
GEOTECHNICAL INVESTIGATION
LONDON AVENUE OUTFALL CANAL
PROPOSED LEVEE CROWN DEGRADING
MIRABEAU AVENUE TO LEON C. SIMON BOULEVARD
NEW ORLEANS, LOUISIANA

FOR
BURK-KLEINPETER, INC.
NEW ORLEANS, LOUISIANA

~~29 MARCH 1994~~



EUSTIS ENGINEERING COMPANY, INC.
GEOTECHNICAL ENGINEERS
CONSTRUCTION QUALITY CONTROL AND MATERIALS TESTING
3011 28th Street • Metairie, Louisiana 70002 • 504-834-0157

*Original
Eustis*



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29 March 1994

Burk-Kleinpeter, Inc.
4176 Canal Street
New Orleans, Louisiana 70119-5994

Attention Mr. Suresh Shah

Gentlemen:

Geotechnical Investigation
London Avenue Outfall Canal
Proposed Levee Crown Degrading
Mirabeau Avenue to Leon C. Simon Boulevard
New Orleans, Louisiana

At your request, we are providing this letter to transmit geotechnical engineering analyses performed for proposed levee crown degrading along the east and west banks of the London Avenue Outfall Canal. Analyses contained in this letter are applicable for levee design reaches between Mirabeau Avenue and Leon C. Simon Boulevard. Construction of the project will begin shortly. We understand the contractor proposes to remove 2 feet of the levee crown landside of the existing floodwall to facilitate construction access.

Available and Furnished Information

The analyses are based on data developed by Eustis Engineering Company, Inc. (Eustis Engineering) and the U.S. Army Corps of Engineers (USACE). The data and design criteria are contained in Design Memorandum No. 19A, "General Design, London Avenue Outfall Canal, Orleans Parish." Two soil reaches, based

on the Design Memorandum and discussions with representatives of the USACE for previous investigations at the subject site, were used in our analyses. Soil parameters, stratification, and the extent of the two soil reaches are shown on Figure 1 of Eustis Engineering's letter report entitled "Additional Geotechnical Analyses, London Avenue Outfall Canal, Proposed I-Walls and T-Walls, Mirabeau Avenue to Leon C. Simon Boulevard, New Orleans, Louisiana," dated 19 May 1993.

Burk-Kleinpeter, Inc., provided plan and profile drawings of the existing floodwalls along the London Avenue Outfall Canal. Also furnished were survey data of the existing and proposed conditions along the east and west banks of the canal. We understand a factor of safety of approximately 1.5 is required for approval of the proposed degrading operations. The proposed degrading operations will be temporary and thus analyses are based on the "Q" case condition.

Floodwall Analyses

Design Assumptions and Criteria. Based on the furnished survey data of the existing floodwalls, analyses were performed to determine the resulting factor of safety for degrading 2 feet of levee crown landside of the existing floodwall for construction access. The computations were performed using the "analysis" mode of the Corps of Engineers' computer program CWALSHT. Sheetpile analyses are based on short term (undrained) loading conditions only. High water levels in the canal were assumed at the top of the existing floodwalls. Low water levels landside of the existing floodwalls were assumed at the toe of the levee.

In the analysis mode, a factor of safety is iteratively applied to the soil shear strength parameters until the actual penetration is matched. The same factor of safety was applied to the active and passive pressures. A structural analyses was also performed, given the modulus of elasticity and moment of inertia of the wall, to determine the deflected shape of the wall. The computer program only allows for one set of properties to be input for the sheetpile, thus an accurate deflected shape is not computed for the floodwalls constructed of a steel sheetpile and a concrete cap extension.

Based on the existing floodwall section and penetration and on the soil reaches, the project was divided into eight subreaches for the current analyses. A summary of the conditions analyzed are tabulated on Enclosure 1. Subreaches 1 through 5 define sections along the east bank. The west bank is divided into Subreaches 6 through 8.

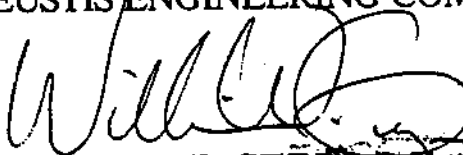
Results of Analyses. The computer printouts of our results are appended to this letter. Each subreach analyzed is indicated on the output printout. One computer run was performed for each subreach where an adequate factor of safety was obtained for 2 feet of degrading. An additional computer run was performed for reaches where a factor of safety of 1.5 was not obtained for 2 feet of degrading to obtain the recommended degrading limit. A summary of our analyses is shown on Enclosure 2.

It should be noted the current analysis of the penetration for the degraded levee crown does not include consideration for slope stability. However, slope stability analyses were previously performed on the existing floodwalls to determine the required penetration. Therefore, slope stability analyses are not necessary for the temporary condition currently being analyzed.

If we can be of further assistance or if you require further information, please do not hesitate to contact us.

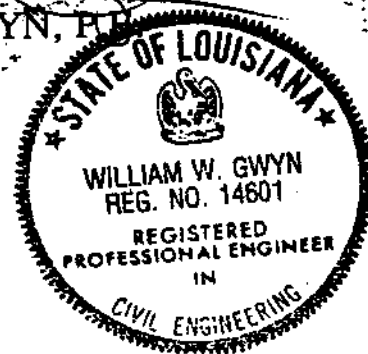
Yours very truly,

EUSTIS ENGINEERING COMPANY, INC.


WILLIAM W. GWYN, P.E.

Gwen P. Sanders:ln

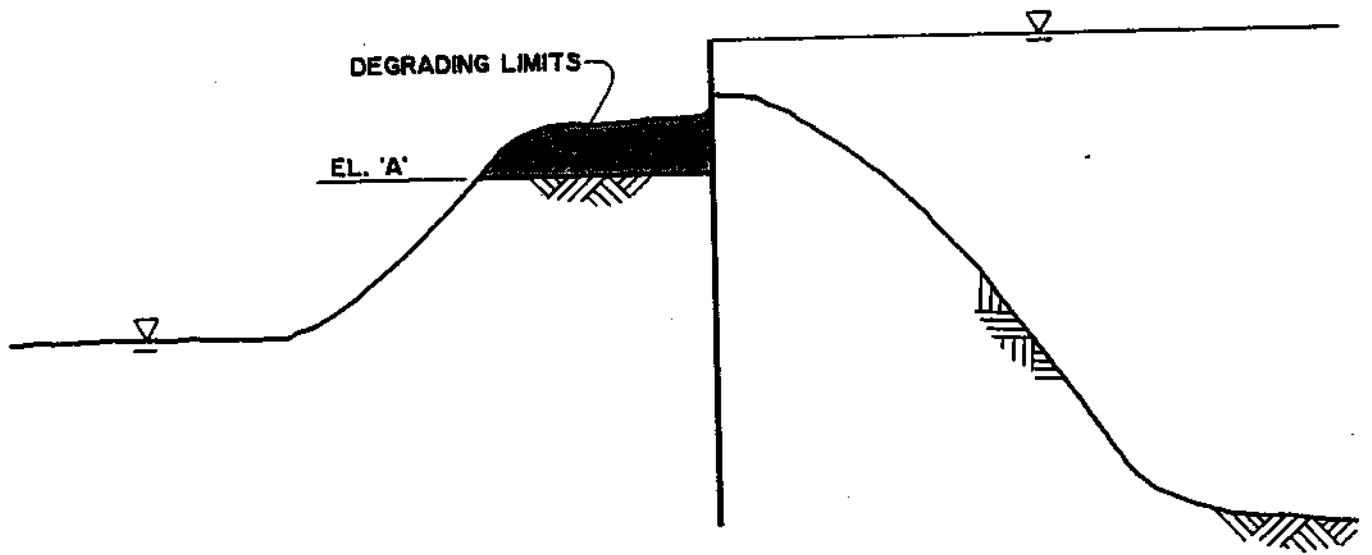
Enclosures 1 and 2
Appendix
EE 12882



LONDON AVENUE OUTFALL CANAL
 PROPOSED LEVEE CROWN DEGRADING
 MIRABEAU AVENUE TO LEON C. SIMON BOULEVARD
 NEW ORLEANS, LOUISIANA

SUMMARY OF CONDITIONS ANALYZED

SUBREACH	BANK	STATIONS	ELEVATION IN FEET (NGVD) AT TOP OF FLOODWALL	ELEVATION IN FEET (NGVD) AT BOTTOM OF SHEETPILE	TYPE OF SHEETPILE	SOIL REACH
1		70+20 to 73+00	11.3	-26.5	AZ-18	1
2		73+00 to 84+60	11.5	-15.5	MP-112	1
3	East	85+40 to 100+00	11.5	-28.5	AZ-18	2
4		102+30 to 119+40	12.0	-20.0	PX-27 or RZ-10	1
5		120+10 to 127+50	12.0	-12.0	MP-112	2
6		70+50 to 84+50	11.5	-15.5	MP-112	1
7	West	85+60 to 99+15	11.5	-15.5	MP-112	2
8		100+40 to 119+85	11.5	-15.5	MP-112	1



SUBREACH	EL. 'A' FT. NGVD	FACTOR OF SAFETY
1	3	2.02
2	3	1.52
3	2	1.32
	3	1.53
4	1.5	1.07
	3	1.39
5	4	1.67
6	2.5	1.31
	3	1.50
7	3.5	1.78
8	3	1.53

RESULTS OF ANALYSES

LONDON AVENUE OUTFALL CANAL
 PROPOSED LEVEE CROWN DEGRADING
 MIRABEAU AVENUE TO LEON C. SIMON BOULEVARD
 NEW ORLEANS, LOUISIANA

APPENDIX

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS BY CLASSICAL METHODS

DATE: 25-MAR-1994

TIME: 7.23.32

#####
INPUT DATA
#####

I.--HEADING:

'LONDON AVENUE OUTFALL CANAL
'EAST BANK
'STATIONS 70+20 TO 73+00
'SOIL REACH 1; Q CASE

II.--CONTROL

CANTILEVER WALL ANALYSIS
SAME FACTOR OF SAFETY APPLIED TO ACTIVE AND PASSIVE PRESSURES.

III.--WALL DATA

ELEVATION AT TOP OF WALL = 11.30 (FT)
ELEVATION AT BOTTOM OF WALL = -26.50 (FT)
WALL MODULUS OF ELASTICITY = 2.90E+07 (PSI)
WALL MOMENT OF INERTIA = 250.40 (IN**4/FT)

IV.--SURFACE POINT DATA

IV.A--RIGHTSIDE

DIST. FROM ELEVATION
WALL (FT) (FT)
.00 6.00
2.50 6.00
11.50 .50
17.50 -4.00
37.50 -10.00

IV.B-- LEFTSIDE

DIST. FROM ELEVATION
WALL (FT) (FT)
.00 3.00
14.50 3.00
34.50 -5.00

V.--SOIL LAYER DATA

V.A.--RIGHTSIDE LAYER DATA

Table with 8 columns: SAT. WGHT. (PCF), MOIST WGHT. (PCF), ANGLE OF INTERNAL FRICTION (DEG), COHESION (PSF), ANGLE OF WALL FRICTION (DEG), ADHESION (PSF), BOTTOM ELEV. (FT), SLOPE (FT/FT), and SAFETY FACTOR (ACT. PASS.).

122.00 122.00 30.00 .0 .00 .0

V.B.-- LEFTSIDE LAYER DATA

SAT. WGHT. (PCF)	MOIST WGHT. (PCF)	ANGLE OF INTERNAL FRICTION (DEG)	COH- ESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADH- ESION (PSF)	<--BOTTOM--> ELEV. (FT)	<--SAFETY--> <-FACTOR--> SLOPE (FT/FT)	ACT. PASS.
109.00	109.00	.00	700.0	.00	.0	.00	.00	
96.00	96.00	.00	400.0	.00	.0	-6.00	.00	
102.00	102.00	.00	320.0	.00	.0	-12.00	.00	
122.00	122.00	30.00	.0	.00	.0			

VI.--WATER DATA

UNIT WEIGHT = 62.40 (PCF)
 RIGHTSIDE ELEVATION = 11.30 (FT)
 LEFTSIDE ELEVATION = -5.00 (FT)
 NO SEEPAGE

VII.--SURFACE LOADS
 NONE

VIII.--HORIZONTAL LOADS
 NONE

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 25-MAR-1994

TIME: 7.24.10

 X COMPLETE RESULTS FOR X
 X CANTILEVER WALL ANALYSIS X
 #####

I.--HEADING

'LONDON AVENUE OUTFALL CANAL
 'EAST BANK
 'STATIONS 70+20 TO 73+00
 'SOIL REACH 1; Q CASE

II.--RESULTS

ELEVATION (FT)	BENDING MOMENT (LB-FT)	SHEAR (LB)	DEFLECTION (IN)	NET PRESSURE (PSF)
11.30	0.	0.	2.5496E+00	.00
10.30	10.	31.	2.4347E+00	62.40
9.30	83.	125.	2.3198E+00	124.80
8.30	281.	281.	2.2050E+00	187.20
7.30	666.	499.	2.0902E+00	249.60
6.30	1300.	780.	1.9756E+00	312.00
6.00	1548.	876.	1.9412E+00	330.72
5.30	2246.	1123.	1.8612E+00	374.40
4.30	3567.	1529.	1.7475E+00	436.80
3.30	5325.	1997.	1.6345E+00	499.20
3.00	5947.	2149.	1.6009E+00	517.92
3.00	5947.	2149.	1.6009E+00	-176.49
2.65	6688.	2085.	1.5618E+00	-192.80
2.30	7405.	2014.	1.5229E+00	-209.11
2.00	8000.	1950.	1.4897E+00	-223.09
1.30	9307.	1781.	1.4130E+00	-258.53
.30	10965.	1540.	1.3054E+00	-222.76
.00	11418.	1482.	1.2735E+00	-164.91
-.70	12423.	1402.	1.2003E+00	-65.51
-1.70	13791.	1332.	1.0982E+00	-72.92
-2.70	15080.	1241.	9.9934E-01	-109.40
-3.70	16261.	1115.	9.0409E-01	-143.13
-4.70	17299.	956.	8.1271E-01	-175.54
-5.00	17578.	902.	7.8609E-01	-179.79
-5.70	18167.	783.	7.2544E-01	-161.59
-6.00	18395.	743.	7.0010E-01	-104.98
-6.70	18899.	708.	6.4250E-01	4.43
-7.70	19612.	722.	5.6405E-01	24.50
-8.70	20344.	741.	4.9027E-01	12.32
-9.70	21086.	739.	4.2132E-01	-15.11
-10.70	21818.	726.	3.5740E-01	-10.70
-11.70	22536.	707.	2.9867E-01	-28.61
-12.00	22746.	688.	2.8209E-01	-92.48
-12.70	23192.	568.	2.4530E-01	-252.68
-13.70	23622.	280.	1.9744E-01	-322.07
-14.70	23736.	-56.	1.5520E-01	-350.34
-15.70	23500.	-422.	1.1860E-01	-380.99

-16.70	22883.	-817.	8.7590E-02	-409.90
-17.70	21857.	-1240.	6.2013E-02	-435.81
-18.70	20391.	-1699.	4.1628E-02	-482.21
-19.70	18437.	-2223.	2.6086E-02	-565.38
-20.70	15919.	-2825.	1.4920E-02	-639.60
-21.26	14224.	-3192.	1.0335E-02	-662.86
-21.70	12775.	-3435.	7.5302E-03	-451.72
-22.70	9194.	-3645.	3.1710E-03	32.18
-23.70	5646.	-3371.	1.0003E-03	516.07
-24.70	2613.	-2613.	1.8327E-04	999.96
-25.70	581.	-1371.	7.8554E-06	1483.86
-26.52	-1.	0.	0.0000E+00	1878.53

III.--SOIL PRESSURES

ELEVATION (FT)	< LEFTSIDE PRESSURE (PSF)>		<RIGHTSIDE PRESSURE (PSF)>	
	PASSIVE	ACTIVE	ACTIVE	PASSIVE
11.30	0.	0.	0.	0.
10.30	0.	0.	0.	0.
9.30	0.	0.	0.	0.
8.30	0.	0.	0.	0.
7.30	0.	0.	0.	0.
6.30	0.	0.	0.	0.
6.00+	0.	0.	0.	0.
6.00-	0.	0.	0.	694.
5.30	0.	0.	0.	732.
4.30	0.	0.	0.	742.
3.30	0.	0.	0.	631.
3.00+	0.	0.	0.	593.
3.00-	694.	0.	0.	593.
2.65	733.	0.	0.	587.
2.30	771.	0.	0.	581.
2.00	803.	0.	0.	591.
1.30	883.	0.	0.	614.
.30	909.	0.	0.	561.
.00	870.	0.	0.	497.
-.70	814.	11.	0.	386.
-1.70	884.	80.	0.	375.
-2.70	983.	186.	0.	394.
-3.70	1079.	286.	0.	410.
-4.70	1174.	380.	0.	438.
-5.00	1197.	402.	0.	448.
-5.70	1210.	452.	31.	471.
-6.00	1199.	483.	77.	481.
-6.70	1192.	545.	179.	509.
-7.70	1225.	591.	232.	549.
-8.70	1265.	630.	260.	588.
-9.70	1309.	670.	276.	628.
-10.70	1315.	711.	287.	667.
-11.70	1353.	709.	307.	707.
-12.00	1428.	686.	318.	719.
-12.70	1613.	648.	343.	761.
-13.70	1703.	669.	364.	820.
-14.70	1749.	703.	381.	880.
-15.70	1799.	726.	401.	939.
-16.70	1849.	738.	422.	999.
-17.70	1897.	747.	444.	1060.
-18.70	1964.	756.	465.	1152.

-19.70	2068.	765.	486.	1278.
-20.70	2164.	774.	507.	1377.
-21.26	2200.	779.	520.	1417.
-21.70	2228.	783.	530.	1449.
-22.70	2279.	792.	551.	1525.
-23.70	2319.	799.	594.	1601.
-24.70	2352.	825.	675.	1681.
-25.70	2383.	910.	740.	1772.
-26.52	2415.	1003.	768.	1865.
-27.70	2446.	1038.	788.	1950.

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS BY CLASSICAL METHODS

DATE: 24-MAR-1994

TIME: 11.00.44

* INPUT DATA *

I.--HEADING:

'LONDON AVENUE OUTFALL CANAL
'EAST BANK
'STATIONS 73+00 TO 84+60
'SOIL REACH 1; Q CASE

II.--CONTROL

CANTILEVER WALL ANALYSIS
SAME FACTOR OF SAFETY APPLIED TO ACTIVE AND PASSIVE PRESSURES.

III.--WALL DATA

ELEVATION AT TOP OF WALL = 11.50 (FT)
ELEVATION AT BOTTOM OF WALL = -15.50 (FT)
WALL MODULUS OF ELASTICITY = 2.90E+07 (PSI)
WALL MOMENT OF INERTIA = 5.50 (IN**4/FT)

IV.--SURFACE POINT DATA

IV.A--RIGHTSIDE

DIST. FROM WALL (FT)	ELEVATION (FT)
.00	5.00
3.00	4.00
6.00	3.00
16.00	-4.00
34.00	-9.00

IV.B-- LEFTSIDE

DIST. FROM WALL (FT)	ELEVATION (FT)
.00	3.00
16.00	3.00
29.00	-2.00

V.--SOIL LAYER DATA

V.A.--RIGHTSIDE LAYER DATA

SAT. WGT. (PCF)	MOIST WGT. (PCF)	ANGLE OF INTERNAL FRICTION (DEG)	COH-ESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADH-ESION (PSF)	<--BOTTOM--> ELEV. (FT)	<--SLOPE--> (FT/FT)	<--SAFETY--> <--FACTOR--> ACT. PASS.
.09.00	109.00	.00	700.0	.00	.0	.00	.00	
96.00	96.00	.00	400.0	.00	.0	-6.00	.00	
102.00	102.00	.00	320.0	.00	.0	-12.00	.00	

122.00 122.00 30.00 .0 .00 .0

V.B.-- LEFTSIDE LAYER DATA

SAT. WGHT. (PCF)	MOIST WGHT. (PCF)	ANGLE OF INTERNAL FRICTION (DEG)	COH- ESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADH- ESION (PSF)	<--BOTTOM--> ELEV. SLOPE (FT) (FT/FT)		<-SAFETY-> <-FACTOR-> ACT. PASS.
109.00	109.00	.00	700.0	.00	.0	.00	.00	
96.00	96.00	.00	400.0	.00	.0	-6.00	.00	
102.00	102.00	.00	320.0	.00	.0	-12.00	.00	
122.00	122.00	30.00	.0	.00	.0			

VI.--WATER DATA

UNIT WEIGHT = 62.40 (PCF)
 RIGHTSIDE ELEVATION = 11.50 (FT)
 LEFTSIDE ELEVATION = -2.00 (FT)
 NO SEEPAGE

VII.--SURFACE LOADS
NONEVIII.--HORIZONTAL LOADS
NONE

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 24-MAR-1994

TIME: 11.01.09

X SUMMARY OF RESULTS FOR X
X CANTILEVER WALL ANALYSIS X
#####

I.--HEADING

'LONDON AVENUE OUTFALL CANAL
'EAST BANK
'STATIONS 73+00 TO 84+60
'SOIL REACH 1; Q CASE

II.--SUMMARY

RIGHTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

LEFTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

FACTOR OF SAFETY	:	1.52
MAX. BEND. MOMENT (LB-FT)	:	13321.
AT ELEVATION (FT)	:	-4.24
MAXIMUM DEFLECTION (IN)	:	3.0714E+01
AT ELEVATION (FT)	:	11.50

-15.48

-1.

0.

0.0000E+00

1326.38

III.--SOIL PRESSURES

ELEVATION (FT)	< LEFTSIDE PRESSURE (PSF) >		< RIGHTSIDE PRESSURE (PSF) >	
	PASSIVE	ACTIVE	ACTIVE	PASSIVE
11.50	0.	0.	0.	0.
10.50	0.	0.	0.	0.
9.50	0.	0.	0.	0.
8.50	0.	0.	0.	0.
7.50	0.	0.	0.	0.
6.50	0.	0.	0.	0.
5.50	0.	0.	0.	0.
5.00+	0.	0.	0.	0.
5.00-	0.	0.	0.	921.
4.50	0.	0.	0.	708.
3.50	0.	0.	0.	743.
3.00+	0.	0.	0.	761.
3.00-	921.	0.	0.	761.
2.75	948.	0.	0.	769.
2.50	976.	0.	0.	778.
2.00	1030.	0.	0.	796.
1.50	1088.	0.	0.	816.
.50	1131.	0.	0.	785.
.00	1049.	0.	0.	666.
-.50	964.	0.	0.	544.
-1.50	994.	0.	0.	500.
-2.00	1037.	0.	0.	520.
-2.50	1062.	0.	0.	509.
-3.50	1096.	0.	0.	429.
-4.50	1131.	0.	0.	405.
-5.50	1146.	55.	2.	418.
-6.00	1128.	152.	10.	435.
-6.50	1111.	239.	24.	454.
-7.50	1133.	293.	50.	494.
-8.50	1173.	331.	74.	534.
-9.50	1213.	371.	98.	573.
-10.50	1245.	411.	121.	613.
-11.38	1369.	439.	156.	647.
-11.50	1386.	443.	161.	652.
-12.00	1581.	446.	206.	682.
-12.50	1717.	445.	248.	750.
-13.50	1690.	466.	280.	850.
-14.50	1692.	495.	293.	930.
-15.48	1761.	523.	308.	1008.
-16.50	1822.	552.	324.	1098.

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 25-MAR-1994

TIME: 7.24.31

INPUT DATA #
#####

I.--HEADING:

'LONDON AVENUE OUTFALL CANAL
'EAST BANK
'STATIONS 85+40 TO 100+00
'SOIL REACH 2; Q CASE

II.--CONTROL

CANTILEVER WALL ANALYSIS
SAME FACTOR OF SAFETY APPLIED TO ACTIVE AND PASSIVE PRESSURES.

III.--WALL DATA

ELEVATION AT TOP OF WALL = 11.50 (FT)
ELEVATION AT BOTTOM OF WALL = -28.50 (FT)
WALL MODULUS OF ELASTICITY = 2.90E+07 (PSI)
WALL MOMENT OF INERTIA = 250.40 (IN**4/FT)

IV.--SURFACE POINT DATA

IV.A--RIGHTSIDE

DIST. FROM WALL (FT)	ELEVATION (FT)
.00	7.00
1.50	7.00
21.50	.50
29.50	-5.00
47.00	-6.00
65.00	-9.00

IV.B-- LEFTSIDE

DIST. FROM WALL (FT)	ELEVATION (FT)
.00	2.00
13.50	2.00
27.50	-4.00

V.--SOIL LAYER DATA

V.A.--RIGHTSIDE LAYER DATA

SAT. WGHT. (PCF)	MOIST WGHT. (PCF)	ANGLE OF INTERNAL FRICTION (DEG)	COH-ESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADH-ESION (PSF)	<--BOTTOM--> ELEV. (FT)	<--FACTOR--> SLOPE (FT/FT)	<-SAFETY-> <-FACTOR-> ACT. PASS.
109.00	109.00	.00	700.0	.00	.0	.00	.00	
96.00	96.00	.00	400.0	.00	.0	-6.00	.00	

102.00	102.00	.00	320.0	.00	.0	-16.00	.00
117.00	117.00	15.00	200.0	.00	.0	-23.00	.00
122.00	122.00	30.00	.0	.00	.0		

V.B.-- LEFTSIDE LAYER DATA

SAT. WGHT. (PCF)	MOIST WGHT. (PCF)	ANGLE OF INTERNAL FRICTION (DEG)	COH-ESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADH-ESION (PSF)	<--BOTTOM--> ELEV. (FT)	<--SAFETY--> <--FACTOR--> SLOPE (FT/FT) ACT. PASS.
109.00	109.00	.00	700.0	.00	.0	.00	.00
96.00	96.00	.00	400.0	.00	.0	-6.00	.00
102.00	102.00	.00	320.0	.00	.0	-16.00	.00
117.00	117.00	15.00	200.0	.00	.0	-23.00	.00
122.00	122.00	30.00	.0	.00	.0		

VI.--WATER DATA

UNIT WEIGHT = 62.40 (PCF)
 RIGHTSIDE ELEVATION = 11.50 (FT)
 LEFTSIDE ELEVATION = -4.00 (FT)
 NO SEEPAGE

VII.--SURFACE LOADS

NONE

VIII.--HORIZONTAL LOADS

NONE

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 25-MAR-1994

TIME: 7.25.05

X SUMMARY OF RESULTS FOR X
X CANTILEVER WALL ANALYSIS X
#####

I.--HEADING

'LONDON AVENUE OUTFALL CANAL
'EAST BANK
'STATIONS 85+40 TO 100+00
'SOIL REACH 2; Q CASE

II.--SUMMARY

RIGHTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

LEFTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

FACTOR OF SAFETY	:	1.32
MAX. BEND. MOMENT (LB-FT)	:	22071.
AT ELEVATION (FT)	:	-9.49
MAXIMUM DEFLECTION (IN)	:	3.0688E+00
AT ELEVATION (FT)	:	11.50

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 25-MAR-1994

TIME: 7.25.05

 x COMPLETE RESULTS FOR x
 x CANTILEVER WALL ANALYSIS x
 #####

I.--HEADING

'LONDON AVENUE OUTFALL CANAL
 'EAST BANK
 'STATIONS 85+40 TO 100+00
 'SOIL REACH 2; Q CASE

II.--RESULTS

ELEVATION (FT)	BENDING MOMENT (LB-FT)	SHEAR (LB)	DEFLECTION (IN)	NET PRESSURE (PSF)
11.50	0.	0.	3.0688E+00	.00
10.50	10.	31.	2.9364E+00	62.40
9.50	83.	125.	2.8040E+00	124.80
8.50	281.	281.	2.6716E+00	187.20
7.50	666.	499.	2.5393E+00	249.60
7.00	948.	632.	2.4732E+00	280.80
6.50	1300.	780.	2.4071E+00	312.00
5.50	2246.	1123.	2.2753E+00	374.40
4.50	3567.	1529.	2.1440E+00	436.80
3.50	5325.	1997.	2.0136E+00	499.20
2.50	7582.	2527.	1.8844E+00	561.60
2.00	8917.	2816.	1.8205E+00	592.80
2.00	8917.	2816.	1.8205E+00	-465.72
1.75	9606.	2698.	1.7887E+00	-477.37
1.50	10265.	2577.	1.7571E+00	-489.02
1.00	11492.	2325.	1.6943E+00	-519.44
.50	12590.	2072.	1.6321E+00	-491.68
.00	13571.	1866.	1.5708E+00	-334.66
-.50	14468.	1734.	1.5102E+00	-191.96
-1.50	16113.	1563.	1.3917E+00	-150.02
-2.50	17595.	1393.	1.2771E+00	-189.37
-3.50	18888.	1187.	1.1666E+00	-222.68
-4.00	19453.	1074.	1.1130E+00	-231.48
-4.50	19960.	952.	1.0606E+00	-257.28
-5.50	20782.	690.	9.5940E-01	-265.15
-6.00	21096.	569.	9.1063E-01	-221.18
-6.50	21355.	471.	8.6311E-01	-167.92
-7.50	21746.	316.	7.7189E-01	-143.86
-8.50	21988.	165.	6.8585E-01	-157.15
-9.50	22071.	-2.	6.0503E-01	-177.31
-10.50	21983.	-170.	5.2947E-01	-157.66
-11.50	21755.	-266.	4.5913E-01	-35.36
-12.50	21494.	-232.	3.9397E-01	102.77
-13.50	21322.	-104.	3.3392E-01	154.93
-14.50	21299.	60.	2.7895E-01	172.14
-15.50	21437.	210.	2.2906E-01	128.73
-16.00	21554.	246.	2.0602E-01	14.10

-16.50	21674.	222.	1.8426E-01	-110.43
-17.50	21820.	50.	1.4462E-01	-234.07
-18.50	21738.	-228.	1.1017E-01	-320.98
-19.50	21343.	-569.	8.0890E-02	-361.94
-20.50	20592.	-934.	5.6679E-02	-368.31
-21.50	19473.	-1303.	3.7360E-02	-369.87
-22.50	17963.	-1738.	2.2667E-02	-499.77
-23.00	17021.	-2050.	1.6947E-02	-748.95
-23.50	15891.	-2490.	1.2238E-02	-1008.20
-24.50	12869.	-3583.	5.5713E-03	-1179.20
-24.53	12746.	-3624.	5.4025E-03	-1180.47
-25.50	8853.	-4274.	1.9456E-03	-166.97
-26.50	4670.	-3917.	4.2321E-04	882.27
-27.50	1369.	-2510.	2.9571E-05	1931.51
-28.50	0.	-54.	-2.5640E-11	2980.75
-28.52	-1.	0.	0.0000E+00	2999.60

III.--SOIL PRESSURES

ELEVATION (FT)	< LEFTSIDE PRESSURE (PSF) >		< RIGHTSIDE PRESSURE (PSF) >	
	PASSIVE	ACTIVE	ACTIVE	PASSIVE
11.50	0.	0.	0.	0.
10.50	0.	0.	0.	0.
9.50	0.	0.	0.	0.
8.50	0.	0.	0.	0.
7.50	0.	0.	0.	0.
7.00+	0.	0.	0.	0.
7.00-	0.	0.	0.	1059.
6.50	0.	0.	0.	1071.
5.50	0.	0.	0.	997.
4.50	0.	0.	0.	928.
3.50	0.	0.	0.	935.
2.50	0.	0.	0.	974.
2.00+	0.	0.	0.	992.
2.00-	1059.	0.	0.	992.
1.75	1086.	0.	0.	1001.
1.50	1113.	0.	0.	1009.
1.00	1175.	0.	0.	1034.
.50	1178.	0.	0.	1001.
.00	1052.	0.	0.	838.
-.50	941.	0.	0.	690.
-1.50	961.	0.	0.	636.
-2.50	1063.	0.	0.	664.
-3.50	1159.	0.	0.	686.
-4.00	1199.	0.	0.	697.
-4.50	1224.	0.	0.	709.
-5.50	1238.	25.	6.	711.
-6.00	1214.	93.	26.	682.
-6.50	1192.	176.	57.	654.
-7.50	1211.	247.	100.	661.
-8.50	1252.	284.	128.	691.
-9.50	1297.	324.	152.	719.
-10.50	1302.	364.	177.	747.
-11.50	1204.	403.	201.	776.
-12.50	1090.	443.	226.	804.
-13.50	1062.	482.	250.	832.
-14.50	1070.	523.	275.	864.
-15.50	1130.	543.	292.	925.

-16.00	1242.	523.	288.	1023.
-16.50	1363.	502.	286.	1129.
-17.50	1506.	518.	304.	1231.
-18.50	1621.	556.	332.	1295.
-19.50	1690.	592.	361.	1299.
-20.50	1724.	617.	389.	1293.
-21.50	1755.	629.	417.	1402.
-22.50	1907.	620.	440.	1613.
-23.00	2158.	594.	442.	1828.
-23.50	2417.	568.	442.	2053.
-24.50	2603.	559.	456.	2237.
-24.53	2605.	560.	457.	2240.
-25.50	2661.	566.	477.	2320.
-26.50	2751.	572.	498.	2408.
-27.50	2927.	579.	520.	2492.
-28.50	3140.	587.	541.	2615.
-28.52	3288.	595.	562.	2843.
-30.50	3402.	603.	584.	3085.

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS BY CLASSICAL METHODS

DATE: 25-MAR-1994

TIME: 8.24.23

* INPUT DATA *

I.--HEADING:

'LONDON AVENUE OUTFALL CANAL
'EAST BANK
'STATIONS 85+40 TO 100+00
'SOIL REACH 2; Q CASE

II.--CONTROL

CANTILEVER WALL ANALYSIS
SAME FACTOR OF SAFETY APPLIED TO ACTIVE AND PASSIVE PRESSURES.

III.--WALL DATA

ELEVATION AT TOP OF WALL = 11.50 (FT)
ELEVATION AT BOTTOM OF WALL = -28.50 (FT)
WALL MODULUS OF ELASTICITY = 2.90E+07 (PSI)
WALL MOMENT OF INERTIA = 250.40 (IN**4/FT)

IV.--SURFACE POINT DATA

IV.A--RIGHTSIDE

DIST. FROM WALL (FT)	ELEVATION (FT)
.00	7.00
1.50	7.00
21.50	.50
29.50	-5.00
47.00	-6.00
65.00	-9.00

IV.B-- LEFTSIDE

DIST. FROM WALL (FT)	ELEVATION (FT)
.00	3.00
11.50	3.00
27.50	-4.00

V.--SOIL LAYER DATA

V.A.--RIGHTSIDE LAYER DATA

SAT. WGHT. (PCF)	MOIST WGHT. (PCF)	ANGLE OF INTERNAL FRICTION (DEG)	COH-ESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADH-ESION (PSF)	<--BOTTOM--> ELEV. (FT) SLOPE (FT/FT)		<--SAFETY--> <--FACTOR--> ACT. PASS.	
09.00	109.00	.00	700.0	.00	.0	.00	.00		
96.00	96.00	.00	400.0	.00	.0	-6.00	.00		

102.00	102.00	.00	320.0	.00	.0	-16.00	.00
.17.00	117.00	15.00	200.0	.00	.0	-23.00	.00
.22.00	122.00	30.00	.0	.00	.0		

V.B.-- LEFTSIDE LAYER DATA

SAT. WGHT. (PCF)	MOIST WGHT. (PCF)	ANGLE OF INTERNAL FRICTION (DEG)	COH-ESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADH-ESION (PSF)	<--BOTTOM--> ELEV. (FT)	<--SAFETY--> <--FACTOR--> SLOPE (FT/FT) ACT. PASS.
.09.00	109.00	.00	700.0	.00	.0	.00	.00
.96.00	96.00	.00	400.0	.00	.0	-6.00	.00
102.00	102.00	.00	320.0	.00	.0	-16.00	.00
.17.00	117.00	15.00	200.0	.00	.0	-23.00	.00
.22.00	122.00	30.00	.0	.00	.0		

VI.--WATER DATA

UNIT WEIGHT = 62.40 (PCF)
 RIGHTSIDE ELEVATION = 11.50 (FT)
 LEFTSIDE ELEVATION = -4.00 (FT)
 NO SEEPAGE

VII.--SURFACE LOADS
 NONE

VIII.--HORIZONTAL LOADS
 NONE

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 25-MAR-1994

TIME: 8.25.00

X SUMMARY OF RESULTS FOR X
X CANTILEVER WALL ANALYSIS X
#####

I.--HEADING

'LONDON AVENUE OUTFALL CANAL
'EAST BANK
'STATIONS 85+40 TO 100+00
'SOIL REACH 2; Q CASE

II.--SUMMARY

RIGHTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

LEFTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

FACTOR OF SAFETY	:	1.53
MAX. BEND. MOMENT (LB-FT)	:	13413.
AT ELEVATION (FT)	:	-4.33
MAXIMUM DEFLECTION (IN)	:	1.7961E+00
AT ELEVATION (FT)	:	11.50

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS BY CLASSICAL METHODS

DATE: 25-MAR-1994

TIME: 8.25.00

COMPLETE RESULTS FOR CANTILEVER WALL ANALYSIS

I.--HEADING

LONDON AVENUE OUTFALL CANAL EAST BANK STATIONS 85+40 TO 100+00 SOIL REACH 2; Q CASE

II.--RESULTS

Table with 5 columns: ELEVATION (FT), BENDING MOMENT (LB-FT), SHEAR (LB), DEFLECTION (IN), NET PRESSURE (PSF). Rows range from 11.50 to -16.00.

-16.50	10696.	584.	1.2282E-01	-3.27
-17.50	11262.	533.	9.8307E-02	-98.62
-18.50	11733.	395.	7.6467E-02	-178.07
-19.50	12031.	196.	5.7416E-02	-218.87
-20.50	12118.	-24.	4.1224E-02	-221.03
-21.50	11984.	-244.	2.7911E-02	-219.71
-22.50	11611.	-520.	1.7445E-02	-331.91
-23.00	11301.	-741.	1.3254E-02	-550.77
-23.50	10852.	-1073.	9.7344E-03	-778.24
-24.50	9366.	-1924.	4.5919E-03	-923.94
-25.37	7353.	-2733.	1.9444E-03	-945.70
-25.50	6976.	-2850.	1.6601E-03	-791.94
-26.50	3921.	-3071.	3.7378E-04	349.87
-27.50	1215.	-2150.	2.7492E-05	1491.69
-28.50	1.	-87.	3.0931E-11	2633.50
-28.53	0.	0.	0.0000E+00	2671.16

III.--SOIL PRESSURES

ELEVATION (FT)	< LEFTSIDE PRESSURE (PSF) >		< RIGHTSIDE PRESSURE (PSF) >	
	PASSIVE	ACTIVE	ACTIVE	PASSIVE
11.50	0.	0.	0.	0.
10.50	0.	0.	0.	0.
9.50	0.	0.	0.	0.
8.50	0.	0.	0.	0.
7.50	0.	0.	0.	0.
7.00+	0.	0.	0.	0.
7.00-	0.	0.	0.	917.
6.50	0.	0.	0.	930.
5.50	0.	0.	0.	873.
4.50	0.	0.	0.	818.
3.50	0.	0.	0.	830.
3.00+	0.	0.	0.	850.
3.00-	917.	0.	0.	850.
2.75	944.	0.	0.	859.
2.50	971.	0.	0.	867.
2.00	1026.	0.	0.	885.
1.50	1084.	0.	0.	906.
.50	1127.	0.	0.	875.
.00	1046.	0.	0.	757.
-.50	961.	0.	0.	636.
-1.50	990.	0.	0.	591.
-2.50	1091.	0.	0.	618.
-3.50	1187.	12.	0.	640.
-4.00	1227.	72.	0.	651.
-4.50	1252.	158.	0.	663.
-5.50	1269.	256.	14.	668.
-6.00	1251.	307.	57.	644.
-6.50	1237.	362.	111.	621.
-7.50	1229.	420.	165.	632.
-8.50	1148.	458.	193.	661.
-9.50	1050.	498.	217.	689.
-10.50	1026.	537.	241.	717.
-11.50	1037.	565.	266.	746.
-12.50	1043.	569.	290.	785.
-13.50	1075.	560.	315.	825.
-14.50	1115.	552.	340.	864.
-15.50	1154.	602.	355.	904.

-16.00	1270.	646.	350.	971.
-16.50	1316.	657.	346.	1062.
-17.50	1481.	659.	365.	1154.
-18.50	1520.	679.	394.	1214.
-19.50	1610.	686.	424.	1231.
-20.50	1642.	690.	453.	1231.
-21.50	1670.	696.	483.	1316.
-22.50	1804.	684.	505.	1501.
-23.00	2021.	651.	503.	1680.
-23.50	2244.	618.	499.	1862.
-24.50	2405.	606.	514.	2020.
-25.37	2447.	612.	534.	2087.
-25.50	2453.	613.	537.	2097.
-26.50	2495.	619.	560.	2179.
-27.50	2608.	627.	584.	2261.
-28.50	2811.	635.	607.	2335.
-28.53	2967.	644.	631.	2484.
-30.50	3065.	652.	654.	2727.

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 24-MAR-1994

TIME: 11.24.22

X INPUT DATA X
#####

I.--HEADING:

'LONDON AVENUE OUTFALL CANAL
'EAST BANK
'STATIONS 102+30 TO 119+40
'SOIL REACH 1; Q CASE

II.--CONTROL

CANTILEVER WALL ANALYSIS
SAME FACTOR OF SAFETY APPLIED TO ACTIVE AND PASSIVE PRESSURES.

III.--WALL DATA

ELEVATION AT TOP OF WALL = 12.00 (FT)
ELEVATION AT BOTTOM OF WALL = -20.00 (FT)
WALL MODULUS OF ELASTICITY = 2.90E+07 (PSI)
WALL MOMENT OF INERTIA = 171.67 (IN**4/FT)

IV.--SURFACE POINT DATA

IV.A--RIGHTSIDE

DIST. FROM WALL (FT)	ELEVATION (FT)
.00	5.00
8.00	5.00
22.00	1.00
40.00	-6.50
73.00	-8.50

IV.B-- LEFTSIDE

DIST. FROM WALL (FT)	ELEVATION (FT)
.00	1.50
13.00	1.50
30.00	-8.00

V.--SOIL LAYER DATA

V.A.--RIGHTSIDE LAYER DATA

SAT. WGHT. (PCF)	MOIST WGHT. (PCF)	ANGLE OF INTERNAL FRICTION (DEG)	COH-ESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADH-ESION (PSF)	<--BOTTOM--> ELEV. (FT)	<--SAFETY--> <--FACTOR--> SLOPE (FT/FT)	ACT. PASS.
09.00	109.00	.00	700.0	.00	.0	.00	.00	
96.00	96.00	.00	400.0	.00	.0	-6.00	.00	
102.00	102.00	.00	320.0	.00	.0	-12.00	.00	

122.00 122.00 30.00 .0 .00 .0

V.B.-- LEFTSIDE LAYER DATA

SAT. WGHT. (PCF)	MOIST WGHT. (PCF)	ANGLE OF INTERNAL FRICTION (DEG)	COH- ESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADH- ESION (PSF)	<--BOTTOM--> ELEV. (FT)	<--SAFETY--> <--FACTOR--> SLOPE (FT/FT)	ACT. PASS.
109.00	109.00	.00	700.0	.00	.0	.00	.00	
96.00	96.00	.00	400.0	.00	.0	-6.00	.00	
102.00	102.00	.00	320.0	.00	.0	-12.00	.00	
122.00	122.00	30.00	.0	.00	.0			

VI.--WATER DATA

UNIT WEIGHT = 62.40 (PCF)
RIGHTSIDE ELEVATION = 12.00 (FT)
LEFTSIDE ELEVATION = -8.00 (FT)
NO SEEPAGE

VII.--SURFACE LOADS
NONE

VIII.--HORIZONTAL LOADS
NONE

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 24-MAR-1994

TIME: 11.24.46

X SUMMARY OF RESULTS FOR X
X CANTILEVER WALL ANALYSIS X
#####

I.--HEADING

'LONDON AVENUE OUTFALL CANAL
'EAST BANK
'STATIONS 102+30 TO 119+40
'SOIL REACH 1; Q CASE

II.--SUMMARY

RIGHTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

LEFTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

FACTOR OF SAFETY	:	1.07
MAX. BEND. MOMENT (LB-FT)	:	27411.
AT ELEVATION (FT)	:	-8.76
MAXIMUM DEFLECTION (IN)	:	3.0242E+00
AT ELEVATION (FT)	:	12.00

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 24-MAR-1994

TIME: 11.24.46

 X COMPLETE RESULTS FOR X
 X CANTILEVER WALL ANALYSIS X
 #####

I.--HEADING

'LONDON AVENUE OUTFALL CANAL
 'EAST BANK
 'STATIONS 102+30 TO 119+40
 'SOIL REACH 1; Q CASE

II.--RESULTS

ELEVATION (FT)	BENDING MOMENT (LB-FT)	SHEAR (LB)	DEFLECTION (IN)	NET PRESSURE (PSF)
12.00	0.	0.	3.0242E+00	.00
11.00	10.	31.	2.8670E+00	62.40
10.00	83.	125.	2.7097E+00	124.80
9.00	281.	281.	2.5524E+00	187.20
8.00	666.	499.	2.3953E+00	249.60
7.00	1300.	780.	2.2384E+00	312.00
6.00	2246.	1123.	2.0820E+00	374.40
5.00	3567.	1529.	1.9263E+00	436.80
4.00	5325.	1997.	1.7719E+00	499.20
3.00	7582.	2527.	1.6194E+00	561.60
2.00	10400.	3120.	1.4695E+00	624.00
1.50	12039.	3440.	1.3958E+00	655.20
1.50	12039.	3440.	1.3958E+00	-656.54
1.25	12879.	3274.	1.3594E+00	-672.90
1.00	13676.	3103.	1.3232E+00	-689.26
.50	15144.	2772.	1.2518E+00	-634.83
.00	16458.	2499.	1.1817E+00	-460.46
-1.00	18764.	2152.	1.0458E+00	-232.02
-2.00	20801.	1924.	9.1651E-01	-224.79
-3.00	22606.	1679.	7.9439E-01	-265.07
-4.00	24147.	1396.	6.8011E-01	-300.98
-5.00	25389.	1086.	5.7420E-01	-318.21
-6.00	26321.	781.	4.7710E-01	-292.70
-7.00	26959.	500.	3.8913E-01	-269.61
-8.00	27323.	227.	3.1050E-01	-276.70
-9.00	27401.	-79.	2.4135E-01	-334.75
-10.00	27148.	-433.	1.8170E-01	-372.98
-11.00	26527.	-812.	1.3146E-01	-385.83
-12.00	25504.	-1250.	9.0421E-02	-488.40
-13.00	23966.	-1870.	5.8217E-02	-753.34
-14.00	21676.	-2754.	3.4311E-02	-1013.77
-15.00	18383.	-3863.	1.7898E-02	-1204.23
-15.23	17473.	-4140.	1.5099E-02	-1228.11
-16.00	13978.	-4820.	7.8332E-03	-534.03
-17.00	9040.	-4905.	2.6042E-03	364.51
-18.00	4467.	-4091.	5.2341E-04	1263.06
-19.00	1157.	-2379.	2.9658E-05	2161.60

-19.92

0.

0.

0.0000E+00

2991.28

III.--SOIL PRESSURES

ELEVATION (FT)	< LEFTSIDE PRESSURE (PSF) >		< RIGHTSIDE PRESSURE (PSF) >	
	PASSIVE	ACTIVE	ACTIVE	PASSIVE
12.00	0.	0.	0.	0.
11.00	0.	0.	0.	0.
10.00	0.	0.	0.	0.
9.00	0.	0.	0.	0.
8.00	0.	0.	0.	0.
7.00	0.	0.	0.	0.
6.00	0.	0.	0.	0.
5.00+	0.	0.	0.	0.
5.00-	0.	0.	0.	1312.
4.00	0.	0.	0.	1358.
3.00	0.	0.	0.	1405.
2.00	0.	0.	0.	1452.
1.50+	0.	0.	0.	1475.
1.50-	1312.	0.	0.	1475.
1.25	1344.	0.	0.	1491.
1.00	1375.	0.	0.	1508.
.50	1352.	0.	0.	1453.
.00	1209.	0.	0.	1279.
-1.00	1043.	0.	0.	1055.
-2.00	1098.	0.	0.	1016.
-3.00	1201.	0.	0.	935.
-4.00	1299.	0.	0.	845.
-5.00	1379.	13.	0.	820.
-6.00	1416.	94.	0.	788.
-7.00	1455.	229.	0.	755.
-8.00	1525.	330.	0.	768.
-9.00	1583.	383.	0.	799.
-10.00	1621.	425.	0.	823.
-11.00	1656.	452.	22.	892.
-12.00	1857.	442.	121.	1095.
-13.00	2239.	423.	238.	1352.
-14.00	2547.	432.	285.	1529.
-15.00	2755.	455.	302.	1664.
-15.23	2783.	460.	307.	1695.
-16.00	2881.	476.	323.	1801.
-17.00	2944.	497.	345.	1882.
-18.00	3016.	518.	366.	1911.
-19.00	3082.	540.	387.	2062.
-19.92	3110.	561.	408.	2322.
-21.00	3086.	582.	429.	2497.

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 24-MAR-1994

TIME: 15.32.18

* INPUT DATA *
#####

I.--HEADING:

'LONDON AVENUE OUTFALL CANAL
'EAST BANK
'STATIONS 102+30 TO 119+40
'SOIL REACH 1; Q CASE

II.--CONTROL

CANTILEVER WALL ANALYSIS
SAME FACTOR OF SAFETY APPLIED TO ACTIVE AND PASSIVE PRESSURES.

III.--WALL DATA

ELEVATION AT TOP OF WALL = 12.00 (FT)
ELEVATION AT BOTTOM OF WALL = -20.00 (FT)
WALL MODULUS OF ELASTICITY = 2.90E+07 (PSI)
WALL MOMENT OF INERTIA = 171.67 (IN**4/FT)

IV.--SURFACE POINT DATA

IV.A--RIGHTSIDE

DIST. FROM WALL (FT)	ELEVATION (FT)
.00	5.00
8.00	5.00
22.00	1.00
40.00	-6.50
73.00	-8.50

IV.B-- LEFTSIDE

DIST. FROM WALL (FT)	ELEVATION (FT)
.00	3.00
10.00	3.00
28.00	-5.00

V.--SOIL LAYER DATA

V.A.--RIGHTSIDE LAYER DATA

SAT. WGHT. (PCF)	MOIST WGHT. (PCF)	ANGLE OF INTERNAL FRICTION (DEG)	COH-ESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADH-ESION (PSF)	<--BOTTOM-->		<--SAFETY-->	
						ELEV. (FT)	SLOPE (FT/FT)	ACT. PASS.	FACTOR
.09.00	109.00	.00	700.0	.00	.0	.00	.00		
96.00	96.00	.00	400.0	.00	.0	-6.00	.00		
102.00	102.00	.00	320.0	.00	.0	-12.00	.00		

122.00 122.00 30.00 .0 .00 .0

V.B.-- LEFTSIDE LAYER DATA

SAT. WGHT. (PCF)	MOIST WGHT. (PCF)	ANGLE OF INTERNAL FRICTION (DEG)	COH- ESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADH- ESION (PSF)	<---BOTTOM---> ELEV. (FT)	<---SAFETY---> <---FACTOR---> SLOPE (FT/FT) ACT. PASS.
109.00	109.00	.00	700.0	.00	.0	.00	.00
96.00	96.00	.00	400.0	.00	.0	-6.00	.00
102.00	102.00	.00	320.0	.00	.0	-12.00	.00
122.00	122.00	30.00	.0	.00	.0		

VI.--WATER DATA

UNIT WEIGHT = 62.40 (PCF)
 RIGHTSIDE ELEVATION = 12.00 (FT)
 LEFTSIDE ELEVATION = -5.00 (FT)
 NO SEEPAGE

VII.--SURFACE LOADS

NONE

VIII.--HORIZONTAL LOADS

NONE

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 24-MAR-1994

TIME: 15.32.46

SUMMARY OF RESULTS FOR #
CANTILEVER WALL ANALYSIS #
#####

I.--HEADING

'LONDON AVENUE OUTFALL CANAL
'EAST BANK
'STATIONS 102+30 TO 119+40
'SOIL REACH 1; Q CASE

II.--SUMMARY

RIGHTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

LEFTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

FACTOR OF SAFETY	:	1.39
MAX. BEND. MOMENT (LB-FT)	:	15511.
AT ELEVATION (FT)	:	-4.40
MAXIMUM DEFLECTION (IN)	:	1.7389E+00
AT ELEVATION (FT)	:	12.00

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 24-MAR-1994

TIME: 15.32.46

X COMPLETE RESULTS FOR X
X CANTILEVER WALL ANALYSIS X
#####

I.--HEADING

'LONDON AVENUE OUTFALL CANAL
'EAST BANK
'STATIONS 102+30 TO 119+40
'SOIL REACH 1; Q CASE

II.--RESULTS

ELEVATION (FT)	BENDING MOMENT (LB-FT)	SHEAR (LB)	DEFLECTION (IN)	NET PRESSURE (PSF)
12.00	0.	0.	1.7389E+00	.00
11.00	10.	31.	1.6432E+00	62.40
10.00	83.	125.	1.5475E+00	124.80
9.00	281.	281.	1.4519E+00	187.20
8.00	666.	499.	1.3563E+00	249.60
7.00	1300.	780.	1.2610E+00	312.00
6.00	2246.	1123.	1.1662E+00	374.40
5.00	3567.	1529.	1.0721E+00	436.80
4.00	5325.	1997.	9.7935E-01	499.20
3.00	7582.	2527.	8.8841E-01	561.60
3.00	7582.	2527.	8.8841E-01	-442.43
2.50	8789.	2299.	8.4388E-01	-469.12
2.00	9879.	2058.	8.0011E-01	-495.81
1.00	11689.	1563.	7.1522E-01	-495.29
.00	13026.	1133.	6.3437E-01	-363.73
-1.00	14000.	838.	5.5804E-01	-225.87
-2.00	14727.	619.	4.8656E-01	-212.46
-3.00	15284.	386.	4.2018E-01	-252.98
-4.00	15487.	116.	3.5909E-01	-288.10
-5.00	15458.	-177.	3.0336E-01	-298.05
-6.00	15136.	-461.	2.5298E-01	-268.46
-7.00	14568.	-650.	2.0786E-01	-111.29
-8.00	13888.	-681.	1.6779E-01	49.58
-9.00	13243.	-598.	1.3254E-01	117.76
-10.00	12711.	-461.	1.0188E-01	155.28
-11.00	12323.	-319.	7.5650E-02	128.02
-12.00	12083.	-295.	5.3696E-02	-80.13
-13.00	11658.	-494.	3.5916E-02	-317.85
-14.00	10987.	-864.	2.2174E-02	-421.77
-15.00	9896.	-1334.	1.2233E-02	-518.07
-16.00	8280.	-1919.	5.7116E-03	-651.49
-16.79	6556.	-2458.	2.6155E-03	-713.33
-17.00	6024.	-2588.	2.0457E-03	-522.03
-18.00	3327.	-2655.	4.5646E-04	386.71
-19.00	1016.	-1814.	3.3150E-05	1295.44
-20.00	1.	-65.	2.3048E-11	2204.17
-20.03	0.	0.	0.0000E+00	2230.62

III.--SOIL PRESSURES

ELEVATION (FT)	< LEFTSIDE PRESSURE (PSF) >		< RIGHTSIDE PRESSURE (PSF) >	
	PASSIVE	ACTIVE	ACTIVE	PASSIVE
12.00	0.	0.	0.	0.
11.00	0.	0.	0.	0.
10.00	0.	0.	0.	0.
9.00	0.	0.	0.	0.
8.00	0.	0.	0.	0.
7.00	0.	0.	0.	0.
6.00	0.	0.	0.	0.
5.00+	0.	0.	0.	0.
5.00-	0.	0.	0.	1004.
4.00	0.	0.	0.	1051.
3.00+	0.	0.	0.	1097.
3.00-	1004.	0.	0.	1097.
2.50	1062.	0.	0.	1124.
2.00	1120.	0.	0.	1151.
1.00	1182.	0.	0.	1150.
.00	1113.	0.	0.	1019.
-1.00	1037.	0.	0.	884.
-2.00	1086.	0.	0.	846.
-3.00	1189.	0.	0.	793.
-4.00	1287.	12.	0.	730.
-5.00	1359.	114.	0.	717.
-6.00	1330.	296.	0.	698.
-7.00	1187.	415.	15.	679.
-8.00	1063.	463.	52.	696.
-9.00	1038.	500.	95.	727.
-10.00	1038.	529.	133.	753.
-11.00	1115.	521.	182.	806.
-12.00	1394.	470.	253.	944.
-13.00	1697.	456.	319.	1122.
-14.00	1837.	514.	355.	1255.
-15.00	1957.	564.	378.	1363.
-16.00	2113.	588.	401.	1475.
-16.79	2191.	609.	417.	1551.
-17.00	2212.	615.	421.	1572.
-18.00	2272.	635.	442.	1627.
-19.00	2318.	646.	463.	1679.
-20.00	2339.	651.	483.	1815.
-20.03	2352.	656.	504.	2004.
-22.00	2365.	661.	525.	2136.

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 24-MAR-1994

TIME: 11.03.11

* INPUT DATA *
#####

I.--HEADING:

'LONDON AVENUE OUTFALL CANAL
'EAST BANK
'STATIONS 120+10 TO 127+50
'SOIL REACH 2; Q CASE

II.--CONTROL

CANTILEVER WALL ANALYSIS
SAME FACTOR OF SAFETY APPLIED TO ACTIVE AND PASSIVE PRESSURES.

III.--WALL DATA

ELEVATION AT TOP OF WALL = 12.00 (FT)
ELEVATION AT BOTTOM OF WALL = -12.00 (FT)
WALL MODULUS OF ELASTICITY = 2.90E+07 (PSI)
WALL MOMENT OF INERTIA = 5.50 (IN**4/FT)

IV.--SURFACE POINT DATA

IV.A--RIGHTSIDE

DIST. FROM WALL (FT)	ELEVATION (FT)
.00	6.00
4.50	6.00
18.00	2.00
35.00	.50
51.00	-5.00

IV.B-- LEFTSIDE

DIST. FROM WALL (FT)	ELEVATION (FT)
.00	4.00
12.00	4.00
26.00	-.50
36.00	-3.00

V.--SOIL LAYER DATA

V.A.--RIGHTSIDE LAYER DATA

SAT. WGHT. (PCF)	MOIST WGHT. (PCF)	ANGLE OF INTERNAL FRICTION (DEG)	COH-ESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADH-ESION (PSF)	<--BOTTOM--> ELEV. (FT)	<--SAFETY--> <--FACTOR--> ACT. PASS.
09.00	109.00	.00	700.0	.00	.0	.00	.00
96.00	96.00	.00	400.0	.00	.0	-6.00	.00

102.00	102.00	.00	320.0	.00	.0	-16.00	.00
17.00	117.00	15.00	200.0	.00	.0	-23.00	.00
22.00	122.00	30.00	.0	.00	.0		

V.B.-- LEFTSIDE LAYER DATA

SAT. WGHT. (PCF)	MOIST WGHT. (PCF)	ANGLE OF INTERNAL FRICTION (DEG)	COH-ESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADH-ESION (PSF)	<--BOTTOM--> ELEV. (FT)	SLOPE (FT/FT)	<-SAFETY-> <-FACTOR-> ACT. PASS.
09.00	109.00	.00	700.0	.00	.0	.00	.00	
96.00	96.00	.00	400.0	.00	.0	-6.00	.00	
102.00	102.00	.00	320.0	.00	.0	-16.00	.00	
17.00	117.00	15.00	200.0	.00	.0	-23.00	.00	
22.00	122.00	30.00	.0	.00	.0			

VI.--WATER DATA

UNIT WEIGHT = 62.40 (PCF)
 RIGHTSIDE ELEVATION = 12.00 (FT)
 LEFTSIDE ELEVATION = -3.00 (FT)
 NO SEEPAGE

VII.--SURFACE LOADS
NONE

VIII.--HORIZONTAL LOADS
NONE

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 24-MAR-1994

TIME: 11.03.49

X SUMMARY OF RESULTS FOR X
X CANTILEVER WALL ANALYSIS X
#####

I.--HEADING

'LONDON AVENUE OUTFALL CANAL
'EAST BANK
'STATIONS 120+10 TO 127+50
'SOIL REACH 2; Q CASE

II.--SUMMARY

RIGHTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

LEFTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

FACTOR OF SAFETY	:	1.67
MAX. BEND. MOMENT (LB-FT)	:	10394.
AT ELEVATION (FT)	:	-1.40
MAXIMUM DEFLECTION (IN)	:	1.8037E+01
AT ELEVATION (FT)	:	12.00

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 24-MAR-1994

TIME: 11.03.49

 X COMPLETE RESULTS FOR X
 X CANTILEVER WALL ANALYSIS X
 #####

I.--HEADING

'LONDON AVENUE OUTFALL CANAL
 'EAST BANK
 'STATIONS 120+10 TO 127+50
 'SOIL REACH 2; Q CASE

II.--RESULTS

ELEVATION (FT)	BENDING MOMENT (LB-FT)	SHEAR (LB)	DEFLECTION (IN)	NET PRESSURE (PSF)
12.00	0.	0.	1.8037E+01	.00
11.00	10.	31.	1.6716E+01	62.40
10.00	83.	125.	1.5395E+01	124.80
9.00	281.	281.	1.4075E+01	187.20
8.00	666.	499.	1.2759E+01	249.60
7.00	1300.	780.	1.1449E+01	312.00
6.00	2246.	1123.	1.0155E+01	374.40
5.00	3567.	1529.	8.8844E+00	436.80
4.00	5325.	1997.	7.6533E+00	499.20
4.00	5325.	1997.	7.6533E+00	-340.27
3.50	6280.	1821.	7.0581E+00	-363.57
3.00	7144.	1633.	6.4799E+00	-386.87
2.00	8575.	1220.	5.3836E+00	-439.14
1.00	9574.	777.	4.3798E+00	-446.34
.00	10146.	383.	3.4793E+00	-343.43
-1.00	10375.	94.	2.6884E+00	-234.47
-2.00	10352.	-138.	2.0097E+00	-228.53
-3.00	10096.	-378.	1.4430E+00	-251.61
-4.00	9584.	-655.	9.8537E-01	-302.77
-5.00	8775.	-965.	6.3133E-01	-317.01
-6.00	7660.	-1258.	3.7207E-01	-268.11
-7.00	6284.	-1479.	1.9556E-01	-174.10
-8.00	4736.	-1597.	8.6974E-02	-63.29
-8.95	3207.	-1612.	3.1619E-02	31.52
-9.00	3124.	-1610.	2.9644E-02	48.55
-10.00	1593.	-1396.	6.2190E-03	379.34
-11.00	442.	-852.	3.9718E-04	710.12
-11.98	0.	0.	0.0000E+00	1033.31

III.--SOIL PRESSURES

ELEVATION (FT)	< LEFTSIDE PRESSURE (PSF) >		< RIGHTSIDE PRESSURE (PSF) >	
	PASSIVE	ACTIVE	ACTIVE	PASSIVE
12.00	0.	0.	0.	0.
11.00	0.	0.	0.	0.
10.00	0.	0.	0.	0.
9.00	0.	0.	0.	0.

8.00	0.	0.	0.	0.
7.00	0.	0.	0.	0.
6.00+	0.	0.	0.	0.
6.00-	0.	0.	0.	839.
5.00	0.	0.	0.	886.
4.00+	0.	0.	0.	933.
4.00-	839.	0.	0.	933.
3.50	894.	0.	0.	959.
3.00	948.	0.	0.	985.
2.00	1063.	0.	0.	989.
1.00	1133.	0.	0.	883.
.00	1092.	6.	0.	722.
-1.00	1046.	52.	0.	608.
-2.00	1102.	144.	0.	592.
-3.00	1188.	229.	0.	620.
-4.00	1239.	276.	0.	645.
-5.00	1262.	321.	9.	657.
-6.00	1261.	395.	57.	643.
-7.00	1238.	472.	128.	631.
-8.00	1177.	522.	178.	650.
-8.95	1119.	558.	214.	678.
-9.00	1116.	560.	216.	680.
-10.00	1107.	600.	255.	709.
-11.00	1123.	639.	287.	738.
-11.98	1136.	670.	315.	767.
-13.00	1149.	683.	340.	796.

V.B.-- LEFTSIDE LAYER DATA

SAT. WGHT. (PCF)	MOIST WGHT. (PCF)	ANGLE OF INTERNAL FRICTION (DEG)	COH- ESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADH- ESION (PSF)	<--BOTTOM--> ELEV. SLOPE (FT) (FT/FT)		<-SAFETY-> <-FACTOR-> ACT. PASS.
109.00	109.00	.00	700.0	.00	.0	.00	.00	
96.00	96.00	.00	400.0	.00	.0	-6.00	.00	
102.00	102.00	.00	320.0	.00	.0	-12.00	.00	
122.00	122.00	30.00	.0	.00	.0			

VI.--WATER DATA

UNIT WEIGHT = 62.40 (PCF)
 RIGHTSIDE ELEVATION = 11.50 (FT)
 LEFTSIDE ELEVATION = -2.00 (FT)
 NO SEEPAGE

VII.--SURFACE LOADS
NONEVIII.--HORIZONTAL LOADS
NONE

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 24-MAR-1994

TIME: 11.04.3

X SUMMARY OF RESULTS FOR X
X CANTILEVER WALL ANALYSIS X
#####

I.--HEADING

'LONDON AVENUE OUTFALL CANAL
'WEST BANK
'STATIONS 70+50 TO 84+50
'SOIL REACH 1; Q CASE

II.--SUMMARY

RIGHTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

LEFTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

FACTOR OF SAFETY	:	1.31
MAX. BEND. MOMENT (LB-FT)	:	15063.
AT ELEVATION (FT)	:	-4.56
MAXIMUM DEFLECTION (IN)	:	3.5032E+01
AT ELEVATION (FT)	:	11.50

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 24-MAR-1994

TIME: 11.04.37

 * COMPLETE RESULTS FOR *
 * CANTILEVER WALL ANALYSIS *
 #####

I.--HEADING

'LONDON AVENUE OUTFALL CANAL
 'WEST BANK
 'STATIONS 70+50 TO 84+50
 'SOIL REACH 1; Q CASE

II.--RESULTS

ELEVATION (FT)	BENDING MOMENT (LB-FT)	SHEAR (LB)	DEFLECTION (IN)	NET PRESSURE (PSF)
11.50	0.	0.	3.5032E+01	.00
10.50	10.	31.	3.2804E+01	62.40
9.50	83.	125.	3.0575E+01	124.80
8.50	281.	281.	2.8348E+01	187.20
7.50	666.	499.	2.6123E+01	249.60
6.50	1300.	780.	2.3907E+01	312.00
5.50	2246.	1123.	2.1704E+01	374.40
5.00	2856.	1318.	2.0611E+01	405.60
4.50	3567.	1529.	1.9526E+01	436.80
3.50	5325.	1997.	1.7387E+01	499.20
2.50	7582.	2527.	1.5307E+01	561.60
2.50	7582.	2527.	1.5307E+01	-508.94
2.00	8780.	2266.	1.4296E+01	-535.12
1.50	9846.	1992.	1.3308E+01	-561.30
.50	11562.	1447.	1.1416E+01	-529.46
.00	12225.	1216.	1.0516E+01	-394.33
-.50	12789.	1053.	9.6486E+00	-256.11
-1.50	13722.	819.	8.0194E+00	-213.03
-2.00	14104.	709.	7.2599E+00	-225.65
-2.50	14429.	590.	6.5386E+00	-250.44
-3.50	14888.	322.	5.2140E+00	-284.34
-4.50	15063.	21.	4.0504E+00	-319.36
-5.50	14921.	-305.	3.0497E+00	-332.09
-6.00	14728.	-465.	2.6101E+00	-307.85
-6.50	14458.	-613.	2.2104E+00	-285.08
-7.50	13699.	-908.	1.5274E+00	-303.75
-8.50	12634.	-1227.	9.9262E-01	-335.52
-9.50	11239.	-1564.	5.9438E-01	-338.15
-10.50	9507.	-1898.	3.1760E-01	-329.63
-11.50	7443.	-2233.	1.4353E-01	-339.29
-11.94	6437.	-2384.	9.4242E-02	-356.64
-12.00	6283.	-2406.	8.8149E-02	-319.82
-12.50	5052.	-2494.	4.9773E-02	-33.21
-13.50	2637.	-2241.	1.0726E-02	540.02
-14.50	762.	-1414.	7.3415E-04	1113.25
-15.50	0.	-14.	-9.4811E-11	1686.49
-15.51	0.	0.	0.0000E+00	1691.32

III.--SOIL PRESSURES

ELEVATION (FT)	< LEFTSIDE PRESSURE (PSF)>		<RIGHTSIDE PRESSURE (PSF)>	
	PASSIVE	ACTIVE	ACTIVE	PASSIVE
11.50	0.	0.	0.	0.
10.50	0.	0.	0.	0.
9.50	0.	0.	0.	0.
8.50	0.	0.	0.	0.
7.50	0.	0.	0.	0.
6.50	0.	0.	0.	0.
5.50	0.	0.	0.	0.
5.00+	0.	0.	0.	0.
5.00-	0.	0.	0.	1071.
4.50	0.	0.	0.	969.
3.50	0.	0.	0.	1010.
2.50+	0.	0.	0.	1051.
2.50-	1071.	0.	0.	1051.
2.00	1128.	0.	0.	1075.
1.50	1185.	0.	0.	1098.
.50	1216.	0.	0.	1061.
.00	1112.	0.	0.	923.
-.50	1005.	0.	0.	783.
-1.50	1024.	0.	0.	734.
-2.00	1068.	0.	0.	752.
-2.50	1093.	0.	0.	766.
-3.50	1127.	0.	0.	795.
-4.50	1162.	0.	0.	825.
-5.50	1174.	15.	0.	832.
-6.00	1150.	57.	0.	805.
-6.50	1127.	112.	0.	780.
-7.50	1146.	170.	0.	793.
-8.50	1187.	209.	9.	829.
-9.50	1227.	248.	46.	863.
-10.50	1265.	288.	93.	893.
-11.50	1330.	329.	148.	990.
-11.94	1395.	347.	196.	1049.
-12.00	1405.	349.	203.	1057.
-12.50	1485.	367.	255.	1073.
-13.50	1574.	393.	299.	1098.
-14.50	1635.	418.	321.	1192.
-15.50	1695.	444.	345.	1292.
-15.51	1786.	469.	368.	1389.
-17.50	1942.	494.	392.	1501.

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 25-MAR-1994

TIME: 8.45.19

X INPUT DATA X
#####

I.--HEADING:

'LONDON AVENUE OUTFALL CANAL
'WEST BANK
'STATIONS 70+50 TO 84+50
'SOIL REACH 1; Q CASE

II.--CONTROL

CANTILEVER WALL ANALYSIS
SAME FACTOR OF SAFETY APPLIED TO ACTIVE AND PASSIVE PRESSURES.

III.--WALL DATA

ELEVATION AT TOP OF WALL = 11.50 (FT)
ELEVATION AT BOTTOM OF WALL = -15.50 (FT)
WALL MODULUS OF ELASTICITY = 2.90E+07 (PSI)
WALL MOMENT OF INERTIA = 5.50 (IN**4/FT)

IV.--SURFACE POINT DATA

IV.A--RIGHTSIDE

DIST. FROM WALL (FT)	ELEVATION (FT)
.00	5.00
15.50	3.00
38.00	-7.00
74.00	-8.00

IV.B-- LEFTSIDE

DIST. FROM WALL (FT)	ELEVATION (FT)
.00	3.00
13.50	3.00
25.00	-2.00

V.--SOIL LAYER DATA

V.A.--RIGHTSIDE LAYER DATA

SAT. WGHT. (PCF)	MOIST WGHT. (PCF)	ANGLE OF INTERNAL FRICTION (DEG)	COH-ESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADH-ESION (PSF)	<--BOTTOM--> ELEV. (FT) SLOPE (FT/FT)		<-SAFETY-FACTOR- ACT. PASS
109.00	109.00	.00	700.0	.00	.0	.00	.00	
96.00	96.00	.00	400.0	.00	.0	-6.00	.00	
102.00	102.00	.00	320.0	.00	.0	-12.00	.00	
122.00	122.00	30.00	.0	.00	.0			

V.B.-- LEFTSIDE LAYER DATA

SAT. WGHT. (PCF)	MOIST WGHT. (PCF)	ANGLE OF INTERNAL FRICTION (DEG)	COH- ESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADH- ESION (PSF)	<--BOTTOM--> ELEV. (FT)	SLOPE (FT/FT)	<-SAFETY- <-FACTOR- ACT. PASS
109.00	109.00	.00	700.0	.00	.0	.00	.00	
96.00	96.00	.00	400.0	.00	.0	-6.00	.00	
102.00	102.00	.00	320.0	.00	.0	-12.00	.00	
122.00	122.00	30.00	.0	.00	.0			

VI.--WATER DATA

UNIT WEIGHT = 62.40 (PCF)
 RIGHTSIDE ELEVATION = 11.50 (FT)
 LEFTSIDE ELEVATION = -2.00 (FT)
 NO SEEPAGE

VII.--SURFACE LOADS
 NONE

VIII.--HORIZONTAL LOADS
 NONE

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 25-MAR-1994

TIME: 8.45.46

SUMMARY OF RESULTS FOR #
CANTILEVER WALL ANALYSIS #
#####

I.--HEADING

'LONDON AVENUE OUTFALL CANAL
'WEST BANK
'STATIONS 70+50 TO 84+50
'SOIL REACH 1; Q CASE

II.--SUMMARY

RIGHTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

LEFTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

FACTOR OF SAFETY	:	1.50
MAX. BEND. MOMENT (LB-FT)	:	13085.
AT ELEVATION (FT)	:	-4.03
MAXIMUM DEFLECTION (IN)	:	2.9957E+01
AT ELEVATION (FT)	:	11.50

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 25-MAR-1994

TIME: 8.45.46

 ☐ COMPLETE RESULTS FOR ☐
 ☐ CANTILEVER WALL ANALYSIS ☐
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I.--HEADING

'LONDON AVENUE OUTFALL CANAL
 'WEST BANK
 'STATIONS 70+50 TO 84+50
 'SOIL REACH 1; Q CASE

II.--RESULTS

ELEVATION (FT)	BENDING MOMENT (LB-FT)	SHEAR (LB)	DEFLECTION (IN)	NET PRESSURE (PSF)
11.50	0.	0.	2.9957E+01	.00
10.50	10.	31.	2.8013E+01	62.40
9.50	83.	125.	2.6069E+01	124.80
8.50	281.	281.	2.4127E+01	187.20
7.50	666.	499.	2.2187E+01	249.60
6.50	1300.	780.	2.0256E+01	312.00
5.50	2246.	1123.	1.8338E+01	374.40
5.00	2856.	1318.	1.7388E+01	405.60
4.50	3567.	1529.	1.6445E+01	436.80
3.50	5325.	1997.	1.4591E+01	499.20
3.00	6387.	2254.	1.3685E+01	530.40
3.00	6387.	2254.	1.3685E+01	-401.51
2.75	6938.	2152.	1.3238E+01	-413.16
2.50	7463.	2048.	1.2795E+01	-424.81
2.00	8433.	1829.	1.1926E+01	-448.11
1.50	9290.	1599.	1.1080E+01	-474.75
.50	10655.	1134.	9.4650E+00	-454.73
.00	11170.	935.	8.6999E+00	-339.91
-.50	11600.	795.	7.9650E+00	-221.98
-1.50	12289.	589.	6.5905E+00	-188.81
-2.00	12560.	492.	5.9527E+00	-200.93
-2.50	12780.	385.	5.3489E+00	-225.72
-3.50	13046.	143.	4.2455E+00	-259.62
-4.50	13053.	-134.	3.2833E+00	-294.44
-5.50	12769.	-436.	2.4622E+00	-308.73
-6.00	12514.	-584.	2.1038E+00	-282.67
-6.50	12188.	-717.	1.7792E+00	-249.57
-7.50	11349.	-960.	1.2280E+00	-236.05
-8.50	10269.	-1202.	7.9957E-01	-248.00
-9.50	8947.	-1438.	4.8214E-01	-223.61
-10.50	7419.	-1599.	2.6145E-01	-99.63
-11.50	5784.	-1655.	1.2104E-01	-12.00
-12.00	4951.	-1684.	7.5444E-02	-103.80
-12.50	4091.	-1768.	4.3255E-02	-231.66
-12.68	3766.	-1811.	3.4426E-02	-247.56
-13.50	2258.	-1805.	9.6256E-03	261.81
-14.50	687.	-1232.	6.9260E-04	884.28

-15.50	0.	-37.	-6.4035E-11	1506.76
-15.52	0.	0.	0.0000E+00	1521.94

III.--SOIL PRESSURES

ELEVATION (FT)	< LEFTSIDE PRESSURE (PSF)>		<RIGHTSIDE PRESSURE (PSF)>	
	PASSIVE	ACTIVE	ACTIVE	PASSIVE
11.50	0.	0.	0.	0.
10.50	0.	0.	0.	0.
9.50	0.	0.	0.	0.
8.50	0.	0.	0.	0.
7.50	0.	0.	0.	0.
6.50	0.	0.	0.	0.
5.50	0.	0.	0.	0.
5.00+	0.	0.	0.	0.
5.00-	0.	0.	0.	932.
4.50	0.	0.	0.	846.
3.50	0.	0.	0.	887.
3.00+	0.	0.	0.	908.
3.00-	932.	0.	0.	908.
2.75	959.	0.	0.	918.
2.50	986.	0.	0.	929.
2.00	1041.	0.	0.	949.
1.50	1099.	0.	0.	973.
.50	1141.	0.	0.	948.
.00	1058.	0.	0.	830.
-.50	971.	0.	0.	710.
-1.50	1000.	0.	0.	671.
-2.00	1043.	0.	0.	689.
-2.50	1068.	0.	0.	703.
-3.50	1102.	0.	0.	731.
-4.50	1137.	0.	0.	761.
-5.50	1152.	30.	1.	771.
-6.00	1133.	113.	8.	750.
-6.50	1116.	211.	24.	730.
-7.50	1137.	290.	59.	746.
-8.50	1183.	326.	93.	781.
-9.50	1192.	366.	126.	815.
-10.50	1101.	406.	159.	847.
-11.50	1061.	438.	206.	930.
-12.00	1197.	441.	250.	984.
-12.50	1367.	442.	292.	997.
-12.68	1390.	445.	300.	1002.
-13.50	1494.	462.	333.	1022.
-14.50	1545.	491.	358.	1106.
-15.50	1600.	519.	384.	1197.
-15.52	1662.	547.	410.	1287.
-17.50	1777.	575.	436.	1372.

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS BY CLASSICAL METHODS

DATE: 24-MAR-1994

TIME: 11.04.59

* INPUT DATA *

I.--HEADING:

'LONDON AVENUE OUTFALL CANAL
'WEST BANK
'STATIONS 85+60 TO 99+15
'SOIL REACH 2; Q CASE

II.--CONTROL

CANTILEVER WALL ANALYSIS
SAME FACTOR OF SAFETY APPLIED TO ACTIVE AND PASSIVE PRESSURES.

III.--WALL DATA

ELEVATION AT TOP OF WALL = 11.50 (FT)
ELEVATION AT BOTTOM OF WALL = -15.50 (FT)
WALL MODULUS OF ELASTICITY = 2.90E+07 (PSI)
WALL MOMENT OF INERTIA = 5.50 (IN**4/FT)

IV.--SURFACE POINT DATA

IV.A--RIGHTSIDE

DIST. FROM WALL (FT)	ELEVATION (FT)
.00	4.00
14.00	2.50
21.00	2.00
55.00	-7.00

IV.B-- LEFTSIDE

DIST. FROM WALL (FT)	ELEVATION (FT)
.00	3.50
16.00	3.50
29.00	-1.00

V.--SOIL LAYER DATA

V.A.--RIGHTSIDE LAYER DATA

SAT. WGHT. (PCF)	MOIST WGHT. (PCF)	ANGLE OF FRICTION (DEG)	COH-ESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADH-ESION (PSF)	<--BOTTOM-->		<-SAFETY->	
						ELEV. (FT)	SLOPE (FT/FT)	<-FACTOR->	ACT. PASS.
109.00	109.00	.00	700.0	.00	.0	.00	.00		
96.00	96.00	.00	400.0	.00	.0	-6.00	.00		
102.00	102.00	.00	320.0	.00	.0	-16.00	.00		
117.00	117.00	15.00	200.0	.00	.0	-23.00	.00		

122.00 122.00 30.00 .0 .00 .0

V.B.-- LEFTSIDE LAYER DATA

SAT. WGHT. (PCF)	MOIST WGHT. (PCF)	ANGLE OF INTERNAL FRICTION (DEG)	COH- ESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADH- ESION (PSF)	<--BOTTOM--> ELEV. SLOPE (FT) (FT/FT)		<-SAFETY- <-FACTOR- ACT. PASS
109.00	109.00	.00	700.0	.00	.0	.00	.00	
96.00	96.00	.00	400.0	.00	.0	-6.00	.00	
102.00	102.00	.00	320.0	.00	.0	-16.00	.00	
117.00	117.00	15.00	200.0	.00	.0	-23.00	.00	
122.00	122.00	30.00	.0	.00	.0			

VI.--WATER DATA

UNIT WEIGHT = 62.40 (PCF)
 RIGHTSIDE ELEVATION = 11.50 (FT)
 LEFTSIDE ELEVATION = -1.00 (FT)
 NO SEEPAGE

VII.--SURFACE LOADS
NONEVIII.--HORIZONTAL LOADS
NONE

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 24-MAR-1994

TIME: 11.05.40

X SUMMARY OF RESULTS FOR X
X CANTILEVER WALL ANALYSIS X
#####

I.--HEADING

'LONDON AVENUE OUTFALL CANAL
'WEST BANK
'STATIONS 85+60 TO 99+15
'SOIL REACH 2; Q CASE

II.--SUMMARY

RIGHTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

LEFTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

FACTOR OF SAFETY	:	1.78
MAX. BEND. MOMENT (LB-FT)	:	11909.
AT ELEVATION (FT)	:	-4.03
MAXIMUM DEFLECTION (IN)	:	2.7281E+01
AT ELEVATION (FT)	:	11.50

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 24-MAR-1994

TIME: 11.05.40

 * COMPLETE RESULTS FOR *
 * CANTILEVER WALL ANALYSIS *
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I.--HEADING

'LONDON AVENUE OUTFALL CANAL
 'WEST BANK
 'STATIONS 85+60 TO 99+15
 'SOIL REACH 2; Q CASE

II.--RESULTS

ELEVATION (FT)	BENDING MOMENT (LB-FT)	SHEAR (LB)	DEFLECTION (IN)	NET PRESSURE (PSF)
11.50	0.	0.	2.7281E+01	.00
10.50	10.	31.	2.5496E+01	62.40
9.50	83.	125.	2.3711E+01	124.80
8.50	281.	281.	2.1927E+01	187.20
7.50	666.	499.	2.0147E+01	249.60
6.50	1300.	780.	1.8374E+01	312.00
5.50	2246.	1123.	1.6615E+01	374.40
4.50	3567.	1529.	1.4882E+01	436.80
4.00	4387.	1755.	1.4028E+01	468.00
3.50	5325.	1997.	1.3187E+01	499.20
3.50	5325.	1997.	1.3187E+01	-287.94
3.00	6286.	1847.	1.2360E+01	-311.24
2.50	7170.	1686.	1.1550E+01	-334.54
1.50	8680.	1326.	9.9898E+00	-385.38
.50	9814.	945.	8.5237E+00	-375.69
.00	10244.	782.	7.8298E+00	-277.64
-.50	10605.	672.	7.1637E+00	-163.21
-1.00	10921.	597.	6.5262E+00	-133.93
-1.50	11202.	523.	5.9183E+00	-163.87
-2.50	11637.	342.	4.7942E+00	-197.79
-3.50	11875.	127.	3.7960E+00	-231.30
-4.50	11881.	-121.	2.9263E+00	-266.01
-5.50	11624.	-395.	2.1850E+00	-280.52
-6.00	11393.	-528.	1.8617E+00	-253.29
-6.50	11099.	-646.	1.5694E+00	-218.28
-7.50	10346.	-857.	1.0738E+00	-203.23
-8.50	9387.	-1063.	6.9012E-01	-209.66
-9.50	8218.	-1275.	4.0796E-01	-214.65
-10.50	6834.	-1494.	2.1464E-01	-222.91
-11.50	5232.	-1708.	9.5161E-02	-205.66
-11.80	4706.	-1767.	7.1011E-02	-180.12
-12.50	3450.	-1804.	3.2185E-02	73.07
-13.50	1743.	-1549.	6.6550E-03	436.00
-14.50	473.	-932.	4.0719E-04	798.93
-15.46	0.	0.	0.0000E+00	1146.62

III.--SOIL PRESSURES

ELEVATION (FT)	< LEFTSIDE PRESSURE (PSF)>		<RIGHTSIDE PRESSURE (PSF)>	
	PASSIVE	ACTIVE	ACTIVE	PASSIVE
11.50	0.	0.	0.	0.
10.50	0.	0.	0.	0.
9.50	0.	0.	0.	0.
8.50	0.	0.	0.	0.
7.50	0.	0.	0.	0.
6.50	0.	0.	0.	0.
5.50	0.	0.	0.	0.
4.50	0.	0.	0.	0.
4.00+	0.	0.	0.	0.
4.00-	0.	0.	0.	787.
3.50+	0.	0.	0.	732.
3.50-	787.	0.	0.	732.
3.00	842.	0.	0.	753.
2.50	896.	0.	0.	774.
1.50	1009.	0.	0.	820.
.50	1062.	0.	0.	806.
.00	995.	0.	0.	706.
-.50	912.	0.	0.	589.
-1.00	914.	5.	0.	566.
-1.50	944.	24.	0.	586.
-2.50	978.	75.	0.	615.
-3.50	1011.	112.	0.	644.
-4.50	1046.	144.	0.	674.
-5.50	1064.	193.	4.	688.
-6.00	1051.	241.	18.	672.
-6.50	1039.	291.	41.	658.
-7.50	1054.	346.	80.	678.
-8.50	1104.	385.	115.	714.
-9.50	1184.	424.	149.	749.
-10.50	1187.	464.	184.	787.
-11.50	1204.	503.	219.	832.
-11.80	1189.	515.	229.	846.
-12.50	1154.	543.	253.	878.
-13.50	1091.	583.	288.	917.
-14.50	1078.	624.	323.	951.
-15.46	1130.	645.	352.	1014.
-16.00	1213.	626.	360.	1089.

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 24-MAR-1994

TIME: 11.05.59

X INPUT DATA X
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I.--HEADING:

'LONDON AVENUE OUTFALL CANAL
'WEST BANK
'STATIONS 100+40 TO 119+85
'SOIL REACH 1; Q CASE

II.--CONTROL

CANTILEVER WALL ANALYSIS
SAME FACTOR OF SAFETY APPLIED TO ACTIVE AND PASSIVE PRESSURES.

III.--WALL DATA

ELEVATION AT TOP OF WALL = 11.50 (FT)
ELEVATION AT BOTTOM OF WALL = -15.50 (FT)
WALL MODULUS OF ELASTICITY = 2.90E+07 (PSI)
WALL MOMENT OF INERTIA = 5.50 (IN**4/FT)

IV.--SURFACE POINT DATA

IV.A--RIGHTSIDE

DIST. FROM WALL (FT)	ELEVATION (FT)
.00	5.00
3.00	5.00
7.00	3.00
17.00	2.00
37.50	-2.00
42.50	-5.00

IV.B-- LEFTSIDE

DIST. FROM WALL (FT)	ELEVATION (FT)
.00	3.00
15.50	3.00
32.00	-3.00

V.--SOIL LAYER DATA

V.A.--RIGHTSIDE LAYER DATA

SAT. WGHT. (PCF)	MOIST WGHT. (PCF)	ANGLE OF INTERNAL FRICTION (DEG)	COH-ESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADH-ESION (PSF)	<--BOTTOM--> ELEV. (FT)	<--FACTOR--> SLOPE (FT/FT)	<-SAFETY- ACT. PASS
109.00	109.00	.00	700.0	.00	.0	.00	.00	
96.00	96.00	.00	400.0	.00	.0	-6.00	.00	

102.00	102.00	.00	320.0	.00	.0	-12.00	.00
122.00	122.00	30.00	.0	.00	.0		

V.B.-- LEFTSIDE LAYER DATA

SAT. WGHT. (PCF)	MOIST WGHT. (PCF)	ANGLE OF INTERNAL FRICTION (DEG)	COHESION (PSF)	ANGLE OF WALL FRICTION (DEG)	ADHESION (PSF)	<--BOTTOM--> ELEV. (FT) SLOPE (FT/FT)		<--SAFETY--> <--FACTOR--> ACT. PASS.
109.00	109.00	.00	700.0	.00	.0	.00	.00	
96.00	96.00	.00	400.0	.00	.0	-6.00	.00	
102.00	102.00	.00	320.0	.00	.0	-12.00	.00	
122.00	122.00	30.00	.0	.00	.0			

VI.--WATER DATA

UNIT WEIGHT = 62.40 (PCF)
 RIGHTSIDE ELEVATION = 11.50 (FT)
 LEFTSIDE ELEVATION = -3.00 (FT)
 NO SEEPAGE

VII.--SURFACE LOADS
 NONE

VIII.--HORIZONTAL LOADS
 NONE

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 24-MAR-1994

TIME: 11.06.26

X SUMMARY OF RESULTS FOR X
X CANTILEVER WALL ANALYSIS X
#####

I.--HEADING

'LONDON AVENUE OUTFALL CANAL
'WEST BANK
'STATIONS 100+40 TO 119+85
'SOIL REACH 1; Q CASE

II.--SUMMARY

RIGHTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

LEFTSIDE SOIL PRESSURES DETERMINED BY FIXED SURFACE WEDGE METHOD.

FACTOR OF SAFETY	:	1.53
MAX. BEND. MOMENT (LB-FT)	:	13409.
AT ELEVATION (FT)	:	-4.32
MAXIMUM DEFLECTION (IN)	:	3.1665E+01
AT ELEVATION (FT)	:	11.50

PROGRAM CWALSHT-DESIGN/ANALYSIS OF ANCHORED OR CANTILEVER SHEET PILE WALLS
BY CLASSICAL METHODS

DATE: 24-MAR-1994

TIME: 11.06.26

X COMPLETE RESULTS FOR X
X CANTILEVER WALL ANALYSIS X
#####

I.--HEADING

'LONDON AVENUE OUTFALL CANAL
'WEST BANK
'STATIONS 100+40 TO 119+85
'SOIL REACH 1; Q CASE

II.--RESULTS

ELEVATION (FT)	BENDING MOMENT (LB-FT)	SHEAR (LB)	DEFLECTION (IN)	NET PRESSURE (PSF)
11.50	0.	0.	3.1665E+01	.00
10.50	10.	31.	2.9637E+01	62.40
9.50	83.	125.	2.7609E+01	124.80
8.50	281.	281.	2.5582E+01	187.20
7.50	666.	499.	2.3559E+01	249.60
6.50	1300.	780.	2.1542E+01	312.00
5.50	2246.	1123.	1.9540E+01	374.40
5.00	2856.	1318.	1.8548E+01	405.60
4.50	3567.	1529.	1.7563E+01	436.80
3.50	5325.	1997.	1.5625E+01	499.20
3.00	6387.	2254.	1.4676E+01	530.40
3.00	6387.	2254.	1.4676E+01	-386.81
2.75	6938.	2156.	1.4208E+01	-398.46
2.50	7465.	2055.	1.3745E+01	-410.11
2.00	8440.	1844.	1.2834E+01	-433.41
1.50	9307.	1621.	1.1945E+01	-460.00
.50	10701.	1170.	1.0246E+01	-441.03
.00	11235.	978.	9.4393E+00	-328.36
-.50	11688.	843.	8.6627E+00	-212.52
-1.50	12430.	647.	7.2055E+00	-179.12
-2.50	12981.	449.	5.8829E+00	-217.32
-3.00	13178.	338.	5.2739E+00	-226.13
-3.50	13317.	219.	4.7006E+00	-250.92
-4.50	13404.	-50.	3.6625E+00	-286.12
-5.50	13209.	-343.	2.7692E+00	-299.70
-6.00	13001.	-486.	2.3765E+00	-271.15
-6.50	12726.	-612.	2.0189E+00	-233.90
-7.50	12001.	-835.	1.4061E+00	-213.17
-8.50	11058.	-1050.	9.2325E-01	-216.81
-9.50	9897.	-1273.	5.5996E-01	-228.46
-10.50	8508.	-1509.	3.0369E-01	-242.75
-11.50	6857.	-1815.	1.3936E-01	-369.10
-12.00	5898.	-2032.	8.6196E-02	-501.75
-12.08	5737.	-2072.	7.9368E-02	-512.14
-12.50	4826.	-2230.	4.8975E-02	-237.43
-13.50	2586.	-2142.	1.0661E-02	414.29
-14.50	760.	-1401.	7.3357E-04	1066.02

-15.50	0.	-10.	-1.3964E-11	1717.75
-15.51	0.	0.	0.0000E+00	1721.39

III.--SOIL PRESSURES

ELEVATION (FT)	< LEFTSIDE PRESSURE (PSF) >		< RIGHTSIDE PRESSURE (PSF) >	
	PASSIVE	ACTIVE	ACTIVE	PASSIVE
11.50	0.	0.	0.	0.
10.50	0.	0.	0.	0.
9.50	0.	0.	0.	0.
8.50	0.	0.	0.	0.
7.50	0.	0.	0.	0.
6.50	0.	0.	0.	0.
5.50	0.	0.	0.	0.
5.00+	0.	0.	0.	0.
5.00-	0.	0.	0.	917.
4.50	0.	0.	0.	941.
3.50	0.	0.	0.	987.
3.00+	0.	0.	0.	1015.
3.00-	917.	0.	0.	1015.
2.75	944.	0.	0.	1010.
2.50	972.	0.	0.	1004.
2.00	1026.	0.	0.	905.
1.50	1084.	0.	0.	817.
.50	1127.	0.	0.	733.
.00	1046.	0.	0.	615.
-.50	961.	0.	0.	492.
-1.50	990.	0.	0.	443.
-2.50	1091.	0.	0.	465.
-3.00	1181.	0.	0.	466.
-3.50	1156.	11.	0.	508.
-4.50	1191.	84.	0.	680.
-5.50	1207.	187.	2.	748.
-6.00	1188.	247.	12.	722.
-6.50	1172.	300.	33.	703.
-7.50	1193.	357.	75.	721.
-8.50	1234.	396.	112.	757.
-9.50	1274.	435.	140.	793.
-10.50	1305.	476.	158.	825.
-11.50	1463.	502.	189.	899.
-12.00	1634.	493.	228.	1003.
-12.08	1651.	491.	234.	1023.
-12.50	1740.	482.	267.	1129.
-13.50	1771.	497.	302.	1259.
-14.50	1828.	526.	325.	1307.
-15.50	1888.	555.	352.	1371.
-15.51	1952.	582.	379.	1461.
-17.50	2016.	602.	408.	1559.