

January 31, 1984

Foundations & Materials Branch
Engineering Division

Mr. G. Joseph Sullivan
General Superintendent
New Orleans Sewerage and Water Board
City Hall, Civic Center
New Orleans, LA 70165

Dear Mr. Sullivan:

Reference is made to the attached Modjeski and Masters letter of January 17, 1984 forwarding the Eustis Engineering report on the 17th Street Outfall Canal Test Section.

We have reviewed the test section report and concur with the conclusions presented on page six. We also concur with the recommendation of installing piezometers to monitor the uplift pressures along the entire reach where the sand stratum is exposed. A contingency plan should be developed to eliminate excess uplift pressures at the landside toe during construction and presented to this office for approval.

We further concur that the recommendations of the Eustis report adequately address comments 1 and 3 on page 2 of our September 7, 1983 letter to Modjeski and Masters (copy attached). It should be noted that the test data indicate the hydrostatic head in the sand under the levee is approximately elevation 18 CD (-2.4 N.G.V.D.). This data should be considered in future stability analyses.

In regard to your permit application, technical comments 2b through 2f forwarded to you by Operations Division's letter of January 20, 1983 (copy attached) have been satisfactorily resolved. However, comment 2a concerning the gap at Veterans Highway remains to be addressed.

JR

I wish to point out that this letter does not necessarily imply credit for construction toward the High Level Plan.

If we can be of any further assistance please do not hesitate to call.

Sincerely,

Frederic M. Chatry
Chief, Engineering Division

Enclosures

Copy furnished:

Mr. Barney Martin
Modjeski and Masters
Consulting Engineers
John Hancock Building
1055 St. Charles Avenue
New Orleans, Louisiana 70130

LMNED-D
LMNOD

PH
NAPOLITANO
LMNED-ES
PICCOLA
LMNED-F/30
JUDLIER
LMNED-D
CHATRY
LMNED
NETTLES
LMNSO

- 1) The water elevation in the piezometers was not affected by the water level in the canal because the surface of the underlying sand has become intermixed with fines to some depth below design grade (el 4.0 C.D.). This layer of contaminated sand acts as a seal preventing the water in the canal from influencing the hydrostatic head at and beyond the levee toe.
- 2) Upon completion of the proposed dredging to design grade in the canal, sedimentation will probably deposit on the bottom in a relatively short period of time further sealing off the water pressure in the canal from the surrounding ground water.

The preceding conclusions may be supported by the present thickness of sedimentation on the canal bottom which suggest that at one time the bottom of the canal was as deep if not deeper than the proposed design grade. Such a situation could account for the layer of contaminated sand at the surface of this stratum, and confirm that sedimentation will deposit on the canal bottom after excavation to design grade. It should also be noted that the location of the test section was selected where the surface of the underlying sand is at the highest elevation based on borings in the canal. If the surface of the sand was deeper than the design grade, there will be many areas in which the sand stratum will not be exposed by the proposed dredging.

Reach 1
L.S.

LI	MSR	1-E0F	17 TH ST	OUTFALL	CANAL	STA	553+70	TO	568	ORLEANS	
1	10.0	10.0	0.5	0.0	1						
2	10.0	10.0	0.5	0.0	1						
3	10.0	10.0	0.5	0.0	1						
4	10.0	10.0	0.5	0.0	1						
5	10.0	10.0	0.5	0.0	1						
6	0.0	0.0	0.0	0.0	0.0						
7	0.0	10.0	50.0	100.0	500.0						
8	0.0	10.0	50.0	100.0	500.0						
9	0.0	10.0	20.0	30.0	200.0						
10	0.0	10.0	30.0	100.0	300.0						
11	0.0	10.0	30.0	100.0	300.0						
12	0.0	10.0	0.0	0.0	0.0						
13	0.0	10.0	20.0	30.0	200.0						
14	0.0	10.0	20.0	30.0	200.0						
15	0.0	10.0	18.5	15.2	10.5	177.5	-2	189.5	2	201.4	2
16	201.5	3.5									
17	201.6	5.5	210.5	5.5	216.5	3.5	233	-2			
18	237.8	-3.6	247.8	-4	340	-4	999.9	0			
19	0.0	18.5	128	-18.5	152	-10.5	177.5	-2			
20	189.5	2	201.4	2	201.5	3.5					
21	216.5	3.5	233	-2	237.8	-3.6	247.8	-4			
22	340	-4	999.9	0							
23	0.0	18.5	128	-18.5	152	-10.5	177	-2	233	-2	
24	237.8	-3.6	247.8	-4	340	-4	999.9	0			
25	0.0	18.5	128	-18.5	152	-10.5	340	-10.5	999.9	0	
26	0.0	20.5	340	-20.5	999.9	0					
27	0.0	36.5	340	-36.5	999.9	0					
28	0.0	40	340	-40	999.9	0					
29	0.0	2.4	340	-2.4	999.9	0					
30	1	1	1	1	1	1	1	1	1	1	1
31	1	1	1	1	1	1	1	1	1	1	1
32	4	203.5	-10.5	229	-10.5	1					
33	229										
34	5	201.5	-20.5	229	-20.5	1					
35	229										
36	6	201.5	-36.5	245	-36.5	1					
37	245										
38	245										
39	245										
40	245										
41	245										
42	245										
43	245										
44	245										
45	245										
46	245										
47	245										
48	245										
49	245										
50	245										

ASSUMED CRIT. PASSIVE LOC. 229.0 EL. -10.5 DP 3733, RP 3733, RP 4130.

ACTIVE WEDGE DATA

S	DIST.	ELEV.	DA	RA	DB	RB	F
203.5	-10.5	17988.		8760.	0.	7140.	1.41
208.5	-10.5	16959.		8760.	0.	5740.	1.41
213.5	-10.5	15750.		8760.	0.	4340.	1.43
218.5	-10.5	13177.		12260.	0.	2940.	2.05
223.5	-10.5	10447.		12258.	0.	1540.	2.67
228.5	-10.5	7737.		11256.	0.	140.	3.88

CRIT. ACTIVE LOC 203.5 EL -10.5 DA 17988.3 RA 8760.

CRIT. ACTIVE LOC 203.5 EL -10.5 DA 17988.3 RA 8760.

DIS.	EL.	DP	RP	DB	RB	FS
229.0	-10.5	3733.	4130.	0.	7140.	1.41

* * STRATUM 5 ACT. WEDGE LOC. 201.5 EL. -20.5 PASS.WEDGE LOC. 229.0 EL. -20.5

ASSUMED FAILURE SURFACE DATA

DIST.	ELEV.	WT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-20.5	2087.	1131.	380.	380.	380.
100.0	-20.5	2087.	1131.	380.	380.	380.

* * STRATUM 4 ACT. WEDGE LOC. 203.5 EL. -10.5 PASS.WEDGE LOC. 229.0 EL. -10.5

ASSUMED FAILURE SURFACE DATA

DIST.	ELEV.	WT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-10.5	1381.	506.	280.	99999.	280.
100.0	-10.5	1381.	506.	280.	99999.	280.
128.0	-10.5	1381.	506.	280.	99999.	280.

**** STABILITY WITH UPLIFT ****

17 TH ST OUTFALL CANAL
STA 553+70 TO 568 ORLEANS
8 PROFILES
VERTICALS
UPLIFT WITH 1 PIEZOMETRIC GRADE LINES

DI U1 1-E0F

128.0	-20.5	2087.	1131.	380.	380.	201.3	-36.5	4549.	2131.	380.	1396.	380.
158.0	-20.5	2384.	1131.	380.	380.	201.4	-36.5	4515.	2131.	380.	1376.	380.
158.0	-20.5	2411.	1131.	380.	380.	201.5	-36.5	4239.	2131.	380.	1217.	380.
177.0	-20.5	2749.	1131.	380.	380.	210.6	-36.5	4344.	2131.	380.	1278.	380.
177.5	-20.5	2756.	1131.	380.	380.	210.5	-36.5	4344.	2131.	380.	1277.	380.
183.5	-20.5	2917.	1131.	380.	380.	216.5	-36.5	4104.	2131.	380.	1139.	380.
201.3	-20.5	2917.	1131.	380.	380.	223.0	-36.5	3537.	2131.	380.	812.	380.
201.4	-20.5	2883.	1131.	380.	380.	237.8	-36.5	3373.	2131.	380.	717.	380.
201.5	-20.5	2607.	1131.	380.	380.	247.8	-36.5	3331.	2131.	380.	693.	380.
201.6	-20.5	2712.	1131.	380.	380.	340.0	-36.5	3331.	2131.	380.	693.	380.
210.5	-20.5	2712.	1131.	380.	380.							
216.5	-20.5	2472.	1131.	380.	380.							
233.0	-20.5	1905.	1131.	380.	380.							
237.8	-20.5	1741.	1131.	380.	380.							
247.8	-20.5	1699.	1131.	380.	380.							
340.0	-20.5	1699.	1131.	380.	380.							

ASSUMED CRIT. PASSIVE LOC. 229.0 EL. -20.5 DP 15906. RP 10200ST. ELEV. DA RA DB RB F
 22400. ASSUMED CRIT. PASSIVE LOC. 245.0 EL. -36.5 DP 54283. RP

ACTIVE WEDGE DATA

DIST.	ELEV.	DA	RA	DB	RB	FS	ELEV.	DA	RA	DB	RB	F
201.5	-20.5	41871.	12737.	0.	10450.	1.29	201.5	98610.	22051.	0.	16530.	1.38
206.5	-20.5	41242.	13986.	0.	8550.	1.30	206.5	98791.	22751.	0.	14630.	1.34
211.5	-20.5	40345.	15235.	0.	6550.	1.32	211.5	98703.	23452.	0.	12730.	1.32
216.5	-20.5	38617.	15360.	0.	4750.	1.34	216.5	97683.	24647.	0.	10830.	1.33
221.5	-20.5	35959.	15360.	0.	2850.	1.42	221.5	95480.	25896.	0.	8930.	1.39
226.5	-20.5	32305.	17818.	0.	950.	1.77	226.5	92165.	27146.	0.	7030.	1.49
CRIT. ACTIVE LOC	201.5 EL	-20.5 DP	41871. DA	12737. RA	12737. RB		231.5	87802.	27520.	0.	5130.	1.64
224 → 224 NG							236.5	82569.	27520.	0.	3230.	1.88

DIST.	EL.	DP	RP	DB	RB	FS	CRIT. ACTIVE LOC	EL	DA	RA	DB	RB	F
229.0	-20.5	15906.	10290.	0.	10450.	1.29	211.5	211.5	98703.	23452.	0.	12730.	1.32
233.8	-20.5	14674.	10240.	0.	12255.	1.30	245.0	54283.	22400.	0.	12730.	1.32	
237.2	-20.5	14260.	10240.	0.	13547.	1.32							
236.6	-20.5	14302.	10240.	0.	13332.	1.32	DIS.	EL.	DP	RP	DB	RB	F
236.6	-20.5	14302.	10240.	0.	13332.	1.32	245.0	-36.5	54283.	22400.	0.	12730.	1.32
234.3	-20.5	14578.	10240.	0.	12471.	1.30							

EOT..

* STRATUM 6 ACT. WEDGE LOC. 201.5 EL. -36.5 PASS.WEDGE LOC. 245.0 EL. -36.5

ASSUMED FAILURE SURFACE DATA

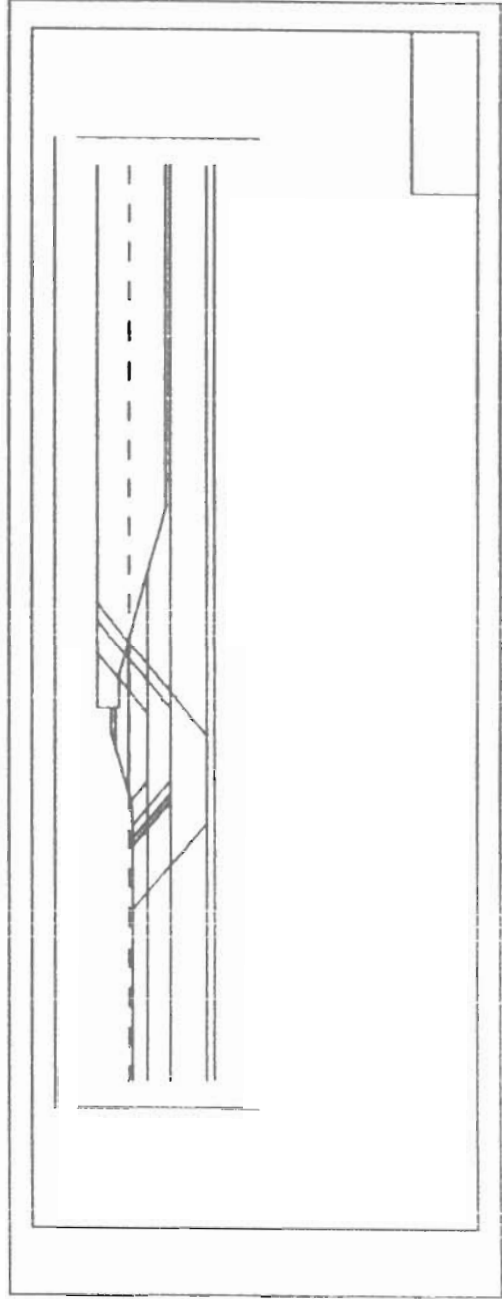
DIST.	ELEV.	WT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-36.5	3719.	2131.	380.	917.	380.
100.0	-36.5	3719.	2131.	380.	917.	380.
128.0	-36.5	3719.	2131.	380.	917.	380.
150.0	-36.5	4016.	2131.	380.	1088.	380.
152.0	-36.5	4043.	2131.	380.	1104.	380.
177.0	-36.5	4381.	2131.	380.	1299.	380.
177.5	-36.5	4388.	2131.	380.	1303.	380.
189.5	-36.5	4549.	2171.	380.	1366.	380.

AFTER SELECTED WEDGES PLACE CROSSHAIRS AT ADDITIONAL P.U. LOCATIONS
 (N, S, E = COMPLETE STRATA & D, R = REDRAW & U = WINDOW)
 1 = END, 2 = PLOT SECTION, 3 = NEW SECTION
 4 = CK. MORE, 5 = SPOOL DETAIL DATA 1

STR 4 EL. -10.5 NO 1
 NO DIST. F.S.
 2 229. 1.405

STR 5 EL. -20.5 NO 3
 NO DIST. F.S.
 4 229. 1.289
 5 233.8 1.295
 6 237.2 1.323
 7 236.6 1.317
 8 236.6 1.317
 9 234.3 1.299

STR 6 EL. -36.5 NO 10
 NO DIST. F.S.
 11 245. 1.319



Reach 1
C/S

LINE NO	DESCRIPTION	85.2	-10.5	1682.	506.	280.	380.	280.
1	17 TH ST OUTFALL CANAL	98.3	-10.5	1680.	506.	280.	380.	280.
2	STA 553+70 TO 568 ORLEANS(560)	98.4	-10.5	1488.	506.	280.	380.	280.
3	10.0 10.0 0.5 0 1 0	98.5	-10.5	1288.	506.	280.	380.	280.
4	7.2 2.1	100.0	-10.5	1288.	506.	280.	380.	280.
5	100 150	110.5	-10.5	1287.	506.	280.	380.	280.
6	0 62.5 0 0 62.5 0 0	122.5	-10.5	1275.	506.	280.	380.	280.
7	0 120 500 500 120 500 500	131.5	-10.5	566.	506.	280.	380.	280.
8	0 103 500 500 103 500 500	148.0	-10.5	344.	506.	280.	380.	280.
9	0 103 280 280 103 280 280	150.0	-10.5	344.	506.	280.	999999.	280.
10	0 103 330 380 103 330 380	172.0	-10.5	344.	506.	280.	999999.	280.
11	0 102 380 380 102 380 380	340.0	-10.5	344.	506.	280.	999999.	280.
12	30 122 0 0 122 0 0							
13	0 -2 58.2 -2 78 3.5							
14	85.2 5.5 98.3 5.5 98.4 3.5 98.5 2							
15	110.5 2 122.5 -2 131.5 -5 340 -5 9999.9 0							
16	0 -2 58.2 -2 78 3.5							
17	85.2 5.5 98.3 5.5 98.4 3.5 98.5 2							
18	110.5 2 122.5 -2 131.5 -5 148 -10.5 172 -18.5							
19	340 -18.5 9999.9 0							
20	0 -2 58.2 -2 78 3.5							
21	98.4 3.5 98.5 2 110.5 2							
22	122.5 -2 131.5 -5 148 -10.5 172 -18.5 340 -18.5 9999.9 0							
23	0 -2 58.2 -2 122.5 -2							
24	131.5 -5 148 -10.5 172 -18.5 340 -18.5 9999.9 0							
25	0 -10.5 148 -10.5 172 -18.5 340 -18.5 9999.9 0							
26	0 -20.5 340 -20.5 9999.9 0							
27	0 -36.5 340 -36.5 9999.9 0							
28	0 -40 340 -40 9999.9 0							
29	0 -2.4 340 -2.4 9999.9 0							
30	1 1 1 1 1 1 1 1 1							
31	1							
32	4.95 -10.5 131 -10.5 1							
33	131							
34	5.95 -20.5 132 -20.5 1							
35	132							
36	6.975 -36.5 154 -36.5 3							
37	149 154 159							
EOT.								
DI WJ 1-EOT								

ASSUMED CRIT. PASSIVE LOC. 131.0 EL. -10.5 DP 1435. RP 2379.

ACTIVE WEDGE DATA

DIST.	ELEV.	DA	RA	DB	RB	F
95.0	-10.5	13113.	10914.	0.	10080.	2.00
100.0	-10.5	12895.	11999.	0.	8680.	2.01
105.0	-10.5	10953.	12207.	0.	7280.	2.30
110.0	-10.5	9032.	12137.	0.	5880.	2.68
115.0	-10.5	7696.	8759.	0.	4480.	2.49
120.0	-10.5	6494.	8758.	0.	3080.	2.81

CRIT. ACTIVE LOC 95.0 EL -10.5 DA 13113. RA 10914.

STABILITY WITH UPLIFT ***

17 TH ST OUTFALL CANAL
STA 553+70 TO 568 ORLEANS(560)
8 PROFILES
2 VERTICALS
UPLIFT WITH 1 PIEZOMETRIC GRADE LINES

DIS.	EL.	DP	RP	DB	RB	FS
131.0	-10.5	1435.	2379.	0.	10080.	2.00
134.0	-10.5	1275.	1957.	0.	10923.	2.01

* STRATUM 5 ACT. WEDGE LOC. 95.0 EL. -20.5 PASS.WEDGE LOC. 132.0 EL. -20.5

ASSUMED FAILURE SURFACE DATA

DIST.	ELEV.	WT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-10.5	876.	506.	280.	280.	280.
58.2	-10.5	876.	506.	280.	280.	280.
78.0	-10.5	1442.	506.	280.	380.	280.

* STRATUM 4 ACT. WEDGE LOC. 95.0 EL. -10.5 PASS.WEDGE LOC. 131.0 ASSUMED FAILURE SURFACE DATA

150.0 -36.5 2979. 3131. 380. 489. 380.
 SHEAR STRENGTHS ARE EQUAL 380.0 AT DIST. 164.0
 172.0 -36.5 2682. 2131. 380. 318. 318.
 340.0 -36.5 2682. 2131. 380. 318. 318.

ASSUMED CRIT. PASSIVE LOC. 154.0 EL. -36.5 DP 39626. RP
 13480.

ACTIVE WEDGE DATA

S	DIST.	ELEV.	DA	RA	DB	RB	F
	97.5	-36.5	81262.	24566.	0.	21470.	1.43
	7480.5	-36.5	82835.	25653.	0.	19570.	1.36
	107.5	-36.5	83516.	26740.	0.	17670.	1.32
	112.5	-36.5	83567.	27827.	0.	15770.	1.30
	FS 117.5	-36.5	82355.	28914.	0.	13870.	1.32
	122.5	-36.5	79688.	30000.	0.	11970.	1.38
	127.5	-36.5	75513.	31016.	0.	10070.	1.52
	132.5	-36.5	70226.	30946.	0.	8170.	1.72
	137.5	-36.5	64477.	30876.	0.	6270.	2.04

ASSUMED CRIT. PASSIVE LOC. 132.0 EL. -20.5 DP 11077. RP

ACTIVE WEDGE DATA

DIST.	ELEV.	DA	RA	DB	RB	FS
95.0	-20.5	32254.	15340.	0.	14060.	1.74
100.0	-20.5	32256.	16427.	0.	12160.	1.62
105.0	-20.5	32409.	17514.	0.	10260.	1.62
110.0	-20.5	30918.	18600.	0.	8360.	1.73
115.0	-20.5	28627.	18807.	0.	6460.	1.86
120.0	-20.5	25504.	18737.	0.	4560.	2.13
125.0	-20.5	22456.	15353.	0.	2660.	2.24

CRIT. ACTIVE LOC 100.0 EL. -20.5 DA 32256. RA 16427.

CRIT. ACTIVE LOC 112.5 EL. -36.5 DA 83567. RA 27827.

DIS.	EL.	DP	RP	DB	FS	DIS.	EL.	DP	RP	DB	RB	FS
132.0	-20.5	11077.	7439.	0.	12160.	1.62	149.0	-36.5	40883.	14305.	0.	13870.
136.3	-20.5	10444.	6840.	0.	13785.	1.62	154.0	-36.5	39626.	13480.	0.	15770.
							154.0	-36.5	38580.	13480.	0.	17670.

* * STRATUM 6 ACT. WEDGE LOC. 97.5 EL. -36.5 PASS.WEDGE LOC. 154.0 EL.-36.5 DP 39626. RP

EOT..

ASSUMED FAILURE SURFACE DATA

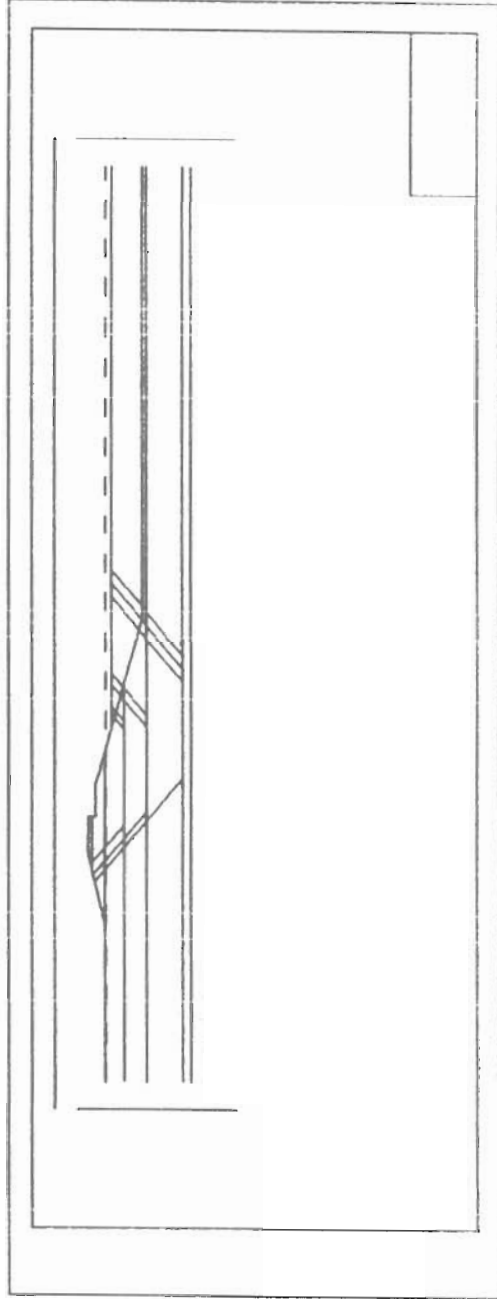
DIST.	ELEV.	WT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-36.5	9538.	2131.	380.	812.	380.
58.2	-36.5	9538.	2131.	380.	1138.	380.
78.0	-36.5	4104.	2131.	380.	1278.	380.
85.2	-36.5	4322.	2131.	380.	1265.	380.
98.3	-36.5	4099.	2131.	380.	1050.	380.
98.4	-36.5	3950.	2131.	380.	1050.	380.
98.5	-36.5	3960.	2131.	380.	1050.	380.
100.0	-36.5	3949.	2131.	380.	1050.	380.
110.5	-36.5	3537.	2131.	380.	812.	380.
122.5	-36.5	3228.	2131.	380.	505.	380.
131.5	-36.5	3006.	2131.	380.	505.	380.
148.0	-36.5					

AFTER SELECTED LEDGES, PLACE CROSSHAIRS AT ADDITIONAL P.U. LOCATIONS
 (N, S, E = COMPLETE STRATA & D, R = REDRAW & U = WINDOW)
 1 = END, 2 = PLOT SECTION, 3 = NEW SECTION
 4 = CK. MORE, 5 = SPOOL DETAIL DATA 1

STR 4 EL. -10.5 NO 1
 NO DIST. F.S.
 2 131. 2.001
 3 134. 2.01

STR 5 EL. -20.5 NO 4
 NO DIST. F.S.
 5 132. 1.624
 6 136.3 1.624

STR 6 EL. -36.5 NO 7
 NO DIST. F.S.
 8 149. 1.312
 9 154. 1.299
 10 159. 1.311



Reach 2

11 M30M 1-E0F
 1 17.7M ST. OUTFALL CANAL.
 2 STA 568 TO 589 ORLEANS.
 3 10.0 10.0 0.5 0 0 1
 4 7.2 2.1
 5 100 150
 6 0 62.5 0 0 62.5 0 0
 7 0 120 500 500 120 500 500
 8 0 103 500 500 103 500 500
 9 0 103 280 280 103 280 280
 10 0 103 320 320 103 320 320
 11 0 102 320 320 102 320 320
 12 30 122 0 122 0 0
 13 0 11.6 196.5 11.6 196.6 5.5 205.8 5.5 211.8 3.5
 14 228.3 -2 233.7 -3 239.7 -4 340 -4 9999.9 0
 15 0 18.5 126 -18.5 150 -10.5 175.5 -2 187.5 2 196.4 2
 16 196.5 3.5
 17 196.6 5.5 205.8 5.5 211.8 3.5 228.3 -2 233.7 -3
 18 239.7 -4 340 -4 9999.9 0
 19 0 -18.5 126 -18.5 150 -10.5 175.5 -2
 20 187.5 2 196.4 2 196.5 3.5
 21 211.8 3.5 228.3 -2 233.7 -3 239.7 -4
 22 340 -4 9999.9 0
 23 0 -18.5 126 -18.5 150 -10.5 175.5 -2 228.3 -2 233.7 -3
 24 239.7 -4 340 -4 9999.9 0
 25 0 -18.5 126 -18.5 150 -10.5 340 -10.5 9999.9 0
 26 0 -20.5 340 -20.5 9999.9 0
 27 0 -34 340 -34 9999.9 0
 28 0 -41 340 -41 9999.9 0
 29 0 -2.4 340 -2.4 9999.9 0
 30 1 1 1 1 1 1 1 1 1 1
 31 1
 32 4 191.5 -10.5 231 -10.5 1
 33 231
 34 5 191.5 -20.5 224 -20.5 1
 35 224
 36 6 191.5 -34 238 -34 1
 37 238
 E0T.
 DI W 1-E0F

ASSUMED CRIT. PASSIVE LOC. 231.0 EL. -10.5 DP 2796. RP
 2816.
 ACTIVE WEDGE DATA
 S

DIST.	ELEV.	DA	RA	DB	RB	F
191.5	-10.5	18066.	6636.	0.	11060.	1.41
196.5	-10.5	18391.	7886.	0.	9660.	1.37
201.5	-10.5	17436.	8782.	0.	8260.	1.42
206.5	-10.5	16385.	8857.	0.	6860.	1.44
211.5	-10.5	14567.	11218.	0.	5460.	1.74
216.5	-10.5	11115.	12259.	0.	4060.	2.42
221.5	-10.5	9026.	12257.	0.	2660.	3.01

 CRIT. ACTIVE LOC 196.5 EL -10.5 DA 18391. RA 7886.

DIST.	EL.	DP	RP	DB	RB	FS
231.0	-10.5	2796.	3816.	0.	9660.	1.37
226.4	-10.5	3433.	4184.	0.	8368.	1.37
225.3	-10.5	3640.	4282.	0.	8051.	1.37
229.2	-10.5	3020.	3958.	0.	9161.	1.37

 * * STRATUM 4 ACT. WEDGE LOC. 191.5 EL. -10.5 PASS.WEDGE LOC.
 * * STRATUM 5 ACT. WEDGE LOC. 191.5 EL. -20.5 PASS.WEDGE LOC.
 224.0 EL. -20.5
 ASSUMED FAILURE SURFACE DATA

DIST.	ELEV.	WT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-10.5	1381.	506.	280.	959999.	280.
100.0	-10.5	1381.	506.	280.	959999.	280.
100.0	-10.5	1381.	506.	280.	959999.	280.

*** STABILITY WITH UPLIFT ***
 17 TH ST. OUTFALL CANAL
 STA 568 TO 589 ORLEANS
 8 PROFILES
 2 VERTICALS
 UPLIFT WITH 1 PIEZOMETRIC GRADE LINES
 * * STRATUM 4 ACT. WEDGE LOC. 191.5 EL. -10.5 PASS.WEDGE LOC.
 ASSUMED FAILURE SURFACE DATA

DIST.	ELEV.	WT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-10.5	1381.	506.	280.	959999.	280.
100.0	-10.5	1381.	506.	280.	959999.	280.
100.0	-10.5	1381.	506.	280.	959999.	280.

UT.	UPLIFT	STR 1	STR 2	STR USED	196.4	-34.0	4300.	1975.	380.	1342.	380.
0.0	2007.	1131.	380.	380.	196.5	-34.0	4331.	1975.	380.	1360.	380.
100.0	2007.	1131.	380.	380.	196.6	-34.0	4089.	1975.	380.	1221.	380.
126.0	2011.	1131.	380.	380.	205.8	-34.0	4089.	1975.	380.	1220.	380.
150.0	2011.	1131.	380.	380.	211.8	-34.0	3849.	1975.	380.	1082.	380.
175.5	2056.	1131.	380.	380.	228.3	-34.0	3282.	1975.	380.	755.	380.
187.5	2017.	1131.	380.	380.	233.7	-34.0	3179.	1975.	380.	655.	380.
196.4	2023.	1131.	380.	380.	230.7	-34.0	3077.	1975.	380.	636.	380.
196.5	2054.	1131.	380.	380.	340.0	-34.0	3076.	1975.	380.	636.	380.
205.8	2012.	1131.	380.	380.	ASSUMED CRIT. PASSIVE LOC. 238.0 EL. -34.0 DP 46282. RP						
211.8	2072.	1131.	380.	380.	20500.						
228.3	2005.	1131.	380.	380.	ACTIVE WEDGE DATA						
233.7	1905.	1131.	380.	380.							
230.7	1802.	1131.	380.	380.							
340.0	1700.	1131.	380.	380.							
	1699.	1131.	380.	380.							

DIST.	ELEV.	DA	RA	DB	RB	FS	CRIT. ACTIVE LOC	206.5	EL	-34.0	DA	87640.	RA	21482.
191.5	40724.	11012.	0.	12350.	1.38	231.5	-34.0	71917.	25740.	0.	2470.	1.90		
196.5	41555.	11987.	0.	10450.	1.30	206.5	-34.0	87640.	21482.	0.	11970.	1.30		
201.5	41096.	13236.	0.	8550.	1.29	211.5	-34.0	86705.	22622.	0.	10070.	1.32		
206.5	40361.	14886.	0.	6650.	1.31	216.5	-34.0	84579.	23871.	0.	8170.	1.37		
211.5	38753.	15382.	0.	4750.	1.36	221.5	-34.0	81342.	25121.	0.	6270.	1.48		
216.5	36134.	15457.	0.	2850.	1.44	226.5	-34.0	77037.	25665.	0.	4370.	1.64		
221.5	32520.	17818.	0.	950.	1.80	231.5	-34.0	71917.	25740.	0.	2470.	1.90		
226.5	27351.	18859.	0.	-950.	2.56	CRIT. ACTIVE LOC 201.5 EL -20.5 DA -41096. RA 13236.								

DIST.	EL.	DP	RP	DB	RB	FS	CRIT. ACTIVE LOC	206.5	EL	-34.0	DA	87640.	RA	21482.
224.0	-20.5	16365.	10240.	0.	8550.	1.29	231.5	-34.0	71917.	25740.	0.	2470.	1.90	
220.7	-20.5	17663.	10438.	0.	7304.	1.32	206.5	-34.0	87640.	21482.	0.	11970.	1.30	
225.3	-20.5	15949.	10240.	0.	9026.	1.29	211.5	-34.0	86705.	22622.	0.	10070.	1.32	
227.0	-20.5	15471.	10240.	0.	9676.	1.29	216.5	-34.0	84579.	23871.	0.	8170.	1.37	
230.4	-20.5	14780.	10240.	0.	10964.	1.31	221.5	-34.0	81342.	25121.	0.	6270.	1.48	

DIST.	ELEV.	WT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-34.0	3464.	1975.	380.	860.	380.
100.0	-34.0	3464.	1975.	380.	860.	380.
126.0	-34.0	3464.	1975.	380.	860.	380.
150.0	-34.0	3788.	1975.	380.	1047.	380.
175.5	-34.0	4133.	1975.	380.	1246.	380.
187.5	-34.0	4294.	1975.	380.	1339.	380.

* * STRATUM 6 ACT. WEDGE LOC. 191.5 EL. -34.0 PASS.WEDGE LOC. 231.7 EL. -34.0
 238.0 EL. -34.0
 236.0 EL. -34.0
 46374. 20500. 11216. 1.29
 EOT..

AFTER SELECTED WEDGES, PLACE CROSSHAIRS AT ADDITIONAL P.W. LOCATIONS
 (N.S. = COMPLETE STRATA & D.R. = REDRAW & U = WINDOW)
 1 = END, 2 = PLOT SECTION, 3 = NEW SECTION
 4 = CK. MORE, 5 = SPOOL DETAIL DATA 1

STR 4 EL. -10.5 NO. 3

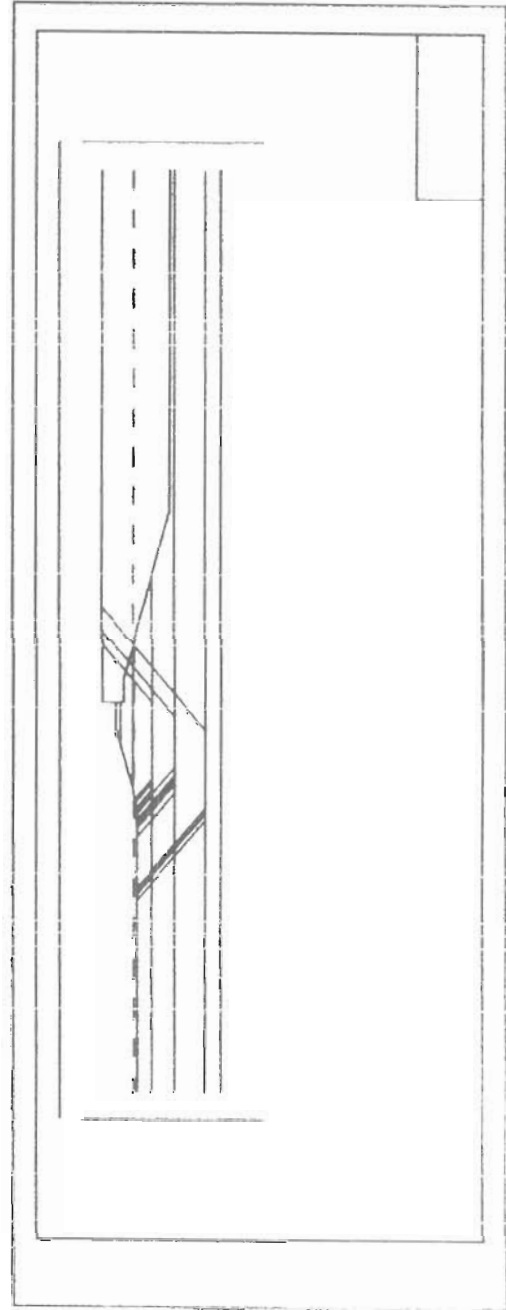
NO	DIST.	F.S.
2	231.1	1.377
3	226.4	1.366
4	225.3	1.371
5	229.2	1.367

STR 5 EL. -20.5 NO. 6

NO	DIST.	F.S.
7	224.4	1.295
8	220.7	1.322
9	225.3	1.293
10	227.1	1.294
11	230.4	1.309

STR 6 EL. -34. NO. 12

NO	DIST.	F.S.
13	238.	1.305
14	240.5	1.327
15	237.7	1.302
16	236.	1.289



Sheet 2

LI M31M 1-EOF
 1 17 TH ST OUTFALL CANAL
 2 STA 568 TO 589 ORLEANS
 3 10.0 10.0 0.5 0 1 0
 4 7.2 2.1
 5 100 150
 6 0 62.5 0 68.5 0 0
 7 0 120 500 500 100 500 500
 8 0 103 500 500 103 500 500
 9 0 103 280 280 103 280 280
 10 0 103 330 380 103 330 380
 11 0 102 380 380 102 380 380
 12 30 122 0 0 122 0 0
 13 0 -1.8 51.8 -1.8 61.8 -1.82 3.5
 14 89.1 5.5 101.5 5.5 101.6 3.5 101.7 2
 15 110.5 2 125.5 -2 134.5 -5 340 -5 9999.9 0
 16 0 -1.8 51.8 -1.8 61.8 -1.82 3.5
 17 89.1 5.5 101.5 5.5 101.6 3.5 101.7 2
 18 110.5 2 125.5 -2 134.5 -5 151 -10.5 175 -18.5
 19 340 -18.5 9999.9 0
 20 0 -1.8 51.8 -1.8 61.8 -1.82 3.5
 21 101.6 3.5 101.7 2 110.5 2
 22 125.5 -2 134.5 -5 151 -10.5 175 -18.5 340 -18.5 9999.9 0
 23 0 -2 125.5 -2 134.5 -5
 24 151 -10.5 175 -18.5 340 -18.5 9999.9 0
 25 0 -10.5 151 -10.5 175 -18.5 340 -18.5 9999.9 0
 26 0 -20.5 340 -20.5 9999.9 0
 27 0 -34 340 -34 9999.9 0
 28 0 -41 341 -41 9999.9 0
 29 0 -2.4 340 -2.4 9999.9 0
 30 1 1 1 1 1 1 1 1 1 1
 31 1 1
 32 4 95 -10.5 135 -10.5 1
 33 135
 34 5 95 -20.5 136 -20.5 1
 35 136
 36 6 98.5 -34 156.5 -34 3
 37 154 156.5 164
 EOF
 DT M1 1-EOF

ASSUMED CRIT. PASSIVE LOC. 135.0 EL. -10.5 DP 1377. RP
 2239.

ACTIVE WEDGE DATA

DIST.	ELEV.	DA	RA	DB	RB	F
95.0	-10.5	12354.	10080.	0.	11200.	2.14
100.0	-10.5	13351.	11140.	0.	9800.	1.94
105.0	-10.5	12329.	12238.	0.	8400.	2.09
110.0	-10.5	10356.	12260.	0.	7000.	2.39
115.0	-10.5	8104.	12260.	0.	5600.	2.99
120.0	-10.5	6804.	8759.	0.	4200.	2.80
125.0	-10.5	5231.	8030.	0.	2800.	3.39

CRIT. ACTIVE LOC 100.0 EL -10.5 DA 13351. RA 11140.

DIS.	EL.	DP	RP	DB	RB	FS
135.0	-10.5	1377.	2239.	0.	9800.	1.94

* * STRATUM 5 ACT. WEDGE LOC. 95.0 EL. -20.5 PASS.WEDGE LOC.
 136.0 EL. -20.5
 135.0 EL. -10.5

ASSUMED FAILURE SURFACE DATA

DIST.	ELEV.	UT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-20.5	1926.	1			

ASSUMED FAILURE SURFACE DATA

DIST.	ELEV.	UT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-10.5	896.	506.	280.	380.	280.
51.8	-10.5	896.	506.	280.	380.	280.
51.8	-10.5	979.	506.	280.	380.	280.

* * STRATUM 4 ACT. WEDGE LOC. 95.0 EL. -10.5 PASS.WEDGE LOC.

131.5	380.	100.0	380.	113.1	380.	380.	110.5	-34.0	3694.	1975.	380.	992.	380.
51.0	380.	1826.	380.	113.1	380.	380.	125.5	-34.0	3882.	1975.	380.	756.	380.
61.0	380.	2009.	380.	113.1	380.	380.	134.5	-34.0	2973.	1975.	380.	576.	380.
82.0	380.	2472.	380.	113.1	380.	380.	150.0	-34.0	2764.	1975.	380.	456.	380.
89.1	380.	2712.	380.	113.1	380.	380.	151.0	-34.0	2751.	1975.	380.	448.	380.
100.0	380.	2712.	380.	113.1	380.	380.	SHEAR STRENGTHS ARE EQUAL						
100.0	380.	2712.	380.	113.1	380.	380.	175.0	-34.0	2427.	1975.	380.	159.7	261.
101.6	380.	2458.	380.	113.1	380.	380.	340.0	-34.0	2427.	1975.	380.	261.	261.
101.7	380.	2318.	380.	113.1	380.	380.	341.0	-34.0	2427.	1969.	380.	264.	264.
125.5	380.	1995.	380.	113.1	380.	380.							
134.5	380.	1596.	380.	113.1	380.	380.							
150.0	380.	1374.	380.	113.1	380.	380.							
175.0	380.	1050.	380.	113.1	380.	380.							
340.0	380.	1050.	380.	113.1	380.	380.							
341.0	380.	1125.	380.	1125.	380.	380.							

ASSUMED CRIT. PASSIVE LOC. 136.0 EL. -20.5 DP 10923. RP S 7299. DIST. ELEV. DA RA DB RB F

ACTIVE WEDGE DATA													
DIST.	ELEV.	DA	RA	DB	RB	FS	ELEV.	DA	RA	DB	RB	F	
95.0	-20.5	3080.	14858.	0.	15580.	1.90	-34.0	71305.	23296.	0.	22040.	1.51	
100.0	-20.5	32796.	15769.	0.	13680.	1.68	-34.0	73467.	24207.	0.	20140.	1.41	
105.0	-20.5	32959.	16680.	0.	11780.	1.62	-34.0	73960.	25118.	0.	18240.	1.36	
110.0	-20.5	31983.	17740.	0.	9880.	1.66	-34.0	73859.	26029.	0.	16340.	1.34	
115.0	-20.5	30073.	18338.	0.	7980.	1.78	-34.0	72657.	26940.	0.	14440.	1.36	
120.0	-20.5	27138.	18660.	0.	6080.	1.99	-34.0	70238.	28001.	0.	12540.	1.43	
125.0	-20.5	23516.	18660.	0.	4180.	2.41	-34.0	66447.	29098.	0.	10640.	1.56	
130.0	-20.5	20774.	15359.	0.	2280.	2.53	-34.0	61469.	29120.	0.	8740.	1.77	

CRIT. ACTIVE LOC 105.0 EL -20.5 DA 32959. RA 16680. 138.5 -34.0 55800. 29120. 0. 6840. 2.14

DIS. EL. DP RP DB RB FS													
136.0	-20.5	10923.	7299.	0.	11780.	1.62	CRIT. ACTIVE LOC 113.5 EL -34.0 DA 73859. RA 26029.						
139.7	-20.5	10388.	6784.	0.	13177.	1.62	DIS. EL. DP RP DB RB FS						
144.8	-20.5	9721.	5976.	0.	15114.	1.63	154.0	-34.0	33877.	12487.	0.	15390.	1.35

* * STRATUM 6 ACT. WEDGE LOC. 98.5 EL. -34.0 PASS.WEDGE LOC. 16665 EL-34.0 33318. 12075. 0. 16340. 1.34

ASSUMED FAILURE SURFACE DATA													
DIST.	ELEV.	UT.	UPLIFT	STR 1	STR 2	STR USED	ELEV.	DA	RA	DB	RB	F	
0.0	-34.0	3303.	1975.	380.	767.	380.	-34.0	31871.	11580.	0.	19118.	1.35	
51.0	-34.0	3303.	1975.	380.	767.	380.	-34.0	33035.	11860.	0.	16336.	1.34	
61.0	-34.0	3386.	1975.	380.	814.	380.	-34.0	32676.	11580.	0.	17482.	1.34	
82.0	-34.0	3849.	1975.	380.	1082.	380.	-34.0	32446.	11580.	0.	17909.	1.34	
89.1	-34.0	4089.	1975.	380.	1221.	380.	-34.0	32236.	11580.	0.	18326.	1.34	
100.0	-34.0	4089.	1975.	380.	1221.	380.							
101.5	-34.0	4067.	1975.	380.	1208.	380.							
101.6	-34.0	3835.	1975.	380.	1074.	380.							
101.7	-34.0	2695.	1975.	380.	993.	380.							

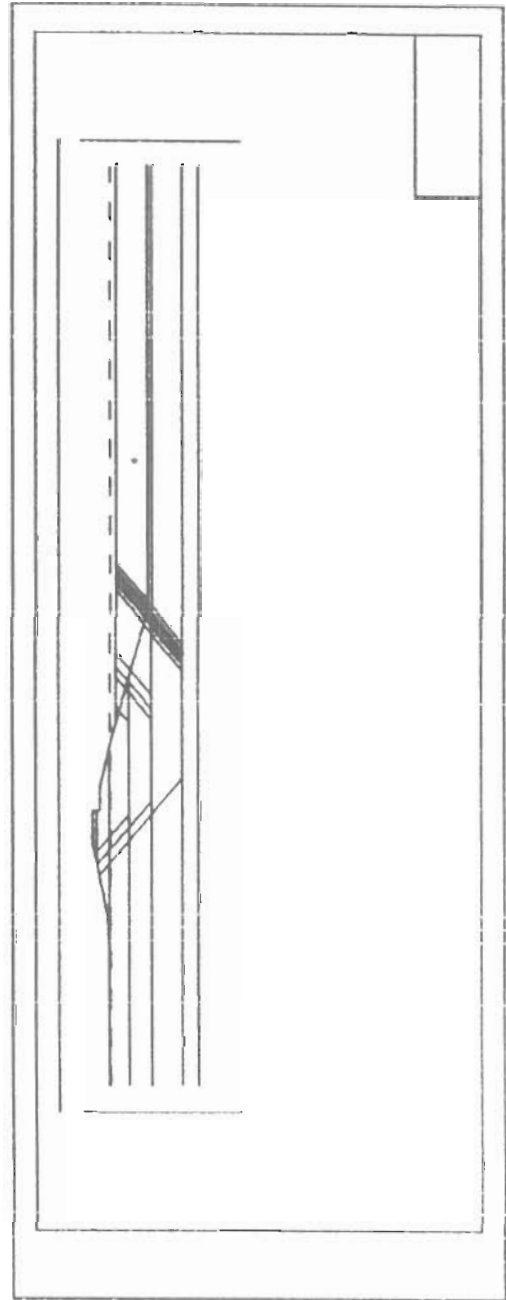
EQT..

AFTER SELECTED WEDGES, PLACE CROSSHAIRS AT ADDITIONAL P.U. LOCATIONS
 (N, S, E = COMPLETE STRATA & D, R = REDRAU & U = WINDOW)
 1 = END, 2 = PLOT SECTION, 3 = NEW SECTION
 4 = CK. MORE, 5 = SPOOL DETAIL DATA 1

STR 4 EL. -10.5 NO 1
 NO DIST. F.S.
 2 135.7 1.936

STR 5 EL. -20.5 NO 3
 NO DIST. F.S.
 4 136.1 1.623
 5 139.7 1.623
 6 144.8 1.625

STR 6 EL. -34. NO 7
 NO DIST. F.S.
 8 154.1 1.348
 9 156.5 1.343
 10 164.1 1.351
 11 157.8 1.341
 12 158.5 1.338
 13 160.6 1.341
 14 161.8 1.344



Reach 3 C.S.

LI	M33M	1-E0F	57.2	-10.5	976.	506.	280.	380.	280.
1	17TH ST OUTFALL CANAL*		66.4	-10.5	1442.	506.	280.	380.	280.
2	STA 589+00 TO STA 614+00		82.2	-10.5	1482.	506.	280.	380.	280.
3	10.0 10.0 0.5 0.0 0.0		89.4	-10.5	1582.	506.	280.	380.	280.
4	7.2 2.1		105.0	-10.5	1660.	506.	280.	380.	280.
5	100.150		105.1	-10.5	1728.	506.	280.	380.	280.
6	0 62.5 0 0 62.5 0 0		105.2	-10.5	1788.	506.	280.	380.	280.
7	0 120 500 500 120 500 500		114.0	-10.5	1887.	506.	280.	380.	280.
8	0 103 500 500 103 500 500		116.0	-10.5	1975.	506.	280.	380.	280.
9	0 103 280 280 103 280 280		135.0	-10.5	566.	506.	280.	380.	280.
10	0 103 330 380 103 330 380		150.0	-10.5	364.	506.	280.	380.	280.
11	0 100 380 380 100 380 380		151.5	-10.5	344.	506.	280.	380.	280.
12	30 122 0 122 0 0		175.5	-10.5	344.	506.	999999.	280.	280.
13	0 -2.1 56.4 -2.1 57.2 -2 66.4 -9 82.2 3.5 89.4 5.5		340.0	-10.5	344.	506.	999999.	280.	280.
14	105 5.5 105.1 3.5 105.2 2								
15	114 2 126 -2 135 -5 340 -5 9999.9 0								
16	0 -2.1 56.4 -2.1 57.2 -2 66.4 -9 82.2 3.5 89.4 5.5								
17	105 5.5 105.1 3.5 105.2 2								
18	114 2 126 -2 135 -5 151.5 -10.5 175.5 -18.5								
19	340 -18.5 9999.9 0								
20	0 -2.1 56.4 -2.1 57.2 -2 66.4 -9 82.2 3.5								
21	105.1 3.5 105.2 2 114 2								
22	126 -2 135 -5 151.5 -10.5 175.5 -18.5 340 -18.5 9999.9 0								
23	0 -2.1 56.4 -2.1								
24	57.2 -2 66.4 -9 126 -2 135 -5 151.5 -10.5 175.5 -18.5								
25	340 -18.5 9999.9 0								
26	0 -10.5 151.5 -10.5 175.5 -18.5 340 -18.5 9999.9 0								
27	0 -20.5 340 -20.5 9999.9 0								
28	0 -32 340 -32 9999.9 0								
29	0 -41 340 -41 9999.9 0								
30	0 -2.4 340 -2.4 9999.9 0								
31	1 1 1 1 1 1 1 1 1								
32	1								
33	4 89 -10.5 134 -10.5 1								
34	134								
35	5 89 -20.5 138 -20.5 1								
36	138								
37	6 89 -32 162 -32 3								
38	157 162 167								
EOT..									
DI W1	1-E0F								

ASSUMED CRIT. PASSIVE LOC. 134.0 EL. -10.5 DP 1472. RP 2449.

ACTIVE WEDGE DATA

DIST.	ELEV.	DA	RA	DB	RB	F
89.0	-10.5	10286.	8317.	0.	12600.	2.65
94.0	-10.5	12009.	9448.	0.	11200.	2.19
99.0	-10.5	13160.	10577.	0.	9800.	1.95
104.0	-10.5	13633.	11704.	0.	8400.	1.85
109.0	-10.5	12094.	12049.	0.	7000.	2.02
114.0	-10.5	10120.	12090.	0.	5600.	2.33
119.0	-10.5	7722.	12019.	0.	4200.	2.99
124.0	-10.5	6326.	8671.	0.	2800.	2.87
129.0	-10.5	4342.	7461.	0.	1400.	3.94

CRIT. ACTIVE LOC 104.0 EL -10.5 DA 13633. RA 11704.

UPLIFT WITH 1 PIEZOMETRIC GRADE LINES

17TH ST OUTFALL CANAL
STA 589+00 TO STA 614+00
8 PROFILES
2 VERTICALS

* * STRATUM 4 ACT. WEDGE LOC. 89.0 EL. -10.5 PASS.WEDGE LOC.

ASSUMED FAILURE SURFACE DATA

DIST.	ELEV.	WT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-10.5	865.	506.	280.	380.	280.
50.4	-10.5	865.	506.	280.	380.	280.

* * STRATUM 5 ACT. WEDGE LOC. 89.0 EL. -20.5 PASS.WEDGE LOC. 138.0 EL. -20.5

ASSUMED FAILURE SURFACE DATA

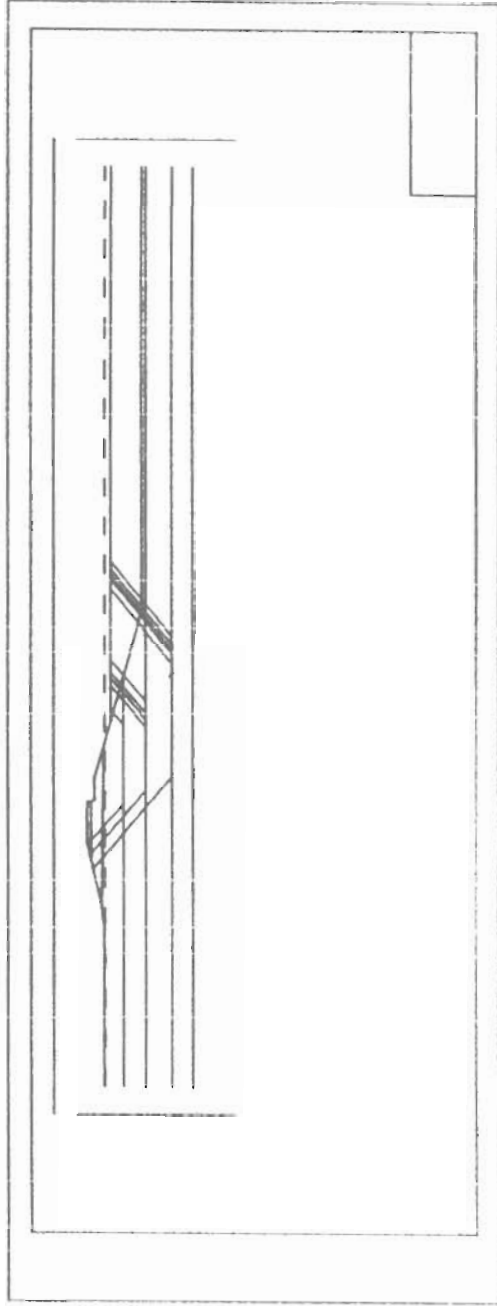
DIST. ELEV

AFTER SELECTED WEDGES, PLACE CROSSHAIRS AT ADDITIONAL P.W. LOCATIONS
 (N, S, E = COMPLETE STRATA & D, R = REDRAW & U = WINDOW)
 1 = END, 2 = PLOT SECTION, 3 = NEW SECTION
 4 = CK. MORE, 5 = SPOOL DETAIL DATA 1

STR 4 EL. -10.5 NO 1
 NO DIST. F.S.
 2 134. 1.854

STR 5 EL. -20.5 NO 3
 NO DIST. F.S.
 4 138. 1.546
 5 142.5 1.549
 6 135.7 1.545
 7 132.9 1.549

STR 6 EL. -32. NO 8
 NO DIST. F.S.
 9 157. 1.313
 10 162. 1.302
 11 167. 1.314
 12 164. 1.305
 13 160.6 1.305



Reach 3 L.S.

LI	MEG	I-EOF	17TH ST OUTFALL CANAL	STA 589+00 TO STA 614+00	10.0 10.0 0.5 0.0 0.1	10.5	138.1	506.	280.	280.	280.
1	0	62.5	0	62.5	0	10.5	1726.	506.	380.	380.	280.
2	0	120	500	500	120	10.5	1897.	506.	380.	380.	280.
3	0	103	500	500	103	10.5	1893.	506.	380.	380.	280.
4	0	103	280	280	103	10.5	1924.	506.	380.	380.	280.
5	0	100	330	380	103	10.5	1688.	506.	380.	380.	280.
6	0	100	380	380	100	10.5	1682.	506.	380.	380.	280.
7	0	120	500	500	120	10.5	1442.	506.	380.	380.	280.
8	0	103	500	500	103	10.5	875.	506.	380.	380.	280.
9	0	103	280	280	103	10.5	669.	506.	380.	380.	280.
10	0	103	330	380	103	10.5	639.	506.	380.	380.	280.
11	0	100	380	380	100	10.5	639.	506.	380.	380.	280.
12	30	122	0	122	0	10.5					
13	0	11.6	205.9	11.6	205.5	216.9	5.5	222.3	3.5	222.3	3.5
14	0	237.1	-2	242.6	-4	252.6	-4	340	-4	3	9999.9
15	0	18.5	135.5	18.5	159.5	10.5	185	-2	197.2		
16	205.8	2	205.9	3.5	206.5	5.5	222.3	3.5	237.1	-2	
17	242.6	-4	252.6	-4	340	-4	3	9999.9			
18	0	18.5	135.5	18.5	159.5	10.5	185	-2	197.2		
19	205.8	2	205.9	3.5	222.3	3.5	237.1	-2	340	90	9999.9
20	0	18.5	135.5	18.5	159.5	10.5	185	-2	237.1	-2	
21	340	90	9999.9	0							
22	0	18.5	135.5	18.5	159.5	10.5	340	-10.5	9999.9	0	
23	0	20.5	340	-20.5	9999.9	0					
24	0	-32	340	-32	9999.9	0					
25	0	-41	340	-41	9999.9	0					
26	0	-2.4	340	-2.4	9999.9	0					
27	1	1	1	1	1	1	1	1	1	1	1
28	1	1	1	1	1	1	1	1	1	1	1
29	4	201	-10.5	238	-10.5	1					
30	238										
31	5	201	-20.5	238.5	-20.5	1					
32	238.5										
33	6	201	-32	246.5	-32	1					
34	246.5										
35	6	100	-32	250.5	-32	1					
36	250.5										

ASSUMED CRIT. PASSIVE LOC. 238.0 EL. -10.5 DP 2566. RP
3609.

ACTIVE WEDGE DATA

DIST.	ELEV.	DA	RA	DB	RB	F
201.0	-10.5	18066.	6636.	0.	10360.	1.33
206.0	-10.5	18382.	7886.	0.	8960.	1.29
211.0	-10.5	17415.	8783.	0.	7560.	1.34
216.0	-10.5	16374.	8858.	0.	6160.	1.35
221.0	-10.5	14810.	11312.	0.	4760.	1.61
226.0	-10.5	11505.	12259.	0.	3360.	2.15
231.0	-10.5	9503.	12257.	0.	1960.	2.57

CRIT. ACTIVE LOC 206.0 EL -10.5 DA 18382. RA 7886.

DIS.	EL.	DP	RP	DB	RB	FS
238.0	-10.5	2566.	3609.	0.	8960.	1.29

17TH ST OUTFALL CANAL
STA 589+00 TO STA 614+00
8 PROFILES
VERTICALS
UPLIFT WITH 1 PIEZOMETRIC GRADE LINES

*** STRATUM 4 ACT. WEDGE LOC. 201.0 EL. -10.5 PASS.WEDGE LOC.
238.0 EL. -20.5

DIST.	ELEV.	UT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-20.5	2087.	1131.	380.	380.	380.
100.0	-20.5	2087.	1131.	380.	380.	380.
135.5	-20.5	2087.	1131.	380.	380.	380.
150.0	-20.5	2283.	1131.	380.	380.	380.
159.5	-20.5	2411.	1131.	380.	380.	380.

ASSUMED FAILURE SURFACE DATA

DIST.	ELEV.	UT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-10.5	1381.	506.	280.	999999.	280.
100.0	-10.5	1381.	506.	280.	999999.	280.
135.5	-10.5	1381.	506.	280.	999999.	280.
150.0	-10.5	1381.	506.	280.	999999.	280.
159.5	-10.5	1381.	506.	280.	999999.	280.

0 2849. 1850. 380. 577. 380.
 32.6 -32.0 2819. 1850. 380. 559. 380.
 340.0 -32.0 2819. 1850. 380. 559. 380.

ASSUMED CRIT. PASSIVE LOC. 250.5 EL. -32.0 DP 39323. RP 18812.

ACTIVE WEDGE DATA

DIST.	ELEV.	DA	RA	DB	RB	FS
100.0	-32.0	62896.	10060.	0.	57190.	3.65
105.0	-32.0	62896.	10060.	0.	55290.	3.57
110.0	-32.0	62896.	10060.	0.	53390.	3.49
115.0	-32.0	62896.	10060.	0.	51490.	3.41
120.0	-32.0	62896.	10060.	0.	49590.	3.33
125.0	-32.0	62896.	10061.	0.	47690.	3.25
130.0	-32.0	62897.	10061.	0.	45790.	3.17
135.0	-32.0	62897.	10061.	0.	43890.	3.09
140.0	-32.0	63034.	10061.	0.	41990.	2.99
145.0	-32.0	63506.	10062.	0.	40090.	2.85
150.0	-32.0	64311.	10227.	0.	38190.	2.60
155.0	-32.0	65282.	11052.	0.	36290.	2.55
160.0	-32.0	66337.	11877.	0.	34390.	2.41
165.0	-32.0	67476.	12702.	0.	32490.	2.27
170.0	-32.0	68699.	13527.	0.	30590.	2.14
175.0	-32.0	70007.	14351.	0.	28690.	2.02
180.0	-32.0	71400.	15176.	0.	26790.	1.89
185.0	-32.0	72876.	15901.	0.	24890.	1.78
190.0	-32.0	74437.	16602.	0.	22990.	1.66
195.0	-32.0	76082.	17302.	0.	21090.	1.56
200.0	-32.0	77754.	18002.	0.	19190.	1.46
205.0	-32.0	79213.	18702.	0.	17290.	1.37
210.0	-32.0	79578.	19402.	0.	15390.	1.33
215.0	-32.0	79485.	20102.	0.	13490.	1.30
220.0	-32.0	78935.	20352.	0.	11590.	1.31
225.0	-32.0	77104.	20601.	0.	9690.	1.35
230.0	-32.0	74057.	20850.	0.	7790.	1.45
235.0	-32.0	69875.	21161.	0.	5890.	1.60
240.0	-32.0	64721.	21297.	0.	3990.	1.85

CRIT. ACTIVE LOC 215.0 EL -32.0 DA 79485. RA 20102.

DIST.	EL.	DP	RP	DB	RB	FS
250.5	-32.0	39323.	18812.	0.	13490.	1.30

EOT..

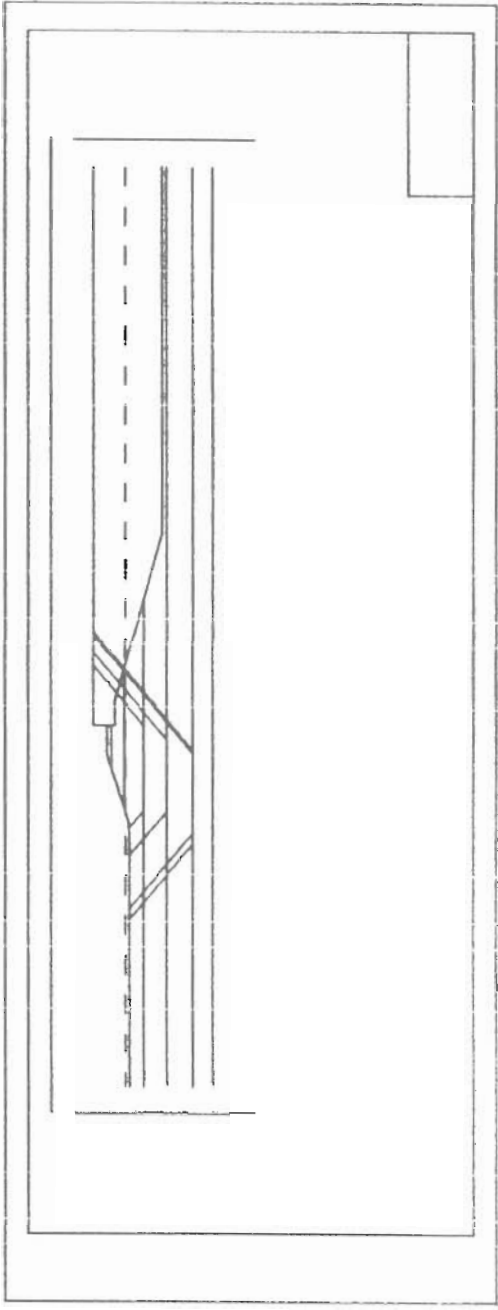
AFTER SELECTED WEDGES, PLACE CROSSHAIRS AT ADDITIONAL P.W. LOCATIONS
 (N.S. = COMPLETE STRATA & D.R. = REDRAW & U = WINDOW)
 1 = END, 2 = PLOT SECTION, 3 = NEW SECTION
 4 = CK. MORE, 5 = SPOOL DETAIL DATA 1

STR 4 EL. -10.5 NO 1
 NO DIST. F.S.
 2 238. 1.293

STR 5 EL. -20.5 NO 3
 NO DIST. F.S.
 4 238.5 1.252

STR 6 EL. -32. NO 5
 NO DIST. F.S.
 6 246.5 1.267

STR 6 EL. -32. NO 7
 NO DIST. F.S.
 8 250.5 1.305



STA 604+00

STOP STOP - TERMINATED NO PLOT

LI N38M 1-Eof

1 17TH ST OUTFALL CANAL

2 STA 589+00 TO STA 614+00

3 10.0 10.0 0.5 0.0 0 1

4 8 2 1

5 100 150

6 0 62.5 0 0 62.5 0 0

7 0 110 400 110 400 400

8 0 150 500 120 500 500

9 0 103 500 500 103 500 500

10 0 103 280 280 103 280 280

11 0 103 330 380 103 330 380

12 0 100 380 380 100 380 380

13 30 122 0 0 122 0 0

14 0 11.6 205.9 11.6 206 6.5 216 6.5 224.1 3.5

15 239 -2 250.8 -2 254.4 -4.3 340 -4.3 9999.9 0

16 0 -18.5 124.5 -18.5 148.5 -10.5 174 -2 186.3 2.1

17 205.8 3 205.9 3.5 206 6.5 216 6.5 224.1 3.5 239 -2

18 250.8 -2 254.4 -4.3 340 -4.3 9999.9 0

19 0 -18.5 124.5 -18.5 148.5 -10.5 174 -2 186.3 2.1 205.8 3

20 205.9 3.5 206 6.5 216 6.5 224.1 3.5 239 -2

21 244.4 -4 254.4 -4.3 254.4 -4.3 340 -4.3 9999.9 0

22 0 -18.5 124.5 -18.5 148.5 -10.5 174 -2 186.3 2.1

23 205.9 3 206 3.5 224.1 3.5 239 -2 340 90 9999.9 0

24 0 -18.5 124.5 -18.5 148.5 -10.5 174 -2 239 -2

25 340 90 9999.9 0

26 0 -18.5 124.5 -18.5 148.5 -10.5 340 -10.5 9999.9 0

27 0 -20.5 340 -20.5 9999.9 0

28 0 -32 340 -32 9999.9 0

29 0 -41 340 -41 9999.9 0

30 0 -2.4 340 -2.4 9999.9 0

31 1 1 1 1 1 1 1 1 1 1

32 1 1 1

33 5 201 -10.5 238 -10.5 1

34 238

35 6 201 -20.5 238.5 -20.5 1

36 238.5

37 2 201 -32 246.5 -32 1

38 246.5

EOT

DI W 1-Eof

**** STABILITY WITH UPLIFT ****

17TH ST OUTFALL CANAL
STA 589+00 TO STA 614+00

9 PROFILES
VERTICALS

UPLIFT WITH 1 PIEZOMETRIC GRADE LINES

* STRATUM 5 ACT. WEDGE LOC. 201.0 EL. -10.5 PASS.WEDGE LOC.

ASSUMED FAILURE SURFACE DATA

DIST. ELEV. WT. UPLIFT STR 1 STR 2 STR USED

	0.0	-10.5	1381.	506.	200.	99999.	280.
	100.0	-10.5	1381.	506.	200.	99999.	280.
	124.5	-10.5	1381.	506.	200.	99999.	280.
	148.5	-10.5	1381.	506.	200.	99999.	280.
	150.0	-10.5	1408.	506.	200.	380.	280.
	174.0	-10.5	1726.	506.	200.	380.	280.
	186.3	-10.5	1898.	506.	200.	380.	280.
	205.9	-10.5	1931.	506.	200.	380.	280.
	206.0	-10.5	1943.	506.	200.	380.	280.
	216.0	-10.5	1802.	506.	200.	380.	280.
	216.0	-10.5	1892.	506.	200.	380.	280.
	224.1	-10.5	1442.	506.	200.	380.	280.
	239.0	-10.5	876.	506.	200.	380.	280.
	244.4	-10.5	890.	506.	200.	380.	280.
	250.8	-10.5	890.	506.	200.	380.	280.
	254.4	-10.5	639.	506.	200.	380.	280.
	340.0	-10.5	639.	506.	200.	380.	280.

ASSUMED CRIT. PASSIVE LOC. 238.0 EL. -10.5 DP 3793. RP 3793. RP 5239.

ACTIVE WEDGE DATA

S	DIST.	ELEV.	DA	RA	DB	RB	F
	201.0	-10.5	18690.	8957.	0.	10360.	1.65
	206.0	-10.5	18813.	9189.	0.	8960.	1.56
	211.0	-10.5	18273.	9420.	0.	7560.	1.53
	216.0	-10.5	17684.	9651.	0.	6160.	1.52
	221.0	-10.5	16435.	11331.	0.	4760.	1.69
	226.0	-10.5	13295.	13259.	0.	3360.	2.30
	231.0	-10.5	10821.	13257.	0.	1960.	2.91
	236.0	-10.5	7554.	11490.	0.	560.	4.60
	241.0	-10.5	4998.	8560.	0.	-840.	10.75

CRIT. ACTIVE LOC 216.0 EL -10.5 DA 17684. RA 9651.

DIS.	EL.	DP	RP	DB	RB	FS
238.0	-10.5	3793.	5239.	0.	6160.	1.52

238.0 EL. -10.5

* STRATUM 6 ACT. WEDGE LOC. 201.0 EL. -20.5 PASS.WEDGE LOC. 238.5 EL. -20.5

ASSUMED FAILURE SURFACE DATA

DIST.	ELEV.	WT.	UPLIFT	STR 1	STR 2	STR USED	RA	DA	EA	DB	EB	FB
0.0	-20.5	2087.	1131.	380.	380.	380.	3561.	1850.	380.	988.	380.	380.
100.0	-20.5	2087.	1131.	380.	380.	380.	3582.	1850.	380.	1000.	380.	380.
124.5	-20.5	2087.	1131.	380.	380.	380.	3606.	1850.	380.	1187.	380.	380.
148.5	-20.5	2411.	1131.	380.	380.	380.	4072.	1850.	380.	1283.	380.	380.
174.0	-20.5	2432.	1131.	380.	380.	380.	4111.	1850.	380.	1305.	380.	380.
186.3	-20.5	2756.	1131.	380.	380.	380.	4123.	1850.	380.	1312.	380.	380.
205.8	-20.5	2921.	1131.	380.	380.	380.	3982.	1850.	380.	1231.	380.	380.
205.9	-20.5	2973.	1131.	380.	380.	380.	3982.	1850.	380.	1231.	380.	380.
206.0	-20.5	2832.	1131.	380.	380.	380.	3982.	1850.	380.	1231.	380.	380.
216.0	-20.5	2472.	1131.	380.	380.	380.	3622.	1850.	380.	1023.	380.	380.
224.1	-20.5	1906.	1131.	380.	380.	380.	3056.	1850.	380.	696.	380.	380.
239.0	-20.5	1920.	1131.	380.	380.	380.	3070.	1850.	380.	704.	380.	380.
244.4	-20.5	1920.	1131.	380.	380.	380.	3070.	1850.	380.	704.	380.	380.
250.3	-20.5	1669.	1131.	380.	380.	380.	2819.	1850.	380.	559.	380.	380.
254.4	-20.5	1669.	1131.	380.	380.	380.	2819.	1850.	380.	559.	380.	380.
340.0	-20.5	1669.	1131.	380.	380.	380.	2819.	1850.	380.	559.	380.	380.

ASSUMED CRIT. PASSIVE LOC. 238.5 EL. -20.5 DP 17017. RP 10072. S
 18812. 201.0 -32.0 81064. 19682. 0. 17290. 1.39
 206.0 -32.0 82087. 20602. 0. 15390. 1.33
 211.0 -32.0 82240. 21852. 0. 13490. 1.31
 216.0 -32.0 82140. 23101. 0. 11590. 1.30
 221.0 -32.0 81232. 24228. 0. 9690. 1.31
 226.0 -32.0 79098. 24459. 0. 7790. 1.33
 231.0 -32.0 75935. 24690. 0. 5890. 1.41
 236.0 -32.0 71775. 24921. 0. 3990. 1.54
 241.0 -32.0 66697. 25282. 0. 2090. 1.79

ACTIVE WEDGE DATA

DIST.	ELEV.	DA	RA	DB	RB	FS	RA	DA	EA	DB	EB	FB
201.0	-20.5	42443.	13486.	0.	14250.	1.49	23101.	82140.	21852.	0.	11590.	1.30
206.0	-20.5	42884.	14736.	0.	12350.	1.44	24228.	81232.	24228.	0.	9690.	1.31
211.0	-20.5	42474.	15557.	0.	10450.	1.42	24459.	79098.	24459.	0.	7790.	1.33
216.0	-20.5	41980.	15789.	0.	8550.	1.38	24690.	75935.	24690.	0.	5890.	1.41
221.0	-20.5	40883.	16020.	0.	6650.	1.37	24921.	71775.	24921.	0.	3990.	1.54
226.0	-20.5	38639.	16251.	0.	4750.	1.44	25282.	66697.	25282.	0.	2090.	1.79
231.0	-20.5	35310.	17931.	0.	2850.	1.69						
236.0	-20.5	30239.	19859.	0.	950.	2.34						
241.0	-20.5	25947.	19857.	0.	-950.	3.25						
246.0	-20.5	21690.	18090.	0.	-2850.	5.42						

CRIT. ACTIVE LOC 221.0 EL -20.5 DA 40883. RA 16020.

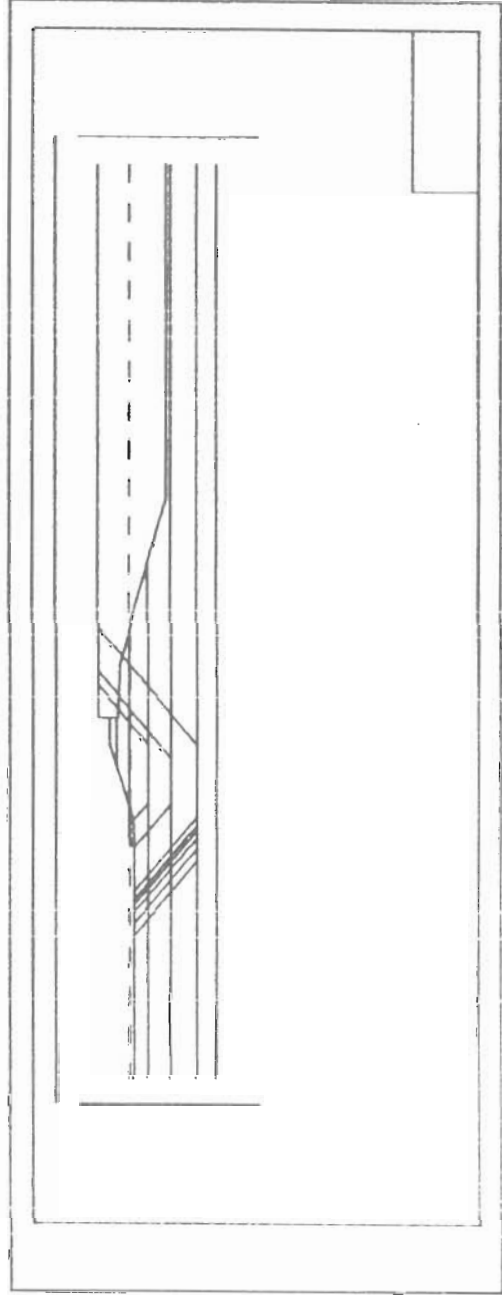
DIST.	EL.	DP	RP	DB	RB	FS	DIS.	EL.	DP	RP	DB	RB	FS
238.5	-20.5	17017.	10072.	0.	6650.	1.37	246.5	-32.0	40850.	18812.	0.	11590.	1.30
* STRATUM 7 ACT. WEDGE LOC. 201.0 EL. -32.0 PASS.WEDGE LOC.													
ASSUMED FAILURE SURFACE DATA													
DIST.	ELEV.	WT.	UPLIFT	STR 1	STR 2	STR USED	RA	DA	EA	DB	EB	FB	
0.0	-32.0	3237.	1850.	380.	801.	380.	41631.	18812.	18812.	0.	10405.	1.29	
100.0	-32.0	3237.	1850.	380.	801.	380.	41631.	18812.	18812.	0.	10405.	1.29	
124.5	-32.0	3237.	1850.	380.	801.	380.	40352.	18812.	18812.	0.	12343.	1.30	
EOT.													

AFTER SELECTED WEDGES, PLACE CROSSHAIRS AT ADDITIONAL P.W. LOCATIONS
 (N, S, E = COMPLETE STRATA & D, R = REDRAW & U = WINDOW)
 1 = END, 2 = PLOT SECTION, 3 = NEW SECTION
 4 = CK. MORE, 5 = SPOOL DETAIL DATA 1

STR 5 EL. -10.5 NO 1
 NO DIST. F.S.
 2 238. 1.515

STR 6 EL. -20.5 NO 3
 NO DIST. F.S.
 4 238.5 1.372

STR 7 EL. -32. NO 5
 NO DIST. F.S.
 6 246.5 1.296
 7 243.4 1.292
 8 248.5 1.298
 9 251.5 1.302
 10 255.3 1.327
 11 259.8 1.367



STA 604+00

LI NBSMA 1-E0F
 1 17TH ST OUTFALL CANAL
 2 STA 589+00 TO STA 614+00
 3 10 @ 10 ASSURED CHANNEL SURFACE DATA
 4 8 @ 2.1
 5 10 @ 1.5
 6 0 @ 62.5 @ 0 @ 62.5 @ 0
 7 0 @ 110 @ 400 @ 110 @ 400 @ 400
 8 0 @ 120 @ 500 @ 120 @ 500 @ 500
 9 0 @ 103 @ 500 @ 103 @ 500 @ 500
 10 0 @ 103 @ 280 @ 103 @ 280 @ 280
 11 0 @ 103 @ 330 @ 103 @ 330 @ 330
 12 0 @ 100 @ 380 @ 100 @ 380 @ 380
 13 30 @ 122 @ 0 @ 122 @ 0
 14 0 @ 11.6 @ 205 @ 11.6 @ 206 @ 6.5 @ 216 @ 6.5 @ 224 @ 1.3 @ 5
 15 239 @ -2 @ 243 @ 6 @ -3 @ 7 @ 272 @ -3 @ 8 @ 273 @ 5 @ -4 @ 3 @ 340 @ -4 @ 3 @ 9999 @ 9 @ 0
 16 0 @ -18 @ 5 @ 124 @ 5 @ -18 @ 5 @ 148 @ 5 @ -10 @ 5 @ 174 @ -2 @ 186 @ 3 @ 2 @ 1
 17 205 @ 8 @ 3 @ 205 @ 9 @ 3 @ 206 @ 6 @ 5 @ 216 @ 6 @ 5 @ 224 @ 1 @ 3 @ 5 @ 239 @ -2
 18 243 @ 6 @ -3 @ 7 @ 272 @ -3 @ 8 @ 273 @ 5 @ -4 @ 3 @ 340 @ -4 @ 3 @ 9999 @ 9 @ 0
 19 0 @ -18 @ 5 @ 124 @ 5 @ -18 @ 5 @ 148 @ 5 @ -10 @ 5 @ 174 @ -2 @ 186 @ 3 @ 2 @ 1 @ 205 @ 8 @ 3
 20 205 @ 9 @ 3 @ 206 @ 6 @ 5 @ 216 @ 6 @ 5 @ 224 @ 1 @ 3 @ 5 @ 239 @ -2
 21 244 @ 4 @ -4 @ 254 @ 4 @ -4 @ 3 @ 273 @ 5 @ -4 @ 3 @ 340 @ -4 @ 3 @ 9999 @ 9 @ 0
 22 0 @ -18 @ 5 @ 124 @ 5 @ -18 @ 5 @ 148 @ 5 @ -10 @ 5 @ 174 @ -2 @ 186 @ 3 @ 2 @ 1
 23 205 @ 9 @ 3 @ 206 @ 6 @ 5 @ 224 @ 1 @ 3 @ 5 @ 239 @ -2 @ 340 @ 90 @ 9999 @ 9 @ 0
 24 0 @ -18 @ 5 @ 124 @ 5 @ -18 @ 5 @ 148 @ 5 @ -10 @ 5 @ 174 @ -2 @ 239 @ -2
 25 340 @ 90 @ 9999 @ 9 @ 0
 26 0 @ -18 @ 5 @ 124 @ 5 @ -18 @ 5 @ 148 @ 5 @ -10 @ 5 @ 340 @ -10 @ 5 @ 9999 @ 9 @ 0
 27 0 @ -20 @ 5 @ 340 @ -20 @ 5 @ 9999 @ 9 @ 0
 28 0 @ -32 @ 340 @ -32 @ 9999 @ 9 @ 0
 29 0 @ -41 @ 340 @ -41 @ 9999 @ 9 @ 0
 30 0 @ -2 @ 340 @ -2 @ 4 @ 9999 @ 9 @ 0
 31 1 @ 1 @ 1 @ 1 @ 1 @ 1 @ 1 @ 1
 32 1 @ 1 @ 1
 33 5 @ 201 @ -10 @ 5 @ 238 @ -10 @ 5 @ 1
 34 238
 35 6 @ 201 @ -20 @ 5 @ 243 @ 5 @ -20 @ 5 @ 1
 36 243 @ 5
 37 7 @ 201 @ -32 @ 246 @ 5 @ -32 @ 1
 38 246 @ 5
 EOT
 DI VI 1-E0F

ASSUMED CRIT. PASSIVE LOC. 238.0 EL -10.5 DP 2978 RP 3877

ACTIVE WEDGE DATA

	DIST.	ELEV.	DA	RA	DB	RB	F
201.0	-10.5	18690	8957	0	10360	1.48	
206.0	-10.5	18813	9189	0	8960	1.39	
211.0	-10.5	18273	9420	0	7560	1.36	
216.0	-10.5	17684	9651	0	6160	1.34	
221.0	-10.5	16435	11331	0	4760	1.48	
226.0	-10.5	13295	13259	0	3360	1.99	
231.0	-10.5	10820	13257	0	1960	2.43	
236.0	-10.5	7552	11490	0	560	3.48	
241.0	-10.5	4914	8559	0	-840	5.99	

CRIT ACTIVE LOC 216.0 EL -10.5 DA 17684 RA 9651

DIS	EL	DP	RP	DB	RB	FS
238.0	-10.5	2978	3877	0	6160	1.34
236.6	-10.5	3316	3842	0	5763	1.34
239.4	-10.5	2717	3883	0	6557	1.34

* X STRATUM 5 ACT WEDGE LOC 201.0 EL -10.5 PASS WEDGE LOC

ASSUMED FAILURE SURFACE DATA

DIST	ELEV	UT	UPLIFT	STR 1	STR 2	STR USED
0 @	-10.5	1381	585	280	999999	280
100 @	-10.5	1381	585	280	999999	280

* X STRATUM 6 ACT WEDGE LOC 201.0 EL -20.5 PASS WEDGE LOC

DIST	ELEV.	UT.	UPLIFT	STR 1	STR 2	STR USED
0	-20 5	2087	1131	380	380	380
100 0	-32 0	3237	1850	380	380	380
124 5	-32 0	3237	1850	380	380	380
148 5	-32 0	3561	1850	380	380	380
174 0	-32 0	3582	1850	380	380	380
190 0	-32 0	3906	1850	380	380	380
216 0	-32 0	4072	1850	380	380	380
242 0	-32 0	4111	1850	380	380	380
268 0	-32 0	4123	1850	380	380	380
294 0	-32 0	3982	1850	380	380	380
320 0	-32 0	3622	1850	380	380	380
346 0	-32 0	3055	1850	380	380	380
372 0	-32 0	2880	1850	380	380	380
398 0	-32 0	2882	1850	380	380	380
424 0	-32 0	2880	1850	380	380	380
450 0	-32 0	2880	1850	380	380	380
476 0	-32 0	2873	1850	380	380	380
502 0	-32 0	2819	1850	380	380	380

ASSUMED CRIT. PASSIVE LOC. 246.5 EL. -32 0 DP 40876. RP 18312.

DIST	ELEV.	UT.	UPLIFT	STR 1	STR 2	STR USED
0	-20 5	4243	13486	0	16150	16150
100 0	-32 0	81064	19682	0	14250	14250
124 5	-32 0	82087	20602	0	12350	12350
148 5	-32 0	82240	21852	0	10450	10450
174 0	-32 0	82140	23101	0	8550	8550
190 0	-32 0	81232	24228	0	6650	6650
216 0	-32 0	79098	24459	0	4750	4750
242 0	-32 0	75935	24690	0	2850	2850
268 0	-32 0	71773	24921	0	950	950
294 0	-32 0	66613	25282	0	-950	-950

ORIF. ACTIVE LOC. 221 0 EL -20 5 DA 40883. RA 16020.

DIST	EL	DP	RP	DB	RB	FS
243 5	-20 5	14537	10504	0	8550	1 33
242 8	-20 5	14550	10506	0	8290	1 32
241 7	-20 5	14610	10510	0	7859	1 31
238 8	-20 5	14972	10518	0	6783	1 29
241 1	-20 5	14658	10511	0	7644	1 30

* X STRATUM 7 ACT WEDGE LOC. 201.0 EL. -32 0 PASS WEDGE LOC. 246.5 EL. -32 0 DP 40876. RP 18312. RA 23101.

DIST	ELEV.	UT.	UPLIFT	STR 1	STR 2	STR USED
247 9	-32 0	40787	18812	0	11590	1 30
245 6	-32 0	40930	18842	0	11266	1 29
247 9	-32 0	40787	18812	0	12128	1

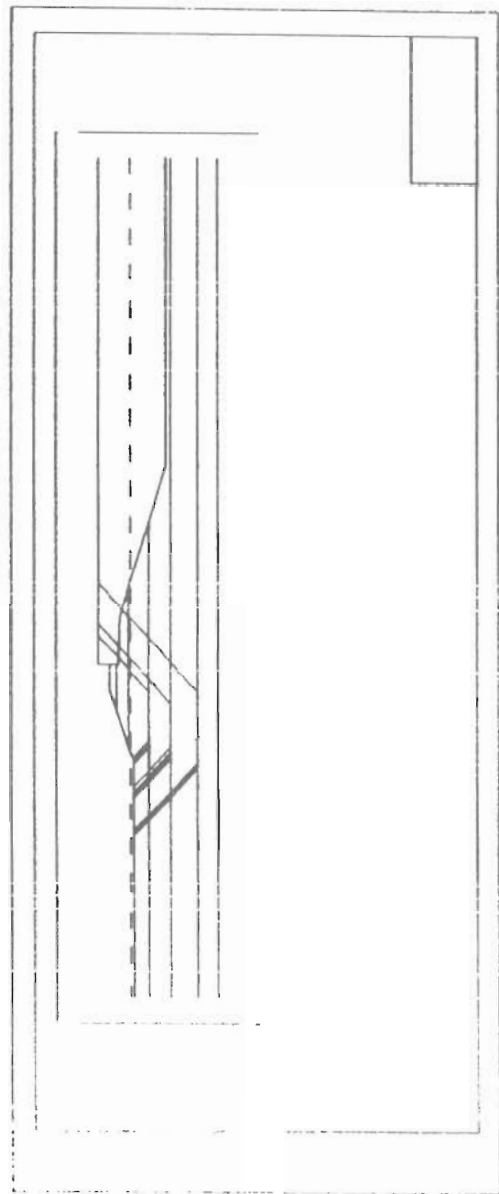
ASSUMED FAILURE SURFACE DATA

AFTER SELECTED WEDGES, PLACE CROSSHAIRS AT ADDITIONAL P U LOCATIONS
 (N, S, E = COMPLETE STRATA & D, R = REDRAW & U = WINDOW)
 1 = END, 2 = PLOT SECTION, 3 = NEW SECTION
 4 = CK, MORE, 5 = SPOOL DETAIL DATA 1

STR 5	EL	-10	5	NO 1
NO	DIST	F	S	
2	238	1	339	
3	236	6	134	
4	239	4	1342	

STR 6	EL	-20	5	NO 5
NO	DIST	F	S	
6	243	5	1331	
7	242	8	1322	
8	241	7	1309	
9	238	8	1286	
10	241	1	1383	

STR 7	EL	-32	NO 11
NO	DIST	F	S
12	246	5	1297
13	245	6	1291
14	247	9	1307



STA 600+00

LI M30ME 1-EOF
 1 17TH ST OUTFALL CANAL
 2 STA 589+00 TO STA 614+00
 3 10.0 10.0 0.5 0.0 0.1
 4 2.1 2.1
 5 100.150
 6 0.82.5 0.0 62.5 0.0
 7 0.110 400 400 110 400 400
 8 0.120 500 500 120 500 500
 9 0.103 500 500 103 500 500
 10 0.103 280 280 103 280 280
 11 0.103 330 380 103 330 380
 12 0.100 380 380 100 380 380
 13 30 122 0.0 122 0.0
 14 0.11.6 205.9 11.6 206.6 5 216.6 5 225.3 3.5
 15 242.4 -2 245.1 -2.9 254.6 -3.8 340 -3.3
 16 9999.9 0
 17 0 -18.5 124.5 -18.5 148.5 -10.5 174 -2 186.3 2.1
 18 205.8 3 205.9 3.5 206 6.5 216 6.5 225.3 3.5 242.4 -2
 19 245.1 -2.9 254.6 -3.8 340 -3.8 9999.9 0
 20 0 -18.5 124.5 -18.5 148.5 -10.5 174 -2 186.3 2.1 205.8 3
 21 205.9 3.5 206 6.5 216 6.5 225.3 3.5 242.4 -2
 22 245.1 -2.9 254.6 -3.8 340 -3.8 9999.9 0
 23 0 -18.5 124.5 -18.5 148.5 -10.5 174 -2 186.3 2.1
 24 205.9 3 206 3.5 225.3 3.5 242.4 -2 340 90. 9999.9 0
 25 0 -18.5 124.5 -18.5 148.5 -10.5 174 -2 242.4 -2
 26 340 90. 9999.9 0
 27 0 -18.5 124.5 -18.5 148.5 -10.5 340 -10.5 9999.9 0
 28 0 -20.5 340 -20.5 9999.9 0
 29 0 -32 340 -32 9999.9 0
 30 0 -41 340 -41 9999.9 0
 31 0 -2.4 340 -2.4 9999.9 0
 32 1 1 1 1 1 1 1 1 1
 33 1 1 1 1 1 1 1 1 1
 34 5 201 -10.5 238 -10.5 1
 35 238
 36 6 201 -20.5 243.5 -20.5 1
 37 243.5
 38 7 201 -32 246.5 -32 1
 39 246.5
 EOT..

ASSUMED CRIT. PASSIVE LOC. 238.0 EL. -10.5 DP 3825. RP
 4231.

ACTIVE WEDGE DATA

S	DIST.	ELEV.	DA	RA	DB	RB	F
201.0	-10.5	18690.		8957.	0.	10360.	1.58
206.0	-10.5	18813.		9189.	0.	8960.	1.49
211.0	-10.5	18273.		9420.	0.	7560.	1.47
216.0	-10.5	17684.		9651.	0.	6160.	1.45
221.0	-10.5	16507.		11331.	0.	4760.	1.60
226.0	-10.5	13572.		13259.	0.	3360.	2.14
231.0	-10.5	11404.		13258.	0.	1960.	2.57
236.0	-10.5	8504.		11827.	0.	560.	3.55
241.0	-10.5	6077.		9450.	0.	-840.	5.70

CRIT. ACTIVE LOC 216.0 EL -10.5 DA 17684. RA 9651.
 DIS. EL. DP RP DB RB FS
 238.0 -10.5 3825. 4231. 0. 6160. 1.45

*** STABILITY WITH UPLIFT ***

17TH ST OUTFALL CANAL
 STA 589+00 TO STA 614+00
 9 PROFILES
 2 VERTICALS
 UPLIFT WITH 1 PIEZOMETRIC GRADE LINES

*** STRUTUM 5 ACT. WEDGE LOC. 201.0 EL. -10.5 PASS.WEDGE LOC.
 238.0 EL. -10.5
 * x STRUTUM 6 ACT. WEDGE LOC. 201.0 EL. -20.5 PASS.WEDGE LOC.
 243.5 EL. -20.5

ASSUMED FAILURE SURFACE DATA

DIST.	ELEV.	UT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-10.5	1781.	506.	280.	99999.	280.

ASSUMED FAILURE SURFACE DATA

DIST.	ELEV.	UT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-10.5	1781.	506.	280.	99999.	280.

0.0	-20.5	2007.	1131.	380.	380.	380.	1850.	132.	380.	580.
100.0	-20.5	2007.	1131.	380.	380.	380.	1850.	1231.	380.	380.
124.5	-20.5	2007.	1131.	380.	380.	380.	1850.	1027.	380.	380.
148.5	-20.5	2411.	1131.	380.	380.	380.	1850.	666.	380.	380.
150.0	-20.5	2732.	1131.	380.	380.	380.	1850.	682.	380.	380.
174.0	-20.5	2756.	1131.	380.	380.	380.	1850.	589.	380.	380.
186.3	-20.5	2922.	1131.	380.	380.	380.	1850.	589.	380.	380.
205.8	-20.5	2951.	1131.	380.	380.	380.	1850.	589.	380.	380.
205.9	-20.5	2973.	1131.	380.	380.	380.	1850.	589.	380.	380.
206.0	-20.5	2832.	1131.	380.	380.	380.	1850.	589.	380.	380.
216.0	-20.5	2832.	1131.	380.	380.	380.	1850.	589.	380.	380.
225.3	-20.5	2472.	1131.	380.	380.	380.	1850.	589.	380.	380.
242.4	-20.5	1905.	1131.	380.	380.	380.	1850.	589.	380.	380.
245.1	-20.5	1813.	1131.	380.	380.	380.	1850.	589.	380.	380.
254.6	-20.5	1720.	1131.	380.	380.	380.	1850.	589.	380.	380.
340.0	-20.5	1720.	1131.	380.	380.	380.	1850.	589.	380.	380.

ASSUMED CRIT. PASSIVE LOC. 243.5 EL. -20.5 DP 14994. RP 16020. CRIT. ACTIVE LOC 216.0 EL -32.0 DA 82140. RA 23101.

ACTIVE WEDGE DATA

S	DIST.	ELEV.	DA	RA	DB	RB	F
	206.0	-32.0	81064.	19682.	0.	17290.	1.40
	211.0	-32.0	82087.	20602.	0.	15390.	1.34
	216.0	-32.0	82240.	21852.	0.	13490.	1.32
FS	216.0	-32.0	82140.	23101.	0.	11590.	1.31
	221.0	-32.0	81305.	24228.	0.	9690.	1.32
	226.0	-32.0	79375.	24459.	0.	7790.	1.34
	231.0	-32.0	76519.	24690.	0.	5890.	1.40
	236.0	-32.0	72786.	24921.	0.	3990.	1.51
	241.0	-32.0	68177.	25282.	0.	2090.	1.71
	1.46						
	1.41						
	1.39						
	1.36						
	1.35						
	1.39						
	1.58						
	2.03						
	2.51						
	3.53						

CRIT. ACTIVE LOC 221.0 EL -20.5 DA 40956. RA 16020. CRIT. ACTIVE LOC 216.0 EL -32.0 DA 82140. RA 23101.

DIS.	EL.	DP	RP	DB	RB	FS	DIS.	EL.	DP	RP	DB	RB	FS
243.5	-20.5	14994.	10352.	0.	8550.	1.35	246.5	-32.0	41075.	19092.	0.	11590.	1.31

* STRATUM 7 ACT. WEDGE LOC. 201.0 EL. -32.0 PASS.WEDGE LOC. 246.5 EL. -32.0 EOT.,

ASSUMED FAILURE SURFACE DATA

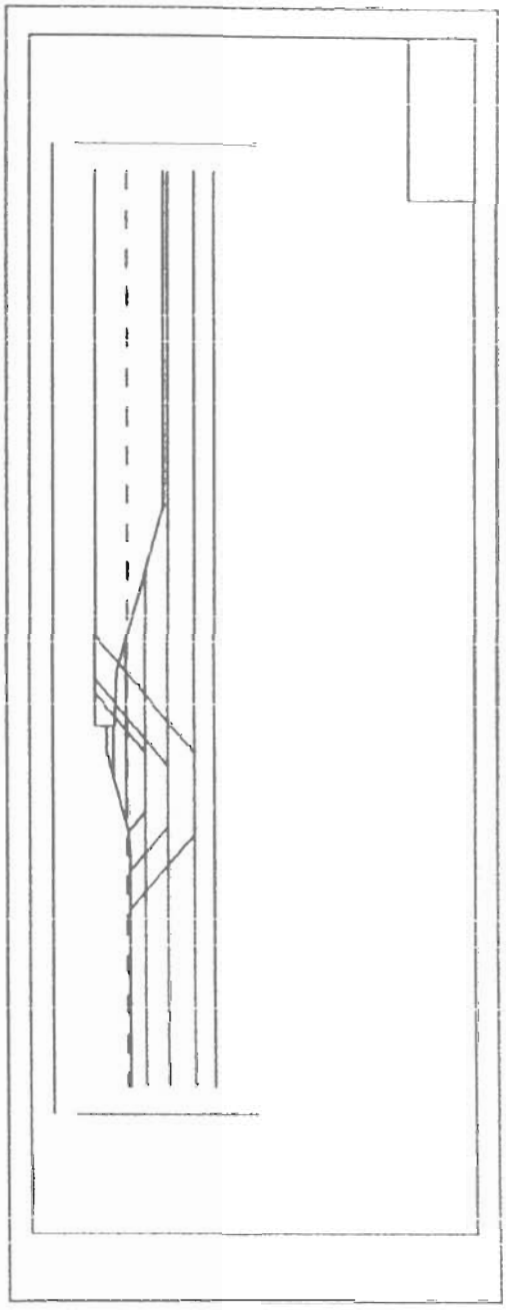
DIST.	ELEV.	WT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-32.0	3237.	1850.	380.	801.	380.
100.0	-32.0	3237.	1850.	380.	801.	380.
124.5	-32.0	3237.	1850.	380.	801.	380.
148.5	-32.0	3561.	1850.	380.	988.	380.
150.0	-32.0	3582.	1850.	380.	1000.	380.
174.0	-32.0	3906.	1850.	380.	1187.	380.
186.3	-32.0	4072.	1850.	380.	1283.	380.
205.8	-32.0	4111.	1850.	380.	1305.	380.

AFTER SELECTED WEDGES, PLACE CROSSHAIRS AT ADDITIONAL P.U. LOCATIONS
 (N, S, E = COMPLETE STRATA & D, R = REDRAW & U = WINDOW)
 1 = END, 2 = PLOT SECTION, 3 = NEW SECTION
 4 = CK. MORE, 5 = SPOOL DETAIL DATA 1

STR 5 EL. -10.5 NO 1
 NO DIST. F.S.
 2 238. 1.446

STR 6 EL. -20.5 NO 3
 NO DIST. F.S.
 4 243.5 1.345

STR 7 EL. -32. NO 5
 NO DIST. F.S.
 6 246.5 1.31

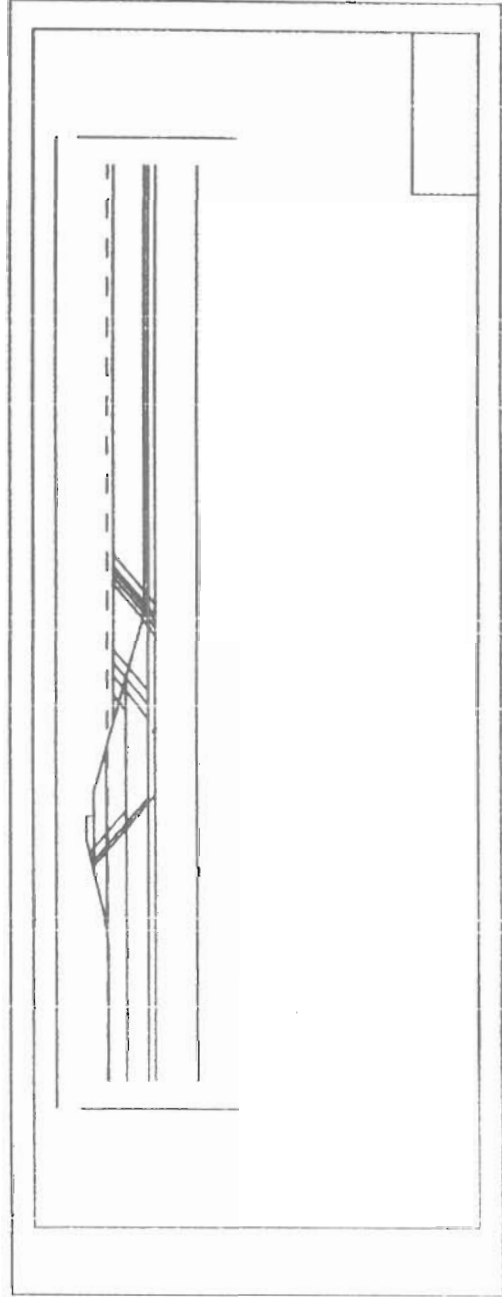


AFTER SELECTED WEDGES, PLACE CROSSHAIRS AT ADDITIONAL P.U. LOCATIONS
 (N,S,E = COMPLETE STRATA & D,R = REDRAW & U = WINDOW)
 1 = END, 2 = PLOT SECTION, 3 = NEW SECTION
 4 = CK. MORE, 5 = SPOOL DETAIL DATA

STR 4 EL. -20.5 NO 1
 NO DIST. F.S.
 2 138. 1.73

STR 5 EL. -20.5 NO 3
 NO DIST. F.S.
 4 135. 1.455
 5 140. 1.461
 6 145. 1.467

STR 6 EL. -23.5 NO 7
 NO DIST. F.S.
 8 166. 1.253
 9 171. 1.238
 10 177. 1.224
 11 172.5 1.238
 12 168.6 1.239



Reach 4 Landside

LI M34M 1-EOF
 1 17TH ST OUTFALL CANAL
 2 STA 614 TO 625 ORLEANS
 3 10.0 10.0 0.5 0.0 0 1
 4 7.2 2.1
 5 100 150
 6 0 62.5 0 0 62.5 0 0
 7 0 120 500 500 120 500 500
 8 0 103 500 500 103 500 500
 9 0 103 380 280 103 280 280
 10 0 103 330 380 103 330 380
 11 0 100 380 380 100 380 380
 12 30 122 0 0 122 0 0
 13 0 11.6 201.7 11.6 201.8 11.5 201.9 7 210.4 7 221.2 3.5
 14 238.3 -2 340.2 -2 6 350.2 -3 1 340 -3 1 9999.9 0
 15 0 -18.5 126.5 -18.5 150.5 -10.5 176 -2 182.5 3.5
 16 192.8 3.6 201.8 3.6 201.9 7 210.4 7 340 90. 9999.9 0
 17 0 -18.5 126.5 -18.5 150.5 -10.5 176 -2 182.5 3.5
 18 221.2 3.5 340 90. 9999.9 0
 19 0 -18.5 126.5 -18.5 150.5 -10.5 176 -2 238.3 -2 240.2 -2.6
 20 250.2 -3 1 340 -3 1 9999.9 0
 21 0 -18.5 126.5 -18.5 150.5 -10.5 340 -10.5 9999.9 0
 22 0 -20.5 340 -20.5 9999.9 0
 23 0 -23.5 340 -23.5 9999.9 0
 24 0 -42 340 -42 9999.9 0
 25 0 -2.4 340 -2.4 9999.9 0
 26 1 1 1 1 1 1 1 1
 27 1 1
 28 4 196.8 -10.5 234 -10.5 1
 29 234
 30 5 196.8 -20.5 232 -20.5 3
 31 227 232 237
 32 6 201.8 -23.5 231 -23.5 3
 33 226 231 236
 EOF.
 DI UI 1-EOF

ASSUMED CRIT. PASSIVE LOC. 234.0 EL. -10.5 DP 3836. RP
 4378.

ACTIVE WEDGE DATA

DIST.	ELEV.	DA	RA	DB	RB	F
196.8	-10.5	18780.	7837.	0.	10416.	1.51
201.8	-10.5	19169.	9087.	0.	9016.	1.47
206.8	-10.5	18852.	10336.	0.	7616.	1.49
211.8	-10.5	18353.	10360.	0.	6216.	1.44
216.8	-10.5	17109.	11242.	0.	4816.	1.54
221.8	-10.5	14130.	13759.	0.	3416.	2.09
226.8	-10.5	11564.	13757.	0.	2016.	2.61
231.8	-10.5	8560.	11886.	0.	616.	3.57
236.8	-10.5	6121.	9497.	0.	-784.	5.73

CRIT. ACTIVE LOC 211.8 EL -10.5 DA 18353. RA 10360.

DIS.	EL.	DP	RP	DB	RB	FS
234.0	-10.5	3836.	4378.	0.	6216.	1.44

* STRATUM 4 ACT. WEDGE LOC. 196.8 EL. -10.5 PASS.WEDGE LOC.
 * STRATUM 5 ACT. WEDGE LOC. 196.8 EL. -20.5 PASS.WEDGE LOC.
 232.0 EL. -20.5

ASSUMED FAILURE SURFACE DATA

DIST.	ELEV.	WT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-20.5	2087.	1131.	380.		

ASSUMED FAILURE SURFACE DATA

DIST.	ELEV.	WT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-10.5	1331.	506.	280.	999999.	280.
100.0	-10.5	1381.	506.	280.	999999.	280.
126.0	-10.5	1381.	506.	280.	999999.	280.
150.0	-10.5	1381.	506.	280.	999999.	280.
150.5	-10.5	1381.	506.	280.	380.	280.
176.0	-10.5	1726.	506.	280.	380.	280.
192.5	-10.5	1948.	506.	280.	380.	280.

*** STABILITY WITH UPLIFT ***

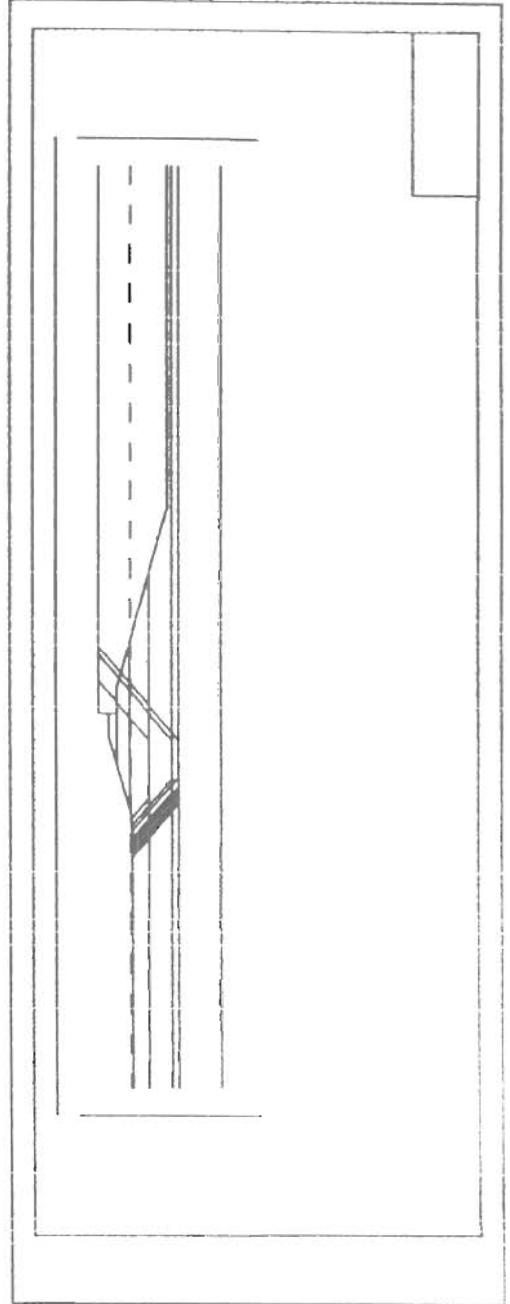
17TH ST OUTFALL CANAL
 STA 614 TO 625 ORLEANS
 S PROFILES
 Z VERTICALS
 UPLIFT WITH 1 PIEZOMETRIC GRADE LINES

AFTER SELECTED WEDGES, PLACE CROSSHAIRS AT ADDITIONAL P.W. LOCATIONS
 (N, S, E = COMPLETE STRATA & D.P.R = REDRAW & U = WINDOW)
 1 = END, 2 = PLOT SECTION, 3 = NEW SECTION
 4 = CK. MORE, 5 = SPOOL DETAIL DATA 1

STR 4 EL. -10.5 NO 1
 NO DIST. F.S.
 2 234. 1.443

STR 5 EL. -20.5 NO 3
 NO DIST. F.S.
 4 227. 1.372
 5 232. 1.337
 6 237. 1.347

STR 6 EL. -23.5 NO 7
 NO DIST. F.S.
 8 226. 1.353
 9 231. 1.314
 10 236. 1.318
 11 229.8 1.319
 12 230.9 1.315
 13 231.5 1.313
 14 232.1 1.312
 15 233.8 1.312
 16 234.9 1.314
 17 235.5 1.316



Reach 5 C.S.

LINE NO	DESCRIPTION	130.0	-10.5	875.	506.	280.	320.	280.
1	17TH ST OUTFALL CANAL	130.0	-10.5	875.	506.	280.	320.	280.
2	STA 625 TO 635 ORLEANS	130.0	-10.5	566.	506.	280.	320.	280.
3	10.0 10.0 0.5 0.0 0	150.0	-10.5	418.	506.	280.	320.	280.
4	16.0 2.1	155.5	-10.5	344.	506.	280.	320.	280.
5	100.150	167.2	-10.5	344.	506.	280.	999999.	280.
6	62.5 0 62.5 0 0	176.5	-10.5	344.	506.	280.	999999.	280.
7	120 500 500 120 500 500	340.0	-10.5	344.	506.	280.	999999.	280.
8	103 500 500 103 500 500							
9	103 280 280 103 280 280							
10	103 300 300 103 300 300							
11	30 122 0 122 0 0							
12	1.6 44.1 -1.6 74.1 3.5							
13	89.7 7.5 98.9 7.5 99 5.5 107.5 5.5 113.5 3.5 130 -2							
14	139 -5 340 -5 9999.9 0							
15	0 -1.6 44.1 -1.6 74.1 3.5							
16	89.7 7.5 98.9 7.5 99 5.5 107.5 5.5 113.5 3.5 130 -2							
17	139 -5 155.5 -10.5 167.2 -14.4 176.5 -17.5 340 -17.5 9999.9 0							
18	0 -1.6 44.1 -1.6 74.1 3.5							
19	113.5 3.5 130 -2 139 -5 155.5 -10.5 167.2 -14.4							
20	176.5 -17.5 340 -17.5 9999.9 0							
21	0 -2 130 -2 139 -5							
22	155.5 -10.5 167.2 -14.4 176.5 -17.5 340 -17.5 9999.9 0							
23	0 -10.5 155.5 -10.5 167.2 -14.4 176.5 -17.5 340 -17.5 9999.9 0							
24	0 -14.4 167.2 -14.4 176.5 -17.5 340 -17.5 9999.9 0							
25	0 -42 340 -42 9999.9 0							
26	0 -2.4 340 -2.4 9999.9 0							
27	1 1 1 1 1 1 1 1							
28	4 86 -10.5 138 -10.5 2							
29	138 143							
30	5 86 -14.4 167.2 -14.4 2							
31	162.2 167.2							
EOT..								
DI WI 1-EOF								

**** STABILITY WITH UPLIFT ****

DIS.	EL.	DP	RP	DB	RB	FS
138.0	-10.5	1472.	2449.	0.	10360.	1.70
143.0	-10.5	1209.	1749.	0.	11760.	1.71
138.0	EL. -10.5					

CRIT. ACTIVE LOC 101.0 EL -10.5 DA 16631. RA 12893.

DIS.	EL.	DP	RP	DB	RB	FS
138.0	-10.5	1472.	2449.	0.	10360.	1.70
143.0	-10.5	1209.	1749.	0.	11760.	1.71
138.0	EL. -10.5					

CRIT. ACTIVE LOC 101.0 EL -10.5 DA 16631. RA 12893.

* * STRATUM 5 ACT. WEDGE LOC. 86.0 EL. -14.4 PASS.WEDGE LOC. 167.2 EL. -14.4

DIS.	EL.	WT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-10.5	917.	506.	280.	320.	280.
44.1	-10.5	917.	506.	280.	320.	280.
74.1	-10.5	1442.	506.	280.	320.	280.
89.7	-10.5	1922.	506.	280.	320.	280.
98.9	-10.5	1900.	506.	280.	320.	280.
99.0	-10.5	1682.	506.	280.	320.	280.
100.0	-10.5	1682.	506.	280.	320.	280.
107.5	-10.5	1682.	506.	280.	320.	280.
113.5	-10.5	1442.	506.	280.	320.	280.

ASSUMED FAILURE SURFACE DATA

750.	320.	328.	750.	320.	633.	320.
74.1	-14.4	1844.	750.	320.	633.	320.
89.7	-14.4	2384.	750.	320.	889.	320.
98.9	-14.4	2302.	750.	320.	886.	320.
99.0	-14.4	2084.	750.	320.	770.	320.
100.0	-14.4	2084.	750.	320.	770.	320.
107.5	-14.4	2083.	750.	320.	770.	320.
113.5	-14.4	1843.	750.	320.	631.	320.
SHEAR STRENGTHS ARE EQUAL						
130.0	-14.4	1277.	320.0	AT DIST.	129.2	304.
139.0	-14.4	968.	750.	320.	394.	126.
150.0	-14.4	820.	750.	320.	126.	40.
155.5	-14.4	745.	750.	320.	40.	0.
167.2	-14.4	588.	750.	320.	0.	0.
FAILURE SURFACE IN STRATA 5 EL. -14.4 DIST. 167.2 STRENGTH						
176.5	-14.4	588.	750.	320.	999999.	320.
340.0	-14.4	587.	750.	320.	999999.	320.

ASSUMED CRIT. PASSIVE LOC. 167.2 EL. -14.4 DP 2761. RP -1.

ACTIVE WEDGE DATA

DIST.	ELEU.	DA	RA	DB	RB	FS
86.0	-14.4	18413.	11730.	0.	17033.	1.84
91.0	-14.4	20862.	12457.	0.	15433.	1.54
96.0	-14.4	23027.	13418.	0.	13833.	1.34
101.0	-14.4	24084.	14438.	0.	12233.	1.25
106.0	-14.4	23875.	15458.	0.	10633.	1.24
111.0	-14.4	22807.	16478.	0.	9033.	1.27
116.0	-14.4	20451.	16512.	0.	7433.	1.35
121.0	-14.4	17545.	14600.	0.	5833.	1.38
126.0	-14.4	14628.	14598.	0.	4233.	1.59
131.0	-14.4	11243.	12796.	0.	2665.	1.82

CRIT. ACTIVE LOC 106.0 EL -14.4 DA 23875. RA 15458.

DIS.	EL.	DP	RP	DB	RB	FS
162.2	-14.4	2803.	749.	0.	10633.	1.27
167.2	-14.4	2761.	-1.	0.	10633.	1.24
159.5	-14.4	2861.	1153.	0.	10633.	1.30
160.6	-14.4	2834.	983.	0.	10633.	1.29
161.2	-14.4	2822.	808.	0.	10633.	1.28
163.5	-14.4	2785.	558.	0.	10633.	1.28

EOT..

AFTER SELECTED WEDGES, PLACE CROSSHAIRS AT ADDITIONAL P.W. LOCATIONS
 (N.S. = COMPLETE STRATA & D.R. = REDRAW & U = WINDOW)
 1 = END, 2 = PLOT SECTION, 3 = NEW SECTION
 4 = CK. MORE, 5 = SPOOL DETAIL DATA 1

STR 4 EL. -10.5 NO 1
 NO DIST. P.S.
 3 138. 1.896
 2 140. 1.732

STR 5 EL. -14.4 NO 4
 NO DIST. P.S.
 1 162.3 1.274 E. H.
 2 161.3 1.236
 3 159.5 1.236
 4 160.5 1.267
 5 161.3 1.282
 6 161.5 1.264



Reach 5 L.S.

LI	NSCM	1-EOF	203.8	-10.5	2094.	506.	280.	320.	280.
1	17TH ST	OUTFALL CANAL	203.9	-10.5	2073.	506.	280.	320.	280.
2	STA 625	TO 635 ORLEANS	204.0	-10.5	1922.	506.	280.	320.	280.
3	10.0	10.0 0.5 0.0 0.1	211.5	-10.5	1922.	506.	280.	320.	280.
4	16.2	2.1	225.1	-10.5	1442.	506.	280.	320.	280.
5	100	150	243.8	-10.5	875.	506.	280.	320.	280.
6	0	62.5 0 62.5 0	244.5	-10.5	855.	506.	280.	320.	280.
7	0	120 500 500 120 500 500	258.0	-10.5	700.	506.	280.	320.	280.
8	0	103 200 500 103 500 500	340.0	-10.5	700.	506.	280.	320.	280.
9	0	103 200 200 103 200 200							
10	0	103 300 320 103 300 320							
11	0	122 0 122 0							
12	0	121 203.8 12.1 203.9 12							
13	204	7.5 211.5 7.5 225.1 3.5 243.8 -2							
14	244	5 -2.2 258 -3.7 340 -3.7 9999.9 0							
15	0	-17.5 126.5 -17.5 135.5 -14.5 147.5 -10.5 173 -2							
16	189	5 3.5 195.5 5.5 203.9 5.5 204 7.5 211.5 7.5							
17	225	1 3.5 243.8 -2.2 258 -3.7 340 -3.7 9999.9 0							
18	0	-17.5 126.5 -17.5 135.5 -14.5 147.5 -10.5 173 -2							
19	189	5 3.5 225.1 3.5 243.8 -2							
20	244	5 -2.2 258 -3.7 340 -3.7 9999.9 0							
21	0	-17.5 126.5 -17.5 135.5 -14.5 147.5 -10.5 173 -2							
22	243	8 -2.2 244.5 -2.2 258 -3.7 340 -3.7 9999.9 0							
23	0	-17.5 126.5 -17.5 135.5 -14.5 147.5 -10.5 340 -10.5 9999.9 0							
24	0	-17.5 126.5 -17.5 135.5 -14.5 340 -14.5 9999.9 0							
25	0	-2.3 40 -42 9999.9 0							
26	0	-2.4 340 -2.4 9999.9 0							
27	1	1 1 1 1 1 1 1 1							
28	4	194 -10.5 243 -10.5 3							
29	238	243 248							
30	5	194 -14.5 243 -14.5 3							
31	238	243 248							
EOT..									
DI	UI	1-EOF							

ASSUMED CRIT. PASSIVE LOC. 243.0 EL. -10.5 DP 3342. RP 4267.

ACTIVE WEDGE DATA

DIST.	ELEV.	DA	RA	DB	RB	F
194.0	-10.5	19669.	7887.	0.	13720.	1.58
199.0	-10.5	20575.	9137.	0.	12320.	1.49
204.0	-10.5	21238.	10387.	0.	10920.	1.43
209.0	-10.5	20734.	11636.	0.	9520.	1.46
214.0	-10.5	19804.	12260.	0.	8120.	1.50
219.0	-10.5	18058.	12260.	0.	6720.	1.58
224.0	-10.5	15079.	14259.	0.	5320.	2.03
229.0	-10.5	12402.	14258.	0.	3920.	2.48

**** STABILITY WITH UPLIFT ****

CRIT. ACTIVE LOC 204.0 EL -10.5 DA 21238. RA 10387.

DIS.	EL.	DP	RP	DB	RB	FS
238.0	-10.5	4165.	4547.	0.	9520.	1.43
243.0	-10.5	3342.	4267.	0.	10920.	1.43
243.0	EL-10.5	2500.	3987.	0.	12320.	1.46

17TH ST OUTFALL CANAL
STA 625 TO 635 ORLEANS
7 PROFILES
VERTICALS
UPLIFT WITH 1 PIEZOMETRIC GRADE LINES

* * STRATUM 4 ACT. WEDGE LOC. 194.0 EL. -10.5 PASS.WEDGE LOC.

ASSUMED FAILURE SURFACE DATA

DIST.	ELEV.	WT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-10.5	1412.	506.	280.	999999.	280.
100.0	-10.5	1412.	506.	280.	999999.	280.
126.5	-10.5	1412.	506.	280.	999999.	280.
135.5	-10.5	1412.	506.	280.	999999.	280.
147.5	-10.5	1412.	506.	320.	320.	280.
150.0	-10.5	1446.	506.	280.	280.	280.
173.0	-10.5	1757.	506.	280.	320.	280.
189.5	-10.5	1980.	506.	280.	320.	280.
195.5	-10.5	2094.	506.	280.	320.	280.

* * STRATUM 5 ACT. WEDGE LOC. 194.0 EL. -14.5 PASS.WEDGE LOC. 243.0 EL. -14.5

ASSUMED FAILURE SURFACE DATA

DIST.	ELEV.	WT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-	-	-	-	-	-

14.5	1662.	756.	320.	999999.	320.	320.
100.0	1662.	756.	320.	999999.	320.	320.
126.5	1662.	756.	320.	999999.	320.	320.
136.5	1662.	756.	320.	999999.	320.	320.
147.5	1662.	756.	320.	999999.	320.	320.
150.0	1662.	756.	320.	999999.	320.	320.
173.0	1662.	756.	320.	999999.	320.	320.
189.5	1662.	756.	320.	999999.	320.	320.
195.5	1662.	756.	320.	999999.	320.	320.
203.8	1662.	756.	320.	999999.	320.	320.
203.0	1662.	756.	320.	999999.	320.	320.
204.0	1662.	756.	320.	999999.	320.	320.
211.5	1662.	756.	320.	999999.	320.	320.
225.1	1662.	756.	320.	999999.	320.	320.
243.8	1662.	756.	320.	999999.	320.	320.
244.5	1662.	756.	320.	999999.	320.	320.
258.0	1662.	756.	320.	999999.	320.	320.
340.0	1662.	756.	320.	999999.	320.	320.

SHEAR STRENGTHS ARE EQUAL

320.0 AT DIST. 243.0

ASSUMED CRIT. PASSIVE LOC. 243.0 EL. -14.5 DP 7223. RP 6443.

ACTIVE WEDGE DATA

DIST.	ELEV.	DA	RA	DB	RB	FS
194.0	-14.5	27945.	9287.	0.	15680.	1.52
199.0	-14.5	29054.	10537.	0.	14080.	1.42
204.0	-14.5	29920.	11787.	0.	12480.	1.35
209.0	-14.5	29677.	13037.	0.	10880.	1.35
214.0	-14.5	28990.	14286.	0.	9280.	1.38
219.0	-14.5	27260.	14660.	0.	7680.	1.44
224.0	-14.5	24630.	14789.	0.	6080.	1.57
229.0	-14.5	20693.	16659.	0.	4480.	2.05
234.0	-14.5	17550.	16448.	0.	2880.	2.50

CRIT. ACTIVE LOC 209.0 EL -14.5 DA 29677. RA 13037.

DIS.	EL.	DP	RP	DB	RB	FS
238.0	-14.5	8252.	6723.	0.	9280.	1.36
243.0	-14.5	7223.	6443.	0.	10880.	1.35
248.0	-14.5	6579.	6208.	0.	12333.	1.37
238.3	-14.5	8180.	6707.	0.	9371.	1.35
236.0	-14.5	8709.	6834.	0.	8645.	1.37
240.5	-14.5	7665.	6580.	0.	10036.	1.35
241.7	-14.5	7446.	6517.	0.	10458.	1.35
243.9	-14.5	7084.	6390.	0.	11176.	1.35
246.2	-14.5	6796.	6263.	0.	11837.	1.36
246.2	-14.5	6796.	6263.	0.	11837.	1.36
245.6	-14.5	6867.	6295.	0.	11675.	1.36
247.7	-14.5	6656.	6208.	0.	12154.	1.36
249.0	-14.5	6465.	6208.	0.	12614.	1.37

EOT..

COE
22444
13,037
10,880
6443

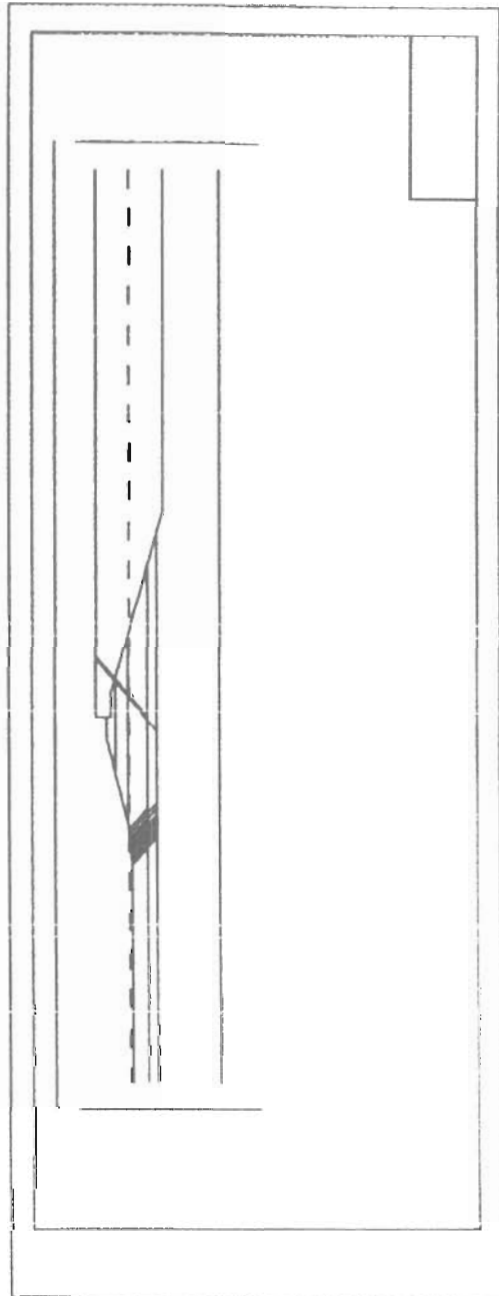
M+M
22036
11,409
10,880
6612

DA-DP
RA
RB
Rp

AFTER SELECTED WEDGES, PLACE CROSSHAIRS AT ADDITIONAL P.U. LOCATIONS
 (N, S, E = COMPLETE STRATA & D, R = REDRAW & U = WINDOW)
 1 = END, 2 = PLOT SECTION, 3 = NEW SECTION
 4 = CK. MORE, 5 = SPOOL DETAIL DATA 1

STR 4 EL.	-10.5 NO 1
NO	DIST. F.S.
2	238.1
3	243.1
4	248.1

STR 5 EL.	-14.5 NO 5
NO	DIST. F.S.
6	238.1
7	243.1
8	248.1
9	238.3
10	236.1
11	240.2
12	241.7
13	243.9
14	246.2
15	248.2
16	245.5
17	247.3
18	249.1



Reach 7

11 11421 1-EOT
 12 1174 ST OUTFALL CANAL
 13 STA 643+00 TO STA 663+00 ORLEANS
 14 10 10 10 0 5 0 10
 15 150 200
 16 0 62 5 0 0 62 5 0 0
 17 0 117 600 600 117 600 600
 18 0 107 377 455 107 377 455
 19 30 122 0 122 0 0
 20 7 8 2 3 7 8 82 3 10 2 89 1 12 105 2 12 112 3 9 4
 21 12 3 6 123 8 5 5 130 3 3 136 3 1 142 3 -2 151 4 -5
 22 30 -5 999 0 0
 23 0 7 8 12 3 7 8 82 3 10 2 89 1 12 105 2 12 112 3 9 4
 24 12 3 6 123 8 5 5 130 3 3 136 3 1 142 3 -2 151 4 -5
 25 12 3 15 3 162 3 -9 5 168 8 -10 172 3 -10 6 340 -10 6 999 9 0
 26 0 5 123 8 5 136 3 1 340 9 999 9 0
 27 0 -10 166 8 -10 172 3 -10 6 340 -10 6 999 9 0
 28 0 -47 340 -47 999 9 0
 29 0 -2 4 340 -2 4 999 9 0
 30 1 1 1 1 1 1
 31 3 90 -10 166 8 -10 2
 32 161 6 166 8
 EOT
 DY 11 1-EOT

*** STABILITY WITH UPLIFT ***

17TH ST OUTFALL CANAL
 STA 643+00 TO STA 663+00 ORLEANS
 S PROFILES
 Z VERTICALS
 UPLIFT WITH PIEZOMETRIC GRADE LINES

CRIT	ACTIVE LOC	110 0	EL -10 0	DA	26599	RA	19211
DIS	EL	-10 0	781	0	0	0	0
161 6	-10 0	781	421	0	0	15107	1 35
166 6	-10 0	781	14	0	0	15107	1 33
165 2	-10 0	782	122	0	0	15107	1 33

CRIT	ACTIVE LOC	110 0	EL -10 0	DA	26599	RA	19211
DIS	EL	-10 0	781	0	0	0	0
161 6	-10 0	781	421	0	0	15107	1 35
166 6	-10 0	781	14	0	0	15107	1 33
165 2	-10 0	782	122	0	0	15107	1 33

ASSUMED CRIT	PASSIVE LOC	166.6	EL	-10 0	DP	781	RP
14							
172 3	-10 0	313	475	99999	455	99999	455
202 0	-10 0	313	475	99999	455	99999	455
340 0	-10 0	312	475	99999	455	99999	455

CRIT	ACTIVE LOC	110 0	EL -10 0	DA	26599	RA	19211
DIS	EL	-10 0	781	0	0	0	0
161 6	-10 0	781	421	0	0	15107	1 35
166 6	-10 0	781	14	0	0	15107	1 33
165 2	-10 0	782	122	0	0	15107	1 33

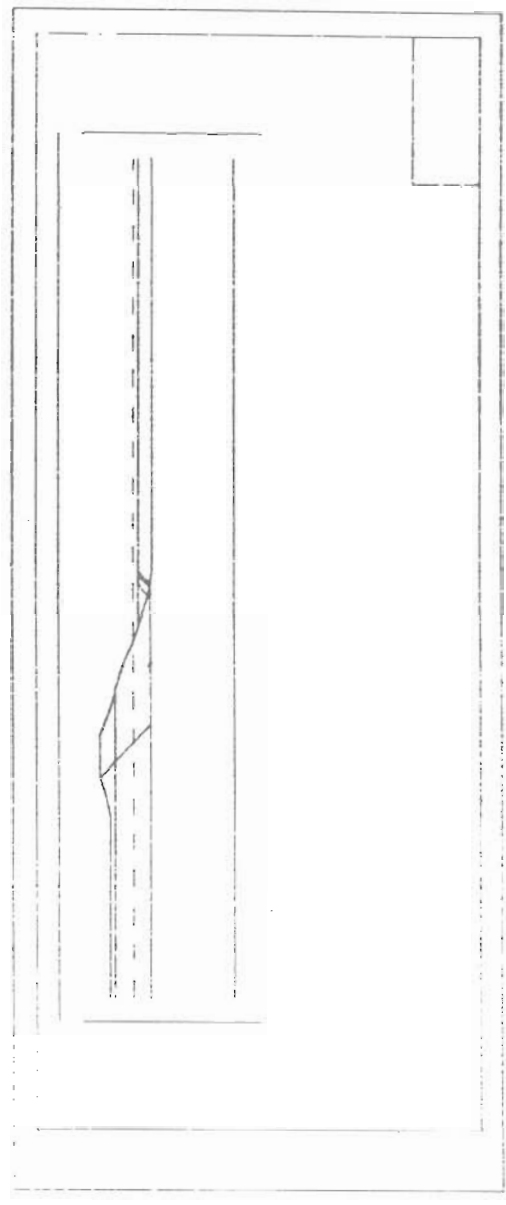
EOT
 COE
 25,818
 19,241
 15107
 14
 0
 M+M
 25,808
 19,202
 15,386
 DA-DR
 RA
 RB
 RP

ASSUMED FAILURE SURFACE DATA	STR 1	STR 2	STR USED
0 0	455	839	455
22 3	455	839	455
82 3	455	1001	455
189 1	455	1122	455
195 2	455	1122	455
112 3	455	947	455
122 3	455	717	455
123 8	455	683	455
130 3	455	548	455
136 3	455	405	405
142 3	455	220	220
150 0	455	63	63
151 4	455	35	35
152 3	455	27	27
162 3	455	0	0
166 8	455	0	0

FAILURE SURFACE IN STRATA 3 EL -10 0 DIST 166 8 STRENGTH 455 0

AFTER SELECTED WEDGES, PLACE CROSSHAIRS AT ADDITIONAL P U LOCATIONS
 (N.S. = COMPLETE STRATA & D.P. = REDRAW & U = WINDOW)
 1 = END. 2 = PLOT SECTION. 3 = NEW SECTION
 4 = CK MORE. 5 = SPOOL DETAIL DATA 1

STR	3 EL	-10	NO 1
NO	DIST	P	S
2	151.6	1	346 E
3	156.6	1	33
4	165.2	1	334



Reach 8

```
LI M44M 1-E0F
1 "17TH ST OUTFALL CANAL"
2 "STA 663+00 TO 669+87 (STA 669+87) ORLEANS"
3 10.0 10.0 0.5 177 1 0
4 4 2 2 1
5 200 250
6 0 62.5 0 0 62.5 0 0
7 0 117 600 600 117 600 600
8 0 107 422 545 107 422 545
9 30 122 0 0 122 0 0
10 0 10.2 73.7 10.2 83.7 10.7 92 12 102 12 121.5 5.5
11 132 2 139.5 2 143.7 0.5 153.7 -3.3 156.3 -5 340 -5
12 9999.9 0
13 0 10.2 73.7 10.2 83.7 10.7 92 12 102 12 121.5 5.5
14 132 2 139.5 2 143.7 0.5 153.7 -3.3 156.3 -5 163.7 -9.8
15 173.7 -11.3 183.7 -15.4 194.7 -17.6 213.7 -17.6 340 -17.6 9999.9 0
16 0 5.5 121.5 5.5 132 2 340 90. 9999.9 0
17 0 -19 340 -19 9999.9 0
18 0 -47 340 -47 9999.9 0
19 0 -2.4 340 -2.4 9999.9 0
20 1 1 1 1 1 1
21 3 94 -19 194 -19 3
22 189 194 199
EOT..
```

LI W1 1-EOF

*** STABILITY WITH UPLIFT ***

17TH ST OUTFALL CANAL
STA 663+00 TO 669+87 (STA 669+87) ORLEANS
5 PROFILES
2 VERTICALS
UPLIFT WITH 1 PIEZOMETRIC GRADE LINES

* * STRATUM 3 ACT. WEDGE LOC. 94.0 EL. -19.0 PASS.WEDGE LOC. 194.0 EL
-19.0

ASSUMED FAILURE SURFACE DATA

DIST.	ELEV.	WT.	UPLIFT	STR 1	STR 2	STR USED
0.0	-19.0	3171.	1037.	545.	1232.	545.
73.7	-19.0	3171.	1037.	545.	1232.	545.
83.7	-19.0	3230.	1037.	545.	1266.	545.
92.0	-19.0	3382.	1037.	545.	1354.	545.
102.0	-19.0	3382.	1037.	545.	1353.	545.
121.5	-19.0	2621.	1037.	545.	914.	545.
132.0	-19.0	2247.	1037.	545.	698.	545.
139.5	-19.0	2247.	1037.	545.	698.	545.
143.7	-19.0	2086.	1037.	545.	605.	545.
SHEAR STRENGTHS ARE EQUAL				545.0	AT DIST. 146.3	
153.7	-19.0	1679.	1037.	545.	371.	371.
156.3	-19.0	1498.	1037.	545.	266.	266.
163.7	-19.0	1284.				

35 173.7 -19.0 1217. 1037. 104. 104.
 36 183.7 -19.0 1035. 1037. 0. 0.
 37 194.7 -19.0 937. 1037. 0. 0.
 38 200.0 -19.0 937. 1037. 0. 0.
 39 213.7 -19.0 937. 1037. 0. 0.
 40 250.0 -19.0 937. 1037. 0. 0.
 41 340.0 -19.0 937. 1037. 0. 0.
 42
 43
 44 ASSUMED CRIT. PASSIVE LOC. 194.0 EL. -19.0 DP 6171. RP 1182.
 45
 46
 47
 48
 49

ACTIVE WEDGE DATA

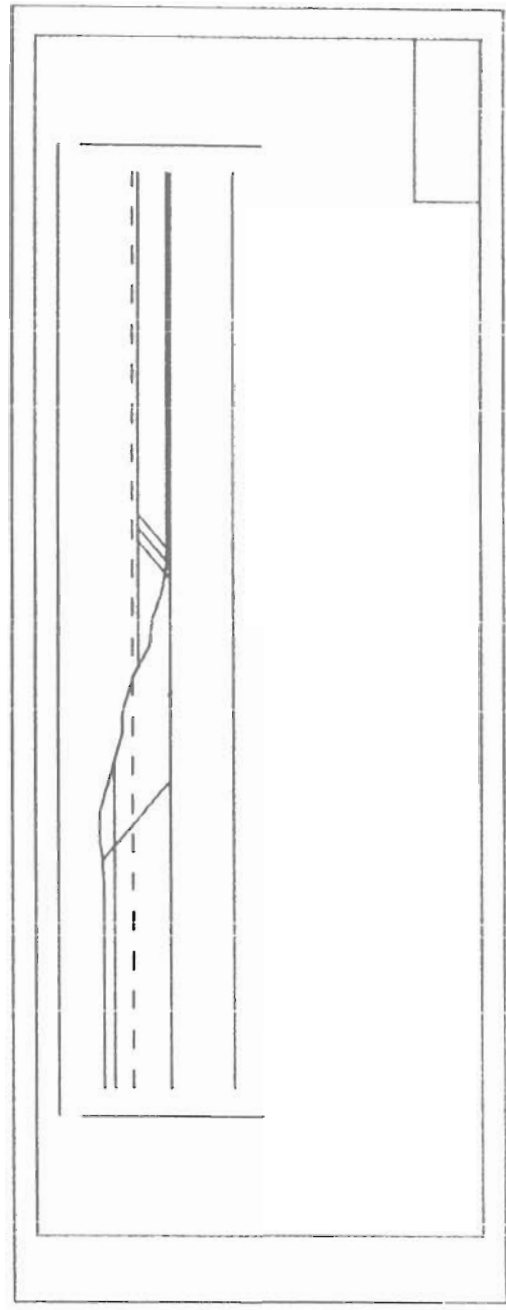
DIST.	ELEV.	DA	RA	DB	RB	FS
94.0	-19.0	48710.	26319.	0.	35978.	1.49
99.0	-19.0	49762.	26319.	0.	33253.	1.39
104.0	-19.0	50731.	26382.	0.	30528.	1.30
109.0	-19.0	50804.	26668.	0.	27803.	1.25
114.0	-19.0	49761.	27017.	0.	25078.	1.22
119.0	-19.0	47446.	27829.	0.	22353.	1.24
124.0	-19.0	43779.	28478.	0.	19628.	1.31
129.0	-19.0	39085.	28476.	0.	16903.	1.41
134.0	-19.0	33601.	27873.	0.	14178.	1.58
139.0	-19.0	28952.	24873.	0.	11453.	1.65

CRIT. ACTIVE LOC 114.0 EL -19.0 DA 49761. RA 27017.

DIS.	EL.	DP	RP	DB	RB	FS
189.0	-19.0	6244.	1786.	0.	25078.	1.24
194.0	-19.0	6171.	1182.	0.	25078.	1.22
199.0	-19.0	6168.	1182.	0.	25078.	1.22

STR 3 EL. -19, NO. 1
 NO DIST. F.S.
 2 189. 1.238 E. H.
 3 194. 1.822
 4 199. 1.822

AFTER SELECTED WEDGES, PLACE CROSSHAIRS AT ADDITIONAL P.W. LOCATIONS
 (N, S, E = COMPLETE STRATA & D.R. = REDRAW & U = WINDOW)
 1 = END, 2 = PLOT SECTION, 3 = NEW SECTION
 4 = CK. MORE, 5 = SPOOL DETAIL, DATA 1



Reach 5

```
LI M70M 1-EOF
1 100 "17TH ST CANAL"
2 110 "STA 625 TO 635" STA 634105
3 120 100 "S" 14.6
4 130 1 12.1 0 -4 -5 12.1 1.5 5 -15
5 140 0 0
6 150 0 0 0 0 0 0 12.1
7 160 0 0 0 23 120 0 0 7.5
8 165 23 57.5 0 0 23 120 0 0 5.5
9 170 23 40.5 0 0 23 103 0 0 3.5
10 180 23 40.5 0 0 23 40.5 0 0 0
11 190 0 12.1 100 12.1 200 12.1 9999.9 0
12 195 0 7.5 100 7.5 106.2 7.5 113.7 5.5 121 3.5
13 200 134 0 136.5 - .5 200 -1.2 9999.9 0
14 210 0 -14.4 31.8 -14.4 75 0 85.5 3.5 91.5 5.5 100 5.5
15 220 113.7 5.5 121 3.5 134 0 136.5 - .5
16 225 200 -1.2 9999.9 0
17 230 0 -14.4 31.8 -14.4 75 0 85.5 3.5
18 240 100 3.5 121 3.5 134 0 136.5 - .5
19 250 200 -1.2 9999.9 0
20 260 0 -14.4 31.8 -14.4 75 0 100 0 134 0 136.5 - .5
21 270 200 -1.2 9999.9 0
22 280 0 -14.4 31.8 -14.4 100 -14.4 200 -14.4 9999.9 0
EOT..
```

CANTILEVER RETAINING WALL STABILITY (USER 85-11-12)

RUN TIME = 12 APR 89 9 02 58
DATA FILE = M10M

17TH ST CANAL
STA 625 TO 635
FS 1.5 WATER 11 PS WATER 11 UPPER 11 LOWER 11 FS WATER 11 FS 11 NO
ELEV 11 ELEV 11 CHANGE 11 RADIUS 11 RADIUS 11
12 10 0 00 -4 00 -5 00 12 10 1 50 5

FLOODWALL ANALYSIS

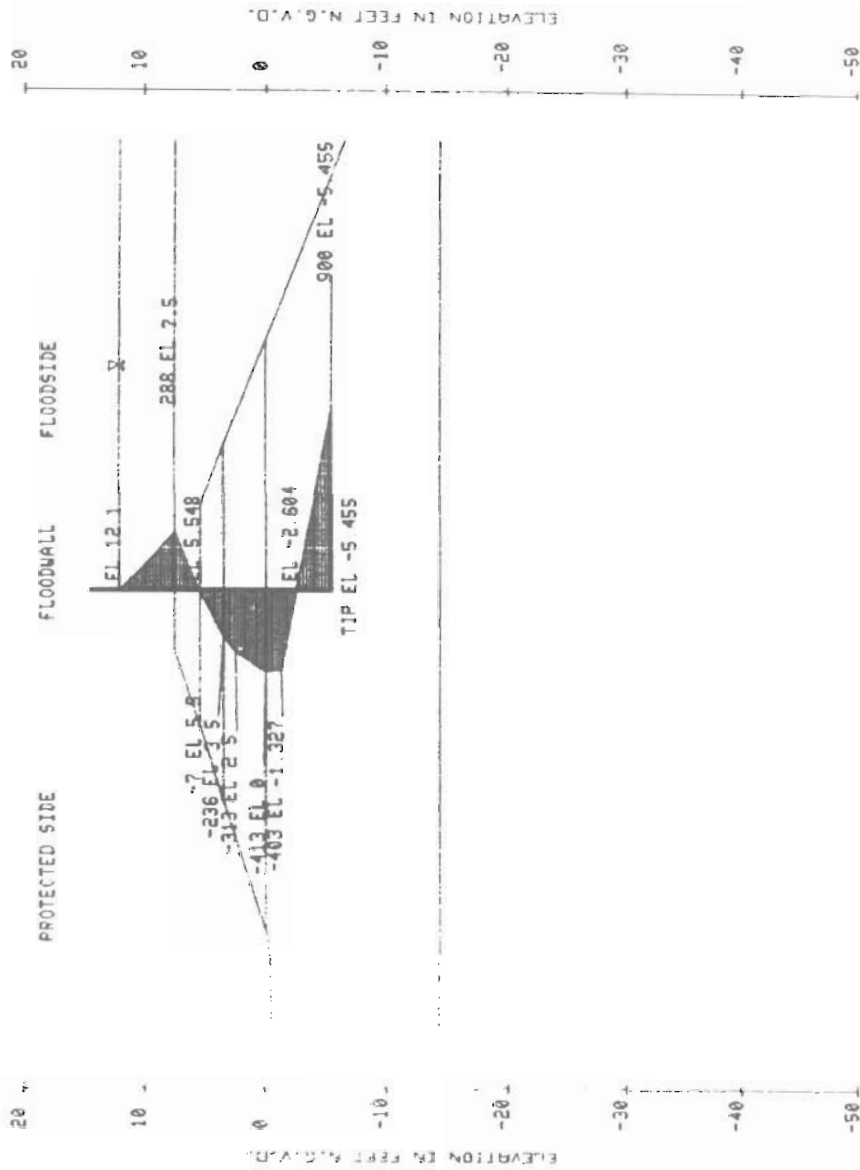
AREA	SUM FORCE	NOM ARM	MOMENT		
X111	541.82	13.84	13032.18		
X121	2224.24	6.40	14241.32		
X131	1282.42	0.00	1218.40		
TRIAL ELEV	* -4.00	SUM OF FORCES*	0.00	SUM OF MOM*	2131.89
TRIAL ELEV	* -5.00	SUM OF FORCES*	0.00	SUM OF MOM*	735.17
TRIAL ELEV	* -5.50	SUM OF FORCES*	0.00	SUM OF MOM*	-110.72
TRIAL ELEV	* -4.50	SUM OF FORCES*	0.00	SUM OF MOM*	1400.80
DESIGN ELEV	* -5.45	SUM OF FORCES*	0.00	SUM OF MOM*	9.26

ELEVATION NET CHARGE
(FT) (KIP/FT)

12 10	0.00
11 10	155.58
10 10	181.50
9 10	250.00
8 10	228.50
7 50	1.00
6 50	6.00
5 50	1.00
4 50	1.00
3 50	-121.50
2 50	-239.00
1 50	-239.00
0 50	-337.00
0 00	-412.50
0 00	-412.50
-1 00	-412.50
-2 00	-412.50
-3 00	-412.50
-4 00	-412.50
-5 45	89.00
-6 45	0.00
-7 45	0.00

COPY SCREEN, THEN STRIKE RETURN TO PLOT

DO YOU WANT A CALCOMP PLOT (Y/N)?



NET DIAGRAM
 DATE 1-2-73

Reach 5

```
I M70MA 1-EOF
1 100 "17TH ST CANAL"
2 110 "STA 625 TO 635"
3 120 100 "S" 14.6
4 130 1 12.1 0 -4 -5 12.1 1.5 5 -15
5 140 0 0
6 150 0 0 0 0 0 0 12.1
7 160 0 0 0 23 120 0 0 7.5
8 165 23 57.5 0 0 23 120 0 0 5.5
9 170 23 40.5 0 0 23 103 0 0 3.5
10 180 23 40.5 0 0 23 40.5 0 0 0
11 190 0 12.1 100 12.1 200 12.1 9999.9 0
12 195 0 7.5 100 7.5 107.5 7.5 114.3 5.5 121.1 3.5
13 200 133 0 140.5 -2.2 154 -3.7 200 -3.7 9999.9 0
14 210 0 -14.4 31.8 -14.4 75 0 85.5 3.5 91.5 100 5.5
15 220 114.3 5.5 121.1 3.5 133 0 140.5 -2.2
16 225 154 -3.7 200 -3.7 9999.9 0
17 230 0 -14.4 31.8 -14.4 75 0 85.5 3.5
18 240 100 3.5 121.1 3.5 133 0 140.5 -2.2
19 250 154 -3.7 200 -3.7 9999.9 0
20 260 0 -14.4 31.8 -14.4 75 0 100 0 133 0 140.5 -2.2
21 270 154 -3.7 200 -3.7 9999.9 0
22 280 0 -14.4 31.8 -14.4 100 -14.4 200 -14.4 9999.9 0
EOT..
```

CANTILEVER RETAINING WALL STABILITY (VER. 85/11/12)

RUN TIME = 19 APR 89 9:37:55
DATA FILE = M70MA

17TH ST CANAL
STA 625 TO 635

FS=LS WATER ** PS WATER ** UPPER ** LOWER ** FS WATER ** FS ** NO.
ELEV ** ELEV ** RANGE ** X-RANGE ** GROUND EL ** ** ** STR.
12.10 0.00 -4.00 -5.00 12.10 1.50 5

FLOODWALL ANALYSIS

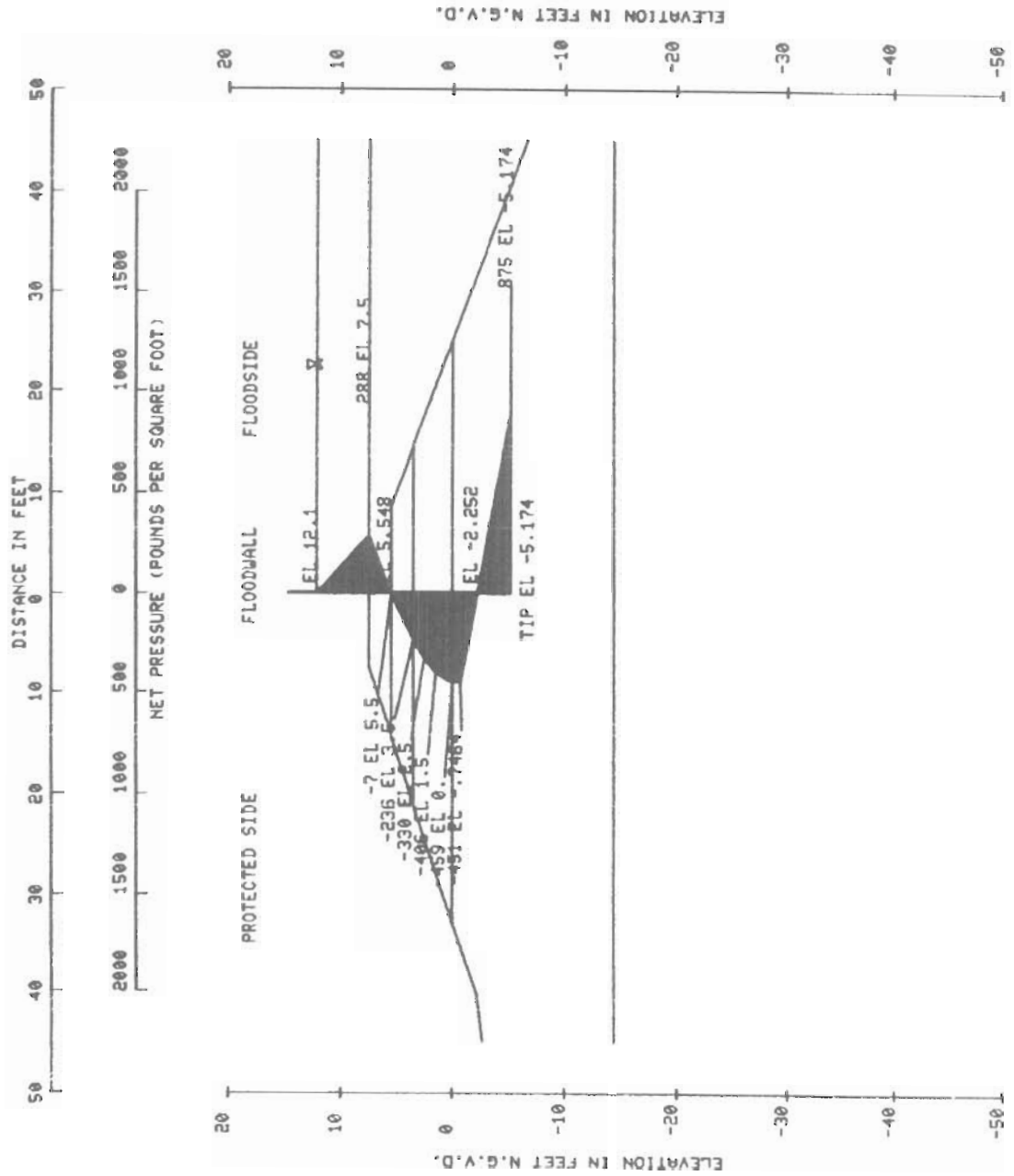
AREA	SUM FORCE	MOM ARM	MOMENT			
X(1)	941.82	13.56	12768.27			
X(2)	3221.49	6.31	14010.49			
X(3)	1278.16	0.97	1245.03			
TRIAL ELEV	-4.00	SUM OF FORCES*	0.00	SUM OF MOM*	1801.31	
TRIAL ELEV	-5.00	SUM OF FORCES*	-1.74	SUM OF MOM*	294.22	
TRIAL ELEV	-5.20	SUM OF FORCES*	-1.46	SUM OF MOM*	-32.71	
TRIAL ELEV	-4.20	SUM OF FORCES*	0.00	SUM OF MOM*	1531.01	
DESIGN EL	-5.17	SUM OF FORCES*	-1.51	SUM OF MOM*	2.81	

ELEVATION NET DIAGRAM
(FT) (LBS/50 FT)

12.10	0.00
11.10	62.50
10.10	125.00
9.10	187.50
8.10	250.00
7.50	287.50
7.50	287.50
6.50	140.20
5.55	0.00
5.50	-7.10
5.50	-7.10
4.50	-121.52
3.50	-235.93
2.50	-330.35
1.50	-405.50
0.50	-441.17
0.00	-459.01
0.00	-459.01
-0.75	-450.72
-2.25	0.00
-5.17	374.78
-5.17	0.00

COPY SCREEN, THEN STRIKE RETURN TO PLOT

DO YOU WANT A CALCOMP PLOT (Y/N)?



NET DIAGRAM
 191 CASE P. 8.-1.8