Stormwater Quality Calculations

For

STONEBRIAR SUBDIVISION

City of North Ridgeville – Lorain County

CALCULATED BY:

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Stonebriar Subdivision
City of North Ridgeville – Lorain County

STORMWATER QUALITY SUMMARY

Water Quality Volume Calculation

Wqv = Water Quality Volume in Ac-Ft= C x P x A/12

C = Runoff Coefficient

Area in Lots / Roadway (Low density residential, < 4 dwellings per Acre)	15.66 Ac.	C=0.3
Open Space	1.61 Ac.	C=0.2
Total Area	17.27 Ac.	

Weighted C

C = (15.66 (0.3) + 1.61 (0.2)) / 17.27

C = 0.291

P = 0.75" Precipitation

A = Area

Area to Pond A	8.51 Ac.
Area to Pond B	8.76 Ac.

Pond A

Wqv = 0.1548 Ac Ft = 6,742 CF

Wqv + 20% additional volume = 8,090 CF

Storage will be provided in Pond A with a Control Structure installed within a Storm Structure. (See Plans)

Water will be restricted to flow through a 1.5" orifice up to Elevation 770.02.

Storage volume provided in pond at Elevation 770.02:

= 8,090 CF
8,090 CF required, therefore, OK

Drain Down Time Calculation

Elevation (ft)	Incremental Storage (cf)	Outflow (cfs)	Time (hrs)
768.68			
	8,090	0.050	48.0
770.02			

Drain Down Time Required = 48.0 Hrs. +/- Therefore, OK

Pond B

Wqv = 0.1593 Ac Ft = 6,940 CF

Wqv + 20% additional volume = 8,328 CF

Storage will be provided in Pond B with a Control Structure installed within a Storm Structure. (See Plans)

Water will be restricted to flow through a 1.5" orifice up to Elevation 769.80.

Storage volume provided in pond at Elevation 769.80:

= 8,328 CF
8,328 CF required, therefore, OK

Drain Down Time Calculation

Elevation (ft)	Incremental Storage (cf)	Outflow (cfs)	Time (hrs)
768.54			
	8,328	0.050	48.0
769.80			

Drain Down Time Required = 48.0 Hrs. +/- Therefore, OK