

Appendix A

Drawings

A-1 – General Location Map

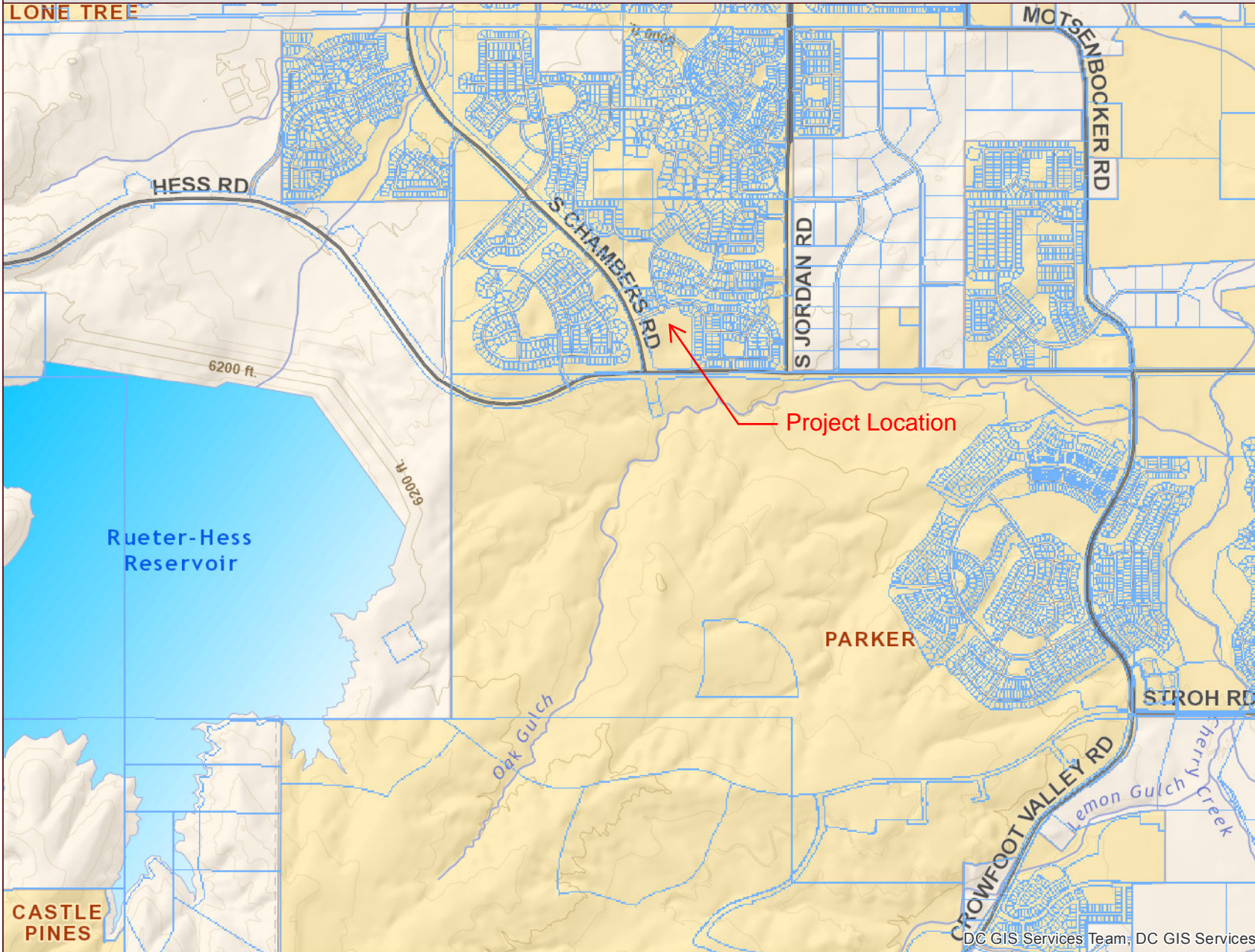
A-2 – Floodplain Information

A-3 – Soils Map

A-4 – Drainage Plan

A-5 – Site and Utility Plans

New Horizon Academy General Location Map



Real Property

Parcel

Public Land Survey System

Township

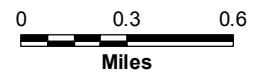
Section

General Features

School

Private Road

Railroad



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All data and information ("Products") contained herein are for informational purposes only. Although such Products are believed to be accurate at the time of printing, Douglas County does not warrant that such Products are error free. Douglas County provides these Products on an "as is" basis without warranties of any kind, either express or implied, including, but not limited to, warranties of title or implied warranties of merchantability or fitness for a particular purpose. Douglas County shall not be liable for any direct, indirect, incidental, special or consequential damages arising out of the use of such Products, or the inability to use such Products or out of any breach of any warranty. The user acknowledges and agrees that the use of such Products is at the sole risk of the user. General questions about this or any other Douglas County GIS products, including errors, omissions, corrections and/or updates should be directed to the Douglas County GIS Division at (303) 660-7416.

Douglas County GIS Division
Philip S. Miller Bldg., 100 Third St.
Castle Rock, Colorado 80104

DC GIS Services Team; DC GIS Services

NOTES TO USERS

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

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

of the floodways were computed at cross sections and interpolated cross sections. The floodways were based on hydraulic considerations with requirements of the National Flood Insurance Program. Floodway widths at pertinent floodway data are provided in the Floodway Data table shown on this map.

ection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 13. The horizontal datum was NAD 83, GRS 1980. Differences in datum, spheroid, projection or UTM zones used in the preparation of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

ations on this map are referenced to the North American Vertical Datum of 1988. Flood elevations must be compared to structure and ground elevations to the same vertical datum. For information regarding conversion from the National Geodetic Vertical Datum of 1929 and the North American Datum of 1983, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following information Services:

ation Services
 NSC12
 Geodetic Survey
 #9202
 1400 West Highway
 College Park, Maryland 20740-3282
 Phone: 301-713-3242

current elevation, description, and/or location information for **bench marks** on this map, please contact the Information Services Branch of the National Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

ap information shown on this FIRM was provided by the Douglas County GIS Department and the Town of Castle Rock GIS Department. Additional information provided by the City of Lone Tree and Town of Parker. These data are as of 2010.

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

le **baselines** depicted on this map represent the hydraulic modeling baselines used in the flood profiles in the FIS report. As a result of improved topographic data, the baselines, in some cases, may deviate significantly from the channel or appear outside the SFHA.

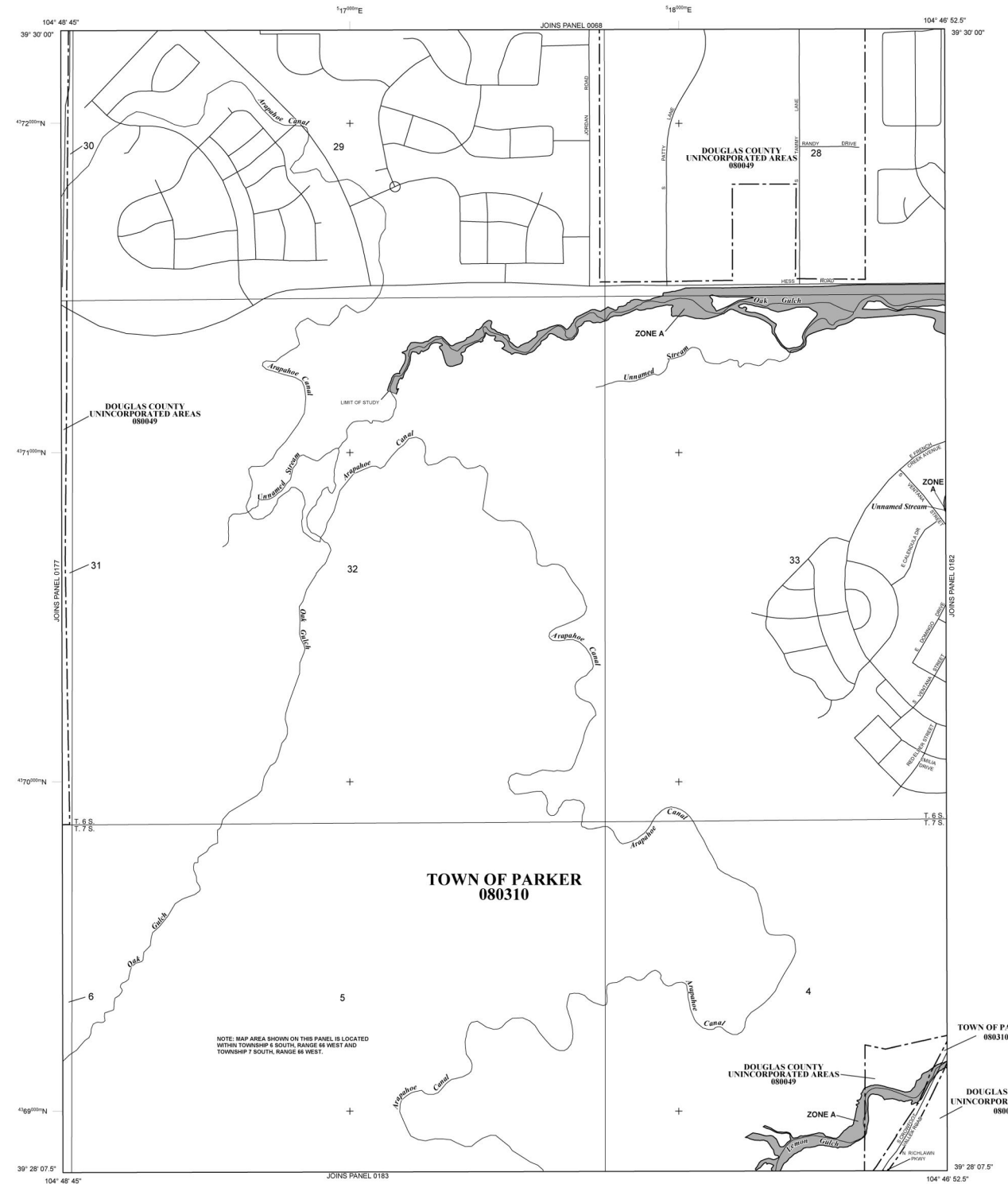
updated topographic information, this map reflects more detailed and accurate stream channel configurations and floodplain delineations than shown on the previous FIRM for this jurisdiction. As a result, the Flood and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect channel distances that differ from what is shown on the map. Also, the floodplain relationships for unreviewed streams may differ from what is shown on previous maps.

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

refer to the separately printed **Map Index** for an overview map of the Douglas County area showing the layout of map panels, community map repository addresses, and a listing of the panels on which each community is shown.

ation on available products associated with this FIRM visit the **Map Center (MSC)** website at <http://msc.fema.gov>. Available products may include various Letters of Map Change, a Flood Insurance Study Report, digital versions of this map. Many of these products can be ordered or purchased directly from the MSC website.

ve **questions about this map**, how to order products, or the National Flood Insurance Program in general, please call the **FEMA Map Information (FMIX)** at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/business/cslg>.



NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 6 SOUTH, RANGE 66 WEST AND TOWNSHIP 7 SOUTH, RANGE 66 WEST.

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
 The 1% annual chance flood (100-year flood), also known as the "base flood," is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Areas shown on this map are subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AH Base Flood Elevations determined.

ZONE AD Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevation determined.

ZONE AR Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); water depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE A99 Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently derelict. Zone AR indicates that the former flood control system is being restored to protect from the 1% annual chance or greater flood.

ZONE V Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); no Base Flood Elevation determined.

FLOODWAY AREAS IN ZONE AE
 The floodway is the channel of a stream plus any adjacent floodplain areas that must be encroached so that the 1% annual chance flood can be carried without substantial runoff flood heights.

OTHER FLOOD AREAS

OTHER AREAS

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
 Areas determined to be outside the 0.2% annual chance floodplain.

OTHERWISE PROTECTED AREAS (OPAs)
 CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% Annual Chance Floodplain Boundary
0.2% Annual Chance Floodplain Boundary
Floodway boundary
Zone D boundary
Zone V and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and floodway
Boundary dividing Special Flood Hazard Areas of different base flood flood depths, or flood velocities.
Base Flood Elevation line and value; elevation in feet* (EL 987)
Base Flood Elevation value where uniform within zone, etc. feet*

*referenced to the North American Vertical Datum of 1988

(A) (A) Cross section line
(2) (2) Transsect line

45° 02' 08" - 93° 02' 12" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
 1000-meter Universal Transverse Mercator grid values, zone 13
 DMS510 X Bench mark (see explanation in Notes to Users section of this map)
 *M:1.5 River Mile

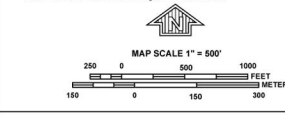
MAP REPOSITORIES
 Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTY-WIDE FLOOD INSURANCE RATE MAP
 SEPTEMBER 30, 2005

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
 MARCH 16, 2010, to update corporate limits, to change base flood elevations, to add flood elevations, to add special flood hazard areas, to update map format, to add roads and to reflect updated topographic information, to incorporate previously issued letters of map change.

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

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-433-6820.



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0181G

FIRM
FLOOD INSURANCE RATE MAP
DOUGLAS COUNTY, COLORADO
AND INCORPORATED AREAS

PANEL 181 OF 495
 (SEE MAP INDEX FOR FIRM PANEL LIST)

COMMUNITY	NUMBER	PANEL
DOUGLAS COUNTY	080049	0181
PARKER, TOWN OF	080310	0181

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

MAP NUMBER
 080350
MAP REVISION
 MARCH 16, 2010
 Federal Emergency Management Agency

Custom Soil Resource Report for Castle Rock Area, Colorado

Lot 11 of Chambers and Hess Development



Preface

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

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

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

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

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

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

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alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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How Soil Surveys Are Made

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

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

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

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

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

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

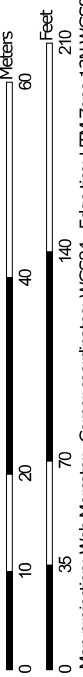
The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map







































Soil Map may not be valid at this scale.

Map Scale: 1:773 if printed on A landscape (11" x 8.5") sheet.



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

MAP LEGEND

Area of Interest (AOI)	 Area of Interest (AOI)	 Spoil Area
Soils	 Soil Map Unit Polygons	 Stony Spot
	 Soil Map Unit Lines	 Very Stony Spot
	 Soil Map Unit Points	 Wet Spot
Special Point Features	 Blowout	 Other
	 Borrow Pit	 Special Line Features
	 Clay Spot	Water Features
	 Closed Depression	 Streams and Canals
	 Gravel Pit	Transportation
	 Gravelly Spot	 Rails
	 Landfill	 Interstate Highways
	 Lava Flow	 US Routes
	 Marsh or swamp	 Major Roads
	 Mine or Quarry	 Local Roads
	 Miscellaneous Water	Background
	 Perennial Water	 Aerial Photography
	 Rock Outcrop	
	 Saline Spot	
	 Sandy Spot	
	 Severely Eroded Spot	
	 Sinkhole	
	 Slide or Slip	
	 Sodic Spot	

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Castle Rock Area, Colorado
 Survey Area Data: Version 13, Jun 5, 2020

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

Date(s) aerial images were photographed: Oct 3, 2018—Dec 4, 2018

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
NsE	Newlin-Satanta complex, 5 to 20 percent slopes	1.0	72.7%
RmE	Renohill-Buick complex, 5 to 25 percent slopes	0.4	27.3%
Totals for Area of Interest		1.4	100.0%

Map Unit Descriptions

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

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

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

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

Custom Soil Resource Report

onsite investigation is needed to define and locate the soils and miscellaneous areas.

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

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

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

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

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

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

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

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

Castle Rock Area, Colorado

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

Map Unit Setting

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

Map Unit Composition

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

Description of Newlin

Setting

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

Typical profile

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

Properties and qualities

Slope: 5 to 20 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.8 inches)

Interpretive groups

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

Description of Satanta

Setting

Landform: Knobs, drainageways
Down-slope shape: Linear

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Across-slope shape: Linear

Parent material: Eolian deposits derived from mixed

Typical profile

H1 - 0 to 9 inches: loam

H2 - 9 to 30 inches: clay loam

H3 - 30 to 60 inches: loam

Properties and qualities

Slope: 5 to 10 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

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

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent

Available water capacity: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B

Hydric soil rating: No

Minor Components

Truckton

Percent of map unit: 6 percent

Hydric soil rating: No

Buick

Percent of map unit: 6 percent

Hydric soil rating: No

Bresser

Percent of map unit: 6 percent

Hydric soil rating: No

Aquic haplustolls

Percent of map unit: 2 percent

Landform: Swales

Hydric soil rating: Yes

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

Map Unit Setting

National map unit symbol: jqzy

Elevation: 5,500 to 6,200 feet

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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
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 capacity: 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 P.Z.
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

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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 capacity: High (about 9.9 inches)*

Interpretive groups

- Land capability classification (irrigated): None specified*
- Land capability classification (nonirrigated): 6e*
- Hydrologic Soil Group: C*
- Hydric soil rating: No*

Minor Components

Satanta

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

Manzanola

- 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*

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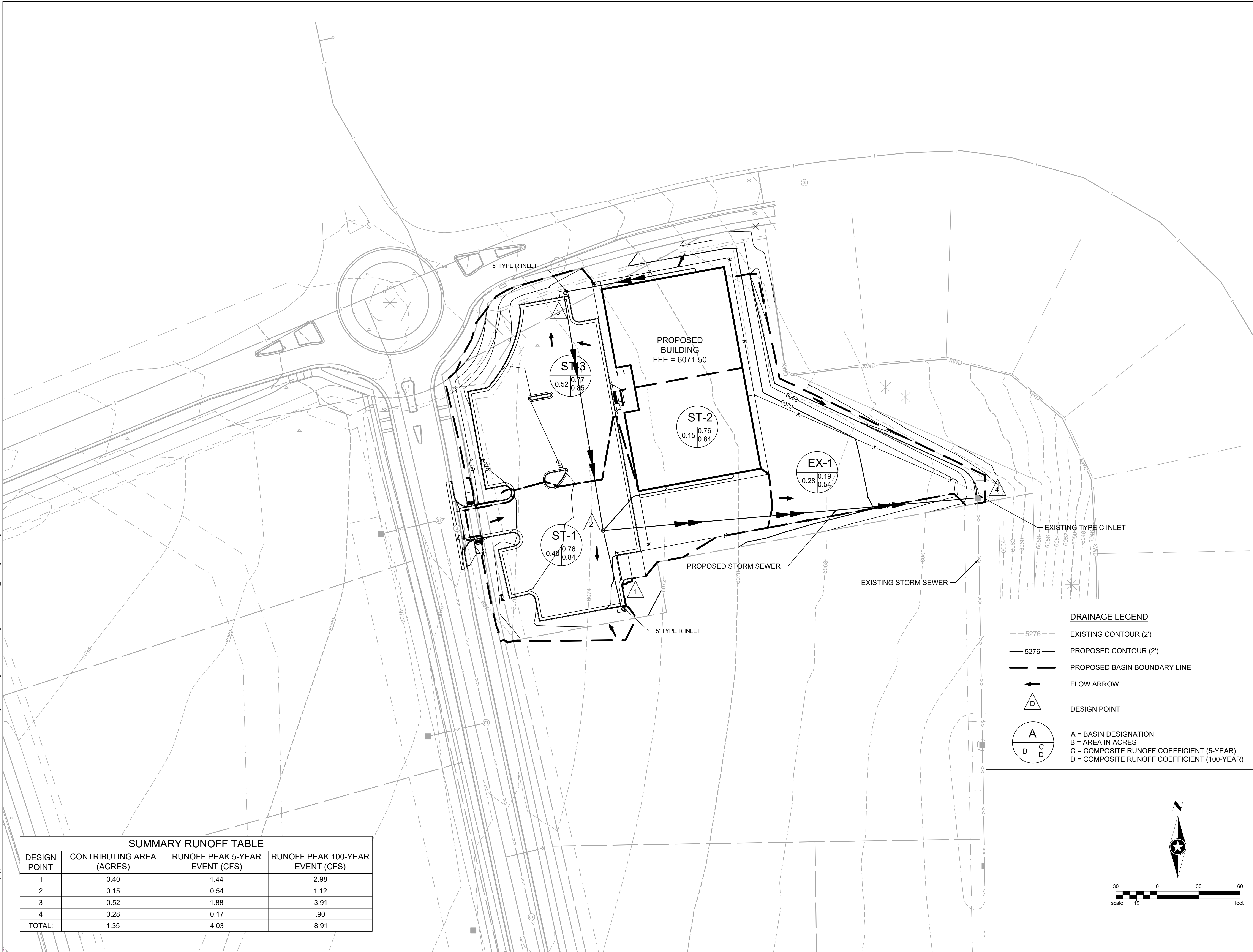
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Issue Date: 8/26/2020

Revision Issue
Rev. # Description Date

DRAINAGE PLAN

1 OF 1

Save: 6/16/2020 12:26 PM apppp Plot: 8/26/2020 4:02 PM X:\KON\NHOAC\156217\Final-dsgn\15-drawings\10-Civil\cad\dwg\NHOAC156217_Drainage Plan.dwg



SUMMARY RUNOFF TABLE			
DESIGN POINT	CONTRIBUTING AREA (ACRES)	RUNOFF PEAK 5-YEAR EVENT (CFS)	RUNOFF PEAK 100-YEAR EVENT (CFS)
1	0.40	1.44	2.98
2	0.15	0.54	1.12
3	0.52	1.88	3.91
4	0.28	0.17	.90
TOTAL:	1.35	4.03	8.91

DRAINAGE LEGEND

- 5276 --- EXISTING CONTOUR (2')
- 5276 — PROPOSED CONTOUR (2')
- — — PROPOSED BASIN BOUNDARY LINE
- ← FLOW ARROW
- △ D DESIGN POINT

DESIGN POINT

A	B	C	D
---	---	---	---

A = BASIN DESIGNATION
B = AREA IN ACRES
C = COMPOSITE RUNOFF COEFFICIENT (5-YEAR)
D = COMPOSITE RUNOFF COEFFICIENT (100-YEAR)

