(A0006669)

PZ-22, SECTION MODULOUS/FT 18.1 in^2/Ft.
SHEAR AREA = 1.84 in^2/Ft.

ORLEANS SIDE - I-WALL ANALYSIS

STATION TO STATION LIMITS	Sheet Pile TYPE	FACTOR OF SAFETY	STICK UP	MAX. Bending Stress fb (K.S.I)	MAX-SHEAR Stress fv (K.S.I)	Deflection (inches)	SWL (NGVD (FT)	LOAD CASE
PLATE #100 (metric) Sta. 545+80 To sta. 552+70 B/L	ARBED BZ 12.1L	1.5	5 ~~5.5~~	0,2	0,2	0,00	-5,0 ~~8,5~~	Q
PLATE #101, Q67 STA. 554+00 To STA. 568+00 B/L	PZ-22	1	8.6	6.2	1.1	0.59	13,6	Q
PLATE # 102 Q67-A STA. 568+00 To ST 589+00 B/L	PZ 22	1	8.6	6.2	1.1	0.59	13,6	Q
PLATE #103 Q68 STA. 589+00 To STA 614+00 B/L	PZ-22	1	8-6	6.2.	1.1	0.59	13,6	Q
PLATE #104 Q69 STA. 614+00 To STA 625+00 B/L	PZ-22	1	7.6	3.8	0.9	0.23	13.6	Q
PLATE #105 Q 70 STA. 625+00 To STA. 635+00 B/L	PZ-22	1	7.1	3.0	0.9	0.14	14.1	Q
PLATE #106 Q-71 STA. 635+00 To STA. 642+00 B/L	PZ-22	1	5.1	0.8	0.5	0.01	14.1	Q
PLATE #107 Q 72 STA. 642+00 To STA. 663+00 B/L	PZ-22	1	3.1	0.1	0.2	0	14.6	Q
PLATE #108 Q 73 STA. 663+00 To STA 670+63 B/L	PZ-22	1	4.1	0.4	0.3	0	14.6	Q

BEAMS (SHEAR, MOMENT, DEFLECTION)

17TH ST CANAL G.D.M., Q-FILE : MET17A, Q-CASE, FS=1.5
A 5

THE REFERENCE SYSTEM SELECTED DEFINES POSITIVE FORCES AS TO THE LEFT
INCREASING MEMBER COORDINATES AS UPWARD, AND POSITIVE MOMENTS
AS COUNTERCLOCKWISE.

THE MAXIMUM DEFLECTION IS .ØØ INCHES AND OCCURS AT MEMBER COORDINATE
14.ØØ FT.

RBED BZ 12 HAS BEEN GIVEN TO SUPPORT THE LOAD SYSTEM.

THE WEIGHT OF THIS VERTICAL MEMBER HAS BEEN NEGLECTED.

CALCULATED EXTERNAL LOADS

DISTANCE FROM REFERENCE(FT)	TYPE OF LOAD	MAGNITUDE OF LOAD
3.6Ø	POINT LD	Ø.ØØ LBF
3.6Ø	COUPLE	-9.85 LBF-FT

INPUTTED LOADS

DISTANCE FROM REFERENCE(FT)	TYPE OF LOAD	MAGNITUDE OF LOAD
8.5Ø	CONTN LD	Ø.ØØ LBF/SQ FT
7.5Ø	CONTN LD	62.5Ø LBF/SQ FT
6.5Ø	CONTN LD	125.ØØ LBF/SQ FT
6.ØØ	CONTN LD	156.25 LBF/SQ FT
6.ØØ	CONTN LD	156.25 LBF/SQ FT
5.5Ø	CONTN LD	55.2Ø LBF/SQ FT
5.5Ø	CONTN LD	Ø.ØØ LBF/SQ FT
5.5Ø	CONTN LD	-545.17 LBF/SQ FT
4.63	CONTN LD	-586.35 LBF/SQ FT
4.26	CONTN LD	Ø.ØØ LBF/SQ FT
3.6Ø	CONTN LD	1Ø55.65 LBF/SQ FT
3.6Ø	CONTN LD	Ø.ØØ LBF/SQ FT

RBED BZ 12 PROPERTIES ARE AS FOLLOWS.

MOMENT OF INERTIA= 115.6Ø IN. TO THE 4TH PER FOOT OF WALL
CROSS SECTIONAL AREA= 6.73 SQ IN.
ELASTIC MODULUS= 29ØØØØØØ. LBF/SQ IN.
DEFLECTION REFERENCE IS AT 3.6ØØ

THE MAXIMUM BENDING MOMENT IS 331.5Ø LBF-FT AND OCCURS AT 5.Ø5
WHICH HAS THE SHEAR FORCE OF Ø.58 LBF.

ARBED BZ 12.1L
$S_{xx}/ft = 22.5\ in^3/ft$

$$f_b = \frac{331.50\,(12)}{(1000)(22.5)} = 0.2\ ksi$$

$$f_v = \frac{.351\ kips/ft}{3.86\ in^2\,(12/22.69')} = 0.2k$$

DISTANCE (FEET)	SHEAR FOR (LBF)	SHEAR STR (LBF/SQIN)	BENDING MOM (LBF-FT)	DEFLECTION FROM TANG. THRU DEFLE REFERENCE (INCHES)
14.000	0.0	0.0	0.0	0.0027
13.999	0.0	0.0	0.0	0.0027
13.000	0.0	0.0	0.0	0.0024
12.000	0.0	0.0	0.0	0.0021
11.000	0.0	0.0	0.0	0.0018
10.000	0.0	0.0	0.0	0.0015
9.000	0.0	0.0	0.0	0.0012
8.000	7.8	1.2	1.3	0.0008
7.000	70.3	10.4	35.2	0.0005
6.000	195.3	29.0	162.8	0.0002
5.500	248.2	36.9	275.7	0.0001
5.054	0.6	0.1	331.5	0.0001
5.000	-30.3	-4.5	330.7	0.0001
4.265	-350.4	-52.1	165.3	0.0000
4.263	-350.4	-52.1	164.6	0.0000
4.000	-294.9	-43.8	77.2	0.0000
3.601	-0.6	-0.1	9.9	0.0000
3.600	0.0	0.0	0.0	0.0000

RUN COMPLETED

EOT..

LIST MET17A

```
1 10001 17TH ST CANAL G.D.M., Q-FILE : MET17A, Q-CASE, FS=1.5
2 10002 STA 545+80 - 552+70 B/L, ORLEANS SIDE
3 10003                    3  0.85000000E+01  0.00000000E+01
4 10004                    3  0.75000000E+01  0.62500000E+02
5 10005                    3  0.65000000E+01  0.12500000E+03
6 10006                    3  0.60000000E+01  0.15625000E+03
7 10007                    3  0.60000000E+01  0.15625000E+03
8 10008                    3  0.55000000E+01  0.55203567E+02
9 10009                    3  0.55000000E+01  0.00000000E+01
10 10010                    3  0.55000000E+01 -0.54516667E+03
11 10011                    3  0.46330562E+01 -0.58634650E+03
12 10012                    3  0.42643142E+01  0.00000000E+01
13 10013                    3  0.36004389E+01  0.10556458E+04
14 10014                    4  0.36004389E+01  0.00000000E+01
15 10015                    0  0.36004389E+01  0.00000000E+01
16 10016   0.36004389E+01  0.63329935E-07  0.98546018E+01
```

EOT..

LIST ARBED

```
1 100 1 14.0 3.6 1 3.6 0 -1
2 200 ARBED BZ 12.1L
3 300 29000000 6.73 115.6
```

EOT..

DISPLAY OUTPUT

BEAMS (SHEAR, MOMENT, DEFLECTION)

17TH ST. CANAL G.D.M., Q-FILE: MET17B, Q-CASE, FS=1.Ø
A 5

THE REFERENCE SYSTEM SELECTED DEFINES POSITIVE FORCES AS TO THE LEFT
INCREASING MEMBER COORDINATES AS UPWARD, AND POSITIVE MOMENTS
AS COUNTERCLOCKWISE.

THE MAXIMUM DEFLECTION IS Ø.ØØ INCHES AND OCCURS AT MEMBER COORDINATE
14.ØØ FT.

RBED BZ 12 HAS BEEN GIVEN TO SUPPORT THE LOAD SYSTEM.

THE WEIGHT OF THIS VERTICAL MEMBER HAS BEEN NEGLECTED.

CALCULATED EXTERNAL LOADS

DISTANCE FROM REFERENCE(FT)	TYPE OF LOAD	MAGNITUDE OF LOAD
4.Ø5	POINT LD	Ø.ØØ LBF
4.Ø5	COUPLE	-4.31 LBF-FT

INPUTTED LOADS

DISTANCE FROM REFERENCE(FT)	TYPE OF LOAD	MAGNITUDE OF LOAD
8.5Ø	CONTN LD	Ø.ØØ LBF/SQ FT
7.5Ø	CONTN LD	62.5Ø LBF/SQ FT
6.5Ø	CONTN LD	125.ØØ LBF/SQ FT
6.ØØ	CONTN LD	156.25 LBF/SQ FT
6.ØØ	CONTN LD	156.25 LBF/SQ FT
5.51	CONTN LD	Ø.ØØ LBF/SQ FT
5.5Ø	CONTN LD	-3.56 LBF/SQ FT
5.5Ø	CONTN LD	-878.5Ø LBF/SQ FT
4.99	CONTN LD	-9Ø2.68 LBF/SQ FT
4.62	CONTN LD	Ø.ØØ LBF/SQ FT
4.Ø5	CONTN LD	1367.83 LBF/SQ FT
4.Ø5	CONTN LD	Ø.ØØ LBF/SQ FT

FS=1,5 case GoverØS

RBED BZ 12 PROPERTIES ARE AS FOLLOWS.

MOMENT OF INERTIA= 115.6Ø IN. TO THE 4TH PER FOOT OF WALL
CROSS SECTIONAL AREA= 6.73 SQ IN.
ELASTIC MODULUS= 29ØØØØØØ. LBF/SQ IN.
DEFLECTION REFERENCE IS AT 3.6ØØ

THE MAXIMUM BENDING MOMENT IS 3Ø4.15 LBF-FT AND OCCURS AT 5.24
WHICH HAS THE SHEAR FORCE OF 6.19 LBF.

DISTANCE (FEET)	SHEAR FOR (LBF)	SHEAR STR (LBF/SQIN)	BENDING MOM (LBF-FT)	DEFLECTION FROM TANG. THRU DEFLE REFERENCE (INCHES)
14.000	0.0	0.0	0.0	0.0022
13.999	0.0	0.0	0.0	0.0022
13.000	0.0	0.0	0.0	0.0019
12.000	0.0	0.0	0.0	0.0017
11.000	0.0	0.0	0.0	0.0014
10.000	0.0	0.0	0.0	0.0012
9.000	0.0	0.0	0.0	0.0009
8.000	7.8	1.2	1.3	0.0006
7.000	70.3	10.4	35.2	0.0004
6.000	195.3	29.0	162.8	0.0002
5.511	233.5	34.7	270.7	0.0001
5.243	6.2	0.9	304.1	0.0000
5.000	-211.7	-31.5	279.2	0.0000
4.616	-389.5	-57.9	152.6	0.0000
4.614	-389.5	-57.9	151.8	0.0000
4.047	-1.4	-0.2	4.3	0.0000
4.045	0.0	0.0	0.0	0.0000
4.000	0.0	0.0	0.0	0.0000
3.601	0.0	0.0	0.0	0.0000
3.600	0.0	0.0	0.0	0.0000

RUN COMPLETED

```
DISPLAY MET17B
10001 17TH ST. CANAL G.D.M., Q-FILE: MET17B, Q-CASE, FS=1.0
10002 STA 545+80 - 552+70 B/L, ORLEANS SIDE
10003                      3  0.85000000E+01   0.00000000E+01
10004                      3  0.75000000E+01   0.62500000E+02
10005                      3  0.65000000E+01   0.12500000E+03
10006                      3  0.60000000E+01   0.15625000E+03
10007                      3  0.60000000E+01   0.15625000E+03
10008                      3  0.55111447E+01   0.00000000E+01
10009                      3  0.55000000E+01  -0.35621190E+01
10010                      3  0.55000000E+01  -0.87850000E+03
10011                      3  0.49909775E+01  -0.90267857E+03
10012                      3  0.46151706E+01   0.00000000E+01
10013                      3  0.40457106E+01   0.13678287E+04
10014                      4  0.40457106E+01   0.00000000E+01
10015                      0  0.40457106E+01   0.00000000E+01
10016    0.40457106E+01   0.22351742E-07   0.43121623E+01
EOT..
DISPLAY ARBED
100 1 14.0 3.6 1 3.6 0 -1
200 ARBED BZ 12.1L
300 290000000 6.73 115.6
EOT..
```

```
LIST Q67
1 10001 17TH ST.CANAL G.D.M. , Q-FILE :Q-67 ,Q-CASE , F.S.=1.Ø
2 10002 STA.553+7Ø TO STA. 568+ØØ B/L ,ORLEANS SIDE
3 10003                    3  Ø.136ØØØØØE+Ø2   Ø.ØØØØØØØØE+Ø1
4 10004                    3  Ø.126ØØØØØE+Ø2   Ø.625ØØØØØE+Ø2
5 10005                    3  Ø.116ØØØØØE+Ø2   Ø.125ØØØØØE+Ø3
6 10006                    3  Ø.106ØØØØØE+Ø2   Ø.187500ØØE+Ø3
7 10007                    3  Ø.96ØØØØØØE+Ø1   Ø.25ØØØØØØE+Ø3
8 10008                    3  Ø.86ØØØØØØE+Ø1   Ø.3125ØØØØE+Ø3
9 10009                    3  Ø.76ØØØØØØE+Ø1   Ø.375ØØØØØE+Ø3
1Ø 10010                    3  Ø.66ØØØØØØE+Ø1   Ø.4375ØØØØE+Ø3
11 10011                    3  Ø.56ØØØØØØE+Ø1   Ø.5ØØØØØØØE+Ø3
12 10012                    3  Ø.55ØØØØØØE+Ø1   Ø.5Ø625ØØØE+Ø3
13 10013                    3  Ø.55ØØØØØØE+Ø1   Ø.ØØØØØØØØE+Ø1
14 10014                    3  Ø.55ØØØØØØE+Ø1  -Ø.493750ØØE+Ø3
15 10015                    3  Ø.45ØØØØØØE+Ø1  -Ø.551250ØØE+Ø3
16 10016                    3  Ø.35ØØØØØØE+Ø1  -Ø.6Ø875ØØØE+Ø3
17 10017                    3  Ø.35ØØØØØØE+Ø1  -Ø.6Ø875ØØØE+Ø3
18 10018                    3  Ø.25ØØØØØØE+Ø1  -Ø.649250ØØE+Ø3
19 10019                    3  Ø.15ØØØØØØE+Ø1  -Ø.689750ØØE+Ø3
20 10020                    3  Ø.15ØØØØØØE+Ø1  -Ø.689750ØØE+Ø3
21 10021                    3  Ø.5ØØØØØØØE+ØØ  -Ø.73Ø25ØØØE+Ø3
22 10022                    3  Ø.18499187E+ØØ  -Ø.743ØØ783E+Ø3
23 10023                    3 -Ø.18262978E+Ø1   Ø.ØØØØØØØØE+Ø1

24 10024                    3 -Ø.51495525E+Ø1   Ø.12276721E+Ø4
25 10025                    4 -Ø.51495525E+Ø1   Ø.ØØØØØØØØE+Ø1
26 10026                    Ø -Ø.51495525E+Ø1   Ø.ØØØØØØØØE+Ø1
27 10027  -Ø.51495525E+Ø1   Ø.44703484E-Ø7   Ø.21142396E+Ø1
EOT..
```

```
LIST PZ22
1 100  1  13.68  -5.1496  1  -5.1496  0  -1
2 200  PZ-22
3 300  29000,000  6.4691  84.3818
```

```
LIST Q670
1
2                        BEAMS (SHEAR, MOMENT, DEFLECTION)
3
4
5    17TH ST.CANAL G.D.M. , Q-FILE :Q-67 ,Q-CASE , F.S.=1.Ø
6      A.5
7
8   THE REFERENCE SYSTEM SELECTED DEFINES POSITIVE FORCES AS TO THE LEFT
9   INCREASING MEMBER COORDINATES AS UPWARD, AND POSITIVE MOMENTS
10   AS COUNTERCLOCKWISE.
11
12
13    THE MAXIMUM DEFLECTION IS   Ø.59 INCHES AND OCCURS AT MEMBER COORDINATE
14    13.6Ø FT.                        O.K.
15
16
17
18   Z-22          HAS BEEN GIVEN TO SUPPORT THE LOAD SYSTEM.
19
20   THE WEIGHT OF THIS VERTICAL MEMBER HAS BEEN NEGLECTED.
21
22
23         CALCULATED EXTERNAL LOADS

24
25   DISTANCE FROM    TYPE OF    MAGNITUDE OF
26   REFERENCE(FT)     LOAD            LOAD
27
28          -5.15  POINT LD        Ø.ØØ LBF
29          -5.15   COUPLE       -2.12 LBF-FT
30
31
32                INPUTTED LOADS
33
34   DISTANCE FROM    TYPE OF    MAGNITUDE OF
35   REFERENCE(FT)     LOAD            LOAD
36
37          13.6Ø  CONTN LD        Ø.ØØ LBF/SQ FT
38          12.6Ø  CONTN LD       62.5Ø LBF/SQ FT
39          11.6Ø  CONTN LD      125.ØØ LBF/SQ FT
40          1Ø.6Ø  CONTN LD      187.5Ø LBF/SQ FT
41           9.6Ø  CONTN LD      25Ø.ØØ LBF/SQ FT
42           8.6Ø  CONTN LD      312.5Ø LBF/SQ FT
43           7.6Ø  CONTN LD      375.ØØ LBF/SQ FT
44           6.6Ø  CONTN LD      437.5Ø LBF/SQ FT
45           5.6Ø  CONTN LD      5ØØ.ØØ LBF/SQ FT
46           5.5Ø  CONTN LD      5Ø6.25 LBF/SQ FT

47           5.5Ø  CONTN LD        Ø.ØØ LBF/SQ FT
48           5.5Ø  CONTN LD     -493.75 LBF/SQ FT
49           4.5Ø  CONTN LD     -551.25 LBF/SQ FT
50           3.5Ø  CONTN LD     -6Ø8.75 LBF/SQ FT
51           3.5Ø  CONTN LD     -6Ø8.75 LBF/SQ FT
52           2.5Ø  CONTN LD     -649.25 LBF/SQ FT
```

1.50	CONTN LD	-689.75	LBF/SQ FT
1.50	CONTN LD	-689.75	LBF/SQ FT
0.50	CONTN LD	-730.25	LBF/SQ FT
0.18	CONTN LD	-743.01	LBF/SQ FT
-1.83	CONTN LD	0.00	LBF/SQ FT
-5.15	CONTN LD	1227.67	LBF/SQ FT
-5.15	CONTN LD	0.00	LBF/SQ FT

Z-22 PROPERTIES ARE AS FOLLOWS.

MOMENT OF INERTIA= 84.38 IN. TO THE 4TH PER FOOT OF WALL
CROSS SECTIONAL AREA= 6.47 SQ IN.
ELASTIC MODULUS= 29000000. LBF/SQ IN.
DEFLECTION REFERENCE IS AT -5.150

THE MAXIMUM BENDING MOMENT IS 9286.48 LBF-FT AND OCCURS AT 2.02
WHICH HAS THE SHEAR FORCE OF 0.33 LBF.

DISTANCE (FEET)	SHEAR FOR (LBF)	SHEAR STR (LBF/SQIN)	BENDING MOM (LBF-FT)	DEFLECTION FROM TANG. THRU DEFLE REFERENCE (INCHES)
-13.600	0.0	0.0	0.0	0.5874
13.599	0.0	0.0	0.0	0.5874
-13.000	11.2	1.7	2.2	0.5561
-12.000	80.0	12.4	-42.7	0.5039
-11.000	211.2	32.7	-183.1	0.4516
-10.000	-405.0	62.6	-486.0	0.3996
-9.000	-661.2	102.2	-1013.9	0.3479
-8.000	-980.0	151.5	-1829.3	0.2970
-7.000	-1361.2	210.4	-2994.7	0.2474
-6.000	-1805.0	279.0	-4572.7	0.1999
-5.500	-2050.3	316.9	-5535.8	0.1773
-5.000	-1796.2	277.7	-6498.1	0.1557
-4.000	-1245.0	192.5	-8023.5	0.1161
-3.000	-638.4	98.7	-8969.3	0.0821
2.017	0.3	0.1	-9286.5	0.0547
-2.000	-10.9	-1.7	-9286.4	0.0543
-1.000	-700.6	-108.3	-8934.0	0.0330
0.000	-1423.9	-220.1	-7872.1	0.0179
-1.000	-1913.8	-295.8	-6172.5	0.0084
-1.825	-2039.9	-315.3	-4523.6	0.0038
-1.827	-2039.9	-315.3	-4519.6	0.0038
-2.000	-2034.4	-314.5	-4167.6	0.0031
-3.000	-1785.5	-276.0	-2226.9	0.0008
-4.000	-1167.2	-180.4	-719.8	0.0001
-5.000	-179.5	-27.7	15.6	0.0000
-5.149	-1.2	-0.2	2.1	0.0000
-5.150	0.0	0.0	0.0	0.0000

1" = 1000#

1" = 2500 ft-lbs

RUN COMPLETED

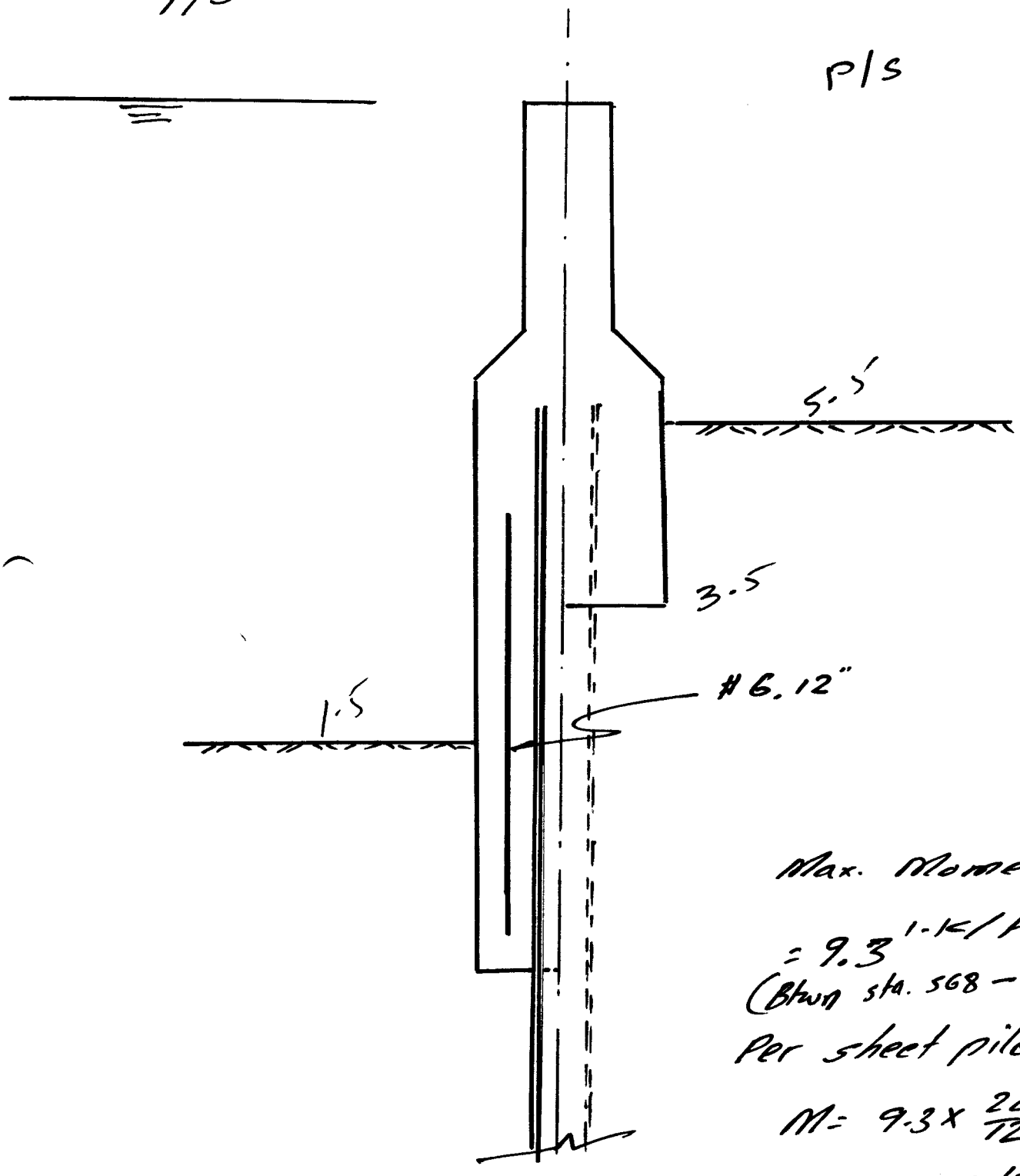
EOT..

$f_s = \frac{9286.48 \times 12}{18.1} = 6.157$ K.S.I. < 18 O.K

$f_v = \frac{V}{A} = \frac{2050.3}{1.84} = 1.114$ K.S.I.

F/S

P/S



Max. Moment

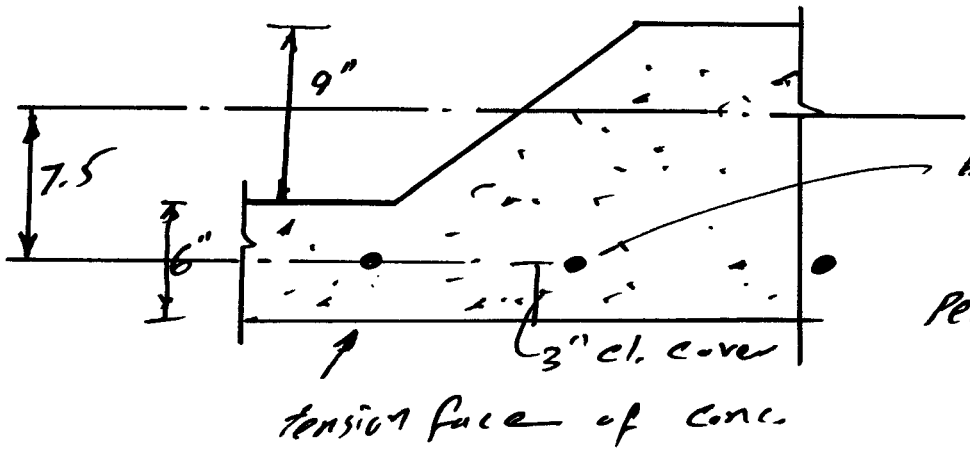
$= 9.3^{1\text{-}K/ft}$

(Btwn sta. 568 – 589 E/B)

Per sheet pile width

$M = 9.3 \times \frac{22}{12}$

$= 17.05^{1\text{-}K}$



Per sheet pile width

$A_s = \frac{0.44}{12} \times 22 = 0.81^{\square"}$

(Assume no tension carried by concrete.)

Composite property of section:

	A	d	Ad	Ad^2	I_o	$I_o + Ad^2$
steel sheet pile	11.86	–	–	–	154.7	154.7
reinf. bars	0.81	7.5	6.05	45.38	–	45.38
	12.67	(0.48)	6.05			~~154.70~~ 200.08 in^4
				– 6.05×0.45		– 2.72
						197.36 in^4

$$S_{@\ reit\ bar} = \frac{197.36}{(7.5 - 0.48)} = 28.11$$

$$f_b = \frac{\cancel{9.5 \times 12}\ 17.05 \times 12}{28.11}$$

$$= 7.28 < 20 \quad \text{allow.} \quad \text{o.k}$$

```
LIST Q67A
1 10001 17TH ST. CANAL G.D.M. ,Q-FILE :Q67A ,Q-CASE ,F.S.=1.Ø
2 10002 STA.568+ØØ B/L TO STA.589+ØØ B/L ,ORLEANS SIDE
3 10003                      3  Ø.136ØØØØØE+Ø2  Ø.ØØØØØØØØE+Ø1
4 10004                      3  Ø.126ØØØØØE+Ø2  Ø.625ØØØØØE+Ø2
5 10005                      3  Ø.116ØØØØØE+Ø2  Ø.125ØØØØØE+Ø3
6 10006                      3  Ø.106ØØØØØE+Ø2  Ø.187500ØØE+Ø3
7 10007                      3  Ø.96ØØØØØØE+Ø1  Ø.25ØØØØØØE+Ø3
8 10008                      3  Ø.86ØØØØØØE+Ø1  Ø.312500ØØE+Ø3
9 10009                      3  Ø.76ØØØØØØE+Ø1  Ø.375ØØØØØE+Ø3
1Ø 1ØØ1Ø                      3  Ø.66ØØØØØØE+Ø1  Ø.437500ØØE+Ø3
11 10011                      3  Ø.56ØØØØØØE+Ø1  Ø.5ØØØØØØØE+Ø3
12 10012                      3  Ø.55ØØØØØØE+Ø1  Ø.5Ø625ØØØE+Ø3
13 10013                      3  Ø.55ØØØØØØE+Ø1  Ø.ØØØØØØØØE+Ø1
14 10014                      3  Ø.55ØØØØØØE+Ø1 -Ø.493750ØØE+Ø3
15 10015                      3  Ø.45ØØØØØØE+Ø1 -Ø.551250ØØE+Ø3
16 10016                      3  Ø.35ØØØØØØE+Ø1 -Ø.608750ØØE+Ø3
17 10017                      3  Ø.35ØØØØØØE+Ø1 -Ø.608750ØØE+Ø3
18 10018                      3  Ø.25ØØØØØØE+Ø1 -Ø.649250ØØE+Ø3
19 10019                      3  Ø.15ØØØØØØE+Ø1 -Ø.689750ØØE+Ø3
2Ø 1ØØ2Ø                      3  Ø.15ØØØØØØE+Ø1 -Ø.689750ØØE+Ø3
21 10021                      3  Ø.5ØØØØØØØE+ØØ -Ø.73Ø25ØØØE+Ø3
22 1ØØ22                      3  Ø.2574663ØE+ØØ -Ø.74ØØ726ØE+Ø3
23 1ØØ23                      3 -Ø.18374126E+Ø1  Ø.ØØØØØØØØE+Ø1

24 10024                      3 -Ø.52142129E+Ø1  Ø.1192946ØE+Ø4
25 10025                      4 -Ø.52142129E+Ø1  Ø.ØØØØØØØØE+Ø1
26 10026                     Ø -Ø.52142129E+Ø1  Ø.ØØØØØØØØE+Ø1
27 10027  -Ø.52142129E+Ø1  Ø.ØØØØØØØØE+Ø1  Ø.28462435E+Ø1
EOT..
```

```
LIST PZ27
1 100 1 13.60 -5.2142 1 -5.2142 Ø -1
2 200 PZ-22
3 300 29000000 6.4691 84.3818
EOT
```

LIST Q67AO

BEAMS (SHEAR, MOMENT, DEFLECTION)

17TH ST. CANAL G.D.M. ,Q-FILE :Q67A ,Q-CASE ,F.S.=1.Ø
A.5

THE REFERENCE SYSTEM SELECTED DEFINES POSITIVE FORCES AS TO THE LEFT INCREASING MEMBER COORDINATES AS UPWARD, AND POSITIVE MOMENTS AS COUNTERCLOCKWISE.

THE MAXIMUM DEFLECTION IS Ø.59 INCHES AND OCCURS AT MEMBER COORDINATE 13.6Ø FT.
O.K.

Z-22 HAS BEEN GIVEN TO SUPPORT THE LOAD SYSTEM.

THE WEIGHT OF THIS VERTICAL MEMBER HAS BEEN NEGLECTED.

CALCULATED EXTERNAL LOADS

DISTANCE FROM REFERENCE (FT)	TYPE OF LOAD	MAGNITUDE OF LOAD
-5.21	POINT LD	Ø.ØØ LBF
-5.21	COUPLE	-2.85 LBF-FT

INPUTTED LOADS

DISTANCE FROM REFERENCE (FT)	TYPE OF LOAD	MAGNITUDE OF LOAD
13.6Ø	CONTN LD	Ø.ØØ LBF/SQ FT
12.6Ø	CONTN LD	62.5Ø LBF/SQ FT
11.6Ø	CONTN LD	125.ØØ LBF/SQ FT
1Ø.6Ø	CONTN LD	187.5Ø LBF/SQ FT
9.6Ø	CONTN LD	25Ø.ØØ LBF/SQ FT
8.6Ø	CONTN LD	312.5Ø LBF/SQ FT
7.6Ø	CONTN LD	375.ØØ LBF/SQ FT
6.6Ø	CONTN LD	437.5Ø LBF/SQ FT
5.6Ø	CONTN LD	5ØØ.ØØ LBF/SQ FT
5.5Ø	CONTN LD	5Ø6.25 LBF/SQ FT
5.5Ø	CONTN LD	Ø.ØØ LBF/SQ FT
5.5Ø	CONTN LD	-493.75 LBF/SQ FT
4.5Ø	CONTN LD	-551.25 LBF/SQ FT
3.5Ø	CONTN LD	-6Ø8.75 LBF/SQ FT
3.5Ø	CONTN LD	-6Ø8.75 LBF/SQ FT
2.5Ø	CONTN LD	-649.25 LBF/SQ FT
1.5Ø	CONTN LD	-689.75 LBF/SQ FT
1.5Ø	CONTN LD	-689.75 LBF/SQ FT
Ø.5Ø	CONTN LD	-73Ø.25 LBF/SQ FT
Ø.26	CONTN LD	-74Ø.Ø7 LBF/SQ FT
-1.84	CONTN LD	Ø.ØØ LBF/SQ FT
-5.21	CONTN LD	1192.95 LBF/SQ FT
-5.21	CONTN LD	Ø.ØØ LBF/SQ FT

Z-22 PROPERTIES ARE AS FOLLOWS.

MOMENT OF INERTIA= 84.38 IN. TO THE 4TH PER FOOT OF WALL
CROSS SECTIONAL AREA= 6.47 SQ IN.
ELASTIC MODULUS= 29000000. LBF/SQ IN.
DEFLECTION REFERENCE IS AT -5.214

THE MAXIMUM BENDING MOMENT IS 9286.48 LBF-FT AND OCCURS AT 2.02
WHICH HAS THE SHEAR FORCE OF 0.33 LBF.

DISTANCE (FEET)	SHEAR FOR (LBF)	SHEAR STR (LBF/SQIN)	BENDING MOM (LBF-FT)	DEFLECTION FROM TANG. THRU DEFLE REFERENCE (INCHES)
13.600	0.0	0.0	0.0	0.5896
13.599	0.0	0.0	0.0	0.5896
13.000	11.2	1.7	2.2	0.5582
12.000	80.0	12.4	42.7	0.5058
11.000	211.2	32.7	183.1	0.4535
10.000	405.0	62.6	486.0	0.4013
9.000	661.2	102.2	1013.9	0.3495
8.000	980.0	151.5	1829.3	0.2984
7.000	1361.2	210.4	2994.7	0.2487
6.000	1805.0	279.0	4572.7	0.2011
5.500	2050.3	316.9	5535.8	0.1785
5.000	1796.2	277.7	6498.1	0.1568
4.000	1245.0	192.5	8023.5	0.1170
3.000	638.4	98.7	8969.3	0.0829
2.017	0.3	0.1	9286.5	0.0554
2.000	-10.9	-1.7	9286.4	0.0550
1.000	-700.6	-108.3	8934.0	0.0335
0.000	-1417.8	-219.2	7872.8	0.0183
-1.000	-1890.3	-292.2	6189.3	0.0086
-1.836	-2014.2	-311.4	4539.2	0.0039
-1.838	-2014.2	-311.4	4535.1	0.0039
-2.000	-2009.5	-310.6	4209.9	0.0032
-3.000	-1775.4	-274.4	2288.0	0.0008
-4.000	-1188.1	-183.7	776.8	0.0001
-5.000	-247.4	-38.2	29.6	0.0000
-5.213	-1.2	-0.2	2.8	0.0000
-5.214	0.0	0.0	0.0	0.0000

RUN COMPLETED

EOT..

$f_s = \frac{9286.48 \times 12}{18.1} = 6.156 < 18.0$ K.S.I. O.K.

$f_v = \frac{V}{A} = \frac{2050.3}{1.84} = 1.114$ K.S.I. O.K.

```
LIST Q68
1 10001 17TH ST CANAL G.D.M. ,Q-FILE :Q68 ,Q-CASE ,F.S.1.0
2 10002 STA.589+00 B/L TO STA. 614+25 B/L , ORLRANS SIDE
3 10003                    3  0.13600000E+02  0.00000000E+01
4 10004                    3  0.12600000E+02  0.62500000E+02
5 10005                    3  0.11600000E+02  0.12500000E+03
6 10006                    3  0.10600000E+02  0.18750000E+03
7 10007                    3  0.96000000E+01  0.25000000E+03
8 10008                    3  0.86000000E+01  0.31250000E+03
9 10009                    3  0.76000000E+01  0.37500000E+03
10 10010                    3  0.66000000E+01  0.43750000E+03
11 10011                    3  0.56000000E+01  0.50000000E+03
12 10012                    3  0.55000000E+01  0.50625000E+03
13 10013                    3  0.55000000E+01  0.00000000E+01
14 10014                    3  0.55000000E+01 -0.49375000E+03
15 10015                    3  0.45000000E+01 -0.55125000E+03
16 10016                    3  0.35000000E+01 -0.60875000E+03
17 10017                    3  0.35000000E+01 -0.60875000E+03
18 10018                    3  0.25000000E+01 -0.64925000E+03
19 10019                    3  0.15000000E+01 -0.68975000E+03
20 10020                    3  0.15000000E+01 -0.68975000E+03
21 10021                    3  0.50000000E+00 -0.73025000E+03
22 10022                    3  0.39658023E+00 -0.73443850E+03
23 10023                    3 -0.18628454E+01  0.00000000E+01

24 10024                    3 -0.53409491E+01  0.11305764E+04
25 10025                    4 -0.53409491E+01  0.00000000E+01
26 10026                    0 -0.53409491E+01  0.00000000E+01
27 10027   -0.53409491E+01  0.00000000E+01  0.41232647E+01
EOT..
```

```
LIST PZ27
1 100 1 13.60 -5.3409 1 -5.3409 0 -1
2 200 PZ-22
3 300 290000000 6.4691 84.3818
EOT..
```

BEAMS (SHEAR, MOMENT, DEFLECTION)

17TH ST CANAL G.D.M. ,Q-FILE :Q68 ,Q-CASE ,F.S.1.Ø
A.5

THE REFERENCE SYSTEM SELECTED DEFINES POSITIVE FORCES AS TO THE LEFT INCREASING MEMBER COORDINATES AS UPWARD, AND POSITIVE MOMENTS AS COUNTERCLOCKWISE.

THE MAXIMUM DEFLECTION IS 0.59 INCHES AND OCCURS AT MEMBER COORDINATE 13.60 FT.

D.K.

Z-22 HAS BEEN GIVEN TO SUPPORT THE LOAD SYSTEM.

THE WEIGHT OF THIS VERTICAL MEMBER HAS BEEN NEGLECTED.

CALCULATED EXTERNAL LOADS

DISTANCE FROM REFERENCE(FT)	TYPE OF LOAD	MAGNITUDE OF LOAD
-5.34	POINT LD	Ø.ØØ LBF
-5.34	COUPLE	-4.13 LBF-FT

INPUTTED LOADS

DISTANCE FROM REFERENCE(FT)	TYPE OF LOAD	MAGNITUDE OF LOAD
13.60	CONTN LD	Ø.ØØ LBF/SQ FT
12.60	CONTN LD	62.5Ø LBF/SQ FT
11.60	CONTN LD	125.ØØ LBF/SQ FT
10.60	CONTN LD	187.5Ø LBF/SQ FT
9.60	CONTN LD	25Ø.ØØ LBF/SQ FT
8.60	CONTN LD	312.5Ø LBF/SQ FT
7.60	CONTN LD	375.ØØ LBF/SQ FT
6.60	CONTN LD	437.5Ø LBF/SQ FT
5.60	CONTN LD	5ØØ.ØØ LBF/SQ FT
5.5Ø	CONTN LD	5Ø6.25 LBF/SQ FT
5.5Ø	CONTN LD	Ø.ØØ LBF/SQ FT
5.5Ø	CONTN LD	-493.75 LBF/SQ FT
4.5Ø	CONTN LD	-551.25 LBF/SQ FT
3.5Ø	CONTN LD	-6Ø8.75 LBF/SQ FT
3.5Ø	CONTN LD	-6Ø8.75 LBF/SQ FT
2.5Ø	CONTN LD	-649.25 LBF/SQ FT
1.5Ø	CONTN LD	-689.75 LBF/SQ FT
1.5Ø	CONTN LD	-689.75 LBF/SQ FT
Ø.5Ø	CONTN LD	-73Ø.25 LBF/SQ FT
Ø.4Ø	CONTN LD	-734.44 LBF/SQ FT
-1.86	CONTN LD	Ø.ØØ LBF/SQ FT
-5.34	CONTN LD	1130.58 LBF/SQ FT
-5.34	CONTN LD	Ø.ØØ LBF/SQ FT

Z-22 PROPERTIES ARE AS FOLLOWS.

MOMENT OF INERTIA= 84.38 IN. TO THE 4TH PER FOOT OF WALL
CROSS SECTIONAL AREA= 6.47 SQ IN.
ELASTIC MODULUS= 29000000. LBF/SQ IN.
DEFLECTION REFERENCE IS AT -5.341

THE MAXIMUM BENDING MOMENT IS 9286.48 LBF-FT AND OCCURS AT 2.02
WHICH HAS THE SHEAR FORCE OF 0.33 LBF.

DISTANCE (FEET)	SHEAR FOR (LBF)	SHEAR STR (LBF/SQIN)	BENDING MOM (LBF-FT)	DEFLECTION FROM TANG. THRU DEFLE REFERENCE (INCHES)
13.600	0.0	0.0	0.0	0.5941
13.599	0.0	0.0	0.0	0.5941
13.000	11.2	1.7	2.2	0.5625
12.000	80.0	12.4	42.7	0.5099
11.000	211.2	32.7	183.1	0.4573
10.000	405.0	62.6	486.0	0.4048
9.000	661.2	102.2	1013.9	0.3527
8.000	980.0	151.5	1829.3	0.3014
7.000	1361.2	210.4	2994.7	0.2514
6.000	1805.0	279.0	4572.7	0.2035
5.500	2050.3	316.9	5535.8	0.1807
5.000	1796.2	277.7	6498.1	0.1589
4.000	1245.0	192.5	8023.5	0.1189
3.000	638.4	98.7	8969.3	0.0845
2.017	0.3	0.1	9286.5	0.0567
2.000	-10.9	-1.7	9286.4	0.0563
1.000	-700.6	-108.3	8934.0	0.0346
0.000	-1402.1	-216.7	7875.4	0.0191
-1.000	-1845.1	-285.2	6224.7	0.0092
-1.862	-1966.1	-303.9	4565.0	0.0041
-1.864	-1966.1	-303.9	4561.1	0.0041
-2.000	-1963.1	-303.5	4293.5	0.0036
-3.000	-1756.0	-271.4	2406.9	0.0010
-4.000	-1223.8	-189.2	890.0	0.0001
-5.000	-366.6	-56.7	67.7	0.0000
-5.340	-1.2	-0.2	4.1	0.0000
-5.341	0.0	0.0	0.0	0.0000

RUN COMPLETED

EOT..

$f_s = \frac{9286.48 \times 12}{18.1} = 6.156$ K.S.I. < 18 K.S.I. O.K.

$f_v = \frac{V}{A} = \frac{2050.3}{1.84} = 1.114$ K.S.I.

Q-File - (Q69 - 17th ST. CANAL Floodwall) ORLEANS SIDE

STA. 614+25 To STA. 625+25

Q-File -

LIST0089 Q69, Q-Case, FS=1.0, SWL- EL 13.6

```
1  10001 17TH STREET CANAL FLOODWALL
2  10002 STA.614+25 TO STA.625+25
3  10003                    3  0.13600000E+02  0.00000000E+01
4  10004                    3  0.12600000E+02  0.62500000E+02
5  10005                    3  0.11600000E+02  0.12500000E+03
6  10006                    3  0.10600000E+02  0.18750000E+03
7  10007                    3  0.96000000E+01  0.25000000E+03
8  10008                    3  0.86000000E+01  0.31250000E+03
9  10009                    3  0.76000000E+01  0.37500000E+03
10 10010                     3  0.66000000E+01  0.43750000E+03
11 10011                     3  0.65000000E+01  0.44375000E+03
12 10012                     3  0.65000000E+01  0.00000000E+01
13 10013                     3  0.65000000E+01 -0.55625000E+03
14 10014                     3  0.55000000E+01 -0.61375000E+03
15 10015                     3  0.45000000E+01 -0.67125000E+03
16 10016                     3  0.35000000E+01 -0.72875000E+03
17 10017                     3  0.35000000E+01 -0.72875000E+03
18 10018                     3  0.25000000E+01 -0.76925000E+03
19 10019                     3  0.17814065E+01 -0.79835304E+03
20 10020                     3  0.10177405E+01  0.00000000E+01
21 10021                     3 -0.92323799E+00  0.20291411E+04
22 10022                     4 -0.92323799E+00  0.00000000E+01
23 10023                     0 -0.92323799E+00  0.00000000E+01

24 10024  -0.92323799E+00  0.14901161E-07  0.21135420E+01
EOT..
```

Reqd tip El. -6.25 based on 2.5:1, penetration to head ratio.

Use -6.50

```
LIST PZ22
1 100 1 13.6 -.9232 1 -.9232 0 -1
2 200 PZ-22
3 300 29000000 6.4691 84.3818
E ..
```

```
LIST Q690
1
2                          BEAMS (SHEAR, MOMENT, DEFLECTION)
3
4
5    17TH STREET CANAL FLOODWALL
6      A.6
7
8   THE REFERENCE SYSTEM SELECTED DEFINES POSITIVE FORCES AS TO THE LEFT
9   INCREASING MEMBER COORDINATES AS UPWARD, AND POSITIVE MOMENTS
10   AS COUNTERCLOCKWISE.
11
12
13    THE MAXIMUM DEFLECTION IS    0.23 INCHES AND OCCURS AT MEMBER COORDINATE
14    13.60 FT.
15
16
17
18   Z-22           HAS BEEN GIVEN TO SUPPORT THE LOAD SYSTEM.
19
20   THE WEIGHT OF THIS VERTICAL MEMBER HAS BEEN NEGLECTED.
21
22
23         CALCULATED EXTERNAL LOADS

24
25   DISTANCE FROM    TYPE OF    MAGNITUDE OF
26   REFERENCE(FT)      LOAD             LOAD
27
28           -0.92  POINT LD         0.00 LBF
29           -0.92    COUPLE        -2.11 LBF-FT
30
31
32                  INPUTTED LOADS
33
34   DISTANCE FROM    TYPE OF    MAGNITUDE OF
35   REFERENCE(FT)      LOAD             LOAD
36
37           13.60  CONTN LD         0.00 LBF/SQ FT
38           12.60  CONTN LD        62.50 LBF/SQ FT
39           11.60  CONTN LD       125.00 LBF/SQ FT
40           10.60  CONTN LD       187.50 LBF/SQ FT
41            9.60  CONTN LD       250.00 LBF/SQ FT
42            8.60  CONTN LD       312.50 LBF/SQ FT
43            7.60  CONTN LD       375.00 LBF/SQ FT
44            6.60  CONTN LD       437.50 LBF/SQ FT
45            6.50  CONTN LD       443.75 LBF/SQ FT
46            6.50  CONTN LD         0.00 LBF/SQ FT
```

6.50	CONTN LD	-556.25	LBF/SQ FT
5.50	CONTN LD	-613.75	LBF/SQ FT
4.50	CONTN LD	-671.25	LBF/SQ FT
3.50	CONTN LD	-728.75	LBF/SQ FT
3.50	CONTN LD	-728.75	LBF/SQ FT
2.50	CONTN LD	-769.25	LBF/SQ FT
1.78	CONTN LD	-798.35	LBF/SQ FT
1.02	CONTN LD	0.00	LBF/SQ FT
-0.92	CONTN LD	2029.14	LBF/SQ FT
-0.92	CONTN LD	0.00	LBF/SQ FT

Z-22 PROPERTIES ARE AS FOLLOWS.

MOMENT OF INERTIA= 84.38 IN. TO THE 4TH PER FOOT OF WALL
CROSS SECTIONAL AREA= 6.47 SQ IN.
ELASTIC MODULUS= 29000000. LBF/SQ IN.
DEFLECTION REFERENCE IS AT -0.923

THE MAXIMUM BENDING MOMENT IS 5778.52 LBF-FT AND OCCURS AT 3.99
WHICH HAS THE SHEAR FORCE OF 0.18 LBF.

DISTANCE (FEET)	SHEAR FOR (LBF)	SHEAR STR (LBF/SQIN)	BENDING MOM (LBF-FT)	DEFLECTION FROM TANG. THRU DEFLE REFERENCE (INCHES)
13.600	0.0	0.0	0.0	0.2269
13.599	0.0	0.0	0.0	0.2269
13.000	11.2	1.7	2.2	0.2120
12.000	80.0	12.4	42.7	0.1872
11.000	211.2	32.7	183.1	0.1624
10.000	405.0	62.6	486.0	0.1378
9.000	661.2	102.2	1013.9	0.1136
8.000	980.0	151.5	1829.3	0.0901
7.000	1361.2	210.4	2994.7	0.0679
6.500	1575.3	243.5	3728.2	0.0576
6.000	1290.0	199.4	4445.2	0.0479
5.000	676.2	104.5	5433.1	0.0310
4.000	5.0	0.8	5778.5	0.0178
3.993	0.2	0.0	5778.5	0.0178
3.000	-721.6	-111.5	5424.3	0.0087
2.000	-1490.9	-230.5	4321.4	0.0033
1.019	-1969.3	-304.4	2552.3	0.0008

```
93     1.017     -1969.3      -304.4        2548.3     0.0008
94     1.000     -1969.1      -304.4        2515.4     0.0008
95     0.000     -1427.8      -220.7         729.8     0.0001
96    -0.922        -2.1        -0.3           2.1     0.0000
97    -0.923         0.0         0.0           0.0     0.0000
98
99
100
101   *RUN COMPLETED*
102
EOT..
```

D-File A-70 (17th ST. OUTFALL CANAL) ORLEANS SIDE

STA. 625+25 TO STA. 635+00

```
LIST 070
1 10001 17TH STREET CANAL FLOODWALL
2 10002 STA.625+25 TO STA..635+00
3 10003                    3  0.14100000E+02  0.00000000E+01
4 10004                    3  0.13100000E+02  0.62500000E+02
5 10005                    3  0.12100000E+02  0.12500000E+03
6 10006                    3  0.11100000E+02  0.18750000E+03
7 10007                    3  0.10100000E+02  0.25000000E+03
8 10008                    3  0.91000000E+01  0.31250000E+03
9 10009                    3  0.81000000E+01  0.37500000E+03
10 10010                    3  0.75000000E+01  0.41250000E+03
11 10011                    3  0.75000000E+01  0.00000000E+01
12 10012                    3  0.75000000E+01 -0.58750000E+03
13 10013                    3  0.65000000E+01 -0.64500000E+03
14 10014                    3  0.55000000E+01 -0.70250000E+03
15 10015                    3  0.45000000E+01 -0.76000000E+03
16 10016                    3  0.45000000E+01 -0.76000000E+03
17 10017                    3  0.35291519E+01 -0.81582376E+03
18 10018                    3  0.28082889E+01  0.00000000E+01
19 10019                    3  0.10670714E+01  0.19705916E+04
20 10020                    4  0.10670714E+01  0.00000000E+01
21 10021                    0  0.10670714E+01  0.00000000E+01
22 10022    0.10670714E+01 -0.33769675E+01  0.24161299E+01
EOT..
```

Required tip El. -5.0 based on 2.5 : 1 penetration to head ratio

use tip El -5.0

```
1 100 1 14.1 1.0671 1 1.0671 0 -1
2 200 PZ-22
3 300 29000000 6.4691 84.3818
EOT..
```

CORPS

```
LIST Q700
1
2                          BEAMS (SHEAR, MOMENT, DEFLECTION)
3
4
5    17TH STREET CANAL FLOODWALL
6      A.6
7
8   THE REFERENCE SYSTEM SELECTED DEFINES POSITIVE FORCES AS TO THE LEFT
9   INCREASING MEMBER COORDINATES AS UPWARD, AND POSITIVE MOMENTS
10   AS COUNTERCLOCKWISE.
11
12
13    THE MAXIMUM DEFLECTION IS    0.14 INCHES AND OCCURS AT MEMBER COORDINATE
14    14.10 FT.
15                                                    o.k.
16
17
18   Z-22            HAS BEEN GIVEN TO SUPPORT THE LOAD SYSTEM.
19
20   THE WEIGHT OF THIS VERTICAL MEMBER HAS BEEN NEGLECTED.
21
22
23         CALCULATED EXTERNAL LOADS

24
25   DISTANCE FROM    TYPE OF    MAGNITUDE OF
26   REFERENCE(FT)      LOAD           LOAD
27
28            1.07  POINT LD        3.38 LBF
2             1.07   COUPLE        -2.42 LBF-FT
30
31
32                  INPUTTED LOADS
33
34   DISTANCE FROM    TYPE OF    MAGNITUDE OF
35   REFERENCE(FT)      LOAD           LOAD
36
37           14.10  CONTN LD        0.00 LBF/SQ FT
38           13.10  CONTN LD       62.50 LBF/SQ FT
39           12.10  CONTN LD      125.00 LBF/SQ FT
40           11.10  CONTN LD      187.50 LBF/SQ FT
41           10.10  CONTN LD      250.00 LBF/SQ FT
42            9.10  CONTN LD      312.50 LBF/SQ FT
43            8.10  CONTN LD      375.00 LBF/SQ FT
44            7.50  CONTN LD      412.50 LBF/SQ FT
45            7.50  CONTN LD        0.00 LBF/SQ FT
46            7.50  CONTN LD     -587.50 LBF/SQ FT
```

47	6.50	CONTN LD	-645.00	LBF/SQ FT
48	5.50	CONTN LD	-702.50	LBF/SQ FT
49	4.50	CONTN LD	-760.00	LBF/SQ FT
50	4.50	CONTN LD	-760.00	LBF/SQ FT
51	3.53	CONTN LD	-815.82	LBF/SQ FT
52	2.81	CONTN LD	0.00	LBF/SQ FT
53	1.07	CONTN LD	1970.59	LBF/SQ FT
54	1.07	CONTN LD	0.00	LBF/SQ FT

Z-22 PROPERTIES ARE AS FOLLOWS.

MOMENT OF INERTIA= 84.38 IN. TO THE 4TH PER FOOT OF WALL
CROSS SECTIONAL AREA= 6.47 SQ IN.
ELASTIC MODULUS= 29000000. LBF/SQ IN.
DEFLECTION REFERENCE IS AT 1.067

THE MAXIMUM BENDING MOMENT IS 4469.15 LBF-FT AND OCCURS AT 5.41
WHICH HAS THE SHEAR FORCE OF 6.95 LBF.

DISTANCE (FEET)	SHEAR FOR (LBF)	SHEAR STR (LBF/SQIN)	BENDING MOM (LBF-FT)	DEFLECTION FROM TANG. THRU DEFLE REFERENCE (INCHES)
14.100	0.0	0.0	0.0	0.1403
14.099	0.0	0.0	0.0	0.1403
14.000	0.3	0.0	0.0	0.1387
13.000	37.8	5.8	13.9	0.1217
12.000	137.8	21.3	96.5	0.1047
11.000	300.3	46.4	310.3	0.0878
10.000	525.3	81.2	717.9	0.0712
9.000	812.8	125.6	1381.8	0.0551
8.000	1162.8	179.7	2364.4	0.0400
7.500	1361.2	210.4	2994.7	0.0331
7.000	1060.3	163.9	3600.7	0.0267
6.000	415.3	64.2	4343.3	0.0158
5.409	6.9	1.1	4469.2	0.0107
5.000	-287.2	-44.4	4412.2	0.0079
4.000	-1047.2	-161.9	3749.8	0.0030
3.000	-1698.2	-262.5	2328.0	0.0007
2.809	-1719.0	-265.7	2001.5	0.0005
2.807	-1719.0	-265.7	1998.1	0.0005
2.000	-1349.3	-208.6	710.0	0.0001

$f_b = \frac{4469.15 \times 12}{18.1}$

$= 2.962 < 18.5$ O.K.

```
93     1.068          -5.4          -0.8            2.4      0.0000
94     1.067           0.0           0.0            0.0      0.0000
95
96
97
98   *RUN COMPLETED*
99
EOT..
```

ORLEANS SIDE

Q-File (Q-70) 17th ST. OUTFALL CANAL

Sta. 635+00 to 642+00 B/L

```
1 10001 17TH STREET CANAL FLOODWALL
2 10002 STA.635+00 TO STA.642+00
3 10003                    3  0.14100000E+02  0.00000000E+01
4 10004                    3  0.13100000E+02  0.62500000E+02
5 10005                    3  0.12100000E+02  0.12500000E+03
6 10006                    3  0.11100000E+02  0.18750000E+03
7 10007                    3  0.10100000E+02  0.25000000E+03
8 10008                    3  0.95000000E+01  0.28750000E+03
9 10009                    3  0.95000000E+01  0.00000000E+01
10 10010                    3  0.95000000E+01 -0.91250000E+03
11 10011                    3  0.85000000E+01 -0.96700000E+03
12 10012                    3  0.82817371E+01 -0.97889533E+03
13 10013                    3  0.75807167E+01  0.00000000E+01
14 10014                    3  0.64877983E+01  0.15261363E+04
15 10015                    4  0.64877983E+01  0.00000000E+01
16 10016                    0  0.64877983E+01  0.00000000E+01
17 10017   0.64877983E+01  0.14901161E-07  0.13822856E+02
EOT..
```

required tip El 0.0 based on 2.5:1 penetration to lead ratio

Use tip El 0.0

```
LIST PZ22
1 100 1 14.1 6.4877 1 6.4877 0 -1
2 200 PZ-22
3 300 290000000 6.4691 84.3818
EOT..
```

```
CCORPSLLIST Q71
1 10001 17TH STREET CANAL FLOODWALL
2 10002 STA.635+00 TO STA.642+00
3 10003                    3  0.14100000E+02  0.00000000E+01
4 10004                    3  0.13100000E+02  0.62500000E+02
5 10005                    3  0.12100000E+02  0.12500000E+03
6 10006                    3  0.11100000E+02  0.18750000E+03
7 10007                    3  0.10100000E+02  0.25000000E+03
8 10008                    3  0.95000000E+01  0.28750000E+03
9 10009                    3  0.95000000E+01  0.00000000E+01
10 10010                    3  0.95000000E+01 -0.91250000E+03
11 10011                    3  0.85000000E+01 -0.96700000E+03
12 10012                    3  0.82817371E+01 -0.97889533E+03
13 10013                    3  0.75807167E+01  0.00000000E+01
14 10014                    3  0.64877983E+01  0.15261363E+04
15 10015                    4  0.64877983E+01  0.00000000E+01
16 10016                    0  0.64877983E+01  0.00000000E+01
17 10017   0.64877983E+01  0.14901161E-07  0.13822856E+02
EOT..
LIST Q710
1
2                        BEAMS (SHEAR, MOMENT, DEFLECTION)
3
4
5    17TH STREET CANAL FLOODWALL
6      A.6
7
8   THE REFERENCE SYSTEM SELECTED DEFINES POSITIVE FORCES AS TO THE LEFT
9   INCREASING MEMBER COORDINATES AS UPWARD, AND POSITIVE MOMENTS
10   AS COUNTERCLOCKWISE.
11
12
13    THE MAXIMUM DEFLECTION IS    0.01 INCHES AND OCCURS AT MEMBER COORDINATE
14    14.10 FT.
15
16
17
18   Z-22          HAS BEEN GIVEN TO SUPPORT THE LOAD SYSTEM.
19
20   THE WEIGHT OF THIS VERTICAL MEMBER HAS BEEN NEGLECTED.
21
22
23         CALCULATED EXTERNAL LOADS
```

O.K.

DISTANCE FROM REFERENCE(FT)	TYPE OF LOAD	MAGNITUDE OF LOAD
6.49	POINT LD	0.00 LBF
6.49	COUPLE	-13.82 LBF-FT

INPUTTED LOADS

DISTANCE FROM REFERENCE(FT)	TYPE OF LOAD	MAGNITUDE OF LOAD
14.10	CONTN LD	0.00 LBF/SQ FT
13.10	CONTN LD	62.50 LBF/SQ FT
12.10	CONTN LD	125.00 LBF/SQ FT
11.10	CONTN LD	187.50 LBF/SQ FT
10.10	CONTN LD	250.00 LBF/SQ FT
9.50	CONTN LD	287.50 LBF/SQ FT
9.50	CONTN LD	0.00 LBF/SQ FT
9.50	CONTN LD	-912.50 LBF/SQ FT
8.50	CONTN LD	-967.00 LBF/SQ FT
8.28	CONTN LD	-978.90 LBF/SQ FT
7.58	CONTN LD	0.00 LBF/SQ FT
6.49	CONTN LD	1526.14 LBF/SQ FT
6.49	CONTN LD	0.00 LBF/SQ FT

Z-22 PROPERTIES ARE AS FOLLOWS.

MOMENT OF INERTIA= 84.38 IN. TO THE 4TH PER FOOT OF WALL
CROSS SECTIONAL AREA= 6.47 SQ IN.
ELASTIC MODULUS= 29000000. LBF/SQ IN.
DEFLECTION REFERENCE IS AT 6.488

THE MAXIMUM BENDING MOMENT IS 1250.12 LBF-FT AND OCCURS AT 8.78
WHICH HAS THE SHEAR FORCE OF -7.90 LBF.

DISTANCE (FEET)	SHEAR FOR (LBF)	SHEAR STR (LBF/SQIN)	BENDING MOM (LBF-FT)	DEFLECTION FROM TANG. THRU DEFLE REFERENCE (INCHES)
14.100	0.0	0.0	0.0	0.0123

By Inspection

$f_b < 18.5$

O.K.

70	14.099	0.0	0.0	0.0	0.0123
71	14.000	0.3	0.0	0.0	0.0121
72	13.000	37.8	5.8	13.9	0.0096
73	12.000	137.8	21.3	96.5	0.0071
74	11.000	300.3	46.4	310.3	0.0048
75	10.000	525.3	81.2	717.9	0.0026
76	9.500	661.2	102.2	1013.9	0.0017
77	9.000	198.2	30.6	1229.3	0.0010
78	8.782	-7.9	-1.2	1250.1	0.0008
79	8.000	-711.2	-109.9	954.0	0.0002
80	7.582	-834.0	-128.9	622.3	0.0001
81	7.580	-834.0	-128.9	620.6	0.0001
82	7.000	-598.5	-92.5	182.7	0.0000
83	6.489	-1.4	-0.2	13.8	0.0000
84	6.488	0.0	0.0	0.0	0.0000
85					
86					
87					
88	*RUN COMPLETED*				
89					

EOT..

Q-File Q-72 (17th St. OUTFALL CANAL) ORLEANS SIDE

STA. 642+00 TO STA. 663+00

```
1 10001 17TH STREET CANAL FLOODWALL
2 10002 STA.642+00 TO STA.663+00
3 10003                    3  0.14600000E+02  0.00000000E+01
4 10004                    3  0.13600000E+02  0.62500000E+02
5 10005                    3  0.12600000E+02  0.12500000E+03
6 10006                    3  0.12000000E+02  0.16250000E+03
7 10007                    3  0.12000000E+02  0.00000000E+01
8 10008                    3  0.12000000E+02 -0.10375000E+04
9 10009                    3  0.11666735E+02 -0.10556629E+04
10 10010                    3  0.11395166E+02  0.00000000E+01
11 10011                    3  0.11015017E+02  0.14777430E+04
12 10012                    4  0.11015017E+02  0.00000000E+01
13 10013                    0  0.11015017E+02  0.00000000E+01
14 10014   0.11015017E+02  0.89406967E-07  0.61046655E+02
EOT..
```

Required tip El. 0.0 based on 2.5:1 penetration to lead ratio.

use tip El. 0.0

```
LIST PZ22
1 100 1 14.6 11.015 1 11.015 0 -1
2 200 PZ-22
3 300 290000000 6.4691 84.3818
EOT..
```

```
LIST 0720
1
2                        BEAMS (SHEAR, MOMENT, DEFLECTION)
3
4
5    17TH STREET CANAL FLOODWALL
6      A.6
7
8   THE REFERENCE SYSTEM SELECTED DEFINES POSITIVE FORCES AS TO THE LEFT
9   INCREASING MEMBER COORDINATES AS UPWARD, AND POSITIVE MOMENTS
10   AS COUNTERCLOCKWISE.
11
12
13    THE MAXIMUM DEFLECTION IS    0.00 INCHES AND OCCURS AT MEMBER COORDINATE
14    14.60 FT.
15
16
17
18   Z-22          HAS BEEN GIVEN TO SUPPORT THE LOAD SYSTEM.
19
20   THE WEIGHT OF THIS VERTICAL MEMBER HAS BEEN NEGLECTED.
21
22
23         CALCULATED EXTERNAL LOADS

24
25   DISTANCE FROM    TYPE OF    MAGNITUDE OF
26   REFERENCE(FT)     LOAD             LOAD
27
28           11.02  POINT LD        0.00 LBF
29           11.02   COUPLE       -61.05 LBF-FT
30
31
32                INPUTTED LOADS
33
34   DISTANCE FROM    TYPE OF    MAGNITUDE OF
35   REFERENCE(FT)     LOAD             LOAD
36
37           14.60  CONTN LD        0.00 LBF/SQ FT
38           13.60  CONTN LD       62.50 LBF/SQ FT
39           12.60  CONTN LD      125.00 LBF/SQ FT
40           12.00  CONTN LD      162.50 LBF/SQ FT
41           12.00  CONTN LD        0.00 LBF/SQ FT
42           12.00  CONTN LD    -1037.50 LBF/SQ FT
43           11.67  CONTN LD    -1055.66 LBF/SQ FT
44           11.40  CONTN LD        0.00 LBF/SQ FT
45           11.02  CONTN LD     1477.74 LBF/SQ FT
46           11.02  CONTN LD        0.00 LBF/SQ FT
```

Z-22 PROPERTIES ARE AS FOLLOWS.

MOMENT OF INERTIA= 84.38 IN. TO THE 4TH PER FOOT OF WALL
CROSS SECTIONAL AREA= 6.47 SQ IN.
ELASTIC MODULUS= 29000000. LBF/SQ IN.
DEFLECTION REFERENCE IS AT 11.015

THE MAXIMUM BENDING MOMENT IS 202.83 LBF-FT AND OCCURS AT 11.74
WHICH HAS THE SHEAR FORCE OF -59.50 LBF.

DISTANCE (FEET)	SHEAR FOR (LBF)	SHEAR STR (LBF/SQIN)	BENDING MOM (LBF-FT)	DEFLECTION FROM TANG. THRU DEFLE REFERENCE (INCHES)
14.600	0.0	0.0	0.0	0.0005
14.599	0.0	0.0	0.0	0.0005
14.000	11.2	1.7	2.2	0.0004
13.000	80.0	12.4	42.7	0.0002
12.000	211.2	32.7	183.1	0.0000
11.741	-59.5	-9.2	202.8	0.0000
11.396	-280.9	-43.4	132.5	0.0000
11.394	-280.9	-43.4	132.0	0.0000
11.016	-1.5	-0.2	61.0	0.0000
11.015	0.0	0.0	0.0	0.0000

RUN COMPLETED

EOT..

By inspection $F_b < 18.5$
O.K.

ORLEANS SIDE

Q-FILE - Q-73 (17th ST. OUTFALL CANAL)

STA. 663+00 TO STA. 670+63

```
LIST Q73
1 10001 17TH STREET CANAL FLOODWALL
2 10002 STA.663+00 TO STA. 670+63
3 10003                    3  0.14600000E+02  0.00000000E+01
4 10004                    3  0.13600000E+02  0.62500000E+02
5 10005                    3  0.12600000E+02  0.12500000E+03
6 10006                    3  0.11600000E+02  0.18750000E+03
7 10007                    3  0.11000000E+02  0.22500000E+03
8 10008                    3  0.11000000E+02  0.00000000E+01
9 10009                    3  0.11000000E+02 -0.97500000E+03
10 10010                    3  0.10229542E+02 -0.10169900E+04
11 10011                    3  0.97923208E+01  0.00000000E+01
12 10012                    3  0.90832776E+01  0.16492565E+04
13 10013                    4  0.90832776E+01  0.00000000E+01
14 10014                    0  0.90832776E+01  0.00000000E+01
15 10015   0.90832776E+01  0.29802322E-07  0.48744224E+01
EOT..
```

Required tip El. 0.0 based on 2.5 : 1 penetration to head ratio.

use tip El 0.0

```
LIST PZ22
1 100 1 14.6 9.0832 1 9.0832 0 -1
2 200 PZ-22
3 300 29000000 6.4691 84.3818
EOT..
```

LIST 0730

BEAMS (SHEAR, MOMENT, DEFLECTION)

17TH STREET CANAL FLOODWALL
A.6

THE REFERENCE SYSTEM SELECTED DEFINES POSITIVE FORCES AS TO THE LEFT INCREASING MEMBER COORDINATES AS UPWARD, AND POSITIVE MOMENTS AS COUNTERCLOCKWISE.

THE MAXIMUM DEFLECTION IS 0.00 INCHES AND OCCURS AT MEMBER COORDINATE 14.60 FT.

Z-22 HAS BEEN GIVEN TO SUPPORT THE LOAD SYSTEM.

THE WEIGHT OF THIS VERTICAL MEMBER HAS BEEN NEGLECTED.

CALCULATED EXTERNAL LOADS

DISTANCE FROM REFERENCE(FT)	TYPE OF LOAD	MAGNITUDE OF LOAD
9.08	POINT LD	0.00 LBF
9.08	COUPLE	-4.87 LBF-FT

INPUTTED LOADS

DISTANCE FROM REFERENCE(FT)	TYPE OF LOAD	MAGNITUDE OF LOAD
14.60	CONTN LD	0.00 LBF/SQ FT
13.60	CONTN LD	62.50 LBF/SQ FT
12.60	CONTN LD	125.00 LBF/SQ FT
11.60	CONTN LD	187.50 LBF/SQ FT
11.00	CONTN LD	225.00 LBF/SQ FT
11.00	CONTN LD	0.00 LBF/SQ FT
11.00	CONTN LD	-975.00 LBF/SQ FT
10.23	CONTN LD	-1016.99 LBF/SQ FT
9.79	CONTN LD	0.00 LBF/SQ FT
9.08	CONTN LD	1649.26 LBF/SQ FT

9.08 CONTN LD 0.00 LBF/SQ FT

Z-22 PROPERTIES ARE AS FOLLOWS.

MOMENT OF INERTIA= 84.38 IN. TO THE 4TH PER FOOT OF WALL
CROSS SECTIONAL AREA= 6.47 SQ IN.
ELASTIC MODULUS= 29000000. LBF/SQ IN.
DEFLECTION REFERENCE IS AT 9.083

THE MAXIMUM BENDING MOMENT IS 569.27 LBF-FT AND OCCURS AT 10.57
WHICH HAS THE SHEAR FORCE OF -20.35 LBF.

DISTANCE (FEET)	SHEAR FOR (LBF)	SHEAR STR (LBF/SQIN)	BENDING MOM (LBF-FT)	DEFLECTION FROM TANG. THRU DEFLE REFERENCE (INCHES)
14.600	0.0	0.0	0.0	0.0030
14.599	0.0	0.0	0.0	0.0030
14.000	11.2	1.7	2.2	0.0025
13.000	80.0	12.4	42.7	0.0017
12.000	211.2	32.7	183.1	0.0009
11.000	405.0	62.6	486.0	0.0003
10.569	-20.4	-3.1	569.3	0.0002
10.000	-534.5	-82.6	399.2	0.0000
9.793	-584.7	-90.4	281.8	0.0000
9.791	-584.7	-90.4	280.7	0.0000
9.084	-1.5	-0.2	4.9	0.0000
9.083	0.0	0.0	0.0	0.0000

RUN COMPLETED

EOT..

By inspection $t_b < 18.50$ O.K.