

BAYER BECKER
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STORM SEWER CALCULATIONS

FORMULAE USED
 $Q_r = AC * I$ (required)
 $V_p = (1.486 / n) * R^{2/3} * S^{1/2}$
 $Q_p = A_p * V_p$
 $R = (\text{Pipe Dia.} / 4)$

Designed By: GJK
Reviewed By:
Date: 4/3/2011
Revised date:

Project Name: **Voice of America Park, Phase 1**

Sheet: Job # 07M056.006

LOCATION		TOPOGRAPHY					TIME				DESIGN				TIME				REMARKS	
From	To	Area Number	Acres	"C" Value	"AC" for Area	"AC" Accumulate	Time To Inlet "T" (minutes)	Time In Pipe "Tp" (minutes)	Concentration "Tc" (minutes)	Intensity "I" 10 Year Storm Event	"Q" Required (c.f.s.)	Pipe Size (inches)	"n" Value	Slope in %	Velocity (ft. / sec)	"Q" Provided (c.f.s.)	Length of Pipe (feet)	Time In Pipe "Tp" (minutes)	Inlet Invert Elev.	Outlet Invert Elev.
1	2		1.50	0.50	0.75	0.75	10.0		10.0	5.15	3.86	15	0.015	1.10	4.78	5.87	124.00	0.4	888.68	887.32
1a	2	1	2.57	0.50	1.29	1.29	10.0		10.0	5.15	6.62	24	0.015	0.30	3.42	10.74	44.00	0.2	886.70	886.57
2	3	2	2.00	0.50	1.00	2.29	10.0	0.4	10.4	5.08	11.62	27	0.015	0.30	3.70	14.70	67.00	0.3	886.32	886.12
3	4	3	2.36	0.50	1.18	3.47	10.4	0.3	10.7	5.04	17.46	30	0.015	0.30	3.97	19.47	176.00	0.7	885.87	885.34
4	5	4	1.11	0.50	0.56	4.02	10.7	0.7	11.5	4.93	19.82	36	0.016	0.30	4.20	29.68	190.00	0.8	884.84	884.27
5	6	5a	3.30	0.50	1.65	1.65	12.0		12.0	4.86	8.01	24	0.016	0.50	4.14	13.00	385.00	1.6	886.36	884.44
6	7	6a	2.91	0.50	1.46	1.46	12.0	1.6	13.6	4.65	29.43	36	0.016	0.45	5.14	36.35	234.00	0.8	884.27	883.21
7	8	7	1.30	0.75	0.98	8.76	13.6	1.6	15.1	4.46	39.08	42	0.016	0.35	5.03	48.36	215.00	0.7	882.71	881.96
		8	0.50	0.50	0.25	9.01	15.1	0.7	15.8	4.38	39.45	42	0.016	0.35	5.03	48.36	84.00	0.3	881.96	881.67
9a		8a	3.75	0.50	1.88	1.88	12.0		12.0	4.86	9.11	24	0.016	0.50	4.14	13.00	365.00	1.5	889.93	888.11
9	10	8b	3.76	0.50	1.88	3.76	12.0	1.5	13.5	4.66	17.50	30	0.016	0.50	4.80	23.57	381.00	1.3	887.86	885.95
10a		8c	3.24	0.50	1.62	1.62	12.0		12.0	4.86	7.87	24	0.016	0.50	4.14	13.00	365.00	1.5	889.93	888.11
10	11	8d	3.05	0.50	1.53	3.15	12.0	1.5	13.5	4.66	14.66	30	0.016	0.50	4.80	23.57	381.00	1.3	887.86	885.95
						6.90	14.8	0.8	15.6	4.40	30.38	36	0.016	0.50	5.42	38.32	435.00	1.3	884.28	882.11
12	13	9	0.37	0.40	0.15	0.15	10.0		10.0	5.15	0.76	12	0.016	2.50	5.83	4.58	63.00	0.2	884.20	882.63
14	15	10	1.65	0.60	0.99	0.99	10.0		10.0	5.15	5.10	15	0.016	3.30	7.77	9.53	60.00	0.1	884.00	882.02

• verify ~~see~~ w/ drawings

• does not include pipe 1-2
 ~ V capacity for 2-3: 3-4

• structure 18-19
 20-21-22