DRAINAGE CONFORMANCE LETTER
FOR
LOT 6G-3A-1
THE MEADOWS FILING NO. 17, AREA NO. 4,
HEALTHSPAN MEDICAL OFFICE BUILDING

Castle Rock, Colorado

Prepared for:

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August 6, 2026

RLEG NO. 260401
TOWN NO. SDP26-0030

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PROFESSIONAL ENGINEER CERTIFICATION

"I affirm that this report and plan for the drainage design of **Healthspan Medical Office Building** was prepared by me (or under my direct supervision) in accordance with the provisions of the Town of Castle Rock Drainage Design and Technical Criteria for the owners thereof. I understand that the Town of Castle Rock does not and will not assume liability for drainage facilities designed by others."

Kevin S. Roth
Registered Professional Engineer
State of Colorado No. 35704

1. GENERAL LOCATION AND DESCRIPTION

A. Site Location

Healthspan Medical Office Building (hereafter referred to as The Site) is located on Lot 6G-3A-1, The Meadows Filing No. 17, Area No. 4, and is situated in the Northwest quarter of Section 34, Township 7 South, Range 67 West of the 6th Principal Meridian, Town of Castle Rock, Douglas County, State of Colorado. Refer to the Vicinity Map in Appendix A for site location.

The site is bounded to the north by Sol Danza Drive and Virtuoso Loop, to the south and west by Prairie Hawk Drive, and to the east by Little Sunshine's Playhouse of Castle Rock and the undeveloped Lot 6G-3A-2.

B. Description of Property

The area of The Site is approximately 1.79 acres. The Site has been previously overlot graded. The Site primarily falls from the southwest to the northeast. Slopes near Prairie Hawk Drive to the south are upwards of 3:1 (horizontal:vertical), with the greatest slopes at the southeast corner of the property. Slopes for the remainder of the site are generally between 2% and 7%.

The site soil, as detailed in the USDA NRCS Soil Map of the Castle Rock area (see Appendix A) is Bresser Sandy Loam (BrB) across the entirety of the site. Bresser Sandy Loam is classified as NRCS Hydrologic Soil Group B.

The proposed improvements of the site include a two-story medical office building totaling approximately 23,668 square feet, two outdoor patio/amenity spaces, interior drive/fire lanes with two points of access, parking stalls, interior sidewalks providing pedestrian access, extension of underground utilities to serve the building and the site, and associated landscaping.

2. DRAINAGE BASINS AND SUB-BASINS

A. Major Basin Description

There are no known major drainage way planning studies or flood hazard area delineations that influence the site.

The Site is not within a FEMA regulated floodplain as depicted on the FIRM panel 08035C0169G, revised March 16, 2016. See Appendix A for the FIRMette map for the site. There are no proposals with this project to request a Letter of Map Revision (LOMR).

The Site was considered within the Phase 3 Drainage Report for The Meadows Filing No. 17, Lots 5 and 6 ("Master Report"), prepared by C2C Engineering Inc, February 15, 2005. Calculations from the Phase 3 Drainage Report for CRDC Virtuoso Loop – Lot 6G-3A-1 ("Original Report"), prepared by Roth Lang Engineering Group, September 20, 2024 were also considered with this report.

Runoff from this site is directed into the existing storm sewer to the northeast. These flows are conveyed to the Filing 17 Regional Detention Pond which outlets to East Plum Creek.

B. Sub-Basin Description

The following is a description of the historic drainage patterns of The Site. The site is split into two sub-basins (Basins H1-A and a portion of H2) from the Master Report and Original Report. Flows from Basin H1-A, which includes the entire undeveloped portion of the site, sheet flow northeast where it is concentrated in a swale that then conveys flows to Lot 6G-3A-2, where there exists a temporary sediment basin with standpipe outfall. Outfall from this temporary sediment basin is routed to the existing detention pond via storm pipe. Flows from Basin H2, which is made up of the southern half of the private Virtuoso Loop, drain in the southern gutter of Virtuoso Loop where they are then captured into an existing inlet located at the southwest corner of Virtuoso Loop and Limelight Avenue. This runoff is then conveyed to the existing detention pond via the same storm pipes. The Original Report created a storm stub for the site to connect to once developed. This stub connects to the same inlet that captures runoff from basin H2. The master developer has designed this existing storm system to convey the developed runoff from the area.

There are no major drainage ways or drainage patterns onto The Site.

3. DRAINAGE DESIGN CRITERIA

A. Regulations

This project complies with the Town's floodplain ordinance. No regulated flood plains were found adjacent to The Site and will not be requesting Mile High Flood District maintenance eligibility review.

The runoff from this project is conveyed via roadway and storm sewer to the existing regional detention pond. There are no new or additional impacts to any stream preservation areas with this development and project is not within a Stream Buffer area.

B. Development Criteria

The drainage design for the proposed site has been prepared following the regulations outlined in the Town of Castle Rock Storm Drainage Design and Technical Criteria Manual (SDDTCM), revised 2025, and Volumes 1, 2 and 3 of the Urban Storm Drainage Criteria Manual (USDCM) from the Mile High Flood District.

This report references the previously mentioned Master Report and Original Report. This report also references Phase 2 Drainage Report – Little Sunshine's Playhouse, Lot 6G-3A-3, The Meadows Filing No. 17 ("Lot 6G-3A-3 Report"), prepared by EES Inc, January 12, 2024. The findings represented herein comply with the previous studies of this area. As shown in this study, water quality and detention will not be required for Lot 6G-3A-1, since the Master Report and the associated construction drawings have already incorporated the design of a water quality and detention pond northeast of the site.

C. Hydrologic Criteria

One-hour point rainfall values were obtained from Table 6-1 of the SDDTCM. For the 5-year storm, P1= 1.43 inches and for the 100-year storm P1= 2.60 inches.

The peak discharges were determined by the Rational Method, due to drainage areas in The Site containing less than 90 aces. All calculations were performed using the Rational Method Formula. Runoff "C" coefficients for hydrologic soil group B were taken from Table 6-5 (USDCM) and utilized in the composite impervious calculations. The recommended percentage of imperviousness values were taken from Table 6-3 (USDCM).

Hydrologic calculations have been prepared for the 5-year (minor) and 100-year (major) storm events.

This project does not require onsite water quality or detention as it was provided for regionally.

D. Hydraulic Criteria

Street capacity references are to the local standard although no public streets, nor private streets, are impacted.

All storm sewers have been designed to convey the runoff from the 100-year storm event.

There are no detention pond structures, outfalls or open channels that will require hydraulic analysis.

There are no variances from the criteria requested with this project.

4. DRAINAGE FACILITY DESIGN

A. General Concept

The previous reports sub-basins H1-A and H2 and the assumptions made therein have been directly compared to the calculated values for this project. Calculations were made using MHFD and Town Criteria. The composite imperviousness of all on-site Basins is 78.6%. Runoff generated from the site will be conveyed to the existing detention pond via a series of RCP and PVC. These pipes have been sized per the requirements in the SDDTCM.

The site will develop into a two-story medical office building with requisite parking, drive aisles, and landscaping. The drainage patterns anticipated in previous studies will be followed with this development.

Appendix C include applicable exhibits of the hydrology that were used in the development of this site.

B. Specific Details

Sub-Basin A1 (0.08-acres) consists of patio, sidewalk, and landscaped area. Surface runoff will be collected by a trench drain in the patio area and an 18” landscape inlet at design point 1 (DP 1). Storm runoff will be conveyed by a proposed 8-inch PVC from DP 1 to DP 2.

Direct Runoff: Q_5 = 0.11 cfs Q_{100}= 0.41 cfs

Sub-Basin A2 (0.34-acres) consists of parking area, drive, sidewalk and landscaped area. Surface runoff will primarily sheet flow to a No. 16 single valley inlet at DP 2. Storm runoff will be conveyed by a 15-inch RCP from DP 2 to DP 3.

Direct Runoff: Q_5 = 0.98 cfs Q_{100}= 2.29 cfs

Sub-Basin A3 (0.18-acres) consists of parking area, drive, sidewalk and landscaped area. Surface runoff will primarily sheet flow to a No. 16 single valley inlet at DP 3. Storm runoff will be conveyed by an 18-inch RCP from DP 3 to DP 4.

Direct Runoff: Q_5 = 0.70 cfs Q_{100}= 1.38 cfs

Sub-Basin A4 (0.27-acres) consists of parking area, drive, sidewalk and landscaped area. Surface runoff will sheet flow and gutter flow to a No. 16 single combo inlet at DP 4. Storm runoff will be conveyed by an 18-inch RCP from DP 4 to DP 5.

Direct Runoff: Q_5 = 1.03 cfs Q_{100}= 2.05 cfs

Sub-Basin A5 (0.16-acres) consists of parking area, drive, sidewalk, patio and landscaped area. Surface runoff will primarily sheet flow to a No. 16 single combo inlet at DP 5. Storm runoff will be conveyed by an 18-inch RCP from DP 5 to the connection to the existing 18-inch RCP stub.

Direct Runoff: Q_5 = 0.57 cfs Q_{100}= 1.15 cfs

Sub-Basin B1 (0.30-acres*)* consists of roof area of the building. This area includes overhangs where runoff will be captured on roof inlets and conveyed to downspout. Runoff will be conveyed to the site storm sewer via an underground roof drain connecting to the inlet at DP 2. The roof drains have been sized for 3 times the anticipated flows.

Direct Runoff: Q_5 = 1.16 cfs Q_{100}= 2.26 cfs

Sub-Basin H2 (0.28-acres) consists of the onsite southern halves of the existing Sol Danza Drive and Virtuoso Loop, onsite drive, sidewalk, and landscaped area. This is part of the historic basin that was created by the Master Report. Surface runoff will gutter flow to an existing Type R inlet that is located on the southwest corner of the intersection of Virtuoso Loop and Limelight Avenue.

Direct Runoff: Q_5 = 1.02 cfs Q_{100}= 2.08 cfs

Sub-Basin OS1 (0.14-acres) consists of patio and landscaped area. Surface runoff will primarily sheet flow offsite to Lot 6G-3A-3. Storm runoff will then be conveyed to the north by a property line swale that was constructed by the development of Lot 6G-3A-3. From there, flows will then follow historic drainage patterns per the Master Report.

Direct Runoff: Q_5 = 0.15 cfs Q_{100}= 0.69 cfs

Sub-Basin OS2 (0.04-acres) consists of sidewalk and landscaped area. Surface runoff will sheet flow offsite to Lot 6G-3A-2. Runoff will then follow historic drainage patterns per the Master Report.

Direct Runoff: Q_5 = 0.03 cfs Q_{100}= 0.18 cfs

C. Compliance with Previous Reports

Master Report Basin H1: The table below provides a summary of the proposed areas being routed to the existing storm system and detention pond as they relate to the assumptions made in the Master Report. The "Proposed Basin" is part of the Master Report Basin H1. The portion of Basin H1 that falls within this project site shows a reduction in imperviousness. Due to the overall reduction in imperviousness, no adverse impacts to the storm system are expected.

	C5	C100
Proposed Basin	0.66	0.79
Master Basin H1	0.81	0.88

Original Report Basin H1-A: The table below provides a summary of the proposed areas being routed to the existing storm system and detention pond as they relate to the assumptions made in the Original Report. The "Proposed Basin" is all of the Original Report Basin H1-A. Due to the overall reduction in imperviousness, no adverse impacts to the storm system are expected.

	C5	C100
Proposed Basin	0.64	0.79
Original Basin H1-A	0.81	0.87

Lot 6G-3A-3 Report Basin H-1.6: The table below provides a summary of the proposed areas being routed offsite as they relate to the assumptions made in the Lot 6G-3A-3 Report. The proposed Basin OS1 is a reduction in the total area and runoff of Lot 6G-3A-3 Basin H1-A. Due to the overall reduction in area and runoff, no adverse impacts to Lot 6G-3A-3 are expected.

	Area	Q100
Proposed Basin OS1	0.14	0.69
Lot 6G-3A-3 Basin H1-A	0.28	1.22

5. ENVIRONMENTAL PROTECTION CRITERIA

The site will include disturbance of approximately 1.48 acres. The soils on site belong to hydrologic group B. The construction plans will include detailed Construction BMP Plans to mitigate and prevent erosion and sediment transportation.

The erosion control measures will be placed on The Site to reduce the on-site erosion, prevent sediment from entering the storm sewer system, and to eliminate sediment deposit off-site. Vehicle tracking control pads will be placed at the entrances to The Site. Silt fences and straw bale barriers will be used in swales and around The Site. Gravel protection will be constructed around all inlets. Surface roughening will be used on all slopes 4:1 and greater. All disturbed areas not being covered by asphalt, concrete, or landscaping will be reseeded with an approved seeding mixture as soon as practical after grading. All erosion control measures shall be maintained and repaired by the contractor during construction. The contractor shall inspect and repair all erosion control measures as needed following each heavy precipitation or snowmelt.

6. CONCLUSIONS

This Drainage Report complies with the technical criteria set forth in the Town of Castle Rock Storm Drainage Design and Technical Criteria Manual as well as the Storm Drainage Criteria Manual from the Mile High Flood District.

The storm system has been designed to effectively intercept and convey flows up to and including the 100-year storm away from structures and to the downstream system. Conveyed flows will be treated and attenuated for flood control at the existing water

quality and detention pond. This report also shows compliance with the previous drainage reports in the area. Therefore, this project should create no adverse impact to upstream or downstream developments or infrastructure if constructed as proposed.

The proposed storm system is a private system. The maintenance responsibility of the onsite storm system will be the burden of the landowner for this proposed system.

The Sediment and Erosion Concept is designed to prevent soil transport and if transported, soil must be detained before leaving The Site.

7. REFERENCES

Mile High Flood District, Urban Storm Drainage Criteria Manual., Volumes 1, Partially Updated March 2024, Volume 2, Revised January 2016, and Volume 3, Partially Updated March 2024.

Phase 3 Drainage Report, CRDC Virtuoso Loop – Lot 6G-3A-1, The Meadows Filing No. 17, September 20, 2024 by Roth Lang Engineering Group LLC.

Phase 3 Drainage Report for The Meadows Filing No. 17, Lots 5 and 6, February 15, 2005 by CVL Consultants of Colorado Inc.

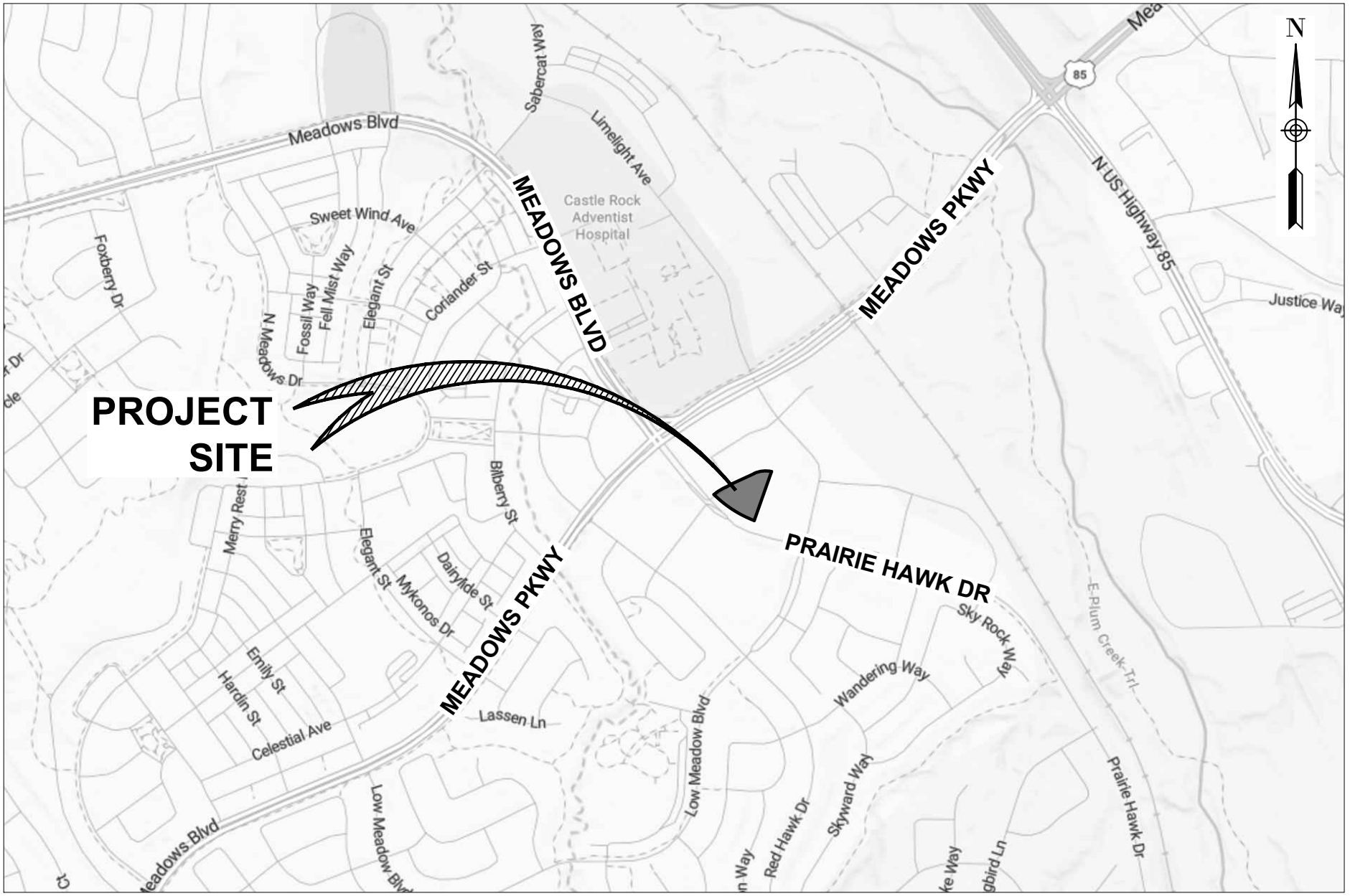
Phase 2 Drainage Report, Little Sunshine's Playhouse, Lot 6G-3A-3, The Meadows Filing No. 17, January 12, 2024 by EES Inc.

Town of Castle Rock, Town of Castle Rock Storm Drainage Design and Technical Criteria Manual. Revised and Adopted February 2025.

APPENDIX A – Maps

VICINITY MAP

SCALE: 1" = 1000'



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

August 4, 2026

Custom Soil Resource Report
Soil Map

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

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

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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

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 18, Aug 29, 2025

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BrB	Bresser sandy loam, cool, 1 to 3 percent slopes	1.8	100.0%
Totals for Area of Interest		**1.8**	**100.0%**

Map Unit Descriptions

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

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

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

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

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

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

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

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

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

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

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

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

Castle Rock Area, Colorado

BrB—Bresser sandy loam, cool, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2tlpj
Landscape: River valleys
Elevation: 5,500 to 6,500 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: Prime farmland if irrigated

Map Unit Composition

Bresser, cool, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bresser, Cool

Setting

Landscape: River valleys
Landform: Hillslopes, Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope, tread
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: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 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): 2e
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: B
Ecological site: R049XB210CO - Sandy Foothill

Hydric soil rating: No

Minor Components

Truckton

Percent of map unit: 5 percent
Landscape: River valleys
Landform: Hillslopes, Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Sampson

Percent of map unit: 5 percent
Landscape: River valleys
Landform: Terraces, Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R049XC202CO - Loamy Foothill Palmer Divide
Hydric soil rating: No

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National Flood Hazard Layer FIRMette

FEMA

104°53'15"W 39°24'18"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

104°52'37"W 39°23'50"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/4/2026 at 6:14 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX B – Tables and Figures

TABLE 6-3. RECOMMENDED IMPERVIOUSNESS BY SURFACE TYPES

SURFACE TYPES		IMPERVIOUSNESS
Roadways and Paved Streets		95%
Concrete Driveways and Walks		95%
Roofs		95%
Gravel	No Traffic (Pedestrian Use)	40%
	Low-traffic Areas (Maintenance Paths and Substations)	60%
	High-traffic Areas (Roadways and Parking)	80%
Disturbed Soil (Including Lawns, Managed/Active Turf, Landscaped Areas with Water-Wise Vegetation, and Uncompacted Gravel/Mulch Planting Beds)		20%
Undisturbed or Decompacted Soil (Native Grasses and Open Space Areas)		5%
Artificial Turfs[1]	Landscape Applications (without Subgrade Drainage Layer)	25% – 45%
	Sport Fields (with Underdrain Pipe System)	60% – 80%
Water Surfaces (Lakes/Reservoirs/Irrigation Ponds)		100%
Solar Fields[2]	Grass Cover (Varies with Panel Orientation Relative to Ground Contours)	10% – 45%
	Gravel Cover (Varies with Panel Orientation Relative to Ground Contours)	50% – 75%
Historic Flow Analysis, Greenbelts, Agricultural		5%
Newly Graded Areas		65%
Stormwater Control Measures[3]	Retention Ponds & Constructed Wetland Ponds	100%
	Rooftop Systems – Blue Roofs	95%
	Rooftop Systems – Green Roofs (extensive)	65%
	Rooftop Systems – Green Roofs (intensive)	50%
	Permeable Pavement – CGP/PGP/RGP	55%
	Permeable Pavement – PICP	45%
	Extended Detention Basins	25%
	Receiving Pervious Areas (incl. Grass Buffers & Grass Swales)	20%
	Bioretention & Sand Filters	10%

[1] Consult with the manufacturer to get a recommended value.

[2] Assumes 1:1 ratio of panels to aisles. See MHFD's technical memorandum regarding *Determination of Solar Panel Field Runoff Coefficients and Imperviousness Values* for additional information on procedures for determining percent imperviousness based on panel width, panel spacing, and panel orientation relative to ground contours and how to reflect other impervious areas such as roads and pads that may be part of a solar field and layouts with wider inter-panel spacing.

[3] See MHFD's technical memorandum regarding *Evaluation of Percent Imperviousness for Stormwater Control Measures* for background information.

4.5 RAINFALL INTENSITY

The calculated rainfall intensity, I, is the average rainfall rate in inches per hour over a duration equal to t_c. Obtain 1-hour point precipitation depths from National Oceanic and Atmospheric Administration (NOAA) Atlas 14 for the average return periods of interest and apply Equation 5-1 in the *Rainfall* chapter using t_c as the storm duration, t_d. Use the centroid of the catchment to determine the 1-hour point precipitation depths. The MHFD-Rational and MHFD-Inlet Excel workbooks automatically calculate rainfall intensity based on 1-hour point precipitation depths for a specified location.

4.6 RUNOFF COEFFICIENTS

Any watershed can be conceptualized as a combination of pervious and impervious surfaces. Pervious surfaces allow water to infiltrate into the ground, while impervious surfaces do not allow for infiltration. In urban hydrology, the relationships between pervious and impervious surfaces is important. Urbanization increases impervious area, causing rainfall-runoff relationships to change significantly. In the absence of stormwater management controls that infiltrate or detain runoff, urbanization increases peak runoff rates, volumes, and frequency of runoff and decreases the time to peak.

When analyzing a catchment for planning or design purposes, estimates of the existing and probable future imperviousness of the drainage area are needed. In some cases, the pre-development (i.e., historic) condition also must be analyzed. Table 6-2 provides recommended imperviousness values based on land use types and is appropriate for master planning analysis and conceptual design. Note that the land use classifications in Table 6-2 incorporate roads that are included within the land use. Table 6-3 provides recommended imperviousness values for different surface types and is appropriate for use during later stages of design when the layout of different types of impervious and pervious areas on the site is known and the area of each surface type can be quantified.

The runoff coefficient, C, represents the integrated effects of infiltration, evaporation, depression storage, and interception, all of which affect the rate and volume of runoff. Determining representative runoff coefficients requires judgment based on the experience and expertise of the engineer.

Volume-based runoff coefficients were derived to improve consistency between CUHP and the Rational Method for peak flow predictions (Guo 2013; Guo and Urbonas 2013). The coefficients developed by Dr. Guo were recalibrated using CUHP Version 2.0.0 (Rapp et al. 2017). Using imperviousness, expressed as a decimal, and the Natural Resources Conservation Service (NRCS) Hydrologic Soil Group (HSG), the equations in Table 6-5 can be used to calculate runoff coefficients for design storm return periods for the Rational Method.

TABLE 6-5. RUNOFF COEFFICIENT EQUATIONS BASED ON NRCS HSG AND STORM RETURN PERIOD

NRCS HSG	STORM RETURN PERIOD						
	WQE & 2-Year	5-Year	10-Year	25-Year	50-Year	100-Year	500-Year
A	$C_A = 0.840I^{1.302}$	$C_A = 0.861I^{1.276}$	$C_A = 0.873I^{1.232}$	$C_A = 0.884I^{1.124}$	$C_A = 0.854I + 0.025$	$C_A = 0.779I + 0.110$	$C_A = 0.645I + 0.254$
B	$C_B = 0.835I^{1.169}$	$C_B = 0.857I^{1.088}$	$C_B = 0.807I + 0.057$	$C_B = 0.628I + 0.249$	$C_B = 0.558I + 0.328$	$C_B = 0.465I + 0.426$	$C_B = 0.366I + 0.536$
C/D	$C_{C/D} = 0.834I^{1.122}$	$C_{C/D} = 0.815I + 0.035$	$C_{C/D} = 0.735I + 0.132$	$C_{C/D} = 0.560I + 0.319$	$C_{C/D} = 0.494I + 0.393$	$C_{C/D} = 0.409I + 0.484$	$C_{C/D} = 0.315I + 0.588$

APPENDIX C – Hydrology

DEVELOPED CONDITIONS

	PROPOSED LAND USE [a.] (sf)								RUNOFF COEFFICIENTS [b.] HYDROLOGIC SOIL GROUP B				
	PAVED	DRIVE & WALKS	ROOF	LAWN									
SUB-BASIN	95%	95%	95%	20%		TOTAL AREA (sf)	TOTAL AREA (acres)	WEIGHTED AVG. PERCENT IMPERVIOUS *(i)*	C_2	C_5	C_{10}	C_{100}	NOTES
A1	-	812	-	2,506	-	3,318	0.08	38.35%	0.27	0.30	0.37	0.60	
A2	-	10,064	-	4,952	-	15,016	0.34	70.27%	0.55	0.58	0.62	0.75	
A3	-	7,709	-	221	-	7,930	0.18	92.91%	0.77	0.79	0.81	0.86	
A4	-	11,291	-	674	-	11,965	0.27	90.78%	0.75	0.77	0.79	0.85	
A5	-	6,374	-	460	-	6,834	0.16	89.95%	0.74	0.76	0.78	0.84	
B1	-	-	12,932	-	-	12,932	0.30	95.00%	0.79	0.81	0.82	0.87	
H2	-	11,115	-	1,232	-	12,347	0.28	87.52%	0.71	0.74	0.76	0.83	
OS1	-	749	-	5,360	-	6,109	0.14	29.20%	0.20	0.22	0.29	0.56	
OS2	-	48	-	1,637	-	1,685	0.04	22.14%	0.14	0.17	0.24	0.53	
On-Site Total	-	48,162	12,932	17,042	-	78,136	1.79	78.64%	0.63	0.66	0.69	0.79	
	-	-	-	-		-	-	0.00%	-	-	0.06	0.43	
Off-Site Total	-	-	-	-	-	-	-	0.00%	-	-	0.06	0.43	
									2-Year	5-year	10-year	100-year	
								C_B	$0.835i^{1.169}$	$0.857i^{1.088}$	$0.807i+0.057$	$0.465i+0.426$	

NOTES:
a. Mile High Flood District "Urban Storm Drainage Criteria Manual: Volume 1" (Table 6-3)
b. Mile High Flood District "Urban Storm Drainage Criteria Manual: Volume 1" (Table 6-5)

DEVELOPED CONDITIONS

BASIN DATA			INITIAL/OVERLAND TIME (t_i) [a.]			TRAVEL TIME (t_t) [b.]					TIME OF CONC. (t_c) [e. f.]	FIRST DESIGN POINT TIME OF CONC. IN URBAN CATCHMENT (t_c) [e.]			FINAL (t_c) [f.]	CONVEYANCE REMARKS
SUB-BASIN	AREA (acres)	C_5	LENGTH L_i (ft)	SLOPE S_o (ft/ft)	t_i (minutes)	LENGTH L_t (ft)	SLOPE S_t (ft/ft)	CONVEYANCE FACTOR K [c.]	VELOCITY V_t (ft/s)	t_t (minutes)	t_c [d.] (minutes)	LENGTH L_t (ft)	IMPERVIOUS i (decimal)	t_c (minutes)	t_c (minutes)	
A1	0.08	0.30	40	0.200	3.4	-	-	-	-	-	5.0	-	0.384	-	**5.0**	
A2	0.34	0.58	110	0.100	4.6	50	0.020	20	2.83	0.29	5.0	50	0.703	14.37	**5.0**	
A3	0.18	0.79	45	0.040	2.4	55	0.020	20	2.83	0.32	5.0	55	0.929	10.50	**5.0**	
A4	0.27	0.77	150	0.035	4.8	20	0.030	20	3.46	0.10	5.0	20	0.908	10.66	**5.0**	
A5	0.16	0.76	180	0.040	5.2	20	0.020	20	2.83	0.12	5.3	20	0.900	10.82	**5.3**	
B1	0.30	0.81	150	0.020	5.1	-	-	-	-	-	5.1	-	0.950	-	**5.1**	
H2	0.28	0.74	20	0.020	2.3	440	0.040	20	4.00	1.83	5.0	440	0.875	12.85	**5.0**	
OS1	0.14	0.22	30	0.333	2.7	75	0.300	20	10.95	0.11	5.0	75	0.292	21.21	**5.0**	
OS2	0.04	0.17	20	0.250	2.6	-	-	-	-	-	5.0	-	0.221	-	**5.0**	

NOTES:

a. MHFD, USDCM Volume 1, Equation 6-3: $t_i = (0.395 * (1.1 - C_5) * \text{sqrt}(L_i)) / S_o^{0.33}$
b. MHFD, USDCM Volume 1, Equation 6-4: $t_t = L_t / (60 * K * \text{sqrt}(S_t)) = L_t / (60 * V_t)$
c. MHFD, USDCM Volume 1, Table 6-4: Heavy Meadow = 2.5, Tillage/Field = 5, Short Pasture & Lawns = 7, Nearly Bare Ground = 10, Grassed Waterway = 15, Paved Areas & Shallow Paved Swales = 20
d. MHFD, USDCM Volume 1, Equation 6-2: $t_c = t_i + t_t$
e. MHFD, USDCM Volume 1, Equation 6-5: $t_c = (26 - 17i) + (L_t / (60 * (14i + 9) * \text{sqrt}(S_t)))$
f. MHFD, USDCM Volume 1, Section 4.4.3, "The time of concentration shall be the lesser of the values calculated by Equation 6-2 and Equation 6-5."
f. MHFD, USDCM Volume 1, Section 4.4.4, "Use a minimum t_c value of 5 minutes for urbanized areas."

DEVELOPED CONDITIONS

	DIRECT RUNOFF								TOTAL RUNOFF				STREET		PIPE			TRAVEL TIME			
MASTER BASIN	DESIGN POINT	AREA (acres)	RUNOFF COEFF	Tc (min)	C * A (acres)	P_1 [a]	I^{b} (in/hour)	Q (cfs) [c]	Tc (min)	C * A (acres)	I (in/hour)	Q (cfs)	SLOPE (%)	STREET FLOW (cfs)	DESIGN FLOW (cfs)	SLOPE (%)	PIPE SIZE (in)	LENGTH (ft)	VELOCITY (fps)	Tt (min)	REMARKS
A1	1	0.08	0.30	5.0	0.02	1.43	4.85	0.11													
A2	2	0.34	0.58	5.0	0.20	1.43	4.85	0.98							0.11	1.0	8	57	2.27	0.42	Routed from DP-1 Inlet to DP-2 Inlet
B1	2	0.30	0.81	5.1	0.24	1.43	4.83	1.16							1.16	1.0	8	40	4.19	0.16	Routed from B1 roofdrain to DP-2 inlet
									5.4	0.46	4.75	2.21			2.21	1.0	15	84	4.64	0.30	Total flow at DP-2 Inlet; Routed from DP-2 Inlet to DP-3 Inlet
A3	3	0.18	0.79	5.0	0.14	1.43	4.85	0.70													
									5.7	0.61	4.67	2.85			2.85	1.0	18	170	4.93	0.57	Total flow at DP-3 Inlet; Routed from DP-3 Inlet to DP-4 Inlet
A4	4	0.27	0.77	5.0	0.21	1.43	4.85	1.03													
									6.3	0.82	4.54	3.73			3.73	1.0	18	42	5.38	0.13	Total flow at DP-4 Inlet; Routed from DP-4 Inlet to DP-5 Inlet
A5	5	0.16	0.76	5.3	0.12	1.43	4.78	0.57													
									6.4	0.94	4.52	4.25									Total flow at DP-5 inlet
H2	-	0.28	0.74	5.0	0.21	1.43	4.85	1.02													Total flow leaving site in Virtuoso Loop southern gutter
OS1	-	0.14	0.22	5.0	0.03	1.43	4.85	0.15													Total flow leaving site to Lot 6G-3A-3
OS2	-	0.04	0.17	5.0	0.01	1.43	4.85	0.03													Total flow leaving site to Lot 6G-3A-2

NOTES: a. Castle Rock Storm Drainage Design and Technical Criteria Manual: 5-year (P1 = 1.43 in.), 100-year (P1 = 2.60 in.)

b. MHFD, USDCM Volume 1, Equation 5-1: $I = (28.5 * P_1) / (10 + T_c)^{0.786}$

c. MHFD, USDCM Volume 1, Equation 6-1: $Q = CIA$

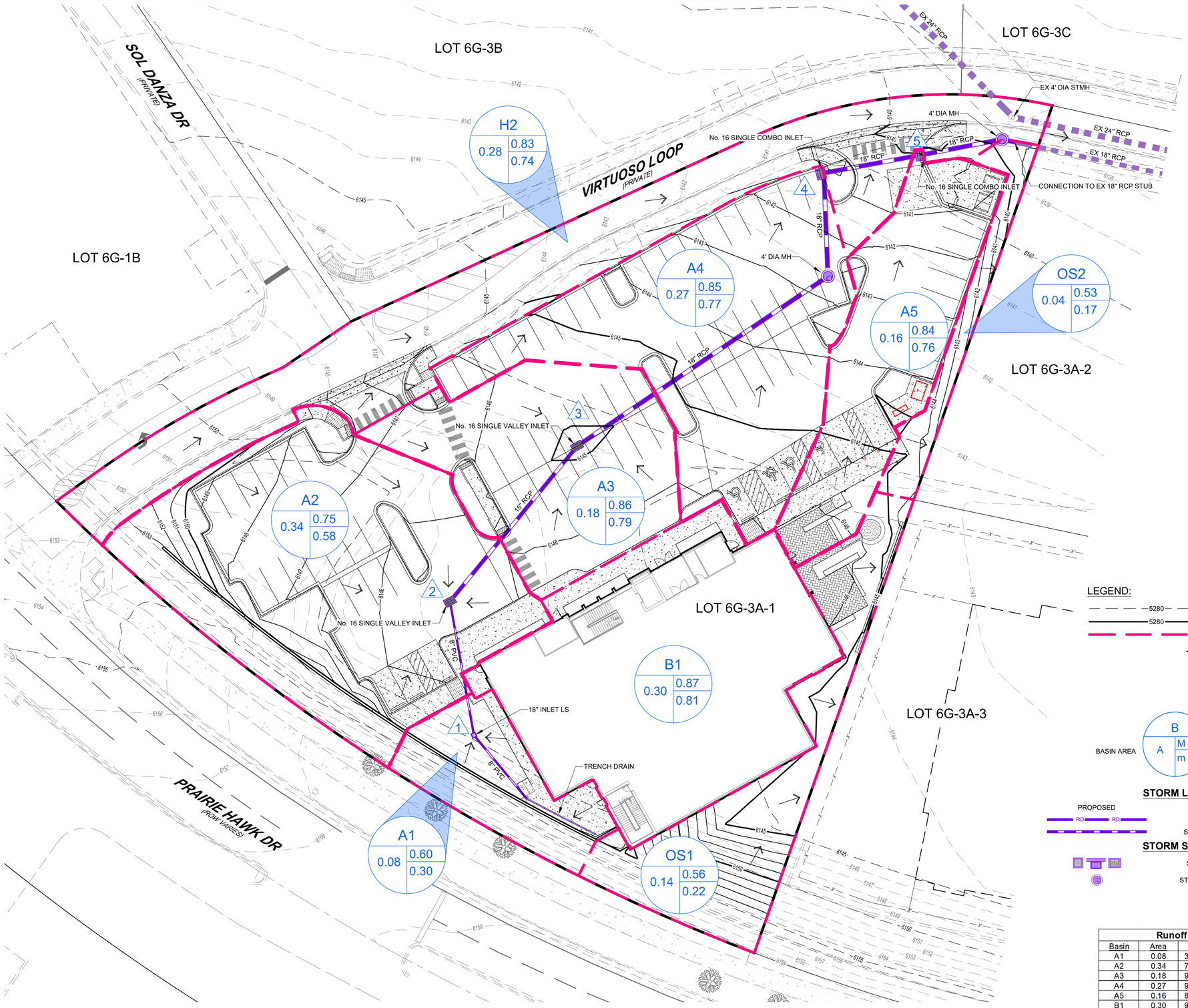
DEVELOPED CONDITIONS

	DIRECT RUNOFF								TOTAL RUNOFF				STREET		PIPE			TRAVEL TIME			
MASTER BASIN	DESIGN POINT	AREA (acres)	RUNOFF COEFF	Tc (min)	C * A (acres)	P_1 [a]	I^{b} (in/hour)	Q (cfs) [c]	Tc (min)	C * A (acres)	I (in/hour)	Q (cfs)	SLOPE (%)	STREET FLOW (cfs)	DESIGN FLOW (cfs)	SLOPE (%)	PIPE SIZE (in)	LENGTH (ft)	VELOCITY (fps)	Tt (min)	REMARKS
A1	1	0.08	0.60	5.0	0.05	2.60	8.82	0.41													
A2	2	0.34	0.75	5.0	0.26	2.60	8.82	2.29							0.41	1.0	8	57	3.22	0.30	Routed from DP-1 Inlet to DP-2 Inlet
B1	2	0.30	0.87	5.1	0.26	2.60	8.78	2.26													
A3	3	0.18	0.86	5.0	0.16	2.60	8.82	1.38	5.3	0.56	8.68	4.89			2.26	1.0	8	40	4.31	0.15	Routed from B1 roofdrain to DP-2 inlet
A4	4	0.27	0.85	5.0	0.23	2.60	8.82	2.05	5.5	0.72	8.58	6.17			4.89	1.0	15	84	5.72	0.24	Total flow at DP-2 Inlet; Routed from DP-2 Inlet to DP-3 Inlet
A5	5	0.16	0.84	5.3	0.13	2.60	8.69	1.15	6.0	0.95	8.38	7.98			6.17	1.0	18	170	6.13	0.46	Total flow at DP-3 Inlet; Routed from DP-3 Inlet to DP-4 Inlet
									6.1	1.08	8.34	9.04			7.98	1.0	18	42	6.51	0.11	Total flow at DP-4 Inlet; Routed from DP-4 Inlet to DP-5 Inlet
H2	-	0.28	0.83	5.0	0.24	2.60	8.82	2.08													Total flow at DP-5 inlet
OS1	-	0.14	0.56	5.0	0.08	2.60	8.82	0.69													Total flow leaving site in Virtuoso Loop southern gutter
OS2	-	0.04	0.53	5.0	0.02	2.60	8.82	0.18													Total flow leaving site to Lot 6G-3A-3
																					Total flow leaving site to Lot 6G-3A-2

NOTES:
a. Castle Rock Storm Drainage Design and Technical Criteria Manual: 5-year (P1 = 1.43 in.), 100-year (P1 = 2.60 in.)
b. MHFD, USDCM Volume 1, Equation 5-1: $I = (28.5 * P_1) / (10 + T_c)^{0.786}$
c. MHFD, USDCM Volume 1, Equation 6-1: $Q = CIA$

Runoff Summary Table				
Basin	Area	% I	Q5 (CFS)	Q100 (CFS)
A1	0.08	38.35%	0.11	0.41
A2	0.34	70.27%	0.98	2.29
A3	0.18	92.91%	0.70	1.38
A4	0.27	90.78%	1.03	2.05
A5	0.16	89.95%	0.57	1.15
B1	0.30	95.00%	1.16	2.26
H2	0.28	87.52%	1.02	2.08
OS1	0.14	29.20%	0.15	0.69
OS2	0.04	22.14%	0.03	0.18

APPENDIX D – Drainage Plan



N

20 0 20

HORIZONTAL SCALE: 1" = 20'

LEGEND:

- EXISTING CONTOUR (5280)
- PROPOSED CONTOUR (5280)
- BASIN BOUNDARY
- EMERGENCY OVERFLOW PATH
- DESIGN POINT (/)
- FLOW DIRECTION

BASIN AREA — B (BASIN DESIGNATION) / A (M: MAJOR RUNOFF COEFFICIENT, m: MINOR RUNOFF COEFFICIENT)

STORM LINETYPE LEGEND

PROPOSED		EXISTING
RD — RD	ROOF DRAIN	
	STORM SEWER	

STORM SYMBOLS LEGEND

STORM INLET

STORM MANHOLE

Runoff Summary Table

Basin	Area	% I	Q5 (CFS)	Q100 (CFS)
A1	0.08	38.35%	0.11	0.41
A2	0.34	70.27%	0.98	2.29
A3	0.18	92.91%	0.70	1.38
A4	0.27	90.78%	1.03	2.05
A5	0.16	89.95%	0.57	1.15
B1	0.30	95.00%	1.16	2.26
H2	0.28	87.52%	1.02	2.08
OS1	0.14	29.20%	0.15	0.69
OS2	0.04	22.14%	0.03	0.18

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

CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

ROTH LANG ENGINEERING GROUP LLC
6855 S. HAVANA STREET, SUITE 600
CENTENNIAL, CO 80112
PHONE: 303-841-9365

HEALTHSPAN MEDICAL OFFICE BUILDING

LOT 6G-3A-1, THE MEADOWS FILING NO. 17, AREA NO. 4

FINAL DRAINAGE PLAN

PREPARED FOR:

DEVELOPMENT SOLUTIONS GROUP
5995 GREENWOOD PLAZA BLVD #210
GREENWOOD VILLAGE, CO 80111

ISSUE DATE: 8/7/2026	DATE	REVISIONS	BY

DESIGNED BY:	KRS
DRAWN BY:	JJH
JOB NUMBER:	260401

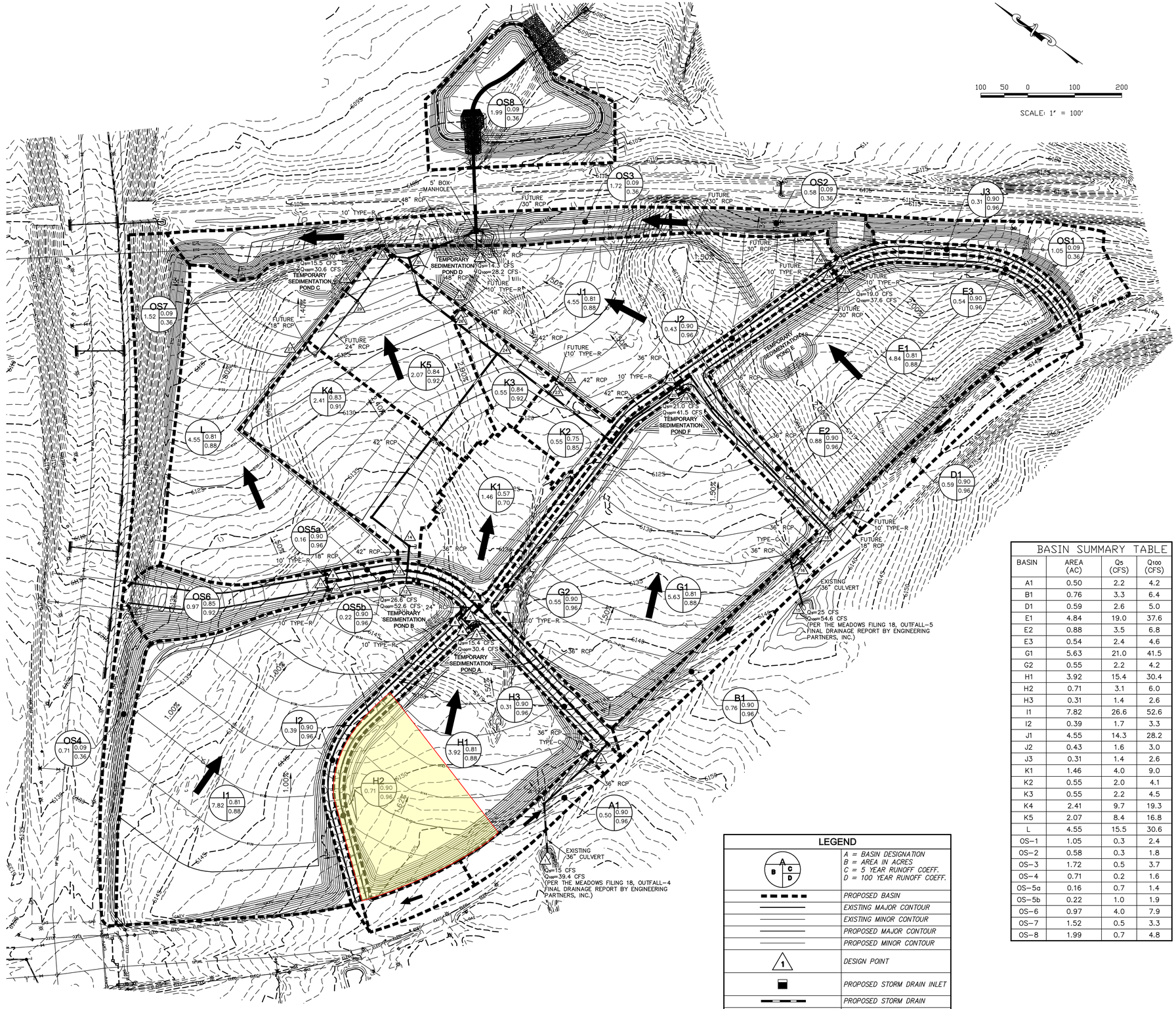
PRELIMINARY NOT FOR CONSTRUCTION

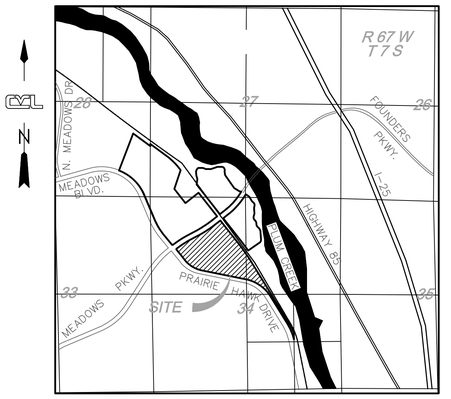
SHEET NUMBER:

DR1.01

APPENDIX E – Previous Reports Drainage Plans

MASTER REPORT





VICINITY MAP
1" = 2000'

SUMMARY RUNOFF TABLE

DESIGN POINT	CONTRIBUTING AREA (AC)	Q5 (CFS)	Q100 (CFS)	CONTRIBUTING BASIN(S)
1	OFFSITE	15.0	39.4	OS
2	0.50	17.2	43.6	A1, OS
3	3.92	15.4	30.4	H1
4	1.02	4.5	8.6	H2, H3
5	4.94	19.9	39.1	H1, H2, H3
6	0.39	1.7	3.3	I2
7	DESIGN POINT 7 NOT USED			
8	5.33	38.7	86.0	H1–H3, I2, OS
9	0.16	0.7	1.4	OS5a
10	0.22	1.0	1.9	OS5b
11	0.38	1.7	3.2	OS5a, OS5b
12	7.82	26.6	52.6	I1
13	13.53	63.6	135.1	H1–H3, I1, I2, OS5a, OS5b, OS
14	14.99	67.1	143.0	H1–H3, I1, I2, OS5a, OS5b, OS, K1
15	OFFSITE	25.0	54.6	OS
16	0.76	28.3	61.0	B1, OS
17	0.59	2.6	5.0	D1
18	1.35	30.9	66.0	B1, D1, OS
19	5.63	21.0	41.5	G1
20	6.18	22.2	43.8	G1, G2
21	7.53	52.6	108.8	B1, D1, G1, G2, OS
22	0.55	2.0	4.1	K2
23	8.08	53.1	110.0	B1, D1, G1, G2, K2, OS
24	23.07	116.9	246.3	BASINS FOR D.P.'S 14 AND 23
25	0.55	2.2	4.5	K3
26	23.62	118.7	250.0	BASINS FOR D.P. 24, K3
27	2.41	9.7	19.3	K4
28	4.55	15.5	30.6	L
29	6.96	23.9	47.4	K4, L
30	9.03	31.2	61.9	K4, K5, L
31	32.65	108.6	215.3	BASINS FOR D.P.'S 30 AND 26
32	4.84	19.0	37.6	E1
33	1.42	5.6	10.9	E2, E3
34	6.26	22.9	44.9	E1, E2, E3
35	0.74	2.7	5.2	J2, J3
36	7.0	23.6	46.4	E1, E2, E3, J2, J3
37	4.55	14.3	28.2	J1
38	44.2	141.3	279.5	BASINS FOR D.P.'S 31, 36 AND 37

BASIN SUMMARY TABLE

BASIN	AREA (AC)	Q5 (CFS)	Q100 (CFS)
A1	0.50	2.2	4.2
B1	0.76	3.3	6.4
D1	0.59	2.6	5.0
E1	4.84	19.0	37.6
E2	0.88	3.5	6.8
E3	0.54	2.4	4.6
G1	5.63	21.0	41.5
G2	0.55	2.2	4.2
H1	3.92	15.4	30.4
H2	0.71	3.1	6.0
H3	0.31	1.4	2.6
I1	7.82	26.6	52.6
I2	0.39	1.7	3.3
J1	4.55	14.3	28.2
J2	0.43	1.6	3.0
J3	0.31	1.4	2.6
K1	1.46	4.0	9.0
K2	0.55	2.0	4.1
K3	0.55	2.2	4.5
K4	2.41	9.7	19.3
K5	2.07	8.4	16.8
L	4.55	15.5	30.6
OS–1	1.05	0.3	2.4
OS–2	0.58	0.3	1.8
OS–3	1.72	0.5	3.7
OS–4	0.71	0.2	1.6
OS–5a	0.16	0.7	1.4
OS–5b	0.22	1.0	1.9
OS–6	0.97	4.0	7.9
OS–7	1.52	0.5	3.3
OS–8	1.99	0.7	4.8

LEGEND

A / B / C / D	A = BASIN DESIGNATION B = AREA IN ACRES C = 5 YEAR RUNOFF COEFF. D = 100 YEAR RUNOFF COEFF.
	PROPOSED BASIN
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
1	DESIGN POINT
	PROPOSED STORM DRAIN INLET
	PROPOSED STORM DRAIN
	FLOW AROW

I HEREBY AFFIRM THAT THESE FINAL CONSTRUCTION PLANS WERE PREPARED UNDER MY DIRECT SUPERVISION, IN ACCORDANCE WITH ALL APPLICABLE TOWN OF CASTLE ROCK AND STATE OF COLORADO STANDARDS AND STATUTES, RESPECTIVELY; AND THAT I AM FULLY RESPONSIBLE FOR ALL DESIGN AND REVISIONS RELATIVE TO SAID PLANS.

KURT A. LANG, COLORADO P.E. 32249 DATE

TOWN OF CASTLE ROCK APPROVALS
THESE PLANS ARE HEREBY APPROVED FOR ONE YEAR FROM DATE OF DEVELOPMENT SERVICES DIRECTOR APPROVAL

RECOMMEND APPROVAL BY:

ENGINEERING DIVISION DATE

APPROVED BY:

DEVELOPMENT SERVICES DIRECTOR DATE

No.	Revisions	Date	Init.	Appr.	Date
	ISSUED FOR CONSTRUCTION	02/15/05	KAL		

7901 E. Belleview Avenue
Suite 150
Englewood, CO 80111
Tel: (720) 482-9526
Fax: (720) 482-9546
CONSULTANTS OF COLORADO, INC.
CIVIL ENGINEERING • LAND SURVEYING • LAND PLANNING

CASTLE ROCK LAND COMPANY
3033 EAST 1ST AVENUE, #410
DENVER, CO 80206

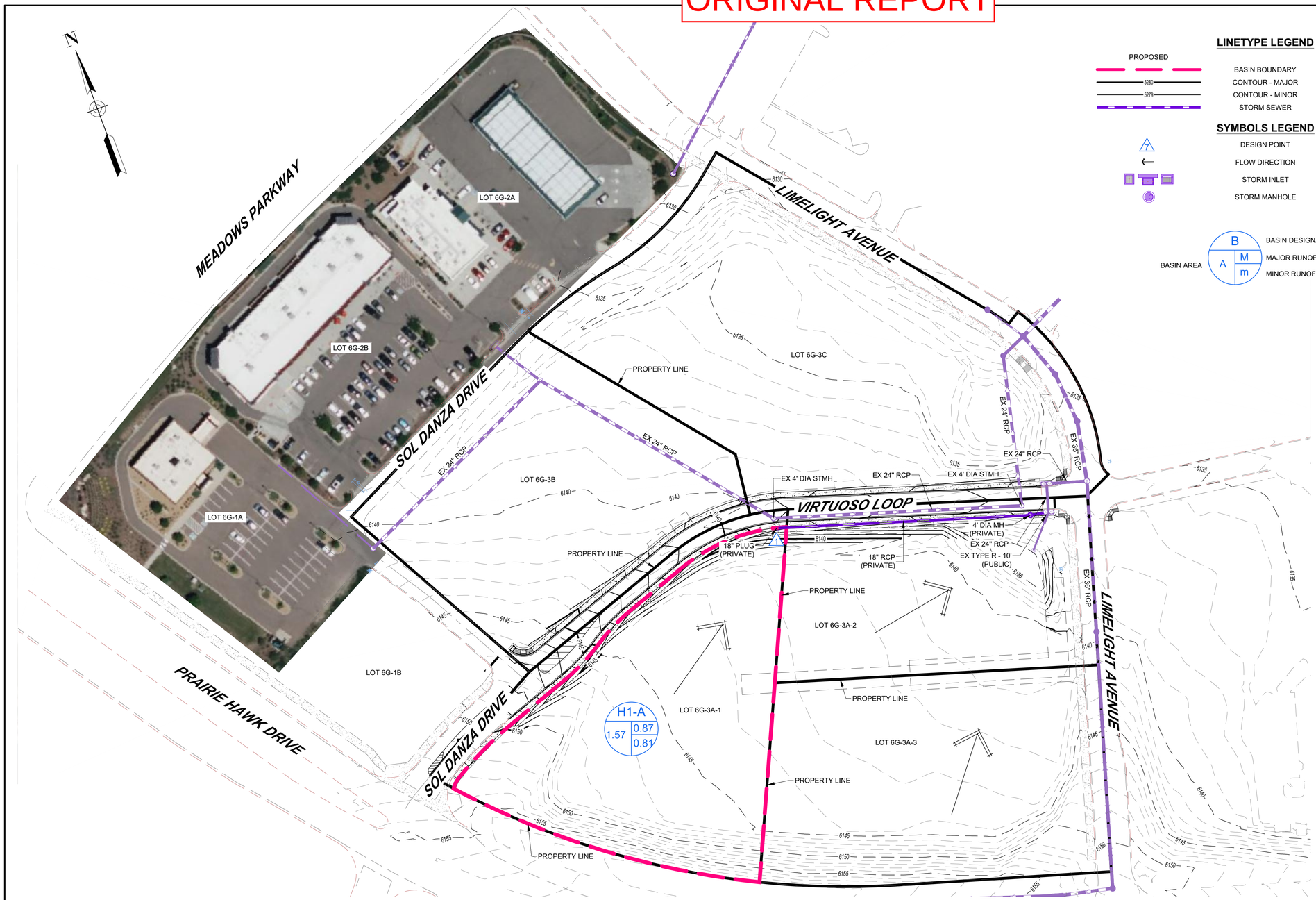
THE MEADOWS FILING 17
LOT 5 AND 6

DEVELOPED DRAINAGE MAP

SCALE: AS SHOWN
FILE NO: 04811401
DRAWN BY: ACS
CHECKED BY: AMZ
DATE: FEB. 15, 2004

SHEET NUMBER 1

ORIGINAL REPORT



LINETYPE LEGEND

PROPOSED		EXISTING
	BASIN BOUNDARY	
5280	CONTOUR - MAJOR	5280
5279	CONTOUR - MINOR	5279
	STORM SEWER	

SYMBOLS LEGEND

7	DESIGN POINT
←	FLOW DIRECTION
	STORM INLET
	STORM MANHOLE
D	

BASIN AREA: B (BASIN DESIGNATION), A (BASIN AREA), M (MAJOR RUNOFF COEFFICIENT), m (MINOR RUNOFF COEFFICIENT)

BASIN SUMMARY:

DRAINAGE BASIN	DESIGN POINT	BASIN AREA (acres)	5-YEAR RUNOFF (cfs)	100-YEAR RUNOFF (cfs)
H1-A	1	1.57	5.62	10.94

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

CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

ROTH LANG ENGINEERING GROUP LLC
6855 S. HAVANA STREET, SUITE 600
CENTENNIAL, CO 80112
PHONE: 303-841-9365

CRDC VIRTUOSO LOOP - LOT 6G-3A-1

DRAINAGE LETTER

DRAINAGE MAP

PREPARED FOR:

CASTLE ROCK DEVELOPEMENT CO.
3033 EAST 1ST AVE., SUITE 305
DENVER, CO 80206

DATE	REVISIONS	BY

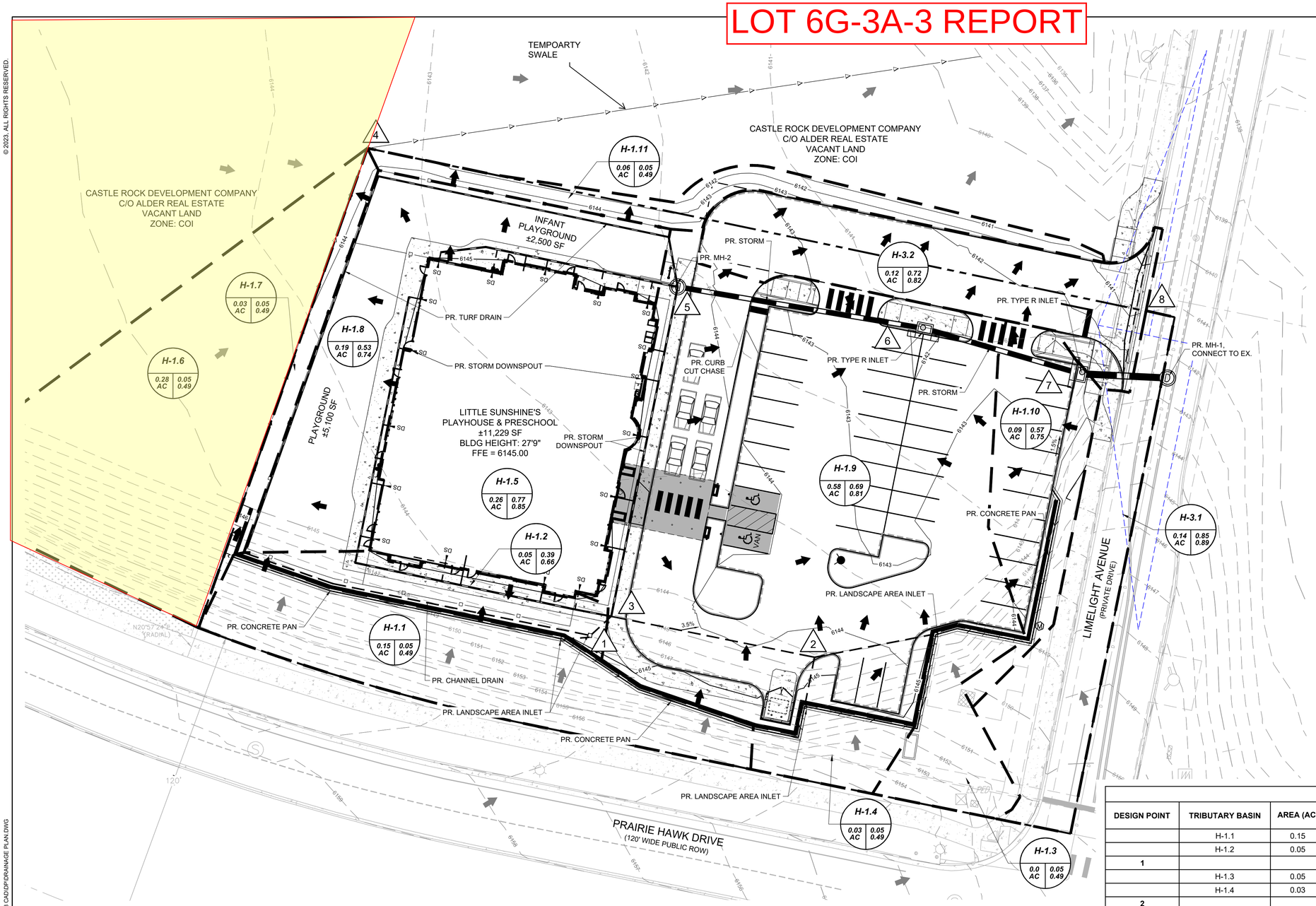
ISSUE DATE: 8/12/2024

DESIGNED BY:	JJH
DRAWN BY:	JJH
JOB NUMBER:	220404

50 0 50
HORIZONTAL SCALE: 1" = 50'

SHEET NUMBER:
DR1.00

LOT 6G-3A-3 REPORT



LEGEND

- DS — PROPOSED DOWN SPOUT
- BASIN LINE
- PROPERTY LINE
- PROPOSED RETAINING WALL
- FLOW ARROW
- DESIGN POINT
- B (0.38 AC, 0.71, 0.73) — BASIN DESIGNATION; 5-YEAR RUNOFF COEFFICIENT; 100-YEAR RUNOFF COEFFICIENT; BASIN AREA IN ACRES

N

SCALE IN FEET
0 20 40

IF BAR DOES NOT MEASURE
1 INCH THEN DRAWING IS
NOT TO SCALE

NOTES

1. WATER QUALITY AND DETENTION FOR THIS SITE IS PROVIDED BY A REGIONAL FACILITY LOCATED NORTHEAST OF THE SITE.
2. ALL PROPOSED STORM SEWER IS PRIVATE UNLESS OTHERWISE NOTED.

BASIN SUMMARY

DESIGN POINT	TRIBUTARY BASIN	AREA (AC)	PERCENT IMPERVIOUS	COEFFICIENT		TOTAL RUNOFF	
				C5	C100	Q5 (CFS)	Q100 (CFS)
	H-1.1	0.15	2.00%	0.05	0.49	0.04	0.67
	H-1.2	0.05	44.29%	0.39	0.66	0.10	0.30
1						0.14	0.97
	H-1.3	0.05	2.00%	0.05	0.49	0.01	0.23
	H-1.4	0.03	2.00%	0.05	0.49	0.01	0.14
2						0.02	0.38
3						0.16	1.35
	H-1.5	0.26	90.00%	0.77	0.85	0.96	1.93
	H-1.6	0.28	2.00%	0.05	0.49	0.07	1.22
	H-1.7	0.03	2.00%	0.05	0.49	0.01	0.12
4						0.08	1.34
	H-1.8	0.19	61.49%	0.53	0.74	0.48	1.21
5						1.60	4.49
	H-1.9	0.58	81.01%	0.69	0.81	1.96	4.16
6						3.56	8.65
	H-1.10	0.08	78.88%	0.68	0.80	0.25	0.53
	H-1.11	0.02	2.00%	0.05	0.49	0.004	0.07
7						3.81	9.25
	H-1.12	0.06	2.00%	0.05	0.49	0.01	0.25
	H-3.1	0.14	100.00%	0.85	0.89	0.57	1.08
	H-3.2	0.12	83.52%	0.72	0.82	0.42	0.88
8						0.99	1.96
	Total Composite	2.04	56.50%	0.49	0.71	4.89	12.73

SITE DEVELOPMENT PLAN
LOT 6G-3A-3, THE MEADOWS FILING 17, AREA 4, AMENDMENT 17
TOWN OF CASTLE ROCK PROJECT NO. SDP23-0038

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

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

P:\PLAYHOUSE DEVELOPMENT\CO, CASTLE ROCK - PRAIRIE HAWK AND LIMELIGHT\08 CAD\DP\DRAINAGE PLAN.DWG

No.	REVISION	BY	DATE

PRELIMINARY NOT FOR CONSTRUCTION

EES
ENTITLEMENT AND ENGINEERING SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-7997 www.ees.us.com

LITTLE SUNSHINE'S PLAYHOUSE & PRESCHOOL®
A Reggio Emilia School

SITE DEVELOPLMENT PLAN
LITTLE SUNSHINE'S
PLAYHOUSE & PRESCHOOL
PRAIRIE HAWK DRIVE AND LIMELIGHT AVENUE

DRAINAGE MAP

PROJECT NO:
DESIGNED BY: LCG
DRAWN BY: LCG
DATE: 01/08/2024

D1.0

APPENDIX F – Summary of Water Quality Conformance to MS4 Permit Form

Summary of Water Quality Conformance to MS4 Permit

The purpose of this worksheet is to document conformance with the Town of Castle Rock's MS4 permit with regard to permanent water quality on land disturbance projects.

Project Name Healthspan Medical Office Building

Project Owner Healthspan Development LLC

Project Location Lot 6G-3A-1, The Meadows Filing No. 17, Area No. 4.

ToCR Project Number SDP26-0030

Total Site Area 1.79 **acres**

Total Size of Common Plan of Development 1.48 **acres**

Check all that apply:

- ☑ **Project within Plum Creek Basin**
- ☐ **Project within Cherry Creek Basin**

Estimated construction completion date Spring 2028

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1. The water quality control measure(s) for applicable development sites shall meet one of the following base design standards as per the SDDTCM Section 14.4. Please select all design standards that were applied to meet conformance with the MS4 on this site.

   - ☑ WQCV standard
   - ☐ Pollutant removal standard
   - ☐ Runoff reduction standard
   - ☐ Applicable site draining to regional WQVC control measure (accepts drainage prior to discharging to WOTS)
   - ☐ Applicable site draining to regional WQVC control facility (with receiving pervious area control measure upstream of WOTS)
   - ☐ Constrained redevelopment sites standard
     - Imperviousness of existing site _____/_____(Imp. Ac/Site Ac) =____%
     - Variance required TCV No. _____
   - ☑ Existing control measure with WQCV per previous criteria standards
     - Reference Construction Permit No. _____
   - ☐ Cherry Creek Basin only, choose one: ☐ Tier 1 ☐ Tier 2 ☐ Tier 3
   - ☐ No control measures provided (See Permanent WQ Worksheet for applicability)

Summary of Water Quality Conformance to MS4 Permit

2. Was an exclusion to water quality applied as per SDDTCM Section 13.1.5? ☐ Yes ☑ No

   i. If yes, please select all that apply, provide total excluded impervious area(s) and submit variance, as applicable: TCV No. _____

   - ❒ Pavement management site
     Excluded impervious area: _____ acres
   - ❒ Excluded roadway redevelopment
     Excluded impervious area: _____ acres
   - ❒ Excluded existing roadway areas
     Excluded impervious area: _____ acres
   - ❒ Above ground and below ground utilities
   - ❒ Large lot single family home
   - ❒ Non-residential and non-commercial infiltration
     Excluded impervious area: _____ acres
   - ❒ Land disturbance for land to remain undeveloped
     Excluded impervious area: _____ acres
   - ❒ Stream Stabilization Sites
     Excluded impervious area: _____ acres
   - ❒ Trails
     Excluded impervious area: _____ acres
   - ❒ Oil and Gas Exploration

3. For Development and Redevelopment sites, following any exclusions claimed above, was any portion of the site excluded up to 20% of the site and not to exceed one acre? ☐ Yes ☑ No

   If yes, complete the following:

   Excluded area: _____ acres

   Total Site area: _____ acres, _____ % site excluded

4. For Constrained sites, was any portion of the site excluded up to 50% of the site and not to exceed 50% of the impervious area? ☐ Yes ☑ No

   If yes, complete the following:

   Excluded area: _____ acres

   Excluded impervious area: _____ acres

   Total Site area: _____ acres, _____ % site excluded

   Total Impervious area: _____ acres, _____ % impervious excluded