HRGreen

HRGREEN.COM

Final Drainage Report
for Hillpointe Apartments at Peterson

April 2026

HR Green Project No: 2502477

Prepared For:

Hillpointe, LLC.

3773 Cherry Creek Drive North, Suite 801 East Tower

Denver, CO 80209

Contact: Mark Foster

mfoster@hillpointe.com

Prepared By:

HR Green Development, LLC

1975 Research Parkway, Suite 160

Contact: Richie Lyon, PE

Richie.Lyon@hrgreen.com

(719) 318-0871

PCD File No. PPR2613

Table of Contents

Appendices

Engineer's Statement

This report and plan for the drainage design of the development, Hillpointe Apartments at Peterson, was prepared by me (or under my direct supervision) and is correct to the best of my knowledge and belief. Said report and plan has been prepared in accordance with the *El Paso County Drainage Criteria* Manual and is in conformity with the master plan of the drainage basin. I understand that El Paso County does not and will not assume liability for drainage facilities designed by others. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this report.

_____ _____

Richie Lyon, PE — Date

State of Colorado No. 53921

For and on behalf of HR Green Development, LLC

Developer's Statement

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

_____ _____

Hillpointe, LLC — Date

El Paso County:

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

_____ _____

Joshua J. Palmer, P.E. — Date

County Engineer/ECM Administrator

I. General Purpose, Location and Description

a. Purpose

This Final Drainage Report (FDR) aims to identify specific solutions to drainage concerns resulting from the development of the site. The report outlines the onsite and offsite drainage patterns, details the existing and proposed storm infrastructure, and proposes a solution for effectively routing developed stormwater to an adequate detention facility. An existing full-spectrum detention pond within the subdivision (see PCD File SF2420) is proposed as the permanent control measure. Hydrologic and hydraulic calculations for onsite areas, along with an assessment of the existing downstream stormwater infrastructure, are provided to demonstrate compliance with County stormwater criteria and ensure that existing infrastructure is not negatively impacted by this development.

b. Location

The Hillpointe Apartments at Peterson, legally described as Lot 1 Cimarron Hills Southeast Mixed Use Filing No. 1, totals 14.09 acres and referred to as 'the site' herein, is a portion of the west half of the southwest quarter of Section 8, Township 14 South, Range 65 West of the 6th P.M., El Paso County, Colorado. The subdivision is described in the *Cimmaron Hills Southeast Mixed Use Filing No. 1 Final Drainage Report* prepared by Matrix Design Group dated September 2025. The site is bound to the north by the 80' wide public right-of-way of Meadowbrook Parkway and across the roadway is Tract A which is designated as future development. To the east of the site is the Aura Crossroads apartment complex, legally described as Lot 1 Crossroads Mixed Use Filing No. 1. To the south of the site is the public right-of-way of US Highway 24 which varies in width. Adjacent to the southwest corner of the site is Tract C, which is dedicated to detention facilities. Immediately west of the site is Tract B which is designated as future development and further west is the 100' wide public right-of-way of Peterson Road. There are no existing or proposed public roadways internal to the site. All of county assessor parcel number 5408007004 and portions of parcel numbers 5408007008 and 5408007001 are within the development limits. The property is not within a Streamside Zone or Hillside Zone. There are no no-build or preservation easements or areas within the platted parcel.

A vicinity map is presented in Appendix A.

c. Description of Existing Conditions

The undeveloped site (zoned RM-30) contains few site improvements which include unpaved trails, abandoned softball fields, and a small concrete pad. The overall on-site imperviousness is approximately 2% and the site is sparsely vegetated by grass, shrubs, and trees. There are no structures or impervious areas on site. The site generally slopes from the northeast down to the southwest.

The site consists of 88.3% Blakeland loamy sand and 11.7% Blendon sandy loam per the USDA, NRCS web soil survey. This soil is categorized as Hydrologic Soil Group A and Group B. The NRCS soil survey is presented in Appendix A.

d. Description of Proposed Conditions

The developed site is to include apartment buildings, garages, recreational facilities, paved drive aisles and parking areas, and private utilities and storm sewer network. The nine apartment buildings are spread throughout the site and parking spaces are provided along drive aisles. Landscape areas surround apartment buildings and are dispersed throughout the islands in parking areas. Screening along adjacent rights-of-way is

provided by landscape areas at the northern and southern edges of the site. The site is accessed by an entry on the adjacent public right-of-way of Meadowbrook Parkway to the north and an entry originating from the public right-of-way of Peterson Road to the west.

The on-site private storm includes private Type R sump and on-grate grate inlets within the drive aisles and parking areas. Roof drains and dome inlets are tied directly into secondary drainage systems surrounding apartment buildings which connect to the main storm system. The storm system is made up of two main branches that ultimately outfall into forebays within the full spectrum detention pond within Tract C. The existing private water quality and detention pond (by others, SF2420) includes an outlet structure with orifice plate and micropool that is designed to provide detention and release the stormwater at or below historic rates.

The entirety of the 14.09 acre site will be disturbed for development. Offsite disturbances for the development include connecting the site to existing public utilities owned and maintained by Cherokee Metropolitan District within Tract B and the shared entry within the Meadowbrook Parkway right-of-way.

e. Floodplain Statement

Based on FEMA Firm map 08041C0754G dated December 7, 2018, the site is Zone X, which are areas determined to be outside the 0.2% annual chance flood. No portion of the site is within a designated FEMA floodplain. The site is approximately 145' away from a FEMA Flood Zone AE at the nearest boundary, located to the west and north of the site. The nearby flood zone has no bearing on the design within Lot 1.

A map is provided in Appendix A.

II. Drainage Basins and Subbasins

EPC has not adopted the newer version of the DBPS

a. Major Basin Description

The site's drainage characteristics were previously studied in the following reports:

1. *Sand Creek Drainage Basin Planning Study Final Report* dated January 2021, prepared by Stantec, HDR, Dewberry
2. *Cimmaron Hills Southeast Mixed Use Filing No. 1 Final Drainage Report,* dated September 2025, prepared by Matrix Design Group

The site is located within the Sand Creek East Fork Subbasin in the Sand Creek Drainage Basin. The East Fork Sand Creek is tributary to Sand Creek which ultimately drains to Fountain Creek. Site flows released from the offsite existing private full spectrum detention pond run west along the public roadside ditch on the north side of US Highway 24 Off Ramp to an inlet that conveys the flows under Peterson Road and to East Fork Sand Creek. Per the FDR for Cimmaron Hills Mixed Use Filing No. 1, the full spectrum detention pond releases flows from the site at or below historic rates and the downstream East Fork Sand Creek is stable with no recommendations for improvement in the DBPS. Therefore, no downstream infrastructure or detention alterations are required.

b. Existing Subbasin Description

The existing subbasins were delineated based on existing drainage patterns. The on-site basins are comprised of undeveloped land. 2% imperviousness was assumed for each on site basin for analysis of historical flow.

The following basins and sub-basins have been delineated.

Existing Basin A has a tributary area of **0.30 acres with a minor (5-year event) runoff of 0.11 cfs and major (100-year event) runoff of 0.71 cfs**. The basin lies on the western edge of the site. Within the basin is an existing storm system and associated easement. The vegetation in the basin includes sparse grass, shrubs, and trees. Runoff generated within the basin flows west to Tract B Cimarron Hills Southeast Mixed Use Filing No. 1, designated as **Design Point 1,** as sheet flow.

Existing Basin B has a total tributary area of **13.79 acres with a total minor (5-year event) runoff of 3.89 cfs and major (100-year event) runoff of 25.65 cfs**. The basin includes all the on-site area except for the area in Existing Basin A. The basin contains abandoned softball fields, unpaved trails, and a single concrete pad and is analyzed as undeveloped land. The vegetation in the basin includes sparse grass, shrubs, and trees. Runoff generated within the basin flows southwest to Tract C Cimarron Hills Southeast Mixed Use Filing No. 1, designated as **Design Point 2,** as channelized flow. The basin flows ultimately flow west within the roadside ditch at the north side of U.S. Highway 24 and the offramp.

Existing Basin OS has a total tributary area of **0.87 acres with a total minor (5-year event) runoff of 0.28 cfs and major (100-year event) runoff of 1.87 cfs**. The basin is located south of the site and is delineated to include area draining to the analyzed cross section of the ditch. The basin accepts flows from the upstream roadside ditch and the existing private full spectrum detention pond within Tract A Crossroads Mixed Use Filing No. 1 (**Design Point 5**) and from a culvert at **Design Point 4**. The vegetation in the basin includes sparse grass, shrubs, and trees. Runoff within the basin flows from east to west. The basin drains to **Design Point 3**, the roadside ditch north of the U.S. Highway 24 offramp to Peterson Road.

HRG Re
Design P
Design P
not studi
to the ro
site.

Reference maps are included in Appendix G.

Indicate what the flow is from these 2 design points

c. Proposed Subbasin Description

The Hillpointe Apartments at Peterson developed area basins and subbasins vary from the historical basins due to changes in site layout and drainage conveyance.

The following basins were delineated per the revised site layout. The on-site basins are to be zoned RM-30. Existing **Basin OS** remains unchanged.

SUMMARY RUNOFF TABLE

BASIN	AREA (ac)	% IMPERVIOUS	Q_5 (cfs)	Q_{100} (cfs)
A1.1	0.31	95.4	1.37	2.49
A1.2	0.07	72.6	0.22	0.43
A2	0.49	71.7	1.52	3.00
A3	0.28	69.7	0.96	1.92
A4.1	0.49	71.8	1.68	3.33
A4.2	0.17	81.9	0.67	1.27
A5.1	0.56	73.4	1.81	3.56
A5.2	0.66	70.2	2.14	4.28
A6.1	0.32	51.5	0.81	1.81
A6.2	0.46	77.3	1.52	2.95

Basins highlighted seem like % impervious might be on the low side. Please verify

HRG Response:
Land use values for calcula
imperviousness double che
are separated into their ow
Revised "Lawn" areas to "L
at 20% to match landscape
water-wise landscaping me

A7	0.40	71.4	1.20	2.37
AR1	0.16	90.0	0.59	1.10
AR2	0.10	90.0	0.39	0.72
AR3	0.12	90.0	0.44	0.83
AR4	0.16	90.0	0.59	1.10
AR5	0.17	90.0	0.65	1.21
AR6	0.16	90.0	0.59	1.10
B1.1	0.96	74.8	2.98	5.83
B1.2	0.71	69.3	2.12	4.24
B2.1	0.31	76.4	1.15	2.22
B2.2	0.25	77.7	0.91	1.76
B3.1	0.41	71.0	1.35	2.68
B3.2	0.61	70.6	2.01	4.00
B4	0.42	62.1	1.28	2.65
B5	0.57	51.6	1.33	2.95
B6	0.70	75.2	2.26	4.42
B7	0.88	30.2	1.12	3.08
BL1	0.36	2.0	0.16	0.99
BR1	0.10	90.0	0.38	0.72
BR2	0.12	90.0	0.44	0.83
BR3	0.16	90.0	0.59	1.10
BR4	0.17	90.0	0.65	1.21
BR5	0.17	90.0	0.65	1.21
BR6	0.17	90.0	0.65	1.21
BR7	0.16	90.0	0.59	1.10
BR8	0.33	90.0	1.24	2.31
BR9	0.17	90.0	0.65	1.21
BR10	0.33	90.0	1.24	2.31
O1	0.18	0.0	0.07	0.54
O2	0.20	0.0	0.08	0.61
O3	0.14	0.0	0.06	0.43
O4	0.48	10.1	0.39	1.66
P1	0.17	0.0	0.06	0.47

O2 and O3 both contain a fair amount of paving. Confirm values.

HRG Response: Basins checked and revised as needed.

Design Point 1: Runoff generated within Basin A1.1 sheet flows across landscape area, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Runoff ultimately enters a proposed private 5' CDOT Type R Sump Inlet. The inlet's emergency overflow route is to the downstream pond. Q_5 = 1.37 cfs, Q_{100} = 2.49 cfs

A1.2

Design Point 2: Runoff generated within Basin A2.1 sheet flows across landscape area, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Runoff ultimately enters a proposed private 5' CDOT Type R Sump Inlet. The inlet's emergency overflow route is to the downstream street. Q_5 = 0.22 cfs, Q_{100} = 0.43 cfs

storm network and not through storm inlets. They are considered in the StormCAD analysis. Discussion of these basins added to report narrati

What happens with Basins AR2 thru AR6 and BL1, BR1 thru BR4 and BR6 thru BR7?

Design Point 3: Runoff generated within Basin A2 sheet flows across landscape area, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Ground runoff and runoff from the directly connected apartment building roof area, Basin AR1, ultimately enter a proposed private 5' CDOT Type R Sump Inlet. The inlet's emergency overflow route is to the downstream street. Q_5 = 2.11 cfs, Q_{100} = 4.10 cfs

Design Point 4: Runoff generated within Basin A3 sheet flows across landscape area, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Runoff ultimately enters a proposed private 5' CDOT Type R Sump Inlet. The inlet's emergency overflow route is to the downstream street. Q_5 = 0.96 cfs, Q_{100} = 1.92 cfs

Design Point 5: Runoff generated within Basin A4.1 sheet flows across landscape area, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Runoff ultimately enters a proposed private 5' CDOT Type R Sump Inlet. This inlet accepts flows from Design Point 6, the upstream inlet within Basin A4.2. The inlet's emergency overflow route is to the downstream street. Q_5 = 2.35 cfs, Q_{100} = 4.60 cfs

Design Point 6: Runoff generated within Basin A4.2 sheet flows across landscape area, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Runoff ultimately enters a proposed private 5' CDOT Type R Sump Inlet which is directly connected to Design Point 5, a downstream private 5' CDOT Type R Inlet. The inlet's emergency overflow route is to the downstream street. Q_5 = 0.67 cfs, Q_{100} = 1.27 cfs

Design Point 7: Runoff generated within Basin A5.1 sheet flows across landscape area, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Runoff generated from garage roof area to the surrounding landscape areas or pavement. Runoff ultimately enters a proposed private 5' CDOT Type R Sump Inlet. The inlet's emergency overflow route is to the downstream street. Q_5 = 1.81 cfs, Q_{100} = 3.56 cfs

Design Point 8: Runoff generated within Basin A5.2 sheet flows across amenity and landscape areas, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Runoff generated from the roofs of the mail kiosk, and community center outfall to the surrounding landscape areas. Runoff ultimately enters a proposed private 5' CDOT Type R Sump Inlet. The inlet's emergency overflow route is to the downstream street. Q_5 = 2.14 cfs, Q_{100} = 4.28 cfs

Design Point 9: Runoff generated within Basin A6.1 sheet flows across amenity and landscape areas, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Runoff generated from the roofs of the fitness center and community center outfall to the surrounding landscape areas. Runoff ultimately enters a proposed private 5' CDOT Type R Sump Inlet. The inlet's emergency overflow route is to the downstream street. Q_5 = 0.81 cfs, Q_{100} = 1.81 cfs

Design Point 10: Runoff generated within Basin A6.2 sheet flows across landscape area, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Runoff generated from garage roof area to the surrounding landscape areas or pavement. Runoff ultimately enters a proposed private 5' CDOT Type R Sump Inlet. The inlet's emergency overflow route is to the downstream street. Q_5 = 1.52 cfs, Q_{100} = 2.95 cfs

Design Point 11: Runoff generated within Basin A7 sheet flows across landscape area, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Runoff ultimately enters a proposed

private 5' CDOT Type R Sump Inlet. The inlet's emergency overflow route is to the downstream street. Q_5 = 1.20 cfs, Q_{100} = 2.37 cfs

Design Point 12: Runoff generated within Basin B1.1 sheet flows across landscape area, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Runoff generated from garage roof area to the surrounding landscape areas or pavement. Runoff ultimately enters a proposed private 5' CDOT Type R Sump Inlet. The inlet's emergency overflow route is to the downstream pickleball court and into the downstream pond. Q_5 = 2.98 cfs, Q_{100} = 5.83 cfs

Design Point 13: Runoff generated within Basin B1.2 sheet flows across landscape area, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Runoff generated from garage roof area to the surrounding landscape areas or pavement. Runoff ultimately enters a proposed private 5' CDOT Type R Sump Inlet. The inlet's emergency overflow route is to the downstream street. Q_5 = 2.12 cfs, Q_{100} = 4.24 cfs

Design Point 14: Runoff generated within Basin B2.1 sheet flows across landscape area, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Runoff ultimately enters a proposed private 5' CDOT Type R Sump Inlet. The inlet's emergency overflow route is to the downstream street. Q_5 = 1.15 cfs, Q_{100} = 2.22 cfs

Design Point 15: Runoff generated within Basin B2.2 sheet flows across landscape area, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Runoff ultimately enters a proposed private 5' CDOT Type R Sump Inlet. The inlet's emergency overflow route is to the downstream street. Q_5 = 0.91 cfs, Q_{100} = 1.76 cfs

Design Point 16: Runoff generated within Basin B3.1 sheet flows across landscape area, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Ground runoff and runoff from the directly connected apartment building roof area, Basin BR5, ultimately enter a proposed private 5' CDOT Type R Sump Inlet. The inlet's emergency overflow route is to the downstream street. Q_5 = 2.00 cfs, Q_{100} = 3.89 cfs

Design Point 17: Runoff generated within Basin B3.2 sheet flows across landscape area, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Ground runoff and runoff from the directly connected apartment building roof area, Basin BR3, ultimately enter a proposed private 5' CDOT Type R Sump Inlet. The inlet's emergency overflow route is to the downstream street. Q_5 = 2.60 cfs, Q_{100} = 5.10 cfs

Design Point 18: Runoff generated within Basin B4 sheet flows across landscape area, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Runoff ultimately enters a proposed private 5' CDOT Type R Sump Inlet. The inlet's emergency overflow route is to the downstream street. Q_5 = 1.28 cfs, Q_{100} = 2.65 cfs

Design Point 19: Runoff generated within Basin B5 sheet flows across landscape area, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Ground runoff and runoff from the directly connected apartment building roof area, Basin BR8, ultimately enter a proposed private 5' CDOT Type R Sump Inlet. The inlet's emergency overflow route is to the downstream street. Q_5 = 2.57 cfs, Q_{100} = 5.27 cfs

Design Point 20: Runoff generated within Basin B6 sheet flows across landscape area, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Runoff generated from garage roof area to the surrounding landscape areas or pavement. Ground runoff and runoff from the directly connected

apartment building roof area, Basin BR9, ultimately enter a proposed private 5' CDOT Type R Sump Inlet. The inlet's emergency overflow route is to the downstream street. Q_5 = 2.91 cfs, Q_{100} = 5.63 cfs

Design Point 21: Runoff generated within Basin B7 sheet flows across landscape area, internal drive aisles, and parking spaces until concentrating within gutters along the drive isles. Ground runoff and runoff from the directly connected apartment building roof area, Basin BR10, ultimately enter a proposed private 5' CDOT Type R Sump Inlet. The inlet's emergency overflow route is to the downstream street. Q_5 = 2.37 cfs, Q_{100} = 5.39 cfs

d. Downstream Drainage

Include statement that this is discusses further in other section.

This development drains to an existing private off-site full spectrum detention facility that provides treatment and detention of stormwater runoff. The site area and imperviousness match the values used to size for the private pond in the *Cimarron Hills Southeast Mixed Use Filing No. 1 Final Drainage Report* prepared by Matrix Design Group as part of the Final Plat application SF2420, and so no modifications are necessary for it to continue functioning as intended. The private off-site pond includes an outlet pipe that drains to the roadside drainage ditch within the public right-of-way of U.S. Highway 24. The public ditch conveys stormwater due west, ultimately to East Fork Sand Creek. Per the FDR by Matrix, the detention pond releases flows at or below historical rates and therefore no improvements to East Fork Sand Creek are proposed. It is anticipated that there will be no negative impacts to downstream properties, developments, or infrastructure due to this development.

III. Drainage Design Criteria

a. Development Criteria Reference

The drainage analysis of existing and proposed storm sewer system follows the criteria from the *El Paso County Drainage Criteria Manual Volumes 1 and 2* (EPC DCM, latest revision October 2018).

b. Hydrologic Criteria

Hydrologic data was obtained from the *El Paso County, Colorado Drainage Criteria Manual – Chapter 5 Storm Runoff Methods of Analysis.* Runoff was calculated per *El Paso County, Colorado Drainage Criteria Manual – Section 5.2 - Rational Method.* Onsite drainage improvements are designed for the 5-year storm (minor event) and 100-year storm (major event) using rainfall values from NOAA Atlas 14 below.

Rainfall Depths for Site Location		
Return Period (yr)	5	100
1-hr Rainfall Depth (in)	1.50	2.52

Private, full spectrum pond design was completed using the latest version of Mile High Flood District's (MHFD) UD-Detention per EPCDCM guidelines. Detention pond allowable release rate are limited to less than historic rates.

c. Hydraulic Criteria

Hydraulic criteria for inlet sizing was obtained from the *El Paso County, Colorado Drainage Criteria Manual – Chapter 7 Street Drainage and Storm Water Inlets* and the UD-Inlet calculator. Hydraulic criteria for storm sewer culverts were obtained from the *El Paso County, Colorado Drainage Criteria Manual – Chapter 9 Culvert Design.* Hydraulic criteria for swale sizing was obtained from the *El Paso County, Colorado Drainage Criteria Manual – Chapter 10 Open Channels and Structures.*

Proposed drive aisle capacities are analyzed utilizing hydraulic modeling (AutoCAD Civil 3D channel analysis tool) by designing the pavement sections as user-defined channels with the proper Manning's coefficient, geometry of designed sections, and slopes. These user-defined capacity calculations are provided to determine the minor 5-year storm and major 100-year storm capacities in various areas of interest.

Storm sewer system modeling is provided in Appendix C. The hydraulic model was developed using Bentley StormCAD to assess and size private inlets and pipes, ensuring that both minor and major hydraulic grade lines comply with applicable stormwater design criteria. Table 9-4 StormCAD Standard Method Coefficients from *City of Colorado Springs, Drainage Criteria Manual, Volume 1* were used for the analysis. All proposed storm pipes are within 80% capacity for the minor storm event and do not surcharge the system to within 1' of all storm manhole rim elevations for the major storm event. The hydraulic grade lines for the minor and major storm at the outfall point of pipes that drain to the proposed private pond are set at the appropriate detention water surface elevations for tailwater conditions.

IV. Drainage Facility Design

a. General Concept

Overland runoff areas include roof runoff from apartment buildings as well as initial overland sheet flow within paved drive aisles and across landscaped areas. On-site stormwater runoff is conveyed as channelized flow within on-site curb and gutter and drainage pans that drain to proposed curb inlets at sump locations. Runoff continues downstream as channelized flow within the two main branches of proposed private on-site storm sewer system. The west branch drains to an existing on-site storm manhole upstream of the existing private off-site full spectrum detention pond, and the east branch drains directly to the forebay on the east side of the existing pond. The existing private off-site pond was assessed for the proposed site area and imperviousness to meet stormwater criteria and treats runoff from the site and releases it at or below historical rates.

b. Basin Design Criteria

The MHFD-Detention spreadsheet was used to design the existing private basin and outlet structure. The 1-hour rainfall depths for the 2, 5, 10, 25, 50, and 100 year storm events used in the spreadsheet were obtained from Table 6-2 Rainfall Depths for Colorado Springs within the EPC DCM. These rainfall depths are 1.19, 1.50, 1.75, 2.00, 2.25, and 2.52 inches, respectively.

Summary table on next page and drainage map show that this exclusion is not used. Please revise.

c. Water Quality & Detention

Water quality treatment is provided for all applicable areas of the site except for excluded areas which do not exceed 20 percent of the development site or 1 acre per the El Paso County base design standard requirements. The existing private off-site full spectrum detention pond provides water quality treatment by facilitating the settling of suspended sediments and the capture of pollutants prior to controlled discharge from the site.

HRG Added O6 no I.7.1.C ECM A

Full spectrum detention is provided by the existing private off-site full spectrum detention basin. The total site area tributary to the detention basin is 13.89 acres and has 66.8% effective imperviousness. Included in Appendix C are the Rational Method Hydrologic Calculations from the FDR by Matrix which include the full site area (Basin P-5) at an assumed imperviousness of 70% for neighborhood areas. The design follows stormwater criteria for full spectrum detention, and the release rate is 40 hours for WQCV, 72 hours for the EURV and 72 hours for the 100-year storm events.

Please provide

HRG Response:
Added to Appendix E

See previous comment regarding this report.

d. Major Drainageways

There are no formal major drainageways within the project boundary. The development lies within the Sand Creek East Fork Subbasin in the Sand Creek Drainage Basin, last studied in the *Sand Creek Drainage Basin Planning Study Final Report* dated January 2021, prepared by Stantec, HDR, Dewberry. The East Fork Sand Creek is tributary to Sand Creek which ultimately drains to Fountain Creek. Stormwater from the site is released from the off-site existing private full spectrum detention pond and runs west along the public roadside ditch on the north side of US Highway 24 Off Ramp under Peterson Road and ultimately to East Fork Sand Creek. Per the FDR for Cimmaron Hills Mixed Use Filing No. 1, the full spectrum detention pond releases flows from the site at or below historic rates and the downstream East Fork Sand Creek is stable with no recommendations for improvement in the DBPS. There are no anticipated negative impacts to surrounding and downstream developments, stormwater infrastructure, or drainageways. Therefore, no downstream infrastructure or detention alterations are required.

e. Grading and Erosion Control Plan

Due to the project disturbance area, a separate Grading and Erosion Control plan will be required. The Grading and Erosion Control Plan will be submitted for review and approval with subsequent submittals of this FDR.

f. Four Step Method to Minimize Adverse Impacts of Urbanization

Step 1 – Reducing Runoff Volumes: Roof drains and sidewalks will route across landscaped areas whenever possible to slow runoff and promote infiltration prior to entering landscape drains and the main storm sewer system. Landscape areas are stabilized with permanent seeding for lawn areas, shrubbery and trees, and ornamental landscaping. Landscape buffers are provided along the border of the property to provide runoff reduction to areas of the site that flow directly off-site.

Step 2 – Treat and slowly release the WQCV: The runoff from the site is treated through the capture and slow WQCV via the existing private off-site full spectrum detention pond.

Use pond identifier and provide project number pond is to be constructed under

A table summarizing the water quality treatment within the site is provided below:

Water Quality Treatment Summary Table

Basin ID	Total Area (ac)	Total Proposed Disturbed Area (ac)	Area Trib to Subdivision Pond (ac)	Disturbed Area Excluded from WQ per ECM App I.7.1.C.1 (ac)	Disturbed Area Excluded from WQ per ECM App I.7.1.B.7 (ac)
A1.1	0.31	0.31	0.31		
A1.2	0.07	0.07	0.07		
A2	0.49	0.49	0.49		
A3	0.28	0.28	0.28		
A4.1	0.49	0.49	0.49		
A4.2	0.17	0.17	0.17		
A5.1	0.56	0.56	0.56		
A5.2	0.66	0.66	0.66		
A6.1	0.32	0.32	0.32		

A6.2	0.46	0.46	0.46		
A7	0.40	0.40	0.40		
AR1	0.16	0.16	0.16		
AR2	0.10	0.10	0.10		
AR3	0.12	0.12	0.12		
AR4	0.16	0.16	0.16		
AR5	0.17	0.17	0.17		
AR6	0.16	0.16	0.16		
B1.1	0.96	0.96	0.96		
B1.2	0.71	0.71	0.71		
B2.1	0.31	0.31	0.31		
B2.2	0.25	0.25	0.25		
B3.1	0.41	0.41	0.41		
B3.2	0.61	0.61	0.61		
B4	0.42	0.42	0.42		
B5	0.57	0.57	0.57		
B6	0.70	0.70	0.70		
B7	0.88	0.88	0.88		
BL1	0.36	0.36	0.36		
BR1	0.10	0.10	0.10		
BR2	0.12	0.12	0.12		
BR3	0.16	0.16	0.16		
BR4	0.17	0.17	0.17		
BR5	0.17	0.17	0.17		
BR6	0.17	0.17	0.17		
BR7	0.16	0.16	0.16		
BR8	0.33	0.33	0.33		
BR9	0.17	0.17	0.17		
BR10	0.33	0.33	0.33		
O1	0.18	0.18	0.00		0.18
O2	0.20	0.20	0.20		
O3	0.14	0.14	0.14		
O4	0.48	0.48	0.48		
P1	0.17	0.17	0.17		
Total	14.31	14.31	14.14	0.00	0.18

Min Required Area to Receive WQ (ac)	Total Proposed Disturbed Area (ac)	Total Proposed Treated Area (ac)	Total Proposed Disturbed Area Excluded from WQ (ac)	Net Treatment (ac)
14.14	14.31	14.14	0.18	0.00

Step 3 – Stabilize stream channels: On-site stormwater is released by the existing off-site private full spectrum detention pond into the public roadside ditch at the south of the site at rates less than or equal to historical rates. The development decreases runoff released directly off-site into the public roadside ditch at the south of the site compared to historical rates, which helps to stabilize the channelized flow.

All new and redevelopment projects are required to construct or participate in the funding of channel stabilization measures. Drainage basin fees were paid at the time of platting to go towards channel stabilization within the drainage basin, therefore there are no public drainageway improvements required or proposed as a part of this development.

Step 4 – Consider the need for source controls: No industrial uses are proposed within this development and therefore no industrial source controls are proposed. The developed area is not anticipated to have uses that would require commercial source controls such as a grease trap/interceptor at this time. Should the uses of that building change, the appropriate source controls will be implemented to meet code requirements.

g. Drainage and Bridge Fees

For the Sand Creek Drainage Basin, the 2026 Drainage Fee is $28,160 per impervious acre and the 2026 Bridge Fee is $11,518 per impervious acre. The fees are to be paid at the time of final plat recording.

$28,160 x 4.82 Impervious Acres = $135,731.20 (2026 Drainage Fee)

$11,518 x 4.82 Impervious Acres = $55,516.76 (2026 Bridge Fee)

Include cost estimate for pond modification. Value should match FAE.

h. Hydraulic Grade Line Calculations

Hydraulic Grade Line analysis for the storm network is presented in Appendix C.

V. Summary

The Hillpointe Apartments at Peterson development remains consistent with drainage patterns and site area imperviousness used for calculations and design in the *Cimarron Hills Southeast Filing No. 1 Final Drainage Report* by Matrix Design Group. The proposed development will not adversely affect downstream stormwater infrastructure or surrounding developments. This report meets the latest El Paso County Drainage criteria and is in accordance with previous reports. This Final Drainage Report presents the amended site layout and the resultant drainage changes with design solutions for these revisions.

VI. Variances

The variances requested for thi

- Variance #1:

County does not do Variances. However, only deviations provided were for road design, so this section can be removed or next page statement can be revised to state that there are no deviations being requested for storm/drainage related items.

HRG Response:
Section removed.

Indicate who will be maintaining storm system

HRG Response:
Added to Section IV.c

A Variance Letter describing these variance requests and their justification with appendix items such as calculations and exhibits is to be approved by El Paso County as a part of the Site Development Plan and Final Plat applications.

VII. Drawings

Please refer to the appendices for vicinity and drainage basin maps.

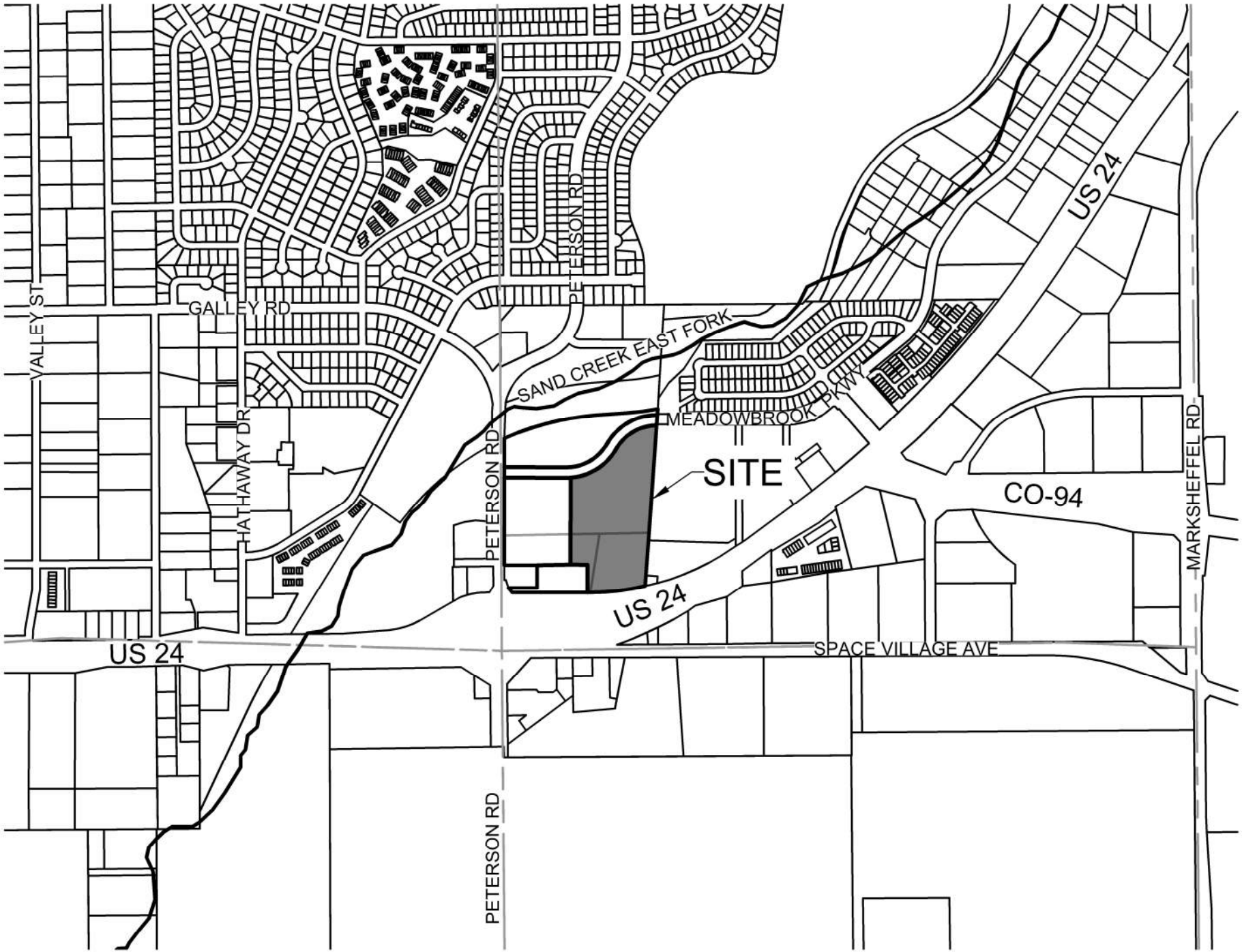
VIII. References

1. El Paso County – Drainage Criteria Manual Volume 1, Revised October 2018.
2. El Paso County – Drainage Criteria Manual Volume 2, Revised October 2018.
3. Urban Storm Drainage Criteria Manual, Urban Drainage Flood Control District, January 2018.
4. Cimmaron Hills Southeast Mixed Use Filing No. 1 Final Drainage Report, Matrix Design Group, September 2025 (SF2420)
5. Sand Creek Drainage Basin Planning Study Final Report, Stantec, HDR, Dewberry, January 2021

APPENDIX A – VICINITY MAP, SOIL MAP, FEMA MAP

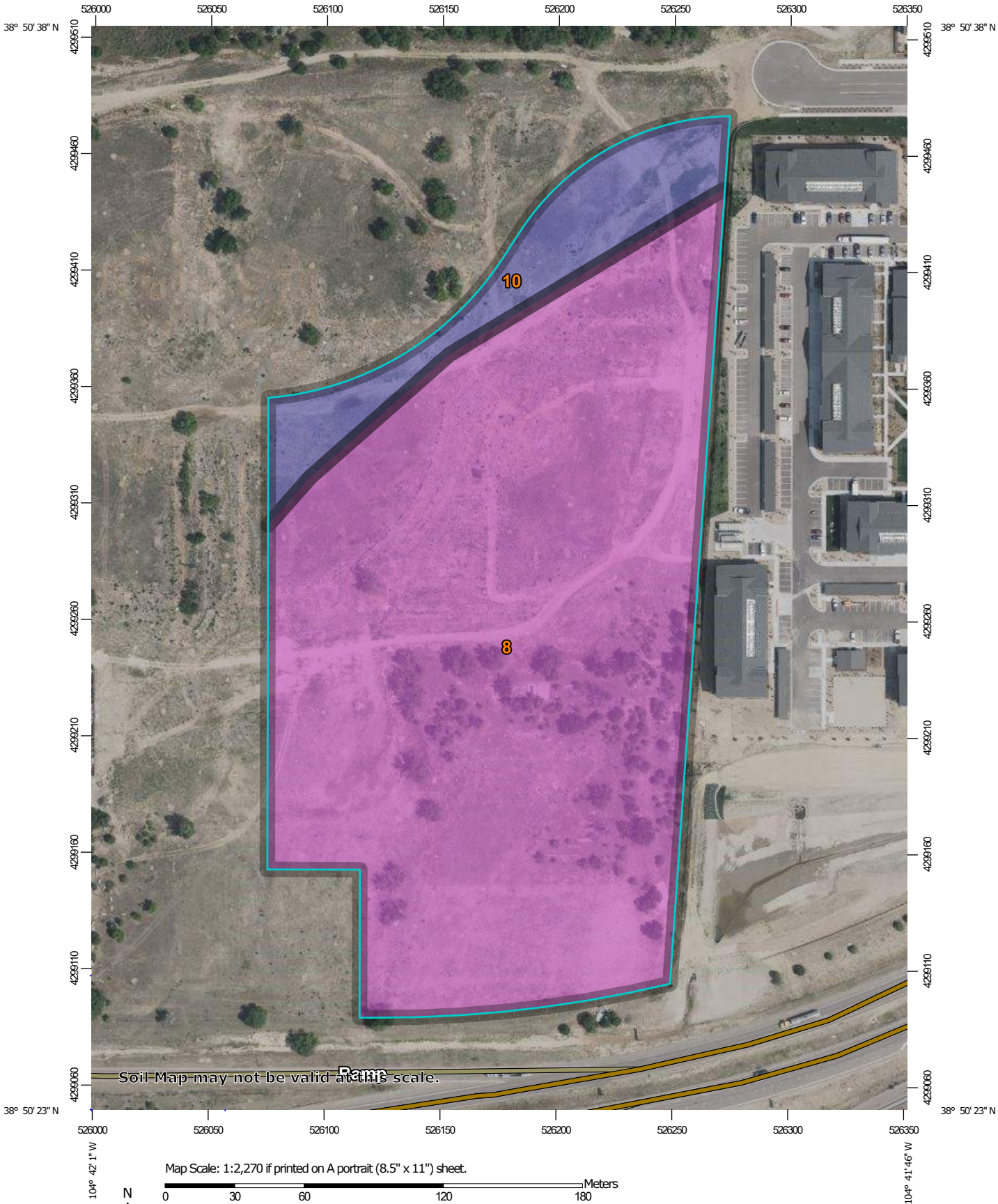
VICINITY MAP

HILLPOINTE APARTMENTS AT PETERSON



SCALE: 1" = 1000'

Hydrologic Soil Group—El Paso County Area, Colorado
(Hillpointe Apartments at Peterson)



Map Scale: 1:2,270 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 30 60 120 180

Feet
0 100 200 400 600

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

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

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

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

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

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 23, 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: Jul 23, 2024—Aug 4, 2024

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
8	Blakeland loamy sand, 1 to 9 percent slopes	A	12.4	88.3%
10	Blendon sandy loam, 0 to 3 percent slopes	B	1.6	11.7%
Totals for Area of Interest			**14.1**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX B – HYDROLOGIC CALCULATIONS

HRGreen	**HILLPOINTE AT PETERSON**	**Calc'd by:**	**CMD**
	EXISTING CONDITIONS	**Checked by:**	**RDL**
	EL PASO COUNTY, CO	**Date:**	**3/9/2026**

SUMMARY RUNOFF TABLE

BASIN	AREA (ac)	% IMPERVIOUS	Q_5 (cfs)	Q_{100} (cfs)
A	0.30	2	0.11	0.71
B	13.79	2	3.89	25.65
OS	0.87	2	0.28	1.87

DESIGN POINT SUMMARY TABLE

DESIGN POINT	CONTRIBUTING BASINS	ΣQ_5 (cfs)	ΣQ_{100} (cfs)
1	A	0.11	0.71
2	B	3.89	25.65
3	OS	0.28	1.87

HILLPOINTE AT PETERSON
EXISTING CONDITIONS
EL PASO COUNTY, CO

Calc'd by: CMD

Checked by: RDL

Date: 3/9/2026

SOIL TYPE: HSG A&B

COMPOSITE 'C' FACTORS

	LAND USE TYPE									TOTAL	COMPOSITE IMPERVIOUSNESS & C FACTOR		
	Roofs			Drive and Walks			Historic Flow Analysis--Greenbelts,						
	%I	C_5	C_{100}	%I	C_5	C_{100}	%I	C_5	C_{100}				
	90	0.73	0.81	100	0.90	0.96	2	0.09	0.36				
BASIN	ACRES			ACRES			ACRES			ACRES	%I	C_5	C_{100}
A	0.00			0.00			0.30			0.30	2.00	0.09	0.36
B	0.00			0.03			13.76			13.79	2.24	0.09	0.36
OS	0.00			0.00			0.87			0.87	2.00	0.09	0.36
ON-SITE	0.00			0.03			14.06			14.09	2.24	0.09	0.36
OFF-SITE	0.00			0.00			0.87			0.87	2.00	0.09	0.36
TOTAL	0.00			0.03			14.93			14.96	2.22	0.09	0.36

HRGreen	**HILLPOINTE AT PETERSON**	**Calc'd by:**	**CMD**
	EXISTING CONDITIONS	**Checked by:**	**RDL**
	EL PASO COUNTY, CO	**Date:**	**3/9/2026**

TIME OF CONCENTRATION

BASIN DATA			OVERLAND TIME (T_i)			TRAVEL TIME (T_t)					TOTAL		
DESIGNATION	C_5	AREA (ac)	LENGTH (ft)	SLOPE %	t_i (min)	C_V	LENGTH (ft)	SLOPE %	V (ft/s)	t_t (min)	t_c (min)	*tc=(L/180)+10*	**Design tc**
												tc max	*tc design (min)*
A	0.09	0.30	150	2.1	17.6	7	150	2.1	1.0	2.4	20.0	11.7	11.7
B	0.09	13.79	300	1.7	26.9	7	1558	1.7	0.9	28.6	55.6	20.3	20.3
OS	0.09	0.87	300	1.5	28.3	7	532	1.5	0.8	10.5	38.8	14.6	14.6

$$t_i = \frac{0.395(1.1 - C_5)\sqrt{L}}{S^{0.33}} \qquad V = C_v S_w^{0.5}$$

Table 6-7. Conveyance Coefficient, C_v

Type of Land Surface	C_v
Heavy meadow	2.5
Tillage/field	5
Riprap (not buried)*	6.5
Short pasture and lawns	7
Nearly bare ground	10
Grassed waterway	15
Paved areas and shallow paved swales	20

*For buried riprap, select C_v value based on type of vegetative cover.

Overland length seems long based on size of basin. Please verify

HRG Response: Adjusted.

HRGreen

HILLPOINTE AT PETERSON
EXISTING CONDITIONS
DESIGN STORM: 5-YEAR

Calc'd by:	CMD
Checked by:	RDL
Date:	3/9/2026

			DIRECT RUNOFF						TOTAL RUNOFF				STREET			PIPE				TRAVEL TIME			REMARKS
STRUCTURE	DESIGN POINT	BASIN ID	AREA (ac)	C_5	t_c (min)	C_5*A (ac)	I (in./ hr.)	Q (cfs)	t_c (min)	C_5*A (ac)	I (in./ hr.)	Q (cfs)	Q_{street} (cfs)	C_5*A (ac)	SLOPE %	Q_{PIPE} (cfs)	C_5*A (ac)	SLOPE %	PIPE SIZE (ft)	LENGTH (FT)	VEL. (FPS)	TRAVEL TIME (min	
	1	A	0.30	0.09	11.7	0.03	3.90	0.11															
	2	B	13.79	0.09	20.3	1.27	3.07	3.89															
	3	OS	0.87	0.09	14.6	0.08	3.56	0.28															

HRGreen

HILLPOINTE AT PETERSON

EXISTING CONDITIONS

DESIGN STORM: 100-YEAR

Calc'd by:	CMD
Checked by:	RDL
Date:	3/9/2026

			DIRECT RUNOFF						TOTAL RUNOFF				STREET			PIPE				TRAVEL TIME			REMARKS
STRUCTURE	DESIGN POINT	BASIN ID	AREA (ac)	C_{100}	t_c (min)	C_{100}*A (ac)	I (in./ hr.)	Q (cfs)	t_c (min)	C_{100}*A (ac)	I (in./ hr.)	Q (cfs)	Q_{street} (cfs)	C_{100}*A (ac)	SLOPE %	Q_{PIPE} (cfs)	C_{100}*A (ac)	SLOPE %	PIPE SIZE (ft)	LENGTH (ft)	VEL. (ft/s)	TRAVEL TIME (min)	
	1	A	0.30	0.36	11.7	0.11	6.54	0.71															
	2	B	13.79	0.36	20.3	4.98	5.15	25.65															
	3	OS	0.87	0.36	14.6	0.31	5.97	1.87															

HRGreen	HILLPOINTE APARTMENTS AT PETERSON	Calc'd by:	CMD
	PROPOSED CONDITIONS	Checked by:	RDL
	EL PASO COUNTY, CO	Date:	4/21/2026

SUMMARY RUNOFF TABLE

BASIN	AREA (ac)	% IMPERVIOUS	Q_5 (cfs)	Q_{100} (cfs)
A1.1	0.31	95.4	1.37	2.49
A1.2	0.07	72.6	0.22	0.43
A2	0.49	71.7	1.52	3.00
A3	0.28	69.7	0.96	1.92
A4.1	0.49	71.8	1.68	3.33
A4.2	0.17	81.9	0.67	1.27
A5.1	0.56	73.4	1.81	3.56
A5.2	0.66	70.2	2.14	4.28
A6.1	0.32	51.5	0.81	1.81
A6.2	0.46	77.3	1.52	2.95
A7	0.40	71.4	1.20	2.37
AR1	0.16	90.0	0.59	1.10
AR2	0.10	90.0	0.39	0.72
AR3	0.12	90.0	0.44	0.83
AR4	0.16	90.0	0.59	1.10
AR5	0.17	90.0	0.65	1.21
AR6	0.16	90.0	0.59	1.10
B1.1	0.96	74.8	2.98	5.83
B1.2	0.71	69.3	2.12	4.24
B2.1	0.31	76.4	1.15	2.22
B2.2	0.25	77.7	0.91	1.76
B3.1	0.41	71.0	1.35	2.68
B3.2	0.61	70.6	2.01	4.00
B4	0.42	62.1	1.28	2.65
B5	0.57	51.6	1.33	2.95
B6	0.70	75.2	2.26	4.42
B7	0.88	30.2	1.12	3.08
BL1	0.36	2.0	0.16	0.99

DESIGN POINT SUMMARY TABLE

DESIGN POINT	CONTRIBUTING BASINS	ΣQ_5 (cfs)	ΣQ_{100} (cfs)
1	A1.1	1.37	2.49
2	A1.2	0.22	0.43
3	A2, AR1	2.11	4.10
4	A3	0.96	1.92
5	A4.1, A4.2	2.35	4.60
6	A4.2	0.67	1.27
7	A5.1	1.81	3.56
8	A5.2	2.14	4.28
9	A6.1	0.81	1.81
10	A6.2	1.52	2.95
11	A7	1.20	2.37
12	B1.1	2.98	5.83
13	B1.2	2.12	4.24
14	B2.1	1.15	2.22
15	B2.2	0.91	1.76
16	B3.1, BR5	2.00	3.89
17	B3.2	2.01	4.00
18	B4	1.28	2.65
19	B5, BR8	2.57	5.27
20	B6, BR9	2.91	5.63
21	B7, BR10	2.37	5.39

BR1	0.10	90.0	0.38	0.72
BR2	0.12	90.0	0.44	0.83
BR3	0.16	90.0	0.59	1.10
BR4	0.17	90.0	0.65	1.21
BR5	0.17	90.0	0.65	1.21
BR6	0.17	90.0	0.65	1.21
BR7	0.16	90.0	0.59	1.10
BR8	0.33	90.0	1.24	2.31
BR9	0.17	90.0	0.65	1.21
BR10	0.33	90.0	1.24	2.31
O1	0.18	0.0	0.07	0.54
O2	0.20	0.0	0.08	0.61
O3	0.14	0.0	0.06	0.43
O4	0.48	10.1	0.39	1.66
P1	0.17	0.0	0.06	0.47

HRGreen	**HILLPOINTE AT PETERSON**	**Calc'd by:**	**CMD**
	PROPOSED CONDITIONS	**Checked by:**	**RDL**
	EL PASO COUNTY, CO	**Date:**	**4/21/2026**

SOIL TYPE: HSG A&B

HRG Response:
Revised to Landscape Area at 20% to match landscape plan per MHFD water-wise landscaping memorandum.

COMPOSITE 'C' FACTORS

	LAND USE TYPE											
	Roofs			Drive and Walks			Lawns			TOTAL	IMPERVIOUSNESS & C FACTOR		
	%I	C_5	C_{100}	%I	C_5	C_{100}	%I	C_5	C_{100}				
	90	0.73	0.81	100	0.90	0.96	0	0.08	0.35				
BASIN	ACRES			ACRES			ACRES			ACRES	%I	C_5	C_{100}
A1.1	0.00			0.29			0.01			0.31	95.4	0.86	0.93
A1.2	0.00			0.05			0.02			0.07	72.6	0.68	0.79
A2	0.00			0.35			0.14			0.49	71.7	0.67	0.79
A3	0.00			0.20			0.09			0.28	69.7	0.65	0.78
A4.1	0.00			0.35			0.14			0.49	71.8	0.67	0.79
A4.2	0.00			0.14			0.03			0.17	81.9	0.75	0.85
A5.1	0.04			0.38			0.15			0.56	73.4	0.68	0.79
A5.2	0.06			0.41			0.19			0.66	70.2	0.65	0.77
A6.1	0.07			0.10			0.15			0.32	51.5	0.48	0.64
A6.2	0.04			0.32			0.10			0.46	77.3	0.71	0.81
A7	0.00			0.29			0.12			0.40	71.4	0.67	0.79
AR1	0.16			0.00			0.00			0.16	90.0	0.73	0.81
AR2	0.10			0.00			0.00			0.10	90.0	0.73	0.81
AR3	0.12			0.00			0.00			0.12	90.0	0.73	0.81
AR4	0.16			0.00			0.00			0.16	90.0	0.73	0.81
AR5	0.17			0.00			0.00			0.17	90.0	0.73	0.81
AR6	0.16			0.00			0.00			0.16	90.0	0.73	0.81
B1.1	0.05			0.68			0.24			0.96	74.8	0.69	0.80
B1.2	0.04			0.46			0.22			0.71	69.3	0.64	0.77
B2.1	0.00			0.24			0.07			0.31	76.4	0.71	0.82
B2.2	0.00			0.20			0.06			0.25	77.7	0.72	0.82
B3.1	0.00			0.29			0.12			0.41	71.0	0.66	0.78
B3.2	0.00			0.43			0.18			0.61	70.6	0.66	0.78
B4	0.00			0.26			0.16			0.42	62.1	0.59	0.73
B5	0.00			0.30			0.28			0.57	51.6	0.50	0.66

COMPOSITE 'C' FACTORS

BASIN	LAND USE TYPE									TOTAL	COMPOSITE IMPERVIOUSNESS & C FACTOR		
	Roofs			Drive and Walks			Lawns						
	%I	C_5	C_{100}	%I	C_5	C_{100}	%I	C_5	C_{100}				
	90	0.73	0.81	100	0.90	0.96	0	0.08	0.35				
	ACRES			ACRES			ACRES			ACRES	%I	C_5	C_{100}
B6	0.04			0.49			0.17			0.70	75.2	0.69	0.80
B7	0.00			0.26			0.61			0.88	30.2	0.33	0.53
BL1	0.00			0.01			0.36			0.36	2.0	0.10	0.36
BR1	0.10			0.00			0.00			0.10	90.0	0.73	0.81
BR2	0.12			0.00			0.00			0.12	90.0	0.73	0.81
BR3	0.16			0.00			0.00			0.16	90.0	0.73	0.81
BR4	0.17			0.00			0.00			0.17	90.0	0.73	0.81
BR5	0.17			0.00			0.00			0.17	90.0	0.73	0.81
BR6	0.17			0.00			0.00			0.17	90.0	0.73	0.81
BR7	0.16			0.00			0.00			0.16	90.0	0.73	0.81
BR8	0.33			0.00			0.00			0.33	90.0	0.73	0.81
BR9	0.17			0.00			0.00			0.17	90.0	0.73	0.81
BR10	0.33			0.00			0.00			0.33	90.0	0.73	0.81
O1	0.00			0.00			0.18			0.18	0.0	0.08	0.35
O2	0.00			0.00			0.20			0.20	0.0	0.08	0.35
O3	0.00			0.00			0.14			0.14	0.0	0.08	0.35
O4	0.00			0.05			0.43			0.48	10.1	0.16	0.41
P1	0.00			0.00			0.17			0.17	0.0	0.08	0.35
ON-SITE	3.07			6.55			4.52			14.14	65.9	0.60	0.73
OFF-SITE	0.00			0.00			0.18			0.18	0.0	0.08	0.35
TOTAL	3.07			6.55			4.70			14.31	65.0	0.59	0.73

HRGreen	HILLPOINTE AT PETERSON	Calc'd by:	CMD
	PROPOSED CONDITIONS	Checked by:	RDL
	EL PASO COUNTY, CO	Date:	4/21/2026

TIME OF CONCENTRATION

BASIN DATA			OVERLAND TIME (T_i)			TRAVEL TIME (T_t)					TOTAL	tc=(L/180)+10	Design tc
DESIGNATION	C_5	AREA (ac)	LENGTH (ft)	SLOPE %	t_i (min)	C_V	LENGTH (ft)	SLOPE %	V (ft/s)	t_t (min)	t_c (min)	tc max	tc design (min)
A1.1	0.86	0.31	15	2.0	1.3	20	365	1.3	2.3	2.7	5.0	12.1	5.0
A1.2	0.68	0.07	28	2.0	3.3	20	304	1.0	2.0	2.6	5.8	11.8	5.8
A2	0.67	0.49	28	2.0	3.3	20	417	0.9	1.9	3.7	7.1	12.5	7.1
A3	0.65	0.28	20	5.0	2.1	20	285	1.3	2.3	2.1	5.0	11.7	5.0
A4.1	0.67	0.49	18	2.0	2.7	20	179	1.3	2.2	1.3	5.0	11.1	5.0
A4.2	0.75	0.17	54	2.0	3.7	20	179	1.1	2.1	1.4	5.2	11.3	5.2
A5.1	0.68	0.56	50	2.0	4.4	20	327	1.6	2.5	2.2	6.5	12.1	6.5
A5.2	0.65	0.66	42	2.0	4.3	20	167	1.3	2.3	1.2	5.5	11.2	5.5
A6.1	0.48	0.32	24	5.0	3.2	20	148	2.3	3.0	0.8	5.0	11.0	5.0
A6.2	0.71	0.46	42	2.0	3.7	20	447	1.5	2.4	3.1	6.8	12.7	6.8
A7	0.67	0.40	72	2.0	5.4	20	475	2.1	2.9	2.8	8.1	13.0	8.1
AR1	0.73	0.16	28	45.8	1.0	20	50	45.8	13.5	0.1	5.0	10.4	5.0
AR2	0.73	0.10	28	45.8	1.0	20	50	45.8	13.5	0.1	5.0	10.4	5.0
AR3	0.73	0.12	28	45.8	1.0	20	50	45.8	13.5	0.1	5.0	10.4	5.0
AR4	0.73	0.16	28	45.8	1.0	20	50	45.8	13.5	0.1	5.0	10.4	5.0
AR5	0.73	0.17	28	45.8	1.0	20	50	45.8	13.5	0.1	5.0	10.4	5.0
AR6	0.73	0.16	28	45.8	1.0	20	50	45.8	13.5	0.1	5.0	10.4	5.0
B1.1	0.69	0.96	44	12.0	2.2	20	824	1.5	2.4	5.6	7.8	14.8	7.8
B1.2	0.64	0.71	30	2.0	3.6	20	451	1.1	2.1	3.6	7.2	12.7	7.2
B2.1	0.71	0.31	30	2.0	3.1	20	301	1.8	2.6	1.9	5.0	11.8	5.0
B2.2	0.72	0.25	44	2.0	3.7	20	248	1.3	2.3	1.8	5.5	11.6	5.5
B3.1	0.66	0.41	32	2.0	3.6	20	281	1.3	2.2	2.1	5.7	11.7	5.7
B3.2	0.66	0.61	32	2.0	3.6	20	269	1.2	2.2	2.1	5.7	11.7	5.7
B4	0.59	0.42	14	2.0	2.8	20	300	1.4	2.3	2.1	5.0	11.7	5.0
B5	0.50	0.57	37	2.0	5.3	20	224	1.0	2.0	1.9	7.2	11.5	7.2
B6	0.69	0.70	44	2.0	3.9	20	375	1.2	2.2	2.9	6.8	12.3	6.8
B7	0.33	0.88	95	3.0	9.6	20	403	3.1	3.5	1.9	11.5	12.8	11.5
BL1	0.10	0.36	48	10.0	5.9	20	280	1.5	2.4	1.9	7.9	11.8	7.9
BR1	0.73	0.10	28	45.8	1.0	20	50	45.8	13.5	0.1	5.0	10.4	5.0
BR2	0.73	0.12	28	45.8	1.0	20	50	45.8	13.5	0.1	5.0	10.4	5.0
BR3	0.73	0.16	28	45.8	1.0	20	50	45.8	13.5	0.1	5.0	10.4	5.0
BR4	0.73	0.17	28	45.8	1.0	20	50	45.8	13.5	0.1	5.0	10.4	5.0
BR5	0.73	0.17	28	45.8	1.0	20	50	45.8	13.5	0.1	5.0	10.4	5.0
BR6	0.73	0.17	28	45.8	1.0	20	50	45.8	13.5	0.1	5.0	10.4	5.0

HRGreen	**HILLPOINTE AT PETERSON**	**Calc'd by:**	**CMD**
	PROPOSED CONDITIONS	**Checked by:**	**RDL**
	EL PASO COUNTY, CO	**Date:**	**4/21/2026**

TIME OF CONCENTRATION

BASIN DATA			OVERLAND TIME (T_i)			TRAVEL TIME (T_t)					TOTAL	*tc=(L/180)+10*	Design tc
DESIGNATION	C_5	AREA (ac)	LENGTH (ft)	SLOPE %	t_i (min)	C_V	LENGTH (ft)	SLOPE %	V (ft/s)	t_t (min)	t_c (min)	*tc max*	*tc design (min)*
BR7	0.73	0.16	28	45.8	1.0	20	50	45.8	13.5	0.1	5.0	10.4	5.0
BR8	0.73	0.33	28	45.8	1.0	20	50	45.8	13.5	0.1	5.0	10.4	5.0
BR9	0.73	0.17	28	45.8	1.0	20	50	45.8	13.5	0.1	5.0	10.4	5.0
BR10	0.73	0.33	28	45.8	1.0	20	50	45.8	13.5	0.1	5.0	10.4	5.0
O1	0.08	0.18	27	10.0	4.5	20	27	10.0	6.3	0.1	5.0	10.3	5.0
O2	0.08	0.20	26	33.3	3.0	20	26	33.3	11.5	0.0	5.0	10.3	5.0
O3	0.08	0.14	46	15.0	5.1	20	46	15.0	7.7	0.1	5.2	10.5	5.2
O4	0.16	0.48	37	7.0	5.5	20	37	7.0	5.3	0.1	5.6	10.4	5.6
P1	0.08	0.17	32	5.0	6.2	20	32	5.0	4.5	0.1	6.3	10.4	6.3

$$t_i = \frac{0.395(1.1 - C_5)\sqrt{L}}{S^{0.33}} \qquad V = C_v S_w^{0.5}$$

Table 6-7. Conveyance Coefficient, C_v

Type of Land Surface	C_v
Heavy meadow	2.5
Tillage/field	5
Riprap (not buried)*	6.5
Short pasture and lawns	7
Nearly bare ground	10
Grassed waterway	15
Paved areas and shallow paved swales	20

*For buried riprap, select C_v value based on type of vegetative cover.

HRGreen

HILLPOINTE AT PETERSON
PROPOSED CONDITIONS
DESIGN STORM: 5-YEAR

Calc'd by:	CMD
Checked by:	RDL
Date:	4/21/2026

			DIRECT RUNOFF						TOTAL RUNOFF				STREET			PIPE				TRAVEL TIME			REMARKS
STRUCTURE	DESIGN POINT	BASIN ID	AREA (ac)	C_5	t_c (min)	C_5*A (ac)	I (in./ hr.)	Q (cfs)	t_c (min)	C_5*A (ac)	I (in./ hr.)	Q (cfs)	Q_{street} (cfs)	C_5*A (ac)	SLOPE %	Q_{PIPE} (cfs)	C_5*A (ac)	SLOPE %	PIPE SIZE (ft)	LENGTH (ft)	VEL. (ft/s)	TRAVEL TIME (min)	
	1	A1.1	0.31	0.86	5.0	0.27	5.17	1.37															
	2	A1.2	0.07	0.68	5.8	0.04	4.93	0.22															
		A2	0.49	0.67	7.1	0.33	4.65	1.52															
	3 4	A3	0.28	0.65	5.0	0.19	5.17	0.96				2.11											COMBINED FLOW TO INLET AT DESIGN POINT LOCATION
		A4.1	0.49	0.67	5.0	0.33	5.17	1.68															
	6	A4.2	0.17	0.75	5.2	0.13	5.12	0.67															
	5 7	A5.1	0.56	0.68	6.5	0.38	4.76	1.81				2.94											COMBINED FLOW TO INLET AT DESIGN POINT LOCATION
	8	A5.2	0.66	0.65	5.5	0.43	5.04	2.14															
	9	A6.1	0.32	0.48	5.0	0.16	5.17	0.81															
	10	A6.2	0.46	0.71	6.8	0.32	4.71	1.52															
	11	A7	0.40	0.67	8.1	0.27	4.44	1.20															
		AR1	0.16	0.73	5.0	0.11	5.17	0.59															
		AR2	0.10	0.73	5.0	0.08	5.17	0.39															
		AR3	0.12	0.73	5.0	0.09	5.17	0.44															
		AR4	0.16	0.73	5.0	0.11	5.17	0.59															
		AR5	0.17	0.73	5.0	0.13	5.17	0.65															
		AR6	0.16	0.73	5.0	0.11	5.17	0.59															
	12	B1.1	0.96	0.69	7.8	0.66	4.50	2.98															
	13	B1.2	0.71	0.64	7.2	0.46	4.61	2.12															
	14	B2.1	0.31	0.71	5.0	0.22	5.16	1.15															
	15	B2.2	0.25	0.72	5.5	0.18	5.02	0.91															
		B3.1	0.41	0.66	5.7	0.27	4.97	1.35															
	16 17	B3.2	0.61	0.66	5.7	0.40	4.97	2.01				2.00											COMBINED FLOW TO INLET AT DESIGN POINT LOCATION
	18	B4	0.42	0.59	5.0	0.25	5.17	1.28															
		B5	0.57	0.50	7.2	0.29	4.63	1.33															
	19	B6	0.70	0.69	6.8	0.48	4.70	2.26				2.57											COMBINED FLOW TO INLET AT DESIGN POINT LOCATION
	20	B7	0.88	0.33	11.5	0.29	3.92	1.12				2.91											COMBINED FLOW TO INLET AT DESIGN POINT LOCATION
	21											2.37											COMBINED FLOW TO INLET AT DESIGN POINT LOCATION

HRGreen

HILLPOINTE AT PETERSON
PROPOSED CONDITIONS
DESIGN STORM: 5-YEAR

Calc'd by:	CMD
Checked by:	RDL
Date:	4/21/2026

			DIRECT RUNOFF						TOTAL RUNOFF				STREET			PIPE				TRAVEL TIME			REMARKS
STRUCTURE	DESIGN POINT	BASIN ID	AREA (ac)	C_5	t_c (min)	C_5*A (ac)	I (in./ hr.)	Q (cfs)	t_c (min)	C_5*A (ac)	I (in./ hr.)	Q (cfs)	Q_{street} (cfs)	C_5*A (ac)	SLOPE %	Q_{PIPE} (cfs)	C_5*A (ac)	SLOPE %	PIPE SIZE (ft)	LENGTH (ft)	VEL. (ft/s)	TRAVEL TIME (min)	
		BL1	0.36	0.10	7.9	0.04	4.49	0.16															
		BR1	0.10	0.73	5.0	0.07	5.17	0.38															
		BR2	0.12	0.73	5.0	0.09	5.17	0.44															
		BR3	0.16	0.73	5.0	0.11	5.17	0.59															
		BR4	0.17	0.73	5.0	0.13	5.17	0.65															
		BR5	0.17	0.73	5.0	0.13	5.17	0.65															
		BR6	0.17	0.73	5.0	0.13	5.17	0.65															
		BR7	0.16	0.73	5.0	0.11	5.17	0.59															
		BR8	0.33	0.73	5.0	0.24	5.17	1.24															
		BR9	0.17	0.73	5.0	0.13	5.17	0.65															
		BR10	0.33	0.73	5.0	0.24	5.17	1.24															
		O1	0.18	0.08	5.0	0.01	5.17	0.07															
		O2	0.20	0.08	5.0	0.02	5.17	0.08															
		O3	0.14	0.08	5.2	0.01	5.10	0.06															
		O4	0.48	0.16	5.6	0.08	5.00	0.39															
		P1	0.17	0.08	6.3	0.01	4.82	0.06															

HRGreen

HILLPOINTE AT PETERSON
PROPOSED CONDITIONS
DESIGN STORM: 100-YEAR

Calc'd by:	CMD
Checked by:	RDL
Date:	4/21/2026

			DIRECT RUNOFF						TOTAL RUNOFF				STREET			PIPE				TRAVEL TIME			REMARKS
STRUCTURE	DESIGN POINT	BASIN ID	AREA (ac)	C_{100}	t_c (min)	C_{100}*A (ac)	I (in./ hr.)	Q (cfs)	t_c (min)	C_{100}*A (ac)	I (in./ hr.)	Q (cfs)	Q_{street} (cfs)	C_{100}*A (ac)	SLOPE %	Q_{PIPE} (cfs)	C_{100}*A (ac)	SLOPE %	PIPE SIZE (ft)	LENGTH (ft)	VEL. (ft/s)	TRAVEL TIME (min)	
	1	A1.1	0.31	0.93	5.0	0.29	8.68	2.49															
	2	A1.2	0.07	0.79	5.8	0.05	8.28	0.43															
		A2	0.49	0.79	7.1	0.38	7.81	3.00															
	3 4	A3	0.28	0.78	5.0	0.22	8.68	1.92				4.10											COMBINED FLOW TO INLET AT DESIGN POINT LOCATION
		A4.1	0.49	0.79	5.0	0.38	8.68	3.33															
	6	A4.2	0.17	0.85	5.2	0.15	8.59	1.27															
	5 7	A5.1	0.56	0.79	6.5	0.45	8.00	3.56				5.70											COMBINED FLOW TO INLET AT DESIGN POINT LOCATION
	8	A5.2	0.66	0.77	5.5	0.51	8.46	4.28															
	9	A6.1	0.32	0.64	5.0	0.21	8.68	1.81															
	10	A6.2	0.46	0.81	6.8	0.37	7.91	2.95															
	11	A7	0.40	0.79	8.1	0.32	7.46	2.37															
		AR1	0.16	0.81	5.0	0.13	8.68	1.10															
		AR2	0.10	0.81	5.0	0.08	8.68	0.72															
		AR3	0.12	0.81	5.0	0.10	8.68	0.83															
		AR4	0.16	0.81	5.0	0.13	8.68	1.10															
		AR5	0.17	0.81	5.0	0.14	8.68	1.21															
		AR6	0.16	0.81	5.0	0.13	8.68	1.10															
	12	B1.1	0.96	0.80	7.8	0.77	7.56	5.83															
	13	B1.2	0.71	0.77	7.2	0.55	7.74	4.24															
	14	B2.1	0.31	0.82	5.0	0.26	8.66	2.22															
	15	B2.2	0.25	0.82	5.5	0.21	8.43	1.76															
		B3.1	0.41	0.78	5.7	0.32	8.35	2.68															
	16 17	B3.2	0.61	0.78	5.7	0.48	8.35	4.00				3.89											COMBINED FLOW TO INLET AT DESIGN POINT LOCATION
	18	B4	0.42	0.73	5.0	0.31	8.68	2.65															
		B5	0.57	0.66	7.2	0.38	7.77	2.95															
	19	B6	0.70	0.80	6.8	0.56	7.90	4.42				5.27											COMBINED FLOW TO INLET AT DESIGN POINT LOCATION
	20	B7	0.88	0.53	11.5	0.47	6.58	3.08				5.63											COMBINED FLOW TO INLET AT DESIGN POINT LOCATION

HRGreen

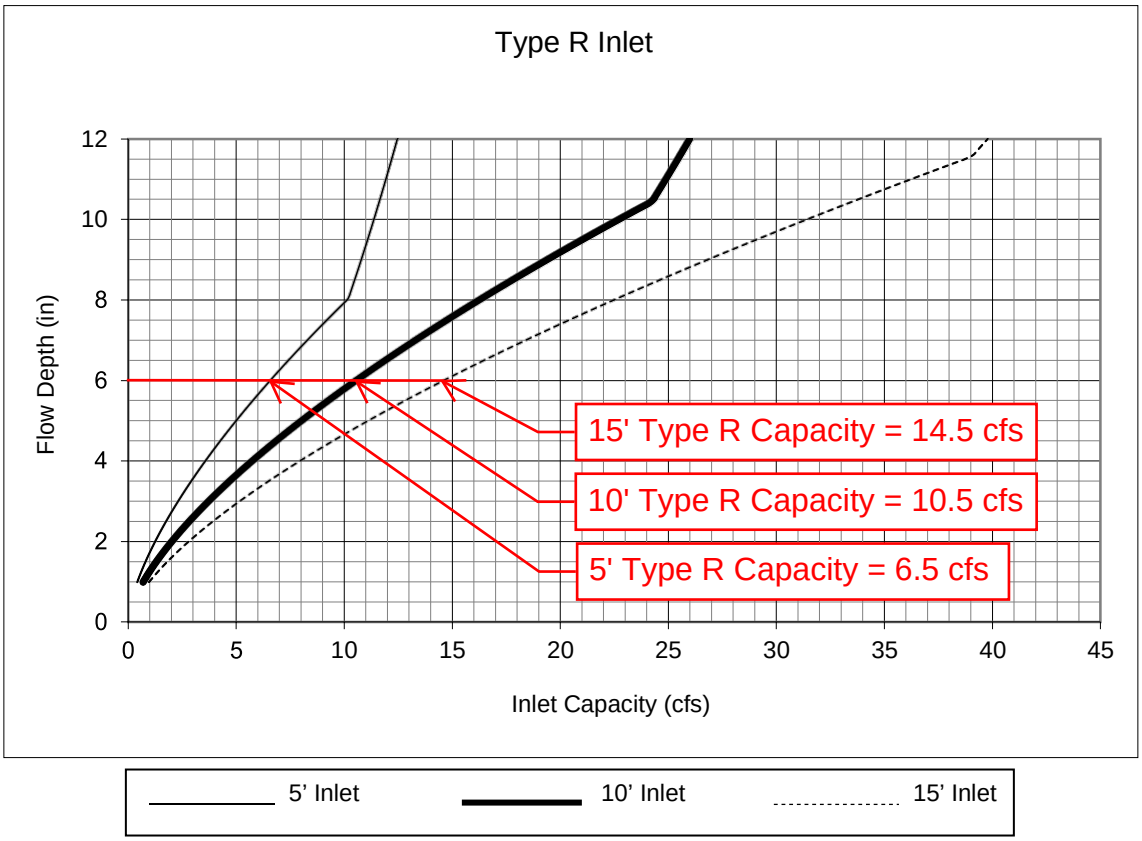
HILLPOINTE AT PETERSON
PROPOSED CONDITIONS
DESIGN STORM: 100-YEAR

Calc'd by:	CMD
Checked by:	RDL
Date:	4/21/2026

			DIRECT RUNOFF						TOTAL RUNOFF				STREET			PIPE				TRAVEL TIME			REMARKS
STRUCTURE	DESIGN POINT	BASIN ID	AREA (ac)	C_{100}	t_c (min)	C_{100}*A (ac)	I (in./ hr.)	Q (cfs)	t_c (min)	C_{100}*A (ac)	I (in./ hr.)	Q (cfs)	Q_{street} (cfs)	C_{100}*A (ac)	SLOPE %	Q_{PIPE} (cfs)	C_{100}*A (ac)	SLOPE %	PIPE SIZE (ft)	LENGTH (ft)	VEL. (ft/s)	TRAVEL TIME (min)	
	21	BL1	0.36	0.36	7.9	0.13	7.54	0.99				5.39											COMBINED FLOW TO INLET AT DESIGN POINT LOCATION
		BR1	0.10	0.81	5.0	0.08	8.68	0.72															
		BR2	0.12	0.81	5.0	0.10	8.68	0.83															
		BR3	0.16	0.81	5.0	0.13	8.68	1.10															
		BR4	0.17	0.81	5.0	0.14	8.68	1.21															
		BR5	0.17	0.81	5.0	0.14	8.68	1.21															
		BR6	0.17	0.81	5.0	0.14	8.68	1.21															
		BR7	0.16	0.81	5.0	0.13	8.68	1.10															
		BR8	0.33	0.81	5.0	0.27	8.68	2.31															
		BR9	0.17	0.81	5.0	0.14	8.68	1.21															
		BR10	0.33	0.81	5.0	0.27	8.68	2.31															
		O1	0.18	0.35	5.0	0.06	8.68	0.54															
		O2	0.20	0.35	5.0	0.07	8.68	0.61															
		O3	0.14	0.35	5.2	0.05	8.56	0.43															
		O4	0.48	0.41	5.6	0.20	8.40	1.66															
		P1	0.17	0.35	6.3	0.06	8.09	0.47															

APPENDIX C – HYDRAULIC CALCULATIONS

Figure 8-11. Inlet Capacity Chart Sump Conditions , Curb Opening (Type R) Inlet



All inlets are sump?

HRG Response:
Yes. Note added.

Notes:

1. The standard inlet parameters must apply to use this chart.

Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Monday, Apr 20 2026

Typical Street Section - Maximum Capacity

User-defined

Invert Elev (ft)	= 6289.59
Slope (%)	= 0.50
N-Value	= 0.013

Calculations

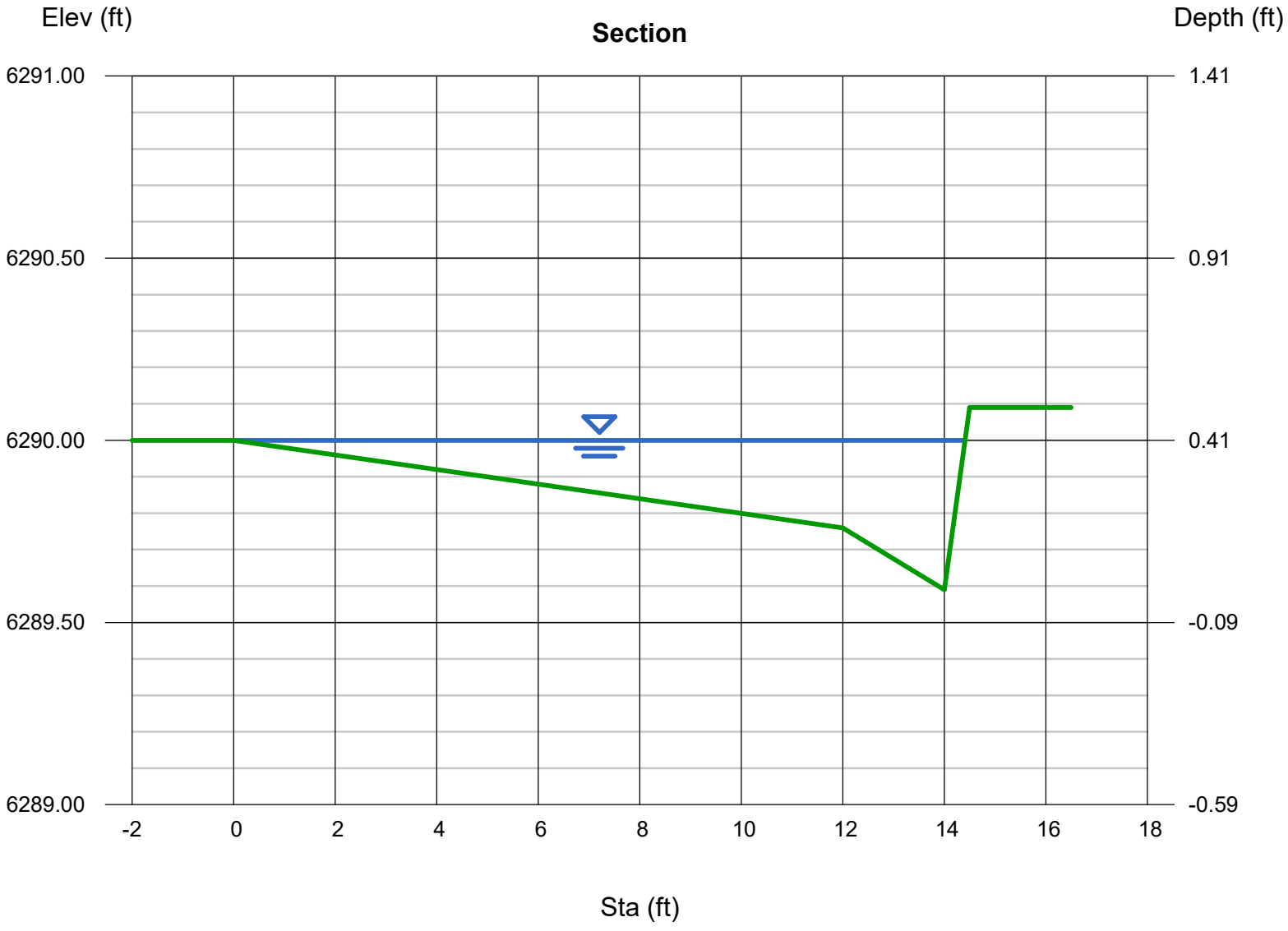
Compute by:	Known Q
Known Q (cfs)	= 4.95

Highlighted

Depth (ft)	= 0.41
Q (cfs)	= 4.950
Area (sqft)	= 2.18
Velocity (ft/s)	= 2.27
Wetted Perim (ft)	= 14.59
Crit Depth, Yc (ft)	= 0.42
Top Width (ft)	= 14.41
EGL (ft)	= 0.49

(Sta, El, n)-(Sta, El, n)...

(0.00, 6290.00)-(12.00, 6289.76, 0.013)-(14.00, 6289.59, 0.013)-(14.50, 6290.09, 0.013)



Add StormCAD Design

[STORMCAD ANALYSIS]

Include MHFD Detention calculations for the final condition of this project (will an updated orifice plate be required?). Also provide forebay and trickle channel calcs.

HRG Response:
Added to Appendix D

APPENDIX D – DRAINAGE MAPS

MATCHLINE: SEE SHEET 2

TRACT B
CIMARRON HILLS SOUTHEA
MIXED USE FILING NO. 1

DP label should be at "bottom" of basin

30' ACCESS EASEMENT
REC. NO. 001001074

30' UTILITY EASEMENT
PER CIMARRON HILLS SOUTHEAST
MIXED USE FILING NO. 1 PLAT

50' UTILITY EASEMENT
PER CIMARRON HILLS SOUTHEAST
MIXED USE FILING NO. 1 FINAL PLAT

TRACT C
CIMARRON HILLS SOUTHEAST
MIXED USE FILING NO. 1

Label

LOT 1
CIMARRON HILLS SOUTHEAST
MIXED USE FILING NO. 1

B
13.79
0.50
0.80

Update coefficient values

OS
0.87
0.50
0.80

10' ELECTRIC EASEMENT
REC. NO. 000751098

Ensure all easements are shown and labeled. Verify with SF2420 plat.

AURA AT CROSSROADS
LOT 1 CROSSROADS
MIXED USE FILING NO. 1
(5408305001)

BLDG 6
FF=6300.52

15' STORM DRAIN EASEMENT
REC. NO. 222714975

10' UTILITY EASEMENT
REC. NO. 000617588

(MATCH EXIST.)

TRACT A
TRACT A CROSSROADS
MIXED USE FILING NO. 1
(5408305002)

20' PUBLIC UTILITY &
DRAINAGE EASEMENT
REC. NO. 222714975

TRACT B CROSSROADS
MIXED USE FILING NO. 1
(5408305003)

U.S. HIGHWAY 24
R.O.W. VARIES

HRG Response:
Design point summary table added to the next page.

Total flows at this design point should include DP 4 & 5 flows

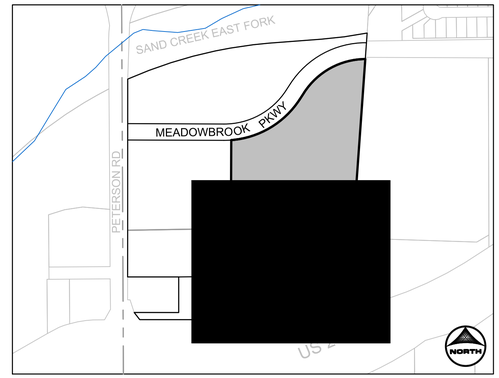
HRG Response:
Culvert labeled. See previous response comments about DP4 flows being unknown and excluded.

Label culvert and include flows

HRG Response:
Design point summary table added to the next page.

Include what flows are from this design point

NORTH
0 40
20



KEY MAP
SCALE: 1" = 350'

LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
EASEMENT LINE		
RIGHT OF WAY		
CENTERLINE		
CURB & GUTTER		
DRAINAGE BASIN		
MAJOR CONTOUR	5900	5900
MINOR CONTOUR	5902	5902
STORM SEWER		
RETAINING WALL		
FLOW DIRECTION		
DESIGN POINT		X

BASIN LABEL — BASIN DESIGNATION A1; AREA (AC.) 1.00; MINOR 5-YR RUNOFF COEF. 0.40; MAJOR 100-YR RUNOFF COEF. 0.60

PCD FILE NO.: _____

DRAWN BY:	CMD	JOB DATE:	4/20/2026
APPROVED:	RDL	JOB NUMBER:	----
CAD DATE:	4/20/2026		
CAD FILE:	J:\2025\2502477\CAD\Dwgs\C\Drainage\Ex_Drainage_Map		

BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1" IF NOT ONE INCH ADJUST SCALE ACCORDINGLY.

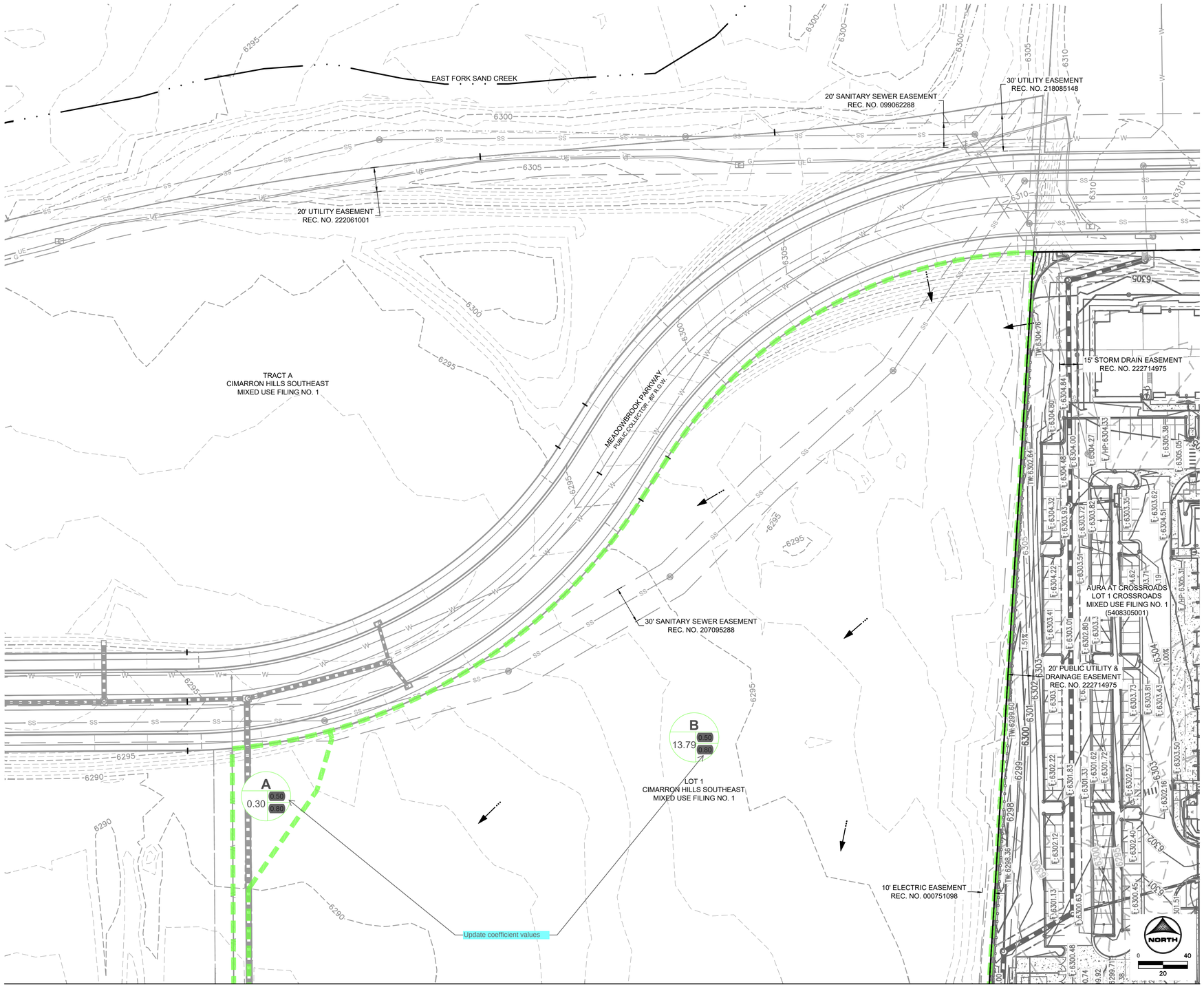
NO.	DATE	BY	REVISION DESCRIPTION

HRGreen
HR GREEN - COLORADO SPRINGS
1975 RESEARCH PARKWAY SUITE 160
COLORADO SPRINGS, CO 80920
PHONE: 719.300.4140
FAX: 713.965.0044

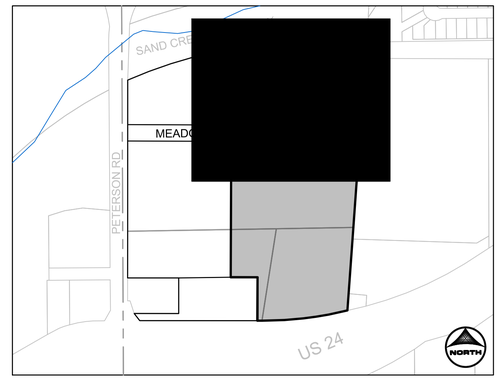
HILLPOINTE APARTMENTS AT PETERSON
HILLPOINTE, LLC.
COLORADO SPRINGS, EL PASO COUNTY, COLORADO

FINAL DRAINAGE REPORT
EXISTING DRAINAGE MAP

SHEET DR 1



MATCHLINE: SEE SHEET 1



KEY MAP
SCALE: 1" = 350'

LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
EASEMENT LINE		
RIGHT OF WAY		
CENTERLINE		
CURB & GUTTER		
DRAINAGE BASIN		
MAJOR CONTOUR	5900	5900
MINOR CONTOUR	5902	5902
STORM SEWER		
RETAINING WALL		
FLOW DIRECTION		
DESIGN POINT		X

BASIN LABEL — BASIN DESIGNATION: A1; AREA (AC.): 1.00; MINOR 5-YR RUNOFF COEF.: 0.40; MAJOR 100-YR RUNOFF COEF.: 0.60

SUMMARY RUNOFF TABLE

BASIN	AREA (ac)	% IMPERVIOUS	Q_5 (cfs)	Q_{100} (cfs)
A	0.30	2	0.11	0.71
B	13.79	2	3.89	25.65
OS	0.87	2	0.28	1.87

PCD FILE NO.: _____

DRAWN BY:	CMD	JOB DATE:	4/20/2026
APPROVED:	RDL	JOB NUMBER:	----
CAD DATE:	4/20/2026		
CAD FILE:	J:\2025\2502477\CAD\Dwgs\C\Drainage\Ex_Drainage_Map		

BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1" IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

NO.	DATE	BY	REVISION DESCRIPTION

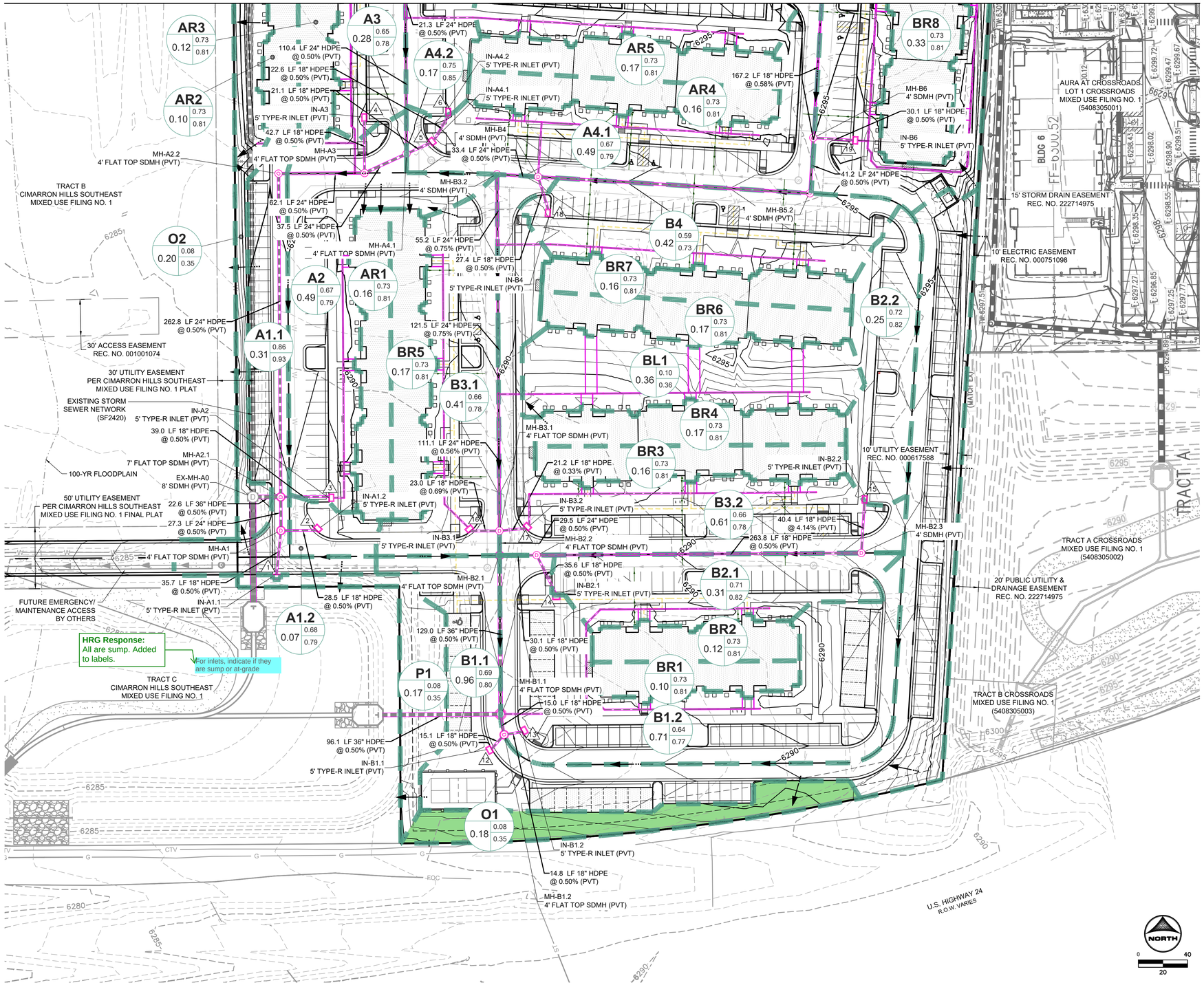
HR GREEN - COLORADO SPRINGS
1975 RESEARCH PARKWAY SUITE 160
COLORADO SPRINGS, CO 80920
PHONE: 719.300.4140
FAX: 713.965.0044

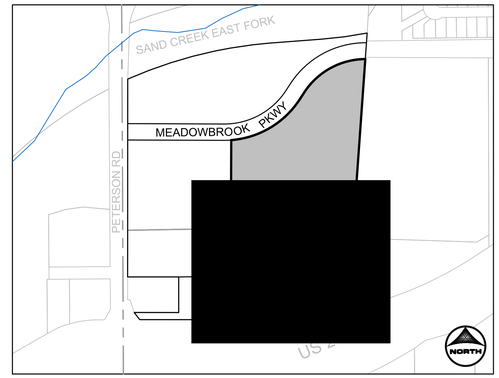
HILLPOINTE APARTMENTS AT PETERSON
HILLPOINTE, LLC.
COLORADO SPRINGS, EL PASO COUNTY, COLORADO

FINAL DRAINAGE REPORT
EXISTING DRAINAGE MAP

SHEET DR 2

MATCHLINE: SEE SHEET 4





KEY MAP
SCALE: 1" = 350'

LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
EASEMENT LINE		
RIGHT OF WAY		
CENTERLINE		
CURB & GUTTER		
DRAINAGE BASIN		
MAJOR CONTOUR	5900	5900
MINOR CONTOUR	5902	5902
STORM SEWER		
RETAINING WALL		
FLOW DIRECTION		
DESIGN POINT		

BASIN LABEL — BASIN DESIGNATION: A1; AREA (AC.): 1.00; MINOR 5-YR RUNOFF COEF.: 0.40; MAJOR 100-YR RUNOFF COEF.: 0.60

AREA EXCLUDED FROM WQ TREATMENT PER ECM APP I.7.1.B.7, TOTAL AREA = 0.18 AC.

PCD FILE NO.: _____

DRAWN BY: CMD	JOB DATE: 4/20/2026	BAR IS ONE INCH ON OFFICIAL DRAWINGS.	
APPROVED: RDL	JOB NUMBER: ----	0 1"	
CAD DATE: 4/20/2026		IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.	
CAD FILE: J:\2025\2502477\CAD\Dwgs\C\Drainage\Pr_Drainage_Map			

NO.	DATE	BY	REVISION DESCRIPTION

HRGreen
HR GREEN - COLORADO SPRINGS
1975 RESEARCH PARKWAY SUITE 160
COLORADO SPRINGS, CO 80920
PHONE: 719.300.4140
FAX: 713.965.0044

HILLPOINTE APARTMENTS AT PETERSON
HILLPOINTE, LLC.
COLORADO SPRINGS, EL PASO COUNTY, COLORADO

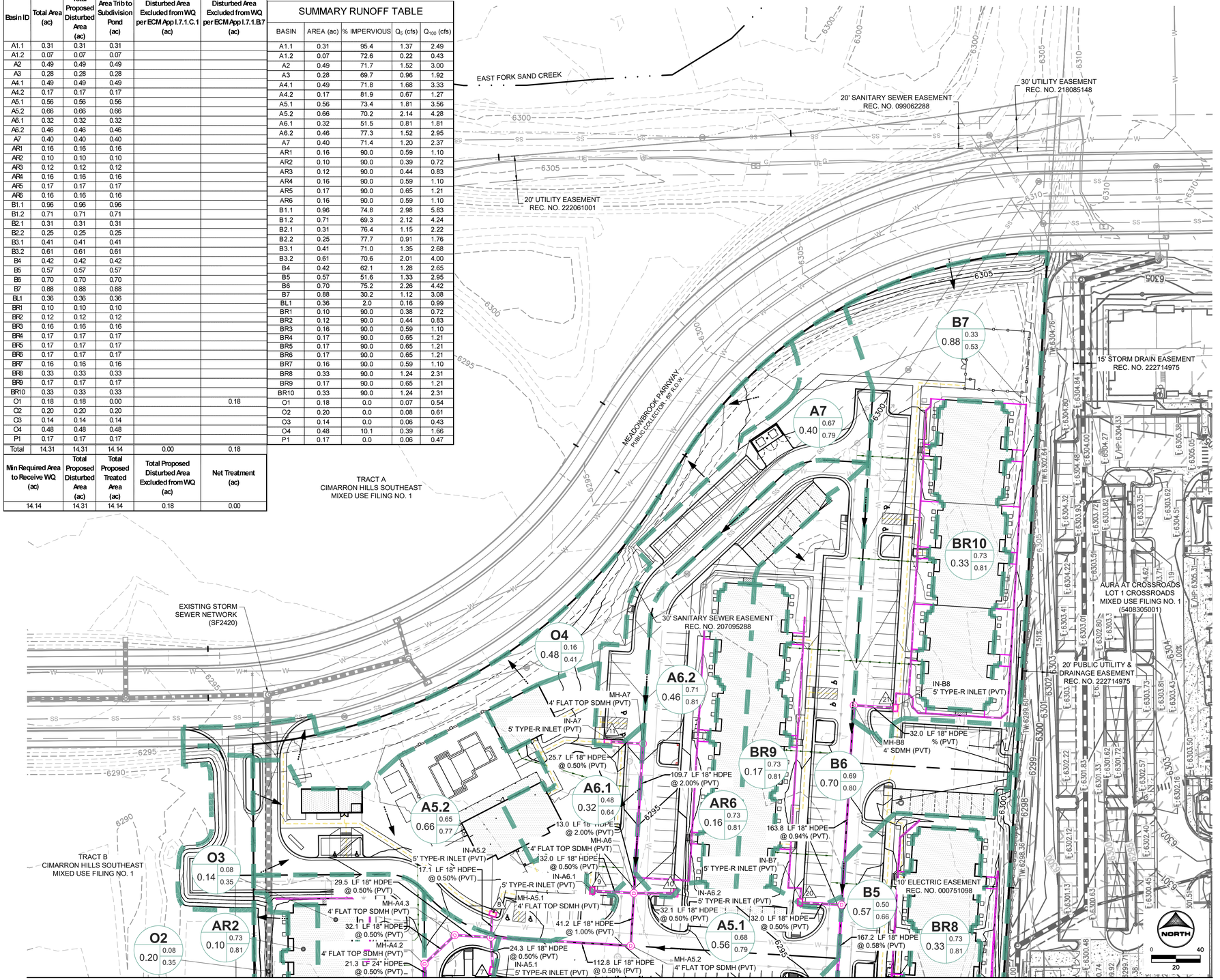
FINAL DRAINAGE REPORT
PROPOSED DRAINAGE MAP

SHEET DR 3

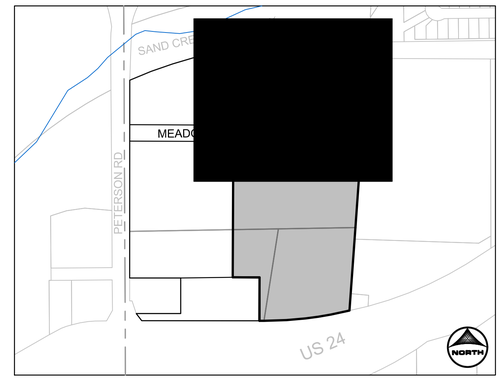
Water Quality Treatment Summary Table					
Basin ID	Total Area (ac)	Total Proposed Disturbed Area (ac)	Area Trib to Subdivision Pond (ac)	Disturbed Area Excluded from WQ per ECM App I.7.1.C.1 (ac)	Disturbed Area Excluded from WQ per ECM App I.7.1.B.7 (ac)
A1.1	0.31	0.31	0.31		
A1.2	0.07	0.07	0.07		
A2	0.49	0.49	0.49		
A3	0.28	0.28	0.28		
A4.1	0.49	0.49	0.49		
A4.2	0.17	0.17	0.17		
A5.1	0.56	0.56	0.56		
A5.2	0.66	0.66	0.66		
A6.1	0.32	0.32	0.32		
A6.2	0.46	0.46	0.46		
A7	0.40	0.40	0.40		
AR1	0.16	0.16	0.16		
AR2	0.10	0.10	0.10		
AR3	0.12	0.12	0.12		
AR4	0.16	0.16	0.16		
AR5	0.17	0.17	0.17		
AR6	0.16	0.16	0.16		
B1.1	0.96	0.96	0.96		
B1.2	0.71	0.71	0.71		
B2.1	0.31	0.31	0.31		
B2.2	0.25	0.25	0.25		
B3.1	0.41	0.41	0.41		
B3.2	0.61	0.61	0.61		
B4	0.42	0.42	0.42		
B5	0.57	0.57	0.57		
B6	0.70	0.70	0.70		
B7	0.88	0.88	0.88		
BL1	0.36	0.36	0.36		
BR1	0.10	0.10	0.10		
BR2	0.12	0.12	0.12		
BR3	0.16	0.16	0.16		
BR4	0.17	0.17	0.17		
BR5	0.17	0.17	0.17		
BR6	0.17	0.17	0.17		
BR7	0.16	0.16	0.16		
BR8	0.33	0.33	0.33		
BR9	0.17	0.17	0.17		
BR10	0.33	0.33	0.33		
O1	0.18	0.18	0.00		0.18
O2	0.20	0.20	0.20		
O3	0.14	0.14	0.14		
O4	0.48	0.48	0.48		
P1	0.17	0.17	0.17		
Total	14.31	14.31	14.14	0.00	0.18
Min Required Area to Receive WQ (ac)		Total Proposed Disturbed Area (ac)	Total Proposed Treated Area (ac)	Total Proposed Disturbed Area Excluded from WQ (ac)	Net Treatment (ac)
14.14		14.31	14.14	0.18	0.00

SUMMARY RUNOFF TABLE

BASIN	AREA (ac)	% IMPERVIOUS	Q_5 (cfs)	Q_{100} (cfs)
A1.1	0.31	95.4	1.37	2.49
A1.2	0.07	72.6	0.22	0.43
A2	0.49	71.7	1.52	3.00
A3	0.28	69.7	0.96	1.92
A4.1	0.49	71.8	1.68	3.33
A4.2	0.17	81.9	0.67	1.27
A5.1	0.56	73.4	1.81	3.56
A5.2	0.66	70.2	2.14	4.28
A6.1	0.32	51.5	0.81	1.81
A6.2	0.46	77.3	1.52	2.95
A7	0.40	71.4	1.20	2.37
AR1	0.16	90.0	0.59	1.10
AR2	0.10	90.0	0.39	0.72
AR3	0.12	90.0	0.44	0.83
AR4	0.16	90.0	0.59	1.10
AR5	0.17	90.0	0.65	1.21
AR6	0.16	90.0	0.59	1.10
B1.1	0.96	74.8	2.98	5.83
B1.2	0.71	69.3	2.12	4.24
B2.1	0.31	76.4	1.15	2.22
B2.2	0.25	77.7	0.91	1.76
B3.1	0.41	71.0	1.35	2.68
B3.2	0.61	70.6	2.01	4.00
B4	0.42	62.1	1.28	2.65
B5	0.57	51.6	1.33	2.95
B6	0.70	75.2	2.26	4.42
B7	0.88	30.2	1.12	3.08
BL1	0.36	2.0	0.16	0.99
BR1	0.10	90.0	0.38	0.72
BR2	0.12	90.0	0.44	0.83
BR3	0.16	90.0	0.59	1.10
BR4	0.17	90.0	0.65	1.21
BR5	0.17	90.0	0.65	1.21
BR6	0.17	90.0	0.65	1.21
BR7	0.16	90.0	0.59	1.10
BR8	0.33	90.0	1.24	2.31
BR9	0.17	90.0	0.65	1.21
BR10	0.33	90.0	1.24	2.31
O1	0.18	0.0	0.07	0.54
O2	0.20	0.0	0.08	0.61
O3	0.14	0.0	0.06	0.43
O4	0.48	10.1	0.39	1.66
P1	0.17	0.0	0.06	0.47



MATCHLINE: SEE SHEET 3



KEY MAP
SCALE: 1" = 350'

LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
EASEMENT LINE		
RIGHT OF WAY		
CENTERLINE		
CURB & GUTTER		
DRAINAGE BASIN		
MAJOR CONTOUR	5900	5900
MINOR CONTOUR	5902	5902
STORM SEWER		
RETAINING WALL		
FLOW DIRECTION		
DESIGN POINT		X
BASIN LABEL		BASIN DESIGNATION: A1; AREA (AC.): 1.00; MINOR 5-YR RUNOFF COEF.: 0.40; MAJOR 100-YR RUNOFF COEF.: 0.60

AREA EXCLUDED FROM WQ TREATMENT PER ECM APP I.7.1.B.7, TOTAL AREA = 0.18 AC.

DESIGN POINT SUMMARY TABLE

DESIGN POINT	CONTRIBUTING BASINS	ΣQ_5 (cfs)	ΣQ_{100} (cfs)
1	A1.1	1.37	2.49
2	A1.2	0.22	0.43
3	A2, AR1	2.11	4.10
4	A3	0.96	1.92
5	A4.1, A4.2	2.35	4.60
6	A4.2	0.67	1.27
7	A5.1	1.81	3.56
8	A5.2	2.14	4.28
9	A6.1	0.81	1.81
10	A6.2	1.52	2.95
11	A7	1.20	2.37
12	B1.1	2.98	5.83
13	B1.2	2.12	4.24
14	B2.1	1.15	2.22
15	B2.2	0.91	1.76
16	B3.1, BR5	2.00	3.89
17	B3.2	2.01	4.00
18	B4	1.28	2.65
19	B5, BR8	2.57	5.27
20	B6, BR9	2.91	5.63
21	B7, BR10	2.37	5.39

Several of the building basins do not appear to have been taken into account with the design points. See comment in report.

HRG Response:
Basin runoff connected directly to the private storm network analyzed in StormCAD. Design points used for inlets. Discussion of these basins added to report.

PCD FILE NO.:

DRAWN BY: CMD	JOB DATE: 4/20/2026	BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1"	
APPROVED: RDL	JOB NUMBER: ----	IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.	
CAD DATE: 4/21/2026			
CAD FILE: J:\2025\2502477\CAD\Dwgs\C\Drainage\Pr_Drainage_Map			

NO.	DATE	BY	REVISION DESCRIPTION

HR GREEN - COLORADO SPRINGS
1975 RESEARCH PARKWAY SUITE 160
COLORADO SPRINGS, CO 80920
PHONE: 719.300.4140
FAX: 713.965.0044

HILLPOINTE APARTMENTS AT PETERSON
HILLPOINTE, LLC.
COLORADO SPRINGS, EL PASO COUNTY, COLORADO

FINAL DRAINAGE REPORT

PROPOSED DRAINAGE MAP

SHEET DR 4