

Summer Hill

Civil Engineers & Land Surveyors, P.C.

BY: MJO DATE: 5-1-24 SUBJECT: Williams School Athletics Team / Maintenance Building SHEET No.: 1 OF 1

CHECKED: LJM DATE: 5-1-24 Water Quality and Required Retention Volume Design Computations PROJECT No.: 23-43

1. Water quality volume and required retention volume computed using the CT Stormwater Quality Manual equation

$WQV = RRV = (1.3)(R)(A)/12$, where:

WQV, Water quality volume (cubic feet)

RRV, Required retention volume (cubic feet)

P, Precipitation depth = 1.3 inches

R, Volumetric runoff coefficient = $0.05 + 0.009(I)$

I, Post-development impervious area (percent)

A Post-development site drainage area (square feet)

$I = 44.0\%$

$R = 0.05 + 0.009(44.0) = 0.45$

$A = 27,030 \text{ ft}^2$

$WQV = RRV = (1.3 \text{ in})(R)(A)/12 = (1.3 \text{ in})(0.45)(27,030 \text{ ft}^2)/12 = 1,318 \text{ ft}^3$

2. Stormwater basin storage volume

Elevation ft	Area ft ²	Average Area ft ²	Incremental Volume ft ³	Cummulative Volume ft ³	Cummulative Volume Ac-ft
80.50	1,010	1,010	0	0	0
81.00	1,035	1,023	511	511	0.0117
82.00	1,405	1,220	1,220	1,731	0.0397

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