HYDROLOGIC ANALYSIS REPORT
DETENTION AND LAKE DESIGN

TURTLE CREEK
"GLEN EAGLE GOLF COURSE"
LOCATED IN:
THE CITY OF O'FALLON
ST. CHARLES COUNTY, MISSOURI

PREPARED FOR REVIEW BY:
THE CITY OF O'FALLON

PREPARED BY:
PICKETT, RAY & SILVER, INC.
333 MID RIVERS MALL DRIVE
ST. PETERS, MISSOURI 63376
PHONE: (314) 441-1211

PROJECT DESIGNER: TANYA DIETZ
PROJECT NUMBER: 89-204/23941

NOVEMBER 15, 1991

14 DRAINS TO 13 TO 17

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LAKE 12

This report was prepared in conjunction with the City of O'Fallon's specifications for stormwater runoff detention and lake design on the proposed development "Glen Eagle Golf Course." The property being developed and referred to in this report is located in Sections 29, 30, 31, and 32, Township 47 North, Range 3 East, St. Charles County, Missouri, on the North and South side of Hillman Road within the City of O'Fallon's City Limits.

The hydrologic analysis begins at the upstream watershed on the South side of Hillman Road. Lakes #14 and #17 and dry detention basin #13 are located on 116.85 acre tract of land proposed as a residential and golf course community development. Lakes #5 and #8 are on the North side of Hillman Road and located on 254.62 tract of land proposed as residential and golf course community development.

The enclosed information provides the detention requirements on the development based on a 25 Year Frequency Storm and a 20 Minute Duration period.

DEVELOPMENT SOUTH OF HILLMAN ROAD

Area of Development = 116.85 Acres

Undeveloped Flow

116.85 Acres x 2.31 = 269.92 cfs Q25 345 cfs Q100

Post Developed Flow

Residential - 52.14 Acres x 3.26 = 169.97 cfs Q25 — Q100 217 cfs
Multi-Family - 18.97 Acres x 4.07 = 77.21 cfs Q25 — 99 cfs
Golf Course - 45.74 Acres x 2.31 = 105.66 cfs Q25 — 135
Total = 116.85 Acres = 352.84 cfs Q25 — 451 cfs

Differential Run-Off

Post Developed = 352.84 cfs Q25
Undeveloped = 269.92 cfs Q25
Total = 82.92 cfs Q25 451 - 345 = 106 cfs

Detention Required: (Voume Calculated for 30 Min. Duration)

82.92 cfs x 30 min. x 60 sec./min = 149,256 cu. ft.

106 x 1800 = 190,800 cf

Detention Provided

Lake #14 = 26,382 cu. ft.
Dry Detention Basin #13 = 106,049 cu. ft.
Lake #17 = 48,328 cu. ft.
Total = 180,759 cu. ft. storage provided (180,760% 190,800) = 94.7 %

Approx. 95% of 100 Year Storm Detained.

NOTE: We have provided 31,503 cu. ft. of additional storage volume in Lakes #14 and #17 and dry detention basin #13.

DEVELOPMENT NORTH OF HILLMAN ROAD

Area of Development = 254.62 Acres
Offsite School Site = 46.20 Acres
Total = 300.82 Acres

Undeveloped Flow

300.82 Acres x 2.31 = 694.89 cfs Q25 — 888 CFS Q100

Post Developed Flow

		Q100
Residential	- 108.05 Acres x 3.26 = 352.24 cfs Q25	451
Golf Course	- 141.87 Acres x 2.31 = 327.72 cfs Q25	419
Clubhouse	- 4.70 Acres x 4.75 = 22.33 cfs Q25	28
School Site	- 23.10 Acres x 2.31 = 53.36 cfs Q25	68
School Site	- 23.10 Acres x 4.75 = 109.73 cfs Q25	140
Total = 300.82 Acres = 865.38 cfs Q25		1106 CFS Q100

1/2 OF TRACT 100% IMP.

Differential Run-Off

Post Developed = 865.38 cfs Q25
Undeveloped = 694.89 cfs Q25
Total = 170.49 cfs Q25

1106 - 888 = 218 CFS
218 X 1800 = 393,200 CFS FOR 100 YEAR

Detention Required: (Voume Calculated for 30 Min. Duration)

170.49 cfs x 30 min. x 60 sec./min = 306,882 cu. ft.

NOTE: Detention volume required includes the school site adjacent to our development. We will provide for their detention in our development.

Detention Provided

Lake #5 = 194,399 cu. ft.
Lake #8 = 189,265 cu. ft.
Total = 383,664 cu. ft. storage provided

97.5% OF 100 YEAR STORM

NOTE: We have provided 76,782 cu. ft. of additional storage volume in Lakes #5 and #8.

ADD SEDIMENT STORAGE

HYDROLOGIC REPORT FOR

GLEN EAGLE GOLF COURSE

DETENTION AND LAKE DESIGN

25 YEAR/20 MIN. STORM

LAKE #14

PREPARED BY:

PICKETT RAY & SILVER, INC.

333 MID RIVERS MALL DRIVE

ST. PETERS, MO. 63376

DESIGNER: TANYA DIETZ

HYDROLOGIC REPORT

GLEN EAGLE GOLF COURSE
LAKE #14.....
INFLOW .....

Hyd. No. 13

Hydrograph type	= RATIONAL	Peak ~~discharge~~ INFLOW	= 33.50 cfs
Storm frequency	= 25 yr	Time interval	= 1 min
Time of conc.	= 20 min	Intensity	= 5.03 in/hr
Runoff coeff.	= .556	Basin area	= 11.97 ac

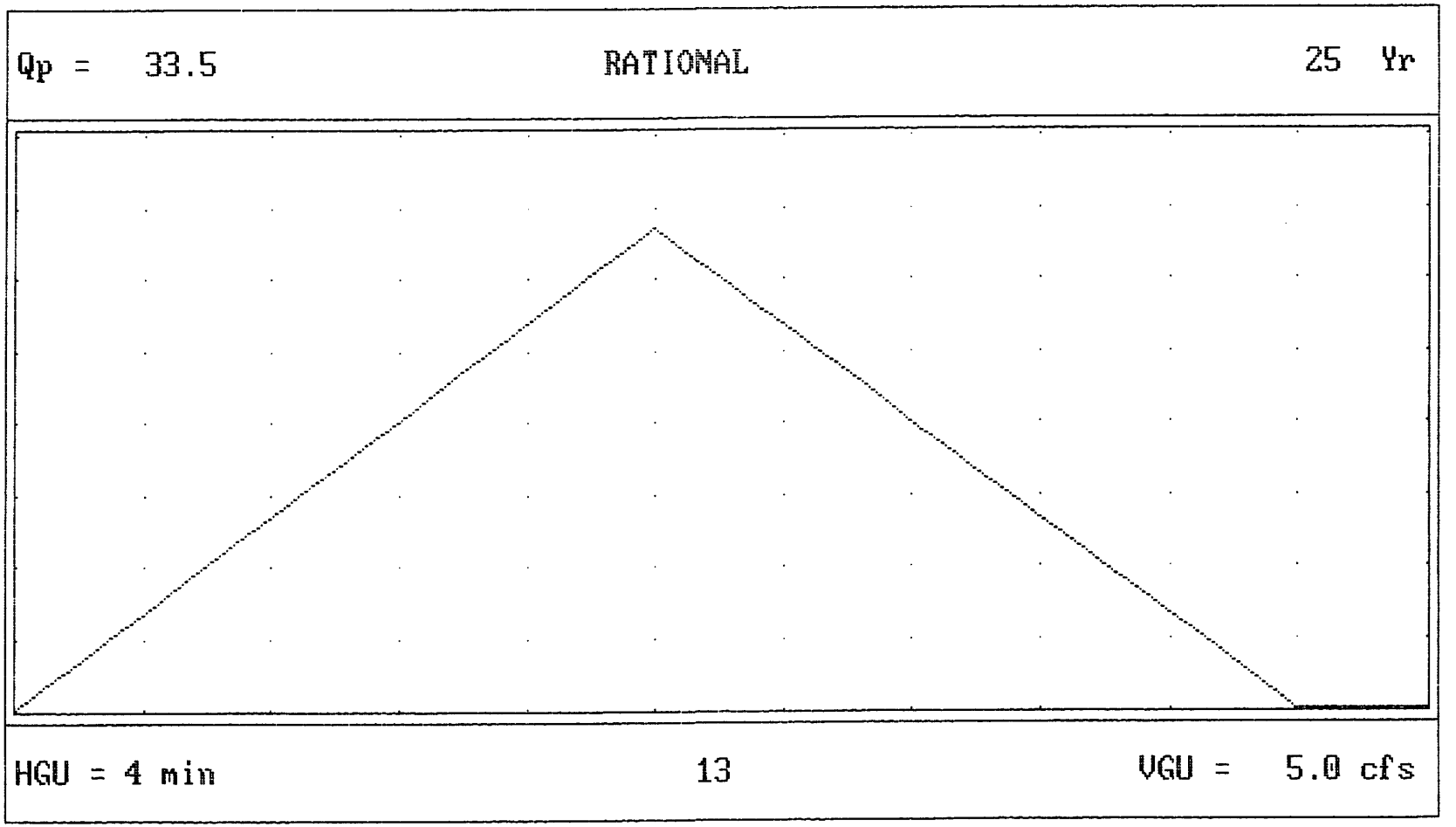
USED TO GET OUR RAT CO-EFF. FROM SPECS. WHICH ARE CONS

HYDROGRAPH DISCHARGE TABLE

TIME--(min)	OUTFLOW (cfs)	TIME--(min)	OUTFLOW (cfs)	TIME--(min)	OUTFLOW (cfs)	TIME--(min)	OUTFLOW (cfs)
1.00	1.68	2.00	3.35	3.00	5.03	4.00	6.70
5.00	8.38	6.00	10.05	7.00	11.73	8.00	13.40
9.00	15.08	10.00	16.75	11.00	18.43	12.00	20.10
13.00	21.78	14.00	23.45	15.00	25.13	16.00	26.80
17.00	28.48	18.00	30.15	19.00	31.83	20.00	33.50
21.00	31.83	22.00	30.15	23.00	28.48	24.00	26.80
25.00	25.13	26.00	23.45	27.00	21.78	28.00	20.10
29.00	18.43	30.00	16.75	31.00	15.08	32.00	13.40
33.00	11.73	34.00	10.05	35.00	8.38	36.00	6.70
37.00	5.03	38.00	3.35	39.00	1.68	40.00	0.00

Peak Inflow:
Offsite (Res.) 0.60 Ac. x 3.26 = 1.96 cfs Q25
Onsite (Res.) 5.53 Ac. x 3.26 = 18.04 cfs Q25
Onsite (Golf) 5.84 Ac. x 2.31 = 13.50 cfs Q25
Total = 11.97 Acres = 33.50 cfs Q25

NOTE: Offsite Areas Are Calculated As Being Developed Under Their Current Zoning Classification.



VOL = (cuft/acft) = 40205 / 0.923

Rev. 3-31-92 [illegible]

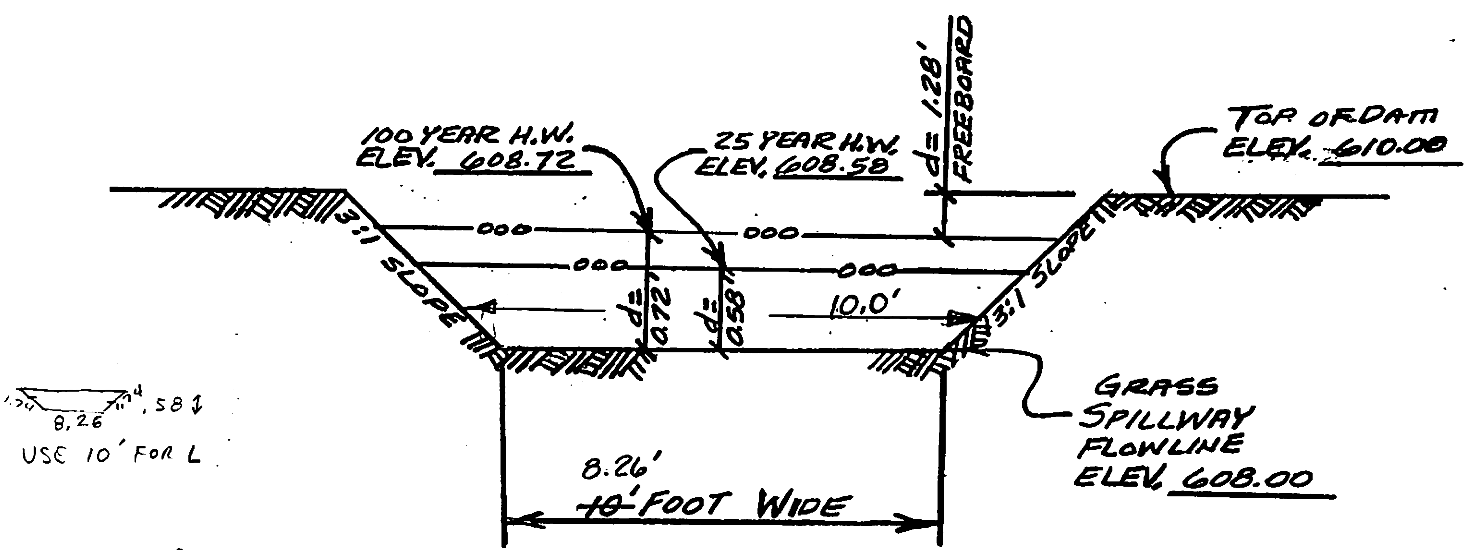
OUTLET STRUCTURES

Reservoir: 4

CULVERT STRUC A. Q=CoA[2gh/k]^.5		CULVERT STRUC B. Q=CoA[2gh/k]^.5	
1. WIDTH (in)	= 0..	9. WIDTH (in)	= 0..
2. HEIGHT (in)	= 0..	10. HEIGHT (in)	= 0..
3. No. BARRELS	= 0..	11. No. BARRELS	= 0..
4. INVERT ELEV.	= 0........	12. INVERT ELEV.	= 0........
5. Co = 0.60		13. Co = 0.60	
6. CULVERT LENGTH (ft)	= 0...	14. CULVERT LENGTH (ft)	= 0...
7. CULVERT SLOPE (%)	= 0...	15. CULVERT SLOPE (%)	= 0...
8. MANNING'S N-VALUE	= .013	16. MANNING'S N-VALUE	= .013
		17. MULTI-STAGE OPTION ? (Y/N)	N

WEIR STRUCTURE A. Q=CwLH^EXP		WEIR STRUCTURE B. Q=CwLH^EXP	
18. CREST LENGTH (ft)	= 10.....	23. CREST LENGTH (ft)	= 0......
19. CREST ELEVATION	= 608....	24. CREST ELEVATION	= 0......
20. Cw = 3.00		25. Cw = 3.00	
21. EXP = 1.50		26. EXP = 1.50	
22. MULTI-STAGE OPTION ? (Y/N)	N	27. MULTI-STAGE OPTION ? (Y/N)	N

Change item number: 0 DY to cont



USE 10' FOR L

$Q = CLH^{3/2}$

$Q = 3.10 (.58)^{3/2}$

$Q = 13.25$

SPILLWAY DETAIL

N.T.S.

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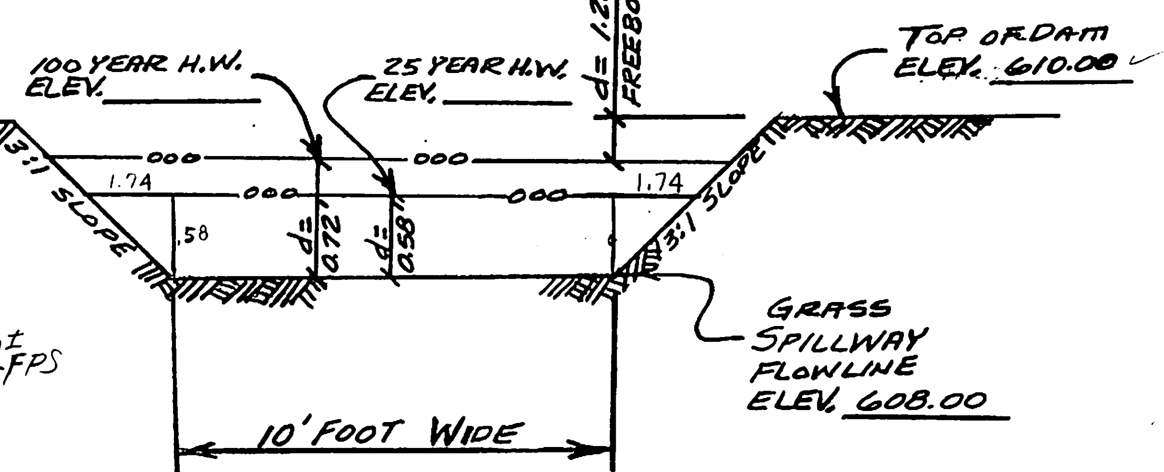
MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM5 OUTLET STRUCTURES FMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM;
 Reservoir:  4                                                                          :
CULVERT STRUC  A. Q=CoA[2gh/k]^.5      CULVERT STRUC  B. Q=CoA[2gh/k]^.5              :
                                                                                        :
1. WIDTH  (in)     = 0..                9. WIDTH  (in)     = 0..                        :
2. HEIGHT (in)     = 0..               10. HEIGHT (in)     = 0..                        :
3. No. BARRELS     = 0..               11. No. BARRELS     = 0..                        :
4. INVERT ELEV.    = 0........         12. INVERT ELEV.    = 0........                  :
5. Co = 0.60                           13. Co = 0.60                                    :
6. CULVERT LENGTH (ft) = 0...          14. CULVERT LENGTH (ft) = 0...                   :
7. CULVERT SLOPE (%)   = 0...          15. CULVERT SLOPE (%)   = 0...                   :
8. MANNING'S N-VALUE   = .013          16. MANNING'S N-VALUE   = .013                   :
                                       17. MULTI-STAGE OPTION ? (Y/N) N                 :
                                                                                        :
WEIR STRUCTURE A.       Q=CwLH^EXP     WEIR STRUCTURE B.       Q=CwLH^EXP               :
                                                                                        :
18. CREST LENGTH (ft)  = 10.....       23. CREST LENGTH (ft)  = 0......                 :
19. CREST ELEVATION    = 608....       24. CREST ELEVATION    = 0......                 :
20. Cw = 3.00                          25. Cw = 3.00                                    :
21. EXP = 1.50                         26. EXP = 1.50                                   :
22. MULTI-STAGE OPTION ? (Y/N) N       27. MULTI-STAGE OPTION ? (Y/N) N                 :
                                                                                        :
MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM<
ange item number: 0                                                        DY to cont
```

C = 3 CONSERVATIVE

$Q = CLH^{3/2}$ - $Q = 3 \cdot 10 \cdot (.58)^{3/2} = 13.25$

$Q = 3 \cdot 11.74 \cdot (.442) = 15.6$



$Q = VA$

$V = \frac{Q}{A}$

$V = \frac{13.25}{6.8} = 2^{\pm} FPS$

$L = 10' + 1.74 = 11.74$

Q = 15.6 CFS

SPILLWAY DETAIL

N.T.S.

IF EST. 14 CFS PASSING

THEN 33.5 - 14 = 19.9 DETAINED

19.5 X 1800 =

HYDROLOGIC REPORT

STAGE / STORAGE / DISCHARGE

RESERVOIR NUMBER = 4

RESERVOIR NAME = LAKE #14....
STORAGE VALUES WERE INPUT MANUALLY

DISCHARGE VALUES: CULVERT STRUCT A. Q = .6 *A*[2gh/k]^.5 * 0
CULVERT STRUCT B. Q = .6 *A*[2gh/k]^.5 * 0
WEIR STRUCT A. Q = 3 * 10 * H ^ 1.5
WEIR STRUCT B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs)			
	CULVERT A	CULVERT B	WEIR A	WEIR B
608.00	0.00	0.00	0.00	0.00
609.00	0.00	0.00	30.00	0.00
610.00	0.00	0.00	84.85	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00

STAGE	ELEVATION	INC STOR cu ft	TOT STOR cu ft	OUTFLOW cfs
0.00	608.00	0	0	0.00
1.00	609.00	45218	45218	30.00
2.00	610.00	53606	98824	84.85
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00

Reservoir No. 4 STAGE / STORAGE / DISCHARGE LAKE #14....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * O
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * O
Weir struct A. Q = 3 * 10 * H ^ 1.5
Weir struct B. Q = 3 * O * H ^ 1.5

ELEVATION	DISCHARGE (cfs)				
	CULVERT A	CULVERT B	WEIR A	WEIR B	TOTAL
608.00	0.00	0.00 -	0.00	0.00	0.00
608.10	0.00	0.00 -	0.95	0.00	0.95
608.20	0.00	0.00 -	2.68	0.00	2.68
608.30	0.00	0.00 -	4.93	0.00	4.93
608.40	0.00	0.00 -	7.59	0.00	7.59
608.50	0.00	0.00 -	10.60	0.00	10.60
608.60	0.00	0.00 -	13.94	0.00	13.94
608.70	0.00	0.00 -	17.56	0.00	17.56
608.80	0.00	0.00 -	21.46	0.00	21.46
608.90	0.00	0.00 -	25.61	0.00	25.61
609.00	0.00	0.00 -	30.00	0.00	30.00

[PgDn] [Esc] to exit

Reservoir No. 4 STAGE / STORAGE / DISCHARGE LAKE #14....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * O
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * O
Weir struct A. Q = 3 * 10 * H ^ 1.5
Weir struct B. Q = 3 * O * H ^ 1.5

ELEVATION	DISCHARGE (cfs)				
	CULVERT A	CULVERT B	WEIR A	WEIR B	TOTAL
609.00	0.00	0.00 -	30.00	0.00	30.00
609.10	0.00	0.00 -	34.61	0.00	34.61
609.20	0.00	0.00 -	39.43	0.00	39.43
609.30	0.00	0.00 -	44.46	0.00	44.46
609.40	0.00	0.00 -	49.69	0.00	49.69
609.50	0.00	0.00 -	55.11	0.00	55.11
609.60	0.00	0.00 -	60.71	0.00	60.71
609.70	0.00	0.00 -	66.49	0.00	66.49
609.80	0.00	0.00 -	72.44	0.00	72.44
609.90	0.00	0.00 -	78.56	0.00	78.56
610.00	0.00	0.00 -	84.85	0.00	84.85

[PgDn] [Esc] to exit

STAGE / STORAGE TABLE

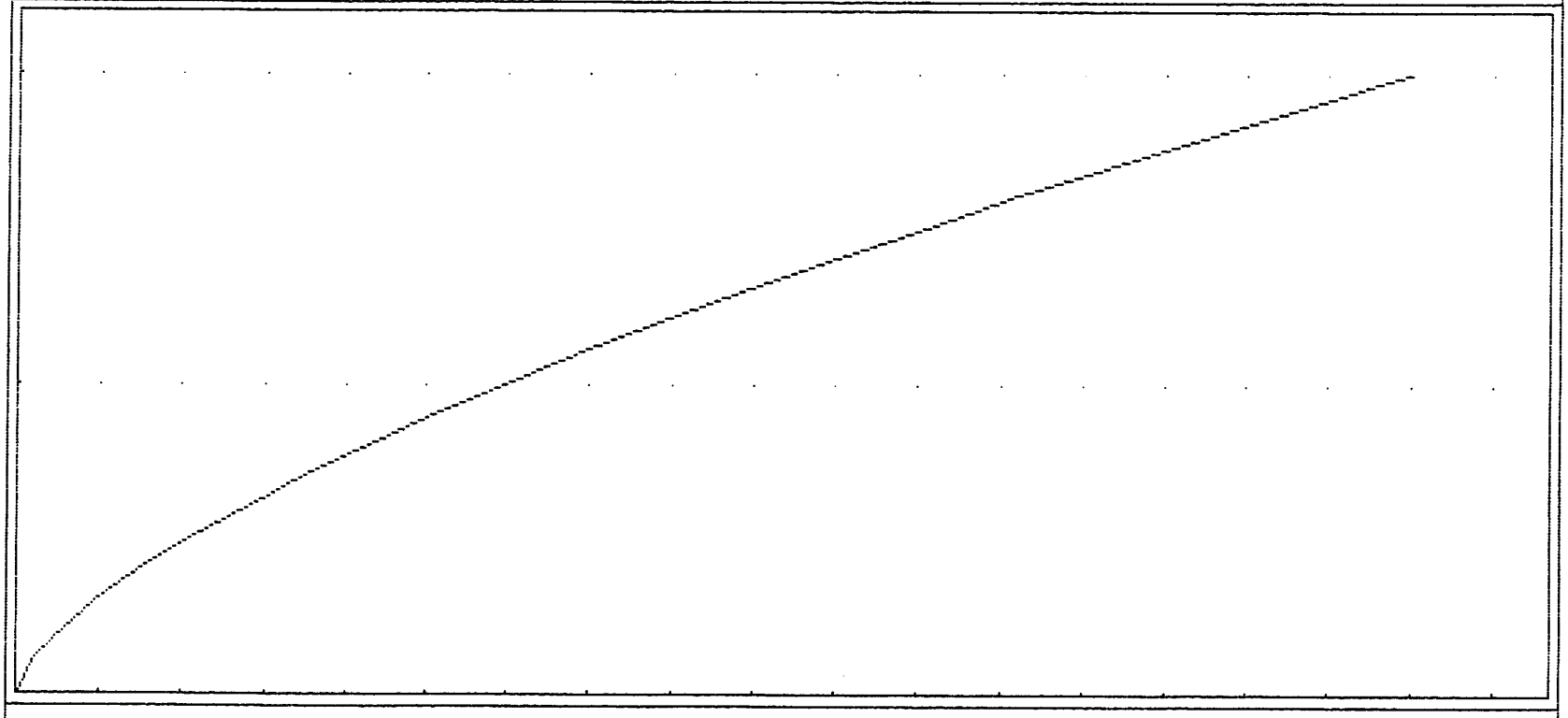
1. RESERVOIR No = 4. 2. RESERVOIR NAME = LAKE #14....
3. S = Ks * Z^b
   Ks = 0..... b = 0.....
   START ELEV = 0..... INCREMENT = 0...

	STAGE ft	ELEVATION ft	CO AREA sq ft	INC STORAGE cu ft	TOT STORAGE cu ft
4	0.00	608.00.	41025...	0	0
5	1.00	609.00.	49412...	45218	45218
6	2.00	610.00.	57800...	53606	98824
7	0.00	0.00.	0.....	0	0
8	0.00	0.00.	0.....	0	0
9	0.00	0.00.	0.....	0	0
10	0.00	0.00.	0.....	0	0
11	0.00	0.00.	0.....	0	0
12	0.00	0.00.	0.....	0	0
13	0.00	0.00.	0.....	0	0
14	0.00	0.00.	0.....	0	0

R to reset

Change item number: 0 DY to cont

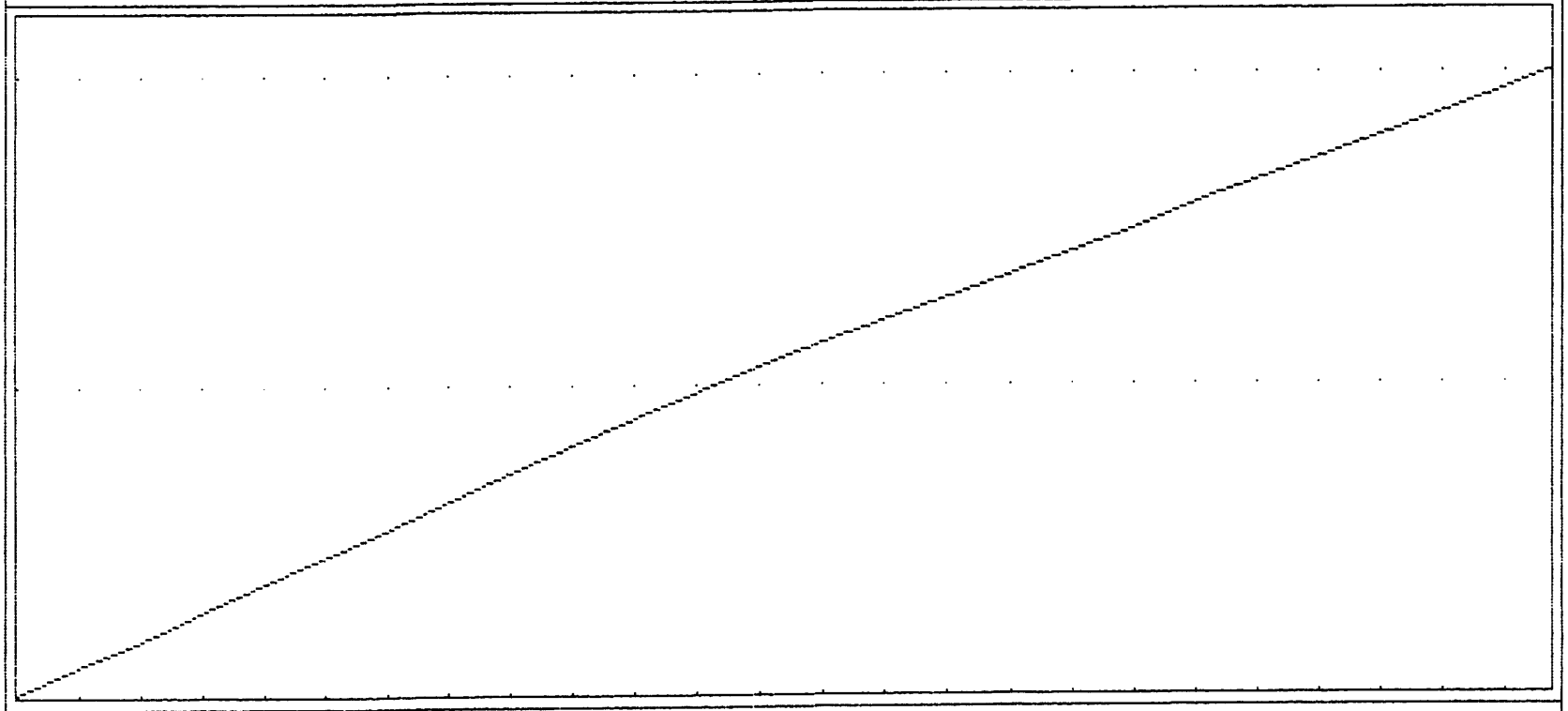
STAGE / DISCHARGE CURVE



HGU = 5.0 cfs VGU = 1.0 ft

[↵] Cont [Esc] Exit

STAGE / STORAGE CURVE



HGU = 4000 cu ft

VGU = 1.0 ft

[↵] Cont

[Esc] Exit

HYDROLOGIC REPORT

GLEN EAGLE GOLF COURSE
.....
LAKE #14.....

Hyd. No. 14

Hydrograph type = RESERVOIR ROUTE Peak discharge = 13.39 cfs
Storm frequency = 25 yr Time interval = 1 min
Inflow hyd. no. = 13 Reservoir no. = 4

HYDROGRAPH DISCHARGE TABLE

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
1.00	1.68	3.35	1.65	1.68	0.01
2.00	3.35	5.03	6.60	6.68	0.04
3.00	5.03	6.70	14.79	14.97	0.09
4.00	6.70	8.38	26.18	26.51	0.17
5.00	8.38	10.05	40.74	41.26	0.26
6.00	10.05	11.73	58.43	59.17	0.37
7.00	11.73	13.40	79.20	80.21	0.50
8.00	13.40	15.08	103.03	104.33	0.65
9.00	15.08	16.75	129.86	131.51	0.82
10.00	16.75	18.43	159.57	161.69	1.06
11.00	18.43	20.10	191.87	194.75	1.44
12.00	20.10	21.78	226.71	230.40	1.84
13.00	21.78	23.45	264.04	268.59	2.28
14.00	23.45	25.13	303.75	309.27	2.76
15.00	25.13	26.80	345.55	352.33	3.39
16.00	26.80	28.48	389.38	397.49	4.05
17.00	28.48	30.15	435.17	444.66	4.75
18.00	30.15	31.83	482.68	493.81	5.56
19.00	31.83	33.50	531.77	544.66	6.45
20.00	33.50	31.83	582.39	597.10	7.35
21.00	31.83	30.15	631.09	647.73	8.32
22.00	30.15	28.48	674.66	693.08	9.21
23.00	28.48	26.80	713.30	733.30	10.00
24.00	26.80	25.13	747.19	768.59	10.70
25.00	25.13	23.45	776.41	799.12	11.36

HYDROGRAPH DISCHARGE TABLE Cont'd

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
26.00	23.45	21.78	801.15	824.99	11.92
27.00	21.78	20.10	821.62	846.38	12.38
28.00	20.10	18.43	838.00	863.50	12.75
29.00	18.43	16.75	850.46	876.53	13.03
30.00	16.75	15.08	859.18	885.64	13.23
31.00	15.08	13.40	864.32	891.01	13.35
32.00	13.40	11.73	866.02	892.80	13.39
33.00	11.73	10.05	864.45	891.15	13.35
34.00	10.05	8.38	859.74	886.23	13.24
35.00	8.38	6.70	852.03	878.17	13.07
36.00	6.70	5.03	841.45	867.11	12.83
37.00	5.03	3.35	828.12	853.18	12.53
38.00	3.35	1.68	812.16	836.50	12.17
39.00	1.68	0.00	793.69	817.19	11.75
40.00	0.00	0.00	772.81	795.37	11.28
41.00	0.00	0.00	751.24	772.81	10.79
42.00	0.00	0.00	730.54	751.24	10.35
43.00	0.00	0.00	710.66	730.54	9.94
44.00	0.00	0.00	691.55	710.66	9.55
45.00	0.00	0.00	673.20	691.55	9.18
46.00	0.00	0.00	655.57	673.20	8.82
47.00	0.00	0.00	638.62	655.57	8.47
48.00	0.00	0.00	622.35	638.62	8.14
49.00	0.00	0.00	606.71	622.35	7.82
50.00	0.00	0.00	591.67	606.71	7.52
51.00	0.00	0.00	577.15	591.67	7.26
52.00	0.00	0.00	563.13	577.15	7.01
53.00	0.00	0.00	549.60	563.13	6.77
54.00	0.00	0.00	536.54	549.60	6.53
55.00	0.00	0.00	523.93	536.54	6.30
56.00	0.00	0.00	511.75	523.93	6.09
57.00	0.00	0.00	500.00	511.75	5.88
58.00	0.00	0.00	488.66	500.00	5.67
59.00	0.00	0.00	477.71	488.66	5.47
60.00	0.00	0.00	467.14	477.71	5.28
61.00	0.00	0.00	456.94	467.14	5.10
62.00	0.00	0.00	447.09	456.94	4.93
63.00	0.00	0.00	437.53	447.09	4.78
64.00	0.00	0.00	428.25	437.53	4.64
65.00	0.00	0.00	419.24	428.25	4.50
66.00	0.00	0.00	410.50	419.24	4.37
67.00	0.00	0.00	402.01	410.50	4.24

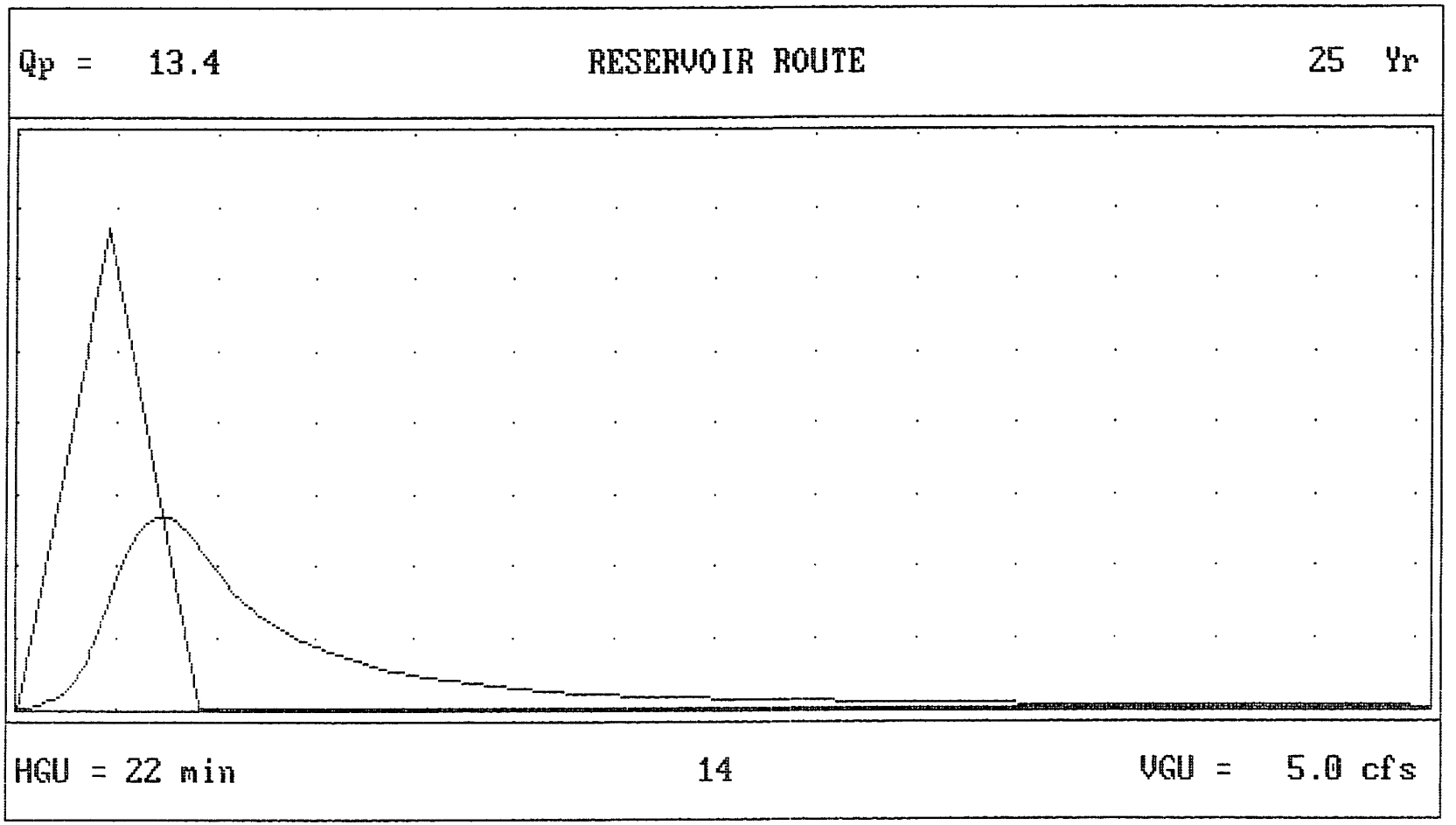
HYDROGRAPH DISCHARGE TABLE Cont'd

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
68.00	0.00	0.00	393.77	402.01	4.12
69.00	0.00	0.00	385.77	393.77	4.00
70.00	0.00	0.00	378.01	385.77	3.88
71.00	0.00	0.00	370.48	378.01	3.77
72.00	0.00	0.00	363.17	370.48	3.66
73.00	0.00	0.00	356.07	363.17	3.55
74.00	0.00	0.00	349.18	356.07	3.44
75.00	0.00	0.00	342.49	349.18	3.34
76.00	0.00	0.00	336.00	342.49	3.25
77.00	0.00	0.00	329.70	336.00	3.15
78.00	0.00	0.00	323.59	329.70	3.06
79.00	0.00	0.00	317.65	323.59	2.97
80.00	0.00	0.00	311.89	317.65	2.88
81.00	0.00	0.00	306.30	311.89	2.80
82.00	0.00	0.00	300.87	306.30	2.71
83.00	0.00	0.00	295.58	300.87	2.65
84.00	0.00	0.00	290.41	295.58	2.58
85.00	0.00	0.00	285.36	290.41	2.53
86.00	0.00	0.00	280.42	285.36	2.47
87.00	0.00	0.00	275.59	280.42	2.41
88.00	0.00	0.00	270.88	275.59	2.36
89.00	0.00	0.00	266.27	270.88	2.30
90.00	0.00	0.00	261.77	266.27	2.25
91.00	0.00	0.00	257.37	261.77	2.20
92.00	0.00	0.00	253.07	257.37	2.15
93.00	0.00	0.00	248.86	253.07	2.10
94.00	0.00	0.00	244.76	248.86	2.05
95.00	0.00	0.00	240.74	244.76	2.01
96.00	0.00	0.00	236.82	240.74	1.96
97.00	0.00	0.00	232.99	236.82	1.92
98.00	0.00	0.00	229.24	232.99	1.87
99.00	0.00	0.00	225.58	229.24	1.83
100.00	0.00	0.00	222.00	225.58	1.79
101.00	0.00	0.00	218.50	222.00	1.75
102.00	0.00	0.00	215.09	218.50	1.71
103.00	0.00	0.00	211.75	215.09	1.67
104.00	0.00	0.00	208.49	211.75	1.63
105.00	0.00	0.00	205.30	208.49	1.59
106.00	0.00	0.00	202.18	205.30	1.56
107.00	0.00	0.00	199.14	202.18	1.52
108.00	0.00	0.00	196.16	199.14	1.49
109.00	0.00	0.00	193.25	196.16	1.45

HYDROGRAPH DISCHARGE TABLE Cont'd

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
110.00	0.00	0.00	190.41	193.25	1.42
111.00	0.00	0.00	187.63	190.41	1.39
112.00	0.00	0.00	184.92	187.63	1.36
113.00	0.00	0.00	182.26	184.92	1.33
114.00	0.00	0.00	179.67	182.26	1.30
115.00	0.00	0.00	177.14	179.67	1.27
116.00	0.00	0.00	174.66	177.14	1.24
117.00	0.00	0.00	172.24	174.66	1.21
118.00	0.00	0.00	169.88	172.24	1.18
119.00	0.00	0.00	167.57	169.88	1.16
120.00	0.00	0.00	165.31	167.57	1.13
121.00	0.00	0.00	163.10	165.31	1.10
122.00	0.00	0.00	160.95	163.10	1.08
123.00	0.00	0.00	158.84	160.95	1.05
124.00	0.00	0.00	156.78	158.84	1.03
125.00	0.00	0.00	154.77	156.78	1.01

Maximum outflow (cfs) = 13.39
Maximum storage (cu ft) = 26382
Maximum elevation (ft) = 608.58



MAX STORAGE = 26382

MAX ELEVATION = 608.58

HYDROLOGIC REPORT FOR

GLEN EAGLE GOLF COURSE

DETENTION AND LAKE DESIGN

100 YEAR/20 MIN. STORM

LAKE #14

PREPARED BY:

PICKETT RAY & SILVER, INC.

333 MID RIVERS MALL DRIVE

ST. PETERS, MO. 63376

DESIGNER: TANYA DIETZ

HYDROLOGIC REPORT

GLEN EAGLE GOLF COURSE
LAKE #14.....
INFLOW.....

Hyd. No. 15

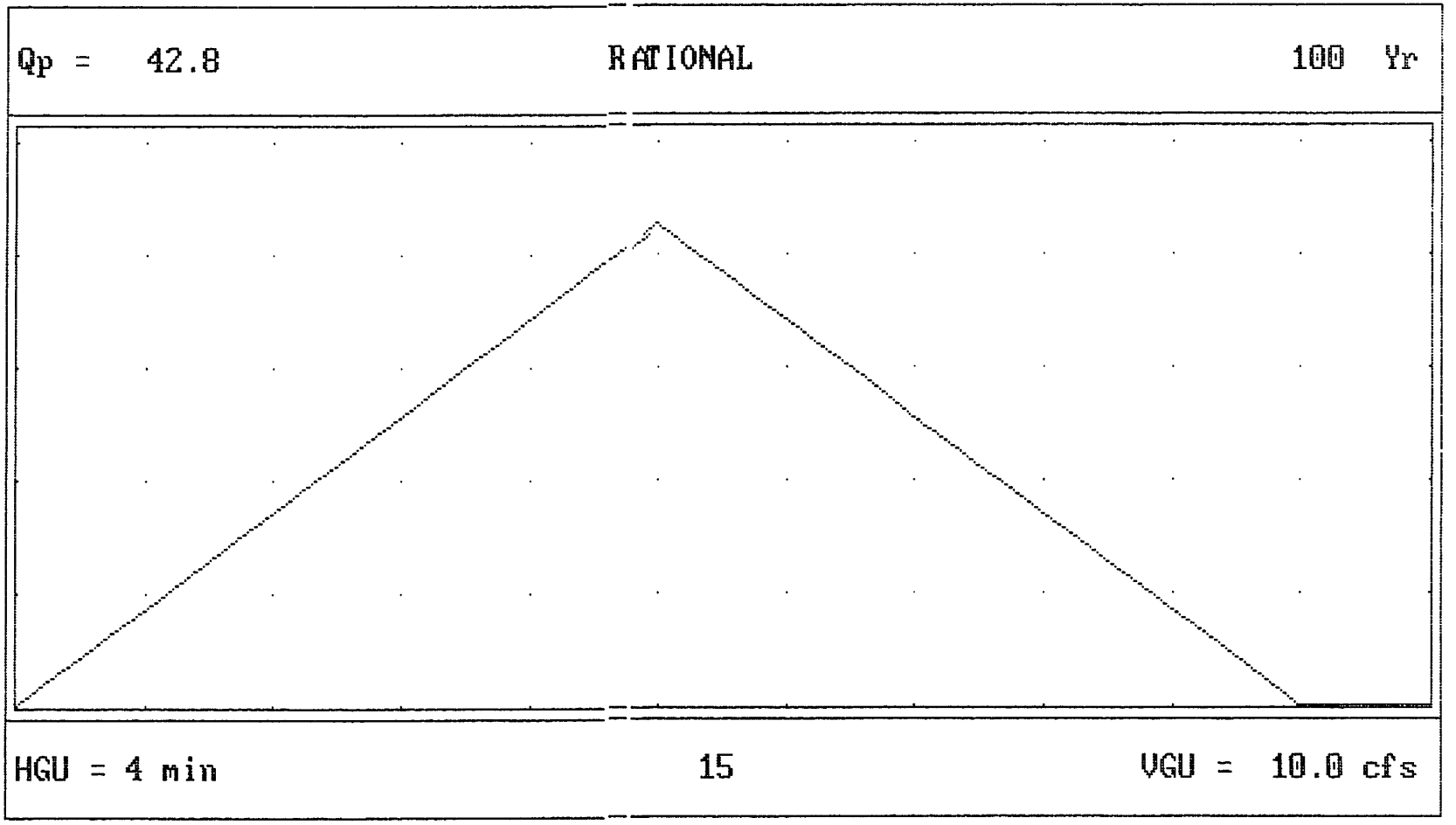
Hydrograph type	= RATIONAL	Peak ~~discharge~~ INFLOW	= 42.79 cfs
Storm frequency	= 100 yr	Time interval	= 1 min
Time of conc.	= 20 min	Intensity	= 6.17 in/hr
Runoff coeff.	= .579	Basin area	= 11.97 ac

HYDROGRAPH DISCHARGE TABLE

TIME--OUTFLOW (min	cfs)	TIME--OUTFLOW (min	cfs)	TIME--OUTFLOW (min	cfs)	TIME--OUTFLOW (min	cfs)
1.00	2.14	2.00	4.28	3.00	6.42	4.00	8.56
5.00	10.70	6.00	12.84	7.00	14.98	8.00	17.12
9.00	19.26	10.00	21.39	11.00	23.53	12.00	25.67
13.00	27.81	14.00	29.95	15.00	32.09	16.00	34.23
17.00	36.37	18.00	38.51	19.00	40.65	20.00	42.79
21.00	40.65	22.00	38.51	23.00	36.37	24.00	34.23
25.00	32.09	26.00	29.95	27.00	27.81	28.00	25.67
29.00	23.53	30.00	21.39	31.00	19.26	32.00	17.12
33.00	14.98	34.00	12.84	35.00	10.70	36.00	8.56
37.00	6.42	38.00	4.28	39.00	2.14	40.00	0.00

Peak Inflow:
Offsite (Res.) 0.60 x 4.17 = 2.50 cfs Q100
Onsite (Res.) 5.53 x 4.17 = 23.06 cfs Q100
Onsite (Golf) 5.84 x 2.95 = 17.23 cfs Q100
Total = 11.97 Acres = 42.79 cfs Q100

NOTE: Offsite Areas Are Calculated As Being Developed Under Their Current Zoning Classification.



VOL = (cuft/acft) = 51347 / 1.179

OUTLET STRUCTURES

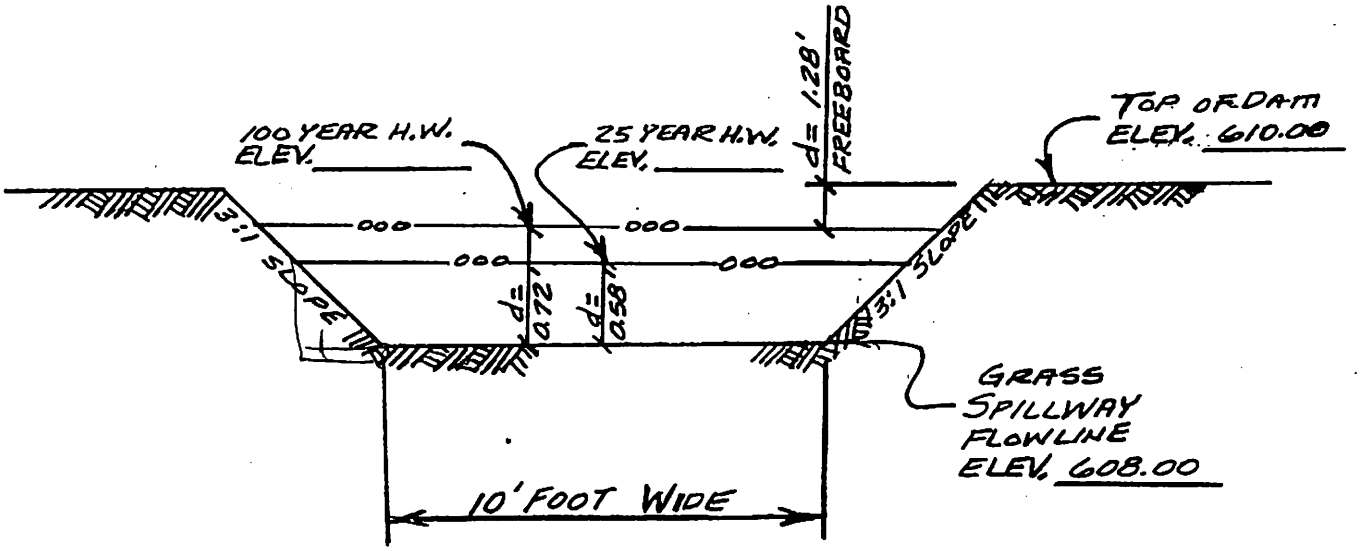
Reservoir: 4

CULVERT STRUC A. Q=CoA[2gh/k]^.5		CULVERT STRUC B. Q=CoA[2gh/k]^.5	
1. WIDTH (in)	= 0..	9. WIDTH (in)	= 0..
2. HEIGHT (in)	= 0..	10. HEIGHT (in)	= 0..
3. No. BARRELS	= 0..	11. No. BARRELS	= 0..
4. INVERT ELEV.	= 0.....	12. INVERT ELEV.	= 0.....
5. Co = 0.60		13. Co = 0.60	
6. CULVERT LENGTH (ft)	= 0...	14. CULVERT LENGTH (ft)	= 0...
7. CULVERT SLOPE (%)	= 0...	15. CULVERT SLOPE (%)	= 0...
8. MANNING'S N-VALUE	= .013	16. MANNING'S N-VALUE	= .013
		17. MULTI-STAGE OPTION ? (Y/N)	N

WEIR STRUCTURE A. Q=CwLH^EXP		WEIR STRUCTURE B. Q=CwLH^EXP	
18. CREST LENGTH (ft)	= 10.....	23. CREST LENGTH (ft)	= 0.....
19. CREST ELEVATION	= 608....	24. CREST ELEVATION	= 0.....
20. Cw = 3.00		25. Cw = 3.00	
21. EXP = 1.50		26. EXP = 1.50	
22. MULTI-STAGE OPTION ? (Y/N)	N	27. MULTI-STAGE OPTION ? (Y/N)	N

Change item number: 0

DY to cont



SPILLWAY DETAIL

N.T.S.

APPROX 19 CFS AT .72'

$Q = VA$

$V = Q/A = \frac{19}{7.2} = 2.3$ CFS

HYDROLOGIC REPORT

STAGE / STORAGE / DISCHARGE

RESERVOIR NUMBER = 4

RESERVOIR NAME = LAKE #14....
STORAGE VALUES WERE INPUT MANUALLY

DISCHARGE VALUES: CULVERT STRUCT A. Q = .6 *A*[2gh/k]^.5 * 0
CULVERT STRUCT B. Q = .6 *A*[2gh/k]^.5 * 0
WEIR STRUCT A. Q = 3 * 10 * H ^ 1.5
WEIR STRUCT B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs)			
	CULVERT A	CULVERT B	WEIR A	WEIR B
608.00	0.00	0.00	0.00	0.00
609.00	0.00	0.00	30.00	0.00
610.00	0.00	0.00	84.85	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00

STAGE	ELEVATION	INC STOR cu ft	TOT STOR cu ft	OUTFLOW cfs
0.00	608.00	0	0	0.00
1.00	609.00	45218	45218	30.00
2.00	610.00	53606	98824	84.85
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00

Reservoir No. 4 STAGE / STORAGE / DISCHARGE LAKE #14....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * O
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * O
Weir struct A. Q = 3 * 10 * H ^ 1.5
Weir struct B. Q = 3 * O * H ^ 1.5

ELEVATION	DISCHARGE (cfs)				
	CULVERT A	CULVERT B	WEIR A	WEIR B	TOTAL
608.00	0.00	0.00 -	0.00	0.00	0.00
608.10	0.00	0.00 -	0.95	0.00	0.95
608.20	0.00	0.00 -	2.68	0.00	2.68
608.30	0.00	0.00 -	4.93	0.00	4.93
608.40	0.00	0.00 -	7.59	0.00	7.59
608.50	0.00	0.00 -	10.60	0.00	10.60
608.60	0.00	0.00 -	13.94	0.00	13.94
608.70	0.00	0.00 -	17.56	0.00	17.56
608.80	0.00	0.00 -	21.46	0.00	21.46
608.90	0.00	0.00 -	25.61	0.00	25.61
609.00	0.00	0.00 -	30.00	0.00	30.00

[PgDn] [Esc] to exit

Reservoir No. 4 STAGE / STORAGE / DISCHARGE LAKE #14....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * O
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * O
Weir struct A. Q = 3 * 10 * H ^ 1.5
Weir struct B. Q = 3 * O * H ^ 1.5

ELEVATION	DISCHARGE (cfs)				
	CULVERT A	CULVERT B	WEIR A	WEIR B	TOTAL
609.00	0.00	0.00 -	30.00	0.00	30.00
609.10	0.00	0.00 -	34.61	0.00	34.61
609.20	0.00	0.00 -	39.43	0.00	39.43
609.30	0.00	0.00 -	44.46	0.00	44.46
609.40	0.00	0.00 -	49.69	0.00	49.69
609.50	0.00	0.00 -	55.11	0.00	55.11
609.60	0.00	0.00 -	60.71	0.00	60.71
609.70	0.00	0.00 -	66.49	0.00	66.49
609.80	0.00	0.00 -	72.44	0.00	72.44
609.90	0.00	0.00 -	78.56	0.00	78.56
610.00	0.00	0.00 -	84.85	0.00	84.85

[PgDn] [Esc] to exit

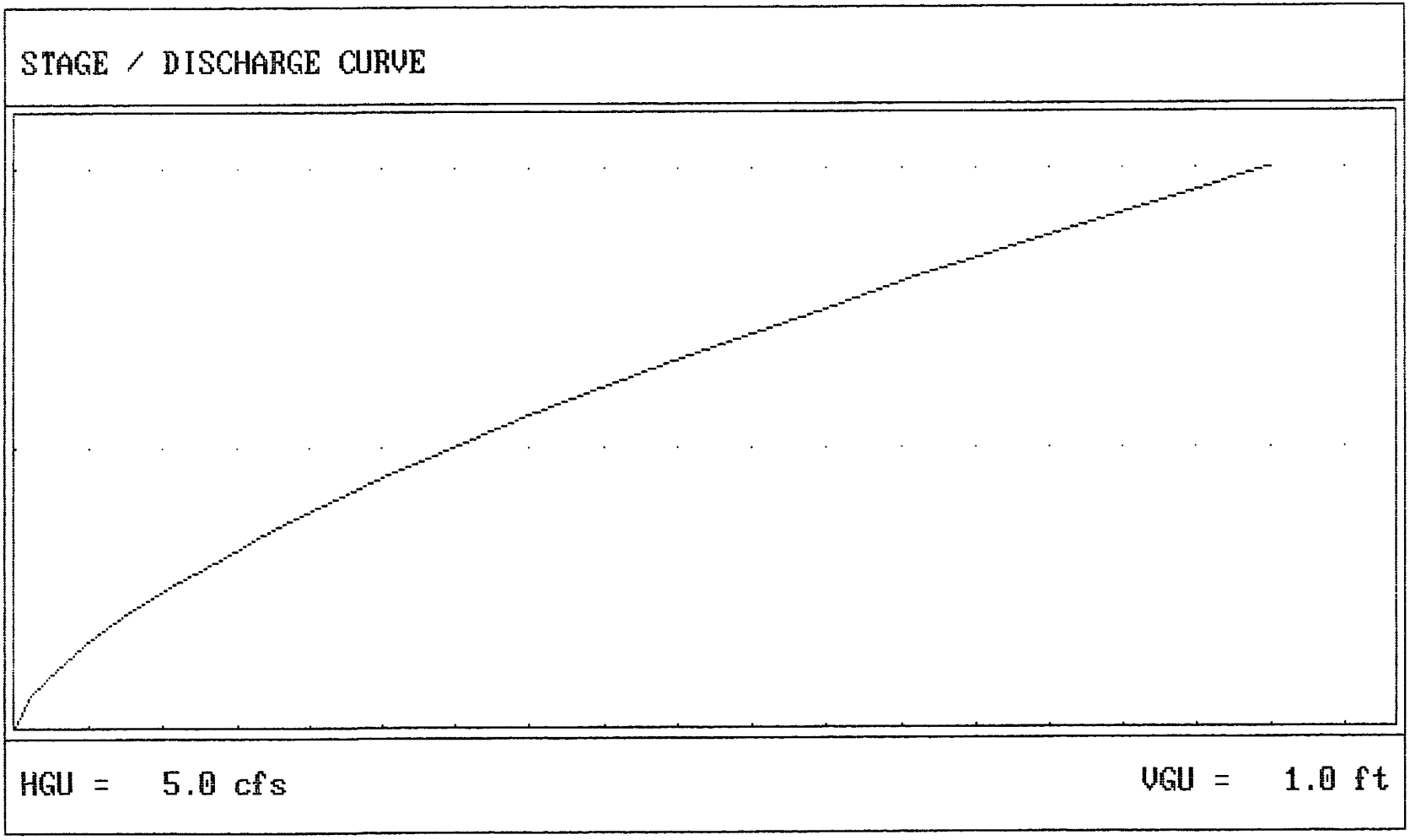
STAGE / STORAGE TABLE

1. RESERVOIR No = 4. 2. RESERVOIR NAME = LAKE #14....
3. S = Ks * Z^b
Ks = 0..... b = 0.....
START ELEV = 0..... INCREMENT = 0...

	STAGE ft	ELEVATION ft	CO AREA sq ft	INC STORAGE cu ft	TOT STORAGE cu ft
4	0.00	608.00.	41025...	0	0
5	1.00	609.00.	49412...	45218	45218
6	2.00	610.00.	57800...	53606	98824
7	0.00	0.00.	0.....	0	0
8	0.00	0.00.	0.....	0	0
9	0.00	0.00.	0.....	0	0
10	0.00	0.00.	0.....	0	0
11	0.00	0.00.	0.....	0	0
12	0.00	0.00.	0.....	0	0
13	0.00	0.00.	0.....	0	0
14	0.00	0.00.	0.....	0	0

R to reset

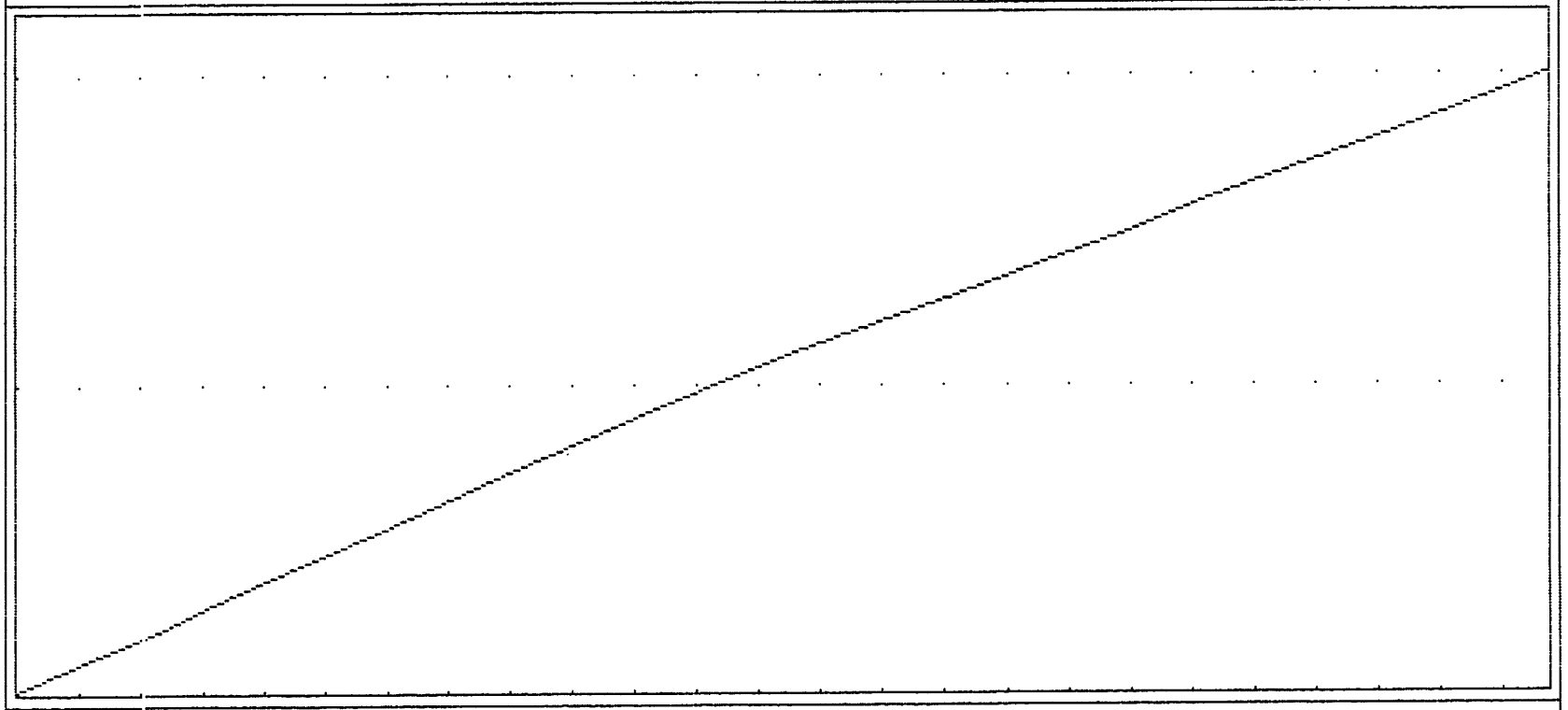
Change item number: 0 DY to cont



[↵] Cont

[Esc] Exit

STAGE / STORAGE CURVE



HGU = 4000 cu ft VGU = 1.0 ft

[↵] Cont [Esc] Exit

HYDROLOGIC REPORT

GLEN EAGLE GOLF COURSE
.....
LAKE #14.....

Hyd. No. 16

Hydrograph type = RESERVOIR ROUTE Peak discharge = 18.28 cfs
Storm frequency = 100 yr Time interval = 1 min
Inflow hyd. no. = 15 Reservoir no. = 4

HYDROGRAPH DISCHARGE TABLE

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
1.00	2.14	4.28	2.11	2.14	0.01
2.00	4.28	6.42	8.42	8.53	0.05
3.00	6.42	8.56	18.88	19.12	0.12
4.00	8.56	10.70	33.44	33.86	0.21
5.00	10.70	12.84	52.03	52.69	0.33
6.00	12.84	14.98	74.62	75.57	0.47
7.00	14.98	17.12	101.15	102.43	0.64
8.00	17.12	19.26	131.58	133.25	0.83
9.00	19.26	21.39	165.68	167.95	1.13
10.00	21.39	23.53	203.19	206.33	1.57
11.00	23.53	25.67	244.03	248.12	2.05
12.00	25.67	27.81	288.12	293.24	2.56
13.00	27.81	29.95	335.15	341.61	3.23
14.00	29.95	32.09	384.94	392.91	3.99
15.00	32.09	34.23	437.43	446.99	4.78
16.00	34.23	36.37	492.28	503.75	5.74
17.00	36.37	38.51	549.36	562.88	6.76
18.00	38.51	40.65	608.53	624.24	7.86
19.00	40.65	42.79	669.49	687.69	9.10
20.00	42.79	40.65	732.16	752.93	10.38
21.00	40.65	38.51	792.17	815.60	11.71
22.00	38.51	36.37	845.49	871.33	12.92
23.00	36.37	34.23	892.40	920.37	13.99
24.00	34.23	32.09	933.03	963.00	14.99
25.00	32.09	29.95	967.67	999.35	15.84

HYDROGRAPH DISCHARGE TABLE Cont'd

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
26.00	29.95	27.81	996.60	1029.71	16.55
27.00	27.81	25.67	1020.10	1054.37	17.13
28.00	25.67	23.53	1038.41	1073.59	17.59
29.00	23.53	21.39	1051.74	1087.62	17.94
30.00	21.39	19.26	1060.33	1096.67	18.17
31.00	19.26	17.12	1064.43	1100.98	18.28
32.00	17.12	14.98	1064.25	1100.80	18.27
33.00	14.98	12.84	1060.03	1096.35	18.16
34.00	12.84	10.70	1051.95	1087.84	17.95
35.00	10.70	8.56	1040.21	1075.48	17.63
36.00	8.56	6.42	1024.96	1059.47	17.25
37.00	6.42	4.28	1006.35	1039.94	16.79
38.00	4.28	2.14	984.53	1017.04	16.26
39.00	2.14	0.00	959.66	990.95	15.64
40.00	0.00	0.00	931.88	961.80	14.96
41.00	0.00	0.00	903.37	931.88	14.26
42.00	0.00	0.00	876.14	903.37	13.61
43.00	0.00	0.00	850.09	876.14	13.03
44.00	0.00	0.00	825.17	850.09	12.46
45.00	0.00	0.00	801.32	825.17	11.92
46.00	0.00	0.00	778.51	801.32	11.41
47.00	0.00	0.00	756.69	778.51	10.91
48.00	0.00	0.00	735.78	756.69	10.45
49.00	0.00	0.00	715.69	735.78	10.04
50.00	0.00	0.00	696.39	715.69	9.65
51.00	0.00	0.00	677.85	696.39	9.27
52.00	0.00	0.00	660.03	677.85	8.91
53.00	0.00	0.00	642.91	660.03	8.56
54.00	0.00	0.00	626.47	642.91	8.22
55.00	0.00	0.00	610.67	626.47	7.90
56.00	0.00	0.00	595.49	610.67	7.59
57.00	0.00	0.00	580.83	595.49	7.33
58.00	0.00	0.00	566.69	580.83	7.07
59.00	0.00	0.00	553.03	566.69	6.83
60.00	0.00	0.00	539.85	553.03	6.59
61.00	0.00	0.00	527.13	539.85	6.36
62.00	0.00	0.00	514.85	527.13	6.14
63.00	0.00	0.00	502.99	514.85	5.93
64.00	0.00	0.00	491.54	502.99	5.72
65.00	0.00	0.00	480.49	491.54	5.52
66.00	0.00	0.00	469.83	480.49	5.33
67.00	0.00	0.00	459.53	469.83	5.15

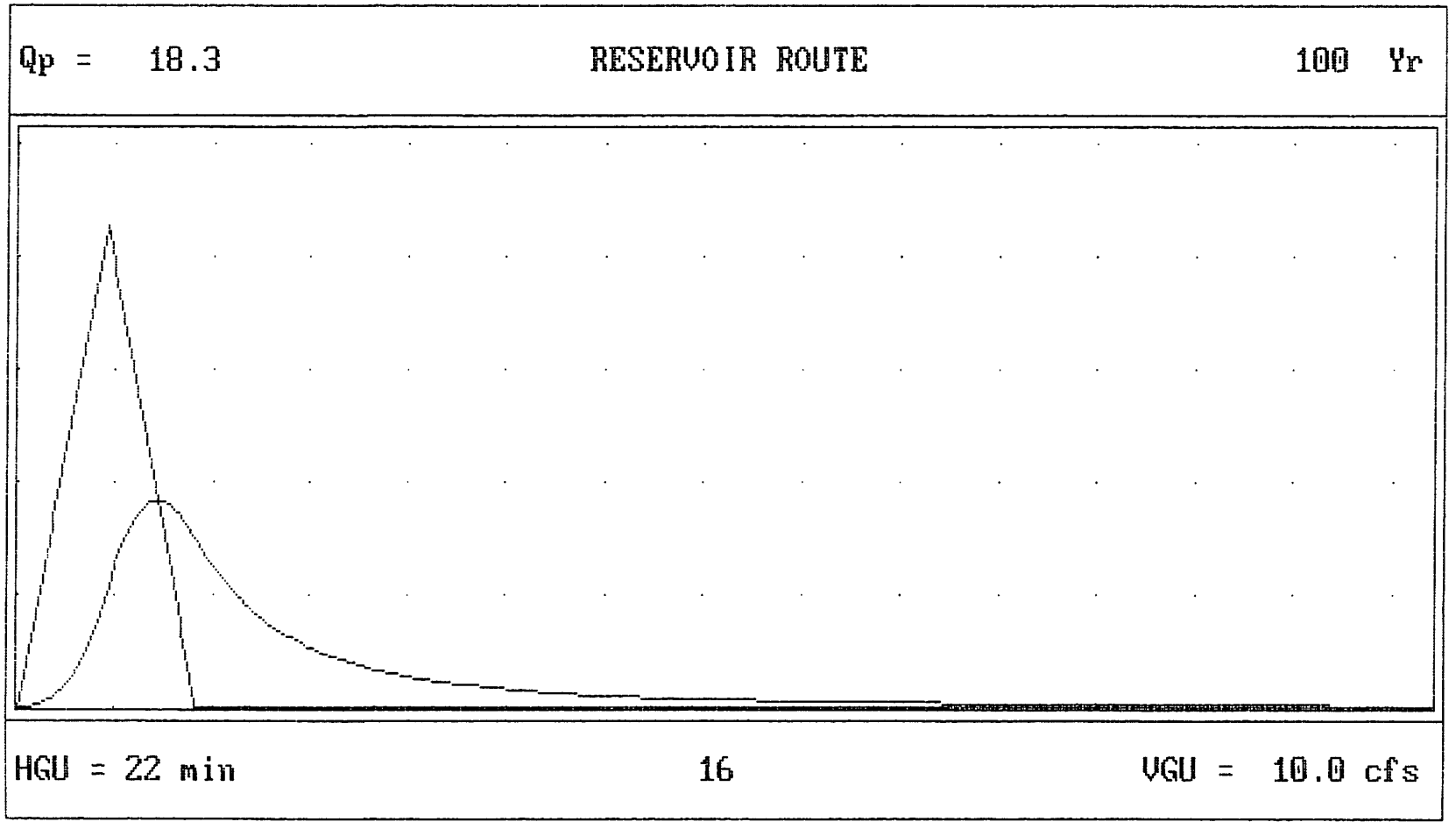
HYDROGRAPH DISCHARGE TABLE Cont'd

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
68.00	0.00	0.00	449.59	459.53	4.97
69.00	0.00	0.00	439.96	449.59	4.82
70.00	0.00	0.00	430.60	439.96	4.68
71.00	0.00	0.00	421.53	430.60	4.54
72.00	0.00	0.00	412.72	421.53	4.41
73.00	0.00	0.00	404.16	412.72	4.28
74.00	0.00	0.00	395.86	404.16	4.15
75.00	0.00	0.00	387.81	395.86	4.03
76.00	0.00	0.00	379.98	387.81	3.91
77.00	0.00	0.00	372.39	379.98	3.80
78.00	0.00	0.00	365.02	372.39	3.68
79.00	0.00	0.00	357.87	365.02	3.58
80.00	0.00	0.00	350.93	357.87	3.47
81.00	0.00	0.00	344.19	350.93	3.37
82.00	0.00	0.00	337.65	344.19	3.27
83.00	0.00	0.00	331.30	337.65	3.17
84.00	0.00	0.00	325.14	331.30	3.08
85.00	0.00	0.00	319.16	325.14	2.99
86.00	0.00	0.00	313.35	319.16	2.90
87.00	0.00	0.00	307.72	313.35	2.82
88.00	0.00	0.00	302.25	307.72	2.73
89.00	0.00	0.00	296.93	302.25	2.66
90.00	0.00	0.00	291.73	296.93	2.60
91.00	0.00	0.00	286.64	291.73	2.54
92.00	0.00	0.00	281.68	286.64	2.48
93.00	0.00	0.00	276.82	281.68	2.43
94.00	0.00	0.00	272.08	276.82	2.37
95.00	0.00	0.00	267.45	272.08	2.32
96.00	0.00	0.00	262.92	267.45	2.27
97.00	0.00	0.00	258.49	262.92	2.21
98.00	0.00	0.00	254.16	258.49	2.16
99.00	0.00	0.00	249.93	254.16	2.11
100.00	0.00	0.00	245.80	249.93	2.07
101.00	0.00	0.00	241.76	245.80	2.02
102.00	0.00	0.00	237.82	241.76	1.97
103.00	0.00	0.00	233.96	237.82	1.93
104.00	0.00	0.00	230.19	233.96	1.88
105.00	0.00	0.00	226.51	230.19	1.84
106.00	0.00	0.00	222.91	226.51	1.80
107.00	0.00	0.00	219.40	222.91	1.76
108.00	0.00	0.00	215.96	219.40	1.72
109.00	0.00	0.00	212.60	215.96	1.68

HYDROGRAPH DISCHARGE TABLE Cont'd

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
110.00	0.00	0.00	209.32	212.60	1.64
111.00	0.00	0.00	206.11	209.32	1.60
112.00	0.00	0.00	202.97	206.11	1.57
113.00	0.00	0.00	199.91	202.97	1.53
114.00	0.00	0.00	196.92	199.91	1.50
115.00	0.00	0.00	193.99	196.92	1.46
116.00	0.00	0.00	191.13	193.99	1.43
117.00	0.00	0.00	188.34	191.13	1.40
118.00	0.00	0.00	185.61	188.34	1.37
119.00	0.00	0.00	182.94	185.61	1.33
120.00	0.00	0.00	180.33	182.94	1.30
121.00	0.00	0.00	177.78	180.33	1.27
122.00	0.00	0.00	175.29	177.78	1.25
123.00	0.00	0.00	172.86	175.29	1.22
124.00	0.00	0.00	170.48	172.86	1.19
125.00	0.00	0.00	168.16	170.48	1.16
126.00	0.00	0.00	165.88	168.16	1.14
127.00	0.00	0.00	163.66	165.88	1.11
128.00	0.00	0.00	161.49	163.66	1.08
129.00	0.00	0.00	159.37	161.49	1.06
130.00	0.00	0.00	157.30	159.37	1.04
131.00	0.00	0.00	155.28	157.30	1.01

Maximum outflow (cfs) = 18.28
Maximum storage (cu ft) = 32481
Maximum elevation (ft) = 608.72



MAX STORAGE = 32481

MAX ELEVATION = 608.72

HYDROLOGIC REPORT FOR

GLEN EAGLE GOLF COURSE

DETENTION AND LAKE DESIGN

25 YEAR/20 MIN. STORM

LAKE #13

PREPARED BY:

PICKETT RAY & SILVER, INC.

333 MID RIVERS MALL DRIVE

ST. PETERS, MO. 63376

DESIGNER: TANYA DIETZ

HYDROLOGIC REPORT

GLEN EAGLE GOLF COURSE
LAKE #13.....
INFLOW.....

Hyd. No. 9

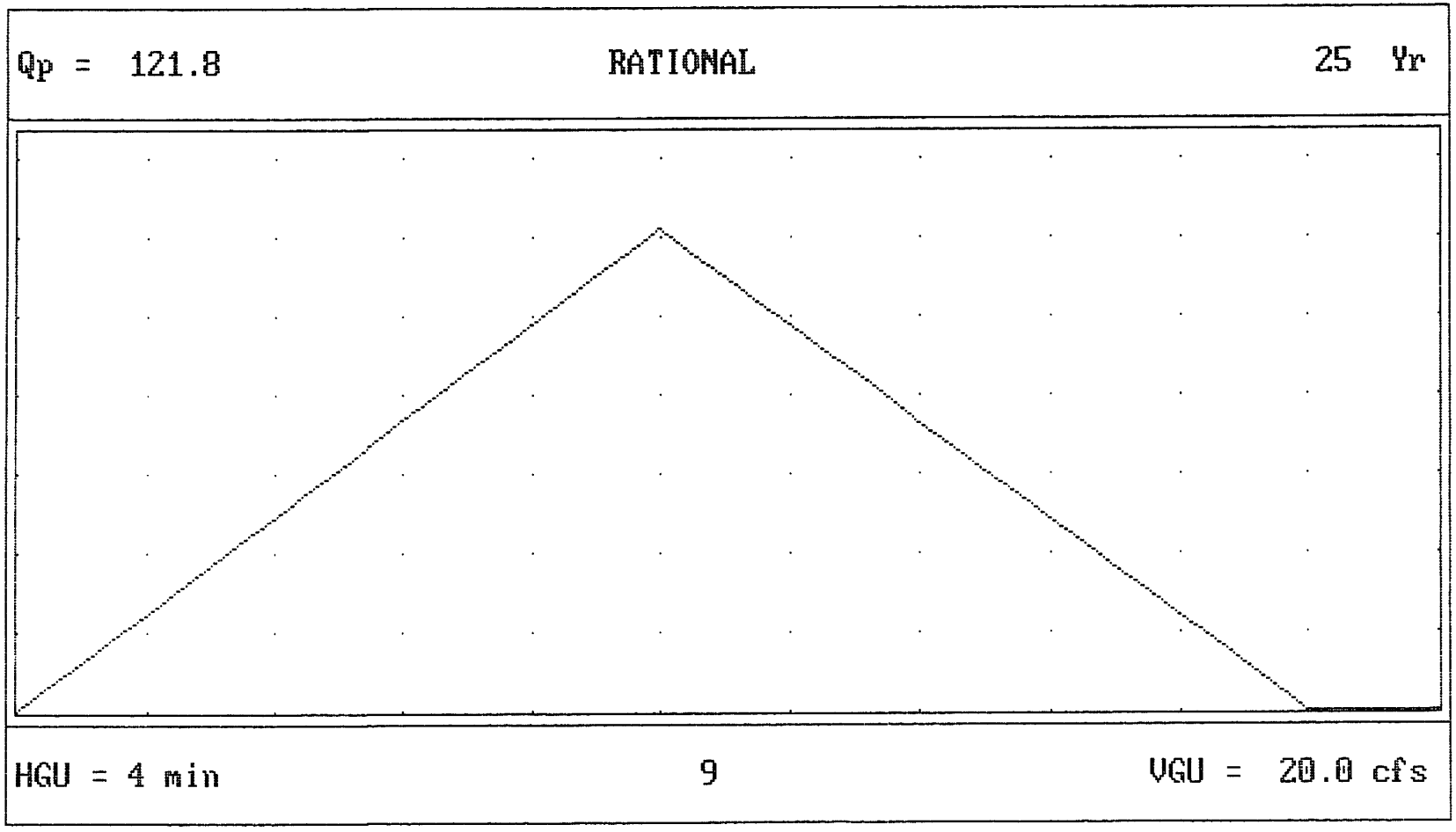
Hydrograph type	= RATIONAL	Peak ~~discharge~~ INFLOW	= 121.80 cfs
Storm frequency	= 25 yr	Time interval	= 1 min
Time of conc.	= 20 min	Intensity	= 5.03 in/hr
Runoff coeff.	= .6852	Basin area	= 35.31 ac

HYDROGRAPH DISCHARGE TABLE

TIME--OUTFLOW (min	cfs)	TIME--OUTFLOW (min	cfs)	TIME--OUTFLOW (min	cfs)	TIME--OUTFLOW (min	cfs)
1.00	6.09	2.00	12.18	3.00	18.27	4.00	24.36
5.00	30.45	6.00	36.54	7.00	42.63	8.00	48.72
9.00	54.81	10.00	60.90	11.00	66.99	12.00	73.08
13.00	79.17	14.00	85.26	15.00	91.35	16.00	97.44
17.00	103.53	18.00	109.62	19.00	115.71	20.00	121.80
21.00	115.71	22.00	109.62	23.00	103.53	24.00	97.44
25.00	91.35	26.00	85.26	27.00	79.17	28.00	73.08
29.00	66.99	30.00	60.90	31.00	54.81	32.00	48.72
33.00	42.63	34.00	36.54	35.00	30.45	36.00	24.36
37.00	18.27	38.00	12.18	39.00	6.09	40.00	0.00

Peak Inflow:
Offsite (Res.) 18.40 Ac. x 3.26 = 59.99 cfs Q25
Onsite (Res.) 9.84 Ac. x 3.26 = 32.08 cfs Q25
Onsite (Golf) 7.07 Ac. x 2.31 = 16.34 cfs Q25
Total = 35.31 Acres = 108.41 cfs Q25
Outflow From Lake #14 = 13.39 cfs Q25 25 YEAR RELEASE FROM
Total = 121.80 cfs Q25

NOTE: Offsite Areas Are Calculated As Being Developed Under Their Current Zoning Classification.



VOL = (cuft/acft) = 146160 / 3.355

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MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM OUTLET STRUCTURES MMMMMMMMMMMMMMMMMMMMMMMMMMMMMM
 Reservoir:  3
CULVERT STRUC  A. Q=CoA[2gh/k]^.5      CULVERT STRUC  B. Q=CoA[2gh/k]^.5

 1. WIDTH  (in)      = 24.              9. WIDTH  (in)      = 0..
 2. HEIGHT (in)      = 24.             10. HEIGHT (in)      = 0..
 3. No. BARRELS      = 1..             11. No. BARRELS      = 0..
 4. INVERT ELEV.     = 576......       12. INVERT ELEV.     = 0........
 5. Co = 0.60                          13. Co = 0.60
 6. CULVERT LENGTH (ft) = 105.         14. CULVERT LENGTH (ft) = 0...
 7. CULVERT SLOPE (%)   = 3.8.         15. CULVERT SLOPE (%)   = 0...
 8. MANNING'S N-VALUE   = .013         16. MANNING'S N-VALUE   = .013
                                       17. MULTI-STAGE OPTION ? (Y/N) N

WEIR STRUCTURE A.       Q=CwLH^EXP     WEIR STRUCTURE B.       Q=CwLH^EXP

 18. CREST LENGTH (ft)  = 0......      23. CREST LENGTH (ft)  = 0......
 19. CREST ELEVATION    = 0......      24. CREST ELEVATION    = 0......
 20. Cw = 3.00                         25. Cw = 3.00
 21. EXP = 1.50                        26. EXP = 1.50
 22. MULTI-STAGE OPTION ? (Y/N) N      27. MULTI-STAGE OPTION ? (Y/N) N

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM
hange item number: 0                                        DY to cont
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HYDROLOGIC REPORT

STAGE / STORAGE / DISCHARGE

RESERVOIR NUMBER = 3

RESERVOIR NAME = LAKE #13....
STORAGE VALUES WERE INPUT MANUALLY

DISCHARGE VALUES: CULVERT STRUCT A. Q = .6 *A*[2gh/k]^.5 * 1
CULVERT STRUCT B. Q = .6 *A*[2gh/k]^.5 * 0
WEIR STRUCT A. Q = 3 * 0 * H ^ 1.5
WEIR STRUCT B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs)			
	CULVERT A	CULVERT B	WEIR A	WEIR B
576.00	0.00	0.00	0.00	0.00
577.00	6.40	0.00	0.00	0.00
578.00	15.12	0.00	0.00	0.00
579.00	21.39	0.00	0.00	0.00
580.00	26.20	0.00	0.00	0.00
582.00	33.82	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00

STAGE	ELEVATION	INC STOR cu ft	TOT STOR cu ft	OUTFLOW cfs
0.00	576.00	0	0	0.00
1.00	577.00	9587	9587	6.40
2.00	578.00	21075	30662	15.12
3.00	579.00	25225	55887	21.39
4.00	580.00	29725	85612	26.20
6.00	582.00	74150	159762	33.82
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00

Reservoir No. 3 STAGE / STORAGE / DISCHARGE LAKE #13....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * 1
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * 0
Weir struct A. Q = 3 * 0 * H ^ 1.5
Weir struct B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs) CULVERT A		CULVERT B		WEIR A	WEIR B	TOTAL
576.00	0.00		0.00	-	0.00	0.00	0.00
576.10	0.07	IC	0.00	-	0.00	0.00	0.07
576.20	0.43	IC	0.00	-	0.00	0.00	0.43
576.30	0.87	IC	0.00	-	0.00	0.00	0.87
576.40	1.00	IC	0.00	-	0.00	0.00	1.00
576.50	1.67	IC	0.00	-	0.00	0.00	1.67
576.60	2.54	IC	0.00	-	0.00	0.00	2.54
576.70	3.58	IC	0.00	-	0.00	0.00	3.58
576.80	3.83	IC	0.00	-	0.00	0.00	3.83
576.90	5.07	IC	0.00	-	0.00	0.00	5.07
577.00	6.40	IC	0.00	-	0.00	0.00	6.40

[PgDn] [Esc] to exit

Reservoir No. 3 STAGE / STORAGE / DISCHARGE LAKE #13....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * 1
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * 0
Weir struct A. Q = 3 * 0 * H ^ 1.5
Weir struct B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs) CULVERT A		CULVERT B		WEIR A	WEIR B	TOTAL
577.00	6.40	IC	0.00	-	0.00	0.00	6.40
577.10	6.72	IC	0.00	-	0.00	0.00	6.72
577.20	8.12	IC	0.00	-	0.00	0.00	8.12
577.30	8.45	IC	0.00	-	0.00	0.00	8.45
577.40	9.85	IC	0.00	-	0.00	0.00	9.85
577.50	11.15	IC	0.00	-	0.00	0.00	11.15
577.60	12.29	IC	0.00	-	0.00	0.00	12.29
577.70	12.67	IC	0.00	-	0.00	0.00	12.67
577.80	13.65	IC	0.00	-	0.00	0.00	13.65
577.90	14.65	IC	0.00	-	0.00	0.00	14.65
578.00	15.12	IC	0.00	-	0.00	0.00	15.12

TOP OF PIPE

[PgDn] [Esc] to exit

Q = 42 CFS

F.L. = 576.00

24" CONC. PIPE

3.8% ✓

FLOWIN FULL

Reservoir No. 3 STAGE / STORAGE / DISCHARGE LAKE #13....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * 1
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * 0
Weir struct A. Q = 3 * 0 * H ^ 1.5
Weir struct B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs) CULVERT A		CULVERT B		WEIR A	WEIR B	TOTAL
578.00	15.12	IC	0.00	-	0.00	0.00	15.12
578.10	15.86	IC	0.00	-	0.00	0.00	15.86
578.20	16.57	IC	0.00	-	0.00	0.00	16.57
578.30	17.24	IC	0.00	-	0.00	0.00	17.24
578.40	17.90	IC	0.00	-	0.00	0.00	17.90
578.50	18.52	IC	0.00	-	0.00	0.00	18.52
578.60	19.13	IC	0.00	-	0.00	0.00	19.13
578.70	19.72	IC	0.00	-	0.00	0.00	19.72
578.80	20.29	IC	0.00	-	0.00	0.00	20.29
578.90	20.85	IC	0.00	-	0.00	0.00	20.85
579.00	21.39	IC	0.00	-	0.00	0.00	21.39

[PgDn] [Esc] to exit

Reservoir No. 3 STAGE / STORAGE / DISCHARGE LAKE #13....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * 1
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * 0
Weir struct A. Q = 3 * 0 * H ^ 1.5
Weir struct B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs) CULVERT A		CULVERT B		WEIR A	WEIR B	TOTAL
579.00	21.39	IC	0.00	-	0.00	0.00	21.39
579.10	21.92	IC	0.00	-	0.00	0.00	21.92
579.20	22.43	IC	0.00	-	0.00	0.00	22.43
579.30	22.94	IC	0.00	-	0.00	0.00	22.94
579.40	23.43	IC	0.00	-	0.00	0.00	23.43
579.50	23.91	IC	0.00	-	0.00	0.00	23.91
579.60	24.39	IC	0.00	-	0.00	0.00	24.39
579.70	24.85	IC	0.00	-	0.00	0.00	24.85
579.80	25.31	IC	0.00	-	0.00	0.00	25.31
579.90	25.76	IC	0.00	-	0.00	0.00	25.76
580.00	26.20	IC	0.00	-	0.00	0.00	26.20

[PgDn] [Esc] to exit

Reservoir No. 3 STAGE / STORAGE / DISCHARGE LAKE #13....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * 1
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * 0
Weir struct A. Q = 3 * 0 * H ^ 1.5
Weir struct B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs)					
	CULVERT A		CULVERT B		WEIR A	WEIR B	TOTAL
580.00	26.20	IC	0.00	-	0.00	0.00	26.20
580.20	27.06	IC	0.00	-	0.00	0.00	27.06
580.40	27.89	IC	0.00	-	0.00	0.00	27.89
580.60	28.70	IC	0.00	-	0.00	0.00	28.70
580.80	29.48	IC	0.00	-	0.00	0.00	29.48
581.00	30.25	IC	0.00	-	0.00	0.00	30.25
581.20	31.00	IC	0.00	-	0.00	0.00	31.00
581.40	31.73	IC	0.00	-	0.00	0.00	31.73
581.60	32.44	IC	0.00	-	0.00	0.00	32.44
581.80	33.14	IC	0.00	-	0.00	0.00	33.14
582.00	33.82	IC	0.00	-	0.00	0.00	33.82

[PgDn] [Esc] to exit

5 STAGE / STORAGE TABLE F

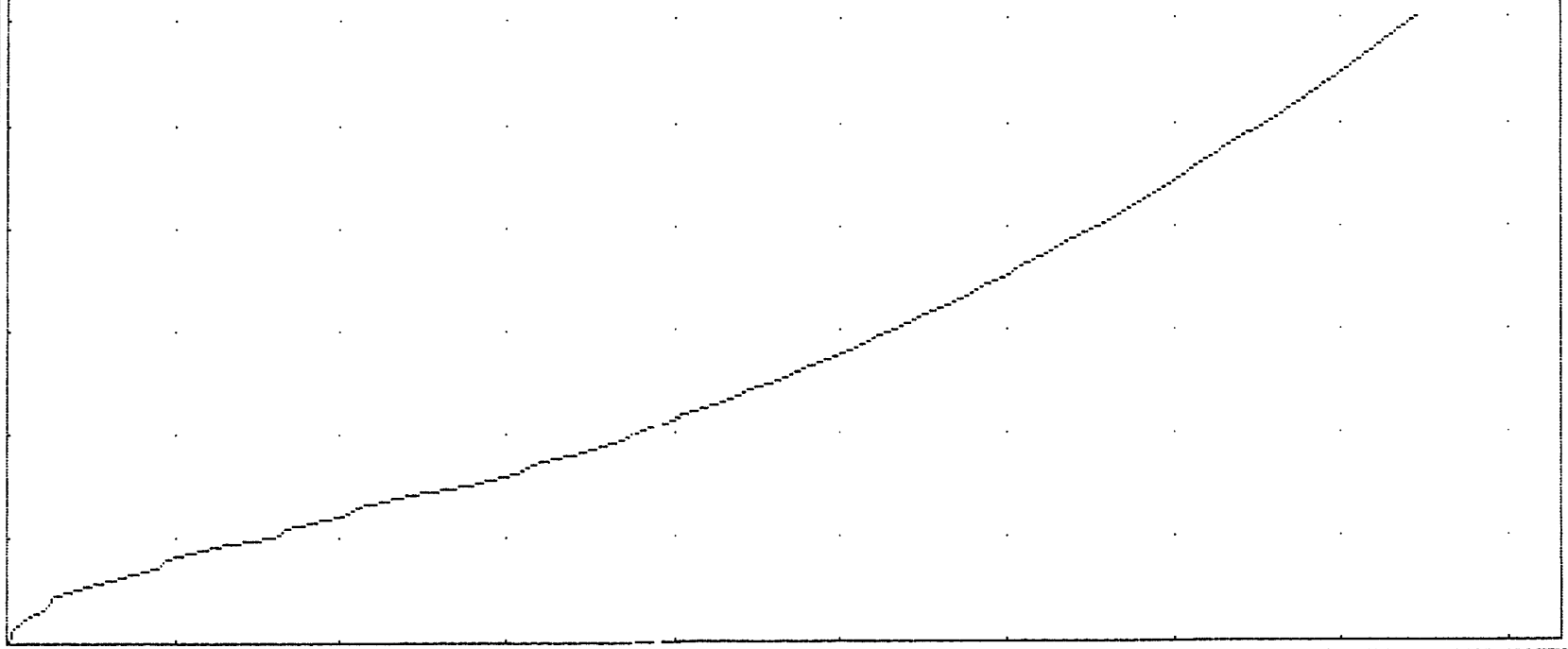
1. RESERVOIR No = 3. 2. RESERVOIR NAME = LAKE #13....
3. S = Ks * Z^b
   Ks = 0..... b = 0.....
   START ELEV = 0..... INCREMENT = 0...

	STAGE ft	ELEVATION ft	CO AREA sq ft	INC STORAGE cu ft	TOT STORAGE cu ft
4	0.00	576.00.	0.....	0	0
5	1.00	577.00.	19175...	9587	9587
6	2.00	578.00.	22975...	21075	30662
7	3.00	579.00.	27475...	25225	55887
8	4.00	580.00.	31975...	29725	85612
9	6.00	582.00.	42175...	74150	159762
10	0.00	0.00.	0.....	0	0
11	0.00	0.00.	0.....	0	0
12	0.00	0.00.	0.....	0	0
13	0.00	0.00.	0.....	0	0
14	0.00	0.00.	0.....	0	0

R to reset

Change item number: 0 DY to cont

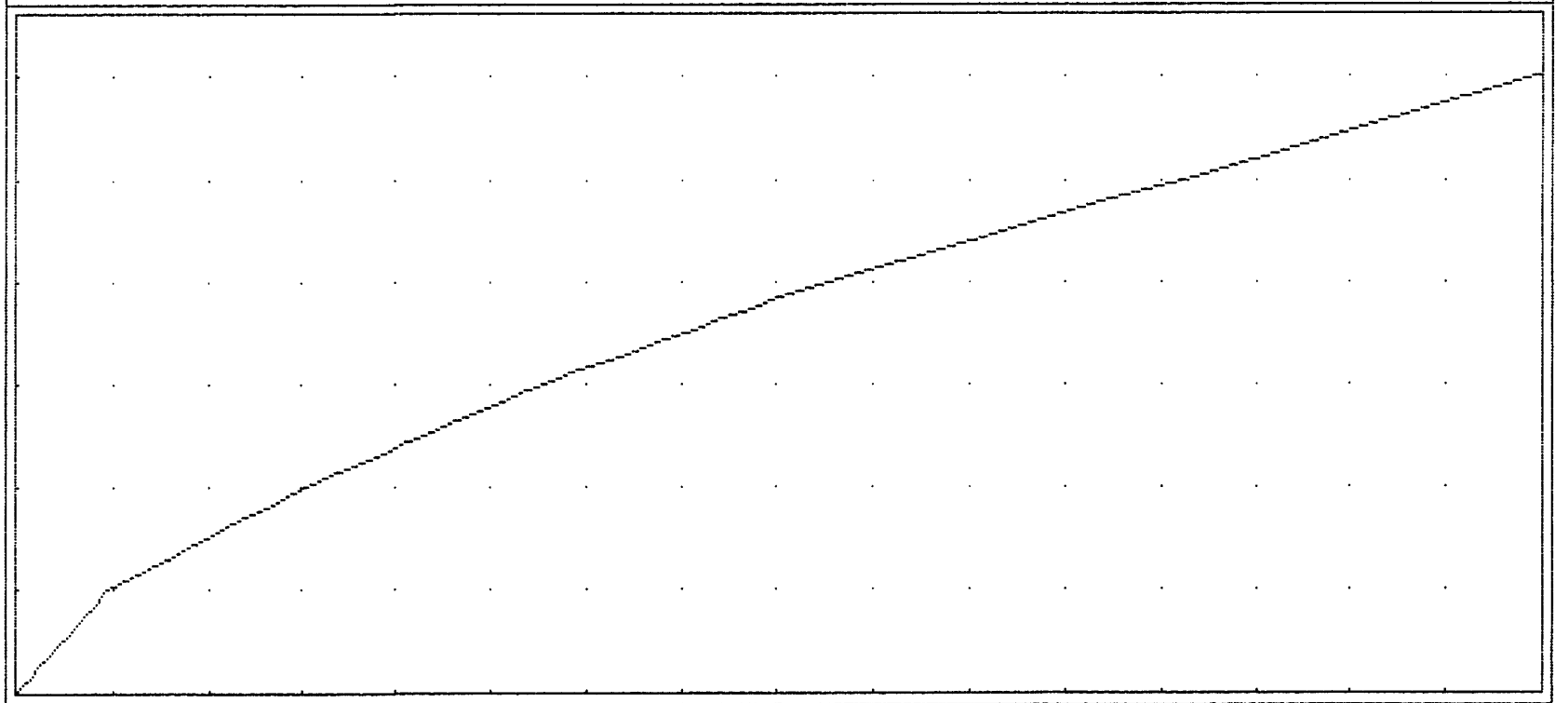
STAGE / DISCHARGE CURVE



HGU = 4.0 cfs VGU = 1.0 ft

[↵] Cont [Esc] Exit

STAGE / STORAGE CURVE



HGU = 10000 cu ft VGU = 1.0 ft

[↵] Cont [Esc] Exit

HYDROLOGIC REPORT

GLEN EAGLE GOLF COURSE
.....
LAKE #13.....

Hyd. No. 10

Hydrograph type = RESERVOIR ROUTE Peak discharge = 28.50 cfs
Storm frequency = 25 yr Time interval = 1 min
Inflow hyd. no. = 9 Reservoir no. = 3

HYDROGRAPH DISCHARGE TABLE

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
1.00	6.09	12.18	6.06	6.09	0.01
2.00	12.18	18.27	24.22	24.33	0.05
3.00	18.27	24.36	54.02	54.67	0.33
4.00	24.36	30.45	94.92	96.65	0.87
5.00	30.45	36.54	146.86	149.73	1.43
6.00	36.54	42.63	207.54	213.85	3.16
7.00	42.63	48.72	277.02	286.71	4.85
8.00	48.72	54.81	355.19	368.37	6.59
9.00	54.81	60.90	442.85	458.72	7.93
10.00	60.90	66.99	540.88	558.56	8.84
11.00	66.99	73.08	646.96	668.77	10.91
12.00	73.08	79.17	762.08	787.03	12.48
13.00	79.17	85.26	886.50	914.33	13.92
14.00	85.26	91.35	1020.44	1050.93	15.24
15.00	91.35	97.44	1164.08	1197.05	16.49
16.00	97.44	103.53	1317.44	1352.87	17.72
17.00	103.53	109.62	1480.54	1518.41	18.93
18.00	109.62	115.71	1653.39	1693.69	20.15
19.00	115.71	121.80	1836.01	1878.72	21.35
20.00	121.80	115.71	2028.76	2073.52	22.38
21.00	115.71	109.62	2219.57	2266.27	23.35
22.00	109.62	103.53	2396.48	2444.90	24.21
23.00	103.53	97.44	2559.67	2609.63	24.98
24.00	97.44	91.35	2709.30	2760.64	25.67
25.00	91.35	85.26	2845.57	2898.09	26.26

HYDROGRAPH DISCHARGE TABLE Cont'd

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
26.00	85.26	79.17	2968.80	3022.18	26.69
27.00	79.17	73.08	3079.09	3133.23	27.07
28.00	73.08	66.99	3176.53	3231.34	27.40
29.00	66.99	60.90	3261.22	3316.60	27.69
30.00	60.90	54.81	3333.25	3389.11	27.93
31.00	54.81	48.72	3392.70	3448.96	28.13
32.00	48.72	42.63	3439.67	3496.23	28.28
33.00	42.63	36.54	3474.23	3531.02	28.39
34.00	36.54	30.45	3496.47	3553.40	28.47
35.00	30.45	24.36	3506.46	3563.46	28.50
36.00	24.36	18.27	3504.28	3561.27	28.49
37.00	18.27	12.18	3490.02	3546.91	28.45
38.00	12.18	6.09	3463.75	3520.47	28.36
39.00	6.09	0.00	3425.55	3482.02	28.23
40.00	0.00	0.00	3375.50	3431.64	28.07
41.00	0.00	0.00	3319.72	3375.50	27.89
42.00	0.00	0.00	3264.32	3319.72	27.70
43.00	0.00	0.00	3209.29	3264.32	27.51
44.00	0.00	0.00	3154.64	3209.29	27.33
45.00	0.00	0.00	3100.34	3154.64	27.15
46.00	0.00	0.00	3046.42	3100.34	26.96
47.00	0.00	0.00	2992.88	3046.42	26.77
48.00	0.00	0.00	2939.70	2992.88	26.59
49.00	0.00	0.00	2886.89	2939.70	26.40
50.00	0.00	0.00	2834.45	2886.89	26.22
51.00	0.00	0.00	2782.46	2834.45	26.00
52.00	0.00	0.00	2730.93	2782.46	25.76
53.00	0.00	0.00	2679.86	2730.93	25.53
54.00	0.00	0.00	2629.26	2679.86	25.30
55.00	0.00	0.00	2579.11	2629.26	25.07
56.00	0.00	0.00	2529.43	2579.11	24.84
57.00	0.00	0.00	2480.21	2529.43	24.61
58.00	0.00	0.00	2431.45	2480.21	24.38
59.00	0.00	0.00	2383.16	2431.45	24.15
60.00	0.00	0.00	2335.32	2383.16	23.92
61.00	0.00	0.00	2287.95	2335.32	23.69
62.00	0.00	0.00	2241.03	2287.95	23.46
63.00	0.00	0.00	2194.59	2241.03	23.22
64.00	0.00	0.00	2148.60	2194.59	22.99
65.00	0.00	0.00	2103.07	2148.60	22.76
66.00	0.00	0.00	2058.01	2103.07	22.53
67.00	0.00	0.00	2013.40	2058.01	22.30

HYDROGRAPH DISCHARGE TABLE Cont'd

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
68.00	0.00	0.00	1969.26	2013.40	22.07
69.00	0.00	0.00	1925.58	1969.26	21.84
70.00	0.00	0.00	1882.36	1925.58	21.61
71.00	0.00	0.00	1839.61	1882.36	21.38
72.00	0.00	0.00	1797.40	1839.61	21.10
73.00	0.00	0.00	1755.74	1797.40	20.83
74.00	0.00	0.00	1714.62	1755.74	20.56
75.00	0.00	0.00	1674.05	1714.62	20.29
76.00	0.00	0.00	1634.02	1674.05	20.01
77.00	0.00	0.00	1594.53	1634.02	19.74
78.00	0.00	0.00	1555.59	1594.53	19.47
79.00	0.00	0.00	1517.19	1555.59	19.20
80.00	0.00	0.00	1479.34	1517.19	18.93
81.00	0.00	0.00	1442.03	1479.34	18.65
82.00	0.00	0.00	1405.26	1442.03	18.38
83.00	0.00	0.00	1369.04	1405.26	18.11
84.00	0.00	0.00	1333.36	1369.04	17.84
85.00	0.00	0.00	1298.23	1333.36	17.57
86.00	0.00	0.00	1263.64	1298.23	17.30
87.00	0.00	0.00	1229.60	1263.64	17.02
88.00	0.00	0.00	1196.10	1229.60	16.75
89.00	0.00	0.00	1163.14	1196.10	16.48
90.00	0.00	0.00	1130.73	1163.14	16.20
91.00	0.00	0.00	1098.86	1130.73	15.94
92.00	0.00	0.00	1067.54	1098.86	15.66
93.00	0.00	0.00	1036.76	1067.54	15.39
94.00	0.00	0.00	1006.52	1036.76	15.12
95.00	0.00	0.00	976.68	1006.52	14.92
96.00	0.00	0.00	947.25	976.68	14.72
97.00	0.00	0.00	918.50	947.25	14.38
98.00	0.00	0.00	890.55	918.50	13.97
99.00	0.00	0.00	863.38	890.55	13.58
100.00	0.00	0.00	836.95	863.38	13.21
101.00	0.00	0.00	811.25	836.95	12.85
102.00	0.00	0.00	786.04	811.25	12.61
103.00	0.00	0.00	761.10	786.04	12.47
104.00	0.00	0.00	736.43	761.10	12.34
105.00	0.00	0.00	712.39	736.43	12.02
106.00	0.00	0.00	689.11	712.39	11.64
107.00	0.00	0.00	666.59	689.11	11.26
108.00	0.00	0.00	644.86	666.59	10.87
109.00	0.00	0.00	623.91	644.86	10.47

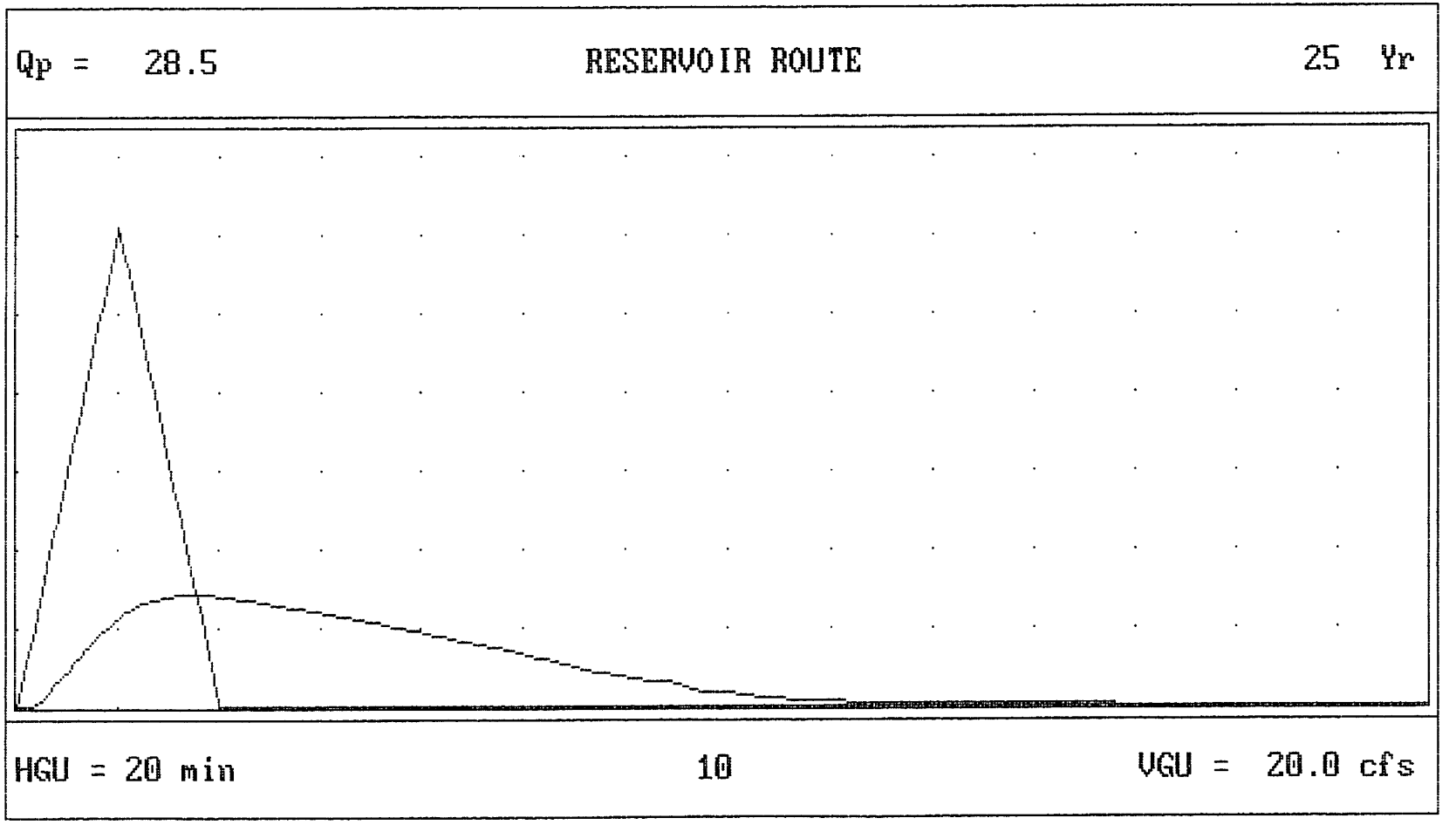
HYDROGRAPH DISCHARGE TABLE Cont'd

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
110.00	0.00	0.00	603.72	623.91	10.09
111.00	0.00	0.00	584.28	603.72	9.72
112.00	0.00	0.00	565.61	584.28	9.34
113.00	0.00	0.00	547.66	565.61	8.97
114.00	0.00	0.00	530.41	547.66	8.62
115.00	0.00	0.00	513.58	530.41	8.41
116.00	0.00	0.00	496.92	513.58	8.33
117.00	0.00	0.00	480.41	496.92	8.25
118.00	0.00	0.00	464.05	480.41	8.18
119.00	0.00	0.00	447.98	464.05	8.04
120.00	0.00	0.00	432.53	447.98	7.72
121.00	0.00	0.00	417.69	432.53	7.42
122.00	0.00	0.00	403.43	417.69	7.13
123.00	0.00	0.00	389.73	403.43	6.85
124.00	0.00	0.00	376.35	389.73	6.69
125.00	0.00	0.00	363.10	376.35	6.63
126.00	0.00	0.00	349.97	363.10	6.57
127.00	0.00	0.00	336.95	349.97	6.51
128.00	0.00	0.00	324.04	336.95	6.45
129.00	0.00	0.00	311.39	324.04	6.33
130.00	0.00	0.00	299.76	311.39	5.82
131.00	0.00	0.00	289.05	299.76	5.35
132.00	0.00	0.00	279.19	289.05	4.93
133.00	0.00	0.00	270.06	279.19	4.56
134.00	0.00	0.00	261.61	270.06	4.22
135.00	0.00	0.00	253.79	261.61	3.91
136.00	0.00	0.00	246.22	253.79	3.79
137.00	0.00	0.00	238.76	246.22	3.73
138.00	0.00	0.00	231.42	238.76	3.67
139.00	0.00	0.00	224.19	231.42	3.61
140.00	0.00	0.00	217.22	224.19	3.48
141.00	0.00	0.00	210.70	217.22	3.26
142.00	0.00	0.00	204.58	210.70	3.06
143.00	0.00	0.00	198.86	204.58	2.86
144.00	0.00	0.00	193.50	198.86	2.68
145.00	0.00	0.00	188.47	193.50	2.52
146.00	0.00	0.00	183.70	188.47	2.38
147.00	0.00	0.00	179.19	183.70	2.26
148.00	0.00	0.00	174.91	179.19	2.14
149.00	0.00	0.00	170.86	174.91	2.03
150.00	0.00	0.00	167.02	170.86	1.92
151.00	0.00	0.00	163.39	167.02	1.82

HYDROGRAPH DISCHARGE TABLE Cont'd

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
152.00	0.00	0.00	159.94	163.39	1.72
153.00	0.00	0.00	156.66	159.94	1.64
154.00	0.00	0.00	153.52	156.66	1.57
155.00	0.00	0.00	150.50	153.52	1.51
156.00	0.00	0.00	147.60	150.50	1.45
157.00	0.00	0.00	144.83	147.60	1.39
158.00	0.00	0.00	142.17	144.83	1.33
159.00	0.00	0.00	139.61	142.17	1.28
160.00	0.00	0.00	137.16	139.61	1.22
161.00	0.00	0.00	134.82	137.16	1.17
162.00	0.00	0.00	132.56	134.82	1.13
163.00	0.00	0.00	130.40	132.56	1.08
164.00	0.00	0.00	128.33	130.40	1.04
165.00	0.00	0.00	126.33	128.33	1.00

Maximum outflow (cfs) = 28.50
Maximum storage (cu ft) = 106049
Maximum elevation (ft) = 580.55



MAX STORAGE = 106049

MAX ELEVATION = 580.55

HYDROLOGIC REPORT FOR

GLEN EAGLE GOLF COURSE

DETENTION AND LAKE DESIGN

100 YEAR/20 MIN. STORM

LAKE #13

PREPARED BY:

PICKETT RAY & SILVER, INC.

333 MID RIVERS MALL DRIVE

ST. PETERS, MO. 63376

DESIGNER: TANYA DIETZ

HYDROLOGIC REPORT

GLEN EAGLE GOLF COURSE
LAKE #13.....
INFLOW.....

Hyd. No. 11

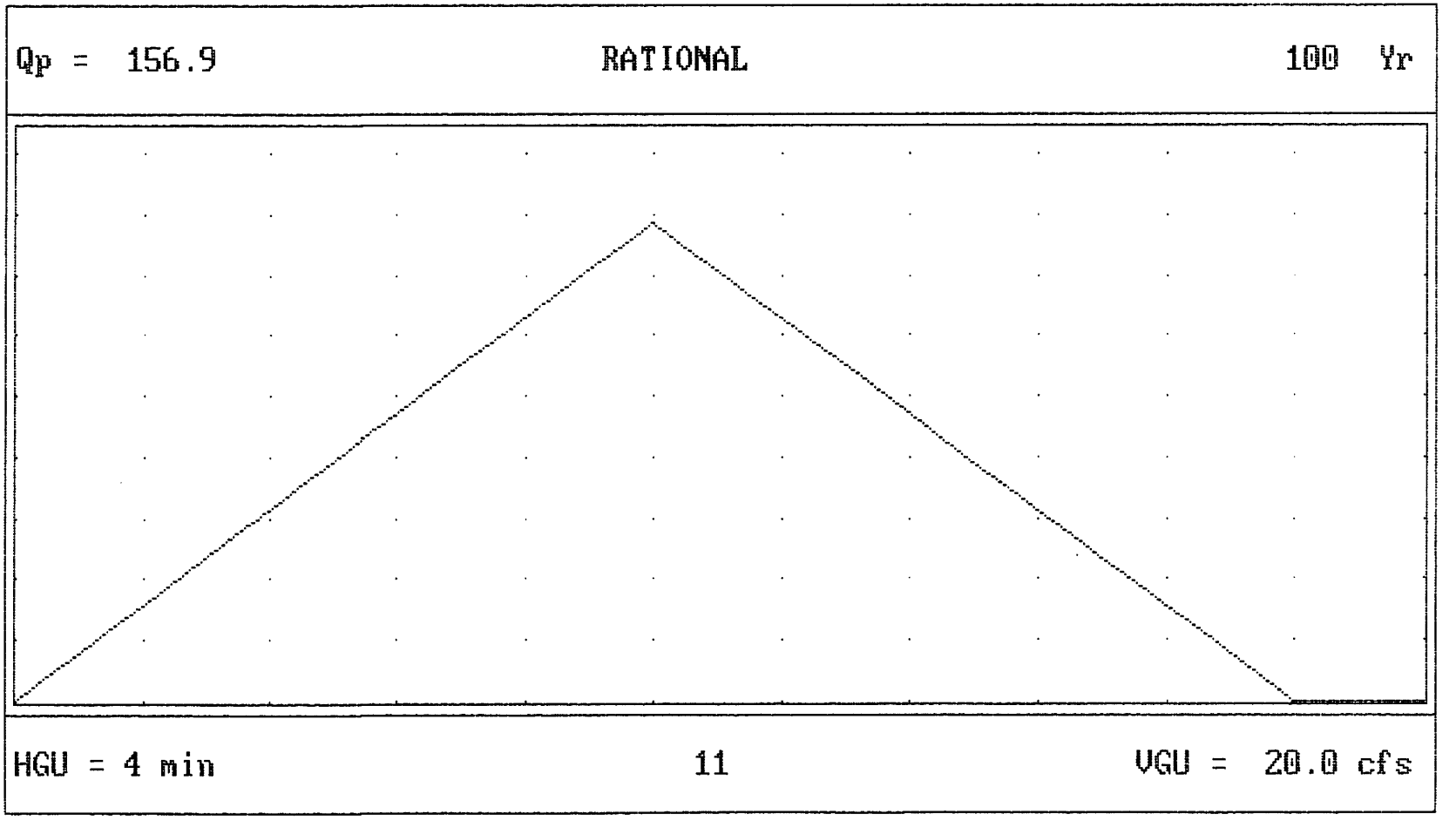
Hydrograph type	= RATIONAL	Peak ~~discharge~~ INFLOW	= 156.87 cfs
Storm frequency	= 100 yr	Time interval	= 1 min
Time of conc.	= 20 min	Intensity	= 6.17 in/hr
Runoff coeff.	= .7196	Basin area	= 35.31 ac

HYDROGRAPH DISCHARGE TABLE

TIME--OUTFLOW (min cfs)		TIME--OUTFLOW (min cfs)		TIME--OUTFLOW (min cfs)		TIME--OUTFLOW (min cfs)	
1.00	7.84	2.00	15.69	3.00	23.53	4.00	31.37
5.00	39.22	6.00	47.06	7.00	54.91	8.00	62.75
9.00	70.59	10.00	78.44	11.00	86.28	12.00	94.12
13.00	101.97	14.00	109.81	15.00	117.66	16.00	125.50
17.00	133.34	18.00	141.19	19.00	149.03	20.00	156.87
21.00	149.03	22.00	141.19	23.00	133.34	24.00	125.50
25.00	117.66	26.00	109.81	27.00	101.97	28.00	94.12
29.00	86.28	30.00	78.44	31.00	70.59	32.00	62.75
33.00	54.91	34.00	47.06	35.00	39.22	36.00	31.37
37.00	23.53	38.00	15.69	39.00	7.84	40.00	0.00

Peak Inflow:
Offsite (Res.) 18.40 Ac. x 4.17 = 76.72 cfs Q100
Onsite (Res.) 9.84 Ac. x 4.17 = 41.03 cfs Q100
Onsite (Golf) 7.07 Ac. x 2.95 = 20.84 cfs Q100
Total = 35.31 Acres = 138.59 cfs Q100
Outflow From Lake #14 = 18.28 cfs Q100
Total = 156.87 cfs Q100

NOTE: Offsite Areas Are Calculated As Being Developed Under Their Current Zoning Classification.



VOL = (cuft/acft) = 188250 / 4.322

```
OUTLET STRUCTURES
 Reservoir:  3
CULVERT STRUC  A. Q=CoA[2gh/k]^.5        CULVERT STRUC  B. Q=CoA[2gh/k]^.5

 1. WIDTH  (in)     = 24.                 9. WIDTH  (in)     = 0..
 2. HEIGHT (in)     = 24.                10. HEIGHT (in)     = 0..
 3. No. BARRELS     = 1..                11. No. BARRELS     = 0..
 4. INVERT ELEV.    = 576.....           12. INVERT ELEV.    = 0........
 5. Co = 0.60                            13. Co = 0.60
 6. CULVERT LENGTH (ft) = 105.           14. CULVERT LENGTH (ft) = 0...
 7. CULVERT SLOPE (%)   = 3.8.           15. CULVERT SLOPE (%)   = 0...
 8. MANNING'S N-VALUE   = .013           16. MANNING'S N-VALUE   = .013
                                         17. MULTI-STAGE OPTION ? (Y/N) N

WEIR STRUCTURE A.       Q=CwLH^EXP      WEIR STRUCTURE B.       Q=CwLH^EXP

18. CREST LENGTH (ft)   = 0.....        23. CREST LENGTH (ft)   = 0.....
19. CREST ELEVATION     = 0.....        24. CREST ELEVATION     = 0.....
20. Cw = 3.00                           25. Cw = 3.00
21. EXP = 1.50                          26. EXP = 1.50
22. MULTI-STAGE OPTION ? (Y/N) N        27. MULTI-STAGE OPTION ? (Y/N) N

Change item number: 0                                          DY to cont
```

HYDROLOGIC REPORT

STAGE / STORAGE / DISCHARGE

RESERVOIR NUMBER = 3

RESERVOIR NAME = LAKE #13....
STORAGE VALUES WERE INPUT MANUALLY

DISCHARGE VALUES: CULVERT STRUCT A. Q = .6 *A*[2gh/k]^.5 * 1
CULVERT STRUCT B. Q = .6 *A*[2gh/k]^.5 * 0
WEIR STRUCT A. Q = 3 * 0 * H ^ 1.5
WEIR STRUCT B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs)			
	CULVERT A	CULVERT B	WEIR A	WEIR B
576.00	0.00	0.00	0.00	0.00
577.00	6.40	0.00	0.00	0.00
578.00	15.12	0.00	0.00	0.00
579.00	21.39	0.00	0.00	0.00
580.00	26.20	0.00	0.00	0.00
582.00	33.82	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00

STAGE	ELEVATION	INC STOR cu ft	TOT STOR cu ft	OUTFLOW cfs
0.00	576.00	0	0	0.00
1.00	577.00	9587	9587	6.40
2.00	578.00	21075	30662	15.12
3.00	579.00	25225	55887	21.39
4.00	580.00	29725	85612	26.20
6.00	582.00	74150	159762	33.82
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00

Reservoir No. 3 STAGE / STORAGE / DISCHARGE LAKE #13....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * 1
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * 0
Weir struct A. Q = 3 * 0 * H ^ 1.5
Weir struct B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs) CULVERT A		CULVERT B		WEIR A	WEIR B	TOTAL
576.00	0.00		0.00	-	0.00	0.00	0.00
576.10	0.07	IC	0.00	-	0.00	0.00	0.07
576.20	0.43	IC	0.00	-	0.00	0.00	0.43
576.30	0.87	IC	0.00	-	0.00	0.00	0.87
576.40	1.00	IC	0.00	-	0.00	0.00	1.00
576.50	1.67	IC	0.00	-	0.00	0.00	1.67
576.60	2.54	IC	0.00	-	0.00	0.00	2.54
576.70	3.58	IC	0.00	-	0.00	0.00	3.58
576.80	3.83	IC	0.00	-	0.00	0.00	3.83
576.90	5.07	IC	0.00	-	0.00	0.00	5.07
577.00	6.40	IC	0.00	-	0.00	0.00	6.40

[PgDn] [Esc] to exit

Reservoir No. 3 STAGE / STORAGE / DISCHARGE LAKE #13....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * 1
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * 0
Weir struct A. Q = 3 * 0 * H ^ 1.5
Weir struct B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs) CULVERT A		CULVERT B		WEIR A	WEIR B	TOTAL
577.00	6.40	IC	0.00	-	0.00	0.00	6.40
577.10	6.72	IC	0.00	-	0.00	0.00	6.72
577.20	8.12	IC	0.00	-	0.00	0.00	8.12
577.30	8.45	IC	0.00	-	0.00	0.00	8.45
577.40	9.85	IC	0.00	-	0.00	0.00	9.85
577.50	11.15	IC	0.00	-	0.00	0.00	11.15
577.60	12.29	IC	0.00	-	0.00	0.00	12.29
577.70	12.67	IC	0.00	-	0.00	0.00	12.67
577.80	13.65	IC	0.00	-	0.00	0.00	13.65
577.90	14.65	IC	0.00	-	0.00	0.00	14.65
578.00	15.12	IC	0.00	-	0.00	0.00	15.12

[PgDn] [Esc] to exit

Reservoir No. 3 STAGE / STORAGE / DISCHARGE LAKE #13....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * 1
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * 0
Weir struct A. Q = 3 * 0 * H ^ 1.5
Weir struct B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs) CULVERT A		CULVERT B		WEIR A	WEIR B	TOTAL
578.00	15.12	IC	0.00	-	0.00	0.00	15.12
578.10	15.86	IC	0.00	-	0.00	0.00	15.86
578.20	16.57	IC	0.00	-	0.00	0.00	16.57
578.30	17.24	IC	0.00	-	0.00	0.00	17.24
578.40	17.90	IC	0.00	-	0.00	0.00	17.90
578.50	18.52	IC	0.00	-	0.00	0.00	18.52
578.60	19.13	IC	0.00	-	0.00	0.00	19.13
578.70	19.72	IC	0.00	-	0.00	0.00	19.72
578.80	20.29	IC	0.00	-	0.00	0.00	20.29
578.90	20.85	IC	0.00	-	0.00	0.00	20.85
579.00	21.39	IC	0.00	-	0.00	0.00	21.39

[PgDn] [Esc] to exit

Reservoir No. 3 STAGE / STORAGE / DISCHARGE LAKE #13....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * 1
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * 0
Weir struct A. Q = 3 * 0 * H ^ 1.5
Weir struct B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs) CULVERT A		CULVERT B		WEIR A	WEIR B	TOTAL
579.00	21.39	IC	0.00	-	0.00	0.00	21.39
579.10	21.92	IC	0.00	-	0.00	0.00	21.92
579.20	22.43	IC	0.00	-	0.00	0.00	22.43
579.30	22.94	IC	0.00	-	0.00	0.00	22.94
579.40	23.43	IC	0.00	-	0.00	0.00	23.43
579.50	23.91	IC	0.00	-	0.00	0.00	23.91
579.60	24.39	IC	0.00	-	0.00	0.00	24.39
579.70	24.85	IC	0.00	-	0.00	0.00	24.85
579.80	25.31	IC	0.00	-	0.00	0.00	25.31
579.90	25.76	IC	0.00	-	0.00	0.00	25.76
580.00	26.20	IC	0.00	-	0.00	0.00	26.20

[PgDn] [Esc] to exit

Reservoir No. 3 STAGE / STORAGE / DISCHARGE LAKE #13....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * 1
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * 0
Weir struct A. Q = 3 * 0 * H ^ 1.5
Weir struct B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs)				
	CULVERT A	CULVERT B	WEIR A	WEIR B	TOTAL
580.00	26.20 IC	0.00 -	0.00	0.00	26.20
580.20	27.06 IC	0.00 -	0.00	0.00	27.06
580.40	27.89 IC	0.00 -	0.00	0.00	27.89
580.60	28.70 IC	0.00 -	0.00	0.00	28.70
580.80	29.48 IC	0.00 -	0.00	0.00	29.48
581.00	30.25 IC	0.00 -	0.00	0.00	30.25
581.20	31.00 IC	0.00 -	0.00	0.00	31.00
581.40	31.73 IC	0.00 -	0.00	0.00	31.73
581.60	32.44 IC	0.00 -	0.00	0.00	32.44
581.80	33.14 IC	0.00 -	0.00	0.00	33.14
582.00	33.82 IC	0.00 -	0.00	0.00	33.82

[PgDn] [Esc] to exit

581.3 100 YEAR ON PLANS

STAGE / STORAGE TABLE

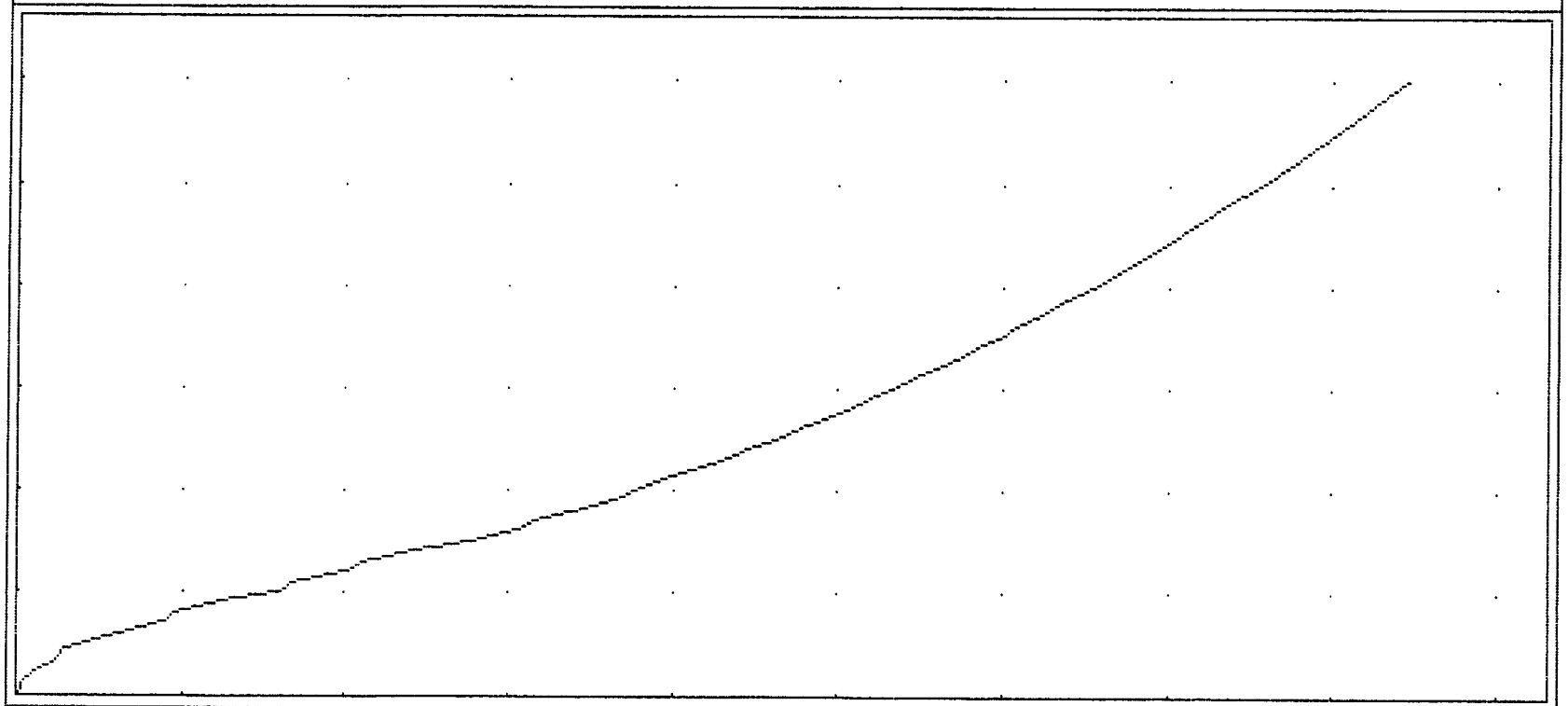
1. RESERVOIR No = 3. 2. RESERVOIR NAME = LAKE #13....
3. S = Ks * Z^b
   Ks = 0..... b = 0.....
   START ELEV = 0..... INCREMENT = 0...

	STAGE ft	ELEVATION ft	CO AREA sq ft	INC STORAGE cu ft	TOT STORAGE cu ft
4	0.00	576.00.	0.....	0	0
5	1.00	577.00.	19175...	9587	9587
6	2.00	578.00.	22975...	21075	30662
7	3.00	579.00.	27475...	25225	55887
8	4.00	580.00.	31975...	29725	85612
9	6.00	582.00.	42175...	74150	159762
10	0.00	0.00.	0.....	0	0
11	0.00	0.00.	0.....	0	0
12	0.00	0.00.	0.....	0	0
13	0.00	0.00.	0.....	0	0
14	0.00	0.00.	0.....	0	0

R to reset

Change item number: 0 DY to cont

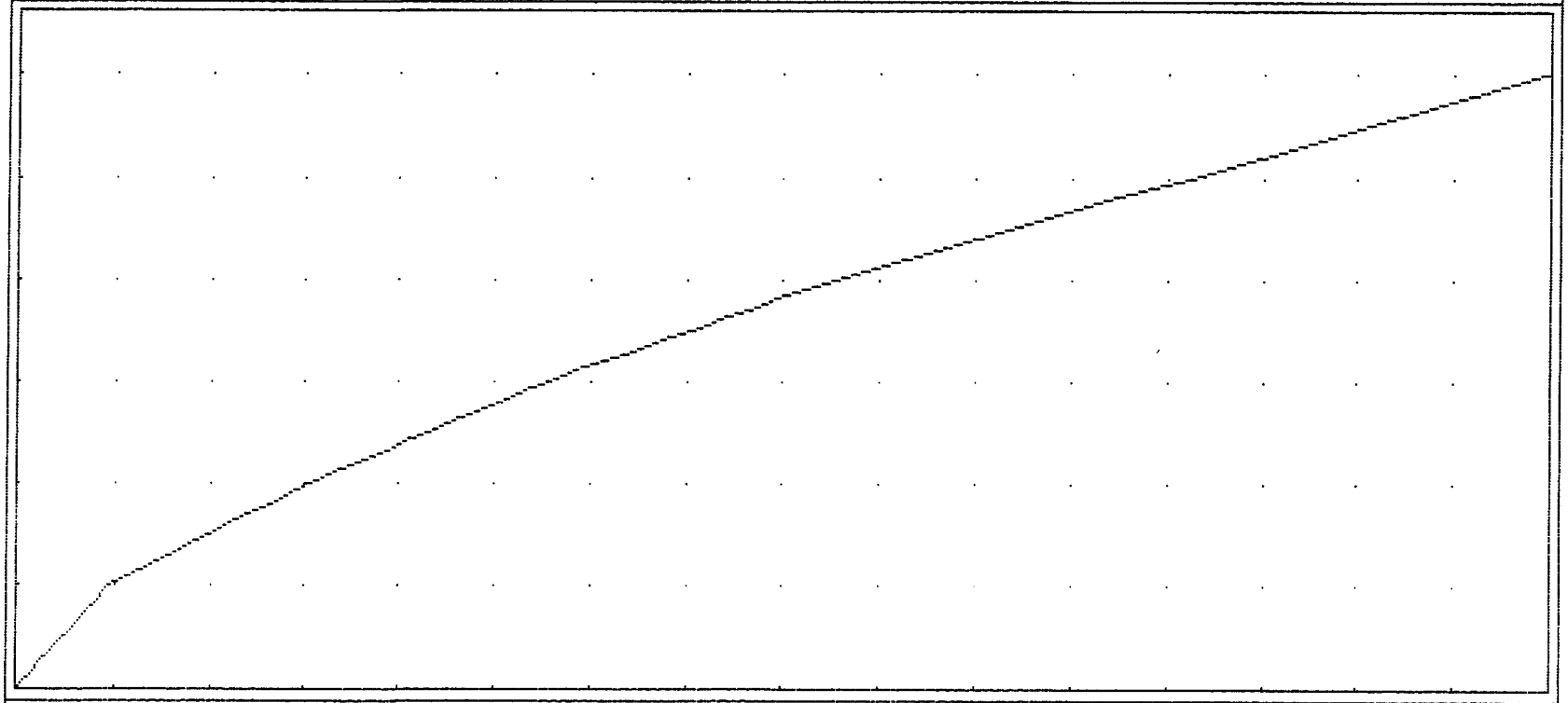
STAGE / DISCHARGE CURVE



HGU = 4.0 cfs VGU = 1.0 ft

[↵] Cont [Esc] Exit

STAGE / STORAGE CURVE



HGU = 10000 cu ft VGU = 1.0 ft

[↵] Cont [Esc] Exit

HYDROLOGIC REPORT

7.62

580.78

GLEN EAGLE GOLF COURSE
.....
LAKE #13.....

Hyd. No. 12

Hydrograph type = RESERVOIR ROUTE Peak discharge = 32.15 cfs
Storm frequency = 100 yr Time interval = 1 min
Inflow hyd. no. = 11 Reservoir no. = 3

HYDROGRAPH DISCHARGE TABLE

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
1.00	7.84	15.69	7.81	7.84	0.02
2.00	15.69	23.53	31.20	31.34	0.07
3.00	23.53	31.37	69.39	70.42	0.52
4.00	31.37	39.22	122.32	124.29	0.99
5.00	39.22	47.06	187.92	192.92	2.50
6.00	47.06	54.91	265.44	274.20	4.38
7.00	54.91	62.75	354.24	367.41	6.59
8.00	62.75	70.59	455.62	471.89	8.14
9.00	70.59	78.44	570.10	588.96	9.43
10.00	78.44	86.28	695.64	719.13	11.74
11.00	86.28	94.12	834.02	860.36	13.17
12.00	94.12	101.97	984.49	1014.43	14.97
13.00	101.97	109.81	1147.88	1180.58	16.35
14.00	109.81	117.66	1324.12	1359.66	17.77
15.00	117.66	125.50	1513.25	1551.59	19.17
16.00	125.50	133.34	1715.28	1756.41	20.56
17.00	133.34	141.19	1930.39	1974.12	21.87
18.00	141.19	149.03	2158.83	2204.92	23.05
19.00	149.03	156.87	2400.59	2449.05	24.23
20.00	156.87	149.03	2655.65	2706.49	25.42
21.00	149.03	141.19	2908.59	2961.55	26.48
22.00	141.19	133.34	3144.22	3198.81	27.29
23.00	133.34	125.50	3362.70	3418.75	28.03
24.00	125.50	117.66	3564.16	3621.54	28.69
25.00	117.66	109.81	3748.76	3807.32	29.28

HYDROGRAPH DISCHARGE TABLE Cont'd

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
26.00	109.81	101.97	3916.62	3976.23	29.81
27.00	101.97	94.12	4067.85	4128.40	30.28
28.00	94.12	86.28	4202.57	4263.94	30.68
29.00	86.28	78.44	4320.89	4382.98	31.04
30.00	78.44	70.59	4422.92	4485.61	31.34
31.00	70.59	62.75	4508.76	4571.96	31.60
32.00	62.75	54.91	4578.50	4642.10	31.80
33.00	54.91	47.06	4632.24	4696.16	31.96
34.00	47.06	39.22	4670.07	4734.21	32.07
35.00	39.22	31.37	4692.09	4756.35	32.13
36.00	31.37	23.53	4698.39	4762.69	32.15
37.00	23.53	15.69	4689.05	4753.29	32.12
38.00	15.69	7.84	4664.17	4728.27	32.05
39.00	7.84	0.00	4623.83	4687.70	31.93
40.00	0.00	0.00	4568.13	4631.67	31.77
41.00	0.00	0.00	4504.96	4568.13	31.59
42.00	0.00	0.00	4442.16	4504.96	31.40
43.00	0.00	0.00	4379.72	4442.16	31.22
44.00	0.00	0.00	4317.66	4379.72	31.03
45.00	0.00	0.00	4255.97	4317.66	30.85
46.00	0.00	0.00	4194.65	4255.97	30.66
47.00	0.00	0.00	4133.70	4194.65	30.48
48.00	0.00	0.00	4073.11	4133.70	30.29
49.00	0.00	0.00	4012.90	4073.11	30.11
50.00	0.00	0.00	3953.06	4012.90	29.92
51.00	0.00	0.00	3893.59	3953.06	29.73
52.00	0.00	0.00	3834.49	3893.59	29.55
53.00	0.00	0.00	3775.76	3834.49	29.37
54.00	0.00	0.00	3717.40	3775.76	29.18
55.00	0.00	0.00	3659.42	3717.40	28.99
56.00	0.00	0.00	3601.80	3659.42	28.81
57.00	0.00	0.00	3544.55	3601.80	28.63
58.00	0.00	0.00	3487.67	3544.55	28.44
59.00	0.00	0.00	3431.16	3487.67	28.25
60.00	0.00	0.00	3375.02	3431.16	28.07
61.00	0.00	0.00	3319.25	3375.02	27.89
62.00	0.00	0.00	3263.86	3319.25	27.70
63.00	0.00	0.00	3208.83	3263.86	27.51
64.00	0.00	0.00	3154.18	3208.83	27.33
65.00	0.00	0.00	3099.89	3154.18	27.14
66.00	0.00	0.00	3045.97	3099.89	26.96
67.00	0.00	0.00	2992.43	3045.97	26.77

HYDROGRAPH DISCHARGE TABLE Cont'd

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
68.00	0.00	0.00	2939.25	2992.43	26.59
69.00	0.00	0.00	2886.45	2939.25	26.40
70.00	0.00	0.00	2834.01	2886.45	26.22
71.00	0.00	0.00	2782.02	2834.01	25.99
72.00	0.00	0.00	2730.50	2782.02	25.76
73.00	0.00	0.00	2679.43	2730.50	25.53
74.00	0.00	0.00	2628.83	2679.43	25.30
75.00	0.00	0.00	2578.69	2628.83	25.07
76.00	0.00	0.00	2529.01	2578.69	24.84
77.00	0.00	0.00	2479.80	2529.01	24.61
78.00	0.00	0.00	2431.04	2479.80	24.38
79.00	0.00	0.00	2382.75	2431.04	24.15
80.00	0.00	0.00	2334.92	2382.75	23.92
81.00	0.00	0.00	2287.55	2334.92	23.68
82.00	0.00	0.00	2240.64	2287.55	23.45
83.00	0.00	0.00	2194.20	2240.64	23.22
84.00	0.00	0.00	2148.21	2194.20	22.99
85.00	0.00	0.00	2102.69	2148.21	22.76
86.00	0.00	0.00	2057.63	2102.69	22.53
87.00	0.00	0.00	2013.03	2057.63	22.30
88.00	0.00	0.00	1968.89	2013.03	22.07
89.00	0.00	0.00	1925.21	1968.89	21.84
90.00	0.00	0.00	1882.00	1925.21	21.61
91.00	0.00	0.00	1839.25	1882.00	21.38
92.00	0.00	0.00	1797.05	1839.25	21.10
93.00	0.00	0.00	1755.39	1797.05	20.83
94.00	0.00	0.00	1714.28	1755.39	20.56
95.00	0.00	0.00	1673.71	1714.28	20.29
96.00	0.00	0.00	1633.68	1673.71	20.01
97.00	0.00	0.00	1594.20	1633.68	19.74
98.00	0.00	0.00	1555.26	1594.20	19.47
99.00	0.00	0.00	1516.87	1555.26	19.20
100.00	0.00	0.00	1479.02	1516.87	18.92
101.00	0.00	0.00	1441.72	1479.02	18.65
102.00	0.00	0.00	1404.96	1441.72	18.38
103.00	0.00	0.00	1368.74	1404.96	18.11
104.00	0.00	0.00	1333.07	1368.74	17.84
105.00	0.00	0.00	1297.94	1333.07	17.56
106.00	0.00	0.00	1263.35	1297.94	17.29
107.00	0.00	0.00	1229.31	1263.35	17.02
108.00	0.00	0.00	1195.82	1229.31	16.75
109.00	0.00	0.00	1162.86	1195.82	16.48

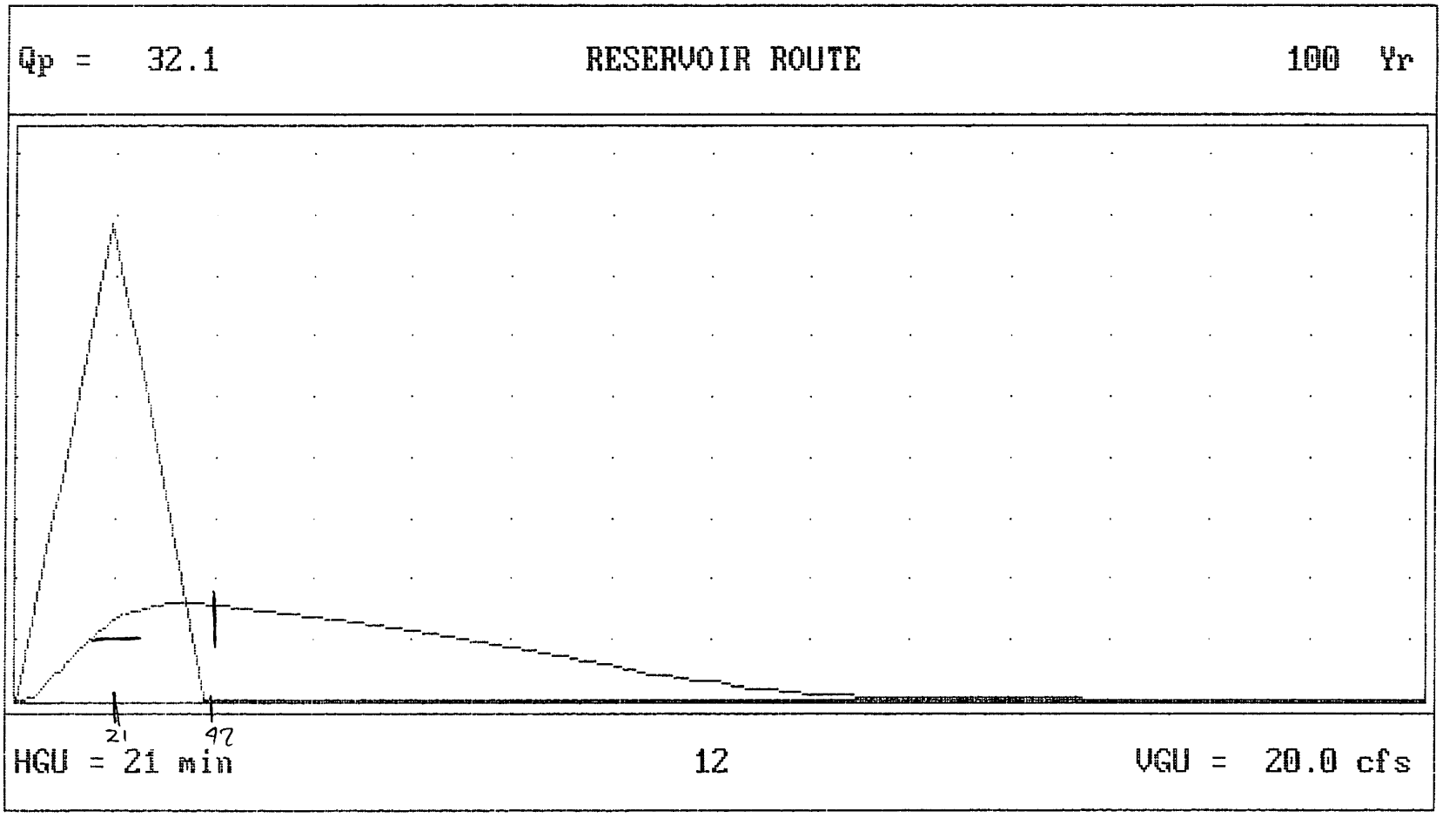
HYDROGRAPH DISCHARGE TABLE Cont'd

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
110.00	0.00	0.00	1130.46	1162.86	16.20
111.00	0.00	0.00	1098.59	1130.46	15.93
112.00	0.00	0.00	1067.27	1098.59	15.66
113.00	0.00	0.00	1036.50	1067.27	15.39
114.00	0.00	0.00	1006.26	1036.50	15.12
115.00	0.00	0.00	976.43	1006.26	14.92
116.00	0.00	0.00	947.00	976.43	14.71
117.00	0.00	0.00	918.26	947.00	14.37
118.00	0.00	0.00	890.31	918.26	13.97
119.00	0.00	0.00	863.15	890.31	13.58
120.00	0.00	0.00	836.73	863.15	13.21
121.00	0.00	0.00	811.04	836.73	12.85
122.00	0.00	0.00	785.83	811.04	12.60
123.00	0.00	0.00	760.89	785.83	12.47
124.00	0.00	0.00	736.22	760.89	12.34
125.00	0.00	0.00	712.18	736.22	12.02
126.00	0.00	0.00	688.92	712.18	11.63
127.00	0.00	0.00	666.40	688.92	11.26
128.00	0.00	0.00	644.67	666.40	10.86
129.00	0.00	0.00	623.73	644.67	10.47
130.00	0.00	0.00	603.55	623.73	10.09
131.00	0.00	0.00	584.12	603.55	9.72
132.00	0.00	0.00	565.45	584.12	9.34
133.00	0.00	0.00	547.51	565.45	8.97
134.00	0.00	0.00	530.26	547.51	8.62
135.00	0.00	0.00	513.44	530.26	8.41
136.00	0.00	0.00	496.78	513.44	8.33
137.00	0.00	0.00	480.27	496.78	8.25
138.00	0.00	0.00	463.92	480.27	8.18
139.00	0.00	0.00	447.84	463.92	8.04
140.00	0.00	0.00	432.40	447.84	7.72
141.00	0.00	0.00	417.56	432.40	7.42
142.00	0.00	0.00	403.31	417.56	7.13
143.00	0.00	0.00	389.61	403.31	6.85
144.00	0.00	0.00	376.24	389.61	6.68
145.00	0.00	0.00	362.99	376.24	6.63
146.00	0.00	0.00	349.86	362.99	6.57
147.00	0.00	0.00	336.84	349.86	6.51
148.00	0.00	0.00	323.94	336.84	6.45
149.00	0.00	0.00	311.29	323.94	6.32
150.00	0.00	0.00	299.66	311.29	5.81
151.00	0.00	0.00	288.97	299.66	5.35

HYDROGRAPH DISCHARGE TABLE Cont'd

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
152.00	0.00	0.00	279.11	288.97	4.93
153.00	0.00	0.00	269.99	279.11	4.56
154.00	0.00	0.00	261.54	269.99	4.22
155.00	0.00	0.00	253.73	261.54	3.91
156.00	0.00	0.00	246.16	253.73	3.79
157.00	0.00	0.00	238.70	246.16	3.73
158.00	0.00	0.00	231.36	238.70	3.67
159.00	0.00	0.00	224.13	231.36	3.61
160.00	0.00	0.00	217.17	224.13	3.48
161.00	0.00	0.00	210.64	217.17	3.26
162.00	0.00	0.00	204.53	210.64	3.05
163.00	0.00	0.00	198.81	204.53	2.86
164.00	0.00	0.00	193.45	198.81	2.68
165.00	0.00	0.00	188.43	193.45	2.51
166.00	0.00	0.00	183.66	188.43	2.38
167.00	0.00	0.00	179.15	183.66	2.26
168.00	0.00	0.00	174.88	179.15	2.14
169.00	0.00	0.00	170.83	174.88	2.02
170.00	0.00	0.00	166.99	170.83	1.92
171.00	0.00	0.00	163.36	166.99	1.82
172.00	0.00	0.00	159.91	163.36	1.72
173.00	0.00	0.00	156.64	159.91	1.64
174.00	0.00	0.00	153.49	156.64	1.57
175.00	0.00	0.00	150.47	153.49	1.51
176.00	0.00	0.00	147.58	150.47	1.45
177.00	0.00	0.00	144.81	147.58	1.39
178.00	0.00	0.00	142.15	144.81	1.33
179.00	0.00	0.00	139.59	142.15	1.28
180.00	0.00	0.00	137.14	139.59	1.22
181.00	0.00	0.00	134.80	137.14	1.17
182.00	0.00	0.00	132.54	134.80	1.13
183.00	0.00	0.00	130.39	132.54	1.08
184.00	0.00	0.00	128.31	130.39	1.04
185.00	0.00	0.00	126.31	128.31	1.00

Maximum outflow (cfs) = 32.15
Maximum storage (cu ft) = 141916
Maximum elevation (ft) = 581.52



MAX STORAGE = 141916

MAX ELEVATION = 581.52

HYDROLOGIC REPORT FOR

GLEN EAGLE GOLF COURSE

DETENTION AND LAKE DESIGN

25 YEAR/20 MIN. STORM

LAKE #17

PREPARED BY:

PICKETT RAY & SILVER, INC.

333 MID RIVERS MALL DRIVE

ST. PETERS, MO. 63376

DESIGNER: TANYA DIETZ

HYDROLOGIC REPORT

GLEN EAGLE GOLF COURSE
LAKE #17.....
INFLOW.....

Hyd. No. 17

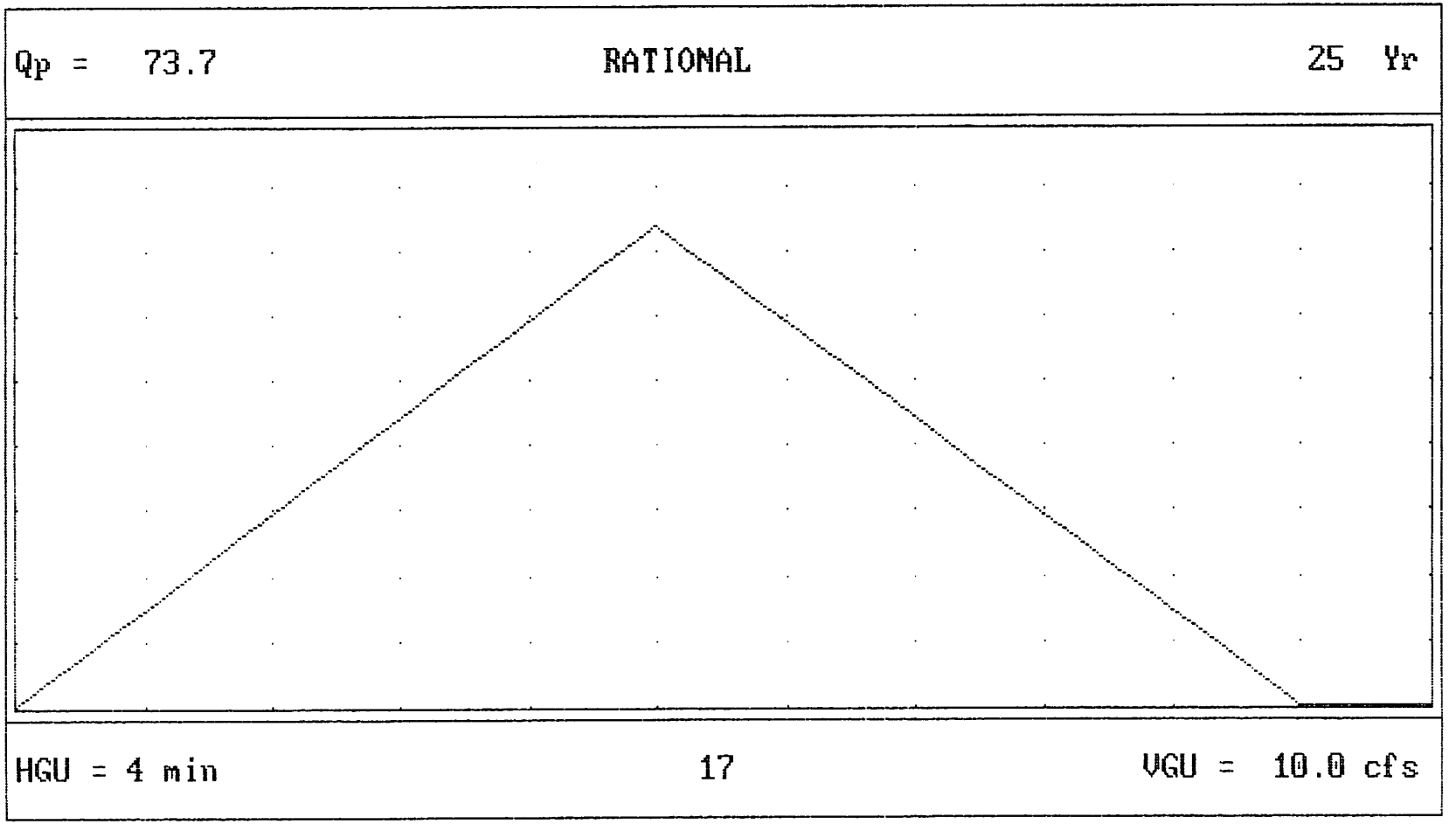
Hydrograph type	= RATIONAL	Peak ~~discharge~~ INFLOW	= 73.70 cfs
Storm frequency	= 25 yr	Time interval	= 1 min
Time of conc.	= 20 min	Intensity	= 5.03 in/hr
Runoff coeff.	= .9959	Basin area	= 14.7 ac

HYDROGRAPH DISCHARGE TABLE

TIME--OUTFLOW (min cfs)		TIME--OUTFLOW (min cfs)		TIME--OUTFLOW (min cfs)		TIME--OUTFLOW (min cfs)	
1.00	3.68	2.00	7.37	3.00	11.05	4.00	14.74
5.00	18.42	6.00	22.11	7.00	25.79	8.00	29.48
9.00	33.16	10.00	36.85	11.00	40.53	12.00	44.22
13.00	47.90	14.00	51.59	15.00	55.27	16.00	58.96
17.00	62.64	18.00	66.33	19.00	70.01	20.00	73.70
21.00	70.01	22.00	66.33	23.00	62.64	24.00	58.96
25.00	55.27	26.00	51.59	27.00	47.90	28.00	44.22
29.00	40.53	30.00	36.85	31.00	33.16	32.00	29.48
33.00	25.79	34.00	22.11	35.00	18.42	36.00	14.74
37.00	11.05	38.00	7.37	39.00	3.68	40.00	0.00

Peak Inflow:
Offsite (Res.) 5.20 Ac. x 3.26 = 16.95 cfs Q25
Onsite (Res.) 6.61 Ac. x 3.26 = 21.55 cfs Q25
Onsite (Golf) 2.90 Ac. x 2.31 = 6.70 cfs Q25
Total = 14.70 Acres = 45.20 cfs Q25
Outflow From Basin #13 = 28.50 cfs Q25
Total = 73.70 cfs Q25

NOTE: Offsite Areas Are Calculated As Being Developed Under Their Current Zoning Classification.



VOL = (cuft/acft) = 88440 / 2.030

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5 OUTLET STRUCTURES
 Reservoir:  5
 CULVERT STRUC  A. Q=CoA[2gh/k]^.5      CULVERT STRUC  B. Q=CoA[2gh/k]^.5

 1. WIDTH  (in)     = 0..                 9. WIDTH  (in)     = 0..
 2. HEIGHT (in)     = 0..                10. HEIGHT (in)     = 0..
 3. No. BARRELS     = 0..                11. No. BARRELS     = 0..
 4. INVERT ELEV.    = 0.......           12. INVERT ELEV.    = 0.......
 5. Co = 0.60                            13. Co = 0.60
 6. CULVERT LENGTH (ft) = 0...           14. CULVERT LENGTH (ft) = 0...
 7. CULVERT SLOPE (%)   = 0...           15. CULVERT SLOPE (%)   = 0...
 8. MANNING'S N-VALUE   = .013           16. MANNING'S N-VALUE   = .013
                                         17. MULTI-STAGE OPTION ? (Y/N) N

 WEIR STRUCTURE A.      Q=CwLH^EXP       WEIR STRUCTURE B.      Q=CwLH^EXP

 18. CREST LENGTH (ft)  = 6.....         23. CREST LENGTH (ft)  = 0.....
 19. CREST ELEVATION    = 569....        24. CREST ELEVATION    = 0.....
 20. Cw = 3.00                           25. Cw = 3.00
 21. EXP = 1.50                          26. EXP = 1.50
 22. MULTI-STAGE OPTION ? (Y/N) N        27. MULTI-STAGE OPTION ? (Y/N) N

hange item number: 0                                          DY to cont
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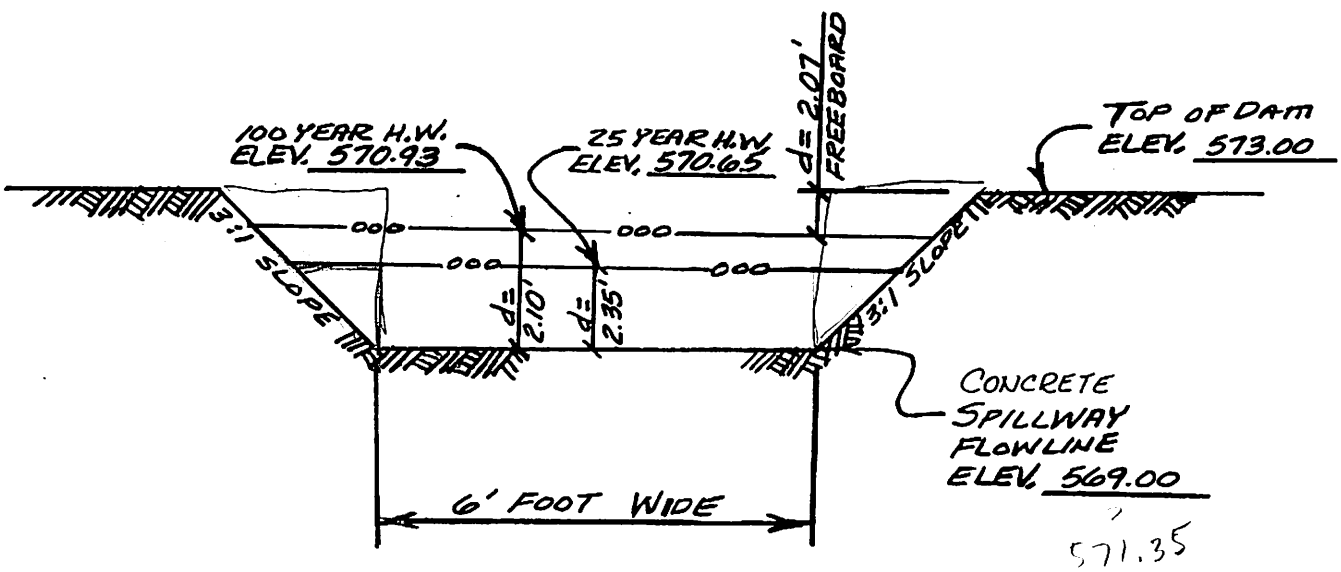


SPILLWAY DETAIL

N.T.S.

HYDROLOGIC REPORT

STAGE / STORAGE / DISCHARGE

RESERVOIR NUMBER = 5

RESERVOIR NAME = LAKE #17....
STORAGE VALUES WERE INPUT MANUALLY

DISCHARGE VALUES: CULVERT STRUCT A. Q = .6 *A*[2gh/k]^.5 * 0
CULVERT STRUCT B. Q = .6 *A*[2gh/k]^.5 * 0
WEIR STRUCT A. Q = 3 * 6 * H ^ 1.5
WEIR STRUCT B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs)			
	CULVERT A	CULVERT B	WEIR A	WEIR B
569.00	0.00	0.00	0.00	0.00
570.00	0.00	0.00	18.00	0.00
571.00	0.00	0.00	50.91	0.00
572.00	0.00	0.00	93.53	0.00
573.00	0.00	0.00	144.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00

STAGE	ELEVATION	INC STOR cu ft	TOT STOR cu ft	OUTFLOW cfs
0.00	569.00	0	0	0.00
1.00	570.00	27825	27825	18.00
2.00	571.00	31500	59325	50.91
3.00	572.00	35087	94412	93.53
4.00	573.00	40025	134437	144.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00

Reservoir No. 5 STAGE / STORAGE / DISCHARGE LAKE #17....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * 0
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * 0
Weir struct A. Q = 3 * 6 * H ^ 1.5
Weir struct B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs) CULVERT A	CULVERT B		WEIR A	WEIR B	TOTAL
569.00	0.00	0.00	-	0.00	0.00	0.00
569.10	0.00	0.00	-	0.57	0.00	0.57
569.20	0.00	0.00	-	1.61	0.00	1.61
569.30	0.00	0.00	-	2.96	0.00	2.96
569.40	0.00	0.00	-	4.55	0.00	4.55
569.50	0.00	0.00	-	6.36	0.00	6.36
569.60	0.00	0.00	-	8.36	0.00	8.36
569.70	0.00	0.00	-	10.54	0.00	10.54
569.80	0.00	0.00	-	12.88	0.00	12.88
569.90	0.00	0.00	-	15.36	0.00	15.36
570.00	0.00	0.00	-	18.00	0.00	18.00

[PgDn] [Esc] to exit

Reservoir No. 5 STAGE / STORAGE / DISCHARGE LAKE #17....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * 0
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * 0
Weir struct A. Q = 3 * 6 * H ^ 1.5
Weir struct B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs) CULVERT A	CULVERT B		WEIR A	WEIR B	TOTAL
570.00	0.00	0.00	-	18.00	0.00	18.00
570.10	0.00	0.00	-	20.77	0.00	20.77
570.20	0.00	0.00	-	23.66	0.00	23.66
570.30	0.00	0.00	-	26.68	0.00	26.68
570.40	0.00	0.00	-	29.81	0.00	29.81
570.50	0.00	0.00	-	33.06	0.00	33.06
570.60	0.00	0.00	-	36.42	0.00	36.42
570.70	0.00	0.00	-	39.89	0.00	39.89
570.80	0.00	0.00	-	43.46	0.00	43.46
570.90	0.00	0.00	-	47.13	0.00	47.13
571.00	0.00	0.00	-	50.91	0.00	50.91

[PgDn] [Esc] to exit

Reservoir No. 5 STAGE / STORAGE / DISCHARGE LAKE #17....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * O
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * O
Weir struct A. Q = 3 * 6 * H ^ 1.5
Weir struct B. Q = 3 * O * H ^ 1.5

ELEVATION	DISCHARGE (cfs) CULVERT A	CULVERT B	WEIR A	WEIR B	TOTAL
571.00	0.00	0.00 -	50.91	0.00	50.91
571.10	0.00	0.00 -	54.78	0.00	54.78
571.20	0.00	0.00 -	58.73	0.00	58.73
571.30	0.00	0.00 -	62.78	0.00	62.78
571.40	0.00	0.00 -	66.92	0.00	66.92
571.50	0.00	0.00 -	71.15	0.00	71.15
571.60	0.00	0.00 -	75.46	0.00	75.46
571.70	0.00	0.00 -	79.85	0.00	79.85
571.80	0.00	0.00 -	84.33	0.00	84.33
571.90	0.00	0.00 -	88.88	0.00	88.88
572.00	0.00	0.00 -	93.53	0.00	93.53

[PgDn] [Esc] to exit

Reservoir No. 5 STAGE / STORAGE / DISCHARGE LAKE #17....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * O
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * O
Weir struct A. Q = 3 * 6 * H ^ 1.5
Weir struct B. Q = 3 * O * H ^ 1.5

ELEVATION	DISCHARGE (cfs) CULVERT A	CULVERT B	WEIR A	WEIR B	TOTAL
572.00	0.00	0.00 -	93.53	0.00	93.53
572.10	0.00	0.00 -	98.24	0.00	98.24
572.20	0.00	0.00 -	103.04	0.00	103.04
572.30	0.00	0.00 -	107.90	0.00	107.90
572.40	0.00	0.00 -	112.84	0.00	112.84
572.50	0.00	0.00 -	117.86	0.00	117.86
572.60	0.00	0.00 -	122.94	0.00	122.94
572.70	0.00	0.00 -	128.10	0.00	128.10
572.80	0.00	0.00 -	133.33	0.00	133.33
572.90	0.00	0.00 -	138.62	0.00	138.62
573.00	0.00	0.00 -	144.00	0.00	144.00

[PgDn] [Esc] to exit

5 STAGE / STORAGE TABLE F

1. RESERVOIR No = 5. 2. RESERVOIR NAME = LAKE #17....

3. S = Ks * Z^b

Ks = 0..... b = 0.....

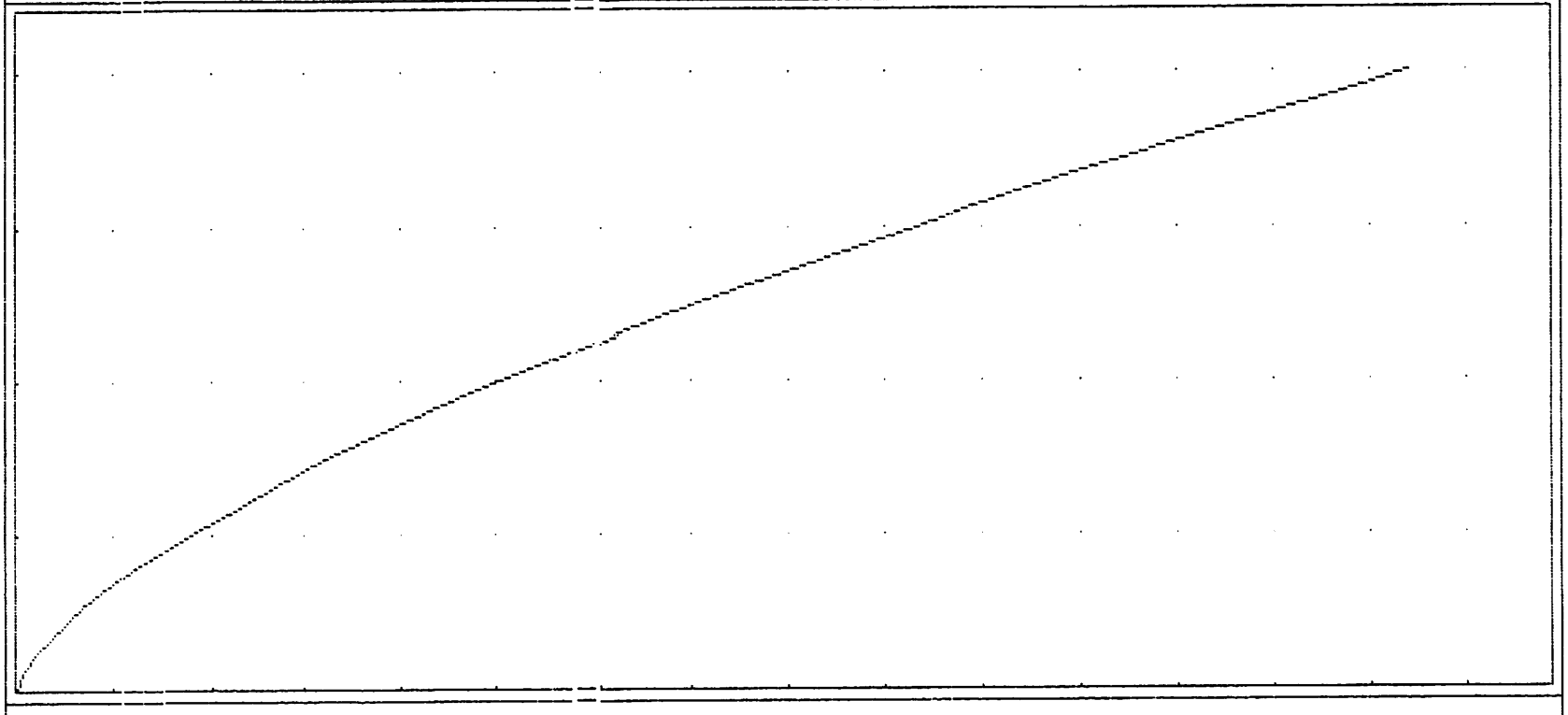
START ELEV = 0..... INCREMENT = 0...

	STAGE ft	ELEVATION ft	CO AREA sq ft	INC STORAGE cu ft	TOT STORAGE cu ft
4	0.00	569.00.	25975...	0	0
5	1.00	570.00.	29675...	27825	27825
6	2.00	571.00.	33325...	31500	59325
7	3.00	572.00.	36850...	35087	94412
8	4.00	573.00.	43200...	40025	134437
9	0.00	0.00.	0.....	0	0
10	0.00	0.00.	0.....	0	0
11	0.00	0.00.	0.....	0	0
12	0.00	0.00.	0.....	0	0
13	0.00	0.00.	0.....	0	0
14	0.00	0.00.	0.....	0	0

R to reset

hange item number: 0 DY to cont

STAGE / DISCHARGE CURVE



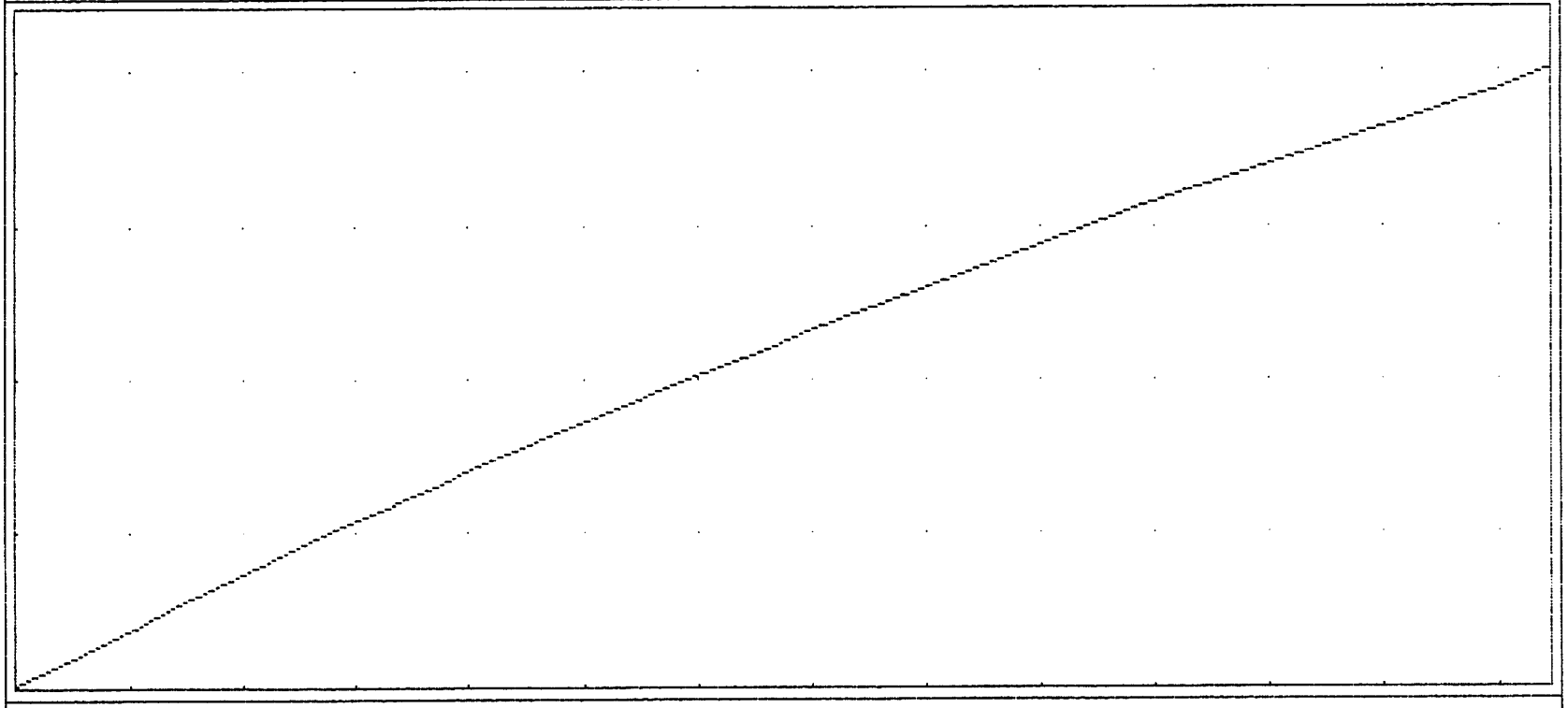
HGU = 10.0 cfs

VGU = 1.0 ft

[↵] Cont

[Esc] Exit

STAGE / STORAGE CURVE



HGU = 10000 cu ft VGU = 1.0 ft

[↵] Cont [Esc] Exit

HYDROLOGIC REPORT

GLEN EAGLE GOLF COURSE
.....
LAKE #17.....

Hyd. No. 18

Hydrograph type = RESERVOIR ROUTE Peak discharge = 38.19 cfs
Storm frequency = 25 yr Time interval = 1 min
Inflow hyd. no. = 17 Reservoir no. = 5

HYDROGRAPH DISCHARGE TABLE

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
0					0
1.00	3.68	7.37	3.64	3.68	0.02
2.00	7.37	11.05	14.52	14.69	0.09
3.00	11.05	14.74	32.54	32.94	0.20
4.00	14.74	18.42	57.62	58.33	0.36
5.00	18.42	22.11	89.68	90.79	0.55
6.00	22.11	25.79	128.26	130.22	0.98
7.00	25.79	29.48	173.19	176.16	1.49
8.00	29.48	33.16	224.06	228.46	2.20
9.00	33.16	36.85	280.60	286.70	3.05
10.00	36.85	40.53	342.36	350.62	4.13
11.00	40.53	44.22	408.95	419.74	5.40
12.00	44.22	47.90	479.98	493.70	6.86
13.00	47.90	51.59	555.05	572.11	8.53
14.00	51.59	55.27	633.71	654.54	10.42
15.00	55.27	58.96	715.53	740.57	12.52
16.00	58.96	62.64	800.10	829.76	14.83
17.00	62.64	66.33	887.02	921.70	17.34
18.00	66.33	70.01	976.37	1015.99	19.81
19.00	70.01	73.70	1068.00	1112.72	22.36
20.00	73.70	70.01	1161.57	1211.71	25.07
21.00	70.01	66.33	1249.83	1305.28	27.72
22.00	66.33	62.64	1326.02	1386.18	30.08
23.00	62.64	58.96	1390.70	1454.99	32.15
24.00	58.96	55.27	1444.52	1512.30	33.89
25.00	55.27	51.59	1488.08	1558.75	35.33

HYDROGRAPH DISCHARGE TABLE Cont'd

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
26.00	51.59	47.90	1522.03	1594.95	36.46
27.00	47.90	44.22	1546.91	1621.53	37.31
28.00	44.22	40.53	1563.31	1639.04	37.87
29.00	40.53	36.85	1571.75	1648.06	38.15
30.00	36.85	33.16	1572.76	1649.14	38.19
31.00	33.16	29.48	1566.80	1642.77	37.99
32.00	29.48	25.79	1554.33	1629.44	37.56
33.00	25.79	22.11	1535.75	1609.60	36.93
34.00	22.11	18.42	1511.44	1583.65	36.11
35.00	18.42	14.74	1481.73	1551.98	35.12
36.00	14.74	11.05	1446.95	1514.89	33.97
37.00	11.05	7.37	1407.38	1472.74	32.68
38.00	7.37	3.68	1363.27	1425.81	31.27
39.00	3.68	0.00	1314.87	1374.32	29.73
40.00	0.00	0.00	1262.33	1318.55	28.11
41.00	0.00	0.00	1209.36	1262.33	26.49
42.00	0.00	0.00	1159.35	1209.36	25.01
43.00	0.00	0.00	1112.12	1159.35	23.61
44.00	0.00	0.00	1067.44	1112.12	22.34
45.00	0.00	0.00	1025.14	1067.44	21.15
46.00	0.00	0.00	985.06	1025.14	20.04
47.00	0.00	0.00	947.03	985.06	19.02
48.00	0.00	0.00	910.95	947.03	18.04
49.00	0.00	0.00	876.86	910.95	17.04
50.00	0.00	0.00	844.65	876.86	16.10
51.00	0.00	0.00	814.21	844.65	15.22
52.00	0.00	0.00	785.36	814.21	14.43
53.00	0.00	0.00	758.02	785.36	13.67
54.00	0.00	0.00	732.10	758.02	12.96
55.00	0.00	0.00	707.47	732.10	12.32
56.00	0.00	0.00	684.05	707.47	11.71
57.00	0.00	0.00	661.78	684.05	11.13
58.00	0.00	0.00	640.61	661.78	10.59
59.00	0.00	0.00	620.41	640.61	10.10
60.00	0.00	0.00	601.14	620.41	9.64
61.00	0.00	0.00	582.75	601.14	9.19
62.00	0.00	0.00	565.21	582.75	8.77
63.00	0.00	0.00	548.47	565.21	8.37
64.00	0.00	0.00	532.43	548.47	8.02
65.00	0.00	0.00	517.08	532.43	7.68
66.00	0.00	0.00	502.37	517.08	7.35
67.00	0.00	0.00	488.29	502.37	7.04

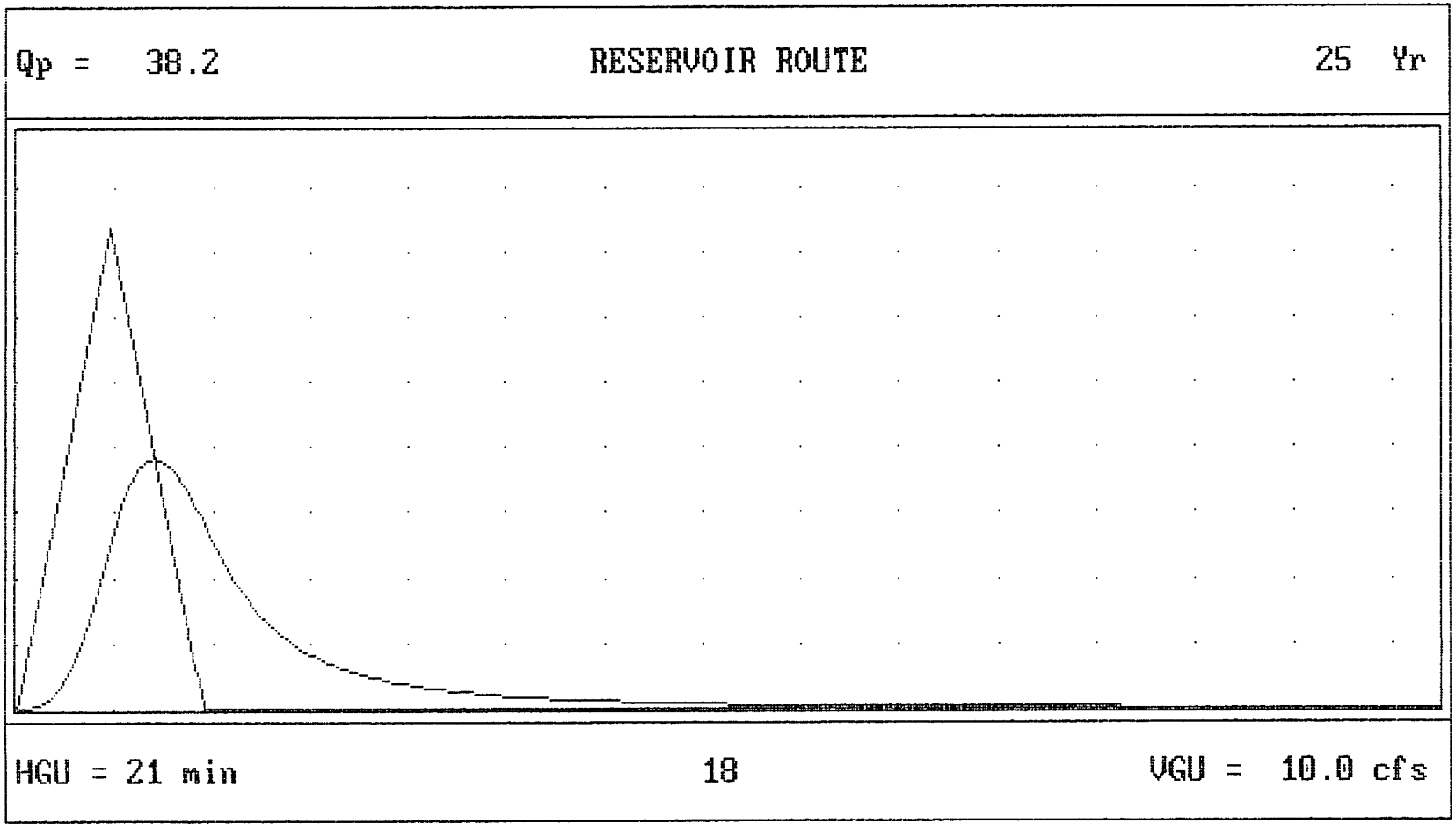
HYDROGRAPH DISCHARGE TABLE Cont'd

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
68.00	0.00	0.00	474.80	488.29	6.75
69.00	0.00	0.00	461.87	474.80	6.46
70.00	0.00	0.00	449.47	461.87	6.20
71.00	0.00	0.00	437.53	449.47	5.97
72.00	0.00	0.00	426.06	437.53	5.74
73.00	0.00	0.00	415.02	426.06	5.52
74.00	0.00	0.00	404.41	415.02	5.31
75.00	0.00	0.00	394.20	404.41	5.10
76.00	0.00	0.00	384.38	394.20	4.91
77.00	0.00	0.00	374.94	384.38	4.72
78.00	0.00	0.00	365.85	374.94	4.54
79.00	0.00	0.00	357.08	365.85	4.39
80.00	0.00	0.00	348.60	357.08	4.24
81.00	0.00	0.00	340.41	348.60	4.10
82.00	0.00	0.00	332.49	340.41	3.96
83.00	0.00	0.00	324.84	332.49	3.82
84.00	0.00	0.00	317.45	324.84	3.69
85.00	0.00	0.00	310.32	317.45	3.57
86.00	0.00	0.00	303.42	310.32	3.45
87.00	0.00	0.00	296.75	303.42	3.33
88.00	0.00	0.00	290.31	296.75	3.22
89.00	0.00	0.00	284.09	290.31	3.11
90.00	0.00	0.00	278.08	284.09	3.01
91.00	0.00	0.00	272.26	278.08	2.91
92.00	0.00	0.00	266.60	272.26	2.83
93.00	0.00	0.00	261.11	266.60	2.75
94.00	0.00	0.00	255.77	261.11	2.67
95.00	0.00	0.00	250.58	255.77	2.59
96.00	0.00	0.00	245.55	250.58	2.52
97.00	0.00	0.00	240.66	245.55	2.45
98.00	0.00	0.00	235.90	240.66	2.38
99.00	0.00	0.00	231.29	235.90	2.31
100.00	0.00	0.00	226.80	231.29	2.24
101.00	0.00	0.00	222.45	226.80	2.18
102.00	0.00	0.00	218.22	222.45	2.12
103.00	0.00	0.00	214.11	218.22	2.05
104.00	0.00	0.00	210.12	214.11	2.00
105.00	0.00	0.00	206.24	210.12	1.94
106.00	0.00	0.00	202.47	206.24	1.88
107.00	0.00	0.00	198.81	202.47	1.83
108.00	0.00	0.00	195.26	198.81	1.78
109.00	0.00	0.00	191.81	195.26	1.73

HYDROGRAPH DISCHARGE TABLE Cont'd

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
110.00	0.00	0.00	188.45	191.81	1.68
111.00	0.00	0.00	185.20	188.45	1.63
112.00	0.00	0.00	182.02	185.20	1.59
113.00	0.00	0.00	178.91	182.02	1.55
114.00	0.00	0.00	175.88	178.91	1.52
115.00	0.00	0.00	172.91	175.88	1.48
116.00	0.00	0.00	170.00	172.91	1.45
117.00	0.00	0.00	167.16	170.00	1.42
118.00	0.00	0.00	164.39	167.16	1.39
119.00	0.00	0.00	161.67	164.39	1.36
120.00	0.00	0.00	159.02	161.67	1.33
121.00	0.00	0.00	156.42	159.02	1.30
122.00	0.00	0.00	153.89	156.42	1.27
123.00	0.00	0.00	151.40	153.89	1.24
124.00	0.00	0.00	148.98	151.40	1.21
125.00	0.00	0.00	146.60	148.98	1.19
126.00	0.00	0.00	144.28	146.60	1.16
127.00	0.00	0.00	142.02	144.28	1.13
128.00	0.00	0.00	139.80	142.02	1.11
129.00	0.00	0.00	137.63	139.80	1.08
130.00	0.00	0.00	135.51	137.63	1.06
131.00	0.00	0.00	133.43	135.51	1.04
132.00	0.00	0.00	131.41	133.43	1.01

Maximum outflow (cfs) = 38.19
Maximum storage (cu ft) = 48328
Maximum elevation (ft) = 570.65



MAX STORAGE = 48328

MAX ELEVATION = 570.65

HYDROLOGIC REPORT FOR

GLEN EAGLE GOLF COURSE

DETENTION AND LAKE DESIGN

100 YEAR/20 MIN. STORM

LAKE #17

PREPARED BY:

PICKETT RAY & SILVER, INC.

333 MID RIVERS MALL DRIVE

ST. PETERS, MO. 63376

DESIGNER: TANYA DIETZ

HYDROLOGIC REPORT

GLEN EAGLE GOLF COURSE
LAKE #17.....
INFLOW.....

Hyd. No. 19

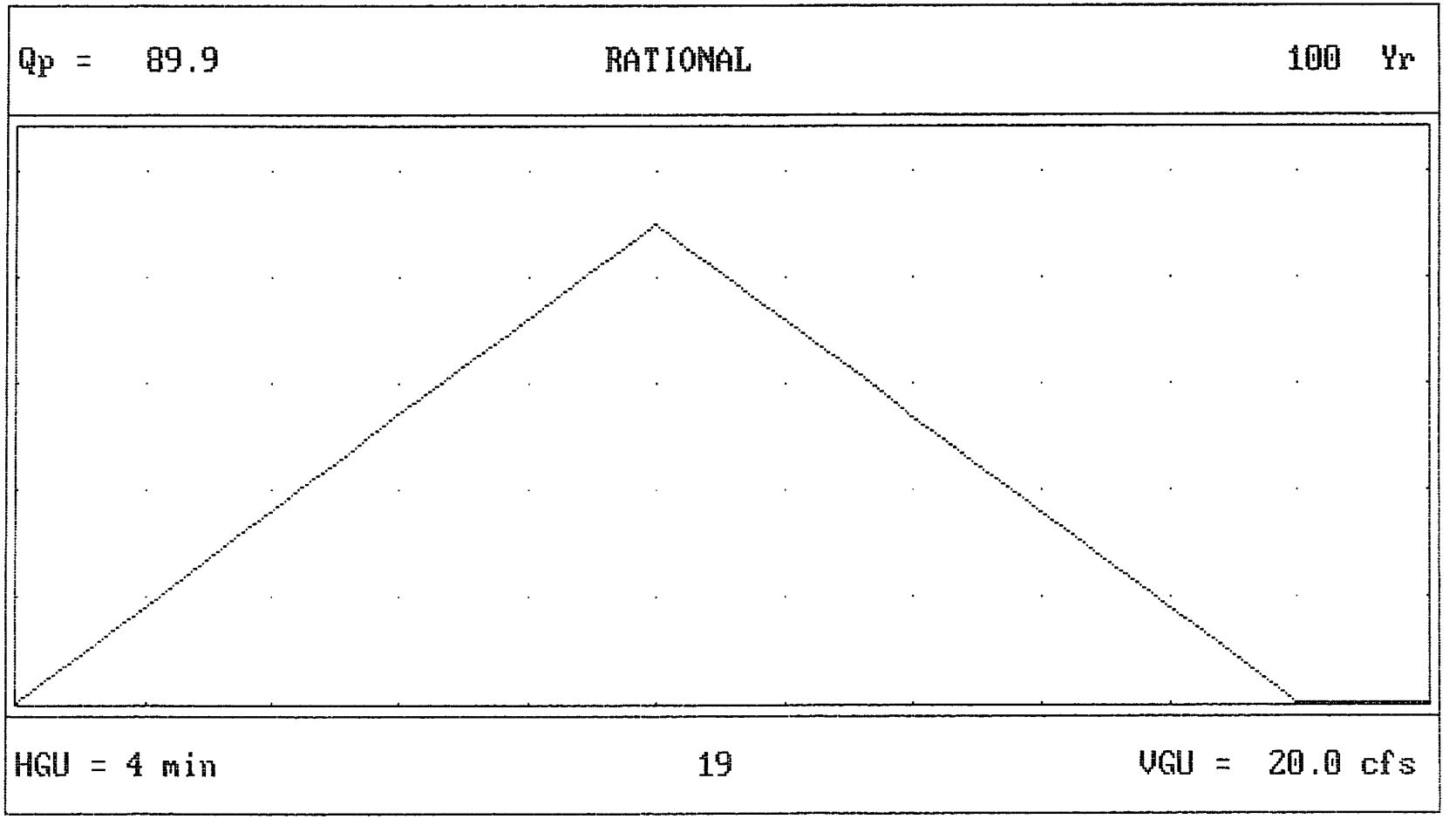
Hydrograph type	= RATIONAL	Peak ~~discharge~~ INFLOW	= 89.95 cfs
Storm frequency	= 100 yr	Time interval	= 1 min
Time of conc.	= 20 min	Intensity	= 6.17 in/hr
Runoff coeff.	= .9911	Basin area	= 14.7 ac

HYDROGRAPH DISCHARGE TABLE

TIME--OUTFLOW (min cfs)		TIME--OUTFLOW (min cfs)		TIME--OUTFLOW (min cfs)		TIME--OUTFLOW (min cfs)	
1.00	4.50	2.00	8.99	3.00	13.49	4.00	17.99
5.00	22.49	6.00	26.98	7.00	31.48	8.00	35.98
9.00	40.48	10.00	44.97	11.00	49.47	12.00	53.97
13.00	58.47	14.00	62.96	15.00	67.46	16.00	71.96
17.00	76.46	18.00	80.95	19.00	85.45	20.00	89.95
21.00	85.45	22.00	80.95	23.00	76.46	24.00	71.96
25.00	67.46	26.00	62.96	27.00	58.47	28.00	53.97
29.00	49.47	30.00	44.97	31.00	40.48	32.00	35.98
33.00	31.48	34.00	26.98	35.00	22.49	36.00	17.99
37.00	13.49	38.00	8.99	39.00	4.50	40.00	0.00

Peak Inflow:
Offsite (Res.) 5.20 Ac. x 4.17 = 21.68 cfs Q100
Onsite (Res.) 6.61 Ac. x 4.17 = 27.56 cfs Q100
Onsite (Golf) 2.90 Ac. x 2.95 = 8.56 cfs Q100
Total = 14.70 Acres = 57.80 cfs Q100
Outflow From Basin #13 = 32.15 cfs Q100
Total = 89.95 cfs Q100

NOTE: Offsite Areas Are Calculated As Being Developed Under Their Current Zoning Classification.



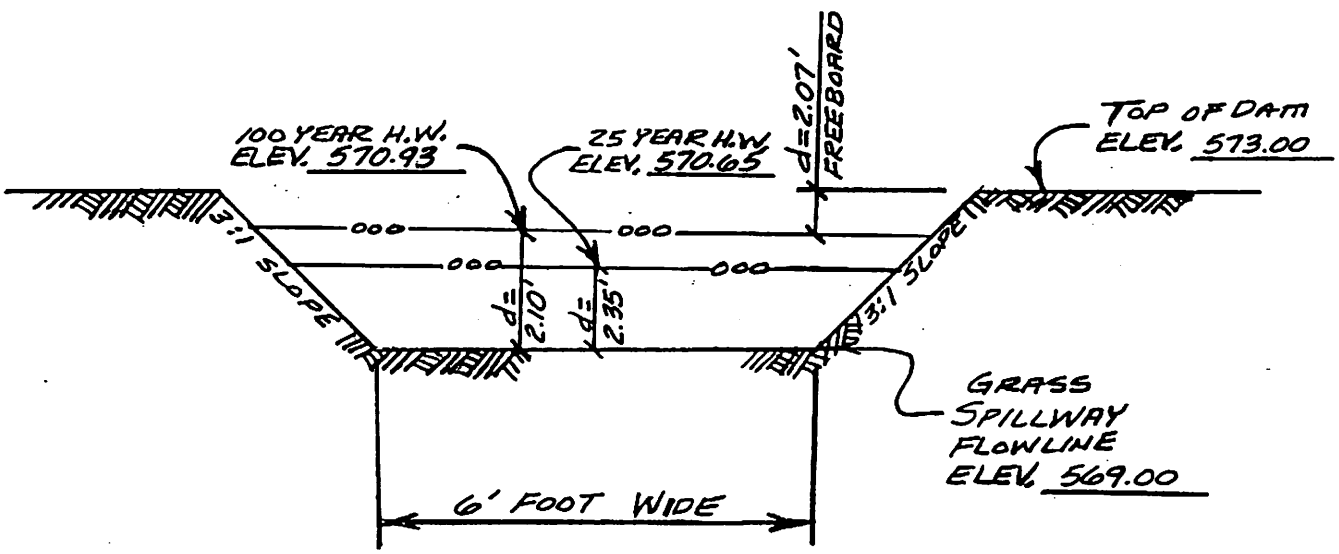
VOL = (cuft/acft) = 107940 / 2.478

5 OUTLET STRUCTURES

Reservoir: 5

CULVERT STRUC A. Q=CoA[2gh/k]^.5		CULVERT STRUC B. Q=CoA[2gh/k]^.5	
1. WIDTH (in)	= 0..	9. WIDTH (in)	= 0..
2. HEIGHT (in)	= 0..	10. HEIGHT (in)	= 0..
3. No. BARRELS	= 0..	11. No. BARRELS	= 0..
4. INVERT ELEV.	= 0.....	12. INVERT ELEV.	= 0.....
5. Co = 0.60		13. Co = 0.60	
6. CULVERT LENGTH (ft)	= 0...	14. CULVERT LENGTH (ft)	= 0...
7. CULVERT SLOPE (%)	= 0...	15. CULVERT SLOPE (%)	= 0...
8. MANNING'S N-VALUE	= .013	16. MANNING'S N-VALUE	= .013
		17. MULTI-STAGE OPTION ? (Y/N)	N
WEIR STRUCTURE A. Q=CwLH^EXP		WEIR STRUCTURE B. Q=CwLH^EXP	
18. CREST LENGTH (ft)	= 6.....	23. CREST LENGTH (ft)	= 0.....
19. CREST ELEVATION	= 569....	24. CREST ELEVATION	= 0.....
20. Cw = 3.00		25. Cw = 3.00	
21. EXP = 1.50		26. EXP = 1.50	
22. MULTI-STAGE OPTION ? (Y/N)	N	27. MULTI-STAGE OPTION ? (Y/N)	N

Change item number: 0 DY to cont



SPILLWAY DETAIL

N.T.S.

HYDROLOGIC REPORT

STAGE / STORAGE / DISCHARGE

RESERVOIR NUMBER = 5

RESERVOIR NAME = LAKE #17....
STORAGE VALUES WERE INPUT MANUALLY

DISCHARGE VALUES: CULVERT STRUCT A. Q = .6 *A*[2gh/k]^.5 * 0
CULVERT STRUCT B. Q = .6 *A*[2gh/k]^.5 * 0
WEIR STRUCT A. Q = 3 * 6 * H ^ 1.5
WEIR STRUCT B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs)			
	CULVERT A	CULVERT B	WEIR A	WEIR B
569.00	0.00	0.00	0.00	0.00
570.00	0.00	0.00	18.00	0.00
571.00	0.00	0.00	50.91	0.00
572.00	0.00	0.00	93.53	0.00
573.00	0.00	0.00	144.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00

STAGE	ELEVATION	INC STOR cu ft	TOT STOR cu ft	OUTFLOW cfs
0.00	569.00	0	0	0.00
1.00	570.00	27825	27825	18.00
2.00	571.00	31500	59325	50.91
3.00	572.00	35087	94412	93.53
4.00	573.00	40025	134437	144.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00

Reservoir No. 5 STAGE / STORAGE / DISCHARGE LAKE #17....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * 0
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * 0
Weir struct A. Q = 3 * 6 * H ^ 1.5
Weir struct B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs)				
	CULVERT A	CULVERT B	WEIR A	WEIR B	TOTAL
569.00	0.00	0.00 -	0.00	0.00	0.00
569.10	0.00	0.00 -	0.57	0.00	0.57
569.20	0.00	0.00 -	1.61	0.00	1.61
569.30	0.00	0.00 -	2.96	0.00	2.96
569.40	0.00	0.00 -	4.55	0.00	4.55
569.50	0.00	0.00 -	6.36	0.00	6.36
569.60	0.00	0.00 -	8.36	0.00	8.36
569.70	0.00	0.00 -	10.54	0.00	10.54
569.80	0.00	0.00 -	12.88	0.00	12.88
569.90	0.00	0.00 -	15.36	0.00	15.36
570.00	0.00	0.00 -	18.00	0.00	18.00

[PgDn] [Esc] to exit

Reservoir No. 5 STAGE / STORAGE / DISCHARGE LAKE #17....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * 0
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * 0
Weir struct A. Q = 3 * 6 * H ^ 1.5
Weir struct B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs)				
	CULVERT A	CULVERT B	WEIR A	WEIR B	TOTAL
570.00	0.00	0.00 -	18.00	0.00	18.00
570.10	0.00	0.00 -	20.77	0.00	20.77
570.20	0.00	0.00 -	23.66	0.00	23.66
570.30	0.00	0.00 -	26.68	0.00	26.68
570.40	0.00	0.00 -	29.81	0.00	29.81
570.50	0.00	0.00 -	33.06	0.00	33.06
570.60	0.00	0.00 -	36.42	0.00	36.42
570.70	0.00	0.00 -	39.89	0.00	39.89
570.80	0.00	0.00 -	43.46	0.00	43.46
570.90	0.00	0.00 -	47.13	0.00	47.13
571.00	0.00	0.00 -	50.91	0.00	50.91

[PgDn] [Esc] to exit

Reservoir No. 5 STAGE / STORAGE / DISCHARGE LAKE #17....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * O
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * O
Weir struct A. Q = 3 * 6 * H ^ 1.5
Weir struct B. Q = 3 * O * H ^ 1.5

ELEVATION	DISCHARGE (cfs)				
	CULVERT A	CULVERT B	WEIR A	WEIR B	TOTAL
571.00	0.00	0.00 -	50.91	0.00	50.91
571.10	0.00	0.00 -	54.78	0.00	54.78
571.20	0.00	0.00 -	58.73	0.00	58.73
571.30	0.00	0.00 -	62.78	0.00	62.78
571.40	0.00	0.00 -	66.92	0.00	66.92
571.50	0.00	0.00 -	71.15	0.00	71.15
571.60	0.00	0.00 -	75.46	0.00	75.46
571.70	0.00	0.00 -	79.85	0.00	79.85
571.80	0.00	0.00 -	84.33	0.00	84.33
571.90	0.00	0.00 -	88.88	0.00	88.88
572.00	0.00	0.00 -	93.53	0.00	93.53

[PgDn] [Esc] to exit

Reservoir No. 5 STAGE / STORAGE / DISCHARGE LAKE #17....

Storage values were input manually
Discharge values: Culvert struct A. Q = .6 * A * [2gh/k]^.5 * O
Culvert struct B. Q = .6 * A * [2gh/k]^.5 * O
Weir struct A. Q = 3 * 6 * H ^ 1.5
Weir struct B. Q = 3 * O * H ^ 1.5

ELEVATION	DISCHARGE (cfs)				
	CULVERT A	CULVERT B	WEIR A	WEIR B	TOTAL
572.00	0.00	0.00 -	93.53	0.00	93.53
572.10	0.00	0.00 -	98.24	0.00	98.24
572.20	0.00	0.00 -	103.04	0.00	103.04
572.30	0.00	0.00 -	107.90	0.00	107.90
572.40	0.00	0.00 -	112.84	0.00	112.84
572.50	0.00	0.00 -	117.86	0.00	117.86
572.60	0.00	0.00 -	122.94	0.00	122.94
572.70	0.00	0.00 -	128.10	0.00	128.10
572.80	0.00	0.00 -	133.33	0.00	133.33
572.90	0.00	0.00 -	138.62	0.00	138.62
573.00	0.00	0.00 -	144.00	0.00	144.00

[PgDn] [Esc] to exit

STAGE / STORAGE TABLE

1. RESERVOIR No = 5. 2. RESERVOIR NAME = LAKE #17....
3. S = Ks * Z^b
   Ks = 0..... b = 0.....
   START ELEV = 0..... INCREMENT = 0...

	STAGE ft	ELEVATION ft	CO AREA sq ft	INC STORAGE cu ft	TOT STORAGE cu ft
4	0.00	569.00.	25975...	0	0
5	1.00	570.00.	29675...	27825	27825
6	2.00	571.00.	33325...	31500	59325
7	3.00	572.00.	36850...	35087	94412
8	4.00	573.00.	43200...	40025	134437
9	0.00	0.00.	0.....	0	0
10	0.00	0.00.	0.....	0	0
11	0.00	0.00.	0.....	0	0
12	0.00	0.00.	0.....	0	0
13	0.00	0.00.	0.....	0	0
14	0.00	0.00.	0.....	0	0

R to reset

Change item number: 0 DY to cont