KEEP

NEWEST OK FG 11/6/04

File - Pidgeon Park West Plat 2

Job File:J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Rain Dir: C:\HAESTAD\PPK6\UTIL\

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PACE DEVELOPMENT

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Highway K & Mexico Rd. City of O'Fallon, Missouri

Kuhlmann Design Group - Project #980324-0004

DETENTION ROUTING CALCULATIONS

Revised 11-04-03

In this report:

Calculated volumes stored in the basin and the outfall from the control structure.

Including:

Cemetery @ 4.5 ac.
Winding Woods @ 17.20 acres (with detention provided upstream)
Hwy K C2 area @ 23.20 acres (with detention provided upstream)
Autumn Chase @ 16.02 acres Developed Condition

Calculated controlled flows exiting the basin:

100 year storm	150.04 cfs
25 year storm	119.92 cfs
15 year storm	98.82 cfs

Calculated flows (developed) from 6.49 acre Pigeon Park:

100 year storm	39.46 cfs
25 year storm	33.28 cfs
15 year storm	29.07 cfs

Calculated total flow into creek outfall:

100 year	150.22 + 39.46 = 189.50 cfs (less than 200.22 cfs allowable)
25 year	119.31 + 33.28 = 153.20 cfs (less than 156.58 cfs allowable)
15 year	98.10 + 29.07 = 127.89 cfs (less than 127.98 cfs allowable)

S/N: H0M0L0436313 JRK, JR
Pond Pack Ver: 10-9-97 :055 Compute Time: 10:45:53 Date: 11-04-2003

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FOR 25 YEAR STORM
18 CFS FROM AUTUMN CHASE NEEDED
WALG.
(6.49 ACRES) X (4.75 - 2.31) = 15.8 CFS

SO MUST DETAIN 33.8 CFS
FOR 25 YEAR

33.8 X 20 MIN X 60 SEC =

40,602 C.F.
OF STORAGE

Type.... Pond E-V-Q Table
Name.... BASIN 11-04-03

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

LEVEL POOL ROUTING DATA

HYG Dir = J:\1998\980324~1\0001\CIVIL\DETENT~1\
Inflow HYG file = PACE-03.HYG - PROP INTO BASIN Of 100
Outflow HYG file = NONE STORED - BASIN 11-04-0OUT Of 100

Pond Node Data = P 10
Pond Volume Data = Pace 11-04-03
Pond Outlet Data = Pace Basin Pipes

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	= 514.80	ft
Starting Volume	= 0	cu.ft
Starting Outflow	= .00	cfs
Starting Infiltr.	= .00	cfs
Starting Total Qout=	.00	cfs
Time Increment	= .0250	hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
514.80	.00	0	1	.00	.00	.00
515.00	.32	165	2425	.00	.32	3.98
515.20	1.12	728	3224	.00	1.12	17.30
515.40	2.41	1462	4137	.00	2.41	34.90
515.60	4.12	2391	5164	.00	4.12	57.25
515.80	6.27	3536	6305	.00	6.27	84.84
516.00	8.80	4920	7559	.00	8.80	118.13
516.20	11.66	6458	7823	.00	11.66	155.18
516.40	14.81	8049	8092	.00	14.81	193.68
516.60	18.22	9695	8365	.00	18.22	233.66
516.80	21.84	11396	8643	.00	21.84	275.08
517.00	25.61	13153	8925	.00	25.61	317.89
517.20	29.52	14966	9212	.00	29.52	362.10
517.40	33.52	16837	9503	.00	33.52	407.68
517.60	37.62	18767	9799	.00	37.62	454.68
517.80	41.72	20757	10099	.00	41.72	503.00
518.00	45.87	22808	10404	.00	45.87	552.71
518.20	49.97	24918	10700	.00	49.97	603.71
518.40	54.10	27088	11001	.00	54.10	656.04
518.60	58.17	29318	11306	.00	58.17	709.69
518.80	62.23	31610	11614	.00	62.23	764.68
519.00	65.82	33965	11927	.00	65.82	820.59
519.20	69.33	36382	12245	.00	69.33	877.82

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File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

LEVEL POOL ROUTING DATA

HYG Dir = J:\1998\980324~1\0001\CIVIL\DETENT~1\
Inflow HYG file = PACE-03.HYG - PROP INTO BASIN Of 100
Outflow HYG file = NONE STORED - BASIN 11-04-0OUT Of 100

Pond Node Data = P 10
Pond Volume Data = Pace 11-04-03
Pond Outlet Data = Pace Basin Pipes

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	514.80 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0250 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
519.40	72.77	38862	12566	.00	72.77	936.37
519.50	74.34	40128	12728	.00	74.34	966.06
519.60	76.01	41408	12891	.00	76.01	996.19
519.80	79.54	44020	13221	.00	79.54	1057.75
520.00	83.39	46697	13555	.00	83.39	1121.10
520.20	87.57	49441	13883	.00	87.57	1186.26
520.40	92.04	52250	14215	.00	92.04	1253.16
520.60	96.77	55127	14551	.00	96.77	1321.82
520.80	101.71	58071	14891	.00	101.71	1392.19
521.00	106.84	61084	15235	.00	106.84	1464.26
521.20	112.10	64166	15583	.00	112.10	1538.02
521.40	117.47	67317	15935	.00	117.47	1613.41
521.60	122.90	70540	16291	.00	122.90	1690.46
521.80	128.34	73834	16650	.00	128.34	1769.10
522.00	133.82	77201	17014	.00	133.82	1849.40
522.20	139.26	80639	17366	.00	139.26	1931.24
522.40	144.65	84147	17721	.00	144.65	2014.58
522.60	149.99	87727	18080	.00	149.99	2099.48
522.80	155.27	91379	18443	.00	155.27	2185.92
523.00	160.39	95105	18809	.00	160.39	2273.83
523.20	165.13	98904	19179	.00	165.13	2362.99
523.40	169.85	102776	19552	.00	169.85	2453.76
523.60	174.26	106724	19929	.00	174.26	2545.91

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Pond Volume Data = Pace 11-04-03
Pond Outlet Data = Pace Basin Pipes

No Infiltration

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Starting Volume	= 0	cu.ft
Starting Outflow	= .00	cfs
Starting Infiltr.	= .00	cfs
Starting Total Qout=	.00	cfs
Time Increment	= .0250	hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
523.80	178.53	110748	20310	.00	178.53	2639.60
524.00	182.66	114849	20694	.00	182.66	2734.86
524.20	186.68	119026	21077	.00	186.68	2831.71
524.40	190.58	123279	21463	.00	190.58	2930.11
524.60	194.41	127611	21853	.00	194.41	3030.20
524.80	198.14	132021	22246	.00	198.14	3131.94
525.00	201.77	136510	22643	.00	201.77	3235.33

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Type.... Pond Routing Summary
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INITIAL CONDITIONS

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Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout=		.00 cfs
Time Increment	=	.0250 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	199.90 cfs	at	12.0750 hrs
Peak Outflow	=	150.04 cfs	at	12.1750 hrs
Peak Elevation	=	522.60 ft		
Peak Storage	=	87759 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	0
+ HYG Vol IN	=	634466
- Infiltration	=	0
- HYG Vol OUT	=	634466
- Retained Vol	=	0
Unrouted Vol	=	-1 cu.ft (.000% of Inflow Volume)

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49.86 CFS DIFFERENTIAL STORAGE
OK FOR 100 YEAR
6.49 ACRES X (6.08-2.95) = 20.3 CFS
23.0 FOR AUTOMUDE
43.3 CFS
REQ DETENTION

APPROX POND STORAGE TAKES CARE OF SEDIMENT STORAGE

Type.... Detention Time
Name.... BASIN 11-04-03 Tag: Of 100

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

DETENTION TIMES SUMMARY

HYG Dir = J:\1998\980324~1\0001\CIVIL\DETENT~1\
Inflow HYG file = PACE-03.HYG - PROP INTO BASIN Of 100
Outflow HYG file = NONE STORED - BASIN 11-04-0OUT Of 100

Pond Node Data = P 10
Pond Volume Data = Pace 11-04-03
Pond Outlet Data = Pace Basin Pipes

No Infiltration

APPROXIMATE DETENTION TIME

Tp, Outflow + Infilt.	=	12.1750 hrs
Tp, Total Inflow	=	12.0750 hrs
Peak to Peak	=	.1000 hrs

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File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = BASIN 11-04-0OUT
HYG Tag = Of 100

Peak Discharge =	150.04 cfs
Time to Peak =	12.1750 hrs
HYG Volume =	634466 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
8.8500	.00	.00	.00	.00	.00
8.9750	.00	.01	.01	.02	.03
9.1000	.04	.05	.06	.07	.09
9.2250	.11	.12	.14	.16	.18
9.3500	.20	.23	.25	.27	.29
9.4750	.32	.34	.36	.38	.40
9.6000	.42	.44	.46	.48	.51
9.7250	.53	.56	.59	.61	.64
9.8500	.67	.70	.73	.76	.80
9.9750	.83	.87	.90	.94	.98
10.1000	1.02	1.06	1.10	1.14	1.20
10.2250	1.25	1.30	1.36	1.41	1.47
10.3500	1.52	1.58	1.64	1.70	1.77
10.4750	1.83	1.90	1.96	2.03	2.10
10.6000	2.17	2.25	2.32	2.40	2.49
10.7250	2.58	2.67	2.76	2.86	2.96
10.8500	3.06	3.17	3.28	3.39	3.51
10.9750	3.63	3.76	3.88	4.02	4.15
11.1000	4.30	4.44	4.60	4.76	4.93
11.2250	5.12	5.31	5.51	5.73	5.96
11.3500	6.20	6.45	6.71	6.98	7.27
11.4750	7.57	7.89	8.22	8.60	9.04
11.6000	9.59	10.30	11.21	12.46	14.10
11.7250	16.24	18.99	22.46	26.68	31.79
11.8500	37.90	44.97	53.09	62.16	70.88
11.9750	79.99	91.41	104.24	116.87	128.25
12.1000	137.51	144.19	148.33	150.04	149.49
12.2250	146.99	142.86	137.41	130.96	123.97
12.3500	116.69	109.42	102.41	95.83	89.75
12.4750	84.26	79.38	75.08	71.06	66.93
12.6000	62.83	58.49	54.32	50.42	46.85
12.7250	43.56	40.59	37.93	35.52	33.39

Type.... Pond Routed HYG (total out)
Name.... BASIN 11-04-03 Tag: Of 100

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
12.8500	31.51	29.86	28.39	27.10	25.96
12.9750	24.95	24.06	23.25	22.53	21.87
13.1000	21.27	20.72	20.21	19.74	19.30
13.2250	18.89	18.50	18.15	17.82	17.52
13.3500	17.22	16.95	16.69	16.43	16.19
13.4750	15.96	15.74	15.52	15.31	15.10
13.6000	14.90	14.70	14.52	14.33	14.15
13.7250	13.98	13.81	13.64	13.47	13.31
13.8500	13.15	13.00	12.84	12.69	12.55
13.9750	12.40	12.26	12.12	11.98	11.84
14.1000	11.70	11.58	11.45	11.33	11.21
14.2250	11.10	10.99	10.89	10.79	10.70
14.3500	10.61	10.52	10.44	10.37	10.29
14.4750	10.22	10.16	10.10	10.03	9.98
14.6000	9.92	9.86	9.81	9.76	9.71
14.7250	9.66	9.61	9.56	9.51	9.46
14.8500	9.41	9.37	9.32	9.27	9.22
14.9750	9.18	9.13	9.09	9.04	8.99
15.1000	8.95	8.90	8.85	8.81	8.76
15.2250	8.72	8.67	8.63	8.58	8.54
15.3500	8.49	8.44	8.40	8.35	8.30
15.4750	8.26	8.21	8.17	8.12	8.07
15.6000	8.03	7.98	7.93	7.89	7.84
15.7250	7.79	7.74	7.70	7.65	7.60
15.8500	7.56	7.51	7.46	7.41	7.37
15.9750	7.32	7.27	7.23	7.18	7.13
16.1000	7.08	7.04	6.99	6.95	6.90
16.2250	6.86	6.82	6.78	6.75	6.71
16.3500	6.68	6.65	6.62	6.59	6.57
16.4750	6.54	6.52	6.49	6.47	6.45
16.6000	6.43	6.41	6.39	6.37	6.35
16.7250	6.33	6.31	6.30	6.28	6.26
16.8500	6.24	6.23	6.21	6.19	6.17
16.9750	6.16	6.14	6.12	6.11	6.09
17.1000	6.07	6.05	6.04	6.02	6.00
17.2250	5.99	5.97	5.95	5.94	5.92
17.3500	5.90	5.89	5.87	5.85	5.84
17.4750	5.82	5.80	5.79	5.77	5.75
17.6000	5.74	5.72	5.70	5.69	5.67
17.7250	5.65	5.64	5.62	5.60	5.58
17.8500	5.57	5.55	5.53	5.52	5.50
17.9750	5.48	5.47	5.45	5.43	5.41
18.1000	5.40	5.38	5.36	5.35	5.33
18.2250	5.31	5.30	5.28	5.26	5.24
18.3500	5.23	5.21	5.19	5.18	5.16
18.4750	5.14	5.12	5.11	5.09	5.07

Type.... Pond Routed HYG (total out)
Name.... BASIN 11-04-03 Tag: Of 100

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
18.6000	5.05	5.04	5.02	5.00	4.99
18.7250	4.97	4.95	4.93	4.92	4.90
18.8500	4.88	4.86	4.85	4.83	4.81
18.9750	4.79	4.78	4.76	4.74	4.73
19.1000	4.71	4.69	4.67	4.66	4.64
19.2250	4.62	4.60	4.59	4.57	4.55
19.3500	4.53	4.52	4.50	4.48	4.46
19.4750	4.45	4.43	4.41	4.39	4.37
19.6000	4.36	4.34	4.32	4.30	4.29
19.7250	4.27	4.25	4.23	4.22	4.20
19.8500	4.18	4.16	4.15	4.13	4.11
19.9750	4.09	4.07	4.06	4.04	4.02
20.1000	4.00	3.99	3.97	3.96	3.94
20.2250	3.92	3.91	3.90	3.88	3.87
20.3500	3.86	3.85	3.84	3.84	3.83
20.4750	3.82	3.81	3.81	3.80	3.79
20.6000	3.79	3.78	3.78	3.78	3.77
20.7250	3.77	3.76	3.76	3.75	3.75
20.8500	3.75	3.74	3.74	3.74	3.73
20.9750	3.73	3.73	3.72	3.72	3.72
21.1000	3.71	3.71	3.71	3.70	3.70
21.2250	3.70	3.69	3.69	3.69	3.68
21.3500	3.68	3.68	3.67	3.67	3.67
21.4750	3.66	3.66	3.66	3.65	3.65
21.6000	3.65	3.64	3.64	3.64	3.63
21.7250	3.63	3.63	3.62	3.62	3.62
21.8500	3.61	3.61	3.61	3.60	3.60
21.9750	3.60	3.59	3.59	3.59	3.58
22.1000	3.58	3.58	3.57	3.57	3.57
22.2250	3.56	3.56	3.56	3.55	3.55
22.3500	3.55	3.54	3.54	3.54	3.53
22.4750	3.53	3.53	3.52	3.52	3.52
22.6000	3.51	3.51	3.51	3.50	3.50
22.7250	3.50	3.49	3.49	3.49	3.48
22.8500	3.48	3.48	3.47	3.47	3.47
22.9750	3.46	3.46	3.46	3.45	3.45
23.1000	3.45	3.44	3.44	3.44	3.43
23.2250	3.43	3.43	3.42	3.42	3.42
23.3500	3.41	3.41	3.41	3.40	3.40
23.4750	3.40	3.39	3.39	3.39	3.38
23.6000	3.38	3.38	3.37	3.37	3.37
23.7250	3.36	3.36	3.36	3.35	3.35
23.8500	3.35	3.34	3.34	3.34	3.33
23.9750	3.33	3.33	3.32	3.31	3.28
24.1000	3.24	3.17	3.07	2.93	2.77
24.2250	2.59	2.39	2.20	2.00	1.81

Type.... Pond Routed HYG (total out)
Name.... BASIN 11-04-03 Tag: Of 100

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
24.3500	1.62	1.45	1.29	1.14	1.03
24.4750	.93	.84	.75	.67	.60
24.6000	.53	.48	.42	.38	.33
24.7250	.29	.25	.21	.18	.15
24.8500	.13	.11	.09	.08	.06
24.9750	.05	.05	.04	.03	.03
25.1000	.02	.02	.02	.01	.01
25.2250	.01	.01	.01	.01	.00
25.3500	.00	.00	.00		

S/N: HOMOL0436313 JRK, JR
Pond Pack Ver: 10-9-97 :055 Compute Time: 10:45:53 Date: 11-04-2003

Type.... Pond Routing Summary
Name.... BASIN 11-04-03 Tag: Of 15

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

LEVEL POOL ROUTING SUMMARY

HYG Dir = J:\1998\980324~1\0001\CIVIL\DETENT~1\
Inflow HYG file = PACE-03.HYG - PROP INTO BASIN Of 15
Outflow HYG file = NONE STORED - BASIN 11-04-0OUT Of 15

Pond Node Data = P 10
Pond Volume Data = Pace 11-04-03
Pond Outlet Data = Pace Basin Pipes

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	514.80 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0250 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	132.62 cfs	at	12.0750 hrs
Peak Outflow	=	98.82 cfs	at	12.1750 hrs
Peak Elevation	=	520.68 ft		
Peak Storage	=	56339 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	0
+ HYG Vol IN	=	425912
- Infiltration	=	0
- HYG Vol OUT	=	425911
- Retained Vol	=	0
Unrouted Vol	=	-1 cu.ft (.000% of Inflow Volume)

S/N: H0M0L0436313 JRK, JR
Pond Pack Ver: 10-9-97 :055 Compute Time: 10:45:53 Date: 11-04-2003

Type.... DetentionTime
Name.... BASIN 11-04-03 Tag: Of 15

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

DETENTION TIMES SUMMARY

HYG Dir = J:\1998\980324~1\0001\CIVIL\DETENT~1\
Inflow HYG file = PACE-03.HYG - PROP INTO BASIN Of 15
Outflow HYG file = NONE STORED - BASIN 11-04-0OUT Of 15

Pond Node Data = P 10
Pond Volume Data = Pace 11-04-03
Pond Outlet Data = Pace Basin Pipes

No Infiltration

APPROXIMATE DETENTION TIME

Tp, Outflow + Infilt.	=	12.1750 hrs
Tp, Total Inflow	=	12.0750 hrs
Peak to Peak	=	.1000 hrs

S/N: H0M0L0436313 JRK, JR
Pond Pack Ver: 10-9-97 :055 Compute Time: 10:45:53 Date: 11-04-2003

Type.... Pond Routed HYG (total out)
Name.... BASIN 11-04-03 Tag: Of 15

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = BASIN 11-04-0OUT
HYG Tag = Of 15

Peak Discharge =	98.82 cfs
Time to Peak =	12.1750 hrs
HYG Volume =	425911 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
9.9500	.00	.00	.00	.00	.00
10.0750	.01	.01	.02	.02	.03
10.2000	.04	.06	.07	.09	.11
10.3250	.13	.15	.17	.20	.23
10.4500	.26	.29	.32	.34	.37
10.5750	.40	.43	.46	.50	.53
10.7000	.57	.61	.66	.70	.75
10.8250	.80	.85	.90	.96	1.02
10.9500	1.08	1.15	1.22	1.30	1.38
11.0750	1.47	1.55	1.64	1.73	1.82
11.2000	1.92	2.03	2.14	2.25	2.38
11.3250	2.51	2.66	2.81	2.96	3.13
11.4500	3.30	3.48	3.67	3.87	4.10
11.5750	4.36	4.68	5.09	5.62	6.32
11.7000	7.21	8.34	9.82	11.70	14.14
11.8250	17.25	21.14	25.89	31.67	38.44
11.9500	46.00	54.07	62.30	69.47	75.91
12.0750	82.40	88.61	93.68	97.15	98.82
12.2000	98.76	97.23	94.54	91.03	87.05
12.3250	82.93	78.91	75.08	71.36	67.39
12.4500	63.36	59.06	54.81	50.76	46.99
12.5750	43.47	40.24	37.30	34.59	32.16
12.7000	29.99	28.04	26.30	24.76	23.39
12.8250	22.18	21.10	20.14	19.29	18.52
12.9500	17.85	17.25	16.71	16.22	15.76
13.0750	15.35	14.96	14.61	14.29	13.98
13.2000	13.70	13.43	13.17	12.93	12.71
13.3250	12.49	12.29	12.10	11.91	11.73
13.4500	11.57	11.41	11.26	11.11	10.97
13.5750	10.83	10.69	10.55	10.42	10.28
13.7000	10.15	10.03	9.90	9.78	9.66
13.8250	9.55	9.44	9.33	9.22	9.11

Type.... Pond Routed HYG (total out)
Name.... BASIN 11-04-03 Tag: Of 15

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
13.9500	9.01	8.90	8.80	8.70	8.60
14.0750	8.51	8.41	8.32	8.23	8.14
14.2000	8.05	7.97	7.89	7.81	7.74
14.3250	7.68	7.61	7.55	7.49	7.44
14.4500	7.39	7.34	7.29	7.25	7.20
14.5750	7.16	7.12	7.08	7.04	7.01
14.7000	6.97	6.94	6.90	6.87	6.83
14.8250	6.80	6.76	6.73	6.70	6.66
14.9500	6.63	6.60	6.57	6.53	6.50
15.0750	6.47	6.44	6.40	6.37	6.34
15.2000	6.31	6.27	6.24	6.21	6.18
15.3250	6.14	6.11	6.08	6.04	6.01
15.4500	5.98	5.94	5.91	5.88	5.84
15.5750	5.81	5.78	5.75	5.71	5.68
15.7000	5.65	5.61	5.58	5.55	5.51
15.8250	5.48	5.44	5.41	5.38	5.34
15.9500	5.31	5.28	5.24	5.21	5.18
16.0750	5.14	5.11	5.07	5.04	5.01
16.2000	4.98	4.95	4.92	4.89	4.87
16.3250	4.84	4.82	4.80	4.78	4.76
16.4500	4.74	4.72	4.71	4.69	4.67
16.5750	4.66	4.65	4.63	4.62	4.60
16.7000	4.59	4.58	4.56	4.55	4.54
16.8250	4.53	4.52	4.50	4.49	4.48
16.9500	4.47	4.45	4.44	4.43	4.42
17.0750	4.41	4.40	4.38	4.37	4.36
17.2000	4.35	4.34	4.32	4.31	4.30
17.3250	4.29	4.28	4.27	4.25	4.24
17.4500	4.23	4.22	4.21	4.19	4.18
17.5750	4.17	4.16	4.15	4.13	4.12
17.7000	4.11	4.10	4.09	4.08	4.06
17.8250	4.05	4.04	4.03	4.02	4.00
17.9500	3.99	3.98	3.97	3.96	3.94
18.0750	3.93	3.92	3.91	3.89	3.88
18.2000	3.87	3.86	3.85	3.83	3.82
18.3250	3.81	3.80	3.78	3.77	3.76
18.4500	3.75	3.74	3.72	3.71	3.70
18.5750	3.69	3.67	3.66	3.65	3.64
18.7000	3.62	3.61	3.60	3.59	3.57
18.8250	3.56	3.55	3.54	3.53	3.51
18.9500	3.50	3.49	3.48	3.46	3.45
19.0750	3.44	3.43	3.41	3.40	3.39
19.2000	3.38	3.36	3.35	3.34	3.32
19.3250	3.31	3.30	3.29	3.27	3.26
19.4500	3.25	3.24	3.22	3.21	3.20
19.5750	3.19	3.17	3.16	3.15	3.14

Type.... Pond Routed HYG (total out)
Name.... BASIN 11-04-03 Tag: Of 15

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
19.7000	3.12	3.11	3.10	3.08	3.07
19.8250	3.06	3.05	3.03	3.02	3.01
19.9500	2.99	2.98	2.97	2.96	2.94
20.0750	2.93	2.92	2.91	2.89	2.88
20.2000	2.87	2.86	2.85	2.84	2.83
20.3250	2.82	2.82	2.81	2.80	2.80
20.4500	2.79	2.78	2.78	2.78	2.77
20.5750	2.77	2.76	2.76	2.76	2.75
20.7000	2.75	2.75	2.74	2.74	2.74
20.8250	2.74	2.73	2.73	2.73	2.73
20.9500	2.72	2.72	2.72	2.72	2.71
21.0750	2.71	2.71	2.71	2.70	2.70
21.2000	2.70	2.70	2.70	2.69	2.69
21.3250	2.69	2.69	2.68	2.68	2.68
21.4500	2.68	2.67	2.67	2.67	2.67
21.5750	2.67	2.66	2.66	2.66	2.66
21.7000	2.65	2.65	2.65	2.65	2.64
21.8250	2.64	2.64	2.64	2.64	2.63
21.9500	2.63	2.63	2.63	2.62	2.62
22.0750	2.62	2.62	2.61	2.61	2.61
22.2000	2.61	2.61	2.60	2.60	2.60
22.3250	2.60	2.59	2.59	2.59	2.59
22.4500	2.58	2.58	2.58	2.58	2.57
22.5750	2.57	2.57	2.57	2.57	2.56
22.7000	2.56	2.56	2.56	2.55	2.55
22.8250	2.55	2.55	2.54	2.54	2.54
22.9500	2.54	2.53	2.53	2.53	2.53
23.0750	2.52	2.52	2.52	2.52	2.52
23.2000	2.51	2.51	2.51	2.51	2.50
23.3250	2.50	2.50	2.50	2.49	2.49
23.4500	2.49	2.49	2.48	2.48	2.48
23.5750	2.48	2.47	2.47	2.47	2.47
23.7000	2.46	2.46	2.46	2.46	2.46
23.8250	2.45	2.45	2.45	2.45	2.44
23.9500	2.44	2.44	2.44	2.43	2.42
24.0750	2.40	2.37	2.32	2.25	2.16
24.2000	2.04	1.92	1.77	1.63	1.48
24.3250	1.34	1.20	1.08	.98	.89
24.4500	.80	.72	.65	.58	.52
24.5750	.46	.41	.37	.33	.28
24.7000	.24	.20	.17	.15	.13
24.8250	.11	.09	.08	.06	.05
24.9500	.05	.04	.03	.03	.02
25.0750	.02	.02	.01	.01	.01
25.2000	.01	.01	.01	.00	.00
25.3250	.00	.00			

Type.... Pond Routing Summary
Name.... BASIN 11-04-03 Tag: Of 25

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

LEVEL POOL ROUTING SUMMARY

HYG Dir = J:\1998\980324~1\0001\CIVIL\DETENT~1\
Inflow HYG file = PACE-03.HYG - PROP INTO BASIN Of 25
Outflow HYG file = NONE STORED - BASIN 11-04-0OUT Of 25

Pond Node Data = P 10
Pond Volume Data = Pace 11-04-03
Pond Outlet Data = Pace Basin Pipes

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	514.80 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout=		.00 cfs
Time Increment	=	.0250 hrs

25 YEAR STORM

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	159.42 cfs	at	12.0750 hrs
Peak Outflow	=	119.92 cfs	at	12.1750 hrs
Peak Elevation	=	521.49 ft		
Peak Storage =		68760 cu.ft		

159
119
40 CFS DETAINED ±

33.8
REQUIRED FOR AUTUMN CHASE + THIS DEVELOPMENT

MASS BALANCE (cu.ft)

+ Initial Vol	=	0
+ HYG Vol IN	=	508545
- Infiltration	=	0
- HYG Vol OUT	=	508544
- Retained Vol	=	0
Unrouted Vol	=	-1 cu.ft (.000% of Inflow Volume)

S/N: H0M0L0436313 JRK, JR
Pond Pack Ver: 10-9-97 :055 Compute Time: 10:45:53 Date: 11-04-2003

Type.... DetentionTime
Name.... BASIN 11-04-03 Tag: Of 25

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

DETENTION TIMES SUMMARY

HYG Dir = J:\1998\980324~1\0001\CIVIL\DETENT~1\
Inflow HYG file = PACE-03.HYG - PROP INTO BASIN Of 25
Outflow HYG file = NONE STORED - BASIN 11-04-0OUT Of 25

Pond Node Data = P 10
Pond Volume Data = Pace 11-04-03
Pond Outlet Data = Pace Basin Pipes

No Infiltration

APPROXIMATE DETENTION TIME

Tp, Outflow + Infilt.	=	12.1750 hrs
Tp, Total Inflow	=	12.0750 hrs
Peak to Peak	=	.1000 hrs

S/N: H0M0L0436313 JRK, JR
Pond Pack Ver: 10-9-97 :055 Compute Time: 10:45:53 Date: 11-04-2003

Type.... Pond Routed HYG (total out)
Name.... BASIN 11-04-03 Tag: Of 25

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = BASIN 11-04-0OUT
HYG Tag = Of 25

Peak Discharge =	119.92 cfs
Time to Peak =	12.1750 hrs
HYG Volume =	508544 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
9.4750	.00	.00	.00	.00	.00
9.6000	.01	.01	.01	.02	.03
9.7250	.04	.05	.06	.07	.09
9.8500	.10	.12	.14	.16	.18
9.9750	.20	.23	.25	.27	.30
10.1000	.32	.35	.37	.39	.42
10.2250	.45	.48	.51	.54	.57
10.3500	.61	.64	.68	.72	.76
10.4750	.80	.85	.89	.94	.98
10.6000	1.03	1.08	1.14	1.20	1.27
10.7250	1.34	1.40	1.47	1.55	1.62
10.8500	1.70	1.77	1.85	1.94	2.02
10.9750	2.11	2.20	2.30	2.39	2.50
11.1000	2.61	2.72	2.83	2.96	3.08
11.2250	3.22	3.36	3.51	3.67	3.84
11.3500	4.02	4.21	4.41	4.62	4.84
11.4750	5.07	5.31	5.57	5.85	6.18
11.6000	6.58	7.10	7.77	8.64	9.81
11.7250	11.29	13.27	15.81	18.99	22.95
11.8500	27.77	33.55	40.39	48.17	56.72
11.9750	65.39	73.43	81.61	90.80	100.05
12.1000	108.16	114.30	118.24	119.92	119.55
12.2250	117.42	113.88	109.29	104.04	98.52
12.3500	93.00	87.68	82.75	78.25	74.15
12.4750	70.16	66.05	61.90	57.47	53.28
12.6000	49.35	45.73	42.36	39.30	36.53
12.7250	34.02	31.79	29.81	28.05	26.49
12.8500	25.12	23.91	22.83	21.88	21.03
12.9750	20.28	19.60	18.99	18.43	17.93
13.1000	17.47	17.05	16.65	16.28	15.93
13.2250	15.61	15.30	15.02	14.75	14.51
13.3500	14.27	14.05	13.84	13.64	13.44

Type.... Pond Routed HYG (total out)
Name.... BASIN 11-04-03 Tag: Of 25

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
13.4750	13.25	13.07	12.89	12.72	12.55
13.6000	12.38	12.22	12.06	11.90	11.75
13.7250	11.61	11.47	11.33	11.20	11.07
13.8500	10.94	10.82	10.69	10.57	10.45
13.9750	10.33	10.21	10.10	9.98	9.87
14.1000	9.76	9.65	9.54	9.44	9.33
14.2250	9.24	9.15	9.06	8.97	8.89
14.3500	8.82	8.75	8.68	8.62	8.56
14.4750	8.50	8.45	8.40	8.35	8.30
14.6000	8.25	8.21	8.16	8.12	8.08
14.7250	8.04	8.00	7.95	7.92	7.88
14.8500	7.84	7.80	7.76	7.72	7.68
14.9750	7.64	7.61	7.57	7.53	7.49
15.1000	7.45	7.42	7.38	7.34	7.30
15.2250	7.26	7.23	7.19	7.15	7.11
15.3500	7.07	7.04	7.00	6.96	6.92
15.4750	6.88	6.84	6.81	6.77	6.73
15.6000	6.69	6.65	6.61	6.57	6.53
15.7250	6.50	6.46	6.42	6.38	6.34
15.8500	6.30	6.26	6.22	6.18	6.14
15.9750	6.10	6.06	6.02	5.98	5.94
16.1000	5.90	5.87	5.83	5.79	5.76
16.2250	5.72	5.69	5.66	5.63	5.60
16.3500	5.57	5.55	5.52	5.50	5.48
16.4750	5.46	5.44	5.42	5.40	5.38
16.6000	5.37	5.35	5.33	5.32	5.30
16.7250	5.29	5.27	5.26	5.24	5.23
16.8500	5.21	5.20	5.18	5.17	5.16
16.9750	5.14	5.13	5.11	5.10	5.09
17.1000	5.07	5.06	5.05	5.03	5.02
17.2250	5.00	4.99	4.98	4.96	4.95
17.3500	4.94	4.92	4.91	4.89	4.88
17.4750	4.87	4.85	4.84	4.82	4.81
17.6000	4.80	4.78	4.77	4.76	4.74
17.7250	4.73	4.71	4.70	4.69	4.67
17.8500	4.66	4.64	4.63	4.62	4.60
17.9750	4.59	4.57	4.56	4.55	4.53
18.1000	4.52	4.50	4.49	4.47	4.46
18.2250	4.45	4.43	4.42	4.40	4.39
18.3500	4.37	4.36	4.35	4.33	4.32
18.4750	4.30	4.29	4.28	4.26	4.25
18.6000	4.23	4.22	4.20	4.19	4.17
18.7250	4.16	4.15	4.13	4.12	4.10
18.8500	4.09	4.07	4.06	4.05	4.03
18.9750	4.02	4.00	3.99	3.97	3.96
19.1000	3.94	3.93	3.92	3.90	3.89

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
19.2250	3.87	3.86	3.84	3.83	3.81
19.3500	3.80	3.78	3.77	3.76	3.74
19.4750	3.73	3.71	3.70	3.68	3.67
19.6000	3.65	3.64	3.62	3.61	3.59
19.7250	3.58	3.56	3.55	3.54	3.52
19.8500	3.51	3.49	3.48	3.46	3.45
19.9750	3.43	3.42	3.40	3.39	3.37
20.1000	3.36	3.34	3.33	3.32	3.30
20.2250	3.29	3.28	3.27	3.26	3.25
20.3500	3.24	3.23	3.22	3.22	3.21
20.4750	3.20	3.20	3.19	3.19	3.18
20.6000	3.18	3.17	3.17	3.17	3.16
20.7250	3.16	3.16	3.15	3.15	3.15
20.8500	3.14	3.14	3.14	3.14	3.13
20.9750	3.13	3.13	3.12	3.12	3.12
21.1000	3.12	3.11	3.11	3.11	3.10
21.2250	3.10	3.10	3.10	3.09	3.09
21.3500	3.09	3.09	3.08	3.08	3.08
21.4750	3.08	3.07	3.07	3.07	3.06
21.6000	3.06	3.06	3.06	3.05	3.05
21.7250	3.05	3.05	3.04	3.04	3.04
21.8500	3.03	3.03	3.03	3.03	3.02
21.9750	3.02	3.02	3.02	3.01	3.01
22.1000	3.01	3.00	3.00	3.00	3.00
22.2250	2.99	2.99	2.99	2.99	2.98
22.3500	2.98	2.98	2.97	2.97	2.97
22.4750	2.97	2.96	2.96	2.96	2.96
22.6000	2.95	2.95	2.95	2.94	2.94
22.7250	2.94	2.94	2.93	2.93	2.93
22.8500	2.92	2.92	2.92	2.92	2.91
22.9750	2.91	2.91	2.91	2.90	2.90
23.1000	2.90	2.89	2.89	2.89	2.89
23.2250	2.88	2.88	2.88	2.87	2.87
23.3500	2.87	2.87	2.86	2.86	2.86
23.4750	2.86	2.85	2.85	2.85	2.84
23.6000	2.84	2.84	2.84	2.83	2.83
23.7250	2.83	2.82	2.82	2.82	2.82
23.8500	2.81	2.81	2.81	2.80	2.80
23.9750	2.80	2.80	2.79	2.78	2.76
24.1000	2.72	2.66	2.58	2.47	2.33
24.2250	2.19	2.03	1.86	1.69	1.53
24.3500	1.37	1.23	1.10	.99	.90
24.4750	.81	.73	.65	.58	.52
24.6000	.46	.41	.37	.33	.28
24.7250	.24	.20	.17	.15	.12
24.8500	.10	.09	.07	.06	.05

Type.... Pond Routed HYG (total out)
Name.... BASIN 11-04-03 Tag: Of 25

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
24.9750	.04	.04	.03	.03	.02
25.1000	.02	.02	.01	.01	.01
25.2250	.01	.01	.01	.00	.00
25.3500	.00	.00			

S/N: H0M0L0436313 JRK, JR
Pond Pack Ver: 10-9-97 :055 Compute Time: 10:45:53 Date: 11-04-2003

Type.... Time-Elev
Name.... BASIN 11-04-0OUT Tag: Of 100

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

TIME vs. ELEVATION (ft)

Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
8.8500	514.80	514.80	514.80	514.80	514.80
8.9750	514.80	514.81	514.81	514.81	514.82
9.1000	514.82	514.83	514.84	514.85	514.86
9.2250	514.87	514.88	514.89	514.90	514.92
9.3500	514.93	514.94	514.96	514.97	514.99
9.4750	515.00	515.01	515.01	515.01	515.02
9.6000	515.03	515.03	515.04	515.04	515.05
9.7250	515.05	515.06	515.07	515.07	515.08
9.8500	515.09	515.10	515.10	515.11	515.12
9.9750	515.13	515.14	515.15	515.15	515.16
10.1000	515.17	515.18	515.19	515.20	515.21
10.2250	515.22	515.23	515.24	515.24	515.25
10.3500	515.26	515.27	515.28	515.29	515.30
10.4750	515.31	515.32	515.33	515.34	515.35
10.6000	515.36	515.38	515.39	515.40	515.41
10.7250	515.42	515.43	515.44	515.45	515.46
10.8500	515.48	515.49	515.50	515.51	515.53
10.9750	515.54	515.56	515.57	515.59	515.60
11.1000	515.62	515.63	515.64	515.66	515.68
11.2250	515.69	515.71	515.73	515.75	515.77
11.3500	515.79	515.81	515.83	515.86	515.88
11.4750	515.90	515.93	515.95	515.98	516.02
11.6000	516.06	516.10	516.17	516.25	516.36
11.7250	516.48	516.64	516.83	517.05	517.31
11.8500	517.61	517.96	518.35	518.80	519.29
11.9750	519.82	520.37	520.90	521.38	521.80
12.1000	522.14	522.38	522.54	522.60	522.58
12.2250	522.49	522.33	522.13	521.90	521.64
12.3500	521.37	521.10	520.83	520.56	520.30
12.4750	520.04	519.79	519.54	519.30	519.06
12.6000	518.83	518.62	518.41	518.22	518.05
12.7250	517.89	517.74	517.61	517.50	517.39
12.8500	517.30	517.22	517.14	517.08	517.02
12.9750	516.97	516.92	516.88	516.84	516.80
13.1000	516.77	516.74	516.71	516.68	516.66
13.2250	516.64	516.62	516.60	516.58	516.56
13.3500	516.54	516.53	516.51	516.50	516.48
13.4750	516.47	516.45	516.44	516.43	516.42
13.6000	516.41	516.39	516.38	516.37	516.36
13.7250	516.35	516.34	516.33	516.32	516.30
13.8500	516.29	516.29	516.28	516.27	516.26
13.9750	516.25	516.24	516.23	516.22	516.21
14.1000	516.20	516.19	516.19	516.18	516.17
14.2250	516.16	516.15	516.15	516.14	516.13

Type.... Time-Elev
Name.... BASIN 11-04-0OUT Tag: Of 100

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

TIME vs. ELEVATION (ft)

Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
14.3500	516.13	516.12	516.11	516.11	516.10
14.4750	516.10	516.10	516.09	516.09	516.08
14.6000	516.08	516.07	516.07	516.07	516.06
14.7250	516.06	516.06	516.05	516.05	516.05
14.8500	516.04	516.04	516.04	516.03	516.03
14.9750	516.03	516.02	516.02	516.02	516.01
15.1000	516.01	516.01	516.00	516.00	516.00
15.2250	515.99	515.99	515.99	515.98	515.98
15.3500	515.98	515.97	515.97	515.96	515.96
15.4750	515.96	515.95	515.95	515.95	515.94
15.6000	515.94	515.94	515.93	515.93	515.92
15.7250	515.92	515.92	515.91	515.91	515.91
15.8500	515.90	515.90	515.89	515.89	515.89
15.9750	515.88	515.88	515.88	515.87	515.87
16.1000	515.86	515.86	515.86	515.85	515.85
16.2250	515.85	515.84	515.84	515.84	515.84
16.3500	515.83	515.83	515.83	515.83	515.82
16.4750	515.82	515.82	515.82	515.82	515.81
16.6000	515.81	515.81	515.81	515.81	515.81
16.7250	515.80	515.80	515.80	515.80	515.80
16.8500	515.80	515.80	515.79	515.79	515.79
16.9750	515.79	515.79	515.79	515.78	515.78
17.1000	515.78	515.78	515.78	515.78	515.78
17.2250	515.77	515.77	515.77	515.77	515.77
17.3500	515.77	515.76	515.76	515.76	515.76
17.4750	515.76	515.76	515.75	515.75	515.75
17.6000	515.75	515.75	515.75	515.75	515.74
17.7250	515.74	515.74	515.74	515.74	515.74
17.8500	515.73	515.73	515.73	515.73	515.73
17.9750	515.73	515.72	515.72	515.72	515.72
18.1000	515.72	515.72	515.72	515.71	515.71
18.2250	515.71	515.71	515.71	515.71	515.70
18.3500	515.70	515.70	515.70	515.70	515.70
18.4750	515.69	515.69	515.69	515.69	515.69
18.6000	515.69	515.69	515.68	515.68	515.68
18.7250	515.68	515.68	515.68	515.67	515.67
18.8500	515.67	515.67	515.67	515.67	515.66
18.9750	515.66	515.66	515.66	515.66	515.66
19.1000	515.65	515.65	515.65	515.65	515.65
19.2250	515.65	515.64	515.64	515.64	515.64
19.3500	515.64	515.64	515.63	515.63	515.63
19.4750	515.63	515.63	515.63	515.62	515.62
19.6000	515.62	515.62	515.62	515.62	515.62
19.7250	515.61	515.61	515.61	515.61	515.61
19.8500	515.61	515.60	515.60	515.60	515.60

Type.... Time-Elev
Name.... BASIN 11-04-OOUT Tag: Of 100

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

TIME vs. ELEVATION (ft)

Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
19.9750	515.60	515.59	515.59	515.59	515.59
20.1000	515.59	515.58	515.58	515.58	515.58
20.2250	515.58	515.58	515.57	515.57	515.57
20.3500	515.57	515.57	515.57	515.57	515.57
20.4750	515.56	515.56	515.56	515.56	515.56
20.6000	515.56	515.56	515.56	515.56	515.56
20.7250	515.56	515.56	515.56	515.56	515.56
20.8500	515.56	515.56	515.56	515.55	515.55
20.9750	515.55	515.55	515.55	515.55	515.55
21.1000	515.55	515.55	515.55	515.55	515.55
21.2250	515.55	515.55	515.55	515.55	515.55
21.3500	515.55	515.55	515.55	515.55	515.55
21.4750	515.55	515.55	515.55	515.55	515.54
21.6000	515.54	515.54	515.54	515.54	515.54
21.7250	515.54	515.54	515.54	515.54	515.54
21.8500	515.54	515.54	515.54	515.54	515.54
21.9750	515.54	515.54	515.54	515.54	515.54
22.1000	515.54	515.54	515.54	515.54	515.54
22.2250	515.53	515.53	515.53	515.53	515.53
22.3500	515.53	515.53	515.53	515.53	515.53
22.4750	515.53	515.53	515.53	515.53	515.53
22.6000	515.53	515.53	515.53	515.53	515.53
22.7250	515.53	515.53	515.53	515.53	515.53
22.8500	515.53	515.52	515.52	515.52	515.52
22.9750	515.52	515.52	515.52	515.52	515.52
23.1000	515.52	515.52	515.52	515.52	515.52
23.2250	515.52	515.52	515.52	515.52	515.52
23.3500	515.52	515.52	515.52	515.52	515.52
23.4750	515.52	515.51	515.51	515.51	515.51
23.6000	515.51	515.51	515.51	515.51	515.51
23.7250	515.51	515.51	515.51	515.51	515.51
23.8500	515.51	515.51	515.51	515.51	515.51
23.9750	515.51	515.51	515.51	515.50	515.50
24.1000	515.50	515.49	515.48	515.46	515.44
24.2250	515.42	515.40	515.37	515.34	515.31
24.3500	515.28	515.25	515.23	515.20	515.18
24.4750	515.15	515.13	515.11	515.09	515.07
24.6000	515.05	515.04	515.03	515.01	515.00
24.7250	514.98	514.96	514.93	514.91	514.89
24.8500	514.88	514.87	514.86	514.85	514.84
24.9750	514.83	514.83	514.82	514.82	514.82
25.1000	514.81	514.81	514.81	514.81	514.81
25.2250	514.81	514.81	514.80	514.80	514.80
25.3500	514.80	514.80	514.80		

Type.... Time vs. Volume
Name.... BASIN 11-04-0OUT Tag: Of 100

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

TIME vs. VOLUME (cu.ft)

Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
8.8500	0	0	0	0	0
8.9750	0	0	0	0	0
9.1000	0	1	1	2	4
9.2250	7	11	16	24	33
9.3500	46	62	82	106	135
9.4750	166	177	189	201	214
9.6000	227	241	255	270	286
9.7250	302	319	336	354	373
9.8500	393	414	436	458	482
9.9750	507	532	559	586	615
10.1000	645	676	709	739	766
10.2250	793	820	848	878	908
10.3500	938	970	1003	1038	1073
10.4750	1110	1148	1187	1228	1270
10.6000	1315	1361	1409	1459	1501
10.7250	1544	1590	1637	1686	1738
10.8500	1792	1849	1908	1970	2035
10.9750	2103	2174	2248	2326	2404
11.1000	2474	2547	2625	2707	2796
11.2250	2891	2994	3105	3225	3354
11.3500	3494	3625	3759	3902	4055
11.4750	4218	4393	4584	4803	5049
11.6000	5340	5720	6216	6856	7688
11.7250	8735	10056	11683	13644	16022
11.8500	18899	22357	26552	31570	37490
11.9750	44333	51848	59553	66964	73775
12.1000	79521	83846	86607	87759	87387
12.2250	85705	82977	79460	75435	71177
12.3500	66853	62588	58482	54545	50801
12.4750	47263	43902	40692	37623	34720
12.6000	32000	29492	27210	25152	23305
12.7250	21659	20202	18915	17770	16777
12.8500	15891	15123	14440	13839	13315
12.9750	12845	12424	12050	11713	11410
13.1000	11125	10864	10623	10402	10196
13.2250	10006	9829	9662	9503	9353
13.3500	9211	9077	8950	8829	8712
13.4750	8601	8493	8388	8288	8189
13.6000	8093	7997	7901	7808	7716
13.7250	7626	7538	7452	7368	7287
13.8500	7206	7128	7051	6976	6902
13.9750	6829	6758	6687	6617	6548
14.1000	6481	6413	6346	6280	6216
14.2250	6155	6096	6039	5985	5934

Type.... Time vs. Volume
Name.... BASIN 11-04-0OUT Tag: Of 100

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

TIME vs. VOLUME (cu.ft)

Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
14.3500	5886	5840	5798	5757	5718
14.4750	5681	5645	5611	5579	5547
14.6000	5517	5488	5459	5431	5403
14.7250	5376	5349	5323	5297	5272
14.8500	5247	5221	5196	5171	5146
14.9750	5122	5097	5073	5048	5024
15.1000	4999	4975	4951	4926	4900
15.2250	4873	4846	4819	4791	4765
15.3500	4738	4711	4684	4657	4630
15.4750	4604	4577	4550	4524	4497
15.6000	4470	4444	4418	4391	4365
15.7250	4339	4313	4287	4261	4235
15.8500	4209	4183	4157	4132	4106
15.9750	4080	4055	4029	4004	3979
16.1000	3954	3929	3905	3882	3859
16.2250	3837	3816	3797	3778	3760
16.3500	3743	3728	3713	3698	3685
16.4750	3672	3660	3648	3637	3626
16.6000	3615	3605	3595	3585	3576
16.7250	3566	3558	3548	3539	3530
16.8500	3519	3509	3499	3489	3479
16.9750	3469	3459	3449	3439	3429
17.1000	3420	3410	3400	3391	3381
17.2250	3371	3362	3352	3343	3333
17.3500	3324	3314	3305	3295	3286
17.4750	3276	3267	3257	3248	3239
17.6000	3229	3220	3210	3201	3191
17.7250	3182	3173	3163	3154	3145
17.8500	3135	3126	3117	3107	3098
17.9750	3089	3079	3070	3061	3051
18.1000	3042	3033	3024	3015	3005
18.2250	2996	2987	2978	2968	2959
18.3500	2950	2941	2932	2923	2913
18.4750	2904	2895	2886	2877	2868
18.6000	2859	2850	2841	2832	2823
18.7250	2813	2805	2795	2787	2778
18.8500	2769	2760	2751	2742	2733
18.9750	2724	2715	2706	2697	2688
19.1000	2679	2670	2661	2653	2644
19.2250	2635	2626	2617	2609	2600
19.3500	2591	2582	2573	2565	2556
19.4750	2547	2538	2530	2521	2512
19.6000	2504	2495	2486	2478	2469
19.7250	2460	2452	2443	2435	2426
19.8500	2417	2409	2400	2392	2382

Type.... Time vs. Volume
Name.... BASIN 11-04-0OUT Tag: Of 100

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

TIME vs. VOLUME (cu.ft)

Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
19.9750	2371	2361	2350	2340	2329
20.1000	2319	2309	2299	2289	2281
20.2250	2272	2264	2256	2248	2242
20.3500	2235	2230	2224	2219	2215
20.4750	2210	2207	2203	2199	2196
20.6000	2193	2190	2187	2185	2182
20.7250	2180	2178	2175	2173	2171
20.8500	2169	2167	2165	2162	2161
20.9750	2159	2157	2155	2153	2151
21.1000	2149	2147	2145	2143	2141
21.2250	2139	2138	2136	2134	2132
21.3500	2130	2128	2126	2124	2123
21.4750	2121	2119	2117	2115	2113
21.6000	2111	2110	2108	2106	2104
21.7250	2102	2100	2098	2097	2095
21.8500	2093	2091	2089	2087	2085
21.9750	2084	2082	2080	2078	2076
22.1000	2074	2072	2071	2069	2067
22.2250	2065	2063	2061	2059	2057
22.3500	2056	2054	2052	2050	2048
22.4750	2046	2044	2042	2041	2039
22.6000	2037	2035	2033	2031	2030
22.7250	2028	2026	2024	2022	2020
22.8500	2018	2016	2015	2013	2011
22.9750	2009	2007	2005	2003	2002
23.1000	2000	1998	1996	1994	1992
23.2250	1990	1989	1987	1985	1983
23.3500	1981	1979	1977	1976	1974
23.4750	1972	1970	1968	1966	1964
23.6000	1963	1961	1959	1957	1955
23.7250	1953	1952	1950	1948	1946
23.8500	1944	1942	1940	1938	1936
23.9750	1935	1933	1930	1922	1909
24.1000	1886	1848	1794	1724	1642
24.2250	1550	1451	1328	1209	1096
24.3500	993	899	815	740	657
24.4750	579	510	448	393	345
24.6000	302	264	231	202	176
24.7250	127	79	49	30	19
24.8500	12	7	4	3	2
24.9750	1	1	0	0	0
25.1000	0	0	0	0	0
25.2250	0	0	0	0	0
25.3500	0	0	0		

Type.... Time-Elev
Name.... BASIN 11-04-0OUT Tag: Of 15

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

TIME vs. ELEVATION (ft)

Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
9.9500	514.80	514.80	514.80	514.80	514.80
10.0750	514.80	514.81	514.81	514.82	514.82
10.2000	514.83	514.84	514.85	514.86	514.87
10.3250	514.88	514.90	514.91	514.93	514.94
10.4500	514.96	514.98	515.00	515.01	515.01
10.5750	515.02	515.03	515.04	515.05	515.05
10.7000	515.06	515.07	515.08	515.10	515.11
10.8250	515.12	515.13	515.15	515.16	515.17
10.9500	515.19	515.20	515.22	515.23	515.24
11.0750	515.25	515.27	515.28	515.29	515.31
11.2000	515.32	515.34	515.36	515.38	515.40
11.3250	515.41	515.43	515.45	515.46	515.48
11.4500	515.50	515.53	515.55	515.57	515.60
11.5750	515.62	515.65	515.69	515.74	515.80
11.7000	515.87	515.96	516.07	516.20	516.36
11.8250	516.54	516.76	517.01	517.31	517.64
11.9500	518.01	518.40	518.80	519.21	519.59
12.0750	519.95	520.25	520.47	520.62	520.68
12.2000	520.68	520.62	520.51	520.35	520.17
12.3250	519.98	519.76	519.54	519.32	519.09
12.4500	518.86	518.64	518.43	518.24	518.05
12.5750	517.88	517.73	517.58	517.45	517.33
12.7000	517.22	517.12	517.04	516.96	516.88
12.8250	516.82	516.76	516.71	516.66	516.62
12.9500	516.58	516.54	516.51	516.48	516.46
13.0750	516.43	516.41	516.39	516.37	516.35
13.2000	516.33	516.31	516.30	516.28	516.27
13.3250	516.25	516.24	516.23	516.22	516.20
13.4500	516.19	516.18	516.17	516.16	516.15
13.5750	516.14	516.13	516.12	516.11	516.10
13.7000	516.09	516.09	516.08	516.07	516.06
13.8250	516.05	516.04	516.04	516.03	516.02
13.9500	516.01	516.01	516.00	515.99	515.98
14.0750	515.98	515.97	515.96	515.95	515.95
14.2000	515.94	515.93	515.93	515.92	515.92
14.3250	515.91	515.91	515.90	515.90	515.89
14.4500	515.89	515.88	515.88	515.88	515.87
14.5750	515.87	515.87	515.86	515.86	515.86
14.7000	515.86	515.85	515.85	515.85	515.84
14.8250	515.84	515.84	515.84	515.83	515.83
14.9500	515.83	515.83	515.82	515.82	515.82
15.0750	515.82	515.81	515.81	515.81	515.81
15.2000	515.80	515.80	515.80	515.79	515.79
15.3250	515.79	515.78	515.78	515.78	515.78

Type.... Time-Elev
Name.... BASIN 11-04-0OUT Tag: Of 15

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

TIME vs. ELEVATION (ft)

Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
15.4500	515.77	515.77	515.77	515.76	515.76
15.5750	515.76	515.75	515.75	515.75	515.74
15.7000	515.74	515.74	515.74	515.73	515.73
15.8250	515.73	515.72	515.72	515.72	515.71
15.9500	515.71	515.71	515.70	515.70	515.70
16.0750	515.69	515.69	515.69	515.69	515.68
16.2000	515.68	515.68	515.67	515.67	515.67
16.3250	515.67	515.66	515.66	515.66	515.66
16.4500	515.66	515.66	515.65	515.65	515.65
16.5750	515.65	515.65	515.65	515.65	515.64
16.7000	515.64	515.64	515.64	515.64	515.64
16.8250	515.64	515.64	515.64	515.63	515.63
16.9500	515.63	515.63	515.63	515.63	515.63
17.0750	515.63	515.63	515.62	515.62	515.62
17.2000	515.62	515.62	515.62	515.62	515.62
17.3250	515.62	515.61	515.61	515.61	515.61
17.4500	515.61	515.61	515.61	515.61	515.61
17.5750	515.60	515.60	515.60	515.60	515.60
17.7000	515.60	515.60	515.60	515.59	515.59
17.8250	515.59	515.59	515.59	515.59	515.59
17.9500	515.58	515.58	515.58	515.58	515.58
18.0750	515.58	515.58	515.57	515.57	515.57
18.2000	515.57	515.57	515.57	515.57	515.56
18.3250	515.56	515.56	515.56	515.56	515.56
18.4500	515.56	515.55	515.55	515.55	515.55
18.5750	515.55	515.55	515.55	515.54	515.54
18.7000	515.54	515.54	515.54	515.54	515.54
18.8250	515.53	515.53	515.53	515.53	515.53
18.9500	515.53	515.53	515.52	515.52	515.52
19.0750	515.52	515.52	515.52	515.52	515.51
19.2000	515.51	515.51	515.51	515.51	515.51
19.3250	515.51	515.50	515.50	515.50	515.50
19.4500	515.50	515.50	515.49	515.49	515.49
19.5750	515.49	515.49	515.49	515.49	515.48
19.7000	515.48	515.48	515.48	515.48	515.48
19.8250	515.48	515.47	515.47	515.47	515.47
19.9500	515.47	515.47	515.47	515.46	515.46
20.0750	515.46	515.46	515.46	515.46	515.46
20.2000	515.45	515.45	515.45	515.45	515.45
20.3250	515.45	515.45	515.45	515.45	515.45
20.4500	515.44	515.44	515.44	515.44	515.44
20.5750	515.44	515.44	515.44	515.44	515.44
20.7000	515.44	515.44	515.44	515.44	515.44
20.8250	515.44	515.44	515.44	515.44	515.44
20.9500	515.44	515.44	515.44	515.44	515.44

S/N: HOMOL0436313 JRK, JR
Pond Pack Ver: 10-9-97 :055 Compute Time: 10:45:53 Date: 11-04-2003

Type.... Time-Elev
Name.... BASIN 11-04-0OUT Tag: Of 15

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

TIME vs. ELEVATION (ft)

Time hrs	Output Time increment = .0250 hrs Time on left represents time for first value in each row.				
21.0750	515.44	515.44	515.43	515.43	515.43
21.2000	515.43	515.43	515.43	515.43	515.43
21.3250	515.43	515.43	515.43	515.43	515.43
21.4500	515.43	515.43	515.43	515.43	515.43
21.5750	515.43	515.43	515.43	515.43	515.43
21.7000	515.43	515.43	515.43	515.43	515.43
21.8250	515.43	515.43	515.43	515.43	515.43
21.9500	515.43	515.43	515.43	515.43	515.42
22.0750	515.42	515.42	515.42	515.42	515.42
22.2000	515.42	515.42	515.42	515.42	515.42
22.3250	515.42	515.42	515.42	515.42	515.42
22.4500	515.42	515.42	515.42	515.42	515.42
22.5750	515.42	515.42	515.42	515.42	515.42
22.7000	515.42	515.42	515.42	515.42	515.42
22.8250	515.42	515.42	515.42	515.42	515.42
22.9500	515.41	515.41	515.41	515.41	515.41
23.0750	515.41	515.41	515.41	515.41	515.41
23.2000	515.41	515.41	515.41	515.41	515.41
23.3250	515.41	515.41	515.41	515.41	515.41
23.4500	515.41	515.41	515.41	515.41	515.41
23.5750	515.41	515.41	515.41	515.41	515.41
23.7000	515.41	515.41	515.41	515.41	515.41
23.8250	515.41	515.40	515.40	515.40	515.40
23.9500	515.40	515.40	515.40	515.40	515.40
24.0750	515.40	515.39	515.39	515.38	515.36
24.2000	515.34	515.32	515.30	515.28	515.26
24.3250	515.23	515.21	515.19	515.17	515.14
24.4500	515.12	515.10	515.08	515.07	515.05
24.5750	515.04	515.02	515.01	515.00	514.98
24.7000	514.95	514.93	514.91	514.89	514.88
24.8250	514.87	514.86	514.85	514.84	514.83
24.9500	514.83	514.82	514.82	514.82	514.81
25.0750	514.81	514.81	514.81	514.81	514.81
25.2000	514.81	514.80	514.80	514.80	514.80
25.3250	514.80	514.80			

S/N: H0M0L0436313 JRK, JR
Pond Pack Ver: 10-9-97 :055 Compute Time: 10:45:53 Date: 11-04-2003

Type.... Time vs. Volume
Name.... BASIN 11-04-0OUT Tag: Of 15

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

TIME vs. VOLUME (cu.ft)

Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
9.9500	0	0	0	0	0
10.0750	0	0	0	0	0
10.2000	1	1	2	4	7
10.3250	12	19	29	43	63
10.4500	89	123	166	181	197
10.5750	216	235	256	278	302
10.7000	328	355	384	415	448
10.8250	483	521	560	602	647
10.9500	694	741	780	821	864
11.0750	908	953	1002	1052	1106
11.2000	1164	1226	1292	1365	1442
11.3250	1513	1583	1659	1740	1827
11.4500	1919	2018	2124	2241	2374
11.5750	2505	2665	2879	3167	3559
11.7000	4019	4653	5466	6478	7709
11.8250	9221	11061	13284	15965	19158
11.9500	22875	27072	31660	36483	41337
12.0750	46001	50086	53240	55349	56339
12.2000	56305	55394	53763	51608	49093
12.3250	46378	43555	40695	37837	35037
12.4500	32347	29816	27472	25327	23379
12.5750	21615	20030	18612	17333	16194
12.7000	15183	14274	13472	12754	12114
12.8250	11552	11044	10592	10192	9838
12.9500	9516	9225	8962	8724	8506
13.0750	8307	8124	7949	7784	7629
13.2000	7483	7346	7218	7096	6982
13.3250	6875	6773	6676	6584	6496
13.4500	6410	6325	6243	6162	6083
13.5750	6006	5930	5856	5783	5712
13.7000	5643	5575	5509	5444	5381
13.8250	5319	5259	5200	5143	5086
13.9500	5031	4976	4922	4863	4806
14.0750	4748	4693	4639	4586	4535
14.2000	4486	4439	4394	4352	4312
14.3250	4274	4239	4206	4174	4145
14.4500	4117	4090	4064	4040	4017
14.5750	3995	3974	3953	3933	3913
14.7000	3894	3876	3857	3839	3822
14.8250	3804	3786	3769	3752	3735
14.9500	3719	3702	3685	3669	3652
15.0750	3636	3619	3603	3587	3570
15.2000	3554	3538	3519	3499	3480
15.3250	3461	3442	3422	3403	3384

Type.... Time vs. Volume
Name.... BASIN 11-04-0OUT Tag: Of 15

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

TIME vs. VOLUME (cu.ft)

Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
15.4500	3365	3346	3328	3309	3290
15.5750	3271	3253	3234	3215	3197
15.7000	3178	3160	3142	3123	3105
15.8250	3086	3068	3050	3031	3013
15.9500	2995	2977	2959	2941	2923
16.0750	2905	2887	2869	2852	2836
16.2000	2820	2804	2789	2775	2762
16.3250	2750	2738	2727	2716	2706
16.4500	2696	2687	2679	2670	2662
16.5750	2655	2648	2641	2633	2627
16.7000	2620	2614	2607	2601	2594
16.8250	2588	2582	2576	2570	2564
16.9500	2558	2552	2546	2540	2534
17.0750	2529	2523	2517	2511	2505
17.2000	2500	2494	2488	2482	2476
17.3250	2471	2465	2459	2453	2447
17.4500	2442	2436	2430	2424	2419
17.5750	2413	2407	2401	2396	2390
17.7000	2382	2375	2368	2361	2354
17.8250	2347	2340	2333	2325	2318
17.9500	2311	2304	2297	2290	2283
18.0750	2276	2268	2261	2254	2247
18.2000	2240	2233	2226	2219	2211
18.3250	2204	2197	2190	2183	2176
18.4500	2169	2162	2155	2148	2141
18.5750	2134	2127	2120	2113	2106
18.7000	2099	2092	2085	2078	2071
18.8250	2064	2057	2050	2043	2036
18.9500	2029	2022	2015	2008	2001
19.0750	1994	1987	1981	1974	1967
19.2000	1960	1953	1946	1939	1932
19.3250	1926	1919	1912	1905	1898
19.4500	1892	1885	1878	1871	1864
19.5750	1857	1851	1844	1837	1830
19.7000	1824	1817	1810	1804	1797
19.8250	1790	1783	1777	1770	1763
19.9500	1757	1750	1743	1737	1730
20.0750	1724	1717	1711	1704	1699
20.2000	1693	1687	1682	1677	1672
20.3250	1668	1664	1661	1657	1654
20.4500	1651	1649	1646	1644	1642
20.5750	1640	1638	1636	1634	1633
20.7000	1631	1630	1628	1627	1625
20.8250	1624	1623	1621	1620	1619
20.9500	1618	1616	1615	1614	1613

Type.... Time vs. Volume
Name.... BASIN 11-04-0OUT Tag: Of 15

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

TIME vs. VOLUME (cu.ft)

Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
21.0750	1612	1610	1609	1608	1607
21.2000	1606	1605	1604	1602	1601
21.3250	1600	1599	1598	1597	1595
21.4500	1594	1593	1592	1591	1590
21.5750	1588	1587	1586	1585	1584
21.7000	1583	1582	1581	1579	1578
21.8250	1577	1576	1575	1574	1572
21.9500	1571	1570	1569	1568	1567
22.0750	1565	1564	1563	1562	1561
22.2000	1560	1558	1557	1556	1555
22.3250	1554	1553	1551	1550	1549
22.4500	1548	1547	1546	1544	1543
22.5750	1542	1541	1540	1539	1538
22.7000	1536	1535	1534	1533	1532
22.8250	1531	1530	1528	1527	1526
22.9500	1525	1524	1523	1521	1520
23.0750	1519	1518	1517	1515	1514
23.2000	1513	1512	1511	1510	1508
23.3250	1507	1506	1505	1504	1503
23.4500	1502	1500	1499	1498	1497
23.5750	1496	1494	1493	1492	1491
23.7000	1490	1489	1487	1486	1485
23.8250	1484	1483	1481	1480	1479
23.9500	1478	1477	1476	1473	1469
24.0750	1460	1441	1409	1364	1306
24.2000	1237	1160	1078	995	915
24.3250	839	768	697	620	550
24.4500	486	430	379	333	293
24.5750	257	225	197	172	119
24.7000	74	46	29	18	11
24.8250	7	4	3	2	1
24.9500	1	0	0	0	0
25.0750	0	0	0	0	0
25.2000	0	0	0	0	0
25.3250	0	0			

S/N: H0M0L0436313 JRK, JR
Pond Pack Ver: 10-9-97 :055 Compute Time: 10:45:53 Date: 11-04-2003

Type.... Time-Elev
Name.... BASIN 11-04-0OUT Tag: Of 25

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

TIME vs. ELEVATION (ft)

Time hrs	Output Time increment = .0250 hrs Time on left represents time for first value in each row.				
9.4750	514.80	514.80	514.80	514.80	514.80
9.6000	514.80	514.81	514.81	514.81	514.82
9.7250	514.82	514.83	514.84	514.85	514.86
9.8500	514.87	514.88	514.89	514.90	514.91
9.9750	514.93	514.94	514.96	514.97	514.99
10.1000	515.00	515.01	515.01	515.02	515.03
10.2250	515.03	515.04	515.05	515.06	515.06
10.3500	515.07	515.08	515.09	515.10	515.11
10.4750	515.12	515.13	515.14	515.15	515.17
10.6000	515.18	515.19	515.20	515.21	515.22
10.7250	515.23	515.24	515.25	515.27	515.28
10.8500	515.29	515.30	515.31	515.33	515.34
10.9750	515.35	515.37	515.38	515.40	515.41
11.1000	515.42	515.44	515.45	515.46	515.48
11.2250	515.49	515.51	515.53	515.55	515.57
11.3500	515.59	515.61	515.63	515.65	515.67
11.4750	515.69	515.71	515.73	515.76	515.79
11.6000	515.82	515.87	515.92	515.99	516.07
11.7250	516.17	516.30	516.46	516.64	516.86
11.8500	517.11	517.40	517.74	518.11	518.53
11.9750	518.98	519.44	519.91	520.34	520.73
12.1000	521.05	521.28	521.43	521.49	521.48
12.2250	521.40	521.27	521.09	520.89	520.67
12.3500	520.44	520.20	519.97	519.73	519.49
12.4750	519.25	519.01	518.78	518.57	518.36
12.6000	518.17	517.99	517.83	517.68	517.55
12.7250	517.42	517.31	517.21	517.13	517.05
12.8500	516.97	516.91	516.85	516.80	516.76
12.9750	516.71	516.68	516.64	516.61	516.58
13.1000	516.56	516.53	516.51	516.49	516.47
13.2250	516.45	516.43	516.41	516.40	516.38
13.3500	516.37	516.35	516.34	516.33	516.31
13.4750	516.30	516.29	516.28	516.27	516.26
13.6000	516.25	516.24	516.23	516.22	516.21
13.7250	516.20	516.19	516.18	516.17	516.16
13.8500	516.15	516.14	516.13	516.12	516.12
13.9750	516.11	516.10	516.09	516.08	516.07
14.1000	516.07	516.06	516.05	516.04	516.04
14.2250	516.03	516.02	516.02	516.01	516.01
14.3500	516.00	516.00	515.99	515.99	515.98
14.4750	515.98	515.97	515.97	515.96	515.96
14.6000	515.96	515.95	515.95	515.95	515.94
14.7250	515.94	515.94	515.93	515.93	515.93
14.8500	515.92	515.92	515.92	515.91	515.91

Type.... Time-Elev
Name.... BASIN 11-04-OOUT Tag: Of 25

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

TIME vs. ELEVATION (ft)

Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
14.9750	515.91	515.91	515.90	515.90	515.90
15.1000	515.89	515.89	515.89	515.88	515.88
15.2250	515.88	515.88	515.87	515.87	515.87
15.3500	515.86	515.86	515.86	515.85	515.85
15.4750	515.85	515.85	515.84	515.84	515.84
15.6000	515.83	515.83	515.83	515.82	515.82
15.7250	515.82	515.81	515.81	515.81	515.81
15.8500	515.80	515.80	515.80	515.79	515.79
15.9750	515.78	515.78	515.78	515.77	515.77
16.1000	515.77	515.76	515.76	515.76	515.75
16.2250	515.75	515.75	515.74	515.74	515.74
16.3500	515.73	515.73	515.73	515.73	515.73
16.4750	515.72	515.72	515.72	515.72	515.72
16.6000	515.72	515.71	515.71	515.71	515.71
16.7250	515.71	515.71	515.71	515.70	515.70
16.8500	515.70	515.70	515.70	515.70	515.70
16.9750	515.69	515.69	515.69	515.69	515.69
17.1000	515.69	515.69	515.69	515.68	515.68
17.2250	515.68	515.68	515.68	515.68	515.68
17.3500	515.68	515.67	515.67	515.67	515.67
17.4750	515.67	515.67	515.67	515.67	515.66
17.6000	515.66	515.66	515.66	515.66	515.66
17.7250	515.66	515.65	515.65	515.65	515.65
17.8500	515.65	515.65	515.65	515.65	515.64
17.9750	515.64	515.64	515.64	515.64	515.64
18.1000	515.64	515.64	515.63	515.63	515.63
18.2250	515.63	515.63	515.63	515.63	515.62
18.3500	515.62	515.62	515.62	515.62	515.62
18.4750	515.62	515.62	515.61	515.61	515.61
18.6000	515.61	515.61	515.61	515.61	515.60
18.7250	515.60	515.60	515.60	515.60	515.60
18.8500	515.60	515.59	515.59	515.59	515.59
18.9750	515.59	515.59	515.58	515.58	515.58
19.1000	515.58	515.58	515.58	515.57	515.57
19.2250	515.57	515.57	515.57	515.57	515.56
19.3500	515.56	515.56	515.56	515.56	515.56
19.4750	515.55	515.55	515.55	515.55	515.55
19.6000	515.55	515.54	515.54	515.54	515.54
19.7250	515.54	515.53	515.53	515.53	515.53
19.8500	515.53	515.53	515.52	515.52	515.52
19.9750	515.52	515.52	515.52	515.51	515.51
20.1000	515.51	515.51	515.51	515.51	515.50
20.2250	515.50	515.50	515.50	515.50	515.50
20.3500	515.50	515.50	515.49	515.49	515.49
20.4750	515.49	515.49	515.49	515.49	515.49

Type.... Time-Elev
Name.... BASIN 11-04-0OUT Tag: Of 25

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

TIME vs. ELEVATION (ft)

Time hrs	Output Time increment = .0250 hrs Time on left represents time for first value in each row.				
20.6000	515.49	515.49	515.49	515.49	515.49
20.7250	515.49	515.49	515.49	515.49	515.49
20.8500	515.49	515.49	515.49	515.48	515.48
20.9750	515.48	515.48	515.48	515.48	515.48
21.1000	515.48	515.48	515.48	515.48	515.48
21.2250	515.48	515.48	515.48	515.48	515.48
21.3500	515.48	515.48	515.48	515.48	515.48
21.4750	515.48	515.48	515.48	515.48	515.48
21.6000	515.48	515.48	515.48	515.48	515.47
21.7250	515.47	515.47	515.47	515.47	515.47
21.8500	515.47	515.47	515.47	515.47	515.47
21.9750	515.47	515.47	515.47	515.47	515.47
22.1000	515.47	515.47	515.47	515.47	515.47
22.2250	515.47	515.47	515.47	515.47	515.47
22.3500	515.47	515.47	515.47	515.47	515.47
22.4750	515.47	515.46	515.46	515.46	515.46
22.6000	515.46	515.46	515.46	515.46	515.46
22.7250	515.46	515.46	515.46	515.46	515.46
22.8500	515.46	515.46	515.46	515.46	515.46
22.9750	515.46	515.46	515.46	515.46	515.46
23.1000	515.46	515.46	515.46	515.46	515.46
23.2250	515.46	515.46	515.45	515.45	515.45
23.3500	515.45	515.45	515.45	515.45	515.45
23.4750	515.45	515.45	515.45	515.45	515.45
23.6000	515.45	515.45	515.45	515.45	515.45
23.7250	515.45	515.45	515.45	515.45	515.45
23.8500	515.45	515.45	515.45	515.45	515.45
23.9750	515.45	515.45	515.44	515.44	515.44
24.1000	515.44	515.43	515.42	515.41	515.39
24.2250	515.37	515.34	515.31	515.29	515.26
24.3500	515.24	515.22	515.19	515.17	515.14
24.4750	515.12	515.10	515.08	515.07	515.05
24.6000	515.04	515.02	515.01	515.00	514.98
24.7250	514.95	514.93	514.91	514.89	514.88
24.8500	514.87	514.86	514.85	514.84	514.83
24.9750	514.83	514.82	514.82	514.82	514.81
25.1000	514.81	514.81	514.81	514.81	514.81
25.2250	514.80	514.80	514.80	514.80	514.80
25.3500	514.80	514.80			

S/N: H0M0L0436313 JRK, JR
Pond Pack Ver: 10-9-97 :055 Compute Time: 10:45:53 Date: 11-04-2003

Type.... Time vs. Volume
Name.... BASIN 11-04-0OUT Tag: Of 25

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

TIME vs. VOLUME (cu.ft)

Time hrs	Output Time increment = .0250 hrs Time on left represents time for first value in each row.				
9.4750	0	0	0	0	0
9.6000	0	0	0	0	0
9.7250	0	1	1	2	4
9.8500	7	10	15	22	32
9.9750	45	61	83	109	143
10.1000	170	184	198	213	229
10.2250	247	265	285	306	328
10.3500	351	376	401	428	457
10.4750	487	518	550	585	621
10.6000	658	698	737	770	804
10.7250	838	874	912	951	991
10.8500	1033	1078	1124	1173	1224
10.9750	1277	1333	1391	1453	1505
11.1000	1559	1615	1674	1736	1803
11.2250	1875	1953	2036	2127	2224
11.3500	2329	2432	2531	2636	2748
11.4750	2867	2995	3135	3295	3485
11.6000	3694	3963	4326	4828	5456
11.7250	6258	7267	8527	10054	11907
11.8500	14147	16852	20106	23985	28518
11.9750	33677	39398	45456	51464	57076
12.1000	61851	65445	67767	68760	68540
12.2250	67291	65203	62514	59433	56163
12.3500	52827	49508	46248	43063	39972
12.4750	36977	34120	31424	28929	26654
12.6000	24594	22739	21067	19573	18247
12.7250	17070	16021	15102	14279	13559
12.8500	12922	12352	11853	11413	11012
12.9750	10656	10339	10054	9795	9555
13.1000	9332	9125	8933	8754	8587
13.2250	8431	8286	8149	8020	7896
13.3500	7777	7664	7556	7453	7354
13.4750	7258	7165	7075	6988	6903
13.6000	6819	6738	6658	6581	6505
13.7250	6430	6355	6282	6209	6138
13.8500	6069	6000	5933	5867	5802
13.9750	5738	5674	5612	5550	5489
14.1000	5430	5371	5314	5258	5205
14.2250	5153	5104	5057	5013	4971
14.3500	4932	4891	4852	4815	4780
14.4750	4747	4715	4684	4655	4628
14.6000	4600	4574	4549	4524	4500
14.7250	4477	4453	4430	4408	4386
14.8500	4364	4342	4321	4299	4278

Type.... Time vs. Volume
Name.... BASIN 11-04-0OUT Tag: Of 25

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

TIME vs. VOLUME (cu.ft)

Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
14.9750	4257	4236	4214	4194	4173
15.1000	4153	4132	4111	4091	4070
15.2250	4050	4030	4009	3989	3969
15.3500	3948	3928	3908	3888	3868
15.4750	3848	3828	3808	3788	3768
15.6000	3748	3728	3709	3689	3669
15.7250	3649	3629	3610	3590	3571
15.8500	3551	3531	3507	3484	3461
15.9750	3437	3415	3392	3369	3346
16.1000	3324	3302	3281	3260	3240
16.2250	3221	3202	3184	3168	3152
16.3500	3137	3123	3110	3098	3086
16.4750	3074	3064	3053	3043	3034
16.6000	3024	3016	3007	2998	2990
16.7250	2982	2974	2966	2958	2950
16.8500	2943	2935	2928	2920	2913
16.9750	2905	2898	2891	2883	2876
17.1000	2869	2862	2854	2847	2840
17.2250	2833	2825	2818	2811	2804
17.3500	2796	2789	2782	2775	2768
17.4750	2761	2754	2746	2739	2732
17.6000	2725	2718	2711	2704	2696
17.7250	2689	2682	2675	2668	2661
17.8500	2654	2647	2640	2632	2625
17.9750	2618	2611	2604	2597	2590
18.1000	2583	2576	2569	2562	2555
18.2250	2548	2541	2533	2527	2520
18.3500	2512	2506	2499	2491	2484
18.4750	2477	2471	2464	2457	2450
18.6000	2442	2435	2429	2422	2415
18.7250	2408	2401	2394	2386	2378
18.8500	2369	2360	2352	2343	2335
18.9750	2326	2318	2309	2301	2292
19.1000	2284	2275	2266	2258	2250
19.2250	2241	2233	2224	2216	2207
19.3500	2199	2190	2182	2174	2165
19.4750	2157	2148	2140	2132	2123
19.6000	2115	2107	2098	2090	2082
19.7250	2074	2065	2057	2049	2040
19.8500	2032	2024	2016	2007	1999
19.9750	1991	1983	1975	1967	1959
20.1000	1951	1943	1936	1928	1921
20.2250	1914	1908	1902	1896	1891
20.3500	1886	1882	1878	1874	1870
20.4750	1867	1864	1861	1859	1856

Type.... Time vs. Volume
Name.... BASIN 11-04-0OUT Tag: Of 25

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Control flows and overflow from detention basin

TIME vs. VOLUME (cu.ft)

Output Time increment = .0250 hrs
Time on left represents time for first value in each row.

Time hrs					
20.6000	1854	1852	1850	1847	1845
20.7250	1844	1842	1840	1838	1837
20.8500	1835	1834	1832	1830	1829
20.9750	1828	1826	1825	1823	1822
21.1000	1820	1819	1817	1816	1814
21.2250	1813	1812	1810	1809	1807
21.3500	1806	1804	1803	1802	1800
21.4750	1799	1797	1796	1794	1793
21.6000	1792	1790	1789	1787	1786
21.7250	1784	1783	1782	1780	1779
21.8500	1777	1776	1775	1773	1772
21.9750	1770	1769	1767	1766	1764
22.1000	1763	1762	1760	1759	1757
22.2250	1756	1755	1753	1752	1750
22.3500	1749	1748	1746	1745	1743
22.4750	1742	1740	1739	1737	1736
22.6000	1735	1733	1732	1730	1729
22.7250	1727	1726	1725	1723	1722
22.8500	1720	1719	1717	1716	1715
22.9750	1713	1712	1710	1709	1707
23.1000	1706	1705	1703	1702	1700
23.2250	1699	1697	1696	1694	1693
23.3500	1692	1690	1689	1687	1686
23.4750	1685	1683	1682	1680	1679
23.6000	1678	1676	1675	1673	1672
23.7250	1670	1669	1667	1666	1664
23.8500	1663	1662	1660	1659	1657
23.9750	1656	1654	1652	1646	1636
24.1000	1618	1588	1545	1490	1415
24.2250	1323	1226	1127	1032	941
24.3500	858	782	709	629	556
24.4750	491	432	380	334	293
24.6000	257	224	196	171	116
24.7250	72	45	28	17	11
24.8500	7	4	3	2	1
24.9750	1	0	0	0	0
25.1000	0	0	0	0	0
25.2250	0	0	0	0	0
25.3500	0	0			

S/N: H0M0L0436313 JRK, JR
Pond Pack Ver: 10-9-97 :055 Compute Time: 10:45:53 Date: 11-04-2003

Type.... Vol: Elev-Area
Name.... PACE 11-04-03

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Existing basin rev areas 11-04-03

Elevation (ft)	Planimeter (sq.in)	Area (sq.ft)	A1+A2+sqr(A1*A2) (sq.ft)	Volume (cu.ft)	Volume Sum (cu.ft)
514.80	-----	1	0	0	0
515.00	-----	2425	2475	165	165
516.00	-----	7559	14265	4755	4920
518.00	-----	10404	26831	17887	22808
520.00	-----	13555	35834	23890	46697
522.00	-----	17014	45755	30504	77201
524.00	-----	20694	56472	37648	114849
526.00	-----	24680	67973	45316	160164

POND VOLUME EQUATIONS

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

S/N: H0M0L0436313 JRK, JR
Pond Pack Ver: 10-9-97 :055 Compute Time: 10:45:53 Date: 11-04-2003

Type.... OutletInput Data
Name.... PACE BASIN PIPES

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Outlets - 42"rcp and 36"rcp with overflow weir

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 514.80 ft
Increment = .20 ft
Max. Elev.= 525.00 ft

****
OUTLET CONNECTIVITY
****

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Culvert-Circular	2	--->	TW	519.500	525.000
Culvert-Circular	1	--->	TW	514.800	525.000
TWSETUP,DS Channel					

S/N: H0M0L0436313 JRK, JR
Pond Pack Ver: 10-9-97 :055 Compute Time: 10:45:53 Date: 11-04-2003

Type.... OutletInput Data
Name.... PACE BASIN PIPES

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Outlets - 42"rcp and 36"rcp with overflow weir

OUTLET STRUCTURE INPUT DATA

Structure ID	= 2		
Structure Type	= Culvert-Circular		
No. Barrels	=	1	
Barrel Diameter	=	3.0000	ft
Upstream Invert	=	519.50	ft
Dnstream Invert	=	519.25	ft
Horiz. Length	=	15.00	ft
Barrel Length	=	15.00	ft
Barrel Slope	=	.01667	ft/ft

OUTLET CONTROL DATA...

Mannings n	=	.0130	
Ke	=	.5000	(forward entrance loss)
Kb	=	.007228	(per ft of full flow)
Kr	=	.5000	(reverse entrance loss)
HW Convergence	=	.001	+/- ft

INLET CONTROL DATA...

Equation form	=	1
Inlet Control K	=	.0098
Inlet Control M	=	2.0000
Inlet Control c	=	.03980
Inlet Control Y	=	.6700
T1 ratio (HW/D)	=	1.152
T2 ratio (HW/D)	=	1.298
Slope Factor	=	-.500
Calc inlet only	= Yes	

Use unsubmerged inlet control Form 1 equ. below T1 elev.
Use submerged inlet control Form 1 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

At T1 Elev =	522.96 ft	--->	Flow =	42.85	cfs
At T2 Elev =	523.40 ft	--->	Flow =	48.97	cfs

Type.... OutletInput Data
Name.... PACE BASIN PIPES

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Outlets - 42"rcp and 36"rcp with overflow weir

OUTLET STRUCTURE INPUT DATA
Structure ID = 1
Structure Type = Culvert-Circular

No. Barrels	=	1	
Barrel Diameter	=	3.5000	ft
Upstream Invert	=	514.80	ft
Dnstream Invert	=	514.50	ft
Horiz. Length	=	24.00	ft
Barrel Length	=	24.00	ft
Barrel Slope	=	.01250	ft/ft

OUTLET CONTROL DATA...

Mannings n	=	.0130	
Ke	=	.5000	(forward entrance loss)
Kb	=	.005885	(per ft of full flow)
Kr	=	.5000	(reverse entrance loss)
HW Convergence	=	.001	+/- ft

INLET CONTROL DATA...

Equation form	=	1
Inlet Control K	=	.0098
Inlet Control M	=	2.0000
Inlet Control c	=	.03980
Inlet Control Y	=	.6700
T1 ratio (HW/D)	=	1.154
T2 ratio (HW/D)	=	1.301
Slope Factor	=	-.500
Calc inlet only	=	Yes

Use unsubmerged inlet control Form 1 equ. below T1 elev.
Use submerged inlet control Form 1 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...
At T1 Elev = 518.84 ft ---> Flow = 63.00 cfs
At T2 Elev = 519.35 ft ---> Flow = 72.00 cfs

Structure ID = TW
Structure Type = TWSETUP,DS Channel

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...

Maximum Iterations	=	30
Min. TW tolerance	=	.01 ft
Max. TW tolerance	=	.01 ft
Min. HW tolerance	=	.01 ft
Max. HW tolerance	=	.01 ft
Min. Q tolerance	=	.10 cfs
Max. Q tolerance	=	.10 cfs

Type.... Individual Outlet Curves
Name.... PACE BASIN PIPES

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Outlets - 42"rcp and 36"rcp with overflow weir

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = 2 (Culvert-Circular)

Mannings open channel maximum capacity: 92.62 cfs
Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, Device Q		Tail Water		Notes
WS Elev. ft	Q cfs	TW Elev ft	Converge +/-ft	Computation Messages
514.80	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
515.00	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
515.20	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
515.40	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
515.60	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
515.80	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
516.00	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
516.20	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
516.40	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
516.60	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
516.80	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
517.00	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
517.20	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
517.40	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
517.60	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El
517.80	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El

Type.... Individual Outlet Curves
Name.... PACE BASIN PIPES

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Outlets - 42"rcp and 36"rcp with overflow weir

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = 2 (Culvert-Circular)

Mannings open channel maximum capacity: 92.62 cfs
Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, Device Q		Tail Water		Notes		
WS Elev. ft	Q cfs	TW Elev ft	Converge +/-ft	Computation Messages		
518.00	.00	Free Outfall				
		Upstream HW & DNstream TW < Inv.El				
518.20	.00	Free Outfall				
		Upstream HW & DNstream TW < Inv.El				
518.40	.00	Free Outfall				
		Upstream HW & DNstream TW < Inv.El				
518.60	.00	Free Outfall				
		Upstream HW & DNstream TW < Inv.El				
518.80	.00	Free Outfall				
		Upstream HW & DNstream TW < Inv.El				
519.00	.00	Free Outfall				
		Upstream HW & DNstream TW < Inv.El				
519.20	.00	Free Outfall				
		Upstream HW & DNstream TW < Inv.El				
519.40	.00	Free Outfall				
		Upstream HW & DNstream TW < Inv.El				
519.50	.00	Free Outfall				
		Upstream HW & DNstream TW < Inv.El				
519.60	.10	Free Outfall				
		INLET CONTROL...	Equ.1: HW =.10	dc=.094	Ac=.0656	
519.80	.62	Free Outfall				
		INLET CONTROL...	Equ.1: HW =.30	dc=.243	Ac=.2699	
520.00	1.59	Free Outfall				
		INLET CONTROL...	Equ.1: HW =.50	dc=.390	Ac=.5404	
520.20	2.98	Free Outfall				
		INLET CONTROL...	Equ.1: HW =.70	dc=.537	Ac=.8591	
520.40	4.73	Free Outfall				
		INLET CONTROL...	Equ.1: HW =.90	dc=.681	Ac=1.2050	
520.60	6.84	Free Outfall				
		INLET CONTROL...	Equ.1: HW =1.10	dc=.822	Ac=1.5731	
520.80	9.23	Free Outfall				
		INLET CONTROL...	Equ.1: HW =1.30	dc=.960	Ac=1.9492	

Type.... Individual Outlet Curves
Name.... PACE BASIN PIPES

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Outlets - 42"rcp and 36"rcp with overflow weir

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = 2 (Culvert-Circular)

Mannings open channel maximum capacity: 92.62 cfs
Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, Device Q		Tail Water		Notes		
WS Elev. ft	Q cfs	TW Elev ft	Converge +/-ft	Computation Messages		
521.00	11.87	Free Outfall				
		INLET CONTROL...		Equ.1: HW =1.50	dc=1.094	Ac=2.3304
521.20	14.73	Free Outfall				
		INLET CONTROL...		Equ.1: HW =1.70	dc=1.224	Ac=2.7099
521.40	17.74	Free Outfall				
		INLET CONTROL...		Equ.1: HW =1.90	dc=1.348	Ac=3.0788
521.60	20.86	Free Outfall				
		INLET CONTROL...		Equ.1: HW =2.10	dc=1.467	Ac=3.4360
521.80	24.06	Free Outfall				
		INLET CONTROL...		Equ.1: HW =2.30	dc=1.581	Ac=3.7768
522.00	27.32	Free Outfall				
		INLET CONTROL...		Equ.1: HW =2.50	dc=1.690	Ac=4.1026
522.20	30.59	Free Outfall				
		INLET CONTROL...		Equ.1: HW =2.70	dc=1.793	Ac=4.4066
522.40	33.86	Free Outfall				
		INLET CONTROL...		Equ.1: HW =2.90	dc=1.890	Ac=4.6904
522.60	37.12	Free Outfall				
		INLET CONTROL...		Equ.1: HW =3.10	dc=1.982	Ac=4.9551
522.80	40.36	Free Outfall				
		INLET CONTROL...		Equ.1: HW =3.30	dc=2.069	Ac=5.1993
523.00	43.47	Free Outfall				
		INLET CONTROL...		Transition: HW =3.50		
523.20	46.25	Free Outfall				
		INLET CONTROL...		Transition: HW =3.70		
523.40	49.02	Free Outfall				
		INLET CONTROL...		Submerged: HW =3.90		
523.60	51.52	Free Outfall				
		INLET CONTROL...		Submerged: HW =4.10		
523.80	53.91	Free Outfall				
		INLET CONTROL...		Submerged: HW =4.30		
524.00	56.20	Free Outfall				
		INLET CONTROL...		Submerged: HW =4.50		

Type.... Individual Outlet Curves
Name.... PACE BASIN PIPES

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Outlets - 42"rcp and 36"rcp with overflow weir

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = 2 (Culvert-Circular)

Mannings open channel maximum capacity: 92.62 cfs
Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, Device Q		Tail Water		Notes
WS Elev. ft	Q cfs	TW Elev ft	Converge +/-ft	Computation Messages
524.20	58.39	Free Outfall		
		INLET CONTROL...		Submerged: HW =4.70
524.40	60.49	Free Outfall		
		INLET CONTROL...		Submerged: HW =4.90
524.60	62.54	Free Outfall		
		INLET CONTROL...		Submerged: HW =5.10
524.80	64.52	Free Outfall		
		INLET CONTROL...		Submerged: HW =5.30
525.00	66.42	Free Outfall		
		INLET CONTROL...		Submerged: HW =5.50

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Type.... Individual Outlet Curves
Name.... PACE BASIN PIPES

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Outlets - 42"rcp and 36"rcp with overflow weir

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = 1 (Culvert-Circular)

Mannings open channel maximum capacity: 120.99 cfs
Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, Device Q		Tail Water		Notes		
WS Elev. ft	Q cfs	TW Elev ft	Converge +/-ft	Computation Messages		
514.80	.00	Free Outfall		Upstream HW & DNstream TW < Inv.El		
515.00	.32	Free Outfall		INLET CONTROL... Equ.1: HW =.20	dc=.166	Ac=.1658
515.20	1.12	Free Outfall		INLET CONTROL... Equ.1: HW =.40	dc=.314	Ac=.4275
515.40	2.41	Free Outfall		INLET CONTROL... Equ.1: HW =.60	dc=.463	Ac=.7537
515.60	4.12	Free Outfall		INLET CONTROL... Equ.1: HW =.80	dc=.608	Ac=1.1191
515.80	6.27	Free Outfall		INLET CONTROL... Equ.1: HW =1.00	dc=.753	Ac=1.5205
516.00	8.80	Free Outfall		INLET CONTROL... Equ.1: HW =1.20	dc=.896	Ac=1.9446
516.20	11.66	Free Outfall		INLET CONTROL... Equ.1: HW =1.40	dc=1.036	Ac=2.3813
516.40	14.81	Free Outfall		INLET CONTROL... Equ.1: HW =1.60	dc=1.172	Ac=2.8235
516.60	18.22	Free Outfall		INLET CONTROL... Equ.1: HW =1.80	dc=1.304	Ac=3.2679
516.80	21.84	Free Outfall		INLET CONTROL... Equ.1: HW =2.00	dc=1.434	Ac=3.7090
517.00	25.61	Free Outfall		INLET CONTROL... Equ.1: HW =2.20	dc=1.558	Ac=4.1385
517.20	29.52	Free Outfall		INLET CONTROL... Equ.1: HW =2.40	dc=1.678	Ac=4.5580
517.40	33.52	Free Outfall		INLET CONTROL... Equ.1: HW =2.60	dc=1.793	Ac=4.9622
517.60	37.62	Free Outfall		INLET CONTROL... Equ.1: HW =2.80	dc=1.905	Ac=5.3531
517.80	41.72	Free Outfall		INLET CONTROL... Equ.1: HW =3.00	dc=2.011	Ac=5.7210

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Title... Outlets - 42"rcp and 36"rcp with overflow weir

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = 1 (Culvert-Circular)

Mannings open channel maximum capacity: 120.99 cfs
Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, Device Q		Tail Water		Notes		
WS Elev. ft	Q cfs	TW Elev ft	Converge +/-ft	Computation Messages		
518.00	45.87	Free Outfall				
		INLET CONTROL...		Equ.1: HW =3.20	dc=2.113	Ac=6.0725
518.20	49.97	Free Outfall				
		INLET CONTROL...		Equ.1: HW =3.40	dc=2.209	Ac=6.4000
518.40	54.10	Free Outfall				
		INLET CONTROL...		Equ.1: HW =3.60	dc=2.302	Ac=6.7098
518.60	58.17	Free Outfall				
		INLET CONTROL...		Equ.1: HW =3.80	dc=2.389	Ac=6.9978
518.80	62.23	Free Outfall				
		INLET CONTROL...		Equ.1: HW =4.00	dc=2.473	Ac=7.2663
519.00	65.82	Free Outfall				
		INLET CONTROL...		Transition: HW =4.20		
519.20	69.33	Free Outfall				
		INLET CONTROL...		Transition: HW =4.40		
519.40	72.77	Free Outfall				
		INLET CONTROL...		Submerged: HW =4.60		
519.50	74.34	Free Outfall				
		INLET CONTROL...		Submerged: HW =4.70		
519.60	75.91	Free Outfall				
		INLET CONTROL...		Submerged: HW =4.80		
519.80	78.92	Free Outfall				
		INLET CONTROL...		Submerged: HW =5.00		
520.00	81.80	Free Outfall				
		INLET CONTROL...		Submerged: HW =5.20		
520.20	84.59	Free Outfall				
		INLET CONTROL...		Submerged: HW =5.40		
520.40	87.31	Free Outfall				
		INLET CONTROL...		Submerged: HW =5.60		
520.60	89.93	Free Outfall				
		INLET CONTROL...		Submerged: HW =5.80		
520.80	92.48	Free Outfall				
		INLET CONTROL...		Submerged: HW =6.00		

Type.... Individual Outlet Curves
Name.... PACE BASIN PIPES

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Outlets - 42"rcp and 36"rcp with overflow weir

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = 1 (Culvert-Circular)

Mannings open channel maximum capacity: 120.99 cfs
Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, Device Q		Tail Water		Notes	
WS Elev. ft	Q cfs	TW Elev Converge ft	+/-ft	Computation Messages	
521.00	94.96	Free Outfall			
		INLET CONTROL...		Submerged:	HW =6.20
521.20	97.37	Free Outfall			
		INLET CONTROL...		Submerged:	HW =6.40
521.40	99.73	Free Outfall			
		INLET CONTROL...		Submerged:	HW =6.60
521.60	102.04	Free Outfall			
		INLET CONTROL...		Submerged:	HW =6.80
521.80	104.28	Free Outfall			
		INLET CONTROL...		Submerged:	HW =7.00
522.00	106.50	Free Outfall			
		INLET CONTROL...		Submerged:	HW =7.20
522.20	108.67	Free Outfall			
		INLET CONTROL...		Submerged:	HW =7.40
522.40	110.79	Free Outfall			
		INLET CONTROL...		Submerged:	HW =7.60
522.60	112.87	Free Outfall			
		INLET CONTROL...		Submerged:	HW =7.80
522.80	114.91	Free Outfall			
		INLET CONTROL...		Submerged:	HW =8.00
523.00	116.92	Free Outfall			
		INLET CONTROL...		Submerged:	HW =8.20
523.20	118.88	Free Outfall			
		INLET CONTROL...		Submerged:	HW =8.40
523.40	120.83	Free Outfall			
		INLET CONTROL...		Submerged:	HW =8.60
523.60	122.74	Free Outfall			
		INLET CONTROL...		Submerged:	HW =8.80
523.80	124.62	Free Outfall			
		INLET CONTROL...		Submerged:	HW =9.00
524.00	126.47	Free Outfall			
		INLET CONTROL...		Submerged:	HW =9.20

Type.... Individual Outlet Curves
Name.... PACE BASIN PIPES

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Title... Outlets - 42"rcp and 36"rcp with overflow weir

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = 1 (Culvert-Circular)

Mannings open channel maximum capacity: 120.99 cfs
Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, Device Q		Tail Water		Notes
WS Elev. ft	Q cfs	TW Elev ft	Converge +/-ft	Computation Messages
524.20	128.29	Free Outfall		
		INLET CONTROL...		Submerged: HW =9.40
524.40	130.09	Free Outfall		
		INLET CONTROL...		Submerged: HW =9.60
524.60	131.87	Free Outfall		
		INLET CONTROL...		Submerged: HW =9.80
524.80	133.62	Free Outfall		
		INLET CONTROL...		Submerged: HW =10.00
525.00	135.35	Free Outfall		
		INLET CONTROL...		Submerged: HW =10.20

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Type.... Composite Rating Curve
Name.... PACE BASIN PIPES

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Title... Outlets - 42"rcp and 36"rcp with overflow weir

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
514.80	.00	Free Outfall		None contributing
515.00	.32	Free Outfall		1
515.20	1.12	Free Outfall		1
515.40	2.41	Free Outfall		1
515.60	4.12	Free Outfall		1
515.80	6.27	Free Outfall		1
516.00	8.80	Free Outfall		1
516.20	11.66	Free Outfall		1
516.40	14.81	Free Outfall		1
516.60	18.22	Free Outfall		1
516.80	21.84	Free Outfall		1
517.00	25.61	Free Outfall		1
517.20	29.52	Free Outfall		1
517.40	33.52	Free Outfall		1
517.60	37.62	Free Outfall		1
517.80	41.72	Free Outfall		1
518.00	45.87	Free Outfall		1
518.20	49.97	Free Outfall		1
518.40	54.10	Free Outfall		1
518.60	58.17	Free Outfall		1
518.80	62.23	Free Outfall		1
519.00	65.82	Free Outfall		1
519.20	69.33	Free Outfall		1
519.40	72.77	Free Outfall		1
519.50	74.34	Free Outfall		1
519.60	76.01	Free Outfall		2 +1
519.80	79.54	Free Outfall		2 +1
520.00	83.39	Free Outfall		2 +1
520.20	87.57	Free Outfall		2 +1
520.40	92.04	Free Outfall		2 +1
520.60	96.77	Free Outfall		2 +1
520.80	101.71	Free Outfall		2 +1
521.00	106.84	Free Outfall		2 +1
521.20	112.10	Free Outfall		2 +1
521.40	117.47	Free Outfall		2 +1
521.60	122.90	Free Outfall		2 +1
521.80	128.34	Free Outfall		2 +1
522.00	133.82	Free Outfall		2 +1
522.20	139.26	Free Outfall		2 +1

Type.... Composite Rating Curve
Name.... PACE BASIN PIPES

File.... J:\1998\980324~1\0001\CIVIL\DETENT~1\PACE1103.PPK
Title... Outlets - 42"rcp and 36"rcp with overflow weir

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
522.40	144.65	Free Outfall	2	+1
522.60	149.99	Free Outfall	2	+1
522.80	155.27	Free Outfall	2	+1
523.00	160.39	Free Outfall	2	+1
523.20	165.13	Free Outfall	2	+1
523.40	169.85	Free Outfall	2	+1
523.60	174.26	Free Outfall	2	+1
523.80	178.53	Free Outfall	2	+1
524.00	182.66	Free Outfall	2	+1
524.20	186.68	Free Outfall	2	+1
524.40	190.58	Free Outfall	2	+1
524.60	194.41	Free Outfall	2	+1
524.80	198.14	Free Outfall	2	+1
525.00	201.77	Free Outfall	2	+1

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8.) Under post-developed conditions, the peak rate of onsite runoff to the northwest sub-watershed which does not enter the detention basin is:

25 YEAR STORM: $0.99\ A^c \times 3.26\ C.F.S./A^c = 3.22\ C.F.S.$

100 YEAR STORM: $0.99\ A^c \times 4.17\ C.F.S./A^c = 4.13\ C.F.S.$

15 YEAR STORM: $0.99\ A^c \times 2.64\ C.F.S./A^c = 2.61\ C.F.S.$

9.) The total post-developed onsite discharge to the northwest subwatershed is:

25 YEAR STORM:

$14.43\ A^c \times 3.26\ C.F.S./A^c = 47.04\ C.F.S.$

$0.99\ A^c \times 3.26\ C.F.S./A^c = 3.23\ C.F.S.$

TOTAL = 50.27 C.F.S.

100 YEAR STORM:

$14.43\ A^c \times 4.17\ C.F.S./A^c = 60.17\ C.F.S.$

$0.99\ A^c \times 4.17\ C.F.S./A^c = 4.13\ C.F.S.$

TOTAL = 64.30 C.F.S.

~~2.95~~ $\cdot$ $(\overset{4.17}{\cancel{6.08}} - 2.95) = 1.22$

$\times 14.43 = 17.6$

10.) The required attenuation can be found by subtracting the pre-developed onsite runoff rate to the subwatershed from the post-developed onsite runoff rate to the sub-watershed:

25 YEAR STORM: 50.27 C.F.S. − 32.64 C.F.S. = 17.63 C.F.S.

64.3 − 41.3 = 23.0 CFS FOR 100 YEAR

EXHIBIT 'A'

Sht. 4 OF 5

5.) Under pre-developed conditions, the onsite area of discharge to the third (northwest) sub-watershed was 15.42 A^c which results in the following pre-developed runoff rate:

15 year storm: 14.00 A^c × 1.87 c.f.s./A^c = 26.18 c.f.s.

25 year storm: 14.00 A^c × 2.31 c.f.s./A^c = 32.34 c.f.s.

100 year storm: 14.00 A^c × 2.95 c.f.s./A^c = 41.30 c.f.s.

6.) The peak rate of discharge to the northwest sub-watershed under developed conditions shall be limited to the pre-developed rate of runoff to the watershed.

7.) Under post-developed conditions, the peak rate of runoff to the detention basin =

25 YEAR STORM:

14.43 A^c × 3.26 C.F.S./A^c = 47.04 C.F.S. (ONSITE)

42.64 A^c × 4.07 C.F.S./A^c = 173.54 C.F.S. (OFFSITE)

TOTAL = 220.58 C.F.S.

100 YEAR STORM:

14.43 A^c × 4.17 C.F.S./A^c = 60.17 C.F.S. (ONSITE)

42.64 A^c × 5.21 C.F.S./A^c = 222.15 C.F.S. (OFFSITE)

TOTAL = 282.32 C.F.S.

15 YEAR STORM:

14.43 A^c × 2.64 C.F.S./A^c = 38.10 C.F.S. (ONSITE)

42.64 A^c × 3.30 C.F.S./A^c = 140.71 C.F.S. (OFFSITE)

TOTAL = 178.81 C.F.S.

EXHIBIT 'A'
Sh't. 3 OF 5

FIGURE 5

FLOW FOR CIRCULAR PIPE FLOWING FULL
BASED ON MANNING'S EQUATION n=0.013

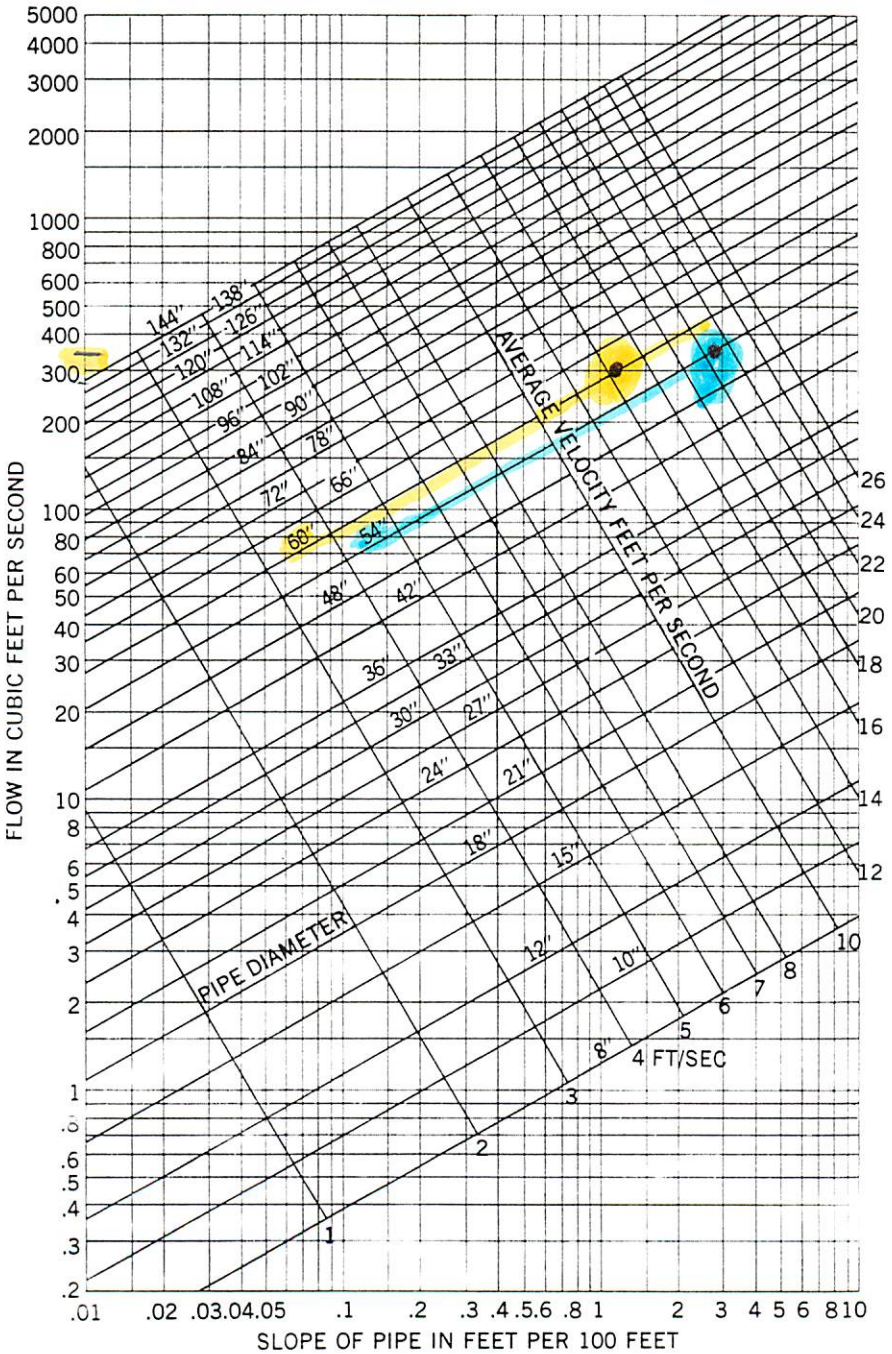
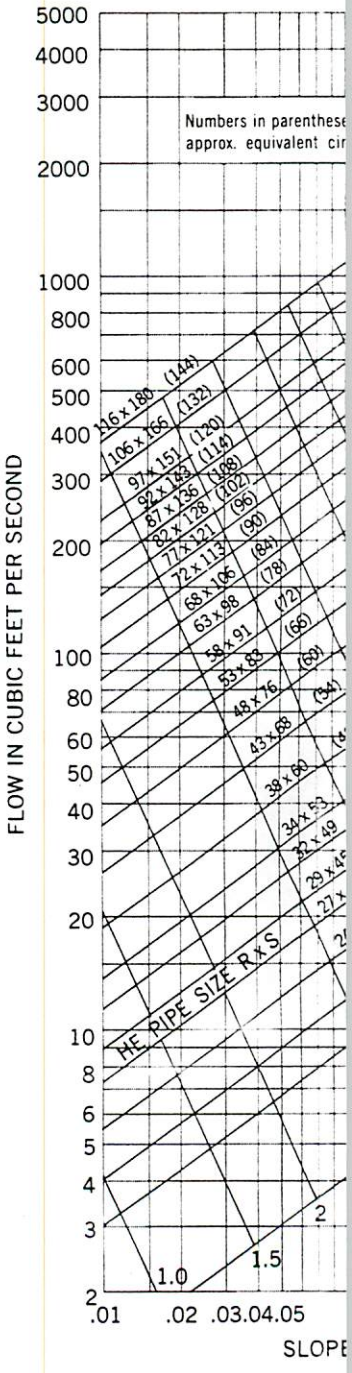
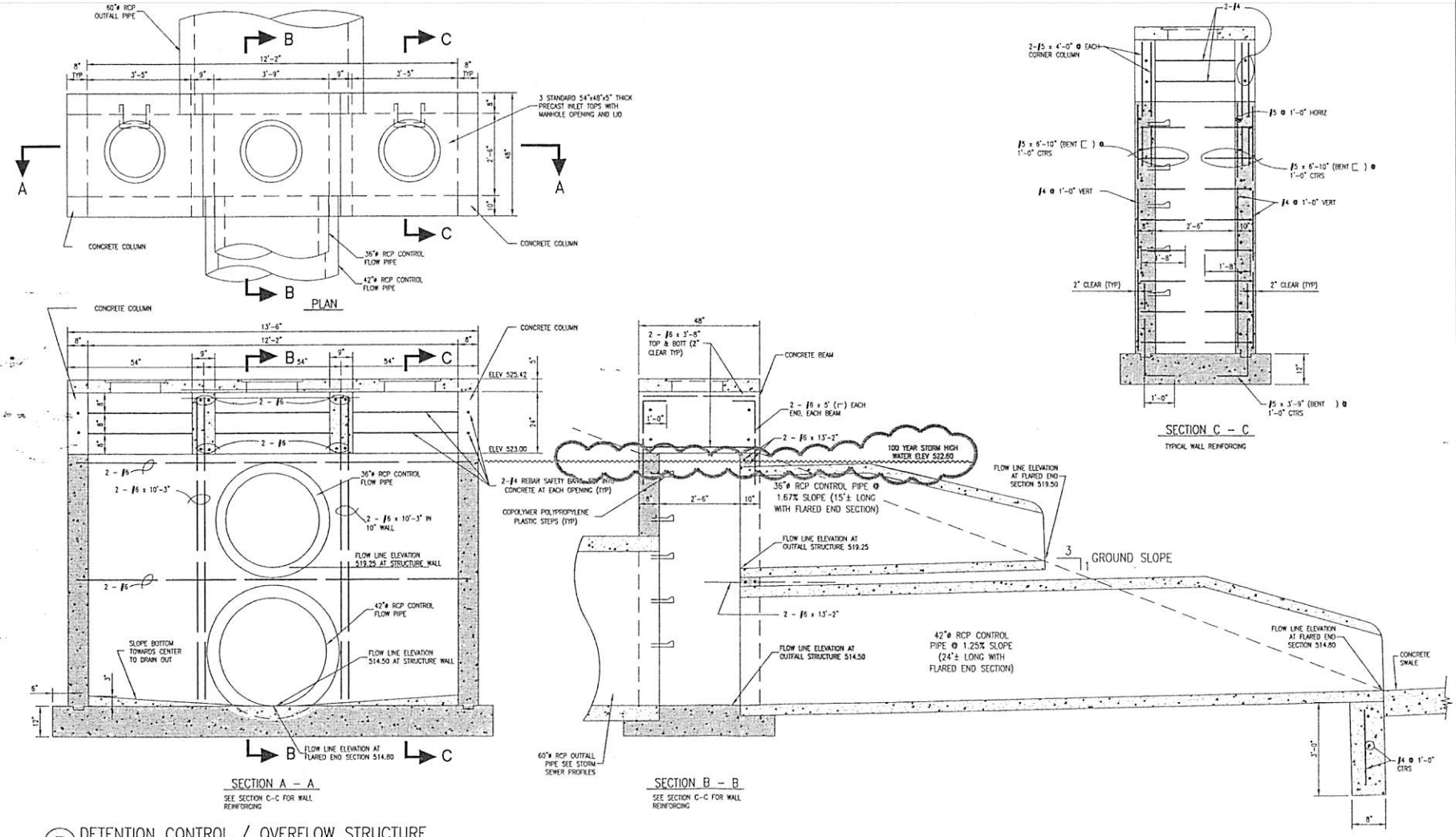


FIGURE 6

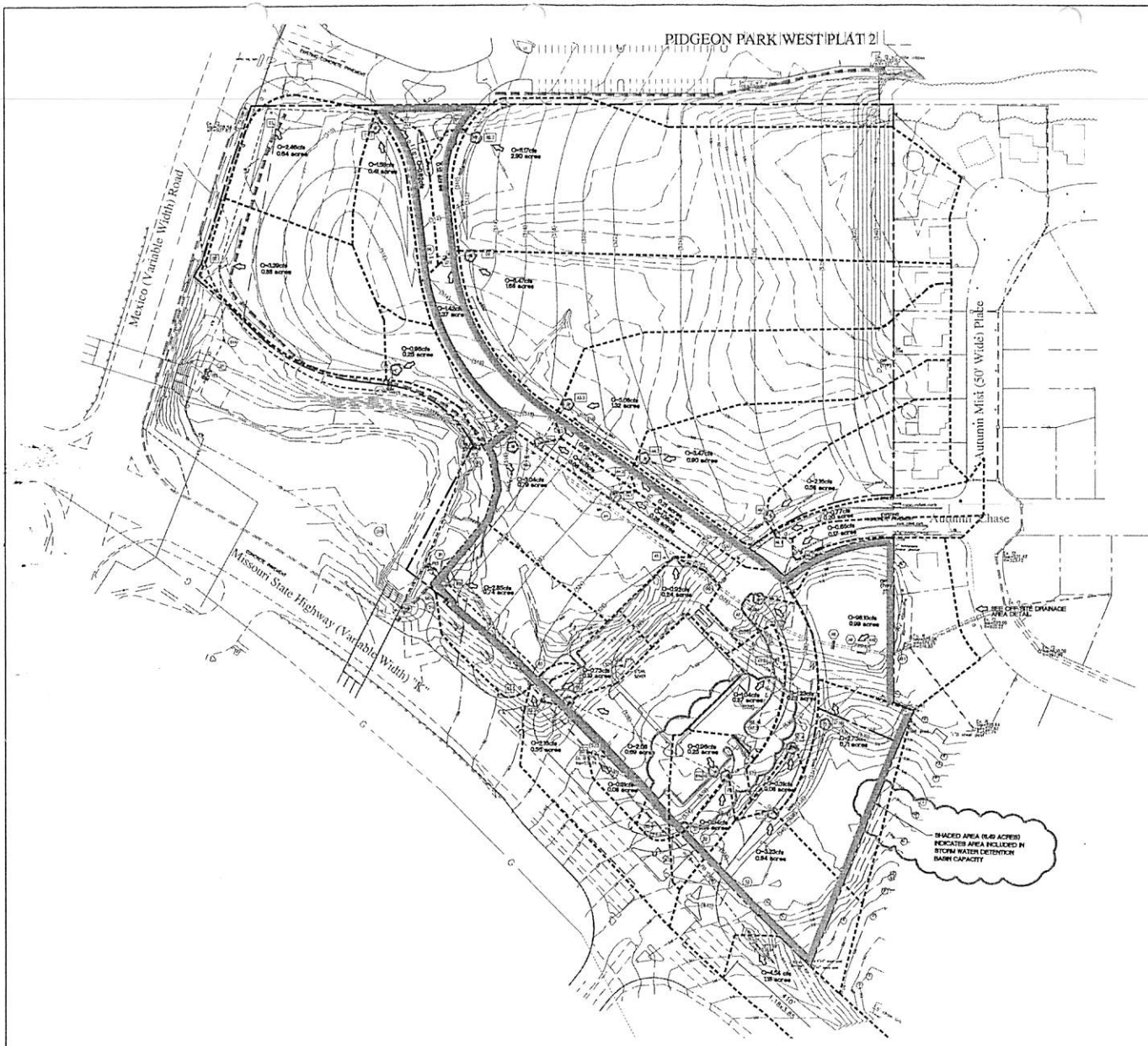
FLOW FOR HORIZ
BASED ON

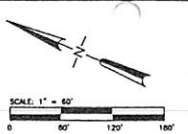


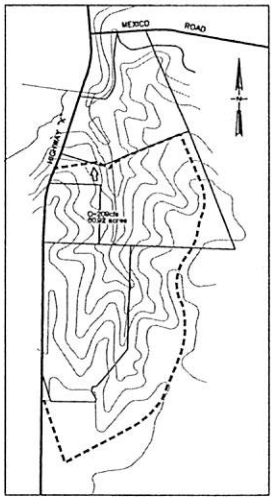


7 DETENTION CONTROL / OVERFLOW STRUCTURE
NO SCALE

PIDGEON PARK WEST PLAT 2







OFF SITE DRAINAGE AREA DETAIL
NO SCALE

PLANNING & ZONING NO. 99-87.03/99-87.04-3

DEVELOPER
PACE PROPERTIES, INC.
1401 S. BRENTWOOD BLVD.
ST. LOUIS, MO 63144
PHONE: (314) 968-9898

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68 Progress Parkway
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KdG

DISCLAIMER OF RESPONSIBILITY

EXPIRATION DATE 12/31/03

NO.	DATE	
1	11/03/03	CITY COMMENTS
2	12/11/03	CITY COMMENTS

PROJECT NO.	CONTRACT NO.
980324	0004
DRAWN: JEM	CHECKED: JML
DATE: 9/05/03	

DRAINAGE AREA MAP

SHEET 18 OF 18

C8.1