

FINAL DRAINAGE REPORT

Please add "PCD File
No. PPR-21-045".

HEARTLAND DENTAL FALCON

Lot 2, Meridian Crossing Filing No. 1
7225 N. Meridian Road
Peyton, CO 80831

Prepared For:

WMG DEVELOPMENT

1200 Network Center Drive, Suite 3
Effingham, IL 62401

Prepared By:

Baseline Engineering Corporation

112 N. Rubey Drive, #210
Golden, CO 80403

December 9, 2021



Engineering · Planning · Surveying

Table of Contents

| | |
|---|---|
| Statements and Certifications | 3 |
| Engineer's Statement | 3 |
| Developer's Statement | 3 |
| El Paso County | 3 |
| General Location and Description | 4 |
| Drainage Basins and Sub-Basins | 5 |
| Drainage Design Criteria / References | 5 |
| Summary | 6 |
| Appendix | 7 |

Statements and Certifications

Engineer's Statement

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

Noah Nemmers, P.E. Colorado 39820

Developer's Statement

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

Name of Developer: _____

Authorized Signature/Date: _____

Printed Name: _____

Title: _____

Address:

El Paso County
Filed in accordance with Section 51.1 of the El Paso Land Development Code as amended.

City of El Paso, Texas

Please update the El Paso County signature block to say:
"El Paso County:

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

Jennifer Irvine, P.E. Date
County Engineer / ECM Administrator

Conditions: "

Please add a line for
the signature date.

General Location and Description

This Final Drainage Report has been prepared to accompany the submittal of a Site Development Plan for Heartland Dental Falcon. This site is located at 7229 N. Meridian Road Lot 2 and covers 1.09 acres. The site is located in the Northeast ¼ of Section 12, Township 13 South, Range 65 West of the 6th P.M. in El Paso County, Colorado. It is located on the southeast side of North Meridian Road approximately 500 feet north of Rolling Thunder Way. The site is bounded to the northeast by McDonald's, to the southeast by the Falcon Liquor outlet, to the southwest by the undeveloped Lot 1 of Meridian Crossing Filing 1, and to the northwest by N. Meridian Road.

Currently, the lot is undeveloped, with existing sparse native grass coverage and a rock landscaping area along N. Meridian Road with the Meridian Crossing subdivision monument sign. The proposed development will include a dental office and associated parking lot with additional landscaping around the lot. Total disturbance for the site is 0.70 acres. This drainage report will describe the proposed runoff patterns, estimate runoff quantities, and ensure safe and appropriate routing of stormwater to meet County requirements and the design intent of the Meridian Crossing Final Drainage Report prepared by Springs Engineering in July 2008.

In general, the site drains at grades between 2% to 5% to the southeast onto private drives within the Meridian Crossing Subdivision. Water sheet flows into a detention basin located within Lot 6. According to the National Resources Conservation Service, the soil underlying the site is identified as Blakeland loamy sand. This soil is categorized as Hydrologic Soil Group A, which is a well-draining soil with a high infiltration rate. The soil survey map is included in the Appendix. Per FEMA FIRM Panel 08041C0561G, dated 12/7/2018, this site lies within Zone X, an area of minimal flood hazard. A Firmette including the site location is also in the Appendix.

Please state what drainage basin the site is located in.

Please include the PCD file number for this report (SF-07-024).

Drainage Basins and Sub-Basins

A description of the basins used in the drainage design of this site are included as follows.

Basin EX (1.09 acres) is undeveloped, with existing sparse native grass coverage and a rock landscaping area along N. Meridian Road. The existing site imperviousness is 28%. Runoff quantities of $Q_{10}= 1.1$ cfs and $Q_{100}= 2.3$ cfs discharge overland to the southeast across the private drive within the Meridian Crossing subdivision into Lot 6, where an existing detention basin is located.

Basin PR (1.09 acres) includes the proposed dental office, parking lot, and landscaping. A drainage swale diverts runoff around the north portion of the building to the private drive along the east portion of Lot 2, and the rest of the site runoff flows south overland onto the private drive of Meridian Crossing. The proposed site imperviousness is 79%. Runoff quantities of $Q_{10}= 2.4$ cfs and $Q_{100}= 4.7$ cfs will continue to flow into the Lot 6 detention basin as they have previously. Since the Meridian Crossing FDP designed Lots 1, 2, and 6 assuming 70% imperviousness, the proposed site will allow the existing detention basin to work as designed with no required modifications.

Drainage Design Criteria / References

This drainage analysis has been prepared in accordance with the current El Paso County Drainage Criteria Manual as of December 2021. Drainage studies referenced in the preparation of this report include:

1. Meridian Crossing Final Drainage Report, prepared by Springs Engineering, dated July 2008.

The existing and proposed conditions at the site for 10yr and 100yr storms have been estimated using the Rational Method for runoff computations as required by the El Paso County Drainage Criteria Manual for sites with less than 100 acres. A summary of all runoff calculations has been included in the Appendix of this report.

Summary

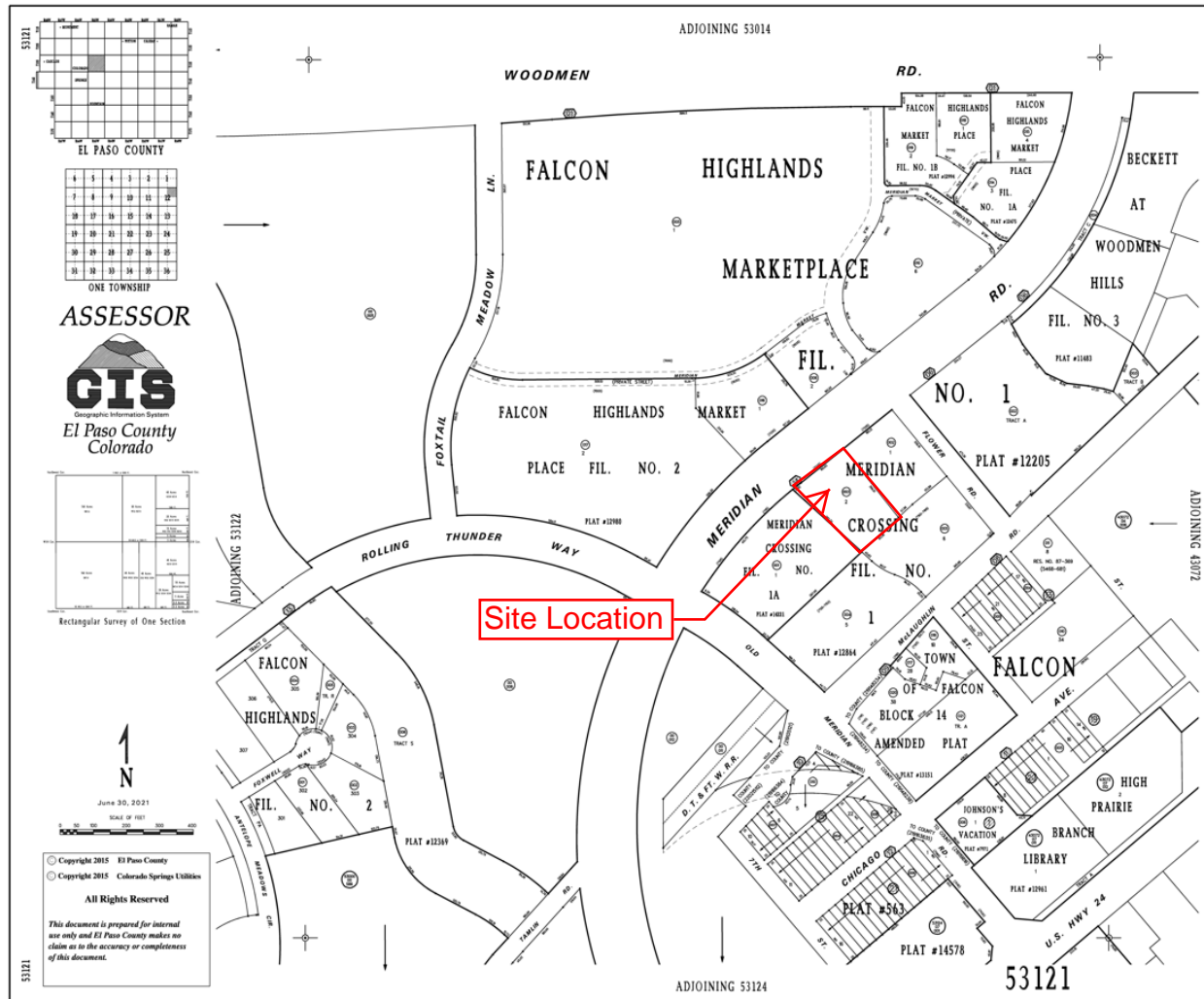
The Heartland Dental Falcon site will include a dental office, parking lot, landscaping, and drainage swale. The estimated runoff from this site of 2.4 cfs for the 10-year storm and 4.7 cfs for the 100-yr storm is below the estimates put forth in the Meridian Crossing Final Drainage Report that previously covered this property and designed the downstream detention facilities. This will allow the proposed site and downstream detention facilities operate as they do currently.

The development of this site and drainage analysis has been designed in accordance with the requirements of the El Paso County Drainage Criteria Manual. The site described in this Final Drainage Report will not adversely affect the downstream and surrounding developments. Supporting information is included in the Appendix.

- Please include a list of references which includes the following:
El Paso County Engineering Criteria Manual Appendix I, Appendix G, El Paso County Drainage Criteria Manual Volume 1 and 2, and the City of Colorado Springs Drainage Criteria Manual Volume 1 Chapter 6 for drainage report requirements/standards.
- Please include a discussion addressing each step of the 4 Step Process found in the ECM Appendix I.7.2.A.
- Please use the City of Colorado Springs Drainage Criteria Manual 2014 Volume 1 Chapter 6 Update as adopted by El Paso County for Rational Method computations and requirements.
- Please include a discussion on off-site drainage flows and their impact on the development.

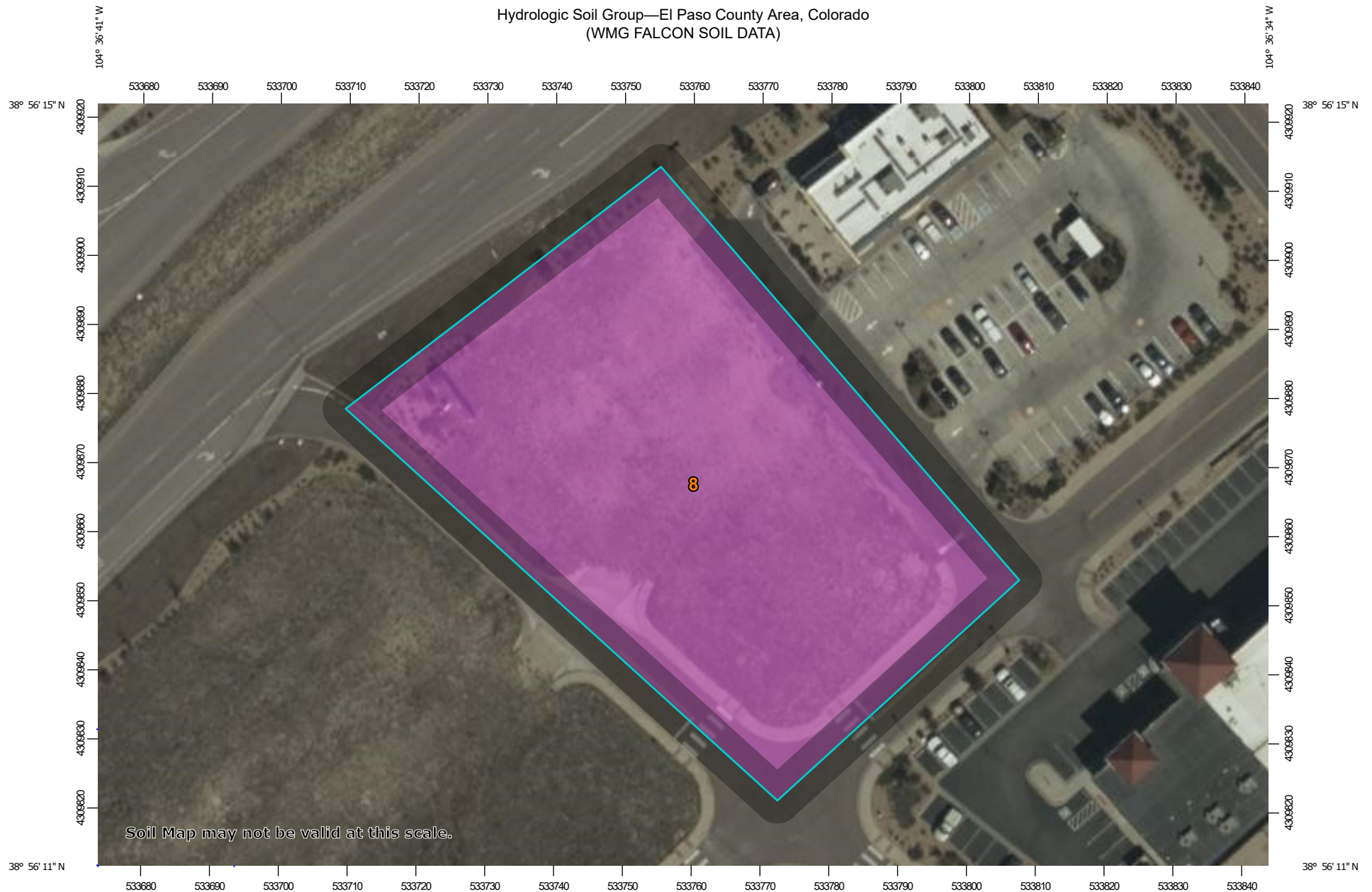
Engineer must confirm in the Drainage Report that the existing pond is functioning as intended.

Appendix

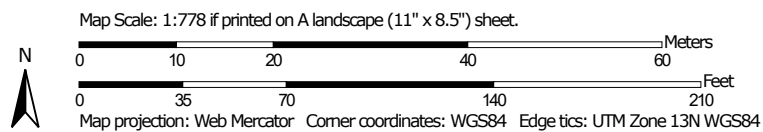


Vicinity Map

Hydrologic Soil Group—El Paso County Area, Colorado (WMG FALCON SOIL DATA)



Soil Map may not be valid at this scale.



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

12/8/2021
Page 1 of 4

Hydrologic Soil Group—El Paso County Area, Colorado
(WMG FALCON SOIL DATA)

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 19, Aug 31, 2021

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

Date(s) aerial images were photographed: Sep 11, 2018—Oct 20, 2018

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

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 | 1.1 | 100.0% |
| Totals for Area of Interest | | | 1.1 | 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

National Flood Hazard Layer FIRMette



104°36'57"W 38°56'28"N



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 Water Surface Elevation |
| | | 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation |
| | | Coastal Transect |
| | | Base Flood Elevation Line (BFE) |
| | | Limit of Study |
| | | Jurisdiction Boundary |
| OTHER FEATURES | | Coastal Transect Baseline |
| | | Profile Baseline |
| | | Hydrographic Feature |
| MAP PANELS | | Digital Data Available |
| | | No Digital Data Available |
| | | Unmapped |



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 11/3/2021 at 5:09 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.

0 250 500 1,000 1,500 2,000 Feet 1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

104°36'19"W 38°56'N



NOAA Atlas 14, Volume 8, Version 2
Location name: Peyton, Colorado, USA*
Latitude: 38.937°, Longitude: -104.6104°
Elevation: 6863.1 ft**

* source: ESRI Maps

** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Please use the rainfall durations from the City of Colorado Springs Drainage Criteria Manual Volume 1 2014 Chapter 6 update.

by Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffrey Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aerals](#)

PF tabular

| PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹ | | | | | | | | | | |
|--|-------------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|-----------------------|-----------------------|----------------------|----------------------|
| Duration | Average recurrence interval (years) | | | | | | | | | |
| | 1 | 2 | 5 | 10 | 25 | 50 | 100 | 200 | 500 | 1000 |
| 5-min | 0.238 (0.193-0.295) | 0.289 (0.234-0.360) | 0.379 (0.306-0.473) | 0.458 (0.368-0.574) | 0.575 (0.448-0.752) | 0.670 (0.508-0.886) | 0.770 (0.564-1.04) | 0.876 (0.614-1.22) | 1.02 (0.690-1.46) | 1.14 (0.747-1.65) |
| 10-min | 0.348 (0.282-0.433) | 0.424 (0.343-0.527) | 0.555 (0.448-0.693) | 0.671 (0.539-0.841) | 0.841 (0.656-1.10) | 0.981 (0.744-1.30) | 1.13 (0.825-1.53) | 1.28 (0.899-1.78) | 1.50 (1.01-2.14) | 1.67 (1.09-2.41) |
| 15-min | 0.424 (0.344-0.528) | 0.517 (0.419-0.643) | 0.677 (0.547-0.845) | 0.819 (0.657-1.02) | 1.03 (0.800-1.34) | 1.20 (0.908-1.58) | 1.38 (1.01-1.86) | 1.57 (1.10-2.18) | 1.83 (1.23-2.61) | 2.04 (1.33-2.94) |
| 30-min | 0.614 (0.498-0.763) | 0.747 (0.605-0.929) | 0.977 (0.789-1.22) | 1.18 (0.947-1.48) | 1.48 (1.15-1.93) | 1.72 (1.31-2.28) | 1.98 (1.45-2.68) | 2.25 (1.58-3.13) | 2.63 (1.77-3.75) | 2.93 (1.91-4.22) |
| 60-min | 0.792 (0.643-0.985) | 0.947 (0.767-1.18) | 1.23 (0.990-1.53) | 1.48 (1.19-1.86) | 1.87 (1.46-2.46) | 2.19 (1.67-2.92) | 2.55 (1.87-3.46) | 2.93 (2.06-4.09) | 3.47 (2.34-4.97) | 3.91 (2.55-5.64) |
| 2-hr | 0.971 (0.794-1.20) | 1.15 (0.937-1.42) | 1.48 (1.20-1.83) | 1.78 (1.44-2.22) | 2.26 (1.79-2.97) | 2.67 (2.05-3.53) | 3.12 (2.31-4.22) | 3.61 (2.56-5.01) | 4.31 (2.94-6.15) | 4.89 (3.22-7.01) |
| 3-hr | 1.07 (0.876-1.31) | 1.25 (1.02-1.53) | 1.59 (1.30-1.95) | 1.92 (1.56-2.37) | 2.44 (1.95-3.21) | 2.91 (2.25-3.85) | 3.42 (2.55-4.63) | 3.99 (2.85-5.54) | 4.82 (3.31-6.87) | 5.51 (3.65-7.87) |
| 6-hr | 1.24 (1.02-1.50) | 1.43 (1.18-1.74) | 1.80 (1.48-2.20) | 2.18 (1.78-2.67) | 2.79 (2.25-3.65) | 3.34 (2.61-4.39) | 3.95 (2.97-5.32) | 4.63 (3.34-6.40) | 5.64 (3.90-7.99) | 6.48 (4.33-9.19) |
| 12-hr | 1.42 (1.18-1.71) | 1.64 (1.37-1.99) | 2.08 (1.73-2.53) | 2.51 (2.08-3.06) | 3.21 (2.60-4.15) | 3.82 (3.00-4.98) | 4.49 (3.41-6.00) | 5.25 (3.81-7.19) | 6.35 (4.42-8.92) | 7.27 (4.89-10.2) |
| 24-hr | 1.62 (1.37-1.95) | 1.91 (1.60-2.29) | 2.43 (2.03-2.92) | 2.92 (2.43-3.53) | 3.68 (3.00-4.70) | 4.33 (3.43-5.58) | 5.05 (3.85-6.66) | 5.83 (4.26-7.90) | 6.96 (4.88-9.69) | 7.89 (5.35-11.0) |
| 2-day | 1.88 (1.59-2.23) | 2.22 (1.88-2.64) | 2.82 (2.38-3.37) | 3.37 (2.83-4.04) | 4.20 (3.44-5.29) | 4.89 (3.89-6.23) | 5.64 (4.33-7.35) | 6.44 (4.73-8.63) | 7.58 (5.35-10.4) | 8.49 (5.81-11.8) |
| 3-day | 2.06 (1.76-2.44) | 2.43 (2.07-2.88) | 3.08 (2.61-3.66) | 3.67 (3.09-4.37) | 4.54 (3.73-5.68) | 5.27 (4.21-6.67) | 6.04 (4.66-7.84) | 6.88 (5.08-9.18) | 8.06 (5.71-11.0) | 9.00 (6.19-12.5) |
| 4-day | 2.22 (1.90-2.62) | 2.60 (2.22-3.07) | 3.28 (2.79-3.88) | 3.89 (3.29-4.62) | 4.80 (3.95-5.97) | 5.55 (4.45-7.00) | 6.35 (4.91-8.21) | 7.22 (5.35-9.59) | 8.43 (6.00-11.5) | 9.41 (6.50-13.0) |
| 7-day | 2.63 (2.26-3.08) | 3.04 (2.61-3.56) | 3.76 (3.22-4.42) | 4.41 (3.75-5.20) | 5.37 (4.46-6.64) | 6.18 (4.99-7.73) | 7.03 (5.48-9.03) | 7.95 (5.93-10.5) | 9.25 (6.63-12.6) | 10.3 (7.15-14.1) |
| 10-day | 2.98 (2.58-3.48) | 3.43 (2.96-4.00) | 4.21 (3.62-4.93) | 4.90 (4.19-5.77) | 5.93 (4.93-7.29) | 6.78 (5.49-8.44) | 7.68 (6.00-9.81) | 8.64 (6.47-11.4) | 9.98 (7.18-13.5) | 11.1 (7.72-15.1) |
| 20-day | 3.99 (3.47-4.61) | 4.59 (3.99-5.31) | 5.61 (4.86-6.51) | 6.48 (5.58-7.55) | 7.72 (6.44-9.34) | 8.70 (7.09-10.7) | 9.72 (7.64-12.3) | 10.8 (8.12-14.0) | 12.2 (8.84-16.3) | 13.3 (9.39-18.1) |
| 30-day | 4.80 (4.20-5.53) | 5.54 (4.85-6.38) | 6.76 (5.89-7.80) | 7.77 (6.73-9.02) | 9.17 (7.67-11.0) | 10.3 (8.38-12.5) | 11.3 (8.95-14.2) | 12.5 (9.42-16.1) | 13.9 (10.1-18.5) | 15.1 (10.7-20.4) |
| 45-day | 5.82 (5.12-6.66) | 6.72 (5.90-7.69) | 8.15 (7.14-9.37) | 9.32 (8.11-10.8) | 10.9 (9.13-13.0) | 12.1 (9.90-14.6) | 13.2 (10.5-16.5) | 14.4 (10.9-18.4) | 15.9 (11.6-21.0) | 17.0 (12.1-22.9) |
| 60-day | 6.68 (5.90-7.62) | 7.69 (6.78-8.78) | 9.29 (8.16-10.6) | 10.6 (9.24-12.2) | 12.3 (10.3-14.5) | 13.5 (11.1-16.3) | 14.7 (11.7-18.2) | 15.9 (12.1-20.3) | 17.4 (12.7-22.9) | 18.5 (13.2-24.8) |

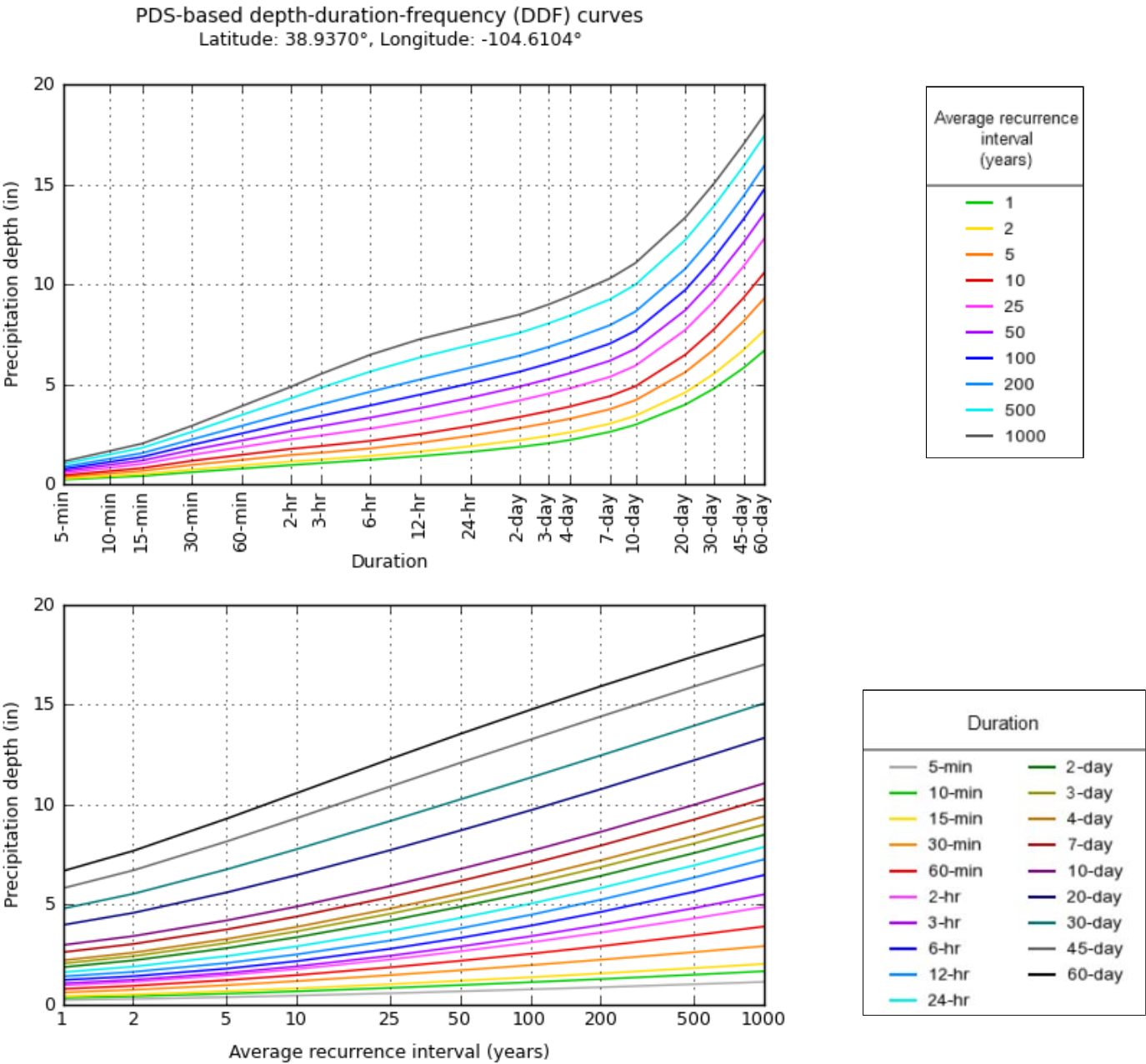
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

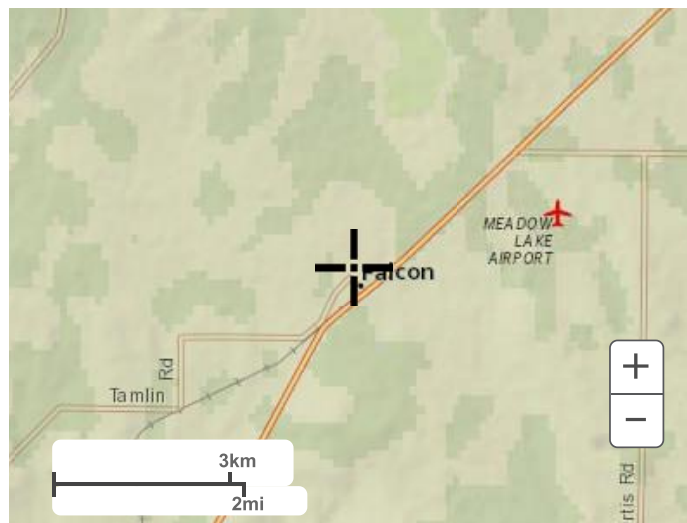
[Back to Top](#)

PF graphical



Maps & aerials

Small scale terrain



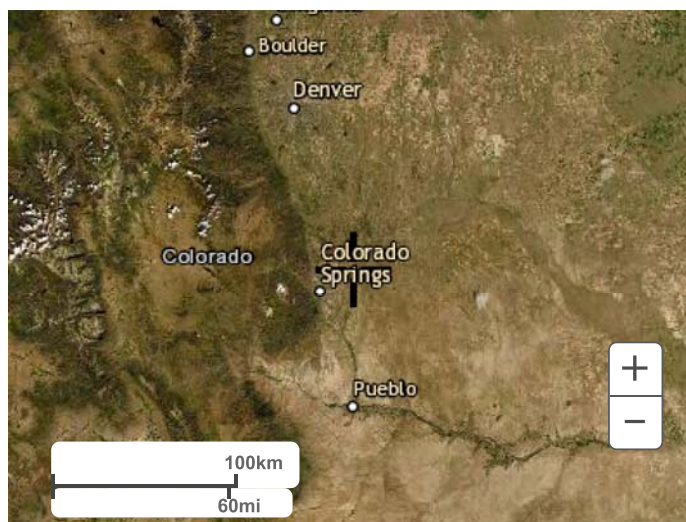
Large scale terrain



Large scale map



Large scale aerial



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1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov
[Disclaimer](#)

Calculation of Peak Runoff using Rational Method

$$Q(cfs) = CIA$$

Please replace the rainfall intensity coefficients with the the City of Colorado Springs Drainage Criteria Manual Volume 1, 2014 Chapter 6 Figure 6-5 and Figure 6-6.

Area-Weighted Runoff Coefficient Calculations

Version 2.00 released May 2017

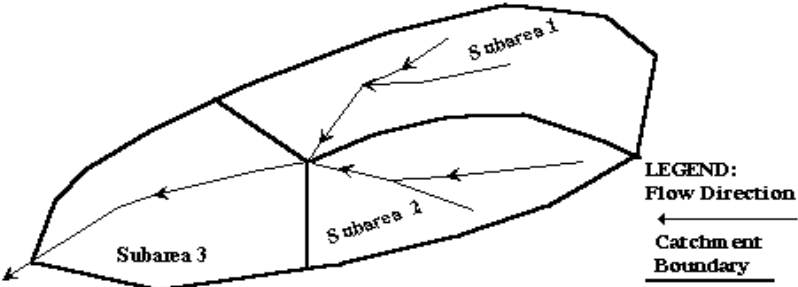
Designer: LDS

Company: BASELINE

Date: 12/8/2021

Project: WMG FALCON

Location: 7225 NORTH MERIDIAN ROAD



| |
|----------------------|
| Subcatchment Name |
| PR |

Cells of this color are for required user-input

Cells of this color are for optional override values

Cells of this color are for calculated results based on overrides

See sheet "Design Info" for imperviousness-based runoff coefficient values.

| Sub-Area ID | Area (ac) | NRCS Hydrologic Soil Group | Percent Imperviousness | Runoff Coefficient, C | | | | | | |
|------------------|-----------|----------------------------|------------------------|-----------------------|------|-------|-------|-------|--------|--------|
| | | | | 2-yr | 5-yr | 10-yr | 25-yr | 50-yr | 100-yr | 500-yr |
| DRIVES AND WALKS | 0.55 | A | 100.0 | 0.84 | 0.86 | 0.87 | 0.88 | 0.88 | 0.89 | 0.90 |
| | | | | | | 0.90 | | | 0.95 | |
| ROOFS | 0.10 | A | 90.0 | 0.73 | 0.75 | 0.77 | 0.79 | 0.79 | 0.81 | 0.83 |
| | | | | | | 0.90 | | | 0.95 | |
| LAWNS | 0.40 | A | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.11 | 0.25 |
| | | | | | | 0.25 | | | 0.35 | |
| ROCK | 0.04 | A | 100.0 | 0.84 | 0.86 | 0.87 | 0.88 | 0.88 | 0.89 | 0.90 |
| | | | | | | 0.90 | | | 0.95 | |
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| | | | | | | | | | | |
| Total Area (ac) | 1.09 | Area-Weighted C | | 0.52 | 0.54 | 0.54 | 0.55 | 0.56 | 0.60 | 0.66 |
| | | Area-Weighted Override C | | 0.52 | 0.54 | 0.66 | 0.55 | 0.56 | 0.73 | 0.66 |

Reach-Weighted Time of Concentration Calculations

Version 2.00 released May 2017

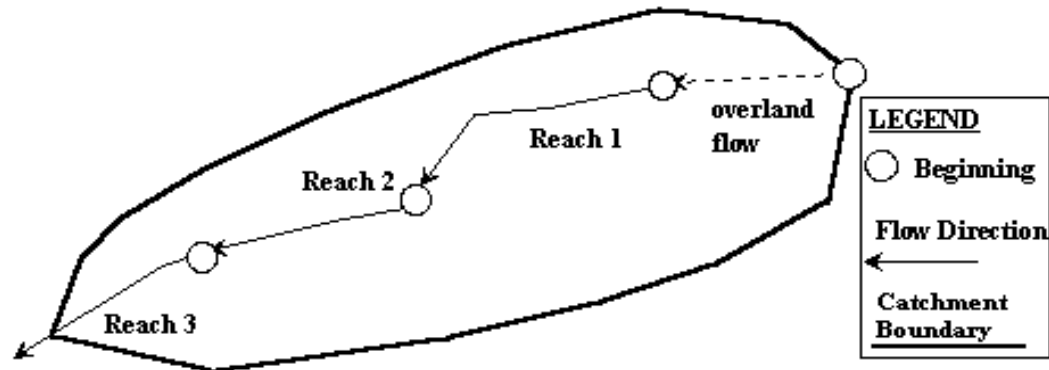
Designer: LDS

Company: BASELINE

Date: 12/8/2021

Project: WMG FALCON

Location: 7225 NORTH MERIDIAN ROAD



| Subcatchment Name | Percent Imperviousness (%) |
|-------------------|----------------------------|
| PR | 62.4 |

OVERLAND FLOW

| Reach ID | Overland Flow Length L_i (ft) | Overland Flow Slope S_i (ft/ft) | 5-yr Runoff Coefficient, C_5 | Overland Flow Time t_i (min) |
|-----------------|---------------------------------|-----------------------------------|--------------------------------|--------------------------------|
| 1 | 116.00 | 0.042 | 0.25 | 10.29 |
| 2 | 127.00 | 0.027 | 0.86 | 3.53 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Weighted Totals | 243.00 | 0.034 | Total t_i (min) | 13.83 |

CHANNELIZED FLOW

| Reach ID | Channelized Flow Length L_t (ft) | Channelized Flow Slope S_t (ft/ft) | NRCS Conveyance Factor K | Channelized Flow Time t_t (min) |
|-----------------|------------------------------------|--------------------------------------|--------------------------|-----------------------------------|
| 1 | 67.00 | 0.011 | 20 | 0.53 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Weighted Totals | 67.00 | 0.011 | Total t_t (min) | 0.53 |

| | |
|----------------------|-------|
| Computed t_c (min) | 14.36 |
| Regional t_c (min) | 15.99 |
| Selected t_c (min) | 14.36 |

Please place the existing conditions drainage plan before the proposed conditions drainage plan.

Please label all proposed and final drainage facilities including utilities, swales, storm sewers, inlets, manholes, etc.

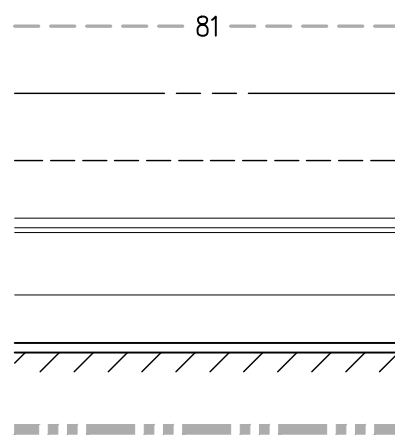
Please delineate the time of concentration path on the plan and update the legend.

Please delineate all subbasins that are onsite and offsite and show contours for those subbasin areas.

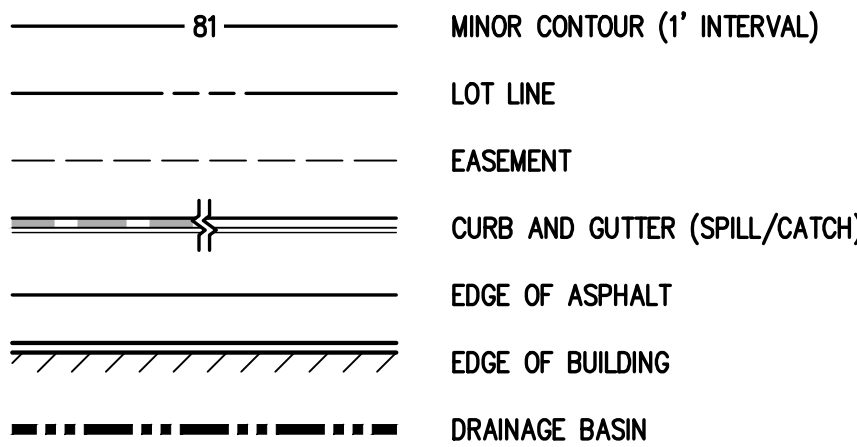
Please verify the proposed imperviousness. The percent listed does not match the amount on page 5 of this report.

LEGEND

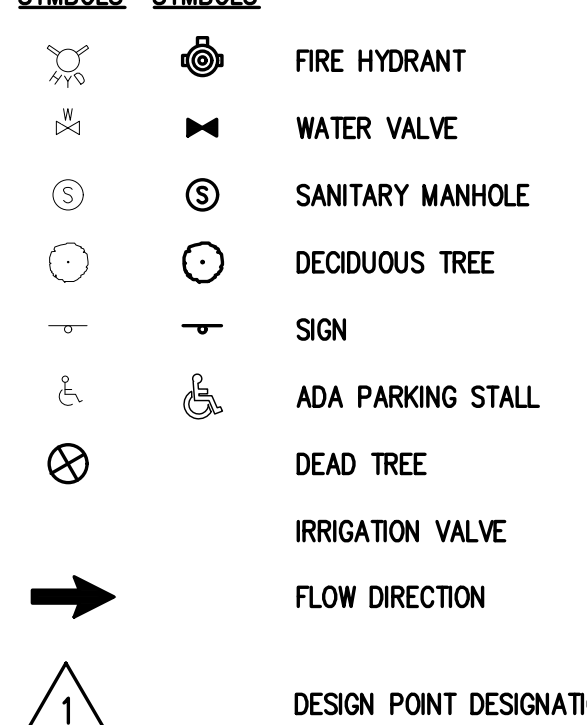
EXISTING LINETYPES



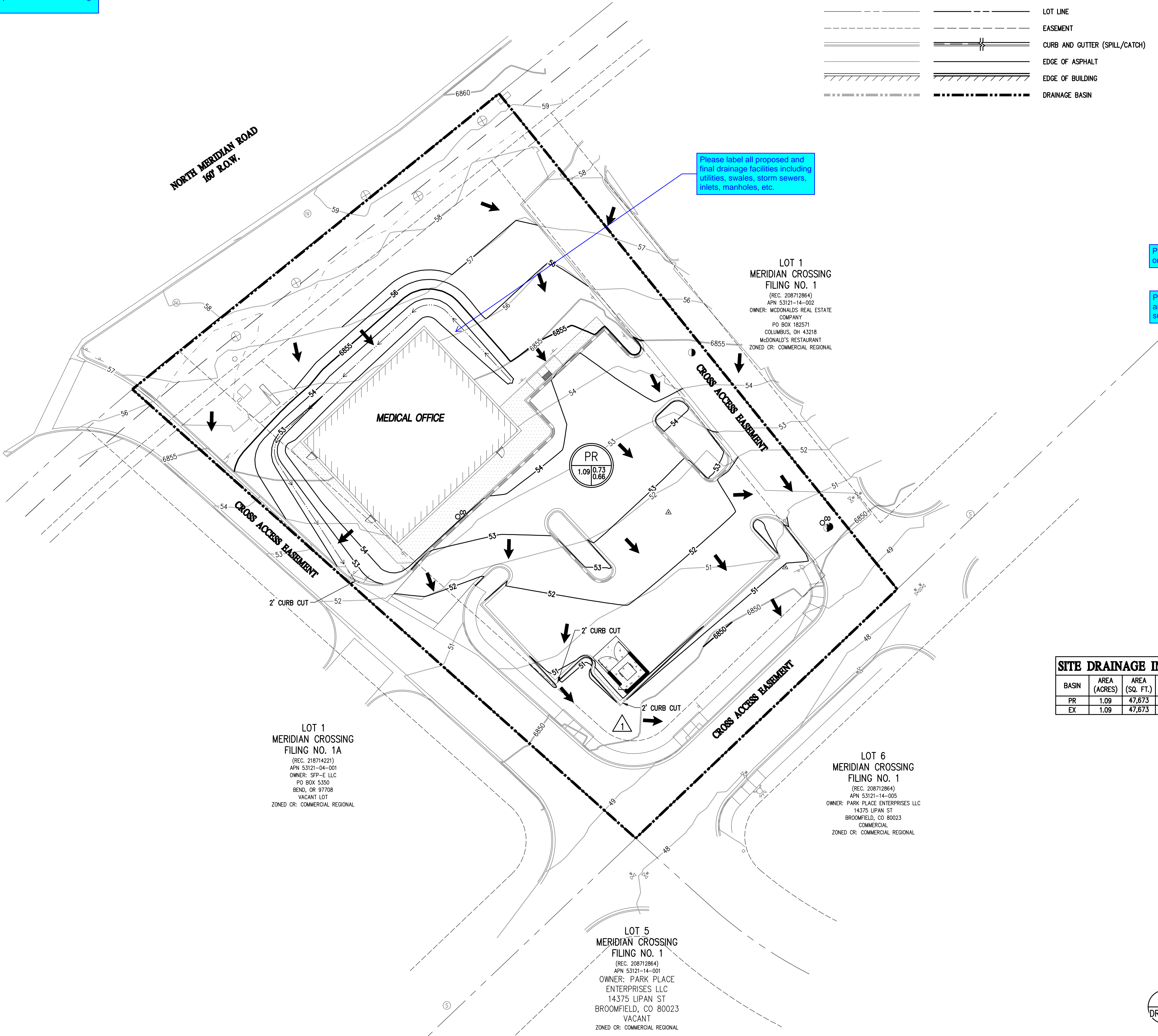
PROPOSED LINETYPES



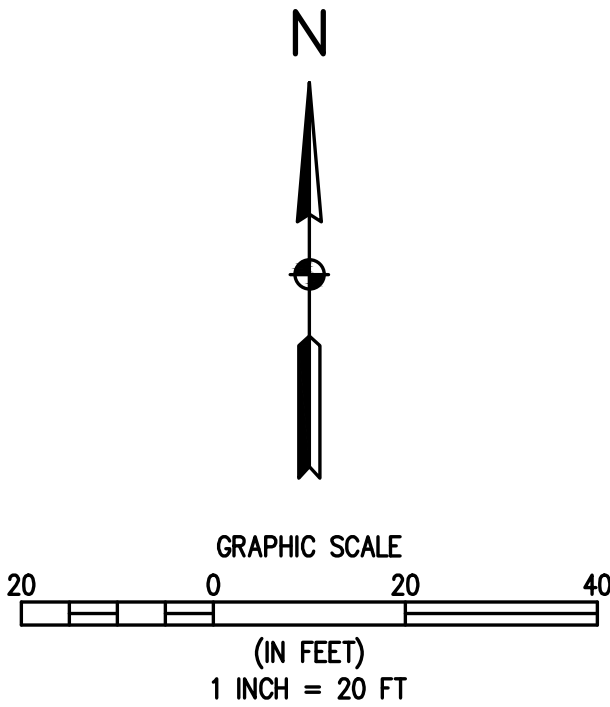
EXISTING SYMBOLS



A = BASIN DESIGNATION
B = BASIN AREA (ac)
C = 100-YR C-FACTOR
D = 5-YR C-FACTOR



| SITE DRAINAGE INFORMATION | | | | | | | |
|---------------------------|--------------|----------------|--------------------|------|------|-----------|------------|
| BASIN | AREA (ACRES) | AREA (SQ. FT.) | IMPERVIOUSNESS (%) | C10 | C100 | Q10 (CFS) | Q100 (CFS) |
| PR | 1.09 | 47,673 | 62.4 | 0.66 | 0.73 | 2.47 | 4.70 |
| EX | 1.09 | 47,673 | 28.0 | 0.35 | 0.40 | 1.19 | 2.34 |



PROPOSED DRAINAGE PLAN

PCD FILE NO. PPR-21-045

BASILINE
Engineering - Planning - Surveying

102 N. RIBEY DRIVE, SUITE 210 • GOLDEN, COLORADO 80403
P: 303.940.9966 • F: 303.940.9969 • www.basilinecorp.com

DESIGNED BY: LDS
DRAWN BY: JDD
CHECKED BY: MRB

DATE: _____
PREPARED BY: _____

REVISION DESCRIPTION: _____

WVG FALCON
EL PASO COUNTY
LOT 2, MERIDIAN CROSSING FILING 1
7225 N. MERIDIAN ROAD
PROPOSED DRAINAGE PLAN

PREPARED UNDER THE DIRECT SUPERVISION OF

**PRELIMINARY
NOT FOR
CONSTRUCTION**

FOR AND ON BEHALF OF
BASILINE CORPORATION
INITIAL SUBMITTAL: 8/25/2021
DRAWING SIZE: 24" X 36"
SURVEY FIRM: BEC
SURVEY DATE: 4/08/2021
JOB NO.: C035036
DRAWING NAME: 3036 DRG PLAN.dwg
SHEET: 1 OF 2
DR1

N:\co35036CS - WMG Falcon\Drawings\Planning Documents\SDP\35036 DRNG PLAN.dwg, 12/17/2021 12:57:09 PM, Luke Seeber

