APPENDIX A

Sedimentation Pond Calculations

Revised 11 Oct 1985

SEDIMENT POND DESIGN FOR THE CRANDALL CANYON MINE

Design Volume

10-yr, 24-hr storm = 2.50 in (Miller et al., 1973)

Drainage area to pond → Undisturbed (WS-3) = 16.0 ac
Disturbed = 5.7 ac

Curve numbers → Six cover types shown on Plate 9-1 of Tract 2 PAP. Cover data from Tables 3-D, 3-E, and 3-F of Tract 2 PAP, Chapter 9. Individual curve numbers from USBR (1977) - see figures on page 2 of this calc.

Undisturbed area (assume soil group C):

Cover Type	Area* (ac.)	Percent Cover	Curve Number
Aspen	27.9	34.2	65
Mtn. Shrub/Grassland	29.3	23.1	75
Sagebrush	5.8	23.1	75
Spruce, Fir, Aspen	18.4	45.2	60
Rock outcrop	1.6	0	96
Mixed Mtn. Shrub, Conifer/Aspen	1.0	34.2	65

* Areas planimetered by DOGM (personal comm., 9 Oct 1985)

$$\text{Weighted Avg. CN} = \frac{(27.9)(65)+(29.3)(75)+(5.8)(75)+(18.4)(60)+(1.6)(96)+(1.0)(65)}{84.0}$$

$$= 68.7 \Longrightarrow \text{use } \underline{\underline{CN = 69}}$$

Disturbed area → $\underline{\underline{CN = 90}}$

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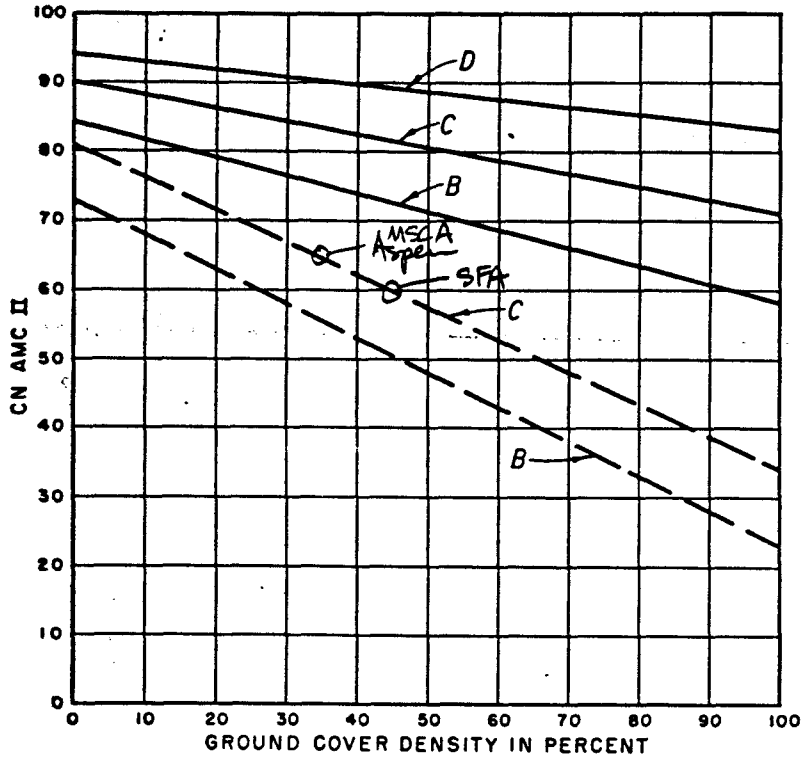
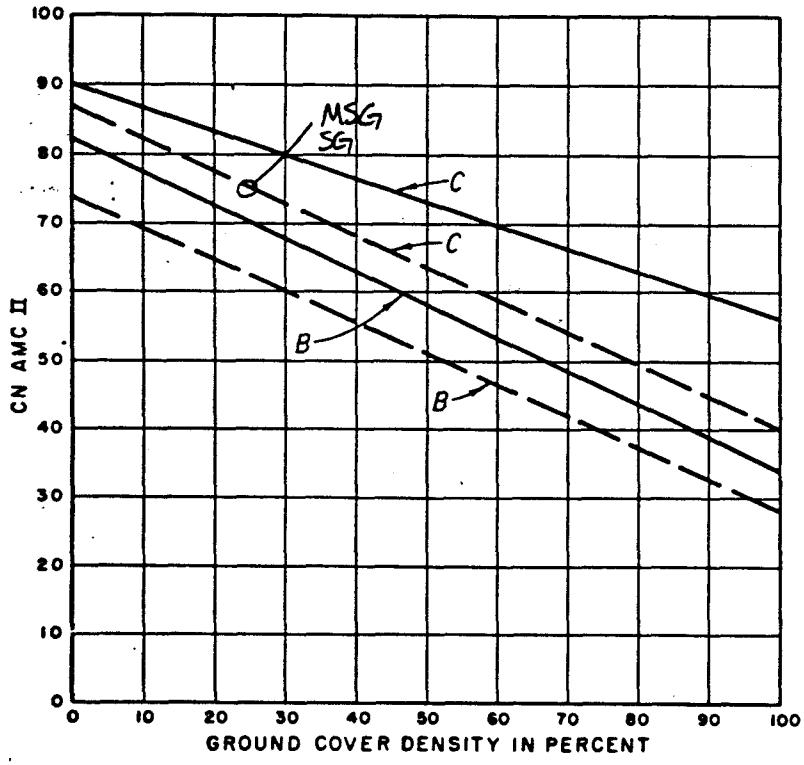


(A)



(B)

Required runoff storage volume:

Undisturbed area → Q = 0.42 in (CN = 69) 0.421 ✓
= 0.56 AF (A = 16.0 ac) 0.561 ✓

Disturbed area → Q = 1.53 in (CN = 90) 1.533 ✓
= 0.73 AF (A = 5.7 ac) 0.727 ✓

Total = 0.56 AF + 0.73 AF = 1.29 AF

Required sediment storage → 0.1 AF/ac of disturbance ✓
Storage volume = (0.1 AF/ac)(5.7 ac)
= 0.57 AF 1.288 - 0.57 ✓

Total required storage volume = 1.29 AF + 0.57 AF
= 1.86 AF 1.858 ✓

Stage-Capacity-Area Data

	Area	Inc. Volume	Cum. Volume (AF)
			0
Elev. 7769 →	A = 0.0219 ac	V = 0.0252 AF	0.0252
Elev. 7770 →	A = 0.0284 ac	V = 0.0745 AF	0.0997
Elev. 7772 →	A = 0.0461 ac	V = 0.1131 AF	0.2128
Elev. 7774 →	A = 0.0670 ac	V = 0.1565 AF	0.3693
Elev. 7776 →	A = 0.0895 ac	V = 0.2026 AF	0.5719
Elev. 7778 →	A = 0.1131 ac	V = 0.2529 AF	0.8248
Elev. 7780 →	A = 0.1398 ac	V = 0.3081 AF	1.1329
Elev. 7782 →	A = 0.1683 ac	V = 0.3672 AF	1.5001
Elev. 7784 →	A = 0.1989 ac		

Stage-capacity curve → see pg. 4 of this calc.
Stage-area curve → see pg. 5 of this calc.

Insufficient space available to store required sediment and runoff. Divert undisturbed areas to meet required storage volumes. Base sizing on use of diversion.

Total required storage = 0.73 AF + 0.57 AF = 1.30 AF

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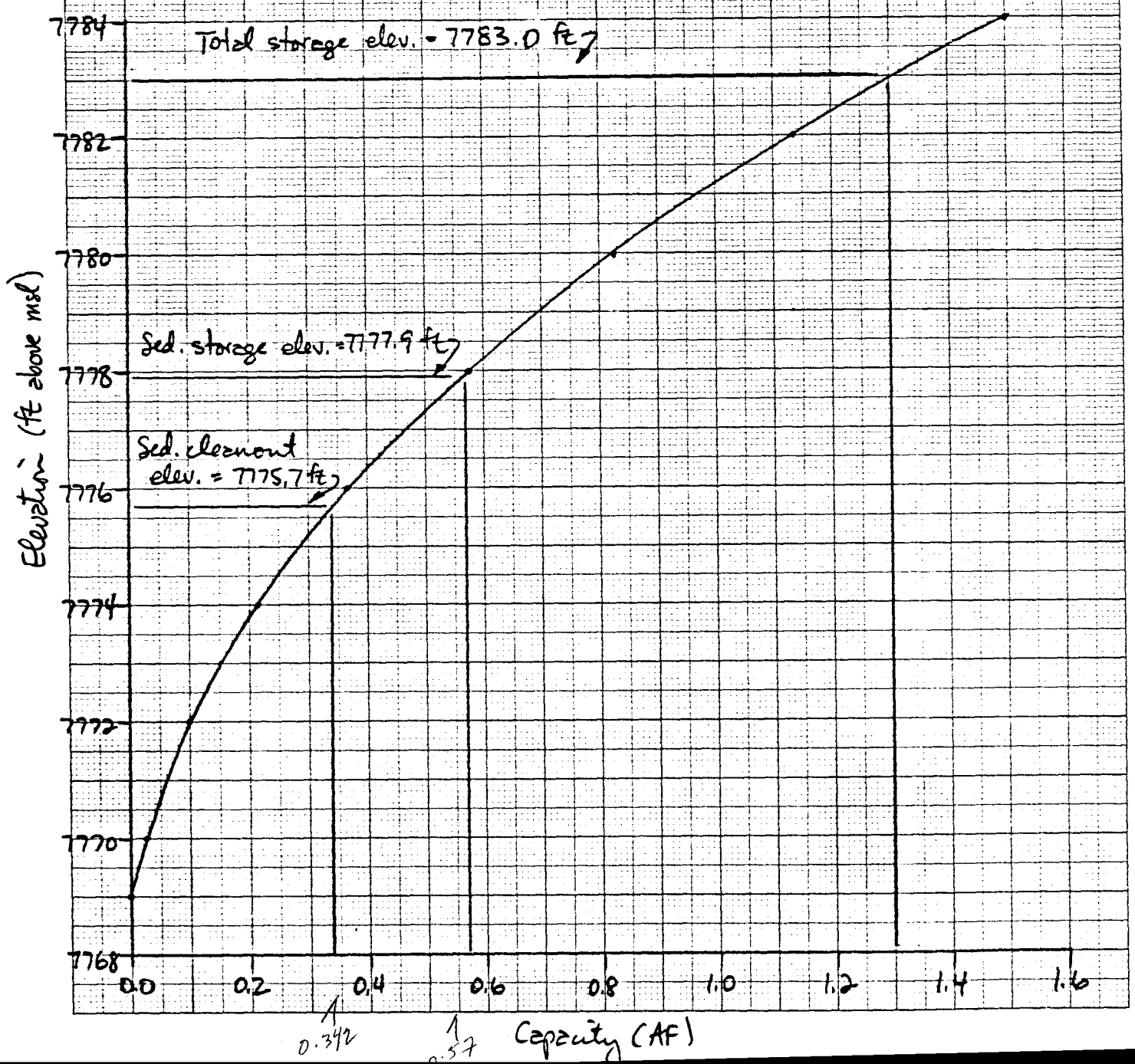
Stage-capacity curve for proposed Genwal sedimentation pond



K+E 10 X 10 TO THE CENTIMETER 18 X 25 CM. KEUFFEL & ESSER CO. MADE IN U.S.A.

K+E 10 X 10 TO THE CENTIMETER 18 X 25 CM.
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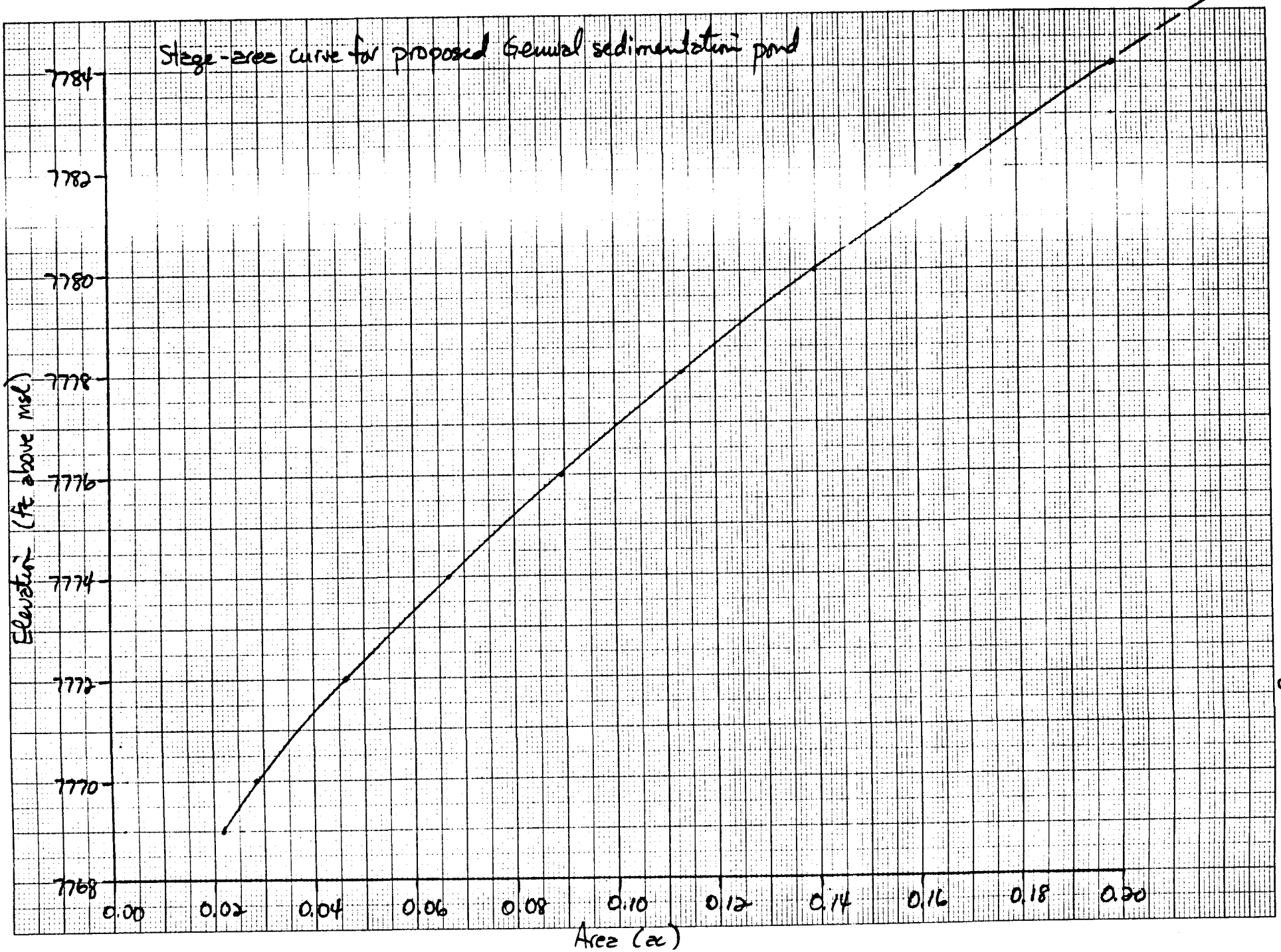

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Spillway Sizing

Methodology → SEDIMOT II (see Wilson et al., 1980; Warner et al., 1980)
Design storm → 25-yr, 24-hr storm = 2.92 in (Miller et al., 1973)
Storm type → SCS Type II
Time increment of outflow hydrograph = 0.1 hr

No. of junctions = 1
No. of branches = 1
Computation mode → hydro. and sed. (although only inflow-outflow through pond is of interest).

Specific gravity of eroded sediment = 2.50 (default value)
Coefficient for distributing sed. load = 1.5 (default value)
Submerged bulk specific gravity = 1.25 (fine to medium)

Particle size distribution → according to Chapter 8 of the PAP, soils in the area are classified as "Rocky land." Swenson et al. (1970) indicate that this soil is a fine sandy loam but give no gradation. According to Donahue et al. (1977), a fine sandy loam typically has the gradation shown on page 7 of this calc. Using this gradation, the following is assumed to apply to the site:

Size (mm)	Percent Finer
0.25	100
0.10	50
0.05	35
0.01	19
0.005	15
0.001	6
0.0001	0

7 values

No. of structures → 1 (sed. pond)
Between structure routing parameters: All ∅ (no upstream structures or junctions).

No. of subwatersheds → 2 (1 undisturbed, 1 disturbed)

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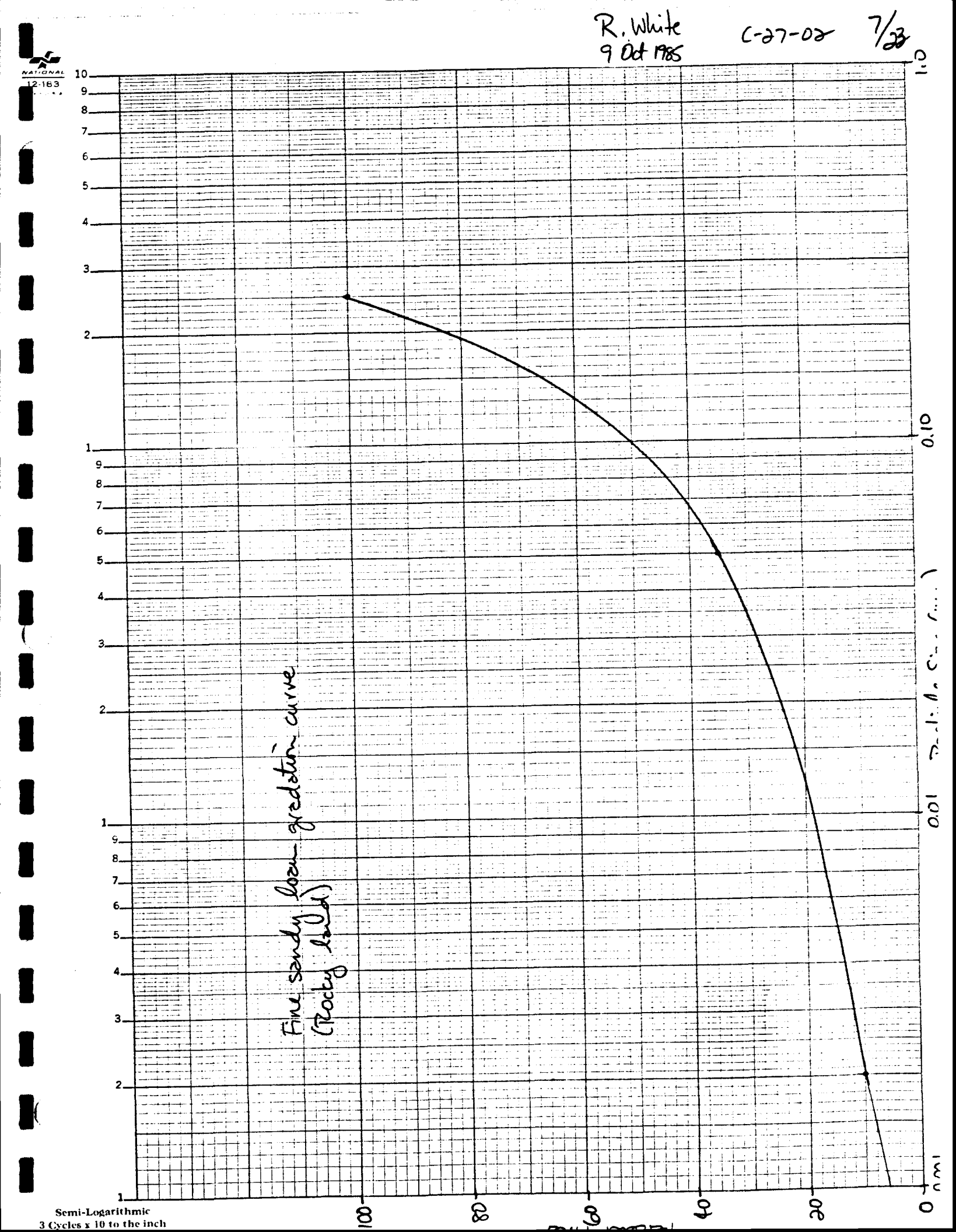

Data for subwatershed 1 (undisturbed within yard area - other diverted):

$A = 0.4$ ac

$CN = 69$

$T_c = 1.67\,L$

$$L = \frac{l^{0.8}\,(S+1)^{0.7}}{1900\,Y^{0.5}}$$

where L = watershed lag (hr)

$S = \frac{1000}{CN} - 10$

Y = watershed slope (%)

l = hydraulic length (ft)

$l = 1320$ ft

$S = \frac{1000}{69} - 10 = 4.49$

$Y = \left(\frac{20\text{ ft}}{50\text{ ft}}\right)(100) = 40\%$ (See site map, 1" = 50' scale)

$$L = \frac{(1320)^{0.8}\,(4.49+1)^{0.7}}{(1900)(40.0)^{0.5}} = 0.09\text{ hr}$$

$T_c = (0.09)(1.67) = 0.14$ hr

Sediment-yield calculations for subwatershed 1 — use MUSLE

$K = 0.30$ (Clyde et al., 1978)

$L = 50$ ft (field obs. — See site map)

$S = 40.0\%$

$CP = 0.037$ (see attached table on page 9 of this calc.)

Data for subwatershed 2 (disturbed):

$A = 5.7$ ac

$CN = 90$

$T_c \longrightarrow$ determine by Upland method (U.S. SCS, 1972) — see pg. 10 of this calc. Flow path — across pads, along roads! Assume pads and roads behave as "paved areas" on nomograph on pg. 10 of this calc.

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Table 5.A.3. C Factors for Permanent Pasture, Rangeland, Idle Land, and Grazed Woodland.[1,5]

Vegetal Canopy		Cover that Contacts the Surface						
Type and Height of Raised Canopy[2]	Canopy Cover[3] %	Type[4]	Percent Ground Cover 0	20	40	60	80	95-100
No appreciable canopy		G	.45	.20	.10	.042	.013	.003
		W	.45	.24	.15	.090	.043	.011
Canopy of tall weeds or short brush (0.5 m fall ht.)	25	G	.36	.17	.09	.038	.012	.003
		W	.36	.20	.13	.082	.041	.011
	50	G	.26	.13	.07	.035	.012	.003
		W	.26	.16	.11	.075	.039	.011
	75	G	.17	.10	.06	.031	.011	.003
		W	.17	.12	.09	.067	.038	.011
Appreciable brush or bushes (2 m fall ht.)	25	G	.40	.18	.09	.040	.013	.003
		W	.40	.22	.14	.085	.042	.011
	50	G	.34	.16	.085	.038	.012	.003
		W	.34	.19	.13	.081	.041	.011
	75	G	.28	.14	.08	.036	.012	.003
		W	.28	.17	.12	.077	.040	.011
Trees but no appreciable low brush (4 m fall ht.)	25	G	.42	.19	.10	.041	.013	.003
		W	.42	.23	.14	.087	.042	.011
	50	G	.39	.18	.09	.040	.013	.003
		W	.39	.21	.14	.085	.042	.011
	75	G	.36	.17	.09	.039	.012	.003
		W	.36	.20	.13	.083	.041	.011

1. All values shown assume: (1) random distribution of mulch or vegetation, and (2) mulch of appreciable depth where it exists. Idle land refers to land with undisturbed profiles for at least a period of three consecutive years. Also to be used for burned forest land and forest land that has been harvested less than three years ago.
2. Average fall height of waterdrops from canopy to soil surface: m = meters.
3. Portion of total area surface that would be hidden from view by canopy in a vertical projection (a bird's-eye view).
4. G: Cover at surface is grass, grasslike plants, decaying compacted duff or litter at least 2 inches deep.

   W: Cover at surface is mostly broadleaf herbaceous plants (as weeds with little lateral root network near the surface), and/or undecayed residue.
5. Soil Conservation Service (1977).

Source: Barfield et al. (1981)

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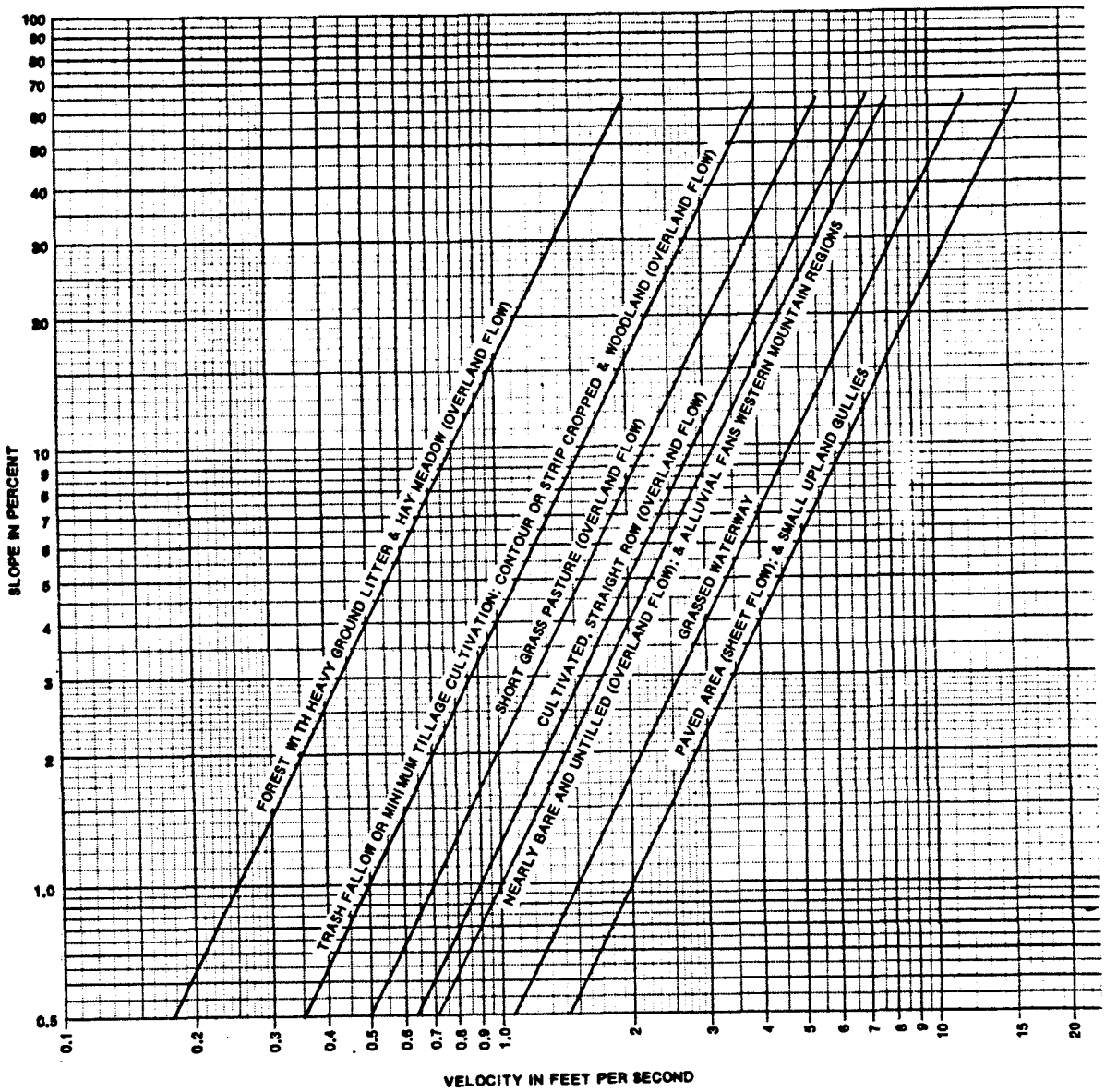

Source: US SCS (1972)

600 ft @ 1% slope → V = 2 ft/s (portal pad to admin. pad)

$$(T_c)_1 = \frac{600\ ft}{2\ ft/s} = 300\ s$$

700 ft @ 7% slope → V = 5.4 ft/s (along road from admin. pad to pond)

$$(T_c)_2 = \frac{700\ ft}{5.4\ ft/s} = 130\ s$$

$$T_c = (300\ s + 130\ s) = 0.12\ hr$$

Sediment yield calculations → use MUSLE

K = 0.30 (Clyde et al., 1978)

L = 70 ft

$$S = \left[\frac{(5410\ ft)(10\ ft)}{(5.7\ ac)(43{,}560\ ft^2/ac)}\right](100) = 21.8\%$$

CP → 2.9 ac. of pad and road areas: CP = 0.90
2.8 ac of cut & fill slopes: CP = 0.80
} see pg. 12 of this calc.

$$\text{Avg. CP} = \frac{(2.9)(0.90) + (2.8)(0.80)}{5.7} = 0.85$$

Pond Parameters:

Dead space → Effective pond width $= \frac{\text{Area}}{\text{Length}}$

$$= \frac{8660\ ft^2}{120\ ft} = 72.2\ ft$$

$$\frac{\text{Length}}{\text{Eff. Width}} = \frac{120}{72.2} = 1.7$$ ⟹ assume dead space = 30% of pool

Outflow withdrawal → surface

Inflow → completely mixed

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Table 5.A.1 Typical C Factor Values Reported in the Literature.*

	Condition	C factor
1.	Bare soil conditions	
	freshly disked to 6-8 inches	1.00
	after one rain	0.89
	loose to 12 inches smooth	0.90
	loose to 12 inches rough	slopes 0.80
	compacted root raked	1.20
	compacted bulldozer scraped across slope	1.20
	same except root raked across	pads 0.90
	rough irregular tracked all directions	0.90
	seed and fertilize, fresh, unprepared seedbed	0.64
	same after six months	0.54
	seed, fertilize and 12 months chemical	0.38
	not tilled algae crusted	0.01
	tilled algae crusted	0.02
	undisturbed except scraped	0.66 - 1.30
	scarified only	0.76 - 1.31
	sawdust 2 inches deep, disked in	0.61
2.	Asphalt emulsion	
	1210 gallons/acre	0.01 - 0.019
	605 gallons/acre	0.14 - 0.57
	302 gallons/acre	0.28 - 0.60
3.	Dust binder	
	605 gallons/acre	1.05
	1210 gallons/acre	0.29 - 0.78
4.	Other chemicals	
	1000 lb fiber glass roving with 60-150 gallons/acre	0.01 - 0.05
	Aquatain	0.68
	Aerospray 70, 10 percent cover	0.94
	Curasol AE	0.30 - 0.48
	PVA	0.71 - 0.90
	Terra-Tack	0.66
	wood fiber slurry, 1400 lb/acre fresh	0.01 - 0.02
	wood fiber slurry, 3500 lb/acre fresh	0.10
5.	Seedings[1]	
	temporary, 0 to 60 days[2]	0.40
	temporary, after 60 days	0.05
	permanent, 2 to 12 months	0.05
6.	Brush	0.35

1. If plantings are used with mulches, use the minimum C values.
2. If dry weather occurs at planting and emergence is a problem, extend the 0-60 days to a period when rainfall normally occurs.

* National Cooperative Highway Research Program, 1976.

Source: Barfield et al. (1981)

Stage-area data (for pond full to top of sed. storage or dewatering level):

Stage (ft)	Elev. (ft)	Area (ac.)
0.0	7777.9	0.112
0.5	7778.4	0.118
1.0	7778.9	0.125
1.5	7779.4	0.131
2.0	7779.9	0.138
3.0	7780.9	0.153
4.0	7781.9	0.168
5.1	7783.0	0.184
5.6	7783.5	0.191
6.1	7784.0	0.199
6.6	7784.5	0.207
7.1	7785.0	0.225

Principal spillway crest → 5.1

12 values

Stage-discharge data:

For principal spillway → Barrel diameter = 18 in
Riser diameter = 24 in
Barrel length = 85 ft

Barfield et al. (1981):
- Entrance loss coef. = 1.0
- Bend loss coef. = 0.5
- Wier flow coef. = 3.1
- Orifice flow coef. = 0.6
- Manning's n of pipe = 0.024

Barrel head drop = 20 ft

Stage-discharge data for principal spillway → see pg. 14 of this calc. (data calculated by preliminary run of SEDIMOT II).

***** DROP SPILLWAY INPUTS *****

ENTRANCE LOSS COEFFICIENT	=	1.0000	
BEND LOSS COEFFICIENT	=	.5000	
WEIR COEFFICIENT	=	3.1000	
ORIFICE COEFFICIENT	=	.6000	
MANNING COEFFICIENT	=	.0240	
BARREL DIAMATER	=	18.00	INCHES
RISER DIAMETER	=	24.00	INCHES
LENGTH OF PIPE	=	85.00	FEET
VERTICAL HEAD DROP	=	20.00	FEET

***** BASIN GEOMETRY *****

STAGE (FT)	Depth over spillway (ft)	AREA (ACRES)	AVERAGE DEPTH (FT)	DISCHARGE (CFS)	CAPACITY (ACRES-FT)
.00		.112	.00	.00	.00
.50		.118	.49	.00	.06
1.00		.125	.98	.00	.12
1.50		.131	1.46	.00	.18
2.00		.138	1.93	.00	.25
3.00		.153	2.84	.00	.39
4.00		.168	3.72	.00	.56
5.00		.182	4.59	.00	.73
Spillway crest → 5.30	0.0	.187	4.84	.00	.79
5.80	0.5	.194	5.26	6.89	.88
6.30	1.0	.202	5.68	15.13	.98
6.80	1.5	.220	6.08	18.53	1.09
7.10	1.8	.225	6.31	20.29	1.15

Principal (drop-inlet) spillway

Emergency spillway hydraulics (bottom of emerg. spillway 1 ft above top of principal spillway):

Assume $L = 10.0$ ft (spillway length)

$b = 4.0$ ft (spillway width)

$z = 2$ (2h:1v sideslopes)

$n = 0.040$ (riprap lined)

Use method developed by U.S. SCS (1968) and expanded by Barfield et al. (1981):

① Determine $H_{ec,r}$ (critical specific energy head) for selected values of H_p (energy head of water in pond) from figure on pg. 15 of this calc.

② Calculate q from the following eq. for the standard 100-ft wide rectangular section:

$$q_r = (0.544)(g^{\frac{1}{2}})(H_{ec,r}^{3/2})(100)$$

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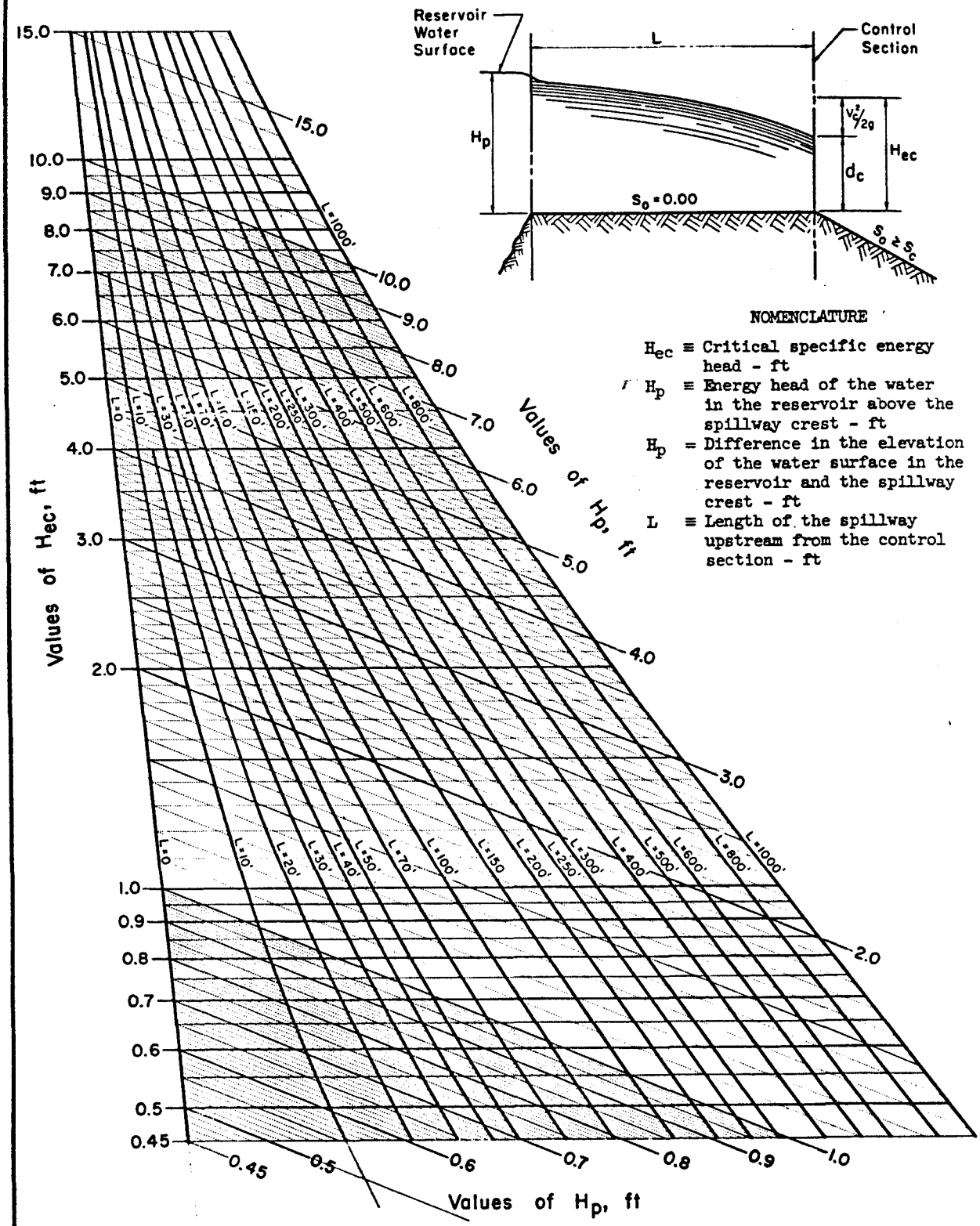
SPILLWAYS: H_{ec} vs H_p for Various Lengths, L

b = 100 ft
z = 2
n = 0.04

Case I



NOMENCLATURE

H_{ec} ≡ Critical specific energy head - ft

H_p ≡ Energy head of the water in the reservoir above the spillway crest - ft

H_p = Difference in the elevation of the water surface in the reservoir and the spillway crest - ft

L ≡ Length of the spillway upstream from the control section - ft

REFERENCE

Source: U.S. SCS (1968)

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③ Correct q for a trapezoidal section according to the equation

$$q = \left[\frac{1.5b + zH_{ec,r}}{150}\right](q_r)$$

H_p (ft)	$H_{ec,r}$ (ft)	q_r (cfs)	q (cfs)
0.5	0.41	81.0	3.7
1.0	0.88	255	13.2
1.5	1.38	500	29.2
2.0	1.89	802	52.3

Combined discharge rating curve:

Stage[a] (ft)	q-principal (cfs)	q-emergency (cfs)	q-total (cfs)
5.1	0	0	0
5.6	6.9	0.0	6.9
6.1	15.1	0.0	15.1
6.6	18.5	3.7	22.2
7.1	21.0	13.2	34.2

[a] From top of sed. storage level

SEDIMOT II results → Peak inflow = 10.72 cfs
Peak outflow = 9.61 cfs
Trap efficiency = 87.0 %
Peak stage = 5.76 ft (above sed. storage level).

Elev. of peak stage = 7777.9 + 5.8 = 7783.7 ft
Emergency spillway not flowing at this elev. Minimum distance between primary and emergency spillway = 1.0 ft.
Embankment height above emerg. spillway crest = 1.0 ft.
Top of embankment = 7783.0 + 1.0 + 1.0 = 7785.0 ft

Design Notes

① Required top width of embankment $= \left(\frac{16.0+35}{5}\right)$

$= 10.2$ ft

② Existing embankment crest elev. = 7783.0 ft (per survey). New addition to be constructed 5% higher (see UMC 817.46 (k)). Existing embankment assumed to be settled. No outflow in emerg. spillway during design event. Crest emerg. spillway = 7784.0 ft. Crest of settled embankment = 7785.0 ft. Add $\longrightarrow$ $(2.0)(1.05) = \underline{2.1}$ ft for new design

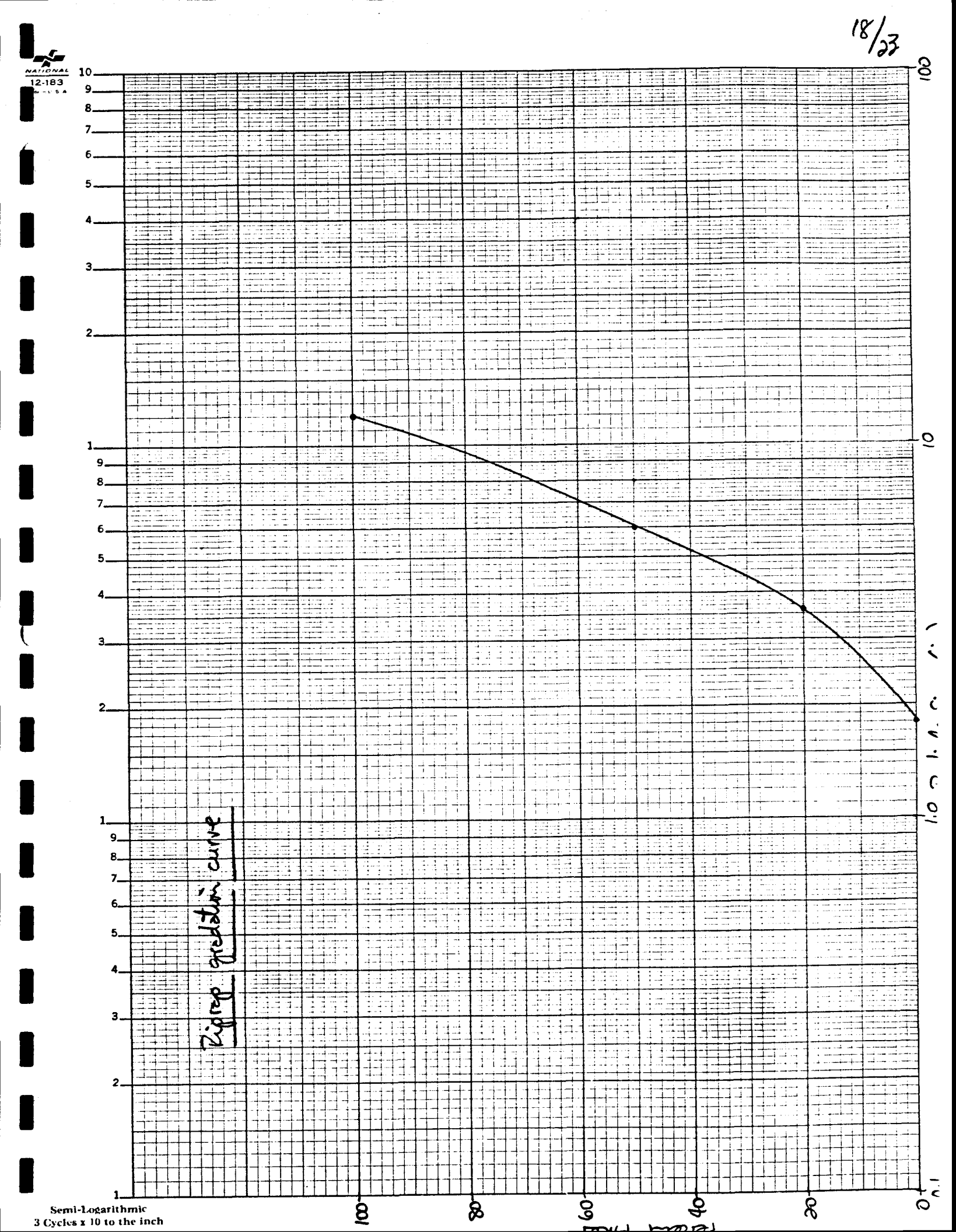
③ Overflow on existing riser at elev. 7779.4 ft (per survey). Raise 3.6 ft to 7783.0 ft to top of sed. + runoff storage level. Decant currently at 7776.4 ft (per survey). Raise 1.5 ft to 7777.9 ft (top of sed. storage level).

④ Crest of emergency spillway to be located at 7784.0 ft (one ft above elev. of overflow on riser spillway). Emergency spillway to be riprapped. Riprap corresponding to $n = 0.04 \longrightarrow d_{50} \approx 6\text{-}8$ in. Riprap gradation

Size (in)	Percent Finer
3.6	20
6.0	50
12.0	100

} see Barfield et al. (1981), Searcy (1978)

Riprap gradation curve provided on pg 18 of this calc.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Rigrep predation curve
Semi-Logarithmic
3 Cycles x 10 to the inch

Check for necessity of filter blanket beneath riprap:
Gradation of bed material (embankment) provided on pg. 20 of this calc. (similar to page 7 with addition of coarse fraction – see Delta Geotechnical Consultants, 1981). Design procedure from Searcy (1978).

$$\frac{D_{15}\text{ (riprap)}}{D_{85}\text{ (bed)}} = \frac{3.1\text{ in}}{0.94\text{ in}} = 3.3 < 5 \qquad \underline{\underline{OK}}$$

$$\frac{D_{15}\text{ (riprap)}}{D_{15}\text{ (bed)}} = \frac{3.1\text{ in}}{0.0021\text{ in}} = 1476 > 40 \qquad \underline{\underline{UNSTABLE}}$$

Assume the use of the sandy gravel shown on pg. 21 of this calc. for a filter blanket.

$$\frac{D_{15}\text{ (riprap)}}{D_{85}\text{ (filter)}} = \frac{3.1\text{ in}}{0.62\text{ in}} = 5.0 \qquad \underline{\underline{OK}}$$

$$\frac{D_{15}\text{ (riprap)}}{D_{15}\text{ (filter)}} = \frac{3.1}{0.078\text{ in}} = 39.7 < 40 \qquad \underline{\underline{OK}}$$

$$\frac{D_{15}\text{ (filter)}}{D_{85}\text{ (bed)}} = \frac{0.078\text{ in}}{0.94\text{ in}} = 0.08 < 5 \qquad \underline{\underline{OK}}$$

$$\frac{D_{15}\text{ (filter)}}{D_{15}\text{ (bed)}} = \frac{0.078\text{ in}}{0.0021\text{ in}} = 37.1 < 40 \qquad \underline{\underline{OK}}$$

Indicated sandy gravel is sufficient for a filter blanket.

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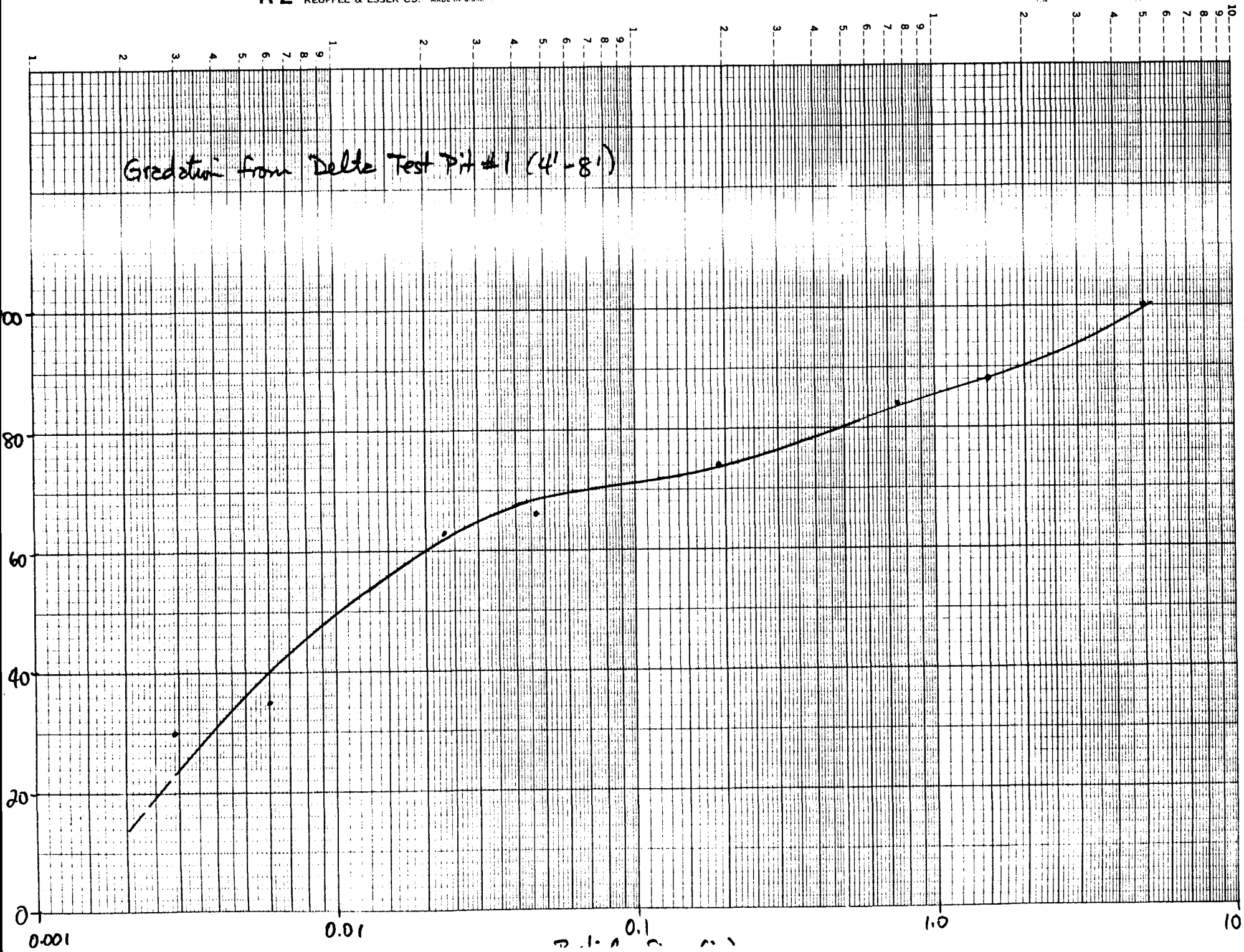

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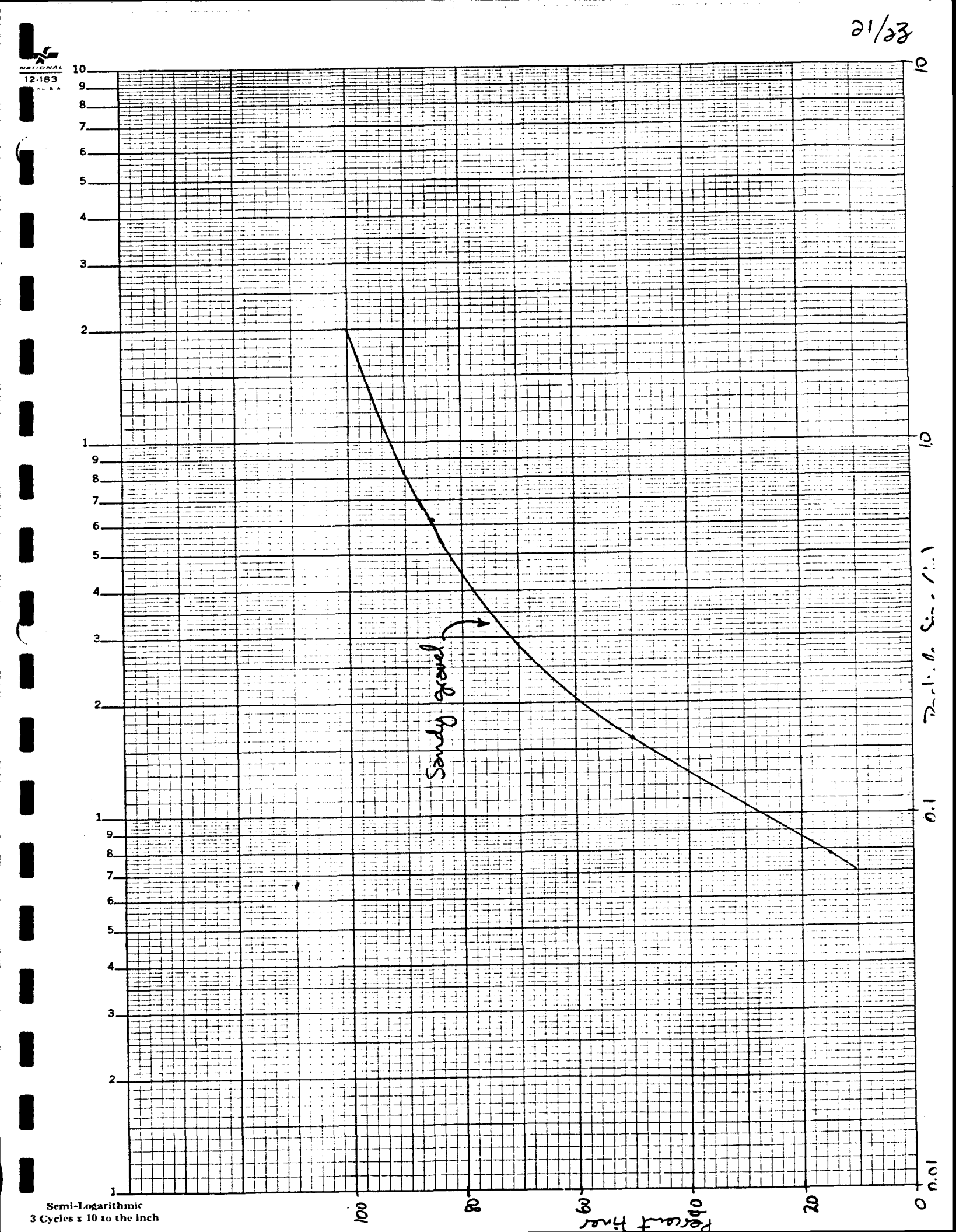

Semi-Logarithmic
3 Cycles x 10 to the inch

(5) Embankment sideslopes → 2:1 interior, 2:1 exterior. Insufficient room to flatten either slope and result in enough volume. This configuration was modeled by R&M Consultants (1981) and found to have a static factor of safety of 1.4 (w/ pond lined with 12" clay). Add weight to toe of dam to increase factor of safety.

(6) 12" layer of compacted local clay to be used in pond bottom and interior embankment per R&M consultants design to decrease seepage, increase stability.

(7) Revegetate exterior embankment slope following reconstruction.

References

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*****************************************************************
                          -- SEDPC --
                SEDIMOT II MODEL FOR THE IBM PC/XT
                CONVERTED BY TECH ENGINEERING INC.
                   VERSION 1.10 NOVEMBER 17,1983
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       UNIVERSITY OF KENTUCKY COMPUTER MODEL
       OF SURFACE MINE HYDROLOGY AND SEDIMENTOLOGY
       FOR MORE INFORMATION CONTACT THE AGRICULTURAL
       ENGINEERING DEPARTMENT
       THE UK MODEL IS A DESIGN MODEL DEVELOPED TO PREDICT
       THE HYDRAULIC AND SEDIMENT RESPONSE FROM SURFACE
       MINED LANDS FOR A SPECIFIED RAINFALL EVENT (SINGLE STORM)
       VERSION DATE 9-23-83
       DISCLAIMER: NEITHER THE UNIVERSITY NOR ANY OF ITS EMPLOYEES
       ACCEPT ANY RESPONSIBILITY OR LEGAL LIABILITY FOR THE
       CONCLUSIONS DRAWN FROM THE RESULTS OF THIS MODEL
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*                                                               *
*     THE FOLLOWING VALUES ARE NOW PREDICTED BY SEDIMOT II.     *
*     THEY CAN BE FOUND IN SUMMARY TABLES.                      *
*      1. PERIOD OF SIGNIFICANT CONCENTRATION                   *
*      2. VOLUME WEIGHTED AVERAGE SETTLEABLE CONCENTRATION      *
*         DURING PERIOD OF SIGNIFICANT CONCENTRATION            *
*      3. VOLUME WEIGHTED AVERAGE SETTLEABLE CONCENTRATION      *
*         DURING PEAK 24 HOUR PERIOD                            *
*      4. ARITHMETIC AVERAGE SETTLEABLE CONCENTRATION           *
*         DURING PERIOD OF SIGNIFICANT CONCENTRATION            *
*      5. ARITHMETIC AVERAGE SETTLEABLE CONCENTRATION           *
*         DURING PEAK 24 HOUR PERIOD                            *
*                                                               *
*     ALL CONCENTRATIONS ARE IN ML/L.                           *
*                                                               *
*****************************************************************
             *********************************************
                  WATERSHED IDENTIFICATION CODE
                  -----------------------------
 GENWAL SED. POND - UPSTREAM DIVERSION - 25-YR, 24-HR STORM
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INPUT PARTICLE SIZE-PERCENT FINER DISTRIBUTIONS

SIZE,MM	.250	.100	.050	.010	.005	.001
	.000					
PCT FINER NO. 1	100.000	50.000	35.000	19.000	15.000	6.000
	.000					

**********INPUT VALUES**********

STORM DURATION	=	24.00	HOURS
PRECIPATION DEPTH	=	2.92	INCHES
SPECIFIC GRAVITY	=	2.50	
LOAD RATE EXPONENT FACTOR	=	1.50	
SUBMERGED BULK SPECIFIC GRAVITY	=	1.25	

* *

JUNCTION 1, BRANCH 1, STRUCTURE 1

* *

***** RESULTS FROM SUBWATERSHED 1 *****

*** PARTICLE SIZE DISTRIBUTION OF SEDIMENT ***

SIZE,MM	.2500	.1000	.0500	.0100	.0050	.0010
PERCENT FINER	100.0000	80.7992	56.5595	30.7037	24.2398	9.6959
SIZE,MM	.0001					
PERCENT FINER	.0000					

*** HYDROGRAPH AND SEDIMENT GRAPH ***

(TWO CONSECUTIVE VALUES PER LINE)

TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)	******* *	TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)
.00	.000	.000	*	.10	.000	.000
.20	.000	.000	*	.30	.000	.000
.40	.000	.000	*	.50	.000	.000
.60	.000	.000	*	.70	.000	.000
.80	.000	.000	*	.90	.000	.000
1.00	.000	.000	*	1.10	.000	.000
1.20	.000	.000	*	1.30	.000	.000
1.40	.000	.000	*	1.50	.000	.000
1.60	.000	.000	*	1.70	.000	.000
1.80	.000	.000	*	1.90	.000	.000
2.00	.000	.000	*	2.10	.000	.000
2.20	.000	.000	*	2.30	.000	.000
2.40	.000	.000	*	2.50	.000	.000
2.60	.000	.000	*	2.70	.000	.000
2.80	.000	.000	*	2.90	.000	.000
3.00	.000	.000	*	3.10	.000	.000
3.20	.000	.000	*	3.30	.000	.000
3.40	.000	.000	*	3.50	.000	.000
3.60	.000	.000	*	3.70	.000	.000
3.80	.000	.000	*	3.90	.000	.000
4.00	.000	.000	*	4.10	.000	.000
4.20	.000	.000	*	4.30	.000	.000
4.40	.000	.000	*	4.50	.000	.000
4.60	.000	.000	*	4.70	.000	.000
4.80	.000	.000	*	4.90	.000	.000
5.00	.000	.000	*	5.10	.000	.000
5.20	.000	.000	*	5.30	.000	.000
5.40	.000	.000	*	5.50	.000	.000
5.60	.000	.000	*	5.70	.000	.000
5.80	.000	.000	*	5.90	.000	.000
6.00	.000	.000	*	6.10	.000	.000
6.20	.000	.000	*	6.30	.000	.000
6.40	.000	.000	*	6.50	.000	.000
6.60	.000	.000	*	6.70	.000	.000
6.80	.000	.000	*	6.90	.000	.000
7.00	.000	.000	*	7.10	.000	.000
7.20	.000	.000	*	7.30	.000	.000
7.40	.000	.000	*	7.50	.000	.000
7.60	.000	.000	*	7.70	.000	.000
7.80	.000	.000	*	7.90	.000	.000
8.00	.000	.000	*	8.10	.000	.000
8.20	.000	.000	*	8.30	.000	.000
8.40	.000	.000	*	8.50	.000	.000
8.60	.000	.000	*	8.70	.000	.000
8.80	.000	.000	*	8.90	.000	.000
9.00	.000	.000	*	9.10	.000	.000
9.20	.000	.000	*	9.30	.000	.000

9.40	.000	.000	*	9.50	.000	.000
9.60	.000	.000	*	9.70	.000	.000
9.80	.000	.000	*	9.90	.000	.000
10.00	.000	.000	*	10.10	.000	.000
10.20	.000	.000	*	10.30	.000	.000
10.40	.000	.000	*	10.50	.000	.000
10.60	.000	.000	*	10.70	.000	.000
10.80	.000	.000	*	10.90	.000	.000
11.00	.000	.000	*	11.10	.000	.000
11.20	.000	.000	*	11.30	.000	.000
11.40	.000	.000	*	11.50	.000	.000
11.60	.000	.000	*	11.70	.011	7600.220
11.80	.036	13464.300	*	11.90	.070	18697.500
12.00	.108	23214.200	*	12.10	.124	24881.900
12.20	.104	22763.200	*	12.30	.086	20756.400
12.40	.074	19247.900	*	12.50	.070	18678.600
12.60	.068	18513.300	*	12.70	.063	17796.000
12.80	.059	17209.100	*	12.90	.056	16773.700
13.00	.054	16509.400	*	13.10	.052	16229.500
13.20	.049	15752.000	*	13.30	.047	15311.800
13.40	.044	14913.700	*	13.50	.042	14562.300
13.60	.040	14145.600	*	13.70	.037	13574.700
13.80	.034	13015.700	*	13.90	.031	12480.200
14.00	.029	12007.000	*	14.10	.026	11507.300
14.20	.024	10930.000	*	14.30	.022	10520.600
14.40	.021	10207.000	*	14.50	.020	9975.630
14.60	.019	9809.720	*	14.70	.019	9671.840
14.80	.018	9562.500	*	14.90	.018	9467.820
15.00	.017	9385.000	*	15.10	.017	9314.570
15.20	.017	9257.020	*	15.30	.017	9212.320
15.40	.017	9175.930	*	15.50	.017	9147.030
15.60	.016	9125.720	*	15.70	.016	9112.190
15.80	.016	9106.200	*	15.90	.016	9104.780
16.00	.016	9107.340	*	16.10	.016	8956.320
16.20	.015	8581.490	*	16.30	.014	8280.550
16.40	.013	8058.810	*	16.50	.012	7922.710
16.60	.012	7844.620	*	16.70	.012	7770.510
16.80	.012	7700.520	*	16.90	.012	7634.790
17.00	.011	7573.460	*	17.10	.011	7516.620
17.20	.011	7464.490	*	17.30	.011	7417.150
17.40	.011	7374.760	*	17.50	.011	7337.390
17.60	.011	7305.160	*	17.70	.010	7278.210
17.80	.010	7256.600	*	17.90	.010	7240.400
18.00	.010	7229.660	*	18.10	.010	7224.470
18.20	.010	7224.860	*	18.30	.010	7230.370
18.40	.010	7236.810	*	18.50	.010	7243.240
18.60	.010	7249.620	*	18.70	.010	7256.020
18.80	.010	7262.330	*	18.90	.010	7268.700
19.00	.010	7275.030	*	19.10	.010	7281.290
19.20	.010	7287.580	*	19.30	.011	7293.820
19.40	.011	7300.050	*	19.50	.011	7306.250
19.60	.011	7312.430	*	19.70	.011	7318.600
19.80	.011	7324.720	*	19.90	.011	7330.880
20.00	.011	7336.970	*	20.10	.010	7238.240
20.20	.000	.000	*	20.30	.000	.000
20.40	.000	.000	*	20.50	.000	.000
20.60	.000	.000	*	20.70	.000	.000
20.80	.000	.000	*	20.90	.000	.000
21.00	.000	.000	*	21.10	.000	.000
21.20	.000	.000	*	21.30	.000	.000
21.40	.000	.000	*	21.50	.000	.000
21.60	.000	.000	*	21.70	.000	.000
21.80	.000	.000	*	21.90	.000	.000
22.00	.000	.000	*	22.10	.000	.000
22.20	.000	.000	*	22.30	.000	.000
22.40	.000	.000	*	22.50	.000	.000

22.60	.000	.000	*	22.70	.000	.000
22.80	.000	.000	*	22.90	.000	.000
23.00	.000	.000	*	23.10	.000	.000
23.20	.000	.000	*	23.30	.000	.000
23.40	.000	.000	*	23.50	.000	.000
23.60	.000	.000	*	23.70	.000	.000
23.80	.000	.000	*	23.90	.000	.000
24.00	.007	6129.590	*	24.10	.007	5867.270
24.20	.005	5185.570	*	24.30	.004	4581.260
24.40	.003	4089.370	*	24.50	.003	3754.910
24.60	.002	3542.270	*	24.70	.002	3329.530
24.80	.002	3116.680	*	24.90	.002	2903.720
25.00	.001	2690.650	*	25.10	.001	2477.470
25.20	.001	2264.190	*	25.30	.001	2050.800
25.40	.001	1837.300	*	25.50	.001	.000
25.60	.000	.000	*	25.70	.000	.000
25.80	.000	.000	*	25.90	.000	.000
26.00	.000	.000	*	26.10	.000	.000

***** RESULTS FROM SUBWATERSHED 2 *****

*** PARTICLE SIZE DISTRIBUTION OF SEDIMENT ***

SIZE,MM	.2500	.1000	.0500	.0100	.0050	.0010
PERCENT FINER	100.0000	50.0000	35.0000	19.0000	15.0000	6.0000
SIZE,MM	.0001					
PERCENT FINER	.0000					

*** HYDROGRAPH AND SEDIMENT GRAPH ***

(TWO CONSECUTIVE VALUES PER LINE)

TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)	******* *	TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)
.00	.000	.000	*	.10	.000	.000
.20	.000	.000	*	.30	.000	.000
.40	.000	.000	*	.50	.000	.000
.60	.000	.000	*	.70	.000	.000
.80	.000	.000	*	.90	.000	.000
1.00	.000	.000	*	1.10	.000	.000
1.20	.000	.000	*	1.30	.000	.000
1.40	.000	.000	*	1.50	.000	.000
1.60	.000	.000	*	1.70	.000	.000
1.80	.000	.000	*	1.90	.000	.000
2.00	.000	.000	*	2.10	.000	.000
2.20	.000	.000	*	2.30	.000	.000
2.40	.000	.000	*	2.50	.000	.000
2.60	.000	.000	*	2.70	.000	.000
2.80	.000	.000	*	2.90	.000	.000
3.00	.000	.000	*	3.10	.000	.000
3.20	.000	.000	*	3.30	.000	.000
3.40	.000	.000	*	3.50	.000	.000
3.60	.000	.000	*	3.70	.000	.000
3.80	.000	.000	*	3.90	.000	.000
4.00	.000	.000	*	4.10	.000	.000
4.20	.000	.000	*	4.30	.000	.000
4.40	.000	.000	*	4.50	.000	.000
4.60	.000	.000	*	4.70	.000	.000
4.80	.000	.000	*	4.90	.000	.000
5.00	.000	.000	*	5.10	.000	.000
5.20	.000	.000	*	5.30	.000	.000
5.40	.000	.000	*	5.50	.000	.000
5.60	.000	.000	*	5.70	.000	.000
5.80	.000	.000	*	5.90	.000	.000
6.00	.000	.000	*	6.10	.000	.000
6.20	.012	17098.700	*	6.30	.015	19328.700
6.40	.018	21293.000	*	6.50	.022	23060.700
6.60	.025	24674.900	*	6.70	.028	26164.900
6.80	.031	27551.700	*	6.90	.034	28850.400
7.00	.037	30073.500	*	7.10	.040	31229.900
7.20	.043	32327.500	*	7.30	.046	33372.300

7.40	.049	34369.800	*	7.50	.051	35323.900
7.60	.054	36239.000	*	7.70	.057	37117.700
7.80	.059	37963.300	*	7.90	.062	38777.900
8.00	.065	39564.500	*	8.10	.088	45998.000
8.20	.092	47070.500	*	8.30	.096	48099.100
8.40	.100	49087.200	*	8.50	.104	50037.800
8.60	.117	52871.000	*	8.70	.121	53853.100
8.80	.125	54798.000	*	8.90	.130	55709.100
9.00	.134	56588.400	*	9.10	.158	61367.600
9.20	.163	62361.700	*	9.30	.169	63318.700
9.40	.174	64240.900	*	9.50	.179	65131.500
9.60	.207	69936.100	*	9.70	.213	70919.200
9.80	.219	71866.100	*	9.90	.225	72778.700
10.00	.230	73661.300	*	10.10	.302	84027.500
10.20	.311	85192.900	*	10.30	.319	86310.500
10.40	.328	87381.500	*	10.50	.336	88413.400
10.60	.465	103385.000	*	10.70	.478	104835.000
10.80	.492	106214.000	*	10.90	.504	107525.000
11.00	.517	108781.000	*	11.10	.823	135761.000
11.20	.850	137853.000	*	11.30	.876	139805.000
11.40	.901	141630.000	*	11.50	.926	143462.000
11.60	8.016	379825.000	*	11.70	8.990	398664.000
11.80	9.692	411417.000	*	11.90	10.214	420515.000
12.00	10.611	427221.000	*	12.10	2.048	207610.000
12.20	2.059	208104.000	*	12.30	2.069	208575.000
12.40	2.079	209026.000	*	12.50	2.088	209443.000
12.60	1.077	154038.000	*	12.70	1.079	154195.000
12.80	1.081	154346.000	*	12.90	1.083	154495.000
13.00	1.086	154635.000	*	13.10	.794	133412.000
13.20	.795	133500.000	*	13.30	.796	133588.000
13.40	.797	133674.000	*	13.50	.798	133755.000
13.60	.621	118782.000	*	13.70	.622	118838.000
13.80	.623	118897.000	*	13.90	.623	118951.000
14.00	.624	119002.000	*	14.10	.446	101366.000
14.20	.446	101401.000	*	14.30	.447	101433.000
14.40	.447	101466.000	*	14.50	.447	101500.000
14.60	.447	101531.000	*	14.70	.448	101563.000
14.80	.448	101594.000	*	14.90	.448	101626.000
15.00	.449	101657.000	*	15.10	.449	101686.000
15.20	.449	101720.000	*	15.30	.449	101747.000
15.40	.450	101779.000	*	15.50	.450	101809.000
15.60	.450	101840.000	*	15.70	.451	101868.000
15.80	.451	101897.000	*	15.90	.451	101926.000
16.00	.451	101946.000	*	16.10	.271	79726.500
16.20	.271	79737.300	*	16.30	.271	79750.900
16.40	.271	79766.500	*	16.50	.271	79777.200
16.60	.271	79791.900	*	16.70	.272	79803.600
16.80	.272	79818.200	*	16.90	.272	79830.900
17.00	.272	79841.600	*	17.10	.272	79857.200
17.20	.272	79866.900	*	17.30	.272	79882.500
17.40	.272	79894.200	*	17.50	.272	79905.900
17.60	.272	79919.500	*	17.70	.272	79933.100
17.80	.273	79944.800	*	17.90	.273	79956.500
18.00	.273	79970.100	*	18.10	.273	79983.700
18.20	.273	79993.400	*	18.30	.273	80005.100
18.40	.273	80019.700	*	18.50	.273	80028.400
18.60	.273	80043.900	*	18.70	.273	80053.700
18.80	.273	80065.300	*	18.90	.273	80078.900
19.00	.274	80089.600	*	19.10	.274	80102.200
19.20	.274	80113.800	*	19.30	.274	80124.500
19.40	.274	80136.200	*	19.50	.274	80148.800
19.60	.274	80159.500	*	19.70	.274	80169.200
19.80	.274	80182.700	*	19.90	.274	80194.400
20.00	.274	80207.000	*	20.10	.183	65882.100
20.20	.183	65888.100	*	20.30	.183	65896.500
20.40	.183	65902.500	*	20.50	.183	65907.300

SIZE,MM .0001
PERCENT FINER .0000

*** HYDROGRAPH AND SEDIMENT GRAPH ***
(TWO CONSECUTIVE VALUES PER LINE)

TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)	*	TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)
.00	.000	.000	*	.10	.000	.000
.20	.000	.000	*	.30	.000	.000
.40	.000	.000	*	.50	.000	.000
.60	.000	.000	*	.70	.000	.000
.80	.000	.000	*	.90	.000	.000
1.00	.000	.000	*	1.10	.000	.000
1.20	.000	.000	*	1.30	.000	.000
1.40	.000	.000	*	1.50	.000	.000
1.60	.000	.000	*	1.70	.000	.000
1.80	.000	.000	*	1.90	.000	.000
2.00	.000	.000	*	2.10	.000	.000
2.20	.000	.000	*	2.30	.000	.000
2.40	.000	.000	*	2.50	.000	.000
2.60	.000	.000	*	2.70	.000	.000
2.80	.000	.000	*	2.90	.000	.000
3.00	.000	.000	*	3.10	.000	.000
3.20	.000	.000	*	3.30	.000	.000
3.40	.000	.000	*	3.50	.000	.000
3.60	.000	.000	*	3.70	.000	.000
3.80	.000	.000	*	3.90	.000	.000
4.00	.000	.000	*	4.10	.000	.000
4.20	.000	.000	*	4.30	.000	.000
4.40	.000	.000	*	4.50	.000	.000
4.60	.000	.000	*	4.70	.000	.000
4.80	.000	.000	*	4.90	.000	.000
5.00	.000	.000	*	5.10	.000	.000
5.20	.000	.000	*	5.30	.000	.000
5.40	.000	.000	*	5.50	.000	.000
5.60	.000	.000	*	5.70	.000	.000
5.80	.000	.000	*	5.90	.000	.000
6.00	.000	.000	*	6.10	.000	.000
6.20	.012	17098.700	*	6.30	.015	19328.700
6.40	.018	21293.000	*	6.50	.022	23060.700
6.60	.025	24674.900	*	6.70	.028	26164.900
6.80	.031	27551.700	*	6.90	.034	28850.400
7.00	.037	30073.500	*	7.10	.040	31229.900
7.20	.043	32327.500	*	7.30	.046	33372.300
7.40	.049	34369.800	*	7.50	.051	35323.900
7.60	.054	36239.000	*	7.70	.057	37117.700
7.80	.059	37963.300	*	7.90	.062	38777.900
8.00	.065	39564.500	*	8.10	.088	45998.000
8.20	.092	47070.500	*	8.30	.096	48099.100
8.40	.100	49087.200	*	8.50	.104	50037.800
8.60	.117	52871.000	*	8.70	.121	53853.100
8.80	.125	54798.000	*	8.90	.130	55709.100
9.00	.134	56588.400	*	9.10	.158	61367.600
9.20	.163	62361.700	*	9.30	.169	63318.700
9.40	.174	64240.900	*	9.50	.179	65131.500
9.60	.207	69936.100	*	9.70	.213	70919.200
9.80	.219	71866.100	*	9.90	.225	72778.700
10.00	.230	73661.300	*	10.10	.302	84027.500
10.20	.311	85192.900	*	10.30	.319	86310.500
10.40	.328	87381.500	*	10.50	.336	88413.400
10.60	.465	103385.000	*	10.70	.478	104835.000
10.80	.492	106214.000	*	10.90	.504	107525.000
11.00	.517	108781.000	*	11.10	.823	135761.000
11.20	.850	137853.000	*	11.30	.876	139805.000
11.40	.901	141630.000	*	11.50	.926	143462.000
11.60	8.016	379825.000	*	11.70	9.002	398247.000

11.80	9.728	410180.000	*	11.90	10.284	418232.000
12.00	10.719	423817.000	*	12.10	2.172	197911.000
12.20	2.163	199862.000	*	12.30	2.155	201629.000
12.40	2.153	202998.000	*	12.50	2.158	203756.000
12.60	1.145	146373.000	*	12.70	1.142	147056.000
12.80	1.140	147630.000	*	12.90	1.139	148088.000
13.00	1.140	148415.000	*	13.10	.846	126479.000
13.20	.844	126928.000	*	13.30	.842	127342.000
13.40	.841	127719.000	*	13.50	.840	128053.000
13.60	.661	112744.000	*	13.70	.659	113228.000
13.80	.656	113695.000	*	13.90	.654	114131.000
14.00	.652	114510.000	*	14.10	.472	96545.300
14.20	.470	97005.300	*	14.30	.468	97329.800
14.40	.468	97583.300	*	14.50	.467	97776.600
14.60	.467	97920.300	*	14.70	.466	98045.600
14.80	.466	98150.400	*	14.90	.466	98245.700
15.00	.466	98332.000	*	15.10	.466	98407.700
15.20	.466	98479.400	*	15.30	.466	98536.500
15.40	.466	98592.700	*	15.50	.467	98641.800
15.60	.467	98686.800	*	15.70	.467	98724.500
15.80	.467	98758.900	*	15.90	.468	98788.800
16.00	.468	98808.600	*	16.10	.287	75919.100
16.20	.286	76209.700	*	16.30	.285	76442.900
16.40	.284	76617.200	*	16.50	.284	76724.000
16.60	.284	76793.500	*	16.70	.283	76856.900
16.80	.283	76920.200	*	16.90	.283	76978.200
17.00	.283	77030.900	*	17.10	.283	77085.400
17.20	.283	77130.500	*	17.30	.283	77178.300
17.40	.283	77218.600	*	17.50	.283	77255.400
17.60	.283	77290.800	*	17.70	.283	77322.600
17.80	.283	77348.800	*	17.90	.283	77371.500
18.00	.283	77392.600	*	18.10	.283	77410.000
18.20	.283	77419.700	*	18.30	.283	77428.200
18.40	.283	77439.000	*	18.50	.283	77443.700
18.60	.284	77455.600	*	18.70	.284	77461.400
18.80	.284	77469.200	*	18.90	.284	77479.000
19.00	.284	77485.900	*	19.10	.284	77494.800
19.20	.284	77502.600	*	19.30	.284	77509.500
19.40	.284	77517.400	*	19.50	.284	77526.300
19.60	.285	77533.200	*	19.70	.285	77539.200
19.80	.285	77549.100	*	19.90	.285	77557.000
20.00	.285	77566.000	*	20.10	.193	62813.800
20.20	.183	65888.100	*	20.30	.183	65896.500
20.40	.183	65902.500	*	20.50	.183	65907.300
20.60	.183	65912.100	*	20.70	.183	65921.700
20.80	.183	65927.700	*	20.90	.183	65932.500
21.00	.183	65934.900	*	21.10	.183	65945.700
21.20	.183	65948.100	*	21.30	.183	65955.300
21.40	.183	65961.300	*	21.50	.183	65968.500
21.60	.183	65972.100	*	21.70	.183	65980.500
21.80	.184	65985.300	*	21.90	.184	65993.700
22.00	.184	65996.100	*	22.10	.184	66000.900
22.20	.184	66009.300	*	22.30	.184	66016.500
22.40	.184	66018.900	*	22.50	.184	66027.200
22.60	.184	66030.900	*	22.70	.184	66036.900
22.80	.184	66045.200	*	22.90	.184	66047.600
23.00	.184	66057.200	*	23.10	.184	66058.400
23.20	.184	66068.000	*	23.30	.184	66069.200
23.40	.184	66078.800	*	23.50	.184	66083.500
23.60	.184	66089.500	*	23.70	.184	66090.700
23.80	.184	66102.700	*	23.90	.000	.000
24.00	.007	6129.590	*	24.10	.007	5867.270
24.20	.005	5185.570	*	24.30	.004	4581.260
24.40	.003	4089.370	*	24.50	.003	3754.910
24.60	.002	3542.270	*	24.70	.002	3329.530
24.80	.002	3116.680	*	24.90	.002	2903.720

25.00	.001	2690.650	*	25.10	.001	2477.470
25.20	.001	2264.190	*	25.30	.001	2050.800
25.40	.001	1837.300	*	25.50	.001	.000
25.60	.000	.000	*	25.70	.000	.000
25.80	.000	.000	*	25.90	.000	.000
26.00	.000	.000	*	26.10	.000	.000

* *

POND RESULTS

* *

***** CONTROL VARIABLES OPTIONS *****

FLOW	FRACTN	ISDO	NRHP	NSP	NCSTR
3	0	1	450	12	2

***** BASIN GEOMETRY *****

STAGE (FT)	AREA (ACRES)	AVERAGE DEPTH (FT)	DISCHARGE (CFS)	CAPACITY (ACRES-FT)
.00	.112	.00	.00	.00
.50	.118	.49	.00	.06
1.00	.125	.98	.00	.12
1.50	.131	1.46	.00	.18
2.00	.138	1.93	.00	.25
3.00	.153	2.84	.00	.39
4.00	.168	3.72	.00	.56
5.10	.184	4.67	.00	.75
5.60	.191	5.10	6.90	.84
6.10	.199	5.51	15.10	.94
6.60	.207	5.93	22.20	1.04
7.10	.225	6.32	34.20	1.15

***** STORM EVENT SUMMARY *****

TURBULENCE FACTOR	=	1.00	
PERMANENT POOL CAPACITY	=	.749	ACRE-FT
DEAD STORAGE	=	30.00	PERCENT
TIME INCREMENT OUTFLOW	=	.10	HRS
VISCOSITY	=	.009	CM**2/SEC
INFLOW RUNOFF VOLUME	=	.929	ACRE-FT
OUTFLOW ROUTED VOLUME	=	.929	ACRE-FT
STORM VOLUME DISCHARGED (PLUG FLOW)	=	.929	ACRE-FT
POND VOLUME AT PEAK STAGE	=	.875	ACRE-FT
PEAK STAGE	=	5.765	FT
PEAK INFLOW RATE	=	10.719	CFS
PEAK DISCHARGE RATE	=	9.609	CFS
PEAK INFLOW SEDIMENT CONCENTRATION	=	423817.00	MG/L
PEAK EFFLUENT SEDIMENT CONCENTRATION	=	54505.70	MG/L
PEAK EFFLUENT SETTLEABLE CONCENTRATION	=	.0158	ML/L
PEAK EFFLUENT SETTLEABLE CONCENTRATION	=	19.74	MG/L
STORM AVERAGE EFFLUENT CONCENTRATION	=	36313.60	MG/L
AVERAGE EFFLUENT SEDIMENT CONCENTRATION	=	36313.60	MG/L
BASIN TRAP EFFICIENCY	=	87.00	PERCENT
DETENTION TIME OF FLOW WITH SEDIMENT	=	.16	HRS
DETENTION TIME FROM HYDROGRAPH CENTERS	=	.16	HRS
DETENTION TIME INCLUDING STORED FLOW	=	.16	HRS
SEDIMENT LOAD DISCHARGED	=	45.45	TONS
PERIOD OF SIGNIFICANT CONCENTRATION	=	19.10	HRS
VOLUME WEIGHTED AVERAGE SETTLEABLE CONCENTRATION DURING PERIOD OF SIGNIFICANT CONCENTRATION	=	.01	ML/L
VOLUME WEIGHTED AVERAGE SETTLEABLE CONCENTRATION DURING PEAK 24 HOUR PERIOD	=	.01	ML/L
ARITHMETIC AVERAGE SETTLEABLE CONCENTRATION DURING PERIOD OF SIGNIFICANT CONCENTRATION	=	.01	ML/L
ARITHMETIC AVERAGE SETTLEABLE CONCENTRATION DURING PEAK 24 HOUR			

PERIOD = .01 MG/L

*** PARTICLE SIZE DISTRIBUTION OF SEDIMENT ***

SIZE,MM	.2500	.1000	.0500	.0100	.0050	.0010
PERCENT FINER	100.0000	100.0000	100.0000	100.0000	100.0000	46.1739
SIZE,MM	.0001					
PERCENT FINER	.0000					

*** HYDROGRAPH AND SEDIMENT GRAPH ***

(TWO CONSECUTIVE VALUES PER LINE)

TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)	******* *	TIME (HR)	DISCHARGE (CFS)	SED DISC (MG/L)
.00	.000	.000	*	.10	.000	.000
.20	.000	.000	*	.30	.000	.000
.40	.000	.000	*	.50	.000	.000
.60	.000	.000	*	.70	.000	.000
.80	.000	.000	*	.90	.000	.000
1.00	.000	.000	*	1.10	.000	.000
1.20	.000	.000	*	1.30	.000	.000
1.40	.000	.000	*	1.50	.000	.000
1.60	.000	.000	*	1.70	.000	.000
1.80	.000	.000	*	1.90	.000	.000
2.00	.000	.000	*	2.10	.000	.000
2.20	.000	.000	*	2.30	.000	.000
2.40	.000	.000	*	2.50	.000	.000
2.60	.000	.000	*	2.70	.000	.000
2.80	.000	.000	*	2.90	.000	.000
3.00	.000	.000	*	3.10	.000	.000
3.20	.000	.000	*	3.30	.000	.000
3.40	.000	.000	*	3.50	.000	.000
3.60	.000	.000	*	3.70	.000	.000
3.80	.000	.000	*	3.90	.000	.000
4.00	.000	.000	*	4.10	.000	.000
4.20	.000	.000	*	4.30	.000	.000
4.40	.000	.000	*	4.50	.000	.000
4.60	.000	.000	*	4.70	.000	.000
4.80	.000	.000	*	4.90	.000	.000
5.00	.000	.000	*	5.10	.000	.000
5.20	.000	.000	*	5.30	.000	.000
5.40	.000	.000	*	5.50	.000	.000
5.60	.000	.000	*	5.70	.000	.000
5.80	.000	.000	*	5.90	.000	.000
6.00	.000	.000	*	6.10	.000	.000
6.20	.003	.000	*	6.30	.008	.001
6.40	.012	.003	*	6.50	.016	.008
6.60	.019	.017	*	6.70	.023	.031
6.80	.026	.051	*	6.90	.029	.079
7.00	.032	.118	*	7.10	.035	.169
7.20	.038	.234	*	7.30	.041	.316
7.40	.044	.417	*	7.50	.047	.540
7.60	.049	.687	*	7.70	.052	.861
7.80	.055	1.065	*	7.90	.058	1.303
8.00	.060	1.576	*	8.10	.068	1.940
8.20	.078	2.432	*	8.30	.085	3.034
8.40	.091	3.754	*	8.50	.096	4.598
8.60	.103	5.611	*	8.70	.110	6.826
8.80	.116	8.230	*	8.90	.122	9.833
9.00	.126	11.644	*	9.10	.135	13.828
9.20	.147	16.476	*	9.30	.156	19.512
9.40	.163	22.954	*	9.50	.169	26.809
9.60	.180	31.371	*	9.70	.194	36.787
9.80	.204	42.899	*	9.90	.212	49.734
10.00	.219	57.294	*	10.10	.241	66.822
10.20	.271	78.924	*	10.30	.292	92.874
10.40	.306	108.726	*	10.50	.318	126.429
10.60	.356	149.628	*	10.70	.410	180.234
10.80	.445	216.115	*	10.90	.470	257.330

11.00	.489	303.636	*	11.10	.373	370.419
11.20	.696	467.152	*	11.30	.774	585.414
11.40	.827	724.744	*	11.50	.867	883.611
11.60	2.547	2441.820	*	11.70	5.326	8899.520
11.80	7.240	19375.000	*	11.90	8.664	31766.100
12.00	9.609	44595.700	*	12.10	7.976	51714.700
12.20	5.163	53144.000	*	12.30	3.762	54063.300
12.40	3.011	54442.700	*	12.50	2.611	54505.700
12.60	2.163	54110.900	*	12.70	1.687	53446.900
12.80	1.432	52840.800	*	12.90	1.296	52245.200
13.00	1.223	51667.700	*	13.10	1.115	51058.900
13.20	.989	50440.600	*	13.30	.921	49864.400
13.40	.884	49311.500	*	13.50	.863	48780.400
13.60	.811	48247.200	*	13.70	.740	47726.600
13.80	.701	47241.200	*	13.90	.680	46773.400
14.00	.667	46319.600	*	14.10	.618	45862.500
14.20	.549	45416.700	*	14.30	.512	45002.400
14.40	.491	44607.500	*	14.50	.480	44228.200
14.60	.474	43860.300	*	14.70	.470	43502.900
14.80	.468	43156.100	*	14.90	.467	42819.600
15.00	.467	42493.100	*	15.10	.466	42176.300
15.20	.466	41867.300	*	15.30	.466	41563.600
15.40	.466	41265.500	*	15.50	.466	40973.400
15.60	.466	40687.400	*	15.70	.466	40407.400
15.80	.467	40133.500	*	15.90	.467	39864.100
16.00	.467	39598.000	*	16.10	.425	39327.900
16.20	.360	39068.000	*	16.30	.325	38830.100
16.40	.306	38602.600	*	16.50	.296	38383.000
16.60	.290	38169.500	*	16.70	.287	37960.900
16.80	.285	37757.200	*	16.90	.284	37558.400
17.00	.284	37364.300	*	17.10	.283	37174.700
17.20	.283	36989.200	*	17.30	.283	36806.600
17.40	.283	36626.600	*	17.50	.283	36448.900
17.60	.283	36273.400	*	17.70	.283	36099.900
17.80	.283	35928.400	*	17.90	.283	35758.600
18.00	.283	35590.400	*	18.10	.283	35423.800
18.20	.283	35258.700	*	18.30	.283	35095.000
18.40	.283	34932.700	*	18.50	.283	34771.800
18.60	.283	34612.100	*	18.70	.283	34453.600
18.80	.283	34296.400	*	18.90	.284	34140.300
19.00	.284	33985.300	*	19.10	.284	33831.400
19.20	.284	33678.500	*	19.30	.284	33526.500
19.40	.284	33375.600	*	19.50	.284	33225.500
19.60	.284	33076.300	*	19.70	.284	32928.100
19.80	.284	32780.700	*	19.90	.285	32634.100
20.00	.285	32488.400	*	20.10	.263	32342.400
20.20	.228	32202.700	*	20.30	.207	32072.100
20.40	.196	31945.500	*	20.50	.190	31821.500
20.60	.187	31699.700	*	20.70	.185	31579.700
20.80	.184	31461.400	*	20.90	.184	31344.600
21.00	.183	31229.100	*	21.10	.183	31114.900
21.20	.183	31001.900	*	21.30	.183	30890.000
21.40	.183	30779.100	*	21.50	.183	30669.200
21.60	.183	30560.200	*	21.70	.183	30452.200
21.80	.183	30344.900	*	21.90	.183	30238.500
22.00	.183	30132.800	*	22.10	.183	30027.900
22.20	.184	29923.600	*	22.30	.184	29820.100
22.40	.184	29717.200	*	22.50	.184	29615.000
22.60	.184	29513.400	*	22.70	.184	29412.400
22.80	.184	29312.000	*	22.90	.184	29212.200
23.00	.184	29112.900	*	23.10	.184	29014.200
23.20	.184	28916.000	*	23.30	.184	28818.400
23.40	.184	28721.300	*	23.50	.184	28624.700
23.60	.184	28528.500	*	23.70	.184	28432.900
23.80	.184	28337.800	*	23.90	.141	28242.700
24.00	.077	28156.200	*	24.10	.044	28081.200

24.20	.027	28010.800	*	24.30	.016	27943.400
24.40	.010	27878.500	*	24.50	.007	27815.500
24.60	.005	27754.300	*	24.70	.004	27694.600
24.80	.003	27636.200	*	24.90	.002	27579.200
25.00	.002	27523.200	*	25.10	.002	27468.300
25.20	.001	27414.400	*	25.30	.001	27361.300
25.40	.001	27309.100	*	25.50	.001	27257.700

*** RUN COMPLETED ****

20.60	.183	65912.100	*	20.70	.183	65921.700
20.80	.183	65927.700	*	20.90	.183	65932.500
21.00	.183	65934.900	*	21.10	.183	65945.700
21.20	.183	65948.100	*	21.30	.183	65955.300
21.40	.183	65961.300	*	21.50	.183	65968.500
21.60	.183	65972.100	*	21.70	.183	65980.500
21.80	.184	65985.300	*	21.90	.184	65993.700
22.00	.184	65996.100	*	22.10	.184	66000.900
22.20	.184	66009.300	*	22.30	.184	66016.500
22.40	.184	66018.900	*	22.50	.184	66027.200
22.60	.184	66030.900	*	22.70	.184	66036.900
22.80	.184	66045.200	*	22.90	.184	66047.600
23.00	.184	66057.200	*	23.10	.184	66058.400
23.20	.184	66068.000	*	23.30	.184	66069.200
23.40	.184	66078.800	*	23.50	.184	66083.500
23.60	.184	66089.500	*	23.70	.184	66090.700

*** HYDRAULIC INPUT VALUES FOR SUBWATERSHEDS ***

WATER SHED	AREA ACRES	CURVE NUMBER	TC HR	TT HR	ROUTING COEFFICIENTS K-HRS	X	UNIT HYDRO
1	.40	69.00	.140	.000	.000	.00	3.0
2	5.70	90.00	.120	.000	.000	.00	.0

*** SEDIMENT INPUT VALUES FOR SUBWATERSHEDS ***

WATER SHED	SEG NUM	SOIL K	LENGTH FEET	SLOPE PCT	CP VALUE	PART OPT	SURF COND
1	1	.30	50.0	40.00	.037	1.0	.0
2	1	.30	70.0	21.80	.850	1.0	.0

* * * COMPUTED VALUES FOR INDIVIDUAL WATERSHEDS * * *

WATERSHED	PEAK FLOW (CFS)	RUNOFF (INCHES)	SEDIMENT TONS	DIAM (MM)	DELIVERY RATIO 1	DELIVERY RATIO 2
1	.12	.63	.37	.033	.619	1.000
2	10.61	1.91	349.18	.100	1.000	1.000

NOTE: SEDIMENT DOES NOT INCLUDE POSSIBLE DEPOSITION BY DELIVERY RATIO 2

***** SUMMARY TABLE FOR TOTAL WATERSHED *****

RUNOFF VOLUME	=	.9285	ACRE-FT
PEAK DISCHARGE	=	10.7188	CFS
AREA	=	6.1000	ACRES
TIME OF PEAK DISCHARGE	=	12.00	HRS
BETA	=	1.0000	
RAINFALL EROSITIVITY FACTOR	=	49.63	EI UNIT
PEAK CONCENTRATION	=	423817.00	MG/L
PEAK SETTLEABLE CONCENTRATION	=	269.03	ML/L
PEAK SETTLEABLE CONCENTRATION	=	336285.00	MG/L
TOTAL SEDIMENT YIELD	=	349.5480	TONS
REPRESENTATIVE PARTICLE SIZE	=	.0999	MM
TIME OF PEAK CONCENTRATION	=	12.00	HRS
PERIOD OF SIGNIFICANT CONCENTRATION	=	17.60	HRS
VOLUME WEIGHTED AVERAGE SETTLEABLE CONCENTRATION DURING PERIOD OF SIGNIFICANT CONCENTRATION	=	152.75	ML/L
VOLUME WEIGHTED AVERAGE SETTLEABLE CONCENTRATION DURING PEAK 24 HOUR PERIOD	=	152.75	ML/L
ARITHMETIC AVERAGE SETTLEABLE CONCENTRATION DURING PERIOD OF SIGNIFICANT CONCENTRATION	=	57.56	ML/L
ARITHMETIC AVERAGE SETTLEABLE CONCENTRATION DURING PEAK 24 HOUR PERIOD	=	42.21	ML/L

***** GENERATED DATA FOR INPUT INTO STRUCTURE 1 *****

*** PARTICLE SIZE DISTRIBUTION OF SEDIMENT ***

SIZE,MM	.2500	.1000	.0500	.0100	.0050	.0010
PERCENT FINER	100.0000	50.0325	35.0227	19.0123	15.0097	6.0039