

# NATE CHRISTENSEN

## Drainage Calculations

October 12, 2020

### 100-YR RETENTION CALCULATIONS:

RAINFALL: 10-YR, 1-HOUR	1.68	INCHES	STORAGE REQUIREMENT FROM ENTITY
BASIN AREA (SF):	81,095	SF	
BASIN AREA (AC):	1.86	AC	
100% IMPERVIOUSNESS	1.00		
BASIN WEIGHTED 'C':	0.68		
RAINFALL ON BASIN (100%):	11,353	CF	100% RAINFALL FOR STORAGE EVENT
RUNOFF FROM ON BASIN (PER 'C')	7,720	CF	100% RUNOFF FOR STORAGE EVENT
RAINFALL PER IDF:			
INTENSITY AT 24 HRS:	0.113	IN/HR	24-HR RATE FOR CHOSEN EVENT
VOLUME = I*(T=24 HRS)*A*C	12,463	CF	24-HR RUNOFF - MIGHT NOT BE APPLIC.
PREC. VS. IDF COMPARISON	-4742	CF	ONLY APPLIC. IF COMPARING 24-HR. EVENT
BASIN A (AREA):	81,095	SF	
SUMP ROCK PERIMETER (LF)	0	LF	
SUMP ROCK HEIGHT	0	LF	
SUMP PERC SF	0	SF	
PERCOLATION RATE (IN/HR)	0.00	IN/HR	
PERCOLATION (CFS)	0.0000	CFS	
PERCOLATION PER 5 MINUTES	0.0	CF	
NUMBER OF SUMPS	0		

Duration	Storm Intensity	Weighted "C"	Subbasin Area	Stormwater Flow	Accumulated inflow	MH / Rock Storage	Metered Outflow Rate	Total Outflow	Required Storage
(min)	(in/hr)		(sq.ft.)	(cfs)	(cf)	(cf)	(cfs)	(cf)	(cf)
5	6.40	0.68	81,095	8.10	2,431	-	0.0000	-	2,431
10	4.87	0.68	81,095	6.17	3,699	-	0.0000	-	3,699
15	4.02	0.68	81,095	5.09	4,580	-	0.0000	-	4,580
30	2.71	0.68	81,095	3.43	6,175	-	0.0000	-	6,175
60	1.68	0.68	81,095	2.13	7,656	-	0.0000	-	7,656
120	0.91	0.68	81,095	1.15	8,285	-	0.0000	-	8,285
<b>180</b>	<b>0.62</b>	<b>0.68</b>	<b>81,095</b>	<b>0.78</b>	<b>8,463</b>	<b>-</b>	<b>0.0000</b>	<b>-</b>	<b>8,463</b>
360	0.34	0.68	81,095	0.43	9,352	-	0.0000	-	9,352
720	0.20	0.68	81,095	0.26	11,157	-	0.0000	-	11,157
1440	0.113	0.68	81,095	0.143	12,463	-	0.0000	-	12,463