File: SIM96-1.ASM
output: SIM96-10

Run №1

```
HEADING
SIMS BAYOU, DM#8, SLOPE STABILITY ANALYSIS,STA. 913+80:
BORING NO. 96-1: LEFT BANK LOOKING UPSTREAM,ZAHID
CONSTRUCTION CONDITION;8 DEC. 1996,18 DEC RERUN, NEW DIMENSIONS
PROFILE LINE
1 1
101 48
114.5 52.5
200 52.5

2 2
55 38
64 41
80 41
101 48
200 48

3 3
0 33
40 33
43 34
55 38
200 38

4 4
-200 32
200 32

5 5
-200 10
200 10
```

CRITICAL ARC.

$x = 69.50$
$Y = 92.00$
$R = 90.00$
$F.S = 5.66$

Arc 1

```
MATERIAL PROPERTIES
1 CLAY, STIFF
119 SATURATED UNIT WT,PCF
CONVENTIONAL
1250 0
NO PORE PRESSURE
2 CLAY, V/ST. SLKS.
121
CONV
2250 0
NO PORE PRESSURE
3 SANDY SILT, MED. D,
120
CON
0 30
P L
1
4 CLAY V/ST. SLKS
123
CONV
2250 0
P L
1
5 SAND, DENSE
115
CONV
0 40
```

```
P L
1

PIEZOMETRIC LINE DATA
1 63
-200 34 43 34
101 38 200 38


SURFACE PRESSURE
0 33 63 0
40 33 63 0
43 34 0 0

ANALYSIS COMPUTATION
CIRCULAR SEARCH
67 85 .50 -20
TANGENT
24.5
CRACK
2
PROCEDURE
SPENCER

COMPUTE
PLOT
```

File: SM96-1L.ASM
Output: SM96-1LO

RUN 4

```
HEADING
SIMS BAYOU, DM#8, SLOPE STABILITY ANALYSIS,STA. 913+80:
BORING NO. 96-1; LEFT BANK LOOKING UPSTREAM,ZAHID
LONG TERM LOADING OR STDY.SEP.1996,19 DEC RERUN, NEW DIMENSIONS
PROFILE LINE
1 1
101 48
114.5 52.5
200 52.5

2 2
55 38
64 41
80 41
101 48
200 48

3 3
0 33
40 33
43 34
55 38
200 38

4 4
-200 32
200 32

5 5
-200 10
200 10
```

X = 66.50
Y = 88.50
R = 69.5
F.S = 1.35

ARC 11

```
MATERIAL PROPERTIES
1 CLAY, STIFF
119 SATURATED UNIT WT,PCF
CONVENTIONAL
0 23
NO PORE PRESSURE
2 CLAY, V/ST. SLKS.
121
CONV
100 13
NO PORE PRESSURE
3 SANDY SILT, MED. D,
120
CON
0 30
P L
1
4 CLAY V/ST. SLKS
123
CONV
100 13
P L
1
5 SAND, DENSE
115
CONV
0 40
```

```
P I
1

PIEZOMETRIC LINE DATA
1 63
-200 34 43 34
101 38 200 38


SURFACE PRESSURE
0 33 63 0
40 33 63 0
43 34 0 0

ANALYSIS COMPUTATION
CIRCULAR SEARCH
67 85 .5 -20
TANGENT
24.5
PROCEDURE
SPENCER

COMPUTE
```

INP: SM96-1L1.ASM
SM96-1L10

```
HEADING
SIMS BAYOU, DM#8, SLOPE STABILITY ANALYSIS,STA. 913+80:
BORING NO. 96-1; LEFT BANK LOOKING UPSTREAM,ZAHID
LONG TERM LOADING OR STDY.SEP.1996,15 JAN RERUN, NEW DIMENSIONS,SINGLE ARC
PROFILE LINE
1 1
101 48
114.5 52.5
200 52.5

2 2
55 38
64 41
80 41
101 48
200 48

3 3
0 33
40 33
43 34
55 38
200 38

4 4
-200 32
200 32

5 5
-200 10
200 10
```

Arc 3

X = 90
Y = 68
T = 39
R = 29
F.S = 1.52

```
MATERIAL PROPERTIES
1 CLAY, STIFF
119 SATURATED UNIT WT,PCF
CONVENTIONAL
0 23
NO PORE PRESSURE
2 CLAY, V/ST. SLKS.
121
CONV
100 13
NO PORE PRESSURE
3 SANDY SILT, MED. D,
120
CON
0 30
P L
1
4 CLAY V/ST. SLKS
123
CONV
100 13
P L
1
5 SAND, DENSE
115
CONV
0 40
```

```
P L
1

PIEZOMETRIC LINE DATA
1 63
-200 34 43 34
101 38 200 38


SURFACE PRESSURE
0 33 63 0
40 33 63 0
43 34 0 0

ANALYSIS COMPUTATION
CIRCULAR
90 68
TANGENT
39
PROCEDURE
SPENCER

COMPUTE
```

SM 96-1L2.ASM
SM96-1L20

HEADING
SIMS BAYOU, DM#8, SLOPE STABILITY ANALYSIS,STA. 913+80:
BORING NO. 96-1; LEFT BANK LOOKING UPSTREAM,ZAHID
LONG TERM LOADING OR STDY.SEP.1996,15 JAN RERUN, NEW DIMENSIONS,SINGLE ARC
PROFILE LINE
1 1
101 48
114.5 52.5
200 52.5

2 2
55 38
64 41
80 41
101 48
200 48

3 3
0 33
40 33
43 34
55 38
200 38

4 4
-200 32
200 32

5 5
-200 10
200 10

Circle IV

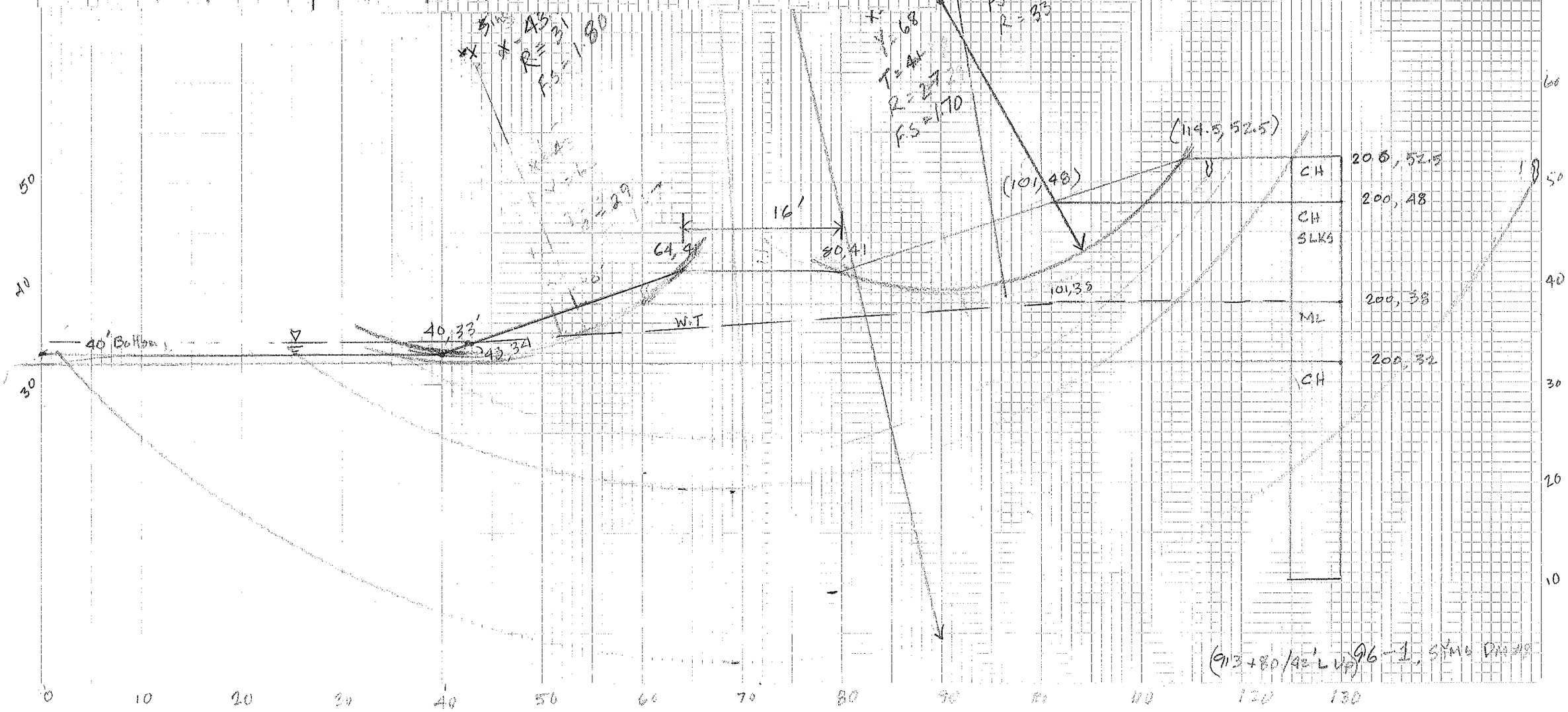
X = 43
Y = 64
R = 31
T = 33
F.S = 1.88

MATERIAL PROPERTIES
1 CLAY, STIFF
119 SATURATED UNIT WT,PCF
CONVENTIONAL
0 23
NO PORE PRESSURE
2 CLAY, V/ST. SLKS.
121
CONV
100 13
NO PORE PRESSURE
3 SANDY SILT, MED. D,
120
CON
0 30
P L
1
4 CLAY V/ST. SLKS
123
CONV
100 13
P L
1
5 SAND, DENSE
115
CONV
0 40

```
P L
1

PIEZOMETRIC LINE DATA
1 63
-200 34 43 34
101 38 200 38


SURFACE PRESSURE
0 33 63 0
40 33 63 0
43 34 0 0

ANALYSIS COMPUTATION
CIRCULAR
43 64
TANGENT
33
PROCEDURE
SPENCER

COMPUTE
```

I. $\gamma_d = \gamma_s(1+24\%)\gamma_d$

Soil No.	Avg. MC %	Avg. γ_s (pcf)	Avg. γ_d	Deg Q-Strength C	Deg Q-Strength φ	Deg S-Strength φ	Deg S-Strength C	Classification
I	24%	119	96	1250	0	23°	0	CLAY, STIFF, GRAY (CH)
II	26%	121	96	2250	0	13°	100	CLAY, V/ST. GRAY & YELLOWISH, SLICKENSIDED (CH)
III	–	120	–	0	30°	0	30	SANDY SILT, MED. DENSE, RED (ML)
IV	28%	123	96	2250	0	13	100	CLAY, V/ST., RED, SLICKENSIDED (CH)
V		115		0	40°	0	40	SAND



Corrected: Bor. ELV. 526'

Top EL or Grn 52.6

Stn: 91+380
INVERT EL. 32.45

Project: Sims Bayou
Houston, Texas
Contract No. DACW64-95-D-0007 Delivery Order No. 0005

SUMMARY OF LABORATORY TEST RESULTS

Boring No. 96-1

S #	Depth (ft)	P P (tsf)	SPT Blows per Foot	Visual Classification	U S C	Mc (%)	Dry Unit Wt (pcf)	Wet Unit Wt (pcf)	L L (%)	PL (%)	Mechanical Analysis % Passing #4	#10	#40	#100	#200	Torvane Shear Strength (tsf)	q u (tsf)
1	0 - 2	1.00		Clay,w/roots,Stiff,Dark gray	C H	24.8											
2	2 - 4	1.25		Clay,Stiff,Dark gray	C H	22.7											
3	4 - 6	3.25		Clay,w/calc nod & fe st,Blocky structure, Slickensided,Very stiff,Gray & yellowish gray	C H	25.4	95.1	119.3	74.0	26.0							
4	6 - 8	3.75		Clay,w/calc nod & fe st,Slickensided,Very stiff, Gray & yellowish gray	C H	24.4											
5	8 - 10	3.50		Clay,w/calc nod & fe st,Slickensided,Very stiff, Gray & yellowish gray	C H	23.7											
6	10 - 12	3.50		Clay,w/calc nod & fe st,Slickensided,Very stiff, Gray & yellowish gray	C H	28.8	94.4	121.6	72.0	26.0							
7	12 - 14	2.25		Clay,w/calc nod & fe st,Slickensided,Very stiff, Reddish brown & yellowish gray	C H	28.6	97.6	125.5	64.0	24.0							2.03
8	14 - 16			Sandy Silt,Medium dense,Red soft	M L						100.0	100.0	100.0	100.0	93.3		
9	16-17.5		12	Sandy Silt,Medium dense,Red soft	M L												
10	20-22	3.00		Clay,w/sand seams & ferrous stains,Slickensided ,Very stiff,Red	C H	24.4	98.9	123.1	50.0	19.0							
11	22-24	3.75		Clay,w/silt pockets & ferrous stains,Slickensided ,Very stiff,Red	C H	25	98		61	17							
12	24-26	4.50+		Clay,w/ferrous stains,Slickensided,Hard,Red	C H	27	97		75	20							
13	26-28	2.75		Clay,w/Ferrous stains,Slickensided,Very stiff, Red	C H	28.4											
14	28-30	3.25		Clay,w/Ferrous stains,Slickensided,Very stiff, Red	C H	26.8	93.9	119.1	60.0	25.0	100.0	100.0	100.0	100.0	98.4		3.07
15	30-32	3.75		Clay,w/Ferrous stains,Slickensided,Very stiff, Red	C H	27.6											
16	32-34	3.75		Clay,w/calcareous nodules & ferrous stains, Slickensided,Very stiff,Red	C H	27.7											
17	34-36	3.50		Clay,w/Ferrous stains,Slickensided,Very stiff, Red	C H	26.9	93.1	118.2	68.0	27.0							
18	36-38	3.50		Clay,w/Ferrous stains,Slickensided,Very stiff, Red	C H	27.8											
19	38-40	3.75		Clay,w/Ferrous stains,Slickensided,Very stiff, Red	C H	31.6											
20	40-42	3.50		Clay,w/Ferrous stains,Slickensided,Very stiff, Red	C H	33.4											

S # : Sample Number, P P : Pocket Penetrometer Reading, U S C : Unified Soil Classifcation, M c : Moisture Content
q u : Uncogined Compressive Strength, W O H : Weight of hammer, W O P : Weight of Pipe