SHW Group LLP
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Consultants:

CIVIL:
GLENN ENGINEERING CORP

STRUCTURAL:
SHW GROUP, LLP

MEP:
ESTES McCLURE AND ASSOCIATES.

FOOD SERVICE:
H. G. RICE Inc.

LANDSCAPING:
GRUBBS RAMSEY

FINAL PLANS FOR BIDDING AND CONSTRUCTING

MIKE GLENN 35059 — STATE OF TEXAS — REGISTERED PROFESSIONAL ENGINEER — 8-7-07

Hydrograph Report

Hydraflow Hydrographs by Intelisolve — Wednesday, Jul 19 2006, 4:1 PM

Hyd. No. 6

Release from pond

Hydrograph type	= Reservoir	Peak discharge	= 118.01 cfs
Storm frequency	= 5 yrs	Time interval	= 1 min
Inflow hyd. No.	= 5	Reservoir name	= Dalton Elementary
Max. Elevation	= 532.93 ft	Max. Storage	= 177,125 cuft

Storage Indication method used. Outflow hydrograph volume = 293,984 cuft

Hydrograph Discharge Table (Printed values >= 1% of Qp.)

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
4	64.32	527.03	1.57	1.57	-----	-----	-----	-----	-----	-----	-----	1.57
5	80.40	527.33	2.77	2.77	-----	-----	-----	-----	-----	-----	-----	2.77
6	96.48	528.10	6.11	6.11	-----	-----	-----	-----	-----	-----	-----	6.11
7	112.56	528.34	7.13	7.13	-----	-----	-----	-----	-----	-----	-----	7.13
8	128.64	528.60	8.31	8.31	-----	-----	-----	-----	-----	-----	-----	8.31
9	144.73	528.91	9.65	9.65	-----	-----	-----	-----	-----	-----	-----	9.65
10	160.81	529.21	11.06	9.57	-----	1.49	-----	-----	-----	-----	-----	11.05
11	160.93	529.52	12.48	9.04	-----	3.43	-----	-----	-----	-----	-----	12.47
12	161.05	529.83	13.87	8.65	-----	5.21	-----	-----	-----	-----	-----	13.86
13	161.17	530.12	15.17	8.37	-----	6.80	-----	-----	-----	-----	-----	15.16
14	161.29	530.38	16.37	8.16	-----	8.20	-----	-----	-----	-----	-----	16.36
15	161.41	530.65	17.55	7.98	-----	9.56	-----	-----	-----	-----	-----	17.54
16	161.53	530.91	18.73	7.85	-----	10.88	-----	-----	-----	-----	-----	18.73
17	161.66	531.15	19.81	7.73	-----	12.07	-----	-----	-----	-----	-----	19.80
18	161.78	531.38	20.84	7.63	-----	13.20	-----	-----	-----	-----	-----	20.83
19	161.90	531.60	28.86	9.96	-----	18.84	-----	-----	-----	-----	-----	28.80
20	162.02 <<	531.80	50.27	16.55	-----	33.68	-----	-----	-----	-----	-----	50.23
21	162.02 <<	531.97	64.56	20.44	-----	44.14	-----	-----	-----	-----	-----	64.57
22	162.02 <<	532.10	75.14	23.06	-----	52.06	-----	-----	-----	-----	-----	75.11
23	162.02 <<	532.22	83.62	25.06	-----	58.55	-----	-----	-----	-----	-----	83.62
24	162.02 <<	532.33	90.16	26.80	-----	63.36	-----	-----	-----	-----	-----	90.16
25	162.02 <<	532.43	95.38	28.35	-----	67.02	-----	-----	-----	-----	-----	95.37
26	162.02 <<	532.52	99.98	29.72	-----	70.25	-----	-----	-----	-----	-----	99.97
27	162.02 <<	532.61	104.09	30.94	-----	73.13	-----	-----	-----	-----	-----	104.07
28	162.02 <<	532.69	107.79	32.04	-----	75.73	-----	-----	-----	-----	-----	107.77
29	162.02 <<	532.77	111.11	33.03	-----	78.08	-----	-----	-----	-----	-----	111.11
30	162.02 <<	532.84	114.17	33.94	-----	80.22	-----	-----	-----	-----	-----	114.16
31	146.06	532.89	116.52	34.64	-----	81.88	-----	-----	-----	-----	-----	116.52
32	130.10	532.92	117.77	35.01	-----	82.75	-----	-----	-----	-----	-----	117.76
33	114.14	532.93 <<	118.02	35.08	-----	82.92	-----	-----	-----	-----	-----	118.01 <<
34	98.18	532.91	117.34	34.88	-----	82.45	-----	-----	-----	-----	-----	117.33
35	82.23	532.86	115.75	34.41	-----	81.34	-----	-----	-----	-----	-----	115.75
36	66.27	532.82	113.30	33.68	-----	79.62	-----	-----	-----	-----	-----	113.30
37	50.31	532.74	109.97	32.69	-----	77.27	-----	-----	-----	-----	-----	109.96
38	34.35	532.65	105.74	31.43	-----	74.29	-----	-----	-----	-----	-----	105.72
39	18.39	532.54	100.54	29.89	-----	70.64	-----	-----	-----	-----	-----	100.53
40	2.43	532.41	94.33	28.04	-----	66.28	-----	-----	-----	-----	-----	94.32
41	2.31	532.28	87.41	26.03	-----	61.38	-----	-----	-----	-----	-----	87.41

Present Conditions
Q=CIA
A = 76.379
C = 0.35
Tc = 20
I_5 = 4.9
Q_5 = 130.99

Future Conditions (Developed)		Offsite Conditions (Developed)		Offsite Conditions (Developed)	
A =	11.136	A =	2.023	A =	63.222
C =	0.7	C =	0.35	C =	0.5
Tc =	10	Tc =	20	Tc =	10
I5 =	6.2	I5 =	4.9	I5 =	6.2
Q5 =	48.33024	Q5 =	3.469446	Q5 =	195.9882

Time	I (Developed)	C	Q	I (Offsite)	C	Q	I (Offsite)	C	Q
10 min	6.2	0.7	48.33024	6.2	0.5	6.2713	6.2	0.5	195.9882
15 min	5.5	0.7	42.8736	5.5	0.5	5.56325	5.5	0.5	173.8605
20 min	4.9	0.7	38.19648	4.9	0.5	4.95635	4.9	0.5	154.8939
30 min	4.1	0.7	31.96032	4.1	0.5	4.14715	4.1	0.5	129.6051
40 min	3.4	0.7	26.50368	3.4	0.5	3.4391	3.4	0.5	107.4774
50 min	2.9	0.7	22.60608	2.9	0.5	2.93335	2.9	0.5	91.6719
60 min	2.6	0.7	20.26752	2.6	0.5	2.6299	2.6	0.5	82.1886
70 min	2.4	0.7	18.70848	2.4	0.5	2.4276	2.4	0.5	75.8664
80 min	2.2	0.7	17.14944	2.2	0.5	2.2253	2.2	0.5	69.5442
90 min	2	0.7	15.5904	2	0.5	2.023	2	0.5	63.222

Storage Calculations

Duration	Inflow	Outflow	Storage
10 min	150353.8	78596.05	71757.8
15 min	200067.6	98245.06	101822.6
20 min	237656.1	117894.1	119762
30 min	298282.6	157192.1	141090.5 *
40 min	329808.4	196490.1	133318.3
50 min	351634	235788.1	115845.8
60 min	378309.7	275086.2	103223.5
70 min	407410.4	314384.2	93026.22
80 min	426810.9	353682.2	73128.69
90 min	436511.2	392980.2	43530.92

Hydrograph Report

Hydraflow Hydrographs by Intelisolve — Wednesday, Jul 19 2006, 4:1 PM

Hyd. No. 6

Release from pond

Hydrograph type	= Reservoir	Peak discharge	= 137.56 cfs
Storm frequency	= 10 yrs	Time interval	= 1 min
Inflow hyd. No.	= 5	Reservoir name	= Dalton Elementary
Max. Elevation	= 533.45 ft	Max. Storage	= 200,678 cuft

Storage Indication method used. Outflow hydrograph volume = 347,314 cuft

Hydrograph Discharge Table (Printed values >= 1% of Qp.)

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
4	76.23	527.13	1.96	1.96	-----	-----	-----	-----	-----	-----	-----	1.96
5	95.29	527.87	5.10	5.10	-----	-----	-----	-----	-----	-----	-----	5.10
6	114.34	528.22	6.64	6.63	-----	-----	-----	-----	-----	-----	-----	6.63
7	133.40	528.50	7.85	7.85	-----	-----	-----	-----	-----	-----	-----	7.85
8	152.46	528.82	9.28	9.26	-----	-----	-----	-----	-----	-----	-----	9.26
9	171.52	529.16	10.79	9.76	-----	1.03	-----	-----	-----	-----	-----	10.78
10	190.57	529.51	12.41	9.06	-----	3.34	-----	-----	-----	-----	-----	12.40
11	190.72	529.88	14.08	8.60	-----	5.47	-----	-----	-----	-----	-----	14.07
12	190.86	530.21	15.60	8.29	-----	7.30	-----	-----	-----	-----	-----	15.60
13	191.00	530.53	17.03	8.06	-----	8.96	-----	-----	-----	-----	-----	17.02
14	191.15	530.85	18.45	7.88	-----	10.57	-----	-----	-----	-----	-----	18.45
15	191.29	531.14	19.78	7.73	-----	12.04	-----	-----	-----	-----	-----	19.77
16	191.43	531.42	21.02	7.62	-----	13.40	-----	-----	-----	-----	-----	21.02
17	191.58	531.68	38.53	13.03	-----	25.45	-----	-----	-----	-----	-----	38.48
18	191.72	531.91	60.11	19.27	-----	40.83	-----	-----	-----	-----	-----	60.10
19	191.86	532.10	74.92	23.01	-----	51.89	-----	-----	-----	-----	-----	74.90
20	192.00 <<	532.26	86.06	25.69	-----	60.37	-----	-----	-----	-----	-----	86.06
21	192.00 <<	532.41	94.23	28.01	-----	66.21	-----	-----	-----	-----	-----	94.22
22	192.00 <<	532.54	100.96	30.01	-----	70.94	-----	-----	-----	-----	-----	100.95
23	192.00 <<	532.67	106.88	31.77	-----	75.09	-----	-----	-----	-----	-----	106.86
24	192.00 <<	532.79	112.13	33.34	-----	78.80	-----	-----	-----	-----	-----	112.13
25	192.00 <<	532.90	116.86	34.74	-----	82.11	-----	-----	-----	-----	-----	116.86
26	192.00 <<	533.01	121.12	36.00	-----	85.10	-----	-----	-----	-----	-----	121.11
27	192.00 <<	533.10	124.65	37.06	-----	87.59	-----	-----	-----	-----	-----	124.64
28	192.00 <<	533.18	127.91	38.03	-----	89.88	-----	-----	-----	-----	-----	127.91
29	192.00 <<	533.26	130.95	38.93	-----	92.01	-----	-----	-----	-----	-----	130.94
30	192.00 <<	533.34	133.78	39.77	-----	94.00	-----	-----	-----	-----	-----	133.77
31	173.09	533.40	136.01	40.43	-----	95.57	-----	-----	-----	-----	-----	136.00
32	154.18	533.44	137.24	40.80	-----	96.43	-----	-----	-----	-----	-----	137.23
33	135.26	533.45 <<	137.58	40.90	-----	96.67	-----	-----	-----	-----	-----	137.56 <<
34	116.35	533.43	137.05	40.74	-----	96.30	-----	-----	-----	-----	-----	137.04
35	97.43	533.39	135.70	40.34	-----	95.36	-----	-----	-----	-----	-----	135.69
36	78.52	533.33	133.52	39.69	-----	93.82	-----	-----	-----	-----	-----	133.51
37	59.60	533.25	130.52	38.80	-----	91.71	-----	-----	-----	-----	-----	130.51
38	40.69	533.15	126.68	37.66	-----	89.02	-----	-----	-----	-----	-----	126.68
39	21.77	533.03	121.99	36.26	-----	85.71	-----	-----	-----	-----	-----	121.98
40	2.86	532.88	115.86	34.44	-----	81.41	-----	-----	-----	-----	-----	115.85
41	2.72	532.72	109.07	32.42	-----	76.63	-----	-----	-----	-----	-----	109.05

Present Conditions
Q=CIA
A = 76.379
C = 0.35
Tc = 20
I_{10} = 5.8
Q_{10} = 155.0494

Future Conditions (Developed)		Offsite Conditions (Developed)		Offsite Conditions (Developed)	
A =	11.136	A =	2.023	A =	63.222
C =	0.7	C =	0.35	C =	0.5
Tc =	10	Tc =	20	Tc =	10
I_{10} =	7.3	I_{10} =	5.8	I_{10} =	7.3
Q_{10} =	56.90496	Q_{10} =	4.10669	Q_{10} =	230.7603

Time	I (Developed)	C	Q	I (Offsite)	C	Q	I (Offsite)	C	Q
10 min	7.3	0.7	56.90496	7.3	0.5	7.36385	7.3	0.5	230.7603
15 min	6.5	0.7	50.6688	6.5	0.5	6.57475	6.5	0.5	205.4715
20 min	5.8	0.7	45.21216	5.8	0.5	5.8667	5.8	0.5	183.3438
30 min	4.8	0.7	37.41696	4.8	0.5	4.8562	4.8	0.5	151.7328
40 min	4	0.7	31.1808	4	0.5	4.046	4	0.5	126.444
50 min	3.5	0.7	27.2832	3.5	0.5	3.54025	3.5	0.5	110.6385
60 min	3	0.7	23.3856	3	0.5	3.0345	3	0.5	94.833
70 min	2.8	0.7	21.82656	2.8	0.5	2.8322	2.8	0.5	88.5108
80 min	2.6	0.7	20.26752	2.6	0.5	2.6299	2.6	0.5	82.1886
90 min	2.4	0.7	18.70848	2.4	0.5	2.4276	2.4	0.5	75.8664

Storage Calculations

Duration	Inflow	Outflow	Storage
10 min	177629.5	93032.06	83897.47
15 min	236443.5	116290.1	120153.5
20 min	281307.2	139548.1	141759.1
30 min	349208.9	186064.1	163144.8 *
40 min	388009.9	232580.1	155429.8
50 min	424385.9	279096.2	145289.7
60 min	436511.2	325612.2	110899
70 min	475312.2	372128.2	103183.9
80 min	504412.9	418644.3	85768.64
90 min	523813.4	465160.3	58653.1

Hydrograph Report

Hydraflow Hydrographs by Intelisolve — Wednesday, Jul 19 2006, 4:1 PM

Hyd. No. 6

Release from pond

Hydrograph type	= Reservoir	Peak discharge	= 155.87 cfs
Storm frequency	= 25 yrs	Time interval	= 1 min
Inflow hyd. No.	= 5	Reservoir name	= Dalton Elementary
Max. Elevation	= 534.00 ft	Max. Storage	= 226,327 cuft

Storage Indication method used. Outflow hydrograph volume = 401,609 cuft

Hydrograph Discharge Table (Printed values >= 1% of Qp.)

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
4	88.14	527.23	2.36	2.36	-----	-----	-----	-----	-----	-----	-----	2.36
5	110.18	528.07	5.98	5.98	-----	-----	-----	-----	-----	-----	-----	5.98
6	132.21	528.35	7.18	7.17	-----	-----	-----	-----	-----	-----	-----	7.17
7	154.25	528.67	8.59	8.59	-----	-----	-----	-----	-----	-----	-----	8.59
8	176.29	529.03	10.21	10.03	-----	0.18	-----	-----	-----	-----	-----	10.21
9	198.32	529.40	11.90	9.23	-----	2.67	-----	-----	-----	-----	-----	11.90
10	220.36	529.80	13.76	8.68	-----	5.08	-----	-----	-----	-----	-----	13.75
11	220.52	530.20	15.56	8.30	-----	7.26	-----	-----	-----	-----	-----	15.56
12	220.69	530.58	17.24	8.03	-----	9.20	-----	-----	-----	-----	-----	17.23
13	220.86	530.95	18.90	7.83	-----	11.07	-----	-----	-----	-----	-----	18.90
14	221.02	531.28	20.39	7.67	-----	12.71	-----	-----	-----	-----	-----	20.37
15	221.19	531.60	28.66	9.90	-----	18.70	-----	-----	-----	-----	-----	28.60
16	221.35	531.89	57.87	18.67	-----	39.19	-----	-----	-----	-----	-----	57.85
17	221.52	532.12	76.35	23.34	-----	52.99	-----	-----	-----	-----	-----	76.33
18	221.68	532.32	89.58	26.63	-----	62.94	-----	-----	-----	-----	-----	89.57
19	221.85	532.50	99.03	29.44	-----	69.58	-----	-----	-----	-----	-----	99.01
20	222.02 <<	532.68	107.06	31.82	-----	75.22	-----	-----	-----	-----	-----	107.04
21	222.02 <<	532.84	114.07	33.91	-----	80.16	-----	-----	-----	-----	-----	114.07
22	222.02 <<	532.99	120.34	35.77	-----	84.55	-----	-----	-----	-----	-----	120.32
23	222.02 <<	533.12	125.44	37.29	-----	88.15	-----	-----	-----	-----	-----	125.44
24	222.02 <<	533.24	130.08	38.67	-----	91.40	-----	-----	-----	-----	-----	130.07
25	222.02 <<	533.36	134.35	39.94	-----	94.40	-----	-----	-----	-----	-----	134.33
26	222.02 <<	533.47	138.30	41.11	-----	97.17	-----	-----	-----	-----	-----	138.28
27	222.02 <<	533.57	141.96	42.20	-----	99.75	-----	-----	-----	-----	-----	141.96
28	222.02 <<	533.68	145.39	43.22	-----	102.16	-----	-----	-----	-----	-----	145.38
29	222.02 <<	533.77	148.60	44.18	-----	104.41	-----	-----	-----	-----	-----	148.59
30	222.02 <<	533.87	151.61	45.07	-----	106.53	-----	-----	-----	-----	-----	151.60
31	200.15	533.94	154.00	45.78	-----	108.21	-----	-----	-----	-----	-----	154.00
32	178.28	533.99	155.41	46.20	-----	109.20	-----	-----	-----	-----	-----	155.40
33	156.41	534.00 <<	155.88	46.34	-----	109.53	-----	-----	-----	-----	-----	155.87 <<
34	134.54	533.99	155.47	46.22	-----	109.25	-----	-----	-----	-----	-----	155.47
35	112.67	533.95	154.20	45.84	-----	108.35	-----	-----	-----	-----	-----	154.19
36	90.80	533.88	152.09	45.21	-----	106.87	-----	-----	-----	-----	-----	152.08
37	68.93	533.79	149.14	44.34	-----	104.80	-----	-----	-----	-----	-----	149.13
38	47.06	533.67	145.33	43.20	-----	102.12	-----	-----	-----	-----	-----	145.32
39	25.19	533.54	140.64	41.81	-----	98.82	-----	-----	-----	-----	-----	140.63
40	3.32	533.38	135.01	40.13	-----	94.86	-----	-----	-----	-----	-----	135.00
41	3.15	533.21	128.88	38.32	-----	90.58	-----	-----	-----	-----	-----	128.88

Present Conditions
Q=CIA
A = 76.379
C = 0.35
Tc = 20
I_{25} = 6.7
Q_{25} = 179.1088

Future Conditions (Developed)		Offsite Conditions (Developed)		Offsite Conditions (Developed)	
A =	11.136	A =	2.023	A =	63.222
C =	0.7	C =	0.35	C =	0.5
Tc =	10	Tc =	20	Tc =	10
I_{25} =	8.3	I_{25} =	6.7	I_{25} =	8.3
Q_{25} =	64.70016	Q_{25} =	4.743935	Q_{25} =	262.3713

Time	I (Developed)	C	Q	I (Offsite)	C	Q	I (Offsite)	C	Q
10 min	8.3	0.7	64.70016	8.3	0.5	8.39545	8.3	0.5	262.3713
15 min	7.4	0.7	57.68448	7.4	0.5	7.4851	7.4	0.5	233.9214
20 min	6.7	0.7	52.22784	6.7	0.5	6.77705	6.7	0.5	211.7937
30 min	5.5	0.7	42.8736	5.5	0.5	5.56325	5.5	0.5	173.8605
40 min	4.6	0.7	35.85792	4.6	0.5	4.6529	4.6	0.5	145.4106
50 min	4	0.7	31.1808	4	0.5	4.046	4	0.5	126.444
60 min	3.5	0.7	27.2832	3.5	0.5	3.54025	3.5	0.5	110.6385
70 min	3.2	0.7	24.94464	3.2	0.5	3.2368	3.2	0.5	101.1552
80 min	3	0.7	23.3856	3	0.5	3.0345	3	0.5	94.833
90 min	2.7	0.7	21.04704	2.7	0.5	2.73105	2.7	0.5	85.3497

Storage Calculations

Duration	Inflow	Outflow	Storage
10 min	201280.1	107468.1	93812.08
15 min	269181.9	134335.1	134846.8
20 min	324958.3	161202.1	163756.2
30 min	400135.2	214936.1	185199.1 *
40 min	446211.4	268670.2	177541.2
50 min	485012.4	322404.2	162608.2
60 min	509263	376138.2	133124.8
70 min	543213.9	429872.3	113341.6
80 min	582014.9	483606.3	98408.58
90 min	589290.1	537340.3	51949.73

Hydrograph Report

Hydraflow Hydrographs by Intelisolve — Wednesday, Jul 19 2006, 4:1 PM

Hyd. No. 6

Release from pond

Hydrograph type	= Reservoir	Peak discharge	= 169.75 cfs
Storm frequency	= 50 yrs	Time interval	= 1 min
Inflow hyd. No.	= 5	Reservoir name	= Dalton Elementary
Max. Elevation	= 534.47 ft	Max. Storage	= 250,059 cuft

Storage Indication method used. Outflow hydrograph volume = 448,678 cuft

Hydrograph Discharge Table (Printed values >= 1% of Qp.)

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
4	98.47	527.32	2.71	2.71	-----	-----	-----	-----	-----	-----	-----	2.71
5	123.09	528.15	6.31	6.31	-----	-----	-----	-----	-----	-----	-----	6.31
6	147.70	528.45	7.65	7.65	-----	-----	-----	-----	-----	-----	-----	7.65
7	172.32	528.81	9.24	9.24	-----	-----	-----	-----	-----	-----	-----	9.24
8	196.94	529.20	10.99	9.60	-----	1.38	-----	-----	-----	-----	-----	10.98
9	221.56	529.61	12.86	8.92	-----	3.94	-----	-----	-----	-----	-----	12.86
10	246.17	530.06	14.90	8.42	-----	6.47	-----	-----	-----	-----	-----	14.89
11	246.36	530.48	16.79	8.09	-----	8.69	-----	-----	-----	-----	-----	16.78
12	246.54	530.89	18.67	7.85	-----	10.81	-----	-----	-----	-----	-----	18.66
13	246.73	531.27	20.37	7.67	-----	12.68	-----	-----	-----	-----	-----	20.35
14	246.92	531.63	32.51	11.12	-----	21.33	-----	-----	-----	-----	-----	32.45
15	247.10	531.95	63.42	20.13	-----	43.28	-----	-----	-----	-----	-----	63.42
16	247.29	532.21	82.74	24.84	-----	57.90	-----	-----	-----	-----	-----	82.74
17	247.47	532.44	95.68	28.44	-----	67.23	-----	-----	-----	-----	-----	95.67
18	247.66	532.65	105.85	31.46	-----	74.37	-----	-----	-----	-----	-----	105.83
19	247.85	532.85	114.54	34.05	-----	80.49	-----	-----	-----	-----	-----	114.54
20	248.03 <<	533.03	122.06	36.29	-----	85.76	-----	-----	-----	-----	-----	122.05
21	248.03 <<	533.19	128.23	38.12	-----	90.11	-----	-----	-----	-----	-----	128.23
22	248.03 <<	533.34	133.84	39.79	-----	94.04	-----	-----	-----	-----	-----	133.83
23	248.03 <<	533.49	138.99	41.32	-----	97.66	-----	-----	-----	-----	-----	138.97
24	248.03 <<	533.63	143.72	42.73	-----	100.99	-----	-----	-----	-----	-----	143.71
25	248.03 <<	533.76	148.11	44.03	-----	104.07	-----	-----	-----	-----	-----	148.11
26	248.03 <<	533.89	152.22	45.25	-----	106.96	-----	-----	-----	-----	-----	152.20
27	248.03 <<	534.01	156.02	46.38	-----	109.63	-----	-----	-----	-----	-----	156.02
28	248.03 <<	534.11	159.30	47.36	-----	111.93	-----	-----	-----	-----	-----	159.29
29	248.03 <<	534.22	162.40	48.28	-----	114.11	-----	-----	-----	-----	-----	162.39
30	248.03 <<	534.32	165.34	49.15	-----	116.17	-----	-----	-----	-----	-----	165.32
31	223.60	534.40	167.71	49.86	-----	117.85	-----	-----	-----	-----	-----	167.71
32	199.17	534.45	169.16	50.29	-----	118.87	-----	-----	-----	-----	-----	169.16
33	174.74	534.47 <<	169.75	50.47	-----	119.28	-----	-----	-----	-----	-----	169.75 <<
34	150.31	534.46	169.51	50.39	-----	119.11	-----	-----	-----	-----	-----	169.51
35	125.88	534.43	168.47	50.08	-----	118.38	-----	-----	-----	-----	-----	168.47
36	101.44	534.36	166.63	49.54	-----	117.09	-----	-----	-----	-----	-----	166.63
37	77.01	534.27	164.01	48.75	-----	115.24	-----	-----	-----	-----	-----	163.99
38	52.58	534.16	160.57	47.73	-----	112.83	-----	-----	-----	-----	-----	160.56
39	28.15	534.02	156.31	46.47	-----	109.84	-----	-----	-----	-----	-----	156.31
40	3.72	533.84	150.73	44.81	-----	105.91	-----	-----	-----	-----	-----	150.72
41	3.53	533.65	144.60	42.99	-----	101.61	-----	-----	-----	-----	-----	144.60

Present Conditions
Q=CIA
A = 76.379
C = 0.35
Tc = 20
I_{50} = 7.4
Q_{50} = 197.8216

Future Conditions (Developed)		Offsite Conditions (Developed)		Offsite Conditions (Developed)	
A =	11.136	A =	2.023	A =	63.222
C =	0.7	C =	0.35	C =	0.5
Tc =	10	Tc =	20	Tc =	10
I_{50} =	9	I_{50} =	7.4	I_{50} =	9
Q_{50} =	70.1568	Q_{50} =	5.23957	Q_{50} =	284.499

Time	I (Developed)	C	Q	I (Offsite)	C	Q	I (Offsite)	C	Q
10 min	9	0.7	70.1568	9	0.5	9.1035	9	0.5	284.499
15 min	8.2	0.7	63.92064	8.2	0.5	8.2943	8.2	0.5	259.2102
20 min	7.4	0.7	57.68448	7.4	0.5	7.4851	7.4	0.5	233.9214
30 min	6.2	0.7	48.33024	6.2	0.5	6.2713	6.2	0.5	195.9882
40 min	5.2	0.7	40.53504	5.2	0.5	5.2598	5.2	0.5	164.3772
50 min	4.5	0.7	35.0784	4.5	0.5	4.55175	4.5	0.5	142.2495
60 min	3.9	0.7	30.40128	3.9	0.5	3.94485	3.9	0.5	123.2829
70 min	3.6	0.7	28.06272	3.6	0.5	3.6414	3.6	0.5	113.7996
80 min	3.3	0.7	25.72416	3.3	0.5	3.33795	3.3	0.5	104.3163
90 min	3.1	0.7	24.16512	3.1	0.5	3.13565	3.1	0.5	97.9941

Storage Calculations

Duration	Inflow	Outflow	Storage
10 min	218255.6	118696.1	99559.51
15 min	298282.6	148370.1	149912.5
20 min	358909.2	178044.1	180865.1
30 min	451061.5	237392.1	213669.4 *
40 min	504412.9	296740.2	207672.7
50 min	545639	356088.2	189550.7
60 min	567464.5	415436.3	152028.2
70 min	611115.6	474784.3	136331.3
80 min	640216.4	534132.3	106084
90 min	676592.3	593480.4	83111.93

Hydrograph Report

Hydraflow Hydrographs by Intelisolve — Wednesday, Jul 19 2006, 4:1 PM

Hyd. No. 6

Release from pond

Hydrograph type	= Reservoir	Peak discharge	= 200.38 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 5	Reservoir name	= Dalton Elementary
Max. Elevation	= 534.94 ft	Max. Storage	= 273,732 cuft

Storage Indication method used. Outflow hydrograph volume = 499,492 cuft

Hydrograph Discharge Table (Printed values >= 1% of Qp.)

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
4	109.60	527.44	3.25	3.25	-----	-----	-----	-----	-----	-----	-----	3.25
5	137.00	528.23	6.66	6.66	-----	-----	-----	-----	-----	-----	-----	6.66
6	164.39	528.57	8.16	8.16	-----	-----	-----	-----	-----	-----	-----	8.16
7	191.79	528.97	9.93	9.93	-----	-----	-----	-----	-----	-----	-----	9.93
8	219.19	529.38	11.81	9.26	-----	2.54	-----	-----	-----	-----	-----	11.80
9	246.59	529.83	13.89	8.64	-----	5.23	-----	-----	-----	-----	-----	13.88
10	273.99	530.30	16.00	8.22	-----	7.78	-----	-----	-----	-----	-----	16.00
11	274.20	530.77	18.11	7.91	-----	10.18	-----	-----	-----	-----	-----	18.10
12	274.41	531.21	20.08	7.70	-----	12.37	-----	-----	-----	-----	-----	20.07
13	274.62	531.61	30.43	10.46	-----	19.91	-----	-----	-----	-----	-----	30.37
14	274.83	531.98	65.62	20.71	-----	44.91	-----	-----	-----	-----	-----	65.62
15	275.04	532.27	86.54	25.81	-----	60.73	-----	-----	-----	-----	-----	86.54
16	275.25	532.53	100.32	29.82	-----	70.49	-----	-----	-----	-----	-----	100.31
17	275.46	532.78	111.48	33.14	-----	78.33	-----	-----	-----	-----	-----	111.47
18	275.67	533.01	121.04	35.98	-----	85.04	-----	-----	-----	-----	-----	121.02
19	275.87	533.20	128.63	38.24	-----	90.38	-----	-----	-----	-----	-----	128.62
20	276.08 <<	533.39	135.47	40.27	-----	95.19	-----	-----	-----	-----	-----	135.46
21	276.08 <<	533.57	141.69	42.12	-----	99.56	-----	-----	-----	-----	-----	141.69
22	276.08 <<	533.74	147.41	43.82	-----	103.58	-----	-----	-----	-----	-----	147.40
23	276.08 <<	533.90	152.70	45.39	-----	107.29	-----	-----	-----	-----	-----	152.69
24	276.08 <<	534.05	157.43	46.80	-----	110.62	-----	-----	-----	-----	-----	157.42
25	276.08 <<	534.19	161.62	48.04	-----	113.56	-----	-----	-----	-----	-----	161.60
26	276.08 <<	534.32	165.54	49.21	-----	116.32	-----	-----	-----	-----	-----	165.53
27	276.08 <<	534.45	169.25	50.32	-----	118.93	-----	-----	-----	-----	-----	169.24
28	276.08 <<	534.58	174.24	51.23	-----	121.08	1.93	-----	-----	-----	-----	174.23
29	276.08 <<	534.69	181.24	51.86	-----	122.58	6.80	-----	-----	-----	-----	181.24
30	276.08 <<	534.80	189.05	52.30	-----	123.61	13.13	-----	-----	-----	-----	189.04
31	248.89	534.88	195.76	52.55	-----	124.20	19.00	-----	-----	-----	-----	195.75
32	221.70	534.93	199.54	52.66	-----	124.46	22.42	-----	-----	-----	-----	199.54
33	194.51	534.94 <<	200.39	52.68	-----	124.51	23.20	-----	-----	-----	-----	200.38 <<
34	167.33	534.92	198.48	52.63	-----	124.40	21.44	-----	-----	-----	-----	198.46
35	140.14	534.86	194.29	52.49	-----	124.07	17.72	-----	-----	-----	-----	194.28
36	112.96	534.79	188.19	52.25	-----	123.50	12.43	-----	-----	-----	-----	188.18
37	85.76	534.69	180.92	51.83	-----	122.52	6.57	-----	-----	-----	-----	180.92
38	58.57	534.56	173.62	51.14	-----	120.87	1.60	-----	-----	-----	-----	173.61
39	31.38	534.41	168.15	49.99	-----	118.16	-----	-----	-----	-----	-----	168.14
40	4.19	534.24	163.05	48.47	-----	114.57	-----	-----	-----	-----	-----	163.04
41	3.98	534.06	157.48	46.82	-----	110.65	-----	-----	-----	-----	-----	157.47

Present Conditions
Q=CIA
A = 76.379
C = 0.35
Tc = 20
I_{100} = 8.3
Q_{100} = 221.881

Future Conditions (Developed)		Offsite Conditions (Developed)		Offsite Conditions (Developed)	
A =	11.136	A =	2.023	A =	63.222
C =	0.7	C =	0.35	C =	0.5
Tc =	10	Tc =	20	Tc =	10
I_{100} =	9.8	I_{100} =	8.3	I_{100} =	9.8
Q_{100} =	76.39296	Q_{100} =	5.876815	Q_{100} =	309.7878

Time	I (Developed)	C	Q	I (Offsite)	C	Q	I (Offsite)	C	Q
10 min	9.8	0.7	76.39296	9.8	0.5	9.9127	9.8	0.5	309.7878
15 min	9	0.7	70.1568	9	0.5	9.1035	9	0.5	284.499
20 min	8.3	0.7	64.70016	8.3	0.5	8.39545	8.3	0.5	262.3713
30 min	6.9	0.7	53.78688	6.9	0.5	6.97935	6.9	0.5	218.1159
40 min	5.8	0.7	45.21216	5.8	0.5	5.8667	5.8	0.5	183.3438
50 min	5	0.7	38.976	5	0.5	5.0575	5	0.5	158.055
60 min	4.5	0.7	35.0784	4.5	0.5	4.55175	4.5	0.5	142.2495
70 min	4	0.7	31.1808	4	0.5	4.046	4	0.5	126.444
80 min	3.7	0.7	28.84224	3.7	0.5	3.74255	3.7	0.5	116.9607
90 min	3.5	0.7	27.2832	3.5	0.5	3.54025	3.5	0.5	110.6385

Storage Calculations

Duration	Inflow	Outflow	Storage
10 min	237656.1	133132.1	104524
15 min	327383.4	166415.1	160968.3
20 min	402560.3	199698.1	202862.2
30 min	501987.8	266264.2	235723.7 *
40 min	562614.4	332830.2	229784.2
50 min	606265.5	399396.2	206869.3
60 min	654766.7	465962.3	188804.4
70 min	679017.4	532528.3	146489
80 min	717618.4	599094.4	118724
90 min	763894.5	665660.4	98234.12

RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Signed: M. Glenn — Date: 8-7-07

Glenn Engineering Corporation

DRAINAGE CALCULATIONS

GLENN ENGINEERING
PHONE 972-717-5151 FAX 972-717-2176
105 DECKER COURT - SUITE 910 IRVING, TEXAS 75062

Rockwall Independent School District

ROCKWALL ELEMENTARY SCHOOL #11
RISD, TEXAS

Project Number:	1441.05.021
Drawing Date:	3/09/2006
Drawn:	R.HOWMAN
Checked:	RAH
Scale:	AS SHOWN

ACAD File: BUSIEK-ENG-SITE2_CITYREV3.dwg
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Revisions:

No.	Date	Description
1	07/20/2006	CITY COMMENTS
2	08/15/2006	CITY COMMENTS
3	10/17/2006	REVISED BOX ELEVATIONS
4	10/23/2006	WATER REVISIONS

Sheet Title:
DRAINAGE CALCULATIONS

CG 1.06A