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PREDEVELOPED STORMWATER ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
ELEMENTARY SCHOOL WENTZVILLE SCHOOL DISTRICT
CITY OF O'FALLON
BAX PROJECT NO. 03-12495
March 12, 2004

INTRODUCTION

The presently undeveloped tract of land lies just to the west of the intersection of Sommers Road and State Highway DD. The tract of land contains approximately 25.36 acres that will be proposed to be developed into an elementary school. A dry basin in the southern area of the property shall provide detention for the site. This basin will provide detention for the development when considering the increased runoff for the site as required by City of O'Fallon. The storage volume and outflow rates shall be proportioned to insure that the peak rate of runoff leaving the site under post-developed conditions is less than the peak rate of runoff leaving the site under pre-developed conditions for the required design storms. The basin is designed for the 2-year, 15-year, 25-year, and the pass the 100-year 20-minute design storms.

GENERAL SITE DATA AND RUNOFF CALCULATIONS:

The pre-developed P.I. factors to be used for the analysis are:

2 year	0-5%	Impervious	1.15	cfs/ac
15 year	0-5%	Impervious	1.87	cfs/ac
25 year	0-5%	Impervious	2.31	cfs/ac
100 year	0-5%	Impervious	2.95	cfs/ac

The post-developed P.I. factors to be used for the analysis are:

2 year	100%	Impervious	2.39	cfs/ac
15 year	100%	Impervious	3.85	cfs/ac
25 year	100%	Impervious	4.75	cfs/ac
100 year	100%	Impervious	6.08	cfs/ac



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DISCHARGE POINT BREAKDOWN:

The 15 year 20 minute design storm was used to determine if any additional runoff will be produced by the development at each of the discharge points.

DRAINAGE AREA	DESIGN STORM	PROPOSED RUNOFF	-	EXISTING RUNOFF	=	DIFFERENTIAL RUNOFF
A	15 year	11.32 cfs	-	8.79 cfs	=	2.53 cfs
B	15 year	5.22 cfs	-	9.28 cfs	=	-4.06 cfs
C	15 year	2.36 cfs	-	2.82 cfs	=	-0.46 cfs
D	15 year	51.55 cfs	-	23.19 cfs	=	28.36 cfs
E	15 year	1.00 cfs	-	1.65 cfs	=	-0.65 cfs
F	15 year	0.00 cfs	-	1.68 cfs	=	-1.68 cfs

DETENTION BASIN CALCULATIONS:

TIME OF CONCENTRATION

Proposed Time of Concentration to the Detention Basin

Of the inflows to the basin, the most remote point lies in the center of the site. Flows will travel approximately 155 feet overland to AI 108 then 1,060 feet via storm pipe to the detention basin. Time of concentration is estimated as follows:

T(overland): L = 155 feet

Elevation difference = 602 - 598 = 4 feet

T(overland) = 1.5 minutes: See figure 1

T(storm pipe): L = 1060 feet

Estimated velocity 7 feet per second

T(storm pipe) = 2.52 minutes

Total time = 4.02 use **4 minutes**





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BASIN PEAK INFLOW:

Inflows to the basin have been estimated using the drainage area map of the project. (see plans)

BASIN A

STORM	DURATION	RUNOFF
2 YEAR	20 MIN.	5.68 CFS
15 YEAR	20 MIN.	9.24 CFS
25 YEAR	20 MIN.	11.41 CFS
100 YEAR	20 MIN.	14.57 CFS

BASIN D

STORM	DURATION	RUNOFF
2 YEAR	20 MIN.	30.69 CFS
15 YEAR	20 MIN.	49.48 CFS
25 YEAR	20 MIN.	61.05 CFS
100 YEAR	20 MIN.	78.13 CFS

PERMITTED RELEASE RATE:

The permitted release rate of the basin was found by subtracting the required attenuation from the basin inflow from each drainage area for each design storm:

Drainage Area A:

Design Storm	Basin Inflow	-	Required Attenuation	=	Release Rate
2 year	5.68 cfs	-	1.56 cfs	=	4.12 cfs
15 year	9.24 cfs	-	2.53 cfs	=	6.71 cfs
25 year	11.41 cfs	-	3.12 cfs	=	8.29 cfs

Drainage Area D:

Design Storm	Basin Inflow	-	Required Attenuation	=	Release Rate
2 year	30.69 cfs	-	17.70 cfs	=	12.99 cfs
15 year	49.48 cfs	-	28.36 cfs	=	21.12 cfs
25 year	61.05 cfs	-	34.98 cfs	=	26.07 cfs



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STORM ROUTING CALCULATIONS AND RESULTS:

A computer program PONDPACK was used in routing the 2, 15 and 25- year storms through the basin. As found in the routing calculations, the results are as follows:

BASIN A

STORM	PEAK INFLOW	ALLOWABLE RELEASE	CALCULATED RELEASE	PEAK ELEVATION
2 YEAR	5.68 CFS	4.12 CFS	3.84 CFS	585.04 ft
15 YEAR	9.24 CFS	6.71 CFS	4.82 CFS	586.52 ft
25 YEAR	11.41 CFS	8.29 CFS	5.26 CFS	587.28 ft

BASIN D

STORM	PEAK INFLOW	ALLOWABLE RELEASE	CALCULATED RELEASE	PEAK ELEVATION
2 YEAR	30.69 CFS	12.99 CFS	12.93 CFS	584.21 ft
15 YEAR	49.48 CFS	21.12 CFS	15.90 CFS	585.85 ft
25 YEAR	61.05 CFS	26.07 CFS	17.29 CFS	586.74 ft

CHECK 100-YEAR OUTFLOW:(low-flow slots blocked)

WEIR FLOW $Q = C \times L \times H^{3/2}$

Basin A

Where 100-YEAR FLOW Q =		14.57
	C =	3.0
Spillway width	L =	11.00
	H =	0.58 ft
	Sill =	587.85 ft
100 yr h/w	=	588.43 ft

Basin D

Where 100-YEAR FLOW Q =		78.13
	C =	3.0
Spillway width	L =	18.67
	H =	1.25 ft
	Sill =	587.00 ft
100 yr h/w	=	588.25 ft



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SEDIMENT VOLUME CALCULATION:

BASIN A

The basin shall be analyzed to accommodate 2 years of sediment storage.

- The Drainage area to the basin = 4.94 Acres
- Rational Method runoff coefficient 'c' = 0.6
- Annual sediment storage volume (from figure 2) = 150 ft³/Acre
- The sediment volume and storage required =

$$2 \text{ years of sediment storage} = 4.94 \text{ Acres} (150 \text{ ft}^3/\text{Acre}/\text{year})(2 \text{ years})$$

$$2 \text{ years of sediment storage} = 1,482.0 \text{ ft}^3$$

To provide for the additional sediment storage the top of the overflow sill will be set at 587.85.

Volume between the 25-year high water of 587.28 and the overflow sill elevation of 587.85 is 1,538 ft³.

$$1,538 \text{ ft}^3 \text{ provided} > 1482.0 \text{ ft}^3 \text{ required}$$

BASIN D

The basin shall be analyzed to accommodate 2 years of sediment storage.

- The Drainage area to the basin = 14.23 Acres
- Rational Method runoff coefficient 'c' = 0.6
- Annual sediment storage volume (from figure 2) = 140 ft³/Acre
- The sediment volume and storage required =

$$2 \text{ years of sediment storage} = 14.23 \text{ Acres} (140 \text{ ft}^3/\text{Acre}/\text{year})(2 \text{ years})$$

$$2 \text{ years of sediment storage} = 3,984.0 \text{ ft}^3$$

To provide for the additional sediment storage the top of the overflow sill will be set at 587.00.

Volume between the 25-year high water of 586.74 and the overflow sill elevation of 587.00 is 3,993.12 ft³.

$$3,993.12 \text{ ft}^3 \text{ provided} > 3,984.0 \text{ ft}^3 \text{ required}$$



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SUMMARY

BASIN A

2 Year – 20 MINUTE HIGH-WATER	585.04 ft
15 Year – 20 MINUTE HIGH-WATER	586.52 ft
25 Year - 20 MINUTE HIGH-WATER	587.28 ft
100 Year - 20 MINUTE HIGH-WATER	588.43 ft

LOW-FLOW SLOT	6" W x 12" H ✓
LOW-FLOW ELEVATION	582.00 ft

TOP OF BERM	589.5 ft
-------------	----------

BASIN D

2 Year – 20 MINUTE HIGH-WATER	584.21 ft
15 Year – 20 MINUTE HIGH-WATER	585.85 ft
25 Year - 20 MINUTE HIGH-WATER	586.74 ft
100 Year - 20 MINUTE HIGH-WATER	588.25 ft

LOW-FLOW SLOT	9" W x 24" H ✓
LOW-FLOW ELEVATION	580.0 ft

TOP OF BERM	590.5 ft
-------------	----------

DRAINAGE AREA	DESIGN STORM	PROPOSED RUNOFF	-	EXISTING RUNOFF	=	DIFFERENTIAL RUNOFF
A	15 year	6.90 cfs*	-	8.79 cfs	=	-1.89 cfs
B	15 year	5.22 cfs	-	9.28 cfs	=	-4.06 cfs
C	15 year	2.36 cfs	-	2.82 cfs	=	-0.46 cfs
D	15 year	17.98 cfs*	-	23.19 cfs	=	-5.21 cfs
E	15 year	1.00 cfs	-	1.65 cfs	=	-0.65 cfs
F	15 year	0.00 cfs	-	1.68 cfs	=	-1.68 cfs

*Proposed Runoff = Discharge from the basin + direct runoff that bypasses the basin.



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BASIN A

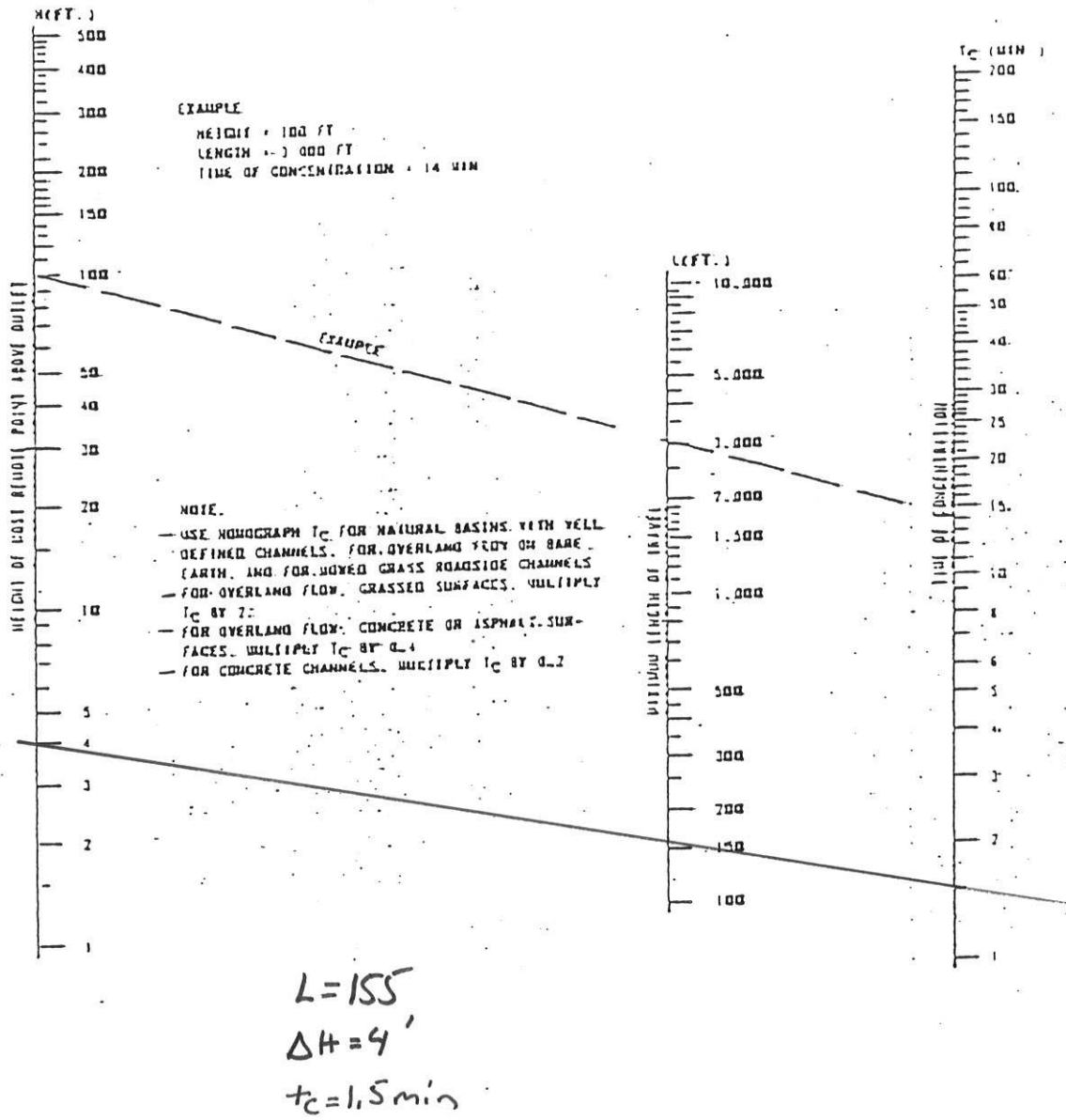


FIGURE 1

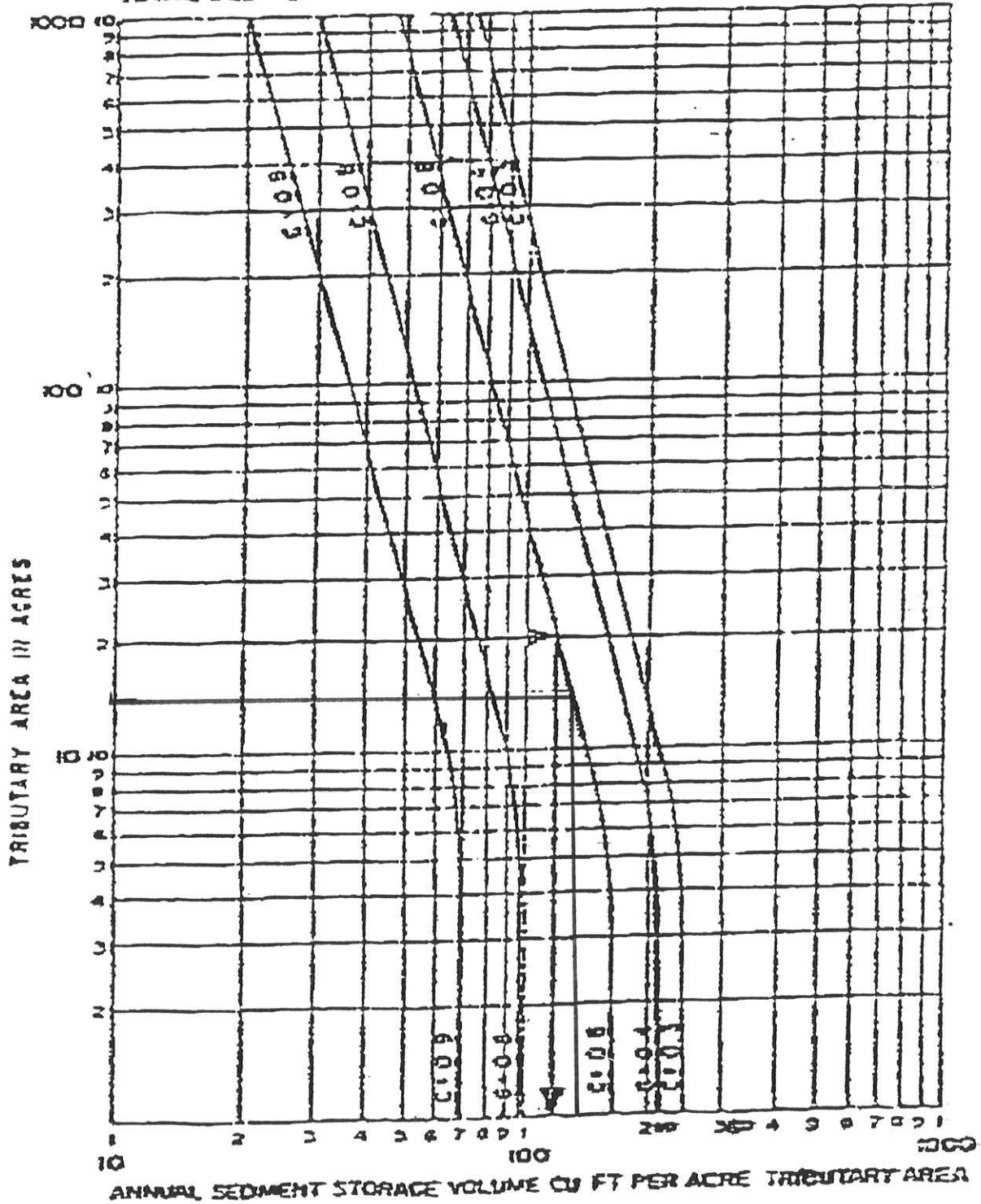
TIME OF CONCENTRATION OF SMALL DRAINAGE BASINS

Basin D

AREA = 14.23 AC
 C = 0.6
 Sed. = 140 lb/Ac/yr
 TSS = 3,984 lb.

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

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POND VOLUME CALCULATIONS

Planimeter scale: 1.00 ft/in

Elevation (ft)	Planimeter (sq.in)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (cu.ft)	Volume Sum (cu.ft)
580.00	.000	.0000	.0000	0	0
582.00	7061.000	.1621	.1621	4707	4707
584.00	10154.000	.2331	.5896	17122	21829
586.00	13473.000	.3093	.8109	23549	45378
588.00	17020.000	.3907	1.0477	30424	75802
590.00	20795.000	.4774	1.3000	37752	113554

POND VOLUME EQUATIONS

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

$$\text{Volume} = (1/3) * (\text{EL2}-\text{EL1}) * (\text{Area1} + \text{Area2} + \text{sq.rt.}(\text{Area1}*\text{Area2}))$$

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.= 580.00 ft
Increment = .05 ft
Max. Elev.= 588.00 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	3	--->	cv	587.000	588.000
Orifice-Area	2	--->	cv	582.000	588.000
Weir-Rectangular	1	--->	cv	580.000	582.000
Culvert-Circular	cv	--->	TW	577.000	588.000
TW SETUP, DS Channel					

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OUTLET STRUCTURE INPUT DATA

Structure ID = 3
Structure Type = Inlet Box

of Openings = 1
Invert Elev. = 587.00 ft
Orifice Area = 21.0500 sq.ft
Orifice Coeff. = .600
Weir Length = 18.66 ft
Weir Coeff. = 3.000
K, Submerged = .000
K, Reverse = 1.000
Kb, Barrel = .000000 (per ft of full flow)
Barrel Length = .00 ft
Mannings n = .0000

Structure ID = 2
Structure Type = Orifice-Area

of Openings = 1
Invert Elev. = 580.00 ft
Area = 1.5000 sq.ft
Top of Orifice = 582.00 ft
Datum Elev. = 581.00 ft
Orifice Coeff. = .600

Structure ID = 1
Structure Type = Weir-Rectangular

of Openings = 1
Crest Elev. = 580.00 ft
Weir Length = .75 ft
Weir Coeff. = 3.000000

Weir TW effects (Use adjustment equation)

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OUTLET STRUCTURE INPUT DATA

Structure ID = cv
Structure Type = Culvert-Circular

No. Barrels = 1
Barrel Diameter = 2.5000 ft
Upstream Invert = 577.00 ft
Dnstream Invert = 575.50 ft
Horiz. Length = 86.65 ft
Barrel Length = 86.66 ft
Barrel Slope = .01731 ft/ft

OUTLET CONTROL DATA...

Mannings n = .0130
Ke = .5000 (forward entrance loss)
Kb = .009217 (per ft of full flow)
Kr = .2000 (reverse entrance loss)
HW Convergence = .001 +/- ft

INLET CONTROL DATA...

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

Use unsubmerged inlet control Form 1 equ. below T1 elev.

Use submerged inlet control Form 1 equ. above T2 elev.

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

At T1 Elev = 579.88 ft ---> Flow = 27.16 cfs
At T2 Elev = 580.25 ft ---> Flow = 31.05 cfs

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

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

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
580.00	.00	Free	Outfall	(no Q: 3,2,1,cv)
580.05	.03	Free	Outfall	1,cv (no Q: 3,2)
580.10	.07	Free	Outfall	1,cv (no Q: 3,2)
580.15	.13	Free	Outfall	1,cv (no Q: 3,2)
580.20	.20	Free	Outfall	1,cv (no Q: 3,2)
580.25	.28	Free	Outfall	1,cv (no Q: 3,2)
580.30	.37	Free	Outfall	1,cv (no Q: 3,2)
580.35	.47	Free	Outfall	1,cv (no Q: 3,2)
580.40	.57	Free	Outfall	1,cv (no Q: 3,2)
580.45	.68	Free	Outfall	1,cv (no Q: 3,2)
580.50	.80	Free	Outfall	1,cv (no Q: 3,2)
580.55	.92	Free	Outfall	1,cv (no Q: 3,2)
580.60	1.05	Free	Outfall	1,cv (no Q: 3,2)
580.65	1.18	Free	Outfall	1,cv (no Q: 3,2)
580.70	1.32	Free	Outfall	1,cv (no Q: 3,2)
580.75	1.46	Free	Outfall	1,cv (no Q: 3,2)
580.80	1.61	Free	Outfall	1,cv (no Q: 3,2)
580.85	1.76	Free	Outfall	1,cv (no Q: 3,2)
580.90	1.92	Free	Outfall	1,cv (no Q: 3,2)
580.95	2.08	Free	Outfall	1,cv (no Q: 3,2)
581.00	2.25	Free	Outfall	1,cv (no Q: 3,2)
581.05	2.42	Free	Outfall	1,cv (no Q: 3,2)
581.10	2.60	Free	Outfall	1,cv (no Q: 3,2)
581.15	2.77	Free	Outfall	1,cv (no Q: 3,2)
581.20	2.96	Free	Outfall	1,cv (no Q: 3,2)
581.25	3.14	Free	Outfall	1,cv (no Q: 3,2)
581.30	3.33	Free	Outfall	1,cv (no Q: 3,2)
581.35	3.53	Free	Outfall	1,cv (no Q: 3,2)
581.40	3.73	Free	Outfall	1,cv (no Q: 3,2)
581.45	3.93	Free	Outfall	1,cv (no Q: 3,2)
581.50	4.13	Free	Outfall	1,cv (no Q: 3,2)
581.55	4.34	Free	Outfall	1,cv (no Q: 3,2)
581.60	4.55	Free	Outfall	1,cv (no Q: 3,2)
581.65	4.77	Free	Outfall	1,cv (no Q: 3,2)
581.70	4.99	Free	Outfall	1,cv (no Q: 3,2)
581.75	5.21	Free	Outfall	1,cv (no Q: 3,2)
581.80	5.43	Free	Outfall	1,cv (no Q: 3,2)
581.85	5.66	Free	Outfall	1,cv (no Q: 3,2)
581.90	5.89	Free	Outfall	1,cv (no Q: 3,2)
581.95	6.13	Free	Outfall	1,cv (no Q: 3,2)

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

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
582.00	7.22	Free	Outfall	2,cv (no Q: 3,1)
582.05	7.40	Free	Outfall	2,cv (no Q: 3,1)
582.10	7.57	Free	Outfall	2,cv (no Q: 3,1)
582.15	7.74	Free	Outfall	2,cv (no Q: 3,1)
582.20	7.91	Free	Outfall	2,cv (no Q: 3,1)
582.25	8.07	Free	Outfall	2,cv (no Q: 3,1)
582.30	8.23	Free	Outfall	2,cv (no Q: 3,1)
582.35	8.39	Free	Outfall	2,cv (no Q: 3,1)
582.40	8.54	Free	Outfall	2,cv (no Q: 3,1)
582.45	8.69	Free	Outfall	2,cv (no Q: 3,1)
582.50	8.84	Free	Outfall	2,cv (no Q: 3,1)
582.55	8.99	Free	Outfall	2,cv (no Q: 3,1)
582.60	9.13	Free	Outfall	2,cv (no Q: 3,1)
582.65	9.27	Free	Outfall	2,cv (no Q: 3,1)
582.70	9.41	Free	Outfall	2,cv (no Q: 3,1)
582.75	9.55	Free	Outfall	2,cv (no Q: 3,1)
582.80	9.69	Free	Outfall	2,cv (no Q: 3,1)
582.85	9.82	Free	Outfall	2,cv (no Q: 3,1)
582.90	9.95	Free	Outfall	2,cv (no Q: 3,1)
582.95	10.08	Free	Outfall	2,cv (no Q: 3,1)
583.00	10.21	Free	Outfall	2,cv (no Q: 3,1)
583.05	10.34	Free	Outfall	2,cv (no Q: 3,1)
583.10	10.46	Free	Outfall	2,cv (no Q: 3,1)
583.15	10.59	Free	Outfall	2,cv (no Q: 3,1)
583.20	10.71	Free	Outfall	2,cv (no Q: 3,1)
583.25	10.83	Free	Outfall	2,cv (no Q: 3,1)
583.30	10.95	Free	Outfall	2,cv (no Q: 3,1)
583.35	11.07	Free	Outfall	2,cv (no Q: 3,1)
583.40	11.18	Free	Outfall	2,cv (no Q: 3,1)
583.45	11.30	Free	Outfall	2,cv (no Q: 3,1)
583.50	11.42	Free	Outfall	2,cv (no Q: 3,1)
583.55	11.53	Free	Outfall	2,cv (no Q: 3,1)
583.60	11.64	Free	Outfall	2,cv (no Q: 3,1)
583.65	11.75	Free	Outfall	2,cv (no Q: 3,1)
583.70	11.86	Free	Outfall	2,cv (no Q: 3,1)
583.75	11.97	Free	Outfall	2,cv (no Q: 3,1)
583.80	12.08	Free	Outfall	2,cv (no Q: 3,1)
583.85	12.19	Free	Outfall	2,cv (no Q: 3,1)
583.90	12.29	Free	Outfall	2,cv (no Q: 3,1)
583.95	12.40	Free	Outfall	2,cv (no Q: 3,1)

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

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
584.00	12.50	Free	Outfall	2,cv (no Q: 3,1)
584.05	12.61	Free	Outfall	2,cv (no Q: 3,1)
584.10	12.71	Free	Outfall	2,cv (no Q: 3,1)
584.15	12.81	Free	Outfall	2,cv (no Q: 3,1)
584.20	12.91	Free	Outfall	2,cv (no Q: 3,1)
584.25	13.02	Free	Outfall	2,cv (no Q: 3,1)
584.30	13.11	Free	Outfall	2,cv (no Q: 3,1)
584.35	13.21	Free	Outfall	2,cv (no Q: 3,1)
584.40	13.31	Free	Outfall	2,cv (no Q: 3,1)
584.45	13.41	Free	Outfall	2,cv (no Q: 3,1)
584.50	13.51	Free	Outfall	2,cv (no Q: 3,1)
584.55	13.60	Free	Outfall	2,cv (no Q: 3,1)
584.60	13.70	Free	Outfall	2,cv (no Q: 3,1)
584.65	13.79	Free	Outfall	2,cv (no Q: 3,1)
584.70	13.89	Free	Outfall	2,cv (no Q: 3,1)
584.75	13.98	Free	Outfall	2,cv (no Q: 3,1)
584.80	14.07	Free	Outfall	2,cv (no Q: 3,1)
584.85	14.17	Free	Outfall	2,cv (no Q: 3,1)
584.90	14.26	Free	Outfall	2,cv (no Q: 3,1)
584.95	14.35	Free	Outfall	2,cv (no Q: 3,1)
585.00	14.44	Free	Outfall	2,cv (no Q: 3,1)
585.05	14.53	Free	Outfall	2,cv (no Q: 3,1)
585.10	14.62	Free	Outfall	2,cv (no Q: 3,1)
585.15	14.71	Free	Outfall	2,cv (no Q: 3,1)
585.20	14.80	Free	Outfall	2,cv (no Q: 3,1)
585.25	14.88	Free	Outfall	2,cv (no Q: 3,1)
585.30	14.97	Free	Outfall	2,cv (no Q: 3,1)
585.35	15.06	Free	Outfall	2,cv (no Q: 3,1)
585.40	15.14	Free	Outfall	2,cv (no Q: 3,1)
585.45	15.23	Free	Outfall	2,cv (no Q: 3,1)
585.50	15.31	Free	Outfall	2,cv (no Q: 3,1)
585.55	15.40	Free	Outfall	2,cv (no Q: 3,1)
585.60	15.48	Free	Outfall	2,cv (no Q: 3,1)
585.65	15.57	Free	Outfall	2,cv (no Q: 3,1)
585.70	15.65	Free	Outfall	2,cv (no Q: 3,1)
585.75	15.73	Free	Outfall	2,cv (no Q: 3,1)
585.80	15.82	Free	Outfall	2,cv (no Q: 3,1)
585.85	15.90	Free	Outfall	2,cv (no Q: 3,1)
585.90	15.98	Free	Outfall	2,cv (no Q: 3,1)
585.95	16.06	Free	Outfall	2,cv (no Q: 3,1)

File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

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

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
586.00	16.14	Free	Outfall	2,cv (no Q: 3,1)
586.05	16.22	Free	Outfall	2,cv (no Q: 3,1)
586.10	16.30	Free	Outfall	2,cv (no Q: 3,1)
586.15	16.38	Free	Outfall	2,cv (no Q: 3,1)
586.20	16.46	Free	Outfall	2,cv (no Q: 3,1)
586.25	16.54	Free	Outfall	2,cv (no Q: 3,1)
586.30	16.62	Free	Outfall	2,cv (no Q: 3,1)
586.35	16.70	Free	Outfall	2,cv (no Q: 3,1)
586.40	16.78	Free	Outfall	2,cv (no Q: 3,1)
586.45	16.85	Free	Outfall	2,cv (no Q: 3,1)
586.50	16.93	Free	Outfall	2,cv (no Q: 3,1)
586.55	17.01	Free	Outfall	2,cv (no Q: 3,1)
586.60	17.08	Free	Outfall	2,cv (no Q: 3,1)
586.65	17.16	Free	Outfall	2,cv (no Q: 3,1)
586.70	17.24	Free	Outfall	2,cv (no Q: 3,1)
586.75	17.31	Free	Outfall	2,cv (no Q: 3,1)
586.80	17.39	Free	Outfall	2,cv (no Q: 3,1)
586.85	17.46	Free	Outfall	2,cv (no Q: 3,1)
586.90	17.54	Free	Outfall	2,cv (no Q: 3,1)
586.95	17.61	Free	Outfall	2,cv (no Q: 3,1)
587.00	17.68	Free	Outfall	2,cv (no Q: 3,1)
587.05	18.38	Free	Outfall	3,2,cv (no Q: 1)
587.10	19.60	Free	Outfall	3,2,cv (no Q: 1)
587.15	21.16	Free	Outfall	3,2,cv (no Q: 1)
587.20	22.98	Free	Outfall	3,2,cv (no Q: 1)
587.25	25.05	Free	Outfall	3,2,cv (no Q: 1)
587.30	27.32	Free	Outfall	3,2,cv (no Q: 1)
587.35	29.78	Free	Outfall	3,2,cv (no Q: 1)
587.40	32.43	Free	Outfall	3,2,cv (no Q: 1)
587.45	35.23	Free	Outfall	3,2,cv (no Q: 1)
587.50	38.12	Free	Outfall	3,2,cv (no Q: 1)
587.55	40.74	Free	Outfall	3,2,cv (no Q: 1)
587.60	43.43	Free	Outfall	3,2,cv (no Q: 1)
587.65	46.23	Free	Outfall	3,2,cv (no Q: 1)
587.70	49.06	Free	Outfall	3,2,cv (no Q: 1)
587.75	51.91	Free	Outfall	3,2,cv (no Q: 1)
587.80	54.82	Free	Outfall	3,2,cv (no Q: 1)
587.85	57.75	Free	Outfall	3,2,cv (no Q: 1)
587.90	60.64	Free	Outfall	3,2,cv (no Q: 1)
587.95	63.53	Free	Outfall	3,2,cv (no Q: 1)

Type.... Composite Rating Curve
Name.... OUTFALL D

File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

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

WS Elev, Total Q		Converge		Notes
Elev.	Q	TW Elev	Error	Contributing Structures
ft	cfs	ft	+/-ft	
588.00	75.08	Free Outfall		3,cv (no Q: 2,1)

Type.... Pond E-V-Q Table
 Name.... BASIN D
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

LEVEL POOL ROUTING DATA

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
 Inflow HYG file = NONE STORED - BASIN D IN 002
 Outflow HYG file = NONE STORED - BASIN D OUT 002

Pond Node Data = BASIN D
 Pond Volume Data = BASIN D
 Pond Outlet Data = OUTFALL D

No Infiltration

INITIAL CONDITIONS

 Starting WS Elev = 580.00 ft
 Starting Volume = 0 cu.ft
 Starting Outflow = .00 cfs
 Starting Infiltr. = .00 cfs
 Starting Total Qout = .00 cfs
 Time Increment = 1.00 min

Elevation ft	Outflow cfs	Storage cu.ft	Area acres	Infiltr. cfs	Q Total cfs	2S/t + 0 cfs
580.00	.00	0	.0000	.00	.00	.00
580.05	.03	0	.0001	.00	.03	.03
580.10	.07	1	.0004	.00	.07	.09
580.15	.13	2	.0009	.00	.13	.20
580.20	.20	5	.0016	.00	.20	.36
580.25	.28	9	.0025	.00	.28	.59
580.30	.37	16	.0036	.00	.37	.90
580.35	.47	25	.0050	.00	.47	1.31
580.40	.57	38	.0065	.00	.57	1.82
580.45	.68	54	.0082	.00	.68	2.47
580.50	.80	74	.0101	.00	.80	3.25
580.55	.92	98	.0123	.00	.92	4.18
580.60	1.05	127	.0146	.00	1.05	5.28
580.65	1.18	162	.0171	.00	1.18	6.57
580.70	1.32	202	.0199	.00	1.32	8.05
580.75	1.46	248	.0228	.00	1.46	9.74
580.80	1.61	301	.0259	.00	1.61	11.65
580.85	1.76	361	.0293	.00	1.76	13.81
580.90	1.92	429	.0328	.00	1.92	16.22
580.95	2.08	505	.0366	.00	2.08	18.90
581.00	2.25	588	.0405	.00	2.25	21.86
581.05	2.42	681	.0447	.00	2.42	25.13
581.10	2.60	783	.0490	.00	2.60	28.70

Type.... Pond E-V-Q Table
 Name.... BASIN D
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

LEVEL POOL ROUTING DATA

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
 Inflow HYG file = NONE STORED - BASIN D IN 002
 Outflow HYG file = NONE STORED - BASIN D OUT 002

Pond Node Data = BASIN D
 Pond Volume Data = BASIN D
 Pond Outlet Data = OUTFALL D

No Infiltration

INITIAL CONDITIONS

 Starting WS Elev = 580.00 ft
 Starting Volume = 0 cu.ft
 Starting Outflow = .00 cfs
 Starting Infiltr. = .00 cfs
 Starting Total Qout= .00 cfs
 Time Increment = 1.00 min

Elevation ft	Outflow cfs	Storage cu.ft	Area acres	Infiltr. cfs	Q Total cfs	2S/t + O cfs
581.15	2.77	895	.0536	.00	2.77	32.61
581.20	2.96	1017	.0584	.00	2.96	36.85
581.25	3.14	1149	.0633	.00	3.14	41.45
581.30	3.33	1293	.0685	.00	3.33	46.43
581.35	3.53	1448	.0739	.00	3.53	51.78
581.40	3.73	1615	.0794	.00	3.73	57.55
581.45	3.93	1794	.0852	.00	3.93	63.73
581.50	4.13	1986	.0912	.00	4.13	70.33
581.55	4.34	2191	.0974	.00	4.34	77.38
581.60	4.55	2410	.1037	.00	4.55	84.89
581.65	4.77	2643	.1103	.00	4.77	92.88
581.70	4.99	2891	.1171	.00	4.99	101.35
581.75	5.21	3154	.1241	.00	5.21	110.33
581.80	5.43	3432	.1313	.00	5.43	119.82
581.85	5.66	3725	.1387	.00	5.66	129.84
581.90	5.89	4036	.1463	.00	5.89	140.43
581.95	6.13	4363	.1541	.00	6.13	151.56
582.00	7.22	4707	.1621	.00	7.22	164.13
582.05	7.40	5062	.1637	.00	7.40	176.13
582.10	7.57	5420	.1653	.00	7.57	188.25
582.15	7.74	5783	.1670	.00	7.74	200.49
582.20	7.91	6148	.1686	.00	7.91	212.84
582.25	8.07	6517	.1703	.00	8.07	225.30

Type.... Pond E-V-Q Table
 Name.... BASIN D
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

LEVEL POOL ROUTING DATA

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
 Inflow HYG file = NONE STORED - BASIN D IN 002
 Outflow HYG file = NONE STORED - BASIN D OUT 002

Pond Node Data = BASIN D
 Pond Volume Data = BASIN D
 Pond Outlet Data = OUTFALL D

No Infiltration

INITIAL CONDITIONS

 Starting WS Elev = 580.00 ft
 Starting Volume = 0 cu.ft
 Starting Outflow = .00 cfs
 Starting Infiltr. = .00 cfs
 Starting Total Qout= .00 cfs
 Time Increment = 1.00 min

Elevation ft	Outflow cfs	Storage cu.ft	Area acres	Infiltr. cfs	Q Total cfs	2S/t + 0 cfs
582.30	8.23	6889	.1719	.00	8.23	237.88
582.35	8.39	7266	.1736	.00	8.39	250.58
582.40	8.54	7646	.1753	.00	8.54	263.41
582.45	8.69	8029	.1770	.00	8.69	276.34
582.50	8.84	8417	.1786	.00	8.84	289.39
582.55	8.99	8807	.1803	.00	8.99	302.57
582.60	9.13	9202	.1820	.00	9.13	315.86
582.65	9.27	9601	.1838	.00	9.27	329.30
582.70	9.41	10003	.1855	.00	9.41	342.84
582.75	9.55	10408	.1872	.00	9.55	356.50
582.80	9.69	10818	.1890	.00	9.69	370.29
582.85	9.82	11231	.1907	.00	9.82	384.20
582.90	9.95	11649	.1925	.00	9.95	398.25
582.95	10.08	12070	.1942	.00	10.08	412.42
583.00	10.21	12495	.1960	.00	10.21	426.71
583.05	10.34	12924	.1978	.00	10.34	441.12
583.10	10.46	13356	.1996	.00	10.46	455.67
583.15	10.59	13793	.2014	.00	10.59	470.36
583.20	10.71	14234	.2032	.00	10.71	485.16
583.25	10.83	14678	.2050	.00	10.83	500.09
583.30	10.95	15126	.2068	.00	10.95	515.16
583.35	11.07	15579	.2086	.00	11.07	530.35
583.40	11.18	16035	.2105	.00	11.18	545.69

Name.... BASIN D

File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

LEVEL POOL ROUTING DATA

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
 Inflow HYG file = NONE STORED - BASIN D IN 002
 Outflow HYG file = NONE STORED - BASIN D OUT 002

Pond Node Data = BASIN D
 Pond Volume Data = BASIN D
 Pond Outlet Data = OUTFALL D

No Infiltration

INITIAL CONDITIONS

 Starting WS Elev = 580.00 ft
 Starting Volume = 0 cu.ft
 Starting Outflow = .00 cfs
 Starting Infiltr. = .00 cfs
 Starting Total Qout = .00 cfs
 Time Increment = 1.00 min

Elevation ft	Outflow cfs	Storage cu.ft	Area acres	Infiltr. cfs	Q Total cfs	2S/t + 0 cfs
583.45	11.30	16496	.2123	.00	11.30	561.15
583.50	11.42	16960	.2141	.00	11.42	576.74
583.55	11.53	17428	.2160	.00	11.53	592.47
583.60	11.64	17901	.2179	.00	11.64	608.33
583.65	11.75	18378	.2198	.00	11.75	624.34
583.70	11.86	18858	.2216	.00	11.86	640.47
583.75	11.97	19343	.2235	.00	11.97	656.73
583.80	12.08	19832	.2254	.00	12.08	673.13
583.85	12.19	20325	.2273	.00	12.19	689.67
583.90	12.29	20822	.2292	.00	12.29	706.37
583.95	12.40	21323	.2312	.00	12.40	723.18
584.00	12.50	21829	.2331	.00	12.50	740.14
584.05	12.61	22338	.2349	.00	12.61	757.22
584.10	12.71	22852	.2367	.00	12.71	774.44
584.15	12.81	23370	.2384	.00	12.81	791.80
584.20	12.91	23891	.2402	.00	12.91	809.28
584.25	13.02	24416	.2420	.00	13.02	826.88
584.30	13.11	24945	.2438	.00	13.11	844.61
584.35	13.21	25478	.2457	.00	13.21	862.48
584.40	13.31	26015	.2475	.00	13.31	880.49
584.45	13.41	26556	.2493	.00	13.41	898.62
584.50	13.51	27101	.2511	.00	13.51	916.88
584.55	13.60	27650	.2530	.00	13.60	935.27

S/N: f21101d06a84 Bax Engineering

PondPack Ver: 7.0 (325)

Compute Time: 15:37:05

Date: 03-12-2004

Type.... Pond E-V-Q Table
 Name.... BASIN D
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

LEVEL POOL ROUTING DATA

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
 Inflow HYG file = NONE STORED - BASIN D IN 002
 Outflow HYG file = NONE STORED - BASIN D OUT 002

Pond Node Data = BASIN D
 Pond Volume Data = BASIN D
 Pond Outlet Data = OUTFALL D

No Infiltration

INITIAL CONDITIONS

 Starting WS Elev = 580.00 ft
 Starting Volume = 0 cu.ft
 Starting Outflow = .00 cfs
 Starting Infiltr. = .00 cfs
 Starting Total Qout = .00 cfs
 Time Increment = 1.00 min

Elevation ft	Outflow cfs	Storage cu.ft	Area acres	Infiltr. cfs	Q Total cfs	2S/t + 0 cfs
584.60	13.70	28203	.2548	.00	13.70	953.79
584.65	13.79	28761	.2567	.00	13.79	972.47
584.70	13.89	29321	.2585	.00	13.89	991.27
584.75	13.98	29886	.2604	.00	13.98	1010.20
584.80	14.07	30456	.2623	.00	14.07	1029.26
584.85	14.17	31029	.2642	.00	14.17	1048.46
584.90	14.26	31607	.2661	.00	14.26	1067.81
584.95	14.35	32188	.2680	.00	14.35	1087.28
585.00	14.44	32774	.2699	.00	14.44	1106.89
585.05	14.53	33363	.2718	.00	14.53	1126.64
585.10	14.62	33957	.2737	.00	14.62	1146.52
585.15	14.71	34556	.2756	.00	14.71	1166.57
585.20	14.80	35158	.2775	.00	14.80	1186.73
585.25	14.88	35765	.2795	.00	14.88	1207.03
585.30	14.97	36375	.2814	.00	14.97	1227.48
585.35	15.06	36990	.2834	.00	15.06	1248.06
585.40	15.14	37610	.2853	.00	15.14	1268.81
585.45	15.23	38233	.2873	.00	15.23	1289.67
585.50	15.31	38861	.2892	.00	15.31	1310.68
585.55	15.40	39493	.2912	.00	15.40	1331.83
585.60	15.48	40129	.2932	.00	15.48	1353.12
585.65	15.57	40771	.2952	.00	15.57	1374.59
585.70	15.65	41416	.2972	.00	15.65	1396.17

Type.... Pond E-V-Q Table
 Name.... BASIN D
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

LEVEL POOL ROUTING DATA

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
 Inflow HYG file = NONE STORED - BASIN D IN 002
 Outflow HYG file = NONE STORED - BASIN D OUT 002

Pond Node Data = BASIN D
 Pond Volume Data = BASIN D
 Pond Outlet Data = OUTFALL D

No Infiltration

INITIAL CONDITIONS

 Starting WS Elev = 580.00 ft
 Starting Volume = 0 cu.ft
 Starting Outflow = .00 cfs
 Starting Infiltr. = .00 cfs
 Starting Total Qout = .00 cfs
 Time Increment = 1.00 min

Elevation ft	Outflow cfs	Storage cu.ft	Area acres	Infiltr. cfs	Q Total cfs	2S/t + 0 cfs
585.75	15.73	42065	.2992	.00	15.73	1417.89
585.80	15.82	42718	.3012	.00	15.82	1439.76
585.85	15.90	43377	.3032	.00	15.90	1461.78
585.90	15.98	44040	.3052	.00	15.98	1483.97
585.95	16.06	44707	.3073	.00	16.06	1506.28
586.00	16.14	45378	.3093	.00	16.14	1528.74
586.05	16.22	46053	.3112	.00	16.22	1551.34
586.10	16.30	46733	.3131	.00	16.30	1574.07
586.15	16.38	47418	.3151	.00	16.38	1596.98
586.20	16.46	48106	.3170	.00	16.46	1620.00
586.25	16.54	48799	.3190	.00	16.54	1643.16
586.30	16.62	49495	.3209	.00	16.62	1666.46
586.35	16.70	50196	.3229	.00	16.70	1689.90
586.40	16.78	50902	.3248	.00	16.78	1713.51
586.45	16.85	51612	.3268	.00	16.85	1737.24
586.50	16.93	52325	.3288	.00	16.93	1761.10
586.55	17.01	53043	.3307	.00	17.01	1785.11
586.60	17.08	53766	.3327	.00	17.08	1809.27
586.65	17.16	54493	.3347	.00	17.16	1833.60
586.70	17.24	55224	.3367	.00	17.24	1858.04
586.75	17.31	55960	.3387	.00	17.31	1882.63
586.80	17.39	56699	.3407	.00	17.39	1907.36
586.85	17.46	57443	.3427	.00	17.46	1932.24

Type.... Pond E-V-Q Table
 Name.... BASIN D
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

LEVEL POOL ROUTING DATA

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
 Inflow HYG file = NONE STORED - BASIN D IN 002
 Outflow HYG file = NONE STORED - BASIN D OUT 002

Pond Node Data = BASIN D
 Pond Volume Data = BASIN D
 Pond Outlet Data = OUTFALL D

No Infiltration

INITIAL CONDITIONS

 Starting WS Elev = 580.00 ft
 Starting Volume = 0 cu.ft
 Starting Outflow = .00 cfs
 Starting Infiltr. = .00 cfs
 Starting Total Qout = .00 cfs
 Time Increment = 1.00 min

Elevation ft	Outflow cfs	Storage cu.ft	Area acres	Infiltr. cfs	Q Total cfs	2S/t + 0 cfs
586.90	17.54	58193	.3448	.00	17.54	1957.29
586.95	17.61	58946	.3468	.00	17.61	1982.47
587.00	17.68	59703	.3488	.00	17.68	2007.78
587.05	18.38	60465	.3509	.00	18.38	2033.88
587.10	19.60	61231	.3529	.00	19.60	2060.63
587.15	21.16	62003	.3550	.00	21.16	2087.91
587.20	22.98	62778	.3570	.00	22.98	2115.58
587.25	25.05	63557	.3591	.00	25.05	2143.63
587.30	27.32	64342	.3611	.00	27.32	2172.04
587.35	29.78	65130	.3632	.00	29.78	2200.79
587.40	32.43	65924	.3653	.00	32.43	2229.90
587.45	35.23	66722	.3674	.00	35.23	2259.30
587.50	38.12	67524	.3695	.00	38.12	2288.93
587.55	40.74	68331	.3716	.00	40.74	2318.44
587.60	43.43	69143	.3737	.00	43.43	2348.18
587.65	46.23	69959	.3758	.00	46.23	2378.20
587.70	49.06	70780	.3779	.00	49.06	2408.39
587.75	51.91	71605	.3800	.00	51.91	2438.75
587.80	54.82	72435	.3822	.00	54.82	2469.32
587.85	57.75	73270	.3843	.00	57.75	2500.06
587.90	60.64	74110	.3864	.00	60.64	2530.96
587.95	63.53	74953	.3886	.00	63.53	2561.97
588.00	75.08	75802	.3907	.00	75.08	2601.81

Type.... Pond E-V-Q Table
Name.... BASIN D
File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

LEVEL POOL ROUTING DATA

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
Inflow HYG file = NONE STORED - BASIN D IN 002
Outflow HYG file = NONE STORED - BASIN D OUT 002

Pond Node Data = BASIN D
Pond Volume Data = BASIN D
Pond Outlet Data = OUTFALL D

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 580.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout = .00 cfs
Time Increment = 1.00 min

Elevation	Outflow	Storage	Area	Infiltr.	Q Total	2S/t + 0
ft	cfs	cu.ft	acres	cfs	cfs	cfs

Type... Node: Pond Inflow Summary
 Name... BASIN D IN
 File... E:\PONDPACK\A12000PLUS\12495\12495.PPW
 Storm... 002 Tag: 002

Page 3.09
 Event: 002 yr

SUMMARY FOR HYDROGRAPH ADDITION
 at Node: BASIN D IN

HYG Directory: E:\PONDPACK\A12000PLUS\12495\

```

=====
Upstream Link ID  Upstream Node ID  HYG file      HYG ID        HYG tag
-----
A 20              BASIN D                basin d        002
=====

```

```

INFLOWS TO:  BASIN D      IN
-----
HYG file      HYG ID        HYG tag      Volume      Peak Time    Peak Flow
              HYG ID        HYG tag      cu.ft       min          cfs
-----
              basin d        002          36829       4.00         30.69

```

```

TOTAL FLOW INTO:  BASIN D      IN
-----
HYG file      HYG ID        HYG tag      Volume      Peak Time    Peak Flow
              HYG ID        HYG tag      cu.ft       min          cfs
-----
              BASIN D      IN  002          36829       4.00         30.69

```

Type... Node: Pond Inflow Summary
 Name... BASIN D IN
 File... E:\PONDPACK\A12000PLUS\12495\12495.PPW
 Storm... 002 Tag: 002

Page 3.10
 Event: 002 yr

TOTAL NODE INFLOW...
 HYG file =
 HYG ID = BASIN D IN
 HYG Tag = 002

 Peak Discharge = 30.69 cfs
 Time to Peak = 4.00 min
 HYG Volume = 36829 cu.ft

HYDROGRAPH ORDINATES (cfs)
 Output Time increment = 1.00 min
 Time on left represents time for first value in each row.

Time min					
.00	.00	7.67	15.35	23.02	30.69
5.00	30.69	30.69	30.69	30.69	30.69
10.00	30.69	30.69	30.69	30.69	30.69
15.00	30.69	30.69	30.69	30.69	30.69
20.00	30.69	23.02	15.35	7.67	.00

Type.... Node: Pond Inflow Summary
 Name.... BASIN D IN
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW
 Storm... 015 Tag: 015

Page 3.11
 Event: 015 yr

SUMMARY FOR HYDROGRAPH ADDITION
 at Node: BASIN D IN

HYG Directory: E:\PONDPACK\A12000PLUS\12495\

```
=====
Upstream Link ID  Upstream Node ID  HYG file      HYG ID        HYG tag
-----
A 20              BASIN D                basin d        015
=====
```

```
INFLOWS TO:  BASIN D      IN
-----
HYG file      HYG ID        HYG tag      Volume      Peak Time    Peak Flow
              HYG ID        HYG tag      cu.ft       min          cfs
-----
              basin d        015          59376       4.00        49.48
```

```
TOTAL FLOW INTO:  BASIN D      IN
-----
HYG file      HYG ID        HYG tag      Volume      Peak Time    Peak Flow
              HYG ID        HYG tag      cu.ft       min          cfs
-----
              BASIN D      IN  015          59376       4.00        49.48
```

Type.... Node: Pond Inflow Summary
 Name.... BASIN D IN
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW
 Storm... 015 Tag: 015

Page 3.12
 Event: 015 yr

TOTAL NODE INFLOW...
 HYG file =
 HYG ID = BASIN D IN
 HYG Tag = 015

 Peak Discharge = 49.48 cfs
 Time to Peak = 4.00 min
 HYG Volume = 59376 cu.ft

HYDROGRAPH ORDINATES (cfs)
 Output Time increment = 1.00 min
 Time on left represents time for first value in each row.

Time min					
.00	.00	12.37	24.74	37.11	49.48
5.00	49.48	49.48	49.48	49.48	49.48
10.00	49.48	49.48	49.48	49.48	49.48
15.00	49.48	49.48	49.48	49.48	49.48
20.00	49.48	37.11	24.74	12.37	.00

Type.... Node: Pond Inflow Summary
 Name.... BASIN D IN
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW
 Storm... 025 Tag: 025

Page 3.13
 Event: 025 yr

SUMMARY FOR HYDROGRAPH ADDITION
 at Node: BASIN D IN

HYG Directory: E:\PONDPACK\A12000PLUS\12495\

```

=====
Upstream Link ID  Upstream Node ID  HYG file      HYG ID        HYG tag
-----
A 20              BASIN D                basin d        025
=====
  
```

```

INFLOWS TO:  BASIN D      IN
-----
HYG file      HYG ID        HYG tag      Volume      Peak Time    Peak Flow
              cu.ft         min          cfs
-----
              basin d        025          73260       4.00         61.05
  
```

```

TOTAL FLOW INTO:  BASIN D      IN
-----
HYG file      HYG ID        HYG tag      Volume      Peak Time    Peak Flow
              cu.ft         min          cfs
-----
              BASIN D      IN  025          73260       4.00         61.05
  
```


Type.... Node: Pond Inflow Summary
 Name.... BASIN D IN
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW
 Storm... 025 Tag: 025

Page 3.14
 Event: 025 yr

TOTAL NODE INFLOW...

HYG file =
 HYG ID = BASIN D IN
 HYG Tag = 025

 Peak Discharge = 61.05 cfs
 Time to Peak = 4.00 min
 HYG Volume = 73260 cu.ft

HYDROGRAPH ORDINATES (cfs)

Output Time increment = 1.00 min
 Time on left represents time for first value in each row.

Time min					
.00	.00	15.26	30.53	45.79	61.05
5.00	61.05	61.05	61.05	61.05	61.05
10.00	61.05	61.05	61.05	61.05	61.05
15.00	61.05	61.05	61.05	61.05	61.05
20.00	61.05	45.79	30.53	15.26	.00

Type... Pond Routing Summary
Name... BASIN D OUT Tag: 002
File... E:\PONDPACK\A12000PLUS\12495\12495.PPW
Storm... 002 Tag: 002

Page 3.15
Event: 002 yr

LEVEL POOL ROUTING SUMMARY

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
Inflow HYG file = NONE STORED - BASIN D IN 002
Outflow HYG file = NONE STORED - BASIN D OUT 002

Pond Node Data = BASIN D
Pond Volume Data = BASIN D
Pond Outlet Data = OUTFALL D

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 580.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout = .00 cfs
Time Increment = 1.00 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

=====
Peak Inflow = 30.69 cfs at 4.00 min
Peak Outflow = 12.93 cfs at 22.00 min

Peak Elevation = 584.21 ft
Peak Storage = 23988 cu.ft
=====

*MAY RELEASE
= 129X 2.31 = 28.6
OK
E
ACCOMMIT*

MASS BALANCE (cu.ft)

+ Initial Vol = 0
+ HYG Vol IN = 36829
- Infiltration = 0
- HYG Vol OUT = 36829
- Retained Vol = 0

Unrouted Vol = - cu.ft (.000% of Inflow Volume)

Type.... Pond Routing Summary
Name.... BASIN D OUT Tag: 015
File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW
Storm... 015 Tag: 015

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Event: 015 yr

LEVEL POOL ROUTING SUMMARY

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
Inflow HYG file = NONE STORED - BASIN D IN 015
Outflow HYG file = NONE STORED - BASIN D OUT 015

Pond Node Data = BASIN D
Pond Volume Data = BASIN D
Pond Outlet Data = OUTFALL D

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 580.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = 1.00 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

=====
Peak Inflow = 49.48 cfs at 4.00 min
Peak Outflow = 15.90 cfs at 23.00 min

Peak Elevation = 585.85 ft
Peak Storage = 43367 cu.ft
=====

MASS BALANCE (cu.ft)

+ Initial Vol = 0
+ HYG Vol IN = 59376
- Infiltration = 0
- HYG Vol OUT = 59376
- Retained Vol = 0

Unrouted Vol = 0 cu.ft (.000% of Outflow Volume)

Type.... Pond Routing Summary
Name.... BASIN D OUT Tag: 025
File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW
Storm... 025 Tag: 025

Page 3.17
Event: 025 yr

LEVEL POOL ROUTING SUMMARY

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
Inflow HYG file = NONE STORED - BASIN D IN 025
Outflow HYG file = NONE STORED - BASIN D OUT 025

Pond Node Data = BASIN D
Pond Volume Data = BASIN D
Pond Outlet Data = OUTFALL D

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 580.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = 1.00 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

=====
Peak Inflow = 61.05 cfs at 4.00 min
Peak Outflow = 17.29 cfs at 23.00 min

Peak Elevation = 586.74 ft
Peak Storage = 55780 cu.ft
=====

MASS BALANCE (cu.ft)

+ Initial Vol = 0
+ HYG Vol IN = 73260
- Infiltration = 0
- HYG Vol OUT = 73260
- Retained Vol = 0

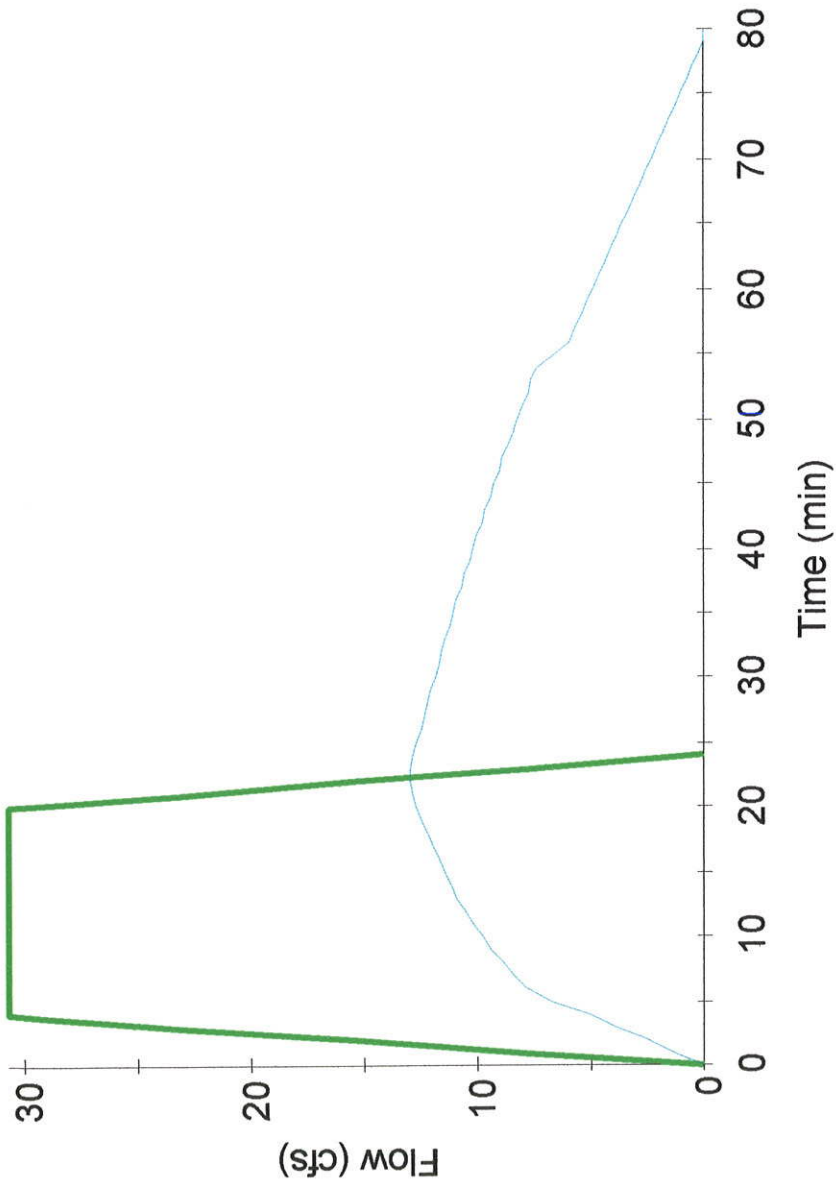
Unrouted Vol = - cu.ft (.000% of Inflow Volume)

Index of Starting Page Numbers for ID Names

----- B -----
BASIN D... 1.01, 3.01
BASIN D IN 002... 3.09, 3.11,
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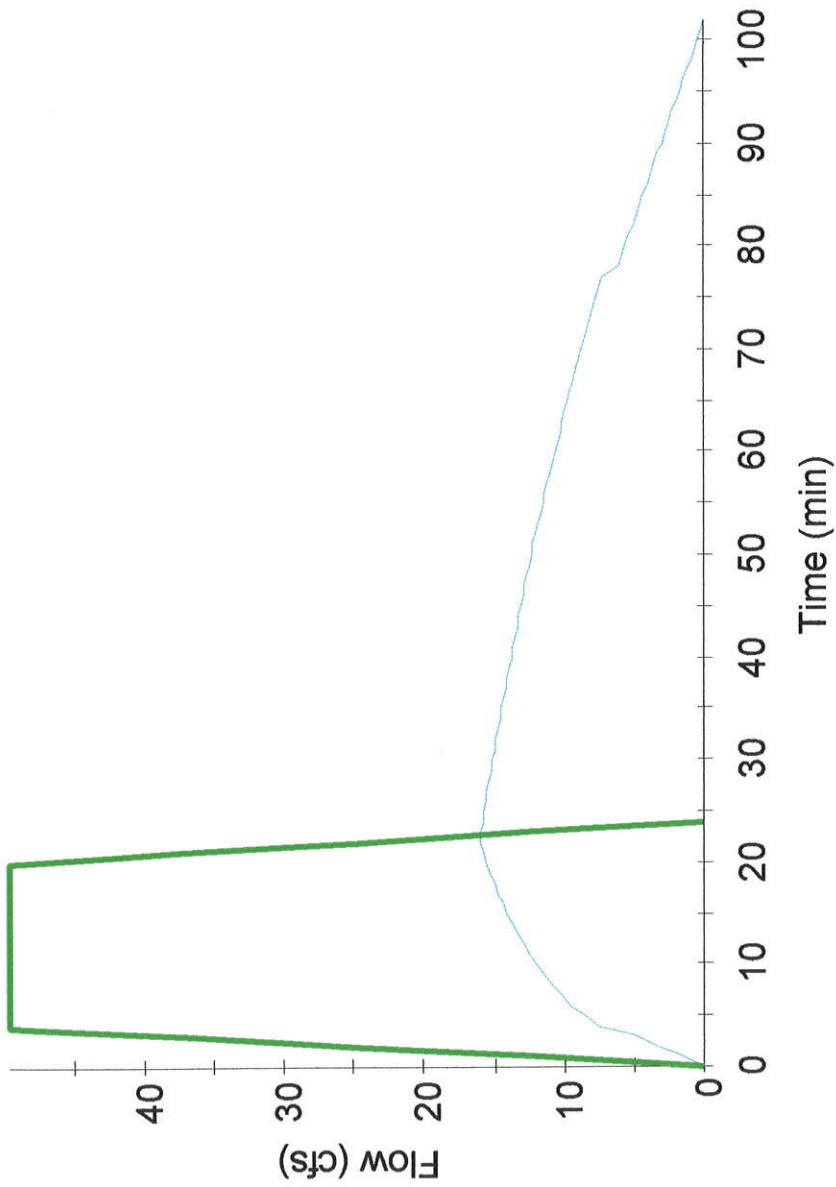
----- O -----
OUTFALL D... 2.01, 2.04

Hydrograph
BASIN D OUT 002



Currently Plotted Curves
BASIN D IN 002
BASIN D OUT 002

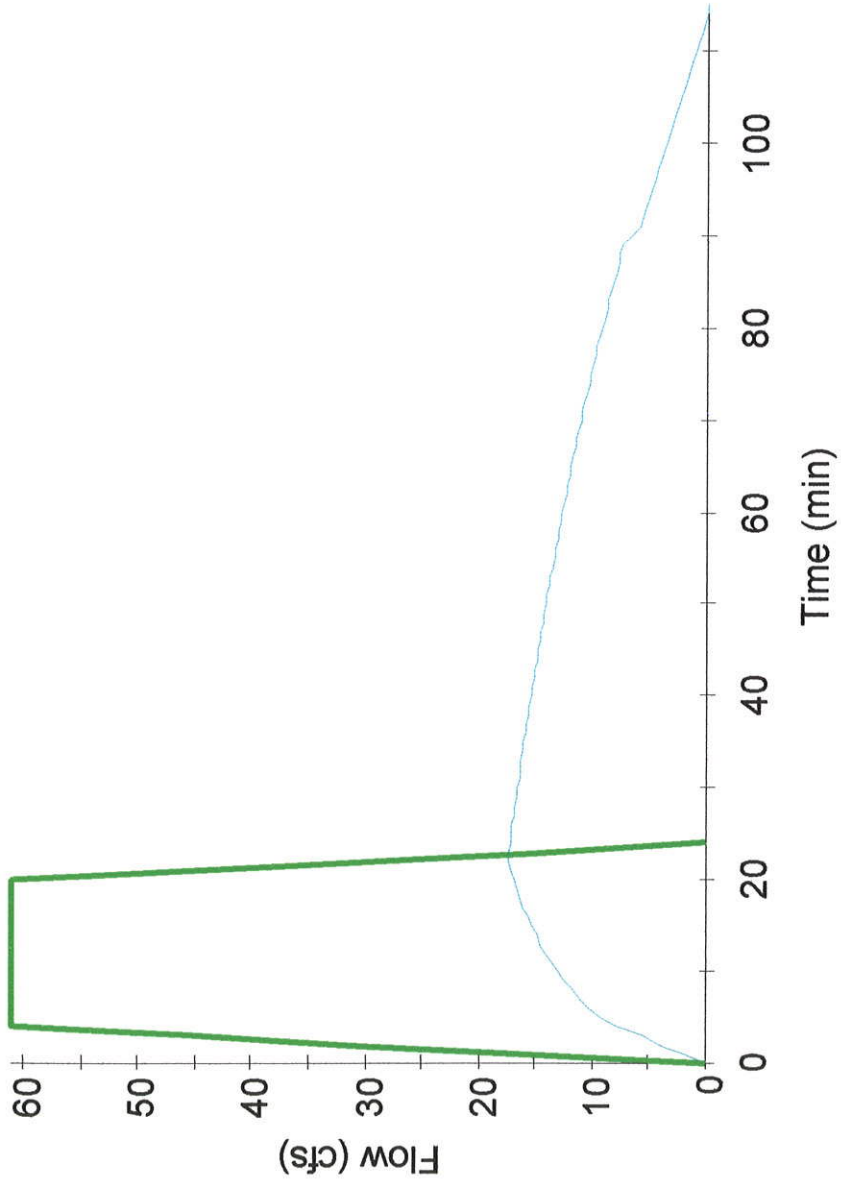
Hydrograph
BASIN D OUT 015



Currently Plotted Curves

- BASIN D
- IN 015
- BASIN D
- OUT 015

Hydrograph
BASIN D OUT 025



Currently Plotted Curves
BASIN D IN 025
BASIN D OUT 025

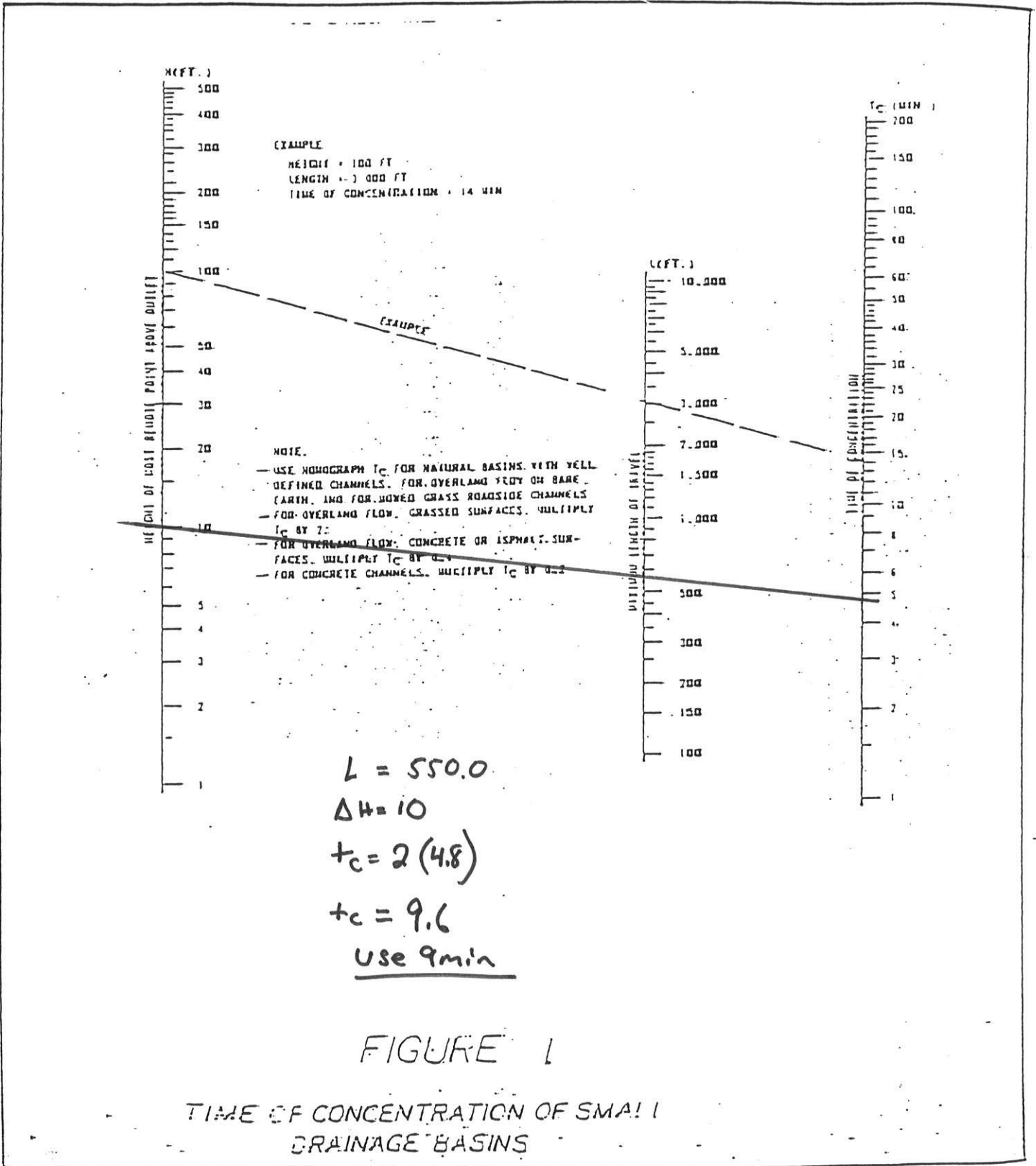


ENGINEERING

PLANNING

SURVEYING

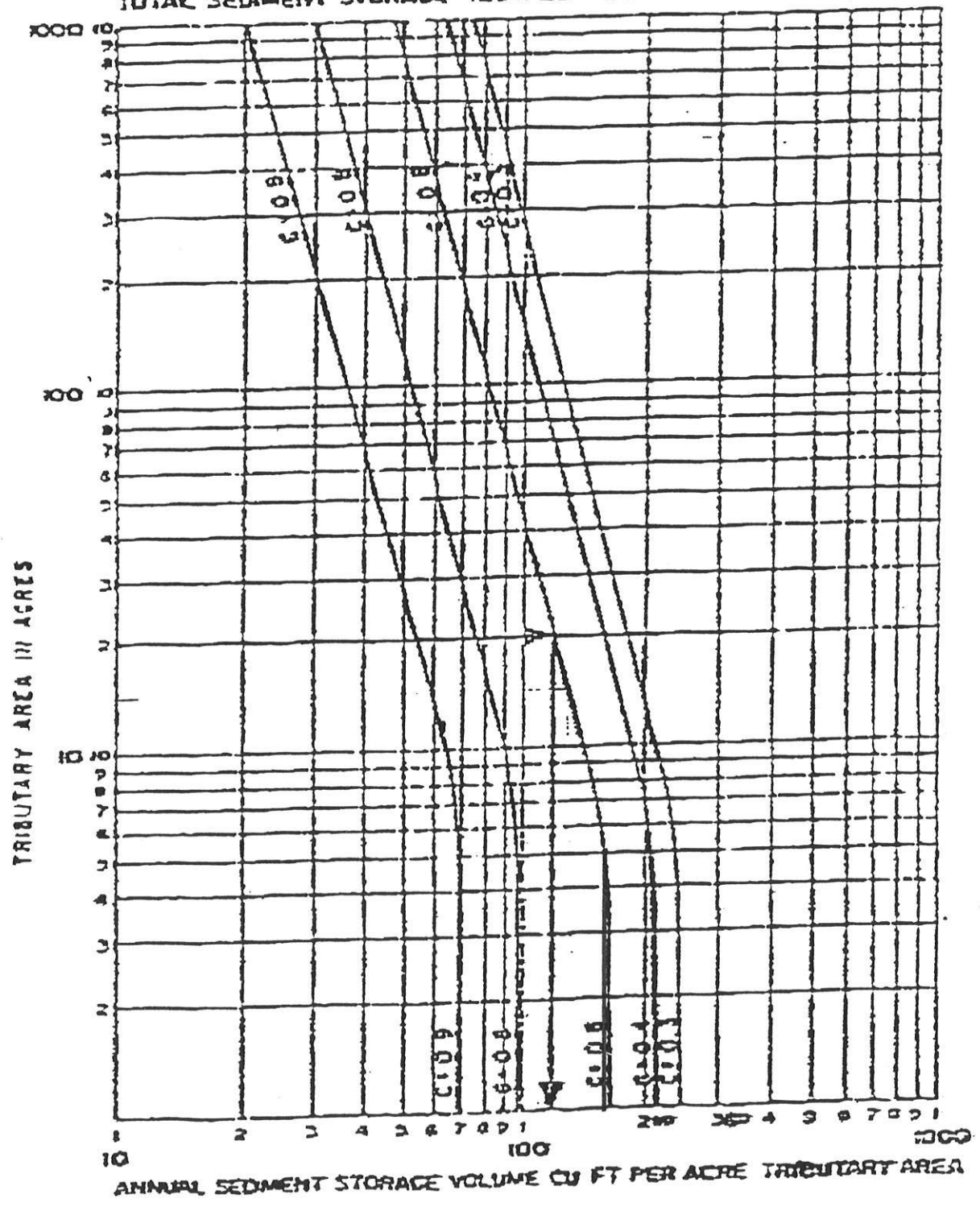
A
BASIN ~~D~~



Basin A

Area = 4,94 ac
 C = .6
 Sed = 150 ft³/Ac/yr
 TSS = 1482.00 ft³

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



ANNUAL SEDIMENT STORAGE

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BASIN A OUT 025
 Pond Routing Summary 3.15

File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

POND VOLUME CALCULATIONS

Planimeter scale: 1.00 ft/in

Elevation (ft)	Planimeter (sq.in)	Area (acres)	A1+A2+sq ² (A1*A2) (acres)	Volume (cu.ft)	Volume Sum (cu.ft)
582.00	.000	.0000	.0000	0	0
584.00	1241.000	.0285	.0285	827	827
586.00	2150.000	.0494	.1153	3350	4177
588.00	3286.000	.0754	.1858	5396	9573
589.00	3939.000	.0904	.2485	3608	13181

POND VOLUME EQUATIONS

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

$$\text{Volume} = (1/3) * (\text{EL2}-\text{EL1}) * (\text{Area1} + \text{Area2} + \text{sq.rt.}(\text{Area1}*\text{Area2}))$$

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

File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 582.00 ft
Increment = .05 ft
Max. Elev.= 588.14 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	3	--->	cv	587.850	588.140
Orifice-Area	2	--->	cv	583.000	589.000
Weir-Rectangular	1	--->	cv	582.000	583.000
Culvert-Circular	cv	--->	TW	580.000	588.140
TW SETUP, DS Channel					

File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

OUTLET STRUCTURE INPUT DATA

Structure ID = 3
Structure Type = Inlet Box

of Openings = 1
Invert Elev. = 587.85 ft
Orifice Area = 9.6200 sq.ft
Orifice Coeff. = .600
Weir Length = 11.00 ft
Weir Coeff. = 3.000
K, Submerged = .000
K, Reverse = 1.000
Kb, Barrel = .000000 (per ft of full flow)
Barrel Length = .00 ft
Mannings n = .0000

Structure ID = 2
Structure Type = Orifice-Area

of Openings = 1
Invert Elev. = 582.00 ft
Area = .5000 sq.ft
Top of Orifice = 583.00 ft
Datum Elev. = 582.50 ft
Orifice Coeff. = .600

Structure ID = 1
Structure Type = Weir-Rectangular

of Openings = 1
Crest Elev. = 582.00 ft
Weir Length = .50 ft
Weir Coeff. = 3.000000

Weir TW effects (Use adjustment equation)

File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

OUTLET STRUCTURE INPUT DATA

Structure ID = cv
Structure Type = Culvert-Circular

No. Barrels = 1
Barrel Diameter = 1.5000 ft
Upstream Invert = 580.00 ft
Dnstream Invert = 579.00 ft
Horiz. Length = 59.62 ft
Barrel Length = 59.63 ft
Barrel Slope = .01677 ft/ft

OUTLET CONTROL DATA...

Mannings n = .0130
Ke = .5000 (forward entrance loss)
Kb = .018213 (per ft of full flow)
Kr = .2000 (reverse entrance loss)
HW Convergence = .001 +/- ft

INLET CONTROL DATA...

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

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

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

At T1 Elev = 581.73 ft ---> Flow = 7.58 cfs
At T2 Elev = 581.95 ft ---> Flow = 8.66 cfs

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

File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

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

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
582.00	.00	Free	Outfall	(no Q: 3,2,1,cv)
582.05	.02	Free	Outfall	1,cv (no Q: 3,2)
582.10	.05	Free	Outfall	1,cv (no Q: 3,2)
582.15	.09	Free	Outfall	1,cv (no Q: 3,2)
582.20	.13	Free	Outfall	1,cv (no Q: 3,2)
582.25	.19	Free	Outfall	1,cv (no Q: 3,2)
582.30	.25	Free	Outfall	1,cv (no Q: 3,2)
582.35	.31	Free	Outfall	1,cv (no Q: 3,2)
582.40	.38	Free	Outfall	1,cv (no Q: 3,2)
582.45	.45	Free	Outfall	1,cv (no Q: 3,2)
582.50	.53	Free	Outfall	1,cv (no Q: 3,2)
582.55	.61	Free	Outfall	1,cv (no Q: 3,2)
582.60	.70	Free	Outfall	1,cv (no Q: 3,2)
582.65	.79	Free	Outfall	1,cv (no Q: 3,2)
582.70	.88	Free	Outfall	1,cv (no Q: 3,2)
582.75	.97	Free	Outfall	1,cv (no Q: 3,2)
582.80	1.07	Free	Outfall	1,cv (no Q: 3,2)
582.85	1.18	Free	Outfall	1,cv (no Q: 3,2)
582.90	1.28	Free	Outfall	1,cv (no Q: 3,2)
582.95	1.39	Free	Outfall	1,cv (no Q: 3,2)
583.00	1.70	Free	Outfall	2,cv (no Q: 3,1)
583.05	1.78	Free	Outfall	2,cv (no Q: 3,1)
583.10	1.86	Free	Outfall	2,cv (no Q: 3,1)
583.15	1.94	Free	Outfall	2,cv (no Q: 3,1)
583.20	2.01	Free	Outfall	2,cv (no Q: 3,1)
583.25	2.08	Free	Outfall	2,cv (no Q: 3,1)
583.30	2.15	Free	Outfall	2,cv (no Q: 3,1)
583.35	2.22	Free	Outfall	2,cv (no Q: 3,1)
583.40	2.28	Free	Outfall	2,cv (no Q: 3,1)
583.45	2.35	Free	Outfall	2,cv (no Q: 3,1)
583.50	2.41	Free	Outfall	2,cv (no Q: 3,1)
583.55	2.47	Free	Outfall	2,cv (no Q: 3,1)
583.60	2.52	Free	Outfall	2,cv (no Q: 3,1)
583.65	2.58	Free	Outfall	2,cv (no Q: 3,1)
583.70	2.64	Free	Outfall	2,cv (no Q: 3,1)
583.75	2.69	Free	Outfall	2,cv (no Q: 3,1)
583.80	2.74	Free	Outfall	2,cv (no Q: 3,1)
583.85	2.80	Free	Outfall	2,cv (no Q: 3,1)
583.90	2.85	Free	Outfall	2,cv (no Q: 3,1)
583.95	2.90	Free	Outfall	2,cv (no Q: 3,1)

Type.... Composite Rating Curve
 Name.... OUTFALL A

File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

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

WS Elev, Total Q		Converge		Notes	
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing	Structures
584.00	2.95	Free	Outfall	2,cv	(no Q: 3,1)
584.05	3.00	Free	Outfall	2,cv	(no Q: 3,1)
584.10	3.04	Free	Outfall	2,cv	(no Q: 3,1)
584.15	3.09	Free	Outfall	2,cv	(no Q: 3,1)
584.20	3.14	Free	Outfall	2,cv	(no Q: 3,1)
584.25	3.18	Free	Outfall	2,cv	(no Q: 3,1)
584.30	3.23	Free	Outfall	2,cv	(no Q: 3,1)
584.35	3.27	Free	Outfall	2,cv	(no Q: 3,1)
584.40	3.32	Free	Outfall	2,cv	(no Q: 3,1)
584.45	3.36	Free	Outfall	2,cv	(no Q: 3,1)
584.50	3.40	Free	Outfall	2,cv	(no Q: 3,1)
584.55	3.45	Free	Outfall	2,cv	(no Q: 3,1)
584.60	3.49	Free	Outfall	2,cv	(no Q: 3,1)
584.65	3.53	Free	Outfall	2,cv	(no Q: 3,1)
584.70	3.57	Free	Outfall	2,cv	(no Q: 3,1)
584.75	3.61	Free	Outfall	2,cv	(no Q: 3,1)
584.80	3.65	Free	Outfall	2,cv	(no Q: 3,1)
584.85	3.69	Free	Outfall	2,cv	(no Q: 3,1)
584.90	3.73	Free	Outfall	2,cv	(no Q: 3,1)
584.95	3.77	Free	Outfall	2,cv	(no Q: 3,1)
585.00	3.81	Free	Outfall	2,cv	(no Q: 3,1)
585.05	3.84	Free	Outfall	2,cv	(no Q: 3,1)
585.10	3.88	Free	Outfall	2,cv	(no Q: 3,1)
585.15	3.92	Free	Outfall	2,cv	(no Q: 3,1)
585.20	3.95	Free	Outfall	2,cv	(no Q: 3,1)
585.25	3.99	Free	Outfall	2,cv	(no Q: 3,1)
585.30	4.03	Free	Outfall	2,cv	(no Q: 3,1)
585.35	4.06	Free	Outfall	2,cv	(no Q: 3,1)
585.40	4.10	Free	Outfall	2,cv	(no Q: 3,1)
585.45	4.13	Free	Outfall	2,cv	(no Q: 3,1)
585.50	4.17	Free	Outfall	2,cv	(no Q: 3,1)
585.55	4.20	Free	Outfall	2,cv	(no Q: 3,1)
585.60	4.24	Free	Outfall	2,cv	(no Q: 3,1)
585.65	4.27	Free	Outfall	2,cv	(no Q: 3,1)
585.70	4.30	Free	Outfall	2,cv	(no Q: 3,1)
585.75	4.34	Free	Outfall	2,cv	(no Q: 3,1)
585.80	4.37	Free	Outfall	2,cv	(no Q: 3,1)
585.85	4.40	Free	Outfall	2,cv	(no Q: 3,1)
585.90	4.44	Free	Outfall	2,cv	(no Q: 3,1)
585.95	4.47	Free	Outfall	2,cv	(no Q: 3,1)

File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

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

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
586.00	4.50	Free	Outfall	2,cv (no Q: 3,1)
586.05	4.53	Free	Outfall	2,cv (no Q: 3,1)
586.10	4.57	Free	Outfall	2,cv (no Q: 3,1)
586.15	4.60	Free	Outfall	2,cv (no Q: 3,1)
586.20	4.63	Free	Outfall	2,cv (no Q: 3,1)
586.25	4.66	Free	Outfall	2,cv (no Q: 3,1)
586.30	4.69	Free	Outfall	2,cv (no Q: 3,1)
586.35	4.72	Free	Outfall	2,cv (no Q: 3,1)
586.40	4.75	Free	Outfall	2,cv (no Q: 3,1)
586.45	4.78	Free	Outfall	2,cv (no Q: 3,1)
586.50	4.81	Free	Outfall	2,cv (no Q: 3,1)
586.55	4.84	Free	Outfall	2,cv (no Q: 3,1)
586.60	4.87	Free	Outfall	2,cv (no Q: 3,1)
586.65	4.90	Free	Outfall	2,cv (no Q: 3,1)
586.70	4.93	Free	Outfall	2,cv (no Q: 3,1)
586.75	4.96	Free	Outfall	2,cv (no Q: 3,1)
586.80	4.99	Free	Outfall	2,cv (no Q: 3,1)
586.85	5.02	Free	Outfall	2,cv (no Q: 3,1)
586.90	5.05	Free	Outfall	2,cv (no Q: 3,1)
586.95	5.08	Free	Outfall	2,cv (no Q: 3,1)
587.00	5.10	Free	Outfall	2,cv (no Q: 3,1)
587.05	5.13	Free	Outfall	2,cv (no Q: 3,1)
587.10	5.16	Free	Outfall	2,cv (no Q: 3,1)
587.15	5.19	Free	Outfall	2,cv (no Q: 3,1)
587.20	5.22	Free	Outfall	2,cv (no Q: 3,1)
587.25	5.24	Free	Outfall	2,cv (no Q: 3,1)
587.30	5.27	Free	Outfall	2,cv (no Q: 3,1)
587.35	5.30	Free	Outfall	2,cv (no Q: 3,1)
587.40	5.33	Free	Outfall	2,cv (no Q: 3,1)
587.45	5.35	Free	Outfall	2,cv (no Q: 3,1)
587.50	5.38	Free	Outfall	2,cv (no Q: 3,1)
587.55	5.41	Free	Outfall	2,cv (no Q: 3,1)
587.60	5.43	Free	Outfall	2,cv (no Q: 3,1)
587.65	5.46	Free	Outfall	2,cv (no Q: 3,1)
587.70	5.49	Free	Outfall	2,cv (no Q: 3,1)
587.75	5.51	Free	Outfall	2,cv (no Q: 3,1)
587.80	5.54	Free	Outfall	2,cv (no Q: 3,1)
587.85	5.57	Free	Outfall	2,cv (no Q: 3,1)
587.90	5.96	Free	Outfall	3,2,cv (no Q: 1)
587.95	6.66	Free	Outfall	3,2,cv (no Q: 1)

Type.... Composite Rating Curve
Name.... OUTFALL A

File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

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

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
588.00	7.56	Free Outfall		3,2,cv (no Q: 1)
588.05	8.62	Free Outfall		3,2,cv (no Q: 1)
588.10	9.82	Free Outfall		3,2,cv (no Q: 1)
588.14	10.87	Free Outfall		3,2,cv (no Q: 1)

S/N: f21101d06a84 Bax Engineering

PondPack Ver: 7.0 (325)

Compute Time: 15:37:05

Date: 03-12-2004

Name.... BASIN A

File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

LEVEL POOL ROUTING DATA

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
 Inflow HYG file = NONE STORED - BASIN A IN 002
 Outflow HYG file = NONE STORED - BASIN A OUT 002

Pond Node Data = BASIN A
 Pond Volume Data = BASIN a
 Pond Outlet Data = OUTFALL A

No Infiltration

INITIAL CONDITIONS

 Starting WS Elev = 582.00 ft
 Starting Volume = 0 cu.ft
 Starting Outflow = .00 cfs
 Starting Infiltr. = .00 cfs
 Starting Total Qout = .00 cfs
 Time Increment = 1.00 min

Elevation ft	Outflow cfs	Storage cu.ft	Area acres	Infiltr. cfs	Q Total cfs	2S/t + 0 cfs
582.00	.00	0	.0000	.00	.00	.00
582.05	.02	0	.0000	.00	.02	.02
582.10	.05	0	.0001	.00	.05	.05
582.15	.09	0	.0002	.00	.09	.10
582.20	.13	1	.0003	.00	.13	.16
582.25	.19	2	.0004	.00	.19	.24
582.30	.25	3	.0006	.00	.25	.34
582.35	.31	4	.0009	.00	.31	.46
582.40	.38	7	.0011	.00	.38	.60
582.45	.45	9	.0014	.00	.45	.77
582.50	.53	13	.0018	.00	.53	.96
582.55	.61	17	.0022	.00	.61	1.19
582.60	.70	22	.0026	.00	.70	1.44
582.65	.79	28	.0030	.00	.79	1.73
582.70	.88	35	.0035	.00	.88	2.06
582.75	.97	44	.0040	.00	.97	2.43
582.80	1.07	53	.0046	.00	1.07	2.84
582.85	1.18	64	.0051	.00	1.18	3.29
582.90	1.28	75	.0058	.00	1.28	3.79
582.95	1.39	89	.0064	.00	1.39	4.34
583.00	1.70	103	.0071	.00	1.70	5.15
583.05	1.78	120	.0079	.00	1.78	5.78
583.10	1.86	138	.0086	.00	1.86	6.45

S/N: f21101d06a84 Bax Engineering

PondPack Ver: 7.0 (325)

Compute Time: 15:37:05

Date: 03-12-2004

Type.... Pond E-V-Q Table
 Name.... BASIN A
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

LEVEL POOL ROUTING DATA

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
 Inflow HYG file = NONE STORED - BASIN A IN 002
 Outflow HYG file = NONE STORED - BASIN A OUT 002

Pond Node Data = BASIN A
 Pond Volume Data = BASIN a
 Pond Outlet Data = OUTFALL A

No Infiltration

INITIAL CONDITIONS

 Starting WS Elev = 582.00 ft
 Starting Volume = 0 cu.ft
 Starting Outflow = .00 cfs
 Starting Infiltr. = .00 cfs
 Starting Total Qout = .00 cfs
 Time Increment = 1.00 min

Elevation ft	Outflow cfs	Storage cu.ft	Area acres	Infiltr. cfs	Q Total cfs	2S/t + 0 cfs
583.15	1.94	157	.0094	.00	1.94	7.18
583.20	2.01	179	.0103	.00	2.01	7.97
583.25	2.08	202	.0111	.00	2.08	8.82
583.30	2.15	227	.0120	.00	2.15	9.73
583.35	2.22	254	.0130	.00	2.22	10.70
583.40	2.28	284	.0140	.00	2.28	11.74
583.45	2.35	315	.0150	.00	2.35	12.86
583.50	2.41	349	.0160	.00	2.41	14.04
583.55	2.47	385	.0171	.00	2.47	15.30
583.60	2.52	424	.0182	.00	2.52	16.64
583.65	2.58	465	.0194	.00	2.58	18.07
583.70	2.64	508	.0206	.00	2.64	19.57
583.75	2.69	554	.0218	.00	2.69	21.17
583.80	2.74	603	.0231	.00	2.74	22.85
583.85	2.80	655	.0244	.00	2.80	24.62
583.90	2.85	709	.0257	.00	2.85	26.49
583.95	2.90	767	.0271	.00	2.90	28.46
584.00	2.95	827	.0285	.00	2.95	30.53
584.05	3.00	890	.0289	.00	3.00	32.66
584.10	3.04	953	.0294	.00	3.04	34.82
584.15	3.09	1018	.0299	.00	3.09	37.02
584.20	3.14	1083	.0303	.00	3.14	39.25
584.25	3.18	1150	.0308	.00	3.18	41.52

Type.... Pond E-V-Q Table
 Name.... BASIN A
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

LEVEL POOL ROUTING DATA

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
 Inflow HYG file = NONE STORED - BASIN A IN 002
 Outflow HYG file = NONE STORED - BASIN A OUT 002

Pond Node Data = BASIN A
 Pond Volume Data = BASIN a
 Pond Outlet Data = OUTFALL A

No Infiltration

INITIAL CONDITIONS

 Starting WS Elev = 582.00 ft
 Starting Volume = 0 cu.ft
 Starting Outflow = .00 cfs
 Starting Infiltr. = .00 cfs
 Starting Total Qout = .00 cfs
 Time Increment = 1.00 min

Elevation ft	Outflow cfs	Storage cu.ft	Area acres	Infiltr. cfs	Q Total cfs	2S/t + 0 cfs
584.30	3.23	1218	.0313	.00	3.23	43.81
584.35	3.27	1286	.0317	.00	3.27	46.14
584.40	3.32	1356	.0322	.00	3.32	48.51
584.45	3.36	1426	.0327	.00	3.36	50.91
584.50	3.40	1498	.0332	.00	3.40	53.34
584.55	3.45	1571	.0337	.00	3.45	55.81
584.60	3.49	1645	.0342	.00	3.49	58.31
584.65	3.53	1720	.0346	.00	3.53	60.85
584.70	3.57	1796	.0351	.00	3.57	63.43
584.75	3.61	1873	.0356	.00	3.61	66.04
584.80	3.65	1951	.0362	.00	3.65	68.68
584.85	3.69	2030	.0367	.00	3.69	71.36
584.90	3.73	2111	.0372	.00	3.73	74.09
584.95	3.77	2192	.0377	.00	3.77	76.84
585.00	3.81	2275	.0382	.00	3.81	79.63
585.05	3.84	2359	.0387	.00	3.84	82.47
585.10	3.88	2444	.0393	.00	3.88	85.33
585.15	3.92	2530	.0398	.00	3.92	88.24
585.20	3.95	2617	.0403	.00	3.95	91.19
585.25	3.99	2705	.0409	.00	3.99	94.17
585.30	4.03	2795	.0414	.00	4.03	97.19
585.35	4.06	2886	.0419	.00	4.06	100.25
585.40	4.10	2978	.0425	.00	4.10	103.36

Type.... Pond E-V-Q Table
 Name.... BASIN A
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

LEVEL POOL ROUTING DATA

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
 Inflow HYG file = NONE STORED - BASIN A IN 002
 Outflow HYG file = NONE STORED - BASIN A OUT 002

Pond Node Data = BASIN A
 Pond Volume Data = BASIN a
 Pond Outlet Data = OUTFALL A

No Infiltration

INITIAL CONDITIONS

 Starting WS Elev = 582.00 ft
 Starting Volume = 0 cu.ft
 Starting Outflow = .00 cfs
 Starting Infiltr. = .00 cfs
 Starting Total Qout= .00 cfs
 Time Increment = 1.00 min

Elevation ft	Outflow cfs	Storage cu.ft	Area acres	Infilt. cfs	Q Total cfs	2S/t + 0 cfs
585.45	4.13	3071	.0431	.00	4.13	106.50
585.50	4.17	3165	.0436	.00	4.17	109.68
585.55	4.20	3261	.0442	.00	4.20	112.90
585.60	4.24	3358	.0447	.00	4.24	116.16
585.65	4.27	3456	.0453	.00	4.27	119.46
585.70	4.30	3555	.0459	.00	4.30	122.80
585.75	4.34	3655	.0464	.00	4.34	126.19
585.80	4.37	3757	.0470	.00	4.37	129.61
585.85	4.40	3860	.0476	.00	4.40	133.08
585.90	4.44	3965	.0482	.00	4.44	136.59
585.95	4.47	4070	.0488	.00	4.47	140.14
586.00	4.50	4177	.0494	.00	4.50	143.73
586.05	4.53	4285	.0499	.00	4.53	147.37
586.10	4.57	4394	.0505	.00	4.57	151.05
586.15	4.60	4505	.0511	.00	4.60	154.77
586.20	4.63	4617	.0517	.00	4.63	158.54
586.25	4.66	4730	.0523	.00	4.66	162.34
586.30	4.69	4845	.0529	.00	4.69	166.19
586.35	4.72	4961	.0535	.00	4.72	170.09
586.40	4.75	5078	.0541	.00	4.75	174.03
586.45	4.78	5197	.0547	.00	4.78	178.01
586.50	4.81	5317	.0554	.00	4.81	182.04
586.55	4.84	5438	.0560	.00	4.84	186.11

Type.... Pond E-V-Q Table
 Name.... BASIN A
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

LEVEL POOL ROUTING DATA

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
 Inflow HYG file = NONE STORED - BASIN A IN 002
 Outflow HYG file = NONE STORED - BASIN A OUT 002

Pond Node Data = BASIN A
 Pond Volume Data = BASIN a
 Pond Outlet Data = OUTFALL A

No Infiltration

INITIAL CONDITIONS

 Starting WS Elev = 582.00 ft
 Starting Volume = 0 cu.ft
 Starting Outflow = .00 cfs
 Starting Infiltr. = .00 cfs
 Starting Total Qout = .00 cfs
 Time Increment = 1.00 min

Elevation ft	Outflow cfs	Storage cu.ft	Area acres	Infiltr. cfs	Q Total cfs	2S/t + 0 cfs
586.60	4.87	5561	.0566	.00	4.87	190.22
586.65	4.90	5685	.0572	.00	4.90	194.39
586.70	4.93	5810	.0579	.00	4.93	198.59
586.75	4.96	5937	.0585	.00	4.96	202.85
586.80	4.99	6065	.0591	.00	4.99	207.14
586.85	5.02	6194	.0598	.00	5.02	211.49
586.90	5.05	6325	.0604	.00	5.05	215.88
586.95	5.08	6457	.0611	.00	5.08	220.32
587.00	5.10	6591	.0617	.00	5.10	224.80
587.05	5.13	6726	.0624	.00	5.13	229.33
587.10	5.16	6863	.0630	.00	5.16	233.91
587.15	5.19	7001	.0637	.00	5.19	238.54
587.20	5.22	7140	.0643	.00	5.22	243.22
587.25	5.24	7281	.0650	.00	5.24	247.94
587.30	5.27	7423	.0657	.00	5.27	252.71
587.35	5.30	7567	.0664	.00	5.30	257.53
587.40	5.33	7712	.0670	.00	5.33	262.40
587.45	5.35	7859	.0677	.00	5.35	267.32
587.50	5.38	8007	.0684	.00	5.38	272.29
587.55	5.41	8157	.0691	.00	5.41	277.30
587.60	5.43	8308	.0698	.00	5.43	282.37
587.65	5.46	8461	.0705	.00	5.46	287.49
587.70	5.49	8615	.0712	.00	5.49	292.66

Type.... Pond E-V-Q Table
 Name.... BASIN A
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW

LEVEL POOL ROUTING DATA

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
 Inflow HYG file = NONE STORED - BASIN A IN 002
 Outflow HYG file = NONE STORED - BASIN A OUT 002

Pond Node Data = BASIN A
 Pond Volume Data = BASIN a
 Pond Outlet Data = OUTFALL A

No Infiltration

INITIAL CONDITIONS

 Starting WS Elev = 582.00 ft
 Starting Volume = 0 cu.ft
 Starting Outflow = .00 cfs
 Starting Infiltr. = .00 cfs
 Starting Total Qout = .00 cfs
 Time Increment = 1.00 min

Elevation ft	Outflow cfs	Storage cu.ft	Area acres	Infiltr. cfs	Q Total cfs	2S/t + 0 cfs
587.75	5.51	8771	.0719	.00	5.51	297.88
587.80	5.54	8928	.0726	.00	5.54	303.15
587.85	5.57	9087	.0733	.00	5.57	308.47
587.90	5.96	9248	.0740	.00	5.96	314.21
587.95	6.66	9409	.0747	.00	6.66	320.31
588.00	7.56	9573	.0754	.00	7.56	326.66
588.05	8.62	9738	.0762	.00	8.62	333.22
588.10	9.82	9905	.0769	.00	9.82	339.97
588.14	10.87	10039	.0775	.00	10.87	345.51

Type.... Node: Pond Inflow Summary
 Name.... BASIN A IN
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW
 Storm... 002 Tag: 002

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 Event: 002 yr

SUMMARY FOR HYDROGRAPH ADDITION
 at Node: BASIN A IN

HYG Directory: E:\PONDPACK\A12000PLUS\12495\

```

=====
Upstream Link ID  Upstream Node ID  HYG file      HYG ID        HYG tag
-----
A 30              BASIN A                basin a        002
=====
  
```

```

INFLOWS TO:  BASIN A      IN
-----
HYG file      HYG ID        HYG tag      Volume      Peak Time    Peak Flow
              cu.ft         min          cfs
-----
              basin a        002          6816        9.00         5.68
  
```

```

TOTAL FLOW INTO:  BASIN A      IN
-----
HYG file      HYG ID        HYG tag      Volume      Peak Time    Peak Flow
              cu.ft         min          cfs
-----
              BASIN A      IN  002          6816        9.00         5.68
  
```

Type.... Node: Pond Inflow Summary
 Name.... BASIN A IN
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW
 Storm... 002 Tag: 002

Page 3.08
 Event: 002 yr

TOTAL NODE INFLOW...

HYG file =
 HYG ID = BASIN A IN
 HYG Tag = 002

 Peak Discharge = 5.68 cfs
 Time to Peak = 9.00 min
 HYG Volume = 6816 cu.ft

HYDROGRAPH ORDINATES (cfs)

Output Time increment = 1.00 min
 Time on left represents time for first value in each row.

Time min					
.00	.00	.62	1.25	1.87	2.50
5.00	3.18	3.81	4.43	5.06	5.68
10.00	5.68	5.68	5.68	5.68	5.68
15.00	5.68	5.68	5.68	5.68	5.68
20.00	5.68	5.06	4.43	3.81	3.18
25.00	2.50	1.87	1.25	.62	.00

Type... Node: Pond Inflow Summary
 Name... BASIN A IN
 File... E:\PONDPACK\A12000PLUS\12495\12495.PPW
 Storm... 015 Tag: 015

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 Event: 015 yr

SUMMARY FOR HYDROGRAPH ADDITION
 at Node: BASIN A IN

HYG Directory: E:\PONDPACK\A12000PLUS\12495\

```

=====
Upstream Link ID  Upstream Node ID  HYG file      HYG ID        HYG tag
-----
A 30              BASIN A                basin a        015
=====
  
```

```

INFLOWS TO:  BASIN A      IN
-----
HYG file      HYG ID        HYG tag      Volume      Peak Time    Peak Flow
              cu.ft         min          cfs
-----
              basin a        015          11088       9.00         9.24
  
```

```

TOTAL FLOW INTO:  BASIN A      IN
-----
HYG file      HYG ID        HYG tag      Volume      Peak Time    Peak Flow
              cu.ft         min          cfs
-----
              BASIN A      IN  015          11088       9.00         9.24
  
```

Type.... Node: Pond Inflow Summary
 Name.... BASIN A IN
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW
 Storm... 015 Tag: 015

TOTAL NODE INFLOW...

HYG file =
 HYG ID = BASIN A IN
 HYG Tag = 015

 Peak Discharge = 9.24 cfs
 Time to Peak = 9.00 min
 HYG Volume = 11088 cu.ft

HYDROGRAPH ORDINATES (cfs)

Output Time increment = 1.00 min
 Time on left represents time for first value in each row.

Time min					
.00	.00	1.02	2.03	3.05	4.07
5.00	5.17	6.19	7.21	8.22	9.24
10.00	9.24	9.24	9.24	9.24	9.24
15.00	9.24	9.24	9.24	9.24	9.24
20.00	9.24	8.22	7.21	6.19	5.17
25.00	4.07	3.05	2.03	1.02	.00

Type.... Node: Pond Inflow Summary
 Name.... BASIN A IN
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW
 Storm... 025 Tag: 025

SUMMARY FOR HYDROGRAPH ADDITION
 at Node: BASIN A IN

HYG Directory: E:\PONDPACK\A12000PLUS\12495\

```

=====
Upstream Link ID  Upstream Node ID  HYG file      HYG ID        HYG tag
-----
A 30              BASIN A                basin a        025
=====

```

```

INFLOWS TO: BASIN A      IN
-----
HYG file      HYG ID        HYG tag      Volume      Peak Time    Peak Flow
              HYG ID        HYG tag      cu.ft       min          cfs
-----
              basin a        025          13692       9.00         11.41

```

```

TOTAL FLOW INTO: BASIN A      IN
-----
HYG file      HYG ID        HYG tag      Volume      Peak Time    Peak Flow
              HYG ID        HYG tag      cu.ft       min          cfs
-----
              BASIN A      IN 025          13692       9.00         11.41

```

Type.... Node: Pond Inflow Summary
 Name.... BASIN A IN
 File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW
 Storm... 025 Tag: 025

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 Event: 025 yr

TOTAL NODE INFLOW...

HYG file =
 HYG ID = BASIN A IN
 HYG Tag = 025

 Peak Discharge = 11.41 cfs
 Time to Peak = 9.00 min
 HYG Volume = 13692 cu.ft

HYDROGRAPH ORDINATES (cfs)

Output Time increment = 1.00 min
 Time on left represents time for first value in each row.

Time min					
.00	.00	1.26	2.51	3.77	5.02
5.00	6.39	7.64	8.90	10.15	11.41
10.00	11.41	11.41	11.41	11.41	11.41
15.00	11.41	11.41	11.41	11.41	11.41
20.00	11.41	10.15	8.90	7.64	6.39
25.00	5.02	3.77	2.51	1.26	.00

Type.... Pond Routing Summary
Name.... BASIN A OUT Tag: 002
File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW
Storm... 002 Tag: 002

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Event: 002 yr

LEVEL POOL ROUTING SUMMARY

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
Inflow HYG file = NONE STORED - BASIN A IN 002
Outflow HYG file = NONE STORED - BASIN A OUT 002

Pond Node Data = BASIN A
Pond Volume Data = BASIN a
Pond Outlet Data = OUTFALL A

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 582.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout = .00 cfs
Time Increment = 1.00 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

=====
Peak Inflow = 5.68 cfs at 9.00 min
Peak Outflow = 3.84 cfs at 23.00 min

Peak Elevation = 585.04 ft
Peak Storage = 2350 cu.ft
=====

MASS BALANCE (cu.ft)

+ Initial Vol = 0
+ HYG Vol IN = 6816
- Infiltration = 0
- HYG Vol OUT = 6816
- Retained Vol = 0

Unrouted Vol = - cu.ft (.000% of Inflow Volume)

Type.... Pond Routing Summary
Name.... BASIN A OUT Tag: 015
File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW
Storm... 015 Tag: 015

Page 3.14
Event: 015 yr

LEVEL POOL ROUTING SUMMARY

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
Inflow HYG file = NONE STORED - BASIN A IN 015
Outflow HYG file = NONE STORED - BASIN A OUT 015

Pond Node Data = BASIN A
Pond Volume Data = BASIN a
Pond Outlet Data = OUTFALL A

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 582.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout = .00 cfs
Time Increment = 1.00 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

=====
Peak Inflow = 9.24 cfs at 9.00 min
Peak Outflow = 4.82 cfs at 24.00 min

Peak Elevation = 586.52 ft
Peak Storage = 5357 cu.ft
=====

MASS BALANCE (cu.ft)

+ Initial Vol = 0
+ HYG Vol IN = 11088
- Infiltration = 0
- HYG Vol OUT = 11088
- Retained Vol = 0

Unrouted Vol = 0 cu.ft (.000% of Outflow Volume)

Type.... Pond Routing Summary
Name.... BASIN A OUT Tag: 025
File.... E:\PONDPACK\A12000PLUS\12495\12495.PPW
Storm... 025 Tag: 025

Page 3.15
Event: 025 yr

LEVEL POOL ROUTING SUMMARY

HYG Dir = E:\PONDPACK\A12000PLUS\12495\
Inflow HYG file = NONE STORED - BASIN A IN 025
Outflow HYG file = NONE STORED - BASIN A OUT 025

Pond Node Data = BASIN A
Pond Volume Data = BASIN a
Pond Outlet Data = OUTFALL A

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 582.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout = .00 cfs
Time Increment = 1.00 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

=====
Peak Inflow = 11.41 cfs at 9.00 min
Peak Outflow = 5.26 cfs at 25.00 min

Peak Elevation = 587.28 ft
Peak Storage = 7376 cu.ft
=====

*OK L 25 RECALC
RMC*

MASS BALANCE (cu.ft)

+ Initial Vol = 0
+ HYG Vol IN = 13692
- Infiltration = 0
- HYG Vol OUT = 13692
- Retained Vol = 0

Unrouted Vol = - cu.ft (.000% of Inflow Volume)

Index of Starting Page Numbers for ID Names

----- B -----

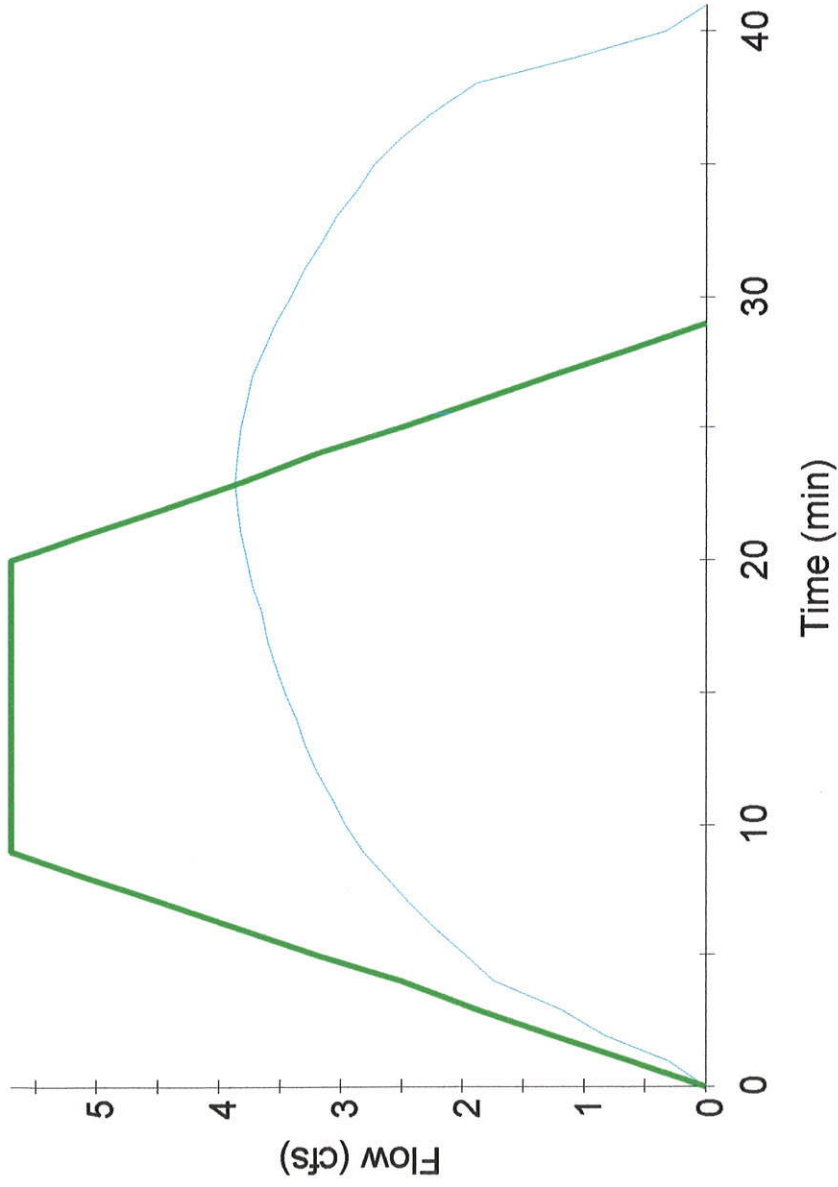
BASIN A... 1.01, 3.01

BASIN A IN 002... 3.07, 3.09,
3.11, 3.13, 3.14, 3.15

----- O -----

OUTFALL A... 2.01, 2.04

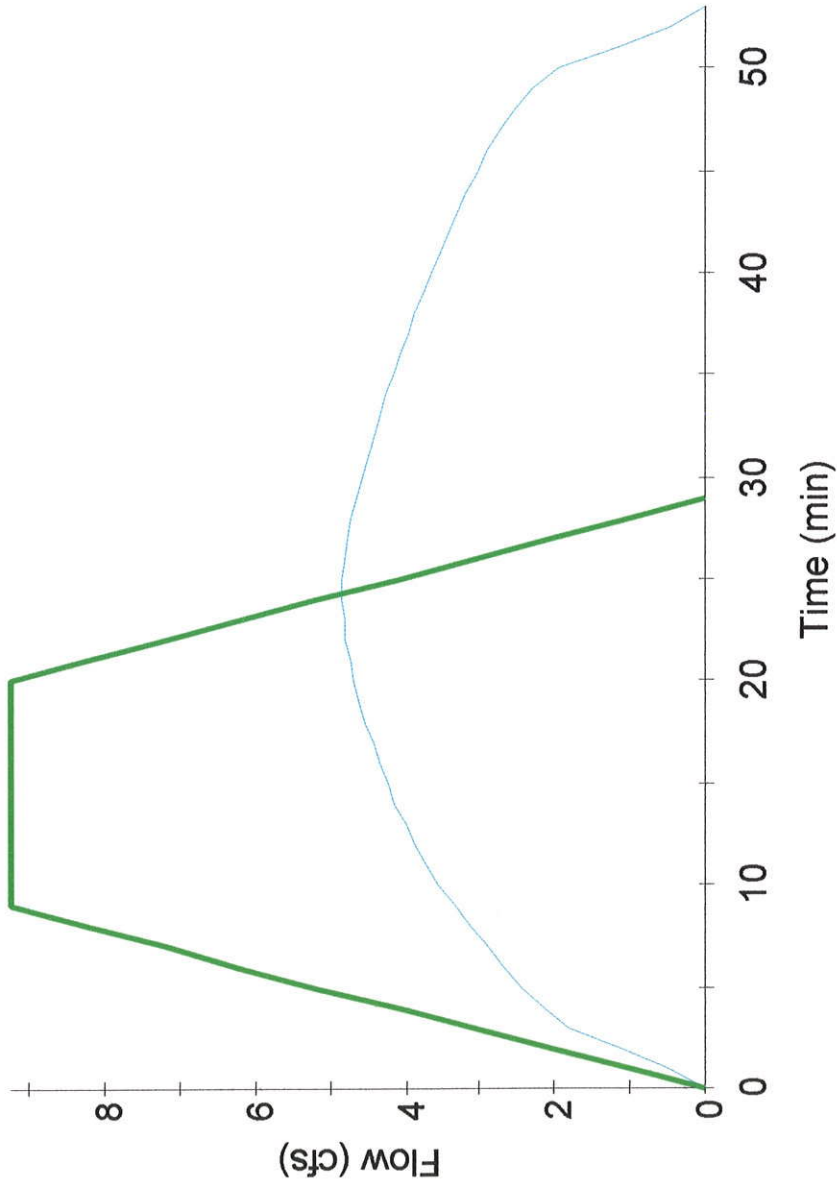
Hydrograph
BASIN A OUT 002



Currently Plotted Curves

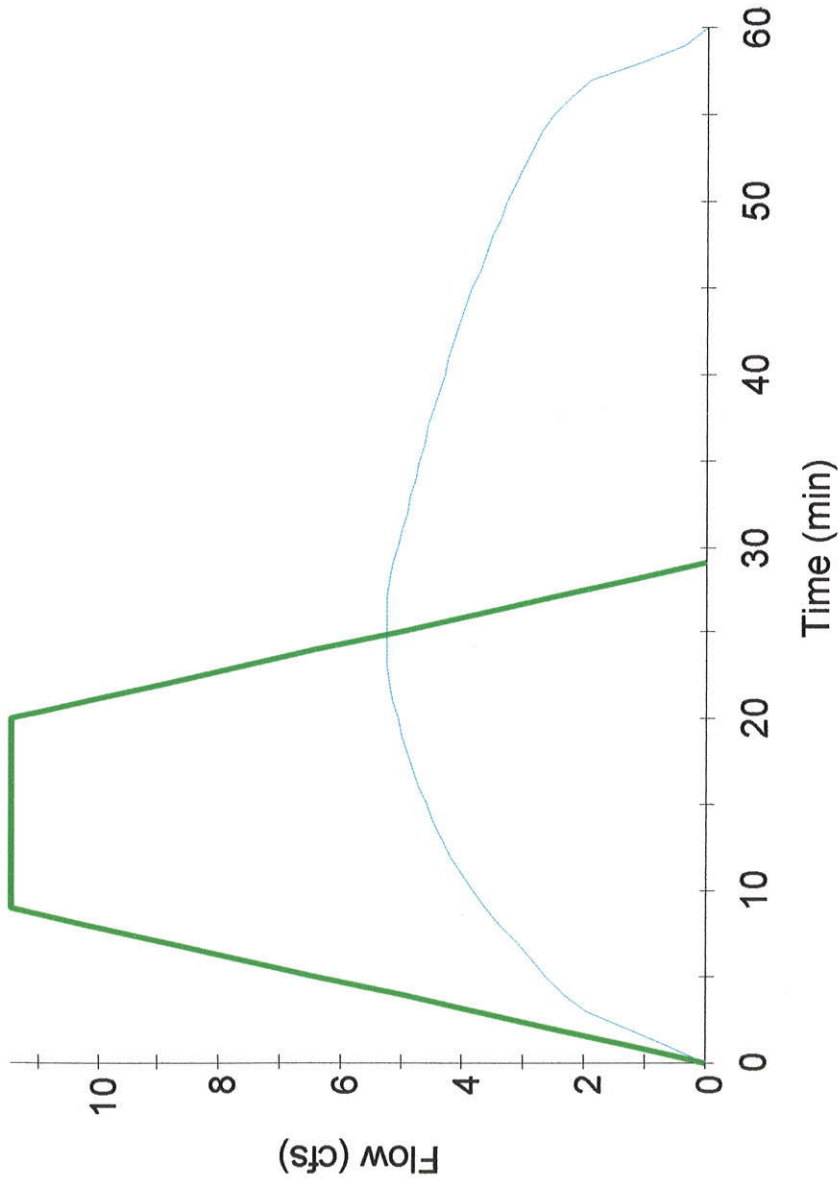
- BASIN A IN 002
- BASIN A OUT 002

Hydrograph
BASIN A OUT 015

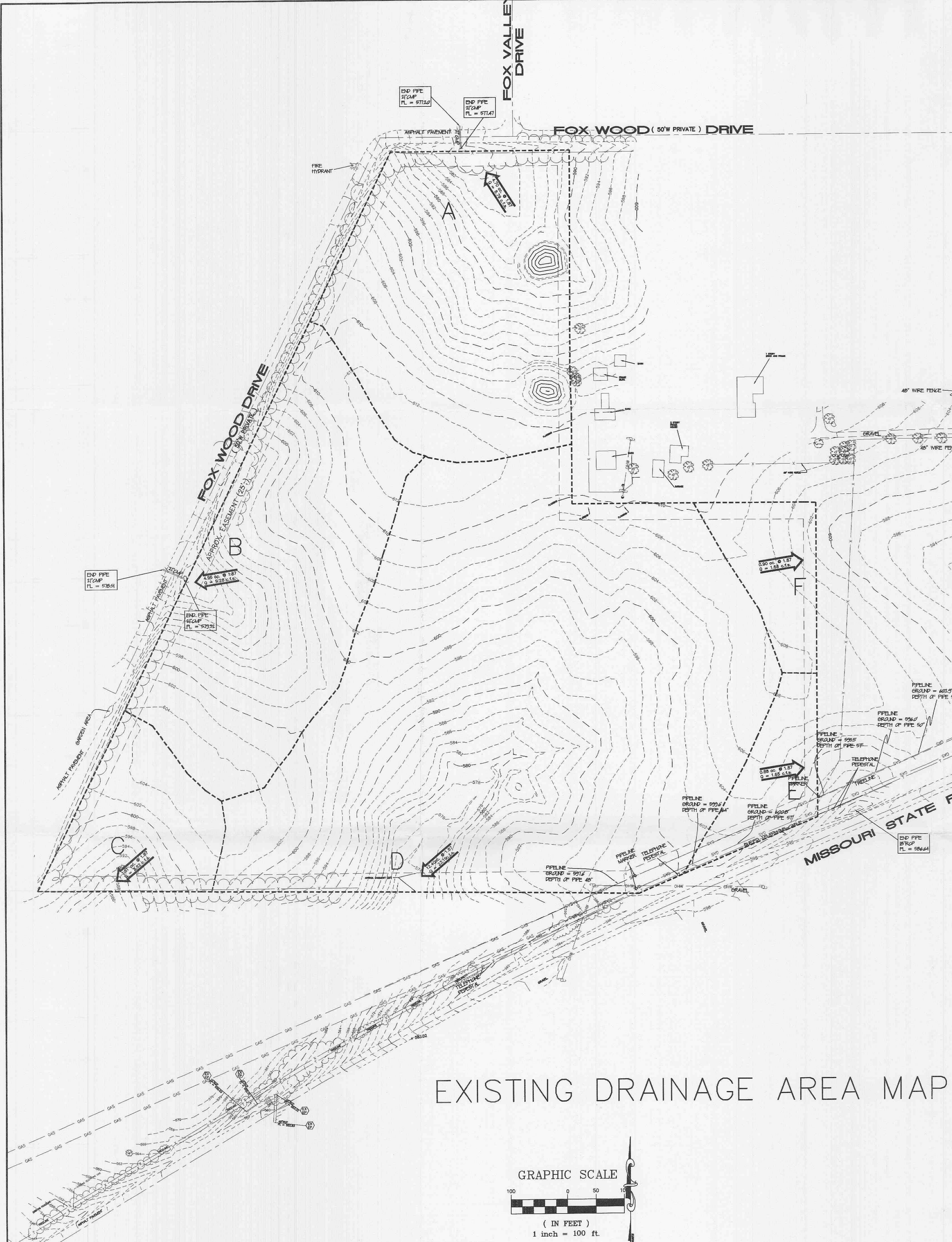


Currently Plotted Curves
BASIN A IN 015
BASIN A OUT 015

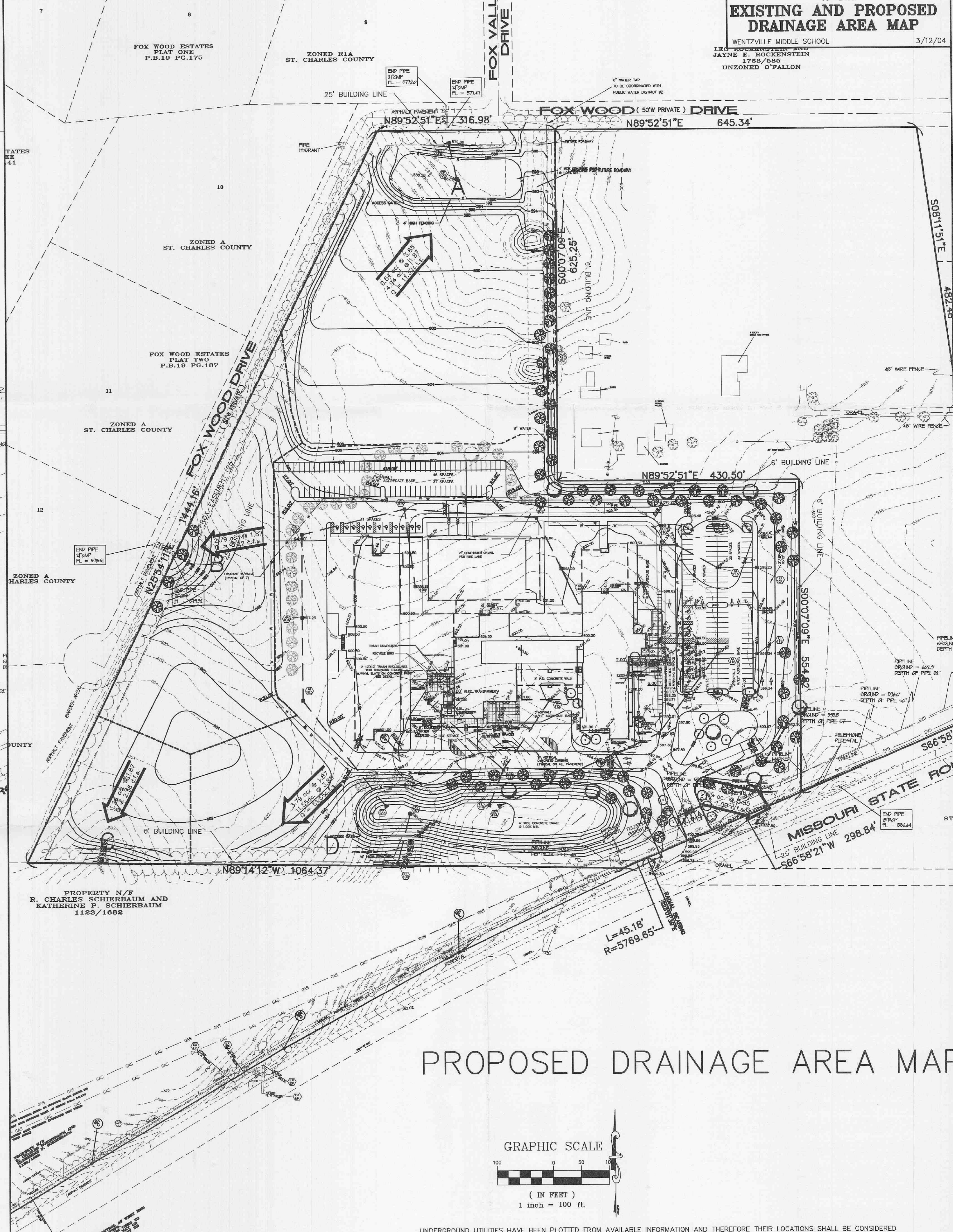
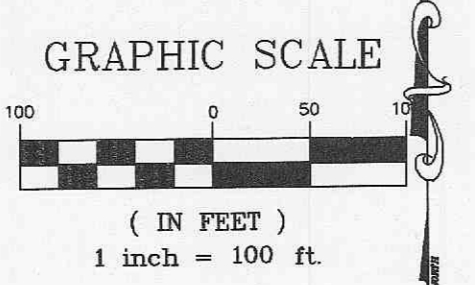
Hydrograph
BASIN A OUT 025



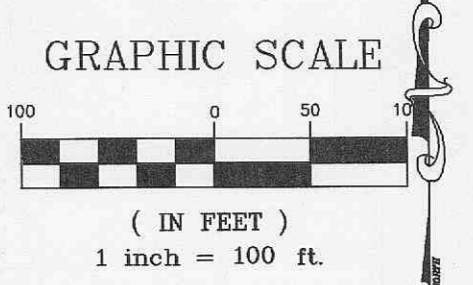
Currently Plotted Curves
BASIN A IN 025
BASIN A OUT 025



EXISTING DRAINAGE AREA MAP



PROPOSED DRAINAGE AREA MAP



UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE THEIR LOCATIONS SHALL BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF THE IMPROVEMENTS.