

Staff Report Addendum

DATE: OCTOBER 4, 2024

TO: DOUGLAS COUNTY PLANNING COMMISSION

FROM: HEATHER SCOTT, AICP, ASSOCIATE PLANNER *HS*
JEANETTE BARE, AICP, CURRENT PLANNING MANAGER *SK for JB*
STEVEN E. KOSTER, AICP, ASSISTANT DIRECTOR OF PLANNING SERVICES *SK*

SUBJECT: MACANTA REGIONAL PARK – LOCATION AND EXTENT

PROJECT FILE: LE2024-023

The Douglas County Parks, Trails and Building Grounds Location and Extent (L & E) application for the regional park went out on referral and comments were provided to the applicant on October 2, 2024. An updated L & E plan exhibit was submitted and is included with this attachment.

ATTACHMENTS

Updated Referral Agency Response Report & Referral Agency Letters
Updated L & E Plan Exhibit

Referral Agency Response Report

Project Name: Macanta Regional Park

Project File #: LE2024-023

Date Sent: 09/16/2024

Date Due: 09/30/2024

Agency	Date Received	Agency Response	Response Resolution
Addressing Analyst	09/24/2024	<p>Received:</p> <p>The proposed address for this facility is 5525 CROWFOOT VALLEY ROAD. This address is not to be used for any purpose other than for plan review until after this project is approved. Proposed addresses are subject to changes as necessary for 911 dispatch and life safety purposes.</p> <p>Addresses are recorded by Douglas County following all necessary approvals. Contact DCAddressing@douglas.co.us or 303.660.7411 with questions.</p>	The applicant acknowledges this address and the potential for change.
Arapahoe County Public Airport Authority-Centennial	09/17/2024	<p>Summary of comments received (see attached letter for full comments):</p> <p>The Arapahoe County Public Airport Authority has no objection to the Macanta Regional Park as a whole but has the following comments to make on the project: The park will be subject to numerous aircraft overflights and their associated effects. These effects include, but are not limited to noise, smoke, dust, fumes, and vibrations.</p> <p>Any objects on the site (including cranes used during construction) that penetrate a 100:1 slope from the nearest point of the nearest runway, penetrates the FAA Part 77 airspace surface, impede signals associated with navigational equipment or any other reason the FAA deems necessary will require the filing and approval of FAA Form 7460-1. Please note that this is a State and Federal regulatory requirement. Runway endpoint data is available from the Airport for engineering calculations. In addition, please have crane operators advise the airport prior to erecting any cranes.</p>	The applicant acknowledges and will adhere to the airport requirements staying below the 100:1 slope.

Referral Agency Response Report**Project Name:** Macanta Regional Park**Project File #:** LE2024-023**Date Sent:** 09/16/2024**Date Due:** 09/30/2024

Agency	Date Received	Agency Response	Response Resolution
Assessor	09/27/2024	No Comment	No response necessary
AT&T Long Distance - ROW	09/19/2024	Received: No conflicts as there are no facilities in that area.	No response necessary
Black Hills Energy		No Response Received	No response necessary
Building Services	09/19/2024	Received: Permit is required for structure(s), please visit Douglas County's web site for requirements and contact 303-660-7497 if you have any questions.	No response necessary
Castle Park Ranch Property Owners Association		No Response Received	No response necessary
Castle Rock Fire and Rescue Department	09/27/2024	No Comment	No response necessary
CenturyLink	10/03/2024	No Comment	No response necessary
City of Castle Pines		No Response Received	No response necessary
Colorado Geological Survey	09/27/2024	No Comment	No response necessary
Comcast		No Response Received	No response necessary
CORE Electric Cooperative	09/20/2024	No Comment	No response necessary
Crowfoot Valley Ranch Metro #1 & 2		No Response Received	No response necessary
Douglas County Conservation District	10/01/2024	Received: Please be advised of the following concerns: soil limitations for septic, roads, dwellings, commercial buildings, and excavations.	Final construction plans, drainage studies and GESC plans will be provided prior to construction.
Douglas County Health Department	09/30/2024	No Comment	No response necessary

Referral Agency Response Report**Project Name:** Macanta Regional Park**Project File #:** LE2024-023**Date Sent:** 09/16/2024**Date Due:** 09/30/2024

Agency	Date Received	Agency Response	Response Resolution
Engineering Services	09/30/2024	Received: PWE has reviewed the L&E application and asks that you provide the following: A set of construction plans for the parking area and detention/water quality facility. GESC Plans and Report Phase III Drainage Report Traffic Division - based on the trip generation and distribution assumptions and engineering judgement, triggers 1, 2, and 4 are met. See notes for the necessary improvements.	The applicant will continue to work PWE to obtain all necessary permits.
Office of Emergency Management	09/16/2024	Received: OEM has no concerns with these projects.	No response necessary
Pradera Homeowners' Association		No Response Received	No response necessary
Sheriff's Office		No Response Received	No response necessary
Sheriff's Office E911		No Response Received	No response necessary
Town of Castle Rock	09/30/2024	Received: CR Water would like to work with the County to identify a water pipeline corridor between Crowfoot and Castle Oaks. We will want to coordinate closely with your group on the trail connections for this project.	The applicant is open to discussing possible water alignment while maintaining good stewardship of the park. Both groups are utilizing the same landscape architect to ensure design continuity.
Town of Parker Development Review	09/30/2024	No Comment	No response necessary
Town of Parker Public Works	09/16/2024	No Comment	No response necessary
Wildfire Mitigation		No Response Received	No response necessary
Xcel Energy-Right of Way & Permits	09/25/2024	No Comment	No response necessary

REFERRAL RESPONSE REQUEST – LOCATION AND EXTENT

Date sent: September 16, 2024

Comments due by: **September 30, 2024**

Project Name: Macanta Regional Park – Location and Extent

Project File #: LE2024-023

Project Summary: The applicant, Douglas County Parks, Trails, and Building Grounds (PT&BG) requests approval of a Location and Extent to construct trails, parking, and amenities on the 463.5-acre regional park within the Canyons South Planned Development.

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

<input type="checkbox"/> No Comment	
<input type="checkbox"/> Please be advised of the following concerns: _____	
<input checked="" type="checkbox"/> See letter attached for detail.	
Agency: Arapahoe County Public Airport Authority	Phone #: 303-218-2919
Your Name: Zachary Gabehart <i>(please print)</i>	Your Signature: <i>Zachary Gabehart</i>
	Date: 09/17/24

A public hearing on this request will be held before the Douglas County Planning Commission on **Monday, October 7, 2024, at 6:00 pm.** **This public hearing will be held on-line and in person. See the County website or contact the Planning Department for more information.**

Sincerely,

Heather Scott, AICP, Principal Planner



CENTENNIAL AIRPORT
ARAPAHOE COUNTY AIRPORT AUTHORITY

7565 South Peoria Street, Unit D9
Englewood, Colorado 80112
main: 303-790-0598 | fax: 303-790-2129
www.centennialairport.com

September 17, 2024

Ms. Heather Scott
Principal Planner
Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104

Re: LE2024-023 - Macanta Regional Park

Thank you for the opportunity to review the preliminary plan revision. The Arapahoe County Public Airport Authority has no objection to the Macanta Regional Park as a whole but has the following comments to make on the project:

- The proposed development lies outside Airport Influence Area (AIA), however because the park is in alignment with the approach to the main runway and in the vicinity of the outer marker for said approach in which aircraft establish on, the park will be subject to numerous aircraft overflights and their associated effects. These effects include, but are not limited to noise, smoke, dust, fumes, and vibrations.
- Any objects on the site (including cranes used during construction) that penetrate a 100:1 slope from the nearest point of the nearest runway, penetrates the FAA Part 77 airspace surface, impede signals associated with navigational equipment or any other reason the FAA deems necessary will require the filing and approval of FAA Form 7460-1. This form may take 90 days or more for approval. Please visit <https://oeaaa.faa.gov> to utilize the notice criteria tool to confirm filing requirements and to file the FAA Form 7460-1. **Please note that this is a State and Federal regulatory requirement.** Runway endpoint data is available from the Airport for engineering calculations. In addition, please have crane operators advise the airport prior to erecting any cranes.

Please feel free to call me if you have any questions.

Sincerely,

Zachary Gabehart
Noise & Environmental Specialist

From: annb.cwc64.com
To: [Heather Scott](mailto:Heather.Scott@att.com)
Cc: [Pam Choy \(pc2914@att.com\)](mailto:Pam.Choy@att.com); duanew.cwc64.com; jt.cwc64.com
Subject: Macanta Regional Park Parker, Colorado Douglas County eReferral #LE2024-023
Date: Thursday, September 19, 2024 10:18:58 AM

Hi Heather,

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

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

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

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



From: [FDPLANS](#)
To: [Heather Scott](#)
Subject: RE: Douglas County eReferral (LE2024-023) Is Ready For Review
Date: Friday, September 27, 2024 3:14:41 PM
Attachments: [image002.png](#)

Heather,

F1) Fire has reviewed the submitted plans and has no comments or objections. Fire requires no further Fire Department permitting for this specific submission review.

Respectfully,

Kevin "Sully" Sullivan
Assistant Fire Marshal

[Form Center • Request a Construction Inspection or Reinspect \(crgov.com\)](#)



Life Safety Division
Castle Rock Fire and Rescue Department
300 Perry Street
Castle Rock, CO 80104
303.663.3120 Office
e-mail FPO@crgov.com



An internationally accredited Fire/Rescue agency since 2012

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From: hscott@douglas.co.us <hscott@douglas.co.us>
Sent: Monday, September 16, 2024 10:37 AM
To: [FPO](mailto:FPO@crgov.com) <FPO@crgov.com>
Subject: Douglas County eReferral (LE2024-023) Is Ready For Review

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

10/1/24



**Heather Scott, AICP
Planning Services
Douglas County
100 Third Street
Castle Rock, CO 80104**

SUBJECT: APPROVAL TO PROCEED WITH ENCROACHMENT – P863360

Project Name & Location: Encroachment Request – Project number: LE2024-023 / Project title: Macanta Regional Park

To Whom It May Concern:

Qwest Corporation, Inc. d/b/a CENTURYLINK (“CenturyLink”) has reviewed the request for the subject encroachment and has determined that it has no objections with respect to the areas proposed for vacation as shown and/or described on Exhibit “A”, said Exhibit “A” attached hereto and incorporated by this reference. It is the intent and understanding of CenturyLink that this Vacation shall not reduce our rights to any other existing easement or rights we have on this site or in the area.

This encroachment response is submitted WITH THE STIPULATION that if CenturyLink facilities are found and/or damaged within the vacated area as described, the Applicant will bear the cost of relocation and repair of said facilities.

If you have any questions or would like to discuss this action further, please contact Varina Hoopes at Varina.Hoopes@lumen.com.

Sincerely yours,

/s/

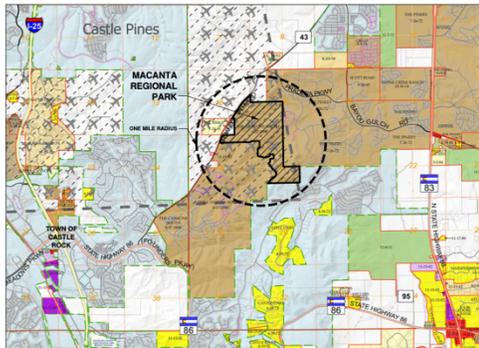
CenturyLink Right of Way Team

EXHIBIT A



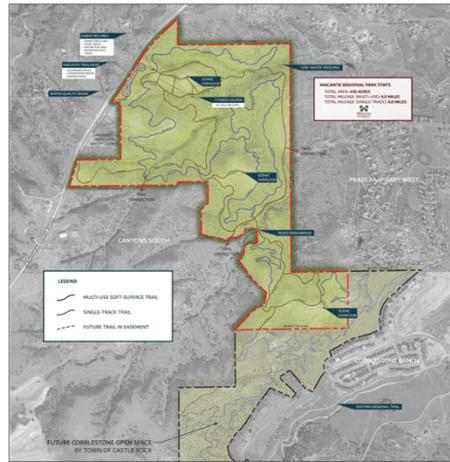
MACANTA REGIONAL PARK

ONE TRACT BEING THE SW 1/4 OF SECTION 17 & PART OF THE E 1/2 OF SECTION 18, TOWNSHIP 7 SOUTH AND ONE TRACT BEING PART OF N 1/2 NE 1/4 OF SECTION 19 & PART OF THE NW 1/4 SW 1/4 SE 1/4 OF SECTION 20, TOWNSHIP 7 SOUTH, IN RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO
LOCATION AND EXTENT XXXXX - XXX



ZONE DISTRICT MAP / VICINITY MAP

N1
NTS



SITE MASTER PLAN

N1
NTS



MACANTA REGIONAL PARK LOCATION AND EXTENT
MACANTA REGIONAL PARK
DOUGLAS COUNTY

SHEET:
L-1



www.douglas.co.us

Department of Community Development

Planning Services

REFERRAL RESPONSE REQUEST – LOCATION AND EXTENT

Date sent: September 16, 2024

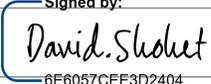
Comments due by: **September 30, 2024**

Project Name: Macanta Regional Park – Location and Extent

Project File #: LE2024-023

Project Summary: The applicant, Douglas County Parks, Trails, and Building Grounds (PT&BG) requests approval of a Location and Extent to construct trails, parking, and amenities on the 463.5-acre regional park within the Canyons South Planned Development.

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

No Comment	
Please be advised of the following concerns:	
<hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/>	
<input checked="" type="checkbox"/> See letter attached for detail.	
Agency: Douglas County Conservation District	Phone #: (303) 218- 2666
Your Name: David Shohet, President	Your Signature: 
(please print)	Date: 9/25/2024

A public hearing on this request will be held before the Douglas County Planning Commission on **Monday, October 7, 2024, at 6:00 pm.** **This public hearing will be held on-line and in person. See the County website or contact the Planning Department for more information.**

Sincerely,

Heather Scott, AICP, Principal Planner



DOUGLAS
—CONSERVES—

DOUGLAS COUNTY CONSERVATION DISTRICT

PO Box 688 / 7519A E. Hwy 86 Franktown, CO 80116 / Phone 303-218-2622

DATE: September 25, 2024

RE: LE2024-023 Macanta Regional Park

According to U.S.D.A. Natural Resources Conservation Service (NRCS) soils survey, much of the hills and slopes are poor for dwellings, and small commercial buildings due to flooding, shrink-swell soil properties, slope, and depth to hard bedrock. Due to the limitations on the above soils on the site, alternatives to mitigate the limitations of the soil will be required in your engineering design or construction techniques. Refer to page 37 of the Soil Survey for details.

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

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

The Conservation District recommends using a phased grading approach. By limiting the area being graded to 15 acres or less and seeding with native grasses the land area disturbed is minimized. The development site in total is 463.5 acres.

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

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

We understand that Maranta Regional Park is adjacent to Cobblestone Open Space and together comprise an important part of the wildlife corridor in this area.



DOUGLAS
—CONSERVES—

DOUGLAS COUNTY CONSERVATION DISTRICT

PO Box 688 / 7519A E. Hwy 86 Franktown, CO 80116 / Phone 303-218-2622

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

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

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

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



United States
Department of
Agriculture

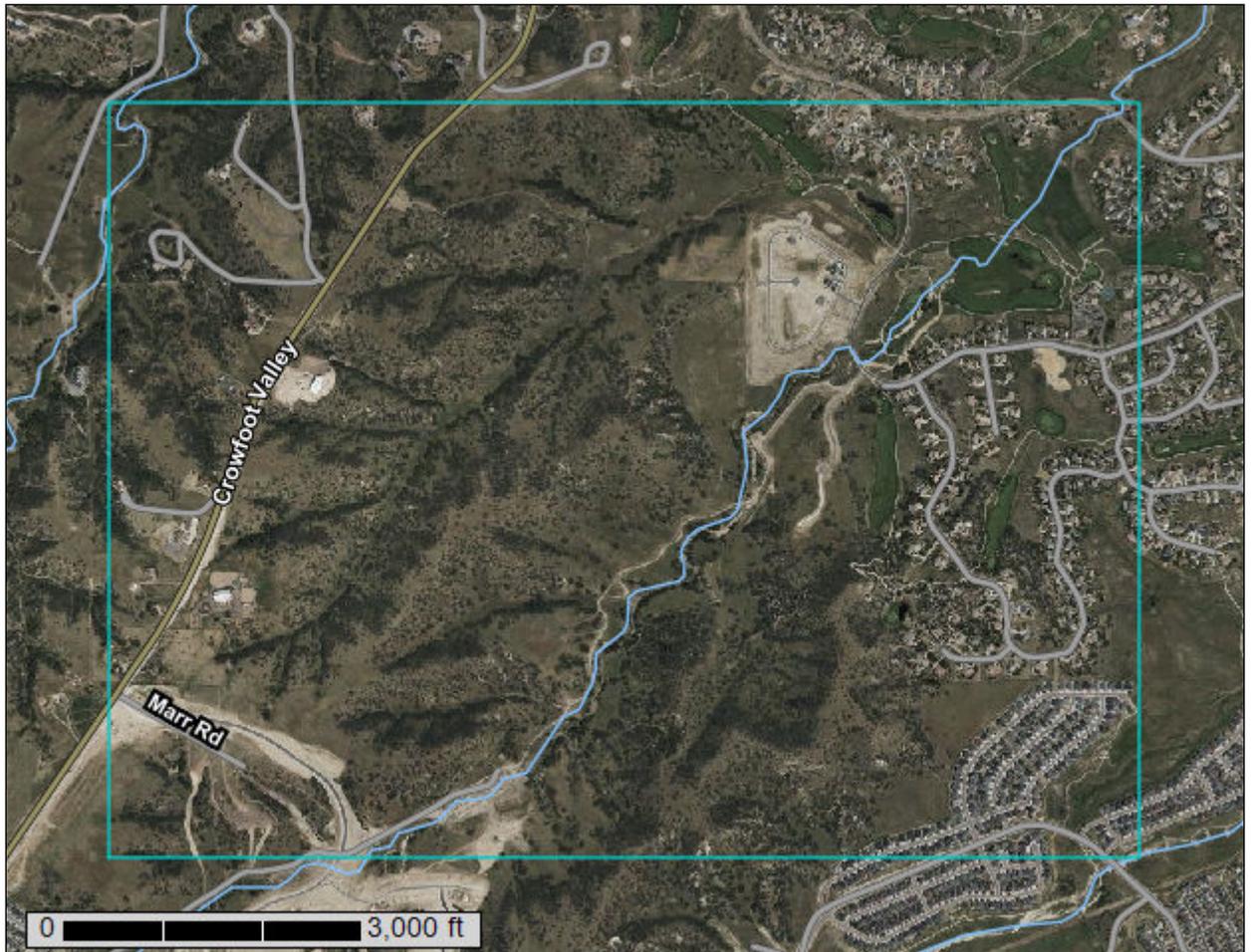
NRCS

Natural
Resources
Conservation
Service

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

Custom Soil Resource Report for Castle Rock Area, Colorado

LE2024-023 Macanta Regional Park



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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Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	11
Map Unit Descriptions.....	11
Castle Rock Area, Colorado.....	14
BrD—Bresser sandy loam, cool, 5 to 9 percent slopes.....	14
BtE—Bresser-Truckton sandy loams, 5 to 25 percent slopes.....	15
BuD2—Bresser and Truckton soils, 3 to 12 percent slopes, eroded.....	17
FoD—Fondis clay loam, 3 to 9 percent slopes.....	19
Fu—Fondis-Kutch association.....	20
Hg—Hilly gravelly land.....	22
Lo—Loamy alluvial land.....	23
NeE—Newlin gravelly sandy loam, 8 to 30 percent slopes.....	25
PpE—Peyton-Pring-Crowfoot sandy loams, 5 to 25 percent slopes.....	26
PrE2—Peyton-Pring-Crowfoot complex, 3 to 15 percent slopes, eroded...	29
RmE—Renohill-Buick complex, 5 to 25 percent slopes.....	31
Sa—Sampson loam.....	33
Sd—Sandy alluvial land.....	34
Soil Information for All Uses	37
Suitabilities and Limitations for Use.....	37
Building Site Development.....	37
Dwellings Without Basements (LE2024-023 Macanta Regional Park).....	37
References	43

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

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

Custom Soil Resource Report

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: 1:19,600 if printed on A landscape (11" x 8.5") sheet.



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

Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Castle Rock Area, Colorado

Survey Area Data: Version 16, Aug 24, 2023

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

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

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

Custom Soil Resource Report

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BrD	Bresser sandy loam, cool, 5 to 9 percent slopes	69.7	3.8%
BtE	Bresser-Truckton sandy loams, 5 to 25 percent slopes	17.4	1.0%
BuD2	Bresser and Truckton soils, 3 to 12 percent slopes, eroded	77.0	4.3%
FoD	Fondis clay loam, 3 to 9 percent slopes	88.8	4.9%
Fu	Fondis-Kutch association	427.8	23.6%
Hg	Hilly gravelly land	768.3	42.4%
Lo	Loamy alluvial land	112.5	6.2%
NeE	Newlin gravelly sandy loam, 8 to 30 percent slopes	139.4	7.7%
PpE	Peyton-Pring-Crowfoot sandy loams, 5 to 25 percent slopes	12.4	0.7%
PrE2	Peyton-Pring-Crowfoot complex, 3 to 15 percent slopes, eroded	16.7	0.9%
RmE	Renohill-Buick complex, 5 to 25 percent slopes	61.6	3.4%
Sa	Sampson loam	18.1	1.0%
Sd	Sandy alluvial land	1.9	0.1%
Totals for Area of Interest		1,811.5	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.

Custom Soil Resource Report

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

Custom Soil Resource Report

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.

Custom Soil Resource Report

Castle Rock Area, Colorado

BrD—Bresser sandy loam, cool, 5 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2t1pk
Elevation: 5,500 to 6,960 feet
Mean annual precipitation: 15 to 19 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 100 to 130 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Bresser, Cool

Setting

Landform: Interfluves
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Tertiary aged alluvium derived from arkose

Typical profile

Ap - 0 to 5 inches: sandy loam
Bt1 - 5 to 8 inches: sandy loam
Bt2 - 8 to 27 inches: sandy clay loam
Bt3 - 27 to 36 inches: sandy loam
C - 36 to 80 inches: loamy coarse sand

Properties and qualities

Slope: 5 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
 (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.1 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Custom Soil Resource Report

Minor Components

Ascalon

Percent of map unit: 10 percent
Landform: Interfluves
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Truckton

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

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

Map Unit Setting

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

Map Unit Composition

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

Description of Bresser

Setting

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

Typical profile

H1 - 0 to 8 inches: sandy loam
H2 - 8 to 30 inches: sandy clay loam

Custom Soil Resource Report

H3 - 30 to 60 inches: loamy sand

Properties and qualities

Slope: 5 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)*

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: B

Ecological site: R049XB210CO - Sandy Foothill

Hydric soil rating: No

Description of Truckton

Setting

Landform: Terraces

Landform position (three-dimensional): Riser, tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from arkosic sedimentary rock

Typical profile

H1 - 0 to 4 inches: sandy loam

H2 - 4 to 19 inches: sandy loam

H3 - 19 to 60 inches: sandy loam

Properties and qualities

Slope: 10 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

*Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00
in/hr)*

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: A

Ecological site: R049XB210CO - Sandy Foothill

Hydric soil rating: No

Minor Components

Newlin

Percent of map unit: 5 percent

Custom Soil Resource Report

Hydric soil rating: No

Blakeland

Percent of map unit: 5 percent

Hydric soil rating: No

Stapleton

Percent of map unit: 4 percent

Hydric soil rating: No

Aquic haplustolls

Percent of map unit: 1 percent

Landform: Swales

Hydric soil rating: Yes

BuD2—Bresser and Truckton soils, 3 to 12 percent slopes, eroded

Map Unit Setting

National map unit symbol: jqyb

Elevation: 5,500 to 6,600 feet

Mean annual precipitation: 15 to 19 inches

Mean annual air temperature: 47 to 52 degrees F

Frost-free period: 120 to 135 days

Farmland classification: Not prime farmland

Map Unit Composition

Bresser, eroded, and similar soils: 50 percent

Truckton, eroded, and similar soils: 35 percent

Minor components: 15 percent

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

Description of Bresser, Eroded

Setting

Landform: Hills, valley sides, hillsides

Landform position (three-dimensional): Side slope, base slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Sandy eolian deposits

Typical profile

H1 - 0 to 8 inches: sandy loam

H2 - 8 to 30 inches: sandy clay loam

H3 - 30 to 60 inches: loamy sand

Properties and qualities

Slope: 3 to 10 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B

Ecological site: R049XB210CO - Sandy Foothill

Hydric soil rating: No

Description of Truckton, Eroded

Setting

Landform: Hills, hillsides, valley sides

Landform position (three-dimensional): Side slope, base slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from arkosic sedimentary rock

Typical profile

H1 - 0 to 4 inches: sandy loam

H2 - 4 to 19 inches: sandy loam

H3 - 19 to 60 inches: sandy loam

Properties and qualities

Slope: 3 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00
in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: A

Ecological site: R049XB210CO - Sandy Foothill

Hydric soil rating: No

Minor Components

Newlin

Percent of map unit: 14 percent

Hydric soil rating: No

Altvan

Percent of map unit: 1 percent

Hydric soil rating: No

Custom Soil Resource Report

FoD—Fondis clay loam, 3 to 9 percent slopes

Map Unit Setting

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

Map Unit Composition

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

Description of Fondis

Setting

Landform: Mesas, buttes, ridges
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits over coarse-silty outwash derived from arkose

Typical profile

H1 - 0 to 7 inches: clay loam
H2 - 7 to 24 inches: clay
H3 - 24 to 60 inches: sandy clay loam

Properties and qualities

Slope: 3 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R049XB208CO - Clayey Foothill
Hydric soil rating: No

Custom Soil Resource Report

Minor Components

Kutch

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

Englewood

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

Denver

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

Aquic haplustolls

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

Fu—Fondis-Kutch association

Map Unit Setting

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

Map Unit Composition

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

Description of Fondis

Setting

Landform: Valley sides, draws
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits over coarse-silty outwash derived from arkose

Typical profile

H1 - 0 to 7 inches: loam
H2 - 7 to 24 inches: clay
H3 - 24 to 60 inches: sandy clay loam

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: R049XB208CO - Clayey Foothill
Hydric soil rating: No

Description of Kutch

Setting

Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine-textured residuum weathered from calcareous shale

Typical profile

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

Properties and qualities

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

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: R049XB208CO - Clayey Foothill
Hydric soil rating: No

Minor Components

Bresser

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

Custom Soil Resource Report

Newlin

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

Hilly gravelly land

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

Aquic haplustolls

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

Hg—Hilly gravelly land

Map Unit Setting

National map unit symbol: jqyw
Elevation: 5,500 to 6,600 feet
Mean annual precipitation: 15 to 18 inches
Mean annual air temperature: 48 to 51 degrees F
Frost-free period: 120 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Hilly Gravelly Land

Setting

Landform: Hills
Landform position (three-dimensional): Side slope, base slope, crest
Down-slope shape: Linear
Across-slope shape: Linear

Typical profile

H1 - 0 to 7 inches: cobbly sandy loam
H2 - 7 to 24 inches: cobbly clay loam
H3 - 24 to 28 inches: weathered bedrock

Properties and qualities

Slope: 5 to 50 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Custom Soil Resource Report

Available water supply, 0 to 60 inches: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: D

Ecological site: R049XY213CO - Cobbly Foothill

Hydric soil rating: No

Minor Components

Bresser

Percent of map unit: 4 percent

Hydric soil rating: No

Kutch

Percent of map unit: 4 percent

Hydric soil rating: No

Fondis

Percent of map unit: 4 percent

Hydric soil rating: No

Newlin

Percent of map unit: 4 percent

Hydric soil rating: No

Truckton

Percent of map unit: 3 percent

Hydric soil rating: No

Aquic haplustolls

Percent of map unit: 1 percent

Landform: Swales

Hydric soil rating: Yes

Lo—Loamy alluvial land

Map Unit Setting

National map unit symbol: jqzb

Elevation: 7,000 to 8,000 feet

Mean annual precipitation: 17 to 19 inches

Mean annual air temperature: 44 to 46 degrees F

Frost-free period: 115 to 120 days

Farmland classification: Not prime farmland

Map Unit Composition

Loamy alluvial land: 80 percent

Minor components: 20 percent

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

Custom Soil Resource Report

Description of Loamy Alluvial Land

Setting

Landform: Flood plains, swales

Down-slope shape: Linear

Across-slope shape: Linear

Typical profile

H1 - 0 to 20 inches: sandy loam

H2 - 20 to 40 inches: stratified loamy sand to clay loam

H3 - 40 to 60 inches: sand and gravel

Properties and qualities

Slope: 1 to 5 percent

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: About 48 to 72 inches

Frequency of flooding: Frequent

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: C

Ecological site: R049XY036CO - Overflow

Hydric soil rating: No

Minor Components

Sampson

Percent of map unit: 7 percent

Hydric soil rating: No

Bresser

Percent of map unit: 7 percent

Hydric soil rating: No

Sandy alluvial land

Percent of map unit: 5 percent

Fluvaquentic haplustolls

Percent of map unit: 1 percent

Landform: Terraces

Hydric soil rating: Yes

Custom Soil Resource Report

NeE—Newlin gravelly sandy loam, 8 to 30 percent slopes

Map Unit Setting

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

Map Unit Composition

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

Description of Newlin

Setting

Landform: Terraces, mesas, plateaus
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Unconformable sandy and gravelly and/or mixed source alluvium

Typical profile

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

Properties and qualities

Slope: 8 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R049XY214CO - Gravelly Foothill
Hydric soil rating: No

Custom Soil Resource Report

Minor Components

Bresser

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

Stapleton

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

Satanta

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

Aquic haplustolls

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

PpE—Peyton-Pring-Crowfoot sandy loams, 5 to 25 percent slopes

Map Unit Setting

National map unit symbol: jqzn
Elevation: 6,500 to 8,000 feet
Mean annual precipitation: 15 to 18 inches
Mean annual air temperature: 44 to 46 degrees F
Frost-free period: 115 to 120 days
Farmland classification: Not prime farmland

Map Unit Composition

Peyton and similar soils: 40 percent
Pring and similar soils: 25 percent
Crowfoot and similar soils: 25 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Peyton

Setting

Landform: Ridges, valley sides
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Weathered alluvium derived from arkose

Typical profile

H1 - 0 to 11 inches: sandy loam
H2 - 11 to 30 inches: sandy clay loam
H3 - 30 to 40 inches: sandy loam
H4 - 40 to 60 inches: sandy loam

Custom Soil Resource Report

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: R048AY222CO - Loamy Park
Hydric soil rating: No

Description of Pring

Setting

Landform: Hills
Landform position (three-dimensional): Base slope, crest
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from arkosic sedimentary rock

Typical profile

H1 - 0 to 12 inches: sandy loam
H2 - 12 to 60 inches: gravelly sandy loam

Properties and qualities

Slope: 5 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R048AY222CO - Loamy Park
Hydric soil rating: No

Description of Crowfoot

Setting

Landform: Ridges, valley sides
Down-slope shape: Linear
Across-slope shape: Linear

Custom Soil Resource Report

Parent material: Residuum weathered from arkosic sedimentary rock

Typical profile

H1 - 0 to 6 inches: sandy loam
H2 - 6 to 19 inches: loamy sand
H3 - 19 to 32 inches: gravelly sandy clay loam
H4 - 32 to 43 inches: gravelly sandy loam
H5 - 43 to 60 inches: coarse sand

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R049XY216CO - Sandy Divide
Hydric soil rating: No

Minor Components

Brussett

Percent of map unit: 3 percent
Hydric soil rating: No

Jarre

Percent of map unit: 3 percent
Hydric soil rating: No

Tomah

Percent of map unit: 3 percent
Hydric soil rating: No

Aquic haploborolls

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

Custom Soil Resource Report

PrE2—Peyton-Pring-Crowfoot complex, 3 to 15 percent slopes, eroded

Map Unit Setting

National map unit symbol: jqzp
Elevation: 6,500 to 8,000 feet
Mean annual precipitation: 15 to 18 inches
Mean annual air temperature: 44 to 46 degrees F
Frost-free period: 115 to 120 days
Farmland classification: Not prime farmland

Map Unit Composition

Peyton, eroded, and similar soils: 40 percent
Pring, eroded, and similar soils: 25 percent
Crowfoot, eroded, and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Peyton, Eroded

Setting

Landform: Mesas, plateaus
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Weathered alluvium derived from arkose

Typical profile

H1 - 0 to 11 inches: sandy loam
H2 - 11 to 30 inches: sandy clay loam
H3 - 30 to 40 inches: sandy loam
H4 - 40 to 60 inches: sandy loam

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C

Custom Soil Resource Report

Ecological site: R049XY216CO - Sandy Divide
Hydric soil rating: No

Description of Pring, Eroded

Setting

Landform: Mesas, plateaus
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from arkosic sedimentary rock

Typical profile

H1 - 0 to 12 inches: gravelly sandy loam
H2 - 12 to 60 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 15 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 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R048AY222CO - Loamy Park
Hydric soil rating: No

Description of Crowfoot, Eroded

Setting

Landform: Mesas, plateaus
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from arkosic sedimentary rock

Typical profile

H1 - 0 to 6 inches: sandy loam
H2 - 6 to 19 inches: loamy sand
H3 - 19 to 32 inches: gravelly sandy clay loam
H4 - 32 to 43 inches: gravelly sandy loam
H5 - 43 to 60 inches: coarse sand

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Custom Soil Resource Report

Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R049XY216CO - Sandy Divide
Hydric soil rating: No

Minor Components

Kippen

Percent of map unit: 8 percent
Hydric soil rating: No

Truckton

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

RmE—Renohill-Buick complex, 5 to 25 percent slopes

Map Unit Setting

National map unit symbol: jqzy
Elevation: 5,500 to 6,200 feet
Mean annual precipitation: 15 to 17 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 120 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Renohill

Setting

Landform: Hills
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Weathered, calcareous clayey shale

Typical profile

H1 - 0 to 3 inches: clay loam
H2 - 3 to 12 inches: clay loam
H3 - 12 to 24 inches: clay loam

Custom Soil Resource Report

H4 - 24 to 28 inches: unweathered bedrock

Properties and qualities

Slope: 5 to 25 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: R049XC202CO - Loamy Foothill 14-19 PZ
Hydric soil rating: No

Description of Buick

Setting

Landform: Hills
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits over silty alluvium

Typical profile

H1 - 0 to 4 inches: loam
H2 - 4 to 15 inches: silty clay loam
H3 - 15 to 22 inches: loam
H4 - 22 to 60 inches: sandy clay loam

Properties and qualities

Slope: 5 to 8 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 (0.20 to 0.60 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: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: R049XC202CO - Loamy Foothill 14-19 PZ

Custom Soil Resource Report

Hydric soil rating: No

Minor Components

Manzanola

Percent of map unit: 6 percent

Hydric soil rating: No

Satanta

Percent of map unit: 6 percent

Hydric soil rating: No

Fondis

Percent of map unit: 6 percent

Hydric soil rating: No

Aquic haplustolls

Percent of map unit: 2 percent

Landform: Swales

Hydric soil rating: Yes

Sa—Sampson loam

Map Unit Setting

National map unit symbol: jr02

Elevation: 5,500 to 6,600 feet

Mean annual precipitation: 15 to 19 inches

Mean annual air temperature: 48 to 50 degrees F

Frost-free period: 120 to 135 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Sampson and similar soils: 80 percent

Minor components: 20 percent

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

Description of Sampson

Setting

Landform: Stream terraces on drainageways

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Weathered alluvium derived from arkose

Typical profile

H1 - 0 to 9 inches: loam

H2 - 9 to 28 inches: clay loam

H3 - 28 to 38 inches: loam

H4 - 38 to 60 inches: silt loam

Custom Soil Resource Report

Properties and qualities

Slope: 1 to 4 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: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: B
Ecological site: R049XC202CO - Loamy Foothill 14-19 PZ
Hydric soil rating: No

Minor Components

Englewood

Percent of map unit: 8 percent
Hydric soil rating: No

Bresser

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

Loamy alluvial land

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

Aquic haplustolls

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

Sd—Sandy alluvial land

Map Unit Setting

National map unit symbol: jr03
Elevation: 5,500 to 6,600 feet
Mean annual precipitation: 15 to 19 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 120 to 135 days
Farmland classification: Not prime farmland

Custom Soil Resource Report

Map Unit Composition

Sandy alluvial land: 75 percent

Minor components: 25 percent

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

Description of Sandy Alluvial Land

Setting

Landform: Drainageways, swales

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Weathered alluvium derived from arkose

Typical profile

H1 - 0 to 20 inches: loamy sand

H2 - 20 to 60 inches: stratified sand to sandy loam

Properties and qualities

Slope: 1 to 5 percent

Drainage class: Excessively drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)

Depth to water table: About 60 inches

Frequency of flooding: Frequent

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7w

Hydrologic Soil Group: A

Hydric soil rating: No

Minor Components

Loamy alluvial land

Percent of map unit: 8 percent

Hydric soil rating: No

Loamy alluvial land, dark surface

Percent of map unit: 8 percent

Hydric soil rating: No

Bresser

Percent of map unit: 4 percent

Hydric soil rating: No

Truckton

Percent of map unit: 4 percent

Hydric soil rating: No

Fluvaquentic haplustolls

Percent of map unit: 1 percent

Landform: Terraces

Hydric soil rating: Yes

Custom Soil Resource Report

Soil Information for All Uses

Suitabilities and Limitations for Use

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

Building Site Development

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

Dwellings Without Basements (LE2024-023 Macanta Regional Park)

ENG - Engineering

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper.

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

Custom Soil Resource Report

to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

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

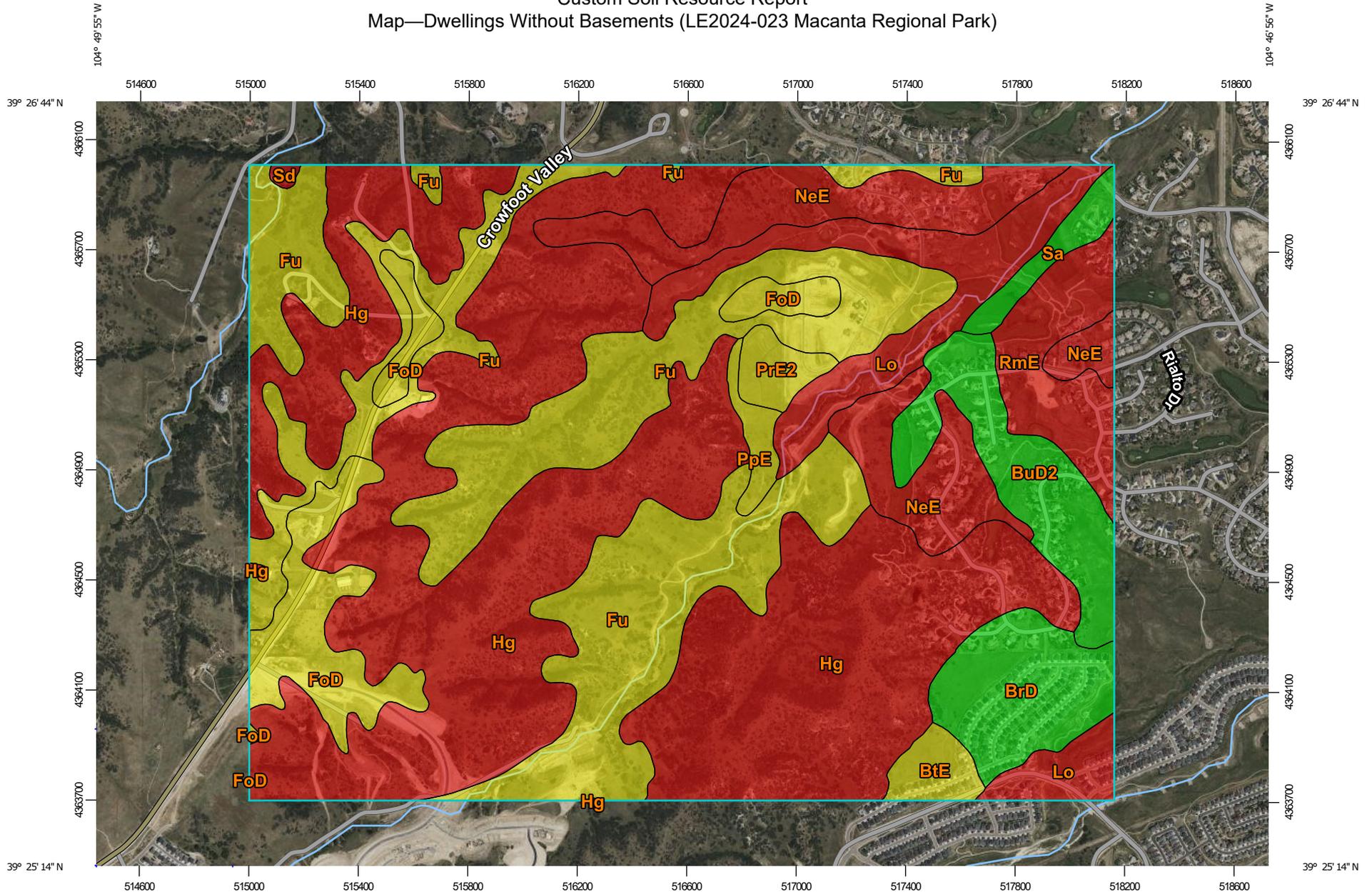
Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not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

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

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

Custom Soil Resource Report

Map—Dwellings Without Basements (LE2024-023 Macanta Regional Park)



Map Scale: 1:19,600 if printed on A landscape (11" x 8.5") sheet.

0 250 500 1000 1500 Meters

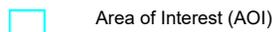
0 500 1000 2000 3000 Feet

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

Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)



Area of Interest (AOI)

Background



Aerial Photography

Soils

Soil Rating Polygons



Very limited



Somewhat limited



Not limited



Not rated or not available

Soil Rating Lines



Very limited



Somewhat limited



Not limited



Not rated or not available

Soil Rating Points



Very limited



Somewhat limited



Not limited



Not rated or not available

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

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

Custom Soil Resource Report

Tables—Dwellings Without Basements (LE2024-023 Macanta Regional Park)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
BrD	Bresser sandy loam, cool, 5 to 9 percent slopes	Not limited	Bresser, cool (85%)		69.7	3.8%
			Ascalon (10%)			
			Truckton (5%)			
BtE	Bresser-Truckton sandy loams, 5 to 25 percent slopes	Somewhat limited	Bresser (50%)	Slope (0.16)	17.4	1.0%
BuD2	Bresser and Truckton soils, 3 to 12 percent slopes, eroded	Not limited	Bresser, eroded (50%)		77.0	4.3%
			Truckton, eroded (35%)			
FoD	Fondis clay loam, 3 to 9 percent slopes	Somewhat limited	Fondis (85%)	Shrink-swell (0.42)	88.8	4.9%
Fu	Fondis-Kutch association	Somewhat limited	Fondis (50%)	Shrink-swell (0.42)	427.8	23.6%
				Slope (0.16)		
Hg	Hilly gravelly land	Very limited	Hilly gravelly land (80%)	Slope (1.00)	768.3	42.4%
				Large stones (0.32)		
Lo	Loamy alluvial land	Very limited	Loamy alluvial land (80%)	Flooding (1.00)	112.5	6.2%
NeE	Newlin gravelly sandy loam, 8 to 30 percent slopes	Very limited	Newlin (85%)	Slope (1.00)	139.4	7.7%
PpE	Peyton-Pring-Crowfoot sandy loams, 5 to 25 percent slopes	Somewhat limited	Peyton (40%)	Slope (0.16)	12.4	0.7%
			Crowfoot (25%)	Slope (0.16)		
PrE2	Peyton-Pring-Crowfoot complex, 3 to 15 percent slopes, eroded	Somewhat limited	Peyton, eroded (40%)	Slope (0.04)	16.7	0.9%
			Pring, eroded (25%)	Slope (0.04)		
			Crowfoot, eroded (20%)	Slope (0.04)		
RmE	Renohill-Buick complex, 5 to 25 percent slopes	Very limited	Renohill (50%)	Slope (1.00)	61.6	3.4%
Sa	Sampson loam	Not limited	Sampson (80%)		18.1	1.0%

Custom Soil Resource Report

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
Sd	Sandy alluvial land	Very limited	Sandy alluvial land (75%)	Flooding (1.00)	1.9	0.1%
Totals for Area of Interest					1,811.5	100.0%

Rating	Acres in AOI	Percent of AOI
Very limited	1,083.6	59.8%
Somewhat limited	563.0	31.1%
Not limited	164.8	9.1%
Totals for Area of Interest	1,811.5	100.0%

Rating Options—Dwellings Without Basements (LE2024-023 Macanta Regional Park)

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified
Tie-break Rule: Higher

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- 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>

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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

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

September 20, 2024

Heather Scott
100 Third St.
Castle Rock, CO 80104

RE: LE2024-023

Dear Heather Scott,

Thank you for the opportunity to review and comment on the referenced Location and Extent application. Douglas County Health Department (DCHD) staff have reviewed the application for compliance with pertinent environmental and public health regulations. After reviewing the application, DCHD has no comments.

Please feel free to contact me at 720-907-4897 or smccain@douglas.co.us if you have any questions about our comments.

Sincerely,



Shania McCain
Environmental Health Specialist I
Douglas County Health Department

DV24-417



Department of Community Development
Planning Services

www.douglas.co.us

REFERRAL RESPONSE REQUEST – LOCATION AND EXTENT

Date sent: September 16, 2024

Comments due by: **September 30, 2024**

Project Name: Macanta Regional Park – Location and Extent

Project File #: LE2024-023

Project Summary: The applicant, Douglas County Parks, Trails, and Building Grounds (PT&BG) requests approval of a Location and Extent to construct trails, parking, and amenities on the 463.5-acre regional park within the Canyons South Planned Development.

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

<input type="checkbox"/> No Comment	
<input type="checkbox"/> Please be advised of the following concerns: _____	
<input checked="" type="checkbox"/> See letter attached for detail.	
Agency: ENGINEERING	Phone #: 4318
Your Name: AL PETERSON <i>(please print)</i>	Your Signature: <i>Al Peterson</i>
	Date: 9/30/2024

A public hearing on this request will be held before the Douglas County Planning Commission on **Monday, October 7, 2024, at 6:00 pm.** **This public hearing will be held on-line and in person. See the County website or contact the Planning Department for more information.**

Sincerely,

Heather Scott, AICP, Principal Planner



September 30, 2024

DV 24-417

Heather Scott, AICP
Douglas County Planning
100 Third Street
Castle Rock, CO. 80104

RE: Macanta Regional Park – L & E

Dear Heather,

Engineering has reviewed the Location & Extent Document for the above referenced project and the following items have been noted:

At some point in the future, the following will need to be addressed/submitted to Engineering:

1. A set of Construction Plans for the parking area and detention/water quality facility.
2. GESC Plans and Report for entire site.
3. Phase III Drainage Report
4. Traffic Division - Based on the trip generation and distribution assumptions and engineering judgement, triggers 1, 2, & 4 are met. With the construction of the trail head, parking and amenities for the Macanta Regional Park, roadway improvements will be required on Crowfoot Valley Rd in order to provide left and right turn deceleration lanes and a left turn acceleration lane for the left turns exiting the park. The approach to Crowfoot Valley from the site will need to include both a left and right turn lane. A single inbound lane into the site is adequate. While not triggered by traffic volume projections, a right turn acceleration lane should be considered as it would benefit operations by allowing right turners exiting the park to accelerate to a merging speed prior to entering the through lane instead of turning into the through lane from a stopped condition.

Heather Scott, AICP
September 30, 2024
Page 2 of 2

Should you have any questions regarding these comments, I can be reached at 303-660-7490 or apeterso@douglas.co.us

Respectfully,

A handwritten signature in blue ink, appearing to read "Al Peterson".

Al Peterson
Senior Development Review Engineer

C: Brad Jackson, P.E., Development Review Supervisor
DV File



External Referral Comments

TO: Heather Scott, Douglas County Planning

FROM: Darcie Hartman, Development Services Technician, Development Services Department

DATE: September 30, 2024

SUBJECT: COU24-0020, Project No. LE2024-023

Thank you for the opportunity to review and respond to the Macanta Regional Park project. The application was reviewed by various Town Departments with the following comments (see below) from Town reviewers. Please keep us informed of any changes to the proposal. Thank you.

CASTLE ROCK WATER **MATTHEW HAYES**

- W1. Please contact Matt Hayes with questions at MHayes@crgov.com or 720-733-6081.
- W2. CR Water would like to work with the County to identify a water pipeline corridor between Crowfoot and Castle Oaks.

PARKS **MATT ROTH**

- PK1. Please contact Matt Roth with questions at MRoth@crgov.com or 720-786-1313.
- PK2. Our Trails Planner, Rich Havel, has been out of the office and has not been able to review these plans. We will want to coordinate closely with your group on the trail connections for this project. Please coordinate further with myself and Rich. Rich Havel: rhavel@crgov.com, 303-472-6984



Right of Way & Permits

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

September 25, 2024

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

Attn: Heather Scott

Re: Macanta Regional Park, Case # LE2024-023

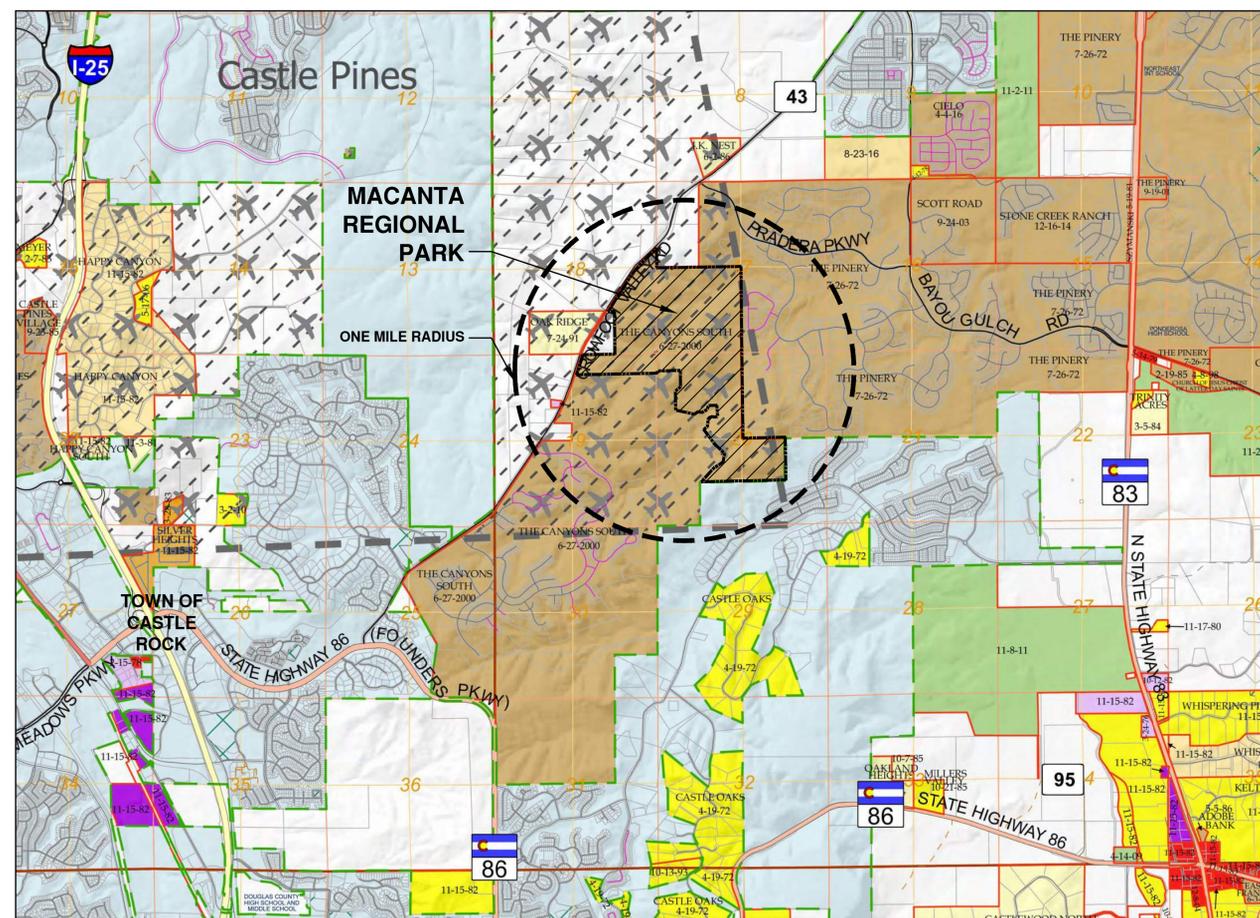
Public Service Company of Colorado's (PSCo) Right of Way & Permits Referral Desk has reviewed the plan for **Macanta Regional Park** and currently has **no apparent conflict**.

As a safety precaution, PSCo would like to remind the developer to call the Utility Notification Center by dialing 811 for utility locates prior to construction.

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

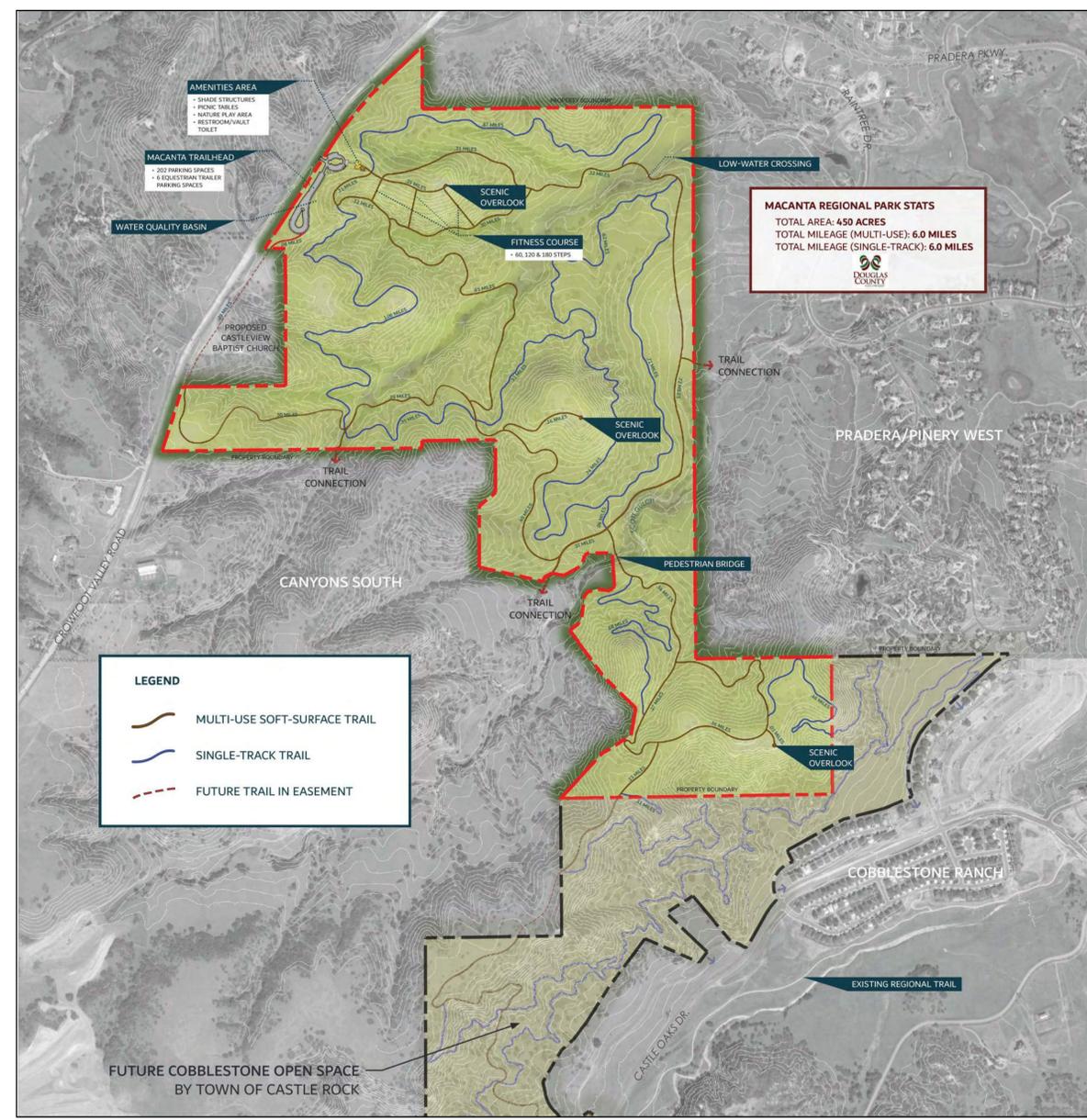
MACANTA REGIONAL PARK

ONE TRACT BEING THE SW ¼ OF SECTION 17 & PART OF THE E ½ OF SECTION 18, TOWNSHIP 7 SOUTH AND ONE TRACT BEING PART OF N ½ NE ¼ OF SECTION 19 & PART OF THE NW ¼ SW ¼ SE ¼ OF SECTION 20, TOWNSHIP 7 SOUTH, IN RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO
LOCATION AND EXTENT XXXXXX - XXX



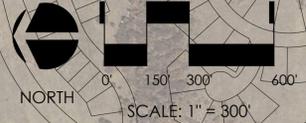
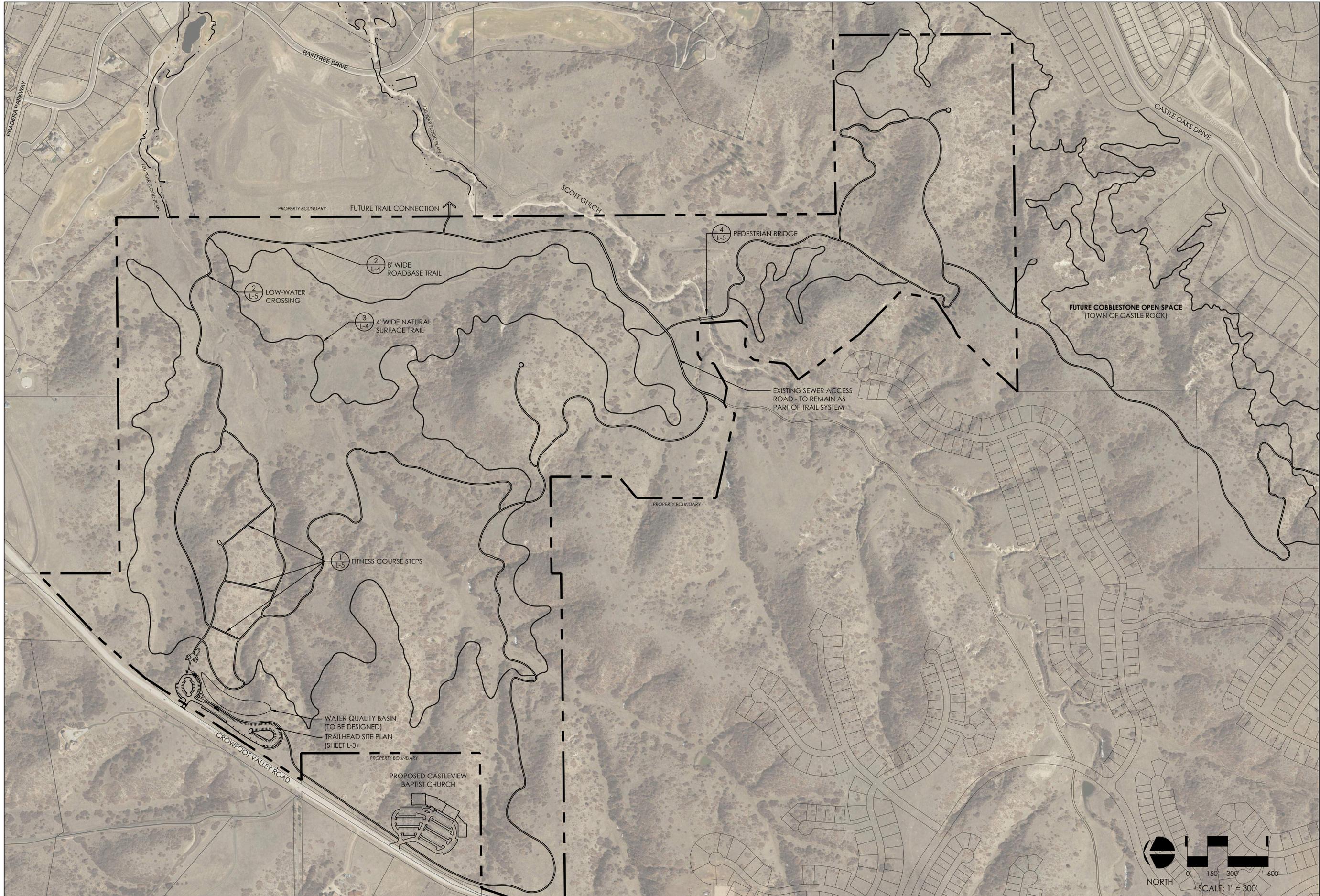
ZONE DISTRICT MAP / VICINITY MAP

N
NTS



SITE MASTER PLAN

N
NTS



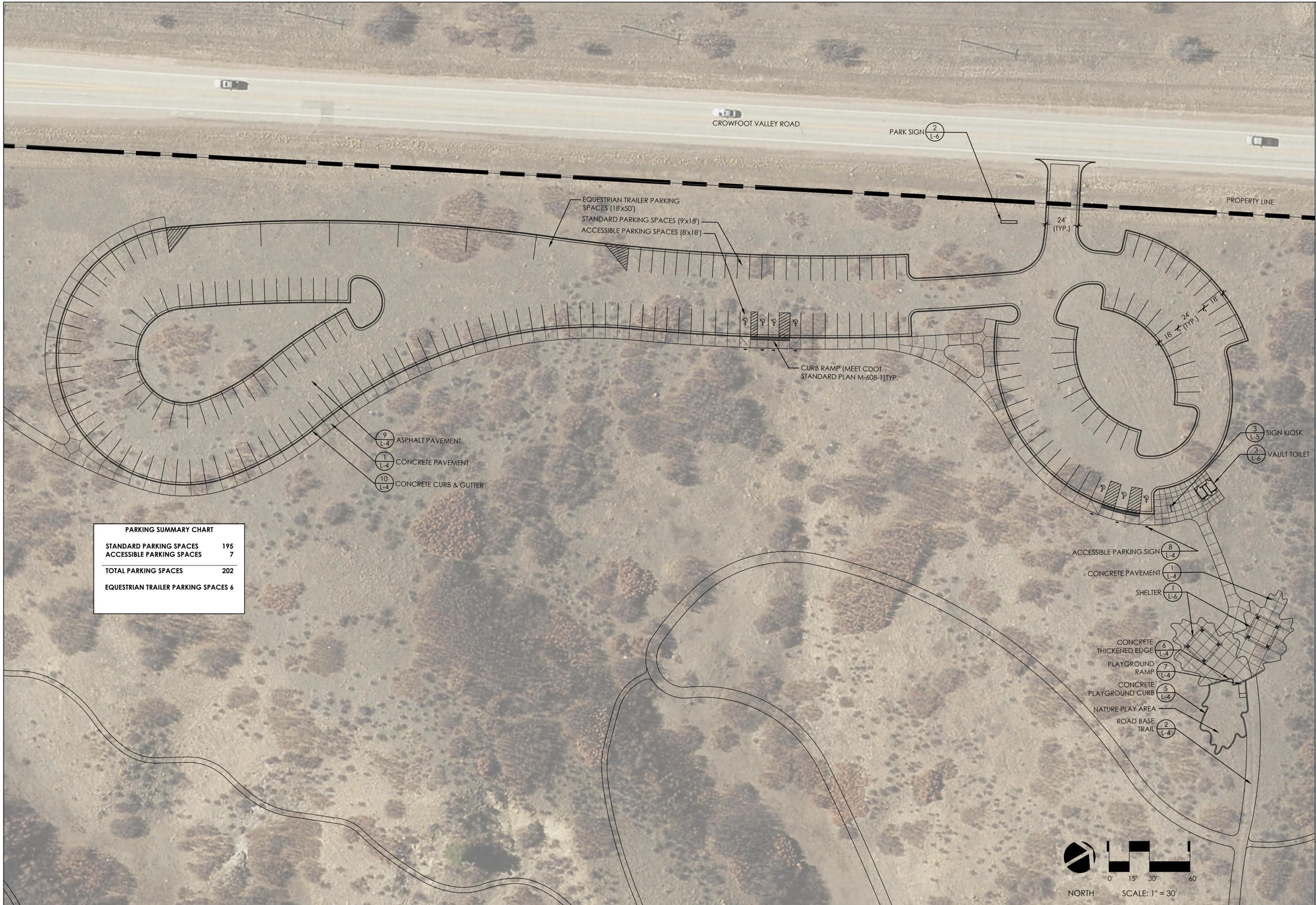
SUBMITTALS:
L&E SUBMITTAL 06-17-24

ARCHITERRA GROUP
5881 South Delaware Street
Denver, Colorado 80127
303.746.1076
www.architerra.com

PROJECT #10212-2024-001-REV. DATE: 11-15-22-CHD BY: DJP

OVERALL SITE PLAN
MACANTA REGIONAL PARK
DOUGLAS COUNTY

SHEET:
L-2



PARKING SUMMARY CHART	
STANDARD PARKING SPACES	195
ACCESSIBLE PARKING SPACES	7
TOTAL PARKING SPACES	202
EQUESTRIAN TRAILER PARKING SPACES	6

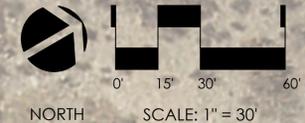
- 9 L-4 ASPHALT PAVEMENT
- 1 L-4 CONCRETE PAVEMENT
- 10 L-4 CONCRETE CURB & GUTTER

- EQUESTRIAN TRAILER PARKING SPACES (18'x50')
- STANDARD PARKING SPACES (9'x18')
- ACCESSIBLE PARKING SPACES (8'x18')

CURB RAMP (MEET CDOT STANDARD PLAN M-608-1) TYP.

- 8 L-4 ACCESSIBLE PARKING SIGN
- 1 L-4 CONCRETE PAVEMENT
- 1 L-6 SHELTER
- 6 L-4 CONCRETE THICKENED EDGE
- 7 L-4 PLAYGROUND RAMP
- 5 L-4 CONCRETE PLAYGROUND CURB
- NATURE PLAY AREA
- 2 L-4 ROAD BASE TRAIL

- 3 L-5 SIGN KIOSK
- 3 L-6 VAULT TOILET

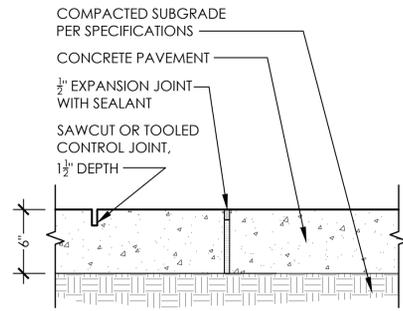


SUBMITTALS:
 SIZE: CD, SUBMITTALS: 05-50-50
 #, #, #, #
ARCHITERRA GROUP
 5881 South Delaware Street
 Aurora, Colorado 80017
 303.747.1766
 www.architerra.com
 PROJECT #/###/###/### DRAWN BY: ### DATE: ##/##/### CHECK BY: ###

LA STAMP

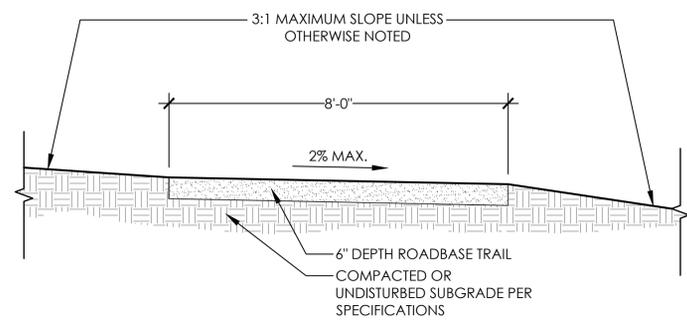
TRAILHEAD GRADING PLAN
 MACANTA REGIONAL PARK
 DOUGLAS COUNTY

SHEET:
L-3

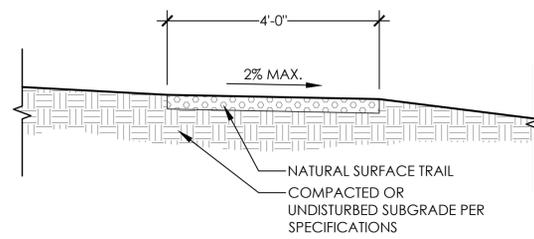


- NOTES:
1. CONCRETE SHALL HAVE MEDIUM BROOM FINISH PERPENDICULAR TO PATH OF TRAVEL.
 2. CONCRETE SHALL BE COLORED SAN DIEGO BUFF, PINECONE OR STAINED DARK WALNUT.

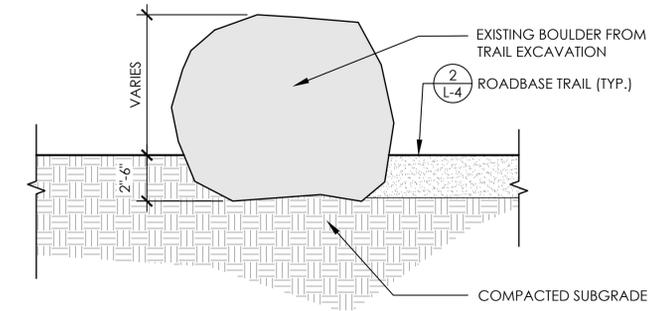
1 CONCRETE PAVEMENT SECTION NTS



2 ROADBASE TRAIL SECTION NTS

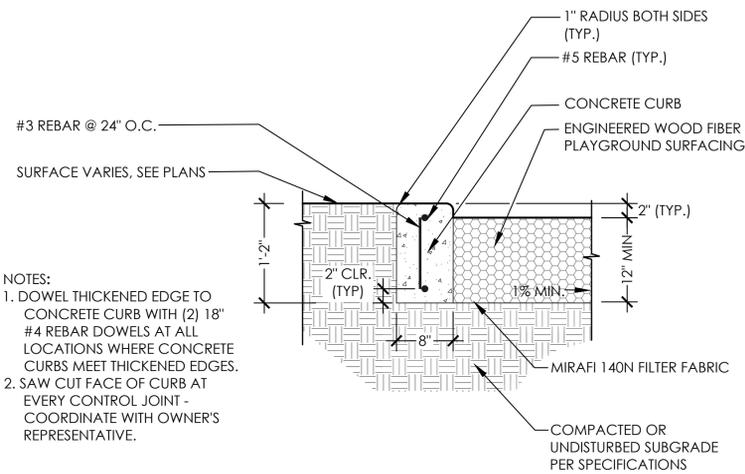


3 NATURAL SURFACE TRAIL SECTION NTS



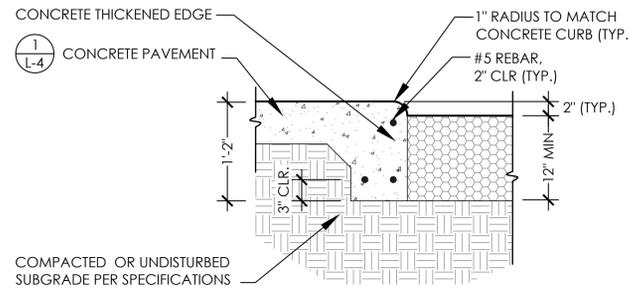
- NOTES:
1. COORDINATE WITH OWNER'S REPRESENTATIVE FOR LAYOUT AND PLACEMENT OF BOULDERS.
 2. BOULDERS SHALL BE PLACED SO THEY ARE STABLE AND WILL NOT MOVE.
 3. INDIVIDUAL BOULDERS MAY BE INSTALLED AS A STAND-ALONE, OR BOULDERS MAY BE INSTALLED ADJACENT TO OTHER BOULDERS.

4 LANDSCAPE BOULDERS SECTION NTS



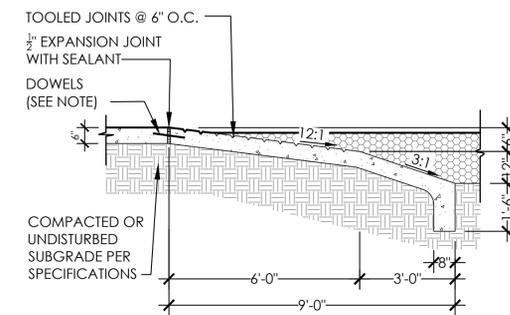
- NOTES:
1. DOWEL THICKENED EDGE TO CONCRETE CURB WITH (2) 18" #4 REBAR DOWELS AT ALL LOCATIONS WHERE CONCRETE CURBS MEET THICKENED EDGES.
 2. SAW CUT FACE OF CURB AT EVERY CONTROL JOINT - COORDINATE WITH OWNER'S REPRESENTATIVE.

5 CONCRETE PLAYGROUND CURB SECTION NTS



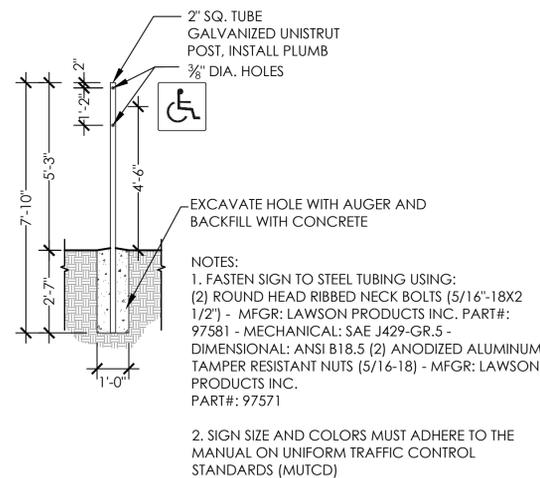
- NOTES:
1. DOWEL THICKENED EDGE TO CURB WITH (2) 18" #4 REBAR DOWELS AT ALL LOCATIONS WHERE CURBS MEET THICKENED EDGES.
 2. SAWCUT FACE OF THICKENED EDGE AT EVERY CONTROL JOINT - COORDINATE WITH OWNER'S REPRESENTATIVE.
 3. CONCRETE SHALL BE COLORED SAN DIEGO BUFF OR PINECONE.
 4. SEE DETAIL 5/L-4 FOR PLAYGROUND SURFACING NOTES.

6 CONCRETE THICKENED EDGE SECTION NTS



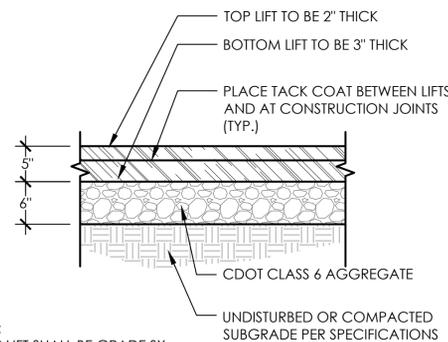
- NOTE:
1. DOWEL RAMP TO PAVEMENT OR CURB WITH 12" #4 REBAR DOWELS SPACED 18" O.C. WHERE RAMP ABUTS PAVEMENT OR CURB

7 CONCRETE PLAYGROUND RAMP SECTION NTS



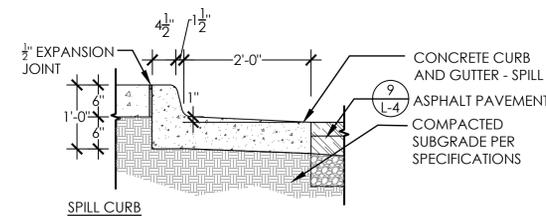
- NOTES:
1. FASTEN SIGN TO STEEL TUBING USING: (2) ROUND HEAD RIBBED NECK BOLTS (5/16"-18X2 1/2") - MFG: LAWSON PRODUCTS INC. PART#: 97581 - MECHANICAL: SAE J429-GR.5 - DIMENSIONAL: ANSI B18.5 (2) ANODIZED ALUMINUM TAMPER RESISTANT NUTS (5/16-18) - MFG: LAWSON PRODUCTS INC. PART#: 97571
 2. SIGN SIZE AND COLORS MUST ADHERE TO THE MANUAL ON UNIFORM TRAFFIC CONTROL STANDARDS (MUTCD)

8 ACCESSIBLE PARKING SIGN SECTION NTS

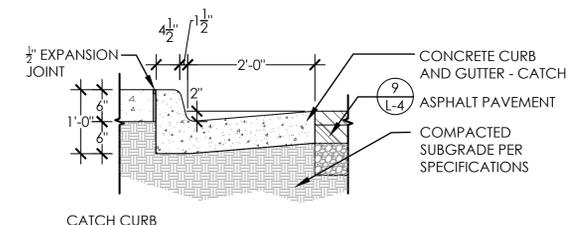


- NOTES:
1. TOP LIFT SHALL BE GRADE SX. BOTTOM LIFT SHALL BE GRADE S.

9 ASPHALT PAVEMENT SECTION NTS



10 CONCRETE CURB & GUTTER SECTION NTS



SUBMITTALS:
SEE SUBMITTAL 06-17-24

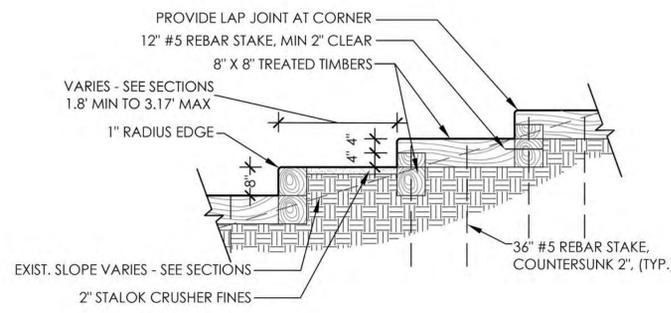
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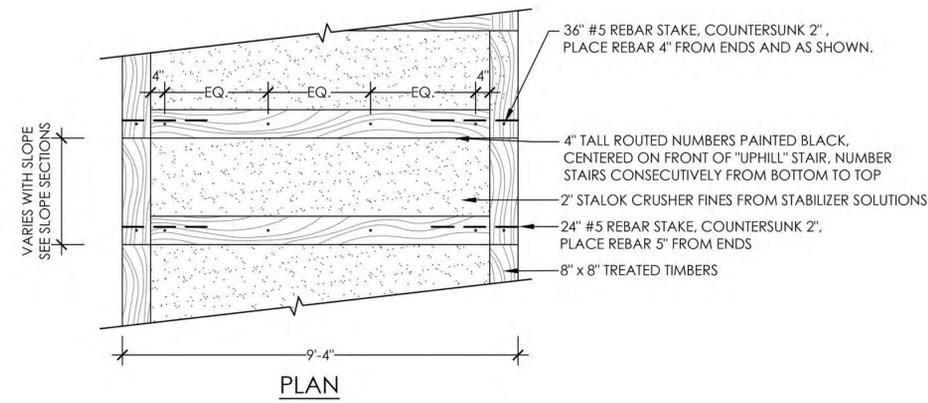
PROJECT #: 02123 DRAWN BY: LEW DATE: 11-15-22 CHD BY: DJP

DETAILS
MACANTA REGIONAL PARK
DOUGLAS COUNTY

SHEET:
L-4



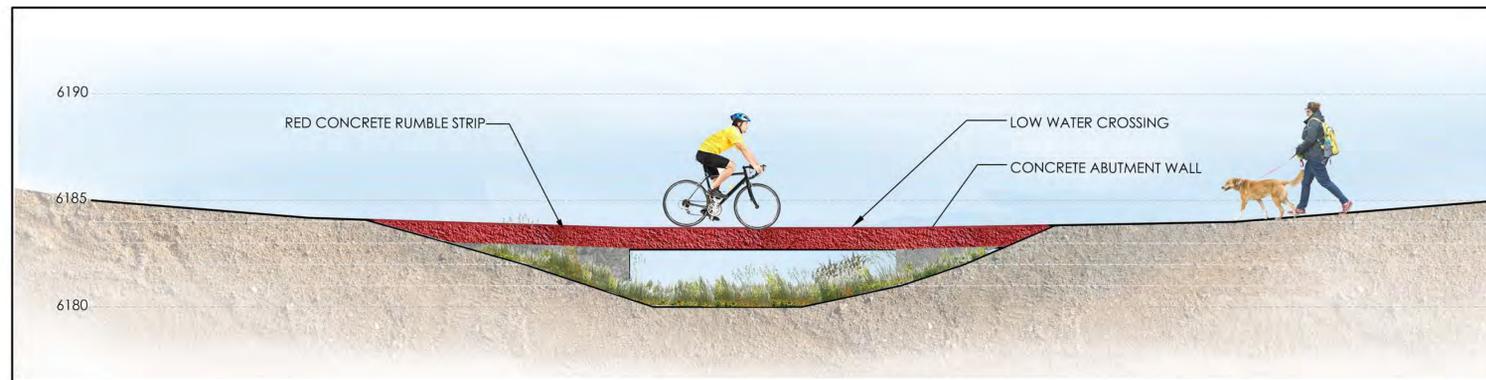
SECTION



PLAN

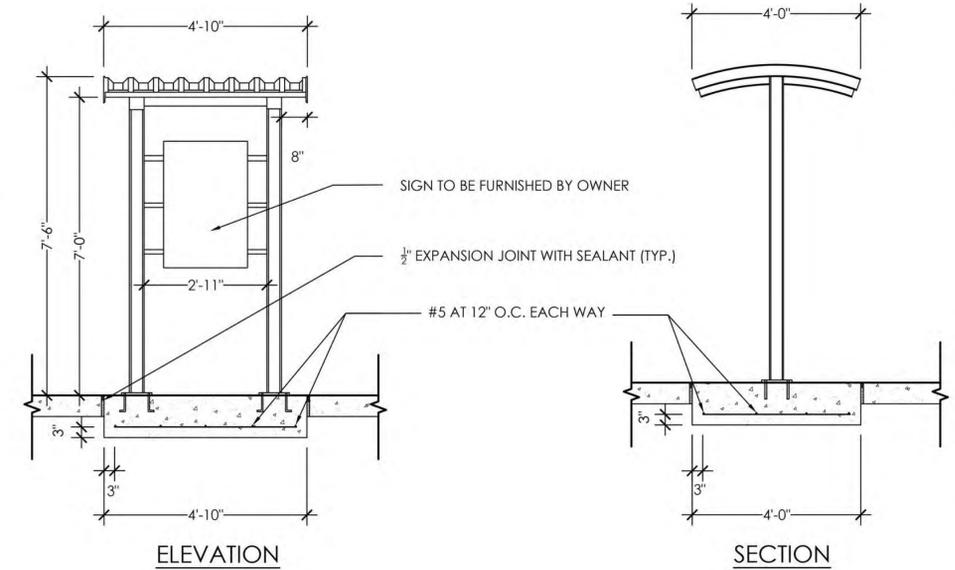
1 FITNESS COURSE STEPS
L-5 SECTION AND PLAN

NTS



2 LOW WATER CROSSING
L-5 SECTION / ELEVATION

SCALE: 1/4" = 1'-0"



ELEVATION

SECTION

- NOTES:
1. SIGN KIOSK TO BE ARC 4X4 KIOSK WITH MEGA-RIB ROOFING BY POLIGON, AVAILABLE FROM CHURCHICH RECREATION, (303) 530-4414
2. ROOF, COLUMN, AND SUPPORT COLOR TO BE POWDERCOATED RUST COLOR

3 SIGN KIOSK
L-5 ELEVATION AND SECTION

NTS



4 PEDESTRIAN BRIDGE
L-5 SECTION / ELEVATION

SCALE: 1/4" = 1'-0"

SUBMITTALS:
L&E SUBMITTAL 06-17-24

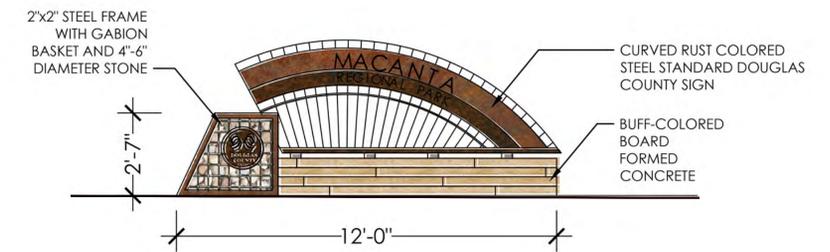
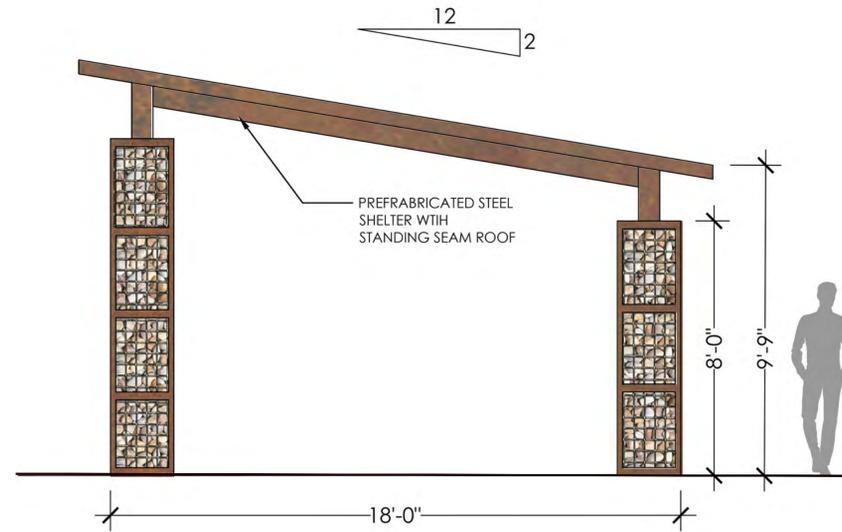
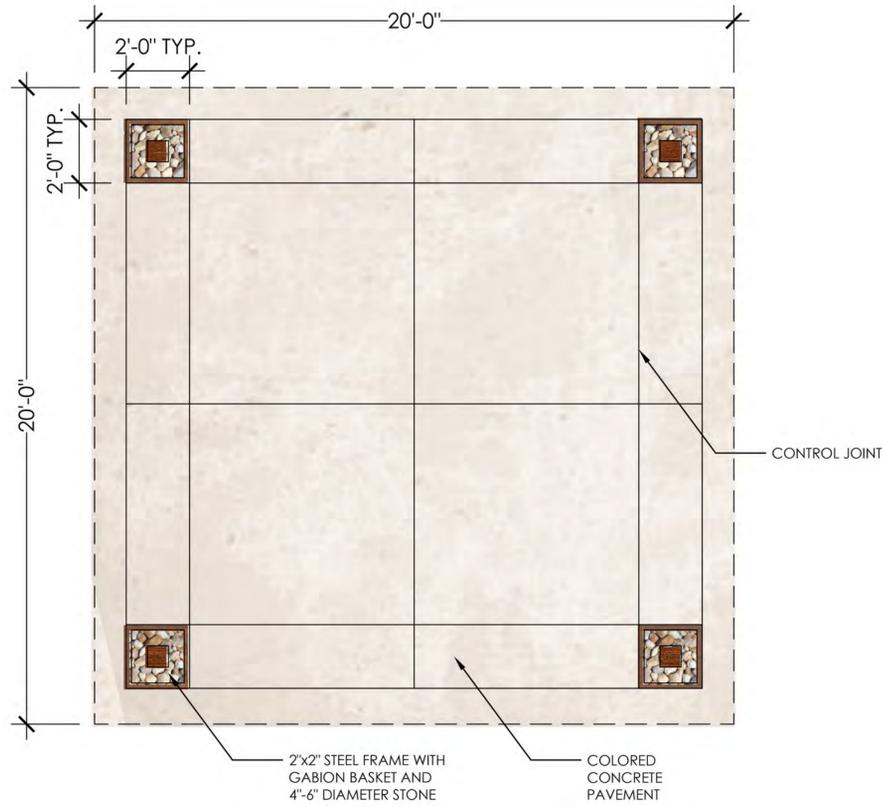
ARCHITERRA GROUP
8981 south delafame street
littleton, colorado 80127
303.948.0766 fax.948.0977
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PROJECT #: 202423 DRAWN BY: LEW DATE: 11/15/23 CHD BY: DJP

DETAILS
MACANTA REGIONAL PARK
DOUGLAS COUNTY

SHEET:
L-5

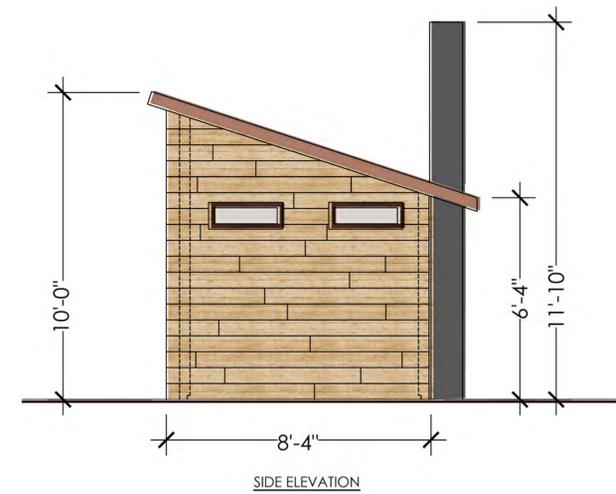
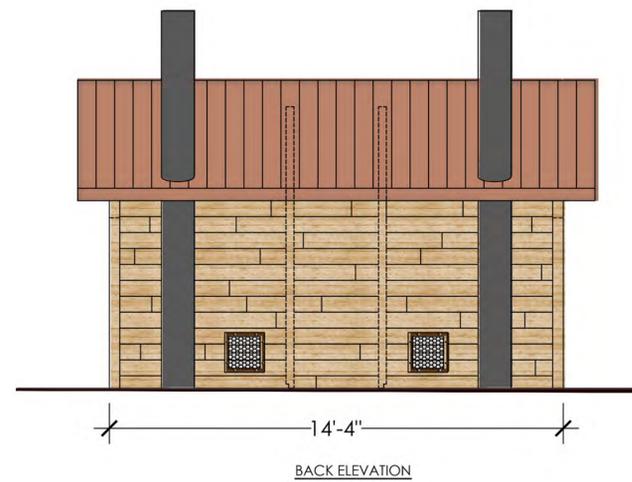
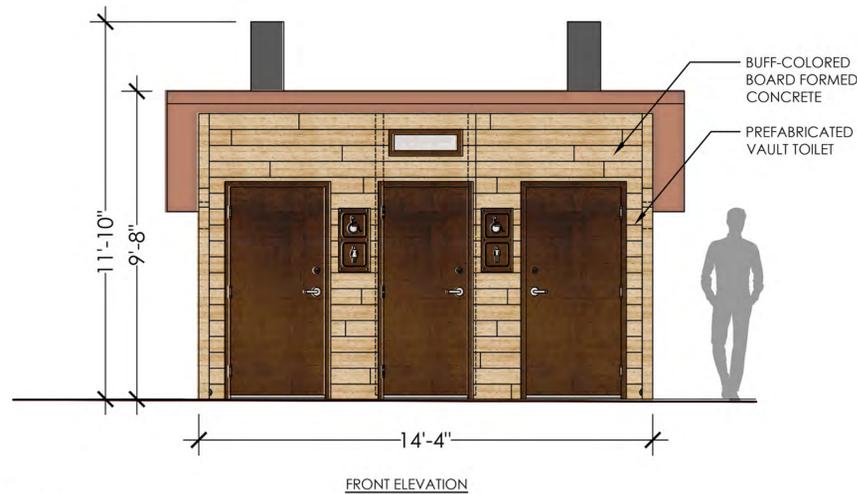


1 SHELTER
L-6 PLAN AND ELEVATION

SCALE: 3/8" = 1'

2 PARK SIGN
L-6 ELEVATION

SCALE: 3/8" = 1'



3 VAULT TOILET
L-6 ELEVATIONS

SCALE: 3/8" = 1'

SUBMITTALS:
L&E SUBMITTAL 06/17/24

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Denver, Colorado 80127
303.746.0776 | fax. 746.0777
www.architerra.com



PROJECT #: 02023 DRAWN BY: SEW DATE: 11/15/22 CHKD BY: DJP

DETAILS
MACANTA REGIONAL PARK
DOUGLAS COUNTY

SHEET:
L-6