

MODIFIED RATIONAL METHOD DETENTION BASIN DESIGN

PROJECT: Dobbs Elementary School 5 YR

February 14, 2017

Runoff Coefficient C = 0.65
 Drainage Area - A = 9.76 acres
 Time of Concentration - tc = 10 minutes
 Maximum Outflow Rate - Q = 30.1 cfs (31.6-1.5)

Duration (minutes)	Intensity (inches/hr)	Depth (inches)	Inflow Discharge Q=CiA	Inflow Volume Cu. Ft.	Outflow Duration (minutes)	Outflow Volume Cu. Ft.	Storage Volume Cu. Ft.
10	6.10	1.02	38.7	23,219	20	18,060	5,159
15	5.50	1.38	34.9	31,403	25	22,575	8,828
20	4.90	1.63	31.1	37,303	30	27,090	10,213
30	4.10	2.05	26.0	46,819	40	36,120	10,699
40	3.40	2.27	21.6	51,767	50	45,150	6,617
50	2.80	2.33	17.8	53,290	60	54,180	(890)
60	2.60	2.60	16.5	59,380	70	63,210	(3,830)
70	2.40	2.80	15.2	63,948	80	72,240	(8,292)
80	2.30	3.07	14.6	70,038	90	81,270	(11,232)
90	2.10	3.15	13.3	71,941	100	90,300	(18,359)
100	1.90	3.17	12.1	72,322	110	99,330	(27,008)
110	1.80	3.30	11.4	75,367	120	108,360	(32,993)
Required Storage Volume						10,699	cubic feet
						0.25	acre-feet