

SSO Independence

**Culligan 2006 Expansion
Analysis of Drainage Calculations Submitted 1996
Detention Requirements
March 28, 2006**

559 S.F.
TO SPARE
12,000 TOTAL
EXTRA

Area	5.65	Ac.	c Value
Pond	0.29	Ac.	1
PVMNT	1.65	Ac.	0.9
Grass	3.71	Ac.	0.3
Wtd. C	0.51		
Allowable	2.71	c.f.s.	

Concentration Time (t) min.	Intensity i in./hr.	CwA	Qin c.f.s.	Qout c.f.s.	Qin - Qout c.f.s.	Detention c.f.	Required Detention c.f.
20	4.4	2.888	12.7072	2.712	9.9952	11994.24	11994.24
30	3.6	2.888	10.3968	6.537857	3.858943	4630.731	
40	3	2.888	8.664	6.537857	2.126143	2551.371	
50	2.6	2.888	7.5088	6.537857	0.970943	1165.131	
60	2.3	2.888	6.6424	6.537857	0.104543	125.4514	
80	1.9	2.888	5.4872	6.537857	-1.05066	-1260.79	
100	1.6	2.888	4.6208	6.537857	-1.91706	-2300.47	
120	1.4	2.888	4.0432	6.537857	-2.49466	-2993.59	
140	1.2	2.888	3.4656	6.537857	-3.07226	-3686.71	
160	1.1	2.888	3.1768	6.537857	-3.36106	-4033.27	
180	1	2.888	2.888	6.537857	-3.64986	-4379.83	

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Outlet Flow Analysis
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Top Elev.	Slope	Overflow	Top Width	Top Leng.	Over Wid.	Over Leng.
680.2		677.87	85	150	71.02	136.02

Top Elev.	Slope	Outlet	Top Width	Top Leng.	Out Wid.	Out Leng.
680.2		676.25	85	150	61.3	126.3

Area Overflow: 9660.14

Area Outlet: 7742.19

Average Area: 8701.165

Depth: 1.62

Volume of Existing Detention: 14,095.89 c.f.

Length of Outlet: 60 ft.

Slope of Outlet: 0.40%

Size of Outlet: 8 in

n value: 0.01

Ke value: 0.5

Maximum Assumed Head: 1.62

Hydraulic Radius (R): 0.166667

R x (4/3) 0.222222

Velocity: 3.721487

Pipe Area: 0.349066

Design Flow: 1.299044

Allowable Flow: 2.712