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STORMWATER DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
**THE CROSSINGS** - O'FALLON
**VILLAGE C**
BAX PROJECT NO. **97-9203C**
August 3, 1998

## INTRODUCTION:

The tract of land is presently an undeveloped site located in the City of O'Fallon, Missouri. It is proposed that 76.68 acres (Village C) of the 168.37 acre tract be developed into residential lots. Three stormwater detention basins, **NORTH**, **SOUTH** and **WEST** shall be constructed. These basins will provide detention for a portion of this development along with future basins. 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 25 year-20 minute design storm. The basin was 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:

| | |
|---|---|
| 2 year - 5% impervious | 1.15 cfs/ac. |
| 15 year - 5% impervious | 1.87 cfs/ac. |
| 25 year - 5% impervious | 2.31 cfs/ac. |
| 100 year - 5% impervious | 2.95 cfs/ac. |

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

| | |
|---|---|
| 2 year - 40% impervious | 1.61 cfs/ac. |
| 15 year - 40% impervious | 2.64 cfs/ac. |
| 25 year - 40% impervious | 3.26 cfs/ac. |
| 100 year - 40% impervious | 4.17 cfs/ac. |
| | |
| 2 year - 46% impervious | 1.69 cfs/ac. |
| 15 year - 46% impervious | 2.90 cfs/ac. |
| 25 year - 46% impervious | 3.43 cfs/ac. |
| 100 year - 46% impervious | 4.39 cfs/ac. |


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## TIME OF CONCENTRATION:

### NORTH

Of the inflows to the North basin, the most remote point lies to the southwest near lot 119. Flows will travel approximately 250 feet overland to the basin. Time of concentration is estimated as follows:

T(overland): L = 250 feet
Elevation difference = 483 – 462 = 21 feet
T(overland) = 3.0 minutes: See figure 1

>> Use **3** min.

### SOUTH

Of the inflows to the South basin, the most remote point lies to the southwest near lot 136. Flows will travel approximately 350 feet overland to AI 247 then 420 feet via stormpipe to the detention basin. Time of concentration is estimated as follows:

T(overland): L = 350 feet
Elevation difference = 497 - 484 = 13 feet
T(overland) = 5.0: See figure 1

T(stormpipe): L = 420 feet (estimated velocity 7 feet per second)
T(stormpipe) = 1.0 minutes

Total 6.0 min >> Use **6** min.

### WEST

Of the inflows to the West basin, the most remote point lies to the west near lot 98. Flows will travel approximately 350 feet overland to AI 228, then 780 feet via stormpipe to the detention basin. Time of concentration is estimated as follows:

T(overland): L = 350 feet
Elevation difference = 506 - 496 = 10 feet
T(overland) = 5.6: See figure 1

T(stormpipe): L = 780 feet (estimated velocity 7 feet per second)
T(stormpipe) = 1.9 minutes

Total 7.5 min >> Use **7** min.

**BASIN PEAK INFLOWS:** Inflows to the basin have been estimated from the drainage area map.

**NORTH**

25 year-20 minute storm

5.61 Ac. x 3.26 cfs/Ac. 18.29 cfs

| | |
|---|---|
| 2 year-20 minute storm: | 9.03 cfs |
| 15 year-20 minute storm: | 14.81 cfs |
| 100 year-20 minute storm: | 23.39 cfs |

Note: the above flows were combined with the outflow of the west basin.

**SOUTH**

25 year-20 minute storm

11.17 Ac. x 3.26 cfs/Ac. 36.41 cfs

| | |
|---|---|
| 2 year-20 minute storm: | 17.98 cfs |
| 15 year-20 minute storm: | 29.49 cfs |
| 100 year-20 minute storm: | 46.58 cfs |

**WEST**

25 year-20 minute storm

15.03 Ac. x 3.26 cfs/Ac. 49.00 cfs

| | |
|---|---|
| 2 year-20 minute storm: | 24.20 cfs |
| 15 year-20 minute storm: | 39.68 cfs |
| 100 year-20 minute storm: | 62.68 cfs |

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**STORM ROUTING CALCULATIONS AND RESULTS**:

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

| | 20 MIN STORM | CALCULATED RELEASE RATE cfs | ATTENUATION PROVIDED cfs | PEAK ELEVATION |
|---|---|---|---|---|
| **NORTH** | | | | |
| | 2 YR | 7.35 | 16.64 | 460.57 |
| | 15 YR | 8.94 | 27.82 | 461.46 |
| | 25 YR | 9.74 | 32.72 | 461.96 |
| **SOUTH** | | | | |
| | 2 YR | 12.00 | 6.00 | 462.56 |
| | 15 YR | 15.46 | 14.04 | 463.58 |
| | 25 YR | 17.20 | 19.20 | 464.18 |
| **WEST** | | | | |
| | 2 YR | 15.66 | 8.54 | 468.59 |
| | 15 YR | 22.73 | 16.96 | 469.53 |
| | 25 YR | 25.43 | 23.57 | 470.10 |

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

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

**NORTH**
30' Spillway
Q = 86.07 cfs
C = 3.0
L = 30 ft
H = 0.97 ft
Sill = 462.00
H/W = 462.97

**SOUTH**
std double AI
Q = 46.58 cfs
C = 3.0
L = 17.5 ft
H = 0.92 ft
Sill = ~~464.18~~
H/W = ~~465.10~~

**WEST**
std double AI
Q = 62.68 cfs
C = 3.0
L = 17.5 ft
H = 1.13 ft
Sill = ~~470.10~~
H/W = ~~471.23~~

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## SUMMARY

### NORTH

| | |
|---|---|
| 25 year-20min H.W. | 461.46 |
| 100 year-20min H.W.(low flow blocked) | 462.97 |
| Low Flow Slot | 9" wide x 18" high |
| Low Flow Slot Elevation | 458.00 |
| Overflow Elevation | 462.00 |
| Top Of Berm | 464.00 |

### SOUTH

| | |
|---|---|
| 25 year-20min H.W. | 463.58 |
| 100 year-20min H.W.(low flow blocked) | 465.10 |
| Low Flow Slot | 12" wide x 24" high |
| Low Flow Slot Elevation | 460.00 |
| Overflow Elevation | 464.18 |
| Top Of Berm | 466.10 |

### WEST

| | |
|---|---|
| 25 year-20min H.W. | 469.53 |
| 100 year-20min H.W.(low flow blocked) | 471.23 |
| Low Flow Slot | 15" wide x 30" high |
| Low Flow Slot Elevation | 466.00 |
| Overflow Elevation | 470.10 |
| Top Of Berm | 472.23 |

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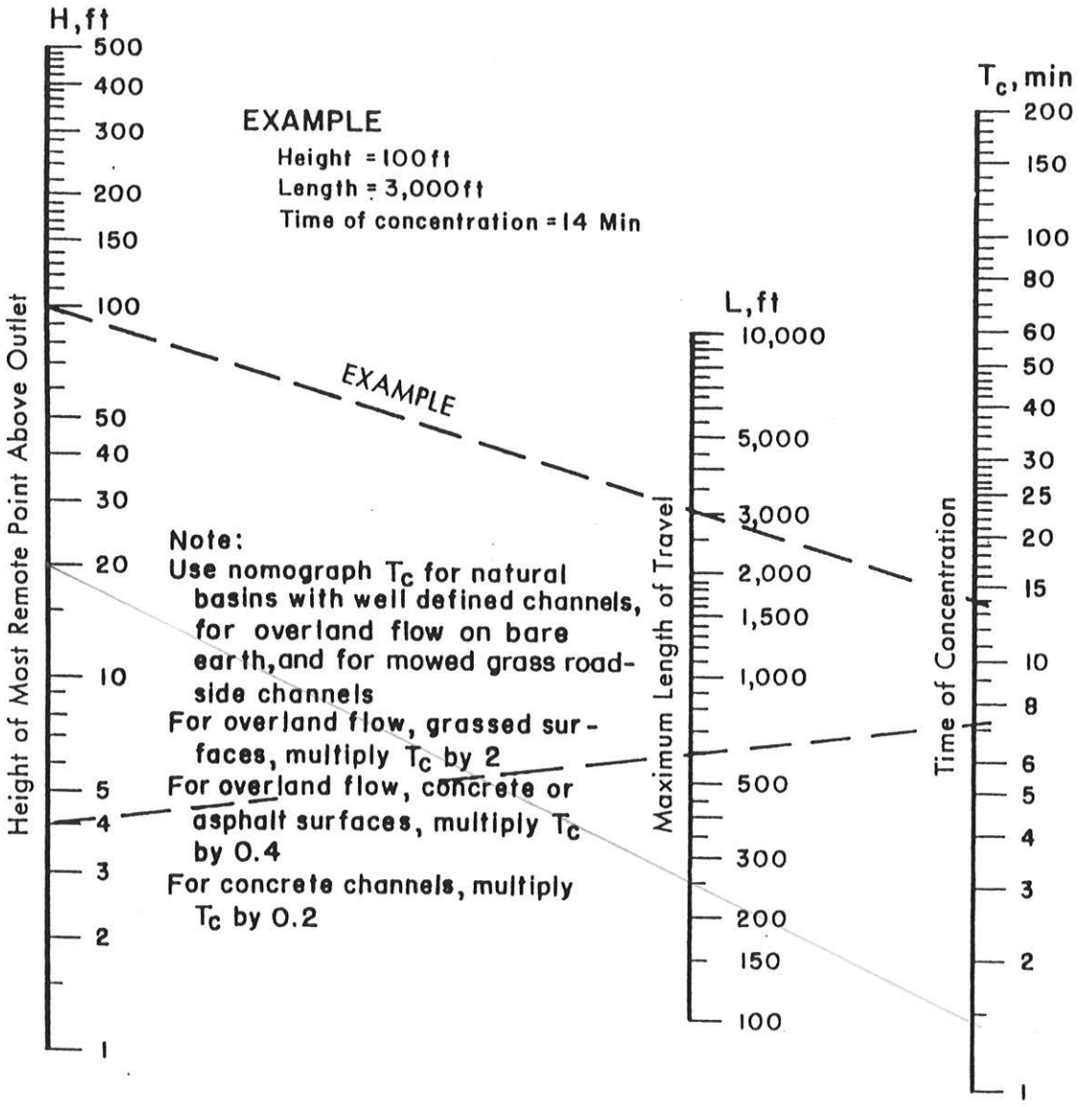
Project: THE CROSSINGS C SHEET ___ of ___

Date: _____ Project No: _____

Designed: _____ Checked: _____

NORTH BASIN




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

250' 483 - 462 (21) 1.5 x 2 = 3 min

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POND-2 Version: 5.20
S/N:

# The Crossings - Village C - North Basin

CALCULATED 08-04-1998 07:42:37
DISK FILE: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .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) |
|---|---|---|---|---|---|
| 458.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 460.00 | 18,361.00 | 0.42 | 0.42 | 0.28 | 0.28 |
| 462.00 | 21,833.00 | 0.50 | 1.38 | 0.92 | 1.20 |
| 464.00 | 25,534.00 | 0.59 | 1.63 | 1.09 | 2.29 |

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

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

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

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July 31, 1998
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***** COMPOSITE OUTFLOW SUMMARY ****

| Elevation (ft) | Q (cfs) | Contributing Structures |
|---|---|---|
| 458.00 | 0.0 | 1 |
| 458.25 | 0.3 | 1 |
| 458.50 | 0.8 | 1 |
| 458.75 | 1.5 | 1 |
| 459.00 | 2.3 | 1 |
| 459.25 | 3.1 | 1 |
| 459.50 | 4.1 | 1 |
| 459.75 | 5.2 | 1 |
| 460.00 | 6.1 | 2 |
| 460.25 | 6.6 | 2 |
| 460.50 | 7.2 | 2 |
| 460.75 | 7.7 | 2 |
| 461.00 | 8.1 | 2 |
| 461.25 | 8.6 | 2 |
| 461.50 | 9.0 | 2 |
| 461.75 | 9.4 | 2 |
| 462.00 | 9.8 | 2 |
| 462.25 | 10.1 | 2 |
| 462.50 | 10.5 | 2 |
| 462.75 | 10.8 | 2 |
| 463.00 | 11.2 | 2 +3 |
| 463.25 | 15.9 | 2 +3 |
| 463.50 | 24.2 | 2 +3 |
| 463.75 | 34.9 | 2 +3 |
| 464.00 | 47.4 | 2 +3 |

Outlet Structure File: 9203C .STR

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

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Outlet Structure File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .STR
Planimeter Input File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .VOL
Rating Table Output File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND

Min. Elev.(ft) = 458 Max. Elev.(ft) = 464 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 |
| WEIR-VR | 3 | | | -> | 3 |

Outflow rating table summary was stored in file:
C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND

Outlet Structure File: 9203C .STR

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

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

WEIR-VR
Weir - Vertical Rectangular

E1 elev.(ft)? 458
E2 elev.(ft)? 464.001
Weir coefficient? 3
Weir elev.(ft)? 458.00
Length (ft)? .750000
Contracted/Suppressed (C/S)? S

Outlet Structure File: 9203C .STR

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

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

ORIFICE
Orifice - Based on Area and Datum Elevation

| | |
|---|---|
| E1 elev.(ft)? | 459.50 |
| E2 elev.(ft)? | 464.001 |
| Orifice coeff.? | 0.6 |
| Invert elev.(ft)? | 458.000 |
| Datum elev.(ft) ? | 458.75 |
| Orifice area (sq ft)? | 1.125 |

Outlet Structure File: 9203C .STR

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

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>>>>>> Structure No. 3 <<<<<<
(Input Data)

WEIR-VR
Weir - Vertical Rectangular

| | |
|---|---|
| E1 elev.(ft)? | 463 |
| E2 elev.(ft)? | 464.001 |
| Weir coefficient? | 3 |
| Weir elev.(ft)? | 463.00 |
| Length (ft)? | 11.67 |
| Contracted/Suppressed (C/S)? | S |

Outlet Structure File: 9203C .STR

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

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

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

| Elevation (ft) | Q (cfs) | Computation Messages |
|---|---|---|
| 458.00 | 0.0 | H =0.0 |
| 458.25 | 0.3 | H =.25 |
| 458.50 | 0.8 | H =.5 |
| 458.75 | 1.5 | H =.750 |
| 459.00 | 2.3 | H =1.0 |
| 459.25 | 3.1 | H =1.25 |
| 459.50 | 4.1 | H =1.5 |
| 459.75 | 5.2 | H =1.75 |
| 460.00 | 6.4 | H =2.0 |
| 460.25 | 7.6 | H =2.25 |
| 460.50 | 8.9 | H =2.5 |
| 460.75 | 10.3 | H =2.75 |
| 461.00 | 11.7 | H =3.0 |
| 461.25 | 13.2 | H =3.25 |
| 461.50 | 14.7 | H =3.5 |
| 461.75 | 16.3 | H =3.75 |
| 462.00 | 18.0 | H =4.0 |
| 462.25 | 19.7 | H =4.25 |
| 462.50 | 21.5 | H =4.5 |
| 462.75 | 23.3 | H =4.75 |
| 463.00 | 25.2 | H =5.0 |
| 463.25 | 27.1 | H =5.25 |
| 463.50 | 29.0 | H =5.5 |
| 463.75 | 31.0 | H =5.75 |
| 464.00 | 33.1 | H =6.0 |

C = 3 L (ft) = .75
H (ft) = Table elev. - Invert elev. ( 458 ft )
Q (cfs) = C * L * (H**1.5) -- Suppressed Weir

Outlet Structure File: 9203C .STR

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

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

| Elevation (ft) | Q (cfs) | Computation Messages |
|---|---|---|
| 458.00 | 0.0 | E < E1=459.50 |
| 458.25 | 0.0 | E < E1=459.50 |
| 458.50 | 0.0 | E < E1=459.50 |
| 458.75 | 0.0 | E < E1=459.50 |
| 459.00 | 0.0 | E < E1=459.50 |
| 459.25 | 0.0 | E < E1=459.50 |
| 459.50 | 4.7 | H =.750 |
| 459.75 | 5.4 | H =1.0 |
| 460.00 | 6.1 | H =1.25 |
| 460.25 | 6.6 | H =1.5 |
| 460.50 | 7.2 | H =1.75 |
| 460.75 | 7.7 | H =2.0 |
| 461.00 | 8.1 | H =2.25 |
| 461.25 | 8.6 | H =2.5 |
| 461.50 | 9.0 | H =2.75 |
| 461.75 | 9.4 | H =3.0 |
| 462.00 | 9.8 | H =3.25 |
| 462.25 | 10.1 | H =3.5 |
| 462.50 | 10.5 | H =3.75 |
| 462.75 | 10.8 | H =4.0 |
| 463.00 | 11.2 | H =4.25 |
| 463.25 | 11.5 | H =4.5 |
| 463.50 | 11.8 | H =4.75 |
| 463.75 | 12.1 | H =5.0 |
| 464.00 | 12.4 | H =5.25 |

C = .6 A = 1.125 sq.ft.
H (ft) = Table elev. - Datum elev. ( 458.75 ft )
Q (cfs) = C * A * sqr(2g * H)

Outlet Structure File: 9203C .STR

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Outflow Rating Table for Structure #3
WEIR-VR Weir - Vertical Rectangular

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

| Elevation (ft) | Q (cfs) | Computation Messages |
|---|---|---|
| 458.00 | 0.0 | E < Inv.El.= 463 |
| 458.25 | 0.0 | E < Inv.El.= 463 |
| 458.50 | 0.0 | E < Inv.El.= 463 |
| 458.75 | 0.0 | E < Inv.El.= 463 |
| 459.00 | 0.0 | E < Inv.El.= 463 |
| 459.25 | 0.0 | E < Inv.El.= 463 |
| 459.50 | 0.0 | E < Inv.El.= 463 |
| 459.75 | 0.0 | E < Inv.El.= 463 |
| 460.00 | 0.0 | E < Inv.El.= 463 |
| 460.25 | 0.0 | E < Inv.El.= 463 |
| 460.50 | 0.0 | E < Inv.El.= 463 |
| 460.75 | 0.0 | E < Inv.El.= 463 |
| 461.00 | 0.0 | E < Inv.El.= 463 |
| 461.25 | 0.0 | E < Inv.El.= 463 |
| 461.50 | 0.0 | E < Inv.El.= 463 |
| 461.75 | 0.0 | E < Inv.El.= 463 |
| 462.00 | 0.0 | E < Inv.El.= 463 |
| 462.25 | 0.0 | E < Inv.El.= 463 |
| 462.50 | 0.0 | E < Inv.El.= 463 |
| 462.75 | 0.0 | E < Inv.El.= 463 |
| 463.00 | 0.0 | H =0.0 |
| 463.25 | 4.4 | H =.25 |
| 463.50 | 12.4 | H =.5 |
| 463.75 | 22.7 | H =.750 |
| 464.00 | 35.0 | H =1.0 |

C = 3 L (ft) = 11.67
H (ft) = Table elev. - Invert elev. ( 463 ft )
Q (cfs) = C * L * (H**1.5) -- Suppressed Weir

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Outflow Rating Table A
Table A = 1 ? 2

| Elevation (ft) | Q (cfs) | Contributing Structures |
|---|---|---|
| 458.00 | 0.0 | 1 |
| 458.25 | 0.3 | 1 |
| 458.50 | 0.8 | 1 |
| 458.75 | 1.5 | 1 |
| 459.00 | 2.3 | 1 |
| 459.25 | 3.1 | 1 |
| 459.50 | 4.1 | 1 |
| 459.75 | 5.2 | 1 |
| 460.00 | 6.1 | 2 |
| 460.25 | 6.6 | 2 |
| 460.50 | 7.2 | 2 |
| 460.75 | 7.7 | 2 |
| 461.00 | 8.1 | 2 |
| 461.25 | 8.6 | 2 |
| 461.50 | 9.0 | 2 |
| 461.75 | 9.4 | 2 |
| 462.00 | 9.8 | 2 |
| 462.25 | 10.1 | 2 |
| 462.50 | 10.5 | 2 |
| 462.75 | 10.8 | 2 |
| 463.00 | 11.2 | 2 |
| 463.25 | 11.5 | 2 |
| 463.50 | 11.8 | 2 |
| 463.75 | 12.1 | 2 |
| 464.00 | 12.4 | 2 |

**********
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* DETENTION ANALYSIS *
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* July 31, 1998 *
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Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-002.HYD
Rating Table file: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND

----INITIAL CONDITIONS----
Elevation = 458.00 ft
Outflow = 0.00 cfs
Storage = 0.00 ac-ft

GIVEN POND DATA

| ELEVATION (ft) | OUTFLOW (cfs) | STORAGE (ac-ft) |
|---|---|---|
| 458.00 | 0.0 | 0.000 |
| 458.25 | 0.3 | 0.001 |
| 458.50 | 0.8 | 0.004 |
| 458.75 | 1.5 | 0.015 |
| 459.00 | 2.3 | 0.035 |
| 459.25 | 3.1 | 0.069 |
| 459.50 | 4.1 | 0.119 |
| 459.75 | 5.2 | 0.188 |
| 460.00 | 6.1 | 0.281 |
| 460.25 | 6.6 | 0.388 |
| 460.50 | 7.2 | 0.497 |
| 460.75 | 7.7 | 0.608 |
| 461.00 | 8.1 | 0.722 |
| 461.25 | 8.6 | 0.838 |
| 461.50 | 9.0 | 0.957 |
| 461.75 | 9.4 | 1.079 |
| 462.00 | 9.8 | 1.203 |
| 462.25 | 10.1 | 1.329 |
| 462.50 | 10.5 | 1.458 |
| 462.75 | 10.8 | 1.590 |
| 463.00 | 11.2 | 1.724 |
| 463.25 | 15.9 | 1.862 |
| 463.50 | 24.2 | 2.001 |
| 463.75 | 34.9 | 2.144 |
| 464.00 | 47.4 | 2.289 |

INTERMEDIATE ROUTING COMPUTATIONS

| 2S/t (cfs) | 2S/t + O (cfs) |
|---|---|
| 0.0 | 0.0 |
| 0.8 | 1.1 |
| 6.4 | 7.2 |
| 21.5 | 23.0 |
| 51.0 | 53.3 |
| 99.6 | 102.7 |
| 172.1 | 176.2 |
| 273.3 | 278.5 |
| 408.0 | 414.1 |
| 562.8 | 569.4 |
| 721.0 | 728.2 |
| 882.8 | 890.5 |
| 1048.2 | 1056.3 |
| 1217.1 | 1225.7 |
| 1389.8 | 1398.8 |
| 1566.1 | 1575.5 |
| 1746.1 | 1755.9 |
| 1930.0 | 1940.1 |
| 2117.5 | 2128.0 |
| 2308.8 | 2319.6 |
| 2504.0 | 2515.2 |
| 2703.0 | 2718.9 |
| 2905.8 | 2930.0 |
| 3112.6 | 3147.5 |
| 3323.4 | 3370.8 |

Time increment (t) = 1.0 min.

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-002.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\920302 .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 | 458.00 |
| 1.0 | 3.98 | 4.0 | 2.9 | 4.0 | 0.54 | 458.37 |
| 2.0 | 8.02 | 12.0 | 12.6 | 14.9 | 1.14 | 458.62 |
| 3.0 | 12.10 | 20.1 | 29.2 | 32.7 | 1.76 | 458.83 |
| 4.0 | 13.16 | 25.3 | 49.9 | 54.5 | 2.32 | 459.01 |
| 5.0 | 14.19 | 27.4 | 71.8 | 77.2 | 2.69 | 459.12 |
| 6.0 | 15.22 | 29.4 | 95.1 | 101.2 | 3.08 | 459.24 |
| 7.0 | 16.28 | 31.5 | 119.7 | 126.6 | 3.42 | 459.33 |
| 8.0 | 17.26 | 33.5 | 145.7 | 153.3 | 3.79 | 459.42 |
| 9.0 | 18.08 | 35.3 | 172.7 | 181.0 | 4.15 | 459.51 |
| 10.0 | 18.79 | 36.9 | 200.7 | 209.6 | 4.46 | 459.58 |
| 11.0 | 19.46 | 38.3 | 229.4 | 238.9 | 4.77 | 459.65 |
| 12.0 | 20.07 | 39.5 | 258.7 | 268.9 | 5.10 | 459.73 |
| 13.0 | 20.65 | 40.7 | 288.8 | 299.4 | 5.34 | 459.79 |
| 14.0 | 21.21 | 41.9 | 319.5 | 330.6 | 5.55 | 459.85 |
| 15.0 | 21.73 | 42.9 | 351.0 | 362.5 | 5.76 | 459.90 |
| 16.0 | 22.23 | 44.0 | 383.0 | 394.9 | 5.97 | 459.96 |
| 17.0 | 22.69 | 44.9 | 415.6 | 427.9 | 6.14 | 460.02 |
| 18.0 | 23.14 | 45.8 | 448.9 | 461.4 | 6.25 | 460.08 |
| 19.0 | 23.57 | 46.7 | 482.9 | 495.6 | 6.36 | 460.13 |
| 20.0 | 23.99 | 47.6 | 517.5 | 530.5 | 6.47 | 460.19 |
| 21.0 | 21.37 | 45.4 | 549.7 | 562.9 | 6.58 | 460.24 |
| 22.0 | 18.60 | 40.0 | 576.3 | 589.7 | 6.68 | 460.28 |
| 23.0 | 15.67 | 34.3 | 597.1 | 610.6 | 6.76 | 460.31 |
| 24.0 | 15.57 | 31.2 | 614.7 | 628.3 | 6.82 | 460.34 |
| 25.0 | 15.33 | 30.9 | 631.8 | 645.6 | 6.89 | 460.37 |
| 26.0 | 14.95 | 30.3 | 648.2 | 662.1 | 6.95 | 460.40 |
| 27.0 | 14.46 | 29.4 | 663.6 | 677.6 | 7.01 | 460.42 |
| 28.0 | 13.88 | 28.3 | 677.8 | 691.9 | 7.06 | 460.44 |
| 29.0 | 13.29 | 27.2 | 690.8 | 705.0 | 7.11 | 460.46 |
| 30.0 | 12.72 | 26.0 | 702.5 | 716.8 | 7.16 | 460.48 |
| 31.0 | 12.16 | 24.9 | 712.9 | 727.3 | 7.20 | 460.50 |
| 32.0 | 11.62 | 23.8 | 722.3 | 736.7 | 7.23 | 460.51 |
| 33.0 | 11.10 | 22.7 | 730.5 | 745.0 | 7.25 | 460.53 |
| 34.0 | 10.61 | 21.7 | 737.6 | 752.2 | 7.27 | 460.54 |
| 35.0 | 10.13 | 20.7 | 743.8 | 758.4 | 7.29 | 460.55 |
| 36.0 | 9.65 | 19.8 | 749.0 | 763.6 | 7.31 | 460.55 |
| 37.0 | 9.21 | 18.9 | 753.2 | 767.8 | 7.32 | 460.56 |
| 38.0 | 8.77 | 18.0 | 756.5 | 771.2 | 7.33 | 460.57 |
| 39.0 | 8.29 | 17.1 | 758.9 | 773.6 | 7.34 | 460.57 |
| 40.0 | 7.81 | 16.1 | 760.3 | 775.0 | 7.34 | 460.57 |
| 41.0 | 7.36 | 15.2 | 760.8 | 775.5 | 7.35 | 460.57 |
| 42.0 | 6.92 | 14.3 | 760.4 | 775.0 | 7.34 | 460.57 |
| 43.0 | 6.42 | 13.3 | 759.0 | 773.7 | 7.34 | 460.57 |
| 44.0 | 5.94 | 12.4 | 756.7 | 771.4 | 7.33 | 460.57 |

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-002.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\920302 .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 | 5.48 | 11.4 | 753.5 | 768.1 | 7.32 | 460.56 |
| 46.0 | 5.04 | 10.5 | 749.4 | 764.0 | 7.31 | 460.56 |
| 47.0 | 4.58 | 9.6 | 744.4 | 759.0 | 7.29 | 460.55 |
| 48.0 | 4.15 | 8.7 | 738.6 | 753.1 | 7.28 | 460.54 |
| 49.0 | 3.75 | 7.9 | 732.0 | 746.5 | 7.26 | 460.53 |
| 50.0 | 3.19 | 6.9 | 724.5 | 738.9 | 7.23 | 460.52 |
| 51.0 | 2.72 | 5.9 | 715.9 | 730.4 | 7.21 | 460.50 |
| 52.0 | 2.28 | 5.0 | 706.6 | 720.9 | 7.17 | 460.49 |
| 53.0 | 1.79 | 4.1 | 696.4 | 710.7 | 7.13 | 460.47 |
| 54.0 | 1.40 | 3.2 | 685.4 | 699.6 | 7.09 | 460.45 |
| 55.0 | 0.93 | 2.3 | 673.6 | 687.7 | 7.05 | 460.44 |
| 56.0 | 0.57 | 1.5 | 661.1 | 675.1 | 7.00 | 460.42 |
| 57.0 | 0.11 | 0.7 | 647.9 | 661.8 | 6.95 | 460.40 |
| 58.0 | 0.01 | 0.1 | 634.3 | 648.0 | 6.90 | 460.37 |
| 59.0 | 0.00 | 0.0 | 620.6 | 634.3 | 6.85 | 460.35 |
| 60.0 | 0.00 | 0.0 | 607.0 | 620.6 | 6.79 | 460.33 |
| 61.0 | 0.00 | 0.0 | 593.5 | 607.0 | 6.74 | 460.31 |
| 62.0 | 0.00 | 0.0 | 580.1 | 593.5 | 6.69 | 460.29 |
| 63.0 | 0.00 | 0.0 | 566.8 | 580.1 | 6.64 | 460.27 |
| 64.0 | 0.00 | 0.0 | 553.7 | 566.8 | 6.59 | 460.25 |
| 65.0 | 0.00 | 0.0 | 540.6 | 553.7 | 6.55 | 460.22 |
| 66.0 | 0.00 | 0.0 | 527.5 | 540.6 | 6.51 | 460.20 |
| 67.0 | 0.00 | 0.0 | 514.6 | 527.5 | 6.47 | 460.18 |
| 68.0 | 0.00 | 0.0 | 501.8 | 514.6 | 6.42 | 460.16 |
| 69.0 | 0.00 | 0.0 | 489.0 | 501.8 | 6.38 | 460.14 |
| 70.0 | 0.00 | 0.0 | 476.3 | 489.0 | 6.34 | 460.12 |
| 71.0 | 0.00 | 0.0 | 463.7 | 476.3 | 6.30 | 460.10 |
| 72.0 | 0.00 | 0.0 | 451.2 | 463.7 | 6.26 | 460.08 |
| 73.0 | 0.00 | 0.0 | 438.8 | 451.2 | 6.22 | 460.06 |
| 74.0 | 0.00 | 0.0 | 426.4 | 438.8 | 6.18 | 460.04 |
| 75.0 | 0.00 | 0.0 | 414.1 | 426.4 | 6.14 | 460.02 |
| 76.0 | 0.00 | 0.0 | 401.9 | 414.1 | 6.10 | 460.00 |
| 77.0 | 0.00 | 0.0 | 389.9 | 401.9 | 6.02 | 459.98 |
| 78.0 | 0.00 | 0.0 | 378.0 | 389.9 | 5.94 | 459.96 |
| 79.0 | 0.00 | 0.0 | 366.3 | 378.0 | 5.86 | 459.93 |
| 80.0 | 0.00 | 0.0 | 354.7 | 366.3 | 5.78 | 459.91 |
| 81.0 | 0.00 | 0.0 | 343.3 | 354.7 | 5.71 | 459.89 |
| 82.0 | 0.00 | 0.0 | 332.0 | 343.3 | 5.63 | 459.87 |
| 83.0 | 0.00 | 0.0 | 320.9 | 332.0 | 5.56 | 459.85 |
| 84.0 | 0.00 | 0.0 | 310.0 | 320.9 | 5.48 | 459.83 |
| 85.0 | 0.00 | 0.0 | 299.2 | 310.0 | 5.41 | 459.81 |
| 86.0 | 0.00 | 0.0 | 288.5 | 299.2 | 5.34 | 459.79 |
| 87.0 | 0.00 | 0.0 | 278.0 | 288.5 | 5.27 | 459.77 |
| 88.0 | 0.00 | 0.0 | 267.6 | 278.0 | 5.19 | 459.75 |
| 89.0 | 0.00 | 0.0 | 257.4 | 267.6 | 5.08 | 459.72 |
| 90.0 | 0.00 | 0.0 | 247.5 | 257.4 | 4.97 | 459.70 |

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

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-002.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\920302 .HYD

Starting Pond W.S. Elevation = 458.00 ft

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

| | | |
|---|---|---|
| Peak Inflow | = | 23.99 cfs |
| Peak Outflow | = | 7.35 cfs |
| Peak Elevation | = | 460.57 ft |

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

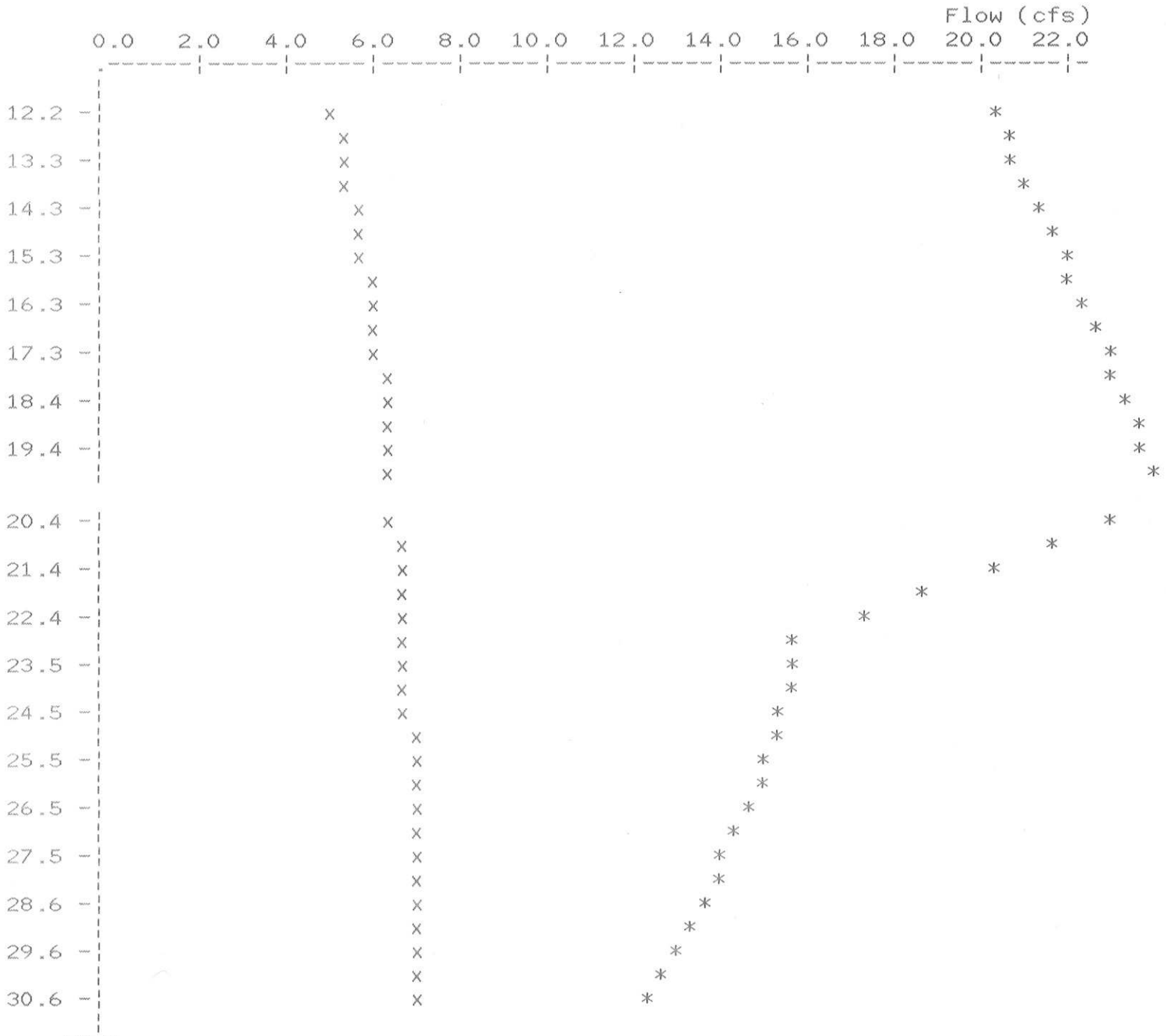
| | | |
|---|---|---|
| Initial Storage | = | 0.00 ac-ft |
| Peak Storage From Storm | = | 0.53 ac-ft |
| Total Storage in Pond | = | 0.53 ac-ft |

Return Freq: 2 years

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-002.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\920302 .HYD

EXECUTED: 08-04-1998 07:51:02

Peak Inflow = 23.99 cfs
Peak Outflow = 7.35 cfs
Peak Elevation = 460.57 ft




x File: C:\WINDOWS\DESKTOP\PONDPA~1\920302 .HYD Qmax = 7.3 cfs
* File: C:\WINDOWS\DESKTOP\PONDPA~1\9203-002.HYD Qmax = 24.0 cfs

The Crossings - Village C - North Basin
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
July 31, 1998

Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-015.HYD
Rating Table file: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND

----INITIAL CONDITIONS----
Elevation = 458.00 ft
Outflow = 0.00 cfs
Storage = 0.00 ac-ft

GIVEN POND DATA

| ELEVATION (ft) | OUTFLOW (cfs) | STORAGE (ac-ft) |
|---|---|---|
| 458.00 | 0.0 | 0.000 |
| 458.25 | 0.3 | 0.001 |
| 458.50 | 0.8 | 0.004 |
| 458.75 | 1.5 | 0.015 |
| 459.00 | 2.3 | 0.035 |
| 459.25 | 3.1 | 0.069 |
| 459.50 | 4.1 | 0.119 |
| 459.75 | 5.2 | 0.188 |
| 460.00 | 6.1 | 0.281 |
| 460.25 | 6.6 | 0.388 |
| 460.50 | 7.2 | 0.497 |
| 460.75 | 7.7 | 0.608 |
| 461.00 | 8.1 | 0.722 |
| 461.25 | 8.6 | 0.838 |
| 461.50 | 9.0 | 0.957 |
| 461.75 | 9.4 | 1.079 |
| 462.00 | 9.8 | 1.203 |
| 462.25 | 10.1 | 1.329 |
| 462.50 | 10.5 | 1.458 |
| 462.75 | 10.8 | 1.590 |
| 463.00 | 11.2 | 1.724 |
| 463.25 | 15.9 | 1.862 |
| 463.50 | 24.2 | 2.001 |
| 463.75 | 34.9 | 2.144 |
| 464.00 | 47.4 | 2.289 |

INTERMEDIATE ROUTING COMPUTATIONS

| 2S/t (cfs) | 2S/t + O (cfs) |
|---|---|
| 0.0 | 0.0 |
| 0.8 | 1.1 |
| 6.4 | 7.2 |
| 21.5 | 23.0 |
| 51.0 | 53.3 |
| 99.6 | 102.7 |
| 172.1 | 176.2 |
| 273.3 | 278.5 |
| 408.0 | 414.1 |
| 562.8 | 569.4 |
| 721.0 | 728.2 |
| 882.8 | 890.5 |
| 1048.2 | 1056.3 |
| 1217.1 | 1225.7 |
| 1389.8 | 1398.8 |
| 1566.1 | 1575.5 |
| 1746.1 | 1755.9 |
| 1930.0 | 1940.1 |
| 2117.5 | 2128.0 |
| 2308.8 | 2319.6 |
| 2504.0 | 2515.2 |
| 2703.0 | 2718.9 |
| 2905.8 | 2930.0 |
| 3112.6 | 3147.5 |
| 3323.4 | 3370.8 |

Time increment (t) = 1.0 min.

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-015.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203015 .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 | 458.00 |
| 1.0 | 6.25 | 6.3 | 4.8 | 6.3 | 0.72 | 458.46 |
| 2.0 | 12.63 | 18.9 | 20.6 | 23.7 | 1.52 | 458.76 |
| 3.0 | 18.94 | 31.6 | 47.7 | 52.2 | 2.27 | 458.99 |
| 4.0 | 20.30 | 39.2 | 81.2 | 86.9 | 2.84 | 459.17 |
| 5.0 | 21.74 | 42.0 | 116.5 | 123.3 | 3.38 | 459.32 |
| 6.0 | 23.14 | 44.9 | 153.6 | 161.4 | 3.90 | 459.45 |
| 7.0 | 24.49 | 47.6 | 192.5 | 201.2 | 4.37 | 459.56 |
| 8.0 | 25.84 | 50.3 | 233.2 | 242.8 | 4.82 | 459.66 |
| 9.0 | 27.11 | 53.0 | 275.6 | 286.1 | 5.25 | 459.76 |
| 10.0 | 28.30 | 55.4 | 319.9 | 331.0 | 5.55 | 459.85 |
| 11.0 | 29.42 | 57.7 | 365.9 | 377.7 | 5.86 | 459.93 |
| 12.0 | 30.54 | 60.0 | 413.6 | 425.9 | 6.14 | 460.02 |
| 13.0 | 31.61 | 62.2 | 463.2 | 475.8 | 6.30 | 460.10 |
| 14.0 | 32.65 | 64.3 | 514.5 | 527.4 | 6.46 | 460.18 |
| 15.0 | 33.65 | 66.3 | 567.5 | 580.8 | 6.64 | 460.27 |
| 16.0 | 34.48 | 68.1 | 622.0 | 635.7 | 6.85 | 460.35 |
| 17.0 | 35.18 | 69.7 | 677.5 | 691.6 | 7.06 | 460.44 |
| 18.0 | 35.81 | 71.0 | 734.0 | 748.5 | 7.26 | 460.53 |
| 19.0 | 36.33 | 72.1 | 791.2 | 806.1 | 7.44 | 460.62 |
| 20.0 | 36.76 | 73.1 | 849.1 | 864.3 | 7.62 | 460.71 |
| 21.0 | 32.15 | 68.9 | 902.4 | 918.0 | 7.77 | 460.79 |
| 22.0 | 27.50 | 59.7 | 946.4 | 962.1 | 7.87 | 460.86 |
| 23.0 | 22.72 | 50.2 | 980.7 | 996.6 | 7.96 | 460.91 |
| 24.0 | 22.70 | 45.4 | 1010.0 | 1026.1 | 8.03 | 460.95 |
| 25.0 | 22.57 | 45.3 | 1039.1 | 1055.3 | 8.10 | 461.00 |
| 26.0 | 22.32 | 44.9 | 1067.6 | 1084.0 | 8.18 | 461.04 |
| 27.0 | 21.93 | 44.3 | 1095.3 | 1111.9 | 8.26 | 461.08 |
| 28.0 | 21.44 | 43.4 | 1122.0 | 1138.7 | 8.34 | 461.12 |
| 29.0 | 20.82 | 42.3 | 1147.5 | 1164.3 | 8.42 | 461.16 |
| 30.0 | 20.13 | 41.0 | 1171.4 | 1188.4 | 8.49 | 461.19 |
| 31.0 | 19.39 | 39.5 | 1193.8 | 1210.9 | 8.56 | 461.23 |
| 32.0 | 18.57 | 38.0 | 1214.6 | 1231.8 | 8.61 | 461.26 |
| 33.0 | 17.72 | 36.3 | 1233.5 | 1250.9 | 8.66 | 461.29 |
| 34.0 | 16.92 | 34.6 | 1250.8 | 1268.2 | 8.70 | 461.31 |
| 35.0 | 16.15 | 33.1 | 1266.4 | 1283.9 | 8.73 | 461.33 |
| 36.0 | 15.43 | 31.6 | 1280.4 | 1298.0 | 8.77 | 461.35 |
| 37.0 | 14.74 | 30.2 | 1293.0 | 1310.6 | 8.80 | 461.37 |
| 38.0 | 14.10 | 28.8 | 1304.2 | 1321.8 | 8.82 | 461.39 |
| 39.0 | 13.50 | 27.6 | 1314.1 | 1331.8 | 8.85 | 461.40 |
| 40.0 | 12.92 | 26.4 | 1322.8 | 1340.5 | 8.87 | 461.42 |
| 41.0 | 12.36 | 25.3 | 1330.3 | 1348.1 | 8.88 | 461.43 |
| 42.0 | 11.81 | 24.2 | 1336.7 | 1354.5 | 8.90 | 461.44 |
| 43.0 | 11.29 | 23.1 | 1342.0 | 1359.8 | 8.91 | 461.44 |
| 44.0 | 10.79 | 22.1 | 1346.2 | 1364.1 | 8.92 | 461.45 |

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-015.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203015 .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 | 10.30 | 21.1 | 1349.4 | 1367.3 | 8.93 | 461.45 |
| 46.0 | 9.82 | 20.1 | 1351.7 | 1369.6 | 8.93 | 461.46 |
| 47.0 | 9.37 | 19.2 | 1353.0 | 1370.9 | 8.94 | 461.46 |
| 48.0 | 8.93 | 18.3 | 1353.4 | 1371.3 | 8.94 | 461.46 |
| 49.0 | 8.48 | 17.4 | 1353.0 | 1370.9 | 8.94 | 461.46 |
| 50.0 | 7.98 | 16.5 | 1351.6 | 1369.4 | 8.93 | 461.46 |
| 51.0 | 7.52 | 15.5 | 1349.2 | 1367.1 | 8.93 | 461.45 |
| 52.0 | 7.09 | 14.6 | 1346.0 | 1363.8 | 8.92 | 461.45 |
| 53.0 | 6.61 | 13.7 | 1341.9 | 1359.7 | 8.91 | 461.44 |
| 54.0 | 6.11 | 12.7 | 1336.8 | 1354.6 | 8.90 | 461.44 |
| 55.0 | 5.65 | 11.8 | 1330.8 | 1348.6 | 8.88 | 461.43 |
| 56.0 | 5.21 | 10.9 | 1323.9 | 1341.7 | 8.87 | 461.42 |
| 57.0 | 4.74 | 9.9 | 1316.2 | 1333.9 | 8.85 | 461.41 |
| 58.0 | 4.30 | 9.0 | 1307.6 | 1325.2 | 8.83 | 461.39 |
| 59.0 | 3.90 | 8.2 | 1298.1 | 1315.8 | 8.81 | 461.38 |
| 60.0 | 3.39 | 7.3 | 1287.9 | 1305.4 | 8.78 | 461.37 |
| 61.0 | 2.90 | 6.3 | 1276.6 | 1294.1 | 8.76 | 461.35 |
| 62.0 | 0.00 | 2.9 | 1262.1 | 1279.5 | 8.72 | 461.33 |
| 63.0 | 0.00 | 0.0 | 1244.7 | 1262.1 | 8.68 | 461.30 |
| 64.0 | 0.00 | 0.0 | 1227.4 | 1244.7 | 8.64 | 461.28 |
| 65.0 | 0.00 | 0.0 | 1210.2 | 1227.4 | 8.60 | 461.25 |
| 66.0 | 0.00 | 0.0 | 1193.1 | 1210.2 | 8.55 | 461.23 |
| 67.0 | 0.00 | 0.0 | 1176.1 | 1193.1 | 8.50 | 461.20 |
| 68.0 | 0.00 | 0.0 | 1159.2 | 1176.1 | 8.45 | 461.18 |
| 69.0 | 0.00 | 0.0 | 1142.4 | 1159.2 | 8.40 | 461.15 |
| 70.0 | 0.00 | 0.0 | 1125.7 | 1142.4 | 8.35 | 461.13 |
| 71.0 | 0.00 | 0.0 | 1109.1 | 1125.7 | 8.30 | 461.10 |
| 72.0 | 0.00 | 0.0 | 1092.6 | 1109.1 | 8.26 | 461.08 |
| 73.0 | 0.00 | 0.0 | 1076.1 | 1092.6 | 8.21 | 461.05 |
| 74.0 | 0.00 | 0.0 | 1059.8 | 1076.1 | 8.16 | 461.03 |
| 75.0 | 0.00 | 0.0 | 1043.6 | 1059.8 | 8.11 | 461.01 |
| 76.0 | 0.00 | 0.0 | 1027.5 | 1043.6 | 8.07 | 460.98 |
| 77.0 | 0.00 | 0.0 | 1011.4 | 1027.5 | 8.03 | 460.96 |
| 78.0 | 0.00 | 0.0 | 995.4 | 1011.4 | 7.99 | 460.93 |
| 79.0 | 0.00 | 0.0 | 979.5 | 995.4 | 7.95 | 460.91 |
| 80.0 | 0.00 | 0.0 | 963.7 | 979.5 | 7.91 | 460.88 |
| 81.0 | 0.00 | 0.0 | 947.9 | 963.7 | 7.88 | 460.86 |
| 82.0 | 0.00 | 0.0 | 932.3 | 947.9 | 7.84 | 460.84 |
| 83.0 | 0.00 | 0.0 | 916.7 | 932.3 | 7.80 | 460.81 |
| 84.0 | 0.00 | 0.0 | 901.1 | 916.7 | 7.76 | 460.79 |
| 85.0 | 0.00 | 0.0 | 885.7 | 901.1 | 7.73 | 460.77 |
| 86.0 | 0.00 | 0.0 | 870.3 | 885.7 | 7.69 | 460.74 |
| 87.0 | 0.00 | 0.0 | 855.0 | 870.3 | 7.64 | 460.72 |
| 88.0 | 0.00 | 0.0 | 839.8 | 855.0 | 7.59 | 460.70 |
| 89.0 | 0.00 | 0.0 | 824.8 | 839.8 | 7.54 | 460.67 |
| 90.0 | 0.00 | 0.0 | 809.8 | 824.8 | 7.50 | 460.65 |

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

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-015.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203015 .HYD

Starting Pond W.S. Elevation = 458.00 ft

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

| | | |
|---|---|---|
| Peak Inflow | = | 36.76 cfs |
| Peak Outflow | = | 8.94 cfs |
| Peak Elevation | = | 461.46 ft |

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

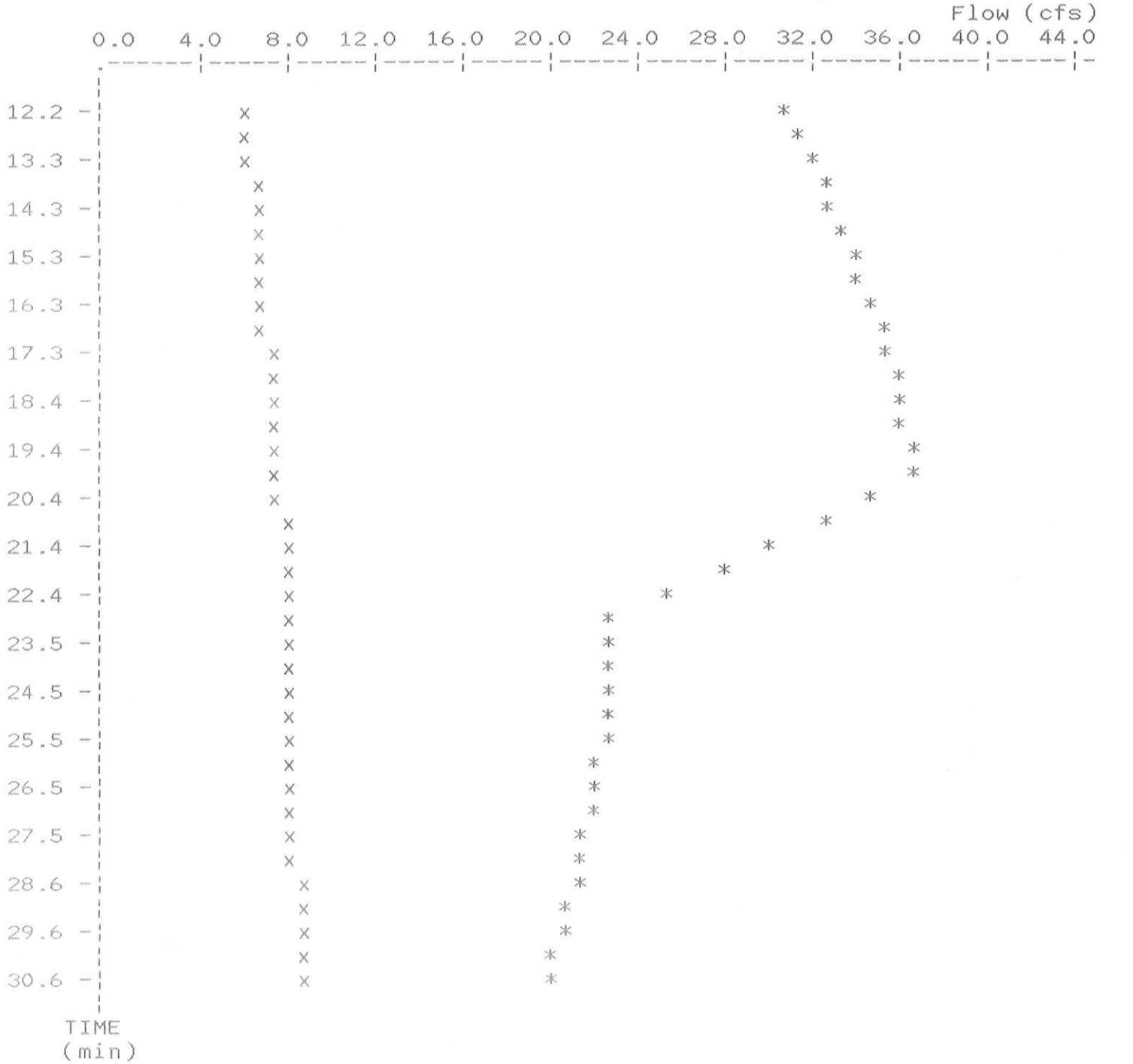
| | | |
|---|---|---|
| Initial Storage | = | 0.00 ac-ft |
| Peak Storage From Storm | = | 0.94 ac-ft |
| Total Storage in Pond | = | 0.94 ac-ft |

Return Freq: 15 years

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-015.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203015 .HYD

EXECUTED: 08-04-1998 07:51:02

Peak Inflow = 36.76 cfs
Peak Outflow = 8.94 cfs
Peak Elevation = 461.46 ft




x File: C:\WINDOWS\DESKTOP\PONDPA~1\9203015 .HYD Qmax = 8.9 cfs
* File: C:\WINDOWS\DESKTOP\PONDPA~1\9203-015.HYD Qmax = 36.8 cfs

```
**********************************************
*                                            *
* The Crossings - Village C - North Basin    *
*            DETENTION ANALYSIS              *
*  PREPARED BY: BAX ENGINEERING CO., INC.    *
*              July 31, 1998                 *
*                                            *
**********************************************
```

Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-025.HYD
Rating Table file: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND

----INITIAL CONDITIONS----
Elevation = 458.00 ft
Outflow = 0.00 cfs
Storage = 0.00 ac-ft

GIVEN POND DATA

| ELEVATION (ft) | OUTFLOW (cfs) | STORAGE (ac-ft) |
|---|---|---|
| 458.00 | 0.0 | 0.000 |
| 458.25 | 0.3 | 0.001 |
| 458.50 | 0.8 | 0.004 |
| 458.75 | 1.5 | 0.015 |
| 459.00 | 2.3 | 0.035 |
| 459.25 | 3.1 | 0.069 |
| 459.50 | 4.1 | 0.119 |
| 459.75 | 5.2 | 0.188 |
| 460.00 | 6.1 | 0.281 |
| 460.25 | 6.6 | 0.388 |
| 460.50 | 7.2 | 0.497 |
| 460.75 | 7.7 | 0.608 |
| 461.00 | 8.1 | 0.722 |
| 461.25 | 8.6 | 0.838 |
| 461.50 | 9.0 | 0.957 |
| 461.75 | 9.4 | 1.079 |
| 462.00 | 9.8 | 1.203 |
| 462.25 | 10.1 | 1.329 |
| 462.50 | 10.5 | 1.458 |
| 462.75 | 10.8 | 1.590 |
| 463.00 | 11.2 | 1.724 |
| 463.25 | 15.9 | 1.862 |
| 463.50 | 24.2 | 2.001 |
| 463.75 | 34.9 | 2.144 |
| 464.00 | 47.4 | 2.289 |

INTERMEDIATE ROUTING COMPUTATIONS

| 2S/t (cfs) | 2S/t + O (cfs) |
|---|---|
| 0.0 | 0.0 |
| 0.8 | 1.1 |
| 6.4 | 7.2 |
| 21.5 | 23.0 |
| 51.0 | 53.3 |
| 99.6 | 102.7 |
| 172.1 | 176.2 |
| 273.3 | 278.5 |
| 408.0 | 414.1 |
| 562.8 | 569.4 |
| 721.0 | 728.2 |
| 882.8 | 890.5 |
| 1048.2 | 1056.3 |
| 1217.1 | 1225.7 |
| 1389.8 | 1398.8 |
| 1566.1 | 1575.5 |
| 1746.1 | 1755.9 |
| 1930.0 | 1940.1 |
| 2117.5 | 2128.0 |
| 2308.8 | 2319.6 |
| 2504.0 | 2515.2 |
| 2703.0 | 2718.9 |
| 2905.8 | 2930.0 |
| 3112.6 | 3147.5 |
| 3323.4 | 3370.8 |

Time increment (t) = 1.0 min.

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-025.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203025 .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 | 458.00 |
| 1.0 | 7.57 | 7.6 | 5.9 | 7.6 | 0.82 | 458.51 |
| 2.0 | 15.27 | 22.8 | 25.5 | 28.8 | 1.65 | 458.80 |
| 3.0 | 22.91 | 38.2 | 58.7 | 63.7 | 2.47 | 459.05 |
| 4.0 | 24.52 | 47.4 | 99.9 | 106.1 | 3.15 | 459.26 |
| 5.0 | 26.10 | 50.6 | 143.0 | 150.5 | 3.75 | 459.41 |
| 6.0 | 27.66 | 53.8 | 188.1 | 196.7 | 4.32 | 459.55 |
| 7.0 | 29.29 | 57.0 | 235.4 | 245.0 | 4.84 | 459.67 |
| 8.0 | 30.94 | 60.2 | 285.0 | 295.6 | 5.31 | 459.78 |
| 9.0 | 32.50 | 63.4 | 337.1 | 348.4 | 5.66 | 459.88 |
| 10.0 | 34.04 | 66.5 | 391.6 | 403.6 | 6.03 | 459.98 |
| 11.0 | 35.54 | 69.6 | 448.6 | 461.1 | 6.25 | 460.08 |
| 12.0 | 36.99 | 72.5 | 508.3 | 521.2 | 6.44 | 460.17 |
| 13.0 | 38.18 | 75.2 | 570.1 | 583.4 | 6.65 | 460.27 |
| 14.0 | 39.17 | 77.3 | 633.7 | 647.5 | 6.90 | 460.37 |
| 15.0 | 39.94 | 79.1 | 698.5 | 712.8 | 7.14 | 460.48 |
| 16.0 | 40.59 | 80.5 | 764.3 | 779.1 | 7.36 | 460.58 |
| 17.0 | 41.18 | 81.8 | 831.0 | 846.1 | 7.56 | 460.68 |
| 18.0 | 41.73 | 82.9 | 898.4 | 913.9 | 7.76 | 460.79 |
| 19.0 | 42.25 | 84.0 | 966.5 | 982.4 | 7.92 | 460.89 |
| 20.0 | 42.46 | 84.7 | 1035.1 | 1051.2 | 8.09 | 460.99 |
| 21.0 | 37.06 | 79.5 | 1098.0 | 1114.6 | 8.27 | 461.09 |
| 22.0 | 31.28 | 68.3 | 1149.5 | 1166.4 | 8.42 | 461.16 |
| 23.0 | 25.65 | 56.9 | 1189.4 | 1206.5 | 8.54 | 461.22 |
| 24.0 | 25.42 | 51.1 | 1223.2 | 1240.4 | 8.63 | 461.27 |
| 25.0 | 25.34 | 50.8 | 1256.5 | 1273.9 | 8.71 | 461.32 |
| 26.0 | 25.14 | 50.5 | 1289.4 | 1307.0 | 8.79 | 461.37 |
| 27.0 | 24.79 | 49.9 | 1321.6 | 1339.3 | 8.86 | 461.41 |
| 28.0 | 24.33 | 49.1 | 1352.9 | 1370.7 | 8.94 | 461.46 |
| 29.0 | 23.83 | 48.2 | 1383.0 | 1401.0 | 9.01 | 461.50 |
| 30.0 | 23.34 | 47.2 | 1412.0 | 1430.2 | 9.07 | 461.54 |
| 31.0 | 22.86 | 46.2 | 1440.0 | 1458.2 | 9.13 | 461.58 |
| 32.0 | 22.36 | 45.2 | 1466.8 | 1485.2 | 9.20 | 461.62 |
| 33.0 | 21.84 | 44.2 | 1492.5 | 1511.0 | 9.25 | 461.66 |
| 34.0 | 21.29 | 43.1 | 1517.0 | 1535.6 | 9.31 | 461.69 |
| 35.0 | 20.64 | 41.9 | 1540.2 | 1558.9 | 9.36 | 461.73 |
| 36.0 | 19.96 | 40.6 | 1562.0 | 1580.8 | 9.41 | 461.76 |
| 37.0 | 19.22 | 39.2 | 1582.2 | 1601.2 | 9.46 | 461.79 |
| 38.0 | 18.35 | 37.6 | 1600.8 | 1619.8 | 9.50 | 461.81 |
| 39.0 | 17.52 | 35.9 | 1617.6 | 1636.7 | 9.54 | 461.83 |
| 40.0 | 16.72 | 34.2 | 1632.7 | 1651.9 | 9.57 | 461.86 |
| 41.0 | 15.96 | 32.7 | 1646.2 | 1665.4 | 9.60 | 461.87 |
| 42.0 | 15.25 | 31.2 | 1658.2 | 1677.4 | 9.63 | 461.89 |
| 43.0 | 14.57 | 29.8 | 1668.7 | 1688.0 | 9.65 | 461.91 |
| 44.0 | 13.95 | 28.5 | 1677.9 | 1697.2 | 9.67 | 461.92 |

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-025.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203025 .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 | 13.35 | 27.3 | 1685.8 | 1705.2 | 9.69 | 461.93 |
| 46.0 | 12.78 | 26.1 | 1692.5 | 1711.9 | 9.70 | 461.94 |
| 47.0 | 12.22 | 25.0 | 1698.1 | 1717.5 | 9.71 | 461.95 |
| 48.0 | 11.68 | 23.9 | 1702.5 | 1722.0 | 9.72 | 461.95 |
| 49.0 | 11.16 | 22.8 | 1705.9 | 1725.4 | 9.73 | 461.96 |
| 50.0 | 10.67 | 21.8 | 1708.3 | 1727.7 | 9.74 | 461.96 |
| 51.0 | 10.18 | 20.9 | 1709.6 | 1729.1 | 9.74 | 461.96 |
| 52.0 | 9.71 | 19.9 | 1710.0 | 1729.5 | 9.74 | 461.96 |
| 53.0 | 9.26 | 19.0 | 1709.5 | 1729.0 | 9.74 | 461.96 |
| 54.0 | 8.83 | 18.1 | 1708.1 | 1727.6 | 9.74 | 461.96 |
| 55.0 | 8.35 | 17.2 | 1705.9 | 1725.3 | 9.73 | 461.96 |
| 56.0 | 7.87 | 16.2 | 1702.6 | 1722.1 | 9.72 | 461.95 |
| 57.0 | 7.41 | 15.3 | 1698.5 | 1717.9 | 9.72 | 461.95 |
| 58.0 | 6.98 | 14.4 | 1693.5 | 1712.9 | 9.70 | 461.94 |
| 59.0 | 6.47 | 13.5 | 1687.5 | 1706.9 | 9.69 | 461.93 |
| 60.0 | 5.99 | 12.5 | 1680.6 | 1700.0 | 9.68 | 461.92 |
| 61.0 | 5.53 | 11.5 | 1672.8 | 1692.2 | 9.66 | 461.91 |
| 62.0 | 0.00 | 5.5 | 1659.1 | 1678.4 | 9.63 | 461.89 |
| 63.0 | 0.00 | 0.0 | 1639.9 | 1659.1 | 9.59 | 461.87 |
| 64.0 | 0.00 | 0.0 | 1620.9 | 1639.9 | 9.54 | 461.84 |
| 65.0 | 0.00 | 0.0 | 1601.9 | 1620.9 | 9.50 | 461.81 |
| 66.0 | 0.00 | 0.0 | 1582.9 | 1601.9 | 9.46 | 461.79 |
| 67.0 | 0.00 | 0.0 | 1564.1 | 1582.9 | 9.42 | 461.76 |
| 68.0 | 0.00 | 0.0 | 1545.4 | 1564.1 | 9.37 | 461.73 |
| 69.0 | 0.00 | 0.0 | 1526.7 | 1545.4 | 9.33 | 461.71 |
| 70.0 | 0.00 | 0.0 | 1508.1 | 1526.7 | 9.29 | 461.68 |
| 71.0 | 0.00 | 0.0 | 1489.6 | 1508.1 | 9.25 | 461.65 |
| 72.0 | 0.00 | 0.0 | 1471.2 | 1489.6 | 9.21 | 461.63 |
| 73.0 | 0.00 | 0.0 | 1452.9 | 1471.2 | 9.16 | 461.60 |
| 74.0 | 0.00 | 0.0 | 1434.6 | 1452.9 | 9.12 | 461.58 |
| 75.0 | 0.00 | 0.0 | 1416.5 | 1434.6 | 9.08 | 461.55 |
| 76.0 | 0.00 | 0.0 | 1398.4 | 1416.5 | 9.04 | 461.53 |
| 77.0 | 0.00 | 0.0 | 1380.4 | 1398.4 | 9.00 | 461.50 |
| 78.0 | 0.00 | 0.0 | 1362.5 | 1380.4 | 8.96 | 461.47 |
| 79.0 | 0.00 | 0.0 | 1344.6 | 1362.5 | 8.92 | 461.45 |
| 80.0 | 0.00 | 0.0 | 1326.9 | 1344.6 | 8.87 | 461.42 |
| 81.0 | 0.00 | 0.0 | 1309.2 | 1326.9 | 8.83 | 461.40 |
| 82.0 | 0.00 | 0.0 | 1291.6 | 1309.2 | 8.79 | 461.37 |
| 83.0 | 0.00 | 0.0 | 1274.1 | 1291.6 | 8.75 | 461.35 |
| 84.0 | 0.00 | 0.0 | 1256.7 | 1274.1 | 8.71 | 461.32 |
| 85.0 | 0.00 | 0.0 | 1239.4 | 1256.7 | 8.67 | 461.29 |
| 86.0 | 0.00 | 0.0 | 1222.1 | 1239.4 | 8.63 | 461.27 |
| 87.0 | 0.00 | 0.0 | 1204.9 | 1222.1 | 8.59 | 461.24 |
| 88.0 | 0.00 | 0.0 | 1187.9 | 1204.9 | 8.54 | 461.22 |
| 89.0 | 0.00 | 0.0 | 1170.9 | 1187.9 | 8.49 | 461.19 |
| 90.0 | 0.00 | 0.0 | 1154.0 | 1170.9 | 8.44 | 461.17 |

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

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-025.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203025 .HYD

Starting Pond W.S. Elevation = 458.00 ft

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

| | | |
|---|---|---|
| Peak Inflow | = | 42.46 cfs |
| Peak Outflow | = | 9.74 cfs |
| Peak Elevation | = | 461.96 ft |

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

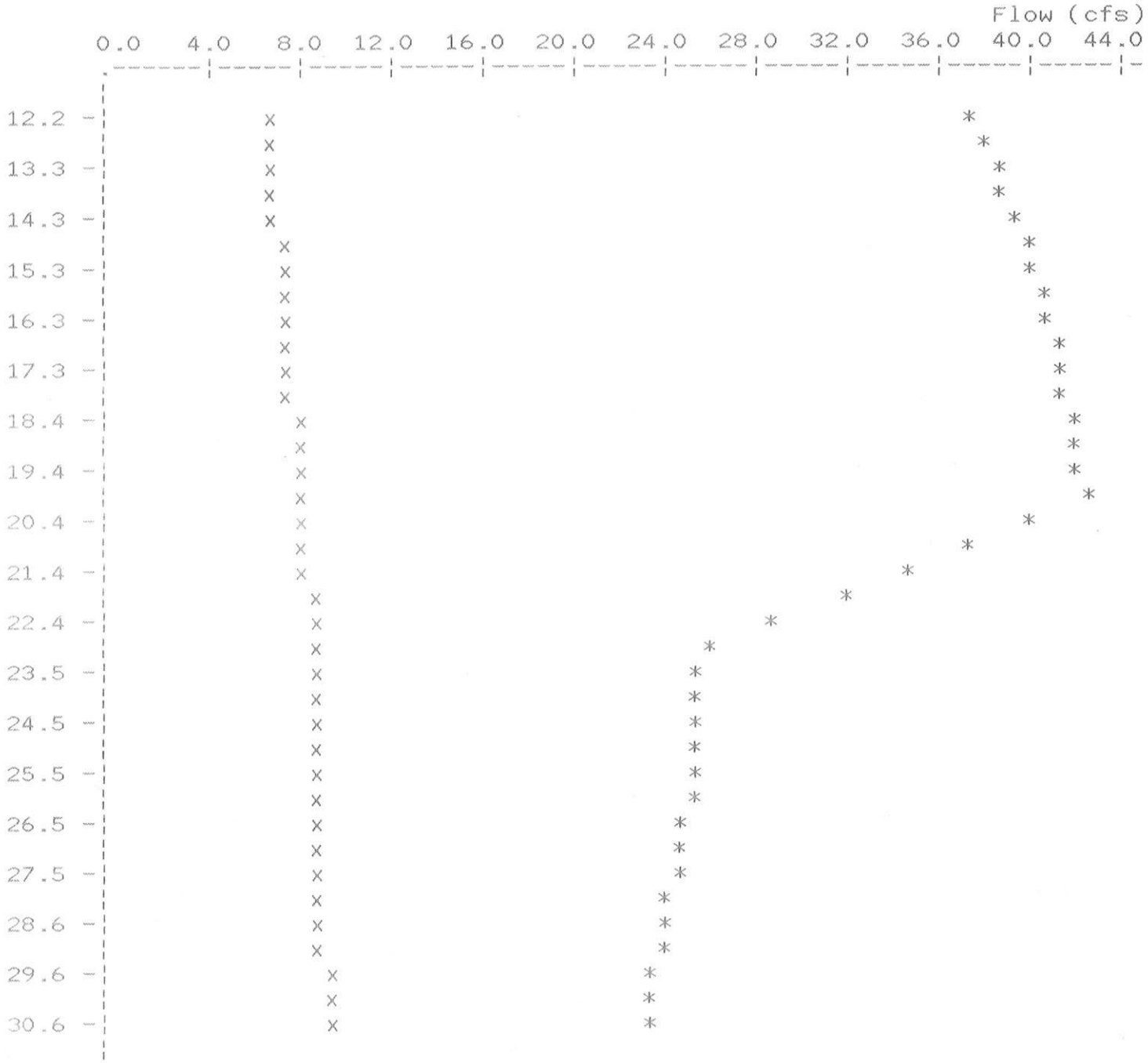
| | | |
|---|---|---|
| Initial Storage | = | 0.00 ac-ft |
| Peak Storage From Storm | = | 1.18 ac-ft |
| Total Storage in Pond | = | 1.18 ac-ft |

Return Freq: 25 years

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-025.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203025 .HYD

EXECUTED: 08-04-1998 07:51:02

Peak Inflow = 42.46 cfs
Peak Outflow = 9.74 cfs
Peak Elevation = 461.96 ft




x File: C:\WINDOWS\DESKTOP\PONDPA~1\9203025 .HYD Qmax = 9.7 cfs
* File: C:\WINDOWS\DESKTOP\PONDPA~1\9203-025.HYD Qmax = 42.5 cfs

# NORTH BASIN INFLOW CALCS



Executed 08-03-1998 11:49:12

Data directory: C:\WINDOWS\DESKTOP\PONDPA~1*.HYD

File Summary for Composite Hydrograph

| Time (min) | 92030002 (cfs) WEST OUT | 9203A-02 (cfs) NORTH DIRECT | 9203-002 (Total) |
|---|---|---|---|
| 0.00 | 0.0 | 0.0 | 0.0 |
| 1.00 | 1.0 | 3.0 | 4.0 |
| 2.00 | 2.0 | 6.0 | 8.0 |
| 3.00 | 3.1 | 9.0 | 12.1 |
| 4.00 | 4.2 | 9.0 | 13.2 |
| 5.00 | 5.2 | 9.0 | 14.2 |
| 6.00 | 6.2 | 9.0 | 15.2 |
| 7.00 | 7.3 | 9.0 | 16.3 |
| 8.00 | 8.3 | 9.0 | 17.3 |
| 9.00 | 9.1 | 9.0 | 18.1 |
| 10.00 | 9.8 | 9.0 | 18.8 |
| 11.00 | 10.5 | 9.0 | 19.5 |
| 12.00 | 11.1 | 9.0 | 20.1 |
| 13.00 | 11.6 | 9.0 | 20.6 |
| 14.00 | 12.2 | 9.0 | 21.2 |
| 15.00 | 12.7 | 9.0 | 21.7 |
| 16.00 | 13.2 | 9.0 | 22.2 |
| 17.00 | 13.7 | 9.0 | 22.7 |
| 18.00 | 14.1 | 9.0 | 23.1 |
| 19.00 | 14.6 | 9.0 | 23.6 |
| 20.00 | 15.0 | 9.0 | 24.0 |
| 21.00 | 15.4 | 6.0 | 21.4 |
| 22.00 | 15.6 | 3.0 | 18.6 |
| 23.00 | 15.7 | 0.0 | 15.7 |
| 24.00 | 15.6 | 0.0 | 15.6 |
| 25.00 | 15.3 | 0.0 | 15.3 |
| 26.00 | 15.0 | 0.0 | 15.0 |
| 27.00 | 14.5 | 0.0 | 14.5 |
| 28.00 | 13.9 | 0.0 | 13.9 |
| 29.00 | 13.3 | 0.0 | 13.3 |
| 30.00 | 12.7 | 0.0 | 12.7 |
| 31.00 | 12.2 | 0.0 | 12.2 |
| 32.00 | 11.6 | 0.0 | 11.6 |
| 33.00 | 11.1 | 0.0 | 11.1 |
| 34.00 | 10.6 | 0.0 | 10.6 |
| 35.00 | 10.1 | 0.0 | 10.1 |
| 36.00 | 9.7 | 0.0 | 9.7 |
| 37.00 | 9.2 | 0.0 | 9.2 |
| 38.00 | 8.8 | 0.0 | 8.8 |
| 39.00 | 8.3 | 0.0 | 8.3 |

NORTH BASIN INFLOW CALCS



Executed 08-03-1998 11:49:12

Data directory: C:\WINDOWS\DESKTOP\PONDPA~1*.HYD

File Summary for Composite Hydrograph

| Time (min) | 92030002 (cfs) WEST OUT | 9203A-02 (cfs) NORTH DIRECT | 9203-002 (Total) |
|---|---|---|---|
| 40.00 | 7.8 | 0.0 | 7.8 |
| 41.00 | 7.4 | 0.0 | 7.4 |
| 42.00 | 6.9 | 0.0 | 6.9 |
| 43.00 | 6.4 | 0.0 | 6.4 |
| 44.00 | 5.9 | 0.0 | 5.9 |
| 45.00 | 5.5 | 0.0 | 5.5 |
| 46.00 | 5.0 | 0.0 | 5.0 |
| 47.00 | 4.6 | 0.0 | 4.6 |
| 48.00 | 4.1 | 0.0 | 4.1 |
| 49.00 | 3.7 | 0.0 | 3.7 |
| 50.00 | 3.2 | 0.0 | 3.2 |
| 51.00 | 2.7 | 0.0 | 2.7 |
| 52.00 | 2.3 | 0.0 | 2.3 |
| 53.00 | 1.8 | 0.0 | 1.8 |
| 54.00 | 1.4 | 0.0 | 1.4 |
| 55.00 | 0.9 | 0.0 | 0.9 |
| 56.00 | 0.6 | 0.0 | 0.6 |
| 57.00 | 0.1 | 0.0 | 0.1 |
| 58.00 | 0.0 | 0.0 | 0.0 |
| 59.00 | 0.0 | 0.0 | 0.0 |
| 60.00 | 0.0 | 0.0 | 0.0 |
| 61.00 | 0.0 | 0.0 | 0.0 |
| 62.00 | 0.0 | 0.0 | 0.0 |
| 63.00 | 0.0 | 0.0 | 0.0 |
| 64.00 | 0.0 | 0.0 | 0.0 |
| 65.00 | 0.0 | 0.0 | 0.0 |
| 66.00 | 0.0 | 0.0 | 0.0 |
| 67.00 | 0.0 | 0.0 | 0.0 |
| 68.00 | 0.0 | 0.0 | 0.0 |
| 69.00 | 0.0 | 0.0 | 0.0 |
| 70.00 | 0.0 | 0.0 | 0.0 |
| 71.00 | 0.0 | 0.0 | 0.0 |
| 72.00 | 0.0 | 0.0 | 0.0 |
| 73.00 | 0.0 | 0.0 | 0.0 |
| 74.00 | 0.0 | 0.0 | 0.0 |
| 75.00 | 0.0 | 0.0 | 0.0 |
| 76.00 | 0.0 | 0.0 | 0.0 |
| 77.00 | 0.0 | 0.0 | 0.0 |
| 78.00 | 0.0 | 0.0 | 0.0 |
| 79.00 | 0.0 | 0.0 | 0.0 |
| 80.00 | 0.0 | 0.0 | 0.0 |

NORTH BASIN INFLOW CALCS



Executed 08-03-1998 11:52:47

Data directory: C:\WINDOWS\DESKTOP\PONDPA~1*.HYD

File Summary for Composite Hydrograph

| Time (min) | WEST OUT 92030015 (cfs) | NORTH DIRECT 9203A-15 (cfs) | 9203-015 (Total) |
|---|---|---|---|
| 0.00 | 0.0 | 0.0 | 0.0 |
| 1.00 | 1.4 | 4.9 | 6.3 |
| 2.00 | 2.7 | 9.9 | 12.6 |
| 3.00 | 4.1 | 14.8 | 18.9 |
| 4.00 | 5.5 | 14.8 | 20.3 |
| 5.00 | 6.9 | 14.8 | 21.7 |
| 6.00 | 8.3 | 14.8 | 23.1 |
| 7.00 | 9.7 | 14.8 | 24.5 |
| 8.00 | 11.0 | 14.8 | 25.8 |
| 9.00 | 12.3 | 14.8 | 27.1 |
| 10.00 | 13.5 | 14.8 | 28.3 |
| 11.00 | 14.6 | 14.8 | 29.4 |
| 12.00 | 15.7 | 14.8 | 30.5 |
| 13.00 | 16.8 | 14.8 | 31.6 |
| 14.00 | 17.9 | 14.8 | 32.7 |
| 15.00 | 18.8 | 14.8 | 33.6 |
| 16.00 | 19.7 | 14.8 | 34.5 |
| 17.00 | 20.4 | 14.8 | 35.2 |
| 18.00 | 21.0 | 14.8 | 35.8 |
| 19.00 | 21.5 | 14.8 | 36.3 |
| 20.00 | 22.0 | 14.8 | 36.8 |
| 21.00 | 22.3 | 9.8 | 32.1 |
| 22.00 | 22.6 | 4.9 | 27.5 |
| 23.00 | 22.7 | 0.0 | 22.7 |
| 24.00 | 22.7 | 0.0 | 22.7 |
| 25.00 | 22.6 | 0.0 | 22.6 |
| 26.00 | 22.3 | 0.0 | 22.3 |
| 27.00 | 21.9 | 0.0 | 21.9 |
| 28.00 | 21.4 | 0.0 | 21.4 |
| 29.00 | 20.8 | 0.0 | 20.8 |
| 30.00 | 20.1 | 0.0 | 20.1 |
| 31.00 | 19.4 | 0.0 | 19.4 |
| 32.00 | 18.6 | 0.0 | 18.6 |
| 33.00 | 17.7 | 0.0 | 17.7 |
| 34.00 | 16.9 | 0.0 | 16.9 |
| 35.00 | 16.2 | 0.0 | 16.2 |
| 36.00 | 15.4 | 0.0 | 15.4 |
| 37.00 | 14.7 | 0.0 | 14.7 |
| 38.00 | 14.1 | 0.0 | 14.1 |
| 39.00 | 13.5 | 0.0 | 13.5 |

>>>>>>>>>>>>>>>>> SUMMATION WARNING <<<<<<<<<<<<<<<<<
Peaks were missed during interpolation for the following files:
92030015.HYD

NORTH BASIN INFLOW CALCS



Executed 08-03-1998 11:52:47

Data directory: C:\WINDOWS\DESKTOP\PONDPA~1*.HYD

File Summary for Composite Hydrograph

| Time (min) | 92030015 (cfs) WEST OUT | 9203A-15 (cfs) NORTH DIRECT | 9203-015 (Total) |
|---|---|---|---|
| 40.00 | 12.9 | 0.0 | 12.9 |
| 41.00 | 12.4 | 0.0 | 12.4 |
| 42.00 | 11.8 | 0.0 | 11.8 |
| 43.00 | 11.3 | 0.0 | 11.3 |
| 44.00 | 10.8 | 0.0 | 10.8 |
| 45.00 | 10.3 | 0.0 | 10.3 |
| 46.00 | 9.8 | 0.0 | 9.8 |
| 47.00 | 9.4 | 0.0 | 9.4 |
| 48.00 | 8.9 | 0.0 | 8.9 |
| 49.00 | 8.5 | 0.0 | 8.5 |
| 50.00 | 8.0 | 0.0 | 8.0 |
| 51.00 | 7.5 | 0.0 | 7.5 |
| 52.00 | 7.1 | 0.0 | 7.1 |
| 53.00 | 6.6 | 0.0 | 6.6 |
| 54.00 | 6.1 | 0.0 | 6.1 |
| 55.00 | 5.6 | 0.0 | 5.6 |
| 56.00 | 5.2 | 0.0 | 5.2 |
| 57.00 | 4.7 | 0.0 | 4.7 |
| 58.00 | 4.3 | 0.0 | 4.3 |
| 59.00 | 3.9 | 0.0 | 3.9 |
| 60.00 | 3.4 | 0.0 | 3.4 |
| 61.00 | 2.9 | 0.0 | 2.9 |
| 62.00 | Missing | 0.0 | 0.0 |
| 63.00 | Missing | 0.0 | 0.0 |
| 64.00 | Missing | 0.0 | 0.0 |
| 65.00 | Missing | 0.0 | 0.0 |
| 66.00 | Missing | 0.0 | 0.0 |
| 67.00 | Missing | 0.0 | 0.0 |
| 68.00 | Missing | 0.0 | 0.0 |
| 69.00 | Missing | 0.0 | 0.0 |
| 70.00 | Missing | 0.0 | 0.0 |
| 71.00 | Missing | 0.0 | 0.0 |
| 72.00 | Missing | 0.0 | 0.0 |
| 73.00 | Missing | 0.0 | 0.0 |
| 74.00 | Missing | 0.0 | 0.0 |
| 75.00 | Missing | 0.0 | 0.0 |
| 76.00 | Missing | 0.0 | 0.0 |
| 77.00 | Missing | 0.0 | 0.0 |
| 78.00 | Missing | 0.0 | 0.0 |
| 79.00 | Missing | 0.0 | 0.0 |
| 80.00 | Missing | 0.0 | 0.0 |

>>>>>>>>>>>>>>>>> SUMMATION WARNING <<<<<<<<<<<<<<<<<
Peaks were missed during interpolation for the following files:
92030015.HYD

NORTH BASIN INFLOW CALCS



Executed 08-03-1998 11:53:42

Data directory: C:\WINDOWS\DESKTOP\PONDPA~1*.HYD

File Summary for Composite Hydrograph

| Time (min) | 92030025 (cfs) WEST OUT | 9203A-25 (cfs) NORTH DIRECT | 9203-025 (Total) |
|---|---|---|---|
| 0.00 | 0.0 | 0.0 | 0.0 |
| 1.00 | 1.5 | 6.1 | 7.6 |
| 2.00 | 3.1 | 12.2 | 15.3 |
| 3.00 | 4.6 | 18.3 | 22.9 |
| 4.00 | 6.2 | 18.3 | 24.5 |
| 5.00 | 7.8 | 18.3 | 26.1 |
| 6.00 | 9.4 | 18.3 | 27.7 |
| 7.00 | 11.0 | 18.3 | 29.3 |
| 8.00 | 12.6 | 18.3 | 30.9 |
| 9.00 | 14.2 | 18.3 | 32.5 |
| 10.00 | 15.7 | 18.3 | 34.0 |
| 11.00 | 17.2 | 18.3 | 35.5 |
| 12.00 | 18.7 | 18.3 | 37.0 |
| 13.00 | 19.9 | 18.3 | 38.2 |
| 14.00 | 20.9 | 18.3 | 39.2 |
| 15.00 | 21.6 | 18.3 | 39.9 |
| 16.00 | 22.3 | 18.3 | 40.6 |
| 17.00 | 22.9 | 18.3 | 41.2 |
| 18.00 | 23.4 | 18.3 | 41.7 |
| 19.00 | 23.9 | 18.3 | 42.2 |
| 20.00 | 24.4 | 18.0 | 42.5 |
| 21.00 | 24.9 | 12.2 | 37.1 |
| 22.00 | 25.2 | 6.1 | 31.3 |
| 23.00 | 25.4 | 0.3 | 25.7 |
| 24.00 | 25.4 | 0.0 | 25.4 |
| 25.00 | 25.3 | 0.0 | 25.3 |
| 26.00 | 25.1 | 0.0 | 25.1 |
| 27.00 | 24.8 | 0.0 | 24.8 |
| 28.00 | 24.3 | 0.0 | 24.3 |
| 29.00 | 23.8 | 0.0 | 23.8 |
| 30.00 | 23.3 | 0.0 | 23.3 |
| 31.00 | 22.9 | 0.0 | 22.9 |
| 32.00 | 22.4 | 0.0 | 22.4 |
| 33.00 | 21.8 | 0.0 | 21.8 |
| 34.00 | 21.3 | 0.0 | 21.3 |
| 35.00 | 20.6 | 0.0 | 20.6 |
| 36.00 | 20.0 | 0.0 | 20.0 |
| 37.00 | 19.2 | 0.0 | 19.2 |
| 38.00 | 18.4 | 0.0 | 18.4 |
| 39.00 | 17.5 | 0.0 | 17.5 |

NORTH BASIN INFLOW CALCS



Executed 08-03-1998 11:53:42

Data directory: C:\WINDOWS\DESKTOP\PONDPA~1*.HYD

File Summary for Composite Hydrograph

| Time (min) | WEST OUT 92030025 (cfs) | NORTH DIRECT 9203A-25 (cfs) | 9203-025 (Total) |
|---|---|---|---|
| 40.00 | 16.7 | 0.0 | 16.7 |
| 41.00 | 16.0 | 0.0 | 16.0 |
| 42.00 | 15.2 | 0.0 | 15.2 |
| 43.00 | 14.6 | 0.0 | 14.6 |
| 44.00 | 13.9 | 0.0 | 13.9 |
| 45.00 | 13.4 | 0.0 | 13.4 |
| 46.00 | 12.8 | 0.0 | 12.8 |
| 47.00 | 12.2 | 0.0 | 12.2 |
| 48.00 | 11.7 | 0.0 | 11.7 |
| 49.00 | 11.2 | 0.0 | 11.2 |
| 50.00 | 10.7 | 0.0 | 10.7 |
| 51.00 | 10.2 | 0.0 | 10.2 |
| 52.00 | 9.7 | 0.0 | 9.7 |
| 53.00 | 9.3 | 0.0 | 9.3 |
| 54.00 | 8.8 | 0.0 | 8.8 |
| 55.00 | 8.3 | 0.0 | 8.3 |
| 56.00 | 7.9 | 0.0 | 7.9 |
| 57.00 | 7.4 | 0.0 | 7.4 |
| 58.00 | 7.0 | 0.0 | 7.0 |
| 59.00 | 6.5 | 0.0 | 6.5 |
| 60.00 | 6.0 | 0.0 | 6.0 |
| 61.00 | 5.5 | 0.0 | 5.5 |
| 62.00 | Missing | 0.0 | 0.0 |
| 63.00 | Missing | 0.0 | 0.0 |
| 64.00 | Missing | 0.0 | 0.0 |
| 65.00 | Missing | 0.0 | 0.0 |
| 66.00 | Missing | 0.0 | 0.0 |
| 67.00 | Missing | 0.0 | 0.0 |
| 68.00 | Missing | 0.0 | 0.0 |
| 69.00 | Missing | 0.0 | 0.0 |
| 70.00 | Missing | 0.0 | 0.0 |
| 71.00 | Missing | 0.0 | 0.0 |
| 72.00 | Missing | 0.0 | 0.0 |
| 73.00 | Missing | 0.0 | 0.0 |
| 74.00 | Missing | 0.0 | 0.0 |
| 75.00 | Missing | 0.0 | 0.0 |
| 76.00 | Missing | 0.0 | 0.0 |
| 77.00 | Missing | 0.0 | 0.0 |
| 78.00 | Missing | 0.0 | 0.0 |
| 79.00 | Missing | 0.0 | 0.0 |
| 80.00 | Missing | 0.0 | 0.0 |

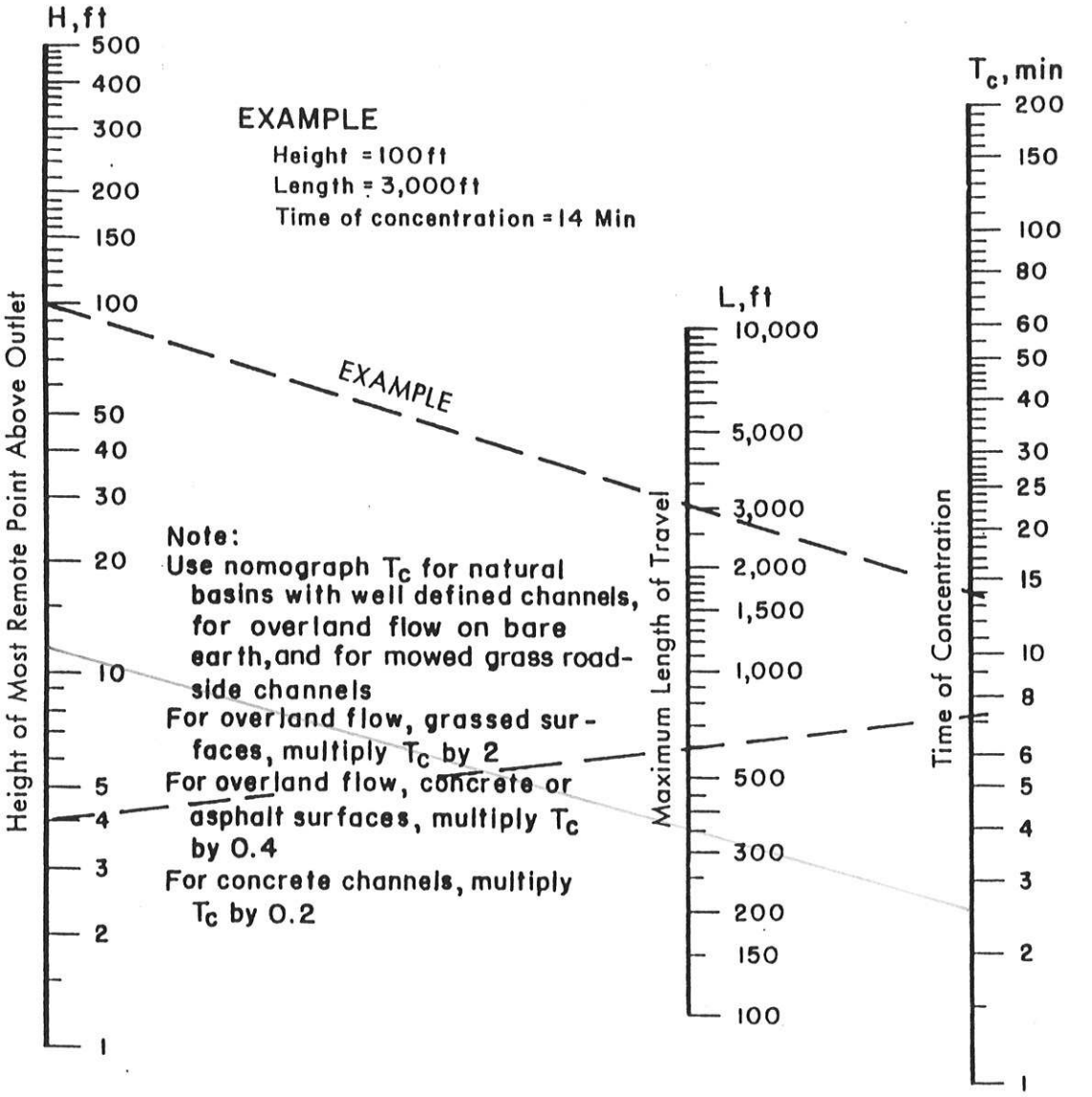
BAX ENGINEERING

Project: THE CROSSINGS C SHEET ___ of ___

Date: _____ Project No: _____

Designed: _____ Checked: _____

SOUTH BASIN




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

350 ft 497-484 (13)

2.5 x 2 = 5

420 ft 7 ft/s = .1

6 min

1052 South Cloverleaf Drive
St. Peters, MO 63376-6445
314-928-5552 FAX 928-1718

POND-2 Version: 5.20
S/N:

The Crossings - Village C - South Basin

CALCULATED 08-04-1998 08:10:36
DISK FILE: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .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) |
|---|---|---|---|---|---|
| 460.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 462.00 | 8,003.00 | 0.18 | 0.18 | 0.12 | 0.12 |
| 464.00 | 10,789.00 | 0.25 | 0.64 | 0.43 | 0.55 |
| 466.00 | 13,862.00 | 0.32 | 0.85 | 0.56 | 1.12 |

* 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

Outlet Structure File: 9203C .STR

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

**********
The Crossings - Village C - South Basin
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
, 1998
**********

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

| Elevation (ft) | Q (cfs) | Contributing Structures |
|---|---|---|
| 460.00 | 0.0 | 1 |
| 460.25 | 0.4 | 1 |
| 460.50 | 1.1 | 1 |
| 460.75 | 1.9 | 1 |
| 461.00 | 3.0 | 1 |
| 461.25 | 4.2 | 1 |
| 461.50 | 5.5 | 1 |
| 461.75 | 6.9 | 1 |
| 462.00 | 8.5 | 1 |
| 462.25 | 10.1 | 1 |
| 462.50 | 11.8 | 2 |
| 462.75 | 12.7 | 2 |
| 463.00 | 13.6 | 2 |
| 463.25 | 14.4 | 2 |
| 463.50 | 15.2 | 2 |
| 463.75 | 16.0 | 2 |
| 464.00 | 16.7 | 2 |
| 464.25 | 17.4 | 2 |
| 464.50 | 18.0 | 2 |
| 464.75 | 18.6 | 2 |
| 465.00 | 19.3 | 2 +3 |
| 465.25 | 24.2 | 2 +3 |
| 465.50 | 32.8 | 2 +3 |
| 465.75 | 43.7 | 2 +3 |
| 466.00 | 56.5 | 2 +3 |

Outlet Structure File: 9203C .STR

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

**********
The Crossings - Village C - South Basin
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
, 1998
**********

Outlet Structure File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .STR
Planimeter Input File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .VOL
Rating Table Output File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND

Min. Elev.(ft) = 460 Max. Elev.(ft) = 466 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 |
| WEIR-VR | 3 | | | -> | 3 |

Outflow rating table summary was stored in file:
C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND

Outlet Structure File: 9203C .STR

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

**********
The Crossings - Village C - South Basin
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
, 1998
**********

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

WEIR-VR
Weir - Vertical Rectangular

E1 elev.(ft)? 460
E2 elev.(ft)? 466.001
Weir coefficient? 3
Weir elev.(ft)? 460.00
Length (ft)? 1.0000
Contracted/Suppressed (C/S)? S

Outlet Structure File: 9203C .STR

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

**********
The Crossings - Village C - South Basin
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
, 1998
**********

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

ORIFICE
Orifice - Based on Area and Datum Elevation

| | |
|---|---|
| E1 elev.(ft)? | 462.0000 |
| E2 elev.(ft)? | 466.001 |
| Orifice coeff.? | 0.6 |
| Invert elev.(ft)? | 460.000 |
| Datum elev.(ft) ? | 461.0000 |
| Orifice area (sq ft)? | 2.00000 |

Outlet Structure File: 9203C .STR

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

**********
The Crossings - Village C - South Basin
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
, 1998
**********

>>>>>> Structure No. 3 <<<<<<
(Input Data)

WEIR-VR
Weir - Vertical Rectangular

E1 elev.(ft)? 465
E2 elev.(ft)? 466.001
Weir coefficient? 3
Weir elev.(ft)? 465.00
Length (ft)? 11.67
Contracted/Suppressed (C/S)? S

Outlet Structure File: 9203C .STR

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

**********
The Crossings - Village C - South Basin
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
, 1998
**********

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

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

| Elevation (ft) | Q (cfs) | Computation Messages |
|---|---|---|
| 460.00 | 0.0 | H =0.0 |
| 460.25 | 0.4 | H =.25 |
| 460.50 | 1.1 | H =.5 |
| 460.75 | 1.9 | H =.750 |
| 461.00 | 3.0 | H =1.0 |
| 461.25 | 4.2 | H =1.25 |
| 461.50 | 5.5 | H =1.5 |
| 461.75 | 6.9 | H =1.75 |
| 462.00 | 8.5 | H =2.0 |
| 462.25 | 10.1 | H =2.25 |
| 462.50 | 11.9 | H =2.5 |
| 462.75 | 13.7 | H =2.75 |
| 463.00 | 15.6 | H =3.0 |
| 463.25 | 17.6 | H =3.25 |
| 463.50 | 19.6 | H =3.5 |
| 463.75 | 21.8 | H =3.75 |
| 464.00 | 24.0 | H =4.0 |
| 464.25 | 26.3 | H =4.25 |
| 464.50 | 28.6 | H =4.5 |
| 464.75 | 31.1 | H =4.75 |
| 465.00 | 33.5 | H =5.0 |
| 465.25 | 36.1 | H =5.25 |
| 465.50 | 38.7 | H =5.5 |
| 465.75 | 41.4 | H =5.75 |
| 466.00 | 44.1 | H =6.0 |

C = 3 L (ft) = 1
H (ft) = Table elev. - Invert elev. ( 460 ft )
Q (cfs) = C * L * (H**1.5) -- Suppressed Weir

Outlet Structure File: 9203C .STR

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

**********
The Crossings - Village C - South Basin
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
, 1998
**********

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

| Elevation (ft) | Q (cfs) | Computation Messages |
|---|---|---|
| 460.00 | 0.0 | E < E1=462.0000 |
| 460.25 | 0.0 | E < E1=462.0000 |
| 460.50 | 0.0 | E < E1=462.0000 |
| 460.75 | 0.0 | E < E1=462.0000 |
| 461.00 | 0.0 | E < E1=462.0000 |
| 461.25 | 0.0 | E < E1=462.0000 |
| 461.50 | 0.0 | E < E1=462.0000 |
| 461.75 | 0.0 | E < E1=462.0000 |
| 462.00 | 9.6 | H =1.0 |
| 462.25 | 10.8 | H =1.25 |
| 462.50 | 11.8 | H =1.5 |
| 462.75 | 12.7 | H =1.75 |
| 463.00 | 13.6 | H =2.0 |
| 463.25 | 14.4 | H =2.25 |
| 463.50 | 15.2 | H =2.5 |
| 463.75 | 16.0 | H =2.75 |
| 464.00 | 16.7 | H =3.0 |
| 464.25 | 17.4 | H =3.25 |
| 464.50 | 18.0 | H =3.5 |
| 464.75 | 18.6 | H =3.75 |
| 465.00 | 19.3 | H =4.0 |
| 465.25 | 19.9 | H =4.25 |
| 465.50 | 20.4 | H =4.5 |
| 465.75 | 21.0 | H =4.75 |
| 466.00 | 21.5 | H =5.0 |

C = .6 A = 2 sq.ft.
H (ft) = Table elev. - Datum elev. ( 461 ft )
Q (cfs) = C * A * sqr(2g * H)

Outlet Structure File: 9203C .STR

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

**********
The Crossings - Village C - South Basin
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
, 1998
**********

Outflow Rating Table for Structure #3
WEIR-VR Weir - Vertical Rectangular

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

| Elevation (ft) | Q (cfs) | Computation Messages |
|---|---|---|
| 460.00 | 0.0 | E < Inv.El.= 465 |
| 460.25 | 0.0 | E < Inv.El.= 465 |
| 460.50 | 0.0 | E < Inv.El.= 465 |
| 460.75 | 0.0 | E < Inv.El.= 465 |
| 461.00 | 0.0 | E < Inv.El.= 465 |
| 461.25 | 0.0 | E < Inv.El.= 465 |
| 461.50 | 0.0 | E < Inv.El.= 465 |
| 461.75 | 0.0 | E < Inv.El.= 465 |
| 462.00 | 0.0 | E < Inv.El.= 465 |
| 462.25 | 0.0 | E < Inv.El.= 465 |
| 462.50 | 0.0 | E < Inv.El.= 465 |
| 462.75 | 0.0 | E < Inv.El.= 465 |
| 463.00 | 0.0 | E < Inv.El.= 465 |
| 463.25 | 0.0 | E < Inv.El.= 465 |
| 463.50 | 0.0 | E < Inv.El.= 465 |
| 463.75 | 0.0 | E < Inv.El.= 465 |
| 464.00 | 0.0 | E < Inv.El.= 465 |
| 464.25 | 0.0 | E < Inv.El.= 465 |
| 464.50 | 0.0 | E < Inv.El.= 465 |
| 464.75 | 0.0 | E < Inv.El.= 465 |
| 465.00 | 0.0 | H =0.0 |
| 465.25 | 4.4 | H =.25 |
| 465.50 | 12.4 | H =.5 |
| 465.75 | 22.7 | H =.750 |
| 466.00 | 35.0 | H =1.0 |

C = 3 L (ft) = 11.67
H (ft) = Table elev. - Invert elev. ( 465 ft )
Q (cfs) = C * L * (H**1.5) -- Suppressed Weir

Outlet Structure File: 9203C .STR

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

**********
The Crossings - Village C - South Basin
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
, 1998
**********

Outflow Rating Table A
Table A = 1 ? 2

| Elevation (ft) | Q (cfs) | Contributing Structures |
|---|---|---|
| 460.00 | 0.0 | 1 |
| 460.25 | 0.4 | 1 |
| 460.50 | 1.1 | 1 |
| 460.75 | 1.9 | 1 |
| 461.00 | 3.0 | 1 |
| 461.25 | 4.2 | 1 |
| 461.50 | 5.5 | 1 |
| 461.75 | 6.9 | 1 |
| 462.00 | 8.5 | 1 |
| 462.25 | 10.1 | 1 |
| 462.50 | 11.8 | 2 |
| 462.75 | 12.7 | 2 |
| 463.00 | 13.6 | 2 |
| 463.25 | 14.4 | 2 |
| 463.50 | 15.2 | 2 |
| 463.75 | 16.0 | 2 |
| 464.00 | 16.7 | 2 |
| 464.25 | 17.4 | 2 |
| 464.50 | 18.0 | 2 |
| 464.75 | 18.6 | 2 |
| 465.00 | 19.3 | 2 |
| 465.25 | 19.9 | 2 |
| 465.50 | 20.4 | 2 |
| 465.75 | 21.0 | 2 |
| 466.00 | 21.5 | 2 |

The Crossings - Village C - South Basin
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
July 31, 1998

Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-002.HYD
Rating Table file: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND

----INITIAL CONDITIONS----
Elevation = 460.00 ft
Outflow = 0.00 cfs
Storage = 0.00 ac-ft

GIVEN POND DATA

| ELEVATION (ft) | OUTFLOW (cfs) | STORAGE (ac-ft) |
|---|---|---|
| 460.00 | 0.0 | 0.000 |
| 460.25 | 0.4 | 0.000 |
| 460.50 | 1.1 | 0.002 |
| 460.75 | 1.9 | 0.006 |
| 461.00 | 3.0 | 0.015 |
| 461.25 | 4.2 | 0.030 |
| 461.50 | 5.5 | 0.052 |
| 461.75 | 6.9 | 0.082 |
| 462.00 | 8.5 | 0.122 |
| 462.25 | 10.1 | 0.169 |
| 462.50 | 11.8 | 0.218 |
| 462.75 | 12.7 | 0.269 |
| 463.00 | 13.6 | 0.321 |
| 463.25 | 14.4 | 0.376 |
| 463.50 | 15.2 | 0.433 |
| 463.75 | 16.0 | 0.491 |
| 464.00 | 16.7 | 0.552 |
| 464.25 | 17.4 | 0.615 |
| 464.50 | 18.0 | 0.680 |
| 464.75 | 18.6 | 0.748 |
| 465.00 | 19.3 | 0.817 |
| 465.25 | 24.2 | 0.888 |
| 465.50 | 32.8 | 0.962 |
| 465.75 | 43.7 | 1.038 |
| 466.00 | 56.5 | 1.117 |

INTERMEDIATE ROUTING COMPUTATIONS

| 2S/t (cfs) | 2S/t + O (cfs) |
|---|---|
| 0.0 | 0.0 |
| 0.3 | 0.7 |
| 2.8 | 3.9 |
| 9.4 | 11.3 |
| 22.2 | 25.2 |
| 43.4 | 47.6 |
| 75.0 | 80.5 |
| 119.1 | 126.0 |
| 177.8 | 186.3 |
| 245.9 | 256.0 |
| 316.7 | 328.5 |
| 390.3 | 403.0 |
| 466.7 | 480.3 |
| 546.0 | 560.4 |
| 628.3 | 643.5 |
| 713.6 | 729.6 |
| 801.9 | 818.6 |
| 893.4 | 910.8 |
| 987.8 | 1005.8 |
| 1085.4 | 1104.0 |
| 1186.1 | 1205.4 |
| 1290.0 | 1314.2 |
| 1397.2 | 1430.0 |
| 1507.7 | 1551.4 |
| 1621.5 | 1678.0 |

Time increment (t) = 1.0 min.

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-002.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030002.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 | 460.00 |
| 1.0 | 3.00 | 3.0 | 1.2 | 3.0 | 0.90 | 460.43 |
| 2.0 | 6.00 | 9.0 | 6.6 | 10.2 | 1.78 | 460.71 |
| 3.0 | 9.00 | 15.0 | 16.2 | 21.6 | 2.72 | 460.94 |
| 4.0 | 12.00 | 21.0 | 29.9 | 37.2 | 3.64 | 461.13 |
| 5.0 | 15.00 | 27.0 | 47.8 | 56.9 | 4.57 | 461.32 |
| 6.0 | 18.00 | 33.0 | 69.8 | 80.8 | 5.51 | 461.50 |
| 7.0 | 18.00 | 36.0 | 93.2 | 105.8 | 6.28 | 461.64 |
| 8.0 | 18.00 | 36.0 | 115.2 | 129.2 | 6.98 | 461.76 |
| 9.0 | 18.00 | 36.0 | 136.1 | 151.2 | 7.57 | 461.85 |
| 10.0 | 18.00 | 36.0 | 155.9 | 172.1 | 8.12 | 461.94 |
| 11.0 | 18.00 | 36.0 | 174.6 | 191.9 | 8.63 | 462.02 |
| 12.0 | 18.00 | 36.0 | 192.5 | 210.6 | 9.06 | 462.09 |
| 13.0 | 18.00 | 36.0 | 209.6 | 228.5 | 9.47 | 462.15 |
| 14.0 | 18.00 | 36.0 | 225.8 | 245.6 | 9.86 | 462.21 |
| 15.0 | 18.00 | 36.0 | 241.4 | 261.8 | 10.24 | 462.27 |
| 16.0 | 18.00 | 36.0 | 256.2 | 277.4 | 10.60 | 462.32 |
| 17.0 | 18.00 | 36.0 | 270.3 | 292.2 | 10.95 | 462.37 |
| 18.0 | 18.00 | 36.0 | 283.7 | 306.3 | 11.28 | 462.42 |
| 19.0 | 18.00 | 36.0 | 296.5 | 319.7 | 11.59 | 462.47 |
| 20.0 | 18.00 | 36.0 | 308.8 | 332.5 | 11.85 | 462.51 |
| 21.0 | 15.01 | 33.0 | 317.9 | 341.8 | 11.96 | 462.54 |
| 22.0 | 12.01 | 27.0 | 320.9 | 344.9 | 12.00 | 462.56 |
| 23.0 | 9.01 | 21.0 | 318.0 | 341.9 | 11.96 | 462.55 |
| 24.0 | 6.01 | 15.0 | 309.3 | 333.0 | 11.86 | 462.52 |
| 25.0 | 3.02 | 9.0 | 295.2 | 318.4 | 11.56 | 462.47 |
| 26.0 | 0.02 | 3.0 | 276.1 | 298.3 | 11.09 | 462.40 |
| 27.0 | 0.00 | 0.0 | 255.0 | 276.1 | 10.57 | 462.32 |
| 28.0 | 0.00 | 0.0 | 234.8 | 255.0 | 10.08 | 462.25 |
| 29.0 | 0.00 | 0.0 | 215.6 | 234.8 | 9.61 | 462.17 |
| 30.0 | 0.00 | 0.0 | 197.2 | 215.6 | 9.17 | 462.10 |
| 31.0 | 0.00 | 0.0 | 179.7 | 197.2 | 8.75 | 462.04 |
| 32.0 | 0.00 | 0.0 | 163.1 | 179.7 | 8.32 | 461.97 |
| 33.0 | 0.00 | 0.0 | 147.3 | 163.1 | 7.88 | 461.90 |
| 34.0 | 0.00 | 0.0 | 132.4 | 147.3 | 7.46 | 461.84 |
| 35.0 | 0.00 | 0.0 | 118.3 | 132.4 | 7.07 | 461.78 |
| 36.0 | 0.00 | 0.0 | 104.9 | 118.3 | 6.66 | 461.71 |
| 37.0 | 0.00 | 0.0 | 92.4 | 104.9 | 6.25 | 461.63 |
| 38.0 | 0.00 | 0.0 | 80.7 | 92.4 | 5.87 | 461.57 |
| 39.0 | 0.00 | 0.0 | 69.7 | 80.7 | 5.51 | 461.50 |
| 40.0 | 0.00 | 0.0 | 59.5 | 69.7 | 5.07 | 461.42 |
| 41.0 | 0.00 | 0.0 | 50.2 | 59.5 | 4.67 | 461.34 |
| 42.0 | 0.00 | 0.0 | 41.6 | 50.2 | 4.30 | 461.27 |
| 43.0 | 0.00 | 0.0 | 33.8 | 41.6 | 3.88 | 461.18 |
| 44.0 | 0.00 | 0.0 | 26.9 | 33.8 | 3.46 | 461.10 |

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-002.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030002.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 | 20.7 | 26.9 | 3.09 | 461.02 |
| 46.0 | 0.00 | 0.0 | 15.4 | 20.7 | 2.65 | 460.92 |
| 47.0 | 0.00 | 0.0 | 11.0 | 15.4 | 2.23 | 460.82 |
| 48.0 | 0.00 | 0.0 | 7.3 | 11.0 | 1.87 | 460.74 |
| 49.0 | 0.00 | 0.0 | 4.3 | 7.3 | 1.46 | 460.61 |
| 50.0 | 0.00 | 0.0 | 2.0 | 4.3 | 1.15 | 460.52 |
| 51.0 | 0.00 | 0.0 | 0.7 | 2.0 | 0.69 | 460.35 |
| 52.0 | 0.00 | 0.0 | -0.0 | 0.7 | 0.35 | 460.22 |
| 53.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 54.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 55.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 56.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 57.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 58.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 59.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 60.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 61.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 62.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 63.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 64.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 65.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 66.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 67.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 68.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 69.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 70.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 71.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 72.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 73.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 74.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 75.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 76.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 77.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 78.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 79.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 80.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 81.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 82.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 83.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 84.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 85.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 86.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 87.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 88.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 89.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 90.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |

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

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-002.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030002.HYD

Starting Pond W.S. Elevation = 460.00 ft

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

| | | |
|---|---|---|
| Peak Inflow | = | 18.00 cfs |
| Peak Outflow | = | 12.00 cfs |
| Peak Elevation | = | 462.56 ft |

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

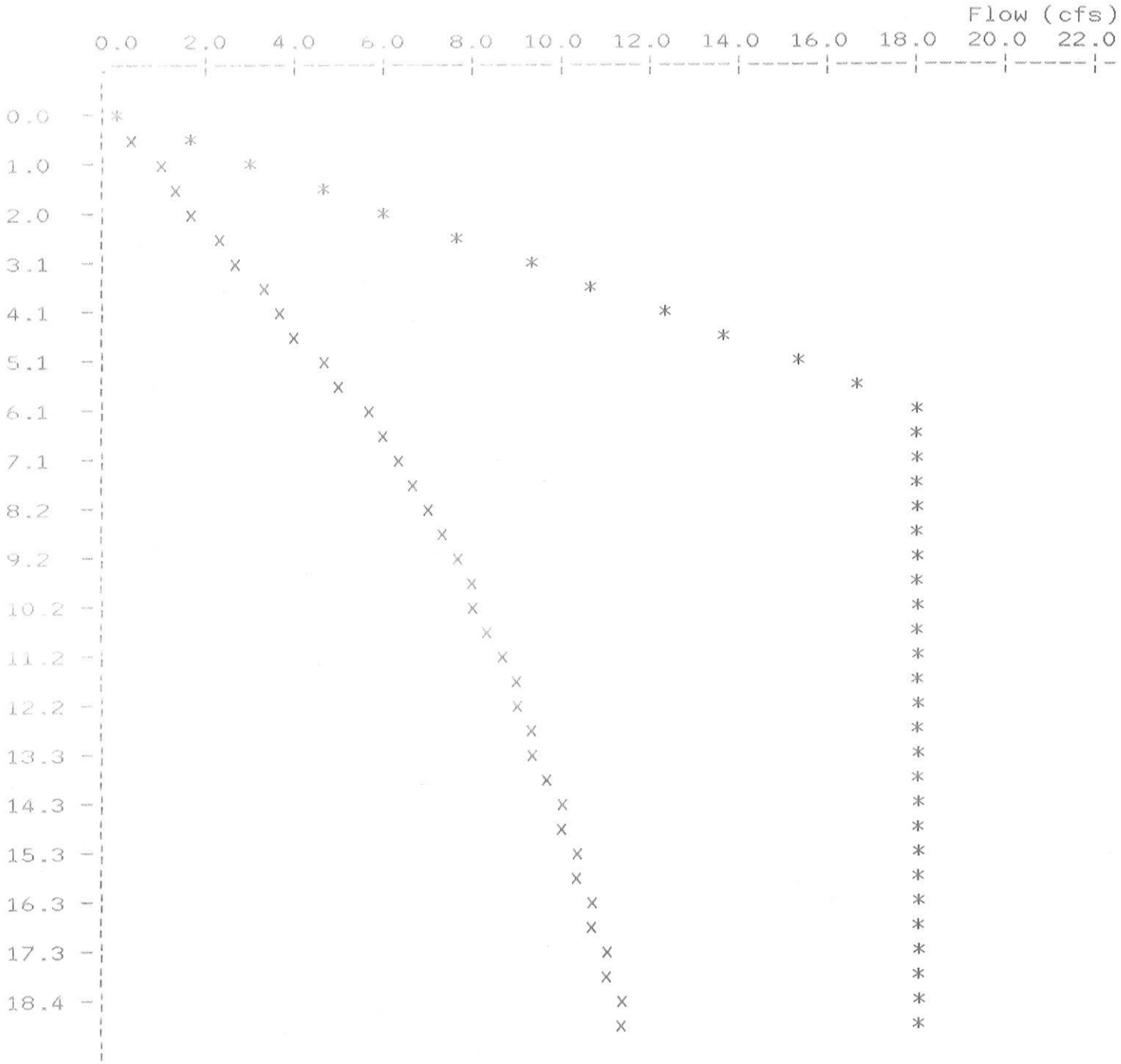
| | | |
|---|---|---|
| Initial Storage | = | 0.00 ac-ft |
| Peak Storage From Storm | = | 0.23 ac-ft |
| Total Storage in Pond | = | 0.23 ac-ft |

Return Freq: 2 years

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-002.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030002.HYD

EXECUTED: 08-04-1998 08:12:19

Peak Inflow = 18.00 cfs
Peak Outflow = 12.00 cfs
Peak Elevation = 462.56 ft




x File: C:\WINDOWS\DESKTOP\PONDPA~1\92030002.HYD Qmax = 12.0 cfs
* File: C:\WINDOWS\DESKTOP\PONDPA~1\9203-002.HYD Qmax = 18.0 cfs

The Crossings - Village C - South Basin
DETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
July 31, 1998

Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-015.HYD
Rating Table file: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND

----INITIAL CONDITIONS----
Elevation = 460.00 ft
Outflow = 0.00 cfs
Storage = 0.00 ac-ft

GIVEN POND DATA

| ELEVATION (ft) | OUTFLOW (cfs) | STORAGE (ac-ft) |
|---|---|---|
| 460.00 | 0.0 | 0.000 |
| 460.25 | 0.4 | 0.000 |
| 460.50 | 1.1 | 0.002 |
| 460.75 | 1.9 | 0.006 |
| 461.00 | 3.0 | 0.015 |
| 461.25 | 4.2 | 0.030 |
| 461.50 | 5.5 | 0.052 |
| 461.75 | 6.9 | 0.082 |
| 462.00 | 8.5 | 0.122 |
| 462.25 | 10.1 | 0.169 |
| 462.50 | 11.8 | 0.218 |
| 462.75 | 12.7 | 0.269 |
| 463.00 | 13.6 | 0.321 |
| 463.25 | 14.4 | 0.376 |
| 463.50 | 15.2 | 0.433 |
| 463.75 | 16.0 | 0.491 |
| 464.00 | 16.7 | 0.552 |
| 464.25 | 17.4 | 0.615 |
| 464.50 | 18.0 | 0.680 |
| 464.75 | 18.6 | 0.748 |
| 465.00 | 19.3 | 0.817 |
| 465.25 | 24.2 | 0.888 |
| 465.50 | 32.8 | 0.962 |
| 465.75 | 43.7 | 1.038 |
| 466.00 | 56.5 | 1.117 |

INTERMEDIATE ROUTING COMPUTATIONS

| 2S/t (cfs) | 2S/t + O (cfs) |
|---|---|
| 0.0 | 0.0 |
| 0.3 | 0.7 |
| 2.8 | 3.9 |
| 9.4 | 11.3 |
| 22.2 | 25.2 |
| 43.4 | 47.6 |
| 75.0 | 80.5 |
| 119.1 | 126.0 |
| 177.8 | 186.3 |
| 245.9 | 256.0 |
| 316.7 | 328.5 |
| 390.3 | 403.0 |
| 466.7 | 480.3 |
| 546.0 | 560.4 |
| 628.3 | 643.5 |
| 713.6 | 729.6 |
| 801.9 | 818.6 |
| 893.4 | 910.8 |
| 987.8 | 1005.8 |
| 1085.4 | 1104.0 |
| 1186.1 | 1205.4 |
| 1290.0 | 1314.2 |
| 1397.2 | 1430.0 |
| 1507.7 | 1551.4 |
| 1621.5 | 1678.0 |

Time increment (t) = 1.0 min.

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-015.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030015.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 | 460.00 |
| 1.0 | 4.90 | 4.9 | 2.5 | 4.9 | 1.21 | 460.53 |
| 2.0 | 9.80 | 14.7 | 12.4 | 17.2 | 2.37 | 460.86 |
| 3.0 | 14.70 | 24.5 | 29.7 | 36.9 | 3.63 | 461.13 |
| 4.0 | 19.70 | 34.4 | 54.4 | 64.1 | 4.85 | 461.38 |
| 5.0 | 24.60 | 44.3 | 86.6 | 98.7 | 6.06 | 461.60 |
| 6.0 | 29.49 | 54.1 | 126.1 | 140.7 | 7.29 | 461.81 |
| 7.0 | 29.50 | 59.0 | 168.1 | 185.1 | 8.47 | 461.99 |
| 8.0 | 29.50 | 59.0 | 208.3 | 227.1 | 9.44 | 462.15 |
| 9.0 | 29.50 | 59.0 | 246.5 | 267.3 | 10.36 | 462.29 |
| 10.0 | 29.50 | 59.0 | 283.0 | 305.5 | 11.26 | 462.42 |
| 11.0 | 29.50 | 59.0 | 318.1 | 342.0 | 11.96 | 462.55 |
| 12.0 | 29.50 | 59.0 | 352.3 | 377.1 | 12.39 | 462.66 |
| 13.0 | 29.50 | 59.0 | 385.7 | 411.3 | 12.80 | 462.78 |
| 14.0 | 29.50 | 59.0 | 418.3 | 444.7 | 13.19 | 462.89 |
| 15.0 | 29.50 | 59.0 | 450.2 | 477.3 | 13.57 | 462.99 |
| 16.0 | 29.50 | 59.0 | 481.4 | 509.2 | 13.89 | 463.09 |
| 17.0 | 29.50 | 59.0 | 512.0 | 540.4 | 14.20 | 463.19 |
| 18.0 | 29.50 | 59.0 | 542.0 | 571.0 | 14.50 | 463.28 |
| 19.0 | 29.50 | 59.0 | 571.4 | 601.0 | 14.79 | 463.37 |
| 20.0 | 29.50 | 59.0 | 600.3 | 630.4 | 15.07 | 463.46 |
| 21.0 | 24.62 | 54.1 | 623.8 | 654.4 | 15.30 | 463.53 |
| 22.0 | 19.72 | 44.3 | 637.3 | 668.2 | 15.43 | 463.57 |
| 23.0 | 14.72 | 34.4 | 640.8 | 671.7 | 15.46 | 463.58 |
| 24.0 | 9.82 | 24.5 | 634.5 | 665.4 | 15.40 | 463.56 |
| 25.0 | 4.92 | 14.7 | 618.8 | 649.3 | 15.25 | 463.52 |
| 26.0 | 0.03 | 5.0 | 593.7 | 623.7 | 15.01 | 463.44 |
| 27.0 | 0.00 | 0.0 | 564.3 | 593.7 | 14.72 | 463.35 |
| 28.0 | 0.00 | 0.0 | 535.4 | 564.3 | 14.44 | 463.26 |
| 29.0 | 0.00 | 0.0 | 507.1 | 535.4 | 14.15 | 463.17 |
| 30.0 | 0.00 | 0.0 | 479.4 | 507.1 | 13.87 | 463.08 |
| 31.0 | 0.00 | 0.0 | 452.2 | 479.4 | 13.59 | 463.00 |
| 32.0 | 0.00 | 0.0 | 425.7 | 452.2 | 13.27 | 462.91 |
| 33.0 | 0.00 | 0.0 | 399.7 | 425.7 | 12.96 | 462.82 |
| 34.0 | 0.00 | 0.0 | 374.4 | 399.7 | 12.66 | 462.74 |
| 35.0 | 0.00 | 0.0 | 349.7 | 374.4 | 12.36 | 462.65 |
| 36.0 | 0.00 | 0.0 | 325.6 | 349.7 | 12.06 | 462.57 |
| 37.0 | 0.00 | 0.0 | 302.1 | 325.6 | 11.73 | 462.49 |
| 38.0 | 0.00 | 0.0 | 279.8 | 302.1 | 11.18 | 462.41 |
| 39.0 | 0.00 | 0.0 | 258.4 | 279.8 | 10.66 | 462.33 |
| 40.0 | 0.00 | 0.0 | 238.1 | 258.4 | 10.16 | 462.26 |
| 41.0 | 0.00 | 0.0 | 218.7 | 238.1 | 9.69 | 462.19 |
| 42.0 | 0.00 | 0.0 | 200.3 | 218.7 | 9.24 | 462.12 |
| 43.0 | 0.00 | 0.0 | 182.6 | 200.3 | 8.82 | 462.05 |
| 44.0 | 0.00 | 0.0 | 165.8 | 182.6 | 8.40 | 461.98 |

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-015.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030015.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 | 149.9 | 165.8 | 7.96 | 461.91 |
| 46.0 | 0.00 | 0.0 | 134.8 | 149.9 | 7.53 | 461.85 |
| 47.0 | 0.00 | 0.0 | 120.6 | 134.8 | 7.13 | 461.79 |
| 48.0 | 0.00 | 0.0 | 107.1 | 120.6 | 6.73 | 461.72 |
| 49.0 | 0.00 | 0.0 | 94.5 | 107.1 | 6.32 | 461.65 |
| 50.0 | 0.00 | 0.0 | 82.6 | 94.5 | 5.93 | 461.58 |
| 51.0 | 0.00 | 0.0 | 71.5 | 82.6 | 5.56 | 461.51 |
| 52.0 | 0.00 | 0.0 | 61.2 | 71.5 | 5.14 | 461.43 |
| 53.0 | 0.00 | 0.0 | 51.7 | 61.2 | 4.74 | 461.35 |
| 54.0 | 0.00 | 0.0 | 43.0 | 51.7 | 4.36 | 461.28 |
| 55.0 | 0.00 | 0.0 | 35.1 | 43.0 | 3.95 | 461.20 |
| 56.0 | 0.00 | 0.0 | 28.0 | 35.1 | 3.53 | 461.11 |
| 57.0 | 0.00 | 0.0 | 21.7 | 28.0 | 3.15 | 461.03 |
| 58.0 | 0.00 | 0.0 | 16.3 | 21.7 | 2.72 | 460.94 |
| 59.0 | 0.00 | 0.0 | 11.7 | 16.3 | 2.29 | 460.84 |
| 60.0 | 0.00 | 0.0 | 7.8 | 11.7 | 1.93 | 460.76 |
| 61.0 | 0.00 | 0.0 | 4.8 | 7.8 | 1.53 | 460.63 |
| 62.0 | 0.00 | 0.0 | 2.4 | 4.8 | 1.20 | 460.53 |
| 63.0 | 0.00 | 0.0 | 0.8 | 2.4 | 0.77 | 460.38 |
| 64.0 | 0.00 | 0.0 | 0.0 | 0.8 | 0.42 | 460.26 |
| 65.0 | 0.00 | 0.0 | -0.0 | 0.0 | 0.00 | 460.00 |
| 66.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 67.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 68.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 69.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 70.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 71.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 72.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 73.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 74.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 75.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 76.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 77.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 78.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 79.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 80.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 81.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 82.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 83.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 84.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 85.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 86.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 87.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 88.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 89.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 90.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |

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

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-015.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030015.HYD

Starting Pond W.S. Elevation = 460.00 ft

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

| | | |
|---|---|---|
| Peak Inflow | = | 29.50 cfs |
| Peak Outflow | = | 15.46 cfs |
| Peak Elevation | = | 463.58 ft |

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

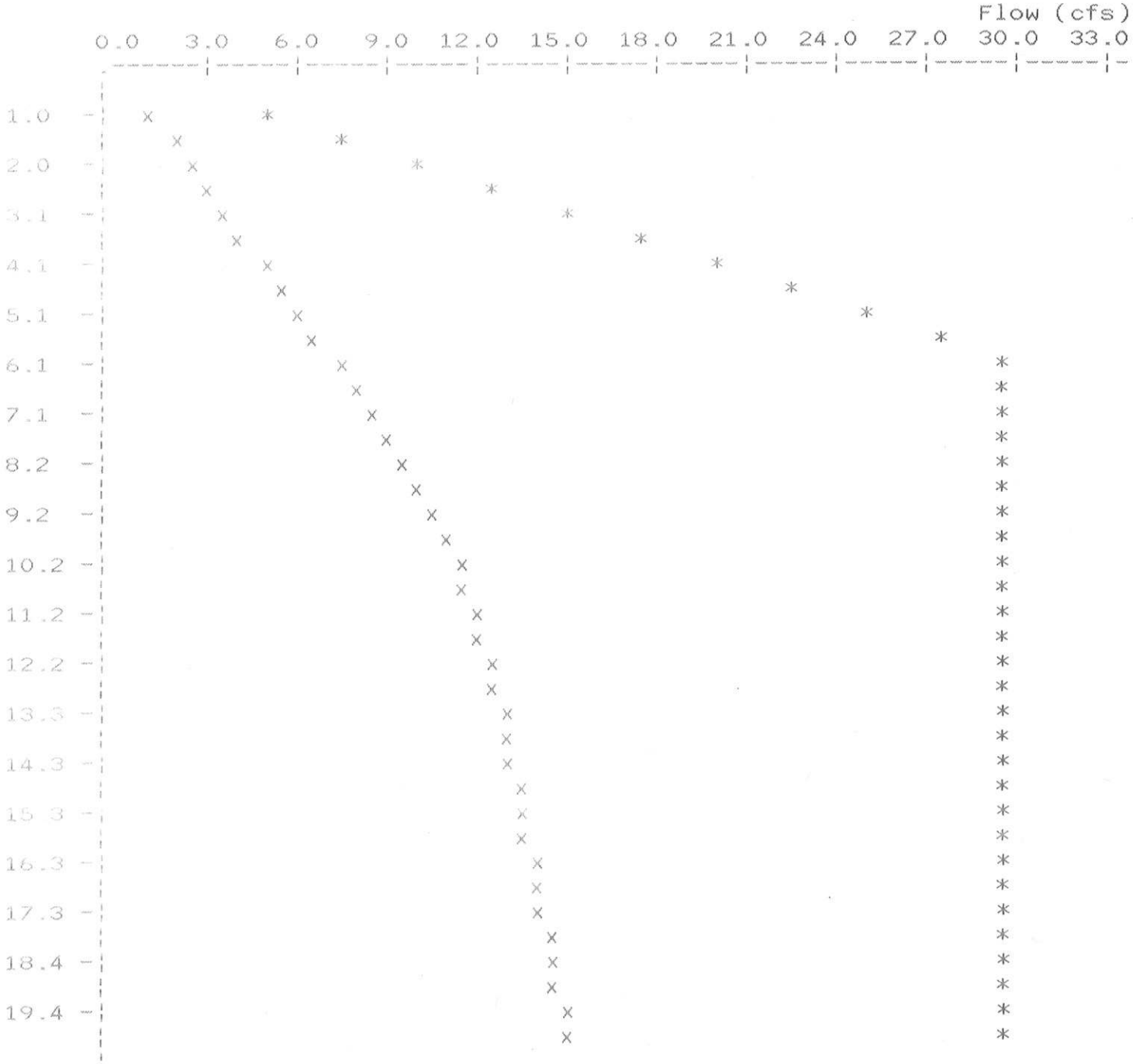
| | | |
|---|---|---|
| Initial Storage | = | 0.00 ac-ft |
| Peak Storage From Storm | = | 0.45 ac-ft |
| Total Storage in Pond | = | 0.45 ac-ft |

Return Freq: 15 years

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-015.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030015.HYD

EXECUTED: 08-04-1998 08:12:19

Peak Inflow = 29.50 cfs
Peak Outflow = 15.46 cfs
Peak Elevation = 463.58 ft




x File: C:\WINDOWS\DESKTOP\PONDPA~1\92030015.HYD Qmax = 15.5 cfs
* File: C:\WINDOWS\DESKTOP\PONDPA~1\9203-015.HYD Qmax = 29.5 cfs

```
**********************************************
*                                            *
* The Crossings - Village C - South Basin    *
*            DETENTION ANALYSIS              *
*  PREPARED BY: BAX ENGINEERING CO., INC.    *
*               July 31, 1998                *
*                                            *
**********************************************
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Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-025.HYD
Rating Table file: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND

----INITIAL CONDITIONS----
Elevation = 460.00 ft
Outflow = 0.00 cfs
Storage = 0.00 ac-ft

GIVEN POND DATA

| ELEVATION (ft) | OUTFLOW (cfs) | STORAGE (ac-ft) |
|---|---|---|
| 460.00 | 0.0 | 0.000 |
| 460.25 | 0.4 | 0.000 |
| 460.50 | 1.1 | 0.002 |
| 460.75 | 1.9 | 0.006 |
| 461.00 | 3.0 | 0.015 |
| 461.25 | 4.2 | 0.030 |
| 461.50 | 5.5 | 0.052 |
| 461.75 | 6.9 | 0.082 |
| 462.00 | 8.5 | 0.122 |
| 462.25 | 10.1 | 0.169 |
| 462.50 | 11.8 | 0.218 |
| 462.75 | 12.7 | 0.269 |
| 463.00 | 13.6 | 0.321 |
| 463.25 | 14.4 | 0.376 |
| 463.50 | 15.2 | 0.433 |
| 463.75 | 16.0 | 0.491 |
| 464.00 | 16.7 | 0.552 |
| 464.25 | 17.4 | 0.615 |
| 464.50 | 18.0 | 0.680 |
| 464.75 | 18.6 | 0.748 |
| 465.00 | 19.3 | 0.817 |
| 465.25 | 24.2 | 0.888 |
| 465.50 | 32.8 | 0.962 |
| 465.75 | 43.7 | 1.038 |
| 466.00 | 56.5 | 1.117 |

INTERMEDIATE ROUTING COMPUTATIONS

| 2S/t (cfs) | 2S/t + O (cfs) |
|---|---|
| 0.0 | 0.0 |
| 0.3 | 0.7 |
| 2.8 | 3.9 |
| 9.4 | 11.3 |
| 22.2 | 25.2 |
| 43.4 | 47.6 |
| 75.0 | 80.5 |
| 119.1 | 126.0 |
| 177.8 | 186.3 |
| 245.9 | 256.0 |
| 316.7 | 328.5 |
| 390.3 | 403.0 |
| 466.7 | 480.3 |
| 546.0 | 560.4 |
| 628.3 | 643.5 |
| 713.6 | 729.6 |
| 801.9 | 818.6 |
| 893.4 | 910.8 |
| 987.8 | 1005.8 |
| 1085.4 | 1104.0 |
| 1186.1 | 1205.4 |
| 1290.0 | 1314.2 |
| 1397.2 | 1430.0 |
| 1507.7 | 1551.4 |
| 1621.5 | 1678.0 |

Time increment (t) = 1.0 min.

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-025.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030025.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 | 460.00 |
| 1.0 | 6.10 | 6.1 | 3.4 | 6.1 | 1.34 | 460.58 |
| 2.0 | 12.10 | 18.2 | 16.2 | 21.6 | 2.72 | 460.94 |
| 3.0 | 18.20 | 30.3 | 38.2 | 46.5 | 4.14 | 461.24 |
| 4.0 | 24.30 | 42.5 | 69.7 | 80.7 | 5.51 | 461.50 |
| 5.0 | 30.29 | 54.6 | 110.6 | 124.3 | 6.85 | 461.74 |
| 6.0 | 36.39 | 66.7 | 160.8 | 177.3 | 8.26 | 461.96 |
| 7.0 | 36.40 | 72.8 | 214.4 | 233.5 | 9.58 | 462.17 |
| 8.0 | 36.40 | 72.8 | 265.5 | 287.2 | 10.83 | 462.36 |
| 9.0 | 36.40 | 72.8 | 314.5 | 338.3 | 11.92 | 462.53 |
| 10.0 | 36.40 | 72.8 | 362.3 | 387.3 | 12.51 | 462.70 |
| 11.0 | 36.40 | 72.8 | 408.9 | 435.1 | 13.07 | 462.85 |
| 12.0 | 36.40 | 72.8 | 454.5 | 481.7 | 13.61 | 463.00 |
| 13.0 | 36.40 | 72.8 | 499.1 | 527.3 | 14.07 | 463.15 |
| 14.0 | 36.40 | 72.8 | 542.9 | 571.9 | 14.51 | 463.28 |
| 15.0 | 36.40 | 72.8 | 585.9 | 615.7 | 14.93 | 463.42 |
| 16.0 | 36.40 | 72.8 | 628.0 | 658.7 | 15.34 | 463.54 |
| 17.0 | 36.40 | 72.8 | 669.3 | 700.8 | 15.73 | 463.67 |
| 18.0 | 36.40 | 72.8 | 709.9 | 742.1 | 16.10 | 463.79 |
| 19.0 | 36.40 | 72.8 | 749.9 | 782.7 | 16.42 | 463.90 |
| 20.0 | 36.30 | 72.7 | 789.1 | 822.6 | 16.73 | 464.01 |
| 21.0 | 30.23 | 66.5 | 821.7 | 855.6 | 16.98 | 464.10 |
| 22.0 | 24.23 | 54.5 | 841.9 | 876.1 | 17.14 | 464.16 |
| 23.0 | 18.13 | 42.4 | 849.8 | 884.2 | 17.20 | 464.18 |
| 24.0 | 12.13 | 30.3 | 845.8 | 880.1 | 17.17 | 464.17 |
| 25.0 | 6.03 | 18.2 | 829.8 | 863.9 | 17.04 | 464.12 |
| 26.0 | 0.03 | 6.1 | 802.2 | 835.9 | 16.83 | 464.05 |
| 27.0 | 0.00 | 0.0 | 769.1 | 802.3 | 16.57 | 463.95 |
| 28.0 | 0.00 | 0.0 | 736.5 | 769.1 | 16.31 | 463.86 |
| 29.0 | 0.00 | 0.0 | 704.4 | 736.5 | 16.05 | 463.77 |
| 30.0 | 0.00 | 0.0 | 672.9 | 704.4 | 15.77 | 463.68 |
| 31.0 | 0.00 | 0.0 | 641.9 | 672.9 | 15.47 | 463.59 |
| 32.0 | 0.00 | 0.0 | 611.5 | 641.9 | 15.18 | 463.50 |
| 33.0 | 0.00 | 0.0 | 581.8 | 611.5 | 14.89 | 463.40 |
| 34.0 | 0.00 | 0.0 | 552.5 | 581.8 | 14.61 | 463.31 |
| 35.0 | 0.00 | 0.0 | 523.9 | 552.5 | 14.32 | 463.23 |
| 36.0 | 0.00 | 0.0 | 495.8 | 523.9 | 14.04 | 463.14 |
| 37.0 | 0.00 | 0.0 | 468.3 | 495.8 | 13.76 | 463.05 |
| 38.0 | 0.00 | 0.0 | 441.4 | 468.3 | 13.46 | 462.96 |
| 39.0 | 0.00 | 0.0 | 415.1 | 441.4 | 13.15 | 462.87 |
| 40.0 | 0.00 | 0.0 | 389.4 | 415.1 | 12.84 | 462.79 |
| 41.0 | 0.00 | 0.0 | 364.3 | 389.4 | 12.54 | 462.70 |
| 42.0 | 0.00 | 0.0 | 339.9 | 364.3 | 12.23 | 462.62 |
| 43.0 | 0.00 | 0.0 | 316.0 | 339.9 | 11.94 | 462.54 |
| 44.0 | 0.00 | 0.0 | 293.0 | 316.0 | 11.51 | 462.46 |

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-025.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030025.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 | 271.0 | 293.0 | 10.97 | 462.38 |
| 46.0 | 0.00 | 0.0 | 250.1 | 271.0 | 10.45 | 462.30 |
| 47.0 | 0.00 | 0.0 | 230.2 | 250.1 | 9.97 | 462.23 |
| 48.0 | 0.00 | 0.0 | 211.2 | 230.2 | 9.51 | 462.16 |
| 49.0 | 0.00 | 0.0 | 193.1 | 211.2 | 9.07 | 462.09 |
| 50.0 | 0.00 | 0.0 | 175.7 | 193.1 | 8.65 | 462.02 |
| 51.0 | 0.00 | 0.0 | 159.3 | 175.7 | 8.22 | 461.96 |
| 52.0 | 0.00 | 0.0 | 143.7 | 159.3 | 7.78 | 461.89 |
| 53.0 | 0.00 | 0.0 | 129.0 | 143.7 | 7.37 | 461.82 |
| 54.0 | 0.00 | 0.0 | 115.0 | 129.0 | 6.98 | 461.76 |
| 55.0 | 0.00 | 0.0 | 101.9 | 115.0 | 6.56 | 461.69 |
| 56.0 | 0.00 | 0.0 | 89.6 | 101.9 | 6.16 | 461.62 |
| 57.0 | 0.00 | 0.0 | 78.0 | 89.6 | 5.78 | 461.55 |
| 58.0 | 0.00 | 0.0 | 67.2 | 78.0 | 5.40 | 461.48 |
| 59.0 | 0.00 | 0.0 | 57.3 | 67.2 | 4.98 | 461.40 |
| 60.0 | 0.00 | 0.0 | 48.1 | 57.3 | 4.58 | 461.32 |
| 61.0 | 0.00 | 0.0 | 39.7 | 48.1 | 4.22 | 461.25 |
| 62.0 | 0.00 | 0.0 | 32.1 | 39.7 | 3.77 | 461.16 |
| 63.0 | 0.00 | 0.0 | 25.4 | 32.1 | 3.37 | 461.08 |
| 64.0 | 0.00 | 0.0 | 19.4 | 25.4 | 3.01 | 461.00 |
| 65.0 | 0.00 | 0.0 | 14.3 | 19.4 | 2.54 | 460.90 |
| 66.0 | 0.00 | 0.0 | 10.0 | 14.3 | 2.14 | 460.80 |
| 67.0 | 0.00 | 0.0 | 6.5 | 10.0 | 1.76 | 460.71 |
| 68.0 | 0.00 | 0.0 | 3.7 | 6.5 | 1.38 | 460.59 |
| 69.0 | 0.00 | 0.0 | 1.6 | 3.7 | 1.07 | 460.49 |
| 70.0 | 0.00 | 0.0 | 0.4 | 1.6 | 0.59 | 460.32 |
| 71.0 | 0.00 | 0.0 | -0.0 | 0.4 | 0.22 | 460.14 |
| 72.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 73.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 74.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 75.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 76.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 77.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 78.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 79.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 80.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 81.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 82.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 83.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 84.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 85.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 86.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 87.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 88.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 89.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |
| 90.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 460.00 |

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

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-025.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030025.HYD

Starting Pond W.S. Elevation = 460.00 ft

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

| | | |
|---|---|---|
| Peak Inflow | = | 36.40 cfs |
| Peak Outflow | = | 17.20 cfs |
| Peak Elevation | = | 464.18 ft |

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

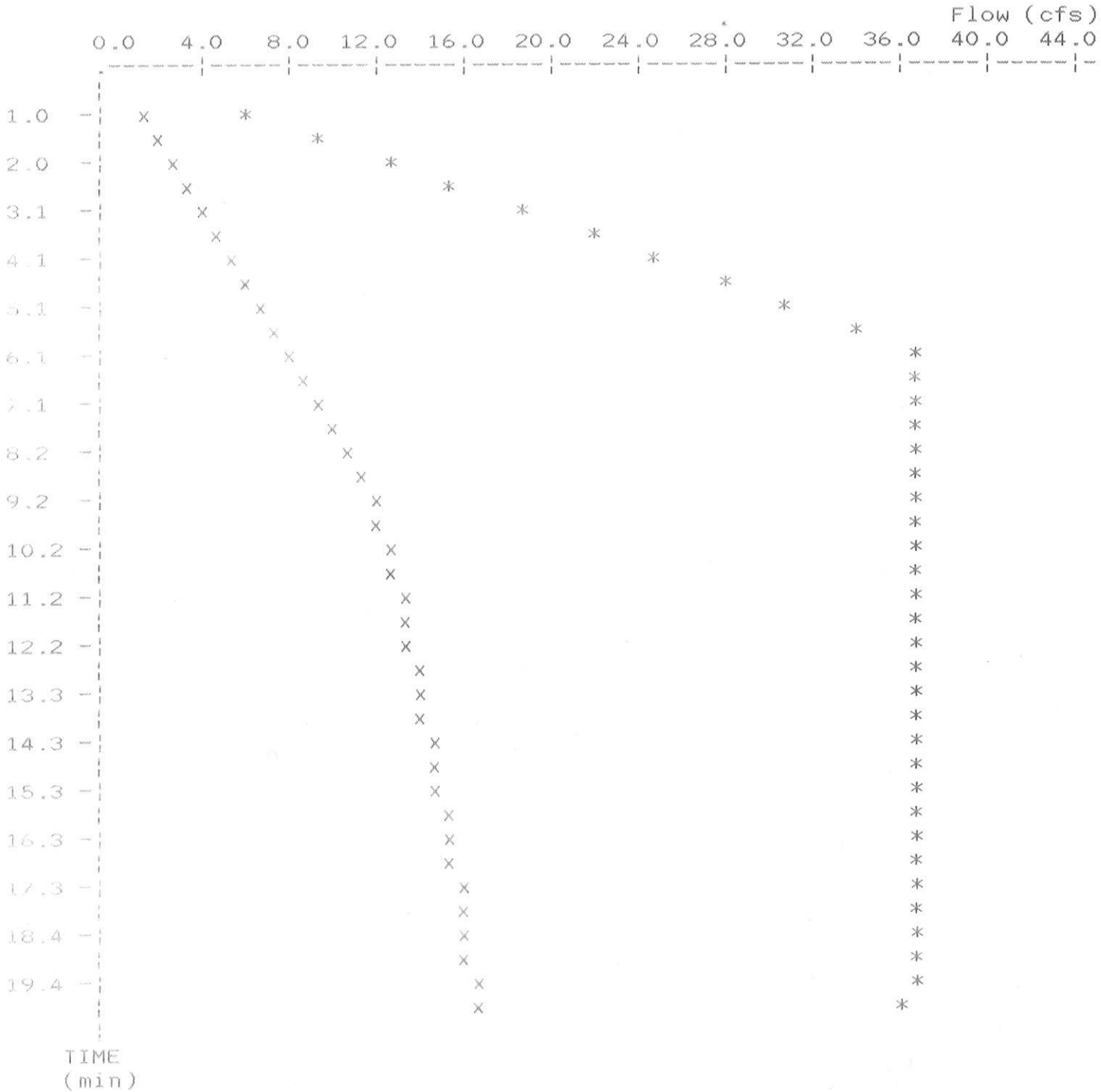
| | | |
|---|---|---|
| Initial Storage | = | 0.00 ac-ft |
| Peak Storage From Storm | = | 0.60 ac-ft |
| Total Storage in Pond | = | 0.60 ac-ft |

Return Freq: 25 years

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-025.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030025.HYD

EXECUTED: 08-04-1998 08:12:19

Peak Inflow = 36.40 cfs
Peak Outflow = 17.20 cfs
Peak Elevation = 464.18 ft




x File: C:\WINDOWS\DESKTOP\PONDPA~1\92030025.HYD Qmax = 17.2 cfs
* File: C:\WINDOWS\DESKTOP\PONDPA~1\9203-025.HYD Qmax = 36.4 cfs

BAX ENGINEERING

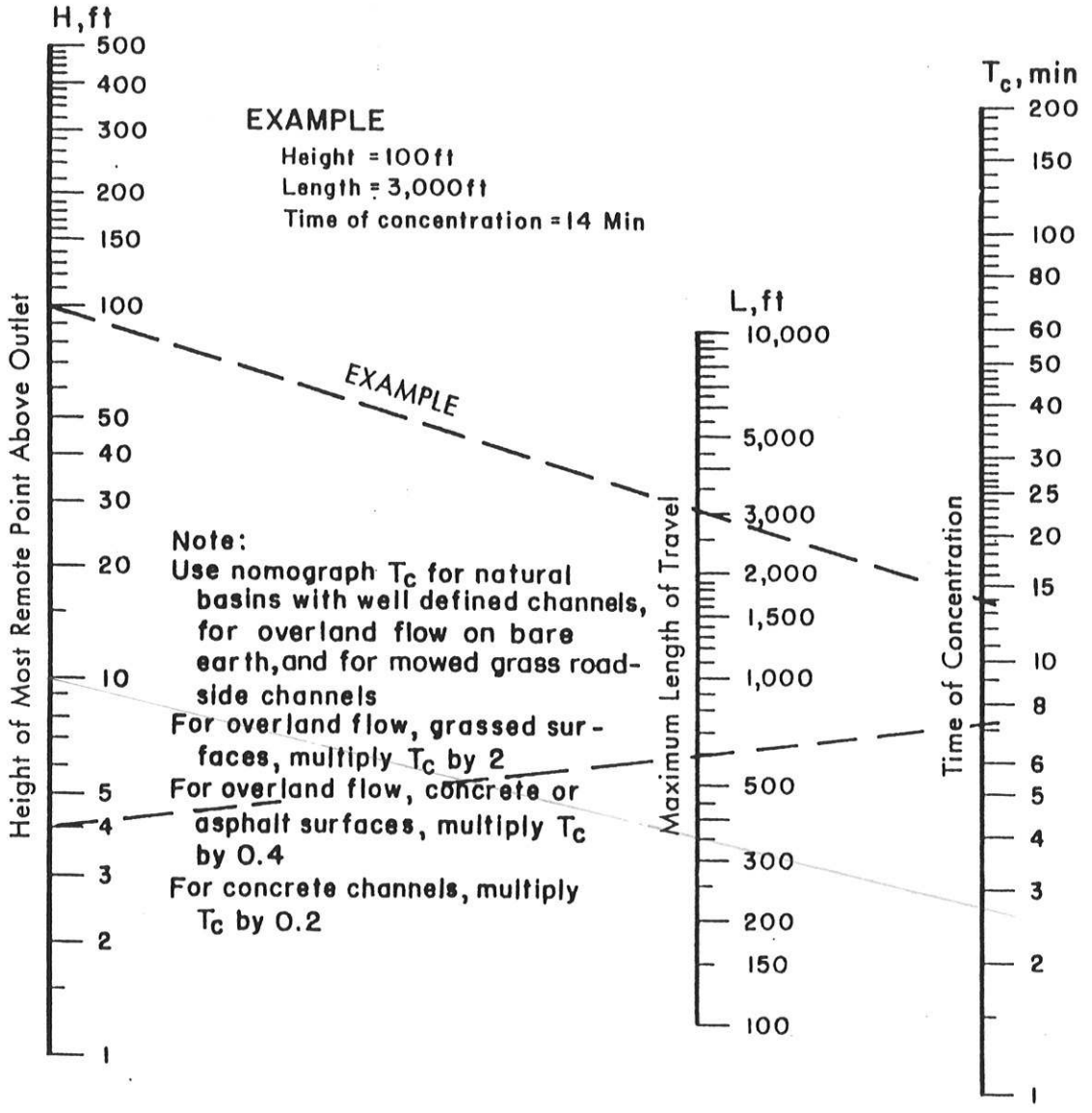
SHEET ___ of ___

Project: THE CROSSINGS C

Date: _____ Project No: _____

Designed: _____ Checked: _____

WEST BASIN




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

350 - 506 - 496 (10) 2.8 x 2.0 5.6

780' PIPE 7 ft/sec 111.4 1.9

7.45 USE 7 min

1052 South Cloverleaf Drive
St. Peters, MO 63376-6445
314-928-5552 FAX 928-1718

POND-2 Version: 5.20
S/N:

# The Crossings - Village C - West Basin

CALCULATED 08-04-1998 07:58:21
DISK FILE: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .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) |
|---|---|---|---|---|---|
| 466.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 468.00 | 10,722.00 | 0.25 | 0.25 | 0.16 | 0.16 |
| 470.00 | 14,107.00 | 0.32 | 0.85 | 0.57 | 0.73 |
| 472.00 | 18,080.00 | 0.42 | 1.11 | 0.74 | 1.47 |

* 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

Outlet Structure File: 9203C .STR

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

**********
The Crossings - Village C - West Basin
aETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
July 31, 1998
**********

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

| Elevation (ft) | Q (cfs) | Contributing Structures |
|---|---|---|
| 466.00 | 0.0 | 1 |
| 466.25 | 0.5 | 1 |
| 466.50 | 1.3 | 1 |
| 466.75 | 2.4 | 1 |
| 467.00 | 3.8 | 1 |
| 467.25 | 5.2 | 1 |
| 467.50 | 6.9 | 1 |
| 467.75 | 8.7 | 1 |
| 468.00 | 10.6 | 1 |
| 468.25 | 12.7 | 1 |
| 468.50 | 14.8 | 1 |
| 468.75 | 17.1 | 1 |
| 469.00 | 19.5 | 1 |
| 469.25 | 21.3 | 2 |
| 469.50 | 22.6 | 2 |
| 469.75 | 23.8 | 2 |
| 470.00 | 25.0 | 2 |
| 470.25 | 26.1 | 2 |
| 470.50 | 27.1 | 2 |
| 470.75 | 28.1 | 2 |
| 471.00 | 29.1 | 2 |
| 471.25 | 30.1 | 2 |
| 471.50 | 31.0 | 2 |
| 471.75 | 31.9 | 2 |
| 472.00 | 32.8 | 2 |

Outlet Structure File: 9203C .STR

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

**********
The Crossings - Village C - West Basin
aETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
July 31, 1998
**********

Outlet Structure File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .STR
Planimeter Input File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .VOL
Rating Table Output File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND

Min. Elev.(ft) = 466 Max. Elev.(ft) = 472 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 |
| WEIR-VR | 3 | | | -> | 3 |

Outflow rating table summary was stored in file:
C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND

Outlet Structure File: 9203C .STR

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

**********
The Crossings - Village C - West Basin
aETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
July 31, 1998
**********

›››››› Structure No. 1 ‹‹‹‹‹‹
(Input Data)

WEIR-VR
Weir - Vertical Rectangular

E1 elev.(ft)? 466
E2 elev.(ft)? 472.001
Weir coefficient? 3
Weir elev.(ft)? 466.00
Length (ft)? 1.25
Contracted/Suppressed (C/S)? S

Outlet Structure File: 9203C .STR

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

**********
The Crossings - Village C - West Basin
aETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
July 31, 1998
**********

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

ORIFICE
Orifice - Based on Area and Datum Elevation

| | |
|---|---|
| E1 elev.(ft)? | 468.5000 |
| E2 elev.(ft)? | 472.001 |
| Orifice coeff.? | 0.6 |
| Invert elev.(ft)? | 466.000 |
| Datum elev.(ft) ? | 467.25 |
| Orifice area (sq ft)? | 3.125 |

Outlet Structure File: 9203C .STR

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

**********
The Crossings - Village C - West Basin
aETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
July 31, 1998
**********

>>>>>> Structure No. 3 <<<<<<
(Input Data)

WEIR-VR
Weir - Vertical Rectangular

E1 elev.(ft)? 513.5
E2 elev.(ft)? 472.001
Weir coefficient? 3
Weir elev.(ft)? 513.50
Length (ft)? 11.67
Contracted/Suppressed (C/S)? S

Outlet Structure File: 9203C .STR

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

**********
The Crossings - Village C - West Basin
aETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
July 31, 1998
**********

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

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

| Elevation (ft) | Q (cfs) | Computation Messages |
|---|---|---|
| 466.00 | 0.0 | H =0.0 |
| 466.25 | 0.5 | H =.25 |
| 466.50 | 1.3 | H =.5 |
| 466.75 | 2.4 | H =.750 |
| 467.00 | 3.8 | H =1.0 |
| 467.25 | 5.2 | H =1.25 |
| 467.50 | 6.9 | H =1.5 |
| 467.75 | 8.7 | H =1.75 |
| 468.00 | 10.6 | H =2.0 |
| 468.25 | 12.7 | H =2.25 |
| 468.50 | 14.8 | H =2.5 |
| 468.75 | 17.1 | H =2.75 |
| 469.00 | 19.5 | H =3.0 |
| 469.25 | 22.0 | H =3.25 |
| 469.50 | 24.6 | H =3.5 |
| 469.75 | 27.2 | H =3.75 |
| 470.00 | 30.0 | H =4.0 |
| 470.25 | 32.9 | H =4.25 |
| 470.50 | 35.8 | H =4.5 |
| 470.75 | 38.8 | H =4.75 |
| 471.00 | 41.9 | H =5.0 |
| 471.25 | 45.1 | H =5.25 |
| 471.50 | 48.4 | H =5.5 |
| 471.75 | 51.7 | H =5.75 |
| 472.00 | 55.1 | H =6.0 |

C = 3 L (ft) = 1.25
H (ft) = Table elev. - Invert elev. ( 466 ft )
Q (cfs) = C * L * (H**1.5) -- Suppressed Weir

Outlet Structure File: 9203C .STR

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

**********
The Crossings - Village C - West Basin
aETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
July 31, 1998
**********

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

| Elevation (ft) | Q (cfs) | Computation Messages |
|---|---|---|
| 466.00 | 0.0 | E < E1=468.5000 |
| 466.25 | 0.0 | E < E1=468.5000 |
| 466.50 | 0.0 | E < E1=468.5000 |
| 466.75 | 0.0 | E < E1=468.5000 |
| 467.00 | 0.0 | E < E1=468.5000 |
| 467.25 | 0.0 | E < E1=468.5000 |
| 467.50 | 0.0 | E < E1=468.5000 |
| 467.75 | 0.0 | E < E1=468.5000 |
| 468.00 | 0.0 | E < E1=468.5000 |
| 468.25 | 0.0 | E < E1=468.5000 |
| 468.50 | 16.8 | H =1.25 |
| 468.75 | 18.4 | H =1.5 |
| 469.00 | 19.9 | H =1.75 |
| 469.25 | 21.3 | H =2.0 |
| 469.50 | 22.6 | H =2.25 |
| 469.75 | 23.8 | H =2.5 |
| 470.00 | 25.0 | H =2.75 |
| 470.25 | 26.1 | H =3.0 |
| 470.50 | 27.1 | H =3.25 |
| 470.75 | 28.1 | H =3.5 |
| 471.00 | 29.1 | H =3.75 |
| 471.25 | 30.1 | H =4.0 |
| 471.50 | 31.0 | H =4.25 |
| 471.75 | 31.9 | H =4.5 |
| 472.00 | 32.8 | H =4.75 |

C = .6 A = 3.125 sq.ft.
H (ft) = Table elev. - Datum elev. ( 467.25 ft )
Q (cfs) = C * A * sqr(2g * H)

Outlet Structure File: 9203C .STR

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

**********
The Crossings - Village C - West Basin
aETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
July 31, 1998
**********

Outflow Rating Table for Structure #3
WEIR-VR Weir - Vertical Rectangular

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

| Elevation (ft) | Q (cfs) | Computation Messages |
|---|---|---|
| 466.00 | 0.0 | E < Inv.El.= 513.5 |
| 466.25 | 0.0 | E < Inv.El.= 513.5 |
| 466.50 | 0.0 | E < Inv.El.= 513.5 |
| 466.75 | 0.0 | E < Inv.El.= 513.5 |
| 467.00 | 0.0 | E < Inv.El.= 513.5 |
| 467.25 | 0.0 | E < Inv.El.= 513.5 |
| 467.50 | 0.0 | E < Inv.El.= 513.5 |
| 467.75 | 0.0 | E < Inv.El.= 513.5 |
| 468.00 | 0.0 | E < Inv.El.= 513.5 |
| 468.25 | 0.0 | E < Inv.El.= 513.5 |
| 468.50 | 0.0 | E < Inv.El.= 513.5 |
| 468.75 | 0.0 | E < Inv.El.= 513.5 |
| 469.00 | 0.0 | E < Inv.El.= 513.5 |
| 469.25 | 0.0 | E < Inv.El.= 513.5 |
| 469.50 | 0.0 | E < Inv.El.= 513.5 |
| 469.75 | 0.0 | E < Inv.El.= 513.5 |
| 470.00 | 0.0 | E < Inv.El.= 513.5 |
| 470.25 | 0.0 | E < Inv.El.= 513.5 |
| 470.50 | 0.0 | E < Inv.El.= 513.5 |
| 470.75 | 0.0 | E < Inv.El.= 513.5 |
| 471.00 | 0.0 | E < Inv.El.= 513.5 |
| 471.25 | 0.0 | E < Inv.El.= 513.5 |
| 471.50 | 0.0 | E < Inv.El.= 513.5 |
| 471.75 | 0.0 | E < Inv.El.= 513.5 |
| 472.00 | 0.0 | E < Inv.El.= 513.5 |

Outlet Structure File: 9203C .STR

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

**********
The Crossings - Village C - West Basin
aETENTION ANALYSIS
PREPARED BY: BAX ENGINEERING CO., INC.
July 31, 1998
**********

Outflow Rating Table A
Table A = 1 ? 2

| Elevation (ft) | Q (cfs) | Contributing Structures |
|---|---|---|
| 466.00 | 0.0 | 1 |
| 466.25 | 0.5 | 1 |
| 466.50 | 1.3 | 1 |
| 466.75 | 2.4 | 1 |
| 467.00 | 3.8 | 1 |
| 467.25 | 5.2 | 1 |
| 467.50 | 6.9 | 1 |
| 467.75 | 8.7 | 1 |
| 468.00 | 10.6 | 1 |
| 468.25 | 12.7 | 1 |
| 468.50 | 14.8 | 1 |
| 468.75 | 17.1 | 1 |
| 469.00 | 19.5 | 1 |
| 469.25 | 21.3 | 2 |
| 469.50 | 22.6 | 2 |
| 469.75 | 23.8 | 2 |
| 470.00 | 25.0 | 2 |
| 470.25 | 26.1 | 2 |
| 470.50 | 27.1 | 2 |
| 470.75 | 28.1 | 2 |
| 471.00 | 29.1 | 2 |
| 471.25 | 30.1 | 2 |
| 471.50 | 31.0 | 2 |
| 471.75 | 31.9 | 2 |
| 472.00 | 32.8 | 2 |

**********
* *
* The Crossings - Village C - West Basin *
* DETENTION ANALYSIS *
* PREPARED BY: BAX ENGINEERING CO., INC. *
* July 31, 1998 *
* *
**********

Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-002.HYD
Rating Table file: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND

----INITIAL CONDITIONS----
Elevation = 466.00 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) |
| 466.00 | 0.0 | 0.000 | 0.0 | 0.0 |
| 466.25 | 0.5 | 0.000 | 0.5 | 1.0 |
| 466.50 | 1.3 | 0.003 | 3.7 | 5.0 |
| 466.75 | 2.4 | 0.009 | 12.6 | 15.0 |
| 467.00 | 3.8 | 0.021 | 29.8 | 33.6 |
| 467.25 | 5.2 | 0.040 | 58.2 | 63.4 |
| 467.50 | 6.9 | 0.069 | 100.5 | 107.4 |
| 467.75 | 8.7 | 0.110 | 159.6 | 168.3 |
| 468.00 | 10.6 | 0.164 | 238.3 | 248.9 |
| 468.25 | 12.7 | 0.227 | 329.3 | 342.0 |
| 468.50 | 14.8 | 0.292 | 423.6 | 438.4 |
| 468.75 | 17.1 | 0.359 | 521.4 | 538.5 |
| 469.00 | 19.5 | 0.429 | 622.6 | 642.1 |
| 469.25 | 21.3 | 0.501 | 727.3 | 748.6 |
| 469.50 | 22.6 | 0.576 | 835.7 | 858.3 |
| 469.75 | 23.8 | 0.653 | 947.6 | 971.4 |
| 470.00 | 25.0 | 0.732 | 1063.3 | 1088.3 |
| 470.25 | 26.1 | 0.815 | 1182.8 | 1208.9 |
| 470.50 | 27.1 | 0.900 | 1306.3 | 1333.4 |
| 470.75 | 28.1 | 0.987 | 1433.8 | 1461.9 |
| 471.00 | 29.1 | 1.078 | 1565.3 | 1594.4 |
| 471.25 | 30.1 | 1.171 | 1701.0 | 1731.1 |
| 471.50 | 31.0 | 1.268 | 1840.9 | 1871.9 |
| 471.75 | 31.9 | 1.367 | 1985.0 | 2016.9 |
| 472.00 | 32.8 | 1.469 | 2133.5 | 2166.3 |

Time increment (t) = 1.0 min.

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-002.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030002.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 | 466.00 |
| 1.0 | 3.50 | 3.5 | 1.5 | 3.5 | 1.00 | 466.41 |
| 2.0 | 6.90 | 10.4 | 7.8 | 11.9 | 2.06 | 466.67 |
| 3.0 | 10.40 | 17.3 | 18.8 | 25.1 | 3.16 | 466.89 |
| 4.0 | 13.80 | 24.2 | 34.5 | 43.0 | 4.24 | 467.08 |
| 5.0 | 17.30 | 31.1 | 55.0 | 65.6 | 5.29 | 467.26 |
| 6.0 | 20.70 | 38.0 | 80.3 | 93.0 | 6.34 | 467.42 |
| 7.0 | 24.20 | 44.9 | 110.4 | 125.2 | 7.43 | 467.57 |
| 8.0 | 24.20 | 48.4 | 141.9 | 158.8 | 8.42 | 467.71 |
| 9.0 | 24.20 | 48.4 | 171.9 | 190.3 | 9.22 | 467.82 |
| 10.0 | 24.20 | 48.4 | 200.4 | 220.3 | 9.93 | 467.91 |
| 11.0 | 24.20 | 48.4 | 227.6 | 248.8 | 10.60 | 468.00 |
| 12.0 | 24.20 | 48.4 | 253.6 | 276.0 | 11.21 | 468.07 |
| 13.0 | 24.20 | 48.4 | 278.4 | 302.0 | 11.80 | 468.14 |
| 14.0 | 24.20 | 48.4 | 302.1 | 326.8 | 12.36 | 468.21 |
| 15.0 | 24.20 | 48.4 | 324.7 | 350.5 | 12.89 | 468.27 |
| 16.0 | 24.20 | 48.4 | 346.4 | 373.1 | 13.38 | 468.33 |
| 17.0 | 24.20 | 48.4 | 367.1 | 394.8 | 13.85 | 468.39 |
| 18.0 | 24.20 | 48.4 | 386.9 | 415.5 | 14.30 | 468.44 |
| 19.0 | 24.20 | 48.4 | 405.8 | 435.3 | 14.73 | 468.49 |
| 20.0 | 24.20 | 48.4 | 423.9 | 454.2 | 15.16 | 468.54 |
| 21.0 | 20.71 | 44.9 | 437.8 | 468.8 | 15.50 | 468.58 |
| 22.0 | 17.31 | 38.0 | 444.5 | 475.8 | 15.66 | 468.59 |
| 23.0 | 13.82 | 31.1 | 444.3 | 475.6 | 15.66 | 468.59 |
| 24.0 | 10.42 | 24.2 | 437.6 | 468.6 | 15.49 | 468.58 |
| 25.0 | 6.92 | 17.3 | 424.6 | 454.9 | 15.18 | 468.54 |
| 26.0 | 3.42 | 10.3 | 405.4 | 434.9 | 14.72 | 468.49 |
| 27.0 | 0.02 | 3.4 | 380.6 | 408.9 | 14.16 | 468.42 |
| 28.0 | 0.00 | 0.0 | 353.5 | 380.6 | 13.54 | 468.35 |
| 29.0 | 0.00 | 0.0 | 327.6 | 353.5 | 12.95 | 468.28 |
| 30.0 | 0.00 | 0.0 | 302.9 | 327.6 | 12.38 | 468.21 |
| 31.0 | 0.00 | 0.0 | 279.2 | 302.9 | 11.82 | 468.14 |
| 32.0 | 0.00 | 0.0 | 256.7 | 279.2 | 11.28 | 468.08 |
| 33.0 | 0.00 | 0.0 | 235.1 | 256.7 | 10.78 | 468.02 |
| 34.0 | 0.00 | 0.0 | 214.6 | 235.1 | 10.28 | 467.96 |
| 35.0 | 0.00 | 0.0 | 195.0 | 214.6 | 9.79 | 467.89 |
| 36.0 | 0.00 | 0.0 | 176.3 | 195.0 | 9.33 | 467.83 |
| 37.0 | 0.00 | 0.0 | 158.5 | 176.3 | 8.89 | 467.77 |
| 38.0 | 0.00 | 0.0 | 141.7 | 158.5 | 8.41 | 467.71 |
| 39.0 | 0.00 | 0.0 | 125.9 | 141.7 | 7.91 | 467.64 |
| 40.0 | 0.00 | 0.0 | 111.0 | 125.9 | 7.45 | 467.58 |
| 41.0 | 0.00 | 0.0 | 97.0 | 111.0 | 7.01 | 467.51 |
| 42.0 | 0.00 | 0.0 | 84.0 | 97.0 | 6.50 | 467.44 |
| 43.0 | 0.00 | 0.0 | 72.0 | 84.0 | 6.00 | 467.37 |
| 44.0 | 0.00 | 0.0 | 60.9 | 72.0 | 5.53 | 467.30 |

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-002.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030002.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 | 50.8 | 60.9 | 5.09 | 467.23 |
| 46.0 | 0.00 | 0.0 | 41.5 | 50.8 | 4.61 | 467.14 |
| 47.0 | 0.00 | 0.0 | 33.2 | 41.5 | 4.17 | 467.07 |
| 48.0 | 0.00 | 0.0 | 25.7 | 33.2 | 3.77 | 466.99 |
| 49.0 | 0.00 | 0.0 | 19.2 | 25.7 | 3.20 | 466.89 |
| 50.0 | 0.00 | 0.0 | 13.8 | 19.2 | 2.72 | 466.81 |
| 51.0 | 0.00 | 0.0 | 9.3 | 13.8 | 2.27 | 466.72 |
| 52.0 | 0.00 | 0.0 | 5.7 | 9.3 | 1.77 | 466.61 |
| 53.0 | 0.00 | 0.0 | 3.0 | 5.7 | 1.38 | 466.52 |
| 54.0 | 0.00 | 0.0 | 1.2 | 3.0 | 0.89 | 466.37 |
| 55.0 | 0.00 | 0.0 | 0.1 | 1.2 | 0.54 | 466.26 |
| 56.0 | 0.00 | 0.0 | -0.0 | 0.1 | 0.05 | 466.02 |
| 57.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 466.00 |
| 58.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 466.00 |
| 59.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 466.00 |
| 60.0 | 0.00 | 0.0 | -0.0 | -0.0 | 0.00 | 466.00 |

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

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-002.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030002.HYD

Starting Pond W.S. Elevation = 466.00 ft

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

| | | |
|---|---|---|
| Peak Inflow | = | 24.20 cfs |
| Peak Outflow | = | 15.66 cfs |
| Peak Elevation | = | 468.59 ft |

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

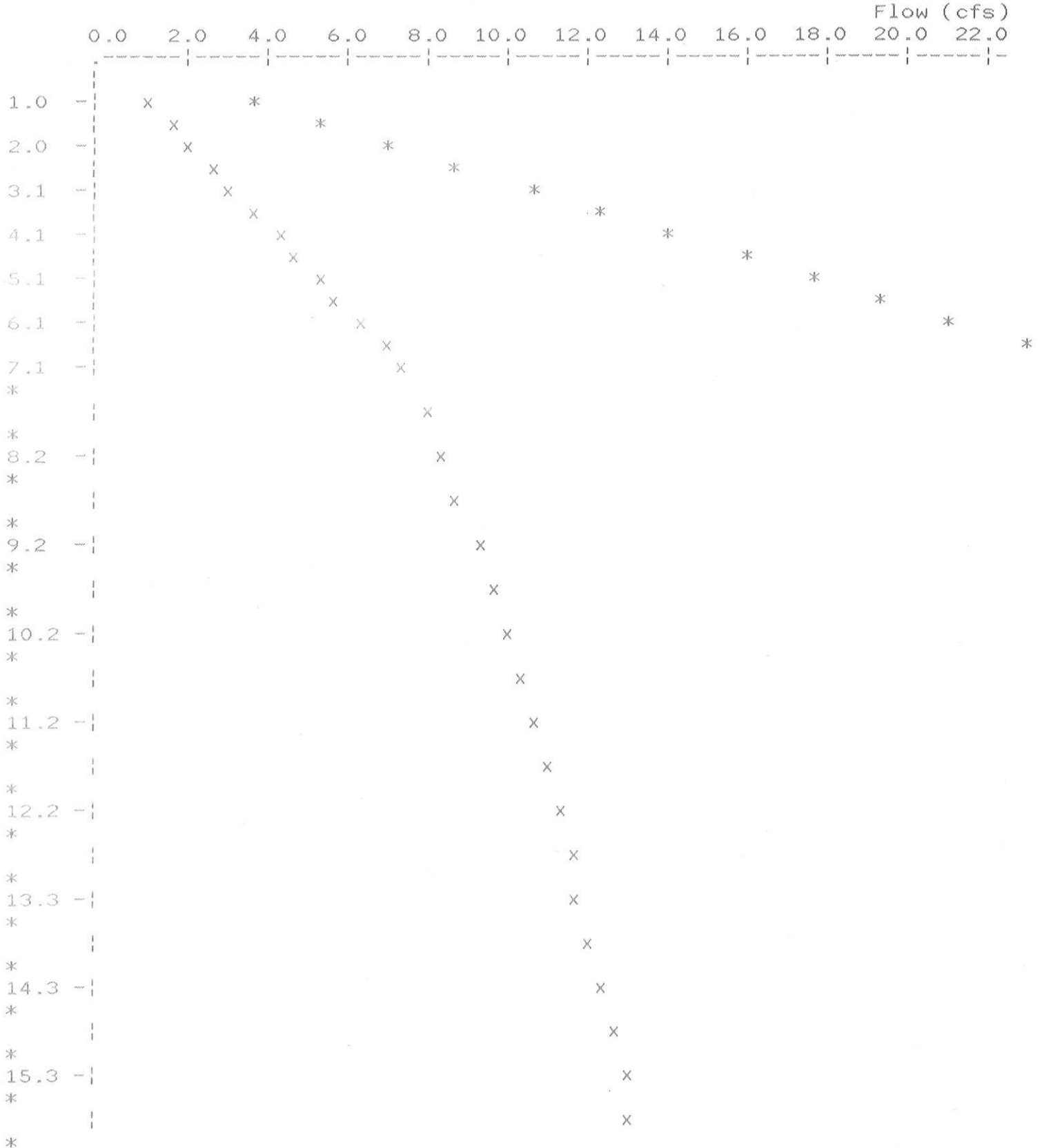
| | | |
|---|---|---|
| Initial Storage | = | 0.00 ac-ft |
| Peak Storage From Storm | = | 0.32 ac-ft |
| Total Storage in Pond | = | 0.32 ac-ft |

Return Freq: 2 years

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-002.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030002.HYD

EXECUTED: 08-04-1998 07:59:48

Peak Inflow = 24.20 cfs
Peak Outflow = 15.66 cfs
Peak Elevation = 468.59 ft




x File: C:\WINDOWS\DESKTOP\PONDPA~1\92030002.HYD Qmax = 15.7 cfs
* File: C:\WINDOWS\DESKTOP\PONDPA~1\9203-002.HYD Qmax = 24.2 cfs

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*
* The Crossings - Village C - West Basin *
* DETENTION ANALYSIS *
* PREPARED BY: BAX ENGINEERING CO., INC. *
* July 31, 1998 *
*
**********

Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-015.HYD
Rating Table file: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .POND

----INITIAL CONDITIONS----
Elevation = 466.00 ft
Outflow = 0.00 cfs
Storage = 0.00 ac-ft

GIVEN POND DATA

| ELEVATION (ft) | OUTFLOW (cfs) | STORAGE (ac-ft) |
|---|---|---|
| 466.00 | 0.0 | 0.000 |
| 466.25 | 0.5 | 0.000 |
| 466.50 | 1.3 | 0.003 |
| 466.75 | 2.4 | 0.009 |
| 467.00 | 3.8 | 0.021 |
| 467.25 | 5.2 | 0.040 |
| 467.50 | 6.9 | 0.069 |
| 467.75 | 8.7 | 0.110 |
| 468.00 | 10.6 | 0.164 |
| 468.25 | 12.7 | 0.227 |
| 468.50 | 14.8 | 0.292 |
| 468.75 | 17.1 | 0.359 |
| 469.00 | 19.5 | 0.429 |
| 469.25 | 21.3 | 0.501 |
| 469.50 | 22.6 | 0.576 |
| 469.75 | 23.8 | 0.653 |
| 470.00 | 25.0 | 0.732 |
| 470.25 | 26.1 | 0.815 |
| 470.50 | 27.1 | 0.900 |
| 470.75 | 28.1 | 0.987 |
| 471.00 | 29.1 | 1.078 |
| 471.25 | 30.1 | 1.171 |
| 471.50 | 31.0 | 1.268 |
| 471.75 | 31.9 | 1.367 |
| 472.00 | 32.8 | 1.469 |

INTERMEDIATE ROUTING COMPUTATIONS

| 2S/t (cfs) | 2S/t + O (cfs) |
|---|---|
| 0.0 | 0.0 |
| 0.5 | 1.0 |
| 3.7 | 5.0 |
| 12.6 | 15.0 |
| 29.8 | 33.6 |
| 58.2 | 63.4 |
| 100.5 | 107.4 |
| 159.6 | 168.3 |
| 238.3 | 248.9 |
| 329.3 | 342.0 |
| 423.6 | 438.4 |
| 521.4 | 538.5 |
| 622.6 | 642.1 |
| 727.3 | 748.6 |
| 835.7 | 858.3 |
| 947.6 | 971.4 |
| 1063.3 | 1088.3 |
| 1182.8 | 1208.9 |
| 1306.3 | 1333.4 |
| 1433.8 | 1461.9 |
| 1565.3 | 1594.4 |
| 1701.0 | 1731.1 |
| 1840.9 | 1871.9 |
| 1985.0 | 2016.9 |
| 2133.5 | 2166.3 |

Time increment (t) = 1.0 min.

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-015.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030015.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 | 466.00 |
| 1.0 | 5.72 | 5.7 | 3.0 | 5.7 | 1.38 | 466.52 |
| 2.0 | 11.32 | 17.0 | 14.4 | 20.0 | 2.78 | 466.82 |
| 3.0 | 17.04 | 28.4 | 34.3 | 42.8 | 4.23 | 467.08 |
| 4.0 | 22.65 | 39.7 | 62.8 | 74.0 | 5.61 | 467.31 |
| 5.0 | 28.35 | 51.0 | 99.6 | 113.8 | 7.09 | 467.53 |
| 6.0 | 33.96 | 62.3 | 144.9 | 161.9 | 8.51 | 467.72 |
| 7.0 | 39.67 | 73.6 | 198.8 | 218.5 | 9.88 | 467.91 |
| 8.0 | 39.69 | 79.4 | 255.6 | 278.1 | 11.26 | 468.08 |
| 9.0 | 39.69 | 79.4 | 309.9 | 335.0 | 12.54 | 468.23 |
| 10.0 | 39.69 | 79.4 | 361.8 | 389.3 | 13.73 | 468.37 |
| 11.0 | 39.69 | 79.4 | 411.5 | 441.2 | 14.86 | 468.51 |
| 12.0 | 39.69 | 79.4 | 458.9 | 490.9 | 16.01 | 468.63 |
| 13.0 | 39.69 | 79.4 | 504.0 | 538.2 | 17.09 | 468.75 |
| 14.0 | 39.69 | 79.4 | 547.1 | 583.4 | 18.14 | 468.86 |
| 15.0 | 39.69 | 79.4 | 588.2 | 626.5 | 19.14 | 468.96 |
| 16.0 | 39.69 | 79.4 | 627.8 | 667.6 | 19.93 | 469.06 |
| 17.0 | 39.69 | 79.4 | 665.9 | 707.1 | 20.60 | 469.15 |
| 18.0 | 39.69 | 79.4 | 702.8 | 745.3 | 21.24 | 469.24 |
| 19.0 | 39.69 | 79.4 | 738.8 | 782.2 | 21.70 | 469.33 |
| 20.0 | 39.69 | 79.4 | 773.9 | 818.2 | 22.12 | 469.41 |
| 21.0 | 33.99 | 73.7 | 802.7 | 847.6 | 22.47 | 469.48 |
| 22.0 | 28.39 | 62.4 | 819.7 | 865.1 | 22.67 | 469.52 |
| 23.0 | 22.67 | 51.1 | 825.3 | 870.8 | 22.73 | 469.53 |
| 24.0 | 17.06 | 39.7 | 819.7 | 865.0 | 22.67 | 469.51 |
| 25.0 | 11.36 | 28.4 | 803.2 | 848.1 | 22.48 | 469.48 |
| 26.0 | 5.75 | 17.1 | 776.0 | 820.3 | 22.15 | 469.41 |
| 27.0 | 0.03 | 5.8 | 738.4 | 781.7 | 21.69 | 469.33 |
| 28.0 | 0.00 | 0.0 | 696.1 | 738.4 | 21.13 | 469.23 |
| 29.0 | 0.00 | 0.0 | 655.3 | 696.1 | 20.41 | 469.13 |
| 30.0 | 0.00 | 0.0 | 615.9 | 655.3 | 19.72 | 469.03 |
| 31.0 | 0.00 | 0.0 | 578.1 | 615.9 | 18.89 | 468.94 |
| 32.0 | 0.00 | 0.0 | 542.0 | 578.1 | 18.02 | 468.85 |
| 33.0 | 0.00 | 0.0 | 507.7 | 542.0 | 17.18 | 468.76 |
| 34.0 | 0.00 | 0.0 | 474.9 | 507.7 | 16.39 | 468.67 |
| 35.0 | 0.00 | 0.0 | 443.6 | 474.9 | 15.64 | 468.59 |
| 36.0 | 0.00 | 0.0 | 413.8 | 443.6 | 14.92 | 468.51 |
| 37.0 | 0.00 | 0.0 | 385.3 | 413.8 | 14.26 | 468.44 |
| 38.0 | 0.00 | 0.0 | 358.0 | 385.3 | 13.64 | 468.36 |
| 39.0 | 0.00 | 0.0 | 331.9 | 358.0 | 13.05 | 468.29 |
| 40.0 | 0.00 | 0.0 | 306.9 | 331.9 | 12.47 | 468.22 |
| 41.0 | 0.00 | 0.0 | 283.1 | 306.9 | 11.91 | 468.16 |
| 42.0 | 0.00 | 0.0 | 260.4 | 283.1 | 11.37 | 468.09 |
| 43.0 | 0.00 | 0.0 | 238.6 | 260.4 | 10.86 | 468.03 |
| 44.0 | 0.00 | 0.0 | 217.9 | 238.6 | 10.36 | 467.97 |

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-015.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030015.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 | 198.2 | 217.9 | 9.87 | 467.90 |
| 46.0 | 0.00 | 0.0 | 179.4 | 198.2 | 9.40 | 467.84 |
| 47.0 | 0.00 | 0.0 | 161.5 | 179.4 | 8.96 | 467.78 |
| 48.0 | 0.00 | 0.0 | 144.5 | 161.5 | 8.50 | 467.72 |
| 49.0 | 0.00 | 0.0 | 128.5 | 144.5 | 7.99 | 467.65 |
| 50.0 | 0.00 | 0.0 | 113.4 | 128.5 | 7.52 | 467.59 |
| 51.0 | 0.00 | 0.0 | 99.3 | 113.4 | 7.08 | 467.52 |
| 52.0 | 0.00 | 0.0 | 86.1 | 99.3 | 6.59 | 467.45 |
| 53.0 | 0.00 | 0.0 | 73.9 | 86.1 | 6.08 | 467.38 |
| 54.0 | 0.00 | 0.0 | 62.7 | 73.9 | 5.61 | 467.31 |
| 55.0 | 0.00 | 0.0 | 52.4 | 62.7 | 5.17 | 467.24 |
| 56.0 | 0.00 | 0.0 | 43.0 | 52.4 | 4.68 | 467.16 |
| 57.0 | 0.00 | 0.0 | 34.5 | 43.0 | 4.24 | 467.08 |
| 58.0 | 0.00 | 0.0 | 26.8 | 34.5 | 3.84 | 467.01 |
| 59.0 | 0.00 | 0.0 | 20.3 | 26.8 | 3.29 | 466.91 |
| 60.0 | 0.00 | 0.0 | 14.7 | 20.3 | 2.80 | 466.82 |

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

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-015.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030015.HYD

Starting Pond W.S. Elevation = 466.00 ft

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

| | | |
|---|---|---|
| Peak Inflow | = | 39.69 cfs |
| Peak Outflow | = | 22.73 cfs |
| Peak Elevation | = | 469.53 ft |

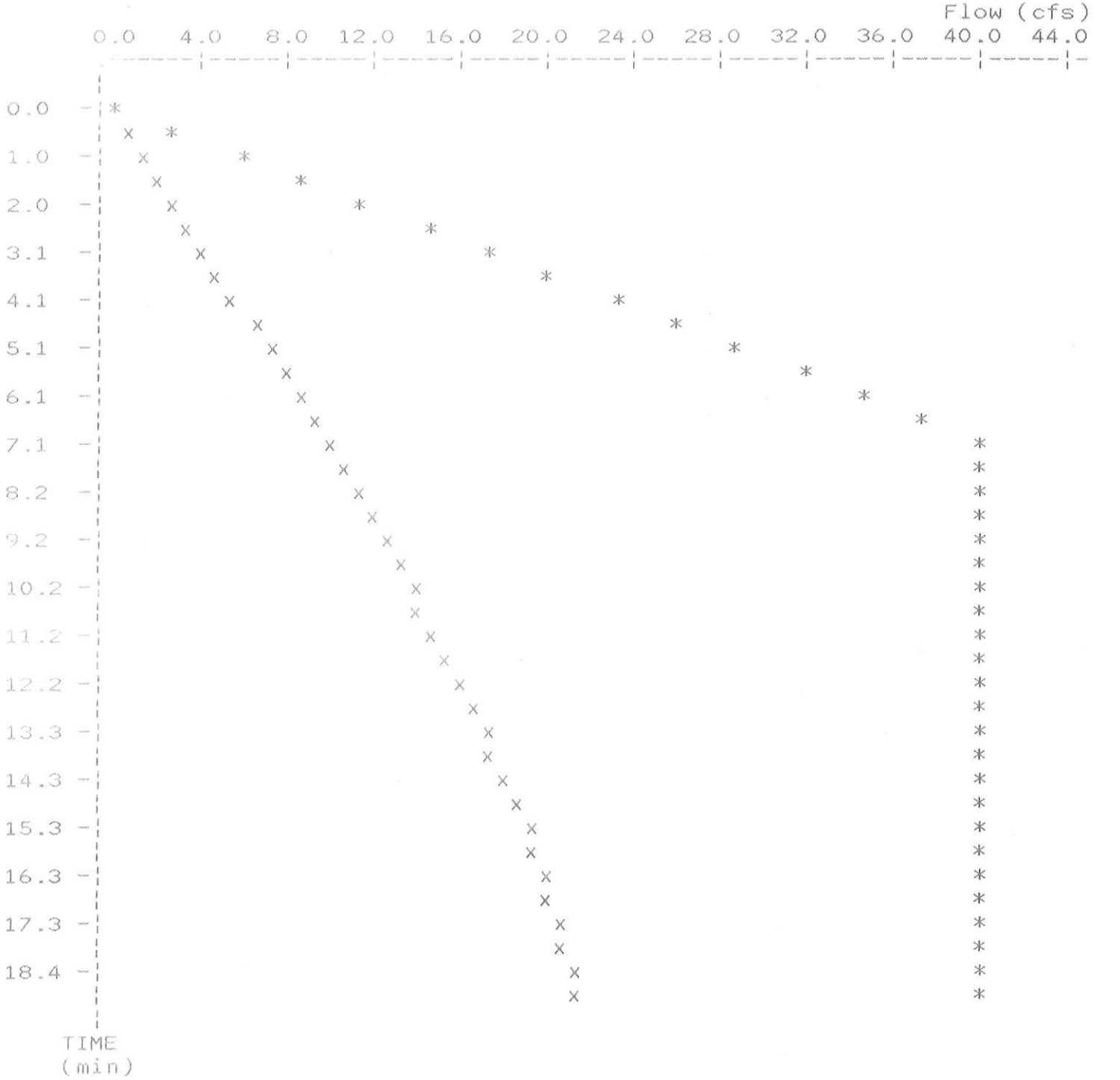
***** Summary of Approximate Peak Storage *****

| | | |
|---|---|---|
| Initial Storage | = | 0.00 ac-ft |
| Peak Storage From Storm | = | 0.58 ac-ft |
| Total Storage in Pond | = | 0.58 ac-ft |

Return Freq: 15 years

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-015.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030015.HYD
EXECUTED: 08-04-1998 07:59:48

Peak Inflow = 39.69 cfs
Peak Outflow = 22.73 cfs
Peak Elevation = 469.53 ft




x File: C:\WINDOWS\DESKTOP\PONDPA~1\92030015.HYD Qmax = 22.7 cfs
* File: C:\WINDOWS\DESKTOP\PONDPA~1\9203-015.HYD Qmax = 39.7 cfs

**********
*
* The Crossings - Village C - West Basin *
* DETENTION ANALYSIS *
* PREPARED BY: BAX ENGINEERING CO., INC. *
* July 31, 1998 *
*
**********

Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-025.HYD
Rating Table file: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND

----INITIAL CONDITIONS----
Elevation = 466.00 ft
Outflow = 0.00 cfs
Storage = 0.00 ac-ft

GIVEN POND DATA

| ELEVATION (ft) | OUTFLOW (cfs) | STORAGE (ac-ft) |
|---|---|---|
| 466.00 | 0.0 | 0.000 |
| 466.25 | 0.5 | 0.000 |
| 466.50 | 1.3 | 0.003 |
| 466.75 | 2.4 | 0.009 |
| 467.00 | 3.8 | 0.021 |
| 467.25 | 5.2 | 0.040 |
| 467.50 | 6.9 | 0.069 |
| 467.75 | 8.7 | 0.110 |
| 468.00 | 10.6 | 0.164 |
| 468.25 | 12.7 | 0.227 |
| 468.50 | 14.8 | 0.292 |
| 468.75 | 17.1 | 0.359 |
| 469.00 | 19.5 | 0.429 |
| 469.25 | 21.3 | 0.501 |
| 469.50 | 22.6 | 0.576 |
| 469.75 | 23.8 | 0.653 |
| 470.00 | 25.0 | 0.732 |
| 470.25 | 26.1 | 0.815 |
| 470.50 | 27.1 | 0.900 |
| 470.75 | 28.1 | 0.987 |
| 471.00 | 29.1 | 1.078 |
| 471.25 | 30.1 | 1.171 |
| 471.50 | 31.0 | 1.268 |
| 471.75 | 31.9 | 1.367 |
| 472.00 | 32.8 | 1.469 |

INTERMEDIATE ROUTING COMPUTATIONS

| 2S/t (cfs) | 2S/t + O (cfs) |
|---|---|
| 0.0 | 0.0 |
| 0.5 | 1.0 |
| 3.7 | 5.0 |
| 12.6 | 15.0 |
| 29.8 | 33.6 |
| 58.2 | 63.4 |
| 100.5 | 107.4 |
| 159.6 | 168.3 |
| 238.3 | 248.9 |
| 329.3 | 342.0 |
| 423.6 | 438.4 |
| 521.4 | 538.5 |
| 622.6 | 642.1 |
| 727.3 | 748.6 |
| 835.7 | 858.3 |
| 947.6 | 971.4 |
| 1063.3 | 1088.3 |
| 1182.8 | 1208.9 |
| 1306.3 | 1333.4 |
| 1433.8 | 1461.9 |
| 1565.3 | 1594.4 |
| 1701.0 | 1731.1 |
| 1840.9 | 1871.9 |
| 1985.0 | 2016.9 |
| 2133.5 | 2166.3 |

Time increment (t) = 1.0 min.

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-025.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030025.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 | 466.00 |
| 1.0 | 6.95 | 7.0 | 3.9 | 7.0 | 1.51 | 466.55 |
| 2.0 | 14.02 | 21.0 | 18.6 | 24.9 | 3.15 | 466.88 |
| 3.0 | 20.97 | 35.0 | 44.1 | 53.6 | 4.74 | 467.17 |
| 4.0 | 28.02 | 49.0 | 80.4 | 93.1 | 6.35 | 467.42 |
| 5.0 | 34.97 | 63.0 | 127.5 | 143.4 | 7.96 | 467.65 |
| 6.0 | 41.92 | 76.9 | 185.3 | 204.4 | 9.55 | 467.86 |
| 7.0 | 48.99 | 90.9 | 253.7 | 276.2 | 11.22 | 468.07 |
| 8.0 | 49.00 | 98.0 | 325.9 | 351.7 | 12.91 | 468.28 |
| 9.0 | 49.00 | 98.0 | 394.9 | 423.9 | 14.48 | 468.46 |
| 10.0 | 49.00 | 98.0 | 460.8 | 492.9 | 16.05 | 468.64 |
| 11.0 | 49.00 | 98.0 | 523.7 | 558.8 | 17.57 | 468.80 |
| 12.0 | 49.00 | 98.0 | 583.6 | 621.7 | 19.03 | 468.95 |
| 13.0 | 49.00 | 98.0 | 641.3 | 681.6 | 20.17 | 469.09 |
| 14.0 | 49.00 | 98.0 | 697.0 | 739.3 | 21.14 | 469.23 |
| 15.0 | 49.00 | 98.0 | 751.3 | 795.0 | 21.85 | 469.36 |
| 16.0 | 49.00 | 98.0 | 804.3 | 849.3 | 22.49 | 469.48 |
| 17.0 | 49.00 | 98.0 | 856.2 | 902.3 | 23.07 | 469.60 |
| 18.0 | 49.00 | 98.0 | 907.0 | 954.2 | 23.62 | 469.71 |
| 19.0 | 49.00 | 98.0 | 956.7 | 1005.0 | 24.14 | 469.82 |
| 20.0 | 49.00 | 98.0 | 1005.4 | 1054.7 | 24.65 | 469.93 |
| 21.0 | 41.97 | 91.0 | 1046.2 | 1096.3 | 25.07 | 470.02 |
| 22.0 | 35.02 | 77.0 | 1072.5 | 1123.2 | 25.32 | 470.07 |
| 23.0 | 27.95 | 63.0 | 1084.6 | 1135.5 | 25.43 | 470.10 |
| 24.0 | 21.00 | 49.0 | 1082.8 | 1133.6 | 25.41 | 470.09 |
| 25.0 | 14.05 | 35.1 | 1067.3 | 1117.8 | 25.27 | 470.06 |
| 26.0 | 6.99 | 21.0 | 1038.3 | 1088.3 | 25.00 | 470.00 |
| 27.0 | 0.03 | 7.0 | 996.2 | 1045.3 | 24.56 | 469.91 |
| 28.0 | 0.00 | 0.0 | 948.1 | 996.3 | 24.05 | 469.80 |
| 29.0 | 0.00 | 0.0 | 901.0 | 948.1 | 23.55 | 469.70 |
| 30.0 | 0.00 | 0.0 | 854.9 | 901.0 | 23.05 | 469.59 |
| 31.0 | 0.00 | 0.0 | 809.8 | 854.9 | 22.56 | 469.49 |
| 32.0 | 0.00 | 0.0 | 765.8 | 809.8 | 22.03 | 469.39 |
| 33.0 | 0.00 | 0.0 | 722.8 | 765.8 | 21.50 | 469.29 |
| 34.0 | 0.00 | 0.0 | 681.0 | 722.8 | 20.86 | 469.19 |
| 35.0 | 0.00 | 0.0 | 640.7 | 681.0 | 20.16 | 469.09 |
| 36.0 | 0.00 | 0.0 | 601.8 | 640.7 | 19.47 | 469.00 |
| 37.0 | 0.00 | 0.0 | 564.6 | 601.8 | 18.57 | 468.90 |
| 38.0 | 0.00 | 0.0 | 529.2 | 564.6 | 17.71 | 468.81 |
| 39.0 | 0.00 | 0.0 | 495.5 | 529.2 | 16.89 | 468.73 |
| 40.0 | 0.00 | 0.0 | 463.2 | 495.5 | 16.11 | 468.64 |
| 41.0 | 0.00 | 0.0 | 432.5 | 463.2 | 15.37 | 468.56 |
| 42.0 | 0.00 | 0.0 | 403.1 | 432.5 | 14.67 | 468.48 |
| 43.0 | 0.00 | 0.0 | 375.1 | 403.1 | 14.03 | 468.41 |
| 44.0 | 0.00 | 0.0 | 348.2 | 375.1 | 13.42 | 468.34 |

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Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030025.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 | 322.6 | 348.2 | 12.84 | 468.27 |
| 0.0 | 298.0 | 322.6 | 12.26 | 468.20 |
| 0.0 | 274.6 | 298.0 | 11.71 | 468.13 |
| 0.0 | 252.3 | 274.6 | 11.18 | 468.07 |
| 0.0 | 230.9 | 252.3 | 10.68 | 468.01 |
| 0.0 | 210.6 | 230.9 | 10.18 | 467.94 |
| 0.0 | 191.2 | 210.6 | 9.70 | 467.88 |
| 0.0 | 172.7 | 191.2 | 9.24 | 467.82 |
| 0.0 | 155.1 | 172.7 | 8.80 | 467.76 |
| 0.0 | 138.5 | 155.1 | 8.31 | 467.70 |
| 0.0 | 122.8 | 138.5 | 7.82 | 467.63 |
| 0.0 | 108.1 | 122.8 | 7.36 | 467.56 |
| 0.0 | 94.3 | 108.1 | 6.92 | 467.50 |
| 0.0 | 81.5 | 94.3 | 6.39 | 467.43 |
| 0.0 | 69.7 | 81.5 | 5.90 | 467.35 |
| 0.0 | 58.8 | 69.7 | 5.44 | 467.29 |

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

Pond File: C:\WINDOWS\DESKTOP\PONDPA~1\9203C .PND
Inflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\9203-025.HYD
Outflow Hydrograph: C:\WINDOWS\DESKTOP\PONDPA~1\92030025.HYD

Starting Pond W.S. Elevation = 466.00 ft

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

| | | |
|---|---|---|
| Peak Inflow | = | 49.00 cfs |
| Peak Outflow | = | 25.43 cfs |
| Peak Elevation | = | 470.10 ft |

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

| | | |
|---|---|---|
| Initial Storage | = | 0.00 ac-ft |
| Peak Storage From Storm | = | 0.76 ac-ft |
| Total Storage in Pond | = | 0.76 ac-ft |