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STORMWATER DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
PHEASANT POINT CENTER -O'FALLON
BAX PROJECT NO. **96-7218**
JANUARY 9, 1998

INTRODUCTION

The tract of land is presently an undeveloped site located in the City of O'Fallon, Missouri. It is proposed that 36.95 acres of the 121.58 acre tract be developed. Two stormwater detention basins, labeled **WEST** and **EAST** will be constructed. The basins will provide detention for the development when considering the increased runoff for the developed site. 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 or equal to the peak rate of runoff leaving the site under pre-developed conditions for the 25 year-20 minute design storm. The basins were also analyzed for the 2, 15 and 100 year frequency - 20 minute duration design storms.

GENERAL SITE DATA AND RUNOFF CALCULATIONS

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

25 year - 5% impervious 2.31 cfs/ac.

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

25 year -	5% impervious	2.31 cfs/ac.
	50% impervious	3.53 cfs/ac.*
	65% impervious	3.94 cfs/ac.*
	75% impervious	4.18 cfs/ac.*
	100% impervious	4.75 cfs/ac.

* interpolated

BAX ENGINEERING CO., INC.
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TIME OF CONCENTRATION

WEST

Flows will travel approximately 230 feet overland to CI105 then 450 feet via stormpipe to the detention basin. Time of concentration is estimated as follows:

Overland L = 230 feet
Elevation difference = 492 - 490 = 2 feet
T(overland) = 1.28 minutes : See figure 1

Stormpipe L = 450 feet
Estimated 7 feet/second
T(stormpipe) = 1.07 minutes

Total Time: 2.35 min. >> Use 2 minutes

EAST

Flows will travel approximately 200 feet overland to CI111 then 820 feet via stormpipe to the detention basin. Time of concentration is estimated as follows:

Overland L = 200 feet
Elevation difference = 490 - 489 = 1 feet
T(overland) = 1.40 minutes : See figure 1

Stormpipe L = 820 feet
Estimated 7 feet/second
T(stormpipe) = 1.95 minutes

Total Time: 3.35 min. >> Use 3 minutes

BASIN PEAK INFLOWS

WEST

Flows have been estimated from the drainage area map.
25 year-20 minute storm

10.17 x 4.75 = 48.31 cfs

2 year-20 minute storm:	24.31 cfs
15 year-20 minute storm:	39.15 cfs
100 year-20 minute storm:	61.83 cfs

EAST

Flows have been estimated from the drainage area map.
25 year-20 minute storm

11.54 x 4.75 = 54.82 cfs

2 year-20 minute storm:	27.58 cfs
15 year-20 minute storm:	44.43 cfs
100 year-20 minute storm:	70.16 cfs

REQUIRED ATTENUATION

= TRACT AREA x [PI(post) - PI(pre)]

25 year-20 minute storm

(100)	29.13 x [4.75 - 2.31] =	71.08 cfs
(75)	2.03 x [4.18 - 2.31] =	3.80 cfs
(65)	1.03 x [3.94 - 2.31] =	1.68 cfs
(50)	0.29 x [3.53 - 2.31] =	0.35 cfs
	Total =	76.91 cfs

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STORM ROUTING CALCULATIONS AND RESULTS

A computer program was used in routing the design 20 minute storms through the basin. As found in the routing calculations, the results are as follows:

20 MIN STORM	CALCULATED RELEASE RATE	PEAK ELEVATION	ATTENUATION PROVIDED
WEST			
2 YR	14.72 cfs	484.50	
15 YR	18.69 cfs	485.42	
25 YR	20.63 cfs	485.95	27.67
100 YR	61.83 cfs	486.99	
EAST			
2 YR	0.88 cfs	482.35	
15 YR	1.00 cfs	482.96	
25 YR	1.06 cfs	483.33	53.74
100 YR	70.16 cfs	484.90	
		TOTAL ATTENUATION:	81.41
		REQUIRED ATTENUATION:	76.91

As shown above, the combined attenuation of the basins is greater than the required attenuation for the development.

CHECK 100 YEAR OVERFLOW (low-flow blocked)

WEST

WIER FLOW : Q = C x L x H (3/2)

where 100-YEAR FLOW Q = 61.83 cfs
C = 3.32
L = 19.0 ft
H = 0.99 ft

sill = 486.00 ft
100 yr h/w = 486.99 ft

EAST

WIER FLOW : Q = C x L x H (3/2)

where 100-YEAR FLOW Q = 70.16 cfs
C = 3.32
L = 12.56 ft (48" standpipe)
H = 1.40 ft

sill = 483.50 ft
100 yr h/w = 484.90 ft

SUMMARY

WEST

25 year-20min H.W.	485.95
100 year-20min H.W.	486.99
Low Flow Slot	15" wide x 24" high
Low Flow Slot Elevation	482.00
Overflow Slot	19' wide
Overflow Slot Elevation	486.00
Top Of Berm	488.00

EAST

25 year-20min H.W.	483.33
100 year-20min H.W.	484.90
Low Flow Slot	3" wide x 6" high
Low Flow Slot Elevation	480.00
48" Overflow Standpipe Elevation	483.50
Top Of Berm	486.00

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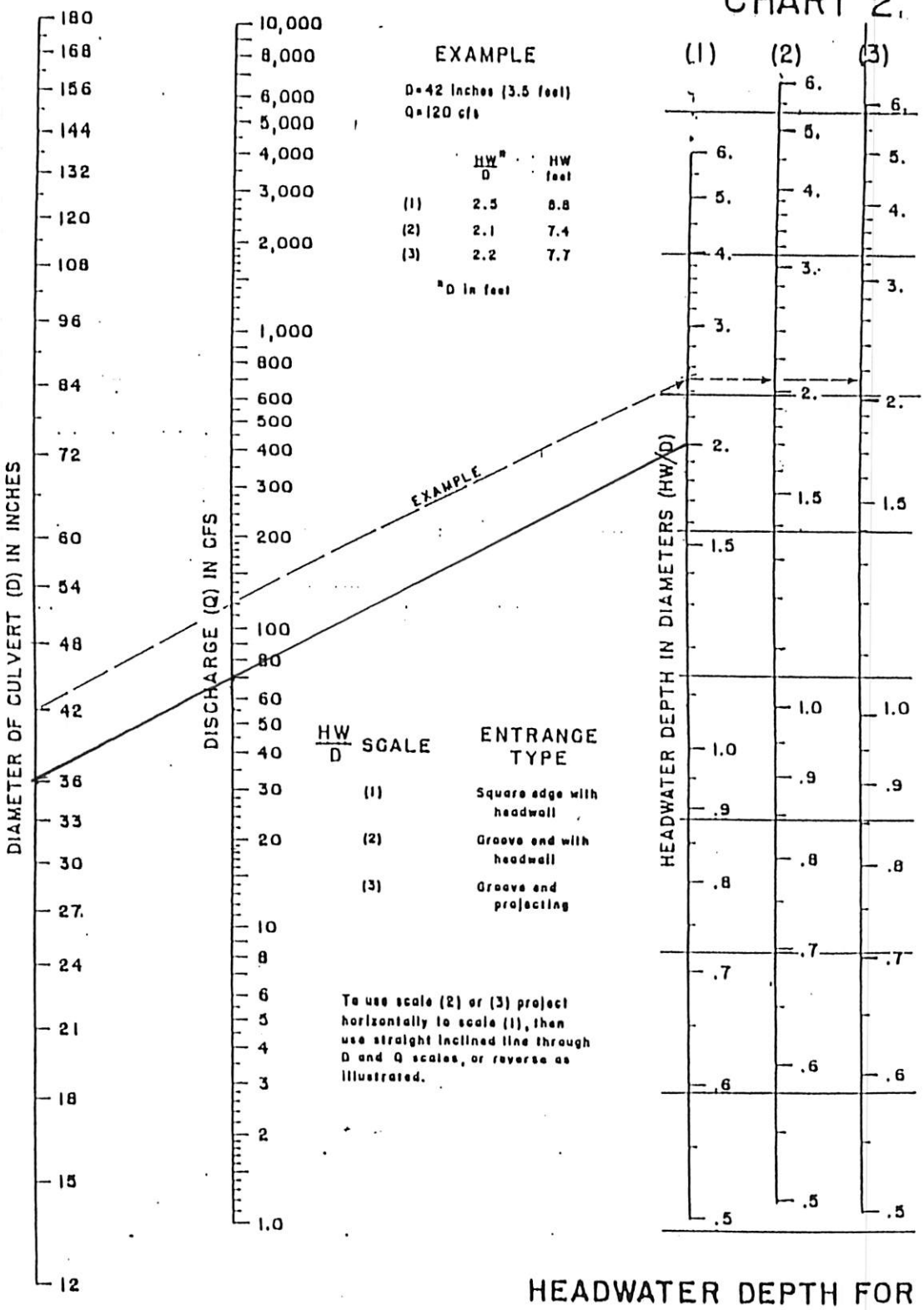
SHEET ___ of ___

Project: PLEASANT PT CENTER

Date: 1-12-97 Project No: 96-7218

Designed: AD1 Checked: ___

CHART 2.



HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

HEADWATER SCALES 2&3
REVISED MAY 1964

BUREAU OF PUBLIC ROADS JAN. 1963

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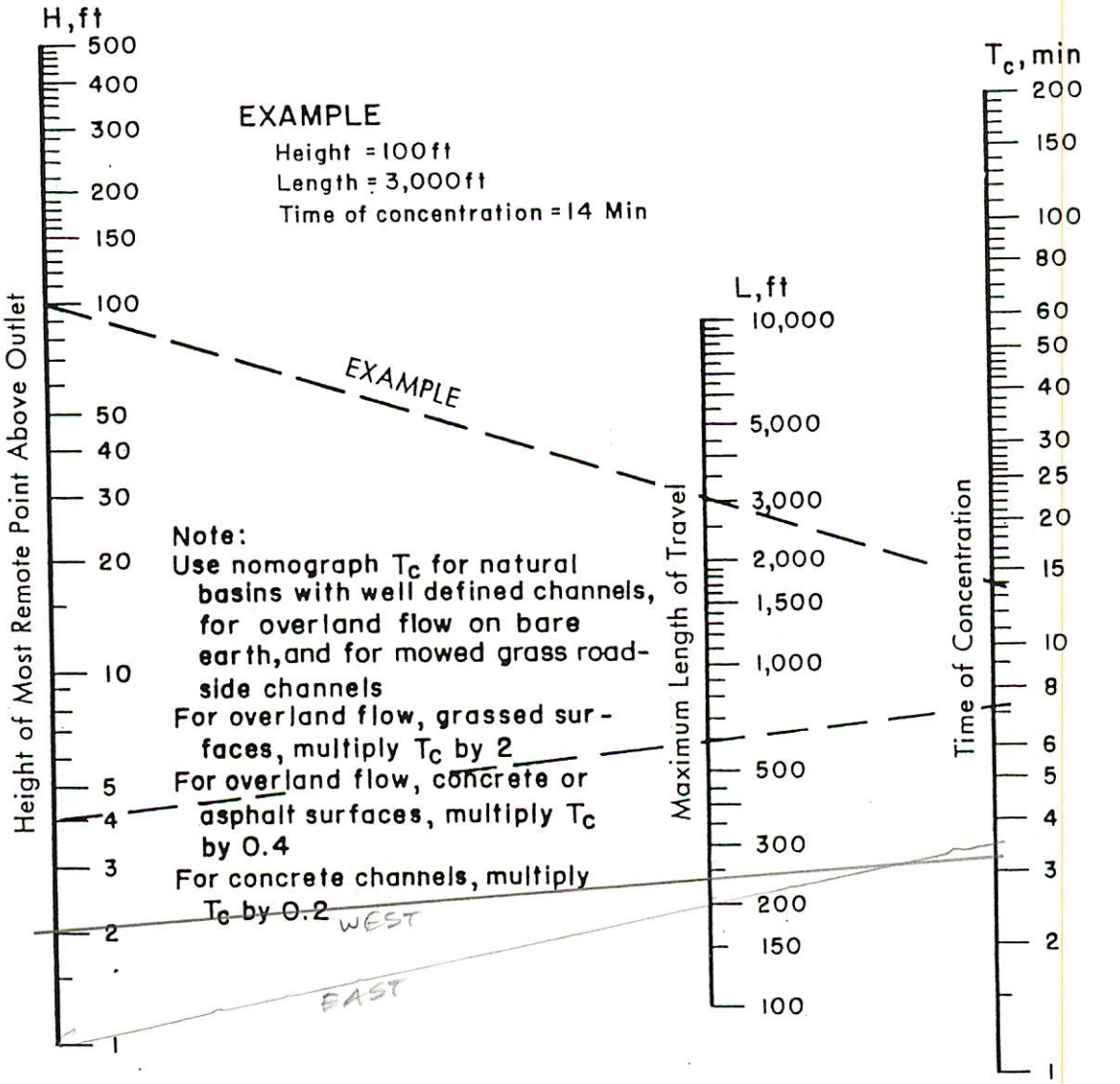
36" x 2.0 = 72" = 6'

478 + 6 = 484 < 484.9



Based on study by P. Z. Kirpich,
Civil Engineering, Vol. 10, No. 6, June 1940, p. 362

WEST $3.2 \times 0.4 = 1.28$

EAST $3.5 \times 0.4 = 1.40$

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POND-2 Version: 5.20
S/N:

PHEASANT POINT CENTER

DETENTION ANALYSIS

WEST BASIN

BAX ENGINEERING CO., INC.
JANUARY 7, 1998

CALCULATED 01-12-1998 12:04:04
DISK FILE: 7218 .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)
482.00	0.00	0.00	0.00	0.00	0.00
484.00	12,834.00	0.29	0.29	0.20	0.20
486.00	18,060.00	0.41	1.06	0.71	0.90
488.00	23,430.00	0.54	1.42	0.95	1.85

* 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


WEST

Outlet Structure File: 7218 .STR

POND-2 Version: 5.20 S/N:
Date Executed: Time Executed:

****
PHEASANT POINT CENTER
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
JANUARY 7, 1998
****

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

Elevation (ft)	Q (cfs)	Contributing Structures
482.00	0.0	1
482.20	0.4	1
482.40	1.0	1
482.60	1.9	1
482.80	3.0	1
483.00	4.2	1
483.20	5.5	1
483.40	6.9	1
483.60	8.4	1
483.80	10.0	1
484.00	11.7	1
484.20	13.2	2
484.40	14.2	2
484.60	15.2	2
484.80	16.1	2
485.00	17.0	2
485.20	17.9	2
485.40	18.6	2
485.60	19.4	2
485.80	20.1	2
486.00	20.8	2
486.20	21.5	2
486.40	22.2	2
486.60	22.8	2
486.80	23.5	2
487.00	24.1	2
487.20	24.7	2
487.40	25.2	2
487.60	25.8	2
487.80	26.4	2
488.00	26.9	2

WEST

Outlet Structure File: 7218 .STR

POND-2 Version: 5.20 S/N:
Date Executed: Time Executed:

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PHEASANT POINT CENTER
DETENTION ANALYSIS
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JANUARY 7, 1998
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Outlet Structure File: 7218 .STR
Planimeter Input File: 7218 .VOL
Rating Table Output File: 7218 .PND

Min. Elev.(ft) = 482 Max. Elev.(ft) = 488 Incr.(ft) = .2

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:
7218 .PND

WEST

Outlet Structure File: 7218 .STR

POND-2 Version: 5.20 S/N:
Date Executed: Time Executed:

****
PHEASANT POINT CENTER
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
JANUARY 7, 1998
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›››››› Structure No. 1 ‹‹‹‹‹‹
(Input Data)

WEIR-VR
Weir - Vertical Rectangular

E1 elev.(ft)? 482
E2 elev.(ft)? 488.001
Weir coefficient? 3.32
Weir elev.(ft)? 482.00
Length (ft)? 1.25
Contracted/Suppressed (C/S)? S

WEST

Outlet Structure File: 7218 .STR

POND-2 Version: 5.20 S/N:
Date Executed: Time Executed:

****
PHEASANT POINT CENTER
DETENTION ANALYSIS
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JANUARY 7, 1998
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>>>>>> Structure No. 2 <<<<<<
(Input Data)

ORIFICE
Orifice - Based on Area and Datum Elevation

E1 elev.(ft)?	484
E2 elev.(ft)?	488.001
Orifice coeff.?	0.6
Invert elev.(ft)?	482.000
Datum elev.(ft) ?	483.00
Orifice area (sq ft)?	2.5000

WEST

Outlet Structure File: 7218 .STR

POND-2 Version: 5.20 S/N:
Date Executed: Time Executed:

****
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JANUARY 7, 1998
****

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

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

Elevation (ft)	Q (cfs)	Computation Messages
482.00	0.0	H =0.0
482.20	0.4	H =.2
482.40	1.0	H =.4
482.60	1.9	H =.6
482.80	3.0	H =.8
483.00	4.2	H =1.0
483.20	5.5	H =1.2
483.40	6.9	H =1.4
483.60	8.4	H =1.6
483.80	10.0	H =1.8
484.00	11.7	H =2.0
484.20	13.5	H =2.2
484.40	15.4	H =2.4
484.60	17.4	H =2.6
484.80	19.4	H =2.8
485.00	21.6	H =3.0
485.20	23.8	H =3.2
485.40	26.0	H =3.4
485.60	28.3	H =3.6
485.80	30.7	H =3.8
486.00	33.2	H =4.0
486.20	35.7	H =4.2
486.40	38.3	H =4.4
486.60	40.9	H =4.6
486.80	43.6	H =4.8
487.00	46.4	H =5.0
487.20	49.2	H =5.2
487.40	52.1	H =5.4
487.60	55.0	H =5.6
487.80	58.0	H =5.8
488.00	61.0	H =6.0

C = 3.32 L (ft) = 1.25
H (ft) = Table elev. - Invert elev. (482 ft)
Q (cfs) = C * L * (H**1.5) -- Suppressed Weir

WEST

Outlet Structure File: 7218 .STR

POND-2 Version: 5.20 S/N:
Date Executed: Time Executed:

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DETENTION ANALYSIS
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JANUARY 7, 1998
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Outflow Rating Table for Structure #2
ORIFICE Orifice - Based on Area and Datum Elevation

Elevation (ft)	Q (cfs)	Computation Messages
482.00	0.0	E < E1=484
482.20	0.0	E < E1=484
482.40	0.0	E < E1=484
482.60	0.0	E < E1=484
482.80	0.0	E < E1=484
483.00	0.0	E < E1=484
483.20	0.0	E < E1=484
483.40	0.0	E < E1=484
483.60	0.0	E < E1=484
483.80	0.0	E < E1=484
484.00	12.0	H =1.0
484.20	13.2	H =1.2
484.40	14.2	H =1.4
484.60	15.2	H =1.6
484.80	16.1	H =1.8
485.00	17.0	H =2.0
485.20	17.9	H =2.2
485.40	18.6	H =2.4
485.60	19.4	H =2.6
485.80	20.1	H =2.8
486.00	20.8	H =3.0
486.20	21.5	H =3.2
486.40	22.2	H =3.4
486.60	22.8	H =3.6
486.80	23.5	H =3.8
487.00	24.1	H =4.0
487.20	24.7	H =4.2
487.40	25.2	H =4.4
487.60	25.8	H =4.6
487.80	26.4	H =4.8
488.00	26.9	H =5.0

C = .6 A = 2.5 sq.ft.
H (ft) = Table elev. - Datum elev. (483 ft)
Q (cfs) = C * A * sqr(2g * H)

WEST

Outlet Structure File: 7218 .STR

POND-2 Version: 5.20 S/N:
Date Executed: Time Executed:

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DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
JANUARY 7, 1998
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Outflow Rating Table A
Table A = 1 ? 2

Elevation (ft)	Q (cfs)	Contributing Structures
482.00	0.0	1
482.20	0.4	1
482.40	1.0	1
482.60	1.9	1
482.80	3.0	1
483.00	4.2	1
483.20	5.5	1
483.40	6.9	1
483.60	8.4	1
483.80	10.0	1
484.00	11.7	1
484.20	13.2	2
484.40	14.2	2
484.60	15.2	2
484.80	16.1	2
485.00	17.0	2
485.20	17.9	2
485.40	18.6	2
485.60	19.4	2
485.80	20.1	2
486.00	20.8	2
486.20	21.5	2
486.40	22.2	2
486.60	22.8	2
486.80	23.5	2
487.00	24.1	2
487.20	24.7	2
487.40	25.2	2
487.60	25.8	2
487.80	26.4	2
488.00	26.9	2

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* DETENTION ANALYSIS
* PREPARED BY: BAX ENGINEERING CO., INC.
* JANUARY 7, 1998
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Inflow Hydrograph: 7218-002.HYD
Rating Table file: 7218 .PND

----INITIAL CONDITIONS----
Elevation = 482.00 ft
Outflow = 0.00 cfs
Storage = 0.00 ac-ft

GIVEN POND DATA			INTERMEDIATE ROUTING COMPUTATIONS	
ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (ac-ft)	2S/t (cfs)	2S/t + O (cfs)
482.00	0.0	0.000	0.0	0.0
482.20	0.4	0.000	0.3	0.7
482.40	1.0	0.002	2.3	3.3
482.60	1.9	0.005	7.7	9.6
482.80	3.0	0.013	18.3	21.3
483.00	4.2	0.025	35.6	39.8
483.20	5.5	0.042	61.6	67.1
483.40	6.9	0.067	97.8	104.7
483.60	8.4	0.101	146.0	154.4
483.80	10.0	0.143	207.9	217.9
484.00	11.7	0.196	285.2	296.9
484.20	13.2	0.256	372.4	385.6
484.40	14.2	0.319	462.8	477.0
484.60	15.2	0.383	556.5	571.7
484.80	16.1	0.450	653.6	669.7
485.00	17.0	0.519	754.1	771.1
485.20	17.9	0.591	858.1	876.0
485.40	18.6	0.665	965.6	984.2
485.60	19.4	0.742	1076.7	1096.1
485.80	20.1	0.821	1191.5	1211.6
486.00	20.8	0.902	1310.0	1330.8
486.20	21.5	0.986	1432.1	1453.6
486.40	22.2	1.073	1557.6	1579.8
486.60	22.8	1.162	1686.5	1709.3
486.80	23.5	1.253	1818.9	1842.4
487.00	24.1	1.346	1954.9	1979.0
487.20	24.7	1.442	2094.4	2119.1
487.40	25.2	1.541	2237.5	2262.7
487.60	25.8	1.642	2384.3	2410.1
487.80	26.4	1.746	2534.9	2561.3
488.00	26.9	1.852	2689.2	2716.1

Time increment (t) = 1.0 min.

WEST

POND-2 Version: 5.20 S/N:
EXECUTED: 01-12-1998 11:53:25

Return Freq: 2 years

Pond File: 7218 .PND
Inflow Hydrograph: 7218-002.HYD
Outflow Hydrograph: 72180002.HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	0.00	-----	0.0	0.0	0.00	482.00
1.0	12.18	12.2	7.9	12.2	2.14	482.64
2.0	24.30	36.5	35.5	44.4	4.42	483.03
3.0	24.30	48.6	71.9	84.1	6.13	483.29
4.0	24.30	48.6	105.7	120.5	7.38	483.46
5.0	24.30	48.6	137.5	154.3	8.40	483.60
6.0	24.30	48.6	167.7	186.1	9.20	483.70
7.0	24.30	48.6	196.4	216.3	9.96	483.80
8.0	24.30	48.6	223.8	245.0	10.58	483.87
9.0	24.30	48.6	250.1	272.4	11.17	483.94
10.0	24.30	48.6	275.2	298.7	11.73	484.00
11.0	24.30	48.6	299.5	323.8	12.16	484.06
12.0	24.30	48.6	323.0	348.1	12.57	484.12
13.0	24.30	48.6	345.7	371.6	12.96	484.17
14.0	24.30	48.6	367.7	394.3	13.30	484.22
15.0	24.30	48.6	389.2	416.3	13.54	484.27
16.0	24.30	48.6	410.3	437.8	13.77	484.31
17.0	24.30	48.6	430.9	458.9	14.00	484.36
18.0	24.30	48.6	451.0	479.5	14.23	484.41
19.0	24.30	48.6	470.7	499.6	14.44	484.45
20.0	24.30	48.6	490.0	519.3	14.65	484.49
21.0	12.18	36.5	497.1	526.5	14.72	484.50
22.0	0.06	12.2	480.2	509.3	14.54	484.47
23.0	0.00	0.1	451.8	480.3	14.23	484.41
24.0	0.00	0.0	424.0	451.8	13.92	484.34
25.0	0.00	0.0	396.7	424.0	13.62	484.28
26.0	0.00	0.0	370.1	396.7	13.32	484.22
27.0	0.00	0.0	344.2	370.1	12.94	484.17
28.0	0.00	0.0	319.2	344.2	12.50	484.11
29.0	0.00	0.0	295.0	319.2	12.08	484.05
30.0	0.00	0.0	271.7	295.0	11.66	484.00
31.0	0.00	0.0	249.4	271.7	11.16	483.94
32.0	0.00	0.0	228.1	249.4	10.68	483.88
33.0	0.00	0.0	207.6	228.1	10.22	483.83
34.0	0.00	0.0	188.1	207.6	9.74	483.77
35.0	0.00	0.0	169.6	188.1	9.25	483.71
36.0	0.00	0.0	152.1	169.6	8.78	483.65
37.0	0.00	0.0	135.4	152.1	8.33	483.59
38.0	0.00	0.0	119.8	135.4	7.83	483.52
39.0	0.00	0.0	105.1	119.8	7.35	483.46
40.0	0.00	0.0	91.2	105.1	6.91	483.40
41.0	0.00	0.0	78.4	91.2	6.40	483.33
42.0	0.00	0.0	66.6	78.4	5.92	483.26
43.0	0.00	0.0	55.6	66.6	5.48	483.20
44.0	0.00	0.0	45.7	55.6	4.95	483.12

WEST

Pond File: 7218 .PND
Inflow Hydrograph: 7218-002.HYD
Outflow Hydrograph: 72180002.HYD

INFLOW HYDROGRAPH

ROUTING COMPUTATIONS

TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
45.0	0.00	0.0	36.8	45.7	4.48	483.04
46.0	0.00	0.0	28.8	36.8	4.00	482.97
47.0	0.00	0.0	21.8	28.8	3.49	482.88
48.0	0.00	0.0	15.7	21.8	3.04	482.81
49.0	0.00	0.0	10.8	15.7	2.48	482.71
50.0	0.00	0.0	6.7	10.8	2.01	482.62
51.0	0.00	0.0	3.8	6.7	1.49	482.51
52.0	0.00	0.0	1.6	3.8	1.07	482.42
53.0	0.00	0.0	0.4	1.6	0.62	482.27
54.0	0.00	0.0	-0.1	0.4	0.23	482.11
55.0	0.00	0.0	-0.1	-0.1	0.00	482.00
56.0	0.00	0.0	-0.1	-0.1	0.00	482.00
57.0	0.00	0.0	-0.1	-0.1	0.00	482.00
58.0	0.00	0.0	-0.1	-0.1	0.00	482.00
59.0	0.00	0.0	-0.1	-0.1	0.00	482.00
60.0	0.00	0.0	-0.1	-0.1	0.00	482.00

WEST

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

Pond File: 7218 .PND
Inflow Hydrograph: 7218-002.HYD
Outflow Hydrograph: 72180002.HYD

Starting Pond W.S. Elevation = 482.00 ft

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

Peak Inflow	=	24.30 cfs
Peak Outflow	=	14.72 cfs
Peak Elevation	=	484.50 ft

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

Initial Storage	=	0.00 ac-ft
Peak Storage From Storm	=	0.35 ac-ft
Total Storage in Pond	=	0.35 ac-ft

WEST

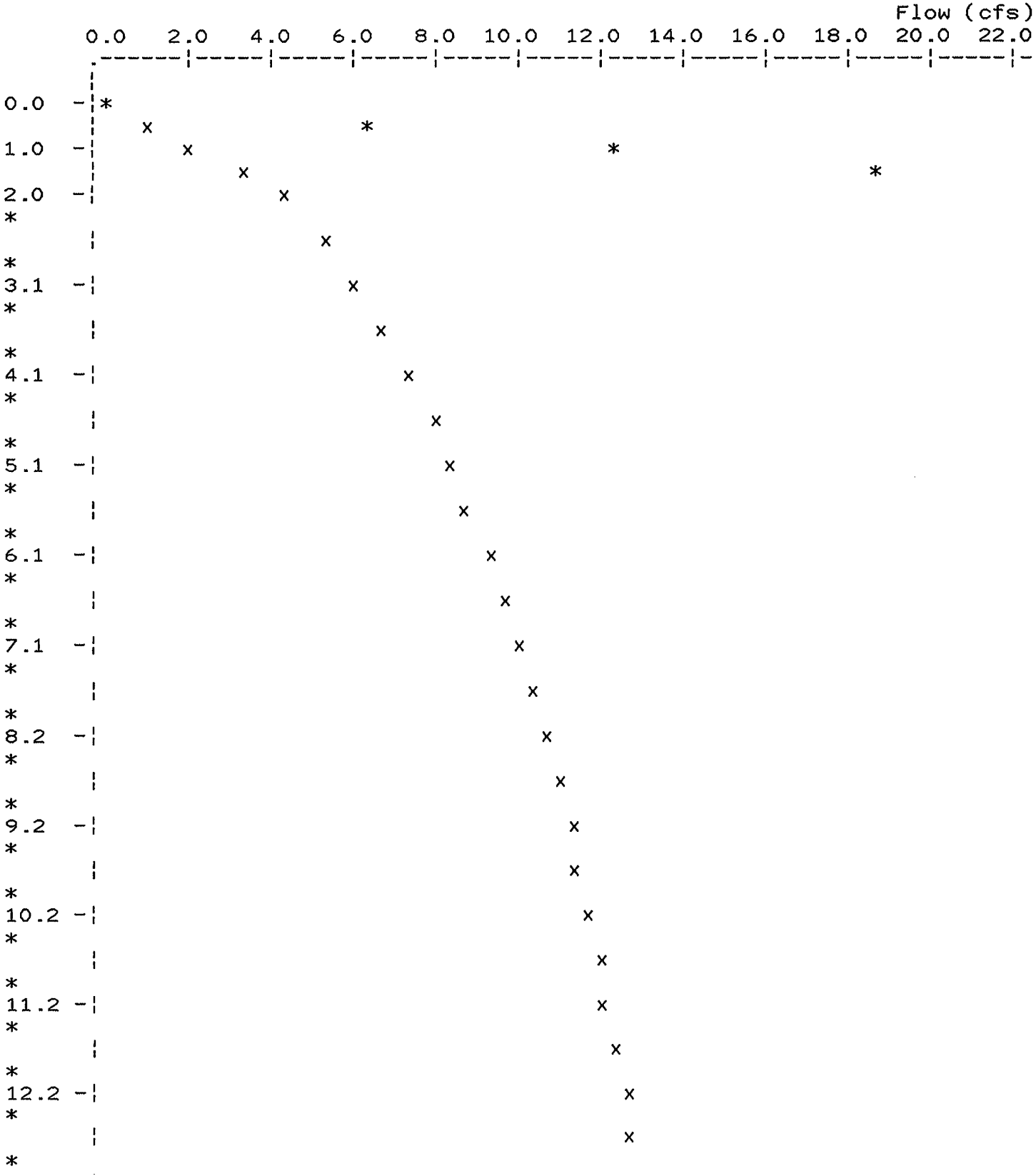
POND-2 Version: 5.20 S/N:

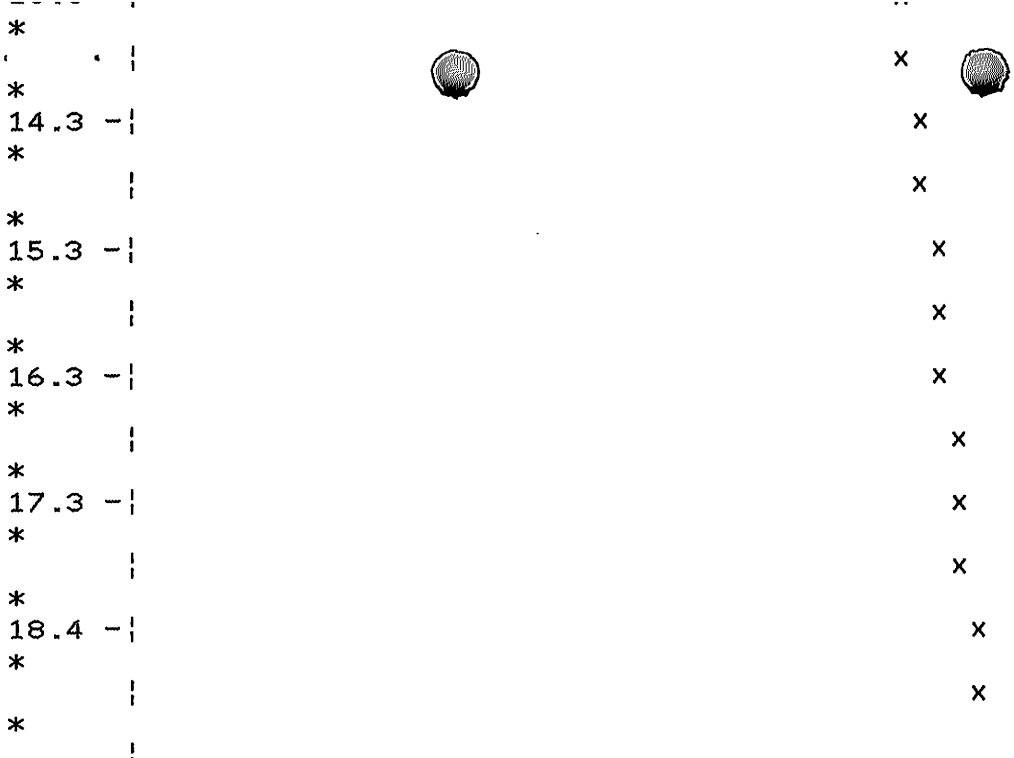
Return Freq: 2 years

Pond File: 7218 .PND
Inflow Hydrograph: 7218-002.HYD
Outflow Hydrograph: 72180002.HYD

EXECUTED: 01-12-1998
11:53:25

Peak Inflow = 24.30 cfs
Peak Outflow = 14.72 cfs
Peak Elevation = 484.50 ft




14.3
15.3
16.3
17.3
18.4
TIME
(min)
x File: 72180002.HYD Qmax = 14.7 cfs
* File: 7218-002.HYD Qmax = 24.3 cfs

WEST

WEST

****
*
* PHEASANT POINT CENTER
* DETENTION ANALYSIS
* PREPARED BY: BAX ENGINEERING CO., INC.
* JANUARY 7, 1998
*
****

Inflow Hydrograph: 7218-015.HYD
Rating Table file: 7218 .PND

----INITIAL CONDITIONS----
Elevation = 482.00 ft
Outflow = 0.00 cfs
Storage = 0.00 ac-ft

GIVEN POND DATA			INTERMEDIATE ROUTING COMPUTATIONS	
ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (ac-ft)	2S/t (cfs)	2S/t + O (cfs)
482.00	0.0	0.000	0.0	0.0
482.20	0.4	0.000	0.3	0.7
482.40	1.0	0.002	2.3	3.3
482.60	1.9	0.005	7.7	9.6
482.80	3.0	0.013	18.3	21.3
483.00	4.2	0.025	35.6	39.8
483.20	5.5	0.042	61.6	67.1
483.40	6.9	0.067	97.8	104.7
483.60	8.4	0.101	146.0	154.4
483.80	10.0	0.143	207.9	217.9
484.00	11.7	0.196	285.2	296.9
484.20	13.2	0.256	372.4	385.6
484.40	14.2	0.319	462.8	477.0
484.60	15.2	0.383	556.5	571.7
484.80	16.1	0.450	653.6	669.7
485.00	17.0	0.519	754.1	771.1
485.20	17.9	0.591	858.1	876.0
485.40	18.6	0.665	965.6	984.2
485.60	19.4	0.742	1076.7	1096.1
485.80	20.1	0.821	1191.5	1211.6
486.00	20.8	0.902	1310.0	1330.8
486.20	21.5	0.986	1432.1	1453.6
486.40	22.2	1.073	1557.6	1579.8
486.60	22.8	1.162	1686.5	1709.3
486.80	23.5	1.253	1818.9	1842.4
487.00	24.1	1.346	1954.9	1979.0
487.20	24.7	1.442	2094.4	2119.1
487.40	25.2	1.541	2237.5	2262.7
487.60	25.8	1.642	2384.3	2410.1
487.80	26.4	1.746	2534.9	2561.3
488.00	26.9	1.852	2689.2	2716.1

Time increment (t) = 1.0 min.

WEST

POND-2 Version: 5.20 S/N:
EXECUTED: 01-12-1998 11:53:25

Return Freq: 15 years

Pond File: 7218 .PND
Inflow Hydrograph: 7218-015.HYD
Outflow Hydrograph: 72180015.HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	0.00	-----	0.0	0.0	0.00	482.00
1.0	19.61	19.6	13.9	19.6	2.85	482.77
2.0	39.13	58.7	61.2	72.7	5.71	483.23
3.0	39.14	78.3	123.6	139.5	7.95	483.54
4.0	39.14	78.3	182.7	201.9	9.60	483.75
5.0	39.14	78.3	239.1	261.0	10.93	483.91
6.0	39.14	78.3	293.3	317.4	12.05	484.05
7.0	39.14	78.3	345.7	371.6	12.96	484.17
8.0	39.14	78.3	396.7	423.9	13.62	484.28
9.0	39.14	78.3	446.6	475.0	14.18	484.40
10.0	39.14	78.3	495.5	524.9	14.71	484.50
11.0	39.14	78.3	543.3	573.8	15.22	484.60
12.0	39.14	78.3	590.3	621.6	15.66	484.70
13.0	39.14	78.3	636.4	668.6	16.09	484.80
14.0	39.14	78.3	681.7	714.7	16.50	484.89
15.0	39.14	78.3	726.2	760.0	16.90	484.98
16.0	39.14	78.3	769.9	804.4	17.29	485.06
17.0	39.14	78.3	812.8	848.1	17.66	485.15
18.0	39.14	78.3	855.1	891.1	18.00	485.23
19.0	39.14	78.3	896.8	933.4	18.27	485.31
20.0	39.14	78.3	938.0	975.1	18.54	485.38
21.0	19.61	58.8	959.4	996.8	18.69	485.42
22.0	0.09	19.7	942.0	979.1	18.57	485.39
23.0	0.00	0.1	905.4	942.1	18.33	485.32
24.0	0.00	0.0	869.2	905.4	18.09	485.25
25.0	0.00	0.0	833.6	869.2	17.84	485.19
26.0	0.00	0.0	798.5	833.6	17.54	485.12
27.0	0.00	0.0	764.0	798.5	17.24	485.05
28.0	0.00	0.0	730.1	764.0	16.94	484.99
29.0	0.00	0.0	696.9	730.1	16.64	484.92
30.0	0.00	0.0	664.2	696.9	16.34	484.85
31.0	0.00	0.0	632.1	664.2	16.05	484.79
32.0	0.00	0.0	600.6	632.1	15.75	484.72
33.0	0.00	0.0	569.6	600.6	15.47	484.66
34.0	0.00	0.0	539.3	569.6	15.18	484.60
35.0	0.00	0.0	509.6	539.3	14.86	484.53
36.0	0.00	0.0	480.5	509.6	14.54	484.47
37.0	0.00	0.0	452.0	480.5	14.24	484.41
38.0	0.00	0.0	424.1	452.0	13.93	484.35
39.0	0.00	0.0	396.9	424.1	13.62	484.28
40.0	0.00	0.0	370.3	396.9	13.32	484.22
41.0	0.00	0.0	344.4	370.3	12.94	484.17
42.0	0.00	0.0	319.4	344.4	12.50	484.11
43.0	0.00	0.0	295.2	319.4	12.08	484.05
44.0	0.00	0.0	271.9	295.2	11.66	484.00

WEST

POND-2 Version: 5.20 S/N:
EXECUTED: 01-12-1998 11:53:25

Return Freq: 15 years

Pond File: 7218 .PND
Inflow Hydrograph: 7218-015.HYD
Outflow Hydrograph: 72180015.HYD

INFLOW HYDROGRAPH

ROUTING COMPUTATIONS

TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
45.0	0.00	0.0	249.6	271.9	11.16	483.94
46.0	0.00	0.0	228.2	249.6	10.68	483.88
47.0	0.00	0.0	207.8	228.2	10.22	483.83
48.0	0.00	0.0	188.3	207.8	9.74	483.77
49.0	0.00	0.0	169.8	188.3	9.25	483.71
50.0	0.00	0.0	152.2	169.8	8.79	483.65
51.0	0.00	0.0	135.5	152.2	8.33	483.59
52.0	0.00	0.0	119.9	135.5	7.83	483.52
53.0	0.00	0.0	105.1	119.9	7.36	483.46
54.0	0.00	0.0	91.3	105.1	6.91	483.40
55.0	0.00	0.0	78.5	91.3	6.40	483.33
56.0	0.00	0.0	66.7	78.5	5.92	483.26
57.0	0.00	0.0	55.7	66.7	5.48	483.20
58.0	0.00	0.0	45.8	55.7	4.96	483.12
59.0	0.00	0.0	36.8	45.8	4.48	483.04
60.0	0.00	0.0	28.8	36.8	4.01	482.97

WEST

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

Pond File: 7218 .PND
Inflow Hydrograph: 7218-015.HYD
Outflow Hydrograph: 72180015.HYD

Starting Pond W.S. Elevation = 482.00 ft

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

Peak Inflow	=	39.14 cfs
Peak Outflow	=	18.69 cfs
Peak Elevation	=	485.42 ft

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

Initial Storage	=	0.00 ac-ft
Peak Storage From Storm	=	0.67 ac-ft
Total Storage in Pond	=	0.67 ac-ft

WEST

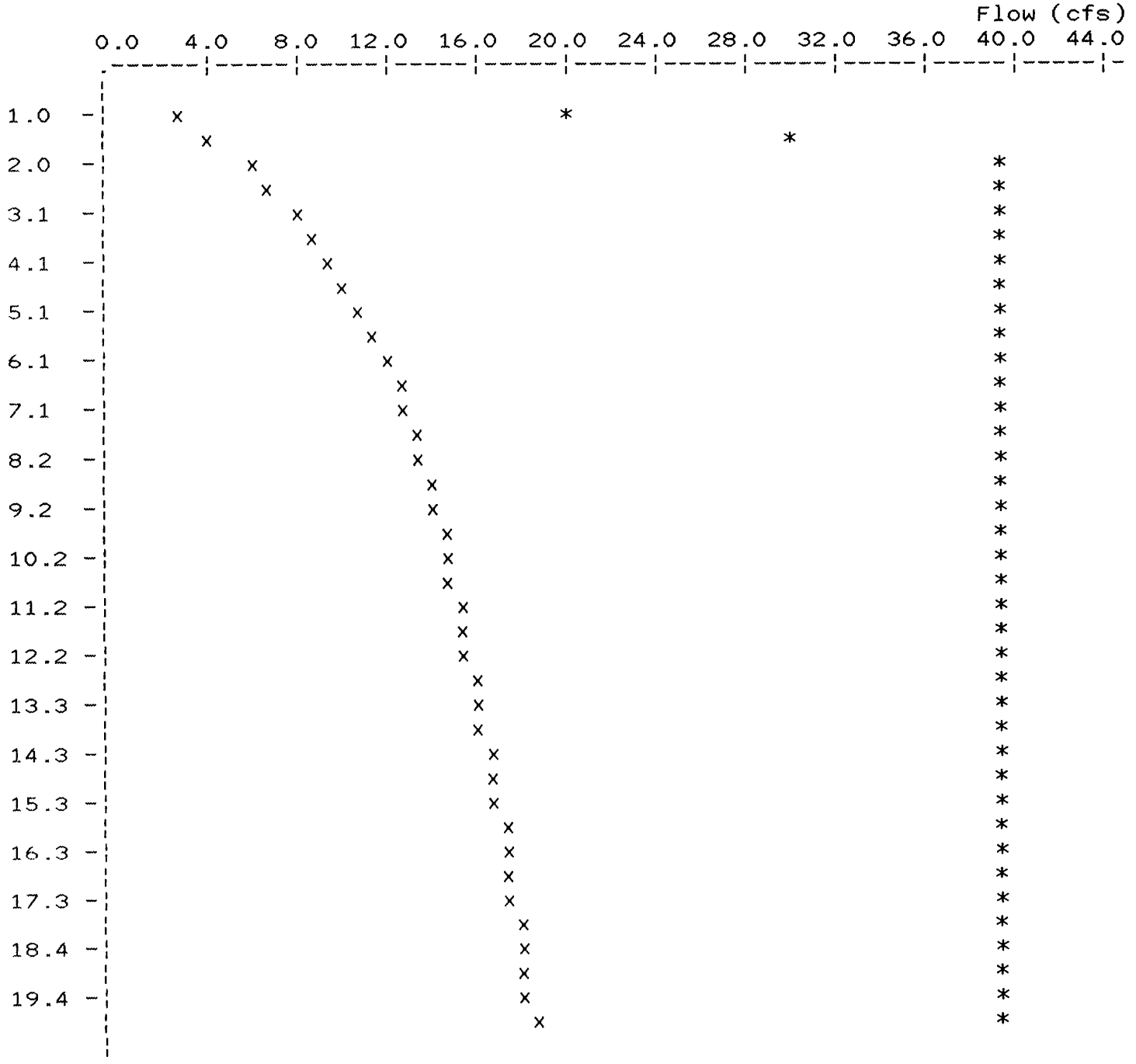
POND-2 Version: 5.20 S/N:

Return Freq: 15 years

Pond File: 7218 .PND
Inflow Hydrograph: 7218-015.HYD
Outflow Hydrograph: 72180015.HYD

EXECUTED: 01-12-1998
11:53:25

Peak Inflow = 39.14 cfs
Peak Outflow = 18.69 cfs
Peak Elevation = 485.42 ft



x File: 72180015.HYD Qmax = 18.7 cfs
* File: 7218-015.HYD Qmax = 39.1 cfs

WEST

POND-2 Version: 5.20 S/N:
EXECUTED: 01-12-1998 11:53:25

Return Freq: 25 years

****
* *
* PHEASANT POINT CENTER *
* DETENTION ANALYSIS *
* PREPARED BY: BAX ENGINEERING CO., INC. *
* JANUARY 7, 1998 *
* *
****

Inflow Hydrograph: 7218-025.HYD
Rating Table file: 7218 .PND

----INITIAL CONDITIONS----
Elevation = 482.00 ft
Outflow = 0.00 cfs
Storage = 0.00 ac-ft

GIVEN POND DATA

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (ac-ft)
482.00	0.0	0.000
482.20	0.4	0.000
482.40	1.0	0.002
482.60	1.9	0.005
482.80	3.0	0.013
483.00	4.2	0.025
483.20	5.5	0.042
483.40	6.9	0.067
483.60	8.4	0.101
483.80	10.0	0.143
484.00	11.7	0.196
484.20	13.2	0.256
484.40	14.2	0.319
484.60	15.2	0.383
484.80	16.1	0.450
485.00	17.0	0.519
485.20	17.9	0.591
485.40	18.6	0.665
485.60	19.4	0.742
485.80	20.1	0.821
486.00	20.8	0.902
486.20	21.5	0.986
486.40	22.2	1.073
486.60	22.8	1.162
486.80	23.5	1.253
487.00	24.1	1.346
487.20	24.7	1.442
487.40	25.2	1.541
487.60	25.8	1.642
487.80	26.4	1.746
488.00	26.9	1.852

INTERMEDIATE ROUTING COMPUTATIONS

2S/t (cfs)	2S/t + O (cfs)
0.0	0.0
0.3	0.7
2.3	3.3
7.7	9.6
18.3	21.3
35.6	39.8
61.6	67.1
97.8	104.7
146.0	154.4
207.9	217.9
285.2	296.9
372.4	385.6
462.8	477.0
556.5	571.7
653.6	669.7
754.1	771.1
858.1	876.0
965.6	984.2
1076.7	1096.1
1191.5	1211.6
1310.0	1330.8
1432.1	1453.6
1557.6	1579.8
1686.5	1709.3
1818.9	1842.4
1954.9	1979.0
2094.4	2119.1
2237.5	2262.7
2384.3	2410.1
2534.9	2561.3
2689.2	2716.1

Time increment (t) = 1.0 min.

WEST

POND-2 Version: 5.20 S/N:
EXECUTED: 01-12-1998 11:53:25

Return Freq: 25 years

Pond File: 7218 .PND
Inflow Hydrograph: 7218-025.HYD
Outflow Hydrograph: 72180025.HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	0.00	-----	0.0	0.0	0.00	482.00
1.0	24.20	24.2	17.8	24.2	3.19	482.83
2.0	48.29	72.5	77.6	90.3	6.36	483.32
3.0	48.30	96.6	156.4	174.2	8.90	483.66
4.0	48.30	96.6	231.5	253.0	10.75	483.89
5.0	48.30	96.6	303.6	328.1	12.23	484.07
6.0	48.30	96.6	373.5	400.2	13.36	484.23
7.0	48.30	96.6	441.8	470.1	14.12	484.38
8.0	48.30	96.6	508.7	538.4	14.85	484.53
9.0	48.30	96.6	574.3	605.3	15.51	484.67
10.0	48.30	96.6	638.7	670.9	16.11	484.80
11.0	48.30	96.6	701.9	735.3	16.68	484.93
12.0	48.30	96.6	764.1	798.5	17.24	485.05
13.0	48.30	96.6	825.1	860.7	17.77	485.17
14.0	48.30	96.6	885.3	921.7	18.20	485.28
15.0	48.30	96.6	944.8	981.9	18.59	485.40
16.0	48.30	96.6	1003.4	1041.4	19.01	485.50
17.0	48.30	96.6	1061.1	1100.0	19.42	485.61
18.0	48.30	96.6	1118.2	1157.7	19.77	485.71
19.0	48.30	96.6	1174.5	1214.8	20.12	485.81
20.0	48.30	96.6	1230.2	1271.1	20.45	485.90
21.0	24.20	72.5	1261.5	1302.7	20.63	485.95
22.0	0.11	24.3	1244.7	1285.8	20.54	485.92
23.0	0.00	0.1	1204.2	1244.8	20.29	485.86
24.0	0.00	0.0	1164.1	1204.2	20.06	485.79
25.0	0.00	0.0	1124.5	1164.1	19.81	485.72
26.0	0.00	0.0	1085.3	1124.5	19.57	485.65
27.0	0.00	0.0	1046.7	1085.3	19.32	485.58
28.0	0.00	0.0	1008.6	1046.7	19.05	485.51
29.0	0.00	0.0	971.0	1008.6	18.77	485.44
30.0	0.00	0.0	934.0	971.0	18.51	485.38
31.0	0.00	0.0	897.5	934.0	18.28	485.31
32.0	0.00	0.0	861.4	897.5	18.04	485.24
33.0	0.00	0.0	825.8	861.4	17.77	485.17
34.0	0.00	0.0	790.9	825.8	17.47	485.10
35.0	0.00	0.0	756.6	790.9	17.17	485.04
36.0	0.00	0.0	722.8	756.6	16.87	484.97
37.0	0.00	0.0	689.7	722.8	16.57	484.90
38.0	0.00	0.0	657.1	689.7	16.28	484.84
39.0	0.00	0.0	625.1	657.1	15.98	484.77
40.0	0.00	0.0	593.8	625.1	15.69	484.71
41.0	0.00	0.0	563.0	593.8	15.40	484.65
42.0	0.00	0.0	532.7	563.0	15.11	484.58
43.0	0.00	0.0	503.2	532.7	14.79	484.52
44.0	0.00	0.0	474.2	503.2	14.48	484.46

WEST

Pond File: 7218 .PND
Inflow Hydrograph: 7218-025.HYD
Outflow Hydrograph: 72180025.HYD

INFLOW HYDROGRAPH

TIME (min)	INFLOW (cfs)
45.0	0.00
46.0	0.00
47.0	0.00
48.0	0.00
49.0	0.00
50.0	0.00
51.0	0.00
52.0	0.00
53.0	0.00
54.0	0.00
55.0	0.00
56.0	0.00
57.0	0.00
58.0	0.00
59.0	0.00
60.0	0.00

ROUTING COMPUTATIONS

I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	445.9	474.2	14.17	484.39
0.0	418.2	445.9	13.86	484.33
0.0	391.0	418.2	13.56	484.27
0.0	364.5	391.0	13.26	484.21
0.0	338.8	364.5	12.84	484.15
0.0	314.0	338.8	12.41	484.09
0.0	290.0	314.0	11.99	484.04
0.0	266.9	290.0	11.55	483.98
0.0	244.8	266.9	11.05	483.92
0.0	223.7	244.8	10.58	483.87
0.0	203.4	223.7	10.12	483.81
0.0	184.1	203.4	9.63	483.75
0.0	165.8	184.1	9.15	483.69
0.0	148.5	165.8	8.69	483.64
0.0	132.0	148.5	8.22	483.58
0.0	116.6	132.0	7.72	483.51

WEST

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

Pond File: 7218 .PND
Inflow Hydrograph: 7218-025.HYD
Outflow Hydrograph: 72180025.HYD

Starting Pond W.S. Elevation = 482.00 ft

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

Peak Inflow	=	48.30 cfs
Peak Outflow	=	20.63 cfs
Peak Elevation	=	485.95 ft

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

Initial Storage	=	0.00 ac-ft
Peak Storage From Storm	=	0.88 ac-ft
Total Storage in Pond	=	0.88 ac-ft

WEST

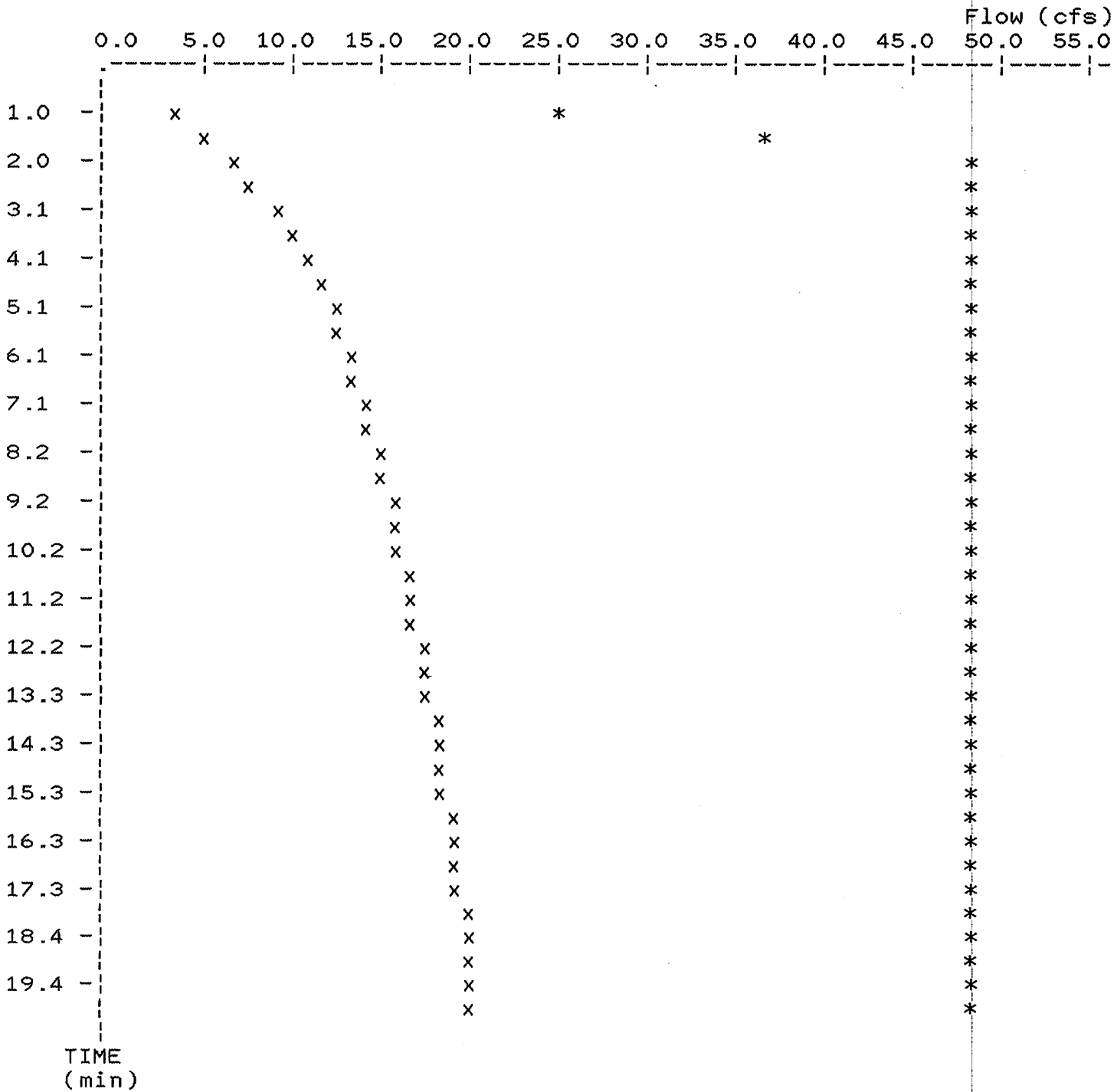
POND-2 Version: 5.20 S/N:

Return Freq: 25 years

Pond File: 7218 .PND
Inflow Hydrograph: 7218-025.HYD
Outflow Hydrograph: 72180025.HYD

EXECUTED: 01-12-1998
11:53:25

Peak Inflow = 48.30 cfs
Peak Outflow = 20.63 cfs
Peak Elevation = 485.95 ft



x File: 72180025.HYD Qmax = 20.6 cfs
* File: 7218-025.HYD Qmax = 48.3 cfs

POND-2 Version: 5.20
S/N:

PHEASANT POINT CENTER

DETENTION ANALYSIS — EAST BASIN

BAX ENGINEERING CO., INC.
JANUARY 7, 1998

CALCULATED 01-12-1998 11:51:02
DISK FILE: 7218 .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)
480.00	0.00	0.00	0.00	0.00	0.00
482.00	31,342.00	0.72	0.72	0.48	0.48
484.00	36,391.00	0.84	2.33	1.55	2.03
486.00	41,801.00	0.96	2.69	1.79	3.83

* 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

EAST

Outlet Structure File: 7218 .STR

POND-2 Version: 5.20 S/N:
Date Executed: Time Executed:

****
PHEASANT POINT CENTER
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
JANUARY 7, 1998
****

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

Elevation (ft)	Q (cfs)	Contributing Structures
480.00	0.0	1
480.20	0.1	1
480.40	0.2	1
480.60	0.4	2
480.80	0.4	2
481.00	0.5	2
481.20	0.6	2
481.40	0.6	2
481.60	0.7	2
481.80	0.7	2
482.00	0.8	2
482.20	0.8	2
482.40	0.9	2
482.60	0.9	2
482.80	1.0	2
483.00	1.0	2
483.20	1.0	2
483.40	1.1	2
483.60	1.1	2
483.80	1.1	2
484.00	1.2	2

EAST

Outlet Structure File: 7218 .STR

POND-2 Version: 5.20 S/N:
Date Executed: Time Executed:

****
PHEASANT POINT CENTER
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
JANUARY 7, 1998
****

Outlet Structure File: 7218 .STR
Planimeter Input File: 7218 .VOL
Rating Table Output File: 7218 .PND

Min. Elev.(ft) = 480 Max. Elev.(ft) = 484 Incr.(ft) = .2

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:
7218 .PND

EAST

Outlet Structure File: 7218 .STR

POND-2 Version: 5.20 S/N:
Date Executed: Time Executed:

****
PHEASANT POINT CENTER
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
JANUARY 7, 1998
****

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

WEIR-VR
Weir - Vertical Rectangular

E1 elev.(ft)? 480
E2 elev.(ft)? 484.001
Weir coefficient? 3.32
Weir elev.(ft)? 480.00
Length (ft)? .25
Contracted/Suppressed (C/S)? S

EAST

Outlet Structure File: 7218 .STR

POND-2 Version: 5.20 S/N:
Date Executed: Time Executed:

****
PHEASANT POINT CENTER
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
JANUARY 7, 1998
****

›››››› Structure No. 2 ‹‹‹‹‹‹
(Input Data)

ORIFICE
Orifice - Based on Area and Datum Elevation

E1 elev.(ft)?	480.50
E2 elev.(ft)?	484.001
Orifice coeff.?	0.6
Invert elev.(ft)?	480.000
Datum elev.(ft) ?	480.25
Orifice area (sq ft)?	0.125

EAST

Outlet Structure File: 7218 .STR

POND-2 Version: 5.20 S/N:
Date Executed: Time Executed:

****
PHEASANT POINT CENTER
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
JANUARY 7, 1998
****

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

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

Elevation (ft)	Q (cfs)	Computation Messages
480.00	0.0	H =0.0
480.20	0.1	H =.2
480.40	0.2	H =.4
480.60	0.4	H =.6
480.80	0.6	H =.8
481.00	0.8	H =1.0
481.20	1.1	H =1.2
481.40	1.4	H =1.4
481.60	1.7	H =1.6
481.80	2.0	H =1.8
482.00	2.3	H =2.0
482.20	2.7	H =2.2
482.40	3.1	H =2.4
482.60	3.5	H =2.6
482.80	3.9	H =2.8
483.00	4.3	H =3.0
483.20	4.8	H =3.2
483.40	5.2	H =3.4
483.60	5.7	H =3.6
483.80	6.1	H =3.8
484.00	6.6	H =4.0

C = 3.32 L (ft) = .25
H (ft) = Table elev. - Invert elev. (480 ft)
Q (cfs) = C * L * (H**1.5) -- Suppressed Weir

EAST

Outlet Structure File: 7218 .STR

POND-2 Version: 5.20 S/N:
Date Executed: Time Executed:

****
PHEASANT POINT CENTER
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
JANUARY 7, 1998
****

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

Elevation (ft)	Q (cfs)	Computation Messages
480.00	0.0	E < E1=480.50
480.20	0.0	E < E1=480.50
480.40	0.0	E < E1=480.50
480.60	0.4	H =.35
480.80	0.4	H =.55
481.00	0.5	H =.750
481.20	0.6	H =.95
481.40	0.6	H =1.15
481.60	0.7	H =1.35
481.80	0.7	H =1.55
482.00	0.8	H =1.75
482.20	0.8	H =1.95
482.40	0.9	H =2.15
482.60	0.9	H =2.35
482.80	1.0	H =2.55
483.00	1.0	H =2.75
483.20	1.0	H =2.95
483.40	1.1	H =3.15
483.60	1.1	H =3.35
483.80	1.1	H =3.55
484.00	1.2	H =3.75

C = .6 A = .125 sq.ft.
H (ft) = Table elev. - Datum elev. (480.25 ft)
Q (cfs) = C * A * sqr(2g * H)

EAST

Outlet Structure File: 7218 .STR

POND-2 Version: 5.20 S/N:
Date Executed: Time Executed:

****
PHEASANT POINT CENTER
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
JANUARY 7, 1998
****

Outflow Rating Table A
Table A = 1 ? 2

Elevation (ft)	Q (cfs)	Contributing Structures
480.00	0.0	1
480.20	0.1	1
480.40	0.2	1
480.60	0.4	2
480.80	0.4	2
481.00	0.5	2
481.20	0.6	2
481.40	0.6	2
481.60	0.7	2
481.80	0.7	2
482.00	0.8	2
482.20	0.8	2
482.40	0.9	2
482.60	0.9	2
482.80	1.0	2
483.00	1.0	2
483.20	1.0	2
483.40	1.1	2
483.60	1.1	2
483.80	1.1	2
484.00	1.2	2

EAST EAST

POND-2 Version: 5.20 S/N: Page 1
EXECUTED: 01-12-1998 11:35:33 Return Freq: 2 years

****
*
* PHEASANT POINT CENTER *
* DETENTION ANALYSIS *
* PREPARED BY: BAX ENGINEERING CO., INC. *
* JANUARY 7, 1998 *
*
****

Inflow Hydrograph: 7218-002.HYD
Rating Table file: 7218 .PND

----INITIAL CONDITIONS----
Elevation = 480.00 ft
Outflow = 0.00 cfs
Storage = 0.00 ac-ft

GIVEN POND DATA			INTERMEDIATE ROUTING COMPUTATIONS	
ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (ac-ft)	2S/t (cfs)	2S/t + O (cfs)
480.00	0.0	0.000	0.0	0.0
480.20	0.1	0.000	0.7	0.8
480.40	0.2	0.004	5.6	5.8
480.60	0.4	0.013	18.8	19.2
480.80	0.4	0.031	44.6	45.0
481.00	0.5	0.060	87.1	87.6
481.20	0.6	0.104	150.4	151.0
481.40	0.6	0.165	238.9	239.5
481.60	0.7	0.246	356.6	357.3
481.80	0.7	0.350	507.7	508.4
482.00	0.8	0.480	696.5	697.3
482.20	0.8	0.625	907.1	907.9
482.40	0.9	0.772	1120.9	1121.8
482.60	0.9	0.922	1338.0	1338.9
482.80	1.0	1.073	1558.4	1559.4
483.00	1.0	1.227	1782.3	1783.3
483.20	1.0	1.384	2009.4	2010.4
483.40	1.1	1.543	2239.9	2241.0
483.60	1.1	1.704	2473.9	2475.0
483.80	1.1	1.867	2711.3	2712.4
484.00	1.2	2.033	2952.2	2953.4

Time increment (t) = 1.0 min.

EAST

POND-2 Version: 5.20 S/N:
EXECUTED: 01-12-1998 11:35:33 Return Freq: 2 years

Pond File: 7218 .PND
Inflow Hydrograph: 7218-002.HYD
Outflow Hydrograph: 72180002.HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	0.00	-----	0.0	0.0	0.00	480.00
1.0	9.22	9.2	8.7	9.2	0.25	480.45
2.0	18.38	27.6	35.5	36.3	0.40	480.73
3.0	27.59	46.0	80.5	81.5	0.49	480.97
4.0	27.60	55.2	134.6	135.7	0.58	481.15
5.0	27.60	55.2	188.6	189.8	0.60	481.29
6.0	27.60	55.2	242.5	243.8	0.60	481.41
7.0	27.60	55.2	296.4	297.7	0.65	481.50
8.0	27.60	55.2	350.3	351.6	0.70	481.59
9.0	27.60	55.2	404.1	405.5	0.70	481.66
10.0	27.60	55.2	457.9	459.3	0.70	481.73
11.0	27.60	55.2	511.7	513.1	0.70	481.80
12.0	27.60	55.2	565.4	566.9	0.73	481.86
13.0	27.60	55.2	619.1	620.6	0.76	481.92
14.0	27.60	55.2	672.7	674.3	0.79	481.98
15.0	27.60	55.2	726.3	727.9	0.80	482.03
16.0	27.60	55.2	779.9	781.5	0.80	482.08
17.0	27.60	55.2	833.5	835.1	0.80	482.13
18.0	27.60	55.2	887.1	888.7	0.80	482.18
19.0	27.60	55.2	940.7	942.3	0.82	482.23
20.0	27.60	55.2	994.2	995.9	0.84	482.28
21.0	18.42	46.0	1038.5	1040.2	0.86	482.32
22.0	9.21	27.6	1064.4	1066.1	0.87	482.35
23.0	0.04	9.3	1071.9	1073.6	0.88	482.35
24.0	0.00	0.0	1070.1	1071.9	0.88	482.35
25.0	0.00	0.0	1068.4	1070.1	0.88	482.35
26.0	0.00	0.0	1066.6	1068.4	0.88	482.35
27.0	0.00	0.0	1064.9	1066.6	0.87	482.35
28.0	0.00	0.0	1063.1	1064.9	0.87	482.35
29.0	0.00	0.0	1061.4	1063.1	0.87	482.35
30.0	0.00	0.0	1059.7	1061.4	0.87	482.34
31.0	0.00	0.0	1057.9	1059.7	0.87	482.34
32.0	0.00	0.0	1056.2	1057.9	0.87	482.34
33.0	0.00	0.0	1054.4	1056.2	0.87	482.34
34.0	0.00	0.0	1052.7	1054.4	0.87	482.34
35.0	0.00	0.0	1051.0	1052.7	0.87	482.34
36.0	0.00	0.0	1049.2	1051.0	0.87	482.33
37.0	0.00	0.0	1047.5	1049.2	0.87	482.33
38.0	0.00	0.0	1045.8	1047.5	0.87	482.33
39.0	0.00	0.0	1044.0	1045.8	0.86	482.33
40.0	0.00	0.0	1042.3	1044.0	0.86	482.33
41.0	0.00	0.0	1040.6	1042.3	0.86	482.33
42.0	0.00	0.0	1038.9	1040.6	0.86	482.32
43.0	0.00	0.0	1037.1	1038.9	0.86	482.32
44.0	0.00	0.0	1035.4	1037.1	0.86	482.32

EAST

POND-2 Version: 5.20 S/N:
EXECUTED: 01-12-1998 11:35:33

Return Freq: 2 years

Pond File: 7218 .PND
Inflow Hydrograph: 7218-002.HYD
Outflow Hydrograph: 72180002.HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
45.0	0.00	0.0	1033.7	1035.4	0.86	482.32
46.0	0.00	0.0	1032.0	1033.7	0.86	482.32
47.0	0.00	0.0	1030.3	1032.0	0.86	482.32
48.0	0.00	0.0	1028.5	1030.3	0.86	482.31
49.0	0.00	0.0	1026.8	1028.5	0.86	482.31
50.0	0.00	0.0	1025.1	1026.8	0.86	482.31
51.0	0.00	0.0	1023.4	1025.1	0.85	482.31
52.0	0.00	0.0	1021.7	1023.4	0.85	482.31
53.0	0.00	0.0	1020.0	1021.7	0.85	482.31
54.0	0.00	0.0	1018.3	1020.0	0.85	482.30
55.0	0.00	0.0	1016.6	1018.3	0.85	482.30
56.0	0.00	0.0	1014.9	1016.6	0.85	482.30
57.0	0.00	0.0	1013.2	1014.9	0.85	482.30
58.0	0.00	0.0	1011.5	1013.2	0.85	482.30
59.0	0.00	0.0	1009.8	1011.5	0.85	482.30
60.0	0.00	0.0	1008.1	1009.8	0.85	482.30

EAST

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

Pond File: 7218 .PND
Inflow Hydrograph: 7218-002.HYD
Outflow Hydrograph: 72180002.HYD

Starting Pond W.S. Elevation = 480.00 ft

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

Peak Inflow	=	27.60 cfs
Peak Outflow	=	0.88 cfs
Peak Elevation	=	482.35 ft

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

Initial Storage	=	0.00 ac-ft
Peak Storage From Storm	=	0.74 ac-ft
Total Storage in Pond	=	0.74 ac-ft

EAST

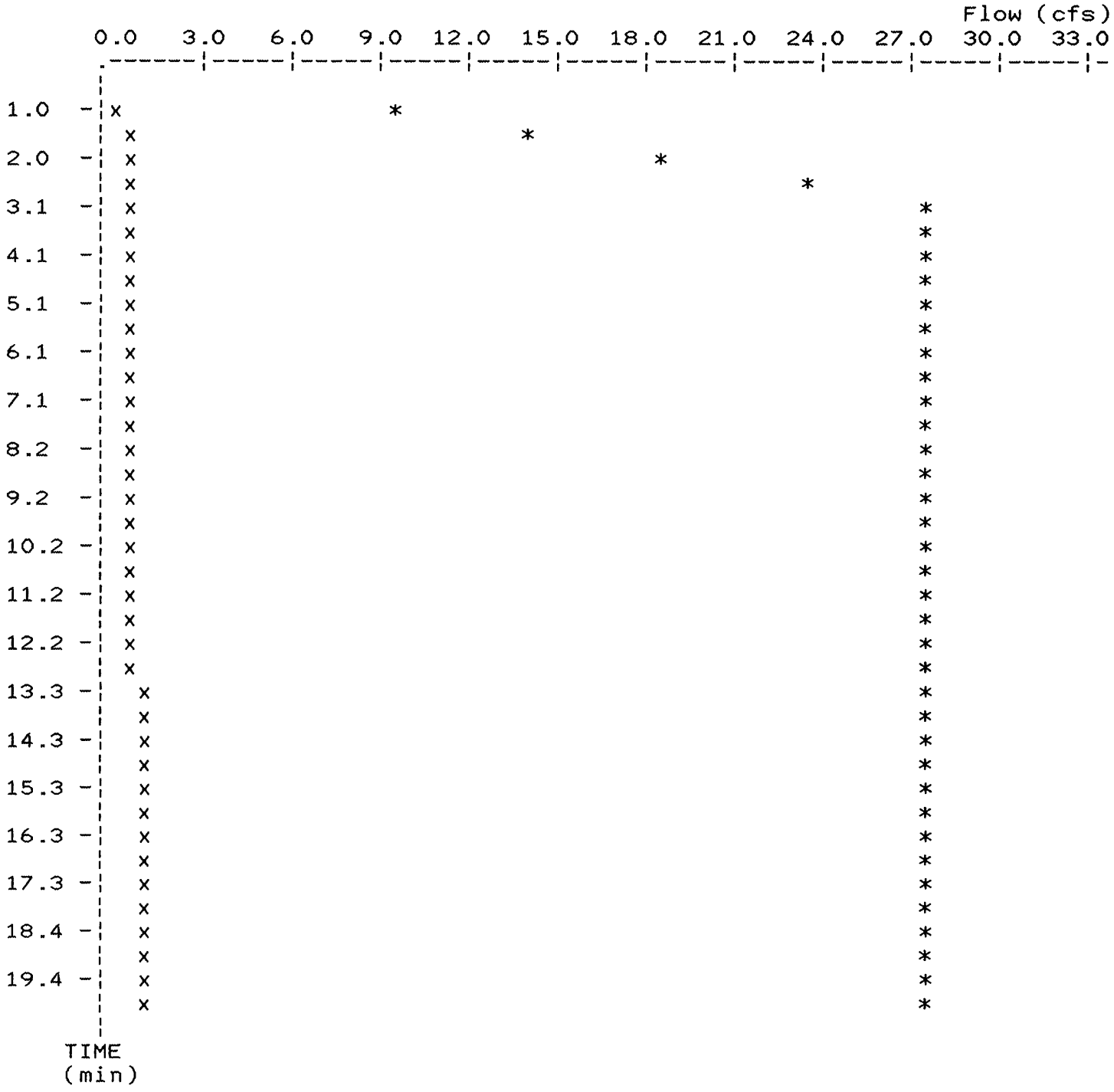
POND-2 Version: 5.20 S/N:

Return Freq: 2 years

Pond File: 7218 .PND
Inflow Hydrograph: 7218-002.HYD
Outflow Hydrograph: 72180002.HYD

EXECUTED: 01-12-1998
11:35:33

Peak Inflow = 27.60 cfs
Peak Outflow = 0.88 cfs
Peak Elevation = 482.35 ft



x File: 72180002.HYD Qmax = 0.9 cfs
* File: 7218-002.HYD Qmax = 27.6 cfs

EAST

POND-2 Version: 5.20 S/N:
EXECUTED: 01-12-1998 11:35:33

Return Freq: 15 years

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*********************************************
*                                           *
*           PHEASANT POINT CENTER           *
*            DETENTION ANALYSIS             *
*  PREPARED BY: BAX ENGINEERING CO., INC.   *
*              JANUARY 7, 1998              *
*                                           *
*********************************************
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Inflow Hydrograph: 7218-015.HYD
Rating Table file: 7218 .PND

----INITIAL CONDITIONS----
Elevation = 480.00 ft
Outflow = 0.00 cfs
Storage = 0.00 ac-ft

GIVEN POND DATA

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (ac-ft)
480.00	0.0	0.000
480.20	0.1	0.000
480.40	0.2	0.004
480.60	0.4	0.013
480.80	0.4	0.031
481.00	0.5	0.060
481.20	0.6	0.104
481.40	0.6	0.165
481.60	0.7	0.246
481.80	0.7	0.350
482.00	0.8	0.480
482.20	0.8	0.625
482.40	0.9	0.772
482.60	0.9	0.922
482.80	1.0	1.073
483.00	1.0	1.227
483.20	1.0	1.384
483.40	1.1	1.543
483.60	1.1	1.704
483.80	1.1	1.867
484.00	1.2	2.033

INTERMEDIATE ROUTING COMPUTATIONS

2S/t (cfs)	2S/t + O (cfs)
0.0	0.0
0.7	0.8
5.6	5.8
18.8	19.2
44.6	45.0
87.1	87.6
150.4	151.0
238.9	239.5
356.6	357.3
507.7	508.4
696.5	697.3
907.1	907.9
1120.9	1121.8
1338.0	1338.9
1558.4	1559.4
1782.3	1783.3
2009.4	2010.4
2239.9	2241.0
2473.9	2475.0
2711.3	2712.4
2952.2	2953.4

Time increment (t) = 1.0 min.

EAST

POND-2 Version: 5.20 S/N:
EXECUTED: 01-12-1998 11:35:33

Return Freq: 15 years

Pond File: 7218 .PND
Inflow Hydrograph: 7218-015.HYD
Outflow Hydrograph: 72180015.HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	0.00	-----	0.0	0.0	0.00	480.00
1.0	14.83	14.8	14.2	14.8	0.33	480.53
2.0	29.56	44.4	57.7	58.6	0.43	480.86
3.0	44.39	74.0	130.5	131.6	0.57	481.14
4.0	44.40	88.8	218.1	219.3	0.60	481.35
5.0	44.40	88.8	305.6	306.9	0.66	481.51
6.0	44.40	88.8	393.0	394.4	0.70	481.65
7.0	44.40	88.8	480.4	481.8	0.70	481.76
8.0	44.40	88.8	567.7	569.2	0.73	481.86
9.0	44.40	88.8	655.0	656.5	0.78	481.96
10.0	44.40	88.8	742.2	743.8	0.80	482.04
11.0	44.40	88.8	829.4	831.0	0.80	482.13
12.0	44.40	88.8	916.5	918.2	0.80	482.21
13.0	44.40	88.8	1003.7	1005.3	0.85	482.29
14.0	44.40	88.8	1090.7	1092.5	0.89	482.37
15.0	44.40	88.8	1177.7	1179.5	0.90	482.45
16.0	44.40	88.8	1264.7	1266.5	0.90	482.53
17.0	44.40	88.8	1351.7	1353.5	0.91	482.61
18.0	44.40	88.8	1438.6	1440.5	0.95	482.69
19.0	44.40	88.8	1525.4	1527.4	0.99	482.77
20.0	44.40	88.8	1612.2	1614.2	1.00	482.85
21.0	29.64	74.0	1684.2	1686.2	1.00	482.91
22.0	14.81	44.5	1726.7	1728.7	1.00	482.95
23.0	0.06	14.9	1739.6	1741.6	1.00	482.96
24.0	0.00	0.1	1737.6	1739.6	1.00	482.96
25.0	0.00	0.0	1735.6	1737.6	1.00	482.96
26.0	0.00	0.0	1733.6	1735.6	1.00	482.96
27.0	0.00	0.0	1731.6	1733.6	1.00	482.96
28.0	0.00	0.0	1729.6	1731.6	1.00	482.95
29.0	0.00	0.0	1727.6	1729.6	1.00	482.95
30.0	0.00	0.0	1725.6	1727.6	1.00	482.95
31.0	0.00	0.0	1723.6	1725.6	1.00	482.95
32.0	0.00	0.0	1721.6	1723.6	1.00	482.95
33.0	0.00	0.0	1719.6	1721.6	1.00	482.94
34.0	0.00	0.0	1717.6	1719.6	1.00	482.94
35.0	0.00	0.0	1715.6	1717.6	1.00	482.94
36.0	0.00	0.0	1713.6	1715.6	1.00	482.94
37.0	0.00	0.0	1711.6	1713.6	1.00	482.94
38.0	0.00	0.0	1709.6	1711.6	1.00	482.94
39.0	0.00	0.0	1707.6	1709.6	1.00	482.93
40.0	0.00	0.0	1705.6	1707.6	1.00	482.93
41.0	0.00	0.0	1703.6	1705.6	1.00	482.93
42.0	0.00	0.0	1701.6	1703.6	1.00	482.93
43.0	0.00	0.0	1699.6	1701.6	1.00	482.93
44.0	0.00	0.0	1697.6	1699.6	1.00	482.93

EAST

Pond File: 7218 .PND
Inflow Hydrograph: 7218-015.HYD
Outflow Hydrograph: 72180015.HYD

INFLOW HYDROGRAPH

TIME (min)	INFLOW (cfs)
45.0	0.00
46.0	0.00
47.0	0.00
48.0	0.00
49.0	0.00
50.0	0.00
51.0	0.00
52.0	0.00
53.0	0.00
54.0	0.00
55.0	0.00
56.0	0.00
57.0	0.00
58.0	0.00
59.0	0.00
60.0	0.00

ROUTING COMPUTATIONS

I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	1695.6	1697.6	1.00	482.92
0.0	1693.6	1695.6	1.00	482.92
0.0	1691.6	1693.6	1.00	482.92
0.0	1689.6	1691.6	1.00	482.92
0.0	1687.6	1689.6	1.00	482.92
0.0	1685.6	1687.6	1.00	482.91
0.0	1683.6	1685.6	1.00	482.91
0.0	1681.6	1683.6	1.00	482.91
0.0	1679.6	1681.6	1.00	482.91
0.0	1677.6	1679.6	1.00	482.91
0.0	1675.6	1677.6	1.00	482.91
0.0	1673.6	1675.6	1.00	482.90
0.0	1671.6	1673.6	1.00	482.90
0.0	1669.6	1671.6	1.00	482.90
0.0	1667.6	1669.6	1.00	482.90
0.0	1665.6	1667.6	1.00	482.90

EAST

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

Pond File: 7218 .PND
Inflow Hydrograph: 7218-015.HYD
Outflow Hydrograph: 72180015.HYD

Starting Pond W.S. Elevation = 480.00 ft

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

Peak Inflow	=	44.40 cfs
Peak Outflow	=	1.00 cfs
Peak Elevation	=	482.96 ft

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

Initial Storage	=	0.00 ac-ft
Peak Storage From Storm	=	1.20 ac-ft
Total Storage in Pond	=	1.20 ac-ft

>>>>>> Warning, peak outflow = last ordinate point. <<<<<<

EAST

Return Freq: 15 years

Pond File: 7218 .PND
Inflow Hydrograph: 7218-015.HYD
Outflow Hydrograph: 72180015.HYD

EXECUTED: 01-12-1998
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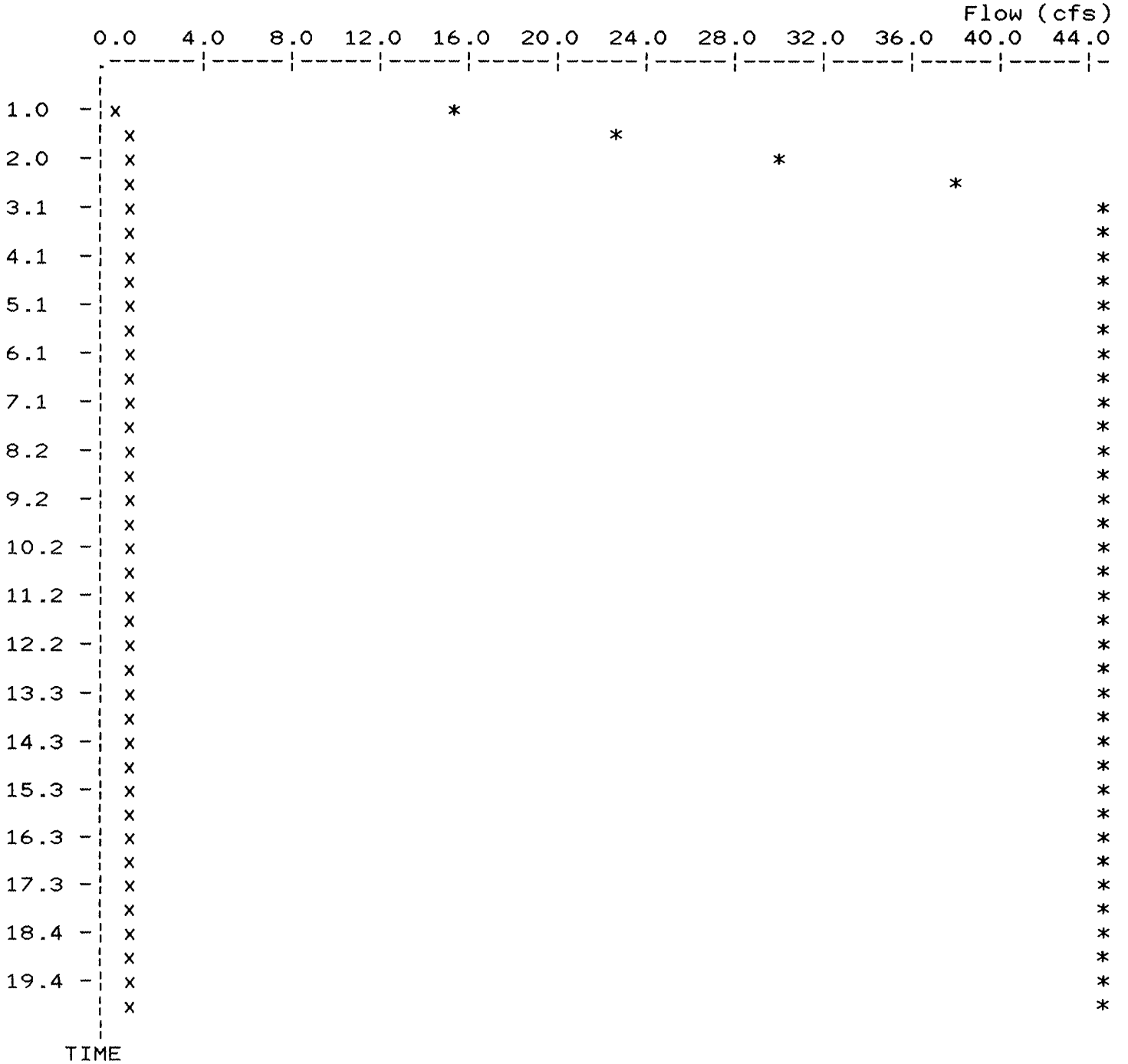
Peak Inflow = 44.40 cfs
Peak Outflow = 1.00 cfs
Peak Elevation = 482.96 ft



x File: 72180015.HYD Qmax = 1.0 cfs
* File: 7218-015.HYD Qmax = 44.4 cfs

EAST

POND-2 Version: 5.20 S/N:
EXECUTED: 01-12-1998 11:35:33 Return Freq: 25 years

****
*
* PHEASANT POINT CENTER *
* DETENTION ANALYSIS *
* PREPARED BY: BAX ENGINEERING CO., INC. *
* JANUARY 7, 1998 *
*
****

Inflow Hydrograph: 7218-025.HYD
Rating Table file: 7218 .PND

----INITIAL CONDITIONS----
Elevation = 480.00 ft
Outflow = 0.00 cfs
Storage = 0.00 ac-ft

GIVEN POND DATA

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (ac-ft)
480.00	0.0	0.000
480.20	0.1	0.000
480.40	0.2	0.004
480.60	0.4	0.013
480.80	0.4	0.031
481.00	0.5	0.060
481.20	0.6	0.104
481.40	0.6	0.165
481.60	0.7	0.246
481.80	0.7	0.350
482.00	0.8	0.480
482.20	0.8	0.625
482.40	0.9	0.772
482.60	0.9	0.922
482.80	1.0	1.073
483.00	1.0	1.227
483.20	1.0	1.384
483.40	1.1	1.543
483.60	1.1	1.704
483.80	1.1	1.867
484.00	1.2	2.033

INTERMEDIATE ROUTING COMPUTATIONS

2S/t (cfs)	2S/t + O (cfs)
0.0	0.0
0.7	0.8
5.6	5.8
18.8	19.2
44.6	45.0
87.1	87.6
150.4	151.0
238.9	239.5
356.6	357.3
507.7	508.4
696.5	697.3
907.1	907.9
1120.9	1121.8
1338.0	1338.9
1558.4	1559.4
1782.3	1783.3
2009.4	2010.4
2239.9	2241.0
2473.9	2475.0
2711.3	2712.4
2952.2	2953.4

Time increment (t) = 1.0 min.

EAST

POND-2 Version: 5.20 S/N:
EXECUTED: 01-12-1998 11:35:33

Return Freq: 25 years

Pond File: 7218 .PND
Inflow Hydrograph: 7218-025.HYD
Outflow Hydrograph: 72180025.HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	0.00	-----	0.0	0.0	0.00	480.00
1.0	18.30	18.3	17.5	18.3	0.39	480.59
2.0	36.49	54.8	71.4	72.3	0.46	480.93
3.0	54.79	91.3	161.5	162.7	0.60	481.23
4.0	54.80	109.6	269.8	271.1	0.63	481.45
5.0	54.80	109.6	378.0	379.4	0.70	481.63
6.0	54.80	109.6	486.2	487.6	0.70	481.77
7.0	54.80	109.6	594.3	595.8	0.75	481.89
8.0	54.80	109.6	702.3	703.9	0.80	482.01
9.0	54.80	109.6	810.3	811.9	0.80	482.11
10.0	54.80	109.6	918.3	919.9	0.81	482.21
11.0	54.80	109.6	1026.2	1027.9	0.86	482.31
12.0	54.80	109.6	1134.0	1135.8	0.90	482.41
13.0	54.80	109.6	1241.8	1243.6	0.90	482.51
14.0	54.80	109.6	1349.6	1351.4	0.91	482.61
15.0	54.80	109.6	1457.3	1459.2	0.95	482.71
16.0	54.80	109.6	1564.9	1566.9	1.00	482.81
17.0	54.80	109.6	1672.5	1674.5	1.00	482.90
18.0	54.80	109.6	1780.1	1782.1	1.00	483.00
19.0	54.80	109.6	1887.7	1889.7	1.00	483.09
20.0	54.80	109.6	1995.3	1997.3	1.00	483.19
21.0	36.58	91.4	2084.6	2086.6	1.03	483.27
22.0	18.28	54.9	2137.3	2139.4	1.06	483.31
23.0	0.08	18.4	2153.6	2155.7	1.06	483.33
24.0	0.00	0.1	2151.5	2153.6	1.06	483.32
25.0	0.00	0.0	2149.4	2151.5	1.06	483.32
26.0	0.00	0.0	2147.3	2149.4	1.06	483.32
27.0	0.00	0.0	2145.2	2147.3	1.06	483.32
28.0	0.00	0.0	2143.0	2145.2	1.06	483.32
29.0	0.00	0.0	2140.9	2143.0	1.06	483.32
30.0	0.00	0.0	2138.8	2140.9	1.06	483.31
31.0	0.00	0.0	2136.7	2138.8	1.06	483.31
32.0	0.00	0.0	2134.6	2136.7	1.05	483.31
33.0	0.00	0.0	2132.5	2134.6	1.05	483.31
34.0	0.00	0.0	2130.4	2132.5	1.05	483.31
35.0	0.00	0.0	2128.3	2130.4	1.05	483.30
36.0	0.00	0.0	2126.2	2128.3	1.05	483.30
37.0	0.00	0.0	2124.1	2126.2	1.05	483.30
38.0	0.00	0.0	2122.0	2124.1	1.05	483.30
39.0	0.00	0.0	2119.9	2122.0	1.05	483.30
40.0	0.00	0.0	2117.8	2119.9	1.05	483.29
41.0	0.00	0.0	2115.7	2117.8	1.05	483.29
42.0	0.00	0.0	2113.6	2115.7	1.05	483.29
43.0	0.00	0.0	2111.5	2113.6	1.04	483.29
44.0	0.00	0.0	2109.4	2111.5	1.04	483.29

EAST

Pond File: 7218 .PND
Inflow Hydrograph: 7218-025.HYD
Outflow Hydrograph: 72180025.HYD

INFLOW HYDROGRAPH

ROUTING COMPUTATIONS

TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
45.0	0.00	0.0	2107.3	2109.4	1.04	483.29
46.0	0.00	0.0	2105.3	2107.3	1.04	483.28
47.0	0.00	0.0	2103.2	2105.3	1.04	483.28
48.0	0.00	0.0	2101.1	2103.2	1.04	483.28
49.0	0.00	0.0	2099.0	2101.1	1.04	483.28
50.0	0.00	0.0	2096.9	2099.0	1.04	483.28
51.0	0.00	0.0	2094.9	2096.9	1.04	483.28
52.0	0.00	0.0	2092.8	2094.9	1.04	483.27
53.0	0.00	0.0	2090.7	2092.8	1.04	483.27
54.0	0.00	0.0	2088.6	2090.7	1.03	483.27
55.0	0.00	0.0	2086.6	2088.6	1.03	483.27
56.0	0.00	0.0	2084.5	2086.6	1.03	483.27
57.0	0.00	0.0	2082.4	2084.5	1.03	483.26
58.0	0.00	0.0	2080.4	2082.4	1.03	483.26
59.0	0.00	0.0	2078.3	2080.4	1.03	483.26
60.0	0.00	0.0	2076.3	2078.3	1.03	483.26

EAST

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

Pond File: 7218 .PND
Inflow Hydrograph: 7218-025.HYD
Outflow Hydrograph: 72180025.HYD

Starting Pond W.S. Elevation = 480.00 ft

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

Peak Inflow	=	54.80 cfs
Peak Outflow	=	1.06 cfs
Peak Elevation	=	483.33 ft

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

Initial Storage	=	0.00 ac-ft
Peak Storage From Storm	=	1.48 ac-ft
Total Storage in Pond	=	1.48 ac-ft

EAST

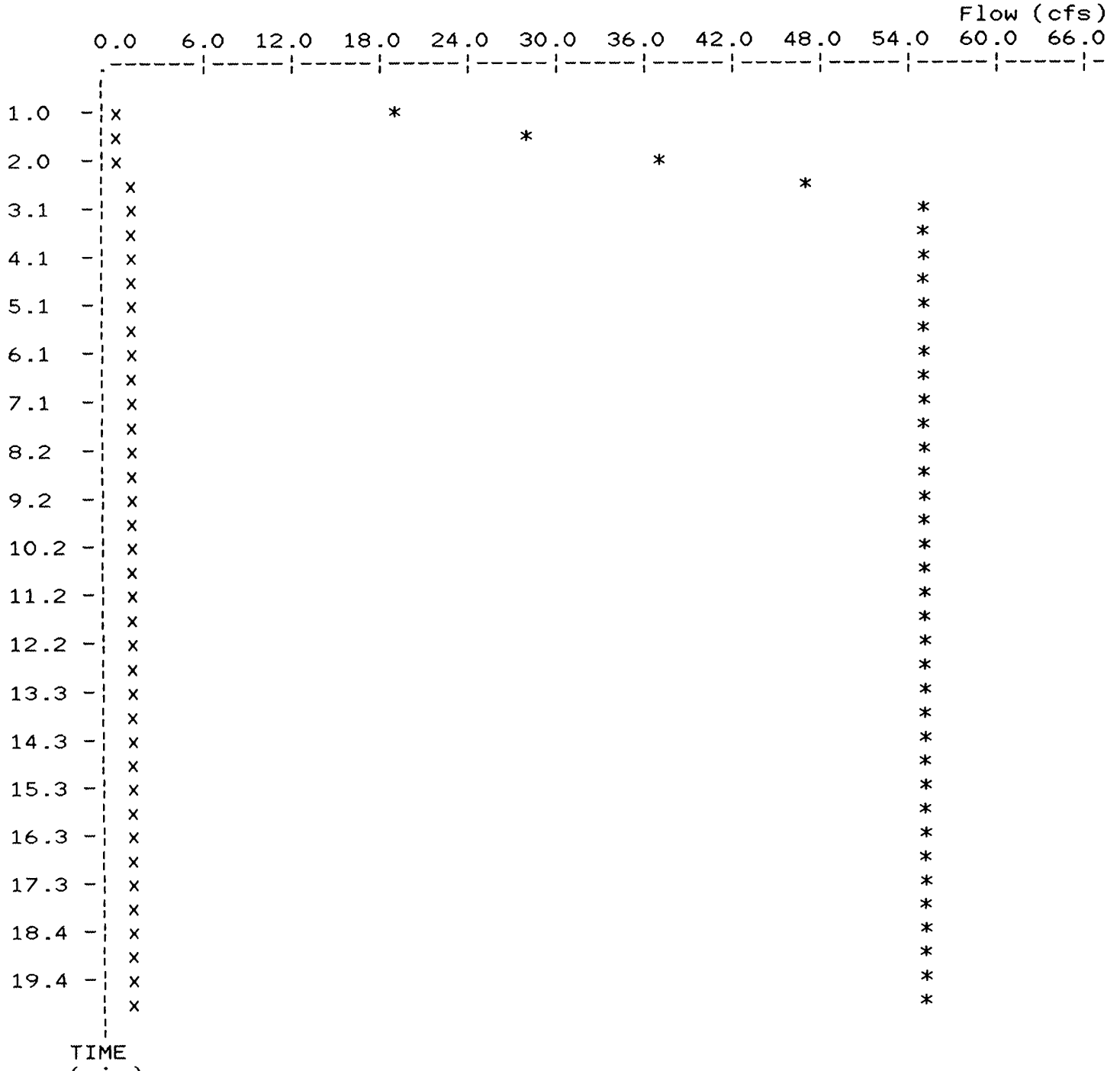
POND-2 Version: 5.20 S/N:

Return Freq: 25 years

Pond File: 7218 .PND
Inflow Hydrograph: 7218-025.HYD
Outflow Hydrograph: 72180025.HYD

EXECUTED: 01-12-1998
11:35:33

Peak Inflow = 54.80 cfs
Peak Outflow = 1.06 cfs
Peak Elevation = 483.33 ft



x File: 72180025.HYD Qmax = 1.1 cfs
* File: 7218-025.HYD Qmax = 54.8 cfs

SEDIMENT
STORAGE
CALC.?