

HOMELAND ACRES  
DRAINAGE LETTER  
EL PASO COUNTY, COLORADO

April 2024

PREPARED FOR:

IBT PIMA LLC  
1275 Village Ridge Pt  
Monument, CO 80132

PREPARED BY:

*Dakota Springs Engineering*

31 N. Tejon Street, Suite 518  
Colorado Springs, CO 80903  
719.227.7388

PROJECT NO. SF2416

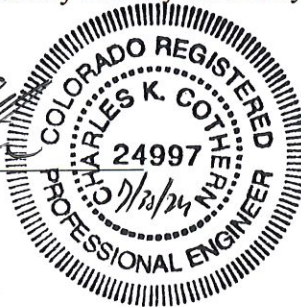
CERTIFICATIONS

**Design Engineer's Statement:**

The attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the County for drainage reports and said report is in conformity with the applicable master plan of the drainage basin. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this report.



Charles K. Cothorn, P.E. #24997



Seal

**Owner/Developer's Statement:**

I, the owner/developer have read and will comply with all of the requirements specified in this drainage report and plan.

By (signature):  \_\_\_\_\_

Date: 8/9/24

Title: President / CEO Integrity Bank & Trust

Address: 1275 VILLAGE RIDGE PT MONUMENT CO, 80132-8996

**El Paso County:**

Filed in accordance with the requirements of the El Paso County Land Development Code, Drainage Criteria Manual Volumes 1 and 2, and the Engineering Criteria Manual, as amended.

\_\_\_\_\_  
Joshua Plamer, P.E.,  
County Engineer / ECM Administrator

\_\_\_\_\_  
Date

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## **1.0 INTRODUCTION**

This letter is to serve as the drainage letter for the HomeLand Acres subdivision. The HomeLand Acres subdivision consists of one 10.43 acre lot and one 46.66 acre tract for a total acreage of 57.09 acres. Lot 1, also known as 8180 Kane Rd, Fountain, CO 80817 includes the existing house, well, and septic. The remaining tract (Tract A) will remain undeveloped. The entire 57.09 acres will remain as is and unchanged, only platted into a single lot and tract. Therefore, not affecting the drainage characteristics of the property.

### ***Purpose***

The purpose of this letter is to present an understanding of existing drainage characteristics and conditions. Highlighting the existing historical discharge location(s) and rate(s).

## **2.0 General Location and Description**

### ***Location***

HomeLand Acres is a 57.09 acre property located in a portion of Section 4, Township 17 South, Range 65 West of the 6<sup>th</sup> Principal Meridian, in El Paso County, Colorado. It is located north of Kane Road and west of Link Road, and south of Eagleside Elementary School. The property is located east of Jimmy Camp Creek and is bordered by Chilcotte Canal #27 irrigation channel on the west. The entire property is located within a portion of the Jimmy Camp Creek drainage basin. Refer to the Vicinity map located in Appendix A.

### ***Description of Property***

The proposed site encompasses 57.09 acres. The topography of the site and surrounding area is typical of a high desert; short prairie grass and weeds with slopes generally ranging from 1% to 12%. The area generally drains to the west.

The site is comprised of several different soil types. From the Soil Survey of El Paso County, the site falls into the following soil types:

1. “2” Ascalon sandy loam, 1 to 3 percent slopes; Type B Soil
2. “3” Ascalon sandy loam, 3 to 9 percent slopes; Type B Soil
3. “101” Ustic Torrfluvents, loamy, 0 to 3 percent slopes; Type B Soil
4. “102” Valent Sand, 1 to 12 percent slopes; Type A Soil

Note: “#” indicates Soil Conservation Survey soil classification number. Please refer to the Soils Report, located in Appendix A.

### 3.0 Drainage Basins and Sub-Basins

#### **Major Basin Description**

HomeLand Acres is located within the Jimmy Camp Creek Drainage Basin. This letter complies with the Flood Insurance Study performed by FEMA and the Master Drainage Plans for; Cumberland Green Filing No.2 (prepared by JPS Engineering), Eagleside Ridge (prepared by JPS Engineering), and Aspen Ranch (prepared by Matrix Design Group). All runoff will be unchanged undeveloped flow and therefore will meet El Paso County standards for discharge rates.

#### **Floodplains**

Per the referenced Flood Insurance Rate Maps (FIRM No. 08041C0966-G dated 12/7/2018 & FIRM No. 08041C0958-G dated 12/7/2018 ), the site is not impacted by a SFHA (Special Flood Hazard Zone). The site is located in El Paso County unincorporated area 080059 floodplain “X”. Refer to the annotated FIRM Panel located in Appendix A.

### 4.0 DRAINAGE BASINS

#### **Existing Drainage Analysis**

Please refer to the Preliminary and Final Drainage Reports prepared for Cumberland Green Filing No.2, Eagleside Ridge, and Aspen Ranch, for existing drainage analysis. Additionally, there is an existing drainage channel passing through the property that was designed by JPS Engineering and prepared for Aspen Ranch Filing No.1. The referenced Existing Drainage Basin Map from these studies is included in Appendix A at the back of the report.

### 5.0 DRAINAGE FEES

The parcel is located within the Jimmy Camp Creek Drainage Basin, which has a drainage fee requirement based on City of Fountain drainage policies. Per resolution N0. 24-436 The El Paso County Municipal Code has established the 2025 Drainage Fees for Jimmy Camp Creek Drainage Basin Fees at a rate of \$26,695 per impervious acre and a Bridge Fee at a rate of \$1,249 per impervious acre.

<b>HomeLand Acres Regions/Types</b>	<b>Area (Acres)</b>	<b>% Impervious</b>
Lot 1	10.43	1.3%
Tract A	46.66	0%
<b>Fees</b>		
<b>Impervious Acres</b>		0.137
Drainage Fee	\$26,695 / Imp. Acre	\$3,657.22
Bridge Fee	\$1,249 / Imp. Acre	\$171.12
<b>Total Fees:</b>		\$3,828.34

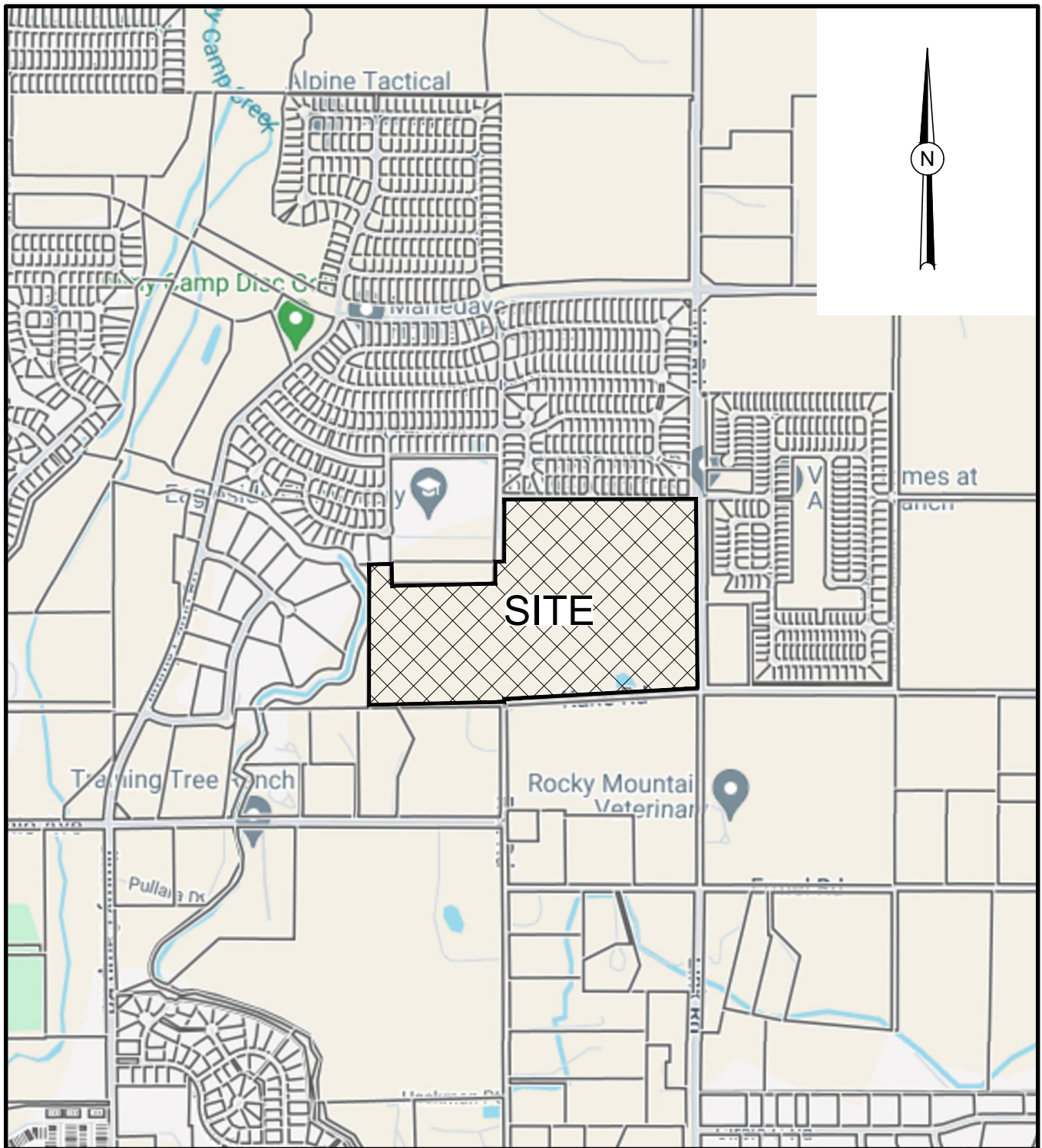
## **6.0 Summary**

The entire 57.09 acres of HomeLand Acres will remain as is and unchanged, only platted into a single lot and tract. Therefore, not affecting the drainage characteristics of the property and will not have negative effects on the receiving drainage way, nor will it negatively affect downstream developments as any discharges from the site will remain at historic levels.

## **7.0 REFERENCE MATERIALS**

1. “City of Colorado Springs/El Paso County Drainage Criteria Manual” January 2021.
2. “Master Development Drainage Plan For Cumberland Green 2”, JPS Engineering, February 2007.
3. “Final Drainage Report For Easgleside View”, JPS Engineering, November 2013.
4. “Master Development Drainage Plan For Aspen Ranch”, JPS Engineering, April 2018.
5. Soils Survey of El Paso County Area, Natural Resources Conservation Services of Colorado.
6. Flood Insurance Rate Study for El Paso County, Colorado and Incorporated Areas. Federal Emergency Management Agency, Revised December 7, 2018.
7. “City of Colorado Springs/El Paso County Drainage Criteria Manual, Revised January 2021.

# Vicinity Map



*DSE* *Dakota Springs*  
*Engineering*

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P: (719) 227-7388  
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PROJECT HOMELAND ACRES – FINAL PLAT

SHEET TITLE VICINITY MAP

**J-CAD**  
CONSULTING, LLC  
719-377-0002

# Soils Data



United States  
Department of  
Agriculture

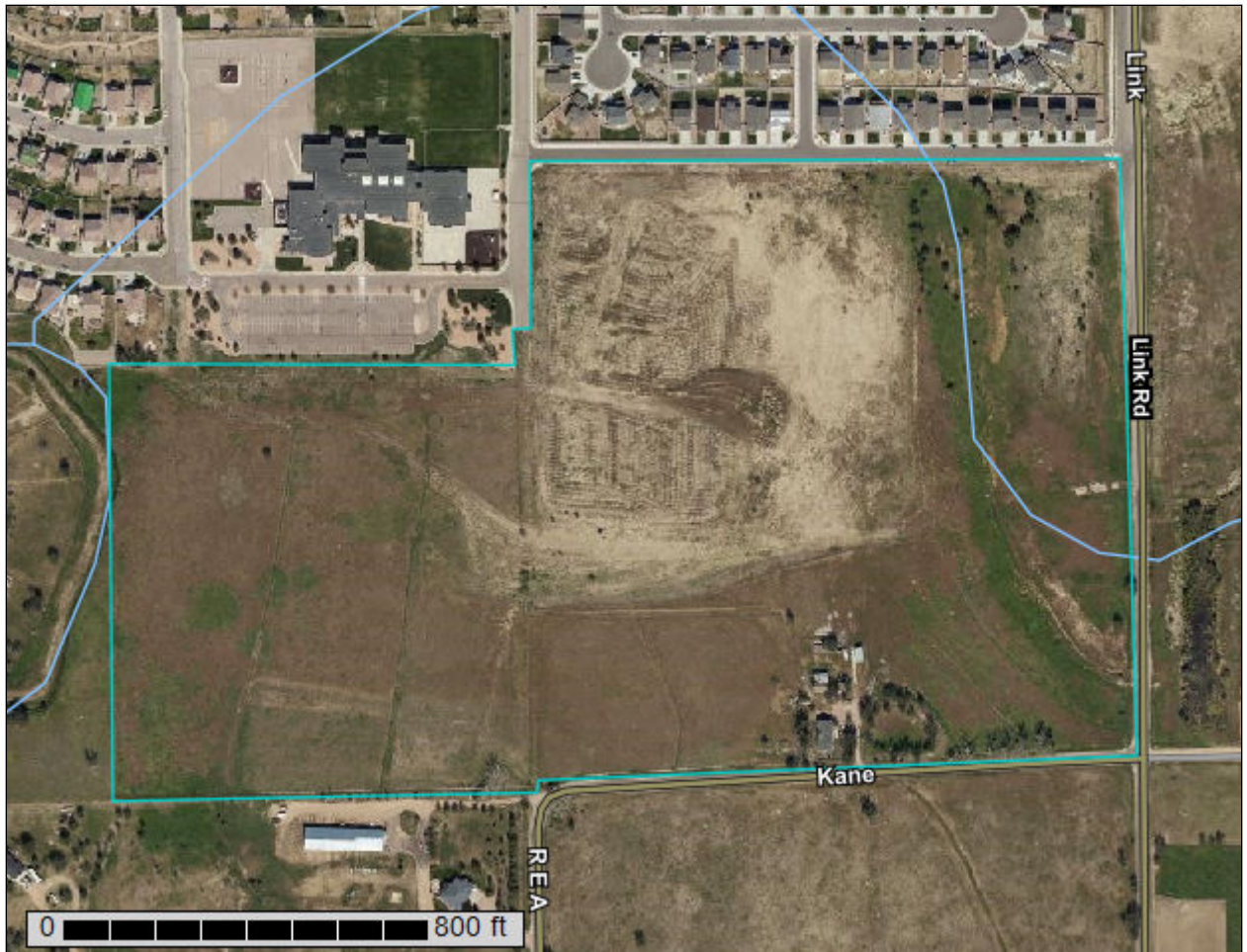
**NRCS**

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

## HomeLand Acres Soil Survey Map



# Preface

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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](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

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

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

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

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# How Soil Surveys Are Made

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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

## Custom Soil Resource Report

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

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

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

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

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

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

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

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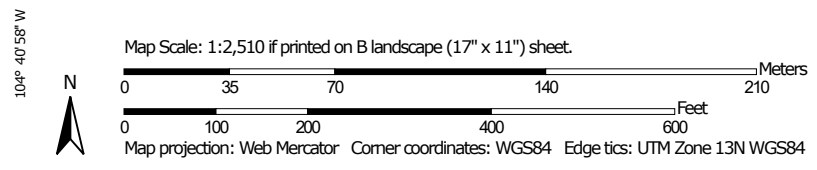
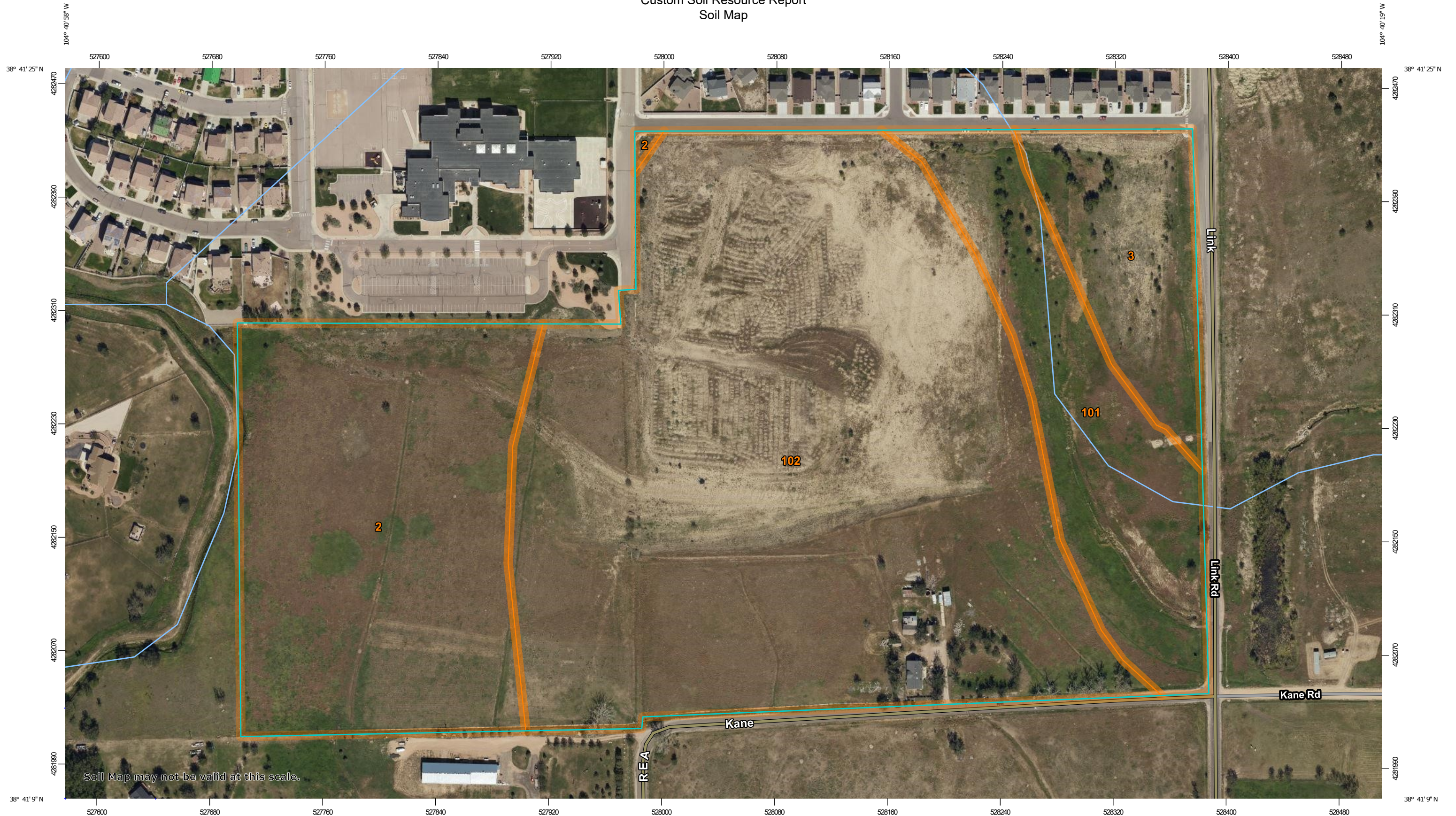
identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

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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 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.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: 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

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2	Ascalon sandy loam, 1 to 3 percent slopes	14.3	23.6%
3	Ascalon sandy loam, 3 to 9 percent slopes	4.6	7.5%
101	Ustic Torrifuvents, loamy	7.6	12.6%
102	Valent sand, 1 to 12 percent slopes, dry	34.0	56.2%
<b>Totals for Area of Interest</b>		<b>60.5</b>	<b>100.0%</b>

## 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

## Custom Soil Resource Report

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)

## Custom Soil Resource Report

*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

## 101—Ustic Torrifuvents, 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 torrifuvents and similar soils:* 95 percent  
*Minor components:* 5 percent

## Custom Soil Resource Report

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

### Description of Ustic Torrfluvents

#### 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

## Custom Soil Resource Report

*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

## Custom Soil Resource Report

*Ecological site:* R069XY026CO - Sandy Plains

*Other vegetative classification:* Not Suited (G069XW000CO), Sandy Plains  
(069XY026CO\_1)

*Hydric soil rating:* No

# References

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- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

## Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2\\_054242](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242)

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# **FIRM Panel**

**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.

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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, NNGS12  
National Geodetic Survey  
SSM-C-45202  
1315 East-West Highway  
Silver Spring, MD 20910-3282

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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.

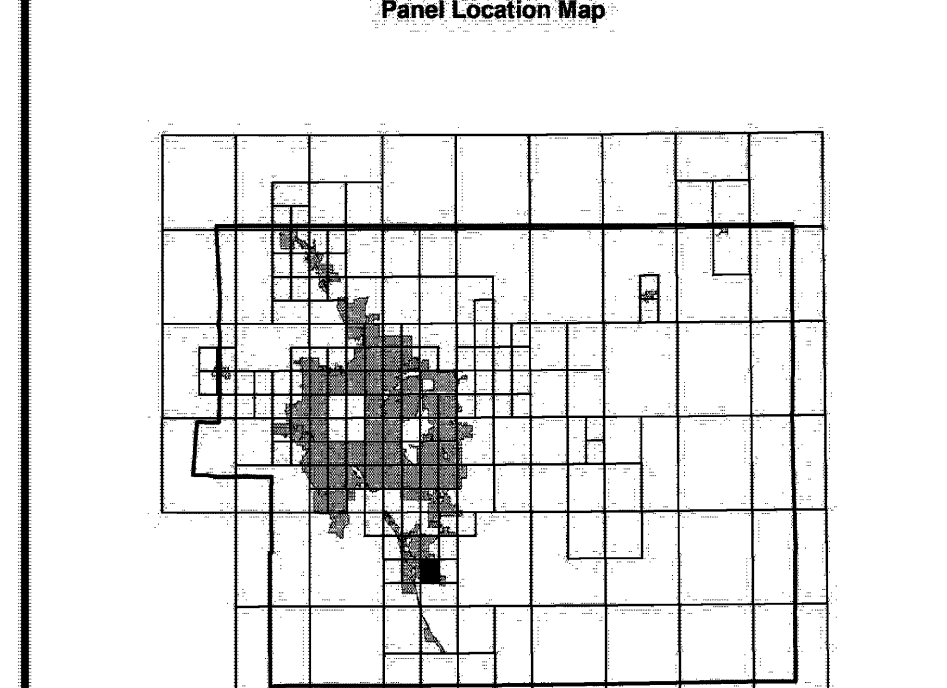
Contact FEMA Map Service Center (MSC) via the FEMA Map Information eXchange (FMIX) 1-877-336-2627 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. The MSC may also be reached by Fax at 1-800-338-9620 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/nfp>.

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.



**SITE**



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.
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- ZONE AR** Special Flood Hazard Area Formerly protected from the 1% annual chance flood by a flood control system that was subsequently deteriorated. 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.
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- 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
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- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- Base Flood Elevation line and value; elevation in feet\*
- Base Flood Elevation value where uniform within zone; elevation in feet\*
- \* Referenced to the North American Vertical Datum of 1988 (NAVD 88)**
- Cross section line
- Transect line
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 1000-meter Universal Transverse Mercator grid ticks, zone 13
- 5000-foot grid ticks: Colorado State Plane coordinate system, central zone (FIPSZONE 0502), Lambert Conformal Conic Projection
- Bench mark (see explanation in Notes to Users section of this FIRM panel)
- 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.

**NFP**

**PANEL 0966G**

**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	08059	0805	G
FOUNTAIN, CITY OF	08061	0806	G

Notes to Users: 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**  
08041C0966G

**MAP REVISED**  
DECEMBER 7, 2018

Federal Emergency Management Agency

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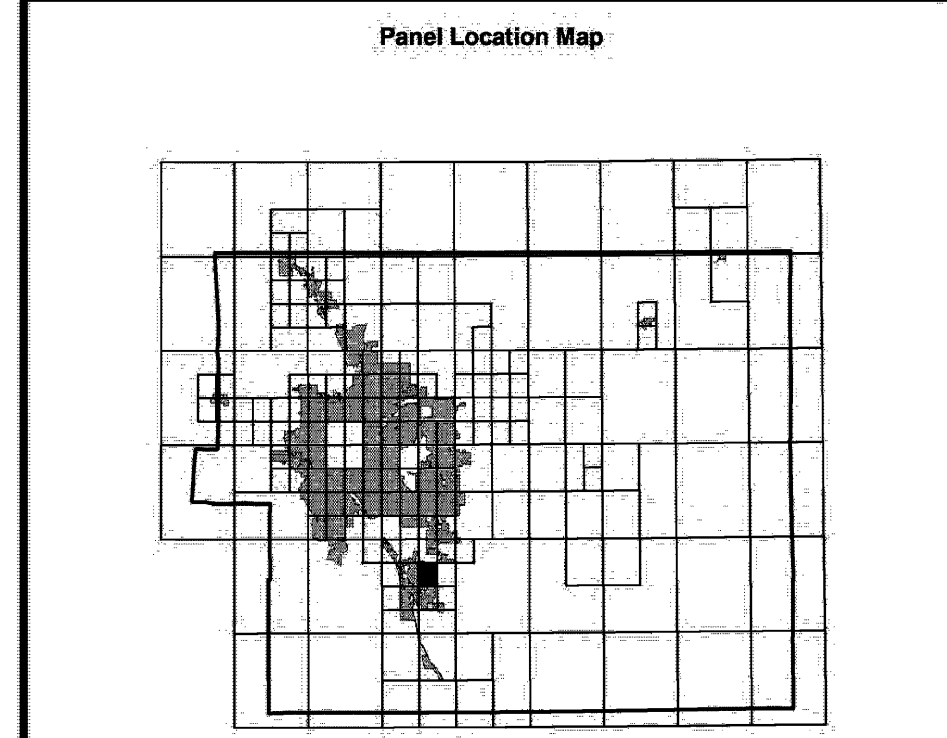
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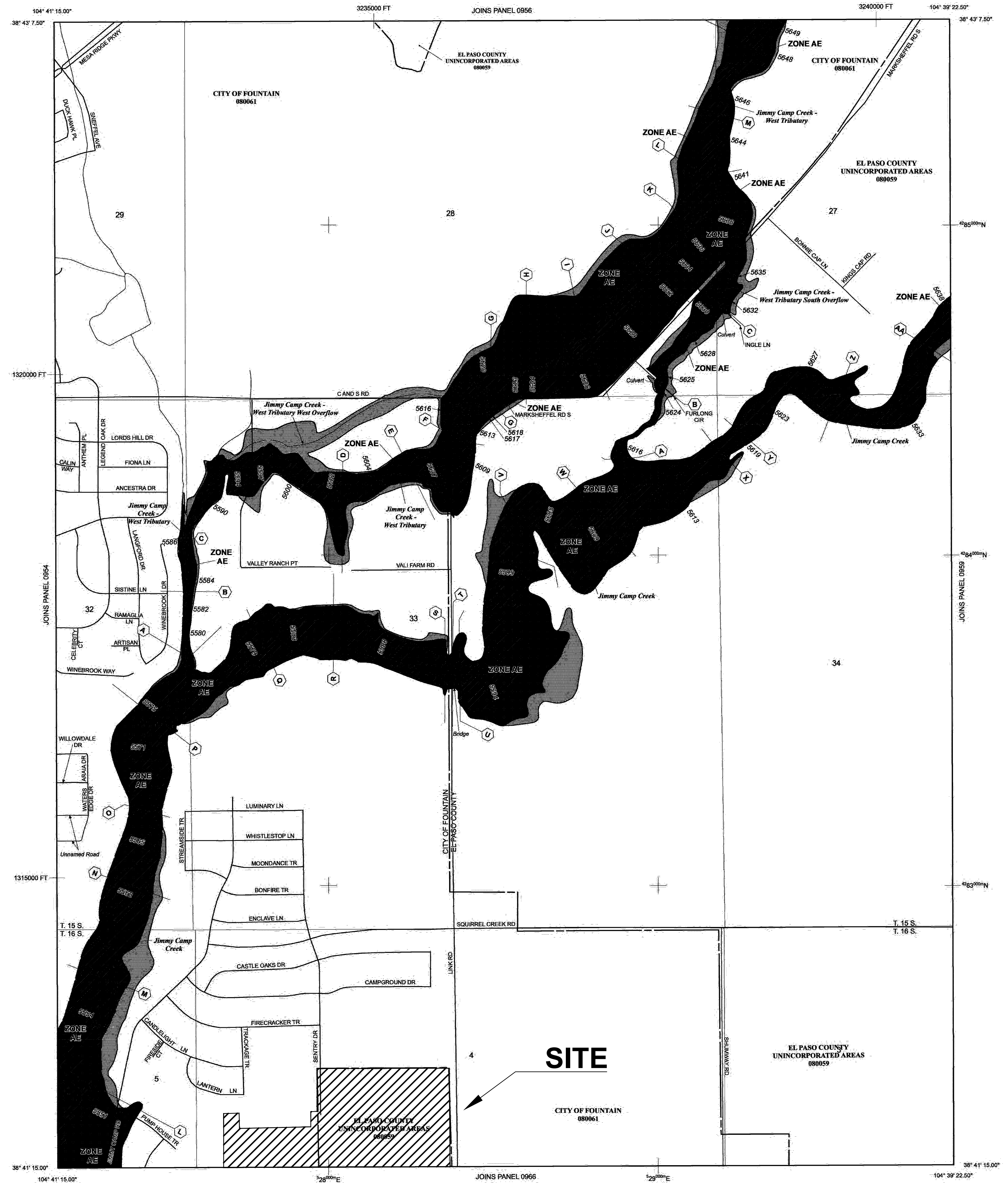
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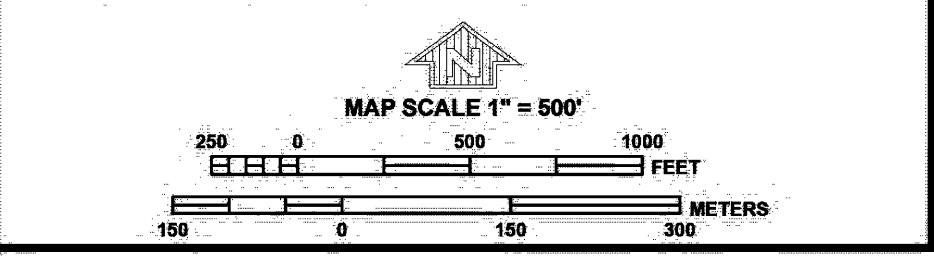
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NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 15 SOUTH, RANGE 65 WEST, AND TOWNSHIP 16 SOUTH, RANGE 65 WEST.

**LEGEND**

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  - Base Flood Elevation value where uniform within zone; elevation in feet\*
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  - 1000-meter Universal Transverse Mercator grid ticks, zone 13
  - 5000-foot grid ticks: Colorado State Plane coordinate system, central zone (EPSZONE 6502), Lambert Conformal Conic Projection
  - Bench mark (see explanation in Notes to Users section of this FIRM part)
  - 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.



**NATIONAL FLOOD INSURANCE PROGRAM**

**PANEL 0958G**

**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	08058	0958	G	
FOUNTAIN, CITY OF	08061	0958	G	

Notes 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.

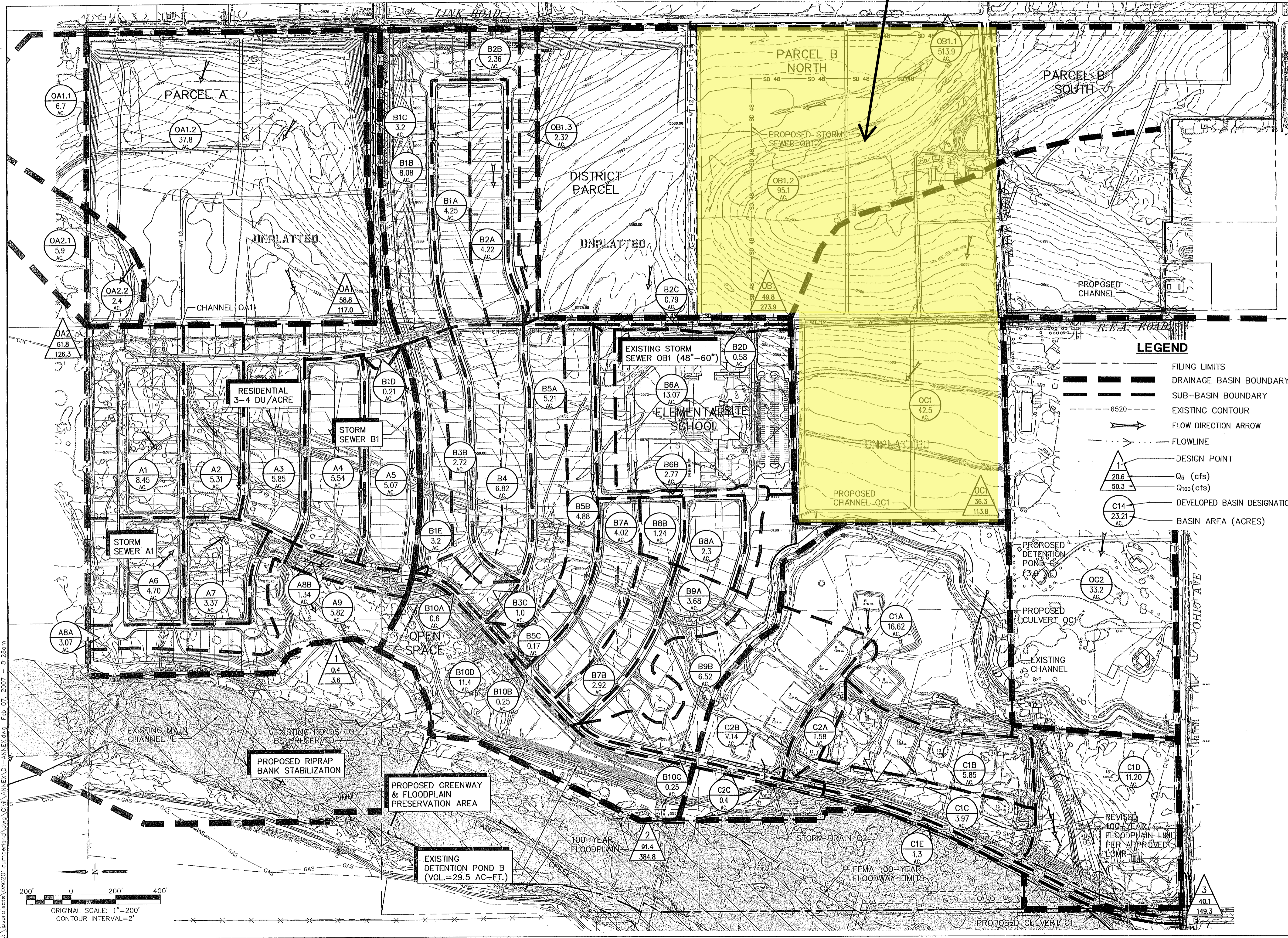
**MAP NUMBER**  
08041C0958G

**MAP REVISED**  
DECEMBER 7, 2018

Federal Emergency Management Agency

## **Referenced Existing Drainage Maps**

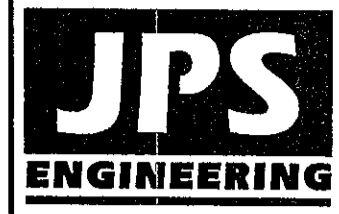
SITE



**LEGEND**

	FILING LIMITS
	DRAINAGE BASIN BOUNDARY
	SUB-BASIN BOUNDARY
	EXISTING CONTOUR
	FLOW DIRECTION ARROW
	FLOWLINE
	DESIGN POINT
	Qs (cfs)
	Q100 (cfs)
	DEVELOPED BASIN DESIGNATION
	BASIN AREA (ACRES)

CUMBERLAND GREEN 2



19 E. Willamette Ave.  
 Colorado Springs, CO  
 80903  
 PH: 719-477-9429  
 FAX: 719-471-0766

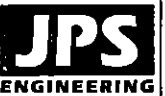
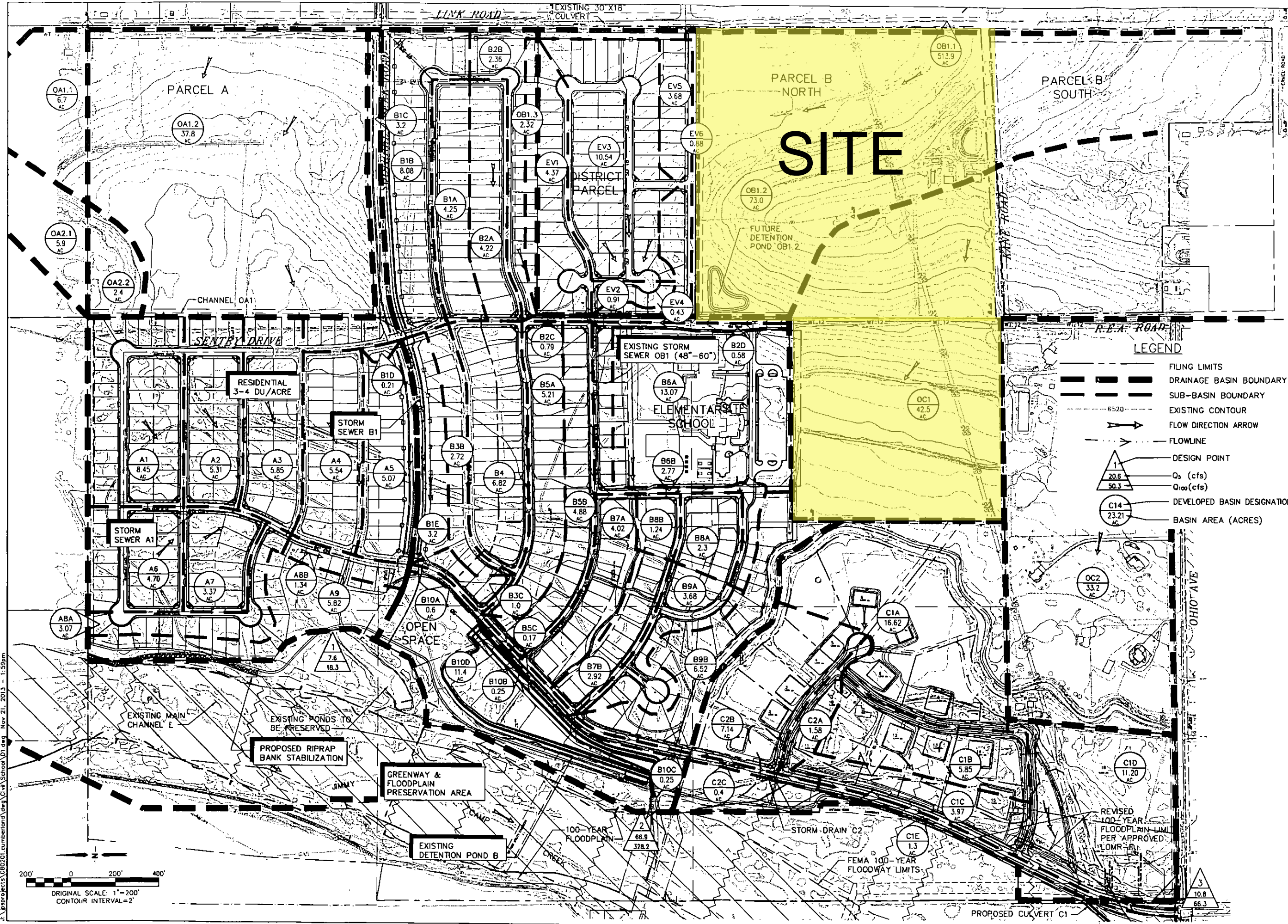
NO.	REVISION	DATE
1	ANNEXATION SUBMITTAL	JPS 2/6/07

DEVELOPED  
DRAINAGE PLAN

HORIZ. SCALE: 1"=200'	DRAWN: RMD
VERT. SCALE: N/A	DESIGNED: JPS
SURVEYED: RMLS	CHECKED: JPS
CREATED: 8/20/02	LAST MODIFIED: 2/6/07
PROJECT NO: 080201	MODIFIED BY: RMD

SHEET: **D1**

4: \\p:\projects\080201\cumberland\dwg\civil\ANNEX.DWG - ANNEX.DWG Feb 07, 2007 - 8:28am



19 E. Wilamette Ave.  
 Colorado Springs, CO  
 80903  
 PH: 719-477-9429  
 FAX: 719-471-0766  
 www.jpsengr.com



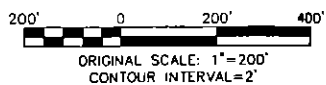
CALL UTILITY NOTIFICATION  
 CENTER OF COLORADO  
 1-800-922-1987  
 CALL 2-BUSINESS DAYS IN ADVANCE  
 BEFORE YOU DIG, GRADE, OR EXCAVATE  
 FOR THE MARKING OF UNDERGROUND  
 MEMBER UTILITIES

# CUMBERLAND GREEN

## MASTER DEVELOPMENT DRAINAGE PLAN

### LEGEND

- FILING LIMITS
- DRAINAGE BASIN BOUNDARY
- SUB-BASIN BOUNDARY
- EXISTING CONTOUR
- FLOW DIRECTION ARROW
- FLOWLINE
- DESIGN POINT
- Q<sub>s</sub> (cfs)
- Q<sub>100</sub> (cfs)
- DEVELOPED BASIN DESIGNATION
- BASIN AREA (ACRES)



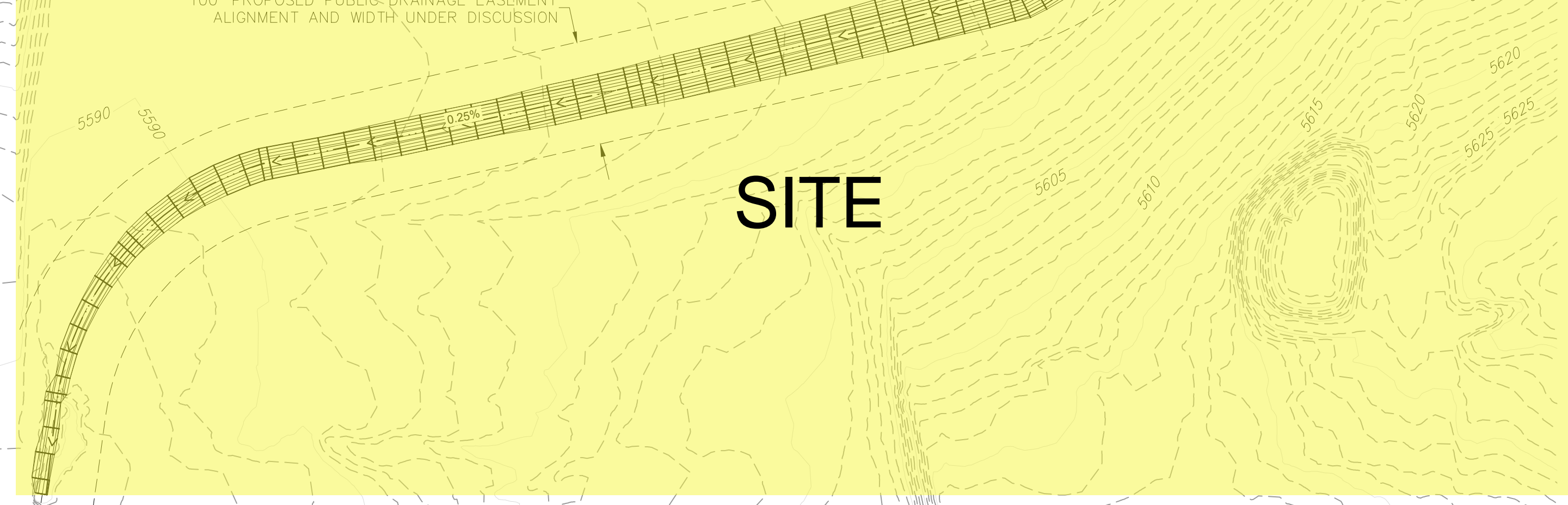
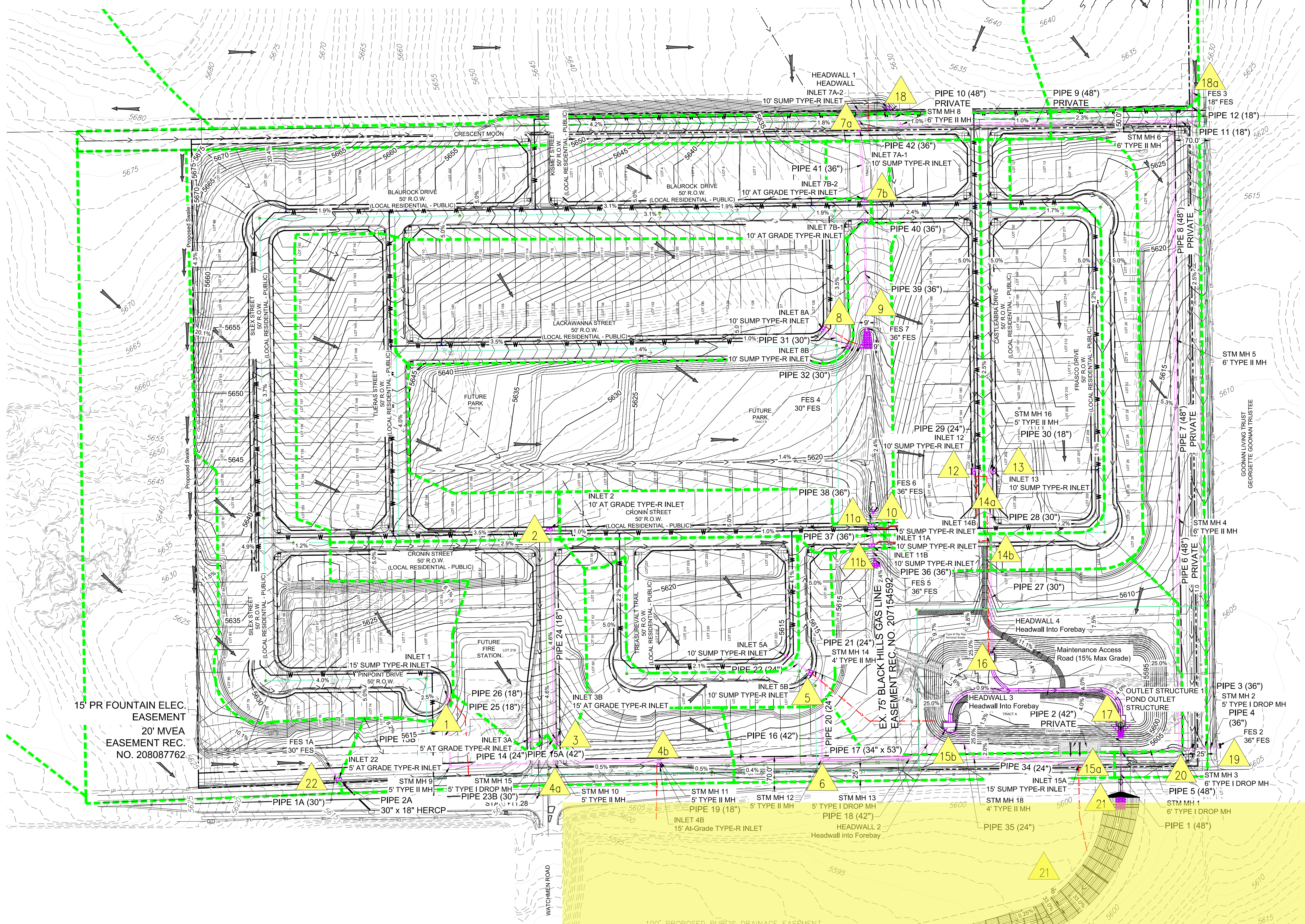
HORIZ. SCALE: 1"=200'	DESIGNED: BJJ
VERT. SCALE: N/A	CHECKED: JPS
SURVEYED: RMLS	LAST MODIFIED: 11/20/13
CREATED: 10/30/13	MODIFIED BY: BJJ
PROJECT NO: 080201	
SHEET:	

D1

J:\proj\080201\CumberlandGreen\DWG\CumGreen\DWG Nov 21, 2013 1:59pm

Aspen Ranch  
Proposed Conditions  
Design Point Summary Table

Design Point: Sub-basins	Description	Upstream Area (Acres)	Q5 (cfs)	Q100 (cfs)	Outlet Pipe Size (Inches)	Type	Grade (%)	Downstream Design Point
1: B10	Capture by: 15-foot sump Type-R Curb Inlet	6.6	11.3	24.9	24	RCP	1.7	4a
2: B11	Capture by: 10-foot Al-Grade Type-R Curb Inlet	3.7	6.4	14.0	18	RCP	2.8	2
3: B11, B12a	Capture by: 15-foot & 5-foot Al-Grade Type R Curb Inlets	6.4	13.3	27.4	30	RCP	1	3
4a: B10, B11, B12a	Manhole in Link Road combining B12a & DP 3	9.1	20.5	41.6	42	RCP	0.50	4b
4b: B10, B11, B12a, 12b	Sump Inlet on Link Road and MH Combining DP 4b w/ Sub-basin B12b	11.5	22.4	45.8	42	RCP	0.30	6
5: B3a1 & B3b	On-Grade Inlets 15' Type R south, 5' Type R north	3.8	6.2	13.7	18	RCP	0.65	6
6: B3b, B10, B11, B12a, B12b	Manhole in Link Road combining DP5 & DP4b	15.3	26.7	55.8	42	RCP	0.3	15b
7a: B6, B9	Surface flow to inlet in B9	2.4	4.2	9.1	18	RCP	0.3	7b
7b: B7, B8, B9	At-Grade Inlets	7.6	11.6	25.5	36	RCP	0.3	9
8: B6	Sump Inlets	5.1	8.7	19.1	30-inch pipe.	RCP	1.5	9
9: B6, B7, B8, B9	Trapezoidal swale	12.7	12.0	26.2	8' bottom width 5:1 side slopes	Swale	2.4	10
10: B5, B6, B7, B8, B9	36-inch Flared End Section	19.2	13.0	32.4	36	RCP	1.4	11a
11a: B4, B5, B6, B7, B8, B9	10-foot Al Grade Inlet	20.4	20.4	51.0	36	RCP	1.35	11b
11b: B3a2, B4, B5, B6, B7, B8, B9	5-foot Al Grade Inlet	20.5	20.5	51.1	36	RCP	1.35	16
12: B2a + Flow Bypass from DP 7b	Sump Inlet	3.3	5.5	16.9	24	RCP	1	14a
13: B2b	Sump Inlet	3.7	5.7	12.4	24	RCP	2	14a
14a: B2a, B2b	Manhole combining flows from DP 12 & 13	7.1	11.0	29.1	30	RCP	1	14b
14b: B2a, B2b, B2c, B2d	Sump Inlet	9.8	13.7	35.3	30	RCP	2.35	16
15a: B1a, B1b	Link and Kane Roads	5.0	8.5	18.9	24	RCP	0.64	15b
15b: B1a, B1b, B3b, B10, B11, B12a, B12b	Northwest Forebay	20.3	30.8	66.5	42	RCP	0.75	16
16: B1a, B1b, B1c, B2a, B2b, B2c, B3a, B3b, B4, B5, B6, B7, B8, B9	See UD-Detention for Basin Volume Analysis	60.4	38.1	90.4	Trickle Channel	Concrete	0.5	17
17: Detention Pond Discharge	See UD-Detention for outlet structure design information	60.4	1.1	62.1	42	RCP	1	21
18: OB1.1A1	48" Storm Pipe Routing around development	207.0	12.7	70.5	48	RCP	1.1	20
18a (Sub-area within OB1.1A1)	18" FES These flows are included under DP18 and are thus not added again to the flows in the bypass storm sewer.	5.1	1.1	6.3	18	RCP	9.8	20
19: OB1.1A2	42" Crossroad pipe to 48" Storm Pipe Routing around development	223.8	13.5	87.8	36	RCP	2.15	20
20: OB1.1A1, OB1.1A2	48" Storm Pipe Routing around development	430.8	27.3	154.8	48	RCP	3.47	21
21: B1a, B1b, B1c, B2a, B2b, B2c, B3a, B3b, B4, B5, B6, B7, B8, B9, OB1.1A1, OB1.1A2	Crossroad discharge pipe	491.2	28.2	155.8	48	RCP	1.84	Existing Swale
					Swale (8' bottom width, 4:1 side slopes)	Swale	0.25	



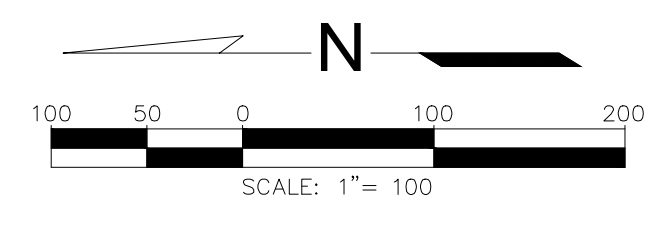
**LEGEND**

- BASIN BOUNDARY
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM DRAIN PIPE
- EXISTING STORM DRAIN PIPE
- DRAINAGE CHANNEL
- EXISTING EDGE OF ROAD
- PROPOSED PROPERTY LINE
- PROPOSED FLOW DIRECTION
- ▲ DESIGN POINT
- PROPOSED WATER LINE
- PROPOSED SANITARY SEWER
- EMERGENCY FLOW PATHS

THE STORM DRAINAGE FACILITIES CONVEYING OFFSITE FLOWS FROM THE EAST SIDE OF THE DEVELOPMENT WILL BE PRIVATELY OWNED AND MAINTAINED UP TO THE MANHOLE (MH - 102) COMBINING THESE FLOWS WITH FLOWS FROM ACROSS KANE ROAD. THE PROPOSED DETENTION POND WILL ALSO BE PRIVATELY OWNED AND MAINTAINED.

STORM SEWER SHOULD BE CONSIDERED PUBLICLY OWNED UNLESS OTHERWISE INDICATED.

ALL OTHER STORM SEWER WILL BE PUBLICLY OWNED AND MAINTAINED.



REFERENCE DRAWINGS	NO.	DATE	DESCRIPTION	BY

COMPUTER FILE MANAGEMENT	SHEET KEY
FILE NAME: S:\19.886.023 Aspen Ranch\200 Drainage\201 Drainage Reports\201A FDR-PDR\DWG\DR-02-Drainage basins(PDR-FDR).dwg	
CTB FILE: ---	
PLOT DATE: August 17, 2020 9:59:58 AM	
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.	

PREPARED BY: **Matrix DESIGN GROUP**

FOR AND ON BEHALF OF: **MATRIX DESIGN GROUP, INC.**  
PROJECT No. 19.886.023

DESIGNED BY: JTS  
CHECKED BY: JTS

SCALE: 1"=100'  
DATE ISSUED: 7/27/2020  
DRAWING No. DR-03

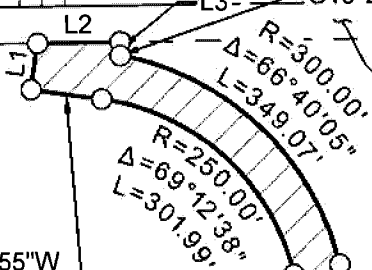
**CITY OF FOUNTAIN**  
COLA, INC.  
STORM SEWER LAYOUT

**ASPEN RANCH**  
PDR

3 OF 3

EAGLESIDE VIEW SUBDIVISION  
FILING NO. 2  
REC. NO. 216713821

S10°20'38"W (R)



WATCHMEN ROAD  
40' R.O.W.  
PLAT BOOK L, PAGE 42  
REC. NO. 160596

EX. 20' MVEA R.O.W.  
REC. NO. 208087762

N82°11'55"W  
77.87'

LINK ROAD  
40' R.O.W.  
PLAT BOOK L, PAGE 42  
REC. NO. 160596

TRACT 28  
FOUNTAIN VALLEY LAND &  
IRRIGATION CO.'S  
SUBDIVISION NO. 1  
PLAT BOOK L, PAGE 42  
REC. NO. 160596

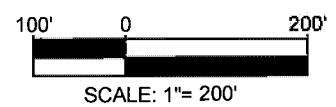
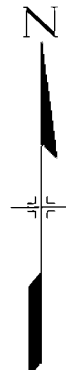
TRACT 36  
FOUNTAIN VALLEY LAND &  
IRRIGATION CO.'S  
SUBDIVISION NO. 1  
PLAT BOOK L, PAGE 42  
REC. NO. 160596



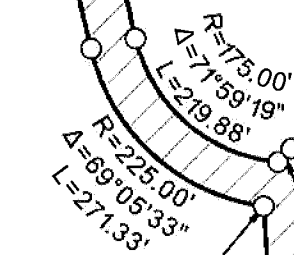
EX. 75' GAS LINE R.O.W.  
AND EASEMENT  
REC. NO. 207154592

N0°45'23"W 1300.27'  
(BASIS OF BEARINGS)

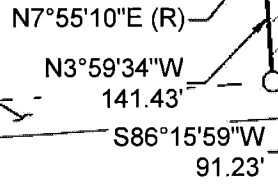
LINE TABLE		
LINE	BEARING	LENGTH
L1	N07°48'05"E	51.01'
L2	N89°19'48"E	89.99'
L3	S00°40'12"E	14.72'
L4	N44°52'53"E	20.22'



KANE ROAD  
40' R.O.W.  
PLAT BOOK L, PAGE 42  
REC. NO. 160596



N89°52'53"E  
67.80'



S0°54'37"E  
198.16'

S84°39'05"W  
44.73'

● INDICATES A FOUND 5/8 INCH REBAR WITH 2" ALUMINUM CAP STAMPED "DB&CO PLS 23515"

AREA: 88,747 SQ. FT. (2.03735 ACRES)



**Matrix**

2435 Research Parkway, Suite 300  
Colorado Springs, CO. 80920  
Phone 719-575-0100  
Fax 719-575-0208

DRAINAGE EASEMENT

EXHIBIT "B"

CHECKED BY: RLM	DATE: MARCH 1, 2021 JN: 19.886.023	1 OF 1
-----------------	---------------------------------------	--------

# Channel Report

## DP22 Swale West of Link Road

### Trapezoidal

Bottom Width (ft) = 8.00  
Side Slopes (z:1) = 4.00, 4.00  
Total Depth (ft) = 6.00  
Invert Elev (ft) = 1.00  
Slope (%) = 0.25  
N-Value = 0.030

### Highlighted

Depth (ft) = 2.54  
Q (cfs) = 155.80  
Area (sqft) = 46.13  
Velocity (ft/s) = 3.38  
Wetted Perim (ft) = 28.95  
Crit Depth, Yc (ft) = 1.72  
Top Width (ft) = 28.32  
EGL (ft) = 2.72

### Calculations

Compute by: Known Q  
Known Q (cfs) = 155.80

