HYDROLOGIC REPORT FOR

MONTICELLO VILLAGE A

DRY DETENTION BASIN

10 YEAR / 20 MIN. STORM

PREPARED BY:

PICKETT RAY & SILVER, INC.

333 MID RIVERS MALL DRIVE

ST. PETERS, MO. 441-1211

DESIGNER: JIM CANNADY

96-01-011

HYDROLOGIC REPORT

MONTICELLO VILLAGE A..
DRY DETENTION.....
INFLOW.....

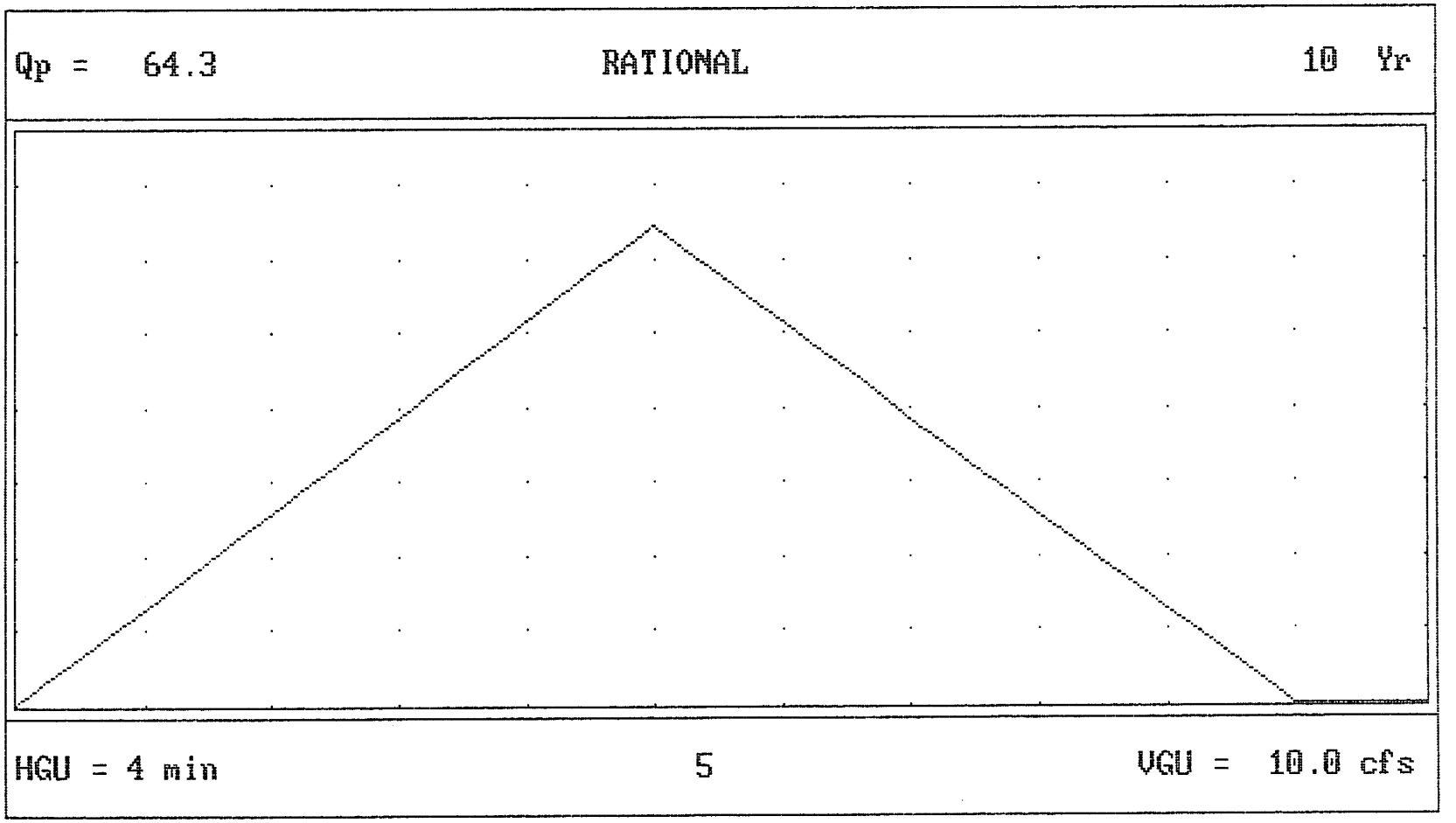
Hyd. No. 5

Hydrograph type = RATIONAL
Storm frequency = 10 yr
Time of conc. = 20 min
~~Runoff coeff. = .6289~~

Peak discharge = 64.27 cfs Q15
Time interval = 1 min
Intensity = 4.30 in/hr
Basin area = 23.75 ac

HYDROGRAPH DISCHARGE TABLE

TIME--OUTFLOW (min cfs)		TIME--OUTFLOW (min cfs)		TIME--OUTFLOW (min cfs)		TIME--OUTFLOW (min cfs)	
1.00	3.21	2.00	6.43	3.00	9.64	4.00	12.85
5.00	16.07	6.00	19.28	7.00	22.49	8.00	25.71
9.00	28.92	10.00	32.14	11.00	35.35	12.00	38.56
13.00	41.78	14.00	44.99	15.00	48.20	16.00	51.42
17.00	54.63	18.00	57.84	19.00	61.06	20.00	64.27
21.00	61.06	22.00	57.84	23.00	54.63	24.00	51.42
25.00	48.20	26.00	44.99	27.00	41.78	28.00	38.56
29.00	35.35	30.00	32.14	31.00	28.92	32.00	25.71
33.00	22.49	34.00	19.28	35.00	16.07	36.00	12.85
37.00	9.64	38.00	6.43	39.00	3.21	40.00	0.00



VOL = (cuft/acft) = 77125 / 1.771

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OUTLET STRUCTURES

 Reservoir:  1
CULVERT STRUC  A. Q=CoA[2gh/k]^.5

 1. WIDTH  (in)      = 30.
 2. HEIGHT (in)      = 30.
 3. No. BARRELS      = 1..
 4. INVERT ELEV.     = 528.5....
 5. Co = 0.60
 6. CULVERT LENGTH (ft) = 40..
 7. CULVERT SLOPE (%)   = 1...
 8. MANNING'S N-VALUE   = .013

CULVERT STRUC  B. Q=CoA[2gh/k]^.5

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

WEIR STRUCTURE A.       Q=CwLH^EXP

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

WEIR STRUCTURE B.       Q=CwLH^EXP

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

Change item number: 0                                    DY to cont
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HYDROLOGIC REPORT

STAGE / STORAGE / DISCHARGE

RESERVOIR NUMBER = 1

RESERVOIR NAME = DET. BASIN A
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
528.50	0.00	0.00	0.00	0.00
529.00	1.75	0.00	0.00	0.00
530.00	12.86	0.00	0.00	0.00
532.00	34.12	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	528.50	0	0	0.00
0.50	529.00	4312	4312	1.75
1.50	530.00	20500	24812	12.86
3.50	532.00	54550	79362	34.12
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. 1 STAGE / STORAGE / DISCHARGE DET. BASIN A

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
528.50	0.00		0.00	-	0.00	0.00	0.00
528.55	0.02	IC	0.00	-	0.00	0.00	0.02
528.60	0.11	IC	0.00	-	0.00	0.00	0.11
528.65	0.31	IC	0.00	-	0.00	0.00	0.31
528.70	0.36	IC	0.00	-	0.00	0.00	0.36
528.75	0.76	IC	0.00	-	0.00	0.00	0.76
528.80	0.83	IC	0.00	-	0.00	0.00	0.83
528.85	0.90	IC	0.00	-	0.00	0.00	0.90
528.90	1.57	IC	0.00	-	0.00	0.00	1.57
528.95	1.66	IC	0.00	-	0.00	0.00	1.66
529.00	1.75	IC	0.00	-	0.00	0.00	1.75

[PgDn] [Esc] to exit

Reservoir No. 1 STAGE / STORAGE / DISCHARGE DET. BASIN A

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
529.00	1.75	IC	0.00	-	0.00	0.00	1.75
529.10	2.86	IC	0.00	-	0.00	0.00	2.86
529.20	4.28	IC	0.00	-	0.00	0.00	4.28
529.30	4.58	IC	0.00	-	0.00	0.00	4.58
529.40	6.35	IC	0.00	-	0.00	0.00	6.35
529.50	6.69	IC	0.00	-	0.00	0.00	6.69
529.60	8.75	IC	0.00	-	0.00	0.00	8.75
529.70	9.11	OC	0.00	-	0.00	0.00	9.11
529.80	11.03	OC	0.00	-	0.00	0.00	11.03
529.90	11.84	IC	0.00	-	0.00	0.00	11.84
530.00	12.86	OC	0.00	-	0.00	0.00	12.86

[PgDn] [Esc] to exit

Reservoir No. 1 STAGE / STORAGE / DISCHARGE DET. BASIN A

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
530.00	12.86	OC	0.00	-	0.00	0.00	12.86
530.20	14.50	OC	0.00	-	0.00	0.00	14.50
530.40	15.88	OC	0.00	-	0.00	0.00	15.88
530.60	16.95	OC	0.00	-	0.00	0.00	16.95
530.80	18.15	OC	0.00	-	0.00	0.00	18.15
531.00	18.24	OC	0.00	-	0.00	0.00	18.24
531.20	22.34	OC	0.00	-	0.00	0.00	22.34
531.40	25.79	OC	0.00	-	0.00	0.00	25.79
531.60	28.83	OC	0.00	-	0.00	0.00	28.83
531.80	31.59	OC	0.00	-	0.00	0.00	31.59
532.00	34.12	OC	0.00	-	0.00	0.00	34.12

[PgDn] [Esc] to exit

STAGE / STORAGE TABLE

1. RESERVOIR No = 1. 2. RESERVOIR NAME = DET. BASIN A

3. S = Ks * Z^b

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

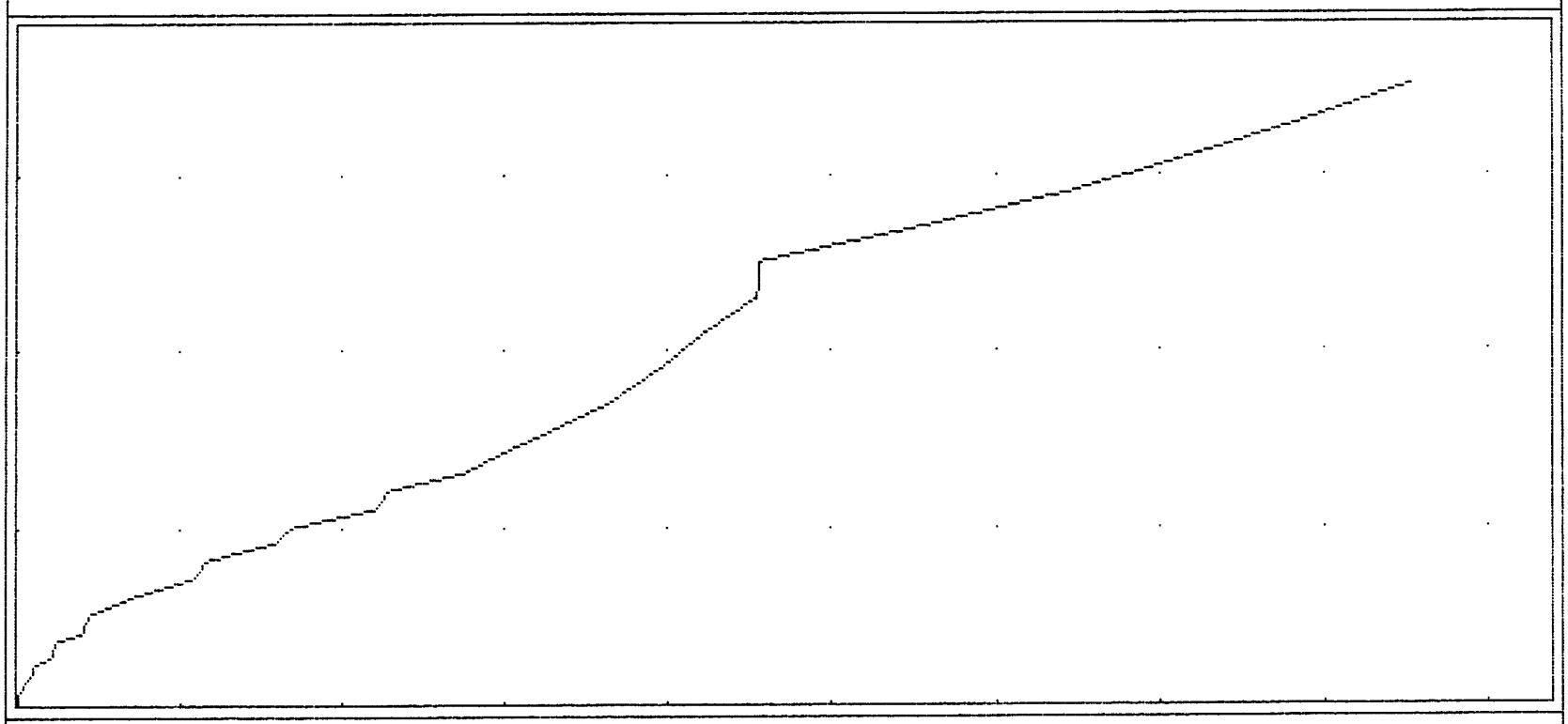
START ELEV = 0..... INCREMENT = 0...

	STAGE ft	ELEVATION ft	CO AREA sq ft	INC STORAGE cu ft	TOT STORAGE cu ft
4	0.00	528.50.	0.....	0	0
5	0.50	529.00.	17250...	4312	4312
6	1.50	530.00.	23750...	20500	24812
7	3.50	532.00.	30800...	54550	79362
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



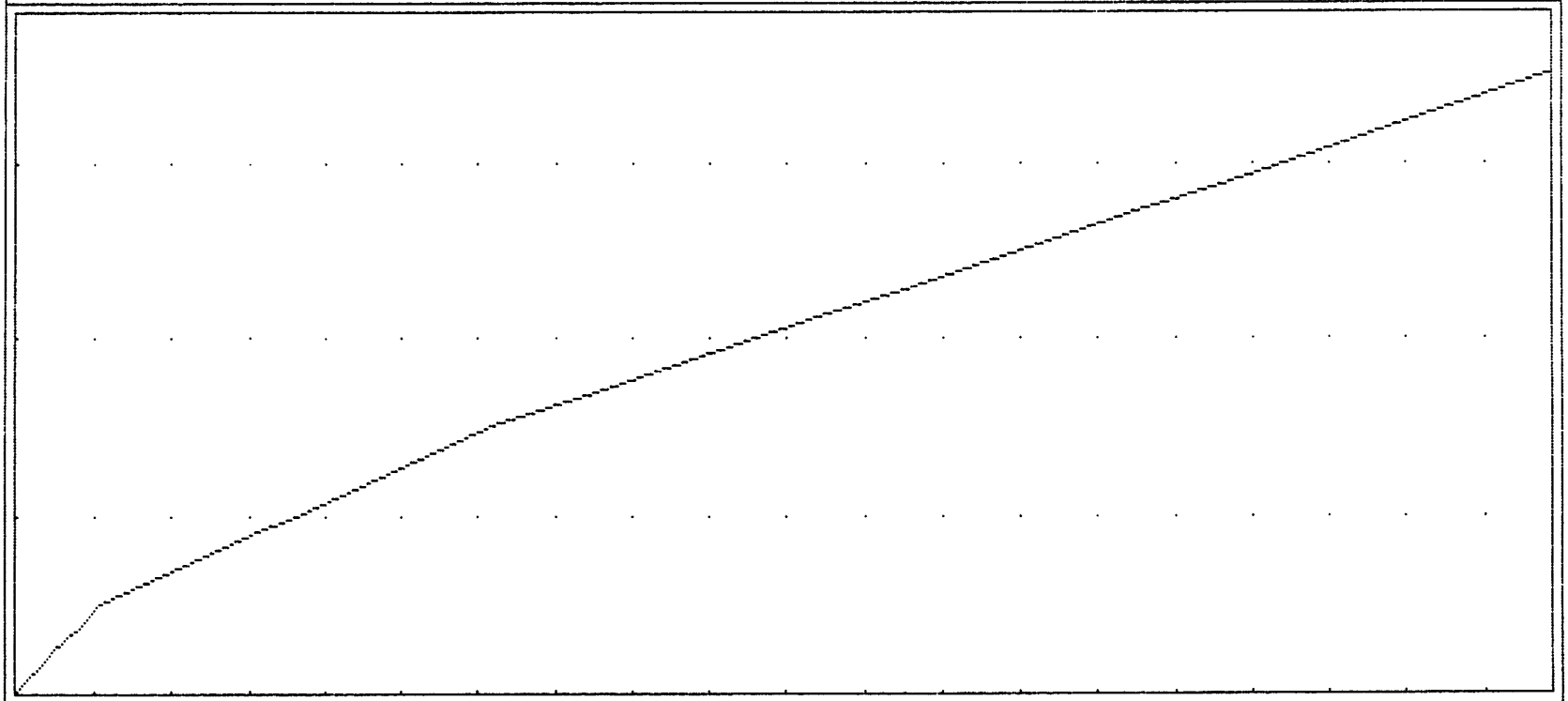
HGU = 4.0 cfs

VGU = 1.0 ft

[↵] Cont

[Esc] Exit

STAGE / STORAGE CURVE



HGU = 4000 cu ft VGU = 1.0 ft

[↵] Cont [Esc] Exit

HYDROLOGIC REPORT

MONTICELLO VILLAGE A .
.....
DETENTION BASIN A.....

Hyd. No. 6

Hydrograph type = RESERVOIR ROUTE Peak discharge = 18.45 cfs
Storm frequency = 10 yr Time interval = 1 min
Inflow hyd. no. = 5 Reservoir no. = 1

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	3.21	6.43	3.20	3.21	0.01
2.00	6.43	9.64	12.80	12.84	0.02
3.00	9.64	12.85	28.64	28.87	0.11
4.00	12.85	16.07	50.46	51.14	0.34
5.00	16.07	19.28	77.80	79.38	0.79
6.00	19.28	22.49	110.31	113.14	1.42
7.00	22.49	25.71	148.37	152.09	1.86
8.00	25.71	28.92	191.44	196.57	2.57
9.00	28.92	32.14	239.08	246.07	3.49
10.00	32.14	35.35	291.44	300.14	4.35
11.00	35.35	38.56	349.49	358.93	4.72
12.00	38.56	41.78	410.71	423.40	6.35
13.00	41.78	44.99	477.68	491.05	6.69
14.00	44.99	48.20	546.91	564.44	8.76
15.00	48.20	51.42	621.40	640.10	9.35
16.00	51.42	54.63	698.49	721.02	11.26
17.00	54.63	57.84	779.86	804.54	12.34
18.00	57.84	61.06	865.68	892.34	13.33
19.00	61.06	64.27	956.27	984.58	14.15
20.00	64.27	61.06	1051.72	1081.60	14.94
21.00	61.06	57.84	1145.74	1177.05	15.66
22.00	57.84	54.63	1232.20	1264.64	16.22
23.00	54.63	51.42	1311.29	1344.67	16.69
24.00	51.42	48.20	1383.06	1417.33	17.14
25.00	48.20	44.99	1447.55	1482.68	17.57

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	44.99	41.78	1504.85	1540.74	17.95
27.00	41.78	38.56	1555.29	1591.62	18.16
28.00	38.56	35.35	1599.26	1635.63	18.18
29.00	35.35	32.14	1636.77	1673.17	18.20
30.00	32.14	28.92	1667.83	1704.26	18.21
31.00	28.92	25.71	1692.43	1728.88	18.23
32.00	25.71	22.49	1710.59	1747.06	18.23
33.00	22.49	19.28	1722.13	1758.80	18.33
34.00	19.28	16.07	1727.01	1763.91	18.45
35.00	16.07	12.85	1725.54	1762.36	18.41
36.00	12.85	9.64	1717.99	1754.46	18.24
37.00	9.64	6.43	1704.02	1740.48	18.23
38.00	6.43	3.21	1683.64	1720.09	18.22
39.00	3.21	0.00	1656.86	1693.28	18.21
40.00	0.00	0.00	1623.69	1660.08	18.19
41.00	0.00	0.00	1587.33	1623.69	18.18
42.00	0.00	0.00	1551.01	1587.33	18.16
43.00	0.00	0.00	1514.98	1551.01	18.01
44.00	0.00	0.00	1479.43	1514.98	17.78
45.00	0.00	0.00	1444.34	1479.43	17.54
46.00	0.00	0.00	1409.71	1444.34	17.31
47.00	0.00	0.00	1375.54	1409.71	17.09
48.00	0.00	0.00	1341.80	1375.54	16.87
49.00	0.00	0.00	1308.45	1341.80	16.67
50.00	0.00	0.00	1275.49	1308.45	16.48
51.00	0.00	0.00	1242.92	1275.49	16.28
52.00	0.00	0.00	1210.74	1242.92	16.09
53.00	0.00	0.00	1178.93	1210.74	15.90
54.00	0.00	0.00	1147.59	1178.93	15.67
55.00	0.00	0.00	1116.72	1147.59	15.44
56.00	0.00	0.00	1086.31	1116.72	15.20
57.00	0.00	0.00	1056.37	1086.31	14.97
58.00	0.00	0.00	1026.87	1056.37	14.75
59.00	0.00	0.00	997.82	1026.87	14.53
60.00	0.00	0.00	969.27	997.82	14.27
61.00	0.00	0.00	941.24	969.27	14.02
62.00	0.00	0.00	913.71	941.24	13.77
63.00	0.00	0.00	886.67	913.71	13.52
64.00	0.00	0.00	860.11	886.67	13.28
65.00	0.00	0.00	834.03	860.11	13.04
66.00	0.00	0.00	808.48	834.03	12.77
67.00	0.00	0.00	783.68	808.48	12.40

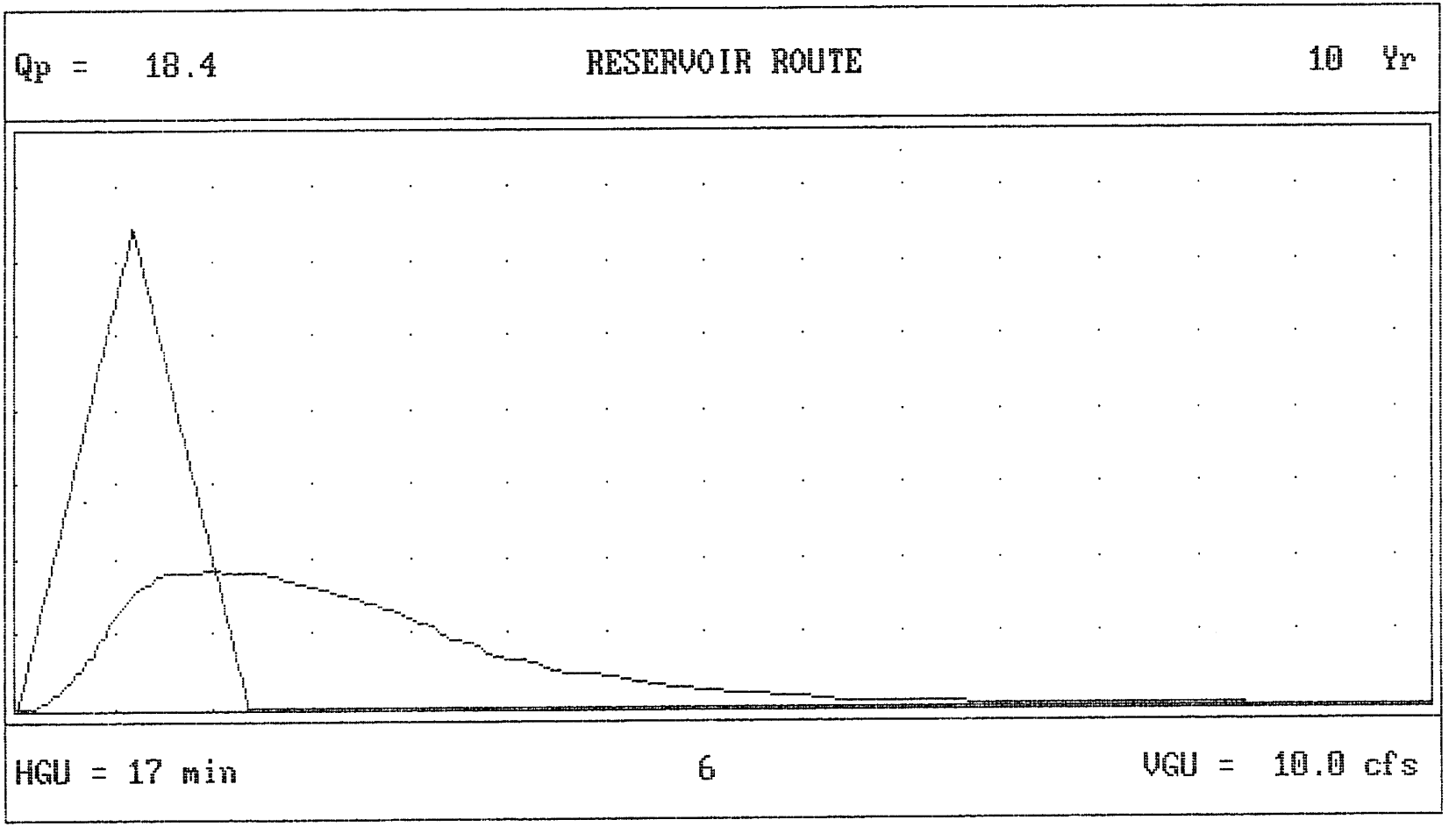
HYDROGRAPH DISCHARGE TABLE Cont'd

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	759.62	783.68	12.03
69.00	0.00	0.00	736.20	759.62	11.71
70.00	0.00	0.00	713.33	736.20	11.44
71.00	0.00	0.00	690.98	713.33	11.17
72.00	0.00	0.00	669.49	690.98	10.75
73.00	0.00	0.00	649.17	669.49	10.16
74.00	0.00	0.00	629.96	649.17	9.60
75.00	0.00	0.00	611.76	629.96	9.10
76.00	0.00	0.00	593.74	611.76	9.01
77.00	0.00	0.00	575.91	593.74	8.92
78.00	0.00	0.00	558.26	575.91	8.82
79.00	0.00	0.00	541.00	558.26	8.63
80.00	0.00	0.00	524.75	541.00	8.12
81.00	0.00	0.00	509.45	524.75	7.65
82.00	0.00	0.00	495.05	509.45	7.20
83.00	0.00	0.00	481.50	495.05	6.78
84.00	0.00	0.00	468.22	481.50	6.64
85.00	0.00	0.00	455.08	468.22	6.57
86.00	0.00	0.00	442.07	455.08	6.51
87.00	0.00	0.00	429.18	442.07	6.44
88.00	0.00	0.00	416.43	429.18	6.38
89.00	0.00	0.00	404.09	416.43	6.17
90.00	0.00	0.00	392.37	404.09	5.86
91.00	0.00	0.00	381.25	392.37	5.56
92.00	0.00	0.00	370.68	381.25	5.28
93.00	0.00	0.00	360.65	370.68	5.01
94.00	0.00	0.00	351.13	360.65	4.76
95.00	0.00	0.00	342.00	351.13	4.57
96.00	0.00	0.00	332.95	342.00	4.53
97.00	0.00	0.00	323.97	332.95	4.49
98.00	0.00	0.00	315.07	323.97	4.45
99.00	0.00	0.00	306.25	315.07	4.41
100.00	0.00	0.00	297.51	306.25	4.37
101.00	0.00	0.00	288.84	297.51	4.34
102.00	0.00	0.00	280.24	288.84	4.30
103.00	0.00	0.00	271.86	280.24	4.19
104.00	0.00	0.00	263.82	271.86	4.02
105.00	0.00	0.00	256.11	263.82	3.86
106.00	0.00	0.00	248.72	256.11	3.70
107.00	0.00	0.00	241.62	248.72	3.55
108.00	0.00	0.00	234.81	241.62	3.40
109.00	0.00	0.00	228.28	234.81	3.27

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	222.02	228.28	3.13
111.00	0.00	0.00	216.01	222.02	3.00
112.00	0.00	0.00	210.24	216.01	2.88
113.00	0.00	0.00	204.67	210.24	2.79
114.00	0.00	0.00	199.28	204.67	2.70
115.00	0.00	0.00	194.06	199.28	2.61
116.00	0.00	0.00	189.00	194.06	2.53
117.00	0.00	0.00	184.11	189.00	2.45
118.00	0.00	0.00	179.37	184.11	2.37
119.00	0.00	0.00	174.78	179.37	2.29
120.00	0.00	0.00	170.34	174.78	2.22
121.00	0.00	0.00	166.04	170.34	2.15
122.00	0.00	0.00	161.87	166.04	2.08
123.00	0.00	0.00	157.84	161.87	2.02
124.00	0.00	0.00	153.94	157.84	1.95
125.00	0.00	0.00	150.16	153.94	1.89
126.00	0.00	0.00	146.51	150.16	1.83
127.00	0.00	0.00	142.97	146.51	1.77
128.00	0.00	0.00	139.49	142.97	1.74
129.00	0.00	0.00	136.06	139.49	1.72
130.00	0.00	0.00	132.67	136.06	1.70
131.00	0.00	0.00	129.32	132.67	1.67
132.00	0.00	0.00	126.01	129.32	1.65
133.00	0.00	0.00	122.75	126.01	1.63
134.00	0.00	0.00	119.53	122.75	1.61
135.00	0.00	0.00	116.35	119.53	1.59
136.00	0.00	0.00	113.23	116.35	1.56
137.00	0.00	0.00	110.39	113.23	1.42
138.00	0.00	0.00	107.81	110.39	1.29
139.00	0.00	0.00	105.45	107.81	1.18
140.00	0.00	0.00	103.30	105.45	1.07

Maximum outflow (cfs) = 18.45
Maximum storage (cu ft) = 52364
Maximum elevation (ft) = 531.01



MAX STORAGE = 52364

MAX ELEVATION = 531.01

HYDROLOGIC REPORT FOR

MONTICELLO VILLAGE A

DRY DETENTION BASIN

25 YEAR / 20 MIN. STORM

PREPARED BY:

PICKETT RAY & SILVER, INC.

333 MID RIVERS MALL DRIVE

ST. PETERS, MO. 441-1211

DESIGNER: JIM CANNADY

HYDROLOGIC REPORT

MONTICELLO VILLAGE A..
DRY DETENTION.....
INFLOW.....

Hyd. No. 1

Hydrograph type = RATIONAL
Storm frequency = 25 yr
Time of conc. = 20 min
~~Runoff coeff. = .6397~~

Peak Inflow = 76.48 cfs
Time interval = 1 min
Intensity = 5.03 in/hr
Basin area = 23.75 ac

HYDROGRAPH DISCHARGE TABLE

TIME--OUTFLOW (min cfs)		TIME--OUTFLOW (min cfs)		TIME--OUTFLOW (min cfs)		TIME--OUTFLOW (min cfs)	
1.00	3.82	2.00	7.65	3.00	11.47	4.00	15.30
5.00	19.12	6.00	22.95	7.00	26.77	8.00	30.59
9.00	34.42	10.00	38.24	11.00	42.07	12.00	45.89
13.00	49.71	14.00	53.54	15.00	57.36	16.00	61.19
17.00	65.01	18.00	68.84	19.00	72.66	20.00	76.48
21.00	72.66	22.00	68.84	23.00	65.01	24.00	61.19
25.00	57.36	26.00	53.54	27.00	49.71	28.00	45.89
29.00	42.07	30.00	38.24	31.00	34.42	32.00	30.59
33.00	26.77	34.00	22.95	35.00	19.12	36.00	15.30
37.00	11.47	38.00	7.65	39.00	3.82	40.00	0.00

Peak Inflow:

Offsite (Res.) 1.26 Ac. X 3.26 = 4.11 cfs

Onsite (Res.) 21.43 Ac. X 3.26 = 69.86 cfs

Onsite (Common Ground) 1.06 Ac. X 2.31 = 2.45 cfs

Total 23.75 Acres = 76.42 cfs

Exist. Watershed Condition: (Undeveloped)

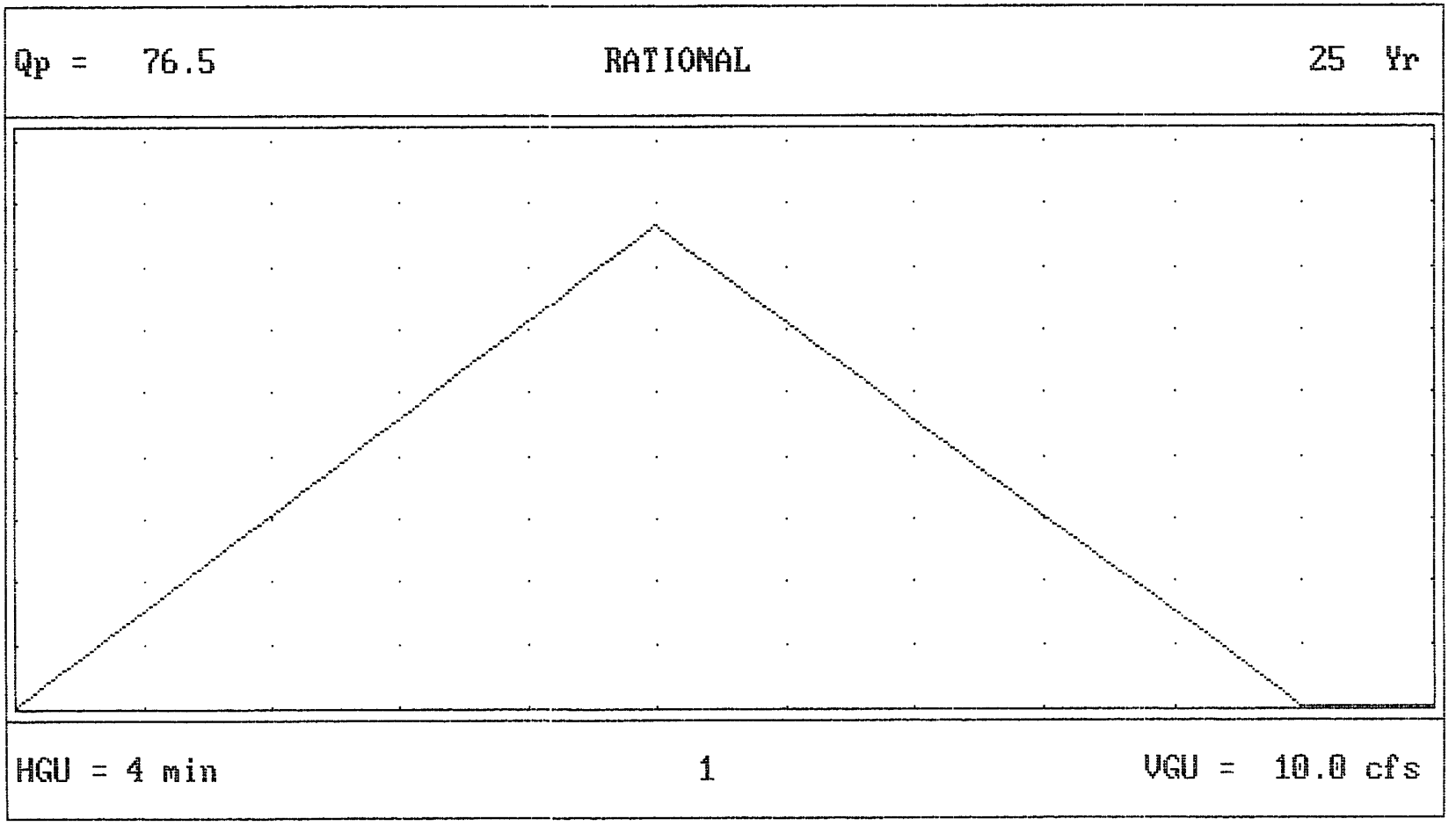
21.58 Ac. X 2.31 = 49.85 (Allowable Release Rate)

Detention Required:

76.42 cfs - 49.85 cfs = 26.57 cfs

Volume Required:

26.57 cfs X 30 Min. X 60 Sec.Min = 47,826 Cu. Ft.



VOL = (cuft/acft) = 91781 / 2.107

IMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM5 OUTLET STRUCTURES FMMMMMMMMMMMMMMMMMMMMMMMMMMMMM;

Reservoir: 1

CULVERT STRUC A. Q=CoA[2gh/k]^.5	CULVERT STRUC B. Q=CoA[2gh/k]^.5
1. WIDTH (in) = 30.	9. WIDTH (in) = 0..
2. HEIGHT (in) = 30.	10. HEIGHT (in) = 0..
3. No. BARRELS = 1..	11. No. BARRELS = 0..
4. INVERT ELEV. = 528.5....	12. INVERT ELEV. = 0........
5. Co = 0.60	13. Co = 0.60
6. CULVERT LENGTH (ft) = 40..	14. CULVERT LENGTH (ft) = 0...
7. CULVERT SLOPE (%) = 1...	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

HMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM<

Change item number: 0 DY to cont

HYDROLOGIC REPORT

STAGE / STORAGE / DISCHARGE

RESERVOIR NUMBER = 1

RESERVOIR NAME = DET. BASIN A
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
528.50	0.00	0.00	0.00	0.00
529.00	1.75	0.00	0.00	0.00
530.00	12.86	0.00	0.00	0.00
532.00	34.12	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	528.50	0	0	0.00
0.50	529.00	4312	4312	1.75
1.50	530.00	20500	24812	12.86
3.50	532.00	54550	79362	34.12
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. 1 STAGE / STORAGE / DISCHARGE DET. BASIN A

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 * O * H ^ 1.5
Weir struct B. Q = 3 * O * H ^ 1.5

ELEVATION	DISCHARGE (cfs) CULVERT A		CULVERT B		WEIR A	WEIR B	TOTAL
528.50	0.00		0.00	-	0.00	0.00	0.00
528.55	0.02	IC	0.00	-	0.00	0.00	0.02
528.60	0.11	IC	0.00	-	0.00	0.00	0.11
528.65	0.31	IC	0.00	-	0.00	0.00	0.31
528.70	0.36	IC	0.00	-	0.00	0.00	0.36
528.75	0.76	IC	0.00	-	0.00	0.00	0.76
528.80	0.83	IC	0.00	-	0.00	0.00	0.83
528.85	0.90	IC	0.00	-	0.00	0.00	0.90
528.90	1.57	IC	0.00	-	0.00	0.00	1.57
528.95	1.66	IC	0.00	-	0.00	0.00	1.66
529.00	1.75	IC	0.00	-	0.00	0.00	1.75

[PgDn] [Esc] to exit

Reservoir No. 1 STAGE / STORAGE / DISCHARGE DET. BASIN A

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 * O * H ^ 1.5
Weir struct B. Q = 3 * O * H ^ 1.5

STAGE	ELEVATION	INC STOR cu ft	TOT STOR cu ft	OUTFLOW cfs
0.50	529.00	431	4312	1.75
0.60	529.10	2050	6362	2.86
0.70	529.20	2050	8412	4.28
0.80	529.30	2050	10462	4.58
0.90	529.40	2050	12512	6.35
1.00	529.50	2050	14562	6.69
1.10	529.60	2050	16612	8.75
1.20	529.70	2050	18662	9.11
1.30	529.80	2050	20712	11.03
1.40	529.90	2050	22762	11.84
1.50	530.00	2050	24812	12.86

[PgDn] [Esc] to exit

Reservoir No. 1 STAGE / STORAGE / DISCHARGE DET. BASIN A

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

STAGE	ELEVATION	INC STOR cu ft	TOT STOR cu ft	OUTFLOW cfs
1.50	530.00	2050	24812	12.86
1.70	530.20	5455	30267	14.50
1.90	530.40	5455	35722	15.88
2.10	530.60	5455	41177	16.95
2.30	530.80	5455	46632	18.15
2.50	531.00	5455	52087	18.24
2.70	531.20	5455	57542	22.34
2.90	531.40	5455	62997	25.79
3.10	531.60	5455	68452	28.83
3.30	531.80	5455	73907	31.59
3.50	532.00	5455	79362	34.12

[PgDn] [Esc] to exit

STAGE / STORAGE TABLE

1. RESERVOIR No = 1. 2. RESERVOIR NAME = DET. BASIN A

3. S = Ks * Z^b

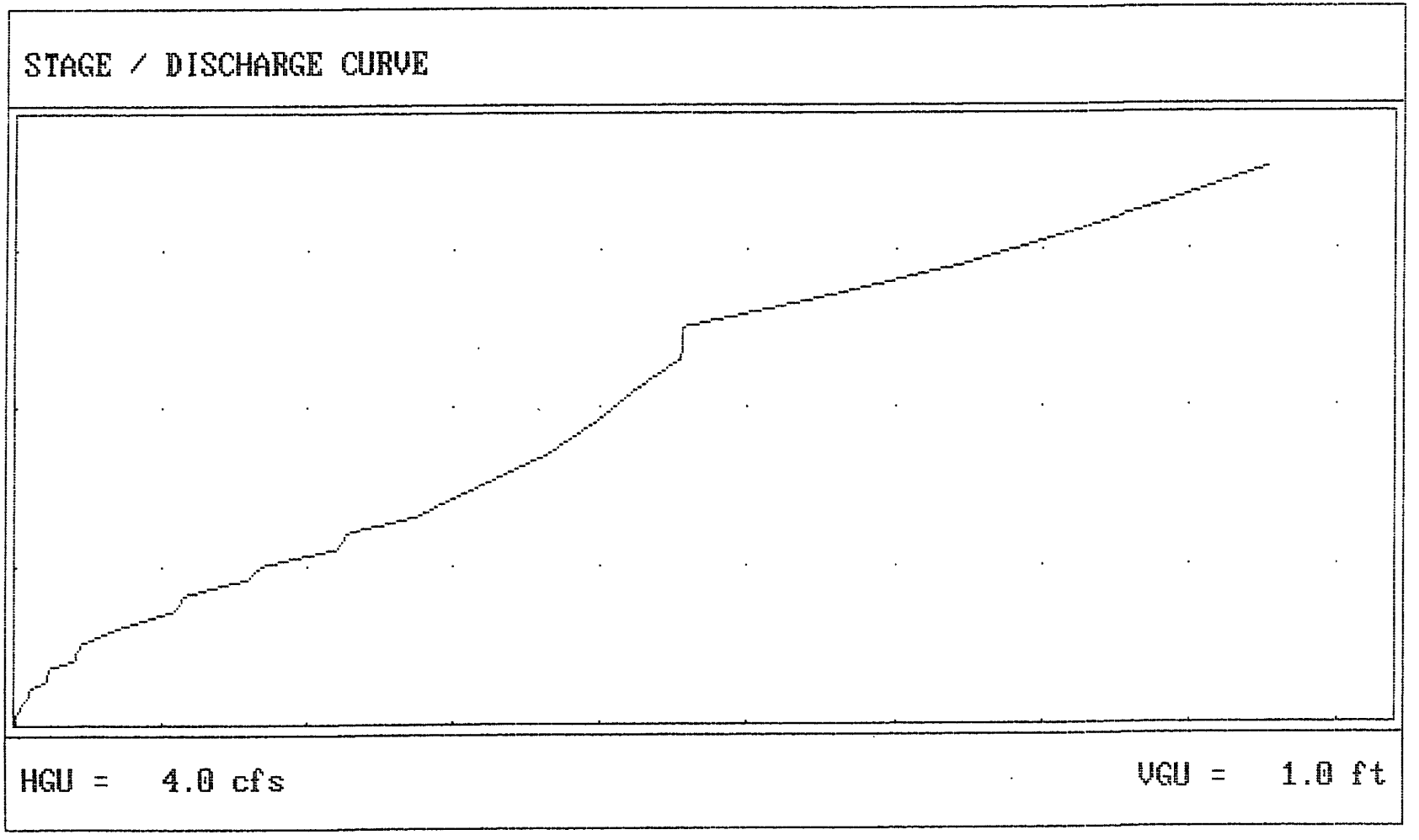
Ks = 0..... b = 0.....

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

	STAGE ft	ELEVATION ft	CO AREA sq ft	INC STORAGE cu ft	TOT STORAGE cu ft
4	0.00	528.50.	0.....	0	0
5	0.50	529.00.	17250...	4312	4312
6	1.50	530.00.	23750...	20500	24812
7	3.50	532.00.	30800...	54550	79362
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

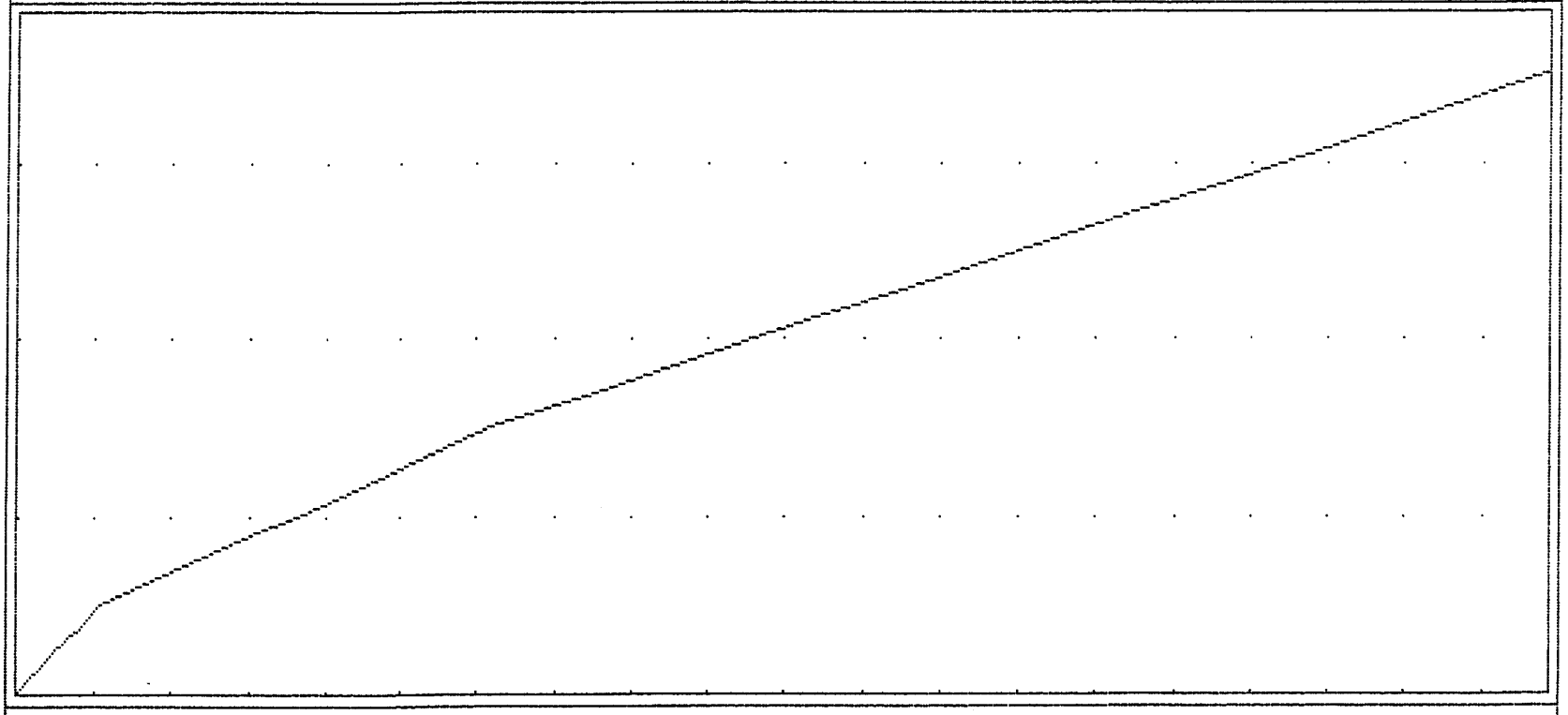
Change item number: 0 DY to cont



[↵] Cont

[Esc] Exit

STAGE / STORAGE CURVE



HGU = 4000 cu ft VGU = 1.0 ft

[↵] Cont [Esc] Exit

HYDROLOGIC REPORT

MONTICELLO VILLAGE A..
.....
DETENTION BASIN A.....

Hyd. No. 2

Hydrograph type = RESERVOIR ROUTE Peak discharge = 25.20 cfs
Storm frequency = 25 yr Time interval = 1 min
Inflow hyd. no. = 1 Reservoir no. = 1

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	3.82	7.65	3.81	3.82	0.01
2.00	7.65	11.47	15.23	15.28	0.03
3.00	11.47	15.30	33.97	34.35	0.19
4.00	15.30	19.12	59.86	60.74	0.44
5.00	19.12	22.95	92.55	94.28	0.86
6.00	22.95	26.77	131.24	134.62	1.69
7.00	26.77	30.59	176.32	180.96	2.32
8.00	30.59	34.42	227.20	233.68	3.24
9.00	34.42	38.24	283.59	292.21	4.31
10.00	38.24	42.07	346.95	356.25	4.65
11.00	42.07	45.89	414.52	427.26	6.37
12.00	45.89	49.71	488.49	502.48	7.00
13.00	49.71	53.54	566.36	584.09	8.87
14.00	53.54	57.36	649.29	669.61	10.16
15.00	57.36	61.19	736.76	760.19	11.72
16.00	61.19	65.01	829.31	855.31	13.00
17.00	65.01	68.84	927.72	955.51	13.89
18.00	68.84	72.66	1032.00	1061.57	14.79
19.00	72.66	76.48	1142.23	1173.49	15.63
20.00	76.48	72.66	1258.62	1291.38	16.38
21.00	72.66	68.84	1373.62	1407.77	17.07
22.00	68.84	65.01	1479.56	1515.11	17.78
23.00	65.01	61.19	1577.06	1613.41	18.17
24.00	61.19	57.36	1666.83	1703.26	18.21
25.00	57.36	53.54	1747.54	1785.38	18.92

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	53.54	49.71	1817.39	1858.44	20.53
27.00	49.71	45.89	1876.84	1920.64	21.90
28.00	45.89	42.07	1926.58	1972.44	22.93
29.00	42.07	38.24	1967.10	2014.54	23.72
30.00	38.24	34.42	1998.74	2047.41	24.33
31.00	34.42	30.59	2021.85	2071.41	24.78
32.00	30.59	26.77	2036.73	2086.86	25.07
33.00	26.77	22.95	2043.69	2094.09	25.20
34.00	22.95	19.12	2043.02	2093.40	25.19
35.00	19.12	15.30	2035.02	2085.09	25.03
36.00	15.30	11.47	2019.96	2069.44	24.74
37.00	11.47	7.65	1998.09	2046.73	24.32
38.00	7.65	3.82	1969.67	2017.21	23.77
39.00	3.82	0.00	1934.96	1981.15	23.10
40.00	0.00	0.00	1894.18	1938.78	22.30
41.00	0.00	0.00	1851.55	1894.18	21.32
42.00	0.00	0.00	1810.79	1851.55	20.38
43.00	0.00	0.00	1771.83	1810.79	19.48
44.00	0.00	0.00	1734.59	1771.83	18.62
45.00	0.00	0.00	1698.14	1734.59	18.23
46.00	0.00	0.00	1661.71	1698.14	18.21
47.00	0.00	0.00	1625.32	1661.71	18.20
48.00	0.00	0.00	1588.96	1625.32	18.18
49.00	0.00	0.00	1552.64	1588.96	18.16
50.00	0.00	0.00	1516.59	1552.64	18.02
51.00	0.00	0.00	1481.01	1516.59	17.79
52.00	0.00	0.00	1445.91	1481.01	17.55
53.00	0.00	0.00	1411.26	1445.91	17.32
54.00	0.00	0.00	1377.07	1411.26	17.10
55.00	0.00	0.00	1343.30	1377.07	16.88
56.00	0.00	0.00	1309.94	1343.30	16.68
57.00	0.00	0.00	1276.97	1309.94	16.49
58.00	0.00	0.00	1244.38	1276.97	16.29
59.00	0.00	0.00	1212.18	1244.38	16.10
60.00	0.00	0.00	1180.35	1212.18	15.91
61.00	0.00	0.00	1148.99	1180.35	15.68
62.00	0.00	0.00	1118.10	1148.99	15.45
63.00	0.00	0.00	1087.67	1118.10	15.21
64.00	0.00	0.00	1057.70	1087.67	14.98
65.00	0.00	0.00	1028.19	1057.70	14.76
66.00	0.00	0.00	999.11	1028.19	14.54
67.00	0.00	0.00	970.55	999.11	14.28

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
68.00	0.00	0.00	942.49	970.55	14.03
69.00	0.00	0.00	914.94	942.49	13.78
70.00	0.00	0.00	887.87	914.94	13.53
71.00	0.00	0.00	861.29	887.87	13.29
72.00	0.00	0.00	835.19	861.29	13.05
73.00	0.00	0.00	809.61	835.19	12.79
74.00	0.00	0.00	784.78	809.61	12.41
75.00	0.00	0.00	760.69	784.78	12.05
76.00	0.00	0.00	737.24	760.69	11.72
77.00	0.00	0.00	714.34	737.24	11.45
78.00	0.00	0.00	691.97	714.34	11.18
79.00	0.00	0.00	670.42	691.97	10.78
80.00	0.00	0.00	650.05	670.42	10.18
81.00	0.00	0.00	630.80	650.05	9.63
82.00	0.00	0.00	612.59	630.80	9.11
83.00	0.00	0.00	594.56	612.59	9.01
84.00	0.00	0.00	576.72	594.56	8.92
85.00	0.00	0.00	559.06	576.72	8.83
86.00	0.00	0.00	541.76	559.06	8.65
87.00	0.00	0.00	525.46	541.76	8.15
88.00	0.00	0.00	510.12	525.46	7.67
89.00	0.00	0.00	495.68	510.12	7.22
90.00	0.00	0.00	482.09	495.68	6.80
91.00	0.00	0.00	468.81	482.09	6.64
92.00	0.00	0.00	455.66	468.81	6.57
93.00	0.00	0.00	442.64	455.66	6.51
94.00	0.00	0.00	429.75	442.64	6.44
95.00	0.00	0.00	417.00	429.75	6.38
96.00	0.00	0.00	404.63	417.00	6.19
97.00	0.00	0.00	392.88	404.63	5.87
98.00	0.00	0.00	381.73	392.88	5.58
99.00	0.00	0.00	371.14	381.73	5.29
100.00	0.00	0.00	361.09	371.14	5.03
101.00	0.00	0.00	351.55	361.09	4.77
102.00	0.00	0.00	342.41	351.55	4.57
103.00	0.00	0.00	333.35	342.41	4.53
104.00	0.00	0.00	324.37	333.35	4.49
105.00	0.00	0.00	315.47	324.37	4.45
106.00	0.00	0.00	306.65	315.47	4.41
107.00	0.00	0.00	297.90	306.65	4.37
108.00	0.00	0.00	289.23	297.90	4.34
109.00	0.00	0.00	280.63	289.23	4.30

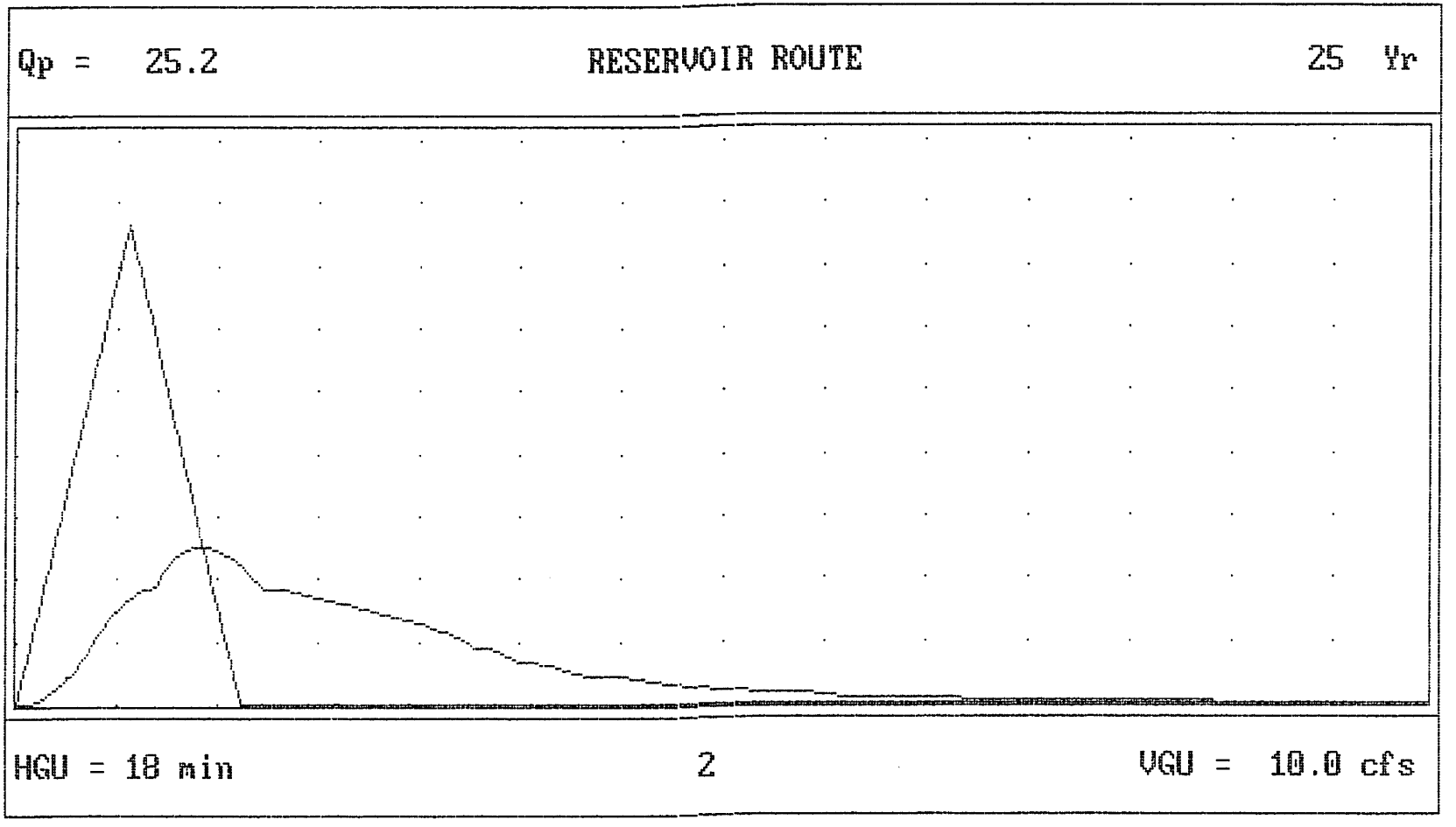
HYDROGRAPH DISCHARGE TABLE Cont'd

TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
110.00	0.00	0.00	272.23	280.63	4.20
111.00	0.00	0.00	264.18	272.23	4.03
112.00	0.00	0.00	256.45	264.18	3.86
113.00	0.00	0.00	249.04	256.45	3.71
114.00	0.00	0.00	241.93	249.04	3.55
115.00	0.00	0.00	235.11	241.93	3.41
116.00	0.00	0.00	228.57	235.11	3.27
117.00	0.00	0.00	222.30	228.57	3.14
118.00	0.00	0.00	216.28	222.30	3.01
119.00	0.00	0.00	210.50	216.28	2.89
120.00	0.00	0.00	204.92	210.50	2.79
121.00	0.00	0.00	199.52	204.92	2.70
122.00	0.00	0.00	194.29	199.52	2.61
123.00	0.00	0.00	189.22	194.29	2.53
124.00	0.00	0.00	184.32	189.22	2.45
125.00	0.00	0.00	179.58	184.32	2.37
126.00	0.00	0.00	174.98	179.58	2.30
127.00	0.00	0.00	170.53	174.98	2.22
128.00	0.00	0.00	166.23	170.53	2.15
129.00	0.00	0.00	162.06	166.23	2.08
130.00	0.00	0.00	158.02	162.06	2.02
131.00	0.00	0.00	154.11	158.02	1.95
132.00	0.00	0.00	150.33	154.11	1.89
133.00	0.00	0.00	146.67	150.33	1.83
134.00	0.00	0.00	143.12	146.67	1.77
135.00	0.00	0.00	139.64	143.12	1.74
136.00	0.00	0.00	136.21	139.64	1.72
137.00	0.00	0.00	132.82	136.21	1.70
138.00	0.00	0.00	129.47	132.82	1.68
139.00	0.00	0.00	126.16	129.47	1.65
140.00	0.00	0.00	122.89	126.16	1.63
141.00	0.00	0.00	119.67	122.89	1.61
142.00	0.00	0.00	116.49	119.67	1.59
143.00	0.00	0.00	113.36	116.49	1.57
144.00	0.00	0.00	110.51	113.36	1.43
145.00	0.00	0.00	107.91	110.51	1.30
146.00	0.00	0.00	105.55	107.91	1.18
147.00	0.00	0.00	103.39	105.55	1.08

Maximum outflow (cfs) = 25.20 ← NOTE: ALLOWABLE OUTFLOW = 49.85 CFS

Maximum storage (cu ft) = 62067 ← NOTE: REQUIRED STORAGE = 47,826 CU. FT.

Maximum elevation (ft) = 531.37



MAX STORAGE = 62067

MAX ELEVATION = 531.37

PICKETT RAY & SILVER

333 Mid Rivers Mall Dr.
St. Peters, MO 63376

Civil Engineers
Planners
Land Surveyors

441-1211
278-1211

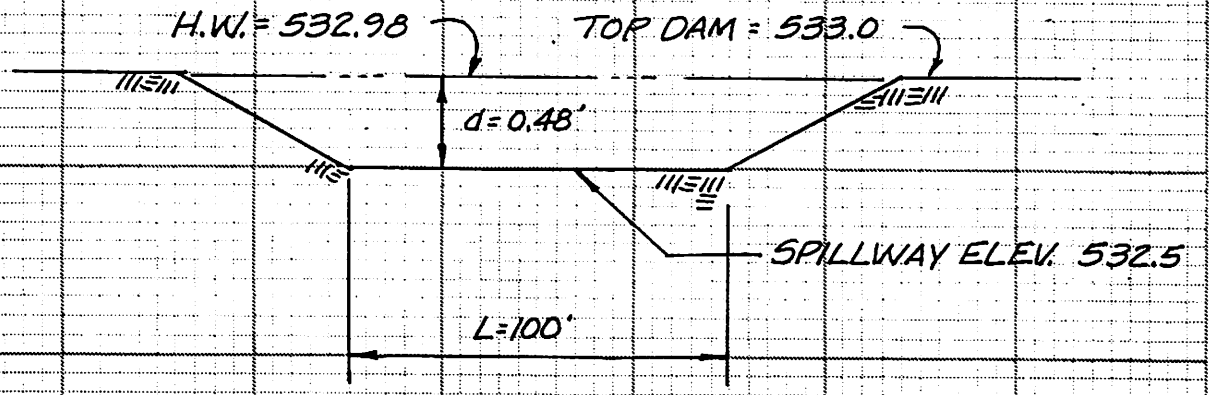
PROJECT NAME MONTICELLO VILLAGE A
PROJECT #/JOB ORDER # 85-064U
DATE FEB. 13, 1992
DESIGNER J.C.
PAGE Sheet 16 of 16

GRASS EMERGENCY SPILLWAY

$Q_{100} = CLH^{3/2}$

$97.75 = 3.0(100)(H^{3/2})$

$0.48 = H$



HYDROLOGIC REPORT FOR

MONTICELLO VILLAGE A

DRY DETENTION BASIN

100YEAR / 20 MIN. STORM

PREPARED BY:

PICKETT RAY & SILVER, INC.

333 MID RIVERS MALL DRIVE

ST. PETERS, MO. 441-1211

DESIGNER: JIM CANNADY

HYDROLOGIC REPORT

Monticello Village A
Dry Detention
INFLOW

Hyd. No. 3

Hydrograph type = RATIONAL
Storm frequency = 100 yr
Time of conc. = 20 min
~~Runoff coeff. = .66700~~

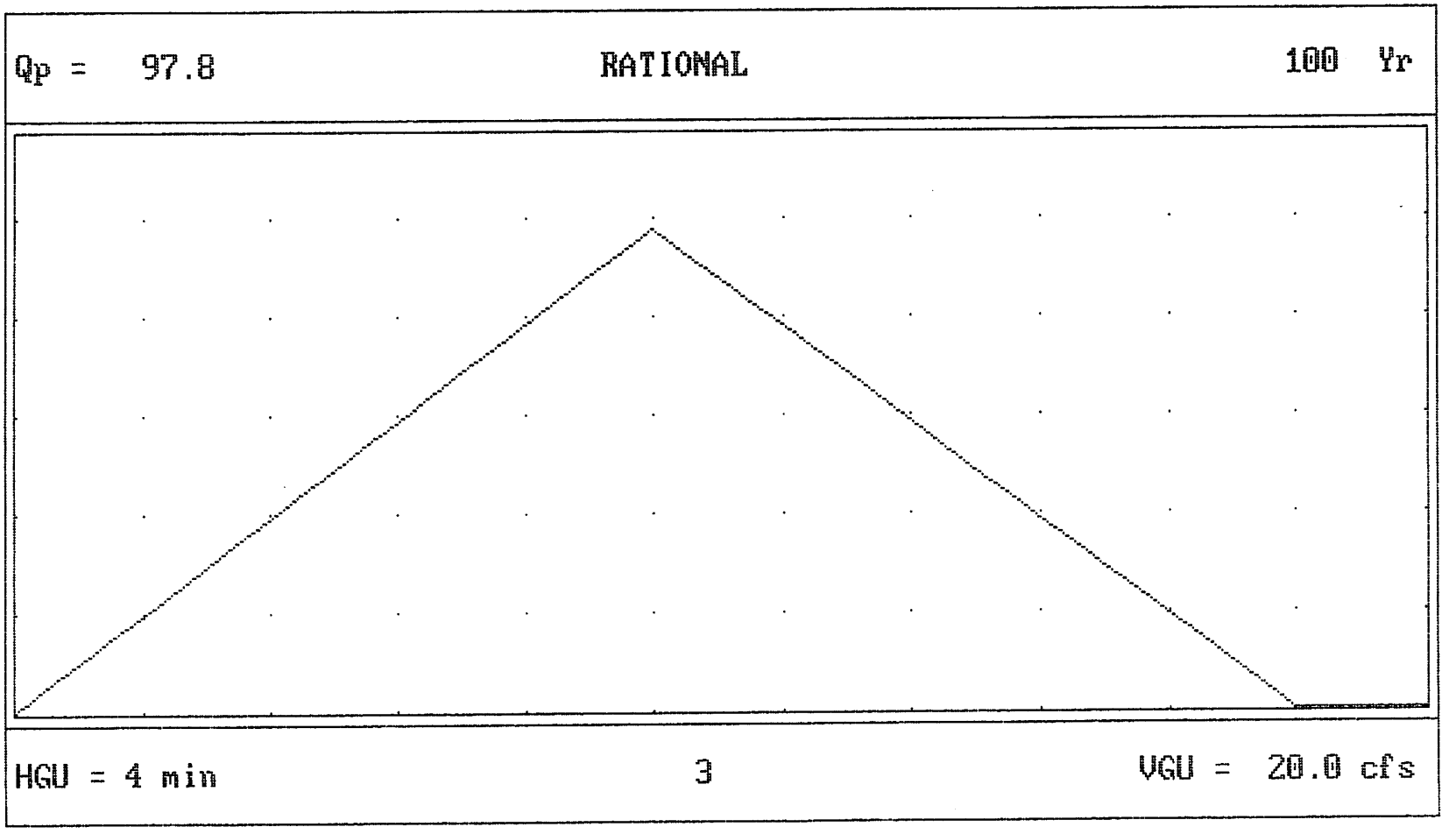
Peak discharge = 97.81 cfs
Time interval = 1 min
Intensity = 6.17 in/hr
Basin area = 23.75 ac

HYDROGRAPH DISCHARGE TABLE

TIME--OUTFLOW (min cfs)		TIME--OUTFLOW (min cfs)		TIME--OUTFLOW (min cfs)		TIME--OUTFLOW (min cfs)	
1.00	4.89	2.00	9.78	3.00	14.67	4.00	19.56
5.00	24.45	6.00	29.34	7.00	34.23	8.00	39.12
9.00	44.02	10.00	48.91	11.00	53.80	12.00	58.69
13.00	63.58	14.00	68.47	15.00	73.36	16.00	78.25
17.00	83.14	18.00	88.03	19.00	92.92	20.00	97.81
21.00	92.92	22.00	88.03	23.00	83.14	24.00	78.25
25.00	73.36	26.00	68.47	27.00	63.58	28.00	58.69
29.00	53.80	30.00	48.91	31.00	44.02	32.00	39.12
33.00	34.23	34.00	29.34	35.00	24.45	36.00	19.56
37.00	14.67	38.00	9.78	39.00	4.89	40.00	0.00

PEAK INFLOW

Offsite (Res.)	1.26 Ac. x 4.17 =	5.23
Onsite (Res.)	21.43 Ac. x 4.17 =	89.44
Onsite (Common Ground)	1.06 Ac. x 2.95 =	3.14
Total	23.75 Ac. =	97.81



(3) VOL = (cuft/acft) = 117375 / 2.695

```
IMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM5 OUTLET STRUCTURES FMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM;
:  Reservoir:   1                                                                       :
: CULVERT STRUC   A. Q=CoA[2gh/k]^.5     CULVERT STRUC   B. Q=CoA[2gh/k]^.5             :
:                                                                                       :
: 1. WIDTH  (in)      = 30.               9. WIDTH  (in)      = 0..                     :
: 2. HEIGHT (in)      = 30.              10. HEIGHT (in)      = 0..                     :
: 3. No. BARRELS      = 1..              11. No. BARRELS      = 0..                     :
: 4. INVERT ELEV.     = 528.5....        12. INVERT ELEV.     = 0........               :
: 5. Co = 0.60                           13. Co = 0.60                                  :
: 6. CULVERT LENGTH (ft) = 40..          14. CULVERT LENGTH (ft) = 0...                 :
: 7. CULVERT SLOPE (%)   = 1...          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               :
:                                                                                       :
:                                                                                       :
HMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM<
Change item number: 0                                                         DY to cont
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HYDROLOGIC REPORT

STAGE / STORAGE / DISCHARGE

RESERVOIR NUMBER = 1

RESERVOIR NAME = DET. BASIN A
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
528.50	0.00	0.00	0.00	0.00
529.00	1.75	0.00	0.00	0.00
530.00	12.86	0.00	0.00	0.00
532.00	34.12	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	528.50	0	0	0.00
0.50	529.00	4312	4312	1.75
1.50	530.00	20500	24812	12.86
3.50	532.00	54550	79362	34.12
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. 1 STAGE / STORAGE / DISCHARGE DET. BASIN A

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
528.50	0.00		0.00	-	0.00	0.00	0.00
528.55	0.02	IC	0.00	-	0.00	0.00	0.02
528.60	0.11	IC	0.00	-	0.00	0.00	0.11
528.65	0.31	IC	0.00	-	0.00	0.00	0.31
528.70	0.36	IC	0.00	-	0.00	0.00	0.36
528.75	0.76	IC	0.00	-	0.00	0.00	0.76
528.80	0.83	IC	0.00	-	0.00	0.00	0.83
528.85	0.90	IC	0.00	-	0.00	0.00	0.90
528.90	1.57	IC	0.00	-	0.00	0.00	1.57
528.95	1.66	IC	0.00	-	0.00	0.00	1.66
529.00	1.75	IC	0.00	-	0.00	0.00	1.75

[PgDn] [Esc] to exit

Reservoir No. 1 STAGE / STORAGE / DISCHARGE DET. BASIN A

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
529.00	1.75	IC	0.00	-	0.00	0.00	1.75
529.10	2.86	IC	0.00	-	0.00	0.00	2.86
529.20	4.28	IC	0.00	-	0.00	0.00	4.28
529.30	4.58	IC	0.00	-	0.00	0.00	4.58
529.40	6.35	IC	0.00	-	0.00	0.00	6.35
529.50	6.69	IC	0.00	-	0.00	0.00	6.69
529.60	8.75	IC	0.00	-	0.00	0.00	8.75
529.70	9.11	OC	0.00	-	0.00	0.00	9.11
529.80	11.03	OC	0.00	-	0.00	0.00	11.03
529.90	11.84	IC	0.00	-	0.00	0.00	11.84
530.00	12.86	OC	0.00	-	0.00	0.00	12.86

[PgDn] [Esc] to exit

Reservoir No. 1 STAGE / STORAGE / DISCHARGE DET. BASIN A

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
530.00	12.86	OC	0.00	-	0.00	0.00	12.86
530.20	14.50	OC	0.00	-	0.00	0.00	14.50
530.40	15.88	OC	0.00	-	0.00	0.00	15.88
530.60	16.95	OC	0.00	-	0.00	0.00	16.95
530.80	18.15	OC	0.00	-	0.00	0.00	18.15
531.00	18.24	OC	0.00	-	0.00	0.00	18.24
531.20	22.34	OC	0.00	-	0.00	0.00	22.34
531.40	25.79	OC	0.00	-	0.00	0.00	25.79
531.60	28.83	OC	0.00	-	0.00	0.00	28.83
531.80	31.59	OC	0.00	-	0.00	0.00	31.59
532.00	34.12	OC	0.00	-	0.00	0.00	34.12

[PgDn] [Esc] to exit

STAGE / STORAGE TABLE

1. RESERVOIR No = 1. 2. RESERVOIR NAME = DET. BASIN A

3. S = Ks * Z^b

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

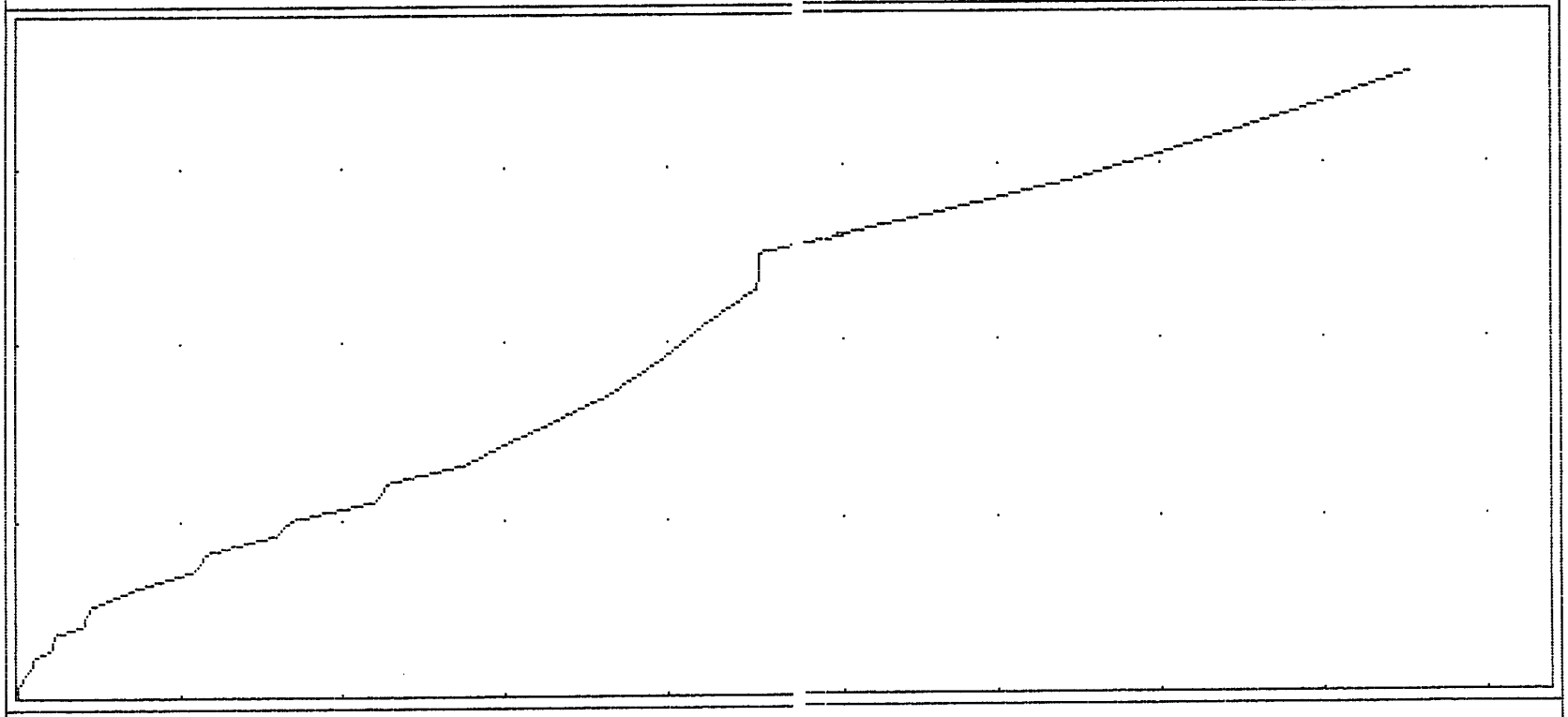
START ELEV = 0..... INCREMENT = 0...

	STAGE ft	ELEVATION ft	CO AREA sq ft	INC STORAGE cu ft	TOT STORAGE cu ft
4	0.00	528.50.	0.....	0	0
5	0.50	529.00.	17250...	4312	4312
6	1.50	530.00.	23750...	20500	24812
7	3.50	532.00.	30800...	54550	79362
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



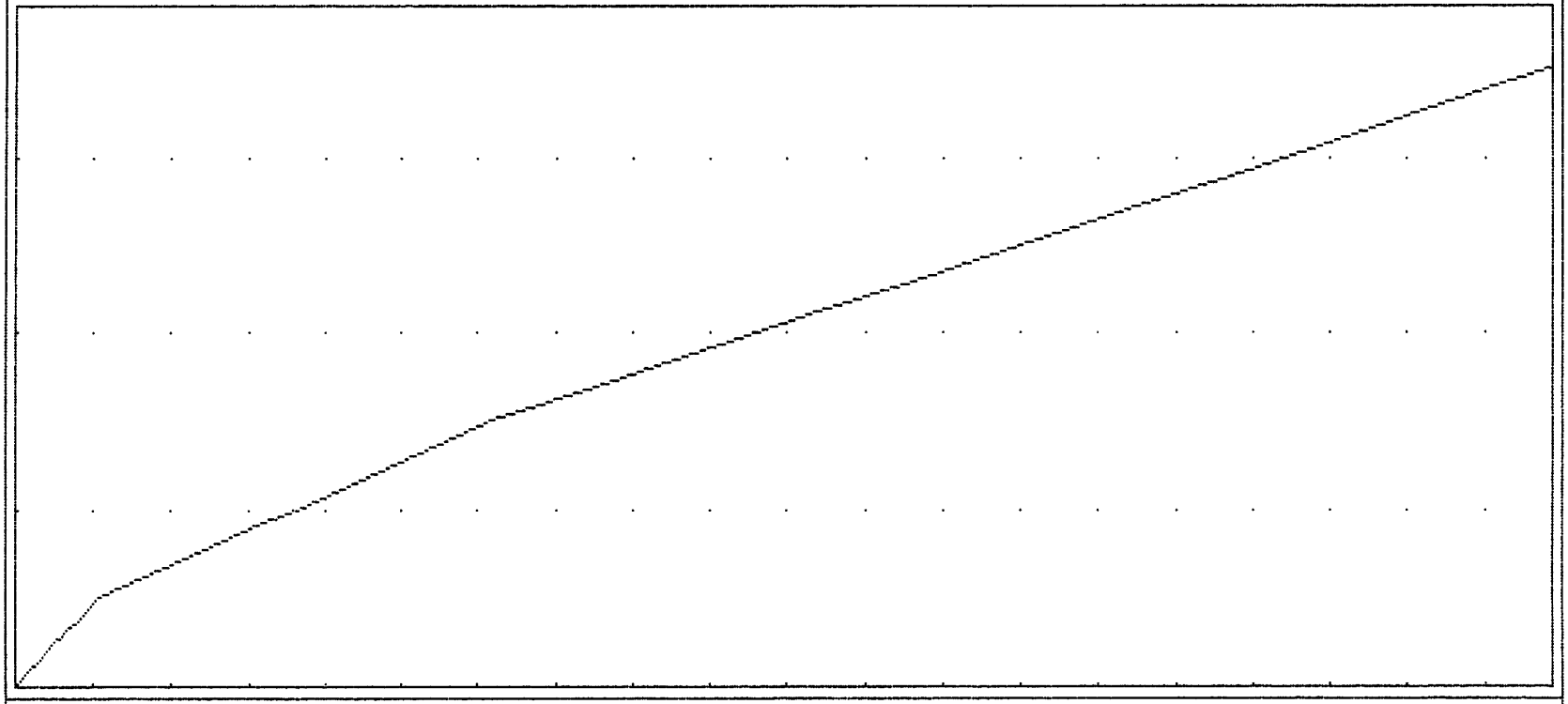
HGU = 4.0 cfs

VGU = 1.0 ft

[↵] Cont

[Esc] Exit

STAGE / STORAGE CURVE



HGU = 4000 cu ft VGU = 1.0 ft

[↵] Cont [Esc] Exit

HYDROLOGIC REPORT

.....
.....
.....

Hyd. No. 4

Hydrograph type = RESERVOIR ROUTE Peak discharge = 33.70 cfs
Storm frequency = 100 yr Time interval = 1 min
Inflow hyd. no. = 3 Reservoir no. = 1

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	4.89	9.78	4.87	4.89	0.01
2.00	9.78	14.67	19.44	19.55	0.06
3.00	14.67	19.56	43.26	43.89	0.32
4.00	19.56	24.45	75.93	77.49	0.78
5.00	24.45	29.34	116.76	119.94	1.59
6.00	29.34	34.23	166.25	170.56	2.15
7.00	34.23	39.12	223.50	229.83	3.16
8.00	39.12	44.02	288.19	296.86	4.33
9.00	44.02	48.91	361.27	371.33	5.03
10.00	48.91	53.80	441.19	454.19	6.50
11.00	53.80	58.69	527.47	543.89	8.21
12.00	58.69	63.58	621.26	639.96	9.35
13.00	63.58	68.47	720.48	743.52	11.52
14.00	68.47	73.36	826.58	852.53	12.97
15.00	73.36	78.25	940.39	968.41	14.01
16.00	78.25	83.14	1061.96	1092.00	15.02
17.00	83.14	88.03	1191.40	1223.35	15.98
18.00	88.03	92.92	1328.98	1362.57	16.80
19.00	92.92	97.81	1474.44	1509.93	17.74
20.00	97.81	92.92	1628.78	1665.18	18.20
21.00	92.92	88.03	1780.17	1819.52	19.67
22.00	88.03	83.14	1915.68	1961.13	22.72
23.00	83.14	78.25	2036.72	2086.85	25.07
24.00	78.25	73.36	2144.14	2198.11	26.98
25.00	73.36	68.47	2238.57	2295.75	28.59

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	68.47	63.58	2320.65	2380.40	29.88
27.00	63.58	58.69	2390.79	2452.69	30.95
28.00	58.69	53.80	2449.39	2513.05	31.83
29.00	53.80	48.91	2496.87	2561.87	32.50
30.00	48.91	44.02	2533.53	2599.57	33.02
31.00	44.02	39.12	2559.68	2626.45	33.39
32.00	39.12	34.23	2575.59	2642.82	33.61
33.00	34.23	29.34	2581.56	2648.95	33.70
34.00	29.34	24.45	2577.85	2645.13	33.64
35.00	24.45	19.56	2564.72	2631.64	33.46
36.00	19.56	14.67	2542.45	2608.74	33.15
37.00	14.67	9.78	2511.27	2576.68	32.71
38.00	9.78	4.89	2471.44	2535.73	32.14
39.00	4.89	0.00	2423.21	2486.11	31.45
40.00	0.00	0.00	2366.92	2428.10	30.59
41.00	0.00	0.00	2307.57	2366.92	29.68
42.00	0.00	0.00	2250.00	2307.57	28.79
43.00	0.00	0.00	2194.33	2250.00	27.84
44.00	0.00	0.00	2140.49	2194.33	26.92
45.00	0.00	0.00	2088.42	2140.49	26.03
46.00	0.00	0.00	2038.23	2088.42	25.10
47.00	0.00	0.00	1989.91	2038.23	24.16
48.00	0.00	0.00	1943.39	1989.91	23.26
49.00	0.00	0.00	1898.60	1943.39	22.39
50.00	0.00	0.00	1855.78	1898.60	21.41
51.00	0.00	0.00	1814.83	1855.78	20.47
52.00	0.00	0.00	1775.70	1814.83	19.57
53.00	0.00	0.00	1738.29	1775.70	18.71
54.00	0.00	0.00	1701.83	1738.29	18.23
55.00	0.00	0.00	1665.40	1701.83	18.21
56.00	0.00	0.00	1629.01	1665.40	18.20
57.00	0.00	0.00	1592.64	1629.01	18.18
58.00	0.00	0.00	1556.32	1592.64	18.16
59.00	0.00	0.00	1520.22	1556.32	18.05
60.00	0.00	0.00	1484.60	1520.22	17.81
61.00	0.00	0.00	1449.44	1484.60	17.58
62.00	0.00	0.00	1414.75	1449.44	17.35
63.00	0.00	0.00	1380.51	1414.75	17.12
64.00	0.00	0.00	1346.71	1380.51	16.90
65.00	0.00	0.00	1313.30	1346.71	16.70
66.00	0.00	0.00	1280.29	1313.30	16.51
67.00	0.00	0.00	1247.66	1280.29	16.31

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	1215.42	1247.66	16.12
69.00	0.00	0.00	1183.56	1215.42	15.93
70.00	0.00	0.00	1152.15	1183.56	15.71
71.00	0.00	0.00	1121.21	1152.15	15.47
72.00	0.00	0.00	1090.74	1121.21	15.24
73.00	0.00	0.00	1060.72	1090.74	15.01
74.00	0.00	0.00	1031.16	1060.72	14.78
75.00	0.00	0.00	1002.04	1031.16	14.56
76.00	0.00	0.00	973.42	1002.04	14.31
77.00	0.00	0.00	945.32	973.42	14.05
78.00	0.00	0.00	917.71	945.32	13.80
79.00	0.00	0.00	890.60	917.71	13.56
80.00	0.00	0.00	863.97	890.60	13.31
81.00	0.00	0.00	837.82	863.97	13.08
82.00	0.00	0.00	812.16	837.82	12.83
83.00	0.00	0.00	787.26	812.16	12.45
84.00	0.00	0.00	763.09	787.26	12.08
85.00	0.00	0.00	739.59	763.09	11.75
86.00	0.00	0.00	716.63	739.59	11.48
87.00	0.00	0.00	694.21	716.63	11.21
88.00	0.00	0.00	672.54	694.21	10.84
89.00	0.00	0.00	652.05	672.54	10.24
90.00	0.00	0.00	632.69	652.05	9.68
91.00	0.00	0.00	614.39	632.69	9.15
92.00	0.00	0.00	596.35	614.39	9.02
93.00	0.00	0.00	578.49	596.35	8.93
94.00	0.00	0.00	560.81	578.49	8.84
95.00	0.00	0.00	543.40	560.81	8.71
96.00	0.00	0.00	527.01	543.40	8.20
97.00	0.00	0.00	511.58	527.01	7.71
98.00	0.00	0.00	497.06	511.58	7.26
99.00	0.00	0.00	483.38	497.06	6.84
100.00	0.00	0.00	470.09	483.38	6.65
101.00	0.00	0.00	456.93	470.09	6.58
102.00	0.00	0.00	443.90	456.93	6.52
103.00	0.00	0.00	431.00	443.90	6.45
104.00	0.00	0.00	418.23	431.00	6.39
105.00	0.00	0.00	405.79	418.23	6.22
106.00	0.00	0.00	393.99	405.79	5.90
107.00	0.00	0.00	382.78	393.99	5.60
108.00	0.00	0.00	372.14	382.78	5.32
109.00	0.00	0.00	362.04	372.14	5.05

HYDROGRAPH DISCHARGE TABLE Cont'd

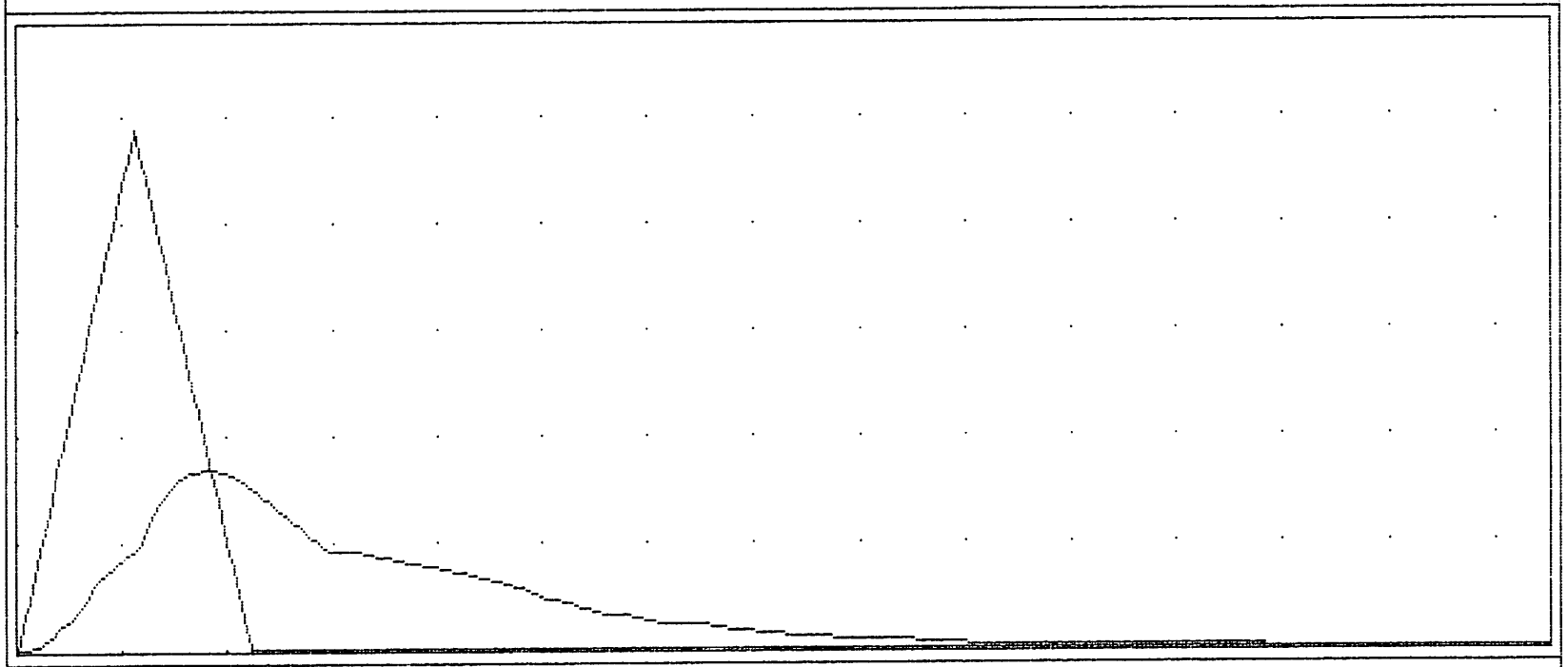
TIME min	INFLOW (i) cfs	INFLOW (j) cfs	2S/dt-O (i) cfs	2S/dt+O (j) cfs	OUTFLOW cfs
110.00	0.00	0.00	352.45	362.04	4.80
111.00	0.00	0.00	343.30	352.45	4.57
112.00	0.00	0.00	334.24	343.30	4.53
113.00	0.00	0.00	325.25	334.24	4.49
114.00	0.00	0.00	316.34	325.25	4.45
115.00	0.00	0.00	307.51	316.34	4.42
116.00	0.00	0.00	298.75	307.51	4.38
117.00	0.00	0.00	290.07	298.75	4.34
118.00	0.00	0.00	281.47	290.07	4.30
119.00	0.00	0.00	273.04	281.47	4.21
120.00	0.00	0.00	264.95	273.04	4.04
121.00	0.00	0.00	257.20	264.95	3.88
122.00	0.00	0.00	249.75	257.20	3.72
123.00	0.00	0.00	242.62	249.75	3.57
124.00	0.00	0.00	235.77	242.62	3.42
125.00	0.00	0.00	229.20	235.77	3.28
126.00	0.00	0.00	222.90	229.20	3.15
127.00	0.00	0.00	216.85	222.90	3.02
128.00	0.00	0.00	211.05	216.85	2.90
129.00	0.00	0.00	205.46	211.05	2.80
130.00	0.00	0.00	200.04	205.46	2.71
131.00	0.00	0.00	194.79	200.04	2.62
132.00	0.00	0.00	189.71	194.79	2.54
133.00	0.00	0.00	184.79	189.71	2.46
134.00	0.00	0.00	180.03	184.79	2.38
135.00	0.00	0.00	175.42	180.03	2.30
136.00	0.00	0.00	170.96	175.42	2.23
137.00	0.00	0.00	166.64	170.96	2.16
138.00	0.00	0.00	162.46	166.64	2.09
139.00	0.00	0.00	158.41	162.46	2.02
140.00	0.00	0.00	154.49	158.41	1.96
141.00	0.00	0.00	150.70	154.49	1.90
142.00	0.00	0.00	147.02	150.70	1.84
143.00	0.00	0.00	143.46	147.02	1.78
144.00	0.00	0.00	139.98	143.46	1.74
145.00	0.00	0.00	136.54	139.98	1.72
146.00	0.00	0.00	133.14	136.54	1.70
147.00	0.00	0.00	129.79	133.14	1.68
148.00	0.00	0.00	126.48	129.79	1.66
149.00	0.00	0.00	123.21	126.48	1.63
150.00	0.00	0.00	119.99	123.21	1.61
151.00	0.00	0.00	116.80	119.99	1.59

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	113.66	116.80	1.57
153.00	0.00	0.00	110.78	113.66	1.44
154.00	0.00	0.00	108.16	110.78	1.31
155.00	0.00	0.00	105.77	108.16	1.19
156.00	0.00	0.00	103.60	105.77	1.09

Maximum outflow (cfs) = 33.70
Maximum storage (cu ft) = 78458
Maximum elevation (ft) = 531.97

Qp = 33.7 RESERVOIR ROUTE 100 Yr



HGU = 18 min 4 VGU = 20.0 cfs

MAX STORAGE = 78458

MAX ELEVATION = 531.97

PICKETT RAY & SILVER

Civil Engineers
Planners
Land Surveyors

333 Mid Rivers Mall Dr
St. Peters, MO 63376

441-1211
278-1211

PROJECT NAME MONTICELLO VILLAGE A
PROJECT #/JOB ORDER # 85-064U
DATE FEB. 13, 1992
DESIGNER J.C.
PAGE Sheet 17 of 17

GRASS EMERGENCY SPILLWAY

$Q_{100} = CLH^{3/2}$

$97.75 = 3.0(100)(H^{3/2})$

$0.48 = H$