

Bachl Sub.

Summary

Runoff is decreased with  
usage change from Cultivated  
field to residence with lawn.

Baehl Sub.

Acres behind R/w line - 5.28 AC

$(C_d)$  weighted

$$5.28 \text{ AC} - \frac{5 \times 6000 \text{ ft}^2 \text{ House \& Drive}}{43,560} = 4.59 \text{ AC yard}$$

0.69 AC House and Drive

$$\frac{0.40 \text{ }^{1.84} (4.59) + 0.96 \text{ }^{0.66} (0.69)}{5.28} = \frac{2.5}{5.28} = 0.48$$

=  $C_d$  weighted

Form 9.00

Project Baehl Sub. Detention Facility Design Return Period 25 yrs.

Designer \_\_\_\_\_ Release Rate Return Period 10 yrs.

Watershed Area 5.99 acres - <sup>R&P/W</sup> 0.71 = 5.28 ac affected

Time of Concentration (undeveloped watershed) 10 minutes

Rainfall Intensity ( $I_U$ ) 5.380 inches/hr

Undeveloped Runoff Coefficient ( $C_U$ ) 0.65

Undeveloped Runoff Coefficient ( $O = C_U i A_U$ ) 18.46 cfs

Developed Runoff Coefficient ( $C_D$ ) 0.48

Storm Duration $t_d$ (hrs.)	Rainfall Intensity $i_d$ (inches/hr)	Inflow Rate $I(t_d)$ $(C_D i_d A_D)$ (cfs)	Outflow Rate $O$ $(C_U i_U A_U)$ (cfs)	Storage Rate $I(t_d) - O$ (cfs)	Required Storage $I(t_d) - O \frac{t_d}{12}$ (acre-ft)
0.08	6.625	16.79	18.46	-1.67	
0.17	5.380	13.64	}		
0.25	4.515	11.44			
0.50	3.226				
1	1.819				
2	1.230				
3					
4					
5					

Runoff is Decreased