

Summary for Pond 4P: REAR FB

Inflow Area = 7.526 ac, 61.00% Impervious, Inflow Depth = 0.80" for 100-Year event  
 Inflow = 4.76 cfs @ 12.70 hrs, Volume= 0.505 af  
 Outflow = 2.09 cfs @ 13.26 hrs, Volume= 0.505 af, Atten= 56%, Lag= 33.1 min  
 Discarded = 0.88 cfs @ 13.26 hrs, Volume= 0.387 af  
 Primary = 1.21 cfs @ 13.26 hrs, Volume= 0.117 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-20.00 hrs, dt= 0.05 hrs / 3  
 Peak Elev= 116.22' @ 13.26 hrs Surf Area= 5,599 sf Storage= 9,632 cf

Plug-Flow detention time= 99.8 min calculated for 0.503 af (100% of inflow)  
 Center-of-Mass det. time= 99.9 min (897.5 - 797.6)

Volume	Invert	Avail. Storage	Storage Description
#1A	113.50'	6,196 cf	25,92W x 216.04L x 4.00'H Field A
		22,396 cf Overall	- 6,905 cf Embedded = 15,491 cf x 40.0% Voids
#2A	114.50'	6,905 cf	ADS StormTech SC-740 x 150 Inside #1
		Overall Size= 44.6"W x 30.0"H => 6.45 sf x 7.12L = 45.9 cf	
		Overall Size= 51.0"W x 30.0"H x 7.56L with 0.44' Overlap	
		Row Length Adjustment= +0.44' x 6.45 sf x 5 rows	
		13,102 cf Total Available Storage	

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	113.50'	2,410 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 112.00'
#2	Primary	115.50'	12.0" Round Culvert L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 115.50' / 115.40' S= 0.0067 ' / n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded Outflow Max=0.88 cfs @ 13.26 hrs HW=116.22' (Free Discharge)  
 1=Exfiltration (Controls 0.88 cfs)

Primary Outflow Max=1.21 cfs @ 13.26 hrs HW=116.22' TW=111.25' (Dynamic Tailwater)  
 2=Culvert (Barrel Controls 1.21 cfs @ 2.78 fps)

Pond 4P: REAR FB - Chamber Wizard

Chamber Model = ADS StormTech SC-740 (ADS StormTech® SC-740)  
 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12L = 45.9 cf  
 Overall Size= 51.0"W x 30.0"H x 7.56L with 0.44' Overlap  
 Row Length Adjustment= +0.44' x 6.45 sf x 5 rows

51.0" Wide + 8.0" Spacing = 59.0" C-C Row Spacing

30 Chambers/Row x 7.12' Long +0.44' Row Adjustment = 214.04' Row L  
 216.04' Base Length  
 5 Rows x 51.0" Wide + 8.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.92'  
 12.0" Base + 30.0" Chamber Height + 6.0" Cover = 4.00' Field Height

150 Chambers x 45.9 cf +0.44' Row Adjustment x 6.45 sf x 5 Rows = 6,905

22,396.1 cf Field - 6,905.2 cf Chambers = 15,490.9 cf Stone x 40.0% Voi

Chamber Storage + Stone Storage = 13,101.6 cf = 0.301 af

Overall Storage Efficiency = 58.5%

Overall System Size = 216.04' x 25.92' x 4.00'

150 Chambers  
 829.5 cy Field  
 573.7 cy Stone