

**FINAL DRAINAGE REPORT
FOR
HOMESTEAD NORTH AT STERLING RANCH FILING NO. 1
EL PASO COUNTY, COLORADO**

Prepared For:

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**September, 2022
Project No. 25188.00**

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**PCD Filing No.:
SF22-13**

Please clarify as discussed

south of Briargate

DRAINAGE REPORT FOR
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Basin OS3 has a tributary area of 11.98 Acres is 2.0 % impervious. The runoff from this basin ($Q_5=2.2$ cfs, $Q_{100}=12.6$ cfs) sheet flows towards Vollmer road and is captured within an existing ditch along the west side of Vollmer Road and corresponds to design point 3o. The Existing roadside ditch will channel flow south along Vollmer Road to existing inlets designed with the Homestead at Sterling Ranch Filing No.1 Final Drainage Report, see the associated drainage map in Appendix E. Runoff from this basin was also accounted for in the design of the proposed 15' type r inlet at design pond 8D and associated storm pipe. In the future, this side of Vollmer is expect to have a paved walk and runoff was accounted to drain directly onto Vollmer Road to the inlet at design point 8D and be piped to Pond C. In the interim condition, flow will continue to accumulate in the roadside ditch until the west side of Vollmer Rd is developed.

DRAINAGE DESIGN CRITERIA

DEVELOPMENT CRITERIA REFERENCE

Storm drainage analysis and design criteria for this project were taken from the “*City of Colorado Springs/El Paso County Drainage Criteria Manual*” Volumes 1 and 2 (EPCDCM), dated October 12, 1994, the “*Urban Storm Drainage Criteria Manual*” Volumes 1 to 3 (USDCM) and Chapter 6 and Section 3.2.1 of Chapter 13 of the “*Colorado Springs Drainage Criteria Manual*” (CSDCM), dated May 2014, as adopted by El Paso County.

HYDROLOGIC CRITERIA

All hydrologic data was obtained from the “*El Paso Drainage Criteria Manual*” Volumes 1 and 2, and the “*Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual*” Volumes 1, 2, and 3. Onsite drainage improvements were designed based on the 5 year (minor) storm event and the 100-year (major) storm event. Runoff was calculated using the Rational Method, and rainfall intensities for the 5-year and the 100-year storm return frequencies were obtained from Table 6-2 of the CSDCM. One hour point rainfall data for the storm events is identified in the chart below. Runoff coefficients were determined based on proposed land use and from data in Table 6-6 from the CSDCM. Time of concentrations were developed using equations from CSDCM. All runoff calculations and applicable charts and graphs are included in the Appendices.

Table 3 - 1-hr Point Rainfall Data

Storm	Rainfall (in.)
5-year	1.50
100-year	2.52



AREA INLET IN A SWALE

Homestead North

Inlet 2D

Inlet Design Information (Input)

Type of Inlet: Inlet Type =

Angle of Inclined Grate (must be <= 30 degrees): degrees

Width of Grate: feet

Length of Grate: feet

Open Area Ratio:

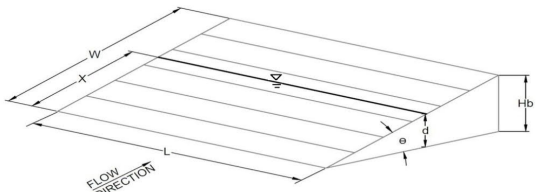
Height of Inclined Grate: feet

Clogging Factor:

Grate Discharge Coefficient:

Orifice Coefficient:

Weir Coefficient:



	MINOR	MAJOR	
d =	2.02	2.30	
Q_a =	42.9	45.7	cfs
Bypassed Flow, Q _b =	0.0	0.0	cfs
Capture Percentage = Q _a /Q _o = C%	100	100	%

Water Depth at Inlet (for depressed inlets, 1 foot is added for depression)

Total Inlet Interception Capacity (assumes clogged condition)

are these correct?

Appendix D

Drainage Maps

Please switch Appendix D with Appendix E to avoid confusion