100 NORTH MAIN STREET
O'FALLON, MISSOURI 63366
636.240.2000
FACSIMILE 636.978-4144
www.ofallon.mo.us

October 4, 2005

Karl Schoenike
St Charles Engineering
801 South Fifth Street, Suite 202
St. Charles, Missouri 63301-2973

Re: Magnolia Commercial & Detention Site Plans

Dear Mr. Schoenike:

The plans for Magnolia Commercial & Detention Site Plans have been reviewed and approved.

Make sure all City specifications are followed. Additional temporary swales, berms and/or silting basins may be required as construction proceeds and planned siltation control is evaluated for effectiveness. Siltation control is to be erected before construction begins in any area. Copies of any off site easements and pertinent permits or approvals should be on file before any construction off site. Care should be taken to ensure no soil or mud is tracked onto any pavement from the site. Please schedule a pre-construction meeting with Senior Construction Inspector, Karl Ebert at (636) 379-5561. Please notify the Construction Inspection Division at 636-379-5561 at least 48 hours before construction begins and 24 hours in advance of any required inspections. Please notify Gary Johnson of Alliance Water at (636) 281-2858 one- (1) week prior to the start of construction. Upon completion of the improvements and necessary tests, an engineer shall certify that construction took place according to plan with all changes noted. Please insure that the as-builts accurately show the locations and elevations of the water, sanitary sewer, storm sewer, and swales. One set of reproducible as-builts should then be submitted along with three copies. **An e-mail version of the site plan and as-builts must also be supplied.** With this information the City of O'Fallon can proceed to accept the public improvements under its maintenance responsibility.

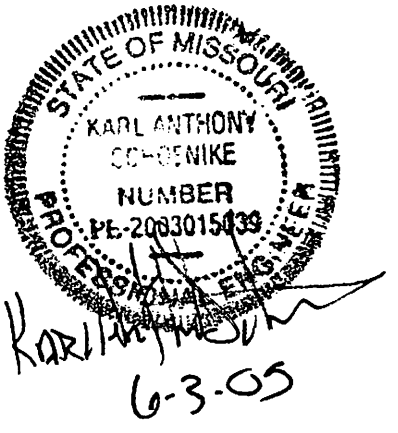
If you have any further questions please call me at (636) 379-5480 or email me at akilpatrick@ofallon.mo.us.

Sincerely,

Al Kilpatrick
Engineer III

cc via email
Cash Sweiven – City Administrator
Todd Criswell, P.E. – Managing Director / Community Development
Charles Mobley, P.E. –Director of Public Works
David Woods – Director of Planning and Engineering
Shannon Gerard – Assistant Director of Planning
Frank Godwin, P.E. – City Engineer
Art Genasci –Director of Building Safety / Building Official
Karl Ebert – Senior Construction Inspector
File through KL

MAGNOLIA COMMERCIAL
DETENTION REPORT
JUNE 2005



MAGNOLIA COMMERCIAL

DETENTION REPORT - Basin 1

Date: 5/10/2005, rev 06/03/05

PRE DEVELOPMENT CONDITION

		Q(pre)
2YR PONDPACK	Page 8.17	**60.15**
15 YR PONDPACK	Page 8.20	**120.95**
25YR PONDPACK	Page 8.23	**135.02**
100 YR PONDPACK	Page 8.26	**181.40**

POST DEVELOPED BYPASS

		Q(post)
2YR PONDPACK	Page 7.03	**49.57**
15 YR PONDPACK	Page 7.07	**79.88**
25YR PONDPACK	Page 7.11	**86.55**
100 YR PONDPACK	Page 7.15	**108.15**

POST DEVELOPMENT ROUTED CONDITION

		Q(post) ELEV
2YR PONDPACK	Page 12.22	**12.31**
2 YR PEAK ELEV	Page 12.22	**599.05**
15YR PONDPACK	Page 12.26	**37.67**
15 YR PEAK ELEV	Page 12.26	**600.63**
25YR PONDPACK	Page 12.30	**47.80**
25 YR PEAK ELEV	Page 12.30	**600.80**
100YR PONDPACK	Page 12.34	**83.39**
100YR PONDPACK	Page 12.34	**601.28** ←

POST DEVELOPED CONDITION

		Q(post)
2YR PONDPACK	Page 8.01	**60.62** WITHIN 1/2 OK
15 YR PONDPACK	Page 8.05	**94.13** ✓
25YR PONDPACK	Page 8.09	**107.72**
100YR PONDPACK	Page 8.13	**171.93** ✓

MEETS CITY REQ.
8/11/05
Frank Edwin

Outlet Pipe:

Length:	49.00
U.F.L.	593.55
L.F.L.	593.05
% Slope	0.01
Diameter (in):	30"
Type:	RCP

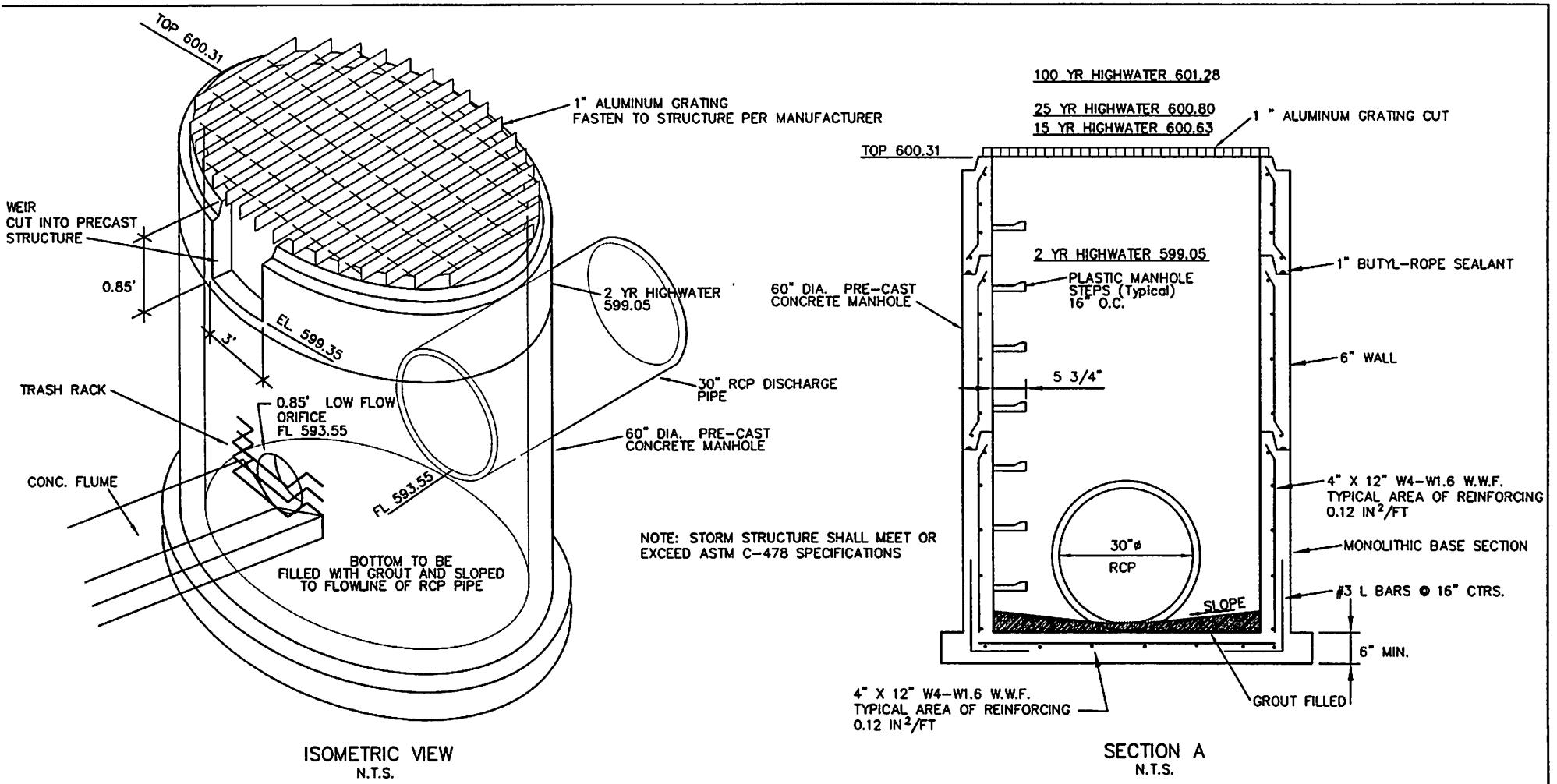
Time of Concentration:	0.160 HRS

Overflow Structure:

Type:	60" Riser
Orifice Elev.	593.55
Orifice Diameter	0.85'
Orifice Width	8"
Weir Length	3.00'
Wier Elevation	599.35
Sill Elev.:	600.20

Basin Dimensions

Elev	Area
593.55	0.0000
594	0.0163
596	0.1811
598	0.3767
600	0.4642
602	0.5855
602.5	0.6177

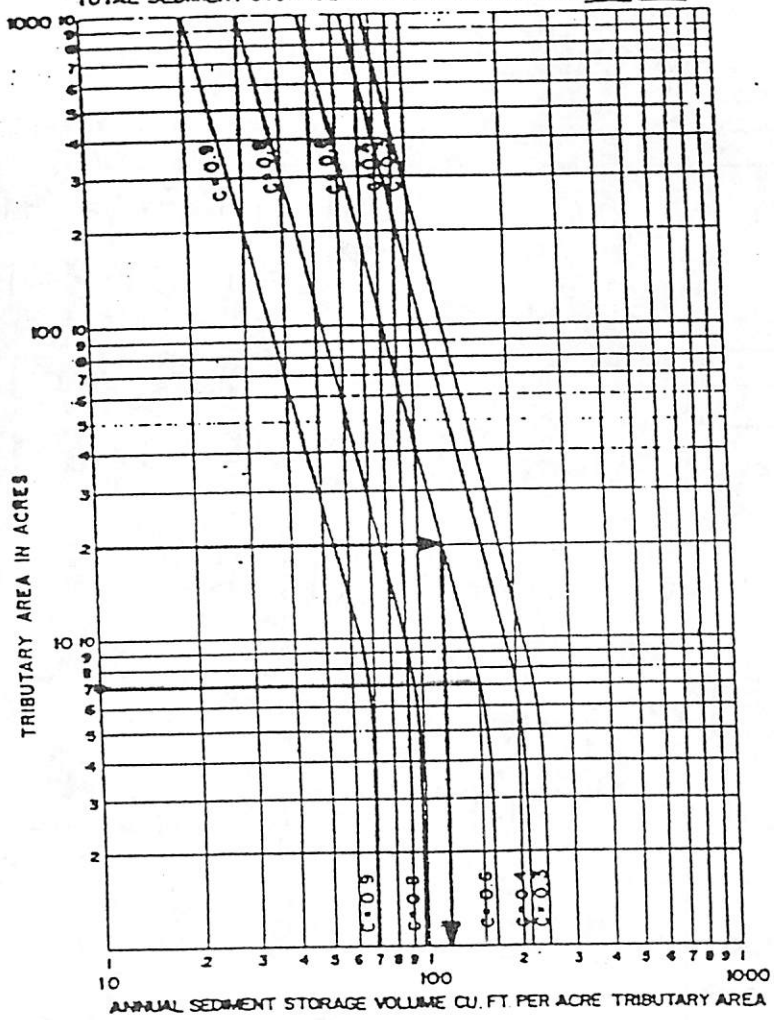


DETENTION STRUCTURE DETAIL

P & Z FILE NO. 3603.1

2 YEAR SEDIMENT STORAGE REQUIRED

EXAMPLE:
TRIBUTARY AREA = 20 ACRES
RATIONAL METHOD RUNOFF COEFFICIENT "C" = 0.6
SEDIMENT STORAGE = 120 CU. FT. PER ACRE PER YEAR
TOTAL SEDIMENT STORAGE = 120 X 20 = 2400 CU. FT. PER YEAR.



ANNUAL SEDIMENT STORAGE

FIG.

Sed Storage = 155 cu ft per Ac. per Yr.

Sed Storage = 2,225.8 ft³
= 82.4 yd³

Raise top 0.1'

ST. CHARLES ENGINEERING & SURVEYING, INC.

S C
E S

CONSULTING ENGINEERS AND LAND SURVEYORS

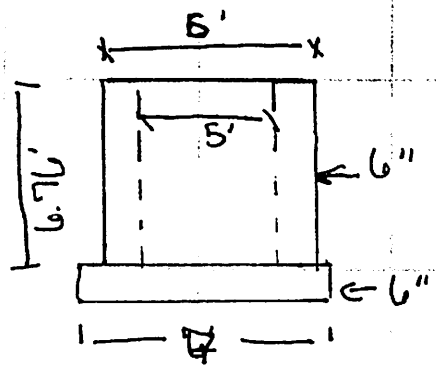
(636) 947-0607
FAX 947-2448

801 SOUTH FIFTH ST.
SUITE 202
ST. CHARLES, MO 63301

PROJECT NAME Magnolia Commercial
PROJECT #/JOB ORDER # 03-1986-01
DATE 6-3-05
DESIGNER K. Sobaski
PAGE

Buoyancy Calcs.

weight of Structure



base = $\pi r^2 \cdot d = 3.14(3.5^2) \cdot 0.5$

$= 19.24 ft^3 \cdot 150 \frac{lb}{ft^3} = 2,886 lbs$

riser = $\pi r_1^2 h - \pi r_2^2 h = 3.14(h)(3^2 - 2.5^2)$

$= 58.40 ft^3 \cdot 150 \frac{lb}{ft^3} = 8,760 lbs$

Total weight = 11,646 lbs.

-Buoyant force-

base = $19.24 ft^3 \cdot 62.4 \frac{lb}{ft^3} = 1200 lbs$

riser $\Rightarrow \pi(3)^2 5.8 = 163 ft^3$

$163 ft^3 \cdot 62.4 \frac{lb}{ft^3} = 10,233 lbs$

$B_F = 11433 lbs$

$T_W > B_F$ ∴ o.k.

Magnolia Commercial
Detention
7/5/2005

Time (hrs)	Bypass	Pond	Total
	Report 7.17	Report 12.36	
11.50	9.73	7.33	17.06
11.55	11.10	7.55	18.65
11.60	14.50	7.87	22.37
11.65	19.82	8.33	28.15
11.70	28.20	8.95	37.15
11.75	38.34	9.70	48.04
11.80	50.89	10.52	61.41
11.85	66.72	11.38	78.10
11.90	89.47	12.39	101.86
11.95	107.29	18.80	126.09
12.00	**108.15**	46.82	154.97
12.05	95.57	76.36	**171.93**
12.10	70.87	**83.39**	154.26
12.15	46.20	72.85	119.05
12.20	31.40	58.09	89.49
12.25	23.71	45.72	69.43
12.30	19.31	36.87	56.18
12.35	16.59	30.74	47.33
12.40	14.64	26.50	41.14
12.45	13.15	23.61	36.76
12.50	11.82	21.66	33.48
12.55	10.71	20.57	31.28
12.60	9.80	19.52	29.32
12.65	9.09	18.52	27.61
12.70	8.58	17.60	26.18
12.75	8.21	16.76	24.97
12.80	7.89	16.02	23.91
12.85	7.61	15.35	22.96
12.90	7.33	14.75	22.08
12.95	7.07	14.23	21.30
13.00	6.81	13.75	20.56

==========
JOB TITLE
==========

Project Date: 3/3/2005
Project Engineer: Karl A. Schoenike
Project Title: Magnolia Commercial
Project Comments:

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MASTER DESIGN STORM SUMMARY

Network Storm Collection: O'Fallon

Return Event	Total Depth in	Rainfall Type	RNF ID
2yr	3.5000	Synthetic Curve	TypeII 24hr
15yr	5.3000	Synthetic Curve	TypeII 24hr
25yr	5.7000	Synthetic Curve	TypeII 24hr
100yr	7.0000	Synthetic Curve	TypeII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID		Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
BASIN	IN	POND	2	3.560		11.9500	55.91		
BASIN	IN	POND	15	5.917		11.9500	90.73		
BASIN	IN	POND	25	6.447		11.9500	98.40		
BASIN	IN	POND	100	8.175		11.9500	123.22		
BASIN	OUT	POND	2	3.560		12.2500	12.31	599.05	1.137
BASIN	OUT	POND	15	5.917		12.1500	37.67	600.63	1.860
BASIN	OUT	POND	25	6.447		12.1500	47.80	600.80	1.946
BASIN	OUT	POND	100	8.175		12.1000	83.39	601.28	2.197
BYPASS		AREA	2	3.181		12.0000	49.57		
BYPASS		AREA	15	5.288		12.0000	79.88		
BYPASS		AREA	25	5.761		12.0000	86.55		
BYPASS		AREA	100	7.305		12.0000	108.15		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
*POST DEVELOPED	JCT	2	6.741		12.0000	60.62		
*POST DEVELOPED	JCT	15	11.205		12.0000	94.13		
*POST DEVELOPED	JCT	25	12.207		12.0500	107.72		
*POST DEVELOPED	JCT	100	15.480		12.0500	171.93		
*PRE-DEVELOPED	JCT	2	3.658		12.0000	60.15		
*PRE-DEVELOPED	JCT	15	7.354		12.0000	120.95		
*PRE-DEVELOPED	JCT	25	8.230		12.0000	135.02		
*PRE-DEVELOPED	JCT	100	11.164		12.0000	181.40		
SUBAREA 10	AREA	2	3.658		12.0000	60.15		
SUBAREA 10	AREA	15	7.354		12.0000	120.95		
SUBAREA 10	AREA	25	8.230		12.0000	135.02		
SUBAREA 10	AREA	100	11.164		12.0000	181.40		
TO BASIN	AREA	2	3.560		11.9500	55.91		
TO BASIN	AREA	15	5.917		11.9500	90.73		
TO BASIN	AREA	25	6.447		11.9500	98.40		
TO BASIN	AREA	100	8.175		11.9500	123.22		

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = O'Fallon

Storm Tag Name = 2yr

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 2 yr
Total Rainfall Depth= 3.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
BASIN IN	POND	3.560		11.9500	55.91	
BASIN OUT	POND	3.560		12.2500	12.31	599.05
BYPASS	AREA	3.181		12.0000	49.57	
Outfall POST DEVELOPED	JCT	6.741		12.0000	60.62	
Outfall PRE-DEVELOPED	JCT	3.658		12.0000	60.15	
SUBAREA 10	AREA	3.658		12.0000	60.15	
TO BASIN	AREA	3.560		11.9500	55.91	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = O'Fallon

Storm Tag Name = 15yr

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 15 yr
Total Rainfall Depth= 5.3000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID		Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
BASIN	IN	POND	5.917		11.9500	90.73	
BASIN	OUT	POND	5.917		12.1500	37.67	600.63
BYPASS		AREA	5.288		12.0000	79.88	
Outfall POST DEVELOPED		JCT	11.205		12.0000	94.13	
Outfall PRE-DEVELOPED		JCT	7.354		12.0000	120.95	
SUBAREA 10		AREA	7.354		12.0000	120.95	
TO BASIN		AREA	5.917		11.9500	90.73	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = O'Fallon

Storm Tag Name = 25yr

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 25 yr
Total Rainfall Depth= 5.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID		Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
BASIN	IN	POND	6.447		11.9500	98.40	
BASIN	OUT	POND	6.447		12.1500	47.80	600.80
BYPASS		AREA	5.761		12.0000	86.55	
Outfall POST DEVELOPED		JCT	12.207		12.0500	107.72	
Outfall PRE-DEVELOPED		JCT	8.230		12.0000	135.02	
SUBAREA 10		AREA	8.230		12.0000	135.02	
TO BASIN		AREA	6.447		11.9500	98.40	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = O'Fallon

Storm Tag Name = 100yr

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 7.0000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID		Type	HYG Vol ac-ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
BASIN	IN	POND	8.175		11.9500	123.22	
BASIN	OUT	POND	8.175		12.1000	83.39	601.28
BYPASS		AREA	7.305		12.0000	108.15	
Outfall POST DEVELOPED		JCT	15.480		12.0500	171.93	
Outfall PRE-DEVELOPED		JCT	11.164		12.0000	181.40	
SUBAREA 10		AREA	11.164		12.0000	181.40	
TO BASIN		AREA	8.175		11.9500	123.22	

NETWORK RUNOFF NODE SEQUENCE

Runoff Data		Apply to Node		Receiving Link	
SCS UH	SUBAREA 10	Subarea	SUBAREA 10	Add Hyd	SUBAREA 10
SCS UH	BYPASS	Subarea	BYPASS	Add Hyd	BYPASS
SCS UH	TO BASIN	Subarea	TO BASIN	Add Hyd	TO BASIN

NETWORK ROUTING SEQUENCE

Link Operation	UPstream Node	DNstream Node
Add Hyd ADDLINK 30	Subarea TO BASIN	Pond BASIN IN
POND ROUTE TOTAL OUTFLOW...		
Total Pond Outflow	Pond BASIN IN	Outflow BASIN OUT
SET POND ROUTING LINK TO TOTAL POND OUTFLOW...		
Outlet STRUCTURE	Outflow BASIN OUT	Jct POST DEVELOPED
Add Hyd ADDLINK 20	Subarea BYPASS	Jct POST DEVELOPED
Add Hyd ADDLINK 10	Subarea SUBAREA 10	Jct PRE-DEVELOPED

File.... H:\DWG\031486\DETENTION\
Title... Project Date: 3/3/2005
Project Engineer: Karl A. Schoenike
Project Title: Magnolia Commercial
Project Comments:

DESIGN STORMS SUMMARY

Design Storm File,ID = O'Fallon

Storm Tag Name = 2yr

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 2 yr
Total Rainfall Depth= 3.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 15yr

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 15 yr
Total Rainfall Depth= 5.3000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 25yr

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 25 yr
Total Rainfall Depth= 5.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 100yr

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 7.0000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

DESIGN STORMS SUMMARY

Design Storm File,ID = O'Fallon

Storm Tag Name = 2yr

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 2 yr
Total Rainfall Depth= 3.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 15yr

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 15 yr
Total Rainfall Depth= 5.3000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 25yr

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 25 yr
Total Rainfall Depth= 5.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 100yr

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 7.0000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Type.... Synthetic Curve
Name.... TypeII 24hr Tag: 2yr
File.... H:\DWG\031486\DETENTION\

CUMULATIVE RAINFALL FRACTIONS
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
.0000	.000	.001	.002	.003	.004
.5000	.005	.006	.007	.008	.009
1.0000	.011	.012	.013	.014	.015
1.5000	.016	.017	.018	.020	.021
2.0000	.022	.023	.024	.026	.027
2.5000	.028	.029	.031	.032	.033
3.0000	.035	.036	.037	.038	.040
3.5000	.041	.042	.044	.045	.047
4.0000	.048	.049	.051	.052	.054
4.5000	.055	.057	.058	.060	.061
5.0000	.063	.065	.066	.068	.070
5.5000	.071	.073	.075	.076	.078
6.0000	.080	.082	.084	.085	.087
6.5000	.089	.091	.093	.095	.097
7.0000	.099	.101	.103	.105	.107
7.5000	.109	.111	.113	.116	.118
8.0000	.120	.122	.125	.127	.130
8.5000	.132	.135	.138	.141	.144
9.0000	.147	.150	.153	.157	.160
9.5000	.163	.166	.170	.173	.177
10.0000	.181	.185	.189	.194	.199
10.5000	.204	.209	.215	.221	.228
11.0000	.235	.243	.251	.261	.271
11.5000	.283	.307	.354	.431	.568
12.0000	.663	.682	.699	.713	.725
12.5000	.735	.743	.751	.759	.766
13.0000	.772	.778	.784	.789	.794
13.5000	.799	.804	.808	.812	.816
14.0000	.820	.824	.827	.831	.834
14.5000	.838	.841	.844	.847	.850
15.0000	.854	.856	.859	.862	.865
15.5000	.868	.870	.873	.875	.878
16.0000	.880	.882	.885	.887	.889
16.5000	.891	.893	.895	.898	.900
17.0000	.902	.904	.906	.908	.910
17.5000	.912	.914	.915	.917	.919
18.0000	.921	.923	.925	.926	.928
18.5000	.930	.931	.933	.935	.936
19.0000	.938	.939	.941	.942	.944
19.5000	.945	.947	.948	.949	.951
20.0000	.952	.953	.955	.956	.957
20.5000	.958	.960	.961	.962	.964
21.0000	.965	.966	.967	.968	.970
21.5000	.971	.972	.973	.975	.976

CUMULATIVE RAINFALL FRACTIONS
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
22.0000	.977	.978	.979	.981	.982
22.5000	.983	.984	.985	.986	.988
23.0000	.989	.990	.991	.992	.993
23.5000	.994	.996	.997	.998	.999
24.0000	1.000				

CUMULATIVE RAINFALL DEPTHS (in)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
.0000	.0000	.0035	.0071	.0107	.0143
.5000	.0180	.0216	.0254	.0291	.0329
1.0000	.0368	.0406	.0445	.0485	.0524
1.5000	.0565	.0605	.0646	.0687	.0728
2.0000	.0770	.0812	.0855	.0898	.0941
2.5000	.0985	.1028	.1073	.1117	.1162
3.0000	.1208	.1253	.1299	.1346	.1392
3.5000	.1440	.1487	.1535	.1583	.1631
4.0000	.1680	.1729	.1779	.1830	.1882
4.5000	.1934	.1987	.2040	.2094	.2149
5.0000	.2205	.2261	.2318	.2376	.2435
5.5000	.2494	.2554	.2614	.2675	.2737
6.0000	.2800	.2863	.2927	.2992	.3058
6.5000	.3124	.3191	.3258	.3326	.3395
7.0000	.3465	.3535	.3606	.3678	.3751
7.5000	.3824	.3898	.3972	.4047	.4123
8.0000	.4200	.4279	.4361	.4447	.4536
8.5000	.4629	.4725	.4825	.4928	.5035
9.0000	.5145	.5257	.5369	.5481	.5593
9.5000	.5705	.5820	.5940	.6066	.6198
10.0000	.6335	.6479	.6632	.6793	.6962
10.5000	.7140	.7329	.7532	.7749	.7980
11.0000	.8225	.8494	.8796	.9132	.9502
11.5000	.9905	1.0739	1.2403	1.5078	1.9875
12.0000	2.3205	2.3869	2.4452	2.4956	2.5381
12.5000	2.5725	2.6020	2.6298	2.6557	2.6797
13.0000	2.7020	2.7229	2.7427	2.7616	2.7796
13.5000	2.7965	2.8126	2.8280	2.8427	2.8567
14.0000	2.8700	2.8828	2.8954	2.9078	2.9198
14.5000	2.9317	2.9433	2.9547	2.9658	2.9766
15.0000	2.9873	2.9976	3.0078	3.0177	3.0273
15.5000	3.0367	3.0458	3.0548	3.0634	3.0718
16.0000	3.0800	3.0880	3.0959	3.1038	3.1115
16.5000	3.1192	3.1267	3.1342	3.1416	3.1489
17.0000	3.1561	3.1633	3.1703	3.1773	3.1841
17.5000	3.1909	3.1976	3.2042	3.2107	3.2172
18.0000	3.2235	3.2298	3.2359	3.2420	3.2480
18.5000	3.2539	3.2597	3.2655	3.2711	3.2767
19.0000	3.2821	3.2875	3.2928	3.2980	3.3031
19.5000	3.3082	3.3131	3.3180	3.3227	3.3274
20.0000	3.3320	3.3366	3.3411	3.3456	3.3501
20.5000	3.3545	3.3590	3.3634	3.3678	3.3723
21.0000	3.3766	3.3810	3.3853	3.3897	3.3940
21.5000	3.3983	3.4026	3.4068	3.4111	3.4153

CUMULATIVE RAINFALL DEPTHS (in)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
22.0000	3.4195	3.4237	3.4279	3.4320	3.4362
22.5000	3.4403	3.4444	3.4485	3.4525	3.4566
23.0000	3.4606	3.4647	3.4686	3.4726	3.4766
23.5000	3.4805	3.4845	3.4884	3.4923	3.4962
24.0000	3.5000				

CUMULATIVE RAINFALL FRACTIONS
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
.0000	.000	.001	.002	.003	.004
.5000	.005	.006	.007	.008	.009
1.0000	.011	.012	.013	.014	.015
1.5000	.016	.017	.018	.020	.021
2.0000	.022	.023	.024	.026	.027
2.5000	.028	.029	.031	.032	.033
3.0000	.035	.036	.037	.038	.040
3.5000	.041	.042	.044	.045	.047
4.0000	.048	.049	.051	.052	.054
4.5000	.055	.057	.058	.060	.061
5.0000	.063	.065	.066	.068	.070
5.5000	.071	.073	.075	.076	.078
6.0000	.080	.082	.084	.085	.087
6.5000	.089	.091	.093	.095	.097
7.0000	.099	.101	.103	.105	.107
7.5000	.109	.111	.113	.116	.118
8.0000	.120	.122	.125	.127	.130
8.5000	.132	.135	.138	.141	.144
9.0000	.147	.150	.153	.157	.160
9.5000	.163	.166	.170	.173	.177
10.0000	.181	.185	.189	.194	.199
10.5000	.204	.209	.215	.221	.228
11.0000	.235	.243	.251	.261	.271
11.5000	.283	.307	.354	.431	.568
12.0000	.663	.682	.699	.713	.725
12.5000	.735	.743	.751	.759	.766
13.0000	.772	.778	.784	.789	.794
13.5000	.799	.804	.808	.812	.816
14.0000	.820	.824	.827	.831	.834
14.5000	.838	.841	.844	.847	.850
15.0000	.854	.856	.859	.862	.865
15.5000	.868	.870	.873	.875	.878
16.0000	.880	.882	.885	.887	.889
16.5000	.891	.893	.895	.898	.900
17.0000	.902	.904	.906	.908	.910
17.5000	.912	.914	.915	.917	.919
18.0000	.921	.923	.925	.926	.928
18.5000	.930	.931	.933	.935	.936
19.0000	.938	.939	.941	.942	.944
19.5000	.945	.947	.948	.949	.951
20.0000	.952	.953	.955	.956	.957
20.5000	.958	.960	.961	.962	.964
21.0000	.965	.966	.967	.968	.970
21.5000	.971	.972	.973	.975	.976

CUMULATIVE RAINFALL FRACTIONS
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
22.0000	.977	.978	.979	.981	.982
22.5000	.983	.984	.985	.986	.988
23.0000	.989	.990	.991	.992	.993
23.5000	.994	.996	.997	.998	.999
24.0000	1.000				

CUMULATIVE RAINFALL DEPTHS (in)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
.0000	.0000	.0054	.0107	.0162	.0216
.5000	.0272	.0328	.0384	.0441	.0499
1.0000	.0557	.0615	.0674	.0734	.0794
1.5000	.0855	.0916	.0978	.1040	.1103
2.0000	.1166	.1230	.1294	.1359	.1425
2.5000	.1491	.1557	.1624	.1692	.1760
3.0000	.1829	.1898	.1967	.2038	.2108
3.5000	.2180	.2251	.2324	.2397	.2470
4.0000	.2544	.2619	.2695	.2771	.2849
4.5000	.2928	.3008	.3089	.3172	.3255
5.0000	.3339	.3424	.3511	.3598	.3687
5.5000	.3776	.3867	.3959	.4051	.4145
6.0000	.4240	.4336	.4433	.4531	.4630
6.5000	.4730	.4831	.4934	.5037	.5142
7.0000	.5247	.5354	.5461	.5570	.5679
7.5000	.5790	.5902	.6015	.6129	.6244
8.0000	.6360	.6479	.6604	.6734	.6869
8.5000	.7009	.7155	.7306	.7462	.7624
9.0000	.7791	.7961	.8130	.8300	.8469
9.5000	.8639	.8813	.8995	.9186	.9385
10.0000	.9593	.9811	1.0042	1.0286	1.0543
10.5000	1.0812	1.1098	1.1406	1.1734	1.2084
11.0000	1.2455	1.2862	1.3320	1.3829	1.4388
11.5000	1.4999	1.6263	1.8781	2.2832	3.0097
12.0000	3.5139	3.6144	3.7028	3.7791	3.8433
12.5000	3.8955	3.9402	3.9822	4.0214	4.0579
13.0000	4.0916	4.1232	4.1533	4.1819	4.2090
13.5000	4.2347	4.2591	4.2824	4.3047	4.3259
14.0000	4.3460	4.3655	4.3845	4.4032	4.4215
14.5000	4.4394	4.4570	4.4742	4.4910	4.5075
15.0000	4.5236	4.5393	4.5546	4.5696	4.5842
15.5000	4.5984	4.6123	4.6258	4.6389	4.6517
16.0000	4.6640	4.6761	4.6881	4.7000	4.7117
16.5000	4.7233	4.7348	4.7461	4.7573	4.7684
17.0000	4.7793	4.7901	4.8007	4.8113	4.8217
17.5000	4.8320	4.8421	4.8521	4.8620	4.8717
18.0000	4.8813	4.8908	4.9001	4.9093	4.9184
18.5000	4.9274	4.9362	4.9448	4.9534	4.9618
19.0000	4.9701	4.9782	4.9862	4.9941	5.0019
19.5000	5.0095	5.0170	5.0243	5.0316	5.0387
20.0000	5.0456	5.0525	5.0593	5.0662	5.0729
20.5000	5.0797	5.0865	5.0932	5.0999	5.1066
21.0000	5.1132	5.1198	5.1264	5.1329	5.1395
21.5000	5.1460	5.1524	5.1589	5.1653	5.1717

CUMULATIVE RAINFALL DEPTHS (in)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
22.0000	5.1781	5.1845	5.1908	5.1971	5.2033
22.5000	5.2096	5.2158	5.2220	5.2281	5.2343
23.0000	5.2404	5.2465	5.2525	5.2586	5.2645
23.5000	5.2705	5.2765	5.2824	5.2883	5.2942
24.0000	5.3000				

CUMULATIVE RAINFALL FRACTIONS
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
.0000	.000	.001	.002	.003	.004
.5000	.005	.006	.007	.008	.009
1.0000	.011	.012	.013	.014	.015
1.5000	.016	.017	.018	.020	.021
2.0000	.022	.023	.024	.026	.027
2.5000	.028	.029	.031	.032	.033
3.0000	.035	.036	.037	.038	.040
3.5000	.041	.042	.044	.045	.047
4.0000	.048	.049	.051	.052	.054
4.5000	.055	.057	.058	.060	.061
5.0000	.063	.065	.066	.068	.070
5.5000	.071	.073	.075	.076	.078
6.0000	.080	.082	.084	.085	.087
6.5000	.089	.091	.093	.095	.097
7.0000	.099	.101	.103	.105	.107
7.5000	.109	.111	.113	.116	.118
8.0000	.120	.122	.125	.127	.130
8.5000	.132	.135	.138	.141	.144
9.0000	.147	.150	.153	.157	.160
9.5000	.163	.166	.170	.173	.177
10.0000	.181	.185	.189	.194	.199
10.5000	.204	.209	.215	.221	.228
11.0000	.235	.243	.251	.261	.271
11.5000	.283	.307	.354	.431	.568
12.0000	.663	.682	.699	.713	.725
12.5000	.735	.743	.751	.759	.766
13.0000	.772	.778	.784	.789	.794
13.5000	.799	.804	.808	.812	.816
14.0000	.820	.824	.827	.831	.834
14.5000	.838	.841	.844	.847	.850
15.0000	.854	.856	.859	.862	.865
15.5000	.868	.870	.873	.875	.878
16.0000	.880	.882	.885	.887	.889
16.5000	.891	.893	.895	.898	.900
17.0000	.902	.904	.906	.908	.910
17.5000	.912	.914	.915	.917	.919
18.0000	.921	.923	.925	.926	.928
18.5000	.930	.931	.933	.935	.936
19.0000	.938	.939	.941	.942	.944
19.5000	.945	.947	.948	.949	.951
20.0000	.952	.953	.955	.956	.957
20.5000	.958	.960	.961	.962	.964
21.0000	.965	.966	.967	.968	.970
21.5000	.971	.972	.973	.975	.976

CUMULATIVE RAINFALL FRACTIONS
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
22.0000	.977	.978	.979	.981	.982
22.5000	.983	.984	.985	.986	.988
23.0000	.989	.990	.991	.992	.993
23.5000	.994	.996	.997	.998	.999
24.0000	1.000				

CUMULATIVE RAINFALL DEPTHS (in)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
.0000	.0000	.0058	.0115	.0174	.0233
.5000	.0292	.0352	.0413	.0474	.0536
1.0000	.0599	.0662	.0725	.0789	.0854
1.5000	.0919	.0985	.1052	.1118	.1186
2.0000	.1254	.1323	.1392	.1462	.1532
2.5000	.1603	.1675	.1747	.1819	.1893
3.0000	.1967	.2041	.2116	.2192	.2267
3.5000	.2344	.2421	.2499	.2578	.2657
4.0000	.2736	.2816	.2898	.2981	.3064
4.5000	.3149	.3235	.3323	.3411	.3500
5.0000	.3591	.3683	.3776	.3870	.3965
5.5000	.4061	.4159	.4257	.4357	.4458
6.0000	.4560	.4663	.4767	.4873	.4980
6.5000	.5087	.5196	.5306	.5417	.5530
7.0000	.5643	.5758	.5873	.5990	.6108
7.5000	.6227	.6348	.6469	.6591	.6715
8.0000	.6840	.6968	.7102	.7242	.7387
8.5000	.7538	.7695	.7857	.8026	.8199
9.0000	.8379	.8561	.8744	.8926	.9109
9.5000	.9291	.9478	.9674	.9879	1.0094
10.0000	1.0317	1.0552	1.0800	1.1063	1.1338
10.5000	1.1628	1.1936	1.2266	1.2620	1.2996
11.0000	1.3395	1.3833	1.4325	1.4872	1.5474
11.5000	1.6131	1.7490	2.0199	2.4555	3.2368
12.0000	3.7791	3.8872	3.9822	4.0643	4.1334
12.5000	4.1895	4.2376	4.2828	4.3249	4.3641
13.0000	4.4004	4.4344	4.4667	4.4975	4.5267
13.5000	4.5543	4.5805	4.6056	4.6295	4.6523
14.0000	4.6740	4.6949	4.7154	4.7355	4.7552
14.5000	4.7745	4.7934	4.8119	4.8300	4.8477
15.0000	4.8650	4.8819	4.8984	4.9145	4.9302
15.5000	4.9455	4.9604	4.9749	4.9890	5.0027
16.0000	5.0160	5.0291	5.0419	5.0547	5.0673
16.5000	5.0798	5.0921	5.1043	5.1163	5.1282
17.0000	5.1400	5.1516	5.1631	5.1744	5.1856
17.5000	5.1966	5.2075	5.2183	5.2289	5.2394
18.0000	5.2497	5.2599	5.2699	5.2799	5.2896
18.5000	5.2992	5.3087	5.3180	5.3272	5.3363
19.0000	5.3452	5.3540	5.3626	5.3711	5.3794
19.5000	5.3876	5.3956	5.4035	5.4113	5.4189
20.0000	5.4264	5.4338	5.4412	5.4485	5.4558
20.5000	5.4631	5.4703	5.4776	5.4848	5.4920
21.0000	5.4991	5.5062	5.5133	5.5203	5.5273
21.5000	5.5344	5.5413	5.5483	5.5552	5.5621

CUMULATIVE RAINFALL DEPTHS (in)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
22.0000	5.5689	5.5757	5.5825	5.5893	5.5960
22.5000	5.6028	5.6094	5.6161	5.6227	5.6293
23.0000	5.6359	5.6424	5.6489	5.6554	5.6619
23.5000	5.6683	5.6747	5.6811	5.6874	5.6937
24.0000	5.7000				

Type.... Synthetic Curve
Name.... TypeII 24hr Tag: 100yr
File.... H:\DWG\031486\DETENTION\

CUMULATIVE RAINFALL FRACTIONS
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
.0000	.000	.001	.002	.003	.004
.5000	.005	.006	.007	.008	.009
1.0000	.011	.012	.013	.014	.015
1.5000	.016	.017	.018	.020	.021
2.0000	.022	.023	.024	.026	.027
2.5000	.028	.029	.031	.032	.033
3.0000	.035	.036	.037	.038	.040
3.5000	.041	.042	.044	.045	.047
4.0000	.048	.049	.051	.052	.054
4.5000	.055	.057	.058	.060	.061
5.0000	.063	.065	.066	.068	.070
5.5000	.071	.073	.075	.076	.078
6.0000	.080	.082	.084	.085	.087
6.5000	.089	.091	.093	.095	.097
7.0000	.099	.101	.103	.105	.107
7.5000	.109	.111	.113	.116	.118
8.0000	.120	.122	.125	.127	.130
8.5000	.132	.135	.138	.141	.144
9.0000	.147	.150	.153	.157	.160
9.5000	.163	.166	.170	.173	.177
10.0000	.181	.185	.189	.194	.199
10.5000	.204	.209	.215	.221	.228
11.0000	.235	.243	.251	.261	.271
11.5000	.283	.307	.354	.431	.568
12.0000	.663	.682	.699	.713	.725
12.5000	.735	.743	.751	.759	.766
13.0000	.772	.778	.784	.789	.794
13.5000	.799	.804	.808	.812	.816
14.0000	.820	.824	.827	.831	.834
14.5000	.838	.841	.844	.847	.850
15.0000	.854	.856	.859	.862	.865
15.5000	.868	.870	.873	.875	.878
16.0000	.880	.882	.885	.887	.889
16.5000	.891	.893	.895	.898	.900
17.0000	.902	.904	.906	.908	.910
17.5000	.912	.914	.915	.917	.919
18.0000	.921	.923	.925	.926	.928
18.5000	.930	.931	.933	.935	.936
19.0000	.938	.939	.941	.942	.944
19.5000	.945	.947	.948	.949	.951
20.0000	.952	.953	.955	.956	.957
20.5000	.958	.960	.961	.962	.964
21.0000	.965	.966	.967	.968	.970
21.5000	.971	.972	.973	.975	.976

CUMULATIVE RAINFALL FRACTIONS
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
22.0000	.977	.978	.979	.981	.982
22.5000	.983	.984	.985	.986	.988
23.0000	.989	.990	.991	.992	.993
23.5000	.994	.996	.997	.998	.999
24.0000	1.000				

CUMULATIVE RAINFALL DEPTHS (in)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
.0000	.0000	.0071	.0141	.0214	.0286
.5000	.0359	.0433	.0508	.0582	.0659
1.0000	.0735	.0813	.0890	.0969	.1049
1.5000	.1129	.1210	.1292	.1373	.1457
2.0000	.1540	.1625	.1709	.1796	.1882
2.5000	.1969	.2057	.2146	.2234	.2325
3.0000	.2415	.2507	.2598	.2692	.2785
3.5000	.2879	.2974	.3070	.3165	.3263
4.0000	.3360	.3459	.3559	.3660	.3763
4.5000	.3868	.3973	.4080	.4189	.4299
5.0000	.4410	.4523	.4637	.4752	.4869
5.5000	.4988	.5107	.5228	.5351	.5475
6.0000	.5600	.5727	.5855	.5984	.6115
6.5000	.6248	.6381	.6516	.6653	.6791
7.0000	.6930	.7071	.7213	.7356	.7501
7.5000	.7648	.7795	.7944	.8095	.8247
8.0000	.8400	.8558	.8722	.8894	.9072
8.5000	.9258	.9450	.9650	.9856	1.0070
9.0000	1.0290	1.0514	1.0738	1.0962	1.1186
9.5000	1.1410	1.1640	1.1880	1.2132	1.2396
10.0000	1.2670	1.2958	1.3264	1.3586	1.3924
10.5000	1.4280	1.4658	1.5064	1.5498	1.5960
11.0000	1.6450	1.6988	1.7592	1.8264	1.9004
11.5000	1.9810	2.1479	2.4805	3.0155	3.9750
12.0000	4.6410	4.7737	4.8905	4.9913	5.0761
12.5000	5.1450	5.2041	5.2595	5.3113	5.3595
13.0000	5.4040	5.4457	5.4855	5.5233	5.5591
13.5000	5.5930	5.6252	5.6560	5.6854	5.7134
14.0000	5.7400	5.7657	5.7908	5.8155	5.8397
14.5000	5.8634	5.8866	5.9093	5.9315	5.9533
15.0000	5.9745	5.9953	6.0155	6.0353	6.0546
15.5000	6.0734	6.0917	6.1095	6.1268	6.1437
16.0000	6.1600	6.1760	6.1919	6.2075	6.2230
16.5000	6.2383	6.2535	6.2684	6.2832	6.2978
17.0000	6.3123	6.3265	6.3406	6.3545	6.3683
17.5000	6.3818	6.3952	6.4084	6.4215	6.4343
18.0000	6.4470	6.4595	6.4719	6.4840	6.4960
18.5000	6.5078	6.5195	6.5309	6.5422	6.5533
19.0000	6.5643	6.5750	6.5856	6.5960	6.6063
19.5000	6.6163	6.6262	6.6359	6.6455	6.6548
20.0000	6.6640	6.6731	6.6821	6.6912	6.7001
20.5000	6.7091	6.7180	6.7269	6.7357	6.7445
21.0000	6.7533	6.7620	6.7707	6.7794	6.7880
21.5000	6.7966	6.8051	6.8137	6.8221	6.8306

CUMULATIVE RAINFALL DEPTHS (in)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
22.0000	6.8390	6.8474	6.8557	6.8641	6.8723
22.5000	6.8806	6.8888	6.8970	6.9051	6.9132
23.0000	6.9213	6.9293	6.9373	6.9453	6.9532
23.5000	6.9611	6.9689	6.9768	6.9845	6.9923
24.0000	7.0000				

Type.... Tc Calcs
Name.... BYPASS

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: User Defined

Segment #1 Time: .1700 hrs

==========
Total Tc: .1700 hrs
==========

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW

Tc Equations used...

==== User Defined ==========

Tc = Value entered by user

Where: Tc = Time of concentration

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW

TIME OF CONCENTRATION CALCULATOR

Segment #1: Tc: User Defined

Segment #1 Time: .1600 hrs

Total Tc: .1600 hrs

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW

Tc Equations used...

==== User Defined ==========

Tc = Value entered by user

Where: Tc = Time of concentration

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: User Defined

Segment #1 Time: .1600 hrs

==========
Total Tc: .1600 hrs
==========

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW

Tc Equations used...

==== User Defined ==========

Tc = Value entered by user

Where: Tc = Time of concentration

Type.... Runoff CN-Area
Name.... BYPASS

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
urban district - commercial	92	14.480			92.00
COMPOSITE AREA & WEIGHTED CN --->		14.480			92.00 (92)

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
onsite	58	13.950			58.00
offsite	92	16.730			92.00
COMPOSITE AREA & WEIGHTED CN --->		30.680			76.54 (77)

Type.... Runoff CN-Area
Name.... TO BASIN

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
urban district - commercial	92	16.200			92.00
COMPOSITE AREA & WEIGHTED CN --->		16.200			92.00 (92)

SCS UNIT HYDROGRAPH METHOD
(Computational Notes)

DEFINITION OF TERMS: ----------

At = Total area (acres): At = Ai+Ap
Ai = Impervious area (acres)
Ap = Pervious area (acres)
CNi = Runoff curve number for impervious area
CNp = Runoff curve number for pervious area
fLoss = f loss constant infiltration (depth/time)
gKs = Saturated Hydraulic Conductivity (depth/time)
Md = Volumetric Moisture Deficit
Psi = Capillary Suction (length)
hK = Horton Infiltration Decay Rate (time^-1)
fo = Initial Infiltration Rate (depth/time)
fc = Ultimate(capacity)Infiltration Rate (depth/time)
Ia = Initial Abstraction (length)
dt = Computational increment (duration of unit excess rainfall)
Default dt is smallest value of 0.1333Tc, rtm, and th
(Smallest dt is then adjusted to match up with Tp)
UDdt = User specified override computational main time increment
(only used if UDdt is => .1333Tc)
D(t) = Point on distribution curve (fraction of P) for time step t

K = 2 / (1 + (Tr/Tp)): default K = 0.75: (for Tr/Tp = 1.67)
Ks = Hydrograph shape factor
= Unit Conversions * K:
= ((1hr/3600sec) * (1ft/12in) * ((5280ft)**2/sq.mi)) * K
Default Ks = 645.333 * 0.75 = 484

Lag = Lag time from center of excess runoff (dt) to Tp: Lag = 0.6Tc
P = Total precipitation depth, inches
Pa(t) = Accumulated rainfall at time step t
Pi(t) = Incremental rainfall at time step t
qp = Peak discharge (cfs) for 1in. runoff, for 1hr, for 1 sq.mi.
= (Ks * A * Q) / Tp (where Q = 1in. runoff, A=sq.mi.)
Qu(t) = Unit hydrograph ordinate (cfs) at time step t
Q(t) = Final hydrograph ordinate (cfs) at time step t
Rai(t)= Accumulated runoff (inches) at time step t for impervious area
Rap(t)= Accumulated runoff (inches) at time step t for pervious area
Rii(t)= Incremental runoff (inches) at time step t for impervious area
Rip(t)= Incremental runoff (inches) at time step t for pervious area
R(t) = Incremental weighted total runoff (inches)
Rtm = Time increment for rainfall table
Si = S for impervious area: Si = (1000/CNi) - 10
Sp = S for pervious area: Sp = (1000/CNp) - 10
t = Time step (row) number
Tc = Time of concentration
Tb = Time (hrs) of entire unit hydrograph: Tb = Tp + Tr
Tp = Time (hrs) to peak of a unit hydrograph: Tp = (dt/2) + Lag
Tr = Time (hrs) of receding limb of unit hydrograph: Tr = ratio of Tp

SCS UNIT HYDROGRAPH METHOD
(Computational Notes)

PRECIPITATION: ----------
Column (1): Time for time step t
Column (2): D(t) = Point on distribution curve for time step t
Column (3): Pi(t) = Pa(t) - Pa(t-1): Col.(4) - Preceding Col.(4)
Column (4): Pa(t) = D(t) x P: Col.(2) x P

PERVIOUS AREA RUNOFF (using SCS Runoff CN Method) ----------
Column (5): Rap(t) = Accumulated pervious runoff for time step t
If (Pa(t) is <= 0.2Sp) then use: Rap(t) = 0.0
If (Pa(t) is > 0.2Sp) then use:

Rap(t) = (Col.(4)-0.2Sp)**2 / (Col.(4)+0.8Sp)

Column (6): Rip(t) = Incremental pervious runoff for time step t
Rip(t) = Rap(t) - Rap(t-1)
Rip(t) = Col.(5) for current row - Col.(5) for preceding row.

IMPERVIOUS AREA RUNOFF ----------
Column (7 & 8)... Did not specify to use impervious areas.

INCREMENTAL WEIGHTED RUNOFF: ----------
Column (9): R(t) = (Ap/At) x Rip(t) + (Ai/At) x Rii(t)
R(t) = (Ap/At) x Col.(6) + (Ai/At) x Col.(8)

SCS UNIT HYDROGRAPH METHOD: ----------
Column (10): Q(t) is computed with the SCS unit hydrograph method
using R() and Qu().

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.5000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - BYPASS 2yr
Tc = .1700 hrs
Drainage Area = 14.480 acres Runoff CN= 92

==========
Computational Time Increment = .02267 hrs
Computed Peak Time = 11.9907 hrs
Computed Peak Flow = 50.04 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0000 hrs
Peak Flow, Interpolated Output = 49.57 cfs
==========

DRAINAGE AREA

ID:BYPASS
CN = 92
Area = 14.480 acres
S = .8696 in
0.2S = .1739 in

Cumulative Runoff

2.6367 in
3.182 ac-ft

HYG Volume... 3.181 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .17000 hrs (ID: BYPASS)
Computational Incr, Tm = .02267 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 96.51 cfs
Unit peak time Tp = .11333 hrs
Unit receding limb, Tr = .45333 hrs
Total unit time, Tb = .56667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.5000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - BYPASS 2yr
Tc = .1700 hrs
Drainage Area = 14.480 acres Runoff CN= 92
Calc.Increment= .02267 hrs Out.Incr.= .0500 hrs
HYG Volume = 3.181 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
4.2000	.00	.00	.01	.01	.01
4.4500	.02	.02	.03	.03	.03
4.7000	.04	.04	.05	.05	.06
4.9500	.06	.07	.07	.08	.08
5.2000	.09	.09	.10	.10	.11
5.4500	.11	.12	.12	.13	.13
5.7000	.14	.15	.15	.16	.16
5.9500	.17	.17	.18	.19	.19
6.2000	.20	.20	.21	.21	.22
6.4500	.23	.23	.24	.24	.25
6.7000	.26	.26	.27	.27	.28
6.9500	.29	.29	.30	.31	.31
7.2000	.32	.33	.33	.34	.34
7.4500	.35	.36	.36	.37	.38
7.7000	.38	.39	.40	.40	.41
7.9500	.42	.42	.43	.44	.45
8.2000	.46	.48	.49	.51	.52
8.4500	.54	.56	.57	.59	.61
8.7000	.63	.64	.66	.68	.70
8.9500	.72	.74	.76	.77	.79
9.2000	.80	.81	.82	.82	.83
9.4500	.84	.85	.85	.87	.88
9.7000	.91	.93	.96	.99	1.02
9.9500	1.05	1.08	1.12	1.15	1.19
10.2000	1.23	1.27	1.32	1.37	1.42
10.4500	1.46	1.51	1.56	1.62	1.68
10.7000	1.75	1.83	1.91	1.99	2.07
10.9500	2.15	2.24	2.33	2.45	2.58
11.2000	2.75	2.92	3.11	3.31	3.51
11.4500	3.71	3.94	4.52	5.95	8.21

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
11.7000	11.82	16.29	21.95	29.26	39.94
11.9500	48.60	49.57	44.19	32.95	21.56
12.2000	14.70	11.14	9.10	7.84	6.93
12.4500	6.23	5.61	5.08	4.65	4.32
12.7000	4.08	3.90	3.75	3.62	3.49
12.9500	3.37	3.24	3.13	3.02	2.93
13.2000	2.84	2.77	2.70	2.63	2.56
13.4500	2.50	2.43	2.37	2.31	2.25
13.7000	2.20	2.15	2.10	2.05	2.00
13.9500	1.95	1.91	1.86	1.82	1.79
14.2000	1.77	1.74	1.73	1.71	1.69
14.4500	1.67	1.66	1.64	1.63	1.61
14.7000	1.59	1.58	1.56	1.54	1.53
14.9500	1.51	1.49	1.48	1.46	1.44
15.2000	1.43	1.41	1.39	1.38	1.36
15.4500	1.34	1.33	1.31	1.29	1.28
15.7000	1.26	1.24	1.23	1.21	1.19
15.9500	1.18	1.16	1.14	1.13	1.12
16.2000	1.11	1.10	1.09	1.09	1.08
16.4500	1.08	1.07	1.06	1.06	1.05
16.7000	1.05	1.04	1.03	1.03	1.02
16.9500	1.02	1.01	1.00	1.00	.99
17.2000	.99	.98	.97	.97	.96
17.4500	.96	.95	.95	.94	.93
17.7000	.93	.92	.91	.91	.90
17.9500	.90	.89	.88	.88	.87
18.2000	.87	.86	.85	.85	.84
18.4500	.84	.83	.83	.82	.81
18.7000	.81	.80	.79	.79	.78
18.9500	.78	.77	.76	.76	.75
19.2000	.75	.74	.73	.73	.72
19.4500	.72	.71	.70	.70	.69
19.7000	.69	.68	.67	.67	.66
19.9500	.66	.65	.64	.64	.64
20.2000	.63	.63	.63	.63	.63
20.4500	.63	.62	.62	.62	.62
20.7000	.62	.62	.62	.62	.62
20.9500	.61	.61	.61	.61	.61
21.2000	.61	.61	.61	.60	.60
21.4500	.60	.60	.60	.60	.60
21.7000	.60	.60	.59	.59	.59
21.9500	.59	.59	.59	.59	.59
22.2000	.58	.58	.58	.58	.58
22.4500	.58	.58	.58	.57	.57
22.7000	.57	.57	.57	.57	.57

Type.... Unit Hyd. (HYG output)
Name.... BYPASS Tag: 2yr
File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW
Storm... TypeII 24hr Tag: 2yr
Event: 2 yr

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
22.9500	.57	.57	.56	.56	.56
23.2000	.56	.56	.56	.56	.56
23.4500	.55	.55	.55	.55	.55
23.7000	.55	.55	.55	.54	.54
23.9500	.54	.54	.50	.34	.18
24.2000	.09	.04	.02	.01	.00
24.4500	.00	.00			

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 15 year storm
Duration = 24.0000 hrs Rain Depth = 5.3000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - BYPASS 15yr
Tc = .1700 hrs
Drainage Area = 14.480 acres Runoff CN= 92

==========
Computational Time Increment = .02267 hrs
Computed Peak Time = 11.9680 hrs
Computed Peak Flow = 80.96 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0000 hrs
Peak Flow, Interpolated Output = 79.88 cfs
==========

DRAINAGE AREA

ID:BYPASS
CN = 92
Area = 14.480 acres
S = .8696 in
0.2S = .1739 in

Cumulative Runoff

4.3826 in
5.288 ac-ft

HYG Volume... 5.288 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .17000 hrs (ID: BYPASS)
Computational Incr, Tm = .02267 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 96.51 cfs
Unit peak time Tp = .11333 hrs
Unit receding limb, Tr = .45333 hrs
Total unit time, Tb = .56667 hrs

ACRE X 100% IMP.
14.48 X 3.85 = 56 cfs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 15 year storm
Duration = 24.0000 hrs Rain Depth = 5.3000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - BYPASS 15yr
Tc = .1700 hrs
Drainage Area = 14.480 acres Runoff CN= 92
Calc.Increment= .02267 hrs Out.Incr.= .0500 hrs
HYG Volume = 5.288 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
2.9500	.00	.00	.01	.02	.02
3.2000	.03	.04	.05	.05	.06
3.4500	.07	.08	.09	.09	.10
3.7000	.11	.12	.12	.13	.14
3.9500	.15	.15	.16	.17	.18
4.2000	.19	.20	.20	.21	.22
4.4500	.23	.24	.25	.26	.27
4.7000	.27	.28	.29	.30	.31
4.9500	.32	.33	.34	.35	.36
5.2000	.37	.38	.39	.40	.41
5.4500	.42	.43	.44	.45	.45
5.7000	.46	.47	.48	.49	.51
5.9500	.52	.53	.54	.55	.56
6.2000	.57	.58	.59	.60	.61
6.4500	.62	.63	.64	.65	.66
6.7000	.67	.68	.69	.70	.71
6.9500	.72	.73	.74	.75	.77
7.2000	.78	.79	.80	.81	.82
7.4500	.83	.84	.85	.86	.87
7.7000	.88	.89	.90	.92	.93
7.9500	.94	.95	.96	.98	.99
8.2000	1.02	1.05	1.07	1.10	1.13
8.4500	1.16	1.19	1.23	1.26	1.29
8.7000	1.32	1.35	1.39	1.42	1.45
8.9500	1.49	1.52	1.55	1.58	1.60
9.2000	1.62	1.63	1.65	1.66	1.67
9.4500	1.67	1.68	1.70	1.72	1.75
9.7000	1.78	1.83	1.88	1.93	1.99
9.9500	2.04	2.09	2.15	2.21	2.28
10.2000	2.35	2.43	2.51	2.59	2.67

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
10.4500	2.75	2.83	2.92	3.02	3.13
10.7000	3.25	3.37	3.51	3.65	3.79
10.9500	3.92	4.07	4.22	4.42	4.64
11.2000	4.92	5.22	5.54	5.87	6.21
11.4500	6.54	6.92	7.91	10.35	14.19
11.7000	20.26	27.66	36.89	48.62	65.55
11.9500	78.96	79.88	70.77	52.57	34.31
12.2000	23.34	17.64	14.38	12.36	10.92
12.4500	9.81	8.82	7.99	7.31	6.79
12.7000	6.41	6.13	5.89	5.68	5.48
12.9500	5.28	5.09	4.90	4.73	4.58
13.2000	4.45	4.34	4.23	4.12	4.01
13.4500	3.91	3.80	3.70	3.61	3.52
13.7000	3.43	3.36	3.28	3.21	3.13
13.9500	3.05	2.98	2.91	2.85	2.80
14.2000	2.76	2.72	2.69	2.67	2.64
14.4500	2.61	2.59	2.56	2.54	2.51
14.7000	2.48	2.46	2.43	2.41	2.38
14.9500	2.35	2.33	2.30	2.28	2.25
15.2000	2.22	2.20	2.17	2.15	2.12
15.4500	2.09	2.07	2.04	2.01	1.99
15.7000	1.96	1.94	1.91	1.88	1.86
15.9500	1.83	1.80	1.78	1.76	1.74
16.2000	1.72	1.71	1.70	1.69	1.68
16.4500	1.67	1.66	1.66	1.65	1.64
16.7000	1.63	1.62	1.61	1.60	1.59
16.9500	1.58	1.57	1.56	1.55	1.54
17.2000	1.53	1.52	1.52	1.51	1.50
17.4500	1.49	1.48	1.47	1.46	1.45
17.7000	1.44	1.43	1.42	1.41	1.40
17.9500	1.39	1.38	1.37	1.37	1.36
18.2000	1.35	1.34	1.33	1.32	1.31
18.4500	1.30	1.29	1.28	1.27	1.26
18.7000	1.25	1.24	1.23	1.22	1.22
18.9500	1.21	1.20	1.19	1.18	1.17
19.2000	1.16	1.15	1.14	1.13	1.12
19.4500	1.11	1.10	1.09	1.08	1.07
19.7000	1.06	1.06	1.05	1.04	1.03
19.9500	1.02	1.01	1.00	.99	.99
20.2000	.98	.98	.98	.98	.97
20.4500	.97	.97	.97	.97	.96
20.7000	.96	.96	.96	.96	.95
20.9500	.95	.95	.95	.95	.95
21.2000	.94	.94	.94	.94	.94
21.4500	.93	.93	.93	.93	.93

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
21.7000	.92	.92	.92	.92	.92
21.9500	.92	.91	.91	.91	.91
22.2000	.91	.90	.90	.90	.90
22.4500	.90	.89	.89	.89	.89
22.7000	.89	.89	.88	.88	.88
22.9500	.88	.88	.87	.87	.87
23.2000	.87	.87	.86	.86	.86
23.4500	.86	.86	.86	.85	.85
23.7000	.85	.85	.85	.84	.84
23.9500	.84	.84	.77	.53	.29
24.2000	.14	.07	.03	.01	.01
24.4500	.00	.00			

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 25 year storm
Duration = 24.0000 hrs Rain Depth = 5.7000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - BYPASS 25yr
Tc = .1700 hrs
Drainage Area = 14.480 acres Runoff CN= 92

==========
Computational Time Increment = .02267 hrs
Computed Peak Time = 11.9680 hrs
Computed Peak Flow = 87.78 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0000 hrs
Peak Flow, Interpolated Output = 86.55 cfs
==========

DRAINAGE AREA

ID:BYPASS
CN = 92
Area = 14.480 acres
S = .8696 in
0.2S = .1739 in

Cumulative Runoff

4.7747 in
5.762 ac-ft

HYG Volume... 5.761 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .17000 hrs (ID: BYPASS)
Computational Incr, Tm = .02267 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 96.51 cfs
Unit peak time Tp = .11333 hrs
Unit receding limb, Tr = .45333 hrs
Total unit time, Tb = .56667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 25 year storm
Duration = 24.0000 hrs Rain Depth = 5.7000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - BYPASS 25yr
Tc = .1700 hrs
Drainage Area = 14.480 acres Runoff CN= 92
Calc.Increment= .02267 hrs Out.Incr.= .0500 hrs
HYG Volume = 5.761 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
2.7500	.00	.00	.01	.01	.02
3.0000	.03	.04	.05	.06	.07
3.2500	.07	.08	.09	.10	.11
3.5000	.12	.13	.14	.14	.15
3.7500	.16	.17	.18	.19	.20
4.0000	.20	.21	.22	.23	.24
4.2500	.25	.26	.27	.28	.29
4.5000	.30	.31	.32	.33	.34
4.7500	.35	.36	.37	.38	.39
5.0000	.40	.41	.42	.43	.44
5.2500	.45	.46	.47	.48	.49
5.5000	.50	.52	.53	.54	.55
5.7500	.56	.57	.58	.59	.60
6.0000	.61	.63	.64	.65	.66
6.2500	.67	.68	.69	.70	.71
6.5000	.73	.74	.75	.76	.77
6.7500	.78	.79	.81	.82	.83
7.0000	.84	.85	.86	.88	.89
7.2500	.90	.91	.92	.93	.94
7.5000	.96	.97	.98	.99	1.00
7.7500	1.01	1.03	1.04	1.05	1.06
8.0000	1.07	1.09	1.10	1.12	1.15
8.2500	1.18	1.21	1.24	1.28	1.31
8.5000	1.35	1.38	1.41	1.45	1.49
8.7500	1.52	1.56	1.59	1.63	1.67
9.0000	1.70	1.74	1.77	1.79	1.81
9.2500	1.83	1.84	1.85	1.86	1.87
9.5000	1.88	1.89	1.91	1.94	1.99
9.7500	2.04	2.09	2.15	2.21	2.26
10.0000	2.32	2.38	2.45	2.53	2.61

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
10.2500	2.69	2.78	2.86	2.95	3.04
10.5000	3.13	3.23	3.34	3.45	3.59
10.7500	3.72	3.87	4.02	4.17	4.32
11.0000	4.48	4.65	4.86	5.11	5.41
11.2500	5.73	6.09	6.44	6.81	7.17
11.5000	7.58	8.66	11.33	15.52	22.14
11.7500	30.18	40.20	52.89	71.20	85.65
12.0000	86.55	76.63	56.89	37.12	25.24
12.2500	19.08	15.54	13.36	11.79	10.60
12.5000	9.53	8.63	7.90	7.33	6.92
12.7500	6.62	6.36	6.14	5.91	5.71
13.0000	5.49	5.29	5.11	4.95	4.81
13.2500	4.68	4.56	4.45	4.33	4.22
13.5000	4.11	4.00	3.89	3.80	3.71
13.7500	3.62	3.54	3.46	3.38	3.30
14.0000	3.22	3.14	3.07	3.02	2.98
14.2500	2.94	2.91	2.88	2.85	2.82
14.5000	2.79	2.77	2.74	2.71	2.68
14.7500	2.65	2.62	2.60	2.57	2.54
15.0000	2.51	2.48	2.46	2.43	2.40
15.2500	2.37	2.34	2.32	2.29	2.26
15.5000	2.23	2.20	2.17	2.14	2.12
15.7500	2.09	2.06	2.03	2.00	1.98
16.0000	1.95	1.92	1.90	1.88	1.86
16.2500	1.85	1.84	1.83	1.82	1.81
16.5000	1.80	1.79	1.78	1.77	1.76
16.7500	1.75	1.74	1.73	1.72	1.71
17.0000	1.70	1.68	1.68	1.67	1.65
17.2500	1.64	1.63	1.63	1.61	1.60
17.5000	1.59	1.59	1.57	1.56	1.55
17.7500	1.54	1.53	1.52	1.51	1.50
18.0000	1.49	1.48	1.47	1.46	1.45
18.2500	1.44	1.43	1.42	1.41	1.40
18.5000	1.39	1.38	1.37	1.36	1.35
18.7500	1.34	1.33	1.32	1.31	1.30
19.0000	1.29	1.28	1.27	1.26	1.25
19.2500	1.24	1.23	1.22	1.21	1.20
19.5000	1.19	1.18	1.17	1.16	1.15
19.7500	1.14	1.13	1.12	1.11	1.10
20.0000	1.09	1.08	1.07	1.06	1.06
20.2500	1.06	1.05	1.05	1.05	1.05
20.5000	1.05	1.04	1.04	1.04	1.04
20.7500	1.04	1.03	1.03	1.03	1.03
21.0000	1.03	1.02	1.02	1.02	1.02
21.2500	1.01	1.01	1.01	1.01	1.01

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
21.5000	1.01	1.00	1.00	1.00	1.00
21.7500	1.00	.99	.99	.99	.99
22.0000	.98	.98	.98	.98	.98
22.2500	.97	.97	.97	.97	.97
22.5000	.96	.96	.96	.96	.96
22.7500	.96	.95	.95	.95	.95
23.0000	.94	.94	.94	.94	.94
23.2500	.93	.93	.93	.93	.93
23.5000	.92	.92	.92	.92	.92
23.7500	.91	.91	.91	.91	.91
24.0000	.90	.83	.58	.31	.15
24.2500	.07	.03	.02	.01	.00
24.5000	.00				

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 7.0000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - BYPASS 100yr
Tc = .1700 hrs
Drainage Area = 14.480 acres Runoff CN= 92

==========
Computational Time Increment = .02267 hrs
Computed Peak Time = 11.9680 hrs
Computed Peak Flow = 109.85 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0000 hrs
Peak Flow, Interpolated Output = 108.15 cfs
WARNING: The difference between calculated peak flow
and interpolated peak flow is greater than 1.50%
==========

DRAINAGE AREA

ID:BYPASS
CN = 92
Area = 14.480 acres
S = .8696 in
0.2S = .1739 in

Cumulative Runoff

6.0548 in
7.306 ac-ft

HYG Volume... 7.305 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .17000 hrs (ID: BYPASS)
Computational Incr, Tm = .02267 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 96.51 cfs
Unit peak time Tp = .11333 hrs
Unit receding limb, Tr = .45333 hrs
Total unit time, Tb = .56667 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 7.0000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - BYPASS 100yr
Tc = .1700 hrs
Drainage Area = 14.480 acres Runoff CN= 92
Calc.Increment= .02267 hrs Out.Incr.= .0500 hrs
HYG Volume = 7.305 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
2.3000	.00	.00	.01	.02	.03
2.5500	.04	.06	.07	.08	.09
2.8000	.10	.12	.13	.14	.15
3.0500	.16	.18	.19	.20	.21
3.3000	.22	.24	.25	.26	.27
3.5500	.28	.29	.30	.32	.33
3.8000	.34	.35	.36	.37	.38
4.0500	.39	.41	.42	.43	.44
4.3000	.46	.47	.48	.50	.51
4.5500	.52	.53	.55	.56	.57
4.8000	.59	.60	.61	.63	.64
5.0500	.66	.67	.68	.70	.71
5.3000	.72	.74	.75	.77	.78
5.5500	.79	.81	.82	.83	.85
5.8000	.86	.88	.89	.91	.92
6.0500	.93	.95	.96	.98	.99
6.3000	1.00	1.02	1.03	1.05	1.06
6.5500	1.08	1.09	1.10	1.12	1.13
6.8000	1.15	1.16	1.18	1.19	1.20
7.0500	1.22	1.23	1.25	1.26	1.28
7.3000	1.29	1.30	1.32	1.33	1.35
7.5500	1.36	1.38	1.39	1.40	1.42
7.8000	1.43	1.45	1.46	1.48	1.49
8.0500	1.51	1.53	1.56	1.59	1.63
8.3000	1.67	1.71	1.76	1.80	1.84
8.5500	1.89	1.93	1.98	2.03	2.07
8.8000	2.12	2.17	2.21	2.26	2.31
9.0500	2.35	2.39	2.42	2.44	2.46
9.3000	2.47	2.48	2.49	2.50	2.51
9.5500	2.53	2.55	2.59	2.65	2.71

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
9.8000	2.78	2.86	2.93	3.00	3.08
10.0500	3.16	3.25	3.34	3.44	3.54
10.3000	3.66	3.77	3.88	3.99	4.11
10.5500	4.23	4.37	4.52	4.69	4.86
10.8000	5.05	5.24	5.43	5.62	5.82
11.0500	6.03	6.30	6.61	6.99	7.41
11.3000	7.85	8.30	8.76	9.22	9.73
11.5500	11.10	14.50	19.82	28.20	38.34
11.8000	50.89	66.72	89.47	107.29	108.15
12.0500	95.57	70.87	46.20	31.40	23.71
12.3000	19.31	16.59	14.64	13.15	11.82
12.5500	10.71	9.80	9.09	8.58	8.21
12.8000	7.89	7.61	7.33	7.07	6.81
13.0500	6.56	6.33	6.13	5.96	5.80
13.3000	5.65	5.51	5.37	5.23	5.09
13.5500	4.95	4.82	4.71	4.59	4.49
13.8000	4.38	4.28	4.18	4.08	3.98
14.0500	3.89	3.81	3.74	3.68	3.64
14.3000	3.60	3.57	3.53	3.49	3.46
14.5500	3.42	3.39	3.35	3.32	3.28
14.8000	3.25	3.21	3.18	3.14	3.11
15.0500	3.07	3.04	3.01	2.97	2.93
15.3000	2.90	2.87	2.83	2.79	2.76
15.5500	2.73	2.69	2.65	2.62	2.58
15.8000	2.55	2.51	2.48	2.44	2.41
16.0500	2.37	2.34	2.32	2.30	2.29
16.3000	2.27	2.26	2.25	2.23	2.22
16.5500	2.21	2.20	2.18	2.17	2.16
16.8000	2.15	2.13	2.12	2.11	2.10
17.0500	2.08	2.07	2.06	2.05	2.03
17.3000	2.02	2.01	2.00	1.98	1.97
17.5500	1.96	1.95	1.93	1.92	1.91
17.8000	1.90	1.88	1.87	1.86	1.85
18.0500	1.83	1.82	1.81	1.80	1.78
18.3000	1.77	1.76	1.75	1.73	1.72
18.5500	1.71	1.70	1.68	1.67	1.66
18.8000	1.65	1.63	1.62	1.61	1.60
19.0500	1.58	1.57	1.56	1.55	1.53
19.3000	1.52	1.51	1.49	1.48	1.47
19.5500	1.46	1.44	1.43	1.42	1.41
19.8000	1.39	1.38	1.37	1.36	1.34
20.0500	1.33	1.32	1.32	1.31	1.30
20.3000	1.30	1.30	1.30	1.29	1.29
20.5500	1.29	1.29	1.28	1.28	1.28
20.8000	1.28	1.27	1.27	1.27	1.27

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
21.0500	1.26	1.26	1.26	1.26	1.25
21.3000	1.25	1.25	1.25	1.24	1.24
21.5500	1.24	1.24	1.23	1.23	1.23
21.8000	1.23	1.22	1.22	1.22	1.22
22.0500	1.21	1.21	1.21	1.21	1.20
22.3000	1.20	1.20	1.20	1.19	1.19
22.5500	1.19	1.19	1.18	1.18	1.18
22.8000	1.18	1.17	1.17	1.17	1.17
23.0500	1.16	1.16	1.16	1.16	1.15
23.3000	1.15	1.15	1.15	1.14	1.14
23.5500	1.14	1.14	1.13	1.13	1.13
23.8000	1.13	1.12	1.12	1.12	1.11
24.0500	1.02	.71	.38	.18	.09
24.3000	.04	.02	.01	.00	.00

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.5000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - SUBAREA 10 2yr
Tc = .1600 hrs
Drainage Area = 30.680 acres Runoff CN= 77

==========
Computational Time Increment = .02133 hrs
Computed Peak Time = 11.9893 hrs
Computed Peak Flow = 60.24 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0000 hrs
Peak Flow, Interpolated Output = 60.15 cfs
==========

DRAINAGE AREA

ID:SUBAREA 10
CN = 77
Area = 30.680 acres
S = 2.9870 in
0.2S = .5974 in

Cumulative Runoff

1.4305 in
3.657 ac-ft

HYG Volume... 3.658 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .16000 hrs (ID: SUBAREA 10)
Computational Incr, Tm = .02133 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 217.26 cfs
Unit peak time Tp = .10667 hrs
Unit receding limb, Tr = .42667 hrs
Total unit time, Tb = .53333 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.5000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - SUBAREA 10 2yr
Tc = .1600 hrs
Drainage Area = 30.680 acres Runoff CN= 77
Calc.Increment= .02133 hrs Out.Incr.= .0500 hrs
HYG Volume = 3.658 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
9.7500	.00	.00	.01	.02	.04
10.0000	.05	.07	.09	.12	.14
10.2500	.17	.19	.22	.25	.29
10.5000	.32	.36	.40	.44	.49
10.7500	.54	.60	.66	.72	.79
11.0000	.86	.94	1.03	1.14	1.26
11.2500	1.40	1.56	1.72	1.90	2.09
11.5000	2.30	2.78	3.94	5.82	9.05
11.7500	13.45	19.66	28.82	43.55	56.68
12.0000	60.15	55.31	40.90	26.56	18.42
12.2500	14.40	12.12	10.67	9.60	8.73
12.5000	7.91	7.23	6.65	6.20	5.89
12.7500	5.66	5.47	5.29	5.11	4.94
13.0000	4.77	4.61	4.46	4.33	4.22
13.2500	4.12	4.02	3.93	3.83	3.74
13.5000	3.64	3.55	3.46	3.38	3.31
13.7500	3.24	3.17	3.10	3.03	2.96
14.0000	2.89	2.83	2.77	2.73	2.69
14.2500	2.66	2.64	2.61	2.59	2.57
14.5000	2.54	2.52	2.50	2.47	2.45
14.7500	2.43	2.40	2.38	2.35	2.33
15.0000	2.31	2.28	2.26	2.24	2.21
15.2500	2.18	2.16	2.14	2.11	2.09
15.5000	2.06	2.04	2.01	1.99	1.96
15.7500	1.94	1.91	1.89	1.86	1.84
16.0000	1.81	1.79	1.77	1.75	1.74
16.2500	1.73	1.72	1.71	1.70	1.69
16.5000	1.68	1.68	1.67	1.66	1.65
16.7500	1.64	1.63	1.62	1.62	1.61
17.0000	1.60	1.59	1.58	1.57	1.56

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
17.2500	1.55	1.55	1.54	1.53	1.52
17.5000	1.51	1.50	1.49	1.48	1.47
17.7500	1.47	1.46	1.45	1.44	1.43
18.0000	1.42	1.41	1.40	1.39	1.38
18.2500	1.37	1.37	1.36	1.35	1.34
18.5000	1.33	1.32	1.31	1.30	1.29
18.7500	1.28	1.27	1.26	1.26	1.25
19.0000	1.24	1.23	1.22	1.21	1.20
19.2500	1.19	1.18	1.17	1.16	1.15
19.5000	1.14	1.13	1.12	1.11	1.10
19.7500	1.10	1.09	1.08	1.07	1.06
20.0000	1.05	1.04	1.03	1.03	1.02
20.2500	1.02	1.02	1.02	1.01	1.01
20.5000	1.01	1.01	1.01	1.01	1.00
20.7500	1.00	1.00	1.00	1.00	1.00
21.0000	.99	.99	.99	.99	.99
21.2500	.99	.98	.98	.98	.98
21.5000	.98	.98	.97	.97	.97
21.7500	.97	.97	.96	.96	.96
22.0000	.96	.96	.96	.96	.95
22.2500	.95	.95	.95	.95	.94
22.5000	.94	.94	.94	.94	.94
22.7500	.93	.93	.93	.93	.93
23.0000	.92	.92	.92	.92	.92
23.2500	.92	.91	.91	.91	.91
23.5000	.91	.91	.90	.90	.90
23.7500	.90	.90	.89	.89	.89
24.0000	.89	.80	.53	.26	.12
24.2500	.06	.02	.01	.00	.00
24.5000	.00				

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 15 year storm
Duration = 24.0000 hrs Rain Depth = 5.3000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - SUBAREA 10 15yr
Tc = .1600 hrs
Drainage Area = 30.680 acres Runoff CN= 77

==========
Computational Time Increment = .02133 hrs
Computed Peak Time = 11.9893 hrs
Computed Peak Flow = 121.84 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0000 hrs
Peak Flow, Interpolated Output = 120.95 cfs
==========

DRAINAGE AREA

ID:SUBAREA 10
CN = 77
Area = 30.680 acres
S = 2.9870 in
0.2S = .5974 in

Cumulative Runoff

2.8759 in
7.353 ac-ft

HYG Volume... 7.354 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .16000 hrs (ID: SUBAREA 10)
Computational Incr, Tm = .02133 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 217.26 cfs
Unit peak time Tp = .10667 hrs
Unit receding limb, Tr = .42667 hrs
Total unit time, Tb = .53333 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 15 year storm
Duration = 24.0000 hrs Rain Depth = 5.3000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - SUBAREA 10 15yr
Tc = .1600 hrs
Drainage Area = 30.680 acres Runoff CN= 77
Calc.Increment= .02133 hrs Out.Incr.= .0500 hrs
HYG Volume = 7.354 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
7.7000	.00	.00	.01	.02	.03
7.9500	.04	.06	.07	.08	.10
8.2000	.12	.13	.15	.17	.19
8.4500	.21	.23	.26	.28	.30
8.7000	.33	.36	.38	.41	.44
8.9500	.47	.50	.53	.56	.59
9.2000	.62	.64	.67	.69	.72
9.4500	.74	.77	.79	.82	.85
9.7000	.90	.94	.99	1.04	1.09
9.9500	1.14	1.20	1.25	1.32	1.38
10.2000	1.46	1.53	1.61	1.70	1.79
10.4500	1.87	1.97	2.06	2.18	2.29
10.7000	2.43	2.57	2.72	2.87	3.04
10.9500	3.20	3.38	3.57	3.80	4.07
11.2000	4.39	4.74	5.13	5.53	5.96
11.4500	6.39	6.86	8.08	11.10	15.84
11.7000	23.61	33.57	46.81	65.27	93.85
11.9500	117.50	120.95	108.68	79.31	51.04
12.2000	35.08	27.17	22.71	19.89	17.82
12.4500	16.16	14.61	13.34	12.24	11.39
12.7000	10.81	10.38	10.01	9.68	9.34
12.9500	9.02	8.69	8.39	8.11	7.87
13.2000	7.66	7.47	7.29	7.11	6.93
13.4500	6.76	6.58	6.42	6.25	6.11
13.7000	5.97	5.84	5.71	5.58	5.45
13.9500	5.33	5.20	5.08	4.98	4.90
14.2000	4.83	4.77	4.73	4.69	4.64
14.4500	4.59	4.55	4.51	4.46	4.42
14.7000	4.38	4.34	4.29	4.24	4.20
14.9500	4.16	4.11	4.07	4.02	3.98

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
15.2000	3.93	3.89	3.85	3.80	3.76
15.4500	3.71	3.67	3.62	3.57	3.53
15.7000	3.48	3.44	3.39	3.35	3.30
15.9500	3.26	3.21	3.17	3.13	3.10
16.2000	3.08	3.06	3.04	3.03	3.01
16.4500	2.99	2.98	2.96	2.95	2.93
16.7000	2.91	2.90	2.88	2.87	2.85
16.9500	2.84	2.82	2.80	2.79	2.77
17.2000	2.75	2.74	2.72	2.71	2.69
17.4500	2.67	2.66	2.64	2.62	2.61
17.7000	2.59	2.58	2.56	2.54	2.53
17.9500	2.51	2.49	2.48	2.46	2.45
18.2000	2.43	2.41	2.40	2.38	2.36
18.4500	2.35	2.33	2.32	2.30	2.28
18.7000	2.26	2.25	2.23	2.21	2.20
18.9500	2.18	2.16	2.15	2.13	2.12
19.2000	2.10	2.08	2.06	2.05	2.03
19.4500	2.01	2.00	1.98	1.96	1.95
19.7000	1.93	1.92	1.90	1.88	1.86
19.9500	1.85	1.83	1.81	1.80	1.79
20.2000	1.79	1.78	1.78	1.77	1.77
20.4500	1.77	1.76	1.76	1.76	1.75
20.7000	1.75	1.75	1.75	1.74	1.74
20.9500	1.74	1.73	1.73	1.73	1.72
21.2000	1.72	1.72	1.71	1.71	1.71
21.4500	1.70	1.70	1.70	1.69	1.69
21.7000	1.69	1.69	1.68	1.68	1.68
21.9500	1.67	1.67	1.66	1.66	1.66
22.2000	1.66	1.65	1.65	1.65	1.64
22.4500	1.64	1.64	1.64	1.63	1.63
22.7000	1.62	1.62	1.62	1.61	1.61
22.9500	1.61	1.60	1.60	1.60	1.60
23.2000	1.59	1.59	1.59	1.58	1.58
23.4500	1.57	1.57	1.57	1.57	1.56
23.7000	1.56	1.56	1.55	1.55	1.55
23.9500	1.54	1.54	1.39	.92	.45
24.2000	.21	.10	.04	.02	.01
24.4500	.00	.00			

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 25 year storm
Duration = 24.0000 hrs Rain Depth = 5.7000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - SUBAREA 10 25yr
Tc = .1600 hrs
Drainage Area = 30.680 acres Runoff CN= 77

==========
Computational Time Increment = .02133 hrs
Computed Peak Time = 11.9893 hrs
Computed Peak Flow = 136.12 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0000 hrs
Peak Flow, Interpolated Output = 135.02 cfs
==========

DRAINAGE AREA

ID:SUBAREA 10
CN = 77
Area = 30.680 acres
S = 2.9870 in
0.2S = .5974 in

Cumulative Runoff

3.2185 in
8.229 ac-ft

HYG Volume... 8.230 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .16000 hrs (ID: SUBAREA 10)
Computational Incr, Tm = .02133 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 217.26 cfs
Unit peak time Tp = .10667 hrs
Unit receding limb, Tr = .42667 hrs
Total unit time, Tb = .53333 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 25 year storm
Duration = 24.0000 hrs Rain Depth = 5.7000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - SUBAREA 10 25yr
Tc = .1600 hrs
Drainage Area = 30.680 acres Runoff CN= 77
Calc.Increment= .02133 hrs Out.Incr.= .0500 hrs
HYG Volume = 8.230 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
7.3000	.00	.00	.01	.01	.03
7.5500	.04	.05	.07	.08	.10
7.8000	.11	.13	.14	.16	.18
8.0500	.19	.21	.23	.25	.27
8.3000	.29	.31	.34	.36	.39
8.5500	.42	.45	.48	.51	.54
8.8000	.57	.61	.64	.68	.71
9.0500	.75	.78	.82	.85	.87
9.3000	.90	.93	.96	.98	1.01
9.5500	1.04	1.07	1.11	1.16	1.21
9.8000	1.26	1.32	1.38	1.44	1.51
10.0500	1.58	1.65	1.73	1.81	1.90
10.3000	2.00	2.09	2.20	2.30	2.41
10.5500	2.52	2.65	2.78	2.94	3.10
10.8000	3.27	3.45	3.64	3.83	4.03
11.0500	4.25	4.52	4.82	5.20	5.60
11.3000	6.04	6.50	6.98	7.47	8.01
11.5500	9.41	12.88	18.32	27.19	38.48
11.8000	53.37	73.98	105.71	131.69	135.02
12.0500	120.96	88.10	56.63	38.88	30.08
12.3000	25.12	21.98	19.68	17.84	16.12
12.5500	14.72	13.50	12.57	11.92	11.45
12.8000	11.03	10.66	10.29	9.94	9.58
13.0500	9.24	8.93	8.67	8.43	8.22
13.3000	8.02	7.83	7.63	7.44	7.25
13.5500	7.06	6.88	6.72	6.56	6.42
13.8000	6.28	6.14	5.99	5.86	5.71
14.0500	5.59	5.47	5.38	5.31	5.25
14.3000	5.20	5.15	5.10	5.05	5.00
14.5500	4.96	4.91	4.86	4.81	4.76

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
14.8000	4.71	4.66	4.61	4.57	4.52
15.0500	4.47	4.42	4.37	4.32	4.27
15.3000	4.22	4.18	4.12	4.07	4.02
15.5500	3.98	3.92	3.87	3.82	3.78
15.8000	3.72	3.67	3.62	3.58	3.52
16.0500	3.48	3.43	3.40	3.38	3.36
16.3000	3.34	3.32	3.30	3.28	3.27
16.5500	3.25	3.23	3.21	3.20	3.18
16.8000	3.16	3.14	3.13	3.11	3.09
17.0500	3.07	3.06	3.04	3.02	3.00
17.3000	2.98	2.97	2.95	2.93	2.91
17.5500	2.90	2.88	2.86	2.84	2.83
17.8000	2.81	2.79	2.77	2.75	2.73
18.0500	2.72	2.70	2.68	2.66	2.64
18.3000	2.63	2.61	2.59	2.57	2.55
18.5500	2.54	2.52	2.50	2.48	2.46
18.8000	2.44	2.43	2.41	2.39	2.37
19.0500	2.35	2.34	2.32	2.30	2.28
19.3000	2.26	2.25	2.23	2.21	2.19
19.5500	2.17	2.15	2.13	2.12	2.10
19.8000	2.08	2.06	2.04	2.02	2.00
20.0500	1.99	1.97	1.96	1.96	1.95
20.3000	1.95	1.94	1.94	1.93	1.93
20.5500	1.93	1.92	1.92	1.92	1.92
20.8000	1.91	1.91	1.90	1.90	1.90
21.0500	1.89	1.89	1.89	1.88	1.88
21.3000	1.88	1.87	1.87	1.86	1.86
21.5500	1.86	1.85	1.85	1.85	1.85
21.8000	1.84	1.84	1.83	1.83	1.83
22.0500	1.82	1.82	1.82	1.81	1.81
22.3000	1.81	1.80	1.80	1.79	1.79
22.5500	1.79	1.78	1.78	1.78	1.78
22.8000	1.77	1.77	1.76	1.76	1.76
23.0500	1.75	1.75	1.75	1.74	1.74
23.3000	1.73	1.73	1.73	1.72	1.72
23.5500	1.72	1.71	1.71	1.71	1.70
23.8000	1.70	1.69	1.69	1.69	1.68
24.0500	1.52	1.00	.49	.23	.10
24.3000	.05	.02	.01	.00	.00

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 7.0000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - SUBAREA 10 100yr
Tc = .1600 hrs
Drainage Area = 30.680 acres Runoff CN= 77

==========
Computational Time Increment = .02133 hrs
Computed Peak Time = 11.9893 hrs
Computed Peak Flow = 183.23 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0000 hrs
Peak Flow, Interpolated Output = 181.40 cfs
==========

DRAINAGE AREA

ID:SUBAREA 10
CN = 77
Area = 30.680 acres
S = 2.9870 in
0.2S = .5974 in

Cumulative Runoff

4.3658 in
11.162 ac-ft

HYG Volume... 11.164 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .16000 hrs (ID: SUBAREA 10)
Computational Incr, Tm = .02133 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 217.26 cfs
Unit peak time Tp = .10667 hrs
Unit receding limb, Tr = .42667 hrs
Total unit time, Tb = .53333 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 7.0000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - SUBAREA 10 100yr
Tc = .1600 hrs
Drainage Area = 30.680 acres Runoff CN= 77
Calc.Increment= .02133 hrs Out.Incr.= .0500 hrs
HYG Volume = 11.164 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
6.3500	.00	.01	.02	.03	.05
6.6000	.07	.08	.10	.12	.14
6.8500	.16	.18	.20	.21	.23
7.1000	.25	.27	.29	.31	.33
7.3500	.35	.37	.40	.42	.44
7.6000	.46	.48	.50	.52	.54
7.8500	.57	.59	.61	.63	.66
8.1000	.68	.71	.75	.78	.82
8.3500	.86	.90	.94	.99	1.03
8.6000	1.08	1.12	1.17	1.22	1.27
8.8500	1.33	1.38	1.44	1.49	1.55
9.1000	1.60	1.64	1.68	1.72	1.76
9.3500	1.79	1.82	1.86	1.89	1.93
9.6000	1.97	2.03	2.10	2.18	2.27
9.8500	2.35	2.44	2.54	2.63	2.73
10.1000	2.84	2.96	3.09	3.22	3.36
10.3500	3.50	3.65	3.80	3.96	4.12
10.6000	4.31	4.51	4.74	4.97	5.23
10.8500	5.48	5.75	6.02	6.31	6.62
11.1000	7.01	7.45	7.99	8.56	9.20
11.3500	9.84	10.53	11.22	11.96	13.98
11.6000	19.00	26.81	39.37	55.10	75.46
11.8500	103.12	145.19	178.67	181.40	161.28
12.1000	116.96	74.95	51.29	39.56	32.96
12.3500	28.79	25.74	23.32	21.06	19.21
12.6000	17.61	16.38	15.54	14.91	14.36
12.8500	13.88	13.39	12.92	12.45	12.01
13.1000	11.61	11.26	10.95	10.68	10.41
13.3500	10.16	9.90	9.65	9.40	9.15
13.6000	8.92	8.70	8.50	8.32	8.13

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
13.8500	7.95	7.76	7.58	7.39	7.23
14.1000	7.08	6.96	6.86	6.79	6.72
14.3500	6.66	6.59	6.53	6.46	6.40
14.6000	6.34	6.27	6.21	6.15	6.08
14.8500	6.02	5.96	5.90	5.83	5.76
15.1000	5.70	5.64	5.57	5.51	5.45
15.3500	5.39	5.32	5.25	5.19	5.13
15.6000	5.06	4.99	4.93	4.87	4.80
15.8500	4.73	4.67	4.61	4.54	4.48
16.1000	4.42	4.38	4.35	4.32	4.30
16.3500	4.27	4.25	4.22	4.20	4.18
16.6000	4.16	4.13	4.11	4.09	4.07
16.8500	4.04	4.02	4.00	3.97	3.95
17.1000	3.93	3.91	3.88	3.86	3.84
17.3500	3.82	3.79	3.77	3.74	3.72
17.6000	3.70	3.67	3.65	3.63	3.60
17.8500	3.58	3.56	3.54	3.51	3.49
18.1000	3.46	3.44	3.42	3.39	3.37
18.3500	3.35	3.32	3.30	3.28	3.26
18.6000	3.23	3.21	3.18	3.16	3.14
18.8500	3.11	3.09	3.07	3.04	3.02
19.1000	3.00	2.97	2.95	2.92	2.90
19.3500	2.88	2.85	2.83	2.81	2.78
19.6000	2.76	2.73	2.71	2.69	2.66
19.8500	2.64	2.62	2.59	2.57	2.55
20.1000	2.53	2.52	2.51	2.50	2.49
20.3500	2.49	2.48	2.48	2.48	2.47
20.6000	2.47	2.46	2.46	2.45	2.45
20.8500	2.44	2.44	2.44	2.43	2.42
21.1000	2.42	2.42	2.41	2.41	2.40
21.3500	2.40	2.39	2.39	2.38	2.38
21.6000	2.37	2.37	2.37	2.36	2.36
21.8500	2.35	2.35	2.34	2.34	2.33
22.1000	2.33	2.33	2.32	2.31	2.31
22.3500	2.31	2.30	2.30	2.29	2.29
22.6000	2.28	2.28	2.27	2.27	2.26
22.8500	2.26	2.26	2.25	2.25	2.24
23.1000	2.24	2.23	2.23	2.22	2.22
23.3500	2.21	2.21	2.20	2.20	2.20
23.6000	2.19	2.18	2.18	2.18	2.17
23.8500	2.17	2.16	2.16	2.15	1.94
24.1000	1.28	.63	.29	.13	.06
24.3500	.03	.01	.00	.00	

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.5000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - TO BASIN 2yr
Tc = .1600 hrs
Drainage Area = 16.200 acres Runoff CN= 92

==========
Computational Time Increment = .02133 hrs
Computed Peak Time = 11.9680 hrs
Computed Peak Flow = 56.95 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 11.9500 hrs
Peak Flow, Interpolated Output = 55.91 cfs
WARNING: The difference between calculated peak flow
and interpolated peak flow is greater than 1.50%
==========

DRAINAGE AREA

ID:TO BASIN
CN = 92
Area = 16.200 acres
S = .8696 in
0.2S = .1739 in

Cumulative Runoff

2.6367 in
3.560 ac-ft

HYG Volume... 3.560 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .16000 hrs (ID: TO BASIN)
Computational Incr, Tm = .02133 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 114.72 cfs
Unit peak time Tp = .10667 hrs
Unit receding limb, Tr = .42667 hrs
Total unit time, Tb = .53333 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.5000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - TO BASIN 2yr
Tc = .1600 hrs
Drainage Area = 16.200 acres Runoff CN= 92
Calc.Increment= .02133 hrs Out.Incr.= .0500 hrs
HYG Volume = 3.560 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
4.2000	.00	.00	.01	.01	.01
4.4500	.02	.02	.03	.03	.04
4.7000	.04	.05	.06	.06	.07
4.9500	.07	.08	.08	.09	.09
5.2000	.10	.10	.11	.12	.12
5.4500	.13	.13	.14	.15	.15
5.7000	.16	.16	.17	.18	.18
5.9500	.19	.20	.20	.21	.21
6.2000	.22	.23	.23	.24	.25
6.4500	.25	.26	.27	.27	.28
6.7000	.29	.29	.30	.31	.32
6.9500	.32	.33	.34	.34	.35
7.2000	.36	.36	.37	.38	.39
7.4500	.39	.40	.41	.42	.42
7.7000	.43	.44	.44	.45	.46
7.9500	.47	.47	.48	.49	.51
8.2000	.52	.54	.55	.57	.59
8.4500	.61	.63	.64	.66	.68
8.7000	.70	.72	.74	.76	.79
8.9500	.81	.83	.85	.87	.88
9.2000	.89	.90	.91	.92	.93
9.4500	.94	.95	.96	.97	.99
9.7000	1.02	1.05	1.08	1.11	1.15
9.9500	1.18	1.22	1.25	1.29	1.34
10.2000	1.39	1.43	1.49	1.54	1.59
10.4500	1.64	1.70	1.76	1.82	1.89
10.7000	1.98	2.06	2.15	2.24	2.33
10.9500	2.42	2.52	2.63	2.76	2.91
11.2000	3.10	3.30	3.52	3.73	3.96
11.4500	4.19	4.43	5.13	6.89	9.59

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
11.7000	13.85	19.00	25.44	33.89	46.46
11.9500	55.91	55.76	48.90	35.17	22.42
12.2000	15.26	11.70	9.71	8.45	7.54
12.4500	6.82	6.15	5.60	5.13	4.77
12.7000	4.52	4.33	4.17	4.03	3.88
12.9500	3.75	3.61	3.48	3.36	3.26
13.2000	3.16	3.08	3.01	2.93	2.86
13.4500	2.78	2.71	2.64	2.57	2.51
13.7000	2.45	2.39	2.34	2.29	2.23
13.9500	2.18	2.12	2.08	2.03	2.00
14.2000	1.97	1.95	1.93	1.91	1.89
14.4500	1.87	1.85	1.83	1.81	1.80
14.7000	1.78	1.76	1.74	1.72	1.70
14.9500	1.69	1.67	1.65	1.63	1.61
15.2000	1.59	1.57	1.55	1.54	1.52
15.4500	1.50	1.48	1.46	1.44	1.42
15.7000	1.41	1.39	1.37	1.35	1.33
15.9500	1.31	1.29	1.27	1.26	1.25
16.2000	1.24	1.23	1.22	1.22	1.21
16.4500	1.20	1.20	1.19	1.18	1.18
16.7000	1.17	1.16	1.16	1.15	1.14
16.9500	1.14	1.13	1.12	1.12	1.11
17.2000	1.10	1.10	1.09	1.08	1.08
17.4500	1.07	1.06	1.06	1.05	1.04
17.7000	1.04	1.03	1.02	1.02	1.01
17.9500	1.00	1.00	.99	.98	.98
18.2000	.97	.96	.96	.95	.94
18.4500	.93	.93	.92	.91	.91
18.7000	.90	.90	.89	.88	.87
18.9500	.87	.86	.85	.85	.84
19.2000	.83	.83	.82	.81	.81
19.4500	.80	.79	.79	.78	.77
19.7000	.77	.76	.75	.75	.74
19.9500	.73	.73	.72	.71	.71
20.2000	.71	.71	.70	.70	.70
20.4500	.70	.70	.70	.70	.69
20.7000	.69	.69	.69	.69	.69
20.9500	.69	.69	.68	.68	.68
21.2000	.68	.68	.68	.68	.67
21.4500	.67	.67	.67	.67	.67
21.7000	.67	.67	.66	.66	.66
21.9500	.66	.66	.66	.66	.66
22.2000	.65	.65	.65	.65	.65
22.4500	.65	.65	.64	.64	.64
22.7000	.64	.64	.64	.64	.63

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
22.9500	.63	.63	.63	.63	.63
23.2000	.63	.63	.62	.62	.62
23.4500	.62	.62	.62	.62	.61
23.7000	.61	.61	.61	.61	.61
23.9500	.61	.61	.55	.36	.18
24.2000	.08	.04	.02	.01	.00
24.4500	.00	.00			

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 15 year storm
Duration = 24.0000 hrs Rain Depth = 5.3000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - TO BASIN 15yr
Tc = .1600 hrs
Drainage Area = 16.200 acres Runoff CN= 92

==========
Computational Time Increment = .02133 hrs
Computed Peak Time = 11.9680 hrs
Computed Peak Flow = 92.12 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 11.9500 hrs
Peak Flow, Interpolated Output = 90.73 cfs
WARNING: The difference between calculated peak flow
and interpolated peak flow is greater than 1.50%
==========

DRAINAGE AREA

ID:TO BASIN
CN = 92
Area = 16.200 acres
S = .8696 in
0.2S = .1739 in

Cumulative Runoff

4.3826 in
5.917 ac-ft

HYG Volume... 5.917 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .16000 hrs (ID: TO BASIN)
Computational Incr, Tm = .02133 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 114.72 cfs
Unit peak time Tp = .10667 hrs
Unit receding limb, Tr = .42667 hrs
Total unit time, Tb = .53333 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 15 year storm
Duration = 24.0000 hrs Rain Depth = 5.3000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - TO BASIN 15yr
Tc = .1600 hrs
Drainage Area = 16.200 acres Runoff CN= 92
Calc.Increment= .02133 hrs Out.Incr.= .0500 hrs
HYG Volume = 5.917 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
2.9000	.00	.00	.01	.01	.02
3.1500	.03	.04	.04	.05	.06
3.4000	.07	.08	.09	.10	.11
3.6500	.11	.12	.13	.14	.15
3.9000	.16	.17	.17	.18	.19
4.1500	.20	.21	.22	.23	.24
4.4000	.25	.26	.27	.28	.29
4.6500	.30	.31	.32	.33	.34
4.9000	.35	.36	.37	.38	.39
5.1500	.40	.41	.42	.43	.44
5.4000	.46	.47	.48	.49	.50
5.6500	.51	.52	.53	.54	.56
5.9000	.57	.58	.59	.60	.61
6.1500	.62	.64	.65	.66	.67
6.4000	.68	.69	.70	.72	.73
6.6500	.74	.75	.76	.77	.79
6.9000	.80	.81	.82	.83	.85
7.1500	.86	.87	.88	.89	.91
7.4000	.92	.93	.94	.95	.97
7.6500	.98	.99	1.00	1.01	1.03
7.9000	1.04	1.05	1.06	1.08	1.09
8.1500	1.12	1.14	1.17	1.21	1.24
8.4000	1.27	1.31	1.34	1.38	1.41
8.6500	1.45	1.48	1.52	1.56	1.59
8.9000	1.63	1.67	1.71	1.74	1.78
9.1500	1.80	1.82	1.83	1.84	1.85
9.4000	1.86	1.87	1.88	1.90	1.92
9.6500	1.96	2.00	2.06	2.11	2.17
9.9000	2.23	2.29	2.35	2.41	2.48
10.1500	2.56	2.64	2.73	2.82	2.91

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
10.4000	3.00	3.09	3.18	3.28	3.40
10.6500	3.52	3.66	3.80	3.95	4.10
10.9000	4.26	4.41	4.58	4.75	4.98
11.1500	5.24	5.55	5.89	6.26	6.62
11.4000	7.00	7.38	7.78	8.96	11.98
11.6500	16.56	23.71	32.24	42.73	56.25
11.9000	76.15	90.73	89.76	78.22	56.07
12.1500	35.65	24.20	18.52	15.33	13.33
12.4000	11.87	10.73	9.67	8.81	8.06
12.6500	7.49	7.10	6.80	6.55	6.32
12.9000	6.09	5.87	5.65	5.45	5.26
13.1500	5.10	4.96	4.83	4.71	4.59
13.4000	4.47	4.36	4.24	4.13	4.02
13.6500	3.92	3.83	3.74	3.65	3.57
13.9000	3.49	3.40	3.32	3.24	3.18
14.1500	3.12	3.08	3.04	3.01	2.98
14.4000	2.95	2.92	2.89	2.86	2.83
14.6500	2.80	2.77	2.75	2.72	2.69
14.9000	2.66	2.63	2.60	2.57	2.54
15.1500	2.51	2.48	2.45	2.42	2.40
15.4000	2.36	2.34	2.31	2.28	2.25
15.6500	2.22	2.19	2.16	2.13	2.10
15.9000	2.07	2.04	2.01	1.98	1.96
16.1500	1.94	1.93	1.91	1.90	1.89
16.4000	1.88	1.87	1.86	1.85	1.84
16.6500	1.83	1.82	1.81	1.80	1.79
16.9000	1.78	1.77	1.76	1.75	1.74
17.1500	1.73	1.71	1.70	1.69	1.68
17.4000	1.67	1.66	1.65	1.64	1.63
17.6500	1.62	1.61	1.60	1.59	1.58
17.9000	1.57	1.56	1.55	1.54	1.53
18.1500	1.52	1.50	1.49	1.48	1.47
18.4000	1.46	1.45	1.44	1.43	1.42
18.6500	1.41	1.40	1.39	1.38	1.37
18.9000	1.36	1.35	1.34	1.33	1.32
19.1500	1.31	1.29	1.28	1.27	1.26
19.4000	1.25	1.24	1.23	1.22	1.21
19.6500	1.20	1.19	1.18	1.17	1.16
19.9000	1.15	1.14	1.13	1.12	1.11
20.1500	1.10	1.10	1.09	1.09	1.09
20.4000	1.09	1.09	1.08	1.08	1.08
20.6500	1.08	1.08	1.07	1.07	1.07
20.9000	1.07	1.07	1.06	1.06	1.06
21.1500	1.06	1.05	1.05	1.05	1.05
21.4000	1.05	1.04	1.04	1.04	1.04

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
21.6500	1.04	1.03	1.03	1.03	1.03
21.9000	1.03	1.02	1.02	1.02	1.02
22.1500	1.02	1.01	1.01	1.01	1.01
22.4000	1.00	1.00	1.00	1.00	1.00
22.6500	.99	.99	.99	.99	.99
22.9000	.98	.98	.98	.98	.98
23.1500	.97	.97	.97	.97	.97
23.4000	.96	.96	.96	.96	.95
23.6500	.95	.95	.95	.95	.94
23.9000	.94	.94	.94	.85	.56
24.1500	.27	.13	.06	.03	.01
24.4000	.00	.00	.00		

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 25 year storm
Duration = 24.0000 hrs Rain Depth = 5.7000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - TO BASIN 25yr
Tc = .1600 hrs
Drainage Area = 16.200 acres Runoff CN= 92

==========
Computational Time Increment = .02133 hrs
Computed Peak Time = 11.9680 hrs
Computed Peak Flow = 99.87 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 11.9500 hrs
Peak Flow, Interpolated Output = 98.40 cfs
==========

DRAINAGE AREA

ID:TO BASIN
CN = 92
Area = 16.200 acres
S = .8696 in
0.2S = .1739 in

Cumulative Runoff

4.7747 in
6.446 ac-ft

HYG Volume... 6.447 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .16000 hrs (ID: TO BASIN)
Computational Incr, Tm = .02133 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 114.72 cfs
Unit peak time Tp = .10667 hrs
Unit receding limb, Tr = .42667 hrs
Total unit time, Tb = .53333 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 25 year storm
Duration = 24.0000 hrs Rain Depth = 5.7000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - TO BASIN 25yr
Tc = .1600 hrs
Drainage Area = 16.200 acres Runoff CN= 92
Calc.Increment= .02133 hrs Out.Incr.= .0500 hrs
HYG Volume = 6.447 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
2.7500	.00	.00	.01	.02	.03
3.0000	.04	.05	.06	.07	.08
3.2500	.08	.09	.10	.11	.12
3.5000	.13	.14	.15	.16	.17
3.7500	.18	.19	.20	.21	.22
4.0000	.23	.24	.25	.26	.27
4.2500	.28	.29	.30	.31	.32
4.5000	.33	.35	.36	.37	.38
4.7500	.39	.40	.41	.42	.44
5.0000	.45	.46	.47	.48	.49
5.2500	.51	.52	.53	.54	.55
5.5000	.57	.58	.59	.60	.61
5.7500	.63	.64	.65	.66	.68
6.0000	.69	.70	.71	.73	.74
6.2500	.75	.76	.78	.79	.80
6.5000	.81	.83	.84	.85	.87
6.7500	.88	.89	.90	.92	.93
7.0000	.94	.96	.97	.98	.99
7.2500	1.01	1.02	1.03	1.05	1.06
7.5000	1.07	1.08	1.10	1.11	1.12
7.7500	1.14	1.15	1.16	1.18	1.19
8.0000	1.20	1.22	1.24	1.26	1.29
8.2500	1.33	1.36	1.40	1.44	1.47
8.5000	1.51	1.55	1.59	1.63	1.67
8.7500	1.71	1.75	1.79	1.83	1.87
9.0000	1.91	1.95	1.99	2.01	2.03
9.2500	2.05	2.06	2.07	2.08	2.09
9.5000	2.10	2.12	2.14	2.18	2.23
9.7500	2.29	2.35	2.41	2.48	2.54
10.0000	2.61	2.68	2.76	2.84	2.93

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
10.2500	3.02	3.12	3.22	3.32	3.42
10.5000	3.52	3.63	3.75	3.88	4.04
10.7500	4.19	4.36	4.52	4.69	4.86
11.0000	5.04	5.23	5.48	5.76	6.10
11.2500	6.47	6.87	7.27	7.68	8.09
11.5000	8.52	9.82	13.11	18.11	25.90
11.7500	35.17	46.55	61.19	82.70	98.40
12.0000	97.25	84.68	60.67	38.56	26.17
12.2500	20.02	16.57	14.40	12.83	11.59
12.5000	10.45	9.51	8.71	8.09	7.66
12.7500	7.35	7.07	6.82	6.58	6.34
13.0000	6.11	5.89	5.68	5.51	5.35
13.2500	5.22	5.08	4.96	4.83	4.70
13.5000	4.58	4.46	4.34	4.23	4.13
13.7500	4.04	3.95	3.86	3.76	3.67
14.0000	3.58	3.50	3.43	3.37	3.32
14.2500	3.28	3.25	3.22	3.18	3.15
14.5000	3.12	3.09	3.06	3.02	2.99
14.7500	2.96	2.93	2.90	2.87	2.84
15.0000	2.80	2.77	2.74	2.71	2.68
15.2500	2.65	2.62	2.59	2.55	2.52
15.5000	2.49	2.46	2.43	2.39	2.36
15.7500	2.33	2.30	2.27	2.24	2.21
16.0000	2.17	2.14	2.12	2.10	2.08
16.2500	2.07	2.05	2.04	2.03	2.02
16.5000	2.01	2.00	1.99	1.97	1.96
16.7500	1.95	1.94	1.93	1.92	1.91
17.0000	1.89	1.88	1.87	1.86	1.85
17.2500	1.84	1.83	1.82	1.80	1.79
17.5000	1.78	1.77	1.76	1.75	1.74
17.7500	1.73	1.71	1.70	1.69	1.68
18.0000	1.67	1.66	1.65	1.64	1.62
18.2500	1.61	1.60	1.59	1.58	1.57
18.5000	1.56	1.55	1.53	1.52	1.51
18.7500	1.50	1.49	1.48	1.46	1.45
19.0000	1.44	1.43	1.42	1.41	1.40
19.2500	1.38	1.37	1.36	1.35	1.34
19.5000	1.33	1.32	1.31	1.29	1.28
19.7500	1.27	1.26	1.25	1.24	1.23
20.0000	1.21	1.20	1.20	1.19	1.18
20.2500	1.18	1.18	1.18	1.17	1.17
20.5000	1.17	1.17	1.16	1.16	1.16
20.7500	1.16	1.16	1.15	1.15	1.15
21.0000	1.15	1.14	1.14	1.14	1.14
21.2500	1.13	1.13	1.13	1.13	1.13

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
21.5000	1.12	1.12	1.12	1.12	1.12
21.7500	1.11	1.11	1.11	1.11	1.10
22.0000	1.10	1.10	1.10	1.10	1.09
22.2500	1.09	1.09	1.09	1.08	1.08
22.5000	1.08	1.08	1.07	1.07	1.07
22.7500	1.07	1.07	1.06	1.06	1.06
23.0000	1.06	1.05	1.05	1.05	1.05
23.2500	1.04	1.04	1.04	1.04	1.04
23.5000	1.03	1.03	1.03	1.03	1.02
23.7500	1.02	1.02	1.02	1.02	1.01
24.0000	1.01	.91	.60	.29	.14
24.2500	.06	.03	.01	.01	.00
24.5000	.00				

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 7.0000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - TO BASIN 100yr
Tc = .1600 hrs
Drainage Area = 16.200 acres Runoff CN= 92

==========
Computational Time Increment = .02133 hrs
Computed Peak Time = 11.9680 hrs
Computed Peak Flow = 124.93 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 11.9500 hrs
Peak Flow, Interpolated Output = 123.22 cfs
==========

DRAINAGE AREA

ID:TO BASIN
CN = 92
Area = 16.200 acres
S = .8696 in
0.2S = .1739 in

Cumulative Runoff

6.0548 in
8.174 ac-ft

HYG Volume... 8.175 ac-ft (area under HYG curve)

***** SCS UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .16000 hrs (ID: TO BASIN)
Computational Incr, Tm = .02133 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 114.72 cfs
Unit peak time Tp = .10667 hrs
Unit receding limb, Tr = .42667 hrs
Total unit time, Tb = .53333 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 7.0000 in
Rain Dir = H:\DWG\031486\DETENTION\
Rain File -ID = - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = H:\DWG\031486\DETENTION\
HYG File - ID = - TO BASIN 100yr
Tc = .1600 hrs
Drainage Area = 16.200 acres Runoff CN= 92
Calc.Increment= .02133 hrs Out.Incr.= .0500 hrs
HYG Volume = 8.175 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
2.2500	.00	.00	.01	.01	.03
2.5000	.04	.05	.07	.08	.09
2.7500	.11	.12	.13	.15	.16
3.0000	.17	.19	.20	.21	.23
3.2500	.24	.25	.27	.28	.29
3.5000	.30	.32	.33	.34	.36
3.7500	.37	.38	.39	.41	.42
4.0000	.43	.44	.46	.47	.48
4.2500	.50	.51	.53	.54	.56
4.5000	.57	.59	.60	.62	.63
4.7500	.64	.66	.67	.69	.70
5.0000	.72	.74	.75	.77	.78
5.2500	.80	.81	.83	.84	.86
5.5000	.87	.89	.91	.92	.94
5.7500	.95	.97	.98	1.00	1.02
6.0000	1.03	1.05	1.06	1.08	1.09
6.2500	1.11	1.13	1.14	1.16	1.17
6.5000	1.19	1.21	1.22	1.24	1.25
6.7500	1.27	1.29	1.30	1.32	1.33
7.0000	1.35	1.37	1.38	1.40	1.41
7.2500	1.43	1.45	1.46	1.48	1.49
7.5000	1.51	1.53	1.54	1.56	1.57
7.7500	1.59	1.61	1.62	1.64	1.65
8.0000	1.67	1.69	1.71	1.74	1.79
8.2500	1.83	1.88	1.92	1.97	2.02
8.5000	2.07	2.12	2.17	2.22	2.28
8.7500	2.33	2.38	2.43	2.48	2.54
9.0000	2.59	2.64	2.68	2.72	2.74
9.2500	2.75	2.77	2.78	2.79	2.80
9.5000	2.81	2.83	2.86	2.91	2.97

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
9.7500	3.05	3.13	3.21	3.29	3.37
10.0000	3.46	3.55	3.65	3.75	3.87
10.2500	3.98	4.11	4.23	4.36	4.49
10.5000	4.62	4.75	4.91	5.08	5.27
10.7500	5.47	5.68	5.89	6.11	6.32
11.0000	6.54	6.78	7.09	7.45	7.89
11.2500	8.35	8.86	9.36	9.89	10.40
11.5000	10.94	12.59	16.78	23.13	32.98
11.7500	44.66	58.92	77.16	103.88	123.22
12.0000	121.47	105.57	75.56	47.99	32.54
12.2500	24.88	20.58	17.88	15.92	14.38
12.5000	12.96	11.80	10.80	10.03	9.50
12.7500	9.11	8.76	8.46	8.15	7.86
13.0000	7.57	7.30	7.04	6.83	6.63
13.2500	6.46	6.30	6.14	5.98	5.83
13.5000	5.67	5.52	5.37	5.24	5.12
13.7500	5.00	4.89	4.78	4.66	4.55
14.0000	4.44	4.33	4.24	4.17	4.11
14.2500	4.06	4.02	3.98	3.94	3.90
14.5000	3.86	3.83	3.78	3.74	3.71
14.7500	3.67	3.63	3.59	3.55	3.51
15.0000	3.47	3.43	3.39	3.36	3.31
15.2500	3.27	3.24	3.20	3.16	3.12
15.5000	3.08	3.04	3.00	2.96	2.92
15.7500	2.89	2.84	2.80	2.77	2.73
16.0000	2.69	2.65	2.62	2.59	2.57
16.2500	2.55	2.54	2.53	2.51	2.50
16.5000	2.48	2.47	2.46	2.44	2.43
16.7500	2.41	2.40	2.38	2.37	2.36
17.0000	2.34	2.33	2.32	2.30	2.29
17.2500	2.27	2.26	2.25	2.23	2.22
17.5000	2.20	2.19	2.18	2.16	2.15
17.7500	2.13	2.12	2.10	2.09	2.08
18.0000	2.06	2.05	2.04	2.02	2.01
18.2500	1.99	1.98	1.97	1.95	1.94
18.5000	1.92	1.91	1.89	1.88	1.87
18.7500	1.85	1.84	1.82	1.81	1.80
19.0000	1.78	1.77	1.75	1.74	1.73
19.2500	1.71	1.70	1.69	1.67	1.66
19.5000	1.64	1.63	1.61	1.60	1.59
19.7500	1.57	1.56	1.54	1.53	1.52
20.0000	1.50	1.49	1.48	1.47	1.46
20.2500	1.46	1.46	1.45	1.45	1.45
20.5000	1.44	1.44	1.44	1.44	1.43
20.7500	1.43	1.43	1.42	1.42	1.42

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
21.0000	1.42	1.41	1.41	1.41	1.41
21.2500	1.40	1.40	1.40	1.39	1.39
21.5000	1.39	1.39	1.38	1.38	1.38
21.7500	1.38	1.37	1.37	1.37	1.36
22.0000	1.36	1.36	1.36	1.35	1.35
22.2500	1.35	1.34	1.34	1.34	1.33
22.5000	1.33	1.33	1.33	1.32	1.32
22.7500	1.32	1.32	1.31	1.31	1.31
23.0000	1.30	1.30	1.30	1.30	1.29
23.2500	1.29	1.29	1.29	1.28	1.28
23.5000	1.28	1.28	1.27	1.27	1.27
23.7500	1.26	1.26	1.26	1.25	1.25
24.0000	1.25	1.13	.74	.36	.17
24.2500	.08	.04	.02	.01	.00
24.5000	.00				

SUMMARY FOR HYDROGRAPH ADDITION
at Node: POST DEVELOPED

HYG Directory: H:\DWG\031486\DETENTION\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
STRUCTURE	BASIN	IN	STRUCTURE	2yr
ADDLINK 20	BYPASS		BYPASS	2yr

INFLOWS TO: POST DEVELOPED

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	STRUCTURE	2yr	3.560	12.2500	12.31
	BYPASS	2yr	3.181	12.0000	49.57

TOTAL FLOW INTO: POST DEVELOPED

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	POST DEVELOPED	2yr	6.741	12.0000	60.62

TOTAL NODE INFLOW...
HYG file =
HYG ID = POST DEVELOPED
HYG Tag = 2yr

Peak Discharge =	60.62 cfs
Time to Peak =	12.0000 hrs
HYG Volume =	6.741 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
4.2000	.00	.00	.01	.02	.03
4.4500	.03	.04	.05	.06	.07
4.7000	.08	.09	.10	.11	.12
4.9500	.13	.14	.15	.16	.17
5.2000	.18	.19	.21	.22	.23
5.4500	.24	.25	.26	.27	.28
5.7000	.30	.31	.32	.33	.34
5.9500	.35	.37	.38	.39	.40
6.2000	.41	.43	.44	.45	.46
6.4500	.48	.49	.50	.52	.53
6.7000	.54	.55	.57	.58	.59
6.9500	.61	.62	.63	.65	.66
7.2000	.67	.69	.70	.71	.73
7.4500	.74	.75	.77	.78	.80
7.7000	.81	.82	.84	.85	.87
7.9500	.88	.89	.91	.93	.95
8.2000	.98	1.01	1.04	1.07	1.10
8.4500	1.14	1.17	1.21	1.24	1.28
8.7000	1.32	1.36	1.40	1.43	1.47
8.9500	1.51	1.56	1.60	1.63	1.66
9.2000	1.69	1.71	1.72	1.74	1.76
9.4500	1.77	1.79	1.81	1.83	1.87
9.7000	1.91	1.97	2.02	2.08	2.14
9.9500	2.21	2.27	2.34	2.41	2.49
10.2000	2.58	2.67	2.76	2.86	2.96
10.4500	3.06	3.16	3.27	3.39	3.51
10.7000	3.66	3.81	3.97	4.14	4.31
10.9500	4.48	4.66	4.85	5.07	5.33
11.2000	5.65	6.00	6.38	6.77	7.19
11.4500	7.55	7.93	8.75	10.61	13.53
11.7000	17.92	23.21	29.68	37.81	49.38

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
11.9500	58.92	60.62	55.82	44.96	33.78
12.2000	27.00	23.45	21.39	20.09	19.13
12.4500	18.37	17.68	17.08	16.57	16.15
12.7000	15.81	15.54	15.29	15.06	14.83
12.9500	14.60	14.36	14.14	13.92	13.71
13.2000	13.50	13.30	13.10	12.90	12.69
13.4500	12.49	12.27	12.05	11.82	11.60
13.7000	11.37	11.13	10.89	10.64	10.38
13.9500	10.11	9.83	9.54	9.23	8.90
14.2000	8.54	8.15	7.71	7.20	6.60
14.4500	5.89	4.92	4.05	3.65	3.49
14.7000	3.41	3.36	3.32	3.28	3.25
14.9500	3.21	3.18	3.14	3.11	3.07
15.2000	3.04	3.00	2.96	2.93	2.89
15.4500	2.86	2.82	2.79	2.75	2.72
15.7000	2.68	2.65	2.61	2.57	2.54
15.9500	2.50	2.47	2.43	2.40	2.38
16.2000	2.35	2.34	2.32	2.31	2.30
16.4500	2.28	2.27	2.26	2.25	2.23
16.7000	2.22	2.21	2.20	2.18	2.17
16.9500	2.16	2.15	2.13	2.12	2.11
17.2000	2.09	2.08	2.07	2.06	2.04
17.4500	2.03	2.02	2.01	1.99	1.98
17.7000	1.97	1.96	1.94	1.93	1.91
17.9500	1.90	1.89	1.88	1.86	1.85
18.2000	1.84	1.83	1.81	1.80	1.79
18.4500	1.77	1.76	1.75	1.74	1.72
18.7000	1.71	1.70	1.69	1.67	1.66
18.9500	1.65	1.64	1.62	1.61	1.60
19.2000	1.58	1.57	1.56	1.55	1.53
19.4500	1.52	1.51	1.49	1.48	1.47
19.7000	1.46	1.44	1.43	1.42	1.40
19.9500	1.39	1.38	1.37	1.36	1.35
20.2000	1.34	1.34	1.33	1.33	1.33
20.4500	1.33	1.32	1.32	1.32	1.32
20.7000	1.31	1.31	1.31	1.31	1.30
20.9500	1.30	1.30	1.30	1.29	1.29
21.2000	1.29	1.29	1.28	1.28	1.28
21.4500	1.28	1.27	1.27	1.27	1.27
21.7000	1.26	1.26	1.26	1.26	1.25
21.9500	1.25	1.25	1.25	1.24	1.24
22.2000	1.24	1.24	1.23	1.23	1.23
22.4500	1.23	1.22	1.22	1.22	1.22
22.7000	1.21	1.21	1.21	1.21	1.20
22.9500	1.20	1.20	1.19	1.19	1.19

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
23.2000	1.19	1.18	1.18	1.18	1.18
23.4500	1.17	1.17	1.17	1.17	1.16
23.7000	1.16	1.16	1.16	1.15	1.15
23.9500	1.15	1.15	1.07	.80	.45
24.2000	.22	.10	.05	.02	.01
24.4500	.00	.00			

SUMMARY FOR HYDROGRAPH ADDITION
at Node: POST DEVELOPED

HYG Directory: H:\DWG\031486\DETENTION\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
STRUCTURE	BASIN	IN	STRUCTURE	15yr
ADDLINK 20	BYPASS		BYPASS	15yr

INFLOWS TO: POST DEVELOPED

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	STRUCTURE	15yr	5.917	12.1500	37.67
	BYPASS	15yr	5.288	12.0000	79.88

PER RATIONAL 56 CFS PEAK

TOTAL FLOW INTO: POST DEVELOPED

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	POST DEVELOPED	15yr	11.205	12.0000	94.13

56 + 38 = 94 CFS RATIONAL SITE RUNOFF PEAK O/C

TOTAL NODE INFLOW...
HYG file =
HYG ID = POST DEVELOPED
HYG Tag = 15yr

Peak Discharge =	94.13 cfs
Time to Peak =	12.0000 hrs
HYG Volume =	11.205 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
2.9000	.00	.00	.01	.02	.03
3.1500	.05	.06	.08	.09	.11
3.4000	.13	.14	.16	.18	.19
3.6500	.21	.23	.24	.26	.28
3.9000	.29	.31	.33	.34	.36
4.1500	.38	.39	.41	.43	.45
4.4000	.47	.48	.50	.52	.54
4.6500	.56	.58	.60	.62	.64
4.9000	.66	.67	.69	.71	.73
5.1500	.75	.77	.79	.82	.84
5.4000	.86	.88	.90	.92	.94
5.6500	.96	.98	1.00	1.02	1.04
5.9000	1.07	1.09	1.11	1.13	1.15
6.1500	1.17	1.20	1.22	1.24	1.26
6.4000	1.28	1.30	1.33	1.35	1.37
6.6500	1.39	1.42	1.44	1.46	1.48
6.9000	1.50	1.53	1.55	1.57	1.59
7.1500	1.62	1.64	1.66	1.68	1.71
7.4000	1.73	1.75	1.78	1.80	1.82
7.6500	1.84	1.87	1.89	1.91	1.93
7.9000	1.96	1.98	2.00	2.02	2.06
8.1500	2.09	2.14	2.20	2.25	2.32
8.4000	2.38	2.44	2.51	2.57	2.64
8.6500	2.71	2.77	2.84	2.91	2.98
8.9000	3.05	3.12	3.20	3.26	3.33
9.1500	3.38	3.42	3.45	3.48	3.50
9.4000	3.52	3.54	3.56	3.58	3.62
9.6500	3.67	3.75	3.84	3.94	4.04
9.9000	4.16	4.27	4.38	4.50	4.63
10.1500	4.76	4.91	5.06	5.22	5.39
10.4000	5.56	5.73	5.91	6.09	6.28

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
10.6500	6.50	6.74	7.00	7.27	7.49
10.9000	7.74	8.00	8.27	8.55	8.88
11.1500	9.25	9.70	10.18	10.70	11.23
11.4000	11.77	12.31	12.89	14.12	16.92
11.6500	21.29	28.02	36.18	46.24	58.83
11.9000	76.68	91.04	94.13	91.99	85.63
12.1500	71.97	58.21	47.92	40.62	35.66
12.4000	32.31	30.03	27.91	26.02	24.37
12.6500	22.95	21.76	20.77	19.93	19.21
12.9000	18.56	18.09	17.71	17.45	17.19
13.1500	16.96	16.74	16.54	16.34	16.14
13.4000	15.94	15.74	15.54	15.34	15.14
13.6500	14.95	14.76	14.58	14.39	14.21
13.9000	14.02	13.84	13.64	13.45	13.26
14.1500	13.08	12.90	12.73	12.56	12.39
14.4000	12.20	12.02	11.83	11.64	11.43
14.6500	11.22	11.01	10.79	10.55	10.32
14.9000	10.07	9.80	9.52	9.21	8.87
15.1500	8.51	8.10	7.64	7.12	6.56
15.4000	5.94	5.13	4.67	4.45	4.33
15.6500	4.25	4.18	4.13	4.07	4.01
15.9000	3.96	3.90	3.85	3.79	3.74
16.1500	3.70	3.67	3.64	3.62	3.60
16.4000	3.58	3.56	3.54	3.52	3.50
16.6500	3.48	3.46	3.44	3.42	3.40
16.9000	3.38	3.36	3.34	3.32	3.30
17.1500	3.28	3.26	3.24	3.22	3.20
17.4000	3.18	3.16	3.14	3.12	3.10
17.6500	3.08	3.06	3.04	3.02	3.00
17.9000	2.98	2.96	2.94	2.92	2.90
18.1500	2.88	2.86	2.84	2.82	2.80
18.4000	2.78	2.76	2.74	2.72	2.70
18.6500	2.68	2.66	2.64	2.62	2.60
18.9000	2.58	2.56	2.54	2.52	2.50
19.1500	2.48	2.46	2.44	2.42	2.40
19.4000	2.38	2.36	2.34	2.32	2.30
19.6500	2.28	2.26	2.24	2.22	2.20
19.9000	2.18	2.16	2.14	2.12	2.11
20.1500	2.10	2.09	2.08	2.07	2.07
20.4000	2.06	2.06	2.05	2.05	2.05
20.6500	2.04	2.04	2.04	2.03	2.03
20.9000	2.02	2.02	2.02	2.01	2.01
21.1500	2.00	2.00	2.00	1.99	1.99
21.4000	1.98	1.98	1.98	1.97	1.97
21.6500	1.96	1.96	1.96	1.95	1.95

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
21.9000	1.94	1.94	1.94	1.93	1.93
22.1500	1.92	1.92	1.92	1.91	1.91
22.4000	1.90	1.90	1.90	1.89	1.89
22.6500	1.88	1.88	1.88	1.87	1.87
22.9000	1.86	1.86	1.86	1.85	1.85
23.1500	1.85	1.84	1.84	1.83	1.83
23.4000	1.83	1.82	1.82	1.81	1.81
23.6500	1.80	1.80	1.80	1.79	1.79
23.9000	1.78	1.78	1.78	1.66	1.24
24.1500	.70	.34	.16	.07	.03
24.4000	.02	.01	.00		

SUMMARY FOR HYDROGRAPH ADDITION
at Node: POST DEVELOPED

HYG Directory: H:\DWG\031486\DETENTION\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
STRUCTURE	BASIN	IN	STRUCTURE	25yr
ADDLINK 20	BYPASS		BYPASS	25yr

INFLOWS TO: POST DEVELOPED

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	STRUCTURE	25yr	6.447	12.1500	47.80
	BYPASS	25yr	5.761	12.0000	86.55

TOTAL FLOW INTO: POST DEVELOPED

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	POST DEVELOPED	25yr	12.207	12.0500	107.72

TOTAL NODE INFLOW...
HYG file =
HYG ID = POST DEVELOPED
HYG Tag = 25yr

Peak Discharge =	107.72 cfs
Time to Peak =	12.0500 hrs
HYG Volume =	12.207 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
2.7500	.00	.01	.01	.03	.05
3.0000	.06	.08	.10	.12	.14
3.2500	.15	.17	.19	.21	.23
3.5000	.25	.27	.28	.30	.32
3.7500	.34	.36	.37	.39	.41
4.0000	.43	.45	.47	.48	.50
4.2500	.52	.54	.56	.59	.61
4.5000	.63	.65	.67	.69	.71
4.7500	.73	.75	.77	.80	.82
5.0000	.84	.86	.88	.91	.93
5.2500	.95	.97	1.00	1.02	1.04
5.5000	1.06	1.09	1.11	1.13	1.16
5.7500	1.18	1.20	1.23	1.25	1.27
6.0000	1.30	1.32	1.34	1.37	1.39
6.2500	1.41	1.44	1.46	1.49	1.51
6.5000	1.53	1.56	1.58	1.61	1.63
6.7500	1.66	1.68	1.70	1.73	1.75
7.0000	1.78	1.80	1.83	1.85	1.87
7.2500	1.90	1.92	1.95	1.97	1.99
7.5000	2.02	2.04	2.07	2.09	2.12
7.7500	2.14	2.16	2.19	2.21	2.24
8.0000	2.26	2.29	2.32	2.37	2.42
8.2500	2.48	2.54	2.61	2.68	2.75
8.5000	2.82	2.89	2.97	3.04	3.12
8.7500	3.19	3.27	3.34	3.42	3.50
9.0000	3.58	3.65	3.72	3.78	3.82
9.2500	3.85	3.88	3.91	3.93	3.95
9.5000	3.97	3.99	4.03	4.09	4.17
9.7500	4.27	4.38	4.50	4.62	4.74
10.0000	4.86	4.99	5.13	5.27	5.44
10.2500	5.61	5.79	5.97	6.15	6.33

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
10.5000	6.52	6.72	6.94	7.17	7.40
10.7500	7.63	7.90	8.18	8.45	8.73
11.0000	9.02	9.32	9.68	10.07	10.55
11.2500	11.05	11.60	12.16	12.73	13.30
11.5000	13.91	15.23	18.24	22.94	30.19
11.7500	39.00	49.85	63.41	82.64	98.08
12.0000	104.07	107.72	103.43	84.92	66.88
12.2500	53.81	44.73	38.55	34.37	31.64
12.5000	29.42	27.42	25.66	24.15	22.89
12.7500	21.83	20.90	20.11	19.41	18.78
13.0000	18.30	17.92	17.66	17.42	17.20
13.2500	16.99	16.78	16.58	16.38	16.18
13.5000	15.97	15.77	15.57	15.37	15.18
13.7500	15.00	14.81	14.63	14.44	14.25
14.0000	14.06	13.87	13.68	13.51	13.34
14.2500	13.17	13.01	12.84	12.67	12.50
14.5000	12.32	12.14	11.95	11.75	11.55
14.7500	11.35	11.13	10.91	10.69	10.45
15.0000	10.21	9.95	9.67	9.37	9.05
15.2500	8.69	8.31	7.88	7.40	6.86
15.5000	6.29	5.61	5.02	4.73	4.57
15.7500	4.47	4.40	4.33	4.27	4.21
16.0000	4.15	4.09	4.04	4.00	3.96
16.2500	3.93	3.90	3.88	3.86	3.84
16.5000	3.82	3.80	3.77	3.75	3.73
16.7500	3.71	3.69	3.67	3.64	3.62
17.0000	3.60	3.58	3.56	3.54	3.52
17.2500	3.49	3.47	3.45	3.43	3.41
17.5000	3.39	3.37	3.34	3.32	3.30
17.7500	3.28	3.26	3.24	3.22	3.20
18.0000	3.17	3.15	3.13	3.11	3.09
18.2500	3.06	3.04	3.02	3.00	2.98
18.5000	2.96	2.94	2.92	2.89	2.87
18.7500	2.85	2.83	2.81	2.79	2.77
19.0000	2.74	2.72	2.70	2.68	2.66
19.2500	2.64	2.61	2.59	2.57	2.55
19.5000	2.53	2.51	2.48	2.46	2.44
19.7500	2.42	2.40	2.38	2.35	2.33
20.0000	2.31	2.29	2.27	2.26	2.25
20.2500	2.24	2.23	2.23	2.23	2.22
20.5000	2.22	2.21	2.21	2.20	2.20
20.7500	2.20	2.19	2.19	2.18	2.18
21.0000	2.17	2.17	2.16	2.16	2.16
21.2500	2.15	2.15	2.14	2.14	2.13
21.5000	2.13	2.13	2.12	2.12	2.11

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
21.7500	2.11	2.11	2.10	2.10	2.09
22.0000	2.09	2.08	2.08	2.08	2.07
22.2500	2.07	2.06	2.06	2.05	2.05
22.5000	2.05	2.04	2.04	2.03	2.03
22.7500	2.02	2.02	2.01	2.01	2.01
23.0000	2.00	2.00	1.99	1.99	1.99
23.2500	1.98	1.98	1.97	1.97	1.96
23.5000	1.96	1.96	1.95	1.95	1.94
23.7500	1.94	1.93	1.93	1.92	1.92
24.0000	1.91	1.79	1.33	.76	.36
24.2500	.17	.08	.04	.02	.01
24.5000	.00				

SUMMARY FOR HYDROGRAPH ADDITION
at Node: POST DEVELOPED

HYG Directory: H:\DWG\031486\DETENTION\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
STRUCTURE	BASIN	IN	STRUCTURE	100yr
ADDLINK 20	BYPASS		BYPASS	100yr

INFLOWS TO: POST DEVELOPED

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	STRUCTURE	100yr	8.175	12.1000	83.39
	BYPASS	100yr	7.305	12.0000	108.15

TOTAL FLOW INTO: POST DEVELOPED

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	POST DEVELOPED	100yr	15.480	12.0500	171.93

RATIONAL
14.4 X 6.08 = 88
83
88
171 ✓
OK.

TOTAL NODE INFLOW...
HYG file =
HYG ID = POST DEVELOPED
HYG Tag = 100yr

Peak Discharge =	171.93 cfs
Time to Peak =	12.0500 hrs
HYG Volume =	15.480 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
2.2500	.00	.00	.01	.02	.04
2.5000	.07	.09	.12	.14	.17
2.7500	.19	.22	.24	.27	.29
3.0000	.32	.34	.37	.39	.42
3.2500	.44	.47	.49	.52	.54
3.5000	.57	.59	.62	.64	.67
3.7500	.69	.71	.74	.76	.79
4.0000	.81	.83	.86	.88	.91
4.2500	.94	.96	.99	1.02	1.04
4.5000	1.07	1.10	1.13	1.16	1.18
4.7500	1.21	1.24	1.27	1.30	1.33
5.0000	1.35	1.38	1.41	1.44	1.47
5.2500	1.50	1.53	1.56	1.59	1.62
5.5000	1.65	1.67	1.70	1.73	1.76
5.7500	1.79	1.82	1.85	1.88	1.91
6.0000	1.94	1.97	2.00	2.03	2.06
6.2500	2.09	2.12	2.15	2.18	2.21
6.5000	2.24	2.27	2.30	2.33	2.36
6.7500	2.39	2.42	2.45	2.48	2.51
7.0000	2.54	2.57	2.60	2.63	2.66
7.2500	2.69	2.72	2.75	2.78	2.81
7.5000	2.84	2.87	2.90	2.93	2.96
7.7500	2.99	3.02	3.05	3.08	3.11
8.0000	3.14	3.18	3.22	3.27	3.34
8.2500	3.42	3.50	3.59	3.68	3.77
8.5000	3.87	3.96	4.06	4.15	4.25
8.7500	4.35	4.44	4.54	4.64	4.74
9.0000	4.84	4.94	5.02	5.09	5.15
9.2500	5.19	5.22	5.25	5.27	5.29
9.5000	5.31	5.34	5.39	5.46	5.56
9.7500	5.68	5.82	5.97	6.12	6.27

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
10.0000	6.43	6.59	6.77	6.96	7.16
10.2500	7.35	7.54	7.74	7.96	8.18
10.5000	8.39	8.62	8.87	9.13	9.42
10.7500	9.72	10.05	10.37	10.70	11.04
11.0000	11.37	11.73	12.15	12.61	13.17
11.2500	13.76	14.39	15.03	15.69	16.35
11.5000	17.06	18.65	22.36	28.15	37.15
11.7500	48.04	61.41	78.10	101.86	126.08
12.0000	154.97	171.93	154.26	119.05	89.49
12.2500	69.43	56.17	47.33	41.14	36.76
12.5000	33.48	31.27	29.32	27.62	26.18
12.7500	24.97	23.91	22.96	22.09	21.30
13.0000	20.56	19.92	19.35	18.92	18.59
13.2500	18.36	18.14	17.93	17.71	17.50
13.5000	17.28	17.06	16.85	16.65	16.45
13.7500	16.26	16.07	15.88	15.68	15.49
14.0000	15.29	15.10	14.92	14.75	14.60
14.2500	14.45	14.30	14.16	14.01	13.86
14.5000	13.70	13.55	13.39	13.22	13.06
14.7500	12.89	12.71	12.53	12.35	12.16
15.0000	11.97	11.77	11.56	11.36	11.14
15.2500	10.91	10.68	10.45	10.19	9.92
15.5000	9.64	9.33	8.99	8.63	8.24
15.7500	7.82	7.37	6.87	6.38	5.81
16.0000	5.40	5.17	5.04	4.96	4.91
16.2500	4.87	4.83	4.80	4.78	4.75
16.5000	4.72	4.70	4.67	4.64	4.61
16.7500	4.59	4.56	4.53	4.51	4.48
17.0000	4.45	4.43	4.40	4.38	4.35
17.2500	4.32	4.30	4.27	4.24	4.22
17.5000	4.19	4.16	4.14	4.11	4.08
17.7500	4.06	4.03	4.00	3.98	3.95
18.0000	3.92	3.90	3.87	3.85	3.82
18.2500	3.79	3.76	3.74	3.71	3.68
18.5000	3.66	3.63	3.61	3.58	3.55
18.7500	3.53	3.50	3.47	3.44	3.42
19.0000	3.39	3.36	3.34	3.31	3.28
19.2500	3.26	3.23	3.21	3.18	3.15
19.5000	3.12	3.10	3.07	3.04	3.02
19.7500	2.99	2.97	2.94	2.91	2.89
20.0000	2.86	2.83	2.81	2.79	2.78
20.2500	2.77	2.76	2.76	2.75	2.74
20.5000	2.74	2.74	2.73	2.72	2.72
20.7500	2.71	2.71	2.70	2.70	2.69
21.0000	2.69	2.68	2.68	2.67	2.67

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
21.2500	2.66	2.65	2.65	2.64	2.64
21.5000	2.63	2.63	2.62	2.62	2.61
21.7500	2.61	2.60	2.60	2.59	2.59
22.0000	2.58	2.57	2.57	2.57	2.56
22.2500	2.55	2.55	2.54	2.54	2.53
22.5000	2.53	2.52	2.52	2.51	2.51
22.7500	2.50	2.50	2.49	2.48	2.48
23.0000	2.47	2.47	2.46	2.46	2.45
23.2500	2.45	2.44	2.44	2.43	2.43
23.5000	2.42	2.42	2.41	2.40	2.40
23.7500	2.40	2.39	2.38	2.38	2.37
24.0000	2.37	2.23	1.70	.93	.45
24.2500	.21	.10	.05	.02	.01
24.5000	.00				

SUMMARY FOR HYDROGRAPH ADDITION
at Node: PRE-DEVELOPED

HYG Directory: H:\DWG\031486\DETENTION\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ADDLINK 10	SUBAREA 10		SUBAREA 10	2yr

INFLOWS TO: PRE-DEVELOPED

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	SUBAREA 10	2yr	3.658	12.0000	60.15

TOTAL FLOW INTO: PRE-DEVELOPED

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	PRE-DEVELOPED	2yr	3.658	12.0000	60.15

TOTAL NODE INFLOW...
HYG file =
HYG ID = PRE-DEVELOPED
HYG Tag = 2yr

Peak Discharge = 60.15 cfs
Time to Peak = 12.0000 hrs
HYG Volume = 3.658 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
9.7500	.00	.00	.01	.02	.04
10.0000	.05	.07	.09	.12	.14
10.2500	.17	.19	.22	.25	.29
10.5000	.32	.36	.40	.44	.49
10.7500	.54	.60	.66	.72	.79
11.0000	.86	.94	1.03	1.14	1.26
11.2500	1.40	1.56	1.72	1.90	2.09
11.5000	2.30	2.78	3.94	5.82	9.05
11.7500	13.45	19.66	28.82	43.55	56.68
12.0000	60.15	55.31	40.90	26.56	18.42
12.2500	14.40	12.12	10.67	9.60	8.73
12.5000	7.91	7.23	6.65	6.20	5.89
12.7500	5.66	5.47	5.29	5.11	4.94
13.0000	4.77	4.61	4.46	4.33	4.22
13.2500	4.12	4.02	3.93	3.83	3.74
13.5000	3.64	3.55	3.46	3.38	3.31
13.7500	3.24	3.17	3.10	3.03	2.96
14.0000	2.89	2.83	2.77	2.73	2.69
14.2500	2.66	2.64	2.61	2.59	2.57
14.5000	2.54	2.52	2.50	2.47	2.45
14.7500	2.43	2.40	2.38	2.35	2.33
15.0000	2.31	2.28	2.26	2.24	2.21
15.2500	2.18	2.16	2.14	2.11	2.09
15.5000	2.06	2.04	2.01	1.99	1.96
15.7500	1.94	1.91	1.89	1.86	1.84
16.0000	1.81	1.79	1.77	1.75	1.74
16.2500	1.73	1.72	1.71	1.70	1.69
16.5000	1.68	1.68	1.67	1.66	1.65
16.7500	1.64	1.63	1.62	1.62	1.61
17.0000	1.60	1.59	1.58	1.57	1.56
17.2500	1.55	1.55	1.54	1.53	1.52

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
17.5000	1.51	1.50	1.49	1.48	1.47
17.7500	1.47	1.46	1.45	1.44	1.43
18.0000	1.42	1.41	1.40	1.39	1.38
18.2500	1.37	1.37	1.36	1.35	1.34
18.5000	1.33	1.32	1.31	1.30	1.29
18.7500	1.28	1.27	1.26	1.26	1.25
19.0000	1.24	1.23	1.22	1.21	1.20
19.2500	1.19	1.18	1.17	1.16	1.15
19.5000	1.14	1.13	1.12	1.11	1.10
19.7500	1.10	1.09	1.08	1.07	1.06
20.0000	1.05	1.04	1.03	1.03	1.02
20.2500	1.02	1.02	1.02	1.01	1.01
20.5000	1.01	1.01	1.01	1.01	1.00
20.7500	1.00	1.00	1.00	1.00	1.00
21.0000	.99	.99	.99	.99	.99
21.2500	.99	.98	.98	.98	.98
21.5000	.98	.98	.97	.97	.97
21.7500	.97	.97	.96	.96	.96
22.0000	.96	.96	.96	.96	.95
22.2500	.95	.95	.95	.95	.94
22.5000	.94	.94	.94	.94	.94
22.7500	.93	.93	.93	.93	.93
23.0000	.92	.92	.92	.92	.92
23.2500	.92	.91	.91	.91	.91
23.5000	.91	.91	.90	.90	.90
23.7500	.90	.90	.89	.89	.89
24.0000	.89	.80	.53	.26	.12
24.2500	.06	.02	.01	.00	.00
24.5000	.00				

SUMMARY FOR HYDROGRAPH ADDITION
at Node: PRE-DEVELOPED

HYG Directory: H:\DWG\031486\DETENTION\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ADDLINK 10	SUBAREA 10		SUBAREA 10	15yr

INFLOWS TO: PRE-DEVELOPED

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	SUBAREA 10	15yr	7.354	12.0000	120.95

TOTAL FLOW INTO: PRE-DEVELOPED

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	PRE-DEVELOPED	15yr	7.354	12.0000	120.95

TOTAL NODE INFLOW...
HYG file =
HYG ID = PRE-DEVELOPED
HYG Tag = 15yr

Peak Discharge =	120.95 cfs
Time to Peak =	12.0000 hrs
HYG Volume =	7.354 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
7.7000	.00	.00	.01	.02	.03
7.9500	.04	.06	.07	.08	.10
8.2000	.12	.13	.15	.17	.19
8.4500	.21	.23	.26	.28	.30
8.7000	.33	.36	.38	.41	.44
8.9500	.47	.50	.53	.56	.59
9.2000	.62	.64	.67	.69	.72
9.4500	.74	.77	.79	.82	.85
9.7000	.90	.94	.99	1.04	1.09
9.9500	1.14	1.20	1.25	1.32	1.38
10.2000	1.46	1.53	1.61	1.70	1.79
10.4500	1.87	1.97	2.06	2.18	2.29
10.7000	2.43	2.57	2.72	2.87	3.04
10.9500	3.20	3.38	3.57	3.80	4.07
11.2000	4.39	4.74	5.13	5.53	5.96
11.4500	6.39	6.86	8.08	11.10	15.84
11.7000	23.61	33.57	46.81	65.27	93.85
11.9500	117.49	120.95	108.68	79.31	51.04
12.2000	35.08	27.17	22.71	19.89	17.82
12.4500	16.16	14.61	13.34	12.24	11.39
12.7000	10.81	10.38	10.01	9.68	9.34
12.9500	9.02	8.69	8.39	8.11	7.87
13.2000	7.66	7.47	7.29	7.11	6.93
13.4500	6.76	6.58	6.42	6.25	6.11
13.7000	5.97	5.84	5.71	5.58	5.45
13.9500	5.33	5.20	5.08	4.98	4.90
14.2000	4.83	4.77	4.73	4.69	4.64
14.4500	4.59	4.55	4.51	4.46	4.42
14.7000	4.38	4.34	4.29	4.24	4.20
14.9500	4.16	4.11	4.07	4.02	3.98
15.2000	3.93	3.89	3.85	3.80	3.76

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
15.4500	3.71	3.67	3.62	3.57	3.53
15.7000	3.48	3.44	3.39	3.35	3.30
15.9500	3.26	3.21	3.17	3.13	3.10
16.2000	3.08	3.06	3.04	3.03	3.01
16.4500	2.99	2.98	2.96	2.95	2.93
16.7000	2.91	2.90	2.88	2.87	2.85
16.9500	2.84	2.82	2.80	2.79	2.77
17.2000	2.75	2.74	2.72	2.71	2.69
17.4500	2.67	2.66	2.64	2.62	2.61
17.7000	2.59	2.58	2.56	2.54	2.53
17.9500	2.51	2.49	2.48	2.46	2.45
18.2000	2.43	2.41	2.40	2.38	2.36
18.4500	2.35	2.33	2.32	2.30	2.28
18.7000	2.26	2.25	2.23	2.21	2.20
18.9500	2.18	2.16	2.15	2.13	2.12
19.2000	2.10	2.08	2.06	2.05	2.03
19.4500	2.01	2.00	1.98	1.96	1.95
19.7000	1.93	1.92	1.90	1.88	1.86
19.9500	1.85	1.83	1.81	1.80	1.79
20.2000	1.79	1.78	1.78	1.77	1.77
20.4500	1.77	1.76	1.76	1.76	1.75
20.7000	1.75	1.75	1.75	1.74	1.74
20.9500	1.74	1.73	1.73	1.73	1.72
21.2000	1.72	1.72	1.71	1.71	1.71
21.4500	1.70	1.70	1.70	1.69	1.69
21.7000	1.69	1.69	1.68	1.68	1.68
21.9500	1.67	1.67	1.66	1.66	1.66
22.2000	1.66	1.65	1.65	1.65	1.64
22.4500	1.64	1.64	1.64	1.63	1.63
22.7000	1.62	1.62	1.62	1.61	1.61
22.9500	1.61	1.60	1.60	1.60	1.60
23.2000	1.59	1.59	1.59	1.58	1.58
23.4500	1.57	1.57	1.57	1.57	1.56
23.7000	1.56	1.56	1.55	1.55	1.55
23.9500	1.54	1.54	1.39	.92	.45
24.2000	.21	.10	.04	.02	.01
24.4500	.00	.00			

SUMMARY FOR HYDROGRAPH ADDITION
at Node: PRE-DEVELOPED

HYG Directory: H:\DWG\031486\DETENTION\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ADDLINK 10	SUBAREA 10		SUBAREA 10	25yr

INFLOWS TO: PRE-DEVELOPED

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	SUBAREA 10	25yr	8.230	12.0000	135.02

TOTAL FLOW INTO: PRE-DEVELOPED

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	PRE-DEVELOPED	25yr	8.230	12.0000	135.02

TOTAL NODE INFLOW...
HYG file =
HYG ID = PRE-DEVELOPED
HYG Tag = 25yr

Peak Discharge =	135.02 cfs
Time to Peak =	12.0000 hrs
HYG Volume =	8.230 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
7.3000	.00	.00	.01	.01	.03
7.5500	.04	.05	.07	.08	.10
7.8000	.11	.13	.14	.16	.18
8.0500	.19	.21	.23	.25	.27
8.3000	.29	.31	.34	.36	.39
8.5500	.42	.45	.48	.51	.54
8.8000	.57	.61	.64	.68	.71
9.0500	.75	.78	.82	.85	.87
9.3000	.90	.93	.96	.98	1.01
9.5500	1.04	1.07	1.11	1.16	1.21
9.8000	1.26	1.32	1.38	1.44	1.51
10.0500	1.58	1.65	1.73	1.81	1.90
10.3000	2.00	2.09	2.20	2.30	2.41
10.5500	2.52	2.65	2.78	2.94	3.10
10.8000	3.27	3.45	3.64	3.83	4.03
11.0500	4.25	4.52	4.82	5.20	5.60
11.3000	6.04	6.50	6.98	7.47	8.01
11.5500	9.41	12.88	18.32	27.19	38.48
11.8000	53.37	73.98	105.71	131.69	135.02
12.0500	120.96	88.10	56.63	38.88	30.08
12.3000	25.12	21.98	19.68	17.84	16.12
12.5500	14.72	13.50	12.57	11.92	11.45
12.8000	11.03	10.66	10.29	9.94	9.58
13.0500	9.24	8.93	8.67	8.43	8.22
13.3000	8.02	7.83	7.63	7.44	7.25
13.5500	7.06	6.88	6.72	6.56	6.42
13.8000	6.28	6.14	5.99	5.86	5.71
14.0500	5.59	5.47	5.38	5.31	5.25
14.3000	5.20	5.15	5.10	5.05	5.00
14.5500	4.96	4.91	4.86	4.81	4.76
14.8000	4.71	4.66	4.61	4.57	4.52

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
15.0500	4.47	4.42	4.37	4.32	4.27
15.3000	4.22	4.18	4.12	4.07	4.02
15.5500	3.98	3.92	3.87	3.82	3.78
15.8000	3.72	3.67	3.62	3.58	3.52
16.0500	3.48	3.43	3.40	3.38	3.36
16.3000	3.34	3.32	3.30	3.28	3.27
16.5500	3.25	3.23	3.21	3.20	3.18
16.8000	3.16	3.14	3.13	3.11	3.09
17.0500	3.07	3.06	3.04	3.02	3.00
17.3000	2.98	2.97	2.95	2.93	2.91
17.5500	2.90	2.88	2.86	2.84	2.83
17.8000	2.81	2.79	2.77	2.75	2.73
18.0500	2.72	2.70	2.68	2.66	2.64
18.3000	2.63	2.61	2.59	2.57	2.55
18.5500	2.54	2.52	2.50	2.48	2.46
18.8000	2.44	2.43	2.41	2.39	2.37
19.0500	2.35	2.34	2.32	2.30	2.28
19.3000	2.26	2.25	2.23	2.21	2.19
19.5500	2.17	2.15	2.13	2.12	2.10
19.8000	2.08	2.06	2.04	2.02	2.00
20.0500	1.99	1.97	1.96	1.96	1.95
20.3000	1.95	1.94	1.94	1.93	1.93
20.5500	1.93	1.92	1.92	1.92	1.92
20.8000	1.91	1.91	1.90	1.90	1.90
21.0500	1.89	1.89	1.89	1.88	1.88
21.3000	1.88	1.87	1.87	1.86	1.86
21.5500	1.86	1.85	1.85	1.85	1.85
21.8000	1.84	1.84	1.83	1.83	1.83
22.0500	1.82	1.82	1.82	1.81	1.81
22.3000	1.81	1.80	1.80	1.79	1.79
22.5500	1.79	1.78	1.78	1.78	1.78
22.8000	1.77	1.77	1.76	1.76	1.76
23.0500	1.75	1.75	1.75	1.74	1.74
23.3000	1.73	1.73	1.73	1.72	1.72
23.5500	1.72	1.71	1.71	1.71	1.70
23.8000	1.70	1.69	1.69	1.69	1.68
24.0500	1.52	1.00	.49	.23	.10
24.3000	.05	.02	.01	.00	.00

SUMMARY FOR HYDROGRAPH ADDITION
at Node: PRE-DEVELOPED

HYG Directory: H:\DWG\031486\DETENTION\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ADDLINK 10	SUBAREA 10		SUBAREA 10	100yr

INFLOWS TO: PRE-DEVELOPED

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	SUBAREA 10	100yr	11.164	12.0000	181.40

TOTAL FLOW INTO: PRE-DEVELOPED

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	PRE-DEVELOPED	100yr	11.164	12.0000	181.40

TOTAL NODE INFLOW...
HYG file =
HYG ID = PRE-DEVELOPED
HYG Tag = 100yr

Peak Discharge =	181.40 cfs
Time to Peak =	12.0000 hrs
HYG Volume =	11.164 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
6.3500	.00	.01	.02	.03	.05
6.6000	.07	.08	.10	.12	.14
6.8500	.16	.18	.20	.21	.23
7.1000	.25	.27	.29	.31	.33
7.3500	.35	.37	.40	.42	.44
7.6000	.46	.48	.50	.52	.54
7.8500	.57	.59	.61	.63	.66
8.1000	.68	.71	.75	.78	.82
8.3500	.86	.90	.94	.99	1.03
8.6000	1.08	1.12	1.17	1.22	1.27
8.8500	1.33	1.38	1.44	1.49	1.55
9.1000	1.60	1.64	1.68	1.72	1.76
9.3500	1.79	1.82	1.86	1.89	1.93
9.6000	1.97	2.03	2.10	2.18	2.27
9.8500	2.35	2.44	2.54	2.63	2.73
10.1000	2.84	2.96	3.09	3.22	3.36
10.3500	3.50	3.65	3.80	3.96	4.12
10.6000	4.31	4.51	4.74	4.97	5.23
10.8500	5.48	5.75	6.02	6.31	6.62
11.1000	7.01	7.45	7.99	8.56	9.20
11.3500	9.84	10.53	11.22	11.96	13.98
11.6000	19.00	26.81	39.37	55.10	75.46
11.8500	103.12	145.19	178.67	181.40	161.28
12.1000	116.96	74.95	51.29	39.56	32.96
12.3500	28.79	25.74	23.32	21.06	19.21
12.6000	17.61	16.38	15.54	14.91	14.36
12.8500	13.88	13.39	12.92	12.45	12.01
13.1000	11.61	11.26	10.95	10.68	10.41
13.3500	10.16	9.90	9.65	9.40	9.15
13.6000	8.92	8.70	8.50	8.32	8.13
13.8500	7.95	7.76	7.58	7.39	7.23

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
14.1000	7.08	6.96	6.86	6.79	6.72
14.3500	6.66	6.59	6.53	6.46	6.40
14.6000	6.34	6.27	6.21	6.15	6.08
14.8500	6.02	5.96	5.90	5.83	5.76
15.1000	5.70	5.64	5.57	5.51	5.45
15.3500	5.39	5.32	5.25	5.19	5.13
15.6000	5.06	4.99	4.93	4.87	4.80
15.8500	4.73	4.67	4.61	4.54	4.48
16.1000	4.42	4.38	4.35	4.32	4.30
16.3500	4.27	4.25	4.22	4.20	4.18
16.6000	4.16	4.13	4.11	4.09	4.07
16.8500	4.04	4.02	4.00	3.97	3.95
17.1000	3.93	3.91	3.88	3.86	3.84
17.3500	3.82	3.79	3.77	3.74	3.72
17.6000	3.70	3.67	3.65	3.63	3.60
17.8500	3.58	3.56	3.54	3.51	3.49
18.1000	3.46	3.44	3.42	3.39	3.37
18.3500	3.35	3.32	3.30	3.28	3.26
18.6000	3.23	3.21	3.18	3.16	3.14
18.8500	3.11	3.09	3.07	3.04	3.02
19.1000	3.00	2.97	2.95	2.92	2.90
19.3500	2.88	2.85	2.83	2.81	2.78
19.6000	2.76	2.73	2.71	2.69	2.66
19.8500	2.64	2.62	2.59	2.57	2.55
20.1000	2.53	2.52	2.51	2.50	2.49
20.3500	2.49	2.48	2.48	2.48	2.47
20.6000	2.47	2.46	2.46	2.45	2.45
20.8500	2.44	2.44	2.44	2.43	2.42
21.1000	2.42	2.42	2.41	2.41	2.40
21.3500	2.40	2.39	2.39	2.38	2.38
21.6000	2.37	2.37	2.37	2.36	2.36
21.8500	2.35	2.35	2.34	2.34	2.33
22.1000	2.33	2.33	2.32	2.31	2.31
22.3500	2.31	2.30	2.30	2.29	2.29
22.6000	2.28	2.28	2.27	2.27	2.26
22.8500	2.26	2.26	2.25	2.25	2.24
23.1000	2.24	2.23	2.23	2.22	2.22
23.3500	2.21	2.21	2.20	2.20	2.20
23.6000	2.19	2.18	2.18	2.18	2.17
23.8500	2.17	2.16	2.16	2.15	1.94
24.1000	1.28	.63	.29	.13	.06
24.3500	.03	.01	.00	.00	

TIME vs. ELEVATION (ft)

Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
4.2000	593.55	593.55	593.56	593.57	593.58
4.4500	593.60	593.61	593.62	593.63	593.65
4.7000	593.65	593.66	593.66	593.66	593.67
4.9500	593.67	593.68	593.68	593.68	593.69
5.2000	593.69	593.70	593.70	593.71	593.71
5.4500	593.71	593.72	593.72	593.73	593.73
5.7000	593.74	593.74	593.75	593.75	593.75
5.9500	593.75	593.76	593.76	593.76	593.76
6.2000	593.77	593.77	593.77	593.77	593.78
6.4500	593.78	593.78	593.78	593.79	593.79
6.7000	593.79	593.79	593.80	593.80	593.80
6.9500	593.80	593.81	593.81	593.81	593.82
7.2000	593.82	593.82	593.82	593.83	593.83
7.4500	593.83	593.83	593.84	593.84	593.84
7.7000	593.85	593.85	593.85	593.85	593.85
7.9500	593.86	593.86	593.86	593.86	593.86
8.2000	593.87	593.87	593.87	593.88	593.88
8.4500	593.89	593.89	593.90	593.90	593.90
8.7000	593.91	593.91	593.92	593.92	593.93
8.9500	593.93	593.94	593.94	593.95	593.95
9.2000	593.95	593.95	593.96	593.96	593.96
9.4500	593.96	593.96	593.96	593.97	593.97
9.7000	593.97	593.98	593.98	593.99	593.99
9.9500	594.00	594.01	594.02	594.03	594.03
10.2000	594.04	594.05	594.06	594.07	594.08
10.4500	594.09	594.10	594.11	594.12	594.14
10.7000	594.15	594.16	594.18	594.19	594.21
10.9500	594.22	594.24	594.25	594.27	594.29
11.2000	594.32	594.34	594.37	594.40	594.44
11.4500	594.47	594.51	594.57	594.70	594.92
11.7000	595.22	595.58	595.98	596.43	596.96
11.9500	597.54	598.07	598.50	598.81	598.98
12.2000	599.04	599.05	599.04	599.01	598.97
12.4500	598.92	598.86	598.80	598.73	598.66
12.7000	598.59	598.51	598.44	598.36	598.28
12.9500	598.20	598.12	598.04	597.96	597.87
13.2000	597.78	597.69	597.60	597.51	597.41
13.4500	597.32	597.22	597.12	597.01	596.90
13.7000	596.79	596.68	596.57	596.45	596.33
13.9500	596.21	596.08	595.95	595.81	595.67
14.2000	595.51	595.35	595.17	594.98	594.78
14.4500	594.57	594.37	594.24	594.17	594.15
14.7000	594.13	594.13	594.12	594.12	594.12

TIME vs. ELEVATION (ft)

Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
14.9500	594.11	594.11	594.10	594.10	594.10
15.2000	594.09	594.09	594.09	594.08	594.08
15.4500	594.08	594.07	594.07	594.07	594.06
15.7000	594.06	594.06	594.05	594.05	594.04
15.9500	594.04	594.04	594.03	594.03	594.02
16.2000	594.02	594.02	594.02	594.02	594.02
16.4500	594.01	594.01	594.01	594.01	594.01
16.7000	594.01	594.01	594.00	594.00	594.00
16.9500	594.00	594.00	594.00	594.00	593.99
17.2000	593.99	593.99	593.99	593.99	593.99
17.4500	593.99	593.98	593.98	593.98	593.98
17.7000	593.98	593.98	593.98	593.97	593.97
17.9500	593.97	593.97	593.97	593.97	593.97
18.2000	593.97	593.97	593.96	593.96	593.96
18.4500	593.96	593.96	593.96	593.96	593.96
18.7000	593.96	593.95	593.95	593.95	593.95
18.9500	593.95	593.95	593.95	593.95	593.94
19.2000	593.94	593.94	593.94	593.94	593.94
19.4500	593.93	593.93	593.93	593.93	593.93
19.7000	593.93	593.93	593.92	593.92	593.92
19.9500	593.92	593.92	593.92	593.91	593.91
20.2000	593.91	593.91	593.91	593.91	593.91
20.4500	593.91	593.91	593.91	593.91	593.91
20.7000	593.91	593.91	593.91	593.91	593.91
20.9500	593.91	593.91	593.91	593.91	593.91
21.2000	593.91	593.91	593.91	593.91	593.90
21.4500	593.90	593.90	593.90	593.90	593.90
21.7000	593.90	593.90	593.90	593.90	593.90
21.9500	593.90	593.90	593.90	593.90	593.90
22.2000	593.90	593.90	593.90	593.90	593.90
22.4500	593.90	593.90	593.90	593.90	593.90
22.7000	593.90	593.90	593.90	593.90	593.90
22.9500	593.90	593.89	593.89	593.89	593.89
23.2000	593.89	593.89	593.89	593.89	593.89
23.4500	593.89	593.89	593.89	593.89	593.89
23.7000	593.89	593.89	593.89	593.89	593.89
23.9500	593.89	593.89	593.88	593.85	593.79
24.2000	593.72	593.67	593.62	593.58	593.56
24.4500	593.56	593.55			

TIME vs. ELEVATION (ft)

Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
2.9000	593.55	593.55	593.56	593.57	593.59
3.1500	593.61	593.63	593.65	593.66	593.66
3.4000	593.67	593.68	593.68	593.69	593.70
3.6500	593.70	593.71	593.72	593.72	593.73
3.9000	593.73	593.74	593.75	593.75	593.76
4.1500	593.76	593.76	593.77	593.77	593.77
4.4000	593.78	593.78	593.78	593.79	593.79
4.6500	593.80	593.80	593.80	593.81	593.81
4.9000	593.81	593.82	593.82	593.83	593.83
5.1500	593.83	593.84	593.84	593.85	593.85
5.4000	593.85	593.86	593.86	593.86	593.86
5.6500	593.87	593.87	593.87	593.87	593.88
5.9000	593.88	593.88	593.88	593.89	593.89
6.1500	593.89	593.89	593.90	593.90	593.90
6.4000	593.90	593.91	593.91	593.91	593.92
6.6500	593.92	593.92	593.92	593.93	593.93
6.9000	593.93	593.93	593.94	593.94	593.94
7.1500	593.95	593.95	593.95	593.95	593.95
7.4000	593.96	593.96	593.96	593.96	593.96
7.6500	593.97	593.97	593.97	593.97	593.97
7.9000	593.98	593.98	593.98	593.98	593.99
8.1500	593.99	594.00	594.00	594.01	594.01
8.4000	594.02	594.03	594.04	594.04	594.05
8.6500	594.06	594.06	594.07	594.08	594.08
8.9000	594.09	594.10	594.11	594.11	594.12
9.1500	594.13	594.13	594.13	594.14	594.14
9.4000	594.14	594.14	594.14	594.15	594.15
9.6500	594.15	594.16	594.17	594.18	594.19
9.9000	594.20	594.21	594.22	594.23	594.24
10.1500	594.25	594.26	594.27	594.29	594.30
10.4000	594.31	594.33	594.34	594.36	594.37
10.6500	594.39	594.41	594.43	594.45	594.47
10.9000	594.50	594.53	594.57	594.60	594.64
11.1500	594.69	594.74	594.80	594.87	594.94
11.4000	595.01	595.09	595.17	595.27	595.43
11.6500	595.67	595.99	596.41	596.90	597.47
11.9000	598.12	598.87	599.61	600.20	600.54
12.1500	600.63	600.58	600.49	600.39	600.30
12.4000	600.22	600.13	600.05	599.97	599.89
12.6500	599.81	599.73	599.66	599.58	599.52
12.9000	599.45	599.38	599.32	599.25	599.18
13.1500	599.11	599.04	598.97	598.89	598.82
13.4000	598.74	598.67	598.59	598.51	598.44

TIME vs. ELEVATION (ft)

Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
13.6500	598.36	598.28	598.20	598.12	598.04
13.9000	597.95	597.87	597.79	597.70	597.61
14.1500	597.52	597.43	597.33	597.24	597.14
14.4000	597.04	596.94	596.84	596.73	596.63
14.6500	596.52	596.41	596.30	596.19	596.07
14.9000	595.96	595.83	595.71	595.57	595.43
15.1500	595.29	595.13	594.97	594.80	594.63
15.4000	594.46	594.34	594.27	594.24	594.22
15.6500	594.21	594.20	594.20	594.19	594.19
15.9000	594.18	594.18	594.17	594.17	594.16
16.1500	594.16	594.16	594.15	594.15	594.15
16.4000	594.15	594.15	594.14	594.14	594.14
16.6500	594.14	594.14	594.13	594.13	594.13
16.9000	594.13	594.13	594.12	594.12	594.12
17.1500	594.12	594.12	594.11	594.11	594.11
17.4000	594.11	594.11	594.10	594.10	594.10
17.6500	594.10	594.10	594.09	594.09	594.09
17.9000	594.09	594.09	594.08	594.08	594.08
18.1500	594.08	594.08	594.07	594.07	594.07
18.4000	594.07	594.07	594.06	594.06	594.06
18.6500	594.06	594.06	594.05	594.05	594.05
18.9000	594.05	594.05	594.04	594.04	594.04
19.1500	594.04	594.03	594.03	594.03	594.03
19.4000	594.03	594.02	594.02	594.02	594.02
19.6500	594.01	594.01	594.01	594.01	594.00
19.9000	594.00	594.00	594.00	594.00	593.99
20.1500	593.99	593.99	593.99	593.99	593.99
20.4000	593.99	593.99	593.99	593.99	593.99
20.6500	593.99	593.99	593.99	593.98	593.98
20.9000	593.98	593.98	593.98	593.98	593.98
21.1500	593.98	593.98	593.98	593.98	593.98
21.4000	593.98	593.98	593.98	593.98	593.98
21.6500	593.98	593.98	593.98	593.98	593.98
21.9000	593.98	593.97	593.97	593.97	593.97
22.1500	593.97	593.97	593.97	593.97	593.97
22.4000	593.97	593.97	593.97	593.97	593.97
22.6500	593.97	593.97	593.97	593.97	593.97
22.9000	593.97	593.97	593.97	593.97	593.97
23.1500	593.97	593.97	593.97	593.97	593.97
23.4000	593.97	593.96	593.96	593.96	593.96
23.6500	593.96	593.96	593.96	593.96	593.96
23.9000	593.96	593.96	593.96	593.95	593.91
24.1500	593.84	593.76	593.69	593.65	593.60
24.4000	593.57	593.56	593.55		

TIME vs. ELEVATION (ft)

Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
2.7500	593.55	593.56	593.57	593.59	593.61
3.0000	593.63	593.65	593.66	593.67	593.67
3.2500	593.68	593.69	593.70	593.70	593.71
3.5000	593.72	593.72	593.73	593.74	593.75
3.7500	593.75	593.76	593.76	593.76	593.77
4.0000	593.77	593.77	593.78	593.78	593.78
4.2500	593.79	593.79	593.80	593.80	593.80
4.5000	593.81	593.81	593.82	593.82	593.83
4.7500	593.83	593.83	593.84	593.84	593.85
5.0000	593.85	593.85	593.86	593.86	593.86
5.2500	593.86	593.87	593.87	593.87	593.88
5.5000	593.88	593.88	593.88	593.89	593.89
5.7500	593.89	593.89	593.90	593.90	593.90
6.0000	593.91	593.91	593.91	593.92	593.92
6.2500	593.92	593.92	593.93	593.93	593.93
6.5000	593.94	593.94	593.94	593.94	593.95
6.7500	593.95	593.95	593.95	593.96	593.96
7.0000	593.96	593.96	593.96	593.97	593.97
7.2500	593.97	593.97	593.98	593.98	593.98
7.5000	593.98	593.99	593.99	593.99	593.99
7.7500	594.00	594.00	594.00	594.00	594.01
8.0000	594.01	594.01	594.02	594.02	594.03
8.2500	594.03	594.04	594.05	594.05	594.06
8.5000	594.07	594.08	594.08	594.09	594.10
8.7500	594.11	594.11	594.12	594.13	594.14
9.0000	594.14	594.15	594.16	594.16	594.17
9.2500	594.17	594.17	594.18	594.18	594.18
9.5000	594.18	594.18	594.19	594.19	594.20
9.7500	594.21	594.22	594.23	594.24	594.25
10.0000	594.26	594.27	594.28	594.29	594.30
10.2500	594.32	594.33	594.35	594.36	594.38
10.5000	594.39	594.41	594.42	594.44	594.46
10.7500	594.49	594.52	594.55	594.59	594.63
11.0000	594.67	594.71	594.75	594.80	594.86
11.2500	594.92	594.99	595.07	595.15	595.23
11.5000	595.32	595.42	595.58	595.82	596.15
11.7500	596.58	597.10	597.68	598.36	599.15
12.0000	599.92	600.50	600.78	600.80	600.70
12.2500	600.58	600.46	600.36	600.27	600.19
12.5000	600.11	600.03	599.95	599.87	599.79
12.7500	599.71	599.64	599.58	599.51	599.45
13.0000	599.38	599.32	599.25	599.19	599.12
13.2500	599.05	598.98	598.91	598.84	598.77

TIME vs. ELEVATION (ft)

Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
13.5000	598.69	598.62	598.54	598.47	598.39
13.7500	598.31	598.23	598.15	598.08	598.00
14.0000	597.91	597.83	597.75	597.66	597.57
14.2500	597.48	597.39	597.30	597.21	597.11
14.5000	597.02	596.92	596.82	596.72	596.61
14.7500	596.51	596.40	596.29	596.18	596.07
15.0000	595.96	595.84	595.72	595.59	595.46
15.2500	595.32	595.17	595.01	594.85	594.69
15.5000	594.53	594.39	594.31	594.26	594.24
15.7500	594.23	594.22	594.22	594.21	594.21
16.0000	594.20	594.20	594.19	594.19	594.18
16.2500	594.18	594.18	594.18	594.17	594.17
16.5000	594.17	594.17	594.17	594.16	594.16
16.7500	594.16	594.16	594.16	594.15	594.15
17.0000	594.15	594.15	594.15	594.14	594.14
17.2500	594.14	594.14	594.14	594.13	594.13
17.5000	594.13	594.13	594.12	594.12	594.12
17.7500	594.12	594.12	594.11	594.11	594.11
18.0000	594.11	594.11	594.10	594.10	594.10
18.2500	594.10	594.09	594.09	594.09	594.09
18.5000	594.09	594.08	594.08	594.08	594.08
18.7500	594.08	594.07	594.07	594.07	594.07
19.0000	594.06	594.06	594.06	594.06	594.06
19.2500	594.05	594.05	594.05	594.05	594.04
19.5000	594.04	594.04	594.04	594.03	594.03
19.7500	594.03	594.03	594.02	594.02	594.02
20.0000	594.02	594.01	594.01	594.01	594.01
20.2500	594.01	594.01	594.01	594.01	594.01
20.5000	594.01	594.01	594.00	594.00	594.00
20.7500	594.00	594.00	594.00	594.00	594.00
21.0000	594.00	594.00	594.00	594.00	594.00
21.2500	594.00	594.00	594.00	594.00	594.00
21.5000	594.00	594.00	594.00	593.99	593.99
21.7500	593.99	593.99	593.99	593.99	593.99
22.0000	593.99	593.99	593.99	593.99	593.99
22.2500	593.99	593.99	593.99	593.99	593.99
22.5000	593.99	593.99	593.99	593.98	593.98
22.7500	593.98	593.98	593.98	593.98	593.98
23.0000	593.98	593.98	593.98	593.98	593.98
23.2500	593.98	593.98	593.98	593.98	593.98
23.5000	593.98	593.98	593.98	593.98	593.98
23.7500	593.97	593.97	593.97	593.97	593.97
24.0000	593.97	593.96	593.92	593.85	593.77
24.2500	593.70	593.66	593.60	593.57	593.56

TIME vs. ELEVATION (ft)

Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs	
24.5000	593.55

TIME vs. ELEVATION (ft)

Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
2.2500	593.55	593.55	593.56	593.58	593.60
2.5000	593.64	593.66	593.67	593.68	593.69
2.7500	593.70	593.71	593.72	593.72	593.73
3.0000	593.74	593.75	593.76	593.76	593.77
3.2500	593.77	593.78	593.78	593.79	593.79
3.5000	593.80	593.80	593.81	593.81	593.82
3.7500	593.82	593.83	593.83	593.84	593.84
4.0000	593.84	593.85	593.85	593.86	593.86
4.2500	593.86	593.87	593.87	593.87	593.88
4.5000	593.88	593.88	593.89	593.89	593.89
4.7500	593.90	593.90	593.90	593.91	593.91
5.0000	593.91	593.92	593.92	593.92	593.93
5.2500	593.93	593.93	593.94	593.94	593.95
5.5000	593.95	593.95	593.95	593.96	593.96
5.7500	593.96	593.96	593.97	593.97	593.97
6.0000	593.97	593.98	593.98	593.98	593.99
6.2500	593.99	593.99	594.00	594.00	594.00
6.5000	594.01	594.01	594.01	594.02	594.02
6.7500	594.02	594.03	594.03	594.03	594.04
7.0000	594.04	594.04	594.05	594.05	594.05
7.2500	594.06	594.06	594.06	594.07	594.07
7.5000	594.07	594.08	594.08	594.08	594.08
7.7500	594.09	594.09	594.09	594.10	594.10
8.0000	594.10	594.11	594.11	594.11	594.12
8.2500	594.13	594.14	594.15	594.15	594.16
8.5000	594.17	594.18	594.19	594.20	594.20
8.7500	594.21	594.22	594.23	594.24	594.25
9.0000	594.26	594.27	594.27	594.28	594.28
9.2500	594.29	594.29	594.29	594.30	594.30
9.5000	594.30	594.30	594.30	594.31	594.32
9.7500	594.33	594.34	594.35	594.36	594.37
10.0000	594.39	594.40	594.41	594.43	594.44
10.2500	594.46	594.48	594.51	594.53	594.56
10.5000	594.59	594.62	594.65	594.69	594.73
10.7500	594.77	594.81	594.86	594.91	594.96
11.0000	595.01	595.06	595.12	595.18	595.25
11.2500	595.33	595.41	595.49	595.59	595.68
11.5000	595.77	595.89	596.05	596.30	596.66
11.7500	597.13	597.68	598.32	599.12	600.03
12.0000	600.79	601.20	601.28	601.15	600.95
12.2500	600.77	600.62	600.50	600.40	600.31
12.5500	600.23	600.16	600.08	600.01	599.93
12.7500	599.86	599.79	599.73	599.67	599.61

TIME vs. ELEVATION (ft)

Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
13.0000	599.55	599.49	599.44	599.38	599.32
13.2500	599.26	599.20	599.14	599.08	599.02
13.5000	598.96	598.89	598.82	598.76	598.69
13.7500	598.62	598.55	598.48	598.41	598.34
14.0000	598.26	598.19	598.12	598.04	597.97
14.2500	597.89	597.81	597.73	597.66	597.57
14.5000	597.49	597.41	597.33	597.24	597.15
14.7500	597.07	596.98	596.89	596.79	596.70
15.0000	596.61	596.51	596.41	596.31	596.21
15.2500	596.11	596.01	595.90	595.79	595.68
15.5000	595.56	595.44	595.31	595.17	595.04
15.7500	594.89	594.75	594.61	594.49	594.39
16.0000	594.33	594.30	594.28	594.27	594.27
16.2500	594.26	594.26	594.26	594.26	594.25
16.5000	594.25	594.25	594.25	594.24	594.24
16.7500	594.24	594.24	594.23	594.23	594.23
17.0000	594.23	594.23	594.22	594.22	594.22
17.2500	594.22	594.21	594.21	594.21	594.21
17.5000	594.20	594.20	594.20	594.20	594.19
17.7500	594.19	594.19	594.19	594.18	594.18
18.0000	594.18	594.18	594.17	594.17	594.17
18.2500	594.17	594.17	594.16	594.16	594.16
18.5000	594.16	594.15	594.15	594.15	594.15
18.7500	594.14	594.14	594.14	594.13	594.13
19.0000	594.13	594.13	594.12	594.12	594.12
19.2500	594.12	594.11	594.11	594.11	594.11
19.5000	594.10	594.10	594.10	594.09	594.09
19.7500	594.09	594.09	594.08	594.08	594.08
20.0000	594.08	594.07	594.07	594.07	594.07
20.2500	594.07	594.07	594.07	594.06	594.06
20.5000	594.06	594.06	594.06	594.06	594.06
20.7500	594.06	594.06	594.06	594.06	594.06
21.0000	594.06	594.06	594.06	594.06	594.06
21.2500	594.06	594.05	594.05	594.05	594.05
21.5000	594.05	594.05	594.05	594.05	594.05
21.7500	594.05	594.05	594.05	594.05	594.05
22.0000	594.05	594.05	594.05	594.05	594.04
22.2500	594.04	594.04	594.04	594.04	594.04
22.5000	594.04	594.04	594.04	594.04	594.04
22.7500	594.04	594.04	594.04	594.04	594.04
23.0000	594.04	594.03	594.03	594.03	594.03
23.2500	594.03	594.03	594.03	594.03	594.03
23.5000	594.03	594.03	594.03	594.03	594.03
23.7500	594.03	594.03	594.02	594.02	594.02

TIME vs. ELEVATION (ft)

Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
24.0000	594.02	594.01	593.97	593.88	593.78
24.2500	593.71	593.66	593.62	593.58	593.56
24.5000	593.55				

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Elevation (ft)	Planimeter (sq.in)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ac-ft)	Volume Sum (ac-ft)
593.55	-----	.0000	.0000	.000	.000
594.00	-----	.0163	.0163	.002	.002
596.00	-----	.1811	.2517	.168	.170
598.00	-----	.3767	.8190	.546	.716
600.00	-----	.4642	1.2591	.839	1.556
602.00	-----	.5855	1.5710	1.047	2.603

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

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REQUESTED POND WS ELEVATIONS:

Min. Elev.= 593.55 ft
Increment = .10 ft
Max. Elev.= 602.00 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
Inlet Box	r1	--->	C1	600.250	602.000
Weir-Rectangular	W1	--->	C1	599.350	602.000
Orifice-Circular	o1	--->	C1	593.550	602.000
Orifice-Circular	o1	--->	C1	593.550	602.000
TW SETUP, DS Channel					

OUTLET STRUCTURE INPUT DATA

Structure ID = r1
Structure Type = Inlet Box

# of Openings	=	1
Invert Elev.	=	600.25 ft
Orifice Area	=	19.6250 sq.ft
Orifice Coeff.	=	.600
Weir Length	=	12.75 ft
Weir Coeff.	=	3.200
Transition Elev.	=	601.25 ft
Transition Ht.	=	1.00 ft
Crossover Elev.	=	600.25 ft (weir = orifice)
K, Submerged	=	.000
K, Reverse	=	1.000
Kb,Barrel	=	.000000 (per ft of full flow)
Barrel Length	=	.00 ft
Mannings n	=	.0000

Structure ID = W1
Structure Type = Weir-Rectangular

# of Openings	=	1
Crest Elev.	=	599.35 ft
Weir Length	=	3.00 ft
Weir Coeff.	=	3.200000

Weir TW effects (Use adjustment equation)

Structure ID = o1
Structure Type = Orifice-Circular

# of Openings	=	1
Invert Elev.	=	593.55 ft
Diameter	=	.8500 ft
Orifice Coeff.	=	.600

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OUTLET STRUCTURE INPUT DATA

Structure ID = o1
Structure Type = Orifice-Circular

# of Openings = 1
Invert Elev. = 593.55 ft
Diameter = .8500 ft
Orifice Coeff. = .600

Structure ID = TW
Structure Type = TW SETUP, 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

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = r1 (Inlet Box)

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
593.55	.00	Free Outfall		WS below an invert; no flow.
593.65	.00	Free Outfall		WS below an invert; no flow.
593.75	.00	Free Outfall		WS below an invert; no flow.
593.85	.00	Free Outfall		WS below an invert; no flow.
593.95	.00	Free Outfall		WS below an invert; no flow.
594.05	.00	Free Outfall		WS below an invert; no flow.
594.15	.00	Free Outfall		WS below an invert; no flow.
594.25	.00	Free Outfall		WS below an invert; no flow.
594.35	.00	Free Outfall		WS below an invert; no flow.
594.45	.00	Free Outfall		WS below an invert; no flow.
594.55	.00	Free Outfall		WS below an invert; no flow.
594.65	.00	Free Outfall		WS below an invert; no flow.
594.75	.00	Free Outfall		WS below an invert; no flow.
594.85	.00	Free Outfall		WS below an invert; no flow.
594.95	.00	Free Outfall		WS below an invert; no flow.
595.05	.00	Free Outfall		WS below an invert; no flow.
595.15	.00	Free Outfall		WS below an invert; no flow.
595.25	.00	Free Outfall		WS below an invert; no flow.
595.35	.00	Free Outfall		WS below an invert; no flow.
595.45	.00	Free Outfall		WS below an invert; no flow.
595.55	.00	Free Outfall		WS below an invert; no flow.
595.65	.00	Free Outfall		WS below an invert; no flow.
595.75	.00	Free Outfall		WS below an invert; no flow.
595.85	.00	Free Outfall		WS below an invert; no flow.
595.95	.00	Free Outfall		WS below an invert; no flow.
596.05	.00	Free Outfall		WS below an invert; no flow.
596.15	.00	Free Outfall		WS below an invert; no flow.
596.25	.00	Free Outfall		WS below an invert; no flow.
596.35	.00	Free Outfall		WS below an invert; no flow.
596.45	.00	Free Outfall		WS below an invert; no flow.
596.55	.00	Free Outfall		WS below an invert; no flow.
596.65	.00	Free Outfall		WS below an invert; no flow.
596.75	.00	Free Outfall		WS below an invert; no flow.
596.85	.00	Free Outfall		WS below an invert; no flow.

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RATING TABLE FOR ONE OUTLET TYPE

Structure ID = r1 (Inlet Box)

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
596.95	.00	Free Outfall		WS below an invert; no flow.
597.05	.00	Free Outfall		WS below an invert; no flow.
597.15	.00	Free Outfall		WS below an invert; no flow.
597.25	.00	Free Outfall		WS below an invert; no flow.
597.35	.00	Free Outfall		WS below an invert; no flow.
597.45	.00	Free Outfall		WS below an invert; no flow.
597.55	.00	Free Outfall		WS below an invert; no flow.
597.65	.00	Free Outfall		WS below an invert; no flow.
597.75	.00	Free Outfall		WS below an invert; no flow.
597.85	.00	Free Outfall		WS below an invert; no flow.
597.95	.00	Free Outfall		WS below an invert; no flow.
598.05	.00	Free Outfall		WS below an invert; no flow.
598.15	.00	Free Outfall		WS below an invert; no flow.
598.25	.00	Free Outfall		WS below an invert; no flow.
598.35	.00	Free Outfall		WS below an invert; no flow.
598.45	.00	Free Outfall		WS below an invert; no flow.
598.55	.00	Free Outfall		WS below an invert; no flow.
598.65	.00	Free Outfall		WS below an invert; no flow.
598.75	.00	Free Outfall		WS below an invert; no flow.
598.85	.00	Free Outfall		WS below an invert; no flow.
598.95	.00	Free Outfall		WS below an invert; no flow.
599.05	.00	Free Outfall		WS below an invert; no flow.
599.15	.00	Free Outfall		WS below an invert; no flow.
599.25	.00	Free Outfall		WS below an invert; no flow.
599.35	.00	Free Outfall		WS below an invert; no flow.
599.45	.00	Free Outfall		WS below an invert; no flow.
599.55	.00	Free Outfall		WS below an invert; no flow.
599.65	.00	Free Outfall		WS below an invert; no flow.
599.75	.00	Free Outfall		WS below an invert; no flow.
599.85	.00	Free Outfall		WS below an invert; no flow.
599.95	.00	Free Outfall		WS below an invert; no flow.
600.05	.00	Free Outfall		WS below an invert; no flow.
600.15	.00	Free Outfall		WS below an invert; no flow.
600.25	.00	Free Outfall		WS below an invert; no flow.

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = r1 (Inlet Box)

Upstream ID = (Pond Water Surface)
DNstream ID = TW (Pond Outfall)

WS Elev, ft	Device Q, cfs	Tail Water TW Elev, ft	Converge +/-ft	Notes Computation Messages
600.35	1.29	Free Outfall		Weir: H =.10
600.45	3.65	Free Outfall		Weir: H =.20
600.55	6.70	Free Outfall		Weir: H =.30
600.65	10.32	Free Outfall		Weir: H =.40
600.75	14.42	Free Outfall		Weir: H =.50
600.85	18.96	Free Outfall		Weir: H =.60
600.95	23.90	Free Outfall		Weir: H =.70
601.05	29.19	Free Outfall		Weir: H =.80
601.15	34.83	Free Outfall		Weir: H =.90
601.25	40.80	Free Outfall		Transition: H =1.00
601.35	48.26	Free Outfall		Transition: H =1.10
601.45	55.72	Free Outfall		Transition: H =1.20
601.55	63.18	Free Outfall		Transition: H =1.30
601.65	70.64	Free Outfall		Transition: H =1.40
601.75	78.10	Free Outfall		Transition: H =1.50
601.85	85.56	Free Outfall		Transition: H =1.60
601.95	93.02	Free Outfall		Transition: H =1.70
602.00	96.75	Free Outfall		Transition: H =1.75

Transition: E1=601.25 ft, Q1=40.80 cfs; E2=602.25 ft, Q2=115.40 cfs

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RATING TABLE FOR ONE OUTLET TYPE

Structure ID = W1 (Weir-Rectangular)

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
593.55	.00	Free Outfall		WS below an invert; no flow.
593.65	.00	Free Outfall		WS below an invert; no flow.
593.75	.00	Free Outfall		WS below an invert; no flow.
593.85	.00	Free Outfall		WS below an invert; no flow.
593.95	.00	Free Outfall		WS below an invert; no flow.
594.05	.00	Free Outfall		WS below an invert; no flow.
594.15	.00	Free Outfall		WS below an invert; no flow.
594.25	.00	Free Outfall		WS below an invert; no flow.
594.35	.00	Free Outfall		WS below an invert; no flow.
594.45	.00	Free Outfall		WS below an invert; no flow.
594.55	.00	Free Outfall		WS below an invert; no flow.
594.65	.00	Free Outfall		WS below an invert; no flow.
594.75	.00	Free Outfall		WS below an invert; no flow.
594.85	.00	Free Outfall		WS below an invert; no flow.
594.95	.00	Free Outfall		WS below an invert; no flow.
595.05	.00	Free Outfall		WS below an invert; no flow.
595.15	.00	Free Outfall		WS below an invert; no flow.
595.25	.00	Free Outfall		WS below an invert; no flow.
595.35	.00	Free Outfall		WS below an invert; no flow.
595.45	.00	Free Outfall		WS below an invert; no flow.
595.55	.00	Free Outfall		WS below an invert; no flow.
595.65	.00	Free Outfall		WS below an invert; no flow.
595.75	.00	Free Outfall		WS below an invert; no flow.
595.85	.00	Free Outfall		WS below an invert; no flow.
595.95	.00	Free Outfall		WS below an invert; no flow.
596.05	.00	Free Outfall		WS below an invert; no flow.
596.15	.00	Free Outfall		WS below an invert; no flow.
596.25	.00	Free Outfall		WS below an invert; no flow.
596.35	.00	Free Outfall		WS below an invert; no flow.
596.45	.00	Free Outfall		WS below an invert; no flow.
596.55	.00	Free Outfall		WS below an invert; no flow.
596.65	.00	Free Outfall		WS below an invert; no flow.
596.75	.00	Free Outfall		WS below an invert; no flow.
596.85	.00	Free Outfall		WS below an invert; no flow.

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RATING TABLE FOR ONE OUTLET TYPE

Structure ID = W1 (Weir-Rectangular)

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
596.95	.00	Free Outfall		WS below an invert; no flow.
597.05	.00	Free Outfall		WS below an invert; no flow.
597.15	.00	Free Outfall		WS below an invert; no flow.
597.25	.00	Free Outfall		WS below an invert; no flow.
597.35	.00	Free Outfall		WS below an invert; no flow.
597.45	.00	Free Outfall		WS below an invert; no flow.
597.55	.00	Free Outfall		WS below an invert; no flow.
597.65	.00	Free Outfall		WS below an invert; no flow.
597.75	.00	Free Outfall		WS below an invert; no flow.
597.85	.00	Free Outfall		WS below an invert; no flow.
597.95	.00	Free Outfall		WS below an invert; no flow.
598.05	.00	Free Outfall		WS below an invert; no flow.
598.15	.00	Free Outfall		WS below an invert; no flow.
598.25	.00	Free Outfall		WS below an invert; no flow.
598.35	.00	Free Outfall		WS below an invert; no flow.
598.45	.00	Free Outfall		WS below an invert; no flow.
598.55	.00	Free Outfall		WS below an invert; no flow.
598.65	.00	Free Outfall		WS below an invert; no flow.
598.75	.00	Free Outfall		WS below an invert; no flow.
598.85	.00	Free Outfall		WS below an invert; no flow.
598.95	.00	Free Outfall		WS below an invert; no flow.
599.05	.00	Free Outfall		WS below an invert; no flow.
599.15	.00	Free Outfall		WS below an invert; no flow.
599.25	.00	Free Outfall		WS below an invert; no flow.
599.35	.00	Free Outfall		WS below an invert; no flow.
599.45	.30	Free Outfall		H=.10; Htw=.00; Qfree=.30;
599.55	.86	Free Outfall		H=.20; Htw=.00; Qfree=.86;
599.65	1.58	Free Outfall		H=.30; Htw=.00; Qfree=1.58;
599.75	2.43	Free Outfall		H=.40; Htw=.00; Qfree=2.43;
599.85	3.39	Free Outfall		H=.50; Htw=.00; Qfree=3.39;
599.95	4.46	Free Outfall		H=.60; Htw=.00; Qfree=4.46;
600.05	5.62	Free Outfall		H=.70; Htw=.00; Qfree=5.62;
600.15	6.87	Free Outfall		H=.80; Htw=.00; Qfree=6.87;
600.25	8.20	Free Outfall		H=.90; Htw=.00; Qfree=8.20;

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RATING TABLE FOR ONE OUTLET TYPE

Structure ID = W1 (Weir-Rectangular)

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
600.35	9.60	Free Outfall		H=1.00; Htw=.00; Qfree=9.60;
600.45	11.08	Free Outfall		H=1.10; Htw=.00; Qfree=11.08;
600.55	12.62	Free Outfall		H=1.20; Htw=.00; Qfree=12.62;
600.65	14.23	Free Outfall		H=1.30; Htw=.00; Qfree=14.23;
600.75	15.90	Free Outfall		H=1.40; Htw=.00; Qfree=15.90;
600.85	17.64	Free Outfall		H=1.50; Htw=.00; Qfree=17.64;
600.95	19.43	Free Outfall		H=1.60; Htw=.00; Qfree=19.43;
601.05	21.28	Free Outfall		H=1.70; Htw=.00; Qfree=21.28;
601.15	23.18	Free Outfall		H=1.80; Htw=.00; Qfree=23.18;
601.25	25.14	Free Outfall		H=1.90; Htw=.00; Qfree=25.14;
601.35	27.15	Free Outfall		H=2.00; Htw=.00; Qfree=27.15;
601.45	29.22	Free Outfall		H=2.10; Htw=.00; Qfree=29.22;
601.55	31.33	Free Outfall		H=2.20; Htw=.00; Qfree=31.33;
601.65	33.49	Free Outfall		H=2.30; Htw=.00; Qfree=33.49;
601.75	35.69	Free Outfall		H=2.40; Htw=.00; Qfree=35.69;
601.85	37.95	Free Outfall		H=2.50; Htw=.00; Qfree=37.95;
601.95	40.25	Free Outfall		H=2.60; Htw=.00; Qfree=40.25;
602.00	41.41	Free Outfall		H=2.65; Htw=.00; Qfree=41.41;

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = o1 (Orifice-Circular)

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
593.55	.00	Free Outfall		WS below an invert; no flow.
593.65	.03	Free Outfall		CRIT.DEPTH CONTROL Vh= .027ft Dcr= .073ft CRIT.DEPTH
593.75	.12	Free Outfall		CRIT.DEPTH CONTROL Vh= .051ft Dcr= .149ft CRIT.DEPTH
593.85	.26	Free Outfall		CRIT.DEPTH CONTROL Vh= .078ft Dcr= .222ft CRIT.DEPTH
593.95	.46	Free Outfall		CRIT.DEPTH CONTROL Vh= .108ft Dcr= .292ft CRIT.DEPTH
594.05	.69	Free Outfall		CRIT.DEPTH CONTROL Vh= .137ft Dcr= .363ft CRIT.DEPTH
594.15	.95	Free Outfall		CRIT.DEPTH CONTROL Vh= .170ft Dcr= .431ft CRIT.DEPTH
594.25	1.24	Free Outfall		CRIT.DEPTH CONTROL Vh= .204ft Dcr= .495ft CRIT.DEPTH
594.35	1.56	Free Outfall		CRIT.DEPTH CONTROL Vh= .244ft Dcr= .556ft CRIT.DEPTH
594.45	1.88	Free Outfall		H =.48
594.55	2.07	Free Outfall		H =.58
594.65	2.24	Free Outfall		H =.67
594.75	2.40	Free Outfall		H =.78
594.85	2.55	Free Outfall		H =.88
594.95	2.70	Free Outfall		H =.98
595.05	2.83	Free Outfall		H =1.08
595.15	2.96	Free Outfall		H =1.17
595.25	3.08	Free Outfall		H =1.28
595.35	3.20	Free Outfall		H =1.38
595.45	3.32	Free Outfall		H =1.48
595.55	3.43	Free Outfall		H =1.58
595.65	3.53	Free Outfall		H =1.67
595.75	3.64	Free Outfall		H =1.78
595.85	3.74	Free Outfall		H =1.88
595.95	3.84	Free Outfall		H =1.98
596.05	3.93	Free Outfall		H =2.08
596.15	4.03	Free Outfall		H =2.17
596.25	4.12	Free Outfall		H =2.28
596.35	4.21	Free Outfall		H =2.38
596.45	4.30	Free Outfall		H =2.48
596.55	4.38	Free Outfall		H =2.58
596.65	4.47	Free Outfall		H =2.67
596.75	4.55	Free Outfall		H =2.78
596.85	4.63	Free Outfall		H =2.88

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RATING TABLE FOR ONE OUTLET TYPE

Structure ID = o1 (Orifice-Circular)

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
596.95	4.71	Free Outfall		H =2.98
597.05	4.79	Free Outfall		H =3.08
597.15	4.87	Free Outfall		H =3.17
597.25	4.94	Free Outfall		H =3.28
597.35	5.02	Free Outfall		H =3.38
597.45	5.09	Free Outfall		H =3.48
597.55	5.16	Free Outfall		H =3.58
597.65	5.24	Free Outfall		H =3.67
597.75	5.31	Free Outfall		H =3.78
597.85	5.38	Free Outfall		H =3.88
597.95	5.45	Free Outfall		H =3.98
598.05	5.51	Free Outfall		H =4.08
598.15	5.58	Free Outfall		H =4.17
598.25	5.65	Free Outfall		H =4.28
598.35	5.71	Free Outfall		H =4.38
598.45	5.78	Free Outfall		H =4.48
598.55	5.84	Free Outfall		H =4.58
598.65	5.91	Free Outfall		H =4.67
598.75	5.97	Free Outfall		H =4.78
598.85	6.03	Free Outfall		H =4.88
598.95	6.09	Free Outfall		H =4.98
599.05	6.15	Free Outfall		H =5.08
599.15	6.21	Free Outfall		H =5.17
599.25	6.27	Free Outfall		H =5.28
599.35	6.33	Free Outfall		H =5.38
599.45	6.39	Free Outfall		H =5.48
599.55	6.45	Free Outfall		H =5.58
599.65	6.51	Free Outfall		H =5.67
599.75	6.56	Free Outfall		H =5.78
599.85	6.62	Free Outfall		H =5.88
599.95	6.68	Free Outfall		H =5.98
600.05	6.73	Free Outfall		H =6.08
600.15	6.79	Free Outfall		H =6.17
600.25	6.84	Free Outfall		H =6.28

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = o1 (Orifice-Circular)

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
600.35	6.90	Free Outfall		H =6.38
600.45	6.95	Free Outfall		H =6.48
600.55	7.00	Free Outfall		H =6.58
600.65	7.06	Free Outfall		H =6.67
600.75	7.11	Free Outfall		H =6.78
600.85	7.16	Free Outfall		H =6.88
600.95	7.21	Free Outfall		H =6.98
601.05	7.26	Free Outfall		H =7.08
601.15	7.32	Free Outfall		H =7.17
601.25	7.37	Free Outfall		H =7.28
601.35	7.42	Free Outfall		H =7.38
601.45	7.47	Free Outfall		H =7.48
601.55	7.52	Free Outfall		H =7.58
601.65	7.57	Free Outfall		H =7.67
601.75	7.62	Free Outfall		H =7.78
601.85	7.66	Free Outfall		H =7.88
601.95	7.71	Free Outfall		H =7.98
602.00	7.74	Free Outfall		H =8.03

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RATING TABLE FOR ONE OUTLET TYPE

Structure ID = o1 (Orifice-Circular)

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
593.55	.00	Free Outfall		WS below an invert; no flow.
593.65	.03	Free Outfall		CRIT.DEPTH CONTROL Vh= .027ft Dcr= .073ft CRIT.DEPTH
593.75	.12	Free Outfall		CRIT.DEPTH CONTROL Vh= .051ft Dcr= .149ft CRIT.DEPTH
593.85	.26	Free Outfall		CRIT.DEPTH CONTROL Vh= .078ft Dcr= .222ft CRIT.DEPTH
593.95	.46	Free Outfall		CRIT.DEPTH CONTROL Vh= .108ft Dcr= .292ft CRIT.DEPTH
594.05	.69	Free Outfall		CRIT.DEPTH CONTROL Vh= .137ft Dcr= .363ft CRIT.DEPTH
594.15	.95	Free Outfall		CRIT.DEPTH CONTROL Vh= .170ft Dcr= .431ft CRIT.DEPTH
594.25	1.24	Free Outfall		CRIT.DEPTH CONTROL Vh= .204ft Dcr= .495ft CRIT.DEPTH
594.35	1.56	Free Outfall		CRIT.DEPTH CONTROL Vh= .244ft Dcr= .556ft CRIT.DEPTH
594.45	1.88	Free Outfall		H =.48
594.55	2.07	Free Outfall		H =.58
594.65	2.24	Free Outfall		H =.67
594.75	2.40	Free Outfall		H =.78
594.85	2.55	Free Outfall		H =.88
594.95	2.70	Free Outfall		H =.98
595.05	2.83	Free Outfall		H =1.08
595.15	2.96	Free Outfall		H =1.17
595.25	3.08	Free Outfall		H =1.28
595.35	3.20	Free Outfall		H =1.38
595.45	3.32	Free Outfall		H =1.48
595.55	3.43	Free Outfall		H =1.58
595.65	3.53	Free Outfall		H =1.67
595.75	3.64	Free Outfall		H =1.78
595.85	3.74	Free Outfall		H =1.88
595.95	3.84	Free Outfall		H =1.98
596.05	3.93	Free Outfall		H =2.08
596.15	4.03	Free Outfall		H =2.17
596.25	4.12	Free Outfall		H =2.28
596.35	4.21	Free Outfall		H =2.38
596.45	4.30	Free Outfall		H =2.48
596.55	4.38	Free Outfall		H =2.58
596.65	4.47	Free Outfall		H =2.67
596.75	4.55	Free Outfall		H =2.78
596.85	4.63	Free Outfall		H =2.88

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RATING TABLE FOR ONE OUTLET TYPE

Structure ID = o1 (Orifice-Circular)

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
596.95	4.71	Free Outfall		H =2.98
597.05	4.79	Free Outfall		H =3.08
597.15	4.87	Free Outfall		H =3.17
597.25	4.94	Free Outfall		H =3.28
597.35	5.02	Free Outfall		H =3.38
597.45	5.09	Free Outfall		H =3.48
597.55	5.16	Free Outfall		H =3.58
597.65	5.24	Free Outfall		H =3.67
597.75	5.31	Free Outfall		H =3.78
597.85	5.38	Free Outfall		H =3.88
597.95	5.45	Free Outfall		H =3.98
598.05	5.51	Free Outfall		H =4.08
598.15	5.58	Free Outfall		H =4.17
598.25	5.65	Free Outfall		H =4.28
598.35	5.71	Free Outfall		H =4.38
598.45	5.78	Free Outfall		H =4.48
598.55	5.84	Free Outfall		H =4.58
598.65	5.91	Free Outfall		H =4.67
598.75	5.97	Free Outfall		H =4.78
598.85	6.03	Free Outfall		H =4.88
598.95	6.09	Free Outfall		H =4.98
599.05	6.15	Free Outfall		H =5.08
599.15	6.21	Free Outfall		H =5.17
599.25	6.27	Free Outfall		H =5.28
599.35	6.33	Free Outfall		H =5.38
599.45	6.39	Free Outfall		H =5.48
599.55	6.45	Free Outfall		H =5.58
599.65	6.51	Free Outfall		H =5.67
599.75	6.56	Free Outfall		H =5.78
599.85	6.62	Free Outfall		H =5.88
599.95	6.68	Free Outfall		H =5.98
600.05	6.73	Free Outfall		H =6.08
600.15	6.79	Free Outfall		H =6.17
600.25	6.84	Free Outfall		H =6.28

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = o1 (Orifice-Circular)

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
600.35	6.90	Free Outfall		H =6.38
600.45	6.95	Free Outfall		H =6.48
600.55	7.00	Free Outfall		H =6.58
600.65	7.06	Free Outfall		H =6.67
600.75	7.11	Free Outfall		H =6.78
600.85	7.16	Free Outfall		H =6.88
600.95	7.21	Free Outfall		H =6.98
601.05	7.26	Free Outfall		H =7.08
601.15	7.32	Free Outfall		H =7.17
601.25	7.37	Free Outfall		H =7.28
601.35	7.42	Free Outfall		H =7.38
601.45	7.47	Free Outfall		H =7.48
601.55	7.52	Free Outfall		H =7.58
601.65	7.57	Free Outfall		H =7.67
601.75	7.62	Free Outfall		H =7.78
601.85	7.66	Free Outfall		H =7.88
601.95	7.71	Free Outfall		H =7.98
602.00	7.74	Free Outfall		H =8.03

Type.... Composite Rating Curve
Name.... structure

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

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
593.55	.00	Free Outfall		(no Q: r1,W1,o1,o1)
593.65	.06	Free Outfall		o1,o1 (no Q: r1,W1)
593.75	.24	Free Outfall		o1,o1 (no Q: r1,W1)
593.85	.53	Free Outfall		o1,o1 (no Q: r1,W1)
593.95	.91	Free Outfall		o1,o1 (no Q: r1,W1)
594.05	1.38	Free Outfall		o1,o1 (no Q: r1,W1)
594.15	1.91	Free Outfall		o1,o1 (no Q: r1,W1)
594.25	2.49	Free Outfall		o1,o1 (no Q: r1,W1)
594.35	3.12	Free Outfall		o1,o1 (no Q: r1,W1)
594.45	3.76	Free Outfall		o1,o1 (no Q: r1,W1)
594.55	4.14	Free Outfall		o1,o1 (no Q: r1,W1)
594.65	4.49	Free Outfall		o1,o1 (no Q: r1,W1)
594.75	4.81	Free Outfall		o1,o1 (no Q: r1,W1)
594.85	5.11	Free Outfall		o1,o1 (no Q: r1,W1)
594.95	5.39	Free Outfall		o1,o1 (no Q: r1,W1)
595.05	5.66	Free Outfall		o1,o1 (no Q: r1,W1)
595.15	5.92	Free Outfall		o1,o1 (no Q: r1,W1)
595.25	6.17	Free Outfall		o1,o1 (no Q: r1,W1)
595.35	6.41	Free Outfall		o1,o1 (no Q: r1,W1)
595.45	6.63	Free Outfall		o1,o1 (no Q: r1,W1)
595.55	6.86	Free Outfall		o1,o1 (no Q: r1,W1)
595.65	7.07	Free Outfall		o1,o1 (no Q: r1,W1)
595.75	7.28	Free Outfall		o1,o1 (no Q: r1,W1)
595.85	7.48	Free Outfall		o1,o1 (no Q: r1,W1)
595.95	7.68	Free Outfall		o1,o1 (no Q: r1,W1)
596.05	7.87	Free Outfall		o1,o1 (no Q: r1,W1)
596.15	8.06	Free Outfall		o1,o1 (no Q: r1,W1)
596.25	8.24	Free Outfall		o1,o1 (no Q: r1,W1)
596.35	8.42	Free Outfall		o1,o1 (no Q: r1,W1)
596.45	8.59	Free Outfall		o1,o1 (no Q: r1,W1)
596.55	8.77	Free Outfall		o1,o1 (no Q: r1,W1)
596.65	8.93	Free Outfall		o1,o1 (no Q: r1,W1)
596.75	9.10	Free Outfall		o1,o1 (no Q: r1,W1)
596.85	9.26	Free Outfall		o1,o1 (no Q: r1,W1)
596.95	9.42	Free Outfall		o1,o1 (no Q: r1,W1)
597.05	9.58	Free Outfall		o1,o1 (no Q: r1,W1)
597.15	9.73	Free Outfall		o1,o1 (no Q: r1,W1)
597.25	9.89	Free Outfall		o1,o1 (no Q: r1,W1)

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW

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

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
597.35	10.03	Free Outfall		o1,o1 (no Q: r1,W1)
597.45	10.18	Free Outfall		o1,o1 (no Q: r1,W1)
597.55	10.33	Free Outfall		o1,o1 (no Q: r1,W1)
597.65	10.47	Free Outfall		o1,o1 (no Q: r1,W1)
597.75	10.61	Free Outfall		o1,o1 (no Q: r1,W1)
597.85	10.75	Free Outfall		o1,o1 (no Q: r1,W1)
597.95	10.89	Free Outfall		o1,o1 (no Q: r1,W1)
598.05	11.03	Free Outfall		o1,o1 (no Q: r1,W1)
598.15	11.16	Free Outfall		o1,o1 (no Q: r1,W1)
598.25	11.29	Free Outfall		o1,o1 (no Q: r1,W1)
598.35	11.43	Free Outfall		o1,o1 (no Q: r1,W1)
598.45	11.56	Free Outfall		o1,o1 (no Q: r1,W1)
598.55	11.68	Free Outfall		o1,o1 (no Q: r1,W1)
598.65	11.81	Free Outfall		o1,o1 (no Q: r1,W1)
598.75	11.94	Free Outfall		o1,o1 (no Q: r1,W1)
598.85	12.06	Free Outfall		o1,o1 (no Q: r1,W1)
598.95	12.18	Free Outfall		o1,o1 (no Q: r1,W1)
599.05	12.31	Free Outfall		o1,o1 (no Q: r1,W1)
599.15	12.43	Free Outfall		o1,o1 (no Q: r1,W1)
599.25	12.55	Free Outfall		o1,o1 (no Q: r1,W1)
599.35	12.66	Free Outfall		o1,o1 (no Q: r1,W1)
599.45	13.08	Free Outfall		W1,o1,o1 (no Q: r1)
599.55	13.76	Free Outfall		W1,o1,o1 (no Q: r1)
599.65	14.59	Free Outfall		W1,o1,o1 (no Q: r1)
599.75	15.56	Free Outfall		W1,o1,o1 (no Q: r1)
599.85	16.63	Free Outfall		W1,o1,o1 (no Q: r1)
599.95	17.81	Free Outfall		W1,o1,o1 (no Q: r1)
600.05	19.09	Free Outfall		W1,o1,o1 (no Q: r1)
600.15	20.44	Free Outfall		W1,o1,o1 (no Q: r1)
600.25	21.88	Free Outfall		W1,o1,o1 (no Q: r1)
600.35	24.68	Free Outfall		r1,W1,o1,o1
600.45	28.63	Free Outfall		r1,W1,o1,o1
600.55	33.33	Free Outfall		r1,W1,o1,o1
600.65	38.66	Free Outfall		r1,W1,o1,o1
600.75	44.55	Free Outfall		r1,W1,o1,o1
600.85	50.92	Free Outfall		r1,W1,o1,o1
600.95	57.75	Free Outfall		r1,W1,o1,o1
601.05	65.00	Free Outfall		r1,W1,o1,o1

ST. CHARLES ENGINEERING AND SURVEYING, INC.
Consulting Engineers and Land Surveyors
801 South Fifth Street, Suite 202
St. Charles, MO 63301
PHONE: (636) 947-0607
FAX: (636) 947-2448

Facsimile Transmittal

Date:	July 5, 2005
Time:	8:19 AM
Fax Number:	240-5511
Attention:	**Frank Godwin**
Company:	City of O'Fallon
Reference:	Magnolia Commercial
From:	Karl A. Schoenike, PE
Number of Pages (Including this page):	2

RECEIVED
JUL 05 2005
ENGINEERING DEPARTMENT

Magnolia Commercial
Detention
7/5/2005

Time (hrs)	Bypass	Pond	Total
	Report 7.17	Report 12.36	
11.50	9.73	7.33	17.06
11.55	11.10	7.55	18.65
11.60	14.50	7.87	22.37
11.65	19.82	8.33	28.15
11.70	28.20	8.95	37.15
11.75	38.34	9.70	48.04
11.80	50.89	10.52	61.41
11.85	66.72	11.38	78.10
11.90	89.47	12.39	101.86
11.95	107.29	18.80	126.09
12.00	**108.15**	46.82	154.97
12.05	95.57	76.36	**171.93**
12.10	70.87	**83.39**	154.26
12.15	46.20	72.85	119.05
12.20	31.40	58.09	89.49
12.25	23.71	45.72	69.43
12.30	19.31	36.87	56.18
12.35	16.59	30.74	47.33
12.40	14.64	26.50	41.14
12.45	13.15	23.61	36.76
12.50	11.82	21.66	33.48
12.55	10.71	20.57	31.28
12.60	9.80	19.52	29.32
12.65	9.09	18.52	27.61
12.70	8.58	17.60	26.18
12.75	8.21	16.76	24.97
12.80	7.89	16.02	23.91
12.85	7.61	15.35	22.96
12.90	7.33	14.75	22.08
12.95	7.07	14.23	21.30
13.00	6.81	13.75	20.56

Project Name:031486 Description:MAGNOLIA COMMERCIAL CALCULATION TYPE:Actual Flow

LN ID	UPP STR	LOW STR	PIPE LEN	PIPE DIA	UPPER FL LN	LOWER FL LN	LOWER ST EL	PIPE SLPE	UPPER ST EL	DEPTH HY GR	UPPER HY EL	LOWER HY EL	HYDR GRADE	FR HEAD	VEL	VEL HEAD	JUNC LOSS	TRN LOSS	CRV LOSS	STR GRD	INL CAP	DR AREA	PI	Inlet Q	Pipe TQ	Mann. No	Trn. Ang.	Crv. Rad.	Dlta Ang.	Pipe Cap.	Remks
6	FE708	FE707	84.5	15	614.00	611.97	613.22	2.40	615.25	0.77	614.48	612.36	0.0013	0.11	1.91	0.06	0.08	0.00	0.00	0.00	0.00	0.61	3.85	2.35	2.35	0.013	0			10.0	
5	CI706	CI705	48.0	15	603.78	603.30	607.79	1.00	607.78	3.51	604.27	603.89	0.0008	0.04	1.44	0.03	0.04	0.00	0.00	2.00	1.93	0.46	3.85	1.77	1.77	0.013	80			6.5	
1	CI705	MH704	56.0	15	603.10	602.54	606.73	1.00	607.79	3.90	603.89	603.18	0.0026	0.15	2.70	0.11	0.13	0.02	0.00	2.00	1.93	0.40	3.85	1.54	3.31	0.013	20			6.5	
1	MH704	CI703	194.9	15	602.34	598.44	602.80	2.00	606.73	3.55	602.88	599.20	0.0026	0.51	2.70	0.11	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	3.31	0.013	90			9.1	
1	CI703	CI702	48.0	15	598.24	597.76	602.80	1.00	602.80	3.60	599.20	598.50	0.0045	0.22	3.51	0.19	0.14	0.08	0.00	2.00	1.93	0.26	3.85	1.00	4.31	0.013	45			6.5	
3	CI702	FE701	81.5	15	597.56	593.50	594.75	4.98	602.80	4.30	598.36	594.03	0.0068	0.55	4.33	0.29	0.18	0.09	0.00	2.00	1.93	0.26	3.85	1.00	5.31	0.013	0			14.4	
4	OS629	MH627	47.7	30	593.55	593.03	600.13	1.09	600.00	3.13	596.87	595.26	0.0084	0.40	7.67	0.91	1.21	0.00	0.00	0.00	0.00	37.67	1.00	37.67	37.67	0.013	90			42.8	AB
5	AI628	MH627	104.2	12	594.03	592.98	600.13	1.01	598.00	2.41	595.59	595.26	0.0023	0.24	2.18	0.07	0.09	0.00	0.00	0.00	5.50	0.52	3.30	1.72	1.72	0.013	0			3.6	AB
2	MH627	MH619	90.7	30	592.81	591.41	600.06	1.54	600.13	4.87	595.26	593.05	0.0092	0.83	8.02	1.00	0.17	0.64	0.00	0.00	0.00	0.00	0.00	0.00	39.39	0.013	90			50.9	AB
4	FE626	MH619	46.9	30	593.87	591.91	600.06	4.18	596.37	-1.54	597.91	593.36	0.0179	0.84	11.18	1.94	2.59	0.00	0.00	0.00	0.00	14.26	3.85	54.90	54.90	0.013	0			83.9	AB ✓
5	CI625	CI624	35.1	15	592.40	591.91	597.84	1.40	597.60	4.82	592.78	592.26	0.0005	0.02	1.13	0.02	0.03	0.00	0.00	0.00	3.00	0.42	3.30	1.39	1.39	0.013	45			7.6	AB
2	CI624	MH618	26.6	15	591.83	587.67	597.02	15.64	597.84	5.58	592.20	588.79	0.0016	0.04	2.12	0.07	0.08	0.01	0.00	0.00	3.00	0.37	3.30	1.22	2.61	0.013	45			25.5	AB
4	AI623	AI617	110.5	15	587.57	585.68	591.46	1.71	591.82	3.23	588.59	588.09	0.0030	0.33	2.90	0.13	0.17	0.00	0.00	0.00	5.50	1.08	3.30	3.56	3.56	0.013	50			8.4	AB
4	CI622	MH612	18.1	12	584.93	584.70	591.10	1.27	589.28	3.97	585.31	585.04	0.0008	0.01	1.30	0.03	0.04	0.00	0.00	0.00	3.00	0.31	3.30	1.02	1.02	0.013	45			4.0	AB
5	AI621	AI620	400.0	12	594.38	590.82	596.82	0.89	600.03	4.65	595.38	591.54	0.0066	2.64	3.70	0.21	0.28	0.00	0.00	0.00	5.50	0.88	3.30	2.90	2.90	0.013	0			3.4	AB
1	AI620	MH619	43.3	48	588.47	587.86	600.06	1.41	596.82	5.28	590.55	590.55	0.0000	0.00	0.50	0.00	0.00	0.00	0.00	0.00	5.50	1.04	3.30	3.43	6.34	0.013	90			170.6	AB
1	MH619	MH618	195.1	48	587.75	585.76	597.02	1.02	600.06	9.51	590.55	588.79	0.0049	0.96	8.01	1.00	-0.3	0.70	0.00	0.00	0.00	0.00	0.00	0.00	100.62	0.013	0			145.1	AB
1	MH618	AI617	110.2	48	585.54	584.34	591.46	1.09	597.02	8.23	588.79	588.09	0.0052	0.57	8.21	1.05	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	103.23	0.013	45			150.0	AB
1	AI617	CI616	89.5	48	584.18	583.17	592.72	1.13	591.46	3.37	588.09	586.81	0.0057	0.51	8.64	1.16	0.21	0.56	0.00	0.00	5.50	0.54	3.30	1.78	108.58	0.013	90			152.7	AB
1	CI616	DCI615	55.6	48	583.02	582.33	592.18	1.24	592.72	5.91	586.81	585.61	0.0059	0.33	8.76	1.19	0.06	0.81	0.00	0.00	3.00	0.46	3.30	1.52	110.09	0.013	45			159.9	AB
1	DCI615	CI614	36.0	54	582.28	582.11	591.99	0.47	592.18	6.57	585.61	585.17	0.0033	0.12	7.07	0.78	-0.2	0.56	0.00	0.00	5.00	0.69	3.30	2.28	112.37	0.013	45			134.8	AB
1	CI614	MH613	48.0	54	582.03	581.20	590.68	1.73	591.99	6.82	584.55	583.89	0.0034	0.16	7.16	0.80	0.04	0.36	0.00	0.00	3.00	0.44	3.30	1.45	113.82	0.013	45			258.6	AB
1	MH613	MH612	84.2	54	581.02	580.20	591.10	0.97	590.68	6.79	583.89	582.79	0.0034	0.29	7.16	0.80	0.00	0.37	0.00	0.00	0.00	0.00	0.00	0.00	113.82	0.013	45			193.7	AB
3	MH612	FE611	54.9	54	580.06	579.40	583.90	1.20	591.10	8.31	582.79	582.01	0.0034	0.19	7.22	0.81	0.02	0.39	0.00	0.00	0.00	0.00	0.00	0.00	114.85	0.013	0			215.4	AB

STATE OF MISSOURI
NUMBER
PE-2003015039
PROFESSIONAL ENGINEER

6-3-05

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW

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

WS Elev, Total Q		Notes		
		Converge		
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
601.15	72.65	Free Outfall		r1,W1,o1,o1
601.25	80.68	Free Outfall		r1,W1,o1,o1
601.35	90.25	Free Outfall		r1,W1,o1,o1
601.45	99.87	Free Outfall		r1,W1,o1,o1
601.55	109.54	Free Outfall		r1,W1,o1,o1
601.65	119.26	Free Outfall		r1,W1,o1,o1
601.75	129.02	Free Outfall		r1,W1,o1,o1
601.85	138.83	Free Outfall		r1,W1,o1,o1
601.95	148.69	Free Outfall		r1,W1,o1,o1
602.00	153.64	Free Outfall		r1,W1,o1,o1

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW
Outflow Rating Table r1

WS Elev, Total Q		Notes		
		Converge		
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
593.55	.00	Free Outfall		
593.65	.00	Free Outfall		
593.75	.00	Free Outfall		
593.85	.00	Free Outfall		
593.95	.00	Free Outfall		
594.05	.00	Free Outfall		
594.15	.00	Free Outfall		
594.25	.00	Free Outfall		
594.35	.00	Free Outfall		
594.45	.00	Free Outfall		
594.55	.00	Free Outfall		
594.65	.00	Free Outfall		
594.75	.00	Free Outfall		
594.85	.00	Free Outfall		
594.95	.00	Free Outfall		
595.05	.00	Free Outfall		
595.15	.00	Free Outfall		
595.25	.00	Free Outfall		
595.35	.00	Free Outfall		
595.45	.00	Free Outfall		
595.55	.00	Free Outfall		
595.65	.00	Free Outfall		
595.75	.00	Free Outfall		
595.85	.00	Free Outfall		
595.95	.00	Free Outfall		
596.05	.00	Free Outfall		
596.15	.00	Free Outfall		
596.25	.00	Free Outfall		
596.35	.00	Free Outfall		
596.45	.00	Free Outfall		
596.55	.00	Free Outfall		
596.65	.00	Free Outfall		
596.75	.00	Free Outfall		
596.85	.00	Free Outfall		
596.95	.00	Free Outfall		
597.05	.00	Free Outfall		
597.15	.00	Free Outfall		
597.25	.00	Free Outfall		
597.35	.00	Free Outfall		
597.45	.00	Free Outfall		

Type.... Composite Rating Curve
Name.... structure

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW
Outflow Rating Table r1

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
597.55	.00	Free Outfall		
597.65	.00	Free Outfall		
597.75	.00	Free Outfall		
597.85	.00	Free Outfall		
597.95	.00	Free Outfall		
598.05	.00	Free Outfall		
598.15	.00	Free Outfall		
598.25	.00	Free Outfall		
598.35	.00	Free Outfall		
598.45	.00	Free Outfall		
598.55	.00	Free Outfall		
598.65	.00	Free Outfall		
598.75	.00	Free Outfall		
598.85	.00	Free Outfall		
598.95	.00	Free Outfall		
599.05	.00	Free Outfall		
599.15	.00	Free Outfall		
599.25	.00	Free Outfall		
599.35	.00	Free Outfall		
599.45	.00	Free Outfall		
599.55	.00	Free Outfall		
599.65	.00	Free Outfall		
599.75	.00	Free Outfall		
599.85	.00	Free Outfall		
599.95	.00	Free Outfall		
600.05	.00	Free Outfall		
600.15	.00	Free Outfall		
600.25	.00	Free Outfall		
600.35	.00	Free Outfall		r1
600.45	.00	Free Outfall		r1
600.55	.00	Free Outfall		r1
600.65	.00	Free Outfall		r1
600.75	.00	Free Outfall		r1
600.85	.00	Free Outfall		r1
600.95	.00	Free Outfall		r1
601.05	.00	Free Outfall		r1
601.15	.00	Free Outfall		r1
601.25	.00	Free Outfall		r1
601.35	.00	Free Outfall		r1
601.45	.00	Free Outfall		r1

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW
Outflow Rating Table r1

WS Elev, Total Q		Notes		
		Converge		
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
601.55	.00	Free Outfall		r1
601.65	.00	Free Outfall		r1
601.75	.00	Free Outfall		r1
601.85	.00	Free Outfall		r1
601.95	.00	Free Outfall		r1
602.00	.00	Free Outfall		r1

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW
Outflow Rating Table W1

WS Elev, Total Q		Notes		
		Converge		
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
593.55	.00	Free Outfall		
593.65	.00	Free Outfall		
593.75	.00	Free Outfall		
593.85	.00	Free Outfall		
593.95	.00	Free Outfall		
594.05	.00	Free Outfall		
594.15	.00	Free Outfall		
594.25	.00	Free Outfall		
594.35	.00	Free Outfall		
594.45	.00	Free Outfall		
594.55	.00	Free Outfall		
594.65	.00	Free Outfall		
594.75	.00	Free Outfall		
594.85	.00	Free Outfall		
594.95	.00	Free Outfall		
595.05	.00	Free Outfall		
595.15	.00	Free Outfall		
595.25	.00	Free Outfall		
595.35	.00	Free Outfall		
595.45	.00	Free Outfall		
595.55	.00	Free Outfall		
595.65	.00	Free Outfall		
595.75	.00	Free Outfall		
595.85	.00	Free Outfall		
595.95	.00	Free Outfall		
596.05	.00	Free Outfall		
596.15	.00	Free Outfall		
596.25	.00	Free Outfall		
596.35	.00	Free Outfall		
596.45	.00	Free Outfall		
596.55	.00	Free Outfall		
596.65	.00	Free Outfall		
596.75	.00	Free Outfall		
596.85	.00	Free Outfall		
596.95	.00	Free Outfall		
597.05	.00	Free Outfall		
597.15	.00	Free Outfall		
597.25	.00	Free Outfall		
597.35	.00	Free Outfall		
597.45	.00	Free Outfall		

Type.... Composite Rating Curve
Name.... structure

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW
Outflow Rating Table W1

WS Elev, Total Q		Notes		
		Converge		
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
597.55	.00	Free Outfall		
597.65	.00	Free Outfall		
597.75	.00	Free Outfall		
597.85	.00	Free Outfall		
597.95	.00	Free Outfall		
598.05	.00	Free Outfall		
598.15	.00	Free Outfall		
598.25	.00	Free Outfall		
598.35	.00	Free Outfall		
598.45	.00	Free Outfall		
598.55	.00	Free Outfall		
598.65	.00	Free Outfall		
598.75	.00	Free Outfall		
598.85	.00	Free Outfall		
598.95	.00	Free Outfall		
599.05	.00	Free Outfall		
599.15	.00	Free Outfall		
599.25	.00	Free Outfall		
599.35	.00	Free Outfall		
599.45	.00	Free Outfall		W1
599.55	.00	Free Outfall		W1
599.65	.00	Free Outfall		W1
599.75	.00	Free Outfall		W1
599.85	.00	Free Outfall		W1
599.95	.00	Free Outfall		W1
600.05	.00	Free Outfall		W1
600.15	.00	Free Outfall		W1
600.25	.00	Free Outfall		W1
600.35	.00	Free Outfall		W1
600.45	.00	Free Outfall		W1
600.55	.00	Free Outfall		W1
600.65	.00	Free Outfall		W1
600.75	.00	Free Outfall		W1
600.85	.00	Free Outfall		W1
600.95	.00	Free Outfall		W1
601.05	.00	Free Outfall		W1
601.15	.00	Free Outfall		W1
601.25	.00	Free Outfall		W1
601.35	.00	Free Outfall		W1
601.45	.00	Free Outfall		W1

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW
Outflow Rating Table W1

WS Elev, Total Q		Notes		
		Converge		
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
601.55	.00	Free Outfall		W1
601.65	.00	Free Outfall		W1
601.75	.00	Free Outfall		W1
601.85	.00	Free Outfall		W1
601.95	.00	Free Outfall		W1
602.00	.00	Free Outfall		W1

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW
Outflow Rating Table o1

WS Elev, Total Q		Notes		
		Converge		
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
593.55	.00	Free Outfall		
593.65	.00	Free Outfall		o1
593.75	.00	Free Outfall		o1
593.85	.00	Free Outfall		o1
593.95	.00	Free Outfall		o1
594.05	.00	Free Outfall		o1
594.15	.00	Free Outfall		o1
594.25	.00	Free Outfall		o1
594.35	.00	Free Outfall		o1
594.45	.00	Free Outfall		o1
594.55	.00	Free Outfall		o1
594.65	.00	Free Outfall		o1
594.75	.00	Free Outfall		o1
594.85	.00	Free Outfall		o1
594.95	.00	Free Outfall		o1
595.05	.00	Free Outfall		o1
595.15	.00	Free Outfall		o1
595.25	.00	Free Outfall		o1
595.35	.00	Free Outfall		o1
595.45	.00	Free Outfall		o1
595.55	.00	Free Outfall		o1
595.65	.00	Free Outfall		o1
595.75	.00	Free Outfall		o1
595.85	.00	Free Outfall		o1
595.95	.00	Free Outfall		o1
596.05	.00	Free Outfall		o1
596.15	.00	Free Outfall		o1
596.25	.00	Free Outfall		o1
596.35	.00	Free Outfall		o1
596.45	.00	Free Outfall		o1
596.55	.00	Free Outfall		o1
596.65	.00	Free Outfall		o1
596.75	.00	Free Outfall		o1
596.85	.00	Free Outfall		o1
596.95	.00	Free Outfall		o1
597.05	.00	Free Outfall		o1
597.15	.00	Free Outfall		o1
597.25	.00	Free Outfall		o1
597.35	.00	Free Outfall		o1
597.45	.00	Free Outfall		o1

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW
Outflow Rating Table o1

WS Elev, Total Q		Notes		
		Converge		
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
597.55	.00	Free Outfall		o1
597.65	.00	Free Outfall		o1
597.75	.00	Free Outfall		o1
597.85	.00	Free Outfall		o1
597.95	.00	Free Outfall		o1
598.05	.00	Free Outfall		o1
598.15	.00	Free Outfall		o1
598.25	.00	Free Outfall		o1
598.35	.00	Free Outfall		o1
598.45	.00	Free Outfall		o1
598.55	.00	Free Outfall		o1
598.65	.00	Free Outfall		o1
598.75	.00	Free Outfall		o1
598.85	.00	Free Outfall		o1
598.95	.00	Free Outfall		o1
599.05	.00	Free Outfall		o1
599.15	.00	Free Outfall		o1
599.25	.00	Free Outfall		o1
599.35	.00	Free Outfall		o1
599.45	.00	Free Outfall		o1
599.55	.00	Free Outfall		o1
599.65	.00	Free Outfall		o1
599.75	.00	Free Outfall		o1
599.85	.00	Free Outfall		o1
599.95	.00	Free Outfall		o1
600.05	.00	Free Outfall		o1
600.15	.00	Free Outfall		o1
600.25	.00	Free Outfall		o1
600.35	.00	Free Outfall		o1
600.45	.00	Free Outfall		o1
600.55	.00	Free Outfall		o1
600.65	.00	Free Outfall		o1
600.75	.00	Free Outfall		o1
600.85	.00	Free Outfall		o1
600.95	.00	Free Outfall		o1
601.05	.00	Free Outfall		o1
601.15	.00	Free Outfall		o1
601.25	.00	Free Outfall		o1
601.35	.00	Free Outfall		o1
601.45	.00	Free Outfall		o1

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW
Outflow Rating Table o1

WS Elev, Total Q	Converge	TW Elev	Error	Notes
Elev. ft	Q cfs	ft	+/-ft	Contributing Structures
601.55	.00	Free Outfall		o1
601.65	.00	Free Outfall		o1
601.75	.00	Free Outfall		o1
601.85	.00	Free Outfall		o1
601.95	.00	Free Outfall		o1
602.00	.00	Free Outfall		o1

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW
Outflow Rating Table o1

WS Elev, Total Q	Converge	TW Elev	Error	Notes
Elev. ft	Q cfs	ft	+/-ft	Contributing Structures
593.55	.00	Free Outfall		
593.65	.00	Free Outfall		o1
593.75	.00	Free Outfall		o1
593.85	.00	Free Outfall		o1
593.95	.00	Free Outfall		o1
594.05	.00	Free Outfall		o1
594.15	.00	Free Outfall		o1
594.25	.00	Free Outfall		o1
594.35	.00	Free Outfall		o1
594.45	.00	Free Outfall		o1
594.55	.00	Free Outfall		o1
594.65	.00	Free Outfall		o1
594.75	.00	Free Outfall		o1
594.85	.00	Free Outfall		o1
594.95	.00	Free Outfall		o1
595.05	.00	Free Outfall		o1
595.15	.00	Free Outfall		o1
595.25	.00	Free Outfall		o1
595.35	.00	Free Outfall		o1
595.45	.00	Free Outfall		o1
595.55	.00	Free Outfall		o1
595.65	.00	Free Outfall		o1
595.75	.00	Free Outfall		o1
595.85	.00	Free Outfall		o1
595.95	.00	Free Outfall		o1
596.05	.00	Free Outfall		o1
596.15	.00	Free Outfall		o1
596.25	.00	Free Outfall		o1
596.35	.00	Free Outfall		o1
596.45	.00	Free Outfall		o1
596.55	.00	Free Outfall		o1
596.65	.00	Free Outfall		o1
596.75	.00	Free Outfall		o1
596.85	.00	Free Outfall		o1
596.95	.00	Free Outfall		o1
597.05	.00	Free Outfall		o1
597.15	.00	Free Outfall		o1
597.25	.00	Free Outfall		o1
597.35	.00	Free Outfall		o1
597.45	.00	Free Outfall		o1

Type.... Composite Rating Curve
Name.... structure

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW
Outflow Rating Table o1

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
597.55	.00	Free Outfall		o1
597.65	.00	Free Outfall		o1
597.75	.00	Free Outfall		o1
597.85	.00	Free Outfall		o1
597.95	.00	Free Outfall		o1
598.05	.00	Free Outfall		o1
598.15	.00	Free Outfall		o1
598.25	.00	Free Outfall		o1
598.35	.00	Free Outfall		o1
598.45	.00	Free Outfall		o1
598.55	.00	Free Outfall		o1
598.65	.00	Free Outfall		o1
598.75	.00	Free Outfall		o1
598.85	.00	Free Outfall		o1
598.95	.00	Free Outfall		o1
599.05	.00	Free Outfall		o1
599.15	.00	Free Outfall		o1
599.25	.00	Free Outfall		o1
599.35	.00	Free Outfall		o1
599.45	.00	Free Outfall		o1
599.55	.00	Free Outfall		o1
599.65	.00	Free Outfall		o1
599.75	.00	Free Outfall		o1
599.85	.00	Free Outfall		o1
599.95	.00	Free Outfall		o1
600.05	.00	Free Outfall		o1
600.15	.00	Free Outfall		o1
600.25	.00	Free Outfall		o1
600.35	.00	Free Outfall		o1
600.45	.00	Free Outfall		o1
600.55	.00	Free Outfall		o1
600.65	.00	Free Outfall		o1
600.75	.00	Free Outfall		o1
600.85	.00	Free Outfall		o1
600.95	.00	Free Outfall		o1
601.05	.00	Free Outfall		o1
601.15	.00	Free Outfall		o1
601.25	.00	Free Outfall		o1
601.35	.00	Free Outfall		o1
601.45	.00	Free Outfall		o1

File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW
Outflow Rating Table o1

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
601.55	.00	Free Outfall		o1
601.65	.00	Free Outfall		o1
601.75	.00	Free Outfall		o1
601.85	.00	Free Outfall		o1
601.95	.00	Free Outfall		o1
602.00	.00	Free Outfall		o1

Name.... BASIN
File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW

LEVEL POOL ROUTING DATA

HYG Dir = H:\DWG\031486\DETENTION\
Inflow HYG file = NONE STORED - BASIN IN 2yr
Outflow HYG file = NONE STORED - BASIN OUT 2yr

Pond Node Data = BASIN
Pond Volume Data = BASIN
Pond Outlet Data = structure

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	593.55 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0500 hrs

Elevation ft	Outflow cfs	Storage ac-ft	Area acres	Infilt. cfs	Q Total cfs	2S/t + O cfs
593.55	.00	.000	.0000	.00	.00	.00
593.65	.06	.000	.0008	.00	.06	.08
593.75	.24	.000	.0032	.00	.24	.35
593.85	.53	.001	.0072	.00	.53	.88
593.95	.91	.002	.0129	.00	.91	1.74
594.05	1.38	.003	.0183	.00	1.38	2.98
594.15	1.91	.005	.0225	.00	1.91	4.49
594.25	2.49	.008	.0272	.00	2.49	6.28
594.35	3.12	.011	.0323	.00	3.12	8.34
594.45	3.76	.014	.0379	.00	3.76	10.69
594.55	4.14	.018	.0439	.00	4.14	13.04
594.65	4.49	.023	.0504	.00	4.49	15.67
594.75	4.81	.028	.0573	.00	4.81	18.60
594.85	5.11	.035	.0647	.00	5.11	21.85
594.95	5.39	.041	.0725	.00	5.39	25.45
595.05	5.66	.049	.0807	.00	5.66	29.42
595.15	5.92	.058	.0894	.00	5.92	33.79
595.25	6.17	.067	.0985	.00	6.17	38.58
595.35	6.41	.077	.1081	.00	6.41	43.82
595.45	6.63	.089	.1181	.00	6.63	49.52

Name.... BASIN
File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW

LEVEL POOL ROUTING DATA

HYG Dir = H:\DWG\031486\DETENTION\
Inflow HYG file = NONE STORED - BASIN IN 2yr
Outflow HYG file = NONE STORED - BASIN OUT 2yr

Pond Node Data = BASIN
Pond Volume Data = BASIN
Pond Outlet Data = structure

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	593.55 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0500 hrs

Elevation ft	Outflow cfs	Storage ac-ft	Area acres	Infilt. cfs	Q Total cfs	2S/t + O cfs
595.55	6.86	.101	.1285	.00	6.86	55.71
595.65	7.07	.114	.1394	.00	7.07	62.40
595.75	7.28	.129	.1508	.00	7.28	69.63
595.85	7.48	.144	.1626	.00	7.48	77.42
595.95	7.68	.161	.1748	.00	7.68	85.78
596.05	7.87	.179	.1851	.00	7.87	94.71
596.15	8.06	.198	.1933	.00	8.06	104.05
596.25	8.24	.218	.2017	.00	8.24	113.79
596.35	8.42	.239	.2102	.00	8.42	123.94
596.45	8.59	.260	.2189	.00	8.59	134.50
596.55	8.77	.282	.2278	.00	8.77	145.48
596.65	8.93	.306	.2369	.00	8.93	156.89
596.75	9.10	.330	.2461	.00	9.10	168.75
596.85	9.26	.355	.2556	.00	9.26	181.05
596.95	9.42	.381	.2652	.00	9.42	193.82
597.05	9.58	.408	.2750	.00	9.58	207.04
597.15	9.73	.436	.2849	.00	9.73	220.74
597.25	9.89	.465	.2950	.00	9.89	234.93
597.35	10.03	.495	.3054	.00	10.03	249.61
597.45	10.18	.526	.3158	.00	10.18	264.79

LEVEL POOL ROUTING DATA

HYG Dir = H:\DWG\031486\DETENTION\
Inflow HYG file = NONE STORED - BASIN IN 2yr
Outflow HYG file = NONE STORED - BASIN OUT 2yr

Pond Node Data = BASIN
Pond Volume Data = BASIN
Pond Outlet Data = structure

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	593.55 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0500 hrs

Elevation ft	Outflow cfs	Storage ac-ft	Area acres	Infilt. cfs	Q Total cfs	2S/t + O cfs
597.55	10.33	.558	.3265	.00	10.33	280.48
597.65	10.47	.591	.3374	.00	10.47	296.69
597.75	10.61	.626	.3484	.00	10.61	313.43
597.85	10.75	.661	.3596	.00	10.75	330.69
597.95	10.89	.698	.3709	.00	10.89	348.52
598.05	11.03	.735	.3788	.00	11.03	366.84
598.15	11.16	.773	.3829	.00	11.16	385.40
598.25	11.29	.812	.3871	.00	11.29	404.17
598.35	11.43	.851	.3914	.00	11.43	423.14
598.45	11.56	.890	.3956	.00	11.56	442.32
598.55	11.68	.930	.3999	.00	11.68	461.69
598.65	11.81	.970	.4041	.00	11.81	481.27
598.75	11.94	1.011	.4084	.00	11.94	501.07
598.85	12.06	1.052	.4128	.00	12.06	521.06
598.95	12.18	1.093	.4171	.00	12.18	541.28
599.05	12.31	1.135	.4215	.00	12.31	561.69
599.15	12.43	1.177	.4259	.00	12.43	582.31
599.25	12.55	1.220	.4303	.00	12.55	603.16
599.35	12.66	1.264	.4348	.00	12.66	624.21
599.45	13.08	1.307	.4392	.00	13.08	645.79

Name.... BASIN
File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW

LEVEL POOL ROUTING DATA

HYG Dir = H:\DWG\031486\DETENTION\
Inflow HYG file = NONE STORED - BASIN IN 2yr
Outflow HYG file = NONE STORED - BASIN OUT 2yr

Pond Node Data = BASIN
Pond Volume Data = BASIN
Pond Outlet Data = structure

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 593.55 ft
Starting Volume = .000 ac-ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0500 hrs

Elevation ft	Outflow cfs	Storage ac-ft	Area acres	Infilt. cfs	Q Total cfs	2S/t + O cfs
599.55	13.76	1.351	.4437	.00	13.76	667.82
599.65	14.59	1.396	.4482	.00	14.59	690.23
599.75	15.56	1.441	.4528	.00	15.56	713.01
599.85	16.63	1.487	.4573	.00	16.63	736.11
599.95	17.81	1.532	.4619	.00	17.81	759.54
600.05	19.09	1.579	.4671	.00	19.09	783.28
600.15	20.44	1.626	.4728	.00	20.44	807.38
600.25	21.88	1.673	.4786	.00	21.88	831.85
600.35	24.68	1.722	.4844	.00	24.68	857.95
600.45	28.63	1.770	.4903	.00	28.63	885.49
600.55	33.33	1.820	.4962	.00	33.33	914.06
600.65	38.66	1.870	.5021	.00	38.66	943.54
600.75	44.55	1.920	.5080	.00	44.55	973.88
600.85	50.92	1.971	.5140	.00	50.92	1004.98
600.95	57.75	2.023	.5201	.00	57.75	1036.84
601.05	65.00	2.075	.5261	.00	65.00	1069.41
601.15	72.65	2.128	.5322	.00	72.65	1102.66
601.25	80.68	2.182	.5384	.00	80.68	1136.60
601.35	90.25	2.236	.5445	.00	90.25	1172.37
601.45	99.87	2.291	.5507	.00	99.87	1208.51

Name.... BASIN
File.... H:\DWG\031486\DETENTION\COMMERCIAL.PPW

LEVEL POOL ROUTING DATA

HYG Dir = H:\DWG\031486\DETENTION\
Inflow HYG file = NONE STORED - BASIN IN 2yr
Outflow HYG file = NONE STORED - BASIN OUT 2yr

Pond Node Data = BASIN
Pond Volume Data = BASIN
Pond Outlet Data = structure

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	= 593.55	ft
Starting Volume	= .000	ac-ft
Starting Outflow	= .00	cfs
Starting Infiltr.	= .00	cfs
Starting Total Qout	= .00	cfs
Time Increment	= .0500	hrs

Elevation ft	Outflow cfs	Storage ac-ft	Area acres	Infilt. cfs	Q Total cfs	2S/t + O cfs
601.55	109.54	2.346	.5570	.00	109.54	1244.98
601.65	119.26	2.402	.5633	.00	119.26	1281.80
601.75	129.02	2.459	.5696	.00	129.02	1319.00
601.85	138.83	2.516	.5759	.00	138.83	1356.52
601.95	148.69	2.574	.5823	.00	148.69	1394.42
602.00	153.64	2.603	.5855	.00	153.64	1413.49

SUMMARY FOR HYDROGRAPH ADDITION
at Node: BASIN IN

HYG Directory: H:\DWG\031486\DETENTION\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ADDLINK 30	TO BASIN		TO BASIN	2yr

INFLOWS TO: BASIN IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	TO BASIN	2yr	3.560	11.9500	55.91

TOTAL FLOW INTO: BASIN IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	BASIN IN	2yr	3.560	11.9500	55.91

TOTAL NODE INFLOW...
HYG file =
HYG ID = BASIN IN
HYG Tag = 2yr

Peak Discharge =	55.91 cfs
Time to Peak =	11.9500 hrs
HYG Volume =	3.560 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
4.2000	.00	.00	.01	.01	.01
4.4500	.02	.02	.03	.03	.04
4.7000	.04	.05	.06	.06	.07
4.9500	.07	.08	.08	.09	.09
5.2000	.10	.10	.11	.12	.12
5.4500	.13	.13	.14	.15	.15
5.7000	.16	.16	.17	.18	.18
5.9500	.19	.20	.20	.21	.21
6.2000	.22	.23	.23	.24	.25
6.4500	.25	.26	.27	.27	.28
6.7000	.29	.29	.30	.31	.32
6.9500	.32	.33	.34	.34	.35
7.2000	.36	.36	.37	.38	.39
7.4500	.39	.40	.41	.42	.42
7.7000	.43	.44	.44	.45	.46
7.9500	.47	.47	.48	.49	.51
8.2000	.52	.54	.55	.57	.59
8.4500	.61	.63	.64	.66	.68
8.7000	.70	.72	.74	.76	.79
8.9500	.81	.83	.85	.87	.88
9.2000	.89	.90	.91	.92	.93
9.4500	.94	.95	.96	.97	.99
9.7000	1.02	1.05	1.08	1.11	1.15
9.9500	1.18	1.22	1.25	1.29	1.34
10.2000	1.39	1.43	1.49	1.54	1.59
10.4500	1.64	1.70	1.76	1.82	1.89
10.7000	1.98	2.06	2.15	2.24	2.33
10.9500	2.42	2.52	2.63	2.76	2.91
11.2000	3.10	3.30	3.52	3.73	3.96
11.4500	4.19	4.43	5.13	6.89	9.59
11.7000	13.85	19.00	25.44	33.89	46.46

HYDROGRAPH ORDINATES (cfs)

Output Time increment = .0500 hrs

Time hrs | Time on left represents time for first value in each row.

Time hrs					
11.9500	55.91	55.76	48.90	35.17	22.42
12.2000	15.26	11.70	9.71	8.45	7.54
12.4500	6.82	6.15	5.60	5.13	4.77
12.7000	4.52	4.33	4.17	4.03	3.88
12.9500	3.75	3.61	3.48	3.36	3.26
13.2000	3.16	3.08	3.01	2.93	2.86
13.4500	2.78	2.71	2.64	2.57	2.51
13.7000	2.45	2.39	2.34	2.29	2.23
13.9500	2.18	2.12	2.08	2.03	2.00
14.2000	1.97	1.95	1.93	1.91	1.89
14.4500	1.87	1.85	1.83	1.81	1.80
14.7000	1.78	1.76	1.74	1.72	1.70
14.9500	1.69	1.67	1.65	1.63	1.61
15.2000	1.59	1.57	1.55	1.54	1.52
15.4500	1.50	1.48	1.46	1.44	1.42
15.7000	1.41	1.39	1.37	1.35	1.33
15.9500	1.31	1.29	1.27	1.26	1.25
16.2000	1.24	1.23	1.22	1.22	1.21
16.4500	1.20	1.20	1.19	1.18	1.18
16.7000	1.17	1.16	1.16	1.15	1.14
16.9500	1.14	1.13	1.12	1.12	1.11
17.2000	1.10	1.10	1.09	1.08	1.08
17.4500	1.07	1.06	1.06	1.05	1.04
17.7000	1.04	1.03	1.02	1.02	1.01
17.9500	1.00	1.00	.99	.98	.98
18.2000	.97	.96	.96	.95	.94
18.4500	.93	.93	.92	.91	.91
18.7000	.90	.90	.89	.88	.87
18.9500	.87	.86	.85	.85	.84
19.2000	.83	.83	.82	.81	.81
19.4500	.80	.79	.79	.78	.77
19.7000	.77	.76	.75	.75	.74
19.9500	.73	.73	.72	.71	.71
20.2000	.71	.71	.70	.70	.70
20.4500	.70	.70	.70	.70	.69
20.7000	.69	.69	.69	.69	.69
20.9500	.69	.69	.68	.68	.68
21.2000	.68	.68	.68	.68	.67
21.4500	.67	.67	.67	.67	.67
21.7000	.67	.67	.66	.66	.66
21.9500	.66	.66	.66	.66	.66
22.2000	.65	.65	.65	.65	.65
22.4500	.65	.65	.64	.64	.64
22.7000	.64	.64	.64	.64	.63
22.9500	.63	.63	.63	.63	.63

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
23.2000	.63	.63	.62	.62	.62
23.4500	.62	.62	.62	.62	.61
23.7000	.61	.61	.61	.61	.61
23.9500	.61	.61	.55	.36	.18
24.2000	.08	.04	.02	.01	.00
24.4500	.00	.00			

SUMMARY FOR HYDROGRAPH ADDITION
at Node: BASIN IN

HYG Directory: H:\DWG\031486\DETENTION\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ADDLINK 30	TO BASIN		TO BASIN	15yr

INFLOWS TO: BASIN IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	TO BASIN	15yr	5.917	11.9500	90.73

TOTAL FLOW INTO: BASIN IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	BASIN IN	15yr	5.917	11.9500	90.73

TOTAL NODE INFLOW...
HYG file =
HYG ID = BASIN IN
HYG Tag = 15yr

Peak Discharge =	90.73 cfs
Time to Peak =	11.9500 hrs
HYG Volume =	5.917 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
2.9000	.00	.00	.01	.01	.02
3.1500	.03	.04	.04	.05	.06
3.4000	.07	.08	.09	.10	.11
3.6500	.11	.12	.13	.14	.15
3.9000	.16	.17	.17	.18	.19
4.1500	.20	.21	.22	.23	.24
4.4000	.25	.26	.27	.28	.29
4.6500	.30	.31	.32	.33	.34
4.9000	.35	.36	.37	.38	.39
5.1500	.40	.41	.42	.43	.44
5.4000	.46	.47	.48	.49	.50
5.6500	.51	.52	.53	.54	.56
5.9000	.57	.58	.59	.60	.61
6.1500	.62	.64	.65	.66	.67
6.4000	.68	.69	.70	.72	.73
6.6500	.74	.75	.76	.77	.79
6.9000	.80	.81	.82	.83	.85
7.1500	.86	.87	.88	.89	.91
7.4000	.92	.93	.94	.95	.97
7.6500	.98	.99	1.00	1.01	1.03
7.9000	1.04	1.05	1.06	1.08	1.09
8.1500	1.12	1.14	1.17	1.21	1.24
8.4000	1.27	1.31	1.34	1.38	1.41
8.6500	1.45	1.48	1.52	1.56	1.59
8.9000	1.63	1.67	1.71	1.74	1.78
9.1500	1.80	1.82	1.83	1.84	1.85
9.4000	1.86	1.87	1.88	1.90	1.92
9.6500	1.96	2.00	2.06	2.11	2.17
9.9000	2.23	2.29	2.35	2.41	2.48
10.1500	2.56	2.64	2.73	2.82	2.91
10.4000	3.00	3.09	3.18	3.28	3.40

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
10.6500	3.52	3.66	3.80	3.95	4.10
10.9000	4.26	4.41	4.58	4.75	4.98
11.1500	5.24	5.55	5.89	6.26	6.62
11.4000	7.00	7.38	7.78	8.96	11.98
11.6500	16.56	23.71	32.24	42.73	56.25
11.9000	76.15	90.73	89.76	78.22	56.07
12.1500	35.65	24.20	18.52	15.33	13.33
12.4000	11.87	10.73	9.67	8.81	8.06
12.6500	7.49	7.10	6.80	6.55	6.32
12.9000	6.09	5.87	5.65	5.45	5.26
13.1500	5.10	4.96	4.83	4.71	4.59
13.4000	4.47	4.36	4.24	4.13	4.02
13.6500	3.92	3.83	3.74	3.65	3.57
13.9000	3.49	3.40	3.32	3.24	3.18
14.1500	3.12	3.08	3.04	3.01	2.98
14.4000	2.95	2.92	2.89	2.86	2.83
14.6500	2.80	2.77	2.75	2.72	2.69
14.9000	2.66	2.63	2.60	2.57	2.54
15.1500	2.51	2.48	2.45	2.42	2.40
15.4000	2.36	2.34	2.31	2.28	2.25
15.6500	2.22	2.19	2.16	2.13	2.10
15.9000	2.07	2.04	2.01	1.98	1.96
16.1500	1.94	1.93	1.91	1.90	1.89
16.4000	1.88	1.87	1.86	1.85	1.84
16.6500	1.83	1.82	1.81	1.80	1.79
16.9000	1.78	1.77	1.76	1.75	1.74
17.1500	1.73	1.71	1.70	1.69	1.68
17.4000	1.67	1.66	1.65	1.64	1.63
17.6500	1.62	1.61	1.60	1.59	1.58
17.9000	1.57	1.56	1.55	1.54	1.53
18.1500	1.52	1.50	1.49	1.48	1.47
18.4000	1.46	1.45	1.44	1.43	1.42
18.6500	1.41	1.40	1.39	1.38	1.37
18.9000	1.36	1.35	1.34	1.33	1.32
19.1500	1.31	1.29	1.28	1.27	1.26
19.4000	1.25	1.24	1.23	1.22	1.21
19.6500	1.20	1.19	1.18	1.17	1.16
19.9000	1.15	1.14	1.13	1.12	1.11
20.1500	1.10	1.10	1.09	1.09	1.09
20.4000	1.09	1.09	1.08	1.08	1.08
20.6500	1.08	1.08	1.07	1.07	1.07
20.9000	1.07	1.07	1.06	1.06	1.06
21.1500	1.06	1.05	1.05	1.05	1.05
21.4000	1.05	1.04	1.04	1.04	1.04
21.6500	1.04	1.03	1.03	1.03	1.03

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
21.9000	1.03	1.02	1.02	1.02	1.02
22.1500	1.02	1.01	1.01	1.01	1.01
22.4000	1.00	1.00	1.00	1.00	1.00
22.6500	.99	.99	.99	.99	.99
22.9000	.98	.98	.98	.98	.98
23.1500	.97	.97	.97	.97	.97
23.4000	.96	.96	.96	.96	.95
23.6500	.95	.95	.95	.95	.94
23.9000	.94	.94	.94	.85	.56
24.1500	.27	.13	.06	.03	.01
24.4000	.00	.00	.00		

SUMMARY FOR HYDROGRAPH ADDITION
at Node: BASIN IN

HYG Directory: H:\DWG\031486\DETENTION\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ADDLINK 30	TO BASIN		TO BASIN	25yr

INFLOWS TO: BASIN IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	TO BASIN	25yr	6.447	11.9500	98.40

TOTAL FLOW INTO: BASIN IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	BASIN IN	25yr	6.447	11.9500	98.40

TOTAL NODE INFLOW...
HYG file =
HYG ID = BASIN IN
HYG Tag = 25yr

Peak Discharge =	98.40 cfs
Time to Peak =	11.9500 hrs
HYG Volume =	6.447 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
2.7500	.00	.00	.01	.02	.03
3.0000	.04	.05	.06	.07	.08
3.2500	.08	.09	.10	.11	.12
3.5000	.13	.14	.15	.16	.17
3.7500	.18	.19	.20	.21	.22
4.0000	.23	.24	.25	.26	.27
4.2500	.28	.29	.30	.31	.32
4.5000	.33	.35	.36	.37	.38
4.7500	.39	.40	.41	.42	.44
5.0000	.45	.46	.47	.48	.49
5.2500	.51	.52	.53	.54	.55
5.5000	.57	.58	.59	.60	.61
5.7500	.63	.64	.65	.66	.68
6.0000	.69	.70	.71	.73	.74
6.2500	.75	.76	.78	.79	.80
6.5000	.81	.83	.84	.85	.87
6.7500	.88	.89	.90	.92	.93
7.0000	.94	.96	.97	.98	.99
7.2500	1.01	1.02	1.03	1.05	1.06
7.5000	1.07	1.08	1.10	1.11	1.12
7.7500	1.14	1.15	1.16	1.18	1.19
8.0000	1.20	1.22	1.24	1.26	1.29
8.2500	1.33	1.36	1.40	1.44	1.47
8.5000	1.51	1.55	1.59	1.63	1.67
8.7500	1.71	1.75	1.79	1.83	1.87
9.0000	1.91	1.95	1.99	2.01	2.03
9.2500	2.05	2.06	2.07	2.08	2.09
9.5000	2.10	2.12	2.14	2.18	2.23
9.7500	2.29	2.35	2.41	2.48	2.54
10.0000	2.61	2.68	2.76	2.84	2.93
10.2500	3.02	3.12	3.22	3.32	3.42

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
10.5000	3.52	3.63	3.75	3.88	4.04
10.7500	4.19	4.36	4.52	4.69	4.86
11.0000	5.04	5.23	5.48	5.76	6.10
11.2500	6.47	6.87	7.27	7.68	8.09
11.5000	8.52	9.82	13.11	18.11	25.90
11.7500	35.17	46.55	61.19	82.70	98.40
12.0000	97.25	84.68	60.67	38.56	26.17
12.2500	20.02	16.57	14.40	12.83	11.59
12.5000	10.45	9.51	8.71	8.09	7.66
12.7500	7.35	7.07	6.82	6.58	6.34
13.0000	6.11	5.89	5.68	5.51	5.35
13.2500	5.22	5.08	4.96	4.83	4.70
13.5000	4.58	4.46	4.34	4.23	4.13
13.7500	4.04	3.95	3.86	3.76	3.67
14.0000	3.58	3.50	3.43	3.37	3.32
14.2500	3.28	3.25	3.22	3.18	3.15
14.5000	3.12	3.09	3.06	3.02	2.99
14.7500	2.96	2.93	2.90	2.87	2.84
15.0000	2.80	2.77	2.74	2.71	2.68
15.2500	2.65	2.62	2.59	2.55	2.52
15.5000	2.49	2.46	2.43	2.39	2.36
15.7500	2.33	2.30	2.27	2.24	2.21
16.0000	2.17	2.14	2.12	2.10	2.08
16.2500	2.07	2.05	2.04	2.03	2.02
16.5000	2.01	2.00	1.99	1.97	1.96
16.7500	1.95	1.94	1.93	1.92	1.91
17.0000	1.89	1.88	1.87	1.86	1.85
17.2500	1.84	1.83	1.82	1.80	1.79
17.5000	1.78	1.77	1.76	1.75	1.74
17.7500	1.73	1.71	1.70	1.69	1.68
18.0000	1.67	1.66	1.65	1.64	1.62
18.2500	1.61	1.60	1.59	1.58	1.57
18.5000	1.56	1.55	1.53	1.52	1.51
18.7500	1.50	1.49	1.48	1.46	1.45
19.0000	1.44	1.43	1.42	1.41	1.40
19.2500	1.38	1.37	1.36	1.35	1.34
19.5000	1.33	1.32	1.31	1.29	1.28
19.7500	1.27	1.26	1.25	1.24	1.23
20.0000	1.21	1.20	1.20	1.19	1.18
20.2500	1.18	1.18	1.18	1.17	1.17
20.5000	1.17	1.17	1.16	1.16	1.16
20.7500	1.16	1.16	1.15	1.15	1.15
21.0000	1.15	1.14	1.14	1.14	1.14
21.2500	1.13	1.13	1.13	1.13	1.13
21.5000	1.12	1.12	1.12	1.12	1.12

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
21.7500	1.11	1.11	1.11	1.11	1.10
22.0000	1.10	1.10	1.10	1.10	1.09
22.2500	1.09	1.09	1.09	1.08	1.08
22.5000	1.08	1.08	1.07	1.07	1.07
22.7500	1.07	1.07	1.06	1.06	1.06
23.0000	1.06	1.05	1.05	1.05	1.05
23.2500	1.04	1.04	1.04	1.04	1.04
23.5000	1.03	1.03	1.03	1.03	1.02
23.7500	1.02	1.02	1.02	1.02	1.01
24.0000	1.01	.91	.60	.29	.14
24.2500	.06	.03	.01	.01	.00
24.5000	.00				

SUMMARY FOR HYDROGRAPH ADDITION
at Node: BASIN IN

HYG Directory: H:\DWG\031486\DETENTION\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ADDLINK 30	TO BASIN		TO BASIN	100yr

INFLOWS TO: BASIN IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	TO BASIN	100yr	8.175	11.9500	123.22

TOTAL FLOW INTO: BASIN IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	BASIN IN	100yr	8.175	11.9500	123.22

TOTAL NODE INFLOW...
HYG file =
HYG ID = BASIN IN
HYG Tag = 100yr

Peak Discharge =	123.22 cfs
Time to Peak =	11.9500 hrs
HYG Volume =	8.175 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
2.2500	.00	.00	.01	.01	.03
2.5000	.04	.05	.07	.08	.09
2.7500	.11	.12	.13	.15	.16
3.0000	.17	.19	.20	.21	.23
3.2500	.24	.25	.27	.28	.29
3.5000	.30	.32	.33	.34	.36
3.7500	.37	.38	.39	.41	.42
4.0000	.43	.44	.46	.47	.48
4.2500	.50	.51	.53	.54	.56
4.5000	.57	.59	.60	.62	.63
4.7500	.64	.66	.67	.69	.70
5.0000	.72	.74	.75	.77	.78
5.2500	.80	.81	.83	.84	.86
5.5000	.87	.89	.91	.92	.94
5.7500	.95	.97	.98	1.00	1.02
6.0000	1.03	1.05	1.06	1.08	1.09
6.2500	1.11	1.13	1.14	1.16	1.17
6.5000	1.19	1.21	1.22	1.24	1.25
6.7500	1.27	1.29	1.30	1.32	1.33
7.0000	1.35	1.37	1.38	1.40	1.41
7.2500	1.43	1.45	1.46	1.48	1.49
7.5000	1.51	1.53	1.54	1.56	1.57
7.7500	1.59	1.61	1.62	1.64	1.65
8.0000	1.67	1.69	1.71	1.74	1.79
8.2500	1.83	1.88	1.92	1.97	2.02
8.5000	2.07	2.12	2.17	2.22	2.28
8.7500	2.33	2.38	2.43	2.48	2.54
9.0000	2.59	2.64	2.68	2.72	2.74
9.2500	2.75	2.77	2.78	2.79	2.80
9.5000	2.81	2.83	2.86	2.91	2.97
9.7500	3.05	3.13	3.21	3.29	3.37

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
10.0000	3.46	3.55	3.65	3.75	3.87
10.2500	3.98	4.11	4.23	4.36	4.49
10.5000	4.62	4.75	4.91	5.08	5.27
10.7500	5.47	5.68	5.89	6.11	6.32
11.0000	6.54	6.78	7.09	7.45	7.89
11.2500	8.35	8.86	9.36	9.89	10.40
11.5000	10.94	12.59	16.78	23.13	32.98
11.7500	44.66	58.92	77.16	103.88	123.22
12.0000	121.47	105.57	75.56	47.99	32.54
12.2500	24.88	20.58	17.88	15.92	14.38
12.5000	12.96	11.80	10.80	10.03	9.50
12.7500	9.11	8.76	8.46	8.15	7.86
13.0000	7.57	7.30	7.04	6.83	6.63
13.2500	6.46	6.30	6.14	5.98	5.83
13.5000	5.67	5.52	5.37	5.24	5.12
13.7500	5.00	4.89	4.78	4.66	4.55
14.0000	4.44	4.33	4.24	4.17	4.11
14.2500	4.06	4.02	3.98	3.94	3.90
14.5000	3.86	3.83	3.78	3.74	3.71
14.7500	3.67	3.63	3.59	3.55	3.51
15.0000	3.47	3.43	3.39	3.36	3.31
15.2500	3.27	3.24	3.20	3.16	3.12
15.5000	3.08	3.04	3.00	2.96	2.92
15.7500	2.89	2.84	2.80	2.77	2.73
16.0000	2.69	2.65	2.62	2.59	2.57
16.2500	2.55	2.54	2.53	2.51	2.50
16.5000	2.48	2.47	2.46	2.44	2.43
16.7500	2.41	2.40	2.38	2.37	2.36
17.0000	2.34	2.33	2.32	2.30	2.29
17.2500	2.27	2.26	2.25	2.23	2.22
17.5000	2.20	2.19	2.18	2.16	2.15
17.7500	2.13	2.12	2.10	2.09	2.08
18.0000	2.06	2.05	2.04	2.02	2.01
18.2500	1.99	1.98	1.97	1.95	1.94
18.5000	1.92	1.91	1.89	1.88	1.87
18.7500	1.85	1.84	1.82	1.81	1.80
19.0000	1.78	1.77	1.75	1.74	1.73
19.2500	1.71	1.70	1.69	1.67	1.66
19.5000	1.64	1.63	1.61	1.60	1.59
19.7500	1.57	1.56	1.54	1.53	1.52
20.0000	1.50	1.49	1.48	1.47	1.46
20.2500	1.46	1.46	1.45	1.45	1.45
20.5000	1.44	1.44	1.44	1.44	1.43
20.7500	1.43	1.43	1.42	1.42	1.42
21.0000	1.42	1.41	1.41	1.41	1.41

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
21.2500	1.40	1.40	1.40	1.39	1.39
21.5000	1.39	1.39	1.38	1.38	1.38
21.7500	1.38	1.37	1.37	1.37	1.36
22.0000	1.36	1.36	1.36	1.35	1.35
22.2500	1.35	1.34	1.34	1.34	1.33
22.5000	1.33	1.33	1.33	1.32	1.32
22.7500	1.32	1.32	1.31	1.31	1.31
23.0000	1.30	1.30	1.30	1.30	1.29
23.2500	1.29	1.29	1.29	1.28	1.28
23.5000	1.28	1.28	1.27	1.27	1.27
23.7500	1.26	1.26	1.26	1.25	1.25
24.0000	1.25	1.13	.74	.36	.17
24.2500	.08	.04	.02	.01	.00
24.5000	.00				

LEVEL POOL ROUTING SUMMARY

HYG Dir = H:\DWG\031486\DETENTION\
Inflow HYG file = NONE STORED - BASIN IN 2yr
Outflow HYG file = NONE STORED - BASIN OUT 2yr

Pond Node Data = BASIN
Pond Volume Data = BASIN
Pond Outlet Data = structure

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	593.55 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0500 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	55.91 cfs	at	11.9500 hrs
Peak Outflow	=	12.31 cfs	at	12.2500 hrs
Peak Elevation	=	599.05 ft		
Peak Storage	=	1.137 ac-ft		

MASS BALANCE (ac-ft)

+ Initial Vol	=	.000
+ HYG Vol IN	=	3.560
- Infiltration	=	.000
- HYG Vol OUT	=	3.560
- Retained Vol	=	.000
Unrouted Vol	=	-.000 ac-ft (.000% of Inflow Volume)

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = BASIN OUT
HYG Tag = 2yr

Peak Discharge =	12.31 cfs
Time to Peak =	12.2500 hrs
HYG Volume =	3.560 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
4.2000	.00	.00	.00	.01	.01
4.4500	.02	.02	.03	.03	.04
4.7000	.04	.05	.05	.06	.06
4.9500	.07	.07	.08	.08	.09
5.2000	.10	.10	.11	.11	.12
5.4500	.12	.13	.14	.14	.15
5.7000	.15	.16	.17	.17	.18
5.9500	.19	.19	.20	.20	.21
6.2000	.22	.22	.23	.24	.24
6.4500	.25	.26	.26	.27	.28
6.7000	.28	.29	.30	.31	.31
6.9500	.32	.33	.33	.34	.35
7.2000	.35	.36	.37	.38	.38
7.4500	.39	.40	.40	.41	.42
7.7000	.43	.43	.44	.45	.46
7.9500	.46	.47	.48	.49	.50
8.2000	.51	.53	.54	.56	.58
8.4500	.60	.62	.64	.65	.67
8.7000	.69	.71	.73	.75	.78
8.9500	.80	.82	.84	.86	.88
9.2000	.89	.90	.91	.92	.93
9.4500	.93	.94	.95	.96	.98
9.7000	1.01	1.03	1.06	1.09	1.12
9.9500	1.15	1.19	1.22	1.26	1.30
10.2000	1.35	1.39	1.44	1.49	1.54
10.4500	1.60	1.65	1.71	1.77	1.83
10.7000	1.90	1.98	2.06	2.15	2.24
10.9500	2.33	2.42	2.52	2.62	2.75
11.2000	2.91	3.08	3.27	3.46	3.68
11.4500	3.84	3.99	4.23	4.66	5.31
11.7000	6.10	6.92	7.73	8.56	9.44

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
11.9500	10.31	11.05	11.62	12.01	12.22
12.2000	12.30	12.31	12.29	12.25	12.20
12.4500	12.14	12.07	12.00	11.91	11.82
12.7000	11.73	11.64	11.54	11.44	11.33
12.9500	11.23	11.12	11.01	10.90	10.78
13.2000	10.66	10.53	10.40	10.27	10.13
13.4500	9.99	9.84	9.68	9.52	9.35
13.7000	9.17	8.99	8.79	8.59	8.38
13.9500	8.16	7.92	7.68	7.41	7.11
14.2000	6.78	6.41	5.98	5.49	4.91
14.4500	4.21	3.27	2.41	2.03	1.88
14.7000	1.82	1.78	1.76	1.74	1.72
14.9500	1.70	1.68	1.67	1.65	1.63
15.2000	1.61	1.59	1.57	1.55	1.54
15.4500	1.52	1.50	1.48	1.46	1.44
15.7000	1.42	1.40	1.39	1.37	1.35
15.9500	1.33	1.31	1.29	1.27	1.26
16.2000	1.25	1.24	1.23	1.22	1.21
16.4500	1.21	1.20	1.19	1.19	1.18
16.7000	1.17	1.17	1.16	1.15	1.15
16.9500	1.14	1.13	1.13	1.12	1.11
17.2000	1.11	1.10	1.09	1.09	1.08
17.4500	1.07	1.07	1.06	1.05	1.05
17.7000	1.04	1.03	1.03	1.02	1.01
17.9500	1.01	1.00	.99	.99	.98
18.2000	.97	.97	.96	.95	.95
18.4500	.94	.93	.93	.92	.91
18.7000	.90	.90	.89	.88	.88
18.9500	.87	.86	.86	.85	.84
19.2000	.84	.83	.82	.82	.81
19.4500	.80	.80	.79	.78	.78
19.7000	.77	.76	.76	.75	.74
19.9500	.74	.73	.72	.72	.71
20.2000	.71	.71	.70	.70	.70
20.4500	.70	.70	.70	.70	.70
20.7000	.69	.69	.69	.69	.69
20.9500	.69	.69	.68	.68	.68
21.2000	.68	.68	.68	.68	.68
21.4500	.67	.67	.67	.67	.67
21.7000	.67	.67	.67	.66	.66
21.9500	.66	.66	.66	.66	.66
22.2000	.65	.65	.65	.65	.65
22.4500	.65	.65	.65	.64	.64
22.7000	.64	.64	.64	.64	.64
22.9500	.63	.63	.63	.63	.63

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
23.2000	.63	.63	.62	.62	.62
23.4500	.62	.62	.62	.62	.62
23.7000	.61	.61	.61	.61	.61
23.9500	.61	.61	.58	.45	.27
24.2000	.13	.06	.03	.01	.01
24.4500	.00	.00			

LEVEL POOL ROUTING SUMMARY

HYG Dir = H:\DWG\031486\DETENTION\
Inflow HYG file = NONE STORED - BASIN IN 15yr
Outflow HYG file = NONE STORED - BASIN OUT 15yr

Pond Node Data = BASIN
Pond Volume Data = BASIN
Pond Outlet Data = structure

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	593.55 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0500 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	90.73 cfs	at	11.9500 hrs
Peak Outflow	=	37.67 cfs	at	12.1500 hrs
Peak Elevation	=	600.63 ft		
Peak Storage	=	1.860 ac-ft		

MASS BALANCE (ac-ft)

+ Initial Vol	=	.000
+ HYG Vol IN	=	5.917
- Infiltration	=	.000
- HYG Vol OUT	=	5.917
- Retained Vol	=	.000
Unrouted Vol	=	.000 ac-ft (.000% of Outflow Volume)

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = BASIN OUT
HYG Tag = 15yr

Peak Discharge =	37.67 cfs
Time to Peak =	12.1500 hrs
HYG Volume =	5.917 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
2.9000	.00	.00	.00	.01	.02
3.1500	.02	.03	.04	.05	.06
3.4000	.07	.07	.08	.09	.10
3.6500	.11	.12	.13	.14	.14
3.9000	.15	.16	.17	.18	.19
4.1500	.20	.21	.22	.22	.23
4.4000	.24	.25	.26	.27	.28
4.6500	.29	.30	.31	.32	.33
4.9000	.34	.35	.37	.38	.39
5.1500	.40	.41	.42	.43	.44
5.4000	.45	.46	.47	.48	.49
5.6500	.51	.52	.53	.54	.55
5.9000	.56	.57	.58	.60	.61
6.1500	.62	.63	.64	.65	.66
6.4000	.68	.69	.70	.71	.72
6.6500	.73	.75	.76	.77	.78
6.9000	.79	.80	.82	.83	.84
7.1500	.85	.86	.88	.89	.90
7.4000	.91	.92	.94	.95	.96
7.6500	.97	.98	1.00	1.01	1.02
7.9000	1.03	1.04	1.05	1.06	1.08
8.1500	1.10	1.12	1.15	1.18	1.21
8.4000	1.25	1.28	1.31	1.35	1.38
8.6500	1.42	1.45	1.49	1.52	1.56
8.9000	1.60	1.64	1.67	1.71	1.74
9.1500	1.77	1.80	1.82	1.83	1.84
9.4000	1.85	1.87	1.88	1.89	1.90
9.6500	1.93	1.96	2.01	2.06	2.11
9.9000	2.17	2.23	2.29	2.35	2.42
10.1500	2.49	2.56	2.63	2.72	2.81
10.4000	2.89	2.99	3.08	3.17	3.26

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
10.6500	3.37	3.49	3.62	3.76	3.85
10.9000	3.95	4.08	4.20	4.32	4.46
11.1500	4.61	4.78	4.96	5.16	5.36
11.4000	5.56	5.77	5.97	6.21	6.58
11.6500	7.10	7.76	8.52	9.35	10.21
11.9000	11.12	12.08	14.25	21.22	33.07
12.1500	37.67	34.87	30.28	26.24	23.29
12.4000	21.40	20.22	19.09	18.04	17.05
12.6500	16.16	15.35	14.64	14.04	13.53
12.9000	13.08	12.80	12.63	12.55	12.46
13.1500	12.38	12.29	12.20	12.11	12.02
13.4000	11.93	11.83	11.74	11.64	11.54
13.6500	11.43	11.33	11.22	11.12	11.01
13.9000	10.90	10.78	10.66	10.54	10.41
14.1500	10.28	10.15	10.01	9.86	9.72
14.4000	9.56	9.41	9.24	9.07	8.90
14.6500	8.71	8.52	8.33	8.12	7.91
14.9000	7.69	7.45	7.19	6.91	6.60
15.1500	6.25	5.87	5.44	4.95	4.41
15.4000	3.82	3.04	2.60	2.41	2.31
15.6500	2.26	2.22	2.19	2.16	2.13
15.9000	2.10	2.07	2.04	2.01	1.99
16.1500	1.96	1.95	1.93	1.92	1.90
16.4000	1.89	1.88	1.87	1.86	1.85
16.6500	1.84	1.83	1.82	1.81	1.80
16.9000	1.79	1.78	1.77	1.76	1.75
17.1500	1.74	1.72	1.71	1.70	1.69
17.4000	1.68	1.67	1.66	1.65	1.64
17.6500	1.63	1.62	1.61	1.60	1.59
17.9000	1.58	1.57	1.56	1.55	1.54
18.1500	1.53	1.52	1.50	1.49	1.48
18.4000	1.47	1.46	1.45	1.44	1.43
18.6500	1.42	1.41	1.40	1.39	1.38
18.9000	1.37	1.36	1.35	1.33	1.32
19.1500	1.31	1.30	1.29	1.28	1.27
19.4000	1.26	1.25	1.24	1.23	1.22
19.6500	1.21	1.20	1.19	1.18	1.17
19.9000	1.16	1.15	1.14	1.12	1.12
20.1500	1.11	1.10	1.10	1.09	1.09
20.4000	1.09	1.09	1.09	1.08	1.08
20.6500	1.08	1.08	1.08	1.07	1.07
20.9000	1.07	1.07	1.07	1.06	1.06
21.1500	1.06	1.06	1.05	1.05	1.05
21.4000	1.05	1.05	1.04	1.04	1.04
21.6500	1.04	1.04	1.03	1.03	1.03

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
21.9000	1.03	1.02	1.02	1.02	1.02
22.1500	1.02	1.01	1.01	1.01	1.01
22.4000	1.01	1.00	1.00	1.00	1.00
22.6500	.99	.99	.99	.99	.99
22.9000	.98	.98	.98	.98	.98
23.1500	.97	.97	.97	.97	.97
23.4000	.96	.96	.96	.96	.96
23.6500	.95	.95	.95	.95	.94
23.9000	.94	.94	.94	.89	.70
24.1500	.42	.20	.09	.04	.02
24.4000	.01	.00	.00		

LEVEL POOL ROUTING SUMMARY

HYG Dir = H:\DWG\031486\DETENTION\
Inflow HYG file = NONE STORED - BASIN IN 25yr
Outflow HYG file = NONE STORED - BASIN OUT 25yr

Pond Node Data = BASIN
Pond Volume Data = BASIN
Pond Outlet Data = structure

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	593.55 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0500 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	98.40 cfs	at	11.9500 hrs
Peak Outflow	=	47.80 cfs	at	12.1500 hrs
Peak Elevation	=	600.80 ft		
Peak Storage	=	1.946 ac-ft		

MASS BALANCE (ac-ft)

+ Initial Vol	=	.000
+ HYG Vol IN	=	6.447
- Infiltration	=	.000
- HYG Vol OUT	=	6.447
- Retained Vol	=	.000
Unrouted Vol	=	.000 ac-ft (.000% of Outflow Volume)

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = BASIN OUT
HYG Tag = 25yr

Peak Discharge =	47.80 cfs
Time to Peak =	12.1500 hrs
HYG Volume =	6.447 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
2.7500	.00	.00	.01	.01	.02
3.0000	.03	.04	.05	.06	.07
3.2500	.08	.09	.10	.11	.12
3.5000	.13	.14	.15	.16	.17
3.7500	.18	.19	.20	.21	.22
4.0000	.23	.23	.24	.25	.26
4.2500	.28	.29	.30	.31	.32
4.5000	.33	.34	.35	.36	.37
4.7500	.38	.40	.41	.42	.43
5.0000	.44	.45	.47	.48	.49
5.2500	.50	.51	.52	.54	.55
5.5000	.56	.57	.58	.60	.61
5.7500	.62	.63	.65	.66	.67
6.0000	.68	.70	.71	.72	.73
6.2500	.75	.76	.77	.78	.80
6.5000	.81	.82	.83	.85	.86
6.7500	.87	.88	.90	.91	.92
7.0000	.94	.95	.96	.97	.99
7.2500	1.00	1.01	1.03	1.04	1.05
7.5000	1.06	1.07	1.09	1.10	1.11
7.7500	1.13	1.14	1.15	1.16	1.18
8.0000	1.19	1.20	1.22	1.24	1.27
8.2500	1.30	1.33	1.37	1.40	1.44
8.5000	1.48	1.51	1.55	1.59	1.63
8.7500	1.67	1.71	1.75	1.79	1.83
9.0000	1.87	1.92	1.95	1.98	2.01
9.2500	2.03	2.04	2.06	2.07	2.08
9.5000	2.09	2.10	2.12	2.15	2.18
9.7500	2.23	2.29	2.35	2.41	2.48
10.0000	2.54	2.60	2.67	2.75	2.83
10.2500	2.92	3.01	3.11	3.20	3.29

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
10.5000	3.39	3.49	3.60	3.72	3.82
10.7500	3.91	4.03	4.16	4.28	4.41
11.0000	4.54	4.67	4.82	4.97	5.14
11.2500	5.32	5.51	5.72	5.92	6.13
11.5000	6.33	6.57	6.92	7.42	8.06
11.7500	8.82	9.65	10.51	11.43	12.43
12.0000	17.51	31.09	46.54	47.80	41.64
12.2500	34.73	29.19	25.19	22.58	21.04
12.5000	19.89	18.79	17.76	16.81	15.97
12.7500	15.21	14.54	13.97	13.49	13.07
13.0000	12.80	12.63	12.55	12.47	12.39
13.2500	12.31	12.22	12.13	12.05	11.96
13.5000	11.86	11.77	11.67	11.57	11.47
13.7500	11.37	11.27	11.17	11.06	10.95
14.0000	10.84	10.73	10.61	10.49	10.36
14.2500	10.23	10.10	9.96	9.82	9.68
14.5000	9.53	9.37	9.21	9.04	8.87
14.7500	8.69	8.51	8.32	8.12	7.91
15.0000	7.70	7.47	7.22	6.94	6.65
15.2500	6.32	5.96	5.56	5.12	4.61
15.5000	4.06	3.40	2.85	2.58	2.46
15.7500	2.38	2.34	2.30	2.27	2.24
16.0000	2.21	2.17	2.14	2.12	2.10
16.2500	2.08	2.07	2.05	2.04	2.03
16.5000	2.02	2.01	2.00	1.99	1.97
16.7500	1.96	1.95	1.94	1.93	1.92
17.0000	1.91	1.89	1.88	1.87	1.86
17.2500	1.85	1.84	1.83	1.82	1.80
17.5000	1.79	1.78	1.77	1.76	1.75
17.7500	1.74	1.72	1.71	1.70	1.69
18.0000	1.68	1.67	1.66	1.65	1.63
18.2500	1.62	1.61	1.60	1.59	1.58
18.5000	1.57	1.55	1.54	1.53	1.52
18.7500	1.51	1.50	1.49	1.48	1.46
19.0000	1.45	1.44	1.43	1.42	1.41
19.2500	1.40	1.38	1.37	1.36	1.35
19.5000	1.34	1.33	1.32	1.30	1.29
19.7500	1.28	1.27	1.26	1.25	1.24
20.0000	1.22	1.21	1.20	1.20	1.19
20.2500	1.18	1.18	1.18	1.18	1.17
20.5000	1.17	1.17	1.17	1.16	1.16
20.7500	1.16	1.16	1.16	1.15	1.15
21.0000	1.15	1.15	1.14	1.14	1.14
21.2500	1.14	1.13	1.13	1.13	1.13
21.5000	1.13	1.12	1.12	1.12	1.12

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
21.7500	1.11	1.11	1.11	1.11	1.11
22.0000	1.10	1.10	1.10	1.10	1.09
22.2500	1.09	1.09	1.09	1.09	1.08
22.5000	1.08	1.08	1.08	1.07	1.07
22.7500	1.07	1.07	1.06	1.06	1.06
23.0000	1.06	1.06	1.05	1.05	1.05
23.2500	1.05	1.04	1.04	1.04	1.04
23.5000	1.04	1.03	1.03	1.03	1.03
23.7500	1.02	1.02	1.02	1.02	1.01
24.0000	1.01	.96	.76	.45	.22
24.2500	.10	.05	.02	.01	.00
24.5000	.00				

LEVEL POOL ROUTING SUMMARY

HYG Dir = H:\DWG\031486\DETENTION\
Inflow HYG file = NONE STORED - BASIN IN 100yr
Outflow HYG file = NONE STORED - BASIN OUT 100yr

Pond Node Data = BASIN
Pond Volume Data = BASIN
Pond Outlet Data = structure

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	593.55 ft
Starting Volume	=	.000 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0500 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	123.22 cfs	at	11.9500 hrs
Peak Outflow	=	83.39 cfs	at	12.1000 hrs
Peak Elevation	=	601.28 ft		
Peak Storage	=	2.197 ac-ft		

MASS BALANCE (ac-ft)

+ Initial Vol	=	.000
+ HYG Vol IN	=	8.175
- Infiltration	=	.000
- HYG Vol OUT	=	8.175
- Retained Vol	=	.000
Unrouted Vol	=	.000 ac-ft (.000% of Outflow Volume)

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = BASIN OUT
HYG Tag = 100yr

Peak Discharge =	83.39 cfs
Time to Peak =	12.1000 hrs
HYG Volume =	8.175 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
2.2500	.00	.00	.00	.01	.02
2.5000	.03	.05	.06	.07	.09
2.7500	.10	.11	.13	.14	.15
3.0000	.17	.18	.19	.21	.22
3.2500	.23	.25	.26	.27	.28
3.5000	.30	.31	.32	.34	.35
3.7500	.36	.38	.39	.40	.41
4.0000	.43	.44	.45	.46	.48
4.2500	.49	.51	.52	.53	.55
4.5000	.56	.58	.59	.61	.62
4.7500	.64	.65	.67	.68	.70
5.0000	.71	.73	.74	.76	.77
5.2500	.79	.80	.82	.84	.85
5.5000	.87	.88	.90	.91	.93
5.7500	.94	.96	.98	.99	1.01
6.0000	1.02	1.04	1.05	1.07	1.08
6.2500	1.10	1.11	1.13	1.14	1.16
6.5000	1.18	1.19	1.21	1.22	1.24
6.7500	1.26	1.27	1.29	1.30	1.32
7.0000	1.34	1.35	1.37	1.38	1.40
7.2500	1.41	1.43	1.45	1.46	1.48
7.5000	1.49	1.51	1.53	1.54	1.56
7.7500	1.57	1.59	1.61	1.62	1.64
8.0000	1.65	1.67	1.69	1.72	1.75
8.2500	1.79	1.83	1.88	1.93	1.97
8.5000	2.02	2.07	2.12	2.17	2.22
8.7500	2.27	2.33	2.38	2.43	2.48
9.0000	2.53	2.58	2.63	2.67	2.71
9.2500	2.73	2.75	2.76	2.78	2.79
9.5000	2.80	2.81	2.83	2.86	2.91
9.7500	2.97	3.04	3.12	3.19	3.27

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
10.0000	3.35	3.44	3.52	3.62	3.72
10.2500	3.81	3.88	3.98	4.08	4.18
10.5000	4.28	4.39	4.50	4.61	4.73
10.7500	4.86	5.00	5.14	5.27	5.42
11.0000	5.56	5.70	5.85	6.00	6.17
11.2500	6.35	6.54	6.73	6.93	7.13
11.5000	7.33	7.55	7.87	8.33	8.95
11.7500	9.70	10.52	11.38	12.39	18.80
12.0000	46.82	76.36	83.39	72.85	58.09
12.2500	45.72	36.87	30.74	26.50	23.61
12.5000	21.66	20.57	19.52	18.52	17.60
12.7500	16.76	16.02	15.35	14.75	14.23
13.0000	13.75	13.36	13.02	12.78	12.63
13.2500	12.56	12.49	12.42	12.35	12.27
13.5000	12.19	12.11	12.03	11.95	11.86
13.7500	11.77	11.68	11.59	11.50	11.41
14.0000	11.31	11.21	11.11	11.01	10.91
14.2500	10.81	10.70	10.59	10.48	10.36
14.5000	10.25	10.12	10.00	9.87	9.74
14.7500	9.60	9.46	9.32	9.17	9.02
15.0000	8.86	8.69	8.53	8.35	8.17
15.2500	7.98	7.79	7.58	7.36	7.13
15.5000	6.88	6.60	6.31	5.98	5.63
15.7500	5.24	4.82	4.36	3.90	3.37
16.0000	2.99	2.79	2.70	2.64	2.61
16.2500	2.58	2.56	2.54	2.53	2.51
16.5000	2.50	2.49	2.47	2.46	2.44
16.7500	2.43	2.41	2.40	2.39	2.37
17.0000	2.36	2.34	2.33	2.32	2.30
17.2500	2.29	2.27	2.26	2.25	2.23
17.5000	2.22	2.20	2.19	2.18	2.16
17.7500	2.15	2.13	2.12	2.11	2.09
18.0000	2.08	2.06	2.05	2.04	2.02
18.2500	2.01	1.99	1.98	1.97	1.95
18.5000	1.94	1.92	1.91	1.89	1.88
18.7500	1.87	1.85	1.84	1.82	1.81
19.0000	1.80	1.78	1.77	1.75	1.74
19.2500	1.73	1.71	1.70	1.68	1.67
19.5000	1.65	1.64	1.63	1.61	1.60
19.7500	1.59	1.57	1.56	1.54	1.53
20.0000	1.51	1.50	1.49	1.48	1.47
20.2500	1.46	1.46	1.46	1.45	1.45
20.5000	1.45	1.44	1.44	1.44	1.44
20.7500	1.43	1.43	1.43	1.42	1.42
21.0000	1.42	1.42	1.41	1.41	1.41

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
21.2500	1.41	1.40	1.40	1.40	1.39
21.5000	1.39	1.39	1.39	1.38	1.38
21.7500	1.38	1.37	1.37	1.37	1.37
22.0000	1.36	1.36	1.36	1.36	1.35
22.2500	1.35	1.35	1.34	1.34	1.34
22.5000	1.33	1.33	1.33	1.33	1.32
22.7500	1.32	1.32	1.32	1.31	1.31
23.0000	1.31	1.30	1.30	1.30	1.30
23.2500	1.29	1.29	1.29	1.29	1.28
23.5000	1.28	1.28	1.27	1.27	1.27
23.7500	1.27	1.26	1.26	1.26	1.25
24.0000	1.25	1.20	.99	.55	.27
24.2500	.12	.06	.03	.01	.00
24.5000	.00				

DIVERTED HYDROGRAPH...
HYG file =
HYG ID = STRUCTURE
HYG Tag = 2yr

Peak Discharge = 12.31 cfs
Time to Peak = 12.2500 hrs
HYG Volume = 3.560 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
4.2000	.00	.00	.00	.01	.01
4.4500	.02	.02	.03	.03	.04
4.7000	.04	.05	.05	.06	.06
4.9500	.07	.07	.08	.08	.09
5.2000	.10	.10	.11	.11	.12
5.4500	.12	.13	.14	.14	.15
5.7000	.15	.16	.17	.17	.18
5.9500	.19	.19	.20	.20	.21
6.2000	.22	.22	.23	.24	.24
6.4500	.25	.26	.26	.27	.28
6.7000	.28	.29	.30	.31	.31
6.9500	.32	.33	.33	.34	.35
7.2000	.35	.36	.37	.38	.38
7.4500	.39	.40	.40	.41	.42
7.7000	.43	.43	.44	.45	.46
7.9500	.46	.47	.48	.49	.50
8.2000	.51	.53	.54	.56	.58
8.4500	.60	.62	.64	.65	.67
8.7000	.69	.71	.73	.75	.78
8.9500	.80	.82	.84	.86	.88
9.2000	.89	.90	.91	.92	.93
9.4500	.93	.94	.95	.96	.98
9.7000	1.01	1.03	1.06	1.09	1.12
9.9500	1.15	1.19	1.22	1.26	1.30
10.2000	1.35	1.39	1.44	1.49	1.54
10.4500	1.60	1.65	1.71	1.77	1.83
10.7000	1.90	1.98	2.06	2.15	2.24
10.9500	2.33	2.42	2.52	2.62	2.75
11.2000	2.91	3.08	3.27	3.46	3.68
11.4500	3.84	3.99	4.23	4.66	5.31
11.7000	6.10	6.92	7.73	8.56	9.44

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
11.9500	10.31	11.05	11.62	12.01	12.22
12.2000	12.30	12.31	12.29	12.25	12.20
12.4500	12.14	12.07	12.00	11.91	11.82
12.7000	11.73	11.64	11.54	11.44	11.33
12.9500	11.23	11.12	11.01	10.90	10.78
13.2000	10.66	10.53	10.40	10.27	10.13
13.4500	9.99	9.84	9.68	9.52	9.35
13.7000	9.17	8.99	8.79	8.59	8.38
13.9500	8.16	7.92	7.68	7.41	7.11
14.2000	6.78	6.41	5.98	5.49	4.91
14.4500	4.21	3.27	2.41	2.03	1.88
14.7000	1.82	1.78	1.76	1.74	1.72
14.9500	1.70	1.68	1.67	1.65	1.63
15.2000	1.61	1.59	1.57	1.55	1.54
15.4500	1.52	1.50	1.48	1.46	1.44
15.7000	1.42	1.40	1.39	1.37	1.35
15.9500	1.33	1.31	1.29	1.27	1.26
16.2000	1.25	1.24	1.23	1.22	1.21
16.4500	1.21	1.20	1.19	1.19	1.18
16.7000	1.17	1.17	1.16	1.15	1.15
16.9500	1.14	1.13	1.13	1.12	1.11
17.2000	1.11	1.10	1.09	1.09	1.08
17.4500	1.07	1.07	1.06	1.05	1.05
17.7000	1.04	1.03	1.03	1.02	1.01
17.9500	1.01	1.00	.99	.99	.98
18.2000	.97	.97	.96	.95	.95
18.4500	.94	.93	.93	.92	.91
18.7000	.90	.90	.89	.88	.88
18.9500	.87	.86	.86	.85	.84
19.2000	.84	.83	.82	.82	.81
19.4500	.80	.80	.79	.78	.78
19.7000	.77	.76	.76	.75	.74
19.9500	.74	.73	.72	.72	.71
20.2000	.71	.71	.70	.70	.70
20.4500	.70	.70	.70	.70	.70
20.7000	.69	.69	.69	.69	.69
20.9500	.69	.69	.68	.68	.68
21.2000	.68	.68	.68	.68	.68
21.4500	.67	.67	.67	.67	.67
21.7000	.67	.67	.67	.66	.66
21.9500	.66	.66	.66	.66	.66
22.2000	.65	.65	.65	.65	.65
22.4500	.65	.65	.65	.64	.64
22.7000	.64	.64	.64	.64	.64
22.9500	.63	.63	.63	.63	.63

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
23.2000	.63	.63	.62	.62	.62
23.4500	.62	.62	.62	.62	.62
23.7000	.61	.61	.61	.61	.61
23.9500	.61	.61	.58	.45	.27
24.2000	.13	.06	.03	.01	.01
24.4500	.00	.00			

DIVERTED HYDROGRAPH...
HYG file =
HYG ID = STRUCTURE
HYG Tag = 15yr

Peak Discharge = 37.67 cfs
Time to Peak = 12.1500 hrs
HYG Volume = 5.917 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
2.9500	.00	.00	.01	.02	.02
3.2000	.03	.04	.05	.06	.07
3.4500	.07	.08	.09	.10	.11
3.7000	.12	.13	.14	.14	.15
3.9500	.16	.17	.18	.19	.20
4.2000	.21	.22	.22	.23	.24
4.4500	.25	.26	.27	.28	.29
4.7000	.30	.31	.32	.33	.34
4.9500	.35	.37	.38	.39	.40
5.2000	.41	.42	.43	.44	.45
5.4500	.46	.47	.48	.49	.51
5.7000	.52	.53	.54	.55	.56
5.9500	.57	.58	.60	.61	.62
6.2000	.63	.64	.65	.66	.68
6.4500	.69	.70	.71	.72	.73
6.7000	.75	.76	.77	.78	.79
6.9500	.80	.82	.83	.84	.85
7.2000	.86	.88	.89	.90	.91
7.4500	.92	.94	.95	.96	.97
7.7000	.98	1.00	1.01	1.02	1.03
7.9500	1.04	1.05	1.06	1.08	1.10
8.2000	1.12	1.15	1.18	1.21	1.25
8.4500	1.28	1.31	1.35	1.38	1.42
8.7000	1.45	1.49	1.52	1.56	1.60
8.9500	1.64	1.67	1.71	1.74	1.77
9.2000	1.80	1.82	1.83	1.84	1.85
9.4500	1.87	1.88	1.89	1.90	1.93
9.7000	1.96	2.01	2.06	2.11	2.17
9.9500	2.23	2.29	2.35	2.42	2.49
10.2000	2.56	2.63	2.72	2.81	2.89
10.4500	2.99	3.08	3.17	3.26	3.37

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
10.7000	3.49	3.62	3.76	3.85	3.95
10.9500	4.08	4.20	4.32	4.46	4.61
11.2000	4.78	4.96	5.16	5.36	5.56
11.4500	5.77	5.97	6.21	6.58	7.10
11.7000	7.76	8.52	9.35	10.21	11.12
11.9500	12.08	14.25	21.22	33.07	37.67
12.2000	34.87	30.28	26.24	23.29	21.40
12.4500	20.22	19.09	18.04	17.05	16.16
12.7000	15.35	14.64	14.04	13.53	13.08
12.9500	12.80	12.63	12.55	12.46	12.38
13.2000	12.29	12.20	12.11	12.02	11.93
13.4500	11.83	11.74	11.64	11.54	11.43
13.7000	11.33	11.22	11.12	11.01	10.90
13.9500	10.78	10.66	10.54	10.41	10.28
14.2000	10.15	10.01	9.86	9.72	9.56
14.4500	9.41	9.24	9.07	8.90	8.71
14.7000	8.52	8.33	8.12	7.91	7.69
14.9500	7.45	7.19	6.91	6.60	6.25
15.2000	5.87	5.44	4.95	4.41	3.82
15.4500	3.04	2.60	2.41	2.31	2.26
15.7000	2.22	2.19	2.16	2.13	2.10
15.9500	2.07	2.04	2.01	1.99	1.96
16.2000	1.95	1.93	1.92	1.90	1.89
16.4500	1.88	1.87	1.86	1.85	1.84
16.7000	1.83	1.82	1.81	1.80	1.79
16.9500	1.78	1.77	1.76	1.75	1.74
17.2000	1.72	1.71	1.70	1.69	1.68
17.4500	1.67	1.66	1.65	1.64	1.63
17.7000	1.62	1.61	1.60	1.59	1.58
17.9500	1.57	1.56	1.55	1.54	1.53
18.2000	1.52	1.50	1.49	1.48	1.47
18.4500	1.46	1.45	1.44	1.43	1.42
18.7000	1.41	1.40	1.39	1.38	1.37
18.9500	1.36	1.35	1.33	1.32	1.31
19.2000	1.30	1.29	1.28	1.27	1.26
19.4500	1.25	1.24	1.23	1.22	1.21
19.7000	1.20	1.19	1.18	1.17	1.16
19.9500	1.15	1.14	1.12	1.12	1.11
20.2000	1.10	1.10	1.09	1.09	1.09
20.4500	1.09	1.09	1.08	1.08	1.08
20.7000	1.08	1.08	1.07	1.07	1.07
20.9500	1.07	1.07	1.06	1.06	1.06
21.2000	1.06	1.05	1.05	1.05	1.05
21.4500	1.05	1.04	1.04	1.04	1.04
21.7000	1.04	1.03	1.03	1.03	1.03

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
21.9500	1.02	1.02	1.02	1.02	1.02
22.2000	1.01	1.01	1.01	1.01	1.01
22.4500	1.00	1.00	1.00	1.00	.99
22.7000	.99	.99	.99	.99	.98
22.9500	.98	.98	.98	.98	.97
23.2000	.97	.97	.97	.97	.96
23.4500	.96	.96	.96	.96	.95
23.7000	.95	.95	.95	.94	.94
23.9500	.94	.94	.89	.70	.42
24.2000	.20	.09	.04	.02	.01
24.4500	.00	.00			

DIVERTED HYDROGRAPH...
HYG file =
HYG ID = STRUCTURE
HYG Tag = 25yr

Peak Discharge =	47.80 cfs
Time to Peak =	12.1500 hrs
HYG Volume =	6.447 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
2.7500	.00	.00	.01	.01	.02
3.0000	.03	.04	.05	.06	.07
3.2500	.08	.09	.10	.11	.12
3.5000	.13	.14	.15	.16	.17
3.7500	.18	.19	.20	.21	.22
4.0000	.23	.23	.24	.25	.26
4.2500	.28	.29	.30	.31	.32
4.5000	.33	.34	.35	.36	.37
4.7500	.38	.40	.41	.42	.43
5.0000	.44	.45	.47	.48	.49
5.2500	.50	.51	.52	.54	.55
5.5000	.56	.57	.58	.60	.61
5.7500	.62	.63	.65	.66	.67
6.0000	.68	.70	.71	.72	.73
6.2500	.75	.76	.77	.78	.80
6.5000	.81	.82	.83	.85	.86
6.7500	.87	.88	.90	.91	.92
7.0000	.94	.95	.96	.97	.99
7.2500	1.00	1.01	1.03	1.04	1.05
7.5000	1.06	1.07	1.09	1.10	1.11
7.7500	1.13	1.14	1.15	1.16	1.18
8.0000	1.19	1.20	1.22	1.24	1.27
8.2500	1.30	1.33	1.37	1.40	1.44
8.5000	1.48	1.51	1.55	1.59	1.63
8.7500	1.67	1.71	1.75	1.79	1.83
9.0000	1.87	1.92	1.95	1.98	2.01
9.2500	2.03	2.04	2.06	2.07	2.08
9.5000	2.09	2.10	2.12	2.15	2.18
9.7500	2.23	2.29	2.35	2.41	2.48
10.0000	2.54	2.60	2.67	2.75	2.83
10.2500	2.92	3.01	3.11	3.20	3.29

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
10.5000	3.39	3.49	3.60	3.72	3.82
10.7500	3.91	4.03	4.16	4.28	4.41
11.0000	4.54	4.67	4.82	4.97	5.14
11.2500	5.32	5.51	5.72	5.92	6.13
11.5000	6.33	6.57	6.92	7.42	8.06
11.7500	8.82	9.65	10.51	11.43	12.43
12.0000	17.51	31.09	46.54	47.80	41.64
12.2500	34.73	29.19	25.19	22.58	21.04
12.5000	19.89	18.79	17.76	16.81	15.97
12.7500	15.21	14.54	13.97	13.49	13.07
13.0000	12.80	12.63	12.55	12.47	12.39
13.2500	12.31	12.22	12.13	12.05	11.96
13.5000	11.86	11.77	11.67	11.57	11.47
13.7500	11.37	11.27	11.17	11.06	10.95
14.0000	10.84	10.73	10.61	10.49	10.36
14.2500	10.23	10.10	9.96	9.82	9.68
14.5000	9.53	9.37	9.21	9.04	8.87
14.7500	8.69	8.51	8.32	8.12	7.91
15.0000	7.70	7.47	7.22	6.94	6.65
15.2500	6.32	5.96	5.56	5.12	4.61
15.5000	4.06	3.40	2.85	2.58	2.46
15.7500	2.38	2.34	2.30	2.27	2.24
16.0000	2.21	2.17	2.14	2.12	2.10
16.2500	2.08	2.07	2.05	2.04	2.03
16.5000	2.02	2.01	2.00	1.99	1.97
16.7500	1.96	1.95	1.94	1.93	1.92
17.0000	1.91	1.89	1.88	1.87	1.86
17.2500	1.85	1.84	1.83	1.82	1.80
17.5000	1.79	1.78	1.77	1.76	1.75
17.7500	1.74	1.72	1.71	1.70	1.69
18.0000	1.68	1.67	1.66	1.65	1.63
18.2500	1.62	1.61	1.60	1.59	1.58
18.5000	1.57	1.55	1.54	1.53	1.52
18.7500	1.51	1.50	1.49	1.48	1.46
19.0000	1.45	1.44	1.43	1.42	1.41
19.2500	1.40	1.38	1.37	1.36	1.35
19.5000	1.34	1.33	1.32	1.30	1.29
19.7500	1.28	1.27	1.26	1.25	1.24
20.0000	1.22	1.21	1.20	1.20	1.19
20.2500	1.18	1.18	1.18	1.18	1.17
20.5000	1.17	1.17	1.17	1.16	1.16
20.7500	1.16	1.16	1.16	1.15	1.15
21.0000	1.15	1.15	1.14	1.14	1.14
21.2500	1.14	1.13	1.13	1.13	1.13
21.5000	1.13	1.12	1.12	1.12	1.12

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
21.7500	1.11	1.11	1.11	1.11	1.11
22.0000	1.10	1.10	1.10	1.10	1.09
22.2500	1.09	1.09	1.09	1.09	1.08
22.5000	1.08	1.08	1.08	1.07	1.07
22.7500	1.07	1.07	1.06	1.06	1.06
23.0000	1.06	1.06	1.05	1.05	1.05
23.2500	1.05	1.04	1.04	1.04	1.04
23.5000	1.04	1.03	1.03	1.03	1.03
23.7500	1.02	1.02	1.02	1.02	1.01
24.0000	1.01	.96	.76	.45	.22
24.2500	.10	.05	.02	.01	.00
24.5000	.00				

DIVERTED HYDROGRAPH...
HYG file =
HYG ID = STRUCTURE
HYG Tag = 100yr

Peak Discharge = 83.39 cfs
Time to Peak = 12.1000 hrs
HYG Volume = 8.175 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
2.3000	.00	.00	.01	.02	.03
2.5500	.05	.06	.07	.09	.10
2.8000	.11	.13	.14	.15	.17
3.0500	.18	.19	.21	.22	.23
3.3000	.25	.26	.27	.28	.30
3.5500	.31	.32	.34	.35	.36
3.8000	.38	.39	.40	.41	.43
4.0500	.44	.45	.46	.48	.49
4.3000	.51	.52	.53	.55	.56
4.5500	.58	.59	.61	.62	.64
4.8000	.65	.67	.68	.70	.71
5.0500	.73	.74	.76	.77	.79
5.3000	.80	.82	.84	.85	.87
5.5500	.88	.90	.91	.93	.94
5.8000	.96	.98	.99	1.01	1.02
6.0500	1.04	1.05	1.07	1.08	1.10
6.3000	1.11	1.13	1.14	1.16	1.18
6.5500	1.19	1.21	1.22	1.24	1.26
6.8000	1.27	1.29	1.30	1.32	1.34
7.0500	1.35	1.37	1.38	1.40	1.41
7.3000	1.43	1.45	1.46	1.48	1.49
7.5500	1.51	1.53	1.54	1.56	1.57
7.8000	1.59	1.61	1.62	1.64	1.65
8.0500	1.67	1.69	1.72	1.75	1.79
8.3000	1.83	1.88	1.93	1.97	2.02
8.5500	2.07	2.12	2.17	2.22	2.27
8.8000	2.33	2.38	2.43	2.48	2.53
9.0500	2.58	2.63	2.67	2.71	2.73
9.3000	2.75	2.76	2.78	2.79	2.80
9.5500	2.81	2.83	2.86	2.91	2.97
9.8000	3.04	3.12	3.19	3.27	3.35

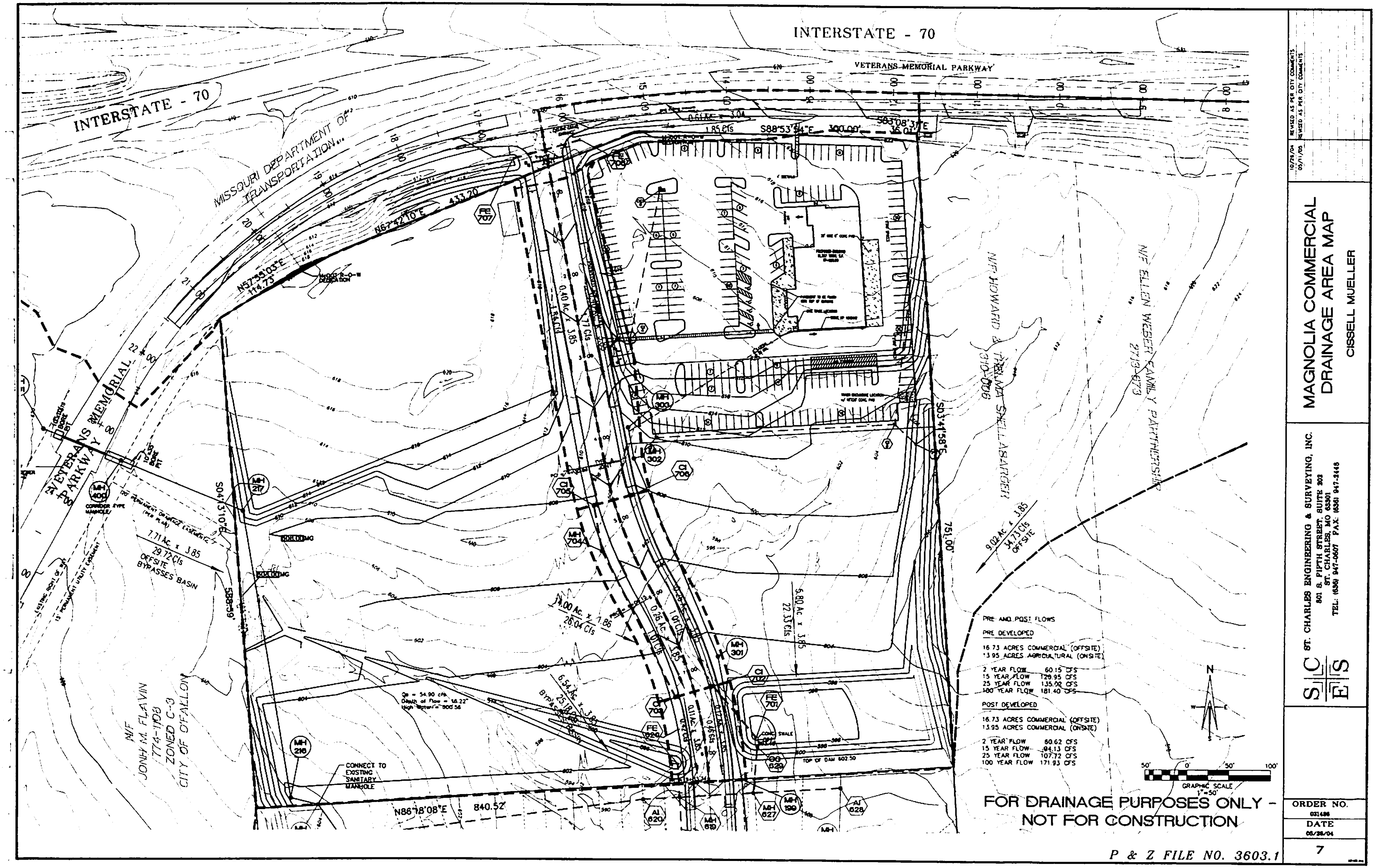
HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
10.0500	3.44	3.52	3.62	3.72	3.81
10.3000	3.88	3.98	4.08	4.18	4.28
10.5500	4.39	4.50	4.61	4.73	4.86
10.8000	5.00	5.14	5.27	5.42	5.56
11.0500	5.70	5.85	6.00	6.17	6.35
11.3000	6.54	6.73	6.93	7.13	7.33
11.5500	7.55	7.87	8.33	8.95	9.70
11.8000	10.52	11.38	12.39	18.80	46.82
12.0500	76.36	83.39	72.85	58.09	45.72
12.3000	36.87	30.74	26.50	23.61	21.66
12.5500	20.57	19.52	18.52	17.60	16.76
12.8000	16.02	15.35	14.75	14.23	13.75
13.0500	13.36	13.02	12.78	12.63	12.56
13.3000	12.49	12.42	12.35	12.27	12.19
13.5500	12.11	12.03	11.95	11.86	11.77
13.8000	11.68	11.59	11.50	11.41	11.31
14.0500	11.21	11.11	11.01	10.91	10.81
14.3000	10.70	10.59	10.48	10.36	10.25
14.5500	10.12	10.00	9.87	9.74	9.60
14.8000	9.46	9.32	9.17	9.02	8.86
15.0500	8.69	8.53	8.35	8.17	7.98
15.3000	7.79	7.58	7.36	7.13	6.88
15.5500	6.60	6.31	5.98	5.63	5.24
15.8000	4.82	4.36	3.90	3.37	2.99
16.0500	2.79	2.70	2.64	2.61	2.58
16.3000	2.56	2.54	2.53	2.51	2.50
16.5500	2.49	2.47	2.46	2.44	2.43
16.8000	2.41	2.40	2.39	2.37	2.36
17.0500	2.34	2.33	2.32	2.30	2.29
17.3000	2.27	2.26	2.25	2.23	2.22
17.5500	2.20	2.19	2.18	2.16	2.15
17.8000	2.13	2.12	2.11	2.09	2.08
18.0500	2.06	2.05	2.04	2.02	2.01
18.3000	1.99	1.98	1.97	1.95	1.94
18.5500	1.92	1.91	1.89	1.88	1.87
18.8000	1.85	1.84	1.82	1.81	1.80
19.0500	1.78	1.77	1.75	1.74	1.73
19.3000	1.71	1.70	1.68	1.67	1.65
19.5500	1.64	1.63	1.61	1.60	1.59
19.8000	1.57	1.56	1.54	1.53	1.51
20.0500	1.50	1.49	1.48	1.47	1.46
20.3000	1.46	1.46	1.45	1.45	1.45
20.5500	1.44	1.44	1.44	1.44	1.43
20.8000	1.43	1.43	1.42	1.42	1.42
21.0500	1.42	1.41	1.41	1.41	1.41

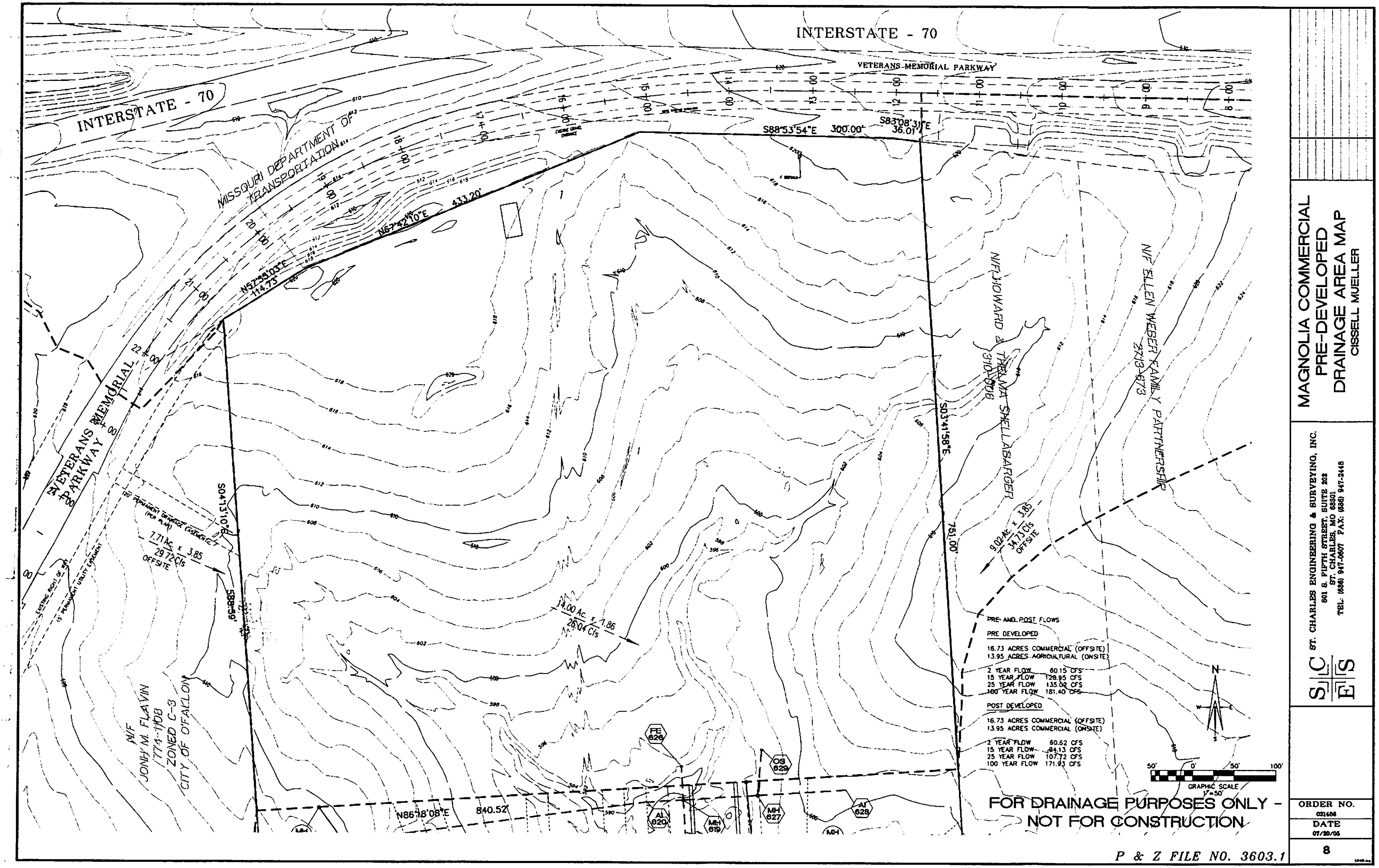
HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
21.3000	1.40	1.40	1.40	1.39	1.39
21.5500	1.39	1.39	1.38	1.38	1.38
21.8000	1.37	1.37	1.37	1.37	1.36
22.0500	1.36	1.36	1.36	1.35	1.35
22.3000	1.35	1.34	1.34	1.34	1.33
22.5500	1.33	1.33	1.33	1.32	1.32
22.8000	1.32	1.32	1.31	1.31	1.31
23.0500	1.30	1.30	1.30	1.30	1.29
23.3000	1.29	1.29	1.29	1.28	1.28
23.5500	1.28	1.27	1.27	1.27	1.27
23.8000	1.26	1.26	1.26	1.25	1.25
24.0500	1.20	.99	.55	.27	.12
24.3000	.06	.03	.01	.00	.00

Index of Starting Page Numbers for ID Names



INTERSTATE - 70
VETERANS MEMORIAL PARKWAY
MISSOURI DEPARTMENT OF TRANSPORTATION
VETERANS MEMORIAL PARKWAY
N/F HOWARD & THELMA SHELLABARGER 310-006
N/F ELLEN WEBER FAMILY PARTNERSHIP 2713-673
N/F JONH M. FLAVIN 774-1108 ZONED C-3 CITY OF O'FALLON
9.02 Ac x 3.85 34.73 Cfs OFFSITE
7.71 Ac. x 3.85 29.72 Cfs OFFSITE BYPASSES BASIN
5.80 Ac x 3.85 22.33 Cfs
14.00 Ac. x 1.86 26.04 Cfs
6.54 Ac. x 3.85 25.18 Cfs
0.40 Ac. x 3.85 1.54 Cfs
CONNECT TO EXISTING SANITARY MANHOLE
TOP OF DAM 602.50
PRE AND POST FLOWS
PRE DEVELOPED
16.73 ACRES COMMERCIAL (OFFSITE)
13.95 ACRES AGRICULTURAL (ONSITE)
2 YEAR FLOW 60.15 CFS
15 YEAR FLOW 129.95 CFS
25 YEAR FLOW 135.02 CFS
100 YEAR FLOW 181.40 CFS
POST DEVELOPED
16.73 ACRES COMMERCIAL (OFFSITE)
13.95 ACRES COMMERCIAL (ONSITE)
2 YEAR FLOW 60.62 CFS
15 YEAR FLOW 94.13 CFS
25 YEAR FLOW 107.72 CFS
100 YEAR FLOW 171.93 CFS
GRAPHIC SCALE 1"=50'
FOR DRAINAGE PURPOSES ONLY - NOT FOR CONSTRUCTION
P & Z FILE NO. 3603.1
MAGNOLIA COMMERCIAL DRAINAGE AREA MAP
CISSELL MUELLER
ST. CHARLES ENGINEERING & SURVEYING, INC.
801 S. FIFTH STREET, SUITE 302
ST. CHARLES, MO 63301
TEL: (636) 947-0607 FAX: (636) 947-3448
ORDER NO.
DATE
7


INTERSTATE - 70
VETERANS MEMORIAL PARKWAY
MISSOURI DEPARTMENT OF TRANSPORTATION
VETERANS MEMORIAL PARKWAY
S88°53'54"E 300.00'
S83°08'31"E 36.01'
N67°42'10"E 433.20'
N57°58'03"E 114.73'
S04°13'10"E 588.59'
S03°41'58"E 751.00'
N86°18'08"E 840.52'
N/F HOWARD & THELMA SHELLABARGER 310-006
N/F ELLEN WEBER FAMILY PARTNERSHIP 2713-673
N/F JONH M. FLAVIN 774-1108 ZONED C-3 CITY OF O'FALLON
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MAGNOLIA COMMERCIAL
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CISSELL MUELLER
ST. CHARLES ENGINEERING & SURVEYING, INC.
801 S. FIFTH STREET, SUITE 202
ST. CHARLES, MO 63301
TEL: (636) 947-0607 FAX: (636) 947-2446
ORDER NO.
031456
DATE
07/20/05
8
P & Z FILE NO. 3603.1