☐ CANCELLATION } NOTICE

TITLE OF WORK ORDER JOHN SEVIER FOSSIL PLANT - CONSTRUCT FLY ASH POND ORDER NO. 510633-20656

IN AREA J AUTH. NO. _____ LOCATION SYMBOL SE-27

GIVE DETAILS OF CHANGES IN THE COMPLETED WORK FROM THAT AUTHORIZED BY THE WORK ORDER OR JOB ORDER. LIST ANY AUTHORIZED WORK LEFT UNFINISHED. INDICATE THE ORGANIZATION RESPONSIBLE FOR FINAL COMPLETON OF SUCH UNFINISHED WORK. AND GIVE REFERENCE TO JOB ORDER OR FORM 1663 AUTHORIZING SAME.

Complete. This superseding completion notice is submitted to provide an overrun explanation for the work order.

The following conditions contributed to the overrun on the construction of Ash Pond "J".

1. Underestimated the amount of dirt needed to build dikes and the shortage of suitable dirt in the excavation.

2. Ran into layer of shale in the bottom of excavation which had to be sealed with clay.

3. A portion of the river bank slid into the river making it necessary to rip-rap the river bank for several hundred feet.

4. Leaks developed in the discharge culverts which had to be partially uncovered and the joints sealed.

5. A change in design criterion which made it necessary to change the dike configuration along Dodson Creek.

cc: Plant Accounting Branch, 278 HB-C
Cost and Budget, 719 CBB-C
Don G. Holden, 819 EB-C

SHOW BELOW DATES PERTAINING TO THE WORK ORDER AS A WHOLE. IF MAJOR PHASES OF THE WORK OR MAJOR ITEMS OF EQUIPMENT WERE PLACED IN SERVICE PRIOR TO WORK CRDER COMPLETION. SUCH DATES SHOULD BE LISTED IN THE SPACE ABOVE.

| | DATE | APPROVAL SIGNATURES | DATE SIGNED |
|---|---|---|---|
| CONSTRUCTION WORK STARTED ON 9/83 COMPLETED 6/85 | | B. B. Street | 8/29/85 |
| READY FOR SERVICE ON 6/85 | | | |
| PLACED IN OR REMOVED FROM SERVICE ON 6/85 | | | |
| ACCEPTED BY OPERATING ORGANIZATION ON 6/85 | | | |

# JOHN SEVIER STEAM PLANT

# ASH DISPOSAL AREA

# SOILS EXPLORATION AND TESTING

# EN DES SOILS SCHEDULE NO. 6.2

TENNESSEE VALLEY AUTHORITY
DIVISION OF CONSTRUCTION
SINGLETON MATERIALS ENGINEERING LABORATORY

Knoxville, Tennessee

RGP

Est. No. 82-19
Rev. No. R2

TENNESSEE VALLEY AUTHORITY
OFFICE OF ENGINEERING
DIVISION OF ENGINEERING PROJECTS

DSP '841217 001

ENGINEERING ESTIMATE OF FACILITY COST

Date December 14, 1984

**PROJECT:** John Sevier Steam Plant

**FEATURE:** New Fly-Ash Disposal Area J

**PURPOSE AND SCOPE:** Estimate the total project cost to move the centerline of the dike along Dodson Creek on the north end of ash pond J and to complete the riverbank dike adjacent to the spillway outfall. This revision is based on actual costs through October 1984 with remaining field construction based on OC estimate number CSB 85-030.

**ESTIMATE REQUESTED BY** O. P. Thornton **DATE** October 31, 1984

**REFERENCE MEMO (IF ANY)** O. P. Thornton to W. D. Hall, 11/27/84 (FEP 841127 004)

**Cost Estimate Request (if any)** FEPJSF84-1002 (FEP 841031 004)

**CLASSIFICATION OF ESTIMATE**

____ 1. Order of Magnitude--Variable accuracy usually based on previous similar cost information.
____ 2. Preliminary Estimate--Accuracy insufficient for budgeting, but a guide to further interest.
_X_ 3. Budget or Authorization Estimate--Suitable for budgeting.
____ 4. Detailed Estimate--Prepared from complete engineering specifications, drawings, and site surveys.
____ 5. Contract Bid Estimate - For purchase requisition or bid award evaluation.
____ 6. Other -

**ESTIMATED COST:** $ 3,613,700

**COMMENTS:** Total Engineering and Construction estimate based on Engineering starting in October 1981 and completed in April 1985, and based on Construction starting in January 1982 and completed in April 1985. Excludes other Power organizations and other TVA organization expenses and overheads.

Attachment:
cc: C. Bonine, Jr., 12-108 SB-K
D. J. Cowser, 12-111 SB-K
R. G. Domer, W11A6 C-K
W. D. Hall, W12C62 C-K
MEDS, W5B63 C-K
O. P. Thornton, 102 SPT-K

Submitted: D. C. Ritchey
D. C. Ritchey

Reviewed: W. David Hall
W. D. Hall

Approved: O. P. Thornton
O. P. Thornton

JOHN S[illegible] STEAM PLANT
A[illegible]ND "J"
ENGINEERING ESTIMATE OF FACILITY COST

| Account | Actual Expenditures Thru October 1984 | | | | | Estimating Work Remaining | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Material | Labor MH | Labor Amount | Eqpt/ Other | Total | Material | Labor MH | Labor Amount | Eqpt/ Other | Total | |
| -0 Gradework | $ 54,325 | 35,375 | $ 564,605 | $ 815,510 | $1,434,440 | $ 1,350 | 203 | $ 2,290 | $ 860 | $ 4,500 | $1,438,940 |
| -10 Spillway Skimmer | 13,670 | 1,018 | 14,200 | 6,600 | 34,470 | -- | -- | -- | -- | -- | 34,470 |
| -11 Discharge Piping | 16,300 | 1,333 | 18,200 | 11,965 | 46,465 | -- | -- | -- | -- | -- | 46,465 |
| -2 Guardrail | 5,800 | 2 | 35 | 20 | 5,855 | -- | -- | -- | -- | -- | 5,855 |
| -4 Redirect Polly Branch | 6,130 | 5,887 | 85,380 | 69,850 | 161,360 | -- | -- | -- | -- | -- | 161,360 |
| -50 Access Road and Riprap Repair | 41,115 | 535 | 7,590 | 7,740 | 56,445 | -- | -- | -- | -- | -- | 56,445 |
| -51 Clearing | -- | 128 | 1,905 | 1,645 | 3,550 | -- | -- | -- | -- | -- | 3,550 |
| -52 Dike Repair | 8,855 | 95 | 1,395 | 590 | 10,840 | -- | -- | -- | -- | -- | 10,840 |
| -53 Dike Road Repair | 2,335 | -- | -- | -- | 2,335 | -- | -- | -- | -- | -- | 2,335 |
| -60 Bottom Ash Fill | -- | 59 | 935 | 800 | 1,735 | 1,000 | 2,568 | 37,000 | 59,850 | 97,850 | 99,585 |
| -61 Earthfill | -- | 40 | 630 | 530 | 1,160 | -- | 1,052 | 17,560 | 41,610 | 59,170 | 60,330 |
| -62 Crushed Stone Surfacing | -- | -- | -- | -- | -- | 6,300 | 34 | 595 | 1,750 | 8,645 | 8,645 |
| -63 Riprap | -- | 64 | 990 | 810 | 1,800 | 378,200 | 1,940 | 30,655 | 77,190 | 486,045 | 487,845 |
| -64 Culvert Pipe - Access Road | -- | -- | -- | -- | -- | 500 | 52 | 725 | 1,075 | 2,300 | 2,300 |
| -65 Railroad Crossing | -- | -- | -- | -- | -- | 7,330 | 876 | 11,150 | 7,720 | 26,200 | 26,200 |
| Material (Commitment Outstanding) | -- | -- | -- | -- | -- | 1,045 | -- | -- | -- | 1,045 | 1,045 |
| -81 Construction Facilities | 15,800 | 11,857 | 190,600 | 130,690 | 337,090 | -- | 1,345 | 20,000 | 26,000 | 46,000 | 383,090 |
| -80 Field General Expense | 1,460 | 13,872 | 253,625 | 115,855 | 370,940 | -- | 1,008 | 18,415 | 2,765 | 21,180 | 392,120 |
| Total Field Construction | $165,790 | 70,265 | $1,140,090 | $1,162,605 | $2,468,485 | $395,725 | 9,078 | $138,390 | $218,820 | $752,935 | $3,221,420 |
| Engineering | | | | | | | | | | | |
| Soils Investigation | | | | | -- | | | | | 5,300 | 5,300 |
| Other | | | | | 79,600 | | | | | 23,100 | 102,700 |
| Subtotal Engineering and Construction | | | | | $2,548,085 | | | | | $781,335 | $3,329,420 |
| General Engineering and Construction Expense | | | | | 101,915 | | | | | 31,265 | 133,180 |
| Contingency | | | | | | | | | | | |
| Construction | | | | | -- | | | | | 148,600 | 148,600 |
| Engineering | | | | | -- | | | | | 2,500 | 2,500 |
| Total Engineering and Construction[a] | | | | | $2,650,000 | | | | | $963,700 | $3,613,700 |

[a]Total Engineering and Construction based on engineering started in October 1981 and completed in April 1985; construction started in January 1982 and completed April 1985. Excludes other Power organizations and other TVA organization expenses and overheads.

Principally prepared by C. L. Toney, extension 7134.

DSP
December 14, 1984
J64349.4

SLOPE STABILITY — ASH DISPOSAL AREA "J" PROJECT JOHN SEVIER S.P.

46+00 — FULL POOL INSIDE SLOPE, LOW POOL OUTSIDE SLOPE — $\bar{R}$ TEST

COMPLETED BY R.D. POWELL DATE CHECKED BY DATE

# SLOPE STABILITY

(USE DECIMAL EXCEPT FOR "I" FORMAT)

| | NS | DESCRIPTION |
|---|---|---|
| 100 | 2 | 110 1 JOHN SEVIER ASH POND "J", FULL POOL INSIDE, LOW POOL OUTSIDE (@ STA. 46+00 $\bar{LR}$ TEST) |

"I" FORMAT

| | N | ERQF |
|---|---|---|
| 120 | 026 | 0.05 |

INSERT "N" NO. OF DATA LINE CARDS (PARAMETERS AS BEFORE)

| | DR |
|---|---|
| 370 | 49 |

| | XT | YT | XB | YB |
|---|---|---|---|---|
| 380 | 8 | -5 -2 | -40 | -35 |

| | GRIDX | GRIDY | XMAX | YMAX | INCX | INCY | INCR |
|---|---|---|---|---|---|---|---|
| 390 | 15 | 5 | 100 | 76 | 5 | 5 | 5 |

"I" FORMAT

| | FSMIN | EFSM |
|---|---|---|
| 400 | 0 | 0 |

IF NS=2, CONTINUE

| | XT | YT | XB | YB |
|---|---|---|---|---|
| 410 | 8 90 | -10 -27 | -55 90 | -50 -40 |

| | GRIDX | GRIDY | XMAX | YMAX | INCX | INCY | INCR |
|---|---|---|---|---|---|---|---|
| 420 | 15 75 | 75 5 | 125 150 | 125 150 | 10 5 | 10 5 | 10 5 |

"I FORMAT"

| | FSMIN | EFSM |
|---|---|---|
| 430 | 2.0 0 | 0 |

FORM R1

SUBJECT SLOPE STABILITY — ASH DISPOSAL AREA "J" PROJECT JOHN SEVIER S.P.

② FULL POOL INSIDE SLOPE, DRAWDOWN OUTSIDE SLOPE — $\bar{R}$ TEST

COMPUTED BY R.D. POOL DATE CHECKED BY DATE

RODE1 2 (= FULL OUTPUT) (2)

N = 263
ERFQ = 40.058

| LINE | X1 (N) | Y1 (N) | X2 (N) | Y2 (N) | UNIT WT. (PCF) (−) SATURATED (+) MOIST W (N) | ∅ ABOVE F2 (N) | ∅ BELOW F1 (N) | COHESION ABOVE C2 (N) | COHESION BELOW C1 (N) | |
|---|---|---|---|---|---|---|---|---|---|---|
| 130 | -9399 | -49 | -124 -130 -146 | -49 | -1000 | 0 | 100 | 0 | 9999 | 1 |
| 140 | -124 -130 -146 | -49 | -109 | -49 | -1000 | 35 | 100 | 0 | 9999 | 2 |
| 150 | -109 | -49 | 9399 | -49 | -1000 | 25 | 100 | 0 | 9999 | 3 |
| 160 | -9399 | -46.7 | -120.5 -126.5 -142 | -46.7 | -62.4 | 0 | 0 | 0 | 0 | 4 |
| 170 | -120.5 -126.5 -142 | -46.7 | -103 | -46.7 | -135 | 35 | 35 | 0 | 0 | 5 |
| 180 | -124 -130 -146 | -49 | -120.5 -126.5 -142 | -46.7 | -135 | 0 | 35 | 0 | 0 | 7 |
| 190 | -120.5 -126.5 -142 | -46.7 | -94 -100 -132 -94 | -29 -40 -25 | 135 | 0 | 35 | 0 | 0 | 8 |
| 200 | -94 -100 -94 | -29 -25 | -78.5 -69 | -29 -25 | 135 | 0 | 35 | 0 | 0 | 9 |
| 210 | -109 | -49 | -103 | -46.7 | -128 | 35 | 25 | 0 | 0 | 10 |
| 220 | -103 | -46.7 | -98 | -44.7 | -128 | 35 | 25 | 0 | 0 | 11 |
| 230 | -98 | -44.7 | -93 | -35 | 125 | 35 | 25 | 0 | 0 | 12 |
| 240 | -93 | -35 | -78.5 | -29 | 125 | 35 | 25 | 0 | 0 | 13 |
| 250 (245) | -78.5 -69 | -29 -25 | -8 | 0 | 123 | 0 | 27 | 0 | 0 | 13A 14 |
| 260 | -8 | 0 | 8 | 0 | 123 | 0 | 27 | 0 | 0 | 15 |
| 270 | 8 | 0 | 16 | -4 | 123 | 0 | 27 | 0 | 0 | 16 |
| 280 | 16 | -4 | 58 | -25 | -127 | 0 | 27 | 0 | 0 | 17 |
| 290 | 58 | -25 | 66 | -29 | -127 | 0 | 27 | 0 | 0 | 18 |
| 300 | 66 | -29 | 78 | -35 | -128 | 0 | 25 | 0 | 0 | 19 |
| 310 | 78 | -35 | 84 | -38 | -128 | 27 | 25 | 0 | 0 | 20 |
| 320 | 84 | -38 | 9399 | -38 | -128 | 27 | 25 | 0 | 0 | 21 |
| 330 | 78 | -35 | 9399 | -35 | -127 | 0 | 27 | 0 | 0 | 22 |
| 340 | 16 | -4 | 9399 | -4 | -62.4 | 0 | 0 | 0 | 0 | 24 |
| 350 | -78.5 | -29 | -54 | -29 | 125 | 27 | 25 | 0 | 0 | 25 |
| 360 | -54 | -29 | 66 | -29 | -128 | 27 | 25 | 0 | 0 | 26 |
| 361 | -98 | -44.7 | -54 | -29 | -128 | 25 | 25 | 0 | 0 | 27 |
| 362 | -54 | -29 | 16 | -4 | -127 | 27 | 27 | 0 | 0 | 28 |

(LIMIT 50 LINES)

191 192

| | H | G | R | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 245 | -78.5 | -29 | -69 | -25 | 123 | 35 | 27 | 0 | 0 |

ONE CARD FOR EACH FAILURE ARC CONSIDERED

⑤

FOR

NAME: M. H. MILLER

DATE: Oct 25, 84

ADDRESS

☐ Chatta ☐ M. S.
☐ Knox ☐ Nor.

Fold here for return

FROM

NAME: J. M HOSKINS

EXTENSION

ADDRESS

☐ Chatta ☐ M. S.
☐ Knox ☐ Nor.

UNCHECKED RESULTS:

ROCK TOE NEEDED

2:1 SLOPE

COMPACTED ASH $\phi = 28°$ FS = 1.04

" " $\phi = 30°$ FS = 1.09

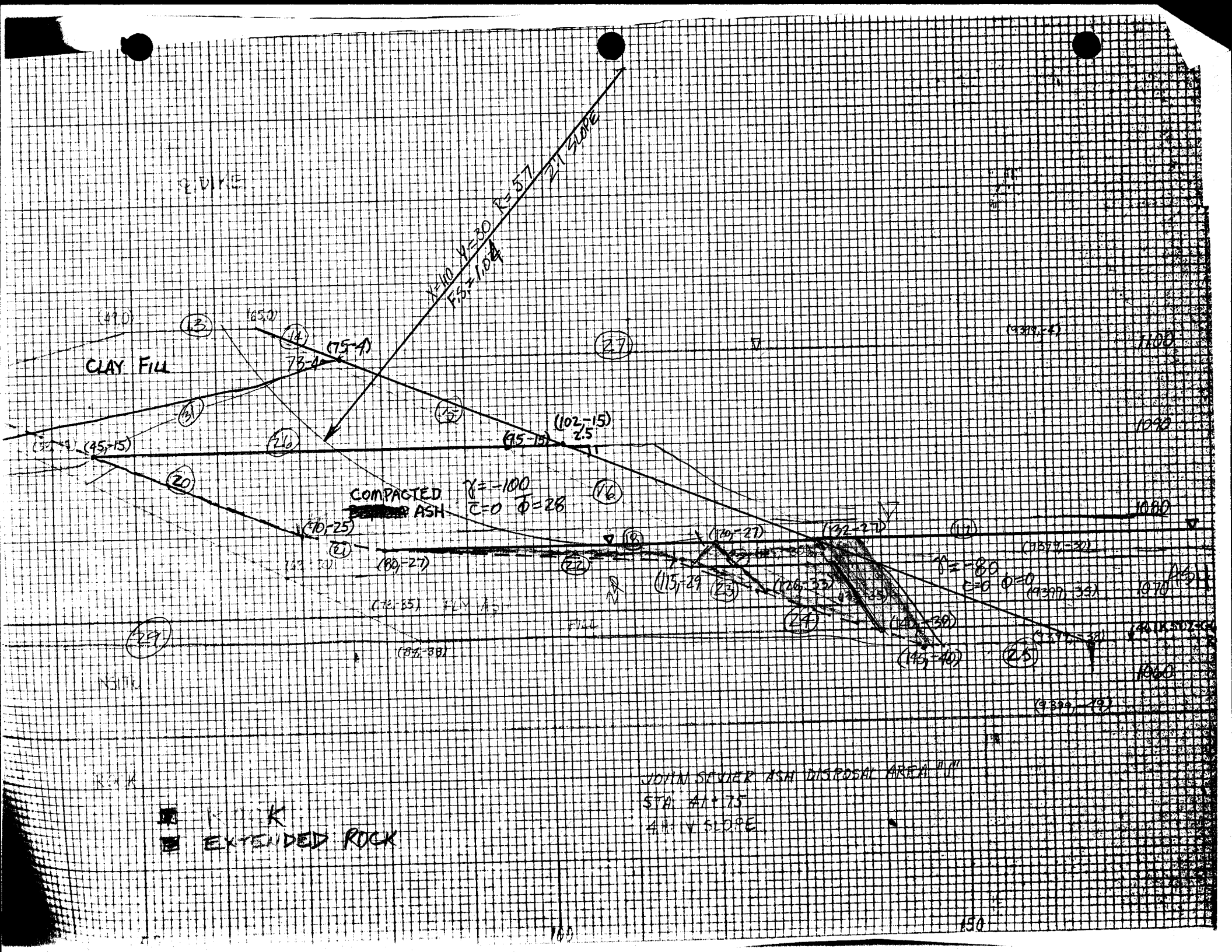
2.5:1 SLOPE

COMPACTED ASH $\phi = 28°$ FS = 1.24

" " $\phi = 30°$ FS = 1.31

RECOMMEND 2.5:1 SLOPE ON INSIDE OF DIKE.

JOHN SEVIER S.P ASH POND "J"



CLAY FILL
COMPACTED ASH
γ = -100
c̄ = 0 φ̄ = 28
γ = -80
c = 0 φ = 0
γ = 110 γ = 30 R = 57 2:1 SLOPE
F.S. = 1.04
(45,-15)
(75,-4)
(102,-15)
2.5
(70,-25)
(80,-27)
(115,-29)
(120,-27)
(132,-27)
(145,-40)
(9399,-4)
(9399,-30)
(9399,-35)
(9399,-38)
(9399,-29)
1100
1090
1080
1070
1060
JOHN SEVIER ASH DISPOSAL AREA "J"
STA 41+75
4H:1V SLOPE
EXTENDED ROCK

TVA 489 (EN-DES-11-76)

SHEET _____ OF _____

JOHN SEVIER ASH DISPOSAL AREA "J"
STA. 41+75 (DODSON CREEK)

COMPUTED JMH DATE 8-9-84

CHECKED _____ DATE _____

## NO ADDITIONAL RIPRAP AND NO SLOPE CHANGE
### DROP WATER TABLE EL. 1073 IN POND FOR DRY STACKING

| | | |
|---|---|---|
| $\bar{R}$ : | OUTSIDE SLOPE | F.S. = 1.08 |
| | INSIDE SLOPE | F.S. = 1.03 |
| R : | OUTSIDE SLOPE | F.S = 1.16 |
| | INSIDE SLOPE | F.S. = 1.12 |

## SLOPE CHANGE TO 4$^H$:1$^V$ AND NO ADDITIONAL RIPRAP
### POND WATER EL. 1101

| | | |
|---|---|---|
| $\bar{R}$ : | OUTSIDE SLOPE | F.S. = 1.47 |
| | INSIDE SLOPE | F.S. = 1.29 |
| R : | OUTSIDE SLOPE | F.S. = 1.73 |
| | INSIDE SLOPE | F.S. = 1.87 |

## SLOPE CHANGE TO 3$^H$:1$^V$ AND NO ADDITIONAL RIPRAP
### POND WATER EL. 1101

| | | |
|---|---|---|
| $\bar{R}$ : | OUTSIDE SLOPE | F.S. = 1.03 |

TVA 489 (REV-9 47)

JOHN SEVIER STEAM PLANT — SHEET ____ OF ____

ASH DISPOSAL AREA "J"

SLOPE STABILITY @ STA. 41+75 (LOUDSON CREEK)

$\bar{R}$ TEST CONDITION — COMPUTED ____ DATE ____

CHECKED ____ DATE ____

**No Additional Riprap —**

High Phreatic Surface, C=0:

Inside Slope F.S. = 1.09 (1.14 for deeper circle)

Outside Slope F.S. = 0.96

Lowered Phreatic Surface, C=0:

Inside Slope F.S. = 1.32 (circle forced lower than 1.14 test result)

Outside Slope F.S. = 1.18

Lowered Phreatic Surface, C=150:

Inside Slope F.S. = 1.75 (compares to 1.09 test result)

Outside Slope F.S. = 1.46

High Phreatic Surface, C=150:

Inside Slope F.S. = 1.69

Outside Slope F.S. = 1.13

**Riprap 25' Wide @ El. 1076 —**

High Phreatic Surface, C=150:

Inside Slope F.S. = 1.69

Outside Slope F.S. = 1.24

High Phreatic Surface, C=0

Inside Slope F.S. = 1.09

Outside Slope F.S. = 0.99

**Riprap 28' Wide @ El. 1080 —**

Use High Phreatic Surface, C=0

Inside Slope F.S. = 1.09

Outside Slope F.S. = 1.04 (Failure to Top of Riprap)

" = 1.06 (Failure to Bottom of Riprap)

**Riprap @ El. 1080 with 10' Berm to El. 1065 —**

Use High Phreatic Surface, C=0

Outside Slope F.S. = 1.14 (Failure to Top of Berm)

" = 1.15 (Failure thru Berm)

**Riprap @ El. 1080 with 10' Berm to El. 1070 —**

Use High Phreatic Surface, C=0

Outside Slope F.S. = 1.17 (Failure to outside Edge of Riprap @ El. 1080)

" = 1.21 (Failure thru Berm)

8-3-'84

# John Sevier S.P. Ash Pond J. Dodson Creek

## Summary: Bottom Ash Properties -

| | $\gamma_{moist}$ | $\gamma_{sat.}$ | $\gamma_{sub}$ | R: $\bar{c}$ | R: $\bar{\Phi}$ | $\bar{R}$ or S: $\bar{c}$ | $\bar{R}$ or S: $\bar{\Phi}$ |
|---|---|---|---|---|---|---|---|
| Compacted Bottom Ash | 117 pcf | 120 pcf | 58 pcf | 1200 PSF 0.6 tsf | 20° | 0 | 33° |
| Dumped Bottom Ash (in water) | – | 110 pcf | 48 pcf | 600 PSF 0.3 tsf | 15° | 0 | 28° |
| Consolidated Fly Ash | 85 | 95 | 33 | 100 PSF 0.05 | 15° | 0 | 24° |
| V. Loose Fly Ash | 65 | 70 | 8 | 0 | 0 | 0 | 0 |

SHEET _____ OF _____

COMPUTED _____ DATE _____

CHECKED _____ DATE _____

# FACTOR OF SAFETY AT STA. 41+75 (DODSON CREEK) WITH NORMAL PHREATIC SURFACE

| DESCRIPTION OF REPAIR | | FACTOR OF SAFETY $\bar{R}$ | FACTOR OF SAFETY R |
|---|---|---|---|
| RIPRAP @ EL. 1076 | | 0.94 | 0.96 |
| RIPRAP @ EL. 1080 | a. FAILURE AT TOP OF RIPRAP | 1.04 | 1.06 |
| | b. FAILURE AT BOTTOM OF RIPRAP | 1.06 | — |
| RIPRAP @ EL. 1080; WITH 10' BERM @ EL. 1065 | | | |
| | a. FAILURE AT TOP OF RIPRAP | 1.14 | 1.12 |
| | b. FAILURE AT BOTTOM OF RIPRAP | 1.15 | 1.27 |
| | c. FAILURE ABOVE RIPRAP | — | 1.04 |
| RIPRAP @ EL. 1080; WITH 10' BERM @ EL. 1070 | | | |
| | a. FAILURE AT TOP OF RIPRAP | 1.17 | 1.12 |
| | b. FAILURE AT BOTTOM OF RIPRAP | 1.21 | 1.31 |
| | c. FAILURE ABOVE RIPRAP | — | 1.04 |

11,200 Ton x $10\frac{1}{2}$
= 120,000
+ 20%
= $144,000

TVA 11030 (WM-7-75)

TVA 489 (REV-9 47)

JOHN SEVIER STEAM PLANT — SHEET ____ OF ____

ASH DISPOSAL AREA "J"

SLOPE STABILITY @ STA. 46+00 (CHEROKEE RESERVOIR)

R TEST CONDITION (EFFECTIVE) — COMPUTED ____ DATE ____

CHECKED ____ DATE ____

No Riprap —

Inside Slope F.S. = 1.06

Outside Slope F.S. = 0.86

Riprap 15' Wide @ EL 1076 —

Outside Slope F.S. = 1.11 (Failure thru toe of riprap)

Riprap 20' Wide @ EL 1076 —

Outside Slope F.S. = 1.14 (Failure thru inside top of riprap)

Riprap 25' Wide @ EL 1080 —

Outside Slope F.S. = 1.24 (Failure thru inside top of riprap)

" = 1.29 (Failure thru toe of riprap)

Riprap @ EL 1080 with 15' Berm to EL 1065 —

Outside Slope F.S. = 1.40 (Failure thru outside top of berm)

Riprap @ EL 1080 with 15' Berm to EL 1070 —

Outside Slope F.S. = 1.42 (Failure thru inside top of berm)

Riprap 20' Wide @ EL 1085 with 15' Berm to EL 1070 —

USE → Outside Slope F.S. = 1.37 (Shallow failure thru inside top of riprap)

" = 1.50 (Deep failure thru inside top of berm)

TVA 488 (EN DES-3-77)

SHEET 1 OF

John Sevier S. P.
Ash Pond "J" Repairs

COMPUTED RDP DATE 1/28/85

CHECKED DATE

Riprap used for Pond "J" repairs:
(per Jim Foggi's secretary by phone on 1/28/85)

Inside Pond — 7,774.15 Tons
On Outside Dike Slope — 22,059.60 Tons
Total — 29,833.75 Tons

1- Cohesionless fine silty sand.

2- Unique type of behavior in triaxial testing. Saturated samples (with higher percentage of silts) liquified during the triaxial R test. (very low shear strength values)

3- Appears to be a dispersive material.

4- High potential for sloughing, erosion and dispersion

5- Recommend to provide a protective cover e.g. 3' wide compacted clay cover. Use Bomag BW-60S (small) roller (24" wide) to compact the clay.

BW-35 (15" wide)

Justifications for placing earth cover on face of ash fill per S.B. Ahmed. 1/85

RDP

SME '84 1115 001

O. P. Thornton, Project Manager, Fossil Design Projects, 102 SPT-K (2)

John A. Raulston, Chief Nuclear Engineer, W10C126 C-K

JOHN SEVIER STEAM PLANT - ASH POND J - SOILS INVESTIGATION ON ASH MATERIAL - EN DES SOILS SCHEDULE 6.3

Testing of bag samples taken from the ash disposal areas as directed by Fossil Engineering Project (FEP) personnel has been completed. In addition to the requirements outlined in your memorandum of October 30, 1984, to W. H. Childres, saturated R and direct shear tests were performed as requested by the Geology and Geotechnical Engineering Group (GGEG) staff.

Index tests (ASTM D 4318), particle-size analyses (ASTM D 422), standard compaction tests (ASTM D 638), and saturated triaxial R tests with pore pressure measurements were performed on bag samples of three different types of ash. Only two of the three samples were chosen for direct shear tests by the GGEG staff. Specimens for triaxial R and direct shear tests were remolded at 95 percent maximum dry density and at 3 percent below optimum water content. Test results are shown in the attachments. The apparent triaxial shear strength parameters varied from $c = 0$ tsf and $\phi = 11.4^{\circ}$ to $c = 0.08$ tsf and $\phi = 20.5^{\circ}$. The effective shear strength parameters ranged from $c = 0.03$ tsf and $\phi = 17.3^{\circ}$ to $c = 0.28$ tsf and $\phi = 28.6^{\circ}$. The direct shear strength parameters are very similar on the two types of ash tested, being $c = 0.13$ tsf and $\phi = 31.2^{\circ}$ for pond J ash and $c = 0.07$ tsf and $\phi = 31.9^{\circ}$ for ash from the southeast bank.

It should be noted that during triaxial shearing on the remolded ash specimens from pond J and the southeast bank, the deviator stress reached its peak very early and then dropped constantly as the developed pore pressure increased continuously to a value equal to the applied confining pressure. It was apparent that an initial liquefaction occurred and the ash exhibited no resistance to deformation at the final stages of static loading. In view of these critical phenomena developed on the ashes of pond J and the southeast bank, the shear strength parameters based on the

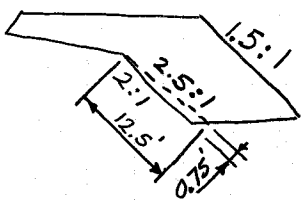
SUBJECT ASH DISPOSAL AREA "J" REPAIR PROJECT JSF

QUANTITY ESTIMATE

COMPUTED BY MDN DATE 10/29/84 CHECKED BY RDP DATE 10/29/84

RIPRAP

0.15
3.39 3.24 } 3,225 □" = 322.5 SF
6.60 3.21 }




0.75(12.5)/2 = 4.6875 SF

(322.5 - 4.6875)( 30/2 + 330 + 40/2) = 116,001.6 CF
317.8125 365

116,001.6 / 27 = 4,296.35 CY

4296.35 (1.8) = 7,733.4 TONS ≈ 7730

INSIDE ROAD → 7730 + 36,200 = 43,930 ← ON OUTSIDE SLOPE FROM 9/84 CALCS.

≈ 44,000 TONS (TOTAL)

CRUSHED STONE SURFACING

(46 (0.5))( 365) = 8,395 CF

8,395 ÷ 27 = 310.9 CY

310.9 (1.8) = 559.7 TONS

559.7
+ 400 PREVIOUS
959.7

≈ 1000 TONS

SUBJECT ASH DISPOSAL AREA "J" REPAIR PROJECT JSF

QUANTITY ESTIMATE

COMPUTED BY MGH DATE 10/29/84 CHECKED BY RDP DATE 10/29/84

COMPACTED ASH FILL

0.44
7.60 7.16 } 7.14 □"
14.72 7.12 } ≈ 715 SF

715 (600) = 429,000 CF

429,000 ÷ 27 = 15,888.9 CY

15,888.9 ÷ 0.75 = 21,185 CY

≈ 21,200 CY

JOHN SEVIER S. P.

ASH DISPOSAL AREA "J" REPAIRS

QUANTITIES ESTIMATE

COMPUTED RQP DATE 9/84

CHECKED [illegible] DATE 9/26/84

Riprap required for 1.5 Safety Factor adjacent to Cherokee Reservoir

Length of Riprap = 650'

Avg. Area = 835 sq ft

Riprap Required = 650' x 835 sq ft = 542,750 cu. ft = 20,100 C.Y.

20,100 C.Y. x 1.8 Tons/C.Y. = 36,185 Tons

Say 36,200 Tons

For Dike Relocation along Dodson Creek:

Begin Relocation @ Sta. 36+70 ±

End Relocation @ sta. 43+50 ± BK. = Sta. 44+65 ± AH.

| | |
|---|---|
| 43+50 | 44+65 |
| - 36+70 | - 36+70 |
| 680' | 795' |

Unclassified Excavation (Item 120)

700' x 660 sq ft = 462,000 cu. ft. = 17,100 C.Y.

Say 17,000 C.Y.

Earth Fill

600' x 720 sq ft = 432,000 cu. ft = 16,000 C.Y.

Say 16,000 C.Y.

~~Dumped Bottom Ash Fill~~ Superceded: See calcs. dated 10/29/84 for compacted ash fill. R.Q.P.

~~600' x 1350 sq ft = 810,000 cu. ft. = 30,000 C.Y.~~

~~Say 30,000 C.Y.~~

Crushed Stone Surfacing (Item 305)

16' x 680' x 1/3' x 125 lb/cu. ft / 2000 lb/ton = 226.7 Tons

Say 225 Tons (For Reloc. Section of Dike)

Seeding & Mulching (Items 580 & 582)

(20' x 800') + (35' x 680') = 96,000 S.F. + 23,800 S.F. = 119,800 S.F. / 9 SF/SY

= 13,310 S.Y.

Say 13,500 S.Y.

ORIGINAL COORDINATES

E
732875.2600
2886607.6700

F
732580.5300
-294.7300000
2885855.3400
-752.3300000

808.0013961 DIST
68.3624981 BRNG.
3.0000000 SW
248.3624981
808.0013961

G
732900.0100
319.4700000
2885950.1000
94.6600000

333.1991361 DIST.
16.3017703 BRNG.
1.0000000 NE
16.3017703
1141.2003971

H
733218.0000
318.0000000
2885948.1000
-2.0000000

318.0063881 DIST.
0.2137345 BRNG.
4.0000000 NW
359.3828756
1459.2066861

J
733365.0000
147.0000000
2886632.1000
684.0000000

699.6177511 DIST.
77.5215331 BRNG.
1.0000000 NE
77.5215331
2158.8244311

COORDINATES OF F, (RELOC)

732580.5300 } F (ORIG.)
2885855.3400 }
68.3624981 BRNG.
1.0000000 QUAD.
68.3624981
72.2334781 DIST.
0.0000000
90.0000000
72.2334781

67.2561891
26.3481741
732606.8781 } F, (RELOC.)
2885922.5971 }

COORDINATES OF H, (RELOC.)

733218.0000 } H (ORIG.)
2885948.1000 }
77.5215331 BRNG.
1.0000000 QUAD.
77.5215331
58.2239341 DIST.
0.0000000
90.0000000
58.2239341

56.9241861
12.2337071
733230.2337 } H, (RELOC.)
2886004.9241 }

COORDINATES OF G, (RELOC.)

732606.8781 } F, (RELOC)
2885922.5971 }
733230.2337 } H, (RELOC)
2886004.9241 }
16.3017703 BRNG. FG
1.0000000 QUAD.
0.2137345 BRNG. HG
2.0000000 QUAD.

732891.9061 } G, (RELOC)
2886007.0521 }

RELOCATED COORDINATES

732875.2600
2886607.6700
732606.8782
-268.3819000
2885922.5971
-685.0730000

735.7674941 DIST.
68.3624891 BRNG.
3.0000000 SW
248.3624891
735.7674941

732891.9061
285.0284000
2886007.0521
84.4550000

297.2773721 DIST.
16.3017133 BRNG.
1.0000000 NE
16.3017133
1033.0448661

733230.2337
338.3271000
2886004.9241
-2.1280000

338.3337921 DIST.
0.2137341 BRNG.
4.0000000 NW
359.3828661
1371.3786541

733365.0000
134.7669000
2886632.0000
627.0760000

641.3940021 DIST.
77.5215341 BRNG.
1.0000000 NE
77.5215341
2012.7726601

JOHN SEVIER STEAM PLANT

ASH DISPOSAL AREA "J"

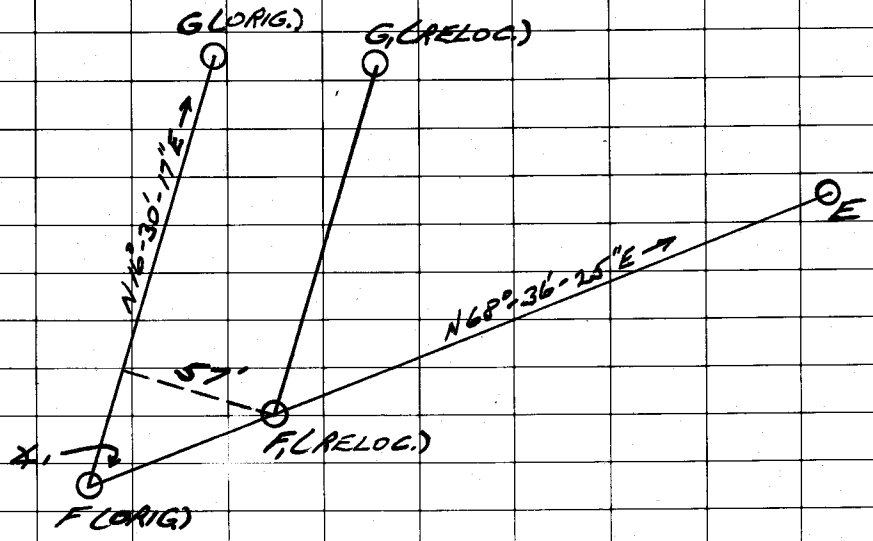
CALCULATION OF RELOCATED DIKE COORDINATES

COMPUTED RDP DATE 9/18/89

CHECKED MJH DATE 9/21/89

SEE DWG. 10W256-1 FOR ORIGINAL COORDINATES.

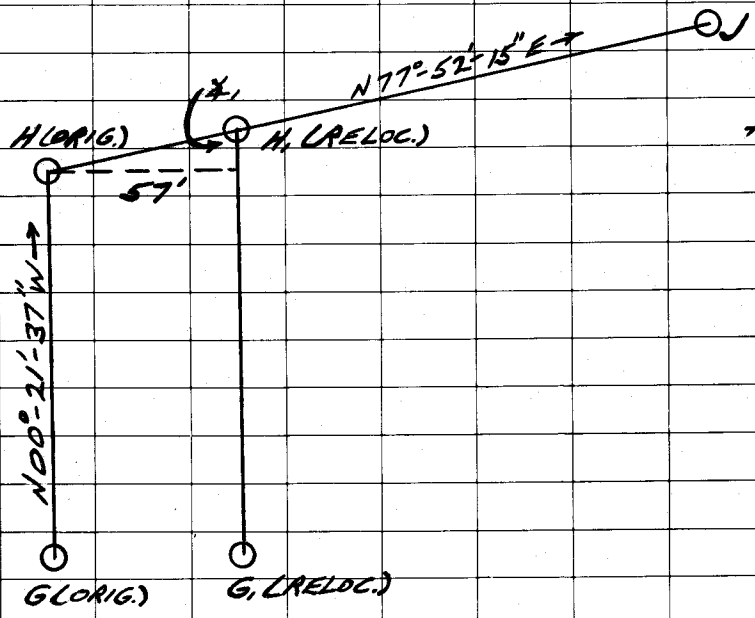
SEE COMPUTER CALCS. OF ORIGINAL COORDS. FOR BRNGS. & DISTANCES.




$68°-36'-25"$
$-16°-30'-17"$
$52°-06'-08" = X,$

$FF, = 57'/\sin X,$
$FF, = 72.2335'$

SEE COMPUTER CALCS. FOR COORDINATES OF F, (RELOC.)




$77°-52'-15"$
$+00°-21'-37"$
$78°-13'-52" = X,$

$HH, = 57'/\sin X,$
$HH, = 58.2239'$

SEE COMPUTER CALCS. FOR COORDINATES OF H, (RELOC.) & G, (RELOC)

JOHN SEVIER STEAM PLANT
ASH DISPOSAL AREA "J"
CALC. OF RELOC. DIKE COORDINATES

COMPUTED RDP DATE 9/18/89
CHECKED MJH DATE 9/21/89

FROM COMPUTER CALCS. OF RELOCATED COORDINATES:

| PI | N | E | BRNG | DIST. |
|---|---|---|---|---|
| E | 732,875.26 | 2,886,607.67 | | |
| | | | S68°-36'-25"W | 735.77' |
| F, | 732,606.88 | 2,885,922.60 | | |
| | | | N16°-30'-17"E | 297.28' |
| G, | 732,891.91 | 2,886,007.05 | | |
| | | | N00°-21'-37"W | 338.33' |
| H, | 733,230.23 | 2,886,004.92 | | |
| | | | N77°-52'-15"E | 641.39' |
| J | 733,365.00 | 2,886,632.00 | | |

PI F,

179°-59'-60"
- 52°-06'-08"
Δ = 127°-53'-52"
R = 100'
D = 5729.58/R = 57.2958°
T = R tan Δ/2 = 204.57'
L = 100Δ/D = 223.22'

PI G,

16°-30'-17"
+ 00°-21'-37"
Δ = 16°-51'-54"
R = 100'
D = 57.2958°
T = 14.82'
L = 29.44'

PI H,

77°-52'-15"
+ 00°-21'-37"
Δ = 78°-13'-52"
R = 100'
D = 57.2958°
T = 81.31'
L = 136.54'

P23-544-37-20656

TVA 64 (08-9-68)

UNITED STATES GOVERNMENT

# Memorandum

TENNESSEE VALLEY AUTHORITY

DOC '841116 001

TO : C. C. Schonhoff, Director of Fossil and Hydro Power, 720 EB-C

FROM : Charles Bonine, Jr., Manager of Construction, 12-108 SB-K

DATE : November 16, 1984

841116T0293 (2)

SUBJECT: JOHN SEVIER STEAM PLANT - ASH POND "J"-SLOPE STABILIZATION MODIFICATIONS

R. G. Domer's September 12 memo to you (FEP 840912 002) outlines additional work to the ash pond dikes for slope stability improvements. These costs are to be charged to the original work order. A copy of Mr. Domer's memo is attached for your ready reference. Due to schedule delays, scope changes, and inclement weather the original work order is already significantly "overrun" and we thought it might be well to bring everyone up to date on this activity. Outlined in the following paragraphs is a brief chronology of this project.

Cost estimate number 82-19 R1, dated March 2, 1982, authorized $1,369,000 to construct ash pond J during calendar year 1982. The original scope indicated that the 486,000 cubic yards of fill material required for the dike would be available from a borrow area inside the dike and another borrow area outside the dike and across the Southern Railway railroad. Each area was to contain approximately 50 percent of the required material. Both of these areas required permits from agencies outside TVA in order to obtain the necessary material. The area inside the pond required a 404 permit before excavation could continue below elevation 1075. The area outside the dike required a permit from Southern Railway for a temporary crossing of the railroad.

Construction actually started on June 21, 1982, within a few days after project authorization. The 404 permit was received from the Corps of Engineers on October 7, 1982, and by November 25, 1982, all material inside the pond had been expended. A total of 200,000 cubic yards of fill had been placed for the dike. Production was slowed during this period due to delays in obtaining the 404 permit and 23 days of inclement weather.

All work was suspended on November 25, 1982, pending approval of the permit to cross the railroad. After the permit was secured, work was resumed on December 7, 1982. Earthwork was completed on September 30, 1983, with 516,267 cubic yards being placed. During this period, fill placement was suspended 70 days due to inclement weather.

Since only 200,000 cubic yards of fill were available inside the dike, approximately 316,267 cubic yards were hauled from the area across the railroad. This resulted in additional haul time and an expansion of this borrow area beyond the original limits. Additional material was also required for a cutoff trench to correct seepage underneath the dike. Following is a tabulation of the additional material handled:

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

C. C. Schonhoff
November 16, 1984

JOHN SEVIER STEAM PLANT - ASH POND "J"-SLOPE STABILIZATION MODIFICATIONS

| | Original Estimate | Actual (CY) | Additional Material |
|---|---|---|---|
| Dike fill | 486,000 | 516,267 | 30,267 |
| *Topsoil Stripped and Stockpiled | 16,133 | 63,000 | 46,867 |
| Topsoil Removal | 16,133 | 63,000 | 46,867 |
| Fill for Seepage | 0 | 50,000 | 50,000 |
| Total | | | 174,001 CY |

*Double handling due to delay in railroad crossing permit.

Construction on work items not in the original scope was started in September 1983 and completed in January 1984. These items include: Polly's Branch relocation, a turnaround at the outfall pipes, a walkway to the out-fall pipe, and a floating skimmer. Mobilization was begun on March 27 for emergency repairs to ash pond J. This emergency work consisted of construction of an anti-seepage collar around one of the spillway discharge pipes, grouting of leaking joints in one discharge pipe, and replacement of riprap at the outfall of the discharge pipes. All of this work was completed on May 30, 1984.

Attached for your information is a summary of actual costs to date and the estimated additional costs for the stabilization work.

Charles Bonine Jr.

GF:MAO
Attachment
cc: Frank Van Meter, 10-103 SB-K
MEDS, W5B63 C-K

DM4307.M1

R.I.H

Paul Wade, Assistant Director of Fossil and Hydro Power (Fossil), 720 EB-C
Jack T. Thompson, Chief, Technical Services Branch, 705 EB-C

SEP 24 1984

JOHN SEVIER FOSSIL PLANT - ASH DISPOSAL PROGRAM

References: 1. My memorandum to C. C. Schonhoff dated June 3, 1984 with attachment on the above subject (M53 840530 912)

2. Letter from Leo H. Gerbus to the Land Branch dated August 23, 1984 regarding the sale of land near John Sevier (M47 840828 403)

A meeting was held at John Sevier on August 14, 1984 to discuss plans for ash disposal addressing immediate and long-range needs. Those in attendance at the meeting represented the Divisions of Engineering Design (EN DES) and Fossil and Hydro Power (F&H PR).

To begin the meeting, representatives of EN DES presented total costs for additional repairs necessary to give the pond J dikes an acceptable factor of safety. To date, $105,000 has been spent on repairs. In order to meet acceptable safety standards, an additional $674,000 will have to be spent on repairs to pond J ($509,000 for riprap of riverbank and $165,000 for constructing a 4:1 slope on the dike at Dodson Creek). After considerable discussion of these repair figures, F&H PR agreed that this work is necessary; and that these repairs to pond J should be charged to the original work order.

At this point in the meeting, attention was directed toward immediate plans to support ash disposal needs. Presently, we have a usable ash capacity of 665,000 tons (400,000 tons in pond 2 and 265,000 tons in pond J). The final usable volume for pond J is 500,000 tons, which is 300,000 tons less than the original design volume. This reduced volume is negatively impacting the life of our overall ash disposal plan and forcing the necessity for a dry ash-handling system one year earlier than stated in the above-referenced memorandum. Between now and March 1986, we must dispose of 547,000 tons of ash. Since ash to be produced approximately equals the remaining storage capacity, it is essential that additional disposal capacity be provided by March 1986. The need for this early date has been a direct result of problems with pond J.

Paul Wade

JOHN SEVIER FOSSIL PLANT - ASH DISPOSAL PROGRAM

To meet our ash disposal requirements until the dry ash collection system is in operation, we recommend the following three actions be taken: (These actions are required to provide a water inventory in pond 2 to support the continued disposal of bottom ash and other plant wastewater streams.)

1. Reclaim and stack 400,000 tons of ash from the bathtub. This action is being implemented by the plant as equipment becomes available. However, bids will be solicited and will be awarded if proven to be economical. The estimated cost for this work is $1,400,000.

2. Pond 2 will be full by spring 1986. Dredge 400,000 tons from pond 2 to the bathtub beginning in March 1986. The estimated cost for this is $400,000.

3. Presently, a contract is in progress for removing 120,000 tons of dry bottom ash from pond 2 and reclaiming a portion of the earth borrow pit across the railroad tracks from pond 2. As soon as this contract is completed (late November 1984), set up a reclaim pond in pond 2 using tractor-scrapers (two CAT 637D's and one dozer, plus operators for two or three days per week). Dry stacking of this material will be at the abandoned section of Polly's Branch and on the abandoned ash ponds.

The conversion to dry fly ash handling is felt to be the most practical alternative to meet long-range ash disposal needs. However, the recent offer by Mr. Gerbus (reference 2) to sell land to TVA must be evaluated along with dry ash handling prior to making a final decision. Possibly, this land can be purchased and developed to support dry ash stacking for plant life. Independent of land considerations, the conversion to dry fly ash handling is expected to cost between $8,000,000 and $10,000,000.

In order to meet the additional ash-handling requirements mentioned in item 3 above, the plant will need two CAT 637D tractor-scrapers. These can be purchased with the money allocated for a dragline for fiscal year 1985, since a dragline will not be necessary for this operation. The cost of the two tractor-scrapers should be approximately $565,000; $555,000 is budgeted.

Paul Wade

JOHN SEVIER FOSSIL PLANT - ASH DISPOSAL PROGRAM

In view of the above, we will proceed immediately with a request for EN DES to prepare a cost estimate for dry fly ash handling. Also, we will prepare necessary work orders and project justification to begin construction in fiscal year 1985.

Jack T. Thompson

TWW:JWC:BLH:SRS
Attachment
cc: ARMS, 810 EB-C
B. B. Street, John Sevier

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

# Memorandum

TENNESSEE VALLEY AUTHORITY

M. H. Miller
333 SPT-K

FEP '840912 002

TO : C. C. Schonhoff, Director of Fossil and Hydro Power, 716 EB-C

FROM : R. G. Domer, Director of Engineering Projects, W11A6 C-K

DATE : SEP 12 1984

SUBJECT: JOHN SEVIER STEAM PLANT - ASH POND J - SLOPE STABILIZATION MODIFICATIONS

Representatives from our respective staffs met with plant personnel in B. B. Street's office on August 14, 1984, to discuss the results of our recent slope stability analyses on the dikes for the subject project. The following areas were of primary concern:

Area 1. The 600± -foot-long section of riverbank dike adjacent to the spillway outfall.

Area 2. The 1000± -foot-long section of riverbank dike between the abandoned bridge and the fisherman's access ramp.

Area 3. The 450± -foot-long section of dike along Dodson Creek on the north end of ash pond J.

Our analyses indicate only area 2 is sufficiently stable to resist landslides without additional modifications. The safety factor against sliding is less than 1.0 for areas 1 and 3, and they will require additional modifications to obtain an acceptable safety factor for long-term operational reliability. Although these dike areas were originally designed to provide a 1.5 safety factor, our reanalysis has discovered the following discrepancies:

1. The original dike design assumed a wide berm between the toe of the new ash pond dike and the existing riverbank. The dike was actually located (per design drawings) too close to the river. The riverbank actually undercuts the dike foundation zone.

2. Original slope stability analyses were performed only for normal operating and construction conditions while our recent analysis for the long-term steady seepage yields lower, unacceptable, safety factors.

3. Our original design also called for granular material to be placed in the outside regions of the dike, but construction drawings made placement of granular material optional; therefore, sufficient granular material was not placed, thus reducing the calculated factor of safety.

In addition to our analysis we investigated various solutions to improve the safety factors for areas 1 and 3, but recommended that a safety factor of 1.5 is most desirable. To obtain this degree of safety would require placing an additional 39,000 tons of riprap at area 1 and moving the centerline of the dike toward the inside of the new pond, thereby creating a new outer dike slope of 4:1 for area 3. The construction costs for this effort would be on the order of magnitude of $680,000.

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

C. C. Schonhoff
SEP 12 1984

JOHN SEVIER STEAM PLANT - ASH POND J - SLOPE STABILIZATION MODIFICATIONS

Less costly modifications could be done but would not provide the recommended 1.5 safety factor. Construction in area 3 would also be delayed since placement of additional riprap on the outside slope of the dike would require an environmental review and approval process.

Therefore, we are proceeding with design and construction and will charge all costs to the original work order in accordance with the concurrence of your representatives at the August 14, 1983 plant meeting. Construction will begin by October 1, 1984, and be completed by December 31, 1984, with priority placed on completing the earthfill for area 3.

Since implementation of these modifications will decrease the ash disposal area of pond J, the long-term ash disposal plans (conversion to dry stacking) will need to be reevaluated and in all probability accelerated by approximately one year. The Office of Engineering will prepare a cost estimate for providing the dry ash handling facilities upon receipt of your scope of work document, but will also require separate funding for this engineering effort since it is not associated with the original work order for ash pond J. We can provide you with an estimate of our anticipated engineering costs for this cost estimate after receipt of your scope-of-work document.

Original Signed By
John E Holladay

R. G. Domer

OPT:JEB:FLC
cc: R. O. Barnett, W9D224 C-K
C. Bonine, E7B24 C-K
C. A. Chandley, W7C126 C-K
MEDS, W5B63 C-K
R. A. Painter, W5D181 C-K
O. P. Thornton, 102 SPT-K
F. Van Meter, 500 SPT-K (3)

Principally Prepared By: J. E. Branch, Extension 3174, and M. H. Miller, Extension 2956

S64248.04

FOR

NAME: Jim Sullivan

DATE: 8-29-84

ADDRESS:

☐ Chatta ☐ M. S.
☐ Knox ☐ Nor.

Fold here for return

FROM

NAME: Marvin H. Miller

EXTENSION: 2956

ADDRESS: 333 SPT

☐ Chatta ☐ M. S.
☒ Knox ☐ Nor.

JSF Ash Pond J Repair - Riprap & Crushed Stone

Please modify existing contract and obtain a new contract to supplement as necessary to provide material per attached sheet.

TVA 45D (05-9-80) INTEROFFICE MAILING SLIP

CSB '840418 405

TENNESSEE VALLEY AUTHORITY

# Purchase Requisition

Location Knoxville, Tennessee
2301000000

Commodity Code

Requisition number 611721
Requisition Date 4-16-84 Req.611721

| Account Number | Location | Subpro. | Org. | Activity | |
|---|---|---|---|---|---|
| | Code on Delivery | | | | |

Acctg. Office Knoxville Accounting Branch 01

Project John Sevier Fossil Plant
Organization Construction Services Branch

Requisitioner Ref. No.

Ship To Tennessee Valley Authority
CSB: John Sevier Fossil Plant
near Rogersville, TN
Shipping Notice To: Attention: Bobby Elliott
Ship By Vendor's Trucks 04 Date Wanted 6 18 84

| ITEM NO. | ARTICLES OR SERVICES Give Complete Description or Catalog Number | QUANTITY | UNIT | UNIT PRICE* | AMOUNT |
|---|---|---|---|---|---|
| | RIPRAP AND CRUSHED STONE FOR DIKE REPAIR [redacted] | Total quantities to complete JSF Pond J repairs - 8-29-84 RDPowell | | | |
| | F.O.B. Jobsite, John Sevier Fossil Plant, near Rogersville, Tennessee, by vendor's trucks and unloaded as directed by TVA. | | | | |
| 1. | Riprap, shall conform to Section 575 of the TVA General Construction Specification No. T-1. The riprap shall consist of stones with a minimum weight of 150 pounds each with the maximum stone size being three times that size. | Approx. ~~[illegible]~~ | Tons | | |
| 2. | Riprap, shall conform to Section 575 of the TVA General Construction Specification No. T-1 and shall be well graded. ~~[illegible]~~ 75% percent (by weight) of the quantities shall consist of stones of 150 pounds each with the maximum stone size being three times that size and not more than five percent passing the 1-inch sieve. | 40,000 ~~[illegible]~~ | Tons | | |
| 3. | Crushed stone (1032 (305?) surfacing) ~~filter blanket~~ in accordance with Section ~~576~~ of the TVA General Construction Specification No. T-1. Estimated Cost | 1,000 ~~[illegible]~~ | Tons | | $240,000.00 |
| | This is to be an IQT Contrct for one year with deliveries only as requested by TVA beginning approximately June 18, 1984. | | | | |
| | cc: MEDS, W5B63 C-K (Continued) | | | | |

*If not estimated price, price used on previous Contract No.

Quality Assurance Requirements ☐ are required and included ☐ are not required.

If QA Requirements are not required, is CFR Part 21 notice required? Yes ☐ No ☐

CS:CB

Requested by Lawrence D Chapman
Telephone L. D. Chapman
Ext. 3124

Validated by S D Hargreaves
S. A. Hargreaves
Budget Supervisor

Authorized by Frank Van Meter
Title
Frank Van Meter, Chief, CSB

Approved
Division of Purchasing

Contracts 7
IB's 5

ORIGINAL AND YELLOW TO DIVISION OF PURCHASING
BLUE RETAINED BY ISSUING OFFICE
EXTRA YELLOW AS DIRECTED

TVA 201 (DP-11-77)

# JSF ASH POND J REPAIRS — 1984

## COSTS

COMPUTED MHM DATE 8-10-84

CHECKED DATE

## REPAIRS COMPLETED IN MAY

1) Road at base of dike
2) riprap at fly ash pipe discharge
3) riprap at spillway outfall
4) collar around spillway pipe
5) leaks in concrete pipe
6) Dike roadway improvement

* ACTUAL COST = # 105,000

## ADDITIONAL REPAIRS TO BE MADE ON RIVER BANK

3 ALTERNATIVES FOR CONTINUED WET PONDING *

| | | |
|---|---|---|
| 1) 15' Riprap to 1076 | FS 1.11 | #188,000 estimate |
| 2) 25' Riprap to 1080 | FS 1.24 | #314,000 estimate |
| 3) 20' Riprap to 1085 w/ 16' berm @ 1070 | FS 1.50 | # 509,000 estimate |

* Costs include mobilization & demob, 10% field expenses & 10% contingency (for future work)

ORIGINAL Order of Magnitude ESTIMATE (March 84) was # 350,000

TVA 488 (EN DES-3-77)

SHEET 2 OF

JSF Pond J repairs - 1984
COSTS - continued

COMPUTED MHM DATE 8-10-84

CHECKED DATE

## ADDITIONAL REPAIRS FOR DIKE AT DODSON CREEK

2 ALTERNATIVES FOR CONTINUED WET PONDING

environmental review required for stream modification

1) Riprap @ 1080 w/ 10' berm @ 1070 — FS 1.17 — #144,000

2) 4:1 outside slope for dike — FS 1.47 — #165,000

* TOTAL COST FOR FS 1.5 ± = #779,000

* TOTAL COST FOR FS 1.2 ± = #563,000

* includes #105,000 already spent by Const. — Does not include any engineering costs (most engineering is complete).

CSB Estimates Section

ESTIMATE FORM

Project John Sevier Steam Plant
Feature Ash Pond "J" Dike Relocation
Cost Code

Sheet 1 of 1
Prepared J.D.J. Date 8-13-84
Checked Date

| Account No. | ITEM | | | MATERIAL | | LABOR | | | | Eqpt Usage/ Other | Furnish & Install Contracts | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Description | Qty | Un | Unit Price | Amount | MH/ Unit | Man-Hours | $/MH | Amount | | | Unit Price | Amount |
| | Mobilization And Demobilization | | | | | | | | | 5,000 | | | $ 5,000 |
| | Haul Road Modification | 1 | LS | | | | 16 | | 280 | 830 | | | 1,110 |
| | Bottom Ash - Dumped | 20,000 | CY | | - | | 840 | | 12,150 | 37,300 | | | 49,450 |
| | - Compacted | 4,200 | CY | | - | | 240 | | 3,600 | 11,500 | | | 15,100 |
| | Earth Excavation And Fill | 14,400 | CY | | - | | 640 | | 10,400 | 31,000 | | | 41,400 |
| | Spoil Disposal | 2,100 | CY | | - | | 64 | | 960 | 3,150 | | | 4,110 |
| | Crushed Stone | 205 | TNS | 7 | 1,435 | | 76 | | 1,325 | 3,950 | | | 6,710 |
| | Seed And Mulch | 15,500 | SY | .10 | 1,550 | | 233 | | 2,630 | 1,020 | | | 5,200 |
| | Subtotal Direct Construction | | | | 2,985 | | 2,109 | 14.86 | 31,345 | 93,750 | | | $128,080 |
| | Construction Facilities | | | | - | | 251 | | 3,730 | 1,600 | | | 5,330 |
| | Total Direct Construction | | | | 2,985 | | 2,360 | | 35,075 | 95,350 | | | $133,410 |
| | Field General Expense | | | | | | 27 | | 400 | 7,600 | | | 8,000 |
| | Contingency | | | | | | | | | | | | 23,590 |
| | TOTAL FIELD CONSTRUCTION | | | | | | | | | | | | $165,000 |

Based on construction in 1984.

TVA 488 (EN DES-3-77)

SHEET 1 OF 1

John Sevier S.P. — Ash Pond J
Dike Slope Stabilization

COMPUTED RDP DATE 7/84

CHECKED DATE

On 7/16/84, R.D. Powell of OE-FEP and Brian Frederick of CSB inspected the exterior dike slope and south bank of Cherokee Reservoir east of the abutment of the dismantled bridge. During subsequent discussions with S.B. Ahmed and S.D. Stone of OE-CEB it was determined that riprap stabilization of this area was not required. This is due primarily to the high elevation of bedrock in this area as evidenced by field observations and from the soils investigation borings performed by SME (ENDES SOILS SCHEDULE NO. 6.2). Also, strength parameters of the foundation soils were greater.

R. D. Powell
REK 1/25/85

TVA 488 (EN DES-3-77)

~~RET~~, RDP

SHEET _____ OF _____

# JSF Pond J Stability Repairs

COMPUTED MHM DATE 7-13-84

CHECKED _____ DATE _____

Riprap Contract — Bids will be opened July 25th
Construction could begin Aug 1st ±. (per Jim Sullivan)

Contract Quantities (per Dave Sessoms)

150# min size riprap — 17,000 TON

150# avg size crusher run riprap. — 9000 TON

Filter blanket material — 4000 TON

These quantities can be increased up to 15% (maximum).

TVA 489 (REV-9 47)

SHEET 1 OF 1

JOHN SEVIER S.P.

ASH DISPOSAL AREA "J"

QUANTITIES FOR BANK REPAIR ALONG CHEROKEE RES. COMPUTED RDP DATE 4/10/84

CHECKED JHR DATE 4/10/84

NORMAL QUARRY RUN RIPRAP

$3' \times 70' \times 65' + 3' \times 60' \times 600' = 13,650 + 108,000 = 121,650$ C.F.

$121,650$ C.F. $\times 130 \frac{LB.}{C.F.} / 2000 \frac{LB.}{TON} = 7,907$ TONS

SAY 7,925 TONS

LARGE STONE RIPRAP

$(430'' \times 65' + 340'' \times 600') 130 \frac{LB}{C.F.} / 2000 \frac{LB}{TON} = 15,096$ TONS

SAY 15,100 TONS

1032 CRUSHED STONE

$(\frac{2}{3}' \times 75' \times 65' + \frac{2}{3}' \times 65' \times 600') 125 \frac{LB}{C.F.} / 2000 \frac{LB}{TON} = 1,828$ TONS

SAY 1,830 TONS

Not Used

Changed Design

RDP

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

# Memorandum

TENNESSEE VALLEY AUTHORITY

FDP '84 0329 003

TO : H. S. Fox, Director of Fossil and Hydro Power, 716 EB-C

FROM : R. W. Cantrell, Manager of Engineering Design (Acting), W11A9 C-K

DATE : MAR 29 1984

SUBJECT: JOHN SEVIER STEAM PLANT - ASH POND J REPAIRS

This is to confirm the agreement made by our respective staff representatives during the March 16, 1984, meeting at John Sevier Steam Plant regarding the subject repairs.

EN DES and CSB will proceed immediately with design and construction to repair the actual and potential riverbank slide areas which were identified during the March 8, 1984, inspection of the subject plant's ash disposal areas.

The scope of work for these repairs is as follows:

1. Stabilize approximately 600 feet of riverbank in the vicinity of the existing pond discharge pipes.

2. Construct a permanent access road at the base of the dike around the western end of pond J (approximately 1500 feet).

3. Regrade the roadway surface on top of the dike to slope toward the pond in accordance with original design drawings.

4. Repair the washout of the interior slope of the dike at the eastern end of the pond.

5. Seal off leakage around the existing pond discharge pipes.

Note: These work areas are identified on the attached marked-up print of drawing 10W286-1 R2.

EN DES and CSB's order-of-magnitude costs for completing these repairs are $22,000 and $350,000 respectively. Due to the urgency for completing this work, we will charge all costs to work order number 51063-20656, account number 544-30-20656 per your staff's verbal request at the March 16, 1984, meeting. CSB mobilized their forces on March 26, 1984, and anticipates completing these repairs in September 1984. We expect pond J could be returned to service by late April 1984. Modifications to the existing 404

*Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan*

H. S. Fox
MAR 29 1984

JOHN SEVIER STEAM PLANT - ASH POND J REPAIRS

permit will be performed concurrently with the physical construction repairs per our verbal coordination with the Corps of Engineers and is included in our estimated costs.

EN DES is initiating an authorization level cost estimate for the purpose of revising the work order (account 544-30-20656) and authorizing the additional funds necessary for EN DES and CSB to perform this work which is outside the scope of the original work order.

Original Signed By
John E. Holladay

R. W. Cantrell

REH
JEB 3/27 OPT:MHM:JEB:JAG
Attachment
cc: R. O. Barnett, W9D224 C-K - w/attachment - Please provide the necessary support documents for the 404 permit modifications.---RWC

C. Bonine, E7B24 C-K
C. A. Chandley, W7C126 C-K - w/attachment - Please handle 404 permit modification. Civils will provide support document.---RWC

MEDS, W5B63 C-K
C. W. Kilgore, W12C74 C-K
R. A. Painter, W5D181 C-K
O. P. Thornton, 102 SPT-K
F. Van Meter, 500 SPT-K (3) - w/attachment - Note CSB's responsibilities.---RWC

Principally Prepared By: J. E. Branch, Extension 3174 and M. H. Miller, Extension 2956

BC/PM: JEB ORJ

MO: _____

S74086.03

TVA 64 (OS-9-65)

UNITED STATES GOVERNMENT

# *Memorandum*

TENNESSEE VALLEY AUTHORITY

FDP '84 0328 007

TO : Fossil Design Projects Files

FROM : Marvin H. Miller, Senior Civil Engineer, 333 SPT-K

DATE : MAR 28 1984

SUBJECT: JOHN SEVIER STEAM PLANT - ASH POND J - REPORT OF RIVERBANK SLIDE AND PROPOSED REPAIRS

On March 8, 1984, while participating in the spring inspection of John Sevier's ash disposal areas, Ronnie Powell (FDP) and Robert Spencer (CEB) discovered a slide at the riverbank at the base of Pond J's dike. The 65-foot long slide extended from the toe of the dike into the Holston River. This slide had eroded the foundation support for the dike creating a serious hazard to the dike itself. See Attachments A and B. FDP immediately notified F&H PR of the slide and the need for repairing it before the river level rises significantly. F&H PR requested EN DES to provide recommendations for the repair work to be done.

John Hillier Stivers, Syed Ahmed, and I visited the site on March 12, 1984. After the inspection of Pond J, we recommended additional work along the riverbank adjacent to the slide. This additional 600 ± feet of nearly vertical riverbank could slip at any time. Because the toe of the dike is so close to this bank, the dike is also susceptible to failure. FDP informed F&H PR the cost to repair the slide and stabilize the riverbank could be several hundred thousand dollars. F&H PR requested all cost be charged to the work order for Pond J. FDP requested CSB to mobilize for the slide repair.

On March 14th, Ronnie Powell returned to the site with CSB estimator Jimmy Jenkins and CSB's Bobby Elliott. While they were inspecting the work site, F&H PR personnel removed a spillway wier in preparation for raising the pond level. The resulting surge of water thru the discharge pipe washed away the riprap at the outfall, exposing the vertical riverbank at the toe of the dike. The plant immediately took Pond J out of operation. This new failure occurred within the 600 ± additional feet of riverbank EN DES recognized as a potential slide area.

On March 16th, O. P. Thornton, R. E. Harris, and John Hillier Stivers and CSB's Jim Sullivan, Bob Bruer, Bobby Elliott, and Jimmy Jenkins met Jack Thompson of F&H PR at Buford Street's office at the plant site. EN DES presented details for the proposed repairs. All parties agreed the entire 600 ± feet of riverbank should be stabilized immediately. A permanent access road will be constructed at the base of the dike around the western end of Pond J. The roadway surface on top of the dike will be graded to slope to the inside in accordance with the original design drawings. A washout of the interior slope of the dike at the eastern end of the pond will also be repaired. Leakage around the pond discharge pipes will be stopped.

CSB will perform all construction. EN DES will provide design drawings for the dike stabilization.

*Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan*

Fossil Design Projects Files

MAR 28 1984

JOHN SEVIER STEAM PLANT - ASH POND J - REPORT OF RIVERBANK SLIDE AND PROPOSED REPAIRS

The Corps of Engineers gave TVA verbal approval to proceed. EN DES will prepare an amendment to the 404 permit.

Holston Electric Company will relocate or deenergize power lines as required.

Marvin H. Miller

Marvin H. Miller

REM

MHM:EFS
Attachments
cc: O. P. Thornton, 102 SPT-K

OPT:EFS - MAR 28 1984
cc: R. O. Barnett, W9D224 C-K
C. A. Chandley, W7C126 C-K
J. E. Holladay, W2D224 C-K
MEDS, W5B63 C-K
F. Van Meter, 500 SPT-K (3)
R. W. Cantrell, W11A9 C-K
Principally Prepared By: Marvin H. Miller, Extension 2956

S64086.02

Water Resources - Roger Milstead  Executive Order 998  R1

Code 9 (Stream modifications) - ok  Dick  Pete Hackney  Rosie Allen → Archeologists need look @ riverbank (for significant artifacts) will cause spillway work environmentally acceptable

OEDC Estimates Section

ESTIMATE FORM

Sheet 1 of ____

Project JOHN SEVIER STEAM PLANT

Prepared J.D.J. Date 3/21/84

Feature ASH DIKE REPAIR

Checked ____ Date ____

Cost Code ____

no EA or EIS required cleared for NEPA act

R2

| Account No. | ITEM Description | Qty | Un | MATERIAL Unit Price | MATERIAL Amount | LABOR MH/Unit | LABOR Man-Hours | LABOR $/MH | LABOR Amount | Eqpt Usage/Other | Furnish & Install Contracts | TOTAL Unit Price | TOTAL Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MOBILIZE + DEMOBILIZE (6 LOADS) | | | | | | | | 1,000 | 4,000 | | | 5,000 |
| | ACCESS ROAD + RIPRAP | | | | | | | | | | | | |
| | REPAIR AT POND DISCHARGE | | | | 34,600 | | 176 | | 2,500 | 3,700 | | | 40,800 |
| | (4,000 TONS RIPRAP @ 8.50/TN) | | | | | | | | | | | | |
| | (1,000 TONS 1032 FROM DIKE ROAD) | | | | | | | | | | | | |
| | CLEARING | | | | — | | 600 | | 8,100 | 11,000 | | | 19,100 |
| | SLIDE AREA REPAIR | | | 8.50 | 21,250 | | 240 | | 3,700 | 8,000 | | | 32,950 |
| | (2500 TNS RIPRAP) | | | | | | | | | | | | |
| | DIKE REPAIR | | | | 148,750 | | 720 | | 11,000 | 21,100 | | | 180,850 |
| | (17,500 TNS RIPRAP) | | | | | | | | | | | | |
| | DIKE ROAD REPAIR | | | | | | | | | | | | |
| | (1800 TNS 1032) | | | | 12,150 | | 160 | | 2,600 | 7750 | | | 22,500 |
| | SUBTOTAL | | | | 216,750 | | 1896 | | 28,900 | 55,550 | | | 301,200 |
| | CONSTRUCTION FACILITIES | | | | | | | | | | | | 5,000 |
| | FIELD GENERAL EXPENSE | | | | | | | | | | | | 17,000 |
| | CONTINGENCY | | | | | | | | | | | | 26,800 |

TOTAL FIELD CONSTRUCTION $350,000

OEDC Estimates Section

R0 (superceded)

ESTIMATE FORM

Sheet 1 of 1

Project John Sevier Steam Plant

Feature Ash Dike Repair

Cost Code

6617

Prepared J.D.J. Date 3/15/84

Checked _____ Date _____

R1

| Account No. | ITEM Description | Qty | Un | MATERIAL Unit Price | MATERIAL Amount | LABOR MH/ Unit | LABOR Man-Hours | LABOR $/MH | LABOR Amount | Eqpt Usage/ Other | Furnish & Install Contracts | TOTAL Unit Price | TOTAL Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mobilize & Demobilize (6 Loads) | | | | | | | | $ 1,000 | $ 4,000 | | | 5,000 |
| | Access Road & Riprap | | | | | | | | | | | | |
| | Repair At Ash Pond Discharge | | | | $ 15,300 | | 160 | | 2,300 | 3,700 | | | 21,300 |
| 4000 | (1,000 TNS Riprap at $8.50/TN) | | | | | | | | | | | | |
| OK | (1,000 TNS 1032 at $6.75/TN) | | | | | | | | | | | | |
| | Clearing | | | | | | 600 | | 8,100 | 11,000 | | | 19,100 |
| | Slide Area Repair (2,500 TNS Riprap) | | | 8.50 | 21,250 | | 240 | | 3,700 | 8,000 | | | 32,950 |
| | Dike Repair (17,500 TNS Riprap) | | | | 148,750 | | 720 | | 11,000 | 21,100 | | | 180,850 |
| | SUBTOTAL | | | | $185,300 | | 1,720 | | $26,100 | $47,800 | | | 259,200 |
| | Construction Facilities | | | | | | | | | | | | 4,000 |
| | Field General Expense | | | | | | | | | | | | 15,000 |
| | Contingency | | | | | | | | | | | | 21,800 |
| | TOTAL FIELD CONSTRUCTION | | | | | | | | | | | | $300,000 |

1000 ton ± will be obtained from top of dike.

Note: (6 month duration)

Add: ① more contingency for grouting a few pipe joints

② recompact & blade top of dike to slope 5% to inside – place 1800 TON crushed stone

TVA 489 (REV-9 47)

SHEET 1 OF 1

John Sevier S.P.
Spillway Repair & Access Rd.
Quantities Estimate

COMPUTED 3/84 DATE R.A. Rowell
CHECKED DATE

Length of Access Rd. & Turnaround = 1800'
Width of Access Rd. = 18'
Use 8" Filter on Access Rd.
Assume 1½' Riprap for Access Rd. Foundation

RIPRAP

For Access Rd. Fdn. —
18' x 1800' x 1.5' x 130 lb/ft³ / 2000 lb/ton = 3,159 tons
For Spillway Outlet Repair —
½ x 48' x 14' x 30' x 130 lb/ft³ / 2000 lb/ton = 655 tons
3,160 tons + 655 tons = 3,815 tons

FILTER

For Access Rd. —
18' x 1800' x ⅔' x 125 lb/ft³ / 2000 lb/ton = 1,350 tons
For Spillway Outlet Repair —
50' x 30' x ⅔' x 125 lb/ft³ / 2000 lb/ton = 62.5 tons
1350 tons + 65 tons = 1,415 tons

FILTER FABRIC

50' x 30' / 9 s.f./s.y. = 166.7 s.y.
Say 170 s.y.

18" PIPE

Say 50'

FREDERICK
Ronald [illegible]

John Sevier 7/16/84

Water reading in river along
Dike "J."

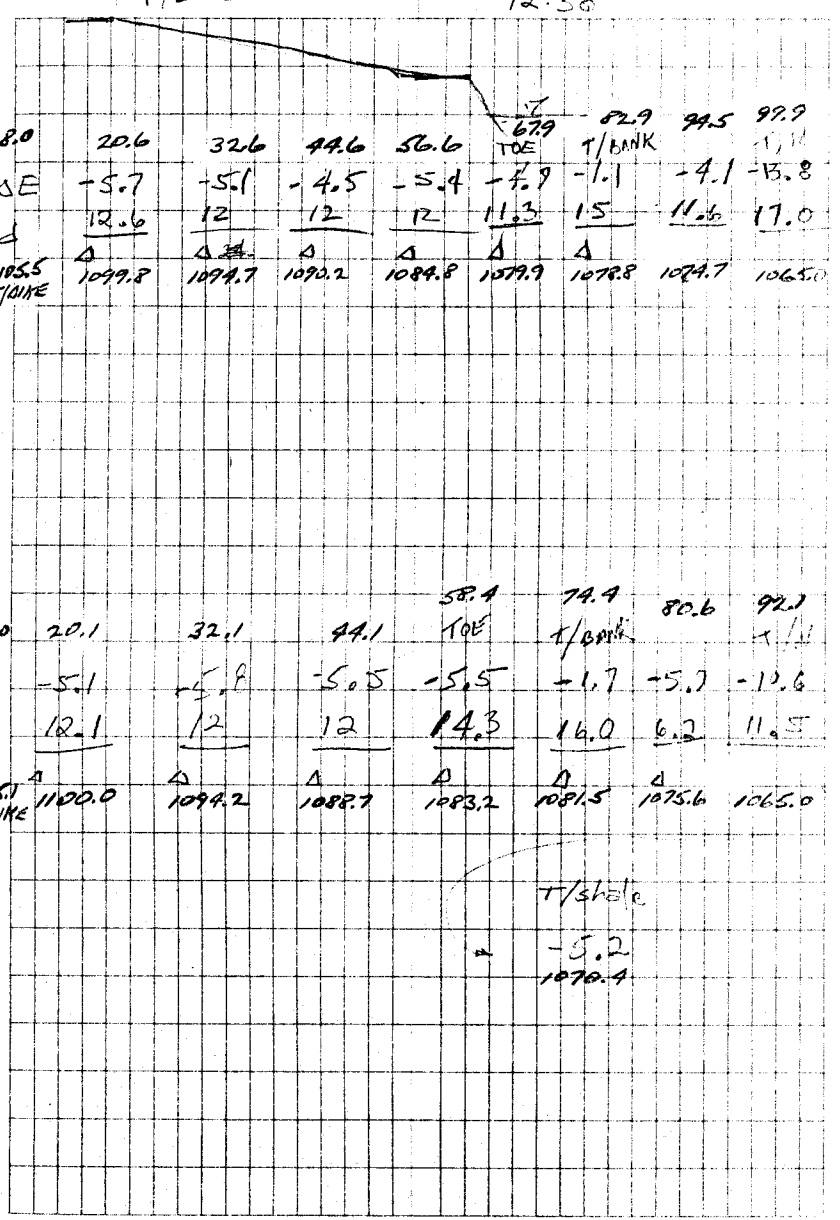
STA 57+73
Water depths
Large tree leaning over water 15'
upstream

| | | | |
|---|---|---|---|
| 107 | @ 7' | 4.9' | 1060.1 |
| 120 | @ 20' | 6.9' | 1058.1 |
| 150 | @ 50' | 8'-9 | 1056.1 |

STA 59+25
25' Down stream from 2nd Rip Rap
off large tree

| | | | |
|---|---|---|---|
| 94.5 | @ 2½' | 2.1' | 1062.9 |
| 96.5 | @ 4½' | 4.2 | 1060.8 |
| 101.0 | @ 9' | 5.4 | 1059.6 |
| 107.0 | @ 15' | 6.6 | 1058.4 |
| 112.0 | @ 20' | 7' | 1058.0 |
| 142.0 | @ 50' | 7.2'± | 1057.8 |

RIP RAP @ 56+00±



T/D EL 1105 12:30

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 8.0 | 20.6 | 32.6 | 44.6 | 56.6 | 67.9 TOE | 82.9 T/BANK | 94.5 | 99.9 T/W |
| ΔE | -5.7 | -5.1 | -4.5 | -5.4 | -4.9 | -1.1 | -4.1 | -13.8 |
| d | 12.6 | 12 | 12 | 12 | 11.3 | 15 | 11.6 | 17.0 |
| 1105.5 T/DIKE | Δ 1099.8 | Δ 1094.7 | Δ 1090.2 | Δ 1084.8 | Δ 1079.9 | Δ 1078.8 | 1074.7 | 1065.0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 8.0 | 20.1 | 32.1 | 44.1 | 58.4 TOE | 74.4 T/BANK | 80.6 | 92.1 T/W |
| | -5.1 | -5.8 | -5.5 | -5.5 | -1.7 | -5.7 | -10.6 |
| | 12.1 | 12 | 12 | 14.3 | 16.0 | 6.2 | 11.5 |
| 1105.1 T/DIKE | Δ 1100.0 | Δ 1094.2 | Δ 1088.7 | Δ 1083.2 | Δ 1081.5 | Δ 1075.6 | 1065.0 |

T/shale
-5.2
1070.4

STA 64+45 ~~[illegible]~~

25' down from eroded gully
midway between 1st & second Riprap

| | | | |
|---|---|---|---|
| 88 | @ 4' | 3' | 1062 |
| 94 | @ 16' | 6' | 1059 |
| 102 | @ 18' | 7' | 1058 |
| 109 | @ 25 | 7' | 1058 |
| 124 | @ 40 | 7' | 1058 |

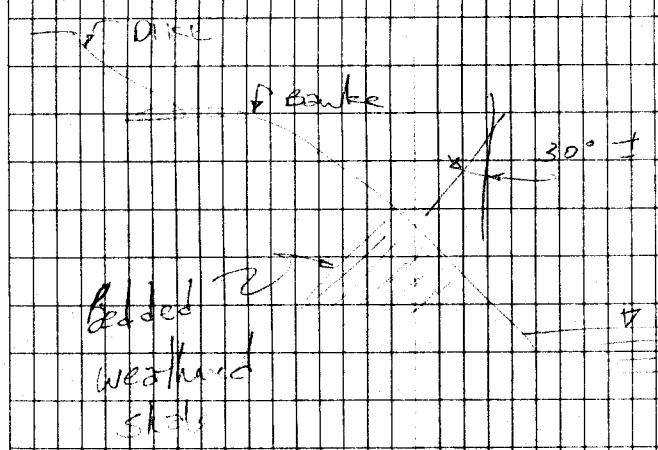
RIPRAP SLOPE @ 59+75 ±
" " @ 64+00 ±

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 8.0 | 19.7 | 30.9 | 49.5 TOE | 53.8 T/BANK | 61.5 | 70.7 | 75.6 TOE/BANK |
| ΔE | ~~[illegible]~~ | -5.5 | -5.3 | -7.5 | -0.9 | -5.0 | -7.8 | -5.1 |
| d | | 11.7 | 11.2 | 18.6 | 4.3 | 7.7 | 9.2 | 4.[illegible] |
| | 1105.2 T/DIKE | 1099.7 | 1094.4 | 1086.9 | 1086.0 | 1081.0 | 1073.2 | 1068.1 |

84.0
T/W
-8.2
13.3
1065.0

T/shale
-1.8
1071.4

-5.6
1067.6



DIKE CROSS SECTION

STA 41+75 I

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | 68.3 | 83.0 | 94.0 | 102.0 |
| 8.0 | 22.0 | 35.8 | 50.1 | 64.1 | TOE/SURF | TOP/RIP RAP | TOE/RIP RAP | T/W |
| ΔE | -7 | -6.2 | -6.1 | -6.4 | -2.1 | -0.9 | -9.0 | -2.3 |
| d | 14 | 13.8 | 14.3 | 14.0 | 4.2 | 14.7 | 11.0 | 8.0 |
| 1105.0 T/DIKE | 1098.0 | 1091.8 | 1085.7 | 1079.3 | 1077.2 | 1076.3 | 1067.3 | 1065.0 |

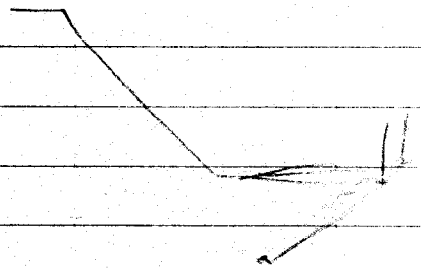
John Sevier S.P. Ash Pond R. Perry M. Burris March 20, 1984

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 48+00 | 1058.3 | 1059.9 | 1067.8 | 1077.1 | 1078.9 | 1087.6 | 1095.6 | 1105.0 | ℄ Dike | | |
| | -18.8 | -17.2 | -9.3 | -1.8 | -8.7 | -8.0 | -9.4 | +0.1 | 1104.9 | | |
| | 109.0 | 103 | 87 | 81.0 | 71.0 | 30.0 | 30.0 | 8.0 | 0 | | |
| 47+25 | 1058.4 | 1064.7 | 1060.8 | 1067.2 | 1079.8 | 1087.2 | 1095.5 | 1105.2 | 1105 | | Slide Area |
| | -6.3 | -15.1 | -19.0 | -12.6 | -7.4 | -8.3 | -9.1 | +0.2 | | | |
| | WS 114 | 111.0 | 99.0 | 83.0 | 70.0 | 50.0 | 30.0 | 8.0 | 0 | | |
| 46+00 | 1058.3 | 1060.3 | 1075.4 | 1076.4 | 1080 | 1087.3 | 1096.3 | 1105 | 1105 | | |
| | -17.1 | -15.1 | -1.0 | -10.9 | -7.3 | -9.0 | -8.7 | 00 | | | |
| | W.S. 103.0 | 98.0 | 90.0 | 76 | 69.0 | 50.0 | 28.0 | 8.0 | 0 | | |
| 45+00 | 1058.1 (59.9) | 1066.6 (4) | 1065.1 (64.9) | 1072.8 (7) | 1072.6 (4) | 1077.1 (76.9) | 1078.8 (3) | 1087.9 | 1096.5 | 1105.6 | 1105.2 | Spillway |
| | -19.0 | -10.5 | -12.0 | -5.2 | -4.5 | -1.4 | -9.6 | -8.6 | -9.1 | +0.4 | | |
| | WS 119.0 | 99.0 | 93.0 | Inv. | ℄ culv. 86.5 | 80 | RR 74 | 50.0 | 29.0 | 9.0 | 0 | |
| 44+25 | 1058.3 | 1059.1 | 1072.1 | 1072.9 | 1077.6 | 1077.6 | 1087.9 | 1096.9 | 1105.4 | 1104.9 | |
| | WS -13.8 | -13.0 | -5.5 | -4.7 | 00 | -10.3 | -9.0 | -8.5 | +0.5 | | |
| | 127 | 122.0 | 100.0 | RR 84.0 | RR 74.0 | 70.0 | 48.0 | 28 | 8 | 0 | |
| 43+40 | 1067.1 (8) | 1067.8 (8) | 1071.2 (2) | 1074.2 (5) | 1074.4 (5) | 1076.2 (7) | 1086.9 (7) | 1097.4 | 1105.4 | 0 | |
| | -4.1 | -3.4 | -5.0 | -2.0 | -1.8 | -10.7 | -9.5 | -8.0 | +0.4 | 1105 | |
| | 149 | 133 | RR 83 | RR 82 | 77 | 72 | 50.0 | 28.0 | 8.0 | 0 | |
| 41+75 | 1058.3 | 1063.4 | 1065.4 | 1066.9 | 1074.9 | 1074.9 | 1079.0 | 1087.3 | 1096.2 | 1105.5 | 1105.2 |
| | -8.6 | -3.5 | -1.5 | -8.0 | 00 | -4.1 | -8.3 | -8.9 | -9.3 | +0.3 | 0 |
| | WS 110 | 105.5 | 100.0 | 92.5 | 75.0 | 71.0 | 60.0 | 43 | 25.5 | 8 | |
| | | | | RR | RR | | | | | | |

35+15±
OPP
45+00 Between RK & Dike

1105 ℄ Dike 1105.0
0 8.0

| 1097.0 | 1089.5 | 1079.5 | 1081.5 |
|---|---|---|---|
| -8.0 | -9.5 | -8.0 | -6.0 |
| 30 | 50 | 71.0 | 94.5 |



Advance Copy

| | | |
|---|---|---|
| FOR | NAME: R. E. Harris | DATE: 3-21-84 |
| | ADDRESS: 338 SPT-K | ☐ Chatta ☐ M. S. ☒ Knox ☐ Nor. |

Fold here for return

| | | |
|---|---|---|
| FROM | NAME: R. J. Hunt | EXTENSION: 6903 |
| | ADDRESS: 179 LB-K | ☐ Chatta ☐ M. S. ☒ Knox ☐ Nor. |

RE: John Sevier S. P. Ash Pond J dike - Slope failure

Attached is a tabulation of recommended properties for compacted earthfill, in situ soil, and uncompacted rockfill material for use in the stability analyses of the dike from STA. 44+ to STA. 50+. For loading conditions and safety factors, pl. refer Civil Design Guide DG-C1.4.2 section 5.4.5.

If you have any question, pl. contact Syed Ahmed (ex: 6905).

Attachment

TVA 45D (OS-9-80) INTEROFFICE MAILING SLIP

# Recommended Soil Properties for Stability Analysis of Ash Pond J dike - STA. 44± to STA 50±

| Soil Identification | Unit Weight (PCF) | | | Shear Strength | | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Q | | R | | $\bar{R}$ | | |
| | $\gamma_{moist}$ | $\gamma_{sat.}$ | $\gamma_{sub}$ | C (TSF) | $\phi$ (°) | C (TSF) | $\phi$ (°) | $\bar{C}$ (TSF) | $\bar{\phi}$ (°) | |
| Borrow Earthfill (compacted) | 123 | 127 | 65 | 0.9 | 5 | ~~0.2~~ 0.1 | 16 | 0 | 27 | Properties same as evaluated on 9-10-81 - |
| In situ Cohesive Alluvium | 125 | 128 | 65 | 0.4 | 0 | 0.3 | 11 | 0 | 25 | Properties evaluated from test results on samples from US borings 12 & 15 only |
| Rockfill (Uncompacted) | 135* | 135* | 73* | 0* | 35* | 0* | 35* | 0* | 35* | * Assumed - No test data available Stone weight - 150 - 450 ℔ |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Note: For stability analysis, assume the in situ soil consists of (In situ) cohesive Alluvium between the bottom of the compacted earthfill and top of rock. Ignore any presence of the in situ granular Alluvial or weathered shale for a conservative analysis. | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

John Sevier S.P. - Ash Pond J
Dike Stability Analysis - STA. 44± to STA. 50±
COMPUTED SBA DATE 3-21-84
CHECKED DATE
SHEET 1 OF 1

# JSF ASH POND J REPAIRS — 1984

COSTS

COMPUTED MHM DATE 8-10-84

CHECKED DATE

## REPAIRS COMPLETED IN MAY

1) Road at base of dike
2) riprap at fly ash pipe discharge
3) riprap at spillway outfall
4) collar around spillway pipe
5) leaks in concrete pipe
6) Dike roadway improvement

* ACTUAL COST = # 105,000

## ADDITIONAL REPAIRS TO BE MADE ON RIVER BANK

3 ALTERNATIVES FOR CONTINUED WET PONDING *

| | | |
|---|---|---|
| 1) 15' Riprap to 1076 | FS 1.11 | #188,000 estimate |
| 2) 25' Riprap to 1080 | FS 1.24 | #314,000 estimate |
| 3) 20' Riprap to 1085 w/ 16' berm @ 1070 | FS 1.50 | #509,000 estimate |

* Costs include mobilization & demob, 10% field expenses & 10% contingency (for future work)

ORIGINAL Order of Magnitude ESTIMATE (March 84) was #350,000

USF Pond J repairs - 1984

COSTS - continued

COMPUTED MHM DATE 8-10-84

CHECKED DATE

## ADDITIONAL REPAIRS FOR DIKE AT DODSON CREEK

### 2 ALTERNATIVES FOR CONTINUED WET PONDING

environmental review required for tream modification

1) Riprap @ 1080 w/ 10' berm @ 1070 — FS 1.17 — #144,000

2) 4:1 outside slope for dike — FS 1.47 — #165,000

* TOTAL COST FOR FS 1.5± = #779,000

* TOTAL COST FOR FS 1.2± = #563,000

* includes #105,000 already spent by Const. — Does not include any engineering costs (most engineering is complete).

OEDC Estimates Section

ESTIMATE FORM

Sheet 1 of _____

Project JOHN SEVILLE STEAM PLANT

Feature ASH POND "J" DIKE RELOCATION

Cost Code _____

Prepared J.D.J. Date 8-13-84

Checked _____ Date _____

# PRELIMINARY

| Account No. | ITEM Description | Qty | Un | MATERIAL Unit Price | MATERIAL Amount | LABOR MH/ Unit | LABOR Man-Hours | LABOR $/MH | LABOR Amount | Eqpt Usage/ Other | Furnish & Install Contracts | TOTAL Unit Price | TOTAL Amount |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MOBILIZATION & | | | | | | | | | | | | |
| | DEMOBILIZATION | | | | | | | | | 5,000 | | | 5,000 |
| | HAUL ROAD MODIFICATION | 1 | LS | | | | 16 | | 280 | 830 | | | 1,110 |
| | BOTTOM ASH - DUMPED | 20,000 | CY | - | - | | 840 | | 12,150 | 37,300 | | | 49,450 |
| | -COMPACTED | 4,200 | CY | | - | | 240 | | 3,600 | 11,500 | | | 15,100 |
| | EARTH EXC. & FILL | 14,400 | CY | | - | | 640 | | 10,400 | 31,000 | | | 41,400 |
| | SPOIL DISPOSAL | 2,100 | CY | | - | | 64 | | 960 | 3,150 | | | 4,110 |
| | CRUSHED STONE | 205 | TNS | 7 | 1435 | | 76 | | 1325 | 3950 | | | 6,710 |
| | SEED + MULCH | 15,500 | SY | .10 | 1550 | | 233 | | 2630 | 1020 | | | 5,200 |
| | SUB-TOTAL DIR CONST | | | | 2985 | | 2109 | 14.86 | 31,345 | 93,250 | | | 128,080 |
| | CONST. FACILITIES | | | | - | | 251 | | 3730 | 1,600 | | | 5,330 |
| | TOTAL DIR CONST | | | | 2985 | | 2360 | | 35,075 | 95,350 | | | 133,410 |
| | FIELD GEN. EXPENSE | | | | | | 27 | | 400 | 7,600 | | | 8,000 |
| | CONTINGENCY | | | | | | | | | | | | 23,590 |
| | | TOTAL | | FIELD CONSTRUCTION | | | | | | | | | 165,000 |
| | BASED ON CONSTRUCTION IN 1984 | | | | | | | | | | | | |

OEDC Estimates Section

ESTIMATE FORM

Sheet 1 of _____

Project JOHN SEVIER STEAM PLANT

Feature ASH POND "J" DIKE RELOCATION

Cost Code _____

Prepared J.D.J. Date 8-13-84

Checked _____ Date _____

# PRELIMINARY

| Account No. | ITEM | | | MATERIAL | | LABOR | | | | Eqpt Usage/ Other | Furnish & Install Contracts | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Description | Qty | Un | Unit Price | Amount | MH/ Unit | Man-Hours | $/MH | Amount | | | Unit Price | Amount |
| | MOBILIZATION & | | | | | | | | | | | | |
| | DEMOBILIZATION | | | | | | | | | 5,000 | | | 5,000 |
| | HAUL ROAD MODIFICATION | 1 | LS | | | | 16 | | 280 | 830 | | | 1,110 |
| | BOTTOM ASH - DUMPED | 20,000 | CY | | - | | 840 | | 12,150 | 37,300 | | | 49,450 |
| | -COMPACTED | 4,200 | CY | | - | | 240 | | 3,600 | 11,500 | | | 15,100 |
| | EARTH EXC. + FILL | 14,400 | CY | | - | | 640 | | 10,400 | 31,000 | | | 41,400 |
| | SPOIL DISPOSAL | 2,100 | CY | | - | | 64 | | 960 | 3,150 | | | 4,110 |
| | CRUSHED STONE | 205 | TNS | 7 | 1435 | | 76 | | 1325 | 3950 | | | 6,710 |
| | SEED + MULCH | 15,500 | SY | .10 | 1550 | | 233 | | 2630 | 1020 | | | 5,200 |
| | SUB-TOTAL DIR CONST | | | | 2985 | | 2109 | 14.86 | 31,345 | 93,750 | | | 124,080 |
| | CONST. FACILITIES | | | | - | | 251 | | 3730 | 1,600 | | | 5,330 |
| | TOTAL DIR CONST | | | | 2985 | | 2360 | | 35,075 | 95,350 | | | 133,410 |
| | FIELD GEN. EXPENSE | | | | | | 27 | | 400 | 7,600 | | | 8,000 |
| | CONTINGENCY | | | | | | | | | | | | 23,590 |
| | | TOTAL | FIELD | CONSTRUCTION | | | | | | | | | 165,000 |
| | BASED ON CONSTRUCTION IN 1984 | | | | | | | | | | | | |

COMPUTED ____ DATE ____

CHECKED ____

# FACTOR OF SAFETY AT STA. 41+75 (DODSON CREEK) WITH NORMAL PHREATIC SURFACE

| DESCRIPTION OF REPAIR | | FACTOR OF SAFETY $\overline{R}$ | FACTOR OF SAFETY R |
|---|---|---|---|
| RIPRAP @ EL. 1076 | | 0.94 | 0.96 |
| RIPRAP @ EL. 1080 | a. FAILURE AT TOP OF RIPRAP | 1.04 | 1.06 |
| | b. FAILURE AT BOTTOM OF RIPRAP | 1.06 | — |
| RIPRAP @ EL. 1080; WITH 10' BERM @ EL. 1065 | | | |
| | a. FAILURE AT TOP OF RIPRAP | 1.14 | 1.12 |
| | b. FAILURE AT BOTTOM OF RIPRAP | 1.15 | 1.27 |
| | c. FAILURE ABOVE RIPRAP | — | 1.04 |
| RIPRAP @ EL. 1080; WITH 10' BERM @ EL. 1070 | | | |
| | a. FAILURE AT TOP OF RIPRAP | 1.17 | 1.12 |
| | b. FAILURE AT BOTTOM OF RIPRAP | 1.21 | 1.31 |
| | c. FAILURE ABOVE RIPRAP | — | 1.04 |

11,200 Ton x $10\frac{1}{2}$
= 120,000
+ 20%
= $144,000

JOHN SEVIER ASH DISPOSAL AREA "J"
STA. 41+75 (DODSON CREEK)

COMPUTED JMH DATE 8-9-84
CHECKED DATE

## NO ADDITIONAL RIPRAP AND NO SLOPE CHANGE
### DROP WATER TABLE EL. 1073 IN POND FOR DRY STACKING

$\overline{R}$ : OUTSIDE SLOPE F.S. = 1.08
INSIDE SLOPE F.S. = 1.03
R : OUTSIDE SLOPE F.S = 1.16
INSIDE SLOPE F.S. = 1.12

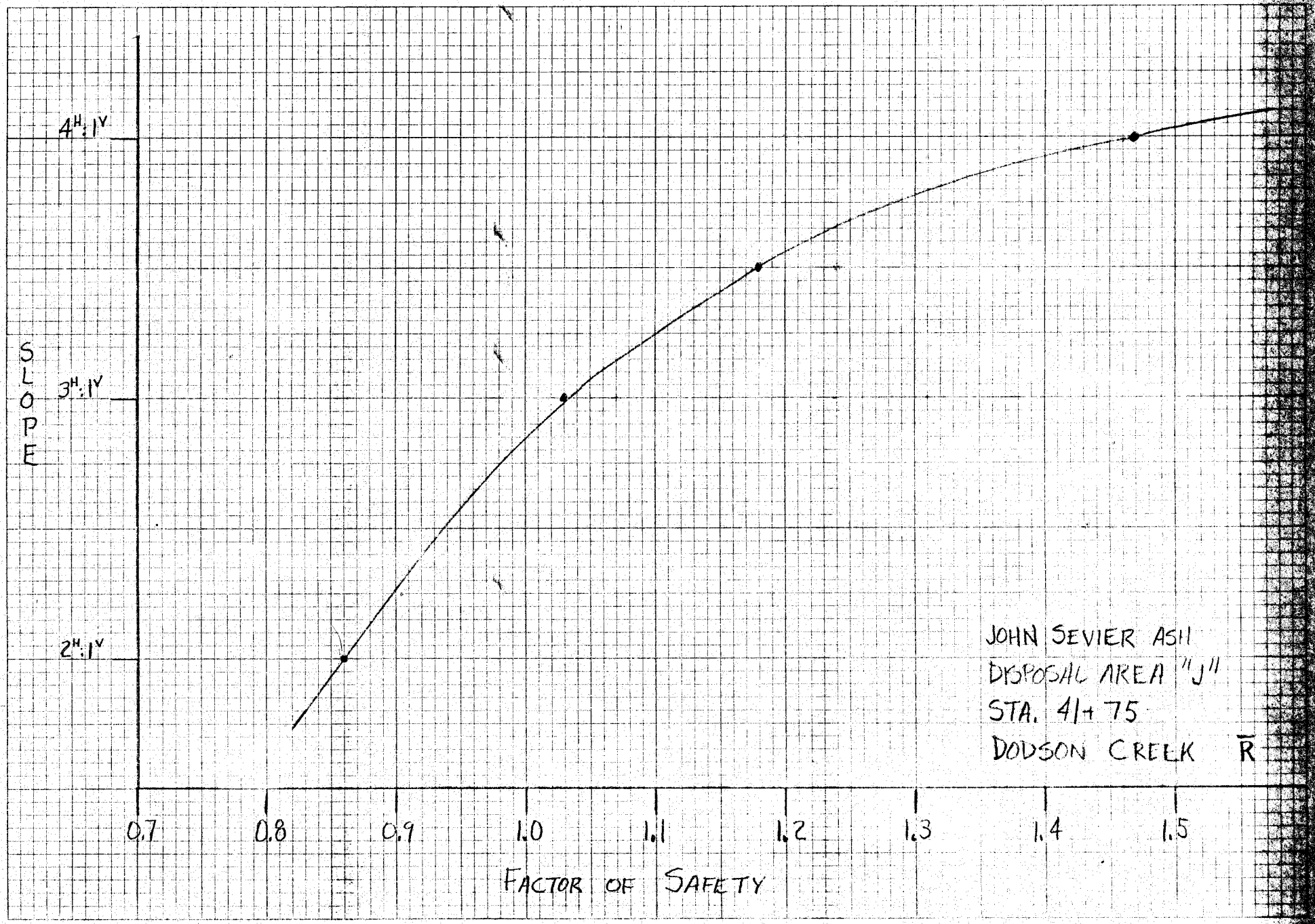
## SLOPE CHANGE TO $4^H:1^V$ AND NO ADDITIONAL RIPRAP
### POND WATER EL. 1101

$\overline{R}$ : OUTSIDE SLOPE F.S. = 1.47
INSIDE SLOPE F.S. = 1.29
R : OUTSIDE SLOPE F.S. = 1.73
INSIDE SLOPE F.S. = 1.87

## SLOPE CHANGE TO $3^H:1^V$ AND NO ADDITIONAL RIPRAP
### POND WATER EL. 1101

$\overline{R}$ : OUTSIDE SLOPE F.S. = 1.03

NO. 340R-10 DIETZGEN GRAPH PAPER
10 X 10 PER INCH
DIETZGEN CORPORATION
MADE IN U.S.A.



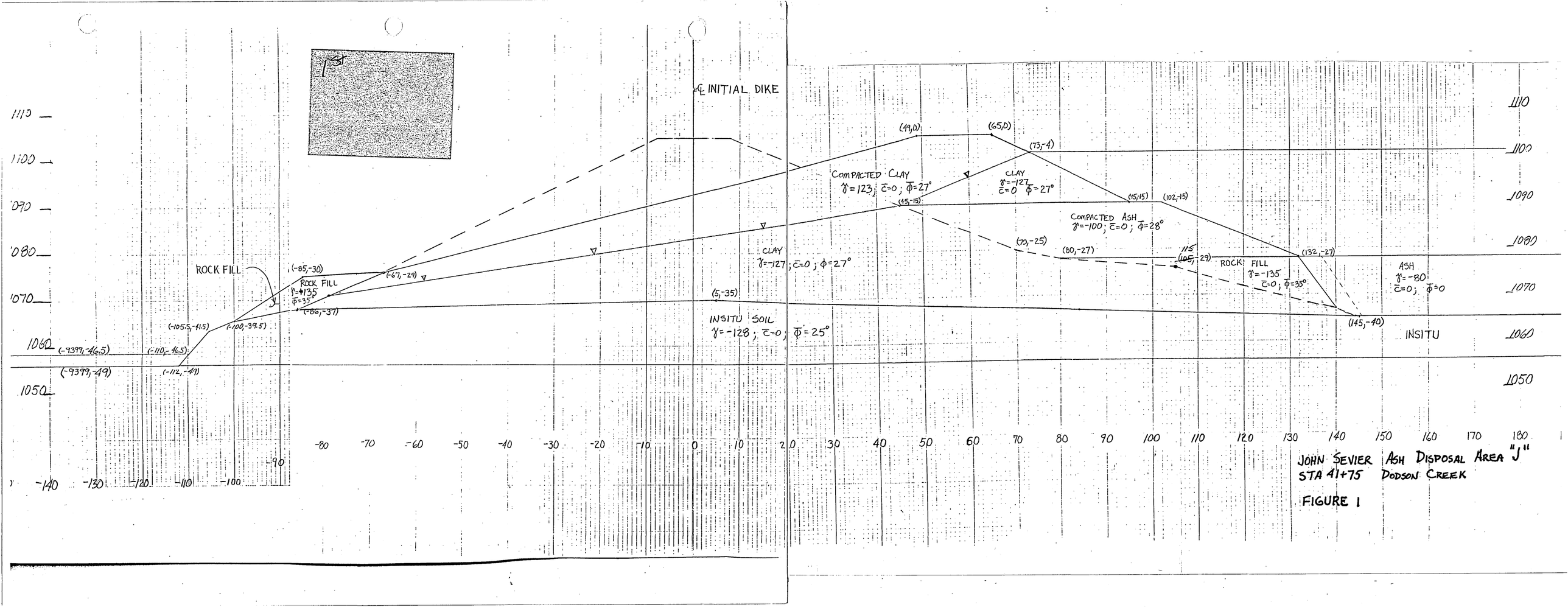
SHEET _____ OF _____

JOHN SEVIER ASH DISPOSAL AREA "J"
STA 41+75 DODSON CREEK
INSIDE SLOPE WITH COMPACTED ASH

COMPUTED JMA DATE OCT. 26, 84
CHECKED _____ DATE _____

PROBLEM: THE REPAIR OF JOHN SEVIER ASH POND "J" CALLED FOR BOTTOM ASH IN THE DESIGN. DURING CONSTRUCTION FLY ASH WAS DUMPED INSTEAD OF BOTTOM ASH.

DESCRIPTION: CHANGE IN DESIGN WAS NEEDED WHEN THE BOTTOM ASH SUPPLY WAS FOUND TO BE VERY LIMITED AND THERE WAS NOT ENOUGH BOTTOM ASH FOR THE DESIGN. TWO CHANGES TO THE DESIGN WERE PROPOSED. THE FIRST WAS TO REMOVE DUMPED FLY ASH AND REPLACE WITH COMPACTED FLY ASH. WITH A 3:1 SLOPE, THE FIRST PROPOSAL WAS FOUND TO HAVE A SAFETY FACTOR OF LESS THAN 1.2, THEREFORE WAS UNSATISFACTORY. THE SECOND PROPOSAL WAS TO REMOVE THE DUMPED FLY ASH PLACE A ROCK FILL BELOW THE WATER LEVEL AND THE TOP OF THE ROCK FILL BE PLACED SUCH THAT COMPACTED FLY ASH COUD BE PLACED ON TOP OF THE ROCK FILL. (SEE FIGURE 1)




JOHN SEVIER ASH DISPOSAL AREA "J"
STA 41+75 DODSON CREEK

FIGURE 1

# Recommended Soil Properties for Stability Analysis of Ash Pond J Dike - STA. 44± to STA 50±

| Soil Identification | Unit Weight (PCF) | | | Shear Strength Q | | Shear Strength R | | Shear Strength $\bar{R}$ | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| | $\gamma$ moist | $\gamma$ sat. | $\gamma$ sub | C (TSF) | $\phi$ (°) | C (TSF) | $\phi$ (°) | $\bar{C}$ (TSF) | $\bar{\phi}$ (°) | |
| Borrow Earthfill (Compacted) | 123 | 127 | 65 | 0.9 | 5 | 200 PSF 0.1 | 16 | 0 | 27 | Properties same as evaluated on 9-10-81 - |
| In situ Cohesive Alluvium | 125 | 128 | 65 | 0.4 | 0 | 600 PSF 0.3 | 11 | 0 | 25 | Properties evaluated from test results on samples from us-borings 12 & 15 only |
| Rockfill (Uncompacted) | 135* | 135* | 73* | 0* | 35* | 0* | 35* | 0* | 35* | * Assumed - No test data available Stone weight - 150 - 450 P |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Note: For stability analysis, assume the in situ soil consists of (In situ) cohesive Alluvium between the bottom of the compacted earthfill and the top of rock. Ignore any presence of the in situ granular Alluvial or weathered shale for a conservative analysis. | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

John Sevier S.P. - Ash Pond J
Dike Stability Analysis - STA. 44± to STA 50±
Soil Properties
COMPUTED SBA DATE 3-21-84
CHECKED DATE
SHEET 1 OF 1

SHEET _____ OF _____

JOHN SEVIER S.P. - ASH POND "J"
STA 41+75 - DODSON CREEK
INSIDE SLOPE WITH COMPACTED ASH
ASH PROPERTIES

COMPUTED JMH DATE OCT. 29, 84
CHECKED _____ DATE _____

## ENGINEERING PROPERTIES OF ASH
### ASSUMED PROPERTIES

| | $\gamma_{MOIST}$ | $\gamma_{SAT}$ | $\gamma_{SUB}$ | R $c$ | R $\phi$ | $\bar{R}$ or S $\bar{c}$ | $\bar{R}$ or S $\bar{\phi}$ |
|---|---|---|---|---|---|---|---|
| COMPACTED BOTTOM ASH | 117 pcf | 120 pcf | 58 pcf | 1200 psf | 20° | 0 | 33° |
| DUMPED BOTTOM ASH (IN WATER) | — | 110 pcf | 48 pcf | 600 psf | 15° | 0 | 28° |
| CONSOLIDATED FLY ASH | 85 pcf | 95 pcf | 33 pcf | 100 psf | 15° | 0 | 24° |
| V. LOOSE FLY ASH | 65 pcf | 70 pcf | 8 pcf | 0 | 0 | 0 | 0 |

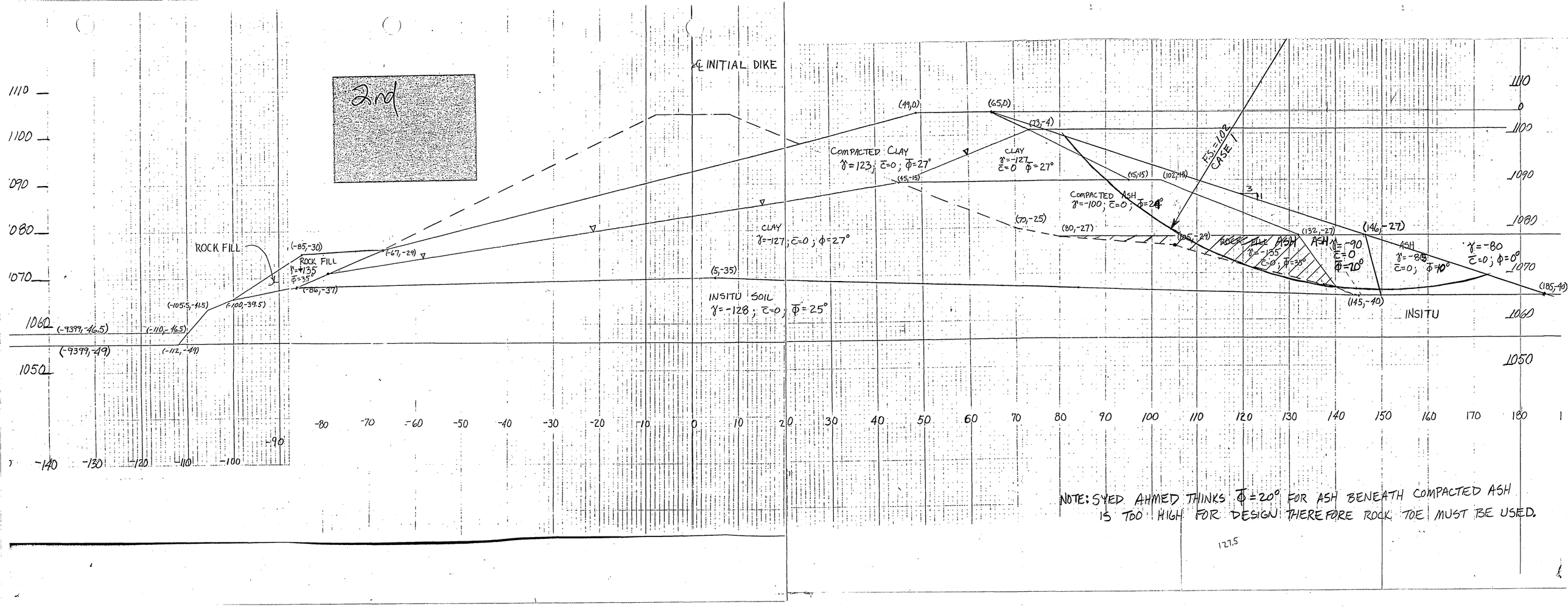
### ASSUMED PROPERTIES OF COMPACTED ASH *

| | $\gamma_{MOIST}$ | $\gamma_{SAT}$ | $\gamma_{SUB}$ | R $c$ | R $\phi$ | $\bar{R}$ or S $\bar{c}$ | $\bar{R}$ or S $\bar{\phi}$ |
|---|---|---|---|---|---|---|---|
| COMPACTED FLY ASH | — | ~100 pcf | 37.6 pcf | — | — | 0 | 28° AND 30° |

| | R $c$ | R $\phi$ | $\bar{R}$ $c$ | $\bar{R}$ $\phi$ |
|---|---|---|---|---|
| COMPACTED ASH | 0 | 11.4 | 0 | 18.8 |

* PROPERTIES FROM THE LAB TESTS WILL BE USED LATTER.

TVA 11030 (WM-7-75)


2nd
℄ INITIAL DIKE
ROCK FILL
ROCK FILL
γ=+135
φ=35°
(-85,-30)
(-67,-29)
(-86,-37)
(-105.5,-41.5)
(-100,-39.5)
(-9399,-46.5)
(-110,-46.5)
(-9399,-49)
(-112,-49)
(5,-35)
INSITU SOIL
γ=-128 ; c=0 ; φ=25°
COMPACTED CLAY
γ=123 ; c=0 ; φ=27°
CLAY
γ=-127 ; c=0 ; φ=27°
(49,0)
(65,0)
(73,-4)
CLAY
γ=-127
c=0 φ=27°
(45,-15)
(15,15)
(102,15)
COMPACTED ASH
γ=-100 ; c=0 ; φ=28°
(70,-25)
(80,-27)
(95,-29)
ROCK FILL ASH
γ=-135
c=0 ; φ=35°
(132,-27)
ASH
γ=-90
c=0
φ=10°
(146,-27)
(145,-40)
ASH
γ=-85
c=0 ; φ=10°
γ=-80
c=0 ; φ=0°
(185,-40)
INSITU
F.S.=1.0
CASE 1
3
1
1110
1100
1090
1080
1070
1060
1050
-140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180
NOTE: SYED AHMED THINKS φ=20° FOR ASH BENEATH COMPACTED ASH
IS TOO HIGH FOR DESIGN THEREFORE ROCK TOE MUST BE USED.
127.5

CASE 1

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 77.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 77.0 | -4.0 | 110.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 110.0 | -15.0 | 146.0 | -27.0 | -100.0 | 0.0 | 24.0 | 0.0 | 0.0 |
| 146.0 | -27.0 | 150.0 | -40.0 | -90.0 | 10.0 | 20.0 | 0.0 | 0.0 |
| 146.0 | -26.0 | 185.0 | -40.0 | -85.0 | 0.0 | 10.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 146.0 | -27.0 | -90.0 | 24.0 | 20.0 | 0.0 | 0.0 |
| 146.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 24.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 24.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 105.0 | -29.0 | -127.0 | 20.0 | 27.0 | 0.0 | 0.0 |
| 105.0 | -29.0 | 145.0 | -40.0 | -127.0 | 20.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 150.0 | -40.0 | -128.0 | 20.0 | 25.0 | 0.0 | 0.0 |
| 150.0 | -40.0 | 185.0 | -40.0 | -128.0 | 10.0 | 25.0 | 0.0 | 0.0 |
| 185.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 10.0 | -15.0 | -100.0 | 27.0 | 24.0 | 0.0 | 0.0 |
| 77.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 77.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 146.0 YT= -28.0 XB= 150.0 YB= -40.0

GRIDX= 90.0 GRIDY= 10.0 XMAX= 190.0 YMAX= 200.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

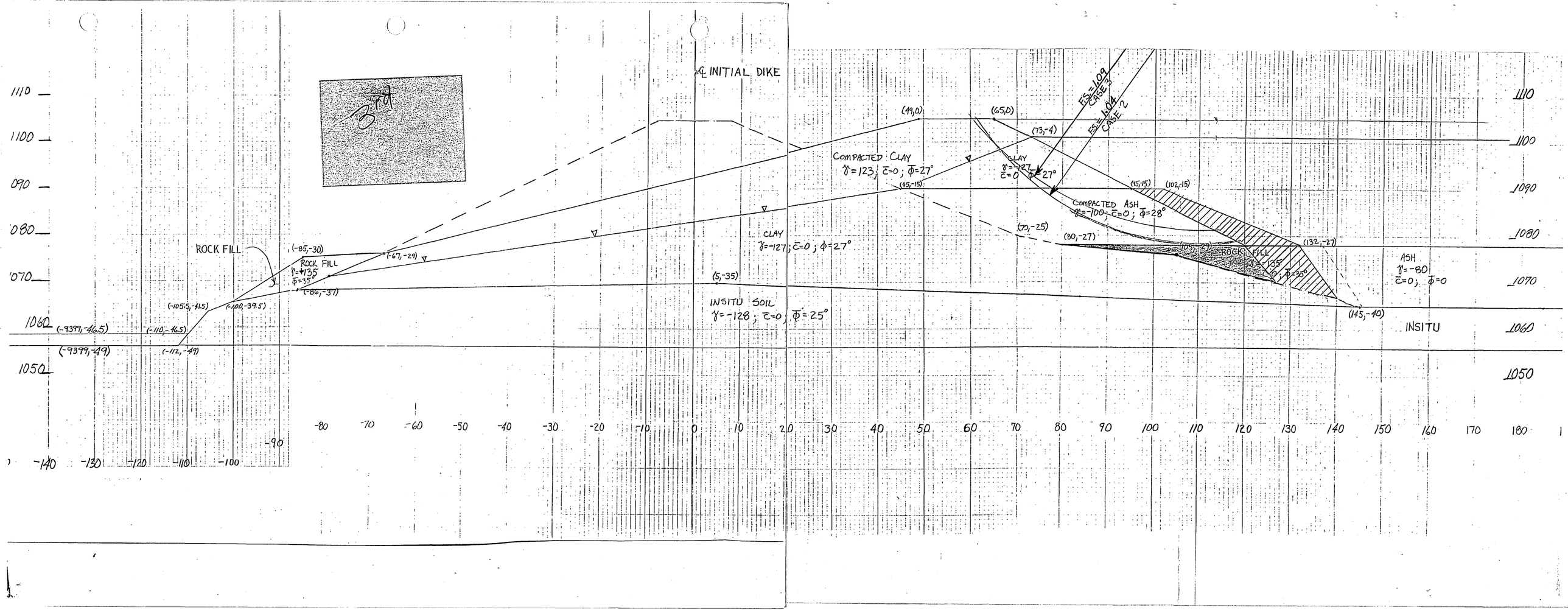
CASE 1

THE MIN. FS= 1.02 EFS= .69 H(X)= 150.00 G(Y)= 50.00 R= 88.11

THE MIN. EFS= .17 FS= 3.51 H(X)= 190.00 G(Y)= 100.00 R= 135.36

SBU 185.006 UNTS.

RUN COMPLETE


3rd
℄ INITIAL DIKE
ROCK FILL
ROCK FILL
γ=135
φ=35°
CLAY
γ=127; c=0 ; φ=27°
INSITU SOIL
γ=128 ; c=0 ; φ=25°
(-85,-30)
(-67,-29)
(-86,-37)
(-105.5,-41.5)
(-100,-39.5)
(-9399,-46.5)
(-110,-46.5)
(-9399,-49)
(-112,-49)
(5,-35)
(49,0)
(65,0)
(73,-4)
(45,-15)
(70,-25)
(80,-27)
(105,-27)
(132,-27)
(145,-40)
COMPACTED CLAY
γ=123; c=0 ; φ=27°
CLAY
γ=127
c=0 φ=27°
FS=1.009
CASE 3
FS=1.014
CASE 2
(15,15)
(102,15)
COMPACTED ASH
γ=100; c=0 ; φ=28°
ROCK FILL
γ=135
c=0; φ=35°
ASH
γ=80
c=0; φ=0
INSITU
1110
1100
1090
1080
1070
1060
1050
-140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180

00110 SHALLOW CIRCLE,JSF,R-EFF,OUTSIDE=4:1,INSIDE=2:1,COMPACTED ASH,ROCK
(ERQF= .05 DEPTH OF ROCK= 49.0 FT)

CASE 2

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 73.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 95.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 95.0 | -15.0 | 120.0 | -27.0 | -100.0 | 0.0 | 28.0 | 0.0 | 0.0 |
| 120.0 | -27.0 | 126.0 | -33.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 120.0 | -27.0 | -135.0 | 28.0 | 35.0 | 0.0 | 0.0 |
| 120.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 126.0 | -33.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 126.0 | -33.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 95.0 | -15.0 | -100.0 | 27.0 | 28.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 73.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 65.0 YT= -5.0 XB= 150.0 YB= -45.0

GRIDX= 90.0 GRIDY= 30.0 XMAX= 150.0 YMAX= 130.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

DOES NOT CONTROL DESIGN
USE 2½:1 SLOPE
JMH

TEST POINTS

CASE 2

THE MIN. FS= 1.04 EFS= .82 H(X)= 110.00 G(Y)= 30.00 R= 57.02

THE MIN. EFS= .78 FS= 1.12 H(X)= 150.00 G(Y)= 100.00 R= 135.10

SBU 76.261 UNTS.

RUN COMPLETE

00110 PHI=30,SHALLOW CIRCLE,JSF,R-EFF,OUTSIDE=4:1,INSIDE=2:1,COMPACTED A
(EROF= .05 DEPTH OF ROCK= 49.0 FT)

CASE 3

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 73.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 95.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 95.0 | -15.0 | 120.0 | -27.0 | -100.0 | 0.0 | 30.0 | 0.0 | 0.0 |
| 120.0 | -27.0 | 126.0 | -33.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 120.0 | -27.0 | -135.0 | 30.0 | 35.0 | 0.0 | 0.0 |
| 120.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 126.0 | -33.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 126.0 | -33.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 95.0 | -15.0 | -100.0 | 27.0 | 30.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 73.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 65.0 YT= -5.0 XB= 150.0 YB= -45.0

GRIDX= 90.0 GRIDY= 30.0 XMAX= 150.0 YMAX= 130.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

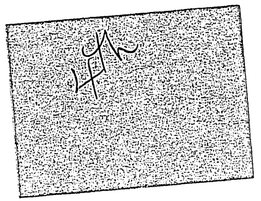
TEST POINTS

CASE 3

THE MIN. FS= 1.09 EFS= .88 H(X)= 110.00 G(Y)= 40.00 R= 63.65

THE MIN. EFS= .80 FS= 1.15 H(X)= 150.00 G(Y)= 100.00 R= 135.10

SBU 78.541 UNTS.



℄ INITIAL DIKE

ROCK FILL

ROCK FILL
$\gamma$=-135
$\bar{c}$=0; $\bar{\phi}$=35°

CLAY
$\gamma$=-127; $\bar{c}$=0; $\bar{\phi}$=27°

INSITU SOIL
$\gamma$=-128; $\bar{c}$=0; $\bar{\phi}$=25°

COMPACTED CLAY
$\gamma$=123; $\bar{c}$=0; $\bar{\phi}$=27°

CLAY
$\gamma$=-127; $\bar{c}$=0; $\bar{\phi}$=27°

COMPACTED ASH
$\gamma$=-100; $\bar{c}$=0; $\bar{\phi}$=28°

ROCK FILL
$\gamma$=-135
$\bar{c}$=0; $\bar{\phi}$=35°

ASH
$\gamma$=-80
$\bar{c}$=0; $\bar{\phi}$=0

INSITU

FS=1.24 CASE 1
FS=1.24 CASE 4
FS=1.20 CASE 6
FS=1.31 CASE 5

(-85,-30)
(-67,-29)
(-86,-37)
(-105.5,-41.5)
(-100,-39.5)
(-9399,-46.5)
(-110,-46.5)
(-9399,-49)
(-112,-49)
(5,-35)
(49,0)
(65,0)
(73,-4)
(45,-15)
(96,-15)
(102,-15)
(70,-25)
(80,-27)
(105,-29)
(132,-27)
(145,-40)

1110
1100
1090
1080
1070
1060
1050

-140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180

84/10/25. 09.03.03. CASE 4
PROGRAM SLOPE2

00110 JSF ASH POND "J", R-EFF,OUTSIDE=4:1,INSIDE=2.5:1,COMPACTED ASH,ROC
(ERQF= .05 DEPTH OF ROCK= 49.0 FT)

CASE 4

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 75.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 75.0 | -4.0 | 102.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 102.0 | -15.0 | 132.0 | -27.0 | -100.0 | 0.0 | 28.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 140.0 | -38.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 132.0 | -27.0 | -135.0 | 28.0 | 35.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 140.0 | -38.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 140.0 | -38.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 102.0 | -15.0 | -100.0 | 27.0 | 28.0 | 0.0 | 0.0 |
| 75.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 75.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 65.0 YT= -5.0 XB= 150.0 YB= -45.0

GRIDX= 90.0 GRIDY= 30.0 XMAX= 150.0 YMAX= 130.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

CASE 4

THE MIN. FS= 1.24 EFS= .97 H(X)= 110.00 G(Y)= 40.00 R= 63.65

.93 FS= 1.32 H(X)= 150.00 G(Y)= 90.00 R= 127.49

00110 JSF ASH POND "J", R-EFF,OUTSIDE=4:1,INSIDE=2.5:1,COMPACTED ASH,ROC
(EROF= .05 DEPTH OF ROCK= 49.0 FT)

CASE 5

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 75.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 75.0 | -4.0 | 102.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 102.0 | -15.0 | 132.0 | -27.0 | -100.0 | 0.0 | 30.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 140.0 | -38.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 132.0 | -27.0 | -135.0 | 30.0 | 35.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 140.0 | -38.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 140.0 | -38.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 102.0 | -15.0 | -100.0 | 27.0 | 30.0 | 0.0 | 0.0 |
| 75.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 75.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 65.0 YT= -5.0 XB= 150.0 YB= -45.0

GRIDX= 90.0 GRIDY= 30.0 XMAX= 150.0 YMAX= 130.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

CASE 5

THE MIN. FS= 1.31 EFS= 1.02 H(X)= 110.00 G(Y)= 40.00 R= 63.65

THE MIN. EFS= .95 FS= 1.35 H(X)= 150.00 G(Y)= 90.00 R= 127.49

SBU 80.862 UNTS.

RUN COMPLETE

(EROF= .05 DEPTH OF ROCK= 49.0 FT)

CASE 6

✓ ROP 11/2/84

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 73.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 95.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 95.0 | -15.0 | 102.0 | -15.0 | -100.0 | 0.0 | 28.0 | 0.0 | 0.0 |
| 102.0 | -15.0 | 132.0 | -27.0 | -100.0 | 0.0 | 28.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 140.0 | -38.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 132.0 | -27.0 | -135.0 | 28.0 | 35.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 140.0 | -38.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 140.0 | -38.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 95.0 | -15.0 | -100.0 | 27.0 | 28.0 | 0.0 | 0.0 |
| 73 75.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 75.0 73 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 65.0 YT= -5.0 XB= 150.0 YB= -45.0

GRIDX= 90.0 GRIDY= 30.0 XMAX= 150.0 YMAX= 130.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

expand test window

TEST POINTS

CASE 6

THE MIN. FS= 1.20 EFS= .95 H(X)= 100.00 G(Y)= 30.00 R= 49.51

THE MIN. EFS= .94 FS= 1.37 H(X)= 150.00 G(Y)= 90.00 R= 127.49

SBU 83.470 UNTS.

RUN COMPLETE

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | -123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 73.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 95.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 95.0 | -15.0 | 102.0 | -15.0 | -100.0 | 0.0 | 28.0 | 0.0 | 0.0 |
| 102.0 | -15.0 | 132.0 | -27.0 | -100.0 | 0.0 | 28.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 140.0 | -38.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 132.0 | -27.0 | -135.0 | 28.0 | 35.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 140.0 | -38.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 140.0 | -38.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 95.0 | -15.0 | -100.0 | 27.0 | 28.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 73.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 65.0 YT= -5.0 XB= 150.0 YB= -45.0

GRIDX= 90.0 GRIDY= 30.0 XMAX= 150.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

CASE 6

TEST POINTS

THE MIN. FS= 1.17 EFS= .93 H(X)= 100.00 G(Y)= 30.00 R= 49.51

THE MIN. EFS= .93 FS= 1.17 H(X)= 100.00 G(Y)= 30.00 R= 49.51

SBU 58.122 UNTS.

RUN COMPLETE.

CASE 6 SHALLOW

THESE ARE THE INPUT DATA LINES :

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 73.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 95.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 95.0 | -15.0 | 102.0 | -15.0 | -100.0 | 0.0 | 28.0 | 0.0 | 0.0 |
| 102.0 | -15.0 | 132.0 | -27.0 | -100.0 | 0.0 | 28.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 140.0 | -38.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 132.0 | -27.0 | -135.0 | 28.0 | 35.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 145.0 | -15.0 | 70.0 | -25.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 140.0 | -38.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 140.0 | -38.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 95.0 | -15.0 | -100.0 | 27.0 | 28.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 73.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 65.0 YT= -5.0 XB= 150.0 YB= -45.0

GRIDX= 90.0 GRIDY= 10.0 XMAX= 150.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

CASE 6 SHALLOW

THE MIN. FS= 1.15 EFS= .94 H(X)= 90.00 G(Y)= 20.00 R= 35.37

THE MIN. EFS= .93 FS= 1.16 H(X)= 90.00 G(Y)= 10.00 R= 29.16

SBU 66.603 UNTS.

RUN COMPLETE.

00110 JSF,R-EFF,OUTSIDE=4:1,INSIDE=2.5:1,COMP. ASH,ROCK:CLAY@2:1,PHI=30
(EROF= .05 DEPTH OF ROCK= 49.0 FT)

# CASE 7

✓ RDP 11/2/84

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 73.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 95.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 95.0 | -15.0 | 102.0 | -15.0 | -100.0 | 0.0 | 30.0 | 0.0 | 0.0 |
| 102.0 | -15.0 | 132.0 | -27.0 | -100.0 | 0.0 | 30.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 140.0 | -38.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 132.0 | -27.0 | -135.0 | 30.0 | 35.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 140.0 | -38.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 140.0 | -38.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 95.0 | -15.0 | -100.0 | 27.0 | 30.0 | 0.0 | 0.0 |
| 73 75.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 75.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

73

XT= 65.0 YT= -5.0 XB= 150.0 YB= -45.0

GRIDX= 90.0 GRIDY= 30.0 XMAX= 150.0 YMAX= 130.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

# CASE 7

THE MIN. FS= 1.24 EFS= 1.02 H(X)= 100.00 G(Y)= 50.00 R= 65.20

THE MIN. EFS= .96 FS= 1.40 H(X)= 150.00 G(Y)= 90.00 R= 127.49

(ERUF= .05 DEPTH OF ROCK= 49.0 FT)

CASE 7

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 99.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | -0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | -0.0 | 73.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | -0.0 |
| 73.0 | -4.0 | 95.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 95.0 | -15.0 | 102.0 | -15.0 | -100.0 | 0.0 | 30.0 | 0.0 | 0.0 |
| 102.0 | -15.0 | 132.0 | -27.0 | -100.0 | 0.0 | 30.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 140.0 | -38.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 132.0 | -27.0 | -135.0 | 30.0 | 35.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 140.0 | -38.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 140.0 | -38.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | -0.0 |
| 45.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 95.0 | -15.0 | -100.0 | 27.0 | 30.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 73.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 65.0 YT= -5.0 XB= 150.0 YB= -45.0

GRIDX= 90.0 GRIDY= 30.0 XMAX= 150.0 YMAX= 130.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

CASE 7

TEST POINTS

THE MIN. FS= 1.20 EFS= .99 H(X)= 90.00 G(Y)= 30.00 R= 43.02

THE MIN. EFS= .95 FS= 1.39 H(X)= 150.00 G(Y)= 90.00 R= 127.49

SBU [illegible] 82.772 UNITS

RUN COMPLETE

.1,INSIDE=2.5:1,COMP. ASH,ROCK:CLAY@2:1,PHI=30

(DEPTH OF ROCK= 49.0 FT)

# CASE 7 SHALLOW

THESE ARE THE INPUT DATA LINES

| .1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 73.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 95.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 95.0 | -15.0 | 102.0 | -15.0 | -100.0 | 0.0 | 30.0 | 0.0 | 0.0 |
| 102.0 | -15.0 | 132.0 | -27.0 | -100.0 | 0.0 | 30.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 140.0 | -38.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 132.0 | -27.0 | -135.0 | 30.0 | 35.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 140.0 | -38.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 140.0 | -38.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 95.0 | -15.0 | -100.0 | 27.0 | 30.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 73.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= -65.0 YT= -5.0 XB= 150.0 YB= -45.0

GRIDX= 90.0 GRIDY= 10.0 XMAX= 150.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

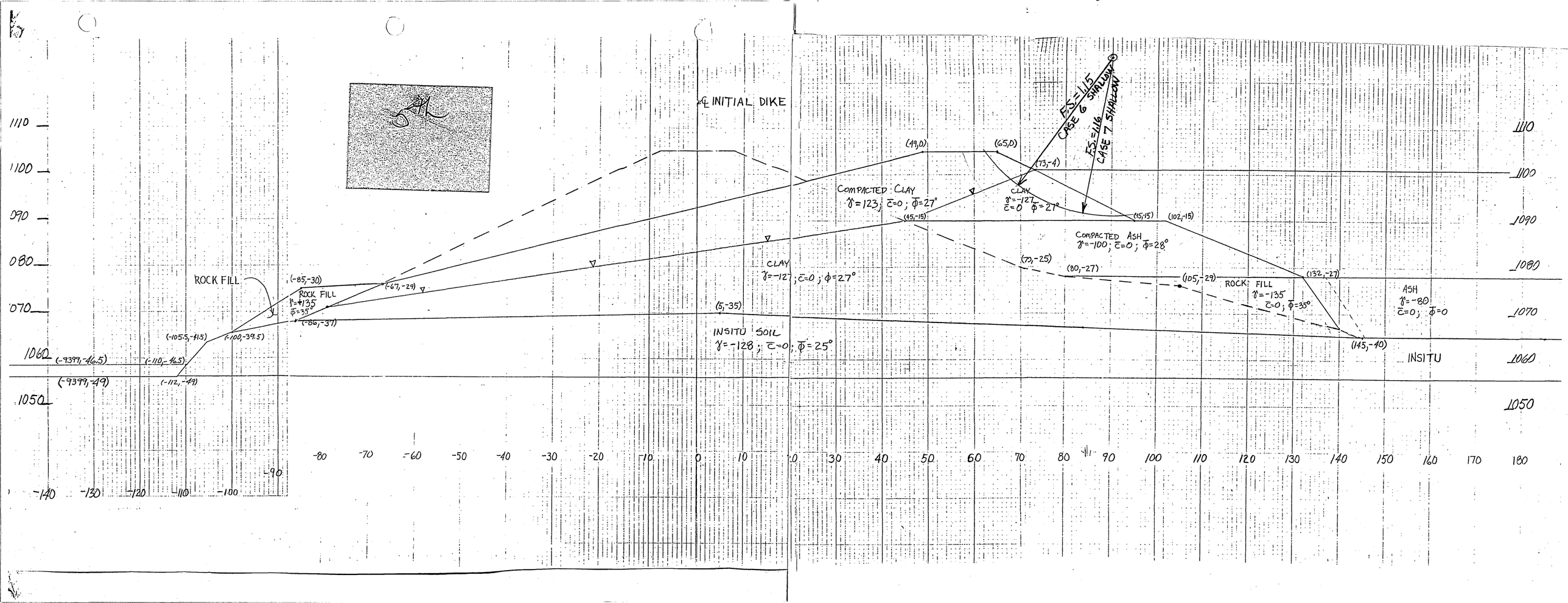
# CASE 7 SHALLOW

TEST POINTS

THE MIN. FS= 1.16 EFS= .95 H(X)= 90.00 G(Y)= 20.00 R= 35.37

THE MIN. EFS= .95 FS= 1.16 H(X)= 90.00 G(Y)= 20.00 R= 35.37

SBU = 65.995 UNTS.


℄ INITIAL DIKE
ROCK FILL
(-85,-30)
(-67,-29)
ROCK FILL
γ=135
φ=35°
(-86,-37)
(-105.5,-41.5)
(-100,-39.5)
(-9399,-46.5)
(-110,-46.5)
(-9399,-49)
(-112,-49)
(5,-35)
INSITU SOIL
γ=-128; c=0; φ=25°
CLAY
γ=-127; c=0; φ=27°
COMPACTED CLAY
γ=123; c=0; φ=27°
(49,0)
(65,0)
(73,-4)
(45,-15)
(15,-15)
(102,-15)
FS=1.15
CASE 6 SHALLOW
FS=1.16
CASE 7 SHALLOW
CLAY
γ=-127
c=0 φ=27°
COMPACTED ASH
γ=-100; c=0; φ=28°
(70,-25)
(80,-27)
(105,-29)
(132,-27)
(145,-40)
ROCK FILL
γ=-135
c=0; φ=35°
ASH
γ=-80
c=0; φ=0
INSITU
1110
1100
1090
1080
1070
1060
1050
-140
-130
-120
-110
-100
-90
-80
-70
-60
-50
-40
-30
-20
-10
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180

SHEET _____ OF _____

JOHN SEVIER
DISPOSAL AREA "J"

COMPUTED JMH DATE OCT. 26, 84

CHECKED _____ DATE _____

# RESULTS FROM SLOPE2 PROGRAM

| | PROFILE | F. S. | |
|---|---|---|---|
| 1. | INSIDE SLOPE 3:1<br>COMPACTED ASH ON DEPOSITED ASH | 1.02 | |
| 2. | INSIDE SLOPE 2:1<br>COMPACTED ASH ON ROCK TOE<br>COMPACTED ASH $\phi = 28°$ | 1.04 | |
| 3. | INSIDE SLOPE 2:1<br>COMPACTED ASH ON ROCK TOE<br>COMPACTED ASH $\phi = 30°$ | 1.09 | |
| 4. | INSIDE SLOPE 2.5:1<br>COMPACTED ASH ON ROCK TOE<br>COMPACTED ASH $\phi = 28°$ | 1.24 | |
| 5. | INSIDE SLOPE 2.5:1<br>COMPACTED ASH ON ROCK TOE<br>COMPACTED ASH $\phi = 30°$ | 1.31 | |
| 6. | INSIDE SLOPE: CLAY @ 2:1<br>COMPACTED ASH @ 2.5:1<br>ROCK TOE; COMPACTED ASH $\phi = 28°$ | 1.17 | SHALLOW<br>1.15 |
| 7. | INSIDE SLOPE: CLAY @ 2:1<br>COMPACTED ASH @ 2.5:1<br>ROCK TOE; COMPACTED ASH $\phi = 30°$ | 1.20 | SHALLOW<br>1.16 |

TVA 11030 (WM-7-75)

SHEET _____ OF _____

JOHN SEVIER

DISPOSAL AREA "J"

COMPUTED JMA DATE Oct. 29, 84

CHECKED _____ DATE _____

RECOMMENDATION:

USE INSIDE SLOPE WITH CLAY FILL @ 2:1 SLOPE, COMPACTED ASH FILL @ 2.5:1 SLOPE, AND ROCK FILL AT THE TOE OF THE SLOPE AS SHOWN IN FIGURE 1.

THE SLOPE WILL BE REANALYZED WITH THE LABORATORY TESTING RESULTS OF R TRIAXIAL SHEAR TESTS, WHEN THE RESULTS ARE AVAILABLE.

SUBJECT SLOPE STABILITY — ASH DISPOSAL AREA "J" PROJECT JOHN SEVIER S.P.

STA. 41+75 — FULL POOL INSIDE, LOW POOL OUTSIDE — R TEST

COMPUTED BY R.D. POWELL DATE CHECKED BY DATE

# SLOPE STABILITY

(USE DECIMAL EXCEPT FOR "I" FORMAT)

| | NS | DESCRIPTION |
|---|---|---|
| 100 | 2 | 110 1 JOHN SEVIER ASH POND "J" @ STA. 41+75 (R TEST) |

"I" FORMAT

| | N | ERGF |
|---|---|---|
| 120 | 024 | 0.05 |

INSERT "N" NO. OF DATA LINE CARDS (PARAMETERS AS BEFORE)

| | DR |
|---|---|
| 370 | 49 |

| | XT | YT | XB | YB |
|---|---|---|---|---|
| 380 | 8 | -5 | -40 | -35 |

| | GRIDX | GRIDY | XMAX | YMAX | INCX | INCY | INCR |
|---|---|---|---|---|---|---|---|
| 390 | 20 | 5 | 100 | 75 | 5 | 5 | 5 |

"I" FORMAT

| | FSMIN | EFSM |
|---|---|---|
| 400 | 0 | 0 |

IF NS=2, CONTINUE

| | XT | YT | XB | YB |
|---|---|---|---|---|
| 410 | 8 | -2.5 -10 | -70 | -45 |

| | GRIDX | GRIDY | XMAX | YMAX | INCX | INCY | INCR |
|---|---|---|---|---|---|---|---|
| 420 | 25 | 15 | 120 | 120 | 5 | 5 | 5 |

"I" FORMAT

| | FSMIN | EFSM |
|---|---|---|
| 430 | 0 | 0 |

FORM R1

SUBJECT SLOPE STABILITY - ASH DISPOSAL AREA "J" PROJECT JOHN SEVIER S.D.

② STA. 41+75 - R TEST

COMPUTED BY R.D. POWELL DATE CHECKED BY DATE

1) RODEI - 1 2 (= FULL OUTPUT) (2)

3: N = 1 3
ERFQ = 4 8

| LINE | X1 (N) | Y1 (N) | X2 (N) | Y2 (N) | UNIT. (PCF) (−) SATURATED (+) MOIST W (N) | Ø ABOVE F2 (N) | Ø BELOW F1 (N) | COHESION ABOVE C2 (N) | COHESION BELOW C1 (N) | |
|---|---|---|---|---|---|---|---|---|---|---|
| 130 | -9399 | -49 | -112 | -49 | -1000 | 0 | 100 | 0 | 9999 | 1 |
| 140 | -112 | -49 | 9399 | -49 | -1000 | 25 | 100 | 0 | 9999 | 2 |
| 150 | -9399 | -46.5 | -110 | -46.5 | -62.4 | 0 | 0 | 0 | 0 | 3 |
| 160 | -112 | -49 | -110 | -46.5 | -128 | 0 | 25 | 0 | 0 | 4 |
| 170 | -110 | -46.5 | -105.5 | -41.5 | 125 | 0 | 25 | 0 | 0 | 5 |
| 180 | -105.5 | -41.5 | -100 | -39.5 | 125 | 0 | 25 | 0 | 0 | 6 |
| 190 | -100 | -39.5 | -86 | -37 | 125 | 35 | 25 | 0 | 0 | 7 |
| 200 | -86 | -37 | -67 | -29 | 123 | 35 | 27 | 0 | 0 | 8 |
| 205 210 | -100 | -39.5 | -85 | -30 | 135 | 0 | 35 | 0 | 0 | 9 |
| 220 | -85 | -30 | -67 | -29 | 135 | 0 | 35 | 0 | 0 | 10 |
| 230 | -67 | -29 | -60 | -26 | 123 | 0 | 27 | 0 | 0 | 11 |
| 240 | -60 | -26 | -8 | 0 | 123 | 0 | 27 | 0 | 0 | 12 |
| 250 | -8 | 0 | 8 | 0 | 123 | 0 | 27 | 0 | 0 | 13 |
| 260 | 8 | 0 | 16 | -4 | 123 | 0 | 27 | 0 | 0 | 14 |
| 270 | 16 | -4 | 78 | -35 | -127 | 0 | 27 | 0 | 0 | 15 |
| 280 | 78 | -35 | 84 | -38 | -128 | 27 | 25 | 0 | 0 | 16 |
| 290 | 84 | -38 | 9399 | -38 | -128 | 27 | 25 | 0 | 0 | 17 |
| 300 | 78 | -35 | 9399 | -35 | -127 | 0 | 27 | 0 | 0 | 18 |
| 310 | 16 | -4 | 9399 | -4 | -62.4 | 0 | 0 | 0 | 0 | 19 |
| 320 | -86 | -37 | -20 -82 | -35.5 -37 | 125 | 27 | 25 | 0 | 0 | 20 |
| 330 | -20 -82 | -35.5 -37 | 5 | -35 | -128 | 27 | 25 | 0 | 0 | 21 |
| 340 | 5 | -35 | 78 | -35 | -128 | 27 | 25 | 0 | 0 | 22 |
| 350 | -110 | -46.5 | -20 -82 | -35.5 -37 | -128 | 25 | 25 | 0 | 0 | 23 |
| 360 | -20 -82 | -35.5 -37 | 16 | -4 | -127 | 27 | 27 | 0 | 0 | 24 |

(LIMIT 50 LINES)

135 155

⑤ | H | G | R | ONE CARD FOR EACH FAILURE ARC CONSIDERED KVA.

SUBJECT _____ PROJECT _____

②

COMPUTED BY _____ DATE _____ CHECKED BY _____ DATE _____

RUDET – 1 _____ 2 (* FULL OUTPUT) (2)

N = 1 [illegible] 3

ERFQ = 4 _____ 8

| LINE | X1 (N) | Y1 (N) | X2 (N) | Y2 (N) | UNIT. (PCF) (–) SATURATED (+) MOIST W (N) | Ø ABOVE F2 (N) | Ø BELOW F1 (N) | COHESION ABOVE C2 (N) | COHESION BELOW C1 (N) |
|---|---|---|---|---|---|---|---|---|---|
| 130 | -9399 | -49 | -122 | -49 | -1000 | 0 | 100 | 0 | 9999 |
| 135 | -122 | -49 | -112 | -49 | -1000 | 35 | 100 | 0 | 9999 |
| 150 | -9399 | -46.5 | -118.5 | -46.5 | -62.4 | 0 | 0 | 0 | 0 |
| 155 | -118.5 | -46.5 | -110 | -46.5 | -135 | 35 | 35 | 0 | 0 |
| 160 | -112 | -49 | -110 | -46.5 | -128 | 35 | 25 | 0 | 0 |
| 170 | -110 | -46.5 | -105.5 | -41.5 | 125 | 35 | 25 | 0 | 0 |
| 180 | -105.5 | -41.5 | -100 | -39.5 | 125 | 35 | 25 | 0 | 0 |
| 205 | -122 | -49 | -118.5 | -46.5 | -135 | 0 | 35 | 0 | 0 |
| 210 | -118.5 | -46.5 | -92 | -29 | 135 | 0 | 35 | 0 | 0 |
| 220 | -92 | -29 | -67 | -29 | 135 | 0 | 35 | 0 | 0 |

(LIMIT 50 LINES)

⑤ | H | G | R | ONE CARD FOR EACH FAILURE ARC CONSIDERED

32

① KODEI = 2 (1–2) 0 = LIMITED OUTPUT, 1 = FULL OUTPUT

② ALPHAMERIC DESCRIPTION 1 ---------- 48

③ N = (1–3)
ERFQ = (4–7)

④ (LIMIT 50 LINES)

| LINE (1–7) | $X_1$ (N) (8–14) | $Y_1$ (N) (15–21) | $X_2$ (N) (22–28) | $Y_2$ (N) (29–35) | UNIT WT. (PCF) $\gamma_s$(−) SATURATED $\gamma_m$(+) MOIST W (N) (36–42) | % ABOVE $F_2$ (N) (43–49) | % BELOW $F_1$ (N) (50–56) | COHESION ABOVE $C_2$ (N) (57–63) | COHESION BELOW $C_1$ (N) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | -9399 | -49 | -112 | -49 | -1000 | 0 | 100 | 0 | 9999 |
| 2 | -112 | -49 | 9399 | -49 | -1000 | 25 | 100 | 0 | 9999 |
| 3 | -9399 | -46.5 | -110 | -46.5 | -62.4 | 0 | 0 | 0 | 0 |
| 4 | -110 | -46.5 | -105.5 | -41.5 | -128 | 0 | 25 | 0 | 0 |
| 5 | -105.5 | -41.5 | -100 | -39.5 | -128 | 0 | 25 | 0 | 0 |
| 6 | -100 | -39.5 | -86 | -37 | -128 | 35 | 25 | 0 | 0 |
| 7 | -86 | -37 | -67 | -29 | -127 | 35 | 27 | 0 | 0 |
| 8 | -100 | -39.5 | -85 | -30 | 135 | 0 | 35 | 0 | 0 |
| 9 | -85 | -30 | -67 | -29 | 135 | 0 | 35 | 0 | 0 |
| 10 | -67 | -29 | 20 | 0 | 123 | 0 | 27 | 0 | 0 |
| 11 | 20 | 0 | 36 | 0 | 123 | 0 | 27 | 0 | 0 |
| 12 | 36 | 0 | 44 | -4 | 123 | 0 | 27 | 0 | 0 |
| 13 | 44 | -4 | 56 | -10 | -127 | 0 | 27 | 0 | 0 |
| 14 | 56 | -10 | 66 | -15 | -115 | 0 | 31 | 0 | 0 |
| 15 | 66 | -15 | 76 | -20 | -105 | 0 | 24 | 0 | 0 |
| 16 | 76 | -20 | 91 | -35 | -95 | 0 | 20 | 0 | 0 |
| 17 | 28 | -10 | 56 | -10 | -115 | 27 | 31 | 0 | 0 |
| 18 | 28 | -10 | 38 | -15 | -127 | 31 | 27 | 0 | 0 |
| 19 | 38 | -15 | 48 | -20 | -127 | 24 | 27 | 0 | 0 |
| 20 | 48 | -20 | 78 | -35 | -127 | 20 | 27 | 0 | 0 |
| 21 | 78 | -35 | 84 | -38 | -128 | 27 | 25 | 0 | 0 |
| 22 | 84 | -38 | 9399 | -38 | -128 | 27 | 25 | 0 | 0 |
| 23 | 78 | -35 | 91 | -35 | -127 | 20 | 27 | 0 | 0 |
| 24 | 91 | -35 | 9399 | -35 | -127 | 0 | 27 | 0 | 0 |
| 25 | 48 | -20 | 76 | 20 | -95 | 24 | 20 | 0 | 0 |

⑤ | H (1–7) | G (8–14) | R (15–21) | ONE CARD FOR EACH FAILURE ARC CONSIDERED

TVA 488 A (DES-3.39)

TENNESSEE VALLEY AUTHORITY

SUBJECT SLOPE STABILITY ANALYSIS OLD SLOPE 2 PROJECT JSF

② 1 JSF ASH POND "J", R-EFF TEST @ STA 41+75, 3:1 SLOPE

COMPUTED BY DATE CHECKED BY DATE

SHEET 1 OF 2

TVA 488 A (DES-3-39) TENNESSEE VALLEY AUTHORITY SHEET 2 OF 2

SUBJECT SLOPE STABILITY ANALYSIS OLD, SLOPE 2 PROJECT

② 1 JSF ASH POND "J", R-EFF TEST @ STA 41+75, 3:1 SLOPE

COMPUTED BY DATE CHECKED BY DATE

(1) KODEI = 1 (2) 0 = LIMITED OUTPUT 1 = FULL OUTPUT (3)

N = 3
NERFQ = 4 7

(2) ALPHAMERIC DESCRIPTION 1 ..... 48

| LINE | $X_1$ (N) 7 8 | $Y_1$ (N) 14 15 | $X_2$ (N) 21 | $Y_2$ (N) 28 29 | UNIT WT. (PCF) $\gamma_s$(−) SATURATED $\gamma_m$(+) MOIST $W$ (N) 35 | ℓ ABOVE $F_2$ (N) 42 43 | ℓ BELOW $F_1$ (N) 49 50 | COHESION ABOVE $C_2$ (N) 56 57 | COHESION BELOW $C_1$ (N) 63 |
|---|---|---|---|---|---|---|---|---|---|
| 26 | 76 | -20 | 9399 | -20 | 80 | 0 | 0 | 0 | 0 |
| 27 | 38 | -15 | 66 | -15 | -105 | 31 | 24 | 0 | 6 |
| 28 | 44 | -4 | 9399 | -4 | -62.4 | 0 | 0 | 0 | 0 |
| 29 | -86 | -37 | 5 | -35 | -128 | 27 | 25 | 0 | 0 |
| 30 | 5 | -35 | 78 | -35 | -128 | 27 | 25 | 0 | 0 |
| 31 | -67 | -29 | 28 | -10 | -127 | 27 | 27 | 0 | 0 |
| 32 | 28 | -10 | 44 | -4 | -127 | 27 | 27 | 0 | 0 |

(4) (LIMIT 50 LINES)

| 1 | H | 7 8 | G | 14 15 | R | 21 |
|---|---|---|---|---|---|---|

ONE CARD FOR EACH FAILURE ARC CONSIDERED

(5)

JOHN SEVIER ASH DISPOSAL "J"

STA 41+75 DODSON CREEK

COMPACTED ASH

SLOPE STABILITY

(INSIDE SLOPE)

(COMPUTER OUTPUT)

TIDE
RUN

# CASE 1

84/10/24. 11.03.58.
PROGRAM SLOPE2

00110 JSF ASH POND "J", R-EFF,OUTSIDE=4:1,INSIDE=3:1,COMPACTED ASH
(EROF= .05 DEPTH OF ROCK= 49.0 FT)

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 77.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 77.0 | -4.0 | 110.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 110.0 | -15.0 | 146.0 | -27.0 | -100.0 | 0.0 | 24.0 | 0.0 | 0.0 |
| 146.0 | -27.0 | 150.0 | -40.0 | -90.0 | 10.0 | 20.0 | 0.0 | 0.0 |
| 146.0 | -26.0 | 185.0 | -40.0 | -85.0 | 0.0 | 10.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 146.0 | -27.0 | -90.0 | 24.0 | 20.0 | 0.0 | 0.0 |
| 146.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 24.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 24.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 105.0 | -29.0 | -127.0 | 20.0 | 27.0 | 0.0 | 0.0 |
| 105.0 | -29.0 | 145.0 | -40.0 | -127.0 | 20.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 150.0 | -40.0 | -128.0 | 20.0 | 25.0 | 0.0 | 0.0 |
| 150.0 | -40.0 | 185.0 | -40.0 | -128.0 | 10.0 | 25.0 | 0.0 | 0.0 |
| 185.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 10.0 | -15.0 | -100.0 | 27.0 | 24.0 | 0.0 | 0.0 |
| 77.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 77.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 146.0 YT= -28.0 XB= 150.0 YB= -40.0

GRIDX= 90.0 GRIDY= 10.0 XMAX= 190.0 YMAX= 200.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.02 EFS= .69 H(X)= 150.00 G(Y)= 50.00 R= 88.11

THE MIN. EFS= .17 FS= 3.51 H(X)= 190.00 G(Y)= 100.00 R= 135.36

SBU 185.006 UNTS.

RUN COMPLETE.

SBU 0.328 UNTS.
READY.
OLD,SLOPE2
READY.
GET,TAPE5=JMH46
READY.
RUN

84/10/26. 13.03.17. CASE 2
PROGRAM SLOPE2

00110 SHALLOW CIRCLE,JSF,R-EFF,OUTSIDE=4:1,INSIDE=2:1,COMPACTED ASH,ROCK
(EROF= .05 DEPTH OF ROCK= 49.0 FT)

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 73.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 95.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 95.0 | -15.0 | 120.0 | -27.0 | -100.0 | 0.0 | 28.0 | 0.0 | 0.0 |
| 120.0 | -27.0 | 126.0 | -33.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 120.0 | -27.0 | -135.0 | 28.0 | 35.0 | 0.0 | 0.0 |
| 120.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 126.0 | -33.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 126.0 | -33.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 95.0 | -15.0 | -100.0 | 27.0 | 28.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 73.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 65.0 YT= -5.0 XB= 150.0 YB= -45.0

GRIDX= 90.0 GRIDY= 30.0 XMAX= 150.0 YMAX= 130.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.04 EFS= .82 H(X)= 110.00 G(Y)= 30.00 R= 57.02

THE MIN. EFS= .78 FS= 1.12 H(X)= 150.00 G(Y)= 100.00 R= 135.10

SBU 76.261 UNTS.

RUN COMPLETE.

```
BLD,SLOPE2
 READY.
GET,TAPE5=JMH47
 READY.
RUN
```

# CASE 3

```
 84/10/25. 09.41.21.
PROGRAM    SLOPE2

00110 PHI=30,SHALLOW CIRCLE,JSF,R-EFF,OUTSIDE=4:1,INSIDE=2:1,COMPACTED A
 (ERROF=        .05      DEPTH OF ROCK=    49.0 FT)
```

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 73.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 95.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 95.0 | -15.0 | 120.0 | -27.0 | -100.0 | 0.0 | 30.0 | 0.0 | 0.0 |
| 120.0 | -27.0 | 126.0 | -33.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 120.0 | -27.0 | -135.0 | 30.0 | 35.0 | 0.0 | 0.0 |
| 120.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 126.0 | -33.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 126.0 | -33.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 95.0 | -15.0 | -100.0 | 27.0 | 30.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 73.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

```
XT=    65.0      YT=    -5.0      XB=   150.0      YB=   -45.0

GRIDX=    90.0      GRIDY=    30.0      XMAX=   150.0      YMAX=   130.0

INCX= 10      INCY= 10      INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS     0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS     0.00
```

TEST POINTS

```
  THE MIN. FS=    1.09    EFS=     .88    H(X)= 110.00    G(Y)=  40.00    R=  63.65

  THE MIN. EFS=     .80    FS=    1.15    H(X)= 150.00    G(Y)= 100.00    R= 135.10

SBU      78.541 UNTS.
```

GET,TAPE5=OMA49
READY.
RUN

84/10/25. 09.03.03.

# CASE 4

PROGRAM SLOPE2

00110 JSF ASH POND "J", R-EFF,OUTSIDE=4:1,INSIDE=2.5:1,COMPACTED ASH,ROC
(EROF= .05 DEPTH OF ROCK= 49.0 FT)

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 75.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 75.0 | -4.0 | 102.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 102.0 | -15.0 | 132.0 | -27.0 | -100.0 | 0.0 | 28.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 140.0 | -38.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 132.0 | -27.0 | -135.0 | 28.0 | 35.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 140.0 | -38.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 140.0 | -38.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 102.0 | -15.0 | -100.0 | 27.0 | 28.0 | 0.0 | 0.0 |
| 75.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 75.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 65.0 YT= -5.0 XB= 150.0 YB= -45.0

GRIDX= 90.0 GRIDY= 30.0 XMAX= 150.0 YMAX= 130.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.24 EFS= .97 H(X)= 110.00 G(Y)= 40.00 R= 63.65

THE MIN. EFS= .93 FS= 1.32 H(X)= 150.00 G(Y)= 90.00 R= 127.49

SBU 80.145 UNTS.

RUN COMPLETE.

84/10/25. 09.15.04.
PROGRAM SLOPE2

CASE 5

00110 JSF ASH POND "J", R-EFF,OUTSIDE=4:1,INSIDE=2.5:1,COMPACTED ASH,ROC
(EROF= .05 DEPTH OF ROCK= 49.0 FT)

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 75.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 75.0 | -4.0 | 102.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 102.0 | -15.0 | 132.0 | -27.0 | -100.0 | 0.0 | 30.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 140.0 | -38.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 132.0 | -27.0 | -135.0 | 30.0 | 35.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 140.0 | -38.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 140.0 | -38.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 102.0 | -15.0 | -100.0 | 27.0 | 30.0 | 0.0 | 0.0 |
| 75.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 75.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 65.0 YT= -5.0 XB= 150.0 YB= -45.0

GRIDX= 90.0 GRIDY= 30.0 XMAX= 150.0 YMAX= 130.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.31 EFS= 1.02 H(X)= 110.00 G(Y)= 40.00 R= 63.65

THE MIN. EFS= .95 FS= 1.35 H(X)= 150.00 G(Y)= 90.00 R= 127.49

SBU 80.862 UNTS.

RUN COMPLETE.

READY.
FTN.
READY.
GET,TAPE5=JMH49
READY.
RUN

84/10/25. 14.09.43.
PROGRAM SLOPE2

# CASE 6

00110 JSF, R-EFF,OUTSIDE=4:1,INSIDE=2.5:1,COMPACTED ASH,ROCK;CLAY@2:1
(ERØF= .05 DEPTH ØF ROCK= 49.0 FT)

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 73.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 95.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 95.0 | -15.0 | 102.0 | -15.0 | -100.0 | 0.0 | 28.0 | 0.0 | 0.0 |
| 102.0 | -15.0 | 132.0 | -27.0 | -100.0 | 0.0 | 28.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 140.0 | -38.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 132.0 | -27.0 | -135.0 | 28.0 | 35.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 140.0 | -38.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 140.0 | -38.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 95.0 | -15.0 | -100.0 | 27.0 | 28.0 | 0.0 | 0.0 |
| 75.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 75.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 65.0 YT= -5.0 XB= 150.0 YB= -45.0

GRIDX= 90.0 GRIDY= 30.0 XMAX= 150.0 YMAX= 130.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TØ BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TØ BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.20 EFS= .95 H(X)= 100.00 G(Y)= 30.00 R= 49.51

THE MIN. EFS= .94 FS= 1.37 H(X)= 150.00 G(Y)= 90.00 R= 127.49

SBU 83.470 UNTS.

RUN COMPLETE.
OLD,JMH48
READY.

```
OLD,SLOPE2
 READY.
GET,TAPE5=JMH53
 READY.
RUN

 84/10/25. 14.21.03.
PROGRAM    SLOPE2
```

# CASE 7

00110 JSF,R-EFF,OUTSIDE=4:1,INSIDE=2.5:1,COMP. ASH,ROCK:CLAY@2:1,PHI=30
 (EROF=  .05  DEPTH OF ROCK=  49.0 FT)

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 73.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 95.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 95.0 | -15.0 | 102.0 | -15.0 | -100.0 | 0.0 | 30.0 | 0.0 | 0.0 |
| 102.0 | -15.0 | 132.0 | -27.0 | -100.0 | 0.0 | 30.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 140.0 | -38.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 132.0 | -27.0 | -135.0 | 30.0 | 35.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 140.0 | -38.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 140.0 | -38.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 95.0 | -15.0 | -100.0 | 27.0 | 30.0 | 0.0 | 0.0 |
| 75.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 75.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT=  65.0  YT=  -5.0  XB=  150.0  YB=  -45.0

GRIDX=  90.0  GRIDY=  30.0  XMAX=  150.0  YMAX=  130.0

INCX= 10  INCY= 10  INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS  0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS  0.00

TEST POINTS

THE MIN. FS=  1.24  EFS=  1.02  H(X)= 100.00  G(Y)=  50.00  R=  65.20

THE MIN. EFS=  .96  FS=  1.40  H(X)= 150.00  G(Y)=  90.00  R= 127.49

```
SBU     83.935 UNTS.
 RUN COMPLETE.
```

READY.
GET,TAPE5=JMH53
READY.
RUN

84/11/27. 13.15.29.
PROGRAM SLOPE2

# CASE 7

00110 JSF,R-EFF,OUTSIDE=4:1,INSIDE=2.5:1,COMP. ASH,ROCK:CLAY@2:1,PHI=30
(EROF= .05 DEPTH OF ROCK= 49.0 FT)

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 73.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 95.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 95.0 | -15.0 | 102.0 | -15.0 | -100.0 | 0.0 | 30.0 | 0.0 | 0.0 |
| 102.0 | -15.0 | 132.0 | -27.0 | -100.0 | 0.0 | 30.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 140.0 | -38.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 132.0 | -27.0 | -135.0 | 30.0 | 35.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| [illegible] | -15.0 | 70.0 | -25.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| [illegible]0 | -25.0 | 80.0 | -27.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| [illegible]0.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 140.0 | -38.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 140.0 | -38.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 95.0 | -15.0 | -100.0 | 27.0 | 30.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 73.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 65.0 YT= -5.0 XB= 150.0 YB= -45.0

GRIDX= 90.0 GRIDY= 10.0 XMAX= 150.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.16 EFS= .95 H(X)= 90.00 G(Y)= 20.00 R= 35.37

THE MIN. EFS= .95 FS= 1.16 H(X)= 90.00 G(Y)= 20.00 R= 35.37

SBU [illegible].995 UNITS.

RUN [illegible]LETE.

```
OLD,SLOPE2
 READY.
GET,TAPE5=JMH54
 READY.
RUN

 84/11/27. 13.33.34.
PROGRAM   SLOPE2
```

# CASE 6

00110 JSF,R-EFF,OUTSIDE=4:1,INSIDE=2.5:1,COMP. ASH,ROCK&CLAY92:1,PHI=28
(EROF=  .05  DEPTH OF ROCK=  49.0 FT)

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9999.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9999.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9999.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 73.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 95.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 95.0 | -15.0 | 108.0 | -15.0 | -100.0 | 0.0 | 28.0 | 0.0 | 0.0 |
| [illegible] | -15.0 | 132.0 | -27.0 | -100.0 | 0.0 | [illegible] | 0.0 | 0.0 |
| [illegible] | -27.0 | 140.0 | -38.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| [illegible] | -27.0 | 132.0 | -27.0 | -135.0 | 28.0 | 35.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 9999.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 140.0 | -38.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 140.0 | -38.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 9999.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 95.0 | -15.0 | -100.0 | 27.0 | 28.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 9999.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 73.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT=  65.0  YT=  -5.0  XB=  150.0  YB=  -45.0

GRIDX=  90.0  GRIDY=  10.0  XMAX=  150.0  YMAX=  100.0

INCX= 10  INCY= 10  INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS  0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS  0.00

TEST POINTS

THE MIN. FS=  1.15  EFS=  .94  H(X)=  90.00  G(Y)=  20.00  R=  35.37

THE MIN. EFS=  .93  FS=  1.16  H(X)=  90.00  G(Y)=  10.00  R=  29.16

SBU  66.603 UNTS.

RUN COMPLETE.

```
 READY.
GET,TAPE5=JMH54
 READY.
RUN

  11/27. 15.53.10.
PROGRAM   SLOPE2
```

# CASE 6

00110 JSF,R-EFF,OUTSIDE=4:1,INSIDE=2.5:1,COMP. ASH,ROCK;CLAY@2:1,PHI=28
 (ERROF=  .05  DEPTH OF ROCK=  49.0 FT)

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 73.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 95.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 95.0 | -15.0 | 102.0 | -15.0 | -100.0 | 0.0 | 28.0 | 0.0 | 0.0 |
| 102.0 | -15.0 | 132.0 | -27.0 | -100.0 | 0.0 | 28.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 140.0 | -38.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 132.0 | -27.0 | -135.0 | 28.0 | 35.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 9399.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 140.0 | -39.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 140.0 | -39.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 9399.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 95.0 | -15.0 | -100.0 | 27.0 | 28.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -25.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -25.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 73.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT=  65.0  YT=  -5.0  XB=  150.0  YB=  -45.0

GRIDX=  90.0  GRIDY=  30.0  XMAX=  150.0  YMAX=  100.0

INCX= 10  INCY= 10  INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS  0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS  0.00

TEST POINTS

THE MIN. FS=  1.17  EFS=  .93  H(X)= 100.00  S(Y)=  30.00  R=  49.51

THE MIN. EFS=  .93  FS=  1.17  H(X)= 100.00  S(Y)=  30.00  R=  49.51

```
$BU     58.122 UNTS.

 RUN COMPLETE.
```

READY.
SET,TAPE5=JMH53
READY.
RUN

[illegible] 13.09.06.
[illegible] SLOPE2

# CASE 7

[illegible] JSF,R-EFF,OUTSIDE=4:1,INSIDE=2.5:1,COMP. ASH,ROCK&CLAY@2:1,PHI=30
(ERR= .05 DEPTH OF ROCK= 49.0 FT)

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | P2 | P1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9999.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9999.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9999.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| [illegible].0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 73.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 95.0 | -15.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 95.0 | -15.0 | 102.0 | -15.0 | -100.0 | 0.0 | 30.0 | 0.0 | 0.0 |
| 102.0 | -15.0 | 132.0 | -27.0 | -100.0 | 0.0 | 30.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 140.0 | -38.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 132.0 | -27.0 | -135.0 | 30.0 | 35.0 | 0.0 | 0.0 |
| 132.0 | -27.0 | 9999.0 | -27.0 | -80.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 70.0 | -25.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| 70.0 | -25.0 | 80.0 | -27.0 | -127.0 | 30.0 | 27.0 | 0.0 | 0.0 |
| 80.0 | -27.0 | 115.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 115.0 | -29.0 | 140.0 | -38.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 140.0 | -38.0 | 145.0 | -40.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 145.0 | -40.0 | 9999.0 | -40.0 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 95.0 | -15.0 | -100.0 | 27.0 | 30.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 9999.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -129.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 145.0 | -40.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 45.0 | -15.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 45.0 | -15.0 | 73.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 65.0 YT= -5.0 XB= 150.0 YB= -45.0

GRIDX= 90.0 GRIDY= 30.0 XMAX= 150.0 YMAX= 130.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST PRINT

THE MIN. FS= 1.30 EFS= .99 H(X)= 90.00 G(Y)= 30.00 R= 43.02

THE MIN. EFS= .95 FS= 1.39 H(X)= 150.00 G(Y)= 90.00 R= 127.49

CBU 88.772 UNITS.

RUN COMPLETE
OLD,JMH53
READY.
END

JOHN SEVIER ASH DISPOSAL "J"

STA 41+75 DODSON CREEK

SLOPE STABILITY

OUTSIDE SLOPE

CHANGED FROM 2:1 TO 4:1

(COMPUTER OUTPUT)

```
      ...,140,250,10,10,10
/ Q,,RL
JMH39    REPLACED
JMH39    IS A LOCAL FILE

SBU       0.312 UNTS.
 READY.
OLD,SLOPE2
 READY.
FTN
 READY.
GET,TAPE5=JMH39
 READY.
RUN

 84/08/13. 08.03.12.
PROGRAM   SLOPE2

110 JSF ASH POND "J", R-EFF,@STA.41+75,3.5:1 SLOPE,R BAR
 (EROF=        .05      DEPTH OF ROCK=    49.0 FT)


                THESE ARE THE INPUT DATA LINES

     X1        Y1        X2        Y2         W         F2        F1        C2        C1

 -9399.0    -49.0  -112.0    -49.0 -1000.0      0.0    100.0       0.0  9999.0
  -112.0    -49.0  9399.0    -49.0 -1000.0     25.0    100.0       0.0  9999.0
 -9399.0    -46.5  -110.0    -46.5   -62.4      0.0      0.0       0.0     0.0
  -112.0    -49.0  -110.0    -46.5  -128.0      0.0     25.0       0.0     0.0
  -110.0    -46.5  -105.5    -41.5  -128.0      0.0     25.0       0.0     0.0
  -105.5    -41.5  -100.0    -39.5  -128.0      0.0     25.0       0.0     0.0
  -100.0    -39.5   -86.0    -37.0  -128.0     35.0     25.0       0.0     0.0
   -86.0    -37.0   -75.0    -32.5  -127.0     35.0     27.0       0.0     0.0
   -75.0    -32.5   -67.0    -29.0   123.0     35.0     27.0       0.0     0.0
  -100.0    -39.5   -85.0    -30.0   135.0      0.0     35.0       0.0     0.0
   -85.0    -30.0   -67.0    -29.0   135.0      0.0     35.0       0.0     0.0
   -67.0    -29.0    34.5      0.0   123.0      0.0     27.0       0.0     0.0
    34.5      0.0    50.5      0.0   123.0      0.0     27.0       0.0     0.0
    50.5      0.0    58.5     -4.0   123.0      0.0     27.0       0.0     0.0
    58.5     -4.0    70.5    -10.0  -127.0      0.0     27.0       0.0     0.0
    70.5    -10.0    80.5    -15.0  -120.0      0.0     33.0       0.0     0.0
    80.5    -15.0   110.5    -30.0  -110.0      0.0     28.0       0.0     0.0
   110.5    -30.0   115.5    -35.0   -95.0      0.0     24.0       0.0     0.0
    28.0    -10.0    35.0    -13.5   123.0     33.0     27.0       0.0     0.0
    35.0    -13.5    38.0    -15.0  -127.0     33.0     27.0       0.0     0.0
    38.0    -15.0    68.0    -30.0  -127.0     28.0     27.0       0.0     0.0
    68.0    -30.0    78.0    -35.0  -127.0     24.0     27.0       0.0     0.0
    78.0    -35.0    84.0    -38.0  -128.0     27.0     25.0       0.0     0.0
    84.0    -38.0  9399.0    -38.0  -128.0     27.0     25.0       0.0     0.0
    78.0    -35.0   115.5    -35.0  -127.0     24.0     27.0       0.0     0.0
   115.5    -35.0  9399.0    -35.0  -127.0      0.0     27.0       0.0     0.0
    68.0    -30.0   110.5    -30.0   -95.0     28.0     24.0       0.0     0.0
   110.5    -30.0  9399.0    -30.0   -70.0      0.0      0.0       0.0     0.0
    38.0    -15.0    80.5    -15.0  -110.0     33.0     28.0       0.0     0.0
    28.0    -10.0    43.0    -10.0   117.0     27.0     33.0       0.0     0.0
    43.0    -10.0    70.5    -10.0  -120.0     27.0     33.0       0.0     0.0
    58.5     -4.0  9399.0     -4.0   -62.4      0.0      0.0       0.0     0.0
   -86.0    -37.0     5.0    -35.0  -128.0     27.0     25.0       0.0     0.0
     5.0    -35.0    78.0    -35.0  -128.0     27.0     25.0       0.0     0.0
   -75.0    -32.5    35.0    -13.5  -127.0     27.0     27.0       0.0     0.0
    35.0    -13.5    43.0    -10.0  -120.0     33.0     33.0       0.0     0.0
    43.0    -10.0    58.5     -4.0  -127.0     27.0     27.0       0.0     0.0


XT=    34.5      YT=    -5.0      XB=    34.5      YB=   -45.0

GRIDX=    70.0      GRIDY=    20.0      XMAX=   170.0      YMAX=   100.0

INCX= 10      INCY= 10      INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS     0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS     0.00


                TEST POINTS
```

THE MIN. FS= 1.28 EFS= .99 H(X)= 100.00 G(Y)= 50.00 R= 85.54

THE MIN. EFS= .99 FS= 1.28 H(X)= 100.00 G(Y)= 50.00 R= 85.54

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| 9399.0 | -46.5 | 110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 75.0 | -32.5 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 75.0 | -32.5 | 67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 100.0 | -39.5 | 85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 85.0 | -30.0 | 67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 67.0 | -29.0 | -34.5 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -34.5 | 0.0 | -50.5 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -50.5 | 0.0 | -58.5 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -58.5 | -4.0 | -70.5 | -10.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -70.5 | -10.0 | -80.5 | -15.0 | -120.0 | 0.0 | 33.0 | 0.0 | 0.0 |
| -80.5 | -15.0 | -110.5 | -30.0 | -110.0 | 0.0 | 28.0 | 0.0 | 0.0 |
| -110.5 | -30.0 | -115.5 | -35.0 | -95.0 | 0.0 | 24.0 | 0.0 | 0.0 |
| -28.0 | -10.0 | -35.0 | -13.5 | 123.0 | 33.0 | 27.0 | 0.0 | 0.0 |
| -35.0 | -13.5 | -38.0 | -15.0 | -127.0 | 33.0 | 27.0 | 0.0 | 0.0 |
| -38.0 | -15.0 | -68.0 | -30.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| -68.0 | -30.0 | -78.0 | -35.0 | -127.0 | 24.0 | 27.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -115.5 | -35.0 | -127.0 | 24.0 | 27.0 | 0.0 | 0.0 |
| -115.5 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -68.0 | -30.0 | -110.5 | -30.0 | -95.0 | 28.0 | 24.0 | 0.0 | 0.0 |
| -110.5 | -30.0 | -9399.0 | -30.0 | -70.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -38.0 | -15.0 | -80.5 | -15.0 | -110.0 | 33.0 | 28.0 | 0.0 | 0.0 |
| -28.0 | -10.0 | -43.0 | -10.0 | 117.0 | 27.0 | 33.0 | 0.0 | 0.0 |
| -43.0 | -10.0 | -70.5 | -10.0 | -120.0 | 27.0 | 33.0 | 0.0 | 0.0 |
| -58.5 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | -5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 75.0 | -32.5 | -35.0 | -13.5 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| -35.0 | -13.5 | -43.0 | -10.0 | -120.0 | 33.0 | 33.0 | 0.0 | 0.0 |
| -43.0 | -10.0 | -58.5 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= -34.5 YT= -5.0 XB= -34.5 YB= -45.0

GRIDX= 10.0 GRIDY= 150.0 XMAX= 140.0 YMAX= 250.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.18 EFS= .98 H(X)= 100.00 G(Y)= 180.00 R= 228.74

THE MIN. EFS= .98 FS= 1.18 H(X)= 100.00 G(Y)= 180.00 R= 228.74

SBU 137.618 UNTS.

RUN COMPLETE.

```
?? Q,,RL
JMH35    REPLACED
;"93"    IS A LOCAL FILE

SBU       0.329 UNTS.
 READY.
OLD,SLOPE2
 READY.
FTN
 READY.
GET,TAPE5=JMH35
 READY.
RUN

 84/08/06. 13.49.54.
PROGRAM   SLOPE2

110 JSF ASH POND "J", R-EFF,@STA.41+75,4:1 SLOPE,R BAR
 (ERROF=        .05      DEPTH OF ROCK=    49.0 FT)
```

USE 4:1 SLOPE JMH 11-28-84

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 73.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 87.0 | -11.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 87.0 | -11.0 | 95.0 | -15.0 | -120.0 | 0.0 | 33.0 | 0.0 | 0.0 |
| 95.0 | -15.0 | 125.0 | -30.0 | -110.0 | 0.0 | 28.0 | 0.0 | 0.0 |
| 125.0 | -30.0 | 130.0 | -35.0 | -95.0 | 0.0 | 24.0 | 0.0 | 0.0 |
| 30.0 | -11.0 | 37.0 | -14.5 | 123.0 | 33.0 | 27.0 | 0.0 | 0.0 |
| 37.0 | -14.5 | 38.0 | -15.0 | -127.0 | 33.0 | 27.0 | 0.0 | 0.0 |
| 38.0 | -15.0 | 68.0 | -30.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| 68.0 | -30.0 | 78.0 | -35.0 | -127.0 | 24.0 | 27.0 | 0.0 | 0.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 78.0 | -35.0 | 130.0 | -35.0 | -127.0 | 24.0 | 27.0 | 0.0 | 0.0 |
| 130.0 | -35.0 | 9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 68.0 | -30.0 | 125.0 | -30.0 | -95.0 | 28.0 | 24.0 | 0.0 | 0.0 |
| 125.0 | -30.0 | 9399.0 | -30.0 | -70.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 38.0 | -15.0 | 95.0 | -15.0 | -110.0 | 33.0 | 28.0 | 0.0 | 0.0 |
| 30.0 | -11.0 | 57.0 | -11.0 | 117.0 | 27.0 | 33.0 | 0.0 | 0.0 |
| 57.0 | -11.0 | 87.0 | -11.0 | -120.0 | 27.0 | 33.0 | 0.0 | 0.0 |
| 73.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -79.0 | -34.0 | 37.0 | -14.5 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 37.0 | -14.5 | 57.0 | -11.0 | -120.0 | 33.0 | 33.0 | 0.0 | 0.0 |
| 57.0 | -11.0 | 73.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 49.0  YT= -5.0  XB= 49.0  YB= -45.0

GRIDX= 70.0  GRIDY= 20.0  XMAX= 170.0  YMAX= 100.0

INCX= 10  INCY= 10  INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.29  EFS= 1.00  H(X)= 110.00  G(Y)= 40.00  R= 75.81

THE MIN. EFS= 1.00  FS= 1.29  H(X)= 120.00  G(Y)= 60.00  R= 96.27

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| 9399.0 | -46.5 | 110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 79.0 | -34.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 79.0 | -34.0 | 67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 100.0 | -39.5 | 85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 85.0 | -30.0 | 67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 67.0 | -29.0 | -49.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -49.0 | 0.0 | -65.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -65.0 | 0.0 | -73.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -73.0 | -4.0 | -87.0 | -11.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -87.0 | -11.0 | -95.0 | -15.0 | -120.0 | 0.0 | 33.0 | 0.0 | 0.0 |
| -95.0 | -15.0 | -125.0 | -30.0 | -110.0 | 0.0 | 28.0 | 0.0 | 0.0 |
| -125.0 | -30.0 | -130.0 | -35.0 | -95.0 | 0.0 | 24.0 | 0.0 | 0.0 |
| -30.0 | -11.0 | -37.0 | -14.5 | 123.0 | 33.0 | 27.0 | 0.0 | 0.0 |
| -37.0 | -14.5 | -38.0 | -15.0 | -127.0 | 33.0 | 27.0 | 0.0 | 0.0 |
| -38.0 | -15.0 | -68.0 | -30.0 | -127.0 | 28.0 | 27.0 | 0.0 | 0.0 |
| -68.0 | -30.0 | -78.0 | -35.0 | -127.0 | 24.0 | 27.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -130.0 | -35.0 | -127.0 | 24.0 | 27.0 | 0.0 | 0.0 |
| -130.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -68.0 | -30.0 | -125.0 | -30.0 | -95.0 | 28.0 | 24.0 | 0.0 | 0.0 |
| -125.0 | -30.0 | -9399.0 | -30.0 | -70.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -38.0 | -15.0 | -95.0 | -15.0 | -110.0 | 33.0 | 28.0 | 0.0 | 0.0 |
| -30.0 | -11.0 | -57.0 | -11.0 | 117.0 | 27.0 | 33.0 | 0.0 | 0.0 |
| -57.0 | -11.0 | -87.0 | -11.0 | -120.0 | 27.0 | 33.0 | 0.0 | 0.0 |
| -73.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | -5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 79.0 | -34.0 | -37.0 | -14.5 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| -37.0 | -14.5 | -57.0 | -11.0 | -120.0 | 33.0 | 33.0 | 0.0 | 0.0 |
| -57.0 | -11.0 | -73.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= -49.0 YT= -5.0 XB= -49.0 YB= -45.0

GRIDX= 10.0 GRIDY= 10.0 XMAX= 140.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.47 EFS= 1.18 H(X)= 50.00 G(Y)= 90.00 R= 137.22

THE MIN. EFS= 1.18 FS= 1.47 H(X)= 50.00 G(Y)= 90.00 R= 137

SBU 104.962 UNTS.

RUN COMPLETE.

▶

```
GET,TAPE5=JMH36
 READY.
RUN

 84/08/07. 08.34.56.
PROGRAM   SLOPE2

110 JSF ASH POND "J", R-APP,@STA.41+75,4:1 SLOPE,R LOW POOL
 (ERQF=       .05     DEPTH OF ROCK=   49.0 FT)
```

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| -9399.0 | -48.0 | -111.0 | -48.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -111.0 | -48.0 | -128.0 | 0.0 | 11.0 | 0.0 | 600.0 |
| -111.0 | -48.0 | -105.5 | -41.5 | -128.0 | 0.0 | 11.0 | 0.0 | 600.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 11.0 | 0.0 | 600.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| -79.0 | -34.0 | -74.0 | -32.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| -74.0 | -32.0 | -67.0 | -29.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| -100.0 | -39.5 | -88.0 | -32.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -88.0 | -32.0 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 65.0 | 0.0 | 73.0 | -4.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 73.0 | -4.0 | 87.0 | -11.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 87.0 | -11.0 | 95.0 | -15.0 | -120.0 | 0.0 | 20.0 | 0.0 | 1200.0 |
| 95.0 | -15.0 | 125.0 | -30.0 | -110.0 | 0.0 | 15.0 | 0.0 | 600.0 |
| 125.0 | -30.0 | 130.0 | -35.0 | -95.0 | 0.0 | 15.0 | 0.0 | 100.0 |
| 30.0 | -11.0 | 37.0 | -14.5 | 123.0 | 20.0 | 16.0 | 1200.0 | 200.0 |
| 37.0 | -14.5 | 38.0 | -15.0 | -127.0 | 20.0 | 16.0 | 1200.0 | 200.0 |
| 38.0 | -15.0 | 68.0 | -30.0 | -127.0 | 15.0 | 16.0 | 600.0 | 200.0 |
| 68.0 | -30.0 | 78.0 | -35.0 | -127.0 | 15.0 | 16.0 | 100.0 | 200.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 78.0 | -35.0 | 130.0 | -35.0 | -127.0 | 15.0 | 16.0 | 100.0 | 200.0 |
| 130.0 | -35.0 | 9399.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 68.0 | -30.0 | 125.0 | -30.0 | -95.0 | 15.0 | 15.0 | 600.0 | 100.0 |
| 125.0 | -30.0 | 9399.0 | -30.0 | -70.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 38.0 | -15.0 | 95.0 | -15.0 | -110.0 | 20.0 | 15.0 | 1200.0 | 600.0 |
| 30.0 | -11.0 | 57.0 | -11.0 | 117.0 | 16.0 | 20.0 | 200.0 | 1200.0 |
| 57.0 | -11.0 | 87.0 | -11.0 | -120.0 | 16.0 | 20.0 | 200.0 | 1200.0 |
| 73.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -79.0 | -34.0 | 37.0 | -14.5 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |
| 37.0 | -14.5 | 57.0 | -11.0 | -120.0 | 20.0 | 20.0 | 1200.0 | 1200.0 |
| 57.0 | -11.0 | 73.0 | -4.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |

XT= 49.0 YT= -5.0 XB= 49.0 YB= -45.0

GRIDX= 70.0 GRIDY= 20.0 XMAX= 170.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.87 EFS= 1.47 H(X)= 100.00 G(Y)= 20.00 R= 56.81

THE MIN. EFS= 1.47 FS= 1.87 H(X)= 100.00 G(Y)= 20.00 R= 56.81

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| 9399.0 | -48.0 | 111.0 | -48.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 111.0 | -48.0 | -128.0 | 0.0 | 11.0 | 0.0 | 600.0 |
| 111.0 | -48.0 | 105.5 | -41.5 | -128.0 | 0.0 | 11.0 | 0.0 | 600.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | -128.0 | 0.0 | 11.0 | 0.0 | 600.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 86.0 | -37.0 | 79.0 | -34.0 | -127.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 79.0 | -34.0 | 74.0 | -32.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 74.0 | -32.0 | 67.0 | -29.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 100.0 | -39.5 | 88.0 | -32.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 88.0 | -32.0 | 85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 85.0 | -30.0 | 67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 67.0 | -29.0 | -49.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -49.0 | 0.0 | -65.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -65.0 | 0.0 | -73.0 | -4.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -73.0 | -4.0 | -87.0 | -11.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -87.0 | -11.0 | -95.0 | -15.0 | -120.0 | 0.0 | 20.0 | 0.0 | 1200.0 |
| -95.0 | -15.0 | -125.0 | -30.0 | -110.0 | 0.0 | 15.0 | 0.0 | 600.0 |
| -125.0 | -30.0 | -130.0 | -35.0 | -95.0 | 0.0 | 15.0 | 0.0 | 100.0 |
| -30.0 | -11.0 | -37.0 | -14.5 | 123.0 | 20.0 | 16.0 | 1200.0 | 200.0 |
| -37.0 | -14.5 | -38.0 | -15.0 | -127.0 | 20.0 | 16.0 | 1200.0 | 200.0 |
| -38.0 | -15.0 | -68.0 | -30.0 | -127.0 | 15.0 | 16.0 | 600.0 | 200.0 |
| -68.0 | -30.0 | -78.0 | -35.0 | -127.0 | 15.0 | 16.0 | 100.0 | 200.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -78.0 | -35.0 | -130.0 | -35.0 | -127.0 | 15.0 | 16.0 | 100.0 | 200.0 |
| -130.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -68.0 | -30.0 | -125.0 | -30.0 | -95.0 | 15.0 | 15.0 | 600.0 | 100.0 |
| -125.0 | -30.0 | -9399.0 | -30.0 | -70.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -38.0 | -15.0 | -95.0 | -15.0 | -110.0 | 20.0 | 15.0 | 1200.0 | 600.0 |
| -30.0 | -11.0 | -57.0 | -11.0 | 117.0 | 16.0 | 20.0 | 200.0 | 1200.0 |
| -57.0 | -11.0 | -87.0 | -11.0 | -120.0 | 16.0 | 20.0 | 200.0 | 1200.0 |
| -73.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | -5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 79.0 | -34.0 | -37.0 | -14.5 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |
| -37.0 | -14.5 | -57.0 | -11.0 | -120.0 | 20.0 | 20.0 | 1200.0 | 1200.0 |
| -57.0 | -11.0 | -73.0 | -4.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |

XT= -49.0 YT= -5.0 XB= -49.0 YB= -45.0

GRIDX= 10.0 GRIDY= 10.0 XMAX= 140.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.73 EFS= 1.40 H(X)= 20.00 G(Y)= 60.00 R= 94.80

THE MIN. EFS= 1.39 FS= 1.75 H(X)= 20.00 G(Y)= 50.00 R= 98.25

SBU 109.433 UNTS.

RUN COMPLETE.

```
OLD,SLOPE2
 READY.
FTN
 READY.
GET,TAPE5=JMH37
 READY.
RUN

 84/08/07. 10.04.51.
PROGRAM   SLOPE2

110 JSF ASH POND "J", R-APP,@STA.41+75,4:1 SLOPE,R HIGH POOL
 (EROF=       .05     DEPTH OF ROCK=   49.0 FT)
```

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| -9399.0 | -32.0 | -88.0 | -32.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -111.0 | -48.0 | -128.0 | 0.0 | 11.0 | 0.0 | 600.0 |
| -111.0 | -48.0 | -105.5 | -41.5 | -128.0 | 0.0 | 11.0 | 0.0 | 600.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 11.0 | 0.0 | 600.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -86.0 | -37.0 | -79.0 | -34.0 | -127.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| -79.0 | -34.0 | -74.0 | -32.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| -74.0 | -32.0 | -67.0 | -29.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| -100.0 | -39.5 | -88.0 | -32.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -88.0 | -32.0 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 49.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 49.0 | 0.0 | 65.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 65.0 | 0.0 | 73.0 | -4.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 73.0 | -4.0 | 87.0 | -11.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 87.0 | -11.0 | 95.0 | -15.0 | -120.0 | 0.0 | 20.0 | 0.0 | 1200.0 |
| 95.0 | -15.0 | 125.0 | -30.0 | -110.0 | 0.0 | 15.0 | 0.0 | 600.0 |
| 125.0 | -30.0 | 130.0 | -35.0 | -95.0 | 0.0 | 15.0 | 0.0 | 100.0 |
| 30.0 | -11.0 | 37.0 | -14.5 | 123.0 | 20.0 | 16.0 | 1200.0 | 200.0 |
| 37.0 | -14.5 | 38.0 | -15.0 | -127.0 | 20.0 | 16.0 | 1200.0 | 200.0 |
| 38.0 | -15.0 | 68.0 | -30.0 | -127.0 | 15.0 | 16.0 | 600.0 | 200.0 |
| 68.0 | -30.0 | 78.0 | -35.0 | -127.0 | 15.0 | 16.0 | 100.0 | 200.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 78.0 | -35.0 | 130.0 | -35.0 | -127.0 | 15.0 | 16.0 | 100.0 | 200.0 |
| 130.0 | -35.0 | 9399.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 68.0 | -30.0 | 125.0 | -30.0 | -95.0 | 15.0 | 15.0 | 600.0 | 100.0 |
| 125.0 | -30.0 | 9399.0 | -30.0 | -70.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 38.0 | -15.0 | 95.0 | -15.0 | -110.0 | 20.0 | 15.0 | 1200.0 | 600.0 |
| 30.0 | -11.0 | 57.0 | -11.0 | 117.0 | 16.0 | 20.0 | 200.0 | 1200.0 |
| 57.0 | -11.0 | 87.0 | -11.0 | -120.0 | 16.0 | 20.0 | 200.0 | 1200.0 |
| 73.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -79.0 | -34.0 | -67.0 | -32.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |
| -67.0 | -32.0 | 37.0 | -14.5 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |
| 37.0 | -14.5 | 57.0 | -11.0 | -120.0 | 20.0 | 20.0 | 1200.0 | 1200.0 |
| 57.0 | -11.0 | 73.0 | -4.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |
| -88.0 | -32.0 | -74.0 | -32.0 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |

XT= 49.0  YT= -5.0  XB= 49.0  YB= -45.0

GRIDX= 70.0  GRIDY= 20.0  XMAX= 170.0  YMAX= 100.0

INCX= 10  INCY= 10  INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.87  EFS= 1.47  H(X)= 100.00  G(Y)= 20.00  R= 56.81

THE MIN. EFS= 1.47  FS= 1.87  H(X)= 100.00  G(Y)= 20.00  R= 56.81

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| 9399.0 | -32.0 | 88.0 | -32.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 111.0 | -48.0 | -128.0 | 0.0 | 11.0 | 0.0 | 600.0 |
| 111.0 | -48.0 | 105.5 | -41.5 | -128.0 | 0.0 | 11.0 | 0.0 | 600.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | -128.0 | 0.0 | 11.0 | 0.0 | 600.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 86.0 | -37.0 | 79.0 | -34.0 | -127.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 79.0 | -34.0 | 74.0 | -32.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 74.0 | -32.0 | 67.0 | -29.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 100.0 | -39.5 | 88.0 | -32.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 88.0 | -32.0 | 85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 85.0 | -30.0 | 67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 67.0 | -29.0 | -49.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -49.0 | 0.0 | -65.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -65.0 | 0.0 | -73.0 | -4.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -73.0 | -4.0 | -87.0 | -11.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -87.0 | -11.0 | -95.0 | -15.0 | -120.0 | 0.0 | 20.0 | 0.0 | 1200.0 |
| -95.0 | -15.0 | -125.0 | -30.0 | -110.0 | 0.0 | 15.0 | 0.0 | 600.0 |
| -125.0 | -30.0 | -130.0 | -35.0 | -95.0 | 0.0 | 15.0 | 0.0 | 100.0 |
| -30.0 | -11.0 | -37.0 | -14.5 | 123.0 | 20.0 | 16.0 | 1200.0 | 200.0 |
| -37.0 | -14.5 | -38.0 | -15.0 | -127.0 | 20.0 | 16.0 | 1200.0 | 200.0 |
| -38.0 | -15.0 | -68.0 | -30.0 | -127.0 | 15.0 | 16.0 | 600.0 | 200.0 |
| -68.0 | -30.0 | -78.0 | -35.0 | -127.0 | 15.0 | 16.0 | 100.0 | 200.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -78.0 | -35.0 | -130.0 | -35.0 | -127.0 | 15.0 | 16.0 | 100.0 | 200.0 |
| -130.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -68.0 | -30.0 | -125.0 | -30.0 | -95.0 | 15.0 | 15.0 | 600.0 | 100.0 |
| -125.0 | -30.0 | -9399.0 | -30.0 | -70.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -38.0 | -15.0 | -95.0 | -15.0 | -110.0 | 20.0 | 15.0 | 1200.0 | 600.0 |
| -30.0 | -11.0 | -57.0 | -11.0 | 117.0 | 16.0 | 20.0 | 200.0 | 1200.0 |
| -57.0 | -11.0 | -87.0 | -11.0 | -120.0 | 16.0 | 20.0 | 200.0 | 1200.0 |
| -73.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | -5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 79.0 | -34.0 | 67.0 | -32.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |
| 67.0 | -32.0 | -37.0 | -14.5 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |
| -37.0 | -14.5 | -57.0 | -11.0 | -120.0 | 20.0 | 20.0 | 1200.0 | 1200.0 |
| -57.0 | -11.0 | -73.0 | -4.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |
| 88.0 | -32.0 | 74.0 | -32.0 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |

XT= -49.0 YT= -5.0 XB= -49.0 YB= -45.0

GRIDX= 10.0 GRIDY= 10.0 XMAX= 140.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.73 EFS= 1.40 H(X)= 20.00 G(Y)= 60.00 R= 94.80

THE MIN. EFS= 1.39 FS= 1.75 H(X)= 20.00 G(Y)= 50.00 R= 98.25

SBU 112.286 UNTS.

RUN COMPLETE.

```
OLD,SLOPE2
 READY.
FTN
 READY.
GET,TAPE5=JMH34
 READY.
RUN

 84/08/03. 11.13.31.
PROGRAM   SLOPE2

110 JSF ASH POND "J", R-EFF,@STA.41+75,3:1 SLOPE
 (EROF=       .05     DEPTH OF ROCK=   49.0 FT)
```

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -67.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 20.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 20.0 | 0.0 | 36.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 36.0 | 0.0 | 44.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 44.0 | -4.0 | 56.0 | -10.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 56.0 | -10.0 | 66.0 | -15.0 | -115.0 | 0.0 | 31.0 | 0.0 | 0.0 |
| 66.0 | -15.0 | 96.0 | -30.0 | -105.0 | 0.0 | 24.0 | 0.0 | 0.0 |
| 96.0 | -30.0 | 98.0 | -35.0 | -95.0 | 0.0 | 20.0 | 0.0 | 0.0 |
| 28.0 | -10.0 | 56.0 | -10.0 | -115.0 | 27.0 | 31.0 | 0.0 | 0.0 |
| 28.0 | -10.0 | 38.0 | -15.0 | -127.0 | 31.0 | 27.0 | 0.0 | 0.0 |
| 38.0 | -15.0 | 68.0 | -30.0 | -127.0 | 24.0 | 27.0 | 0.0 | 0.0 |
| 68.0 | -30.0 | 78.0 | -35.0 | -127.0 | 20.0 | 27.0 | 0.0 | 0.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 78.0 | -35.0 | 98.0 | -35.0 | -127.0 | 20.0 | 27.0 | 0.0 | 0.0 |
| 98.0 | -35.0 | 9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 68.0 | -30.0 | 96.0 | -30.0 | -95.0 | 24.0 | 20.0 | 0.0 | 0.0 |
| 96.0 | -30.0 | 9399.0 | -30.0 | -70.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 38.0 | -15.0 | 66.0 | -15.0 | -105.0 | 31.0 | 24.0 | 0.0 | 0.0 |
| 44.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | 28.0 | -10.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 28.0 | -10.0 | 44.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |

XT= 30.0 YT= -5.0 XB= 30.0 YB= -45.0

GRIDX= 40.0 GRIDY= 20.0 XMAX= 140.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.00 EFS= .79 H(X)= 90.00 G(Y)= 50.00 R= 81.40

THE MIN. EFS= .77 FS= 1.01 H(X)= 100.00 G(Y)= 60.00 R= 95.53

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| 9399.0 | -46.5 | 110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 67.0 | -29.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 100.0 | -39.5 | 85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 85.0 | -30.0 | 67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 67.0 | -29.0 | -20.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -20.0 | 0.0 | -36.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -36.0 | 0.0 | -44.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -44.0 | -4.0 | -56.0 | -10.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -56.0 | -10.0 | -66.0 | -15.0 | -115.0 | 0.0 | 31.0 | 0.0 | 0.0 |
| -66.0 | -15.0 | -96.0 | -30.0 | -105.0 | 0.0 | 24.0 | 0.0 | 0.0 |
| -96.0 | -30.0 | -98.0 | -35.0 | -95.0 | 0.0 | 20.0 | 0.0 | 0.0 |
| -28.0 | -10.0 | -56.0 | -10.0 | -115.0 | 27.0 | 31.0 | 0.0 | 0.0 |
| -28.0 | -10.0 | -38.0 | -15.0 | -127.0 | 31.0 | 27.0 | 0.0 | 0.0 |
| -38.0 | -15.0 | -68.0 | -30.0 | -127.0 | 24.0 | 27.0 | 0.0 | 0.0 |
| -68.0 | -30.0 | -78.0 | -35.0 | -127.0 | 20.0 | 27.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -98.0 | -35.0 | -127.0 | 20.0 | 27.0 | 0.0 | 0.0 |
| -98.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -68.0 | -30.0 | -96.0 | -30.0 | -95.0 | 24.0 | 20.0 | 0.0 | 0.0 |
| -96.0 | -30.0 | -9399.0 | -30.0 | -70.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -38.0 | -15.0 | -66.0 | -15.0 | -105.0 | 31.0 | 24.0 | 0.0 | 0.0 |
| -44.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | -5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 67.0 | -29.0 | -28.0 | -10.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| -28.0 | -10.0 | -44.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 0.0 |

XT= -20.0 YT= -5.0 XB= -20.0 YB= -45.0

GRIDX= 10.0 GRIDY= 10.0 XMAX= 140.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.03 EFS= .86 H(X)= 80.00 G(Y)= 90.00 R= 137.94

THE MIN. EFS= .86 FS= 1.03 H(X)= 80.00 G(Y)= 90.00 R= 137.94

SBU 121.738 UNTS.

RUN COMPLETE.

84/08/08. 13.12.50.
PROGRAM SLOPE2

110 JSF ASH POND "J",R-BAR,@STA.41+75,LOW W.T. WITH DRY STACKING,HIGH PO
(ERQF= .05 DEPTH OF ROCK= 49.0 FT)

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -32.0 | -88.0 | -32.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -88.0 | -32.0 | -74.0 | -32.0 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -105.5 | -41.5 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -74.0 | -32.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -88.0 | -32.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -88.0 | -32.0 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -74.0 | -32.0 | -67.0 | -29.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | -8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -8.0 | 0.0 | 8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 8.0 | 0.0 | 72.0 | -32.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 72.0 | -32.0 | 78.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 78.0 | -35.0 | 9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 72.0 | -32.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -74.0 | -32.0 | 72.0 | -32.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 8.0 YT= -5.0 XB= -40.0 YB= -35.0

GRIDX= 20.0 GRIDY= 20.0 XMAX= 100.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.03 EFS= .89 H(X)= 70.00 G(Y)= 30.00 R= 71.21

THE MIN. EFS= .89 FS= 1.03 H(X)= 70.00 G(Y)= 30.00 R= 71.21

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| 9399.0 | -32.0 | 88.0 | -32.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 88.0 | -32.0 | 74.0 | -32.0 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 105.5 | -41.5 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 74.0 | -32.0 | -127.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 100.0 | -39.5 | 88.0 | -32.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 88.0 | -32.0 | 85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 85.0 | -30.0 | 67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 74.0 | -32.0 | 67.0 | -29.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 67.0 | -29.0 | 8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 8.0 | 0.0 | -8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -8.0 | 0.0 | -72.0 | -32.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -72.0 | -32.0 | -78.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -72.0 | -32.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | -5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 74.0 | -32.0 | -72.0 | -32.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 8.0 YT= -5.0 XB= -70.0 YB= -45.0

GRIDX= 25.0 GRIDY= 5.0 XMAX= 120.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.08 EFS= .92 H(X)= 105.00 G(Y)= 85.00 R= 132.33

THE MIN. EFS= .92 FS= 1.08 H(X)= 105.00 G(Y)= 85.00 R= 132.33

CBU 61.178 UNTS.

RUN COMPLETE.

84/08/08. 11.25.31.
PROGRAM SLOPE2

110 JSF ASH POND "J",R-APP,@STA.41+75,LOW W.T. WITH DRY STACKING,HIGH PO
(EROF= .05 DEPTH OF ROCK= 49.0 FT)

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| -9399.0 | -32.0 | -88.0 | -32.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -88.0 | -32.0 | -74.0 | -32.0 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -105.5 | -41.5 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -86.0 | -37.0 | -74.0 | -32.0 | -127.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| -100.0 | -39.5 | -88.0 | -32.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -88.0 | -32.0 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -74.0 | -32.0 | -67.0 | -29.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -67.0 | -29.0 | -8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -8.0 | 0.0 | 8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 8.0 | 0.0 | 72.0 | -32.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 72.0 | -32.0 | 78.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 78.0 | -35.0 | 9399.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 72.0 | -32.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | 5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -74.0 | -32.0 | 72.0 | -32.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |

XT= 8.0 YT= -5.0 XB= -40.0 YB= -35.0

GRIDX= 20.0 GRIDY= 20.0 XMAX= 100.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.12 EFS= .98 H(X)= 50.00 G(Y)= 30.00 R= 64.68

THE MIN. EFS= .98 FS= 1.12 H(X)= 50.00 G(Y)= 30.00 R= 64.68

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| 9399.0 | -32.0 | 88.0 | -32.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 88.0 | -32.0 | 74.0 | -32.0 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 105.5 | -41.5 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 86.0 | -37.0 | 74.0 | -32.0 | -127.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 100.0 | -39.5 | 88.0 | -32.0 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 88.0 | -32.0 | 85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 85.0 | -30.0 | 67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 74.0 | -32.0 | 67.0 | -29.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 67.0 | -29.0 | 8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 8.0 | 0.0 | -8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -8.0 | 0.0 | -72.0 | -32.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -72.0 | -32.0 | -78.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -78.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -72.0 | -32.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | -5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 74.0 | -32.0 | -72.0 | -32.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |

XT= 8.0 YT= -5.0 XB= -70.0 YB= -45.0

GRIDX= 25.0 GRIDY= 5.0 XMAX= 120.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.16 EFS= 1.01 H(X)= 55.00 G(Y)= 15.00 R= 51.09

THE MIN. EFS= 1.01 FS= 1.16 H(X)= 55.00 G(Y)= 15.00 R= 51.09

SBU 60.848 UNTS.

RUN COMPLETE.

```
SBU       20.900 UNTS.

 RUN COMPLETE.
OLD,JMH30
 READY.
XED
 XEDIT 3.1.00
?? B
430 0,0
?? M-2
410 -50,-26,-50,-70
?? M
  410 -50,-26,-50,-70
?      #        #
410 50,-26,50,-70
?? Q,,RL
JMH30    REPLACED
JMH30    IS A LOCAL FILE

SBU       0.301 UNTS.
 READY.
OLD,SLOPE2
 READY.
FTN
 READY.
GET,TAPE5=JMH30
 READY.
RUN

 84/07/31. 13.47.06.
PROGRAM   SLOPE2

110 JSF ASH POND "J", R TEST @STA.41+75,RIPRAP1080BERM10'@1065
 (ERQF=        .05      DEPTH OF ROCK=    49.0 FT)
```

DAWSON CREEK

NORMAL

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -132.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -132.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| -9399.0 | -46.5 | -128.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -128.5 | -46.5 | -110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -86.0 | -37.0 | -60.0 | -26.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| -132.0 | -49.0 | -128.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -128.5 | -46.5 | -117.0 | -39.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -117.0 | -39.0 | -107.0 | -39.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -107.0 | -39.0 | -86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -86.0 | -25.0 | -58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -60.0 | -26.0 | -58.0 | -25.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| -58.0 | -25.0 | -8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -8.0 | 0.0 | 8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 8.0 | 0.0 | 16.0 | -4.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 16.0 | -4.0 | 78.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 78.0 | -35.0 | 9399.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 16.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -82.0 | -37.0 | 125.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -82.0 | -37.0 | 5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -110.0 | -46.5 | -82.0 | -37.0 | -128.0 | 11.0 | 11.0 | 600.0 | 600.0 |
| -82.0 | -37.0 | 16.0 | -4.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |

XT=  8.0  YT= -10.0  XB= -40.0  YB= -35.0

GRIDX=  50.0  GRIDY=  25.0  XMAX=  100.0  YMAX=  75.0

INCX= 10  INCY= 10  INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS  0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS  0.00

TEST POINTS

THE MIN. FS=  1.45  EFS=  1.18  H(X)=  60.00  G(Y)=  35.00  R=  68.78

THE MIN. EFS=  1.18  FS=  1.45  H(X)=  60.00  G(Y)=  35.00  R=  68.78

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9999.0 | -49.0 | 132.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 132.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9999.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| 9999.0 | -46.5 | 128.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 128.5 | -46.5 | 110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 105.5 | -41.5 | 100.0 | -38.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 100.0 | -38.5 | 86.0 | -37.0 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 86.0 | -37.0 | 60.0 | -26.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 132.0 | -49.0 | 128.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 128.5 | -46.5 | 112.0 | -39.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 112.0 | -39.0 | 107.0 | -39.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 107.0 | -39.0 | 86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 86.0 | -25.0 | 58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 60.0 | -26.0 | 58.0 | -25.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 58.0 | -25.0 | 8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 8.0 | 0.0 | -8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -8.0 | 0.0 | -16.0 | -4.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -16.0 | -4.0 | -78.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -84.0 | -38.0 | -9999.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -9999.0 | -35.0 | -9999.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -16.0 | -4.0 | -9999.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 82.0 | -37.0 | 125.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 82.0 | -37.0 | -5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 110.0 | -46.5 | 82.0 | -37.0 | -128.0 | 11.0 | 11.0 | 600.0 | 600.0 |
| 82.0 | -37.0 | -16.0 | -4.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |

XT= 50.0 YT= -26.0 XB= 50.0 YB= -70.0

GRIDX= 10.0 GRIDY= 10.0 XMAX= 90.0 YMAX= 60.0

INCX= 10 INCY= 10 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.04 EFS= .89 H(X)= 40.00 G(Y)= 10.00 R= 42.3

THE MIN. EFS= .89 FS= 1.04 H(X)= 40.00 G(Y)= 10.00 R= 42.3

CPU 74.848 UNITS.

RUN COMPLETE.

```
READY.
GET SLOPE5=JMH33
READY.
RUN

 84/08/01.  09.25.14.
PROGRAM    SLOPE2

110 JSF ASH POND "J", R TEST @STA.41+75,RIPRAP 1080,28'WIDE
 (ERQF=        .05      DEPTH OF ROCK=    49.0 FT)
```

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -122.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -122.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| -9399.0 | -46.5 | -118.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -118.5 | -46.5 | -110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -86.0 | -37.0 | -60.0 | -26.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| -122.0 | -49.0 | -118.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -118.5 | -46.5 | -86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -86.0 | -25.0 | -58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -60.0 | -26.0 | -58.0 | -25.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -58.0 | -25.0 | -8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -8.0 | 0.0 | 8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 8.0 | 0.0 | 16.0 | -4.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 16.0 | -4.0 | 78.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 78.0 | -35.0 | 9399.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 16.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -82.0 | -37.0 | 125.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -82.0 | -37.0 | 5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -110.0 | -46.5 | -82.0 | -37.0 | -128.0 | 11.0 | 11.0 | 600.0 | 600.0 |
| -82.0 | -37.0 | 16.0 | -4.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |

XT=  8.0  YT=  -5.0  XB=  -40.0  YB=  -35.0

GRIDX=  20.0  GRIDY=  20.0  XMAX=  100.0  YMAX=  100.0

INCX= 10  INCY= 10  INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS  0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS  0.00

TEST POINTS

THE MIN. FS=  1.42  EFS=  1.14  H(X)=  50.00  G(Y)=  30.00  R=  64.68

THE MIN. EFS=  1.14  FS=  1.42  H(X)=  50.00  G(Y)=  30.00  R=  64.68

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 122.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 122.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| 9399.0 | -46.5 | 118.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 118.5 | -46.5 | 110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 86.0 | -37.0 | 60.0 | -26.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 122.0 | -49.0 | 118.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 118.5 | -46.5 | 86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 86.0 | -25.0 | 58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 60.0 | -26.0 | 58.0 | -25.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 58.0 | -25.0 | 8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 8.0 | 0.0 | -8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -8.0 | 0.0 | -16.0 | -4.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -16.0 | -4.0 | -78.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -78.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -16.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 82.0 | -37.0 | 125.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 82.0 | -37.0 | -5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 110.0 | -46.5 | 82.0 | -37.0 | -128.0 | 11.0 | 11.0 | 600.0 | 600.0 |
| 82.0 | -37.0 | -16.0 | -4.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |

XT= 8.0 YT= -5.0 XB= -70.0 YB= -45.0

GRIDX= 25.0 GRIDY= 5.0 XMAX= 120.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.06 EFS= .91 H(X)= 45.00 G(Y)= 25.00 R= 57.64

THE MIN. EFS= .91 FS= 1.07 H(X)= 35.00 G(Y)= 5.00 R= 38.80

SBU 78.976 UNTS.

RUN COMPLETE.

```
GET,TAPE5=JMH32
 READY.
RUN
 84/08/01. 08.52.20.
PROGRAM    SLOPE2

110 JSF ASH POND "J", R TEST @STA.41+75,RIPRAP 1076,25'WIDE
 (ERQF=        .05      DEPTH OF ROCK=    49.0 FT)


                THESE ARE THE INPUT DATA LINES

     X1        Y1        X2        Y2         W         F2        F1        C2        C1

-9399.0     -49.0    -122.0     -49.0  -1000.0       0.0     100.0       0.0    9999.0
 -122.0     -49.0    -112.0     -49.0  -1000.0      35.0     100.0       0.0    9999.0
 -112.0     -49.0    9399.0     -49.0  -1000.0      11.0     100.0     600.0    9999.0
-9399.0     -46.5    -118.5     -46.5    -62.4       0.0       0.0       0.0       0.0
 -118.5     -46.5    -110.0     -46.5   -135.0      35.0      35.0       0.0       0.0
 -112.0     -49.0    -110.0     -46.5   -128.0      35.0      11.0       0.0     600.0
 -110.0     -46.5    -105.5     -41.5    125.0      35.0      11.0       0.0     600.0
 -105.5     -41.5    -100.0     -39.5    125.0      35.0      11.0       0.0     600.0
 -100.0     -39.5     -86.0     -37.0    125.0      35.0      11.0       0.0     600.0
  -86.0     -37.0     -67.0     -29.0    123.0      35.0      16.0       0.0     200.0
 -122.0     -49.0    -118.5     -46.5   -135.0       0.0      35.0       0.0       0.0
 -118.5     -46.5     -92.0     -29.0    135.0       0.0      35.0       0.0       0.0
  -92.0     -29.0     -67.0     -29.0    135.0       0.0      35.0       0.0       0.0
  -67.0     -29.0     -60.0     -26.0    123.0       0.0      16.0       0.0     200.0
  -60.0     -26.0      -8.0       0.0    123.0       0.0      16.0       0.0     200.0
   -8.0       0.0       8.0       0.0    123.0       0.0      16.0       0.0     200.0
    8.0       0.0      16.0      -4.0    123.0       0.0      16.0       0.0     200.0
   16.0      -4.0      78.0     -35.0   -127.0       0.0      16.0       0.0     200.0
   78.0     -35.0      84.0     -38.0   -128.0      16.0      11.0     200.0     600.0
   84.0     -38.0    9399.0     -38.0   -128.0      16.0      11.0     200.0     600.0
   78.0     -35.0    9399.0     -35.0   -127.0       0.0      16.0       0.0     200.0
   16.0      -4.0    9399.0      -4.0    -62.4       0.0       0.0       0.0       0.0
  -86.0     -37.0     -82.0     -37.0    125.0      16.0      11.0     200.0     600.0
  -82.0     -37.0       5.0     -35.0   -128.0      16.0      11.0     200.0     600.0
    5.0     -35.0      78.0     -35.0   -128.0      16.0      11.0     200.0     600.0
 -110.0     -46.5     -82.0     -37.0   -128.0      11.0      11.0     600.0     600.0
  -82.0     -37.0      16.0      -4.0   -127.0      16.0      16.0     200.0     200.0


XT=     8.0      YT=    -5.0      XB=   -40.0      YB=   -35.0

GRIDX=    50.0      GRIDY=    25.0      XMAX=   100.0      YMAX=    75.0

INCX= 10      INCY= 10      INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS     0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS     0.00


                TEST POINTS


   THE MIN. FS=   1.44   EFS=   1.15   H(X)=  60.00   G(Y)=  55.00   R=  89.41

   THE MIN. EFS=   1.15   FS=   1.44   H(X)=  60.00   G(Y)=  55.00   R=  89.41
```

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 122.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 122.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| 9399.0 | -46.5 | 118.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 118.5 | -46.5 | 110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 86.0 | -37.0 | 67.0 | -29.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 122.0 | -49.0 | 118.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 118.5 | -46.5 | 92.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 92.0 | -29.0 | 67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 67.0 | -29.0 | 60.0 | -26.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 60.0 | -26.0 | 8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 8.0 | 0.0 | -8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -8.0 | 0.0 | -16.0 | -4.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -16.0 | -4.0 | -78.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -78.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -16.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 82.0 | -37.0 | 125.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 82.0 | -37.0 | -5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 110.0 | -46.5 | 82.0 | -37.0 | -128.0 | 11.0 | 11.0 | 600.0 | 600.0 |
| 82.0 | -37.0 | -16.0 | -4.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |

XT= 8.0 YT= -5.0 XB= -70.0 YB= -45.0

GRIDX= 10.0 GRIDY= 10.0 XMAX= 80.0 YMAX= 80.0

INCX= 10 INCY= 10 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= .96 EFS= .83 H(X)= 50.00 G(Y)= 30.00 R= 64.68

THE MIN. EFS= .83 FS= .97 H(X)= 40.00 G(Y)= 20.00 R= 55.62

SBU 78.122 UNTS.

RUN COMPLETE.

RUN

84/ 2/31. 14.06.53.
PROGRAM SLOPE2

110 JSF ASH POND "J", R TEST @STA.41+75,RIPRAP1080,BERM10'@1070
(EROF= .05 DEPTH OF ROCK= 49.0 FT)

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -132.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -132.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| -9399.0 | -46.5 | -128.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -128.5 | -46.5 | -110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -86.0 | -37.0 | -60.0 | -26.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| -132.0 | -49.0 | -128.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -128.5 | -46.5 | -111.0 | -35.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -111.0 | -35.0 | -101.0 | -35.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -101.0 | -35.0 | -86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -86.0 | -25.0 | -58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -60.0 | -26.0 | -58.0 | -25.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| -58.0 | -25.0 | -8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -8.0 | 0.0 | 8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 8.0 | 0.0 | 16.0 | -4.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 16.0 | -4.0 | 78.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 78.0 | -35.0 | 9399.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 16.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -82.0 | -37.0 | 125.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -82.0 | -37.0 | 5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -110.0 | -46.5 | -82.0 | -37.0 | -128.0 | 11.0 | 11.0 | 600.0 | 600.0 |
| -82.0 | -37.0 | 16.0 | -4.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |

XT= 8.0 YT= -10.0 XB= -40.0 YB= -35.0

GRIDX= 50.0 GRIDY= 25.0 XMAX= 100.0 YMAX= 75.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.45 EFS= 1.18 H(X)= 60.00 G(Y)= 35.00 R= 68.78

THE MIN. EFS= 1.18 FS= 1.45 H(X)= 60.00 G(Y)= 35.00 R= 68.78

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 132.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 132.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| 9399.0 | -46.5 | 128.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 128.5 | -46.5 | 110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 86.0 | -37.0 | 60.0 | -26.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 132.0 | -49.0 | 128.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 128.5 | -46.5 | 111.0 | -35.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 111.0 | -35.0 | 101.0 | -35.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 101.0 | -35.0 | 86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 86.0 | -25.0 | 58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 60.0 | -26.0 | 58.0 | -25.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 58.0 | -25.0 | 8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 8.0 | 0.0 | -8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -8.0 | 0.0 | -16.0 | -4.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -16.0 | -4.0 | -78.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -78.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -16.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 82.0 | -37.0 | 125.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 82.0 | -37.0 | -5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 110.0 | -46.5 | 82.0 | -37.0 | -128.0 | 11.0 | 11.0 | 600.0 | 600.0 |
| 82.0 | -37.0 | -16.0 | -4.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |

XT= 50.0 YT= -26.0 XB= 50.0 YB= -70.0

GRIDX= 10.0 GRIDY= 10.0 XMAX= 80.0 YMAX= 80.0

INCX= 10 INCY= 10 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.04 EFS= .89 H(X)= 40.00 G(Y)= 10.00 R= 42.37

THE MIN. EFS= .89 FS= 1.04 H(X)= 40.00 G(Y)= 10.00 R= 42.37

SBU 74.300 UNTS.

RUN COMPLETE.

```
FTN77
READY.
GET,TAPE5=JMH30
 READY.
RUN

 84/07/31. 08.57.26.
PROGRAM   SLOPE2

110 JSF ASH POND "J", R TEST @STA.41+75,RIPRAP1080BERM10'@1065
 (ERQF=       .05     DEPTH OF ROCK=   49.0 FT)
```

FAILURE THRU THE BERM

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -132.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -132.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| -9399.0 | -46.5 | -128.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -128.5 | -46.5 | -110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -86.0 | -37.0 | -60.0 | -26.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| -132.0 | -49.0 | -128.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -128.5 | -46.5 | -117.0 | -39.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -117.0 | -39.0 | -107.0 | -39.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -107.0 | -39.0 | -86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -86.0 | -25.0 | -58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -60.0 | -26.0 | -58.0 | -25.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| -58.0 | -25.0 | -8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -8.0 | 0.0 | 8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 8.0 | 0.0 | 16.0 | -4.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 16.0 | -4.0 | 78.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 78.0 | -35.0 | 9399.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 16.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -82.0 | -37.0 | 125.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -82.0 | -37.0 | 5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -110.0 | -46.5 | -82.0 | -37.0 | -128.0 | 11.0 | 11.0 | 600.0 | 600.0 |
| -82.0 | -37.0 | 16.0 | -4.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |

XT= 8.0 YT= -10.0 XB= -40.0 YB= -35.0

GRIDX= 50.0 GRIDY= 25.0 XMAX= 100.0 YMAX= 75.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.45 EFS= 1.18 H(X)= 60.00 G(Y)= 35.00 R= 68.78

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 132.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 132.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| 9399.0 | -46.5 | 128.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 128.5 | -46.5 | 110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 86.0 | -37.0 | 60.0 | -26.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 132.0 | -49.0 | 128.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 128.5 | -46.5 | 117.0 | -39.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 117.0 | -39.0 | 107.0 | -39.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 107.0 | -39.0 | 86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 86.0 | -25.0 | 58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 60.0 | -26.0 | 58.0 | -25.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 58.0 | -25.0 | 8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 8.0 | 0.0 | -8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -8.0 | 0.0 | -16.0 | -4.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -16.0 | -4.0 | -78.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -78.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -16.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 82.0 | -37.0 | 125.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 82.0 | -37.0 | -5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 110.0 | -46.5 | 82.0 | -37.0 | -128.0 | 11.0 | 11.0 | 600.0 | 600.0 |
| 82.0 | -37.0 | -16.0 | -4.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |

XT= 115.0 YT= -41.0 XB= 115.0 YB= -51.0

GRIDX= 70.0 GRIDY= 70.0 XMAX= 120.0 YMAX= 130.0

INCX= 10 INCY= 10 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.27 EFS= 1.08 H(X)= 90.00 G(Y)= 90.00 R= 138.37

THE MIN. EFS= 1.08 FS= 1.27 H(X)= 90.00 G(Y)= 100.00 R= 148.21

SBU 31.662 UNTS.

RUN COMPLETE.

```
SBU        0.312 UNTS.
 READY.
OLD,SLOPE2
 READY.
FTN
 READY.
GET,TAPE5=JMH30
 READY.
RUN

 84/07/31.  09.10.29.
PROGRAM    SLOPE2

110 JSF ASH POND "J", R TEST @STA.41+75,RIPRAP1080BERM10'@1065
 (ERQF=          .05      DEPTH OF ROCK=    49.0 FT)  FAILURE ABOVE THE BERM

                    THESE ARE THE INPUT DATA LINES

     X1         Y1         X2         Y2         W          F2         F1         C2         C1

-9399.0     -49.0     -132.0     -49.0   -1000.0        0.0      100.0        0.0     9999.0
 -132.0     -49.0     -112.0     -49.0   -1000.0       35.0      100.0        0.0     9999.0
 -112.0     -49.0     9399.0     -49.0   -1000.0       11.0      100.0      600.0     9999.0
-9399.0     -46.5     -128.5     -46.5     -62.4        0.0        0.0        0.0        0.0
 -128.5     -46.5     -110.0     -46.5    -135.0       35.0       35.0        0.0        0.0
 -112.0     -49.0     -110.0     -46.5    -128.0       35.0       11.0        0.0      600.0
 -110.0     -46.5     -105.5     -41.5     125.0       35.0       11.0        0.0      600.0
 -105.5     -41.5     -100.0     -39.5     125.0       35.0       11.0        0.0      600.0
 -100.0     -39.5      -86.0     -37.0     125.0       35.0       11.0        0.0      600.0
  -86.0     -37.0      -60.0     -26.0     123.0       35.0       16.0        0.0      200.0
 -132.0     -49.0     -128.5     -46.5    -135.0        0.0       35.0        0.0        0.0
 -128.5     -46.5     -117.0     -39.0     135.0        0.0       35.0        0.0        0.0
 -117.0     -39.0     -107.0     -39.0     135.0        0.0       35.0        0.0        0.0
 -107.0     -39.0      -86.0     -25.0     135.0        0.0       35.0        0.0        0.0
  -86.0     -25.0      -58.0     -25.0     135.0        0.0       35.0        0.0        0.0
  -60.0     -26.0      -58.0     -25.0     123.0       35.0       16.0        0.0      200.0
  -58.0     -25.0       -8.0       0.0     123.0        0.0       16.0        0.0      200.0
   -8.0       0.0        8.0       0.0     123.0        0.0       16.0        0.0      200.0
    8.0       0.0       16.0      -4.0     123.0        0.0       16.0        0.0      200.0
   16.0      -4.0       78.0     -35.0    -127.0        0.0       16.0        0.0      200.0
   78.0     -35.0       84.0     -38.0    -128.0       16.0       11.0      200.0      600.0
   84.0     -38.0     9399.0     -38.0    -128.0       16.0       11.0      200.0      600.0
   78.0     -35.0     9399.0     -35.0    -127.0        0.0       16.0        0.0      200.0
   16.0      -4.0     9399.0      -4.0     -62.4        0.0        0.0        0.0        0.0
  -86.0     -37.0      -82.0     -37.0     125.0       16.0       11.0      200.0      600.0
  -82.0     -37.0        5.0     -35.0    -128.0       16.0       11.0      200.0      600.0
    5.0     -35.0       78.0     -35.0    -128.0       16.0       11.0      200.0      600.0
 -110.0     -46.5      -82.0     -37.0    -128.0       11.0       11.0      600.0      600.0
  -82.0     -37.0       16.0      -4.0    -127.0       16.0       16.0      200.0      200.0

XT=     8.0      YT=   -10.0      XB=   -40.0      YB=   -35.0

GRIDX=    50.0      GRIDY=    25.0      XMAX=   100.0      YMAX=    75.0

INCX= 10      INCY= 10      INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS     0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS     0.00

                    TEST POINTS


 THE MIN. FS=    1.45    EFS=    1.18    H(X)=   60.00    G(Y)=   35.00    R=   68.78

 THE MIN. EFS=    1.18    FS=    1.45    H(X)=   60.00    G(Y)=   35.00    R=   68.78
```

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 132.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 132.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| 9399.0 | -46.5 | 128.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 128.5 | -46.5 | 110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 86.0 | -37.0 | 60.0 | -26.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 132.0 | -49.0 | 128.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 128.5 | -46.5 | 117.0 | -39.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 117.0 | -39.0 | 107.0 | -39.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 107.0 | -39.0 | 86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 86.0 | -25.0 | 58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 60.0 | -26.0 | 58.0 | -25.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 58.0 | -25.0 | 8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 8.0 | 0.0 | -8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -8.0 | 0.0 | -16.0 | -4.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -16.0 | -4.0 | -78.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -84.0 | -38.0 | -9999.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -78.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -16.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 82.0 | -37.0 | 125.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 82.0 | -37.0 | -5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 110.0 | -46.5 | 82.0 | -37.0 | -128.0 | 11.0 | 11.0 | 600.0 | 600.0 |
| 82.0 | -37.0 | -16.0 | -4.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |

XT= 80.0 YT= -27.0 XB= 115.0 YB= -51.0

GRIDX= 10.0 GRIDY= 10.0 XMAX= 80.0 YMAX= 80.0

INCX= 10 INCY= 10 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.12 EFS= .96 H(X)= 50.00 G(Y)= 20.00 R= 55.77

THE MIN. EFS= .96 FS= 1.12 H(X)= 50.00 G(Y)= 20.00 R= 55.77

SBU 55.412 UNTS.

RUN COMPLETE.
BYE

THE ESTIMATED COST OF THIS JOB IS: $ 8.46

KXFDPDC LOG OFF 09.14.34.
SBU = 139.894
TID = 21956

IAF CONNECT TIME 00.27.32.
LOGGED OUT.

READY.
GET,TAPE5=JMH31
READY.
RUN

84/07/31. 11.18.20.
PROGRAM SLOPE2

110 JSF ASH POND "J". R TEST @STA.41+75,RIPRAP1080,BERM10'@1070
(EROF= .05 DEPTH OF ROCK= 49.0 FT) FAILURE ABOVE BERM

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -132.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -132.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| -9399.0 | -46.5 | -128.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -128.5 | -46.5 | -110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -86.0 | -37.0 | -60.0 | -26.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| -132.0 | -49.0 | -128.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -128.5 | -46.5 | -111.0 | -35.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -111.0 | -35.0 | -101.0 | -35.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -101.0 | -35.0 | -86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -86.0 | -25.0 | -58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -60.0 | -26.0 | -58.0 | -25.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| -58.0 | -25.0 | -8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -8.0 | 0.0 | 8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 8.0 | 0.0 | 16.0 | -4.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 16.0 | -4.0 | 78.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 78.0 | -35.0 | 9399.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 16.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -82.0 | -37.0 | 125.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -82.0 | -37.0 | 5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -110.0 | -46.5 | -82.0 | -37.0 | -128.0 | 11.0 | 11.0 | 600.0 | 600.0 |
| -82.0 | -37.0 | 16.0 | -4.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |

XT= 8.0 YT= -10.0 XB= -40.0 YB= -35.0

GRIDX= 50.0 GRIDY= 25.0 XMAX= 100.0 YMAX= 75.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.45 EFS= 1.18 H(X)= 60.00 G(Y)= 35.00 R= 68.78

THE MIN. EFS= 1.18 FS= 1.45 H(X)= 60.00 G(Y)= 35.00 R= 68.78

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 132.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 132.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| 9399.0 | -46.5 | 128.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 128.5 | -46.5 | 110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 86.0 | -37.0 | 60.0 | -26.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 132.0 | -49.0 | 128.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 128.5 | -46.5 | 111.0 | -35.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 111.0 | -35.0 | 101.0 | -35.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 101.0 | -35.0 | 86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 86.0 | -25.0 | 58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 60.0 | -26.0 | 58.0 | -25.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 58.0 | -25.0 | 8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 8.0 | 0.0 | -8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -8.0 | 0.0 | -16.0 | -4.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -16.0 | -4.0 | -78.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -78.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -16.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 82.0 | -37.0 | 125.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 82.0 | -37.0 | -5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 110.0 | -46.5 | 82.0 | -37.0 | -128.0 | 11.0 | 11.0 | 600.0 | 600.0 |
| 82.0 | -37.0 | -16.0 | -4.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |

XT= 80.0 YT= -27.0 XB= 115.0 YB= -51.0

GRIDX= 10.0 GRIDY= 10.0 XMAX= 80.0 YMAX= 80.0

INCX= 10 INCY= 10 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.12 EFS= .96 H(X)= 50.00 G(Y

THE MIN. EFS= .96 FS= 1.12 H(X)= 50.00

SBU 56.005 UNTS.

RUN COMPLETE.

```
READY.
FIN
 READY.
GET,TAPE5=JMH31
 READY.
RUN

 84/07/31. 11.26.03.
PROGRAM   SLOPE2

110 JSF ASH POND "J", R TEST @STA.41+75,RIPRAP1080,BERM10'@1070
 (ERQF=       .05      DEPTH OF ROCK=    49.0 FT)
```

FAILURE THRU THE BERM

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -132.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -132.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| -9399.0 | -46.5 | -128.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -128.5 | -46.5 | -110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| -86.0 | -37.0 | -60.0 | -26.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| -132.0 | -49.0 | -128.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -128.5 | -46.5 | -111.0 | -35.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -111.0 | -35.0 | -101.0 | -35.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -101.0 | -35.0 | -86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -86.0 | -25.0 | -58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -60.0 | -26.0 | -58.0 | -25.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| -58.0 | -25.0 | -8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -8.0 | 0.0 | 8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 8.0 | 0.0 | 16.0 | -4.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 16.0 | -4.0 | 78.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 78.0 | -35.0 | 9399.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 16.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -82.0 | -37.0 | 125.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -82.0 | -37.0 | 5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -110.0 | -46.5 | -82.0 | -37.0 | -128.0 | 11.0 | 11.0 | 600.0 | 600.0 |
| -82.0 | -37.0 | 16.0 | -4.0 | -127.0 | 16.0 | 16.0 | 200.0 | 200.0 |

```
 XT=     8.0      YT=  -10.0      XB=   -40.0      YB=   -35.0

 GRIDX=    50.0      GRIDY=    25.0      XMAX=   100.0      YMAX=    75.0

 INCX= 10      INCY= 10      INCR= 10

 THE MAXIMUM F.S. TO BE PRINTED IS     0.00

 THE MAXIMUM E.F.S. TO BE PRINTED IS     0.00

                TEST POINTS

  THE MIN. FS=   1.45   EFS=   1.18   H(X)=  60.00   G(Y)=  35.00   R=  68.78

  THE MIN. EFS=   1.18   FS=   1.45   H(X)=  60.00   G(Y)=  35.00   R=  68.78
```

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 132.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 132.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 11.0 | 100.0 | 600.0 | 9999.0 |
| 9399.0 | -46.5 | 128.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 128.5 | -46.5 | 110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | 125.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 86.0 | -37.0 | 60.0 | -26.0 | 123.0 | 35.0 | 11.0 | 0.0 | 600.0 |
| 132.0 | -49.0 | 128.5 | -46.5 | -135.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| 128.5 | -46.5 | 111.0 | -35.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 111.0 | -35.0 | 101.0 | -35.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 101.0 | -35.0 | 86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 86.0 | -25.0 | 58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 60.0 | -26.0 | 58.0 | -25.0 | 123.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 58.0 | -25.0 | 8.0 | 0.0 | 123.0 | 35.0 | 16.0 | 0.0 | 200.0 |
| 8.0 | 0.0 | -8.0 | 0.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -8.0 | 0.0 | -16.0 | -4.0 | 123.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -16.0 | -4.0 | -78.0 | -35.0 | -127.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 0.0 | 16.0 | 0.0 | 200.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -78.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -16.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 16.0 | 0.0 | 200.0 |
| 86.0 | -37.0 | 82.0 | -37.0 | 125.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.0 | -37.0 | -5.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 110.0 | -46.5 | 82.0 | -37.0 | -128.0 | 16.0 | 11.0 | 200.0 | 600.0 |
| 82.0 | -37.0 | -16.0 | -4.0 | -127.0 | 11.0 | 11.0 | 600.0 | 600.0 |
| | | | | | 16.0 | 16.0 | 200.0 | 200.0 |

XT= 105.0 YT= -37.0 XB= 105.0 YB= -52.0

GRIDX= 10.0 GRIDY= 10.0 XMAX= 80.0 YMAX= 80.0

INCX= 10 INCY= 10 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.31 EFS= 1.10 H(X)= 70.00 G(Y)= 50.00 R= 98.79

THE MIN. EFS= 1.10 FS= 1.31 H(X)= 70.00 G(Y)= 50.00 R= 98.79

:BU 24.937 UNTS.

RUN COMPLETE.

```
84/07/21. 09.39.08. AA2D5DA
SN214 . *TVA* CHATTANOOGA,TN.  NOS       1.4/531.462/2AB
FAMILY:  KVA
USER NAME: KXFDPDC
PASSWORD
■■■■■■■■
TERMINAL:      23, NAMIAF
RECOVER/ CHARGE: CHAR,A3501PE,*CD2*JSF
    ENTER USER-ID  (FIRST INITIAL PLUS LAST NAME)
? RPOWELLL

              ****** ATTENTION INTERACTIVE USERS ******
 IF YOU ARE EXPERIENCING VERY SLOW RESPONSE TIME AT CONSISTENTLY GREATER
 THAN 15 SECONDS, PLEASE REMAIN ON LINE AND CALL THE COMPUTER SERVICES
 STAFF AT #2383, KNOXVILLE. KNOWING YOUR TTY NUMBER WOULD BE USEFUL.
 REMAIN ON-LINE!!!!!!!!!

                                                      MAY 29, 1984.
 THE FOLLOWING IS A LIST OF THE PROGRAMS AVAILABLE ON KVA WHICH HAVE
 BEEN VALIDATED FOR SAFETY-RELATED ANALYSIS AND DESIGN AS REQUIRED BY
 ENDES EP3.23:

                TVA IN-HOUSE PROGRAMS-
  BOLT      EADHI      TPIPE      FRAMS      GLOBAL     CASD       TVA WELDDA
  ANCHOR    WBDATA     ENVELOPE   U-BOLT     SPECTRA    DBASON     SPIPE
  MV        BAP222     MNBDMNT    CONAN      COM624     STANCE     DL42
  DDLUG     CASDBAP    POPPA      AIS        CIP        CTORC      PLTDL42
  CSS ANALYSIS

                CDC PROGRAMS-
  DIS       CD2000     EDL        UNIPLOT    GTSTRUDL   STARDYNE
  BASEPLATE II
 ALL USERS MUST OBTAIN CONTROLLED DOCUMENTATION FOR THE ABOVE PROGRAMS
 BEFORE USING THEM.  FOR MORE INFO CONTACT THE COMPUTER SERVICES STAFF.

 READY.
OLD,RDP30
 READY.
200 -86,-37,-60,-26,123,35,27,0,0
210 -118.5,-46.5,-86,-25,135,0,35,0,0
220 -86,-25,-58,-25,135,0,35,0,0
230 -60,-26,-58,-25,123,35,27,0,0
240 -58,-25,-8,0,123,0,27,0,0
390 20,20,100,100,10,10,10
420 25,5,120,100,10,10,10
REPLACE
 READY.
FTN
 READY.
OLD,SLOPE2                    Riprap 10' wide @ Channel Bottom to El. 1020
 READY.
GET,TAPE5=RDP30
 READY.
RUN

 84/07/21. 09.57.36.
PROGRAM   SLOPE2

110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
 (ERQF=        .05     DEPTH OF ROCK=   49.0 FT)

                THESE ARE THE INPUT DATA LINES

     X1        Y1        X2        Y2        W         F2        F1        C2        C1

 -9399.0    -49.0   -122.0    -49.0 -1000.0      0.0     100.0       0.0  9999.0
  -122.0    -49.0   -112.0    -49.0 -1000.0     35.0     100.0       0.0  9999.0
  -112.0    -49.0   9399.0    -49.0 -1000.0     25.0     100.0       0.0  9999.0
 -9399.0    -46.5   -118.5    -46.5   -62.4      0.0       0.0       0.0     0.0
  -118.5    -46.5   -110.0    -46.5  -135.0     35.0      35.0       0.0     0.0
  -112.0    -49.0   -110.0    -46.5  -128.0     35.0      25.0       0.0     0.0
  -110.0    -46.5   -105.5    -41.5   125.0     35.0      25.0       0.0     0.0
  -105.5    -41.5   -100.0    -39.5   125.0     35.0      25.0       0.0     0.0
  -100.0    -39.5    -86.0    -37.0   125.0     35.0      25.0       0.0     0.0
   -86.0    -37.0    -60.0    -26.0   123.0     35.0      27.0       0.0     0.0
  -122.0    -49.0   -118.5    -46.5  -135.0      0.0      35.0       0.0     0.0
  -118.5    -46.5    -86.0    -25.0   135.0      0.0      35.0       0.0     0.0
   -86.0    -25.0    -58.0    -25.0   135.0      0.0      35.0       0.0     0.0
   -60.0    -26.0    -58.0    -25.0   123.0     35.0      27.0       0.0     0.0
   -58.0    -25.0     -8.0      0.0   123.0      0.0      27.0       0.0     0.0
    -8.0      0.0      8.0      0.0   123.0      0.0      27.0       0.0     0.0
     8.0      0.0     16.0     -4.0   123.0      0.0      27.0       0.0     0.0
    16.0     -4.0     78.0    -35.0  -127.0      0.0      27.0       0.0     0.0
    78.0    -35.0     84.0    -38.0  -128.0     27.0      25.0       0.0     0.0
    84.0    -38.0   9399.0    -38.0  -128.0     27.0      25.0       0.0     0.0
    78.0    -35.0   9399.0    -35.0  -127.0      0.0      27.0       0.0     0.0
    16.0     -4.0   9399.0     -4.0   -62.4      0.0       0.0       0.0     0.0
   -86.0    -37.0    -82.0    -37.0   125.0     27.0      25.0       0.0     0.0
   -82.0    -37.0      5.0    -35.0  -128.0     27.0      25.0       0.0     0.0
     5.0    -35.0     78.0    -35.0  -128.0     27.0      25.0       0.0     0.0
  -110.0    -46.5    -82.0    -37.0  -128.0     25.0      25.0       0.0     0.0
   -82.0    -37.0     16.0     -4.0  -127.0     27.0      27.0       0.0     0.0

XT=     8.0      YT=    -5.0      XB=  -40.0      YB=   -35.0

GRIDX=    20.0      GRIDY=    20.0      XMAX=  100.0      YMAX=   100.0

INCX= 10      INCY= 10      INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS     0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS     0.00

                TEST POINTS

 THE MIN. FS=    1.09    EFS=     .87    H(X)=  80.00    G(Y)=  70.00    R= 103.98

 THE MIN. EFS=     .87    FS=    1.09    H(X)=  80.00    G(Y)=  70.00    R= 103.98
```

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 122.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 122.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| 9399.0 | -46.5 | 118.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 118.5 | -46.5 | 110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 60.0 | -26.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 122.0 | -49.0 | 118.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 118.5 | -46.5 | 86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 86.0 | -25.0 | 58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 60.0 | -26.0 | 58.0 | -25.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 58.0 | -25.0 | 8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 8.0 | 0.0 | -8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -8.0 | 0.0 | -16.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -16.0 | -4.0 | -78.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -16.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 82.0 | -37.0 | 125.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 82.0 | -37.0 | -5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 82.0 | -37.0 | -128.0 | 25.0 | 25.0 | 0.0 | 0.0 |
| 82.0 | -37.0 | -16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 8.0 YT= -5.0 XB= -70.0 YB= -45.0

GRIDX= 25.0 GRIDY= 5.0 XMAX= 120.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

Shallow Failure

THE MIN. FS= 1.04 EFS= .91 H(X)= 45.00 G(Y)= 15.00 R= 42.07

MIN. EFS= .90 FS= 1.05 H(X)= 45.00 G(Y)= 5.00 R= 38.34

77.389 UNTS.

MPLETE.

```
OLD,RDP30
 READY.
380 8,-2,-40,-35
410 80,-27,80,-52
420 50,0,125,100,10,10,5
REPLACE
 READY.
OLD,SLOPE2
 READY.
FTN
 READY.
GET,TAPE5=RDP30
 READY.
RUN

 84/07/21. 10.13.06.
PROGRAM   SLOPE2

110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
 (EROF=        .05     DEPTH OF ROCK=   49.0 FT)
```

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -122.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -122.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -118.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -118.5 | -46.5 | -110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -60.0 | -26.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -122.0 | -49.0 | -118.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -118.5 | -46.5 | -86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -86.0 | -25.0 | -58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -60.0 | -26.0 | -58.0 | -25.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -58.0 | -25.0 | -8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -8.0 | 0.0 | 8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 8.0 | 0.0 | 16.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 16.0 | -4.0 | 78.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 78.0 | -35.0 | 9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 16.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -82.0 | -37.0 | 125.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -82.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -82.0 | -37.0 | -128.0 | 25.0 | 25.0 | 0.0 | 0.0 |
| -82.0 | -37.0 | 16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 8.0 YT= -2.0 XB= -40.0 YB= -35.0

GRIDX= 20.0 GRIDY= 20.0 XMAX= 100.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

Shallow Failure

THE MIN. FS= 1.06 EFS= .88 H(X)= 30.00 G(Y)= 20.00 R= 31.12

THE MIN. EFS= .86 FS= 1.06 H(X)= 60.00 G(Y)= 50.00 R= 73.55

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 122.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 122.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| 9399.0 | -46.5 | 118.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 118.5 | -46.5 | 110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 60.0 | -26.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 122.0 | -49.0 | 118.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 118.5 | -46.5 | 86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 86.0 | -25.0 | 58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 60.0 | -26.0 | 58.0 | -25.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 58.0 | -25.0 | 8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 8.0 | 0.0 | -8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -8.0 | 0.0 | -16.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -16.0 | -4.0 | -78.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -16.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 82.0 | -37.0 | 125.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 82.0 | -37.0 | -5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 82.0 | -37.0 | -128.0 | 25.0 | 25.0 | 0.0 | 0.0 |
| 82.0 | -37.0 | -16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 80.0 YT= -27.0 XB= 80.0 YB= -52.0

GRIDX= 50.0 GRIDY= 0.0 XMAX= 125.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

Lower Slope Failure
Mostly in Riprap

THE MIN. FS= .97 EFS= .86 H(X)= 120.00 G(Y)= .10 R= 48.27

THE MIN. EFS= .86 FS= .97 H(X)= 120.00 G(Y)= .10 R= 48.27

SBU 107.034 UNTS.

RUN COMPLETE.
!@

```
OLD,RDP30
 READY.
420 80,50,130,120,10,10,5
REPLACE
 READY.
FTN
 READY.
OLD,SLOPE2
 READY.
GET,TAPE5=RDP30
 READY.
RUN

 84/07/21. 10.44.47.
PROGRAM   SLOPE2

110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
  (EROF=       .05     DEPTH OF ROCK=   49.0 FT)
```

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -122.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -122.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -118.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -118.5 | -46.5 | -110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -60.0 | -26.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -122.0 | -49.0 | -118.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -118.5 | -46.5 | -86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -86.0 | -25.0 | -58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -60.0 | -26.0 | -58.0 | -25.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -58.0 | -25.0 | -8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -8.0 | 0.0 | 8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 8.0 | 0.0 | 16.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 16.0 | -4.0 | 78.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 78.0 | -35.0 | 9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 16.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -82.0 | -37.0 | 125.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -82.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -82.0 | -37.0 | -128.0 | 25.0 | 25.0 | 0.0 | 0.0 |
| -82.0 | -37.0 | 16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 8.0 YT= -5.0 XB= -40.0 YB= -35.0

GRIDX= 50.0 GRIDY= 50.0 XMAX= 100.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.09 EFS= .87 H(X)= 80.00 G(Y)= 70.00 R= 103.98

THE MIN. EFS= .87 FS= 1.09 H(X)= 80.00 G(Y)= 70.00 R= 103.98

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 122.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 122.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| 9399.0 | -46.5 | 118.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 118.5 | -46.5 | 110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 60.0 | -26.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 122.0 | -49.0 | 118.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 118.5 | -46.5 | 86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 86.0 | -25.0 | 58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 60.0 | -26.0 | 58.0 | -25.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 58.0 | -25.0 | 8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 8.0 | 0.0 | -8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -8.0 | 0.0 | -16.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -16.0 | -4.0 | -78.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -16.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 82.0 | -37.0 | 125.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 82.0 | -37.0 | -5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 82.0 | -37.0 | -128.0 | 25.0 | 25.0 | 0.0 | 0.0 |
| 82.0 | -37.0 | -16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 80.0 YT= -27.0 XB= 80.0 YB= -52.0

GRIDX= 80.0 GRIDY= 50.0 XMAX= 130.0 YMAX= 120.0

INCX= 10 INCY= 10 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

Deep Failure in Full Dike

THE MIN. FS= 1.06 EFS= .90 H(X)= 100.00 G(Y)= 80.00 R= 128.8

THE MIN. EFS= .90 FS= 1.06 H(X)= 100.00 G(Y)= 80.00 R= 1

SBU 51.771 UNTS.

RUN COMPLETE.

```
OLD,RDP30
 READY.
RUN
 SLOPE2  -10;-40;-35
 SLOPE2  20;100;100;10;10;SREPLACE
 SLOPE2  20;100;100;10;10;5
REPLACE
 READY.
FIN
 READY.
OLD,SLOPE2
 READY.
GET,TAPE5=RDP30
 READY.
RUN

 84/07/21. 14.26.23.
PROGRAM   SLOPE2
```

Riprap to El. 1070
15' Berm @ 100 to El. 1065

110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
(EROF= .05 DEPTH OF ROCK= 49.0 FT)

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -132.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -132.0 | -49.0 | -110.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -110.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 9399.0 | -46.0 | -128.0 | -46.0 | -1.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -128.5 | -46.0 | -110.0 | -46.0 | -1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.0 | -1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -110.0 | -46.0 | -105.5 | -41 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -105.5 | -41 | -100.5 | -39 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -100.5 | -39 | -96.0 | -37 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -96.0 | -37 | -128.0 | -44 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -128.0 | -44 | -114.0 | -41 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -114.0 | -41 | -107.5 | -39 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -107.5 | -39 | -100.5 | -37 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -100.5 | -37 | -96.0 | -35 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -96.0 | -35 | -80.0 | -27 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -80.0 | -27 | -78.0 | -26 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -78.0 | -26 | -76.0 | -25 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -76.0 | -25 | -74.0 | -24 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -74.0 | -24 | -72.0 | -23 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -72.0 | -23 | -70.0 | -22 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -70.0 | -22 | -68.0 | -21 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -68.0 | -21 | -66.0 | -20 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -66.0 | -20 | -64.0 | -19 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -64.0 | -19 | -62.0 | -18 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -62.0 | -18 | -60.0 | -17 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -60.0 | -17 | -58.0 | -16 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -58.0 | -16 | -56.0 | -15 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -56.0 | -15 | -54.0 | -14 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -54.0 | -14 | -52.0 | -13 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -52.0 | -13 | -50.0 | -12 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -50.0 | -12 | -48.0 | -11 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -48.0 | -11 | -46.0 | -10 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -46.0 | -10 | -44.0 | -9 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -44.0 | -9 | -42.0 | -8 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -42.0 | -8 | -40.0 | -7 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -40.0 | -7 | -38.0 | -6 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -38.0 | -6 | -36.0 | -5 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -36.0 | -5 | -34.0 | -4 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -34.0 | -4 | -32.0 | -3 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -32.0 | -3 | -30.0 | -2 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -30.0 | -2 | -28.0 | -1 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -28.0 | -1 | -26.0 | 0 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -26.0 | 0 | -24.0 | 1 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -24.0 | 1 | -22.0 | 2 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -22.0 | 2 | -20.0 | 3 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -20.0 | 3 | -18.0 | 4 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -18.0 | 4 | -16.0 | 5 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -16.0 | 5 | -14.0 | 6 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -14.0 | 6 | -12.0 | 7 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -12.0 | 7 | -10.0 | 8 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -10.0 | 8 | -8.0 | 9 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -8.0 | 9 | -6.0 | 10 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -6.0 | 10 | -4.0 | 11 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -4.0 | 11 | -2.0 | 12 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| -2.0 | 12 | 0.0 | 13 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.0 | 13 | 2.0 | 14 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 14 | 4.0 | 15 | 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4.0 |

```
READY.
TN
READY.
D,SLOPE2
READY.
T,TAPE5=RDP30
READY.
JN

84/07/27. 10.16.29.
ROGRAM   SLOPE2

10 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
CERDF=       .05     DEPTH OF ROCK=   49.0 FT)
```

Riprap to El. 1080
10' Berm @ Toe to El. 1065

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -132.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -132.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -128.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -128.5 | -46.5 | -110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -60.0 | -26.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -132.0 | -49.0 | -128.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -128.5 | -46.5 | -117.0 | -39.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -117.0 | -39.0 | -107.0 | -39.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -107.0 | -39.0 | -86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -86.0 | -25.0 | -58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -60.0 | -26.0 | -58.0 | -25.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -58.0 | -25.0 | -8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -8.0 | 0.0 | 8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 8.0 | 0.0 | 16.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 16.0 | -4.0 | 78.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 78.0 | -35.0 | 9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 16.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -82.0 | -37.0 | 125.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -82.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -82.0 | -37.0 | -128.0 | 25.0 | 25.0 | 0.0 | 0.0 |
| -82.0 | -37.0 | 16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 8.0 YT= -10.0 XB= -40.0 YB= -35.0

GRIDX= 50.0 GRIDY= 25.0 XMAX= 100.0 YMAX= 75.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.15 EFS= .91 H(X)= 70.00 G(Y)= 45.00 R= 82.89

THE MIN. EFS= .91 FS= 1.15 H(X)= 70.00 G(Y)= 45.00 R= 82.89

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 132.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 132.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| 9399.0 | -46.5 | 128.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 128.5 | -46.5 | 110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 60.0 | -26.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 132.0 | -49.0 | 128.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 128.5 | -46.5 | 117.0 | -39.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 117.0 | -39.0 | 107.0 | -39.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 107.0 | -39.0 | 86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 86.0 | -25.0 | 58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 60.0 | -26.0 | 58.0 | -25.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 58.0 | -25.0 | 8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 8.0 | 0.0 | -8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -8.0 | 0.0 | -16.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -16.0 | -4.0 | -78.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -16.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 82.0 | -37.0 | 125.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 82.0 | -37.0 | -5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 82.0 | -37.0 | -128.0 | 25.0 | 25.0 | 0.0 | 0.0 |
| 82.0 | -37.0 | -16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 115.0 YT= -41.0 XB= 115.0 YB= -51.0

GRIDX= 50.0 GRIDY= 0.0 XMAX= 120.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.15 EFS= .96 H(X)= 80.00 G(Y)= 50.00 R= 97.51

THE MIN. EFS= .96 FS= 1.15 H(X)= 80.00 G(Y)= 50.00 R= 97.51

:BU 35.125 UNTS.

RUN COMPLETE.

TERMINAL 21 TIME OUT.

:XFDPDC LOG OFF 10.29.56.
:BU = 38.569
TID = 13333

IAF CONNECT TIME 01.09.48.
LOGGED OUT.
:x78!

```
OLD,RDP30
 READY.
XEDIT
 EDIT 3.1.00
210 210
210 -128.5,-46.5,-117,-39,135,0,35,0,0
210 C/-117,-39/-111,-35/
210 -128.5,-46.5,-111,-35,135,0,35,0,0
212 212
212 -117,-39,-107,-39,135,0,35,0,0
212 C/-117,-39/-107,-39/-111,-35,-101,-35/
212 -111,-35,-101,-35,135,0,35,0,0
214 214
214 -107,-39,-86,-25,135,0,35,0,0
214 C/-107,-39/-101,-35/
214 -101,-35,-86,-25,135,0,35,0,0
*0,RL
RDP30   REPLACED
RDP30   IS A LOCAL FILE
SBU       0.342 UNTS.
 READY.
FIN
 READY.
OLD,SLOPE2
 READY.
GET,TAPE5=RDP30
 READY.
RUN

 84/07/21. 14.50.08.
PROGRAM   SLOPE2

110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
 (EROF=       .05      DEPTH OF ROCK=    49.0 FT)

                THESE ARE THE INPUT DATA LINES

      X1        Y1        X2        Y2         W         F2        F1        C2        C1
 -9399.0     -49.0    -132.0     -49.0  -1000.0       0.0     100.0       0.0    9999.0
  -132.0     -49.0    -111.0     -49.0  -1000.0       0.0     100.0       0.0    9999.0
  -111.0     -49.0    9399.0     -49.0  -1000.0       0.0     100.0       0.0    9999.0
 -9399.0     -46.5    -128.5     -46.5  -1000.4       0.0       0.0       0.0       0.0
  -128.5     -46.5    -117.0     -46.5   -136.5       0.0       0.0       0.0       0.0
  -117.0     -39.0    -107.0     -39.0   -136.5       0.0       0.0       0.0       0.0
  -111.0     -35.0    -101.0     -35.0   -136.5       0.0       0.0       0.0       0.0
  -107.0     -39.0     -86.0     -25.0   -136.5       0.0       0.0       0.0       0.0
  -101.0     -35.0     -86.0     -25.0   -136.5       0.0       0.0       0.0       0.0
   -86.0     -25.0     -60.0     -25.0   -136.5       0.0       0.0       0.0       0.0
   -60.0     -25.0     -50.0     -25.0   -136.5       0.0       0.0       0.0       0.0
   -50.0     -25.0     -40.0     -25.0   -136.5       0.0       0.0       0.0       0.0
   -40.0     -25.0     -30.0     -25.0   -136.5       0.0       0.0       0.0       0.0
   -30.0     -25.0     -20.0     -25.0   -136.5       0.0       0.0       0.0       0.0
   -20.0     -25.0     -10.0     -25.0   -136.5       0.0       0.0       0.0       0.0
   -10.0     -25.0       0.0     -25.0   -136.5       0.0       0.0       0.0       0.0
     0.0     -25.0      10.0     -25.0   -136.5       0.0       0.0       0.0       0.0
    10.0     -25.0      20.0     -25.0   -136.5       0.0       0.0       0.0       0.0
    20.0     -25.0      30.0     -25.0   -136.5       0.0       0.0       0.0       0.0
    30.0     -25.0      40.0     -25.0   -136.5       0.0       0.0       0.0       0.0
    40.0     -25.0      50.0     -25.0   -136.5       0.0       0.0       0.0       0.0
    50.0     -25.0      60.0     -25.0   -136.5       0.0       0.0       0.0       0.0
    60.0     -25.0      70.0     -25.0   -136.5       0.0       0.0       0.0       0.0
    70.0     -25.0      78.0     -25.0   -136.5       0.0       0.0       0.0       0.0
    78.0     -25.0      84.0     -25.0   -136.5       0.0       0.0       0.0       0.0
    84.0     -25.0      90.0     -25.0   -136.5       0.0       0.0       0.0       0.0
    90.0     -25.0     100.0     -25.0   -136.5       0.0       0.0       0.0       0.0
   100.0     -25.0     110.0     -25.0   -136.5       0.0       0.0       0.0       0.0
   110.0     -25.0     120.0     -25.0   -136.5       0.0       0.0       0.0       0.0
   120.0     -25.0
```

```
$ ^Y
84/07/25. 10.17.16. AA3C5DA
SN214  *TVA* CHATTANOOGA,TN.   NOS       1.4/531.462/2AB
FAMILY:  KVA
USER NAME: KXFDPDC
PASSWORD
■■■■■■■■
TERMINAL:       56, NAMIAE
RECOVER? CHARGE: CHAR:B3501PE,*CD2*JSE
    ENTER USER-ID  (FIRST INITIAL PLUS LAST NAME)
? RPOWELL

          ****** ATTENTION INTERACTIVE USERS ******
 IF YOU ARE EXPERIENCING VERY SLOW RESPONSE TIME AT CONSISTENTLY GREATER
 THAN 15 SECONDS, PLEASE REMAIN ON LINE AND CALL THE COMPUTER SERVICES
 STAFF AT #2383, KNOXVILLE. KNOWING YOUR TTY NUMBER WOULD BE USEFUL.
 REMAIN ON-LINE!!!!!!!!!!

                                                        MAY 29, 1984.
 THE FOLLOWING IS A LIST OF THE PROGRAMS AVAILABLE ON KVA WHICH HAVE
 BEEN VALIDATED FOR SAFETY-RELATED ANALYSIS AND DESIGN AS REQUIRED BY
 ENDES EP3.23;

                TVA IN-HOUSE PROGRAMS-
  BOLT      EADHI      TPIPE      FRAMS      GLOBAL     CASD       TVA WELDDA
  ANCHOR    WBDATA     ENVELOPE   U-BOLT     SPECTRA    DBASQN     SPIPE
  MV        BAP222     MNBDMNT    CONAN      COM624     STANCE     DL42
  DDLUG     CASDBAP    POPPA      AIS        CIP        CTORC      PLTDL42
  CSS ANALYSIS

                CDC PROGRAMS-
  DIS       CD2000     EDL        UNIPLOT    GTSTRUDL   STARDYNE
  BASEPLATE II
 ALL USERS MUST OBTAIN CONTROLLED DOCUMENTATION FOR THE ABOVE PROGRAMS
 BEFORE USING THEM.  FOR MORE INFO CONTACT THE COMPUTER SERVICES STAFF.

 READY.
OLD,RDP30
 READY.
390 50,25,100,75,10,10,10
410 105,-37,105,-52
420 50,10,110,100,10,10,5
REPLACE
 READY.
FTN
 READY.
OLD,SLOPE2                          Riprap to El. 1080
 READY.                             10' Berm to El. 1070
GET,TAPE5=RDP30
 READY.
RUN

 84/07/25. 10.28.30.
PROGRAM    SLOPE2

110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
 (EROF=        .05      DEPTH OF ROCK=    49.0 FT)

                THESE ARE THE INPUT DATA LINES

     X1        Y1        X2        Y2         W         F2        F1        C2        C1

 -9399.0     -49.0    -132.0     -49.0  -1000.0       0.0     100.0       0.0    9999.0
  -132.0     -49.0    -112.0     -49.0  -1000.0      35.0     100.0       0.0    9999.0
  -112.0     -49.0    9399.0     -49.0  -1000.0      25.0     100.0       0.0    9999.0
 -9399.0     -46.5    -128.5     -46.5    -62.4       0.0       0.0       0.0       0.0
  -128.5     -46.5    -110.0     -46.5   -135.0      35.0      35.0       0.0       0.0
  -112.0     -49.0    -110.0     -46.5   -128.0      35.0      25.0       0.0       0.0
  -110.0     -46.5    -105.5     -41.5    125.0      35.0      25.0       0.0       0.0
  -105.5     -41.5    -100.0     -39.5    125.0      35.0      25.0       0.0       0.0
  -100.0     -39.5     -86.0     -37.0    125.0      35.0      25.0       0.0       0.0
   -86.0     -37.0     -60.0     -26.0    123.0      35.0      27.0       0.0       0.0
  -132.0     -49.0    -128.5     -46.5   -135.0       0.0      35.0       0.0       0.0
  -128.5     -46.5    -111.0     -35.0    135.0       0.0      35.0       0.0       0.0
  -111.0     -35.0    -101.0     -35.0    135.0       0.0      35.0       0.0       0.0
  -101.0     -35.0     -86.0     -25.0    135.0       0.0      35.0       0.0       0.0
   -86.0     -25.0     -58.0     -25.0    135.0       0.0      35.0       0.0       0.0
   -60.0     -26.0     -58.0     -25.0    123.0      35.0      27.0       0.0       0.0
   -58.0     -25.0      -8.0       0.0    123.0       0.0      27.0       0.0       0.0
    -8.0       0.0       8.0       0.0    123.0       0.0      27.0       0.0       0.0
     8.0       0.0      16.0      -4.0    123.0       0.0      27.0       0.0       0.0
    16.0      -4.0      78.0     -35.0   -127.0       0.0      27.0       0.0       0.0
    78.0     -35.0      84.0     -38.0   -128.0      27.0      25.0       0.0       0.0
    84.0     -38.0    9399.0     -38.0   -128.0      27.0      25.0       0.0       0.0
    78.0     -35.0    9399.0     -35.0   -127.0       0.0      27.0       0.0       0.0
    16.0      -4.0    9399.0      -4.0    -62.4       0.0       0.0       0.0       0.0
   -86.0     -37.0     -82.0     -37.0    125.0      27.0      25.0       0.0       0.0
   -82.0     -37.0       5.0     -35.0   -128.0      27.0      25.0       0.0       0.0
     5.0     -35.0      78.0     -35.0   -128.0      27.0      25.0       0.0       0.0
  -110.0     -46.5     -82.0     -37.0   -128.0      25.0      25.0       0.0       0.0
   -82.0     -37.0      16.0      -4.0   -127.0      27.0      27.0       0.0       0.0

 XT=     8.0      YT=   -10.0      XB=   -40.0      YB=   -35.0
 GRIDX=    50.0      GRIDY=    25.0      XMAX=   100.0      YMAX=    75.0
 INCX= 10      INCY= 10      INCR= 10
 THE MAXIMUM F.S. TO BE PRINTED IS     0.00
 THE MAXIMUM E.F.S. TO BE PRINTED IS     0.00

              TEST POINTS

  THE MIN. FS=    1.15    EFS=     .91    H(X)=   70.00    G(Y)=   45.00    R=   82.89

  THE MIN. EFS=     .91    FS=    1.15    H(X)=   70.00    G(Y)=   45.00    R=   82.89
```

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 132.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 132.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 255.0 | 100.0 | 0.0 | 9999.0 |
| 9399.0 | -46.55 | 128.5 | -46.55 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 128.5 | -46.55 | 110.0 | -46.55 | -1355.0 | 35.0 | 0.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -41.55 | -1268.0 | 255.0 | 0.0 | 0.0 | 0.0 |
| 110.0 | -46.55 | 105.5 | -39.0 | 1255.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 105.5 | -41.55 | 100.0 | -37.0 | 1255.0 | 35.0 | 0.0 | 0.0 | 0.0 |
| 100.0 | -39.0 | 86.0 | -46.55 | 1255.0 | 255.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 60.0 | -46.55 | -1355.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 132.0 | -49.0 | 128.5 | -39.0 | 1355.0 | 35.0 | 0.0 | 0.0 | 0.0 |
| 128.5 | -46.55 | 111.0 | -37.0 | 1355.0 | 255.0 | 0.0 | 0.0 | 0.0 |
| 111.0 | -39.0 | 101.0 | -25.0 | 1355.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 101.0 | -35.0 | 86.0 | -25.0 | 1355.0 | 35.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -25.0 | 58.0 | -25.0 | 1355.0 | 255.0 | 0.0 | 0.0 | 0.0 |
| 60.0 | -25.0 | 8.0 | 0.0 | 1355.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 58.0 | 0.0 | -8.0 | -4.0 | 1355.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 8.0 | -4.0 | -16.0 | -35.0 | -1268.0 | 255.0 | 27.0 | 0.0 | 0.0 |
| -8.0 | -35.0 | -78.0 | -35.0 | -1268.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -16.0 | -35.0 | -84.0 | -35.0 | -1268.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -9399.0 | -35.0 | -1268.0 | 255.0 | 27.0 | 0.0 | 0.0 |
| -84.0 | -35.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 27.0 | 0.0 | 0.0 |
| -78.0 | -4.0 | -9399.0 | -37.0 | 1255.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -16.0 | -37.0 | 82.0 | -35.0 | -1268.0 | 255.0 | 27.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | -5.0 | -35.0 | -1268.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 82.0 | -35.0 | -78.0 | -37.0 | -1268.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -5.0 | -46.55 | 82.0 | -4.0 | -1267.0 | 255.0 | 27.0 | 0.0 | 0.0 |
| 110.0 | -37.0 | -16.0 | | | 0.0 | 27.0 | 0.0 | 0.0 |
| 82.0 | | | | | | | | |

XT= 105.0 YT= -37.0 XB= 105.0 YB= -52.0

GRIDX= 50.0 GRIDY= 10.0 XMAX= 110.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.21 EFS= 1.00 H(X)= 70.00 G(Y)= 50.00 F

THE MIN. EFS= 1.00 FS= 1.21 H(X)= 70.00 G(Y)= 50.00

SBU 43.403 UNTS.

RUN COMPLETE.

```
OLD,RDP30
 READY.
410 8,-5,-70,-45
420 20,5,100,100,10,10,5
REPLACE
 READY.
FTN
 READY.
OLD,SLOPE2
 READY.
GET,TAPE5=RDP30
 READY.
RUN

 84/07/25. 10.41.45.
PROGRAM    SLOPE2
```

Approp to El 1000
10' Berm to El 1070

110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
(EROF= .05 DEPTH OF ROCK= 49.0 FT)

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -132.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -132.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 55.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -128.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -128.5 | -46.5 | -110.0 | -46.5 | -1355.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -1288.0 | 35.0 | 55.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | 125.0 | 35.0 | 55.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | 125.0 | 35.0 | 55.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | 125.0 | 35.0 | 55.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -60.0 | -26.0 | 123.0 | 35.0 | 55.0 | 0.0 | 0.0 |
| -132.0 | -49.0 | -128.5 | -46.5 | -1355.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -128.5 | -46.5 | -111.0 | -35.0 | 1355.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -111.0 | -35.0 | -101.0 | -35.0 | 1355.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -101.0 | -35.0 | -86.0 | -25.0 | 1355.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -86.0 | -25.0 | -58.0 | -25.0 | 1355.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -60.0 | -26.0 | -58.0 | -25.0 | 123.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -58.0 | -25.0 | -8.0 | 0.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -8.0 | 0.0 | 8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 8.0 | 0.0 | 16.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 16.0 | -4.0 | 78.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -128.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -128.0 | 27.0 | 55.0 | 0.0 | 0.0 |
| 78.0 | -35.0 | 9399.0 | -35.0 | -127.0 | 0.0 | 55.0 | 0.0 | 0.0 |
| 16.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 27.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -82.0 | -37.0 | 125.0 | 27.0 | 0.0 | 0.0 | 0.0 |
| -82.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 55.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -128.0 | 27.0 | 55.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -82.0 | -37.0 | -128.0 | 27.0 | 55.0 | 0.0 | 0.0 |
| -82.0 | -37.0 | 16.0 | -4.0 | -127.0 | 55.0 | 55.0 | 0.0 | 0.0 |
| | | | | | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 8.0 YT= -10.0 XB= -40.0 YB= -35.0

GRIDX= 50.0 GRIDY= 25.0 XMAX= 100.0 YMAX= 75.0

INCX= 10 INCY= 10 INCR= 10

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.15 EFS= .91 H(X)= 70.00 G(Y)= 45.00 R= 82.89

THE MIN. EFS= .91 FS= 1.15 H(X)= 70.00 G(Y)= 45.00 R= 82.89

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 132.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 132.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| 9399.0 | -46.5 | 128.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 128.5 | -46.5 | 110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | 125.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 60.0 | -26.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 132.0 | -49.0 | 128.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 128.5 | -46.5 | 111.0 | -35.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 111.0 | -35.0 | 101.0 | -35.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 101.0 | -35.0 | 86.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 86.0 | -25.0 | 58.0 | -25.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 60.0 | -26.0 | 58.0 | -25.0 | 123.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 58.0 | -25.0 | 8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 8.0 | 0.0 | -8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -8.0 | 0.0 | -16.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -16.0 | -4.0 | -78.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -16.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 82.0 | -37.0 | 125.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 82.0 | -37.0 | -5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 82.0 | -37.0 | -128.0 | 25.0 | 25.0 | 0.0 | 0.0 |
| 82.0 | -37.0 | -16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 8.0 YT= -5.0 XB= -70.0 YB= -45.0

GRIDX= 20.0 GRIDY= 5.0 XMAX= 100.0 YMAX= 100.0

INCX= 10 INCY= 10 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.05 EFS= .92 H(X)= 50.00 G(Y)= 25.00 R= 51.62

THE MIN. EFS= .90 FS= 1.06 H(X)= 40.00 G(Y)= 5.00 R= 38.54

SBU 89.546 UNTS.

RUN COMPLETE.

```
001
SIGN ON--KBN,KXFDPDC
13.13.24.32
 CYBERNET CENTER SN214 NOS          1.4/531.523/15AD
ID
L:        4, TTY
 CHARGE: CHAR,A3501PE,*CD2*JSE
ER USER-ID  (FIRST INITIAL PLUS LAST NAME)
ELL

ATE II HAS BEEN CORRECTED ON FAMILY
N CHATTANOOGA.  ALL USERS SHOULD START
NG BASEPLATE II ON KVA AS SOON AS
BLE.

.30. WARNING

EXPLAIN,NJFUSAGE+EXPLAIN,NOS-PLOTTING
10

DP30
.
T 3.1.00
0
9399,-49,-112,-49,-1000,0,100,0,9999
-112/-122/
-9399,-49,-122,-49,-1000,0,100,0,9999
50
-9399,-46.5,-110,-46.5,-62.4,0,0,0,0
/-110/-118.5/
-9399,-46.5,-118.5,-46.5,-62.4,0,0,0,0
60
-112,-49,-110,-46.5,-128,0,25,0,150
/0,55/35,25/3
-112,-49,-110,-46.5,-128,35,25,0,150
-110,-46.5,-105.5,-41.5,125,35,25,0,150
-105.5,-41.5,-100,-39.5,125,35,25,0,150
10
-100,-39.5,-85,-30,135,0,35,0,0
/-100,-39.5,-85,-30/-118.5,-46.5,-92,-29/
-118.5,-46.5,-92,-29,135,0,35,0,0
20
-85,-30,-67,-29,135,0,35,0,0
C/-85,-30/-92,-29/
-92,-29,-67,-29,135,0,35,0,0

0,,RL
30    REPLACED
30    IS A LOCAL FILE
DY.
,RDP30
DY.
2
 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
 0CT,0.05
 -9399,-49,-122,-49,-1000,0,100,0,9999
 -122,-49,-110,-49,-1000,35,100,150,9999
 -110,-49,9999,-49,-1000,25,100,150,9999
 -9399,-46.5,-118.5,-46.5,-62.4,0,0,0,0
 -118.5,-46.5,-110,-46.5,-128,35,25,0,150
 -110,-46.5,-105.5,-41.5,125,35,25,0,150
 -105.5,-41.5,-100,-39.5,125,35,25,0,150
 -100,-39.5,-86,-37,125,35,25,0,150
 -86,-37,-67,-29,125,35,25,0,150
 -122,-49,-118.5,-46.5,-128,0,35,0,0
 -118.5,-46.5,-92,-29,135,0,35,0,0
 -92,-29,-67,-29,135,0,35,0,0
 -67,-29,-60,-26,125,0,27,0,150
 -60,-26,-8,0,125,0,27,0,150
 -8,0,8,0,125,0,27,0,150
 0,0,16,-4,125,0,27,0,150
 16,-4,78,-35,-127,27,25,150,150
 78,-35,84,-38,-128,27,25,150,150
 84,-38,9999,-38,-128,27,25,0,150
 78,-35,9999,-35,-127,0,27,0,150
 16,-4,9999,-4,-62.4,0,0,0,0
 -86,-37,-82,-37,125,27,25,150,150
 -82,-37,5,-35,-128,27,25,150,150
 5,-35,78,-35,-128,27,25,150,150
 -110,-46.5,-82,-37,-128,27,25,150,150
 -92,-37,16,-4,-127,27,27,150,150

 49
 -5,-40,-35
 20,10,100,70,5,5,5
 0,0
 -5,-70,-45
 25,15,120,120,5,5,5
 0,0
READY.
FTN
READY.
OLD,SLOPE2
READY.
GET,TAPE5=RDP30
READY.
RUN

 84/07/13.  13.43.06.
PROGRAM    SLOPE2
 110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
  (EROF=        .05     DEPTH OF ROCK=     49.0 FT)
```

Add 10' Riprap @ channel bottom to EL 1076
C = 150

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -122.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -122.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 150.0 | 9999.0 |
| -9399.0 | -46.5 | -118.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -118.5 | -46.5 | -110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 35.0 | 35.0 | 0.0 | 150.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | 125.0 | 35.0 | 35.0 | 0.0 | 150.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | 125.0 | 35.0 | 35.0 | 0.0 | 150.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | 125.0 | 35.0 | 35.0 | 0.0 | 150.0 |
| -86.0 | -37.0 | -67.0 | -29.0 | 125.0 | 35.0 | 35.0 | 0.0 | 150.0 |
| -122.0 | -49.0 | -118.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -118.5 | -46.5 | -92.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -92.0 | -29.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | -60.0 | -26.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| -60.0 | -26.0 | -8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| -8.0 | 0.0 | 16.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| 16.0 | -4.0 | 78.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -128.0 | 27.0 | 27.0 | 150.0 | 150.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -128.0 | 27.0 | 27.0 | 150.0 | 150.0 |
| 78.0 | -35.0 | 9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| 16.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -82.0 | -37.0 | 125.0 | 27.0 | 27.0 | 150.0 | 150.0 |
| -82.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 27.0 | 150.0 | 150.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -128.0 | 27.0 | 27.0 | 150.0 | 150.0 |
| -110.0 | -46.5 | -82.0 | -37.0 | -128.0 | 25.0 | 27.0 | 150.0 | 150.0 |
| -82.0 | -37.0 | 16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 150.0 | 150.0 |

XT= 8.0 YT= -5.0 XB= -40.0 YB= -35.0

GRIDX= 20.0 GRIDY= 10.0 XMAX= 100.0 YMAX= 70.0

INCX= 5 INCY= 5 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.69 EFS= 1.35 H(X)= 60.00 G(Y)= 30.00 R= 67.69

THE MIN. EFS= 1.35 FS= 1.70 H(X)= 60.00 G(Y)= 25.00 R= 65.04

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 122.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 122.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 35.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 150.0 | 9999.0 |
| 9399.0 | -46.5 | 118.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 118.5 | -46.5 | 110.0 | -46.5 | -135.0 | 35.0 | 35.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 35.0 | 35.0 | 0.0 | 150.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | 125.0 | 35.0 | 35.0 | 0.0 | 150.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | 125.0 | 35.0 | 35.0 | 0.0 | 150.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | 125.0 | 35.0 | 35.0 | 0.0 | 150.0 |
| 86.0 | -37.0 | 67.0 | -29.0 | 125.0 | 35.0 | 35.0 | 0.0 | 150.0 |
| 122.0 | -49.0 | 118.5 | -46.5 | -135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 118.5 | -46.5 | 92.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 92.0 | -29.0 | 67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 67.0 | -29.0 | 60.0 | -26.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| 60.0 | -26.0 | 8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| 8.0 | 0.0 | -8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| -8.0 | 0.0 | -16.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| -16.0 | -4.0 | -78.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 27.0 | 27.0 | 150.0 | 150.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 27.0 | 27.0 | 150.0 | 150.0 |
| -78.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| -16.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |

*SBU LIMIT*
ENTER $ TO CONTINUE OR CR KEY TO STOP:
$,1000

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 86.0 | -37.0 | 82.0 | -37.0 | 125.0 | 27.0 | 27.0 | 150.0 | 150.0 |
| 82.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 27.0 | 150.0 | 150.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 27.0 | 27.0 | 150.0 | 150.0 |
| 110.0 | -46.5 | 82.0 | -37.0 | -128.0 | 25.0 | 27.0 | 150.0 | 150.0 |
| 82.0 | -37.0 | 16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 150.0 | 150.0 |

XT= 8.0 YT= -5.0 XB= -70.0 YB= -45.0

GRIDX= 25.0 GRIDY= 15.0 XMAX= 120.0 YMAX= 120.0

INCX= 5 INCY= 5 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.24 EFS= 1.06 H(X)= 50.00 G(Y)= 20.00 R= 58.8

THE MIN. EFS= 1.05 FS= 1.25 H(X)= 45.00 G(Y)= 15.00 R= 57.

SBU 557.786 UNTS.

RUN COMPLETE.

```
OLD,RDP30
READY.
*EDIT.
*EDIT 3.1.00
?? 140
140 -112,-49,9399,-49,-1000,25,100,150,9999
?? C/100,150/100,0/
140 -112,-49,9399,-49,-1000,25,100,0,9999
?? 160
160 -112,-49,-110,-46.5,-128,35,25,0,150
?? C/0,150/0,0/5
160 -112,-49,-110,-46.5,-128,35,25,0,0
170 -110,-46.5,-105.5,-41.5,125,35,25,0,0
180 -105.5,-41.5,-100,-39.5,125,35,25,0,0
190 -100,-39.5,-86,-37,125,35,25,0,0
200 -86,-37,-67,-29,123,35,27,0,0
?? 230
230 -67,-29,-60,-26,123,0,27,0,150
?? C/0,150/0,0/5
230 -67,-29,-60,-26,123,0,27,0,0
240 -60,-26,-8,0,123,0,27,0,0
250 -8,0,8,0,123,0,27,0,0
260 8,0,16,-4,123,0,27,0,0
270 16,-4,78,-35,-127,0,27,0,0
?? 280
280 78,-35,84,-38,-128,27,25,150,150
?? C/150,150/0,0/2
280 78,-35,84,-38,-128,27,25,0,0
290 84,-38,9399,-38,-128,27,25,0,0
?? 300
300 78,-35,9399,-35,-127,0,27,0,150
?? C/0,150/0,0/
300 78,-35,9399,-35,-127,0,27,0,0
?? 320
320 -86,-37,-82,-37,125,27,25,150,150
?? C/14
ARGUMENT ERROR
?? C/150,150/0,0/5
320 -86,-37,-82,-37,125,27,25,0,0
330 -82,-37,5,-35,-128,27,25,0,0
340 5,-35,78,-35,-128,27,25,0,0
350 -110,-46.5,-82,-37,-128,25,25,0,0
360 -82,-37,16,-4,-127,27,27,0,0
?? 0,,RL
RDP30    REPLACED
RDP30    IS A LOCAL FILE

SBU       0.337 UNTS.
READY.
RDP30
ILLEGAL COMMAND.
OLD,RDP30
READY.
LNH
100 2
110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
120 027,0.05
130 -9399,-49,-122,-49,-1000,0,100,0,9999
135 -122,-49,-112,-49,-1000,35,100,0,9999
140 -112,-49,9399,-49,-1000,25,100,0,9999
150 -9399,-46.5,-118.5,-46.5,-62.4,0,0,0,0
155 -118.5,-46.5,-110,-46.5,-135,35,35,0,0
160 -112,-49,-110,-46.5,-128,35,25,0,0
170 -110,-46.5,-105.5,-41.5,125,35,25,0,0
180 -105.5,-41.5,-100,-39.5,125,35,25,0,0
190 -100,-39.5,-86,-37,125,35,25,0,0
200 -86,-37,-67,-29,123,35,27,0,0
205 -122,-49,-118.5,-46.5,-135,0,35,0,0
210 -118.5,-46.5,-92,-29,135,0,35,0,0
220 -92,-29,-67,-29,135,0,35,0,0
230 -67,-29,-60,-26,123,0,27,0,0
240 -60,-26,-8,0,123,0,27,0,0
250 -8,0,8,0,123,0,27,0,0
260 8,0,16,-4,123,0,27,0,0
270 16,-4,78,-35,-127,0,27,0,0
280 78,-35,84,-38,-128,27,25,0,0
290 84,-38,9399,-38,-128,27,25,0,0
300 78,-35,9399,-35,-127,0,27,0,0
310 16,-4,9399,-4,-62.4,0,0,0,0
320 -86,-37,-82,-37,125,27,25,0,0
330 -82,-37,5,-35,-128,27,25,0,0
340 5,-35,78,-35,-128,27,25,0,0
350 -110,-46.5,-82,-37,-128,25,25,0,0
360 -82,-37,16,-4,-127,27,27,0,0
370 49
380 8,-5,-40,-35
390 20,10,100,70,5,5,5
400 0,0
410 8,-5,-70,-45
420 25,15,120,120,5,5,5
430 0,0
READY.
FTN
READY.
OLD,SLOPE2
READY.
GET,TAPE5=RDP30
READY.
RUN

 84/07/13. 14.05.46.
PROGRAM   SLOPE2

110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
 (EROF=        .05      DEPTH OF ROCK=    49.0 FT)
```

At 1:1 slope @ Channel Bottom to EL 1076

$\epsilon = 0$

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9999.0 | -49.0 | 122.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 122.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 9999.0 | -46.5 | 118.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 118.5 | -46.5 | 110.0 | -46.5 | -133.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 105.5 | -41.0 | 128.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 105.5 | -41.0 | 100.0 | -39.0 | 128.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100.0 | -39.0 | 86.0 | -37.0 | 128.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 67.5 | -35.0 | 128.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 122.0 | -49.0 | 118.5 | -46.5 | -133.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 118.5 | -46.5 | 67.5 | -46.5 | 133.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 96.0 | -39.0 | 67.5 | -39.0 | 133.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 67.5 | -39.0 | 60.0 | -39.0 | 133.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60.0 | -22.0 | -8.0 | 0.0 | 133.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8.0 | 0.0 | -16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| -8.0 | 0.0 | -78.0 | -35.0 | -128.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| -16.0 | -4.0 | -84.0 | -38.0 | -128.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -9399.0 | -38.0 | -128.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| -84.0 | -38.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -16.0 | -4.0 | -9399.0 | | | | | | |

*SBU LIMIT*
ENTER S TO CONTINUE OR CR KEY TO STOP:
S,1000

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 86.0 | -37.0 | 82.0 | -37.0 | 125.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 82.0 | -37.0 | -5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 82.0 | -37.0 | -128.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 82.0 | -37.0 | -16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 8.0 YT= -5.0 XB= -40.0 YB= -35.0
GRIDX= 20.0 GRIDY= 10.0 XMAX= 100.0 YMAX= 70.0
INCX= 5 INCY= 5 INCR= 5
THE MAXIMUM F.S. TO BE PRINTED IS 0.00
THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.09 EFS= .87 H(X)= 80.00 G(Y)= 70.00 R= 103.98

THE MIN. EFS= .87 FS= 1.09 H(X)= 80.00 G(Y)= 65.00 R= 100.43

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 122.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 122.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 9999.0 | -46.5 | 118.5 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 118.5 | -46.5 | 110.0 | -46.5 | -133.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 105.5 | -41.0 | 128.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 105.5 | -41.0 | 100.0 | -39.0 | 128.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100.0 | -39.0 | 86.0 | -37.0 | 128.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 67.5 | -35.0 | 128.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 122.0 | -49.0 | 118.5 | -46.5 | -133.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 118.5 | -46.5 | 67.5 | -46.5 | 133.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 96.0 | -39.0 | 67.5 | -39.0 | 133.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 67.5 | -39.0 | 60.0 | -39.0 | 133.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60.0 | -22.0 | -8.0 | 0.0 | 133.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8.0 | 0.0 | -16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| -8.0 | 0.0 | -78.0 | -35.0 | -128.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| -16.0 | -4.0 | -84.0 | -38.0 | -128.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -9399.0 | -38.0 | -128.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| -84.0 | -38.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -16.0 | -4.0 | -9399.0 | | | | | | |

*SBU LIMIT*
ENTER S TO CONTINUE OR CR KEY TO STOP:
S,1000

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 86.0 | -37.0 | 82.0 | -37.0 | 125.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 82.0 | -37.0 | -5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 82.0 | -37.0 | -128.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 82.0 | -37.0 | -16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 8.0 YT= -5.0 XB= -70.0 YB= -45.0
GRIDX= 25.0 GRIDY= 15.0 XMAX= 120.0 YMAX= 120.0
INCX= 5 INCY= 5 INCR= 5
THE MAXIMUM F.S. TO BE PRINTED IS 0.00
THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= .94 EFS= .81 H(X)= 50.00 G(Y)= 15.00 R= 51.53

THE MIN. EFS= .81 FS= .94 H(X)= 50.00 G(Y)= 15.00 R= 51.53

SBU 556.688 UNTS.
RUN COMPLETE.

```
NEI 038000
PLEASE SIGN ON--KBN,KXFDPDC
  84/07/10. 13.36.00.
EASTERN CYBERNET CENTER SN214 NOS       1.4/531.523/15AD
PASSWORD
[redacted]
TERMINAL:       15, TTY
RECOVER/ CHARGE: CHAR,A3501PE,*CD2*JSE
      ENTER USER-ID  (FIRST INITIAL PLUS LAST NAME)
? RPOWELL

 BASEPLATE II HAS BEEN CORRECTED ON FAMILY
 KVA IN CHATTANOOGA. ALL USERS SHOULD START
 RUNNING BASEPLATE II ON KVA AS SOON AS
 POSSIBLE.
READY.

 07.03.13. WARNING

TYPE EXPLAIN,NOTICE+EXPLAIN,CDSN/IAF IMPACT
ROUT,10
READY.
OLD,RDP30
READY.
110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
140 -112,-49,9999,-49,-1000,25,100,0,9999
150 -112,-49,-110,-46.5,-128,0,25,0,0
160 -110,-46.5,-82,-37,-128,25,25,0,0
170 -82,-37,16,-4,-127,27,27,0,0
180 16,-4,78,-35,-127,0,27,0,0
190 78,-35,84,-38,-128,27,25,0,0
200 84,-38,9999,-38,-128,27,25,0,0
210 78,-35,9999,-35,-127,0,27,0,0
220 16,-4,9999,-4,-62.4,0,0,0,0
230 -86,-37,-82,-37,125,27,25,0,0
240 -82,-37,5,-35,-128,27,25,0,0
250 5,-35,78,-35,-128,27,25,0,0
260 -110
270 -110,-46.5,-82,-37,-128,25,25,0,0
280 -82,-37,16,-4,-127,27,27,0,0
290 20,5,100,75,5,5,5
410 8,-5,-70,-45
420 25,15,120,120,5,5,5
REPLACE
READY.
OLD,RDP30
READY.
LNH
100 2
110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
120 024,0.05
130 -9999,-49,-112,-49,-1000,0,100,0,9999
140 -112,-49,9999,-49,-1000,25,100,0,9999
150 -9999,-46.5,-110,-46.5,-62.4,0,0,0,0
160 -112,-49,-110,-46.5,-128,0,25,0,0
170 -110,-46.5,-105.5,-41.5,125,0,25,0,0
180 -105.5,-41.5,-100,-39.5,125,0,25,0,0
190 -100,-39.5,-86,-37,125,35,25,0,0
200 -86,-37,-67,-29,123,35,27,0,0
210 -100,-39.5,-85,-30,135,0,35,0,0
220 -85,-30,-67,-29,135,0,35,0,0
230 -67,-29,-60,-26,123,0,27,0,0
240 -60,-26,-8,0,123,0,27,0,0
250 -8,0,8,0,123,0,27,0,0
260 8,0,16,-4,123,0,27,0,0
270 16,-4,78,-35,-127,0,27,0,0
280 78,-35,84,-38,-128,27,25,0,0
290 84,-38,9999,-38,-128,27,25,0,0
300 78,-35,9999,-35,-127,0,27,0,0
310 16,-4,9999,-4,-62.4,0,0,0,0
320 -86,-37,-82,-37,125,27,25,0,0
330 -82,-37,5,-35,-128,27,25,0,0
340 5,-35,78,-35,-128,27,25,0,0
350 -110,-46.5,-82,-37,-128,25,25,0,0
360 -82,-37,16,-4,-127,27,27,0,0
370 49
380 8,-5,-40,-35
390 20,5,100,75,5,5,5
400 0,0
410 8,-5,-70,-45
420 25,15,120,120,5,5,5
430 0,0
READY.
FTN
READY.
OLD,SLOPE2
READY.
GET,TAPE5=RDP30
READY.
RUN

 84/07/10. 14.01.48.
PROGRAM   SLOPE2

110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
 (EROF=        .05     DEPTH OF ROCK=    49.0 FT)
```

No Additional Riprap
High Phreatic Surface
C = 0

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.5 | 1000.0 | 35.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.5 | -67.0 | -29.0 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -65.0 | -30.0 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -26.0 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | -60.0 | -8.0 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -80.0 | 0.0 | -8.0 | 0.0 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -8.0 | 0.0 | -16.0 | -4.0 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -16.0 | -4.0 | -78.0 | -35.0 | -1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -84.0 | -38.0 | -93999.0 | -35.0 | -1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -78.0 | -35.0 | -93999.0 | -35.0 | -1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -16.0 | -4.0 | -93999.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 82.0 | -37.0 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.0 | -37.0 | -5.0 | -35.0 | -1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -82.0 | -37.0 | -1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| -82.0 | -37.0 | 16.0 | -4.0 | -127.0 | 27.0 | 0.0 | 0.0 | 0.0 |

XT= 8.0 YT= -5.0 XB= -40.0 YB= -35.0

GRIDX= 20.0 GRIDY= 5.0 XMAX= 100.0 YMAX= 75.0

INCX= 5 INCY= 5 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

*SBU LIMIT*
ENTER S TO CONTINUE OR CR KEY TO STOP:
S,1000

THE MIN. FS= 1.09 EFS= .87 H(X)= 80.00 G(Y)= 70.00 R= 103.98

THE MIN. EFS= .87 FS= 1.09 H(X)= 80.00 G(Y)= 65.00 R= 100.43

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| 9399.0 | -46.5 | 110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110.5 | -46.5 | 105.5 | -41.5 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100.0 | -39.5 | 86.0 | -37.5 | 1000.0 | 35.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.5 | 67.0 | -29.0 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100.0 | -39.5 | 65.0 | -30.0 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85.0 | -30.0 | 67.0 | -26.0 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 67.0 | -29.0 | 60.0 | -8.0 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80.0 | 0.0 | -8.0 | 0.0 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8.0 | 0.0 | -16.0 | -4.0 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 16.0 | -4.0 | 78.0 | -35.0 | -1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 84.0 | -38.0 | 93999.0 | -35.0 | -1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 78.0 | -35.0 | 93999.0 | -35.0 | -1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 16.0 | -4.0 | 93999.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | -82.0 | -37.0 | 1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.0 | -37.0 | 5.0 | -35.0 | -1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 82.0 | -37.0 | -1000.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.0 | -37.0 | 16.0 | -4.0 | -127.0 | 27.0 | 0.0 | 0.0 | 0.0 |

XT= 8.0 YT= -5.0 XB= -70.0 YB= -45.0

GRIDX= 25.0 GRIDY= 15.0 XMAX= 120.0 YMAX= 120.0

INCX= 5 INCY= 5 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= .86 EFS= .74 H(X)= 100.00 G(Y)= 70.00 R= 118.71

THE MIN. EFS= .74 FS= .86 H(X)= 95.00 G(Y)= 60.00 R= 108.61

^BU 518.930 UNTS.

( COMPLETE.

```
OLD,RDP30
READY.
300 0,-10;-40;-35
310 50,50;125;100,5,5,5
410 0,-10;-70;-45
420 50,30;130;120,5,5,5
REPLACE
READY.
FTN
READY.
OLD,SLOPE2
READY.
GET,TAPE5=RDP30
READY.
RUN

 84/07/10. 14.17.35.
PROGRAM    SLOPE2

110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
  (EROF=        .05      DEPTH OF ROCK=    49.0 FT)

                    THESE ARE THE INPUT DATA LINES

      X1          Y1          X2          Y2          W          F2          F1          C2          C1
   -9399.0       -49.0      -112.0       -49.0   -1000.0         0.0       100.0         0.0      9999.0
    -112.0       -49.0     -9399.0       -49.0   -1000.0        25.0       100.0         0.0      9999.0
   -9399.0       -46.5      -110.0       -46.5    -662.4         0.0         0.0         0.0         0.0
    -112.0       -49.0      -110.0       -46.5   -1200.0         0.0         0.0         0.0         0.0
    -110.0       -46.5     -1055.5       -41.5    1200.0         0.0         0.0         0.0         0.0
   -1055.5       -41.5      -100.0       -37.0    1200.0         0.0         0.0         0.0         0.0
    -100.0       -37.0       -86.0        -9.0    1200.0         0.0         0.0         0.0         0.0
     -86.0        -9.0      -100.0       -37.0    1200.0         0.0         0.0         0.0         0.0
    -100.0       -37.0       -85.0        -4.0    1200.0         0.0         0.0         0.0         0.0
     -85.0        -4.0       -67.0         0.0    1200.0         0.0         0.0         0.0         0.0
     -67.0         0.0       -60.0         0.0    1200.0         0.0         0.0         0.0         0.0
     -60.0         0.0         8.0         0.0    1200.0         0.0         0.0         0.0         0.0
       8.0         0.0        16.0        -4.0    1200.0         0.0         0.0         0.0         0.0
      16.0        -4.0        78.0       -35.0    1200.0         0.0         0.0         0.0         0.0
      78.0       -35.0        84.0       -37.0    1200.0         0.0         0.0         0.0         0.0
      84.0       -37.0     -9399.0       -37.0    1200.0         0.0         0.0         0.0         0.0
      16.0        -4.0     -9399.0       -35.0    1200.0         0.0         0.0         0.0         0.0
     -86.0        -9.0     -9399.0        -4.0    1200.0         0.0         0.0         0.0         0.0
      85.0       -37.0       86.0       -37.0    1200.0         0.0         0.0         0.0         0.0
    -110.0       -46.5      -82.0       -37.0   -1200.0         0.0         0.0         0.0         0.0
     -82.0       -37.0       16.0        -4.0   -1127.0        27.0        27.0         0.0         0.0

XT=     8.0      YT=  -10.0      XB=  -40.0      YB=  -35.0
GRIDX=    50.0      GRIDY=    50.0      XMAX=   125.0      YMAX=   100.0
INCX=  5      INCY=  5      INCR=  5
THE MAXIMUM F.S. TO BE PRINTED IS     0.00
THE MAXIMUM E.F.S. TO BE PRINTED IS     0.00

                    TEST POINTS

 THE MIN. FS=    1.14    EFS=     .90    H(X)=   70.00    G(Y)=   50.00    R=   86.29

 THE MIN. EFS=     .90    FS=    1.14    H(X)=   70.00    G(Y)=   50.00    R=   86.29

                    FOR SIDE TWO

                    THESE ARE THE INPUT DATA LINES

      X1          Y1          X2          Y2          W          F2          F1          C2          C1
    9399.0       -49.0       112.0       -49.0   -1000.0         0.0       100.0         0.0      9999.0
     112.0       -49.0     -9399.0       -49.0   -1000.0        25.0       100.0         0.0      9999.0
    9399.0       -46.5       110.0       -46.5    -662.4         0.0         0.0         0.0         0.0
     112.0       -49.0       110.0       -46.5   -1200.0         0.0         0.0         0.0         0.0
     110.0       -46.5      1055.5       -41.5    1200.0         0.0         0.0         0.0         0.0
    1055.5       -41.5       100.0       -37.0    1200.0         0.0         0.0         0.0         0.0
     100.0       -37.0        86.0        -9.0    1200.0         0.0         0.0         0.0         0.0
      86.0        -9.0       100.0       -37.0    1200.0         0.0         0.0         0.0         0.0
     100.0       -37.0        85.0        -4.0    1200.0         0.0         0.0         0.0         0.0
      85.0        -4.0        67.0         0.0    1200.0         0.0         0.0         0.0         0.0
      67.0         0.0        60.0         0.0    1200.0         0.0         0.0         0.0         0.0
      60.0         0.0        -8.0         0.0    1200.0         0.0         0.0         0.0         0.0
      -8.0         0.0       -16.0        -4.0    1200.0         0.0         0.0         0.0         0.0
     -16.0        -4.0       -78.0       -35.0    1200.0         0.0         0.0         0.0         0.0
     -78.0       -35.0       -84.0       -37.0    1200.0         0.0         0.0         0.0         0.0
     -84.0       -37.0     -9399.0       -37.0    1200.0         0.0         0.0         0.0         0.0
     -16.0        -4.0     -9399.0       -35.0    1200.0         0.0         0.0         0.0         0.0
      86.0        -9.0     -9399.0        -4.0    1200.0         0.0         0.0         0.0         0.0
      82.0       -37.0       85.0       -37.0    1200.0         0.0         0.0         0.0         0.0
      -5.0       -35.0      -78.0       -35.0   -1200.0         0.0         0.0         0.0         0.0
     110.0       -46.5      -82.0       -37.0   -1200.0         0.0         0.0         0.0         0.0
      82.0       -37.0       16.0        -4.0   -1127.0        27.0        27.0         0.0         0.0

XT=     8.0      YT=  -10.0      XB=  -70.0      YB=  -45.0
GRIDX=    50.0      GRIDY=    30.0      XMAX=   130.0      YMAX=   120.0
INCX=  5      INCY=  5      INCR=  5
THE MAXIMUM F.S. TO BE PRINTED IS     0.00
THE MAXIMUM E.F.S. TO BE PRINTED IS     0.00

                    TEST POINTS

 *SBU LIMIT*
 ENTER $ TO CONTINUE OR CR KEY TO STOP:
$,1000

  THE MIN. FS=     .86    EFS=     .74    H(X)=  100.00    G(Y)=   80.00    R=  128.71

  THE MIN. EFS=     .74    FS=     .86    H(X)=  100.00    G(Y)=   80.00    R=  128.71
$BU    227.820 UNTS.
RUN COMPLETE.
```

Lower first test point for side 1 & side 2

```
OLD,RDP30
READY.
100 1
390 40,10,120,80,5,5,5
REPLACE
READY.
FTN
READY.
OLD,SLOPE2
READY.
SET,TAPE5=RDP30
READY.
RUN

 84/07/10. 14.27.57.
PROGRAM    SLOPE2

110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
  (ERROF=        .05      DEPTH OF ROCK=    49.0 FT)

                THESE ARE THE INPUT DATA LINES

     X1        Y1        X2        Y2        W         F2        F1        C2        C1
 -9399.0     -49.0    -112.0     -49.0  -1000.0       0.0     100.0       0.0    9999.0
   -112.0     -49.0    9399.0     -49.0  -1000.0      25.0     100.0       0.0    9999.0
 -9399.0     -46.5    -110.0     -46.5     -62.4       0.0       0.0       0.0       0.0
   -112.0     -49.0    -110.0     -46.5    -128.0       0.0      25.0       0.0       0.0
   -110.0     -46.5    -105.5     -41.5     125.0       0.0      25.0       0.0       0.0
   -105.5     -41.5    -100.0     -39.5     125.0       0.0      25.0       0.0       0.0
   -100.0     -39.5     -86.0     -37.0     125.0      35.0      25.0       0.0       0.0
    -86.0     -37.0     -67.0     -29.0     123.0      35.0      27.0       0.0       0.0
   -100.0     -39.5     -85.0     -30.0     135.0       0.0      35.0       0.0       0.0
    -85.0     -30.0     -67.0     -29.0     135.0       0.0      35.0       0.0       0.0
    -67.0     -29.0     -60.0     -26.0     123.0       0.0      27.0       0.0       0.0
    -60.0     -26.0      -8.0       0.0     123.0       0.0      27.0       0.0       0.0
     -8.0       0.0       8.0       0.0     123.0       0.0      27.0       0.0       0.0
      8.0       0.0      16.0      -4.0     123.0       0.0      27.0       0.0       0.0
     16.0      -4.0      78.0     -35.0    -127.0       0.0      27.0       0.0       0.0
     78.0     -35.0      84.0     -38.0    -128.0      27.0      25.0       0.0       0.0
     84.0     -38.0    9399.0     -38.0    -128.0      27.0      25.0       0.0       0.0
     78.0     -35.0    9399.0     -35.0    -127.0       0.0      27.0       0.0       0.0
     16.0      -4.0    9399.0      -4.0     -62.4       0.0       0.0       0.0       0.0
    -86.0     -37.0     -82.0     -37.0     125.0      27.0      25.0       0.0       0.0
    -82.0     -37.0       5.0     -35.0    -128.0      27.0      25.0       0.0       0.0
      5.0     -35.0      78.0     -35.0    -128.0      27.0      25.0       0.0       0.0
   -110.0     -46.5     -82.0     -37.0    -128.0      25.0      25.0       0.0       0.0
    -82.0     -37.0      16.0      -4.0    -127.0      27.0      27.0       0.0       0.0

 XT=     8.0      YT=  -10.0      XB=  -40.0      YB=  -35.0
 GRIDX=    40.0      GRIDY=    10.0      XMAX=   120.0      YMAX=    80.0
 INCX=  5      INCY=  5      INCR=  5
 THE MAXIMUM F.S. TO BE PRINTED IS     0.00
 THE MAXIMUM E.F.S. TO BE PRINTED IS     0.00


              TEST POINTS


  THE MIN. FS=    1.14    EFS=     .90    H(X)=  70.00    G(Y)=  50.00    R=  86.29

  THE MIN. EFS=     .90    FS=    1.14    H(X)=  65.00    G(Y)=  35.00    R=  72.63
$EU     114.747 UNTS.
RUN COMPLETE.
```

Lower Test window on Side 1

```
//
NET 038001
PLEASE SIGN ON--<KBN,KXFDPDC
84/07/11. 08.05.39
EASTERN CYBERNET CENTER SN214 NOS        1.4/531.523/15AD
PASSWORD
[redacted]
TERMINAL:        12, TTY
RECOVER/ CHARGE: CHAR,A3501PE,*CD2*JSE
    ENTER USER-ID  (FIRST INITIAL PLUS LAST NAME)
? RPOWELL

 BASEPLATE II HAS BEEN CORRECTED ON FAMILY
 KVA IN CHATTANOOGA. ALL USERS SHOULD START
 RUNNING BASEPLATE II ON KVA AS SOON AS
 POSSIBLE.
READY.

 06.07.14. WARNING

7/11 PLS TYPE EXPLAIN, NJFUSAGE
ROUT,10
READY.
OLD,RDP30
READY.
100 2
320 -86,-37,-20,-35.5,125,27,25,0,0
330 -82
330 -20,-35.5,5,-35,-128,27,25,0,0
350 -110,-46.5,-20,-35.5,-128,25,25,0,0
360 -20,-35.5M
360 -20,-35.5,16,-4,-127,27,27,0,0
380 0,-10,-40,-35
390 40,20,120,80,5,5,5
420 25,25,125,100,5,5,5
REPLACE
READY.
OLD,RDP30
READY.
LNH
100 2
110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
120 024,0.05
130 -9399,-49,-112,-49,-1000,0,100,0,9999
140 -112,-49,9399,-49,-1000,25,100,0,9999
150 -9399,-46.5,-110,-46.5,-62.4,0,0,0,0
160 -112,-49,-110,-46.5,-128,0,25,0,0
170 -110,-46.5,-105.5,-41.5,125,0,25,0,0
180 -105.5,-41.5,-100,-39.5,125,0,25,0,0
190 -100,-39.5,-86,-37,125,35,25,0,0
200 -86,-37,-67,-29,123,35,27,0,0
210 -100,-39.5,-85,-30,135,0,35,0,0
220 -85,-30,-67,-29,135,0,35,0,0
230 -67,-29,-60,-26,123,0,27,0,0
240 -60,-26,-8,0,123,0,27,0,0
250 -8,0,8,0,123,0,27,0,0
260 8,0,16,-4,123,0,27,0,0
270 16,-4,78,-35,-127,0,27,0,0
280 78,-35,84,-38,-128,27,25,0,0
290 84,-38,9399,-38,-128,27,25,0,0
300 78,-35,9399,-35,-127,0,27,0,0
310 16,-4,9399,-4,-62.4,0,0,0,0
320 -86,-37,-20,-35.5,125,27,25,0,0
330 -20,-35.5,5,-35,-128,27,25,0,0
340 5,-35,78,-35,-128,27,25,0,0
350 -110,-46.5,-20,-35.5,-128,25,25,0,0
360 -20,-35.5,16,-4,-127,27,27,0,0
370 49
380 0,-10,-40,-35
390 40,20,120,80,5,5,5
400 0,0
410 8,-10,-70,-45
420 25,25,125,100,5,5,5
430 0,0
READY.
FTN
READY.
OLD,SLOPE2
READY.
GET,TAPE5=RDP30
READY.
RUN

 84/07/11. 08.29.49.
PROGRAM   SLOPE2
```

No Additional Riprap
Low Phreatic Surface
C = C

110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
(EROF= .05 DEPTH OF ROCK= 49.0 FT)

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -1288.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | 1255.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | 1255.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | 1255.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -67.0 | -29.0 | 1233.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 1355.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 1355.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | -60.0 | -26.0 | 1233.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -60.0 | -26.0 | -8.0 | 0.0 | 1233.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -8.0 | 0.0 | 16.0 | -4.0 | 1233.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 16.0 | -4.0 | 78.0 | -35.5 | -1207.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 78.0 | -35.5 | 84.0 | -38.0 | -1288.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -1288.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 78.0 | -35.5 | 9399.0 | -35.5 | -1207.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 16.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -20.0 | -35.5 | 1255.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| -20.0 | -35.5 | 5.0 | -35.5 | -1288.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 5.0 | -35.5 | 78.0 | -35.5 | -1288.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| -110.0 | -46.5 | -20.0 | -35.5 | -1288.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| -20.0 | -35.5 | 16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 0.0 YT= -10.0 XB= -40.0 YB= -35.0
GRIDX= 40.0 GRIDY= 20.0 XMAX= 120.0 YMAX= 80.0
INCX= 5 INCY= 5 INCR= 5
THE MAXIMUM F.S. TO BE PRINTED IS 0.00
THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.32 EFS= 1.04 H(X)= 65.00 G(Y)= 50.00 R= 88.47

THE MIN. EFS= 1.04 FS= 1.33 H(X)= 60.00 G(Y)= 35.00 R= 75.01

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 0.0 | 9999.0 |
| 9399.0 | -46.5 | 110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -1288.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | 1255.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | 1255.0 | 0.0 | 25.0 | 0.0 | 0.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | 1255.0 | 35.0 | 25.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 67.0 | -29.0 | 1233.0 | 35.0 | 27.0 | 0.0 | 0.0 |
| 100.0 | -39.5 | 85.0 | -30.0 | 1355.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 85.0 | -30.0 | 67.0 | -29.0 | 1355.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 67.0 | -29.0 | 60.0 | -26.0 | 1233.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 60.0 | -26.0 | 8.0 | 0.0 | 1233.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| 8.0 | 0.0 | -16.0 | -4.0 | 1233.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -16.0 | -4.0 | -78.0 | -35.5 | -1207.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -78.0 | -35.5 | -84.0 | -38.0 | -1288.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -1288.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| -78.0 | -35.5 | -9399.0 | -35.5 | -1207.0 | 0.0 | 27.0 | 0.0 | 0.0 |
| -16.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 20.0 | -35.5 | 1255.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 20.0 | -35.5 | -5.0 | -35.5 | -1288.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| -5.0 | -35.5 | 78.0 | -35.5 | -1288.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 110.0 | -46.5 | 20.0 | -35.5 | -1288.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| 20.0 | -35.5 | -16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 0.0 | 0.0 |

XT= 8.0 YT= -10.0 XB= -70.0 YB= -45.0
GRIDX= 25.0 GRIDY= 25.0 XMAX= 125.0 YMAX= 100.0
INCX= 5 INCY= 5 INCR= 5
THE MAXIMUM F.S. TO BE PRINTED IS 0.00
THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

*SBU LIMIT*
ENTER S TO CONTINUE OR CR KEY TO STOP:
S,1000

THE MIN. FS= 1.18 EFS= 1.02 H(X)= 100.00 G(Y)= 80.00 R= 128.71

THE MIN. EFS= 1.02 FS= 1.18 H(X)= 100.00 G(Y)= 80.00 R= 128.71

SBU 260.935 UNTS.
RUN COMPLETE.

```
NET 038000
LEASE SIGN ON--KBN,KXFDPDC
84/07/11. 13.27.40.
EASTERN CYBERNET CENTER SN214 NOS                    1.4/531.523/15AD
PASSWORD
■■■■■■■■
TERMINAL:          7, TTY
RECOVER/ CHARGE: CHAR,A3501PE,*CD2*JSF
    ENTER USER-ID   (FIRST INITIAL PLUS LAST NAME)
? RPOWELL

 BASEPLATE II HAS BEEN CORRECTED ON FAMILY
 KVA IN CHATTANOOGA. ALL USERS SHOULD START
 RUNNING BASEPLATE II ON KVA AS SOON AS
 POSSIBLE.
READY.

 06.07.14. WARNING


?/11 PLS TYPE EXPLAIN, NJFUSAGE
?OUT,10
?EADY.
?LD,RDP30
?EADY.
?EDIT
?EDIT 3.1.00
? 140
40 -112,-49,9399,-49,-1000,25,100,0,9999
? W/C/100,0/100,100/
40 -112,-49,9399,-49,-1000,25,100,100,9999
? WJ3HM160
?0 -112,-49,-110,-46.5,-128,0,25,0,0
? C/0,0/ *DEL*

?160
?T 038000
EASE SIGN ON--KBN,KXFDPDC
4/07/11. 13.41.23.
STERN CYBERNET CENTER SN214 NOS
SSWORD
■■■■■■
?MINAL:          4, TTY
?OVER/ CHARGE: CHAR,A3501PE,*CD2*JSF
  ENTER USER-ID   (FIRST INITIAL PLUS LAST NAME)
?POWELL                                    1.4/531.523/15AD

?SEPLATE II HAS BEEN CORRECTED ON FAMILY
'A IN CHATTANOOGA. ALL USERS SHOULD START
NNING BASEPLATE II ON KVA AS SOON AS
SSIBLE.
DY.

.07.14. WARNING
```

```
/*!! FLS TYPE EXPLAIN, NJFUSAGE
ROUT,10
READY.
OLD,RDP30
READY.
XEDIT
 XEDIT 3.1.00
?? 140
140 -112,-49,9399,-49,-1000,25,100,0,9999
?? C/100,0/100,150/
140 -112,-49,9399,-49,-1000,25,100,150,9999
?? 160
160 -112,-49,-110,-46.5,-128,0,25,0,0
?? C/0,0/0,150/5
160 -112,-49,-110,-46.5,-128,0,25,0,150
170 -110,-46.5,-105.5,-41.5,125,0,25,0,150
180 -105.5,-41.5,-100,-39.5,125,0,25,0,150
190 -100,-39.5,-86,-37,125,35,25,0,150
200 -86,-37,-67,-29,123,35,27,0,150
?? 230
230 -67,-29,-60,-26,123,0,27,0,0
?? C/0,0/0,150/5
230 -67,-29,-60,-26,123,0,27,0,150
240 -60,-26,-8,0,123,0,27,0,150
250 -8,0,8,0,123,0,27,0,150
260 8,0,16,-4,123,0,27,0,150
270 16,-4,78,-35,-127,0,27,0,150
?? 280
280 78,-35,84,-38,-128,27,25,0,0
?? C/0,0/150,150/2
280 78,-35,84,-38,-128,27,25,150,150
290 84,-38,9399,-38,-128,27,25,150,150
?? 300
300 78,-35,9399,-35,-127,0,27,0,0
?? C/0,0/0,150/
300 78,-35,9399,-35,-127,0,27,0,150
?? 320
320 -86,-37,-20,-35.5,125,27,25,0,0
?? C/0,0/150,150/5
320 -86,-37,-20,-35.5,125,27,25,150,150
330 -20,-35.5,5,-35,-128,27,25,150,150
340 5,-35,78,-35,-128,27,25,150,150
350 -110,-46.5,-20,-35.5,-128,25,25,150,150
360 -20,-35.5,16,-4,-127,27,27,150,150
?? 0,,RL
ILLEGAL PARAMETER
?? 0,,RL
NO SUCH COMMAND
?? 0,,RL
RDP30    REPLACED
RDP30    IS A LOCAL FILE
READY.
OLD,RDP30
READY.
LNH
100 2
110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
120 024,0.05
130 -9399,-49,-112,-49,-1000,0,100,0,9999
140 -112,-49,9399,-49,-1000,25,100,150,9999
150 -9399,-46.5,-110,-46.5,-62.4,0,0,0,0
160 -112,-49,-110,-46.5,-128,0,25,0,150
170 -110,-46.5,-105.5,-41.5,125,0,25,0,150
180 -105.5,-41.5,-100,-39.5,125,0,25,0,150
190 -100,-39.5,-86,-37,125,35,25,0,150
200 -86,-37,-67,-29,123,35,27,0,150
210 -100,-39.5,-85,-30,135,0,35,0,0
220 -85,-30,-67,-29,135,0,35,0,0
230 -67,-29,-60,-26,123,0,27,0,150
240 -60,-26,-8,0,123,0,27,0,150
250 -8,0,8,0,123,0,27,0,150
260 8,0,16,-4,123,0,27,0,150
270 16,-4,78,-35,-127,0,27,0,150
280 78,-35,84,-38,-128,27,25,150,150
290 84,-38,9399,-38,-128,27,25,150,150
300 78,-35,9399,-35,-127,0,27,0,150
310 16,-4,9399,-4,-62.4,0,0,0,0
320 -86,-37,-20,-35.5,125,27,25,150,150
330 -20,-35.5,5,-35,-128,27,25,150,150
340 5,-35,78,-35,-128,27,25,150,150
350 -110,-46.5,-20,-35.5,-128,25,25,150,150
360 -20,-35.5,16,-4,-127,27,27,150,150
370 49
380 0,-10,-40,-35
390 40,20,120,80,5,5,5
400 0,0
410 8,-10,-70,-45
420 25,25,125,100,5,5,5
430 0,0
READY.

//OLD,RDP30
NET 038000
PLEASE SIGN ON--KBN,KXFDPDC
```

Change from C=0 To C=150

```
/
NET 038000
PLEASE SIGN ON--KBN,KXFDPDC

/
NET 038000
PLEASE SIGN ON--KBN,KXFDPDC
 84/07/11. 14.07.12.
EASTERN CYBERNET CENTER SN214 NOS       1.4/531.523/15AD
PASSWORD
■■■■■■■■■
TERMINAL:     15, TTY
RECOVER/ CHARGE: CHAR,A3501PE,*CD2*JSF
    ENTER USER-ID  (FIRST INITIAL PLUS LAST NAME)
? RPOWELL

 BASEPLATE II HAS BEEN CORRECTED ON FAMILY
 KVA IN CHATTANOOGA. ALL USERS SHOULD START
 RUNNING BASEPLATE II ON KVA AS SOON AS
 POSSIBLE.
READY.

 06.07.14. WARNING

7/11 PLS TYPE EXPLAIN, NJFUSAGE
ROUT,10
READY.
OLD,RDP30
READY.
380 8,-5,-40,-35
REPLACE
READY.
OLD,RDP30
READY.
LNH
100 2
110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
120 024,0.05
130 -9399,-49,-112,-49,-1000,0,100,0,9999
140 -112,-49,9399,-49,-1000,25,100,150,9999
150 -9399,-46.5,-110,-46.5,-62.4,0,0,0,0
160 -112,-49,-110,-46.5,-128,0,25,0,150
170 -110,-46.5,-105.5,-41.5,125,0,25,0,150
180 -105.5,-41.5,-100,-39.5,125,0,25,0,150
190 -100,-39.5,-86,-37,125,35,25,0,150
200 -86,-37,-67,-29,123,35,27,0,150
210 -100,-39.5,-85,-30,135,0,35,0,0
220 -85,-30,-67,-29,135,0,35,0,0
230 -67,-29,-60,-26,123,0,27,0,150
240 -60,-26,-8,0,123,0,27,0,150
250 -8,0,8,0,123,0,27,0,150
260 8,0,16,-4,123,0,27,0,150
270 16,-4,78,-35,-127,0,27,0,150
280 78,-35,84,-38,-128,27,25,150,150
290 84,-38,9999,-38,-128,27,25,150,150
300 78,-35,9999,-35,-127,0,27,0,150
310 16,-4,9399,-4,-62.4,0,0,0,0
320 -86,-37,-20,-35.5,125,27,25,150,150
330 -20,-35.5,5,-35,-128,27,25,150,150
340 5,-35,78,-35,-128,27,25,150,150
350 -110,-46.5,-20,-35.5,-128,25,25,150,150
360 -20,-35.5,16,-4,-127,27,27,150,150
370 49
380 8,-5,-40,-35
390 40,20,120,80,5,5,5
400 0,0
410 8,-10,-70,-45
420 25,25,125,100,5,5,5
430 0,0
READY.
FTN
READY.
OLD,SLOPE2
READY.
GET,TAPE5=RDP30
READY.
RUN

 84/07/11. 14.11.17.
PROGRAM   SLOPE2

110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
 (ERROF=        .05     DEPTH OF ROCK=    49.0 FT)

  THE MIN. FS=   1.46   EFS=   1.27   H(X)= 100.00   G(Y)=  80.00   R= 128.71

  THE MIN. EFS=   1.27   FS=   1.46   H(X)= 100.00   G(Y)=  80.00   R= 128.71
$BU    303.892 UNTS.
RUN COMPLETE.
```

Low Phreatic Surface
F = 1.55 (Min. Appx.)

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 150.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 150.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | 125.0 | 0.0 | 25.0 | 0.0 | 150.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | 125.0 | 0.0 | 25.0 | 0.0 | 150.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | 125.0 | 35.0 | 25.0 | 0.0 | 150.0 |
| -86.0 | -37.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 150.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | -60.0 | -26.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| -60.0 | -26.0 | -8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| -8.0 | 0.0 | 8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| 8.0 | 0.0 | 16.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| 16.0 | -4.0 | 78.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -128.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -128.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| 78.0 | -35.0 | 9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| 16.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -20.0 | -35.5 | 125.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| -20.0 | -35.5 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| -110.0 | -46.5 | -20.0 | -35.5 | -128.0 | 25.0 | 25.0 | 150.0 | 150.0 |
| -20.0 | -35.5 | 16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 150.0 | 150.0 |

XT= 8.0 YT= -5.0 XB= -40.0 YB= -35.0

GRIDX= 40.0 GRIDY= 20.0 XMAX= 120.0 YMAX= 80.0

INCX= 5 INCY= 5 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.75 EFS= 1.40 H(X)= 60.00 G(Y)= 30.00 R= 67.69

THE MIN. EFS= 1.39 FS= 1.75 H(X)= 60.00 G(Y)= 25.00 R= 65.04

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9399.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 150.0 | 9999.0 |
| 9399.0 | -46.5 | 110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 150.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | 125.0 | 0.0 | 25.0 | 0.0 | 150.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | 125.0 | 0.0 | 25.0 | 0.0 | 150.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | 125.0 | 35.0 | 25.0 | 0.0 | 150.0 |
| 86.0 | -37.0 | 67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 150.0 |
| 100.0 | -39.5 | 85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 85.0 | -30.0 | 67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 67.0 | -29.0 | 60.0 | -26.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| 60.0 | -26.0 | 8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| 8.0 | 0.0 | -8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| -8.0 | 0.0 | -16.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| -16.0 | -4.0 | -78.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| -78.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| -16.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 20.0 | -35.5 | 125.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| 20.0 | -35.5 | -5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| 110.0 | -46.5 | 20.0 | -35.5 | -128.0 | 25.0 | 25.0 | 150.0 | 150.0 |
| 20.0 | -35.5 | -16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 150.0 | 150.0 |

XT= 8.0 YT= -10.0 XB= -70.0 YB= -45.0

GRIDX= 25.0 GRIDY= 25.0 XMAX= 125.0 YMAX= 100.0

INCX= 5 INCY= 5 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

*SBU LIMIT*
ENTER S TO CONTINUE OR CR KEY TO STOP:
S,1000

THE MIN. FS= 1.46 EFS= 1.27 H(X)= 100.00 G(Y)= 80.00 R= 128.71

THE MIN. EFS= 1.27 FS= 1.46 H(X)= 100.00 G(Y)= 80.00 R= 128.71

SBU 303.892 UNTS.

RUN COMPLETE.

```
    RDP30
  DY.
  7 -86,-37,-82,-37,125,27,25,150,150
  0 -82,-37,5,-35,-128,27,25,150,150
  0 -110,-46.5,-82,-37,-128,25,25,150,150
 60 -82,-37,16,-4,-127,27,27,150,150
410 8,-5,-70,-45
420 25,15,120,120,5,5,5
REPLACE
READY.
FTN
READY.
OLD,SLOPE2
READY.
GET,TAPE5=RDP30
READY.
RUN
```

High Phreatic Surface
C = 150
No Additional Riprap

```
 84/07/11. 14.25.37.
PROGRAM   SLOPE2

110 JOHN SEVIER ASH POND "J", R BAR TEST @ STA. 41+75
 (ERQF=        .05      DEPTH OF ROCK=    49.0 FT)
```

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| -9399.0 | -49.0 | -112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| -112.0 | -49.0 | 9399.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 150.0 | 9999.0 |
| -9399.0 | -46.5 | -110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -112.0 | -49.0 | -110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 150.0 |
| -110.0 | -46.5 | -105.5 | -41.5 | 125.0 | 0.0 | 25.0 | 0.0 | 150.0 |
| -105.5 | -41.5 | -100.0 | -39.5 | 125.0 | 0.0 | 25.0 | 0.0 | 150.0 |
| -100.0 | -39.5 | -86.0 | -37.0 | 125.0 | 35.0 | 25.0 | 0.0 | 150.0 |
| -86.0 | -37.0 | -67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 150.0 |
| -100.0 | -39.5 | -85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -85.0 | -30.0 | -67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| -67.0 | -29.0 | -60.0 | -26.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| -60.0 | -26.0 | -8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| -8.0 | 0.0 | 8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| 8.0 | 0.0 | 16.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| 16.0 | -4.0 | 78.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| 78.0 | -35.0 | 84.0 | -38.0 | -128.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| 84.0 | -38.0 | 9399.0 | -38.0 | -128.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| 78.0 | -35.0 | 9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| 16.0 | -4.0 | 9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| -86.0 | -37.0 | -82.0 | -37.0 | 125.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| -82.0 | -37.0 | 5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| 5.0 | -35.0 | 78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| -110.0 | -46.5 | -82.0 | -37.0 | -128.0 | 25.0 | 25.0 | 150.0 | 150.0 |
| -82.0 | -37.0 | 16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 150.0 | 150.0 |

XT= 8.0 YT= -5.0 XB= -40.0 YB= -35.0

GRIDX= 40.0 GRIDY= 20.0 XMAX= 120.0 YMAX= 80.0

INCX= 5 INCY= 5 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

THE MIN. FS= 1.69 EFS= 1.35 H(X)= 60.00 G(Y)= 30.00 R= 67.69

THE MIN. EFS= 1.35 FS= 1.70 H(X)= 60.00 G(Y)= 25.00 R= 65.04

FOR SIDE TWO

THESE ARE THE INPUT DATA LINES

| X1 | Y1 | X2 | Y2 | W | F2 | F1 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|
| 9999.0 | -49.0 | 112.0 | -49.0 | -1000.0 | 0.0 | 100.0 | 0.0 | 9999.0 |
| 112.0 | -49.0 | -9999.0 | -49.0 | -1000.0 | 25.0 | 100.0 | 150.0 | 9999.0 |
| 9399.0 | -46.5 | 110.0 | -46.5 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 112.0 | -49.0 | 110.0 | -46.5 | -128.0 | 0.0 | 25.0 | 0.0 | 150.0 |
| 110.0 | -46.5 | 105.5 | -41.5 | 125.0 | 0.0 | 25.0 | 0.0 | 150.0 |
| 105.5 | -41.5 | 100.0 | -39.5 | 125.0 | 0.0 | 25.0 | 0.0 | 150.0 |
| 100.0 | -39.5 | 86.0 | -37.0 | 125.0 | 35.0 | 25.0 | 0.0 | 150.0 |
| 86.0 | -37.0 | 67.0 | -29.0 | 123.0 | 35.0 | 27.0 | 0.0 | 150.0 |
| 100.0 | -39.5 | 85.0 | -30.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 85.0 | -30.0 | 67.0 | -29.0 | 135.0 | 0.0 | 35.0 | 0.0 | 0.0 |
| 67.0 | -29.0 | 60.0 | -26.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| 60.0 | -26.0 | 8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| 8.0 | 0.0 | -8.0 | 0.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| -8.0 | 0.0 | -16.0 | -4.0 | 123.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| -16.0 | -4.0 | -78.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| -78.0 | -35.0 | -84.0 | -38.0 | -128.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| -84.0 | -38.0 | -9399.0 | -38.0 | -128.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| -78.0 | -35.0 | -9399.0 | -35.0 | -127.0 | 0.0 | 27.0 | 0.0 | 150.0 |
| -16.0 | -4.0 | -9399.0 | -4.0 | -62.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 86.0 | -37.0 | 82.0 | -37.0 | 125.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| 82.0 | -37.0 | -5.0 | -35.0 | -128.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| -5.0 | -35.0 | -78.0 | -35.0 | -128.0 | 27.0 | 25.0 | 150.0 | 150.0 |
| 110.0 | -46.5 | 82.0 | -37.0 | -128.0 | 25.0 | 25.0 | 150.0 | 150.0 |
| 82.0 | -37.0 | -16.0 | -4.0 | -127.0 | 27.0 | 27.0 | 150.0 | 150.0 |

XT= 8.0 YT= -5.0 XB= -70.0 YB= -45.0

GRIDX= 25.0 GRIDY= 15.0 XMAX= 120.0 YMAX= 120.0

INCX= 5 INCY= 5 INCR= 5

THE MAXIMUM F.S. TO BE PRINTED IS 0.00

THE MAXIMUM E.F.S. TO BE PRINTED IS 0.00

TEST POINTS

*SBU LIMIT*
ENTER S TO CONTINUE OR CR KEY TO STOP:
S.1000

THE MIN. FS= 1.13 EFS= .97 H(X)= 95.00 G(Y)= 90.00 R= 138.83

THE MIN. EFS= .97 FS= 1.13 H(X)= 80.00 G(Y)= 55.00 R= 103.73

SBU 436.113 UNTS.

RUN COMPLETE.

2,885,000
2,885,500
2,886,000
2,886,500
2,887,000
2,887,500
734,000
733,500
733,000
732,500
732,000
CHEROKEE
NORMAL MAXIMUM POOL
LAKE
RIVER
HOLSTON
ELEVATION 1073.0
Dismantled Construction Bridge
2006-232
RESERVATION BOUNDARY
INDEX
HOLSTON RIVER
B C D E F G H
3 4 5 6 7
N
TOPOGRAPHY BY PLANE TABLE SHEET NO. 501-7 & C-6
CONTOUR INTERVAL 2 FEET
DATUM IS MEAN SEA LEVEL
TENNESSEE STATE SYSTEM OF RECTANGULAR COORDINATES
R.4 REVISED MAY 1984 FROM PHOTOGRAPHY DATED 8-30-83
R.3 TOPOGRAPHY REVISED MARCH 1981 WITH G-6 FROM PHOTOGRAPHY DATED 11-26-80
R.2 STEREO REVISED FROM PHOTOGRAPHY DATED 3-22-74
R.1 ADDITIONAL TOPOGRAPHY ADDED NORTH AND SOUTH OF RAILROAD, OCTOBER 1952
REVISED AREA FIELD INSPECTED JULY 1974
TOPOGRAPHY
JOHN SEVIER SITE
HAWKINS COUNTY, TENNESSEE
STEAM PLANT INVESTIGATION
TENNESSEE VALLEY AUTHORITY
MAPS AND SURVEYS BRANCH
SCALE OF FEET
100 0 100 200 300 400
CHATTANOOGA JUNE 1952 41 MS 461K502-C-6 R.4