Stormwater Detention and Infiltration Design Data Sheet

SDI-Design Data v2.00, Released January 2020

Stormwater Facility Name: Full-Spectrum Extended Detention Basin A

Facility Location & Jurisdiction: UDON South - El Paso County

User Input: Watershed Characteristics								
Extended Detention Basin (EDB)	EDB							
Watershed Area =	39.94	acres						
Watershed Length =	2,008	ft						
Watershed Length to Centroid =	1,004	ft						
Watershed Slope =	0.050	ft/ft						
Watershed Imperviousness =	20.2%	percent						
Percentage Hydrologic Soil Group A =	0.0%	percent						
Percentage Hydrologic Soil Group B =	0.0%	percent						
Percentage Hydrologic Soil Groups C/D =	100.0%	percent						
Target WQCV Drain Time =	40.0	hours						
Location for 1-hr Rainfall Depths (use dropdown):								
User Input	•							

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

Once CUHP has been run and the Stage-Area-Discharge information has been provided, click 'Process Data' to interpolate the Stage-Area-Volume-Discharge data and generate summary results in the table below. Once this is complete, click 'Print to PDF'.

User Defined	User Defined	User Defined	User Defined
Stage [ft]	Area [ft^2]	Stage [ft]	Discharge [cfs]
0.00	274	0.00	0.00
0.50	334	0.50	0.03
1.00	726	1.00	0.04
1.50	1,664	1.50	0.06
2.00	3,586	2.00	0.09
2.50	6,612	2.50	0.11
3.00	11,012	3.00	0.14
3.50	18,187	3.50	0.17
4.00	25,889	4.00	0.20
4.50	29,726	4.50	7.35
5.00	31,455	5.00	29.97
5.50	33,191	5.50	59.72
6.00	35,072	6.00	90.99
6.50	36,976	6.50	150.30
7.00	38,897	7.00	232.73
7.50	40,868	7.50	337.61
8.00	43,394	8.00	465.09

After completing and printing this worksheet to a pdf, go to: <u>https://maperture.digitaldataservices.com/gvh/?viewer=cswdif</u> Create a new stormwater facility, and attach the PDF of this worksheet to that record.

Routed Hydrograph Results

Design Storm Return Period =	WQCV	2 Year	5 Year	10 Year	50 Year	100 Year	
One-Hour Rainfall Depth =	N/A	1.19	1.50	1.75	2.25	2.52	in
CUHP Runoff Volume =	0.388	1.159	2.018	2.799	4.648	5.762	acre-ft
Inflow Hydrograph Volume =	N/A	1.159	2.018	2.799	4.648	5.762	acre-ft
Time to Drain 97% of Inflow Volume =	37.8	52.9	49.5	46.8	40.8	37.6	hours
Time to Drain 99% of Inflow Volume =	40.3	57.7	55.9	54.5	51.7	50.2	hours
Maximum Ponding Depth =	3.52	4.30	4.64	4.81	5.26	5.48	ft
Maximum Ponded Area =	0.42	0.65	0.69	0.71	0.74	0.76	acres
Maximum Volume Stored =	0.388	0.813	1.047	1.162	1.488	1.652	acre-ft

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