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STORMWATER DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
BASSETT FURNITURE - O'FALLON
BAX PROJECT NO. 99-10795
May 2, 2000
Revised June 29, 2000

INTRODUCTION:

This tract of land is presently an undeveloped site located in the City of O'Fallon, Missouri. The proposed 3.52 acre site is the future location of Bassett Furniture. A dry-basin will be constructed along the southern boundary of the site. The basin shall be designed to detain for this 3.52 acre site as well as 6.86 acres to West which are part of the existing sub-watershed. The storage volume and outflow rates shall be proportioned to insure that the peak rate of runoff leaving the tract under post-developed conditions is less than or equal to the peak rate of runoff under pre-developed conditions for the 2, 15, and 25 year-20 minute design storm. The basin was also be checked for safe passage of the 100-year frequency - 20-minute duration design storm.

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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TIME OF CONCENTRATION:

Of the inflows to the basin, the most remote point lies on the west side of the northern border of the proposed site to the north east of the site. The runoff must travel 990 feet via storm pipe to the detention basin. Time of concentration is estimated as follows:

$$T(\text{storm pipe}): L = 990 \text{ feet} \\ 990 / 7 \text{ fps} = 2.36 \text{ minutes}$$

Use 2min.

PRE-DEVELOPED AND POST-DEVELOPED FLOWS

2 year-20 minute storm

Pre-developed flows

$$\text{Onsite- } 3.52 \text{ acres} \times 1.15 \text{ cfs/acre} = 4.05 \text{ cfs}$$

$$\text{Offsite- } 6.86 \text{ acres} \times 1.15 \text{ cfs/acre} = \underline{7.89 \text{ cfs}}$$

$$\text{Total } 11.94 \text{ cfs}$$

Post-developed flows

$$\text{Onsite- } (1.19 \text{ acres} \times 2.39 \text{ cfs/acre}) + (1.16 \text{ acres} \times 1.15 \text{ cfs/acre}) = 4.18 \text{ cfs}$$

$$\text{Offsite- } 4.75 \text{ acres} \times 2.39 \text{ cfs/acre} = \underline{11.35 \text{ cfs}}$$

$$\text{Total } 15.53 \text{ cfs}$$

15 year-20 minute storm

Pre-developed flows

$$\text{Onsite- } 3.52 \text{ acres} \times 1.87 \text{ cfs/acre} = 6.58 \text{ cfs}$$

$$\text{Offsite- } 6.86 \text{ acres} \times 1.87 \text{ cfs/acre} = \underline{12.83 \text{ cfs}}$$

$$\text{Total } 19.41 \text{ cfs}$$

Post-developed flows

$$\text{Onsite- } (1.19 \text{ acres} \times 3.85 \text{ cfs/acre}) + (1.16 \text{ acres} \times 1.87 \text{ cfs/acre}) = 6.75 \text{ cfs}$$

$$\text{Offsite- } 4.75 \text{ acres} \times 3.85 \text{ cfs/acre} = \underline{18.29 \text{ cfs}}$$

$$\text{Total } 25.04 \text{ cfs}$$

25 year-20 minute storm

Pre-developed flows

$$\text{Onsite- } 3.52 \text{ acres} \times 2.31 \text{ cfs/acre} = 8.13 \text{ cfs}$$

$$\text{Offsite- } 6.86 \text{ acres} \times 2.31 \text{ cfs/acre} = \underline{15.84 \text{ cfs}}$$

$$\text{Total } 23.98 \text{ cfs}$$

Post-developed flows

$$\text{Onsite- } (1.19 \text{ acres} \times 4.75 \text{ cfs/acre}) + (1.16 \text{ acres} \times 2.31 \text{ cfs/acre}) = 8.33 \text{ cfs}$$

$$\text{Offsite- } 4.75 \text{ acres} \times 4.75 \text{ cfs/acre} = \underline{22.56 \text{ cfs}}$$

$$\text{Total } 30.89 \text{ cfs}$$



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REQUIRED ATTENUATION

Required attenuation for full development of the 10.38 acres were determined as shown.

2 year-20 minute storm

$$10.38 \text{ ac } (2.39 - 1.15) \text{ cfs/ac} = 12.87 \text{ cfs}$$

15 year-20 minute storm

$$10.38 \text{ ac } (3.85 - 1.87) \text{ cfs/ac} = 20.55 \text{ cfs}$$

25 year-20 minute storm

$$10.38 \text{ ac } (4.75 - 2.31) \text{ cfs/ac} = 25.33 \text{ cfs}$$

BASIN PEAK INFLOWS:

Inflows to the basin have been estimated from the drainage area map.

2 year-20 minute storm:	15.53 cfs
15 year-20 minute storm:	25.04 cfs
25 year-20 minute storm:	30.89 cfs
100 year-20 minute storm:	39.54 cfs

ALLOWABLE OUTFLOWS:

Allowable outflows were determined by subtracting the required attenuation from the basin inflows.

STORM	INFLOW		REQUIRED.		ALLOWABLE
20-min	cfs		ATTENUATION		OUTFLOW
			cfs		cfs
2 year	15.53	-	12.87	=	2.66
15 year	25.04	-	20.55	=	4.49
25 year	30.89	-	25.33	=	5.56



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STORM ROUTING CALCULATIONS AND RESULTS:

A computer program was used in routing the 2, 15, and 25 year-20 minute storm through the basin. As found in the routing calculations, the results are as follows:

20 MIN STORM	ALLOWABLE RELEASE RATE	CALCULATED RELEASE RATE	PEAK ELEVATION
2 YR	2.66 cfs	2.61	550.15
15 YR	4.49 cfs	3.05	551.25
25 YR	5.56 cfs	3.18	551.82

CHECK 100 YEAR OUTFLOW:(low-flow outlet pipe blocked)

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

where 100-YEAR FLOW Q	=	39.54
c	=	3.0
Spillway width L	=	11.67
H	=	1.09 ft
sill	=	552.0 ft
100 yr h/w	=	553.09 ft

SUMMARY

25 year-20min H.W.	551.82
100 year-20min H.W.	553.09
Low-flow slot	3.5" W x 12" H
Low-flow elevation	546.12
Top Of Berm	554.25

POND-2 Version: 5.20
S/N:

CALCULATED 06-29-2000 11:09:07
DISK FILE: 10795 .VOL

Planimeter scale: 1 inch = 1 ft.

Elevation (ft)	Planimeter (sq.in.)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	* Volume (acre-ft)	Volume Sum (acre-ft)
546.12	0.00	0.00	0.00	0.00	0.00
548.00	4,044.75	0.09	0.09	0.06	0.06
550.00	8,350.54	0.19	0.42	0.28	0.34
552.00	13,236.10	0.30	0.74	0.49	0.83
553.00	16,112.29	0.37	1.01	0.34	1.16

* 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

POND-2 Version: 5.20
Date Executed:

S/N:
Time Executed:

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

<u>Elevation (ft)</u>	<u>Q (cfs)</u>	<u>Contributing Structures</u>
546.12	0.0	1
546.37	0.1	1
546.62	0.3	1
546.87	0.6	1
547.12	0.9	1
547.37	1.2	2
547.62	1.4	2
547.87	1.6	2
548.12	1.7	2
548.37	1.9	2
548.62	2.0	2
548.87	2.1	2
549.12	2.2	2
549.37	2.3	2
549.62	2.4	2
549.87	2.5	2
550.12	2.6	2
550.37	2.7	2
550.62	2.8	2
550.87	2.9	2
551.12	3.0	2
551.37	3.1	2
551.62	3.1	2
551.87	3.2	2
552.12	3.3	2
552.37	3.4	2
552.62	3.4	2
552.87	3.5	2
553.00	0.0	

Outlet Structure File: 10795 .STR
POND-2 Version: 5.20
Date Executed:

S/N:
Time Executed:

Outlet Structure File: 10795 .STR
Planimeter Input File: 10795 .VOL
Rating Table Output File: 10795 .PND

Min. Elev.(ft) = 546.12 Max. Elev.(ft) = 553 Incr.(ft) = .25

Additional elevations (ft) to be included in table:
* * * * *

SYSTEM CONNECTIVITY

Structure	No.	Q Table	Q Table
WEIR-VR	1		-> 1
ORIFICE	2	? 1	-> A

Outflow rating table summary was stored in file:
10795 .PND

POND-2 Version: 5.20

S/N:

Date Executed:

Time Executed:

>>>>> Structure No. 1 <<<<<<
(Input Data)

WEIR-VR

Weir - Vertical Rectangular

E1 elev.(ft)?	546.12
E2 elev.(ft)?	553.0
Weir coefficient?	3
Weir elev.(ft)?	546.12
Length (ft)?	.292
Contracted/Suppressed (C/S)?	S

POND-2 Version: 5.20
Date Executed:

S/N:
Time Executed:

>>>>> Structure No. 2 <<<<<<
(Input Data)

ORIFICE

Orifice - Based on Area and Datum Elevation

E1 elev.(ft)?	547.12
E2 elev.(ft)?	553.0
Orifice coeff.?	.6
Invert elev.(ft)?	546.12
Datum elev.(ft) ?	546.62
Orifice area (sq ft)?	0.292

POND-2 Version: 5.20
 Date Executed:

S/N:
 Time Executed:

Outflow Rating Table for Structure #1
 WEIR-VR Weir - Vertical Rectangular

***** INLET CONTROL ASSUMED *****

Elevation (ft)	Q (cfs)	Computation Messages
546.12	0.0	H =0.0
546.37	0.1	H =.25
546.62	0.3	H =.5
546.87	0.6	H =.750
547.12	0.9	H =1.0
547.37	1.2	H =1.25
547.62	1.6	H =1.5
547.87	2.0	H =1.75
548.12	2.5	H =2.0
548.37	3.0	H =2.25
548.62	3.5	H =2.5
548.87	4.0	H =2.75
549.12	4.6	H =3.0
549.37	5.1	H =3.25
549.62	5.7	H =3.5
549.87	6.4	H =3.75
550.12	7.0	H =4.0
550.37	7.7	H =4.25
550.62	8.4	H =4.5
550.87	9.1	H =4.75
551.12	9.8	H =5.0
551.37	10.5	H =5.25
551.62	11.3	H =5.5
551.87	12.1	H =5.75
552.12	12.9	H =6.0
552.37	13.7	H =6.25
552.62	14.5	H =6.5
552.87	15.4	H =6.75
553.00	0.0	E = or > E2=553.0

C = 3 L (ft) = .292

H (ft) = Table elev. - Invert elev. (546.12 ft)

Q (cfs) = C * L * (H**1.5) -- Suppressed Weir

POND-2 Version: 5.20
 Date Executed:

S/N:
 Time Executed:

Outflow Rating Table for Structure #2
 ORIFICE Orifice - Based on Area and Datum Elevation

Elevation (ft)	Q (cfs)	Computation Messages
546.12	0.0	E < E1=547.12
546.37	0.0	E < E1=547.12
546.62	0.0	E < E1=547.12
546.87	0.0	E < E1=547.12
547.12	1.0	H =.5
547.37	1.2	H =.750
547.62	1.4	H =1.0
547.87	1.6	H =1.25
548.12	1.7	H =1.5
548.37	1.9	H =1.75
548.62	2.0	H =2.0
548.87	2.1	H =2.25
549.12	2.2	H =2.5
549.37	2.3	H =2.75
549.62	2.4	H =3.0
549.87	2.5	H =3.25
550.12	2.6	H =3.5
550.37	2.7	H =3.75
550.62	2.8	H =4.0
550.87	2.9	H =4.25
551.12	3.0	H =4.5
551.37	3.1	H =4.75
551.62	3.1	H =5.0
551.87	3.2	H =5.25
552.12	3.3	H =5.5
552.37	3.4	H =5.75
552.62	3.4	H =6.0
552.87	3.5	H =6.25
553.00	0.0	E = or > E2=553.0

C = .6 A = .292 sq.ft.
 H (ft) = Table elev. - Datum elev. (546.62 ft)
 Q (cfs) = C * A * sqr(2g * H)

POND-2 Version: 5.20
Date Executed:S/N:
Time Executed:Outflow Rating Table A
Table A = 1 ? 2

<u>Elevation (ft)</u>	<u>Q (cfs)</u>	<u>Contributing Structures</u>
546.12	0.0	1
546.37	0.1	1
546.62	0.3	1
546.87	0.6	1
547.12	0.9	1
547.37	1.2	2
547.62	1.4	2
547.87	1.6	2
548.12	1.7	2
548.37	1.9	2
548.62	2.0	2
548.87	2.1	2
549.12	2.2	2
549.37	2.3	2
549.62	2.4	2
549.87	2.5	2
550.12	2.6	2
550.37	2.7	2
550.62	2.8	2
550.87	2.9	2
551.12	3.0	2
551.37	3.1	2
551.62	3.1	2
551.87	3.2	2
552.12	3.3	2
552.37	3.4	2
552.62	3.4	2
552.87	3.5	2
553.00	0.0	-

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 * BASSETT FURNITURE *
 * DETENTION ANALYSIS *
 * PREPARED BY: BAX ENGINEERING CO., INC. *
 * *
 * *

Inflow Hydrograph: 10795-2 .HYD
 Rating Table file: 10795 .PND

----INITIAL CONDITIONS----
 Elevation = 546.12 ft
 Outflow = 0.00 cfs
 Storage = 0.00 ac-ft

GIVEN POND DATA

INTERMEDIATE ROUTING
 COMPUTATIONS

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (ac-ft)
546.12	0.0	0.000
546.37	0.1	0.000
546.62	0.3	0.001
546.87	0.6	0.004
547.12	0.9	0.009
547.37	1.2	0.017
547.62	1.4	0.030
547.87	1.6	0.047
548.12	1.7	0.070
548.37	1.9	0.095
548.62	2.0	0.124
548.87	2.1	0.155
549.12	2.2	0.190
549.37	2.3	0.227
549.62	2.4	0.268
549.87	2.5	0.312
550.12	2.6	0.360
550.37	2.7	0.411
550.62	2.8	0.465
550.87	2.9	0.523
551.12	3.0	0.584
551.37	3.1	0.649
551.62	3.1	0.717
551.87	3.2	0.789
552.12	3.3	0.865
552.37	3.4	0.945
552.62	3.4	1.029
552.87	3.5	1.117

2S/t (cfs)	2S/t + 0 (cfs)
0.0	0.0
0.2	0.3
1.6	1.9
5.4	6.0
12.7	13.6
24.8	26.0
42.9	44.3
68.1	69.7
101.1	102.8
138.5	140.4
179.9	181.9
225.5	227.6
275.4	277.6
330.0	332.3
389.3	391.7
453.6	456.1
523.0	525.6
597.1	599.8
675.9	678.7
759.6	762.5
848.2	851.2
942.1	945.2
1041.2	1044.3
1145.8	1149.0
1256.0	1259.3
1372.0	1375.4
1493.9	1497.3
1621.8	1625.3

Time increment (t) = 1.0 min.

Pond File: 10795 .PND
 Inflow Hydrograph: 10795-2 .HYD
 Outflow Hydrograph: 795-OUT2.HYD

INFLOW HYDROGRAPH

ROUTING COMPUTATIONS

TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - 0 (cfs)	2S/t + 0 (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	0.00		0.0	0.0	0.00	546.12
1.0	7.77	7.8	6.4	7.8	0.67	546.93
2.0	15.53	23.3	27.2	29.7	1.24	547.42
3.0	15.53	31.1	55.3	58.3	1.51	547.76
4.0	15.53	31.1	83.0	86.3	1.65	548.00
5.0	15.53	31.1	110.6	114.1	1.76	548.20
6.0	15.53	31.1	137.8	141.6	1.90	548.38
7.0	15.53	31.1	165.0	168.9	1.97	548.54
8.0	15.53	31.1	192.0	196.0	2.03	548.70
9.0	15.53	31.1	218.8	223.0	2.09	548.84
10.0	15.53	31.1	245.6	249.9	2.14	548.98
11.0	15.53	31.1	272.3	276.7	2.20	549.12
12.0	15.53	31.1	298.8	303.3	2.25	549.24
13.0	15.53	31.1	325.3	329.9	2.30	549.36
14.0	15.53	31.1	351.7	356.4	2.34	549.47
15.0	15.53	31.1	378.0	382.7	2.38	549.58
16.0	15.53	31.1	404.2	409.0	2.43	549.69
17.0	15.53	31.1	430.3	435.2	2.47	549.79
18.0	15.53	31.1	456.4	461.4	2.51	549.89
19.0	15.53	31.1	482.3	487.4	2.55	549.98
20.0	15.53	31.1	508.2	513.4	2.58	550.08
21.0	7.77	23.3	526.3	531.5	2.61	550.14
22.0	0.00	7.8	528.9	534.1	2.61	550.15
23.0	0.00	0.0	523.6	528.9	2.60	550.13
24.0	0.00	0.0	518.4	523.6	2.60	550.11
25.0	0.00	0.0	513.3	518.4	2.59	550.09
26.0	0.00	0.0	508.1	513.3	2.58	550.08
27.0	0.00	0.0	503.0	508.1	2.57	550.06
28.0	0.00	0.0	497.8	503.0	2.57	550.04
29.0	0.00	0.0	492.7	497.8	2.56	550.02
30.0	0.00	0.0	487.6	492.7	2.55	550.00
31.0	0.00	0.0	482.5	487.6	2.55	549.98

POND-2 Version: 5.20 S/N:
EXECUTED: 06-29-2000 11:21:37

***** SUMMARY OF ROUTING COMPUTATIONS *****

Pond File: 10795 .PND
Inflow Hydrograph: 10795-2 .HYD
Outflow Hydrograph: 795-OUT2.HYD

Starting Pond W.S. Elevation = 546.12 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Outflow = 15.53 cfs
Peak Elevation = 550.15 ft

***** Summary of Approximate Peak Storage *****

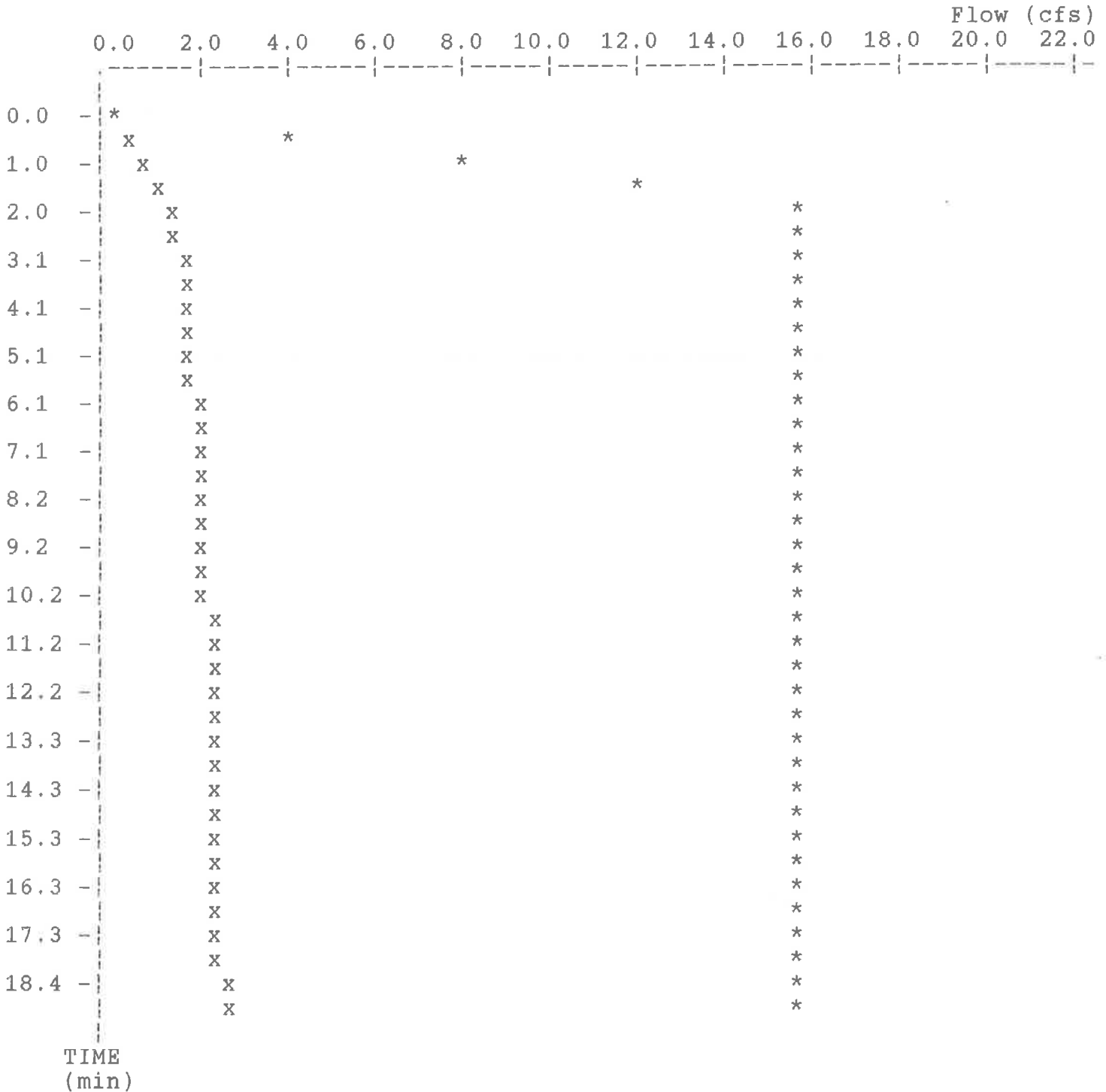
Initial Storage = 0.00 ac-ft
Peak Storage From Storm = 0.37 ac-ft

Total Storage in Pond = 0.37 ac-ft

Pond File: 10795 .PND
 Inflow Hydrograph: 10795-2 .HYD
 Outflow Hydrograph: 795-OUT2.HYD

EXECUTED: 06-29-2000
 11:21:37

Peak Inflow = 15.53 cfs
 Peak Outflow = 2.61 cfs
 Peak Elevation = 550.15 ft



x File: 795-OUT2.HYD Qmax = 2.6 cfs
 * File: 10795-2 .HYD Qmax = 15.5 cfs

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 * BASSETT FURNITURE *
 * DETENTION ANALYSIS *
 * PREPARED BY: BAX ENGINEERING CO., INC. *
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Inflow Hydrograph: 10795-15.HYD
 Rating Table file: 10795 .PND

----INITIAL CONDITIONS----
 Elevation = 546.12 ft
 Outflow = 0.00 cfs
 Storage = 0.00 ac-ft

GIVEN POND DATA

INTERMEDIATE ROUTING COMPUTATIONS

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (ac-ft)
546.12	0.0	0.000
546.37	0.1	0.000
546.62	0.3	0.001
546.87	0.6	0.004
547.12	0.9	0.009
547.37	1.2	0.017
547.62	1.4	0.030
547.87	1.6	0.047
548.12	1.7	0.070
548.37	1.9	0.095
548.62	2.0	0.124
548.87	2.1	0.155
549.12	2.2	0.190
549.37	2.3	0.227
549.62	2.4	0.268
549.87	2.5	0.312
550.12	2.6	0.360
550.37	2.7	0.411
550.62	2.8	0.465
550.87	2.9	0.523
551.12	3.0	0.584
551.37	3.1	0.649
551.62	3.1	0.717
551.87	3.2	0.789
552.12	3.3	0.865
552.37	3.4	0.945
552.62	3.4	1.029
552.87	3.5	1.117

2S/t (cfs)	2S/t + 0 (cfs)
0.0	0.0
0.2	0.3
1.6	1.9
5.4	6.0
12.7	13.6
24.8	26.0
42.9	44.3
68.1	69.7
101.1	102.8
138.5	140.4
179.9	181.9
225.5	227.6
275.4	277.6
330.0	332.3
389.3	391.7
453.6	456.1
523.0	525.6
597.1	599.8
675.9	678.7
759.6	762.5
848.2	851.2
942.1	945.2
1041.2	1044.3
1145.8	1149.0
1256.0	1259.3
1372.0	1375.4
1493.9	1497.3
1621.8	1625.3

Time increment (t) = 1.0 min.

Pond File: 10795 .PND
 Inflow Hydrograph: 10795-15.HYD
 Outflow Hydrograph: 795OUT15.HYD

INFLOW HYDROGRAPH

ROUTING COMPUTATIONS

TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - 0 (cfs)	2S/t + 0 (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	0.00	-----	0.0	0.0	0.00	546.12
1.0	12.52	12.5	10.8	12.5	0.86	547.08
2.0	25.04	37.6	45.5	48.4	1.43	547.66
3.0	25.04	50.1	92.2	95.6	1.68	548.07
4.0	25.04	50.1	138.5	142.3	1.90	548.38
5.0	25.15	50.2	184.7	188.7	2.01	548.66
6.0	25.04	50.2	230.6	234.8	2.11	548.91
7.0	25.04	50.1	276.3	280.7	2.21	549.13
8.0	25.04	50.1	321.8	326.4	2.29	549.34
9.0	25.04	50.1	367.1	371.9	2.37	549.54
10.0	25.04	50.1	412.3	417.2	2.44	549.72
11.0	25.04	50.1	457.4	462.4	2.51	549.89
12.0	25.04	50.1	502.3	507.5	2.57	550.05
13.0	25.04	50.1	547.1	552.4	2.64	550.21
14.0	25.04	50.1	591.8	597.2	2.70	550.36
15.0	25.04	50.1	636.4	641.9	2.75	550.50
16.0	25.04	50.1	680.9	686.5	2.81	550.64
17.0	25.04	50.1	725.2	730.9	2.86	550.78
18.0	25.04	50.1	769.5	775.3	2.91	550.91
19.0	25.04	50.1	813.6	819.5	2.96	551.03
20.0	25.04	50.1	857.7	863.7	3.01	551.15
21.0	12.52	37.6	889.1	895.2	3.05	551.24
22.0	0.00	12.5	895.6	901.7	3.05	551.25
23.0	0.00	0.0	889.5	895.6	3.05	551.24
24.0	0.00	0.0	883.4	889.5	3.04	551.22
25.0	0.00	0.0	877.3	883.4	3.03	551.21
26.0	0.00	0.0	871.3	877.3	3.03	551.19
27.0	0.00	0.0	865.2	871.3	3.02	551.17
28.0	0.00	0.0	859.2	865.2	3.01	551.16
29.0	0.00	0.0	853.2	859.2	3.01	551.14
30.0	0.00	0.0	847.2	853.2	3.00	551.13
31.0	0.00	0.0	841.2	847.2	3.00	551.11

***** SUMMARY OF ROUTING COMPUTATIONS *****

Pond File: 10795 .PND
Inflow Hydrograph: 10795-15.HYD
Outflow Hydrograph: 795OUT15.HYD

Starting Pond W.S. Elevation = 546.12 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow = 25.15 cfs
Peak Outflow = 3.05 cfs
Peak Elevation = 551.25 ft

***** Summary of Approximate Peak Storage *****

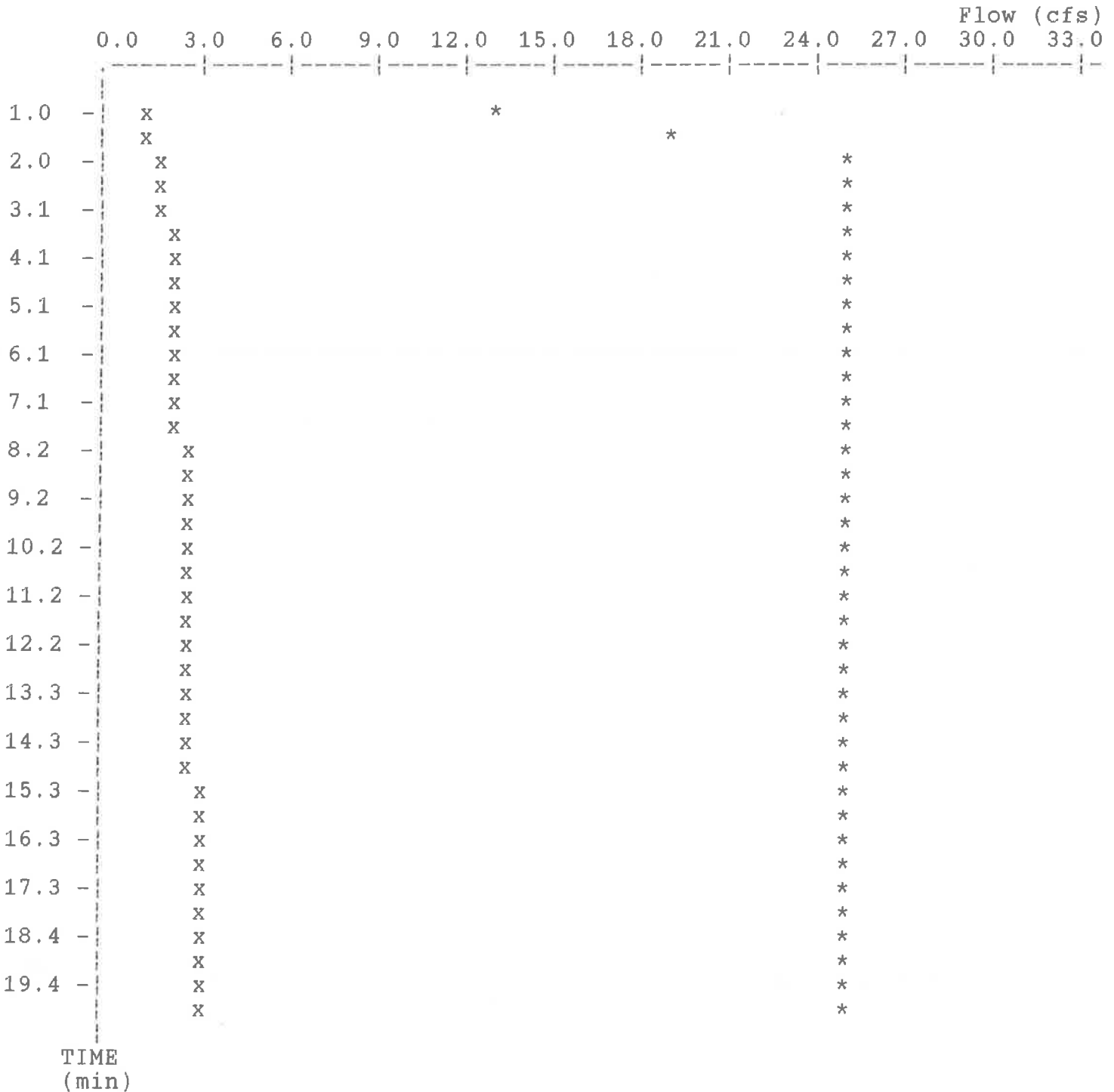
Initial Storage = 0.00 ac-ft
Peak Storage From Storm = 0.62 ac-ft

Total Storage in Pond = 0.62 ac-ft

Pond File: 10795 .PND
 Inflow Hydrograph: 10795-15.HYD
 Outflow Hydrograph: 795OUT15.HYD

EXECUTED: 06-29-2000
 11:21:37

Peak Inflow = 25.15 cfs
 Peak Outflow = 3.05 cfs
 Peak Elevation = 551.25 ft



x File: 795OUT15.HYD Qmax = 3.0 cfs
 * File: 10795-15.HYD Qmax = 25.1 cfs

 *
 * BASSETT FURNITURE *
 * DETENTION ANALYSIS *
 * PREPARED BY: BAX ENGINEERING CO., INC. *
 * *
 * *

Inflow Hydrograph: 10795-25.HYD
 Rating Table file: 10795 .PND

----INITIAL CONDITIONS----
 Elevation = 546.12 ft
 Outflow = 0.00 cfs
 Storage = 0.00 ac-ft

GIVEN POND DATA

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (ac-ft)
546.12	0.0	0.000
546.37	0.1	0.000
546.62	0.3	0.001
546.87	0.6	0.004
547.12	0.9	0.009
547.37	1.2	0.017
547.62	1.4	0.030
547.87	1.6	0.047
548.12	1.7	0.070
548.37	1.9	0.095
548.62	2.0	0.124
548.87	2.1	0.155
549.12	2.2	0.190
549.37	2.3	0.227
549.62	2.4	0.268
549.87	2.5	0.312
550.12	2.6	0.360
550.37	2.7	0.411
550.62	2.8	0.465
550.87	2.9	0.523
551.12	3.0	0.584
551.37	3.1	0.649
551.62	3.1	0.717
551.87	3.2	0.789
552.12	3.3	0.865
552.37	3.4	0.945
552.62	3.4	1.029
552.87	3.5	1.117

INTERMEDIATE ROUTING
 COMPUTATIONS

2S/t (cfs)	2S/t + 0 (cfs)
0.0	0.0
0.2	0.3
1.6	1.9
5.4	6.0
12.7	13.6
24.8	26.0
42.9	44.3
68.1	69.7
101.1	102.8
138.5	140.4
179.9	181.9
225.5	227.6
275.4	277.6
330.0	332.3
389.3	391.7
453.6	456.1
523.0	525.6
597.1	599.8
675.9	678.7
759.6	762.5
848.2	851.2
942.1	945.2
1041.2	1044.3
1145.8	1149.0
1256.0	1259.3
1372.0	1375.4
1493.9	1497.3
1621.8	1625.3

Time increment (t) = 1.0 min.

Pond File: 10795 .PND
 Inflow Hydrograph: 10795-25.HYD
 Outflow Hydrograph: 795OUT25.HYD

INFLOW HYDROGRAPH

ROUTING COMPUTATIONS

TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - 0 (cfs)	2S/t + 0 (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	0.00	-----	0.0	0.0	0.00	546.12
1.0	15.49	15.5	13.6	15.5	0.95	547.16
2.0	30.89	46.4	56.9	60.0	1.52	547.77
3.0	30.89	61.8	115.1	118.7	1.78	548.23
4.0	30.89	61.8	172.9	176.9	1.99	548.59
5.0	30.89	61.8	230.5	234.7	2.11	548.91
6.0	30.89	61.8	287.8	292.3	2.23	549.19
7.0	30.89	61.8	344.9	349.6	2.33	549.44
8.0	30.89	61.8	401.9	406.7	2.42	549.68
9.0	30.89	61.8	458.6	463.7	2.51	549.90
10.0	30.89	61.8	515.2	520.4	2.59	550.10
11.0	30.89	61.8	571.7	577.0	2.67	550.29
12.0	30.89	61.8	628.0	633.5	2.74	550.48
13.0	30.89	61.8	684.1	689.8	2.81	550.65
14.0	30.89	61.8	740.1	745.9	2.88	550.82
15.0	30.89	61.8	796.0	801.9	2.94	550.98
16.0	30.89	61.8	851.8	857.8	3.01	551.14
17.0	30.89	61.8	907.4	913.6	3.07	551.29
18.0	30.89	61.8	963.0	969.2	3.10	551.43
19.0	30.89	61.8	1018.6	1024.8	3.10	551.57
20.0	30.89	61.8	1074.1	1080.4	3.13	551.71
21.0	15.49	46.4	1114.2	1120.5	3.17	551.80
22.0	0.00	15.5	1123.3	1129.6	3.18	551.82
23.0	0.00	0.0	1116.9	1123.3	3.18	551.81
24.0	0.00	0.0	1110.6	1116.9	3.17	551.79
25.0	0.00	0.0	1104.3	1110.6	3.16	551.78
26.0	0.00	0.0	1097.9	1104.3	3.16	551.76
27.0	0.00	0.0	1091.6	1097.9	3.15	551.75
28.0	0.00	0.0	1085.4	1091.6	3.15	551.73
29.0	0.00	0.0	1079.1	1085.4	3.14	551.72
30.0	0.00	0.0	1072.8	1079.1	3.13	551.70
31.0	0.00	0.0	1066.6	1072.8	3.13	551.69
32.0	0.00	0.0	1060.3	1066.6	3.12	551.67

***** SUMMARY OF ROUTING COMPUTATIONS *****

Pond File: 10795 .PND
Inflow Hydrograph: 10795-25.HYD
Outflow Hydrograph: 795OUT25.HYD

Starting Pond W.S. Elevation = 546.12 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow = 30.89 cfs
Peak Outflow = 3.18 cfs
Peak Elevation = 551.82 ft

***** Summary of Approximate Peak Storage *****

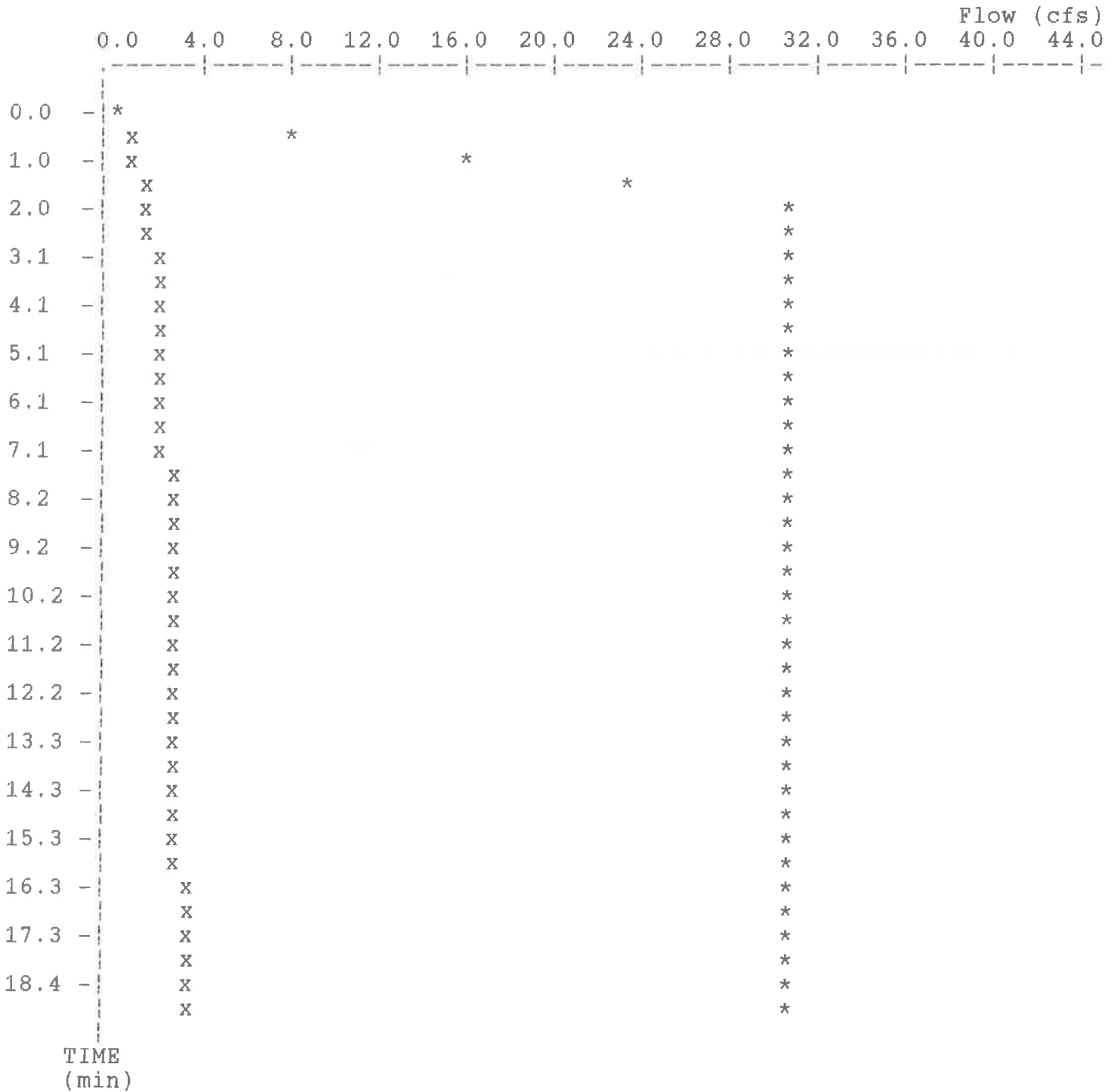
Initial Storage = 0.00 ac-ft
Peak Storage From Storm = 0.78 ac-ft

Total Storage in Pond = 0.78 ac-ft

Pond File: 10795 .PND
 Inflow Hydrograph: 10795-25.HYD
 Outflow Hydrograph: 795OUT25.HYD

EXECUTED: 06-29-2000
 11:21:37

Peak Inflow = 30.89 cfs
 Peak Outflow = 3.18 cfs
 Peak Elevation = 551.82 ft



x File: 795OUT25.HYD Qmax = 3.2 cfs
 * File: 10795-25.HYD Qmax = 30.9 cfs