KIMBERLY CLARK

Drainage Calculations - 100 Year - New Parking and Existing Building

March 25, 2021

BASIN

RAINFALL: 1-HOUR	1.76	INCHES	STORAGE REQUIREMENT FROM ENTITY
BASIN AREA (SF):	295,741	SF	
BASIN AREA (AC):	6.79	AC	
100% IMPERVIOUSNESS	1.00		
BASIN WEIGHTED 'C':	0.91		
RAINFALL ON BASIN (100%):	43,375	CF	100% RAINFALL FOR STORAGE EVENT
RUNOFF FROM BASIN (PER 'C')	**39,472**	CF	100% RUNOFF FOR STORAGE EVENT
RAINFALL PER IDF:			
INTENSITY AT 24 HRS:	0.088	IN/HR	24-HR RATE FOR CHOSEN EVENT
100% RAINFALL ON SITE	**52,050**	CF	RAINFALL - 100%
VOLUME = I*(T=24 HRS)*A*C	**47,366**	CF	24-HR RUNOFF - MIGHT NOT BE APPLIC.
PREC. VS. IDF COMPARSON	-7894	CF	ONLY APPLIC. IF COMPARING 24-HR. EVENT
BASIN A (AREA):	295,741	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	Metered Outflow	Other Outflow	Required Storage	Available Storage
(min)	(in/hr)		(sq.ft.)	(cfs)	(cf)	(cf)	(cfs)	(cf)	(cfs)	(cf)	(cf)	(cf)
5	6.77	0.91	295,741	41.83	12,548	-	0.6790	204	0.000	-	12,344	-
10	5.15	0.91	295,741	31.82	19,091	-	0.6790	407	0.000	-	18,683	-
15	4.26	0.91	295,741	26.32	23,687	-	0.6790	611	0.000	-	23,076	-
30	2.86	0.91	295,741	17.67	31,806	-	0.6790	1,222	0.000	-	30,583	-
60	1.77	0.91	295,741	10.94	39,368	-	0.6790	2,444	0.000	-	36,923	-
120	0.98	0.91	295,741	6.04	43,505	-	0.6790	4,889	0.000	-	38,616	-
180	0.67	0.91	295,741	4.12	44,506	-	0.6790	7,333	0.000	-	37,172	-
360	0.37	0.91	295,741	2.28	49,243	-	0.6790	14,666	0.000	-	34,577	-
720	0.23	0.91	295,741	1.40	60,319	-	0.6790	29,333	0.000	-	30,987	-
1440	0.124	0.91	295,741	0.766	66,743	-	0.6790	58,666	0.000	-	8,077	-

KIMBERLY CLARK		
Orifice Calculations		
March 26, 2021		
Allowable release rate	**0.679**	
Q = Cd * A * (2*g*h)^.5		
	SIZE (IN-DIA.)	AREA (SF)
A (inches diameter - round):	3.650	0.07266
A (square - using inches):	3.230	0.07245
Cd	0.62	
g	32.2	
CIRCULAR:		
TOP WATER ELEVATION: (FT)	100.11	PLUG-IN
BOTTOM OF ORIFICE: (FT)	96.07	PLUG-IN
CENTROID OF ORIFICE: (FT)	0.15	
CENTROID ELEVATION:	96.22	
EFFECTIVE 'h' (FEET):	3.89	
		GPM
Q (cfs):	**0.7129**	319.93
SQUARE		
TOP ELEVATION: (FT)	100.11	PLUG-IN
BOTTOM OF ORIFICE: (FT)	96.07	PLUG-IN
CENTROID OF ORIFICE: (FT)	0.13	
CENTROID ELEVATION:	96.20	
EFFECTIVE 'h' (FEET):	3.91	
		GPM
Q (cfs):	**0.7124**	319.72