

## Detention Volume Calculations

### Rational Formula

Project	Pineae Greenhouses	Date:	Feb. 26, 2021
Project No.	NA	Prepared By:	BFC
Location:	Unincorporated Weber Count West Haven	Checked By:	BFC

### Input Data

	Area	Runoff Coeff.	Weighted Runoff Coeff.	C <sub>w</sub> A
	square feet	C	C <sub>w</sub>	square feet
Roof	1,242,004	0.90		
Pavement	65,000	0.85		
Landscape	1,990,488	0.15		
<b>Total</b>	<b>3,297,492</b>		<b>0.63</b>	<b>2,088,412</b>
Total acres	75.70			
Allowable Release Rate	0.20	cfs/acre		
Storm Frequency	100.00	year		

### Analysis

Storm Interval	Precipitation	C <sub>w</sub> A	Accumulated Flow	Allowable Discharge	Required Storage
minutes	inches	square feet	cubic feet	cubic feet	cubic feet
15	1.070	2,088,412	186,217	13,626	172,591
30	1.450	2,088,412	252,350	27,252	225,098
60	1.790	2,088,412	311,521	54,504	257,017
120	1.960	2,088,412	341,107	109,008	232,099
180	2.010	2,088,412	349,809	163,512	186,297
360	2.210	2,088,412	384,616	327,024	57,592
720	2.760	2,088,412	480,335	654,048	-173,713
1440	3.090	2,088,412	537,766	1,308,096	-770,330

REQUIRED STORAGE	257,017	cubic feet
MAXIMUM RELEASE RATE	15.14	cfs