROPERTY LINES
- 6550 — EXISTING MAJOR CONTOUR
- 6551 — EXISTING MINOR CONTOUR
- GAS — EXISTING GAS LINE
- GAS — PROPOSED GAS LINE
- LOC — LIMITS OF CONSTRUCTION (TEMPORARY 50' CONSTRUCTION EASEMENT)
- LOD — LIMITS OF GROUND DISTURBANCE (LOD = LOC WHERE UNDEFINED)
- SM — PERMANENT SEEDING & MULCHING (OR RETURN TO EXISTING SURFACING) (FINAL PHASE)
- EXISTING FLOW DIRECTION ARROW
- JURISDICTIONAL WETLAND AREA
- 100-YEAR FLOODPLAIN (AREA AE)
- 100-YEAR FLOODPLAIN (AREA AE, REGULATORY FLOODWAY)

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K:\COS_Civil\096826014_BHE Squirrel Creek\CADD\PlanSheets\GEC\GEC_EC_VERT.dwg Petik, Grant 1/17/2024 1:58 PM

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
2024 KIMLEY-HORN AND ASSOCIATES, INC.
2 North Nevada Avenue, Suite 900
Colorado Springs, Colorado 80903 (719) 453-0180

DESIGNED BY: GMP
DRAWN BY: GMP
CHECKED BY: JWM
DATE: 01/17/2024

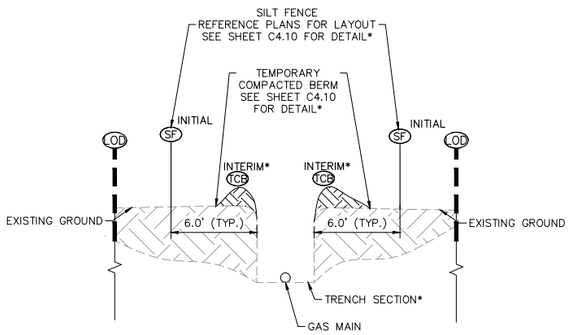
BLACK HILLS ENERGY - SQUIRREL CREEK
GRADING AND EROSION CONTROL PLANS
FINAL PHASE - 3

COLORADO LICENSED
JOSEPH W. MEYER
#63168
01/17/24
PROFESSIONAL ENGINEER

PROJECT NO.
096826014

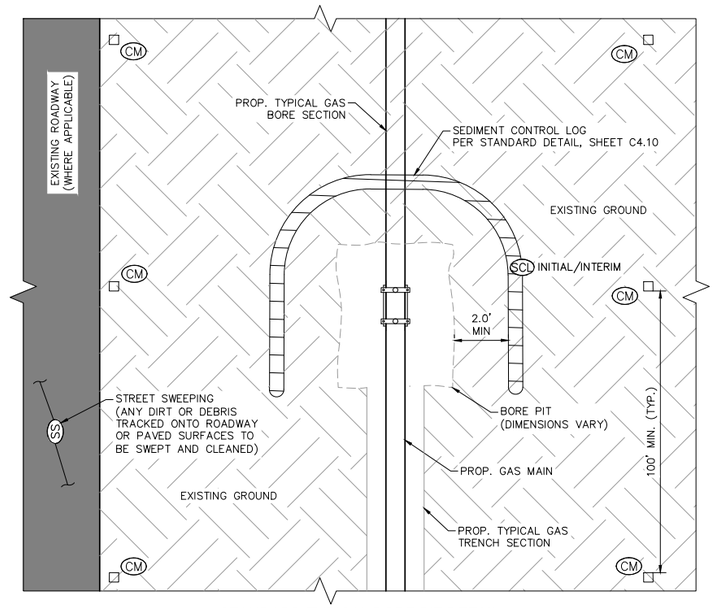
SHEET
C4.9

BLACK HILLS ENERGY
SQUIRREL CREEK - 8" GAS MAIN
CITY OF FOUNTAIN AND EL PASO COUNTY, COLORADO



STANDARD TYPICAL TRENCH SECTION DETAIL
(N.T.S)

*TRENCH NOTES:
1. ALL TRENCH SECTIONS ARE REQUIRED TO MEET RELEVANT OSHA STANDARDS
2. CONSTRUCTION CONTROL MEASURES TO BE TYPICALLY INSTALLED ON THE DOWNSLOPE SIDE OF THE TRENCH. UPSTREAM STORMWATER WILL TYPICALLY BE CAPTURED IN THE TRENCH SECTION.
3. TCB TO EXTEND 1' LATERALLY FROM THE TRENCH FOR EVERY INCH TALL THE BERM STANDS.



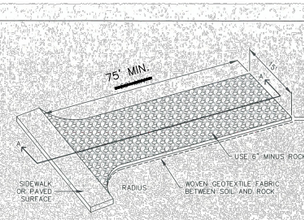
STANDARD TYPICAL BORE PIT DETAIL
(N.T.S)

EL PASO COUNTY CONSERVATION DISTRICT

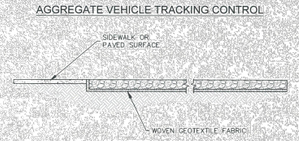
SHOTGUN MIX

Common name	Recommended variety	% of seed mix	PLS Rate per acre double if broadcast
Bluestem, Big Native	Kaw, Bison, Champ	20.0 %	1.08
Grama, Blue Native	Lovington, Hachita, Alma	10.0%	.12
Green Needlegrass Native	Lodorm	10.0%	.48
Wheatgrass, Western Native	Arriba, Barton	20.0%	1.60
Grama, Sideoats Native	Vaughn, Butte, El Reno, Niner	10.0%	.46
Switchgrass Native	Blackwell, Greenville	10%	.20
Prairie Sandreed Native	Goshen, Pronghorn	10.0%	.32
Yellow Indiangrass Native	Cheyenne, Holt, Llano	10.0%	.51

EL PASO COUNTY CONSERVATION DISTRICT
5610 INDUSTRIAL PL SUITE 100
COLORADO SPRINGS,CO 80916
719-686-4510 WWW.EPCCD.ORG
EPCDISTRICT@YAHOO.COM



AGGREGATE VEHICLE TRACKING CONTROL



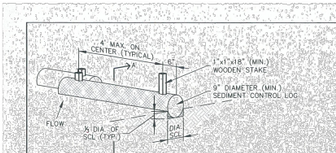
SECTION A-A'

INSTALLATION NOTES
1. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHOULD BE LOCATED AT ALL POINTS WHERE VEHICLES EXIT THE CONSTRUCTION SITE TO ADJACENT ROADWAY.
2. STABILIZED CONSTRUCTION ENTRANCE/EXITS SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
3. RADIUS MUST BE ADEQUATE FOR INTENDED CONSTRUCTION VEHICLE TURNING.
4. ROCK SHOULD CONSIST OF 6" MINUS ROCK.
5. INSTALL CONSTRUCTION FENCE ON BOTH SIDES OF VEHICLE TRACKING CONTROL PAD WHEN NEEDED OR REQUIRED BY INSPECTOR.

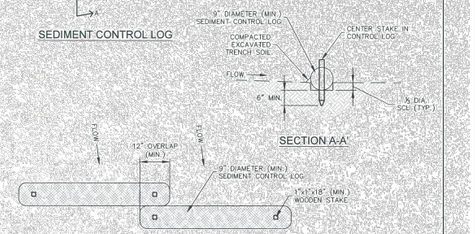
MAINTENANCE NOTES
1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. SEDIMENT TRACKED ONTO THE ADJACENT ROAD SHALL BE REMOVED DAILY BY SWEEPING OR SHOVELING, AND NEVER WASHED DOWN STORM DRAINS.
3. ROUGHEN, REPLACE, AND/OR ADD ROCK AS NEEDED TO MAINTAIN CONSISTENT DEPTH AND TO PREVENT SEDIMENT TRACKING ONTO ADJACENT STREET.
4. PERMANENTLY STABILIZE AREA AFTER VEHICLE TRACKING CONTROL IS REMOVED.

VTC

STORMWATER ENTERPRISE | VEHICLE TRACKING CONTROL
APPROVED: SHEET MANAGER
ISSUED 10/7/19 | REVISED 8/19/2020 | DRAWING NO. 900-VTC



SEDIMENT CONTROL LOG



SECTION A-A'

SEDIMENT CONTROL LOG JOINTS

INSTALLATION NOTES
1. ALL SEDIMENT CONTROL LOGS MUST BE EMBEDDED TO ⅓ OF THE HEIGHT OF THE LOG.
2. LARGER DIAMETER SEDIMENT CONTROL LOGS NEED TO BE EMBEDDED DEEPER.
3. PLACE SEDIMENT CONTROL LOG AGAINST SIDEWALK OR BACK OF CURB WHEN ADJACENT TO THESE FEATURES.
4. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER, AND SHALL BE FREE FROM ANY NOXIOUS WEED SEEDS OF DEFECTS INCLUDING RIPS, HOLES, AND OBVIOUS WEAR.
5. IF USING AS SLOPE PROTECTION, INSTALL SEDIMENT CONTROL LOGS ALONG THE CONTOUR.

MAINTENANCE NOTES
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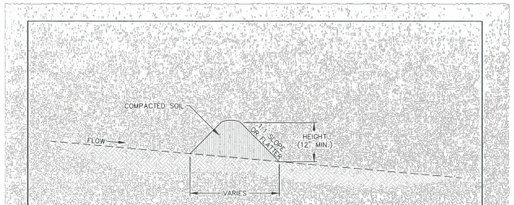
2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES ½ OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.
3. PERMANENTLY STABILIZE AREA AFTER SEDIMENT CONTROL LOGS HAVE BEEN REMOVED.

SCL

STORMWATER ENTERPRISE | SEDIMENT CONTROL LOGS
APPROVED: SHEET MANAGER
ISSUED 10/7/19 | REVISED 8/19/2020 | DRAWING NO. 900-SCL



TEMPORARY COMPACTED BERM

INSTALLATION NOTES
1. COMPACTED BERM MUST BE A MINIMUM HEIGHT OF ONE FOOT. BASE WIDTH IS DETERMINED BY HEIGHT.
2. COMPACTED BERMS MUST BE ADEQUATELY COMPACTED. NOT ALL SOILS ARE SUITABLE FOR COMPACTED BERMS.
3. INSTALL COMPACTED BERMS ALONG CONTOURS. DO NOT INSTALL PERPENDICULAR TO SLOPE.
4. THE MAXIMUM TRIBUTARY DRAINAGE AREA PER 100 LINEAR FEET OF COMPACTED BERMS SHALL BE ¼ ACRE.

MAINTENANCE NOTES
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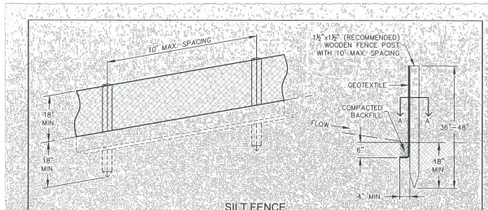
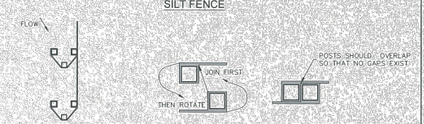
2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES ½ OF THE DESIGN DEPTH OF THE BERM.

TCB

STORMWATER ENTERPRISE | TEMPORARY COMPACTED BERM
APPROVED: SHEET MANAGER
ISSUED 10/7/19 | REVISED 8/19/2020 | DRAWING NO. 900-TCB



SILT FENCE



J-HOOK INSTALLATION

SECTION A-A'

INSTALLATION NOTES
1. SILT FENCE MUST BE PLACED ON A FLAT SURFACE 2-5' AWAY FROM TOE OF THE SLOPE TO ALLOW FOR PONDING AND DEPOSITION.
2. COMPACT THE TRENCH USING A JUMPING JACK OR WHEEL ROLLING TO THE POINT THAT THE FENCE RESISTS BEING PULLED OUT OF THE GROUND BY HAND.
3. SILT FENCE SHALL BE TAUT WITH NO SAGS AFTER IT HAS BEEN ANCHORED.
4. FABRIC SHALL BE ATTACHED TO POSTS WITH 1" HEAVY DUTY STAPLES OR 1" NAILS. THESE SHOULD BE PLACED VERTICALLY DOWN THE POST, 5" APART.
5. THE PREFERRED INSTALLATION METHOD USES A TRENCHER OR SILT FENCE INSTALLATION DEVICE.
6. INSTALL SILT FENCE ALONG THE CONTOUR OF THE SLOPES, OR IN A MANNER TO AVOID CREATING CONCENTRATED FLOW (SUCH AS A "J-HOOK" INSTALLATION).

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2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES ½ OF THE DESIGN HEIGHT OF THE SILT FENCE.
3. SILT FENCE MUST REMAIN UNTIL THE UPSTREAM DISTURBANCE AREA IS STABILIZED.
4. PERMANENTLY STABILIZE AREA AFTER SILT FENCE IS REMOVED.

SF

STORMWATER ENTERPRISE | SILT FENCE
APPROVED: SHEET MANAGER
ISSUED 10/7/19 | REVISED 8/19/2020 | DRAWING NO. 900-SF

NO.	REVISION	BY	DATE	APPR.

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2 North Nevada Avenue, Suite 900
Colorado Springs, Colorado 80903 (719) 453-0180

DESIGNED BY: GMP
DRAWN BY: GMP
CHECKED BY: JWM
DATE: 01/17/2024

BLACK HILLS ENERGY - SQUIRREL CREEK
GRADING AND EROSION CONTROL PLANS
GEC STANDARD DETAILS

COLORADO LICENSED
JOSEPH W. MEHL
#63168
01/17/24
PROFESSIONAL ENGINEER

PROJECT NO.
096826014

SHEET
C4.10

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