Inlet Grate Capacity Calculations

Inlet Grate Capacity Calculations

Job: SM-4810 Calculated by: BRE
Project: The Meadows of Acton Date: 3/28/2012

LeBARON FOUNDRY, INC. LF246 inlet grate pass area A = 225 sq. in.
1.56 sq. ft.

Q = (C*A* SQRT(2*g*h))*f

C = orifice coefficient
C = 0.6 square edges
A = inlet area
A = 1.56 sq. ft.
g = gravitational constant
g = 32.2 ft/sec^2
h = head on inlet
h = 0.33 ft. (low points)
0.17 ft. (on slope)
f = clogging factor
f = 0.66

Single Grate
Q (MAX)= 2.85 cfs (LP) low points LF246
Q (MAX)= 2.04 cfs (OS) on slope LF246
Double Grate
Q (MAX)= 5.70 cfs (LP) low points LF246
Q (MAX)= 4.09 cfs (OS) on slope LF246

	TRIBUTARY AREA (AC)	TIME OF CONC.	100 YR INTENSITY	C	Q=CiA Q100	POSITION	Q (MAX)	single grate	double grate
CB1	0.11	10	7.6	0.84	0.7	LP	2.85	yes	
CB2	0.51	10	7.6	0.53	2.05	LP	2.85	yes	
CB3	0.26	10	7.6	0.68	1.35	OS	2.04	yes	
CB4	0.32	10	7.6	0.83	2.03	OS	2.04	yes	
CB5	0.29	10	7.6	0.37	0.81	LP	2.85	yes	
CB6	0.48	10	7.6	0.49	1.79	LP	2.85	yes	
CB7	0.41	10	7.6	0.37	1.16	OS	2.04	yes	