

C Pit Diversion - 2022 **10-year, 24-hour event**

Jim Mattern

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General Information

Storm Information:

Storm Type:	NRCS Type II
Design Storm:	10 yr - 24 hr
Rainfall Depth:	1.400 inches

Structure Networking:

Type	Stru #	(flows into)	Stru #	Musk. K (hrs)	Musk. X	Description
Channel	#1	==>	End	0.000	0.000	C Pit Diversion

#1
Chan'l

Structure Summary:

	Immediate Contributing Area (ac)	Total Contributing Area (ac)	Peak Discharge (cfs)	Total Runoff Volume (ac-ft)
#1	252.000	252.000	0.39	0.31

Structure Detail:

Structure #1 (Erodible Channel)

C Pit Diversion

Triangular Erodible Channel Inputs:

Material: Graded silts to cobbles when colloidal

Left Sideslope Ratio	Right Sideslope Ratio	Slope (%)	Manning's n	Freeboard Depth (ft)	Freeboard % of Depth	Freeboard Mult. x (VxD)	Limiting Velocity (fps)
2.0:1	2.0:1	5.7	0.0300	1.00			4.0

Erodible Channel Results:

	w/o Freeboard	w/ Freeboard
Design Discharge:	0.39 cfs	
Depth:	0.26 ft	1.26 ft
Top Width:	1.04 ft	5.04 ft
Velocity:	2.83 fps	
X-Section Area:	0.14 sq ft	
Hydraulic Radius:	0.117 ft	
Froude Number:	1.38	

Subwatershed Hydrology Detail:

Stru #	SWS #	SWS Area (ac)	Time of Conc (hrs)	Musk K (hrs)	Musk X	Curve Number	UHS	Peak Discharge (cfs)	Runoff Volume (ac-ft)
#1	1	252.000	0.886	0.000	0.000	65.000	M	0.39	0.306
Σ		252.000						0.39	0.306

Subwatershed Time of Concentration Details:

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#1	1	1. Forest with heavy ground litter	13.73	77.00	561.00	0.930	0.167
		3. Short grass pasture	15.14	58.00	383.00	3.110	0.034
		1. Forest with heavy ground litter	18.60	360.00	1,935.00	1.090	0.493
		3. Short grass pasture	14.62	50.00	342.00	3.050	0.031
		8. Large gullies, diversions, and low flowing streams	7.43	290.00	3,902.00	8.170	0.132
		8. Large gullies, diversions, and low flowing streams	7.16	60.00	838.00	8.020	0.029
#1	1	Time of Concentration:					0.886