SUNSET RIDGE ESTATES

DETENTION BASIN REPORT

PROJECT NUMBER: 95-541

April 10, 1996

Prepared By:

SITE DEVELOPMENT ENGINEERING, INC.
4400 South Lindbergh Blvd., Suite 5
St. Louis, Missouri 63127
Phone: (314) 849-7900 - Fax: (314) 849-7999

Prepared For:

NOTHUM HOMES, INC.
7321 S. Lindbergh, Suite 310
St. Louis, Missouri 63125

TRACT SIZE - 127.30 Acres

AREA TRIBUTARY TO DETENTION BASIN - "A" - 36.63 Acres

TRACT ZONING - R1 - (10,000 S.F. Minimum Lot Size)

REQUIRED STORMWATER DETENTION VOLUME

	Developed P.I.	Undeveloped P.I.
15 yr - 20 min	2.64 cfs/ac	1.87 cfs/ac
25 yr - 20 min	3.26 cfs/ac	2.31 cfs/ac
100 yr - 20min	4.17 cfs/ac	2.95 cfs.ac

DETENTION BASIN "A"

REQUIRED STORAGE & ALLOWABLE DISCHARGES

15yr - 20 min Storm

Flow to Basin: 36.63 ac x 2.64 cfs/ac = 96.70 cfs = Total Q

ALLOWABLE DISCHARGE

96.70 cfs - (36.63 ac x (2.64 cfs/ac - 1.87 cfs/ac) = 68.49 cfs = Total Q

REQUIRED STORAGE VOLUME

Site Acreage x (P.I. Developed - P.I. Undeveloped) x 1800 sec = cu. ft.

36.63 x (2.64 - 1.87) x 1800 = 50,769 cu. ft.

= 28.21 cfs x 1200 = 33,852 ft³

DETENTION BASIN "A"

REQUIRED STORAGE & ALLOWABLE DISCHARGES FOR ALTERNATE STORMS

25 yr - 20 min Storm

Flow to Basin: 36.63 x 3.26 cfs/ac = 119.41 cfs = Total Q
Allowable Discharge: 119.41 cfs - (36.63 x (3.26 - 2.31) = 84.61 cfs
Required Storage: 36.63 x (3.26 - 2.31) x 1800 = 62,637 cu. ft.
34.80 x 1200 = 41,758.2 ft³

100 yr - 20 min Storm

Flow to Basin: 36.63 x 4.17 cfs/ac = 152.75 cfs = Total Q
Allowable Discharge: 152.75 cfs - (36.63 x (4.17 - 2.95) = 108.06 cfs
Required Storage: 36.63 x (4.17 - 2.95) x 1800 = 80,439 cu.ft.
44.69 x 1200 = 53,626.32 ft³

SUMMARY CHART - BASIN "A"

STORM	Q	REQUIRED VOLUME	ALLOWABLE DISCHARGE
yr - 20 min	*cfs*	*cu.ft.*	*cfs*
15	96.70	50,769	68.49
25	119.41	62,637	84.61
100	152.75	80,439	108.06

TRACT SIZE - 127.30 Acres

AREA TRIBUTARY TO DETENTION BASIN - "B" - 17.94 Acres

TRACT ZONING - R1 - (10,000 S.F. Minimum Lot Size)

REQUIRED STORMWATER DETENTION VOLUME

	Developed P.I.	Undeveloped P.I.
15 yr - 20 min	2.64 cfs/ac	1.87 cfs/ac
25 yr - 20 min	3.26 cfs/ac	2.31 cfs/ac
100 yr - 20min	4.17 cfs/ac	2.95 cfs.ac

DETENTION BASIN "B"

REQUIRED STORAGE & ALLOWABLE DISCHARGES

15yr - 20 min Storm

Flow to Basin: 17.94 ac x 2.64 cfs/ac = 47.37 cfs = Total Q

ALLOWABLE DISCHARGE

47.37 cfs - (17.94 ac x (2.64 cfs/ac - 1.87 cfs/ac) = 33.56 cfs = Total Q

REQUIRED STORAGE VOLUME

Site Acreage x (P.I. Developed - P.I. Undeveloped) x 1800 sec = cu. ft.

17.94 x (2.64 - 1.87) x 1800 = 24,864.84 cu. ft.

DETENTION BASIN "B"

REQUIRED STORAGE & ALLOWABLE DISCHARGES FOR ALTERNATE STORMS

25 yr - 20 min Storm

Flow to Basin: 17.94 x 3.26 cfs/ac = 58.48 cfs = Total Q
Allowable Discharge: 58.48 cfs - (17.94 x (3.26 - 2.31) = 41.44 cfs
Required Storage: 17.94 x (3.26 - 2.31) x 1800 = 30,677 cu. ft.

100 yr - 20 min Storm

Flow to Basin: 17.94 x 4.17 cfs/ac = 74.81 cfs = Total Q
Allowable Discharge: 74.81 cfs - (17.94 x (4.17 - 2.95) = 52.92 cfs
Required Storage: 17.94 x (4.17 - 2.95) x 1800 = 39,396 cu.ft.

SUMMARY CHART - BASIN "B"

STORM	Q	REQUIRED VOLUME	ALLOWABLE DISCHARGE
yr - 20 min	*cfs*	*cu.ft.*	*cfs*
15	47.37	24,865	33.56
25	58.48	30,677	41.44
100	74.81	39,396	52.92

DETERMINE ELEVATION OF OUTFALL STRUCTURE
BASIN "A"

Structure: 4' x 8' Concrete Overflow Structure
OPEN ALL (6) SIDES
L= 17.52' C = 3.0

25 yr - Storm

SET WEIR AT ELEVATION = 599.35
Q 15 - HIGH WATER ELEVTION = 597.77
Q 25 - HIGH WATER ELEVATION = 598.74

601.00 Top of Berm
598.74 25 yr High Water Elevation
2.26 Feet of Freeboard

DETERMINE ELEVATION OF OUTFALL STRUCTURE
BASIN "B" OS 2

Structure: 4' x 4' Concrete Overflow Structure
OPEN ALL (6) SIDES
L= 11.68' C = 3.0

25 yr - Storm

SET WEIR AT ELEVATION = 584.50
Q 15 - HIGH WATER ELEVATION = 583.91
Q 25 - HIGH WATER ELEVATION = 584.50

587.00 Top of Berm
584.50 25 yr High Water Elevation
2.50 Feet of Freeboard

POND-2 Version: 5.17 S/N:

>>>>> HYDROGRAPH PRINTOUT <<<<<

04-08-1996 13:56:33

Hydrograph file: projects\95-541\541A-15 .HYD

HYDROGRAPH ORDINATES (cfs)
Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	96.70	96.70	96.70	96.70	96.70	96.70	96.70
7.00	96.70	96.70	96.70	96.70	96.70	96.70	96.70
14.00	96.70	96.70	96.70	96.70	96.70	96.70	96.70

POND-2 Version: 5.17 S/N:

>>>>> HYDROGRAPH PRINTOUT <<<<<

04-08-1996 13:56:58

Hydrograph file: projects\95-541\541A-25 .HYD

HYDROGRAPH ORDINATES (cfs)
Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	119.41	119.41	119.41	119.41	119.41	119.41	119.41
7.00	119.41	119.41	119.41	119.41	119.41	119.41	119.41
14.00	119.41	119.41	119.41	119.41	119.41	119.41	119.41

POND-2 Version: 5.17 S/N:

>>>>> HYDROGRAPH PRINTOUT <<<<<

04-08-1996 13:57:22

Hydrograph file: projects\95-541\541A-100.HYD

HYDROGRAPH ORDINATES (cfs)
Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	152.75	152.75	152.75	152.75	152.75	152.75	152.75
7.00	152.75	152.75	152.75	152.75	152.75	152.75	152.75
14.00	152.75	152.75	152.75	152.75	152.75	152.75	152.75

POND-2 Version: 5.17 S/N:

>>>>> HYDROGRAPH PRINTOUT <<<<<

04-08-1996 13:57:44

Hydrograph file: projects\95-541\541B-15 .HYD

HYDROGRAPH ORDINATES (cfs)
Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	47.37	47.37	47.37	47.37	47.37	47.37	47.37
7.00	47.37	47.37	47.37	47.37	47.37	47.37	47.37
14.00	47.37	47.37	47.37	47.37	47.37	47.37	47.37

POND-2 Version: 5.17 S/N:

>>>>> HYDROGRAPH PRINTOUT <<<<<

04-08-1996 13:58:00

Hydrograph file: projects\95-541\541B-25 .HYD

HYDROGRAPH ORDINATES (cfs)
Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	58.48	58.48	58.48	58.48	58.48	58.48	58.48
7.00	58.48	58.48	58.48	58.48	58.48	58.48	58.48
14.00	58.48	58.48	58.48	58.48	58.48	58.48	58.48

POND-2 Version: 5.17 S/N:

>>>>> HYDROGRAPH PRINTOUT <<<<<

04-08-1996 13:58:23

Hydrograph file: projects\95-541\541B-100.HYD

HYDROGRAPH ORDINATES (cfs)
Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	74.81	74.81	74.81	74.81	74.81	74.81	74.81
7.00	74.81	74.81	74.81	74.81	74.81	74.81	74.81
14.00	74.81	74.81	74.81	74.81	74.81	74.81	74.81

POND-2 Version: 5.17
S/N:

SUNSET RIDGE ESTATES
DETENTION BASIN "A"
3/20/96
J.O.Y.

CALCULATED 04-08-1996 13:58:38
DISK FILE: projects\95-541\541A .VOL

Planimeter scale: 1 inch = 1 ft.

Elevation (ft)	Planimeter (sq.in.)	Area (sq.ft)	A1+A2+sqr(A1*A2) (sq.ft)	* Volume (cubic-ft)	Volume Sum (cubic-ft)
593.00	0.00	0	0	0	0
594.00	8,936.04	8,936	8,936	2,979	2,979
595.00	14,168.91	14,169	34,357	11,452	14,431
596.00	16,012.47	16,012	45,244	15,081	29,512
598.00	20,048.38	20,048	53,978	35,985	65,498
600.00	24,429.83	24,430	66,609	44,406	109,904
601.00	26,694.08	26,694	76,661	25,554	135,457

$$IA = (sq.rt(Area1) + ((Ei-E1)/(E2-E1))*(sq.rt(Area2)-sq.rt(Area1)))^2$$

where: E1, E2 = Closest two elevations with planimeter data
Ei = Elevation at which to interpolate area
Area1,Area2 = Areas computed for E1, E2, respectively
IA = Interpolated area for Ei

* 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

POND-2 Version: 5.17
S/N:

SUNSET RIDGE ESTATES
DETENTION BASIN "B"
3/20/96
J.O.Y.

CALCULATED 04-08-1996 13:59:03
DISK FILE: projects\95-541\541B .VOL

Planimeter scale: 1 inch = 1 ft.

Elevation (ft)	Planimeter (sq.in.)	Area (sq.ft)	A1+A2+sqr(A1*A2) (sq.ft)	* Volume (cubic-ft)	Volume Sum (cubic-ft)
580.25	0.00	0	0	0	0
581.00	5,934.07	5,934	5,934	1,484	1,484
582.00	17,951.73	17,952	34,207	11,402	12,886
584.00	21,268.54	21,269	58,760	39,173	52,059
586.00	24,816.56	24,817	69,059	46,040	98,099
587.00	26,677.32	26,677	77,224	25,741	123,840

$$IA = (sq.rt(Area1) + ((Ei-E1)/(E2-E1))*(sq.rt(Area2)-sq.rt(Area1)))^2$$

where: E1, E2 = Closest two elevations with planimeter data
Ei = Elevation at which to interpolate area
Area1,Area2 = Areas computed for E1, E2, respectively
IA = Interpolated area for Ei

* 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: 541A .STR

POND-2 Version: 5.17 S/N:
Date Executed: Time Executed:

****
SUNSET RIDGE ESTATES
DETENTION BASIN "A"
OVERFLOW STRUCTURE
3/20/96
****

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

Elevation (ft)	Q (cfs)	Contributing Structures
593.00	0.0	
593.25	0.0	
593.50	0.0	
593.75	0.0	
594.00	0.0	
594.25	0.0	
594.50	0.0	
594.75	0.0	
595.00	0.0	
595.25	0.0	
595.50	0.0	
595.75	0.0	
596.00	53.2	1
596.25	55.4	1
596.50	57.5	1
596.75	59.5	1
597.00	61.4	1
597.25	63.3	1
597.50	65.2	1
597.75	67.0	1
598.00	68.7	1
598.25	70.4	1
598.50	72.0	1
598.75	73.7	1
599.00	75.2	1
599.25	76.8	1
599.50	81.4	1 +2
599.75	93.1	1 +2
600.00	108.8	1 +2
600.25	127.6	1 +2
600.50	148.9	1 +2
600.75	172.6	1 +2
601.00	0.0	

Outlet Structure File: 541A .STR

POND-2 Version: 5.17 S/N:
Date Executed: Time Executed:

****
SUNSET RIDGE ESTATES
DETENTION BASIN "A"
OVERFLOW STRUCTURE
3/20/96
****

Outlet Structure File: projects\95-541\541A .STR
Planimeter Input File: projects\95-541\541A .VOL
Rating Table Output File: projects\95-541\541A .PND

Min. Elev.(ft) = 593 Max. Elev.(ft) = 601 Incr.(ft) = .25

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

****
SYSTEM CONNECTIVITY
****

Structure	No.	Q Table		Q Table
ORIFICE	1		->	1
INLET BOX	2		->	2

Outflow rating table summary was stored in file:
projects\95-541\541A .PND

Outlet Structure File: 541A .STR

POND-2 Version: 5.17 S/N:
Date Executed: Time Executed:

****
SUNSET RIDGE ESTATES
DETENTION BASIN "A"
OVERFLOW STRUCTURE
3/20/96
****

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

ORIFICE
Orifice - Based on Area and Datum Elevation

E1 elev.(ft)?	596
E2 elev.(ft)?	601
Orifice coeff.?	.6
Invert elev.(ft)?	593
Datum elev.(ft) ?	593
Orifice area (sq ft)?	6.38

Outlet Structure File: 541A .STR

POND-2 Version: 5.17 S/N:
Date Executed: Time Executed:

****
SUNSET RIDGE ESTATES
DETENTION BASIN "A"
OVERFLOW STRUCTURE
3/20/96
****

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

INLET BOX
Weir & Orifice defined by length and area

E1 elev.(ft)?	593
E2 elev.(ft)?	601
Crest elev.(ft)?	599.35
Weir length (ft)?	17.52
Weir coefficient?	3
Orifice area (sq.ft)?	32
Orifice coefficient?	.6

Start transition elev.(ft) @ ?
Transition height (ft)?

Outlet Structure File: 541B .STR

POND-2 Version: 5.17 S/N:
Date Executed: Time Executed:

****
SUNSET RIDGE ESTEATES
DETENTION BASIN "B"
3/20/96
J.O.Y.
****

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

Elevation (ft)	Q (cfs)	Contributing Structures
580.25	0.0	
580.50	0.0	
580.75	0.0	
581.00	0.0	
581.25	3.8	1
581.50	4.2	1
581.75	4.6	1
582.00	5.0	1
582.25	5.3	1
582.50	5.7	1
582.75	6.0	1
583.00	6.3	1
583.25	6.6	1
583.50	6.8	1
583.75	7.1	1
584.00	7.3	1
584.25	7.6	1
584.50	7.8	1 +2
584.75	12.4	1 +2
585.00	20.6	1 +2
585.25	31.2	1 +2
585.50	43.7	1 +2
585.75	57.8	1 +2
586.00	73.4	1 +2
586.25	90.4	1 +2
586.50	108.6	1 +2
586.75	125.2	1 +2
587.00	0.0	

Outlet Structure File: 541B .STR

POND-2 Version: 5.17 S/N:
Date Executed: Time Executed:

****
SUNSET RIDGE ESTEATES
DETENTION BASIN "B"
3/20/96
J.O.Y.
****

Outlet Structure File: projects\95-541\541B .STR
Planimeter Input File: projects\95-541\541B .VOL
Rating Table Output File: projects\95-541\541B .PND

Min. Elev.(ft) = 580.25 Max. Elev.(ft) = 587 Incr.(ft) = .25

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

****
SYSTEM CONNECTIVITY
****

Structure	No.	Q Table		Q Table
ORIFICE-VC	1		->	1
INLET BOX	2		->	2

Outflow rating table summary was stored in file:
projects\95-541\541B .PND

Outlet Structure File: 541B .STR

POND-2 Version: 5.17 S/N:
Date Executed: Time Executed:

****
SUNSET RIDGE ESTEATES
DETENTION BASIN "B"
3/20/96
J.O.Y.
****

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

ORIFICE-VC
Orifice - Vertical Circular

E1 elev.(ft)?	581.25
E2 elev.(ft)?	587
Orifice coeff.?	.6
Invert elev.(ft)?	580.25
Datum elev.(ft)?	580.25
Diameter (ft)?	1.00

Outlet Structure File: 541B .STR

POND-2 Version: 5.17 S/N:
Date Executed: Time Executed:

****
SUNSET RIDGE ESTEATES
DETENTION BASIN "B"
3/20/96
J.O.Y.
****

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

INLET BOX
Weir & Orifice defined by length and area

E1 elev.(ft)?	581.25
E2 elev.(ft)?	587
Crest elev.(ft)?	584.50
Weir length (ft)?	11.68
Weir coefficient?	3
Orifice area (sq.ft)?	16
Orifice coefficient?	.6
Start transition elev.(ft) @ ?	
Transition height (ft)?	

****
*
* SUNSET RIDGE ESTATES *
* DETENTION BASIN "A" *
* OVERFLOW STRUCTURE *
* 3/20/96 *
*
****

Inflow Hydrograph: projects\95-541\541A-15 .HYD
Rating Table file: projects\95-541\541A .PND

----INITIAL CONDITIONS----
Elevation = 593.00 ft
Outflow = 0.00 cfs
Storage = 0 cu-ft

GIVEN POND DATA

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)
593.00	0.0	0
593.25	0.0	47
593.50	0.0	372
593.75	0.0	1,257
594.00	0.0	2,979
594.25	0.0	5,360
594.50	0.0	8,051
594.75	0.0	11,068
595.00	0.0	14,431
595.25	0.0	18,029
595.50	0.0	21,741
595.75	0.0	25,568
596.00	53.2	29,512
596.25	55.4	33,575
596.50	57.5	37,759
596.75	59.5	42,065
597.00	61.4	46,496
597.25	63.3	51,053
597.50	65.2	55,738
597.75	67.0	60,552
598.00	68.7	65,498
598.25	70.4	70,575
598.50	72.0	75,784
598.75	73.7	81,127
599.00	75.2	86,606
599.25	76.8	92,220
599.50	81.4	97,974
599.75	93.1	103,868
600.00	108.8	109,904
600.25	127.6	116,081
600.50	148.9	122,398

INTERMEDIATE ROUTING COMPUTATIONS

2S/t (cfs)	2S/t + O (cfs)
0.0	0.0
1.6	1.6
12.4	12.4
41.9	41.9
99.3	99.3
178.7	178.7
268.4	268.4
368.9	368.9
481.0	481.0
601.0	601.0
724.7	724.7
852.3	852.3
983.7	1036.9
1119.2	1174.6
1258.6	1316.1
1402.2	1461.7
1549.9	1611.3
1701.8	1765.1
1857.9	1923.1
2018.4	2085.4
2183.3	2252.0
2352.5	2422.9
2526.1	2598.1
2704.2	2777.9
2886.8	2962.0
3074.0	3150.8
3265.8	3347.2
3462.3	3555.4
3663.4	3772.2
3869.4	3997.0
4079.9	4228.8

GIVEN POND DATA

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)
600.75	172.6	128,856

INTERMEDIATE ROUTING COMPUTATIONS

2S/t (cfs)	2S/t + O (cfs)
4295.2	4467.8

Time increment (t) = 1.0 min.

Pond File: projects\95-541\541A .PND
Inflow Hydrograph: projects\95-541\541A-15 .HYD
Outflow Hydrograph: projects\95-541\OUT .HYD

INFLOW HYDROGRAPH

TIME (min)	INFLOW (cfs)
0.0	96.70
1.0	96.70
2.0	96.70
3.0	96.70
4.0	96.70
5.0	96.70
6.0	96.70
7.0	96.70
8.0	96.70
9.0	96.70
10.0	96.70
11.0	96.70
12.0	96.70
13.0	96.70
14.0	96.70
15.0	96.70
16.0	96.70
17.0	96.70
18.0	96.70
19.0	96.70
20.0	96.70

ROUTING COMPUTATIONS

I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
-----	0.0	0.0	0.00	593.00
193.4	193.4	193.4	0.00	594.29
193.4	386.8	386.8	0.00	594.79
193.4	580.2	580.2	0.00	595.21
193.4	773.6	773.6	0.00	595.60
193.4	900.9	967.0	33.05	595.91
193.4	986.1	1094.3	54.12	596.10
193.4	1068.5	1179.5	55.47	596.26
193.4	1148.5	1261.9	56.70	596.40
193.4	1226.2	1341.9	57.85	596.54
193.4	1301.8	1419.6	58.92	596.68
193.4	1375.3	1495.2	59.93	596.81
193.4	1447.0	1568.7	60.86	596.93
193.4	1516.9	1640.4	61.76	597.05
193.4	1585.0	1710.3	62.62	597.16
193.4	1651.5	1778.4	63.46	597.27
193.4	1716.4	1844.9	64.26	597.38
193.4	1779.7	1909.8	65.04	597.48
193.4	1841.6	1973.1	65.75	597.58
193.4	1902.1	2035.0	66.44	597.67
193.4	1961.3	2095.5	67.10	597.77

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

Pond File: projects\95-541\541A .PND
Inflow Hydrograph: projects\95-541\541A-15 .HYD
Outflow Hydrograph: projects\95-541\OUT .HYD

Starting Pond W.S. Elevation = 593.00 ft

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

Peak Inflow	=	96.70 cfs
Peak Outflow	=	67.10 cfs
Peak Elevation	=	597.77 ft

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

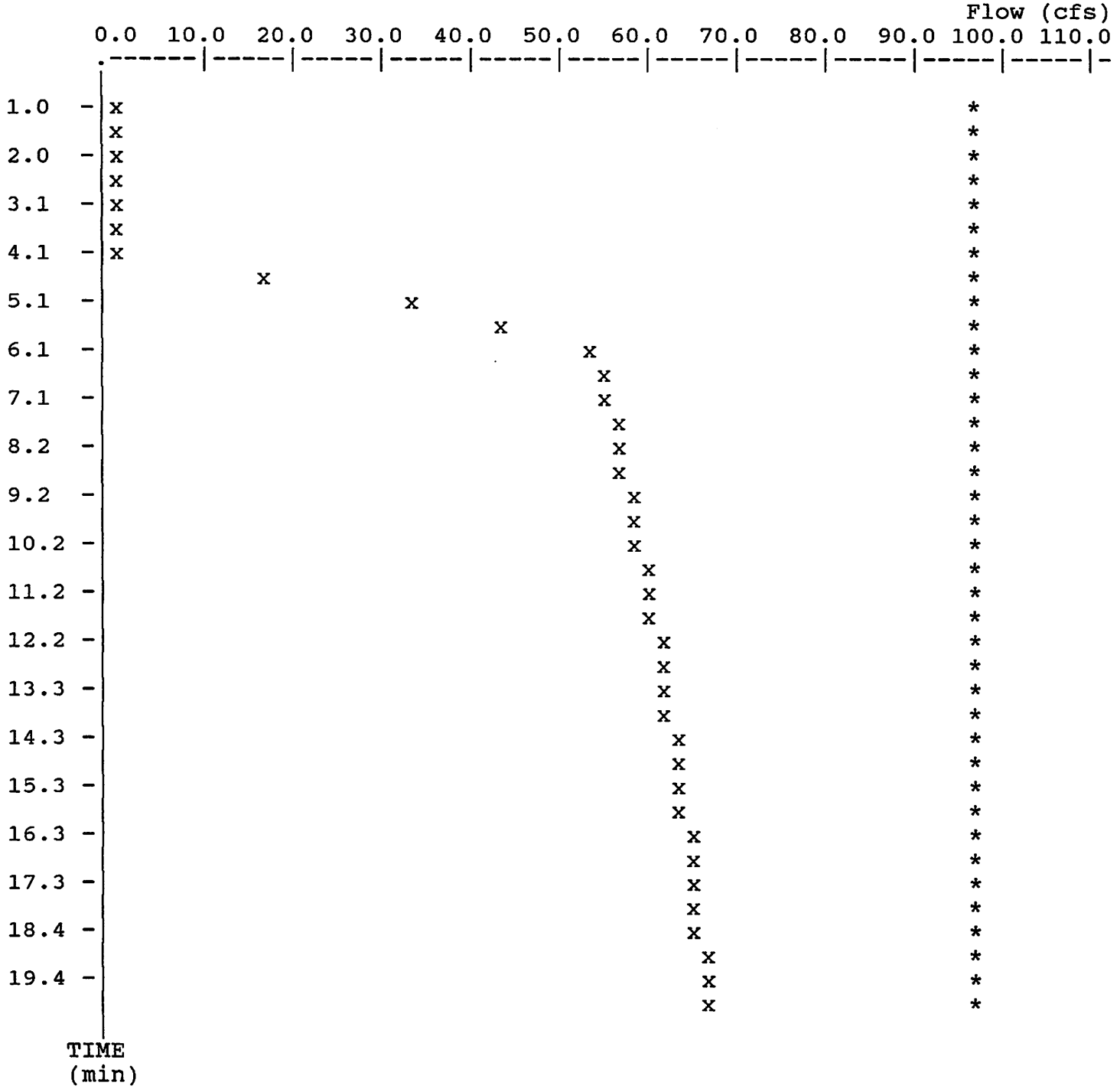
Initial Storage	=	0 cu-ft
Peak Storage From Storm	=	60,853 cu-ft
Total Storage in Pond	=	60,853 cu-ft

Warning: Inflow hydrograph truncated on left side.
Warning: Inflow hydrograph truncated on right side.

Pond File: projects\95-541\541A .PND
Inflow Hydrograph: projects\95-541\541A-15 .HYD
Outflow Hydrograph: projects\95-541\OUT .HYD

EXECUTED: 04-08-1996
14:00:35

Peak Inflow = 96.70 cfs
Peak Outflow = 67.10 cfs
Peak Elevation = 597.77 ft



x File: projects\95-541\541A-15 .HYD Qmax = 67.1 cfs
* File: projects\95-541\OUT .HYD Qmax = 96.7 cfs

****
* *
* SUNSET RIDGE ESTATES *
* DETENTION BASIN "A" *
* OVERFLOW STRUCTURE *
* 3/20/96 *
* *
****

Inflow Hydrograph: projects\95-541\541A-25 .HYD
Rating Table file: projects\95-541\541A .PND

----INITIAL CONDITIONS----
Elevation = 593.00 ft
Outflow = 0.00 cfs
Storage = 0 cu-ft

GIVEN POND DATA

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)
593.00	0.0	0
593.25	0.0	47
593.50	0.0	372
593.75	0.0	1,257
594.00	0.0	2,979
594.25	0.0	5,360
594.50	0.0	8,051
594.75	0.0	11,068
595.00	0.0	14,431
595.25	0.0	18,029
595.50	0.0	21,741
595.75	0.0	25,568
596.00	53.2	29,512
596.25	55.4	33,575
596.50	57.5	37,759
596.75	59.5	42,065
597.00	61.4	46,496
597.25	63.3	51,053
597.50	65.2	55,738
597.75	67.0	60,552
598.00	68.7	65,498
598.25	70.4	70,575
598.50	72.0	75,784
598.75	73.7	81,127
599.00	75.2	86,606
599.25	76.8	92,220
599.50	81.4	97,974
599.75	93.1	103,868
600.00	108.8	109,904
600.25	127.6	116,081
600.50	148.9	122,398

INTERMEDIATE ROUTING COMPUTATIONS

2S/t (cfs)	2S/t + O (cfs)
0.0	0.0
1.6	1.6
12.4	12.4
41.9	41.9
99.3	99.3
178.7	178.7
268.4	268.4
368.9	368.9
481.0	481.0
601.0	601.0
724.7	724.7
852.3	852.3
983.7	1036.9
1119.2	1174.6
1258.6	1316.1
1402.2	1461.7
1549.9	1611.3
1701.8	1765.1
1857.9	1923.1
2018.4	2085.4
2183.3	2252.0
2352.5	2422.9
2526.1	2598.1
2704.2	2777.9
2886.8	2962.0
3074.0	3150.8
3265.8	3347.2
3462.3	3555.4
3663.4	3772.2
3869.4	3997.0
4079.9	4228.8

GIVEN POND DATA

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)
600.75	172.6	128,856

INTERMEDIATE ROUTING COMPUTATIONS

2S/t (cfs)	2S/t + O (cfs)
4295.2	4467.8

Time increment (t) = 1.0 min.

Pond File: projects\95-541\541A .PND
Inflow Hydrograph: projects\95-541\541A-25 .HYD
Outflow Hydrograph: projects\95-541\OUT .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	119.41	-----	0.0	0.0	0.00	593.00
1.0	119.41	238.8	238.8	238.8	0.00	594.42
2.0	119.41	238.8	477.6	477.6	0.00	594.99
3.0	119.41	238.8	716.5	716.5	0.00	595.48
4.0	119.41	238.8	895.9	955.3	29.67	595.89
5.0	119.41	238.8	1025.2	1134.8	54.76	596.18
6.0	119.41	238.8	1150.6	1264.0	56.73	596.41
7.0	119.41	238.8	1272.4	1389.4	58.51	596.63
8.0	119.41	238.8	1391.0	1511.2	60.13	596.83
9.0	119.41	238.8	1506.5	1629.8	61.63	597.03
10.0	119.41	238.8	1619.2	1745.3	63.06	597.22
11.0	119.41	238.8	1729.2	1858.0	64.42	597.40
12.0	119.41	238.8	1836.6	1968.0	65.70	597.57
13.0	119.41	238.8	1941.7	2075.5	66.89	597.73
14.0	119.41	238.8	2044.6	2180.5	67.97	597.89
15.0	119.41	238.8	2145.4	2283.4	69.01	598.05
16.0	119.41	238.8	2244.1	2384.2	70.01	598.19
17.0	119.41	238.8	2341.1	2483.0	70.95	598.34
18.0	119.41	238.8	2436.2	2579.9	71.83	598.47
19.0	119.41	238.8	2529.6	2675.0	72.73	598.61
20.0	119.41	238.8	2621.2	2768.4	73.61	598.74

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

Pond File: projects\95-541\541A .PND
Inflow Hydrograph: projects\95-541\541A-25 .HYD
Outflow Hydrograph: projects\95-541\OUT .HYD

Starting Pond W.S. Elevation = 593.00 ft

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

Peak Inflow	=	119.41 cfs
Peak Outflow	=	73.61 cfs
Peak Elevation	=	598.74 ft

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

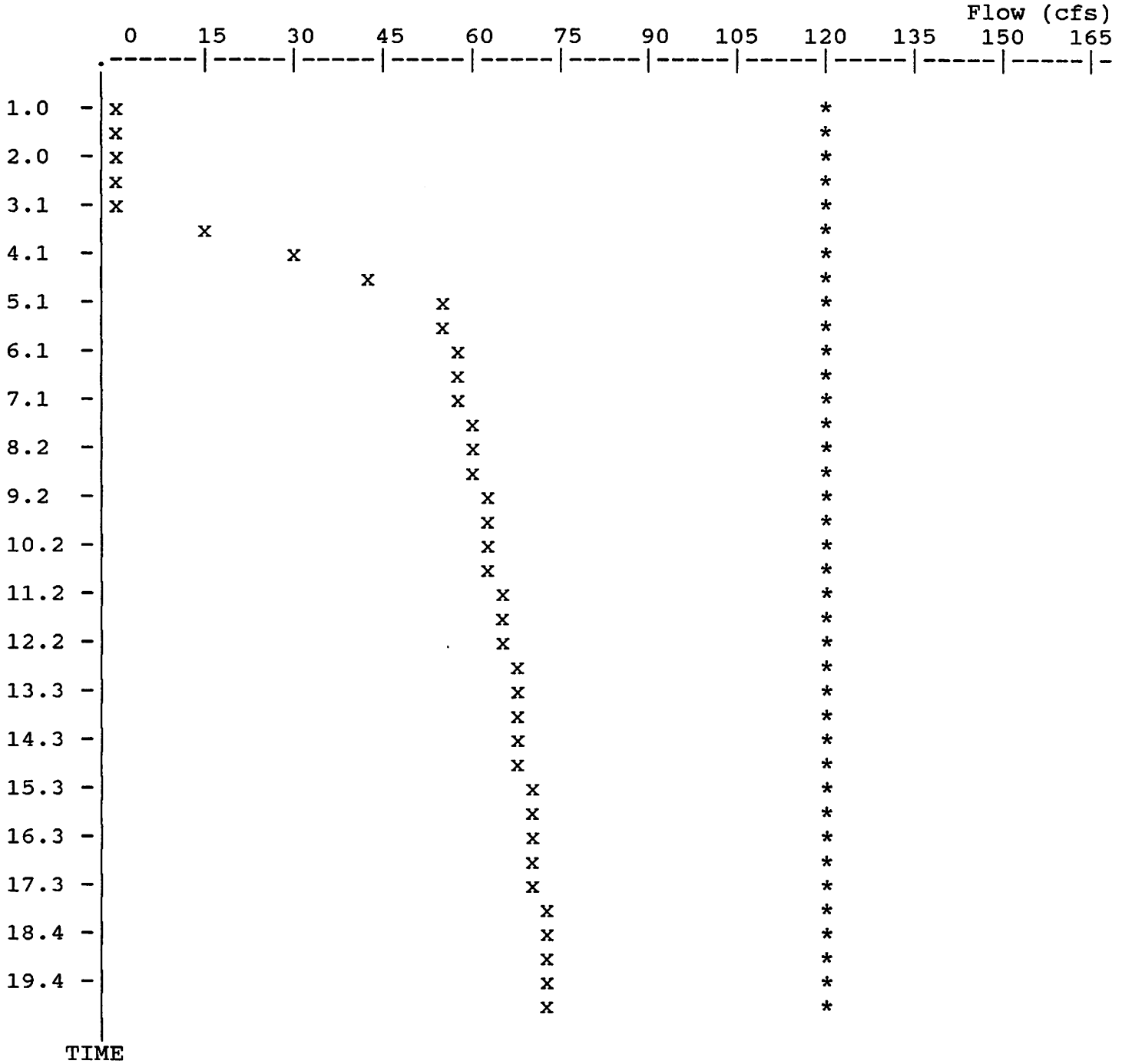
Initial Storage	=	0 cu-ft
Peak Storage From Storm	=	80,844 cu-ft
Total Storage in Pond	=	80,844 cu-ft

Warning: Inflow hydrograph truncated on left side.
Warning: Inflow hydrograph truncated on right side.

Pond File: projects\95-541\541A .PND
Inflow Hydrograph: projects\95-541\541A-25 .HYD
Outflow Hydrograph: projects\95-541\OUT .HYD

EXECUTED: 04-08-1996
14:01:20

Peak Inflow = 119.41 cfs
Peak Outflow = 73.61 cfs
Peak Elevation = 598.74 ft



x File: projects\95-541\541A-25 .HYD Qmax = 73.6 cfs
* File: projects\95-541\OUT .HYD Qmax = 119.4 cfs

****
* *
* SUNSET RIDGE ESTATES *
* DETENTION BASIN "A" *
* OVERFLOW STRUCTURE *
* 3/20/96 *
* *
****

Inflow Hydrograph: projects\95-541\541A-100.HYD
Rating Table file: projects\95-541\541A .PND

----INITIAL CONDITIONS----
Elevation = 593.00 ft
Outflow = 0.00 cfs
Storage = 0 cu-ft

GIVEN POND DATA

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)
593.00	0.0	0
593.25	0.0	47
593.50	0.0	372
593.75	0.0	1,257
594.00	0.0	2,979
594.25	0.0	5,360
594.50	0.0	8,051
594.75	0.0	11,068
595.00	0.0	14,431
595.25	0.0	18,029
595.50	0.0	21,741
595.75	0.0	25,568
596.00	53.2	29,512
596.25	55.4	33,575
596.50	57.5	37,759
596.75	59.5	42,065
597.00	61.4	46,496
597.25	63.3	51,053
597.50	65.2	55,738
597.75	67.0	60,552
598.00	68.7	65,498
598.25	70.4	70,575
598.50	72.0	75,784
598.75	73.7	81,127
599.00	75.2	86,606
599.25	76.8	92,220
599.50	81.4	97,974
599.75	93.1	103,868
600.00	108.8	109,904
600.25	127.6	116,081
600.50	148.9	122,398

INTERMEDIATE ROUTING COMPUTATIONS

2S/t (cfs)	2S/t + O (cfs)
0.0	0.0
1.6	1.6
12.4	12.4
41.9	41.9
99.3	99.3
178.7	178.7
268.4	268.4
368.9	368.9
481.0	481.0
601.0	601.0
724.7	724.7
852.3	852.3
983.7	1036.9
1119.2	1174.6
1258.6	1316.1
1402.2	1461.7
1549.9	1611.3
1701.8	1765.1
1857.9	1923.1
2018.4	2085.4
2183.3	2252.0
2352.5	2422.9
2526.1	2598.1
2704.2	2777.9
2886.8	2962.0
3074.0	3150.8
3265.8	3347.2
3462.3	3555.4
3663.4	3772.2
3869.4	3997.0
4079.9	4228.8

GIVEN POND DATA

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)
600.75	172.6	128,856

INTERMEDIATE ROUTING COMPUTATIONS

2S/t (cfs)	2S/t + O (cfs)
4295.2	4467.8

Time increment (t) = 1.0 min.

Pond File: projects\95-541\541A .PND
Inflow Hydrograph: projects\95-541\541A-100.HYD
Outflow Hydrograph: projects\95-541\OUT .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	152.75	-----	0.0	0.0	0.00	593.00
1.0	152.75	305.5	305.5	305.5	0.00	594.59
2.0	152.75	305.5	611.0	611.0	0.00	595.27
3.0	152.75	305.5	879.5	916.5	18.50	595.84
4.0	152.75	305.5	1073.9	1185.0	55.55	596.27
5.0	152.75	305.5	1262.6	1379.4	58.37	596.61
6.0	152.75	305.5	1446.4	1568.1	60.85	596.93
7.0	152.75	305.5	1625.7	1751.9	63.14	597.23
8.0	152.75	305.5	1800.6	1931.2	65.29	597.51
9.0	152.75	305.5	1971.7	2106.1	67.21	597.78
10.0	152.75	305.5	2139.3	2277.2	68.95	598.04
11.0	152.75	305.5	2303.6	2444.8	70.60	598.28
12.0	152.75	305.5	2464.9	2609.1	72.10	598.52
13.0	152.75	305.5	2623.1	2770.4	73.63	598.74
14.0	152.75	305.5	2778.7	2928.6	74.93	598.95
15.0	152.75	305.5	2931.8	3084.2	76.24	599.16
16.0	152.75	305.5	3079.6	3237.3	78.83	599.36
17.0	152.75	305.5	3218.1	3385.1	83.53	599.55
18.0	152.75	305.5	3340.9	3523.6	91.31	599.71
19.0	152.75	305.5	3447.0	3646.4	99.69	599.85
20.0	152.75	305.5	3537.8	3752.5	107.37	599.98

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

Pond File: projects\95-541\541A .PND
Inflow Hydrograph: projects\95-541\541A-100.HYD
Outflow Hydrograph: projects\95-541\OUT .HYD

Starting Pond W.S. Elevation = 593.00 ft

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

Peak Inflow	=	152.75 cfs
Peak Outflow	=	107.37 cfs
Peak Elevation	=	599.98 ft

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

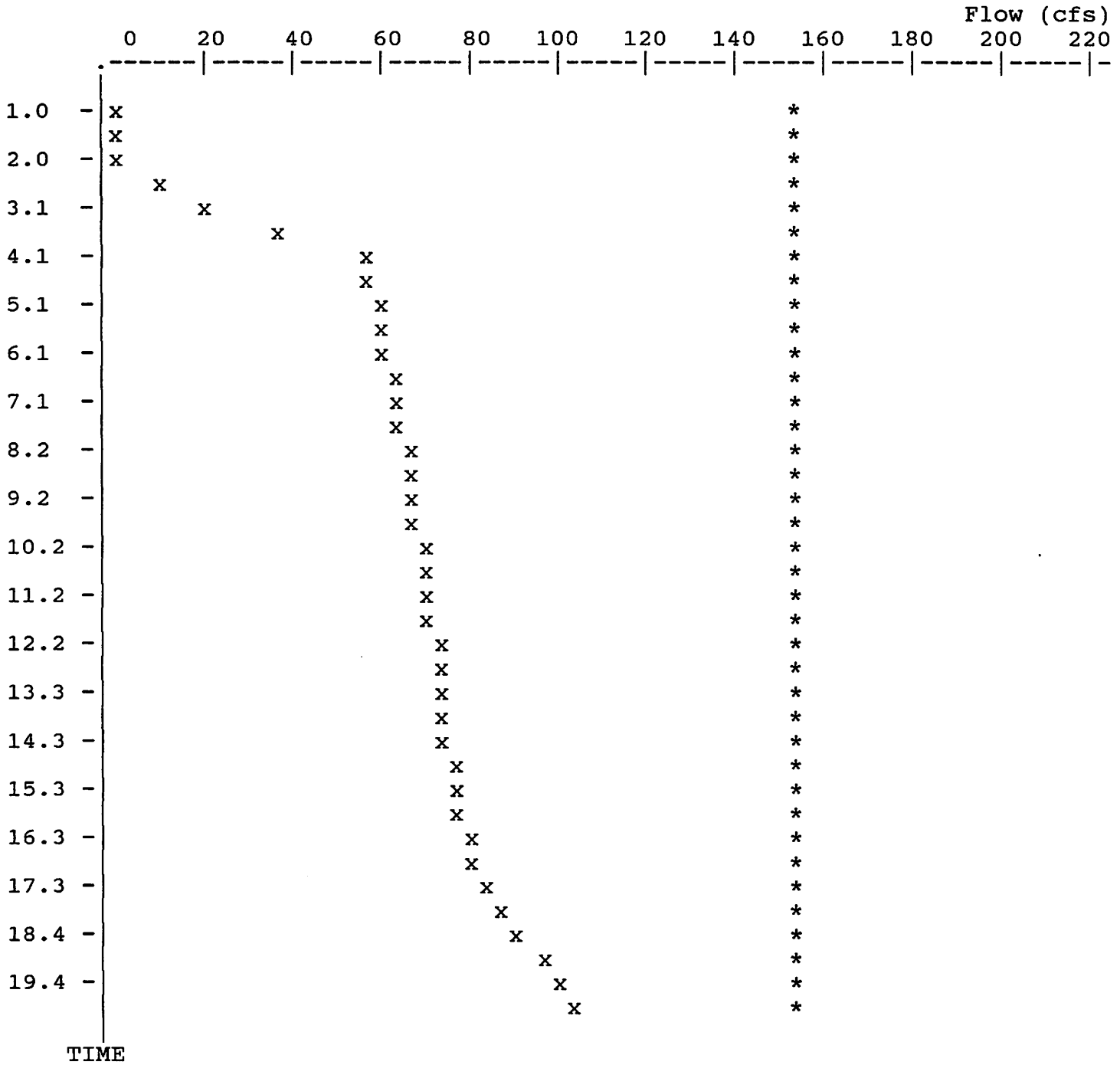
Initial Storage	=	0 cu-ft
Peak Storage From Storm	=	109,355 cu-ft
Total Storage in Pond	=	109,355 cu-ft

Warning: Inflow hydrograph truncated on left side.
Warning: Inflow hydrograph truncated on right side.

Pond File: projects\95-541\541A .PND
Inflow Hydrograph: projects\95-541\541A-100.HYD
Outflow Hydrograph: projects\95-541\OUT .HYD

EXECUTED: 04-08-1996
14:01:47

Peak Inflow = 152.75 cfs
Peak Outflow = 107.37 cfs
Peak Elevation = 599.98 ft



x File: projects\95-541\541A-100.HYD Qmax = 107.4 cfs
* File: projects\95-541\OUT .HYD Qmax = 152.8 cfs

****
* *
* SUNSET RIDGE ESTEATES *
* DETENTION BASIN "B" *
* 3/20/96 *
* J.O.Y. *
* *
****

Inflow Hydrograph: projects\95-541\541B-15 .HYD
Rating Table file: projects\95-541\541B .PND

----INITIAL CONDITIONS----
Elevation = 580.25 ft
Outflow = 0.00 cfs
Storage = 0 cu-ft

GIVEN POND DATA			INTERMEDIATE ROUTING COMPUTATIONS	
ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)	2S/t (cfs)	2S/t + O (cfs)
580.25	0.0	0	0.0	0.0
580.50	0.0	55	1.8	1.8
580.75	0.0	440	14.7	14.7
581.00	0.0	1,484	49.5	49.5
581.25	3.8	3,258	108.6	112.4
581.50	4.2	5,682	189.4	193.6
581.75	4.6	8,858	295.3	299.9
582.00	5.0	12,886	429.5	434.5
582.25	5.3	17,424	580.8	586.1
582.50	5.7	22,062	735.4	741.1
582.75	6.0	26,801	893.4	899.4
583.00	6.3	31,643	1054.8	1061.1
583.25	6.6	36,589	1219.6	1226.2
583.50	6.8	41,639	1388.0	1394.8
583.75	7.1	46,796	1559.9	1567.0
584.00	7.3	52,059	1735.3	1742.6
584.25	7.6	57,430	1914.3	1921.9
584.50	7.8	62,908	2096.9	2104.7
584.75	12.4	68,495	2283.2	2295.6
585.00	20.6	74,192	2473.1	2493.7
585.25	31.2	80,000	2666.7	2697.9
585.50	43.7	85,919	2864.0	2907.7
585.75	57.8	91,952	3065.1	3122.9
586.00	73.4	98,099	3270.0	3343.4
586.25	90.4	104,360	3478.7	3569.1
586.50	108.6	110,737	3691.2	3799.8
586.75	125.2	117,230	3907.7	4032.9

Time increment (t) = 1.0 min.

Pond File: projects\95-541\541B .PND
Inflow Hydrograph: projects\95-541\541B-15 .HYD
Outflow Hydrograph: projects\95-541\OUT .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	47.37	-----	0.0	0.0	0.00	580.25
1.0	47.37	94.7	89.3	94.7	2.73	581.18
2.0	47.37	94.7	175.7	184.0	4.15	581.47
3.0	47.37	94.7	261.5	270.4	4.49	581.68
4.0	47.37	94.7	346.7	356.2	4.77	581.85
5.0	47.37	94.7	431.4	441.4	5.01	582.01
6.0	47.37	94.7	515.8	526.1	5.18	582.15
7.0	47.37	94.7	599.8	610.5	5.36	582.29
8.0	47.37	94.7	683.4	694.5	5.58	582.42
9.0	47.37	94.7	766.6	778.1	5.77	582.56
10.0	47.37	94.7	849.4	861.3	5.93	582.69
11.0	47.37	94.7	932.0	944.2	6.08	582.82
12.0	47.37	94.7	1014.3	1026.8	6.24	582.95
13.0	47.37	94.7	1096.2	1109.0	6.39	583.07
14.0	47.37	94.7	1177.9	1191.0	6.54	583.20
15.0	47.37	94.7	1259.3	1272.7	6.66	583.32
16.0	47.37	94.7	1340.6	1354.1	6.75	583.44
17.0	47.37	94.7	1421.6	1435.3	6.87	583.56
18.0	47.37	94.7	1502.3	1516.3	7.01	583.68
19.0	47.37	94.7	1582.8	1597.0	7.13	583.79
20.0	47.37	94.7	1663.1	1677.5	7.23	583.91

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

Pond File: projects\95-541\541B .PND
Inflow Hydrograph: projects\95-541\541B-15 .HYD
Outflow Hydrograph: projects\95-541\OUT .HYD

Starting Pond W.S. Elevation = 580.25 ft

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

Peak Inflow	=	47.37 cfs
Peak Outflow	=	7.23 cfs
Peak Elevation	=	583.91 ft

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

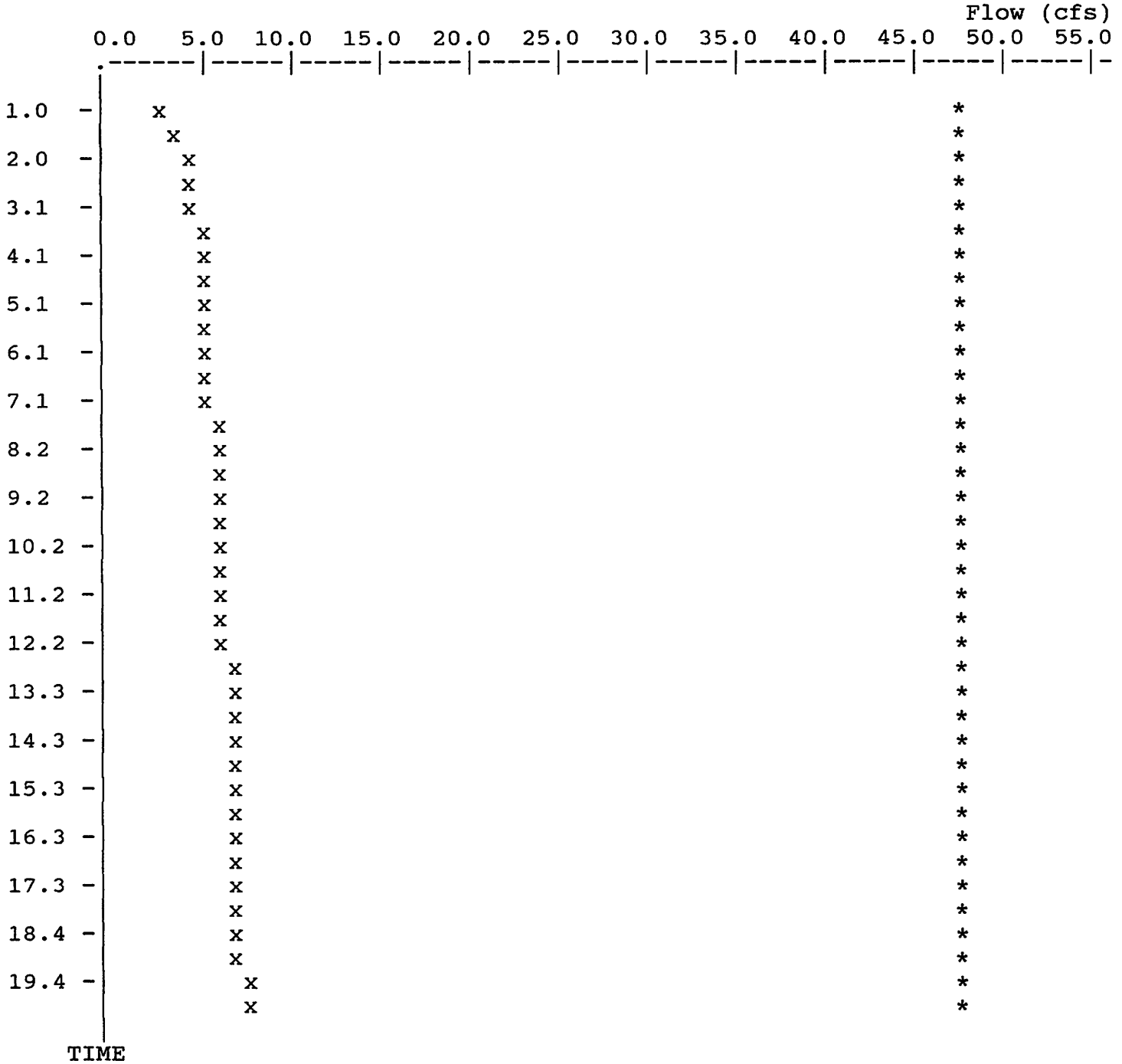
Initial Storage	=	0 cu-ft
Peak Storage From Storm	=	50,109 cu-ft
Total Storage in Pond	=	50,109 cu-ft

Warning: Inflow hydrograph truncated on left side.
Warning: Inflow hydrograph truncated on right side.

Pond File: projects\95-541\541B .PND
Inflow Hydrograph: projects\95-541\541B-15 .HYD
Outflow Hydrograph: projects\95-541\OUT .HYD

EXECUTED: 04-08-1996
14:02:06

Peak Inflow = 47.37 cfs
Peak Outflow = 7.23 cfs
Peak Elevation = 583.91 ft



x File: projects\95-541\541B-15 .HYD Qmax = 7.2 cfs
* File: projects\95-541\OUT .HYD Qmax = 47.4 cfs

POND-2 Version: 5.17 S/N:
EXECUTED: 04-08-1996 14:02:24

****
* *
* SUNSET RIDGE ESTEATES *
* DETENTION BASIN "B" *
* 3/20/96 *
* J.O.Y. *
* *
****

Inflow Hydrograph: projects\95-541\541B-25 .HYD
Rating Table file: projects\95-541\541B .PND

----INITIAL CONDITIONS----
Elevation = 580.25 ft
Outflow = 0.00 cfs
Storage = 0 cu-ft

GIVEN POND DATA			INTERMEDIATE ROUTING COMPUTATIONS	
ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)	2S/t (cfs)	2S/t + O (cfs)
580.25	0.0	0	0.0	0.0
580.50	0.0	55	1.8	1.8
580.75	0.0	440	14.7	14.7
581.00	0.0	1,484	49.5	49.5
581.25	3.8	3,258	108.6	112.4
581.50	4.2	5,682	189.4	193.6
581.75	4.6	8,858	295.3	299.9
582.00	5.0	12,886	429.5	434.5
582.25	5.3	17,424	580.8	586.1
582.50	5.7	22,062	735.4	741.1
582.75	6.0	26,801	893.4	899.4
583.00	6.3	31,643	1054.8	1061.1
583.25	6.6	36,589	1219.6	1226.2
583.50	6.8	41,639	1388.0	1394.8
583.75	7.1	46,796	1559.9	1567.0
584.00	7.3	52,059	1735.3	1742.6
584.25	7.6	57,430	1914.3	1921.9
584.50	7.8	62,908	2096.9	2104.7
584.75	12.4	68,495	2283.2	2295.6
585.00	20.6	74,192	2473.1	2493.7
585.25	31.2	80,000	2666.7	2697.9
585.50	43.7	85,919	2864.0	2907.7
585.75	57.8	91,952	3065.1	3122.9
586.00	73.4	98,099	3270.0	3343.4
586.25	90.4	104,360	3478.7	3569.1
586.50	108.6	110,737	3691.2	3799.8
586.75	125.2	117,230	3907.7	4032.9

Time increment (t) = 1.0 min.

Pond File: projects\95-541\541B .PND
Inflow Hydrograph: projects\95-541\541B-25 .HYD
Outflow Hydrograph: projects\95-541\OUT .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	58.48	-----	0.0	0.0	0.00	580.25
1.0	58.48	117.0	109.3	117.0	3.82	581.26
2.0	58.48	117.0	217.6	226.3	4.32	581.58
3.0	58.48	117.0	325.2	334.6	4.70	581.81
4.0	58.48	117.0	432.1	442.1	5.02	582.01
5.0	58.48	117.0	538.6	549.1	5.23	582.19
6.0	58.48	117.0	644.6	655.6	5.48	582.36
7.0	58.48	117.0	750.1	761.6	5.74	582.53
8.0	58.48	117.0	855.2	867.1	5.94	582.70
9.0	58.48	117.0	959.9	972.1	6.14	582.86
10.0	58.48	117.0	1064.2	1076.8	6.33	583.02
11.0	58.48	117.0	1168.1	1181.1	6.52	583.18
12.0	58.48	117.0	1271.7	1285.1	6.67	583.34
13.0	58.48	117.0	1375.1	1388.7	6.79	583.49
14.0	58.48	117.0	1478.1	1492.1	6.97	583.64
15.0	58.48	117.0	1580.8	1595.1	7.13	583.79
16.0	58.48	117.0	1683.3	1697.8	7.25	583.94
17.0	58.48	117.0	1785.4	1800.2	7.40	584.08
18.0	58.48	117.0	1887.3	1902.4	7.57	584.22
19.0	58.48	117.0	1988.8	2004.2	7.69	584.36
20.0	58.48	117.0	2090.2	2105.8	7.83	584.50

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

Pond File: projects\95-541\541B .PND
Inflow Hydrograph: projects\95-541\541B-25 .HYD
Outflow Hydrograph: projects\95-541\OUT .HYD

Starting Pond W.S. Elevation = 580.25 ft

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

Peak Inflow	=	58.48 cfs
Peak Outflow	=	7.83 cfs
Peak Elevation	=	584.50 ft

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

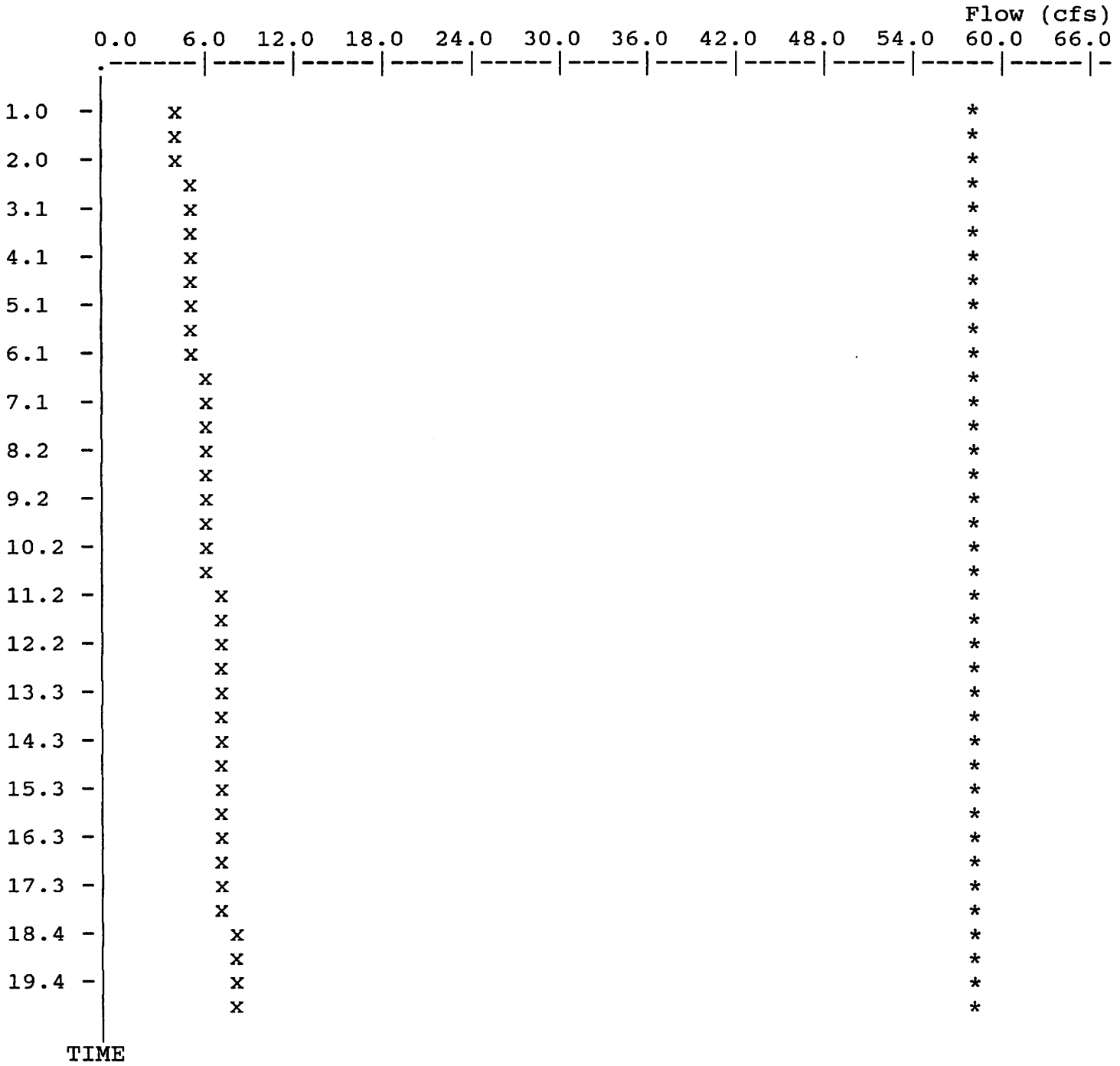
Initial Storage	=	0 cu-ft
Peak Storage From Storm	=	62,939 cu-ft
Total Storage in Pond	=	62,939 cu-ft

Warning: Inflow hydrograph truncated on left side.
Warning: Inflow hydrograph truncated on right side.

Pond File: projects\95-541\541B .PND
Inflow Hydrograph: projects\95-541\541B-25 .HYD
Outflow Hydrograph: projects\95-541\OUT .HYD

EXECUTED: 04-08-1996
14:02:24

Peak Inflow = 58.48 cfs
Peak Outflow = 7.83 cfs
Peak Elevation = 584.50 ft



x File: projects\95-541\541B-25 .HYD Qmax = 7.8 cfs
* File: projects\95-541\OUT .HYD Qmax = 58.5 cfs

****
* *
* SUNSET RIDGE ESTEATES *
* DETENTION BASIN "B" *
* 3/20/96 *
* J.O.Y. *
* *
****

Inflow Hydrograph: projects\95-541\541B-100.HYD
Rating Table file: projects\95-541\541B .PND

----INITIAL CONDITIONS----
Elevation = 580.25 ft
Outflow = 0.00 cfs
Storage = 0 cu-ft

GIVEN POND DATA			INTERMEDIATE ROUTING COMPUTATIONS	
ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)	2S/t (cfs)	2S/t + O (cfs)
580.25	0.0	0	0.0	0.0
580.50	0.0	55	1.8	1.8
580.75	0.0	440	14.7	14.7
581.00	0.0	1,484	49.5	49.5
581.25	3.8	3,258	108.6	112.4
581.50	4.2	5,682	189.4	193.6
581.75	4.6	8,858	295.3	299.9
582.00	5.0	12,886	429.5	434.5
582.25	5.3	17,424	580.8	586.1
582.50	5.7	22,062	735.4	741.1
582.75	6.0	26,801	893.4	899.4
583.00	6.3	31,643	1054.8	1061.1
583.25	6.6	36,589	1219.6	1226.2
583.50	6.8	41,639	1388.0	1394.8
583.75	7.1	46,796	1559.9	1567.0
584.00	7.3	52,059	1735.3	1742.6
584.25	7.6	57,430	1914.3	1921.9
584.50	7.8	62,908	2096.9	2104.7
584.75	12.4	68,495	2283.2	2295.6
585.00	20.6	74,192	2473.1	2493.7
585.25	31.2	80,000	2666.7	2697.9
585.50	43.7	85,919	2864.0	2907.7
585.75	57.8	91,952	3065.1	3122.9
586.00	73.4	98,099	3270.0	3343.4
586.25	90.4	104,360	3478.7	3569.1
586.50	108.6	110,737	3691.2	3799.8
586.75	125.2	117,230	3907.7	4032.9

Time increment (t) = 1.0 min.

Pond File: projects\95-541\541B .PND
Inflow Hydrograph: projects\95-541\541B-100.HYD
Outflow Hydrograph: projects\95-541\OUT .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	74.81	-----	0.0	0.0	0.00	580.25
1.0	74.81	149.6	141.7	149.6	3.98	581.36
2.0	74.81	149.6	282.1	291.3	4.57	581.73
3.0	74.81	149.6	421.8	431.8	4.99	581.99
4.0	74.81	149.6	560.9	571.4	5.27	582.23
5.0	74.81	149.6	699.2	710.5	5.62	582.45
6.0	74.81	149.6	837.0	848.9	5.90	582.67
7.0	74.81	149.6	974.3	986.7	6.16	582.88
8.0	74.81	149.6	1111.1	1124.0	6.41	583.10
9.0	74.81	149.6	1247.5	1260.7	6.64	583.30
10.0	74.81	149.6	1383.5	1397.1	6.80	583.50
11.0	74.81	149.6	1519.0	1533.1	7.04	583.70
12.0	74.81	149.6	1654.2	1668.6	7.22	583.89
13.0	74.81	149.6	1789.0	1803.8	7.40	584.09
14.0	74.81	149.6	1923.4	1938.6	7.62	584.27
15.0	74.81	149.6	2057.5	2073.0	7.77	584.46
16.0	74.81	149.6	2186.6	2207.1	10.27	584.63
17.0	74.81	149.6	2308.0	2336.2	14.08	584.80
18.0	74.81	149.6	2419.4	2457.7	19.11	584.95
19.0	74.81	149.6	2520.0	2569.1	24.51	585.09
20.0	74.81	149.6	2610.2	2669.6	29.74	585.22

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

Pond File: projects\95-541\541B .PND
Inflow Hydrograph: projects\95-541\541B-100.HYD
Outflow Hydrograph: projects\95-541\OUT .HYD

Starting Pond W.S. Elevation = 580.25 ft

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

Peak Inflow	=	74.81 cfs
Peak Outflow	=	29.74 cfs
Peak Elevation	=	585.22 ft

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

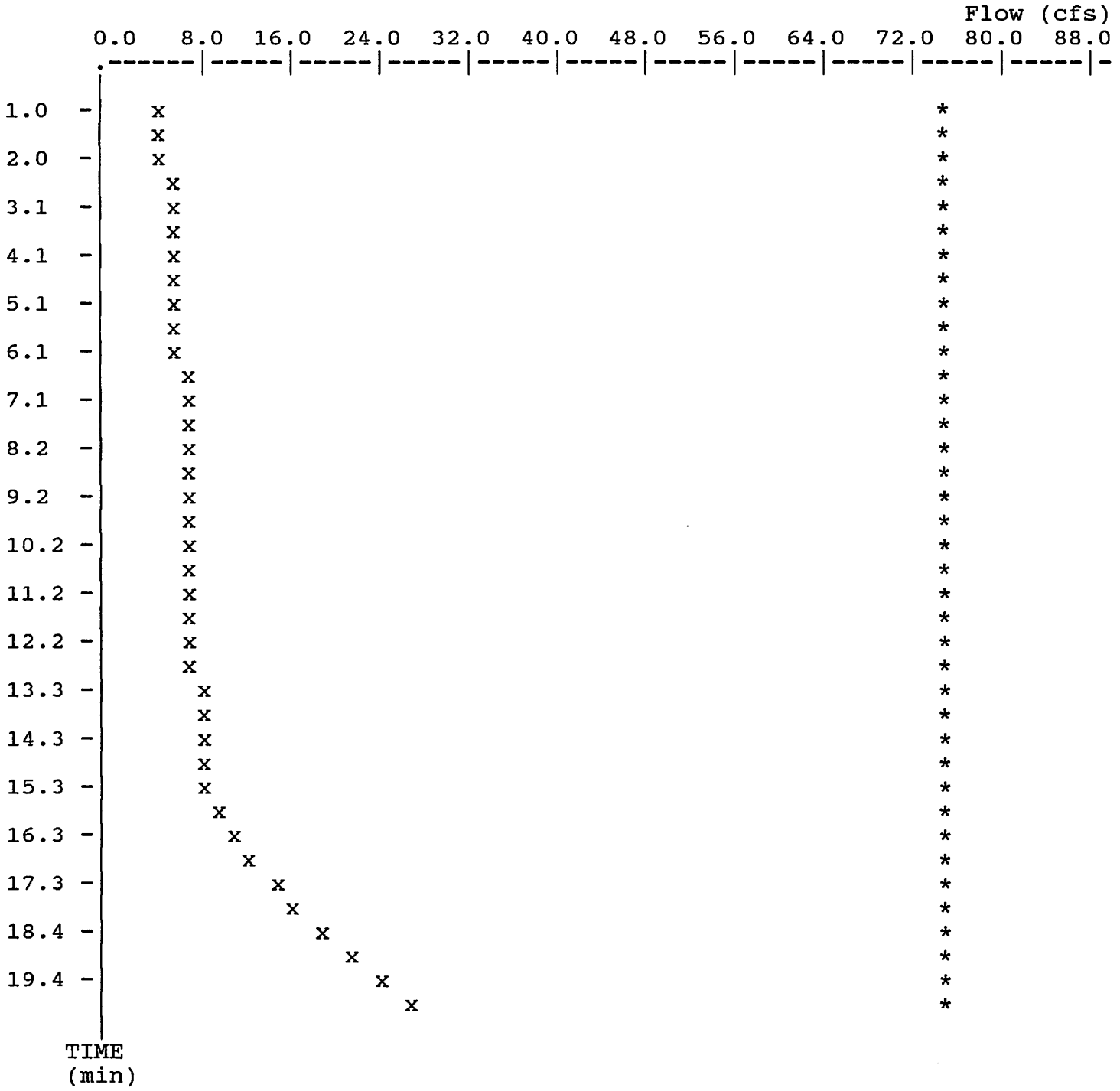
Initial Storage	=	0 cu-ft
Peak Storage From Storm	=	79,197 cu-ft
Total Storage in Pond	=	79,197 cu-ft

Warning: Inflow hydrograph truncated on left side.
Warning: Inflow hydrograph truncated on right side.

Pond File: projects\95-541\541B .PND
Inflow Hydrograph: projects\95-541\541B-100.HYD
Outflow Hydrograph: projects\95-541\OUT .HYD

EXECUTED: 04-08-1996
14:02:41

Peak Inflow = 74.81 cfs
Peak Outflow = 29.74 cfs
Peak Elevation = 585.22 ft



x File: projects\95-541\541B-100.HYD Qmax = 29.7 cfs
* File: projects\95-541\OUT .HYD Qmax = 74.8 cfs

File

SITE DEVELOPMENT ENGINEERING, INC.

Grading Permit

SITE ENGINEERING · LAND PLANNING

RESIDENTIAL · COMMERCIAL · MUNICIPAL

DATE: 4-12-96	JOB NO: 95-541
ATTENTION: Benny Hedden	
RE: Sunset Ridge Estates	

TO: City of O'Fallon
138 S. Main Street
O'Fallon, MO 63366

RECEIVED
APR 15 1996
ENGINEERING DEPT.

WE ARE SENDING YOU: ☒ TRANSMITTAL LETTER ☐ FAX TRANSMISSION

COPIES	DATE	NO.	DESCRIPTION
4			Improvement Plans
1			Grading Plan Application
1			D.N.R. Permit Approvals
3			Detention Report

THESE ARE TRANSMITTED FOR :

☒ APPROVAL
☒ REVIEW AND COMMENT
☐ YOUR USE
☐ OTHER _____

REMARKS : Benny, please review these plans first for a grading permit, as we are trying to start grading as soon as possible.

COPY TO : _____ SIGNED : John O. Yaakub
John O. Yaakub

4400 South Lindbergh Blvd., Suite 5 - St. Louis, Missouri 63127 - (314) 849-7900; FAX (314) 849-7999

27

SITE DEVELOPMENT ENGINEERING, INC.

SITE ENGINEERING · LAND PLANNING

RESIDENTIAL · COMMERCIAL · MUNICIPAL

DATE: 12-2--96	**JOB NO:** 95-541
ATTENTION: Colleen Kramme	
RE: Sunset Ridge Est.	

TO: City of O'Fallon
138 S. Main
O' Fallon, MO 63366

WE ARE SENDING YOU: ☒ **TRANSMITTAL LETTER** ☐ **FAX TRANSMISSION**

COPIES	DATE	NO.	DESCRIPTION
2sets			improvement plans
1			cover sheet
1			D.N.R. permit

THESE ARE TRANSMITTED FOR :

☒ **APPROVAL**
☐ **REVIEW AND COMMENT**
☐ **YOUR USE**
☐ **OTHER** _____

REMARKS : _____

COPY TO : _____ **SIGNED :** John O. Yaakub

John O. Yaakub

4400 South Lindbergh Blvd., Suite 5 - St. Louis, Missouri 63127 - (314) 849-7900; FAX (314) 849-7999