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J. M. KULICKI

40007087

MODJESKI AND MASTERS

CONSULTING ENGINEERS

Founded 1893

1055 ST CHARLES AVE
NEW ORLEANS LA 70130
TELEPHONE 504 - 524-4344

ASSOCIATES

H. E. ECKHOFF
T. Y. BOONG
J. E. PRICKETT
B. P. STRAIN, JR.
D. F. SORGENFREI
B. T. MARTIN, JR.
J. L. MCKENNEY
G. A. MURRAY
D. H. LEROY
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E. W. ROHRBAUGH

September 19, 1986

SENIOR ASSOCIATES

R. W. CHRISTIE
T. SHINTAKU
C. T. FORTRAN
J. R. BOWDEN
H. E. WALDNER

Mr. Frederick M. Chatry
Dept. of the Army, N. O. District
Corps of Engrs.
P. O. Box 60267
New Orleans, LA 70160-0267

Re: Your letter of September 8, 1986
A Study of High Level Flood Protection
17th St. Canal

Dear Mr. Chatry:

We have the following responses to your comment above referenced letter:

Your comment 1. We acknowledge and appreciate your comments regarding the flowline.

Your comment 2. We agree that the flood gates at Veterans Highway are cheaper than sealing the bridge. However due to the objections of numerous public agencies such as the Orleans Department of Streets and the wishes of the Orleans Levee Board the use of flood gates is not considered a "desirable" alternative. It appears that the answer to the question "Which is the best?" may have to be based on criteria other than cost.

Your comment 4. In the final design all top of wall elevations in the vicinity of the bridges will be increased 6" as per your directions. An addendum to the report will be prepared to reflect this change.

Your comment 5. The computer printout provided your office by our letter of July 29, 1986 inadvertently listed an iteration that does not meet your minimum spacing requirement for the active and passive wedge. According to your Foundation and Materials Section the distance between

Mr. Chatry
Mr. [unclear]
Mr. Harrington
3010
E-1271

MODJESKI AND MASTERS

-2- September 19, 1986

Mr. Frederick M. Chatry
New Orleans

the active and passive wedge must be at least .7 of the height of the active wedge. The trial that yielded a factor of safety of 1.278 for Station 554+00 to Station 574+00 did not meet that spacing requirement and should have been discarded. We have attached a corrected copy of the soils analysis for that reach of the canal showing that the factor of safety is actually 1.343. We apologize for any confusion this may have caused.

Your comment 6. Full depth borings will be taken prior to final design for this bridge. If the final design yields steel pipe piles as the most desirable alternative they will be fabricated with steel containing .2% copper and will be epoxy coated to prevent erosion.

Your comment 7. All discussions will be corrected to reference elevations in N.G.V.D.

We trust that the above will meet your approval. Once we receive your approval we will make the appropriate corrections to the referenced report.

We greatly appreciate your rapid response to our submittal of July 29 and will render any additional assistance that you may need in this matter.

Very truly yours,
MODJESKI AND MASTERS - Engineers


Barney I. Martin, Jr.

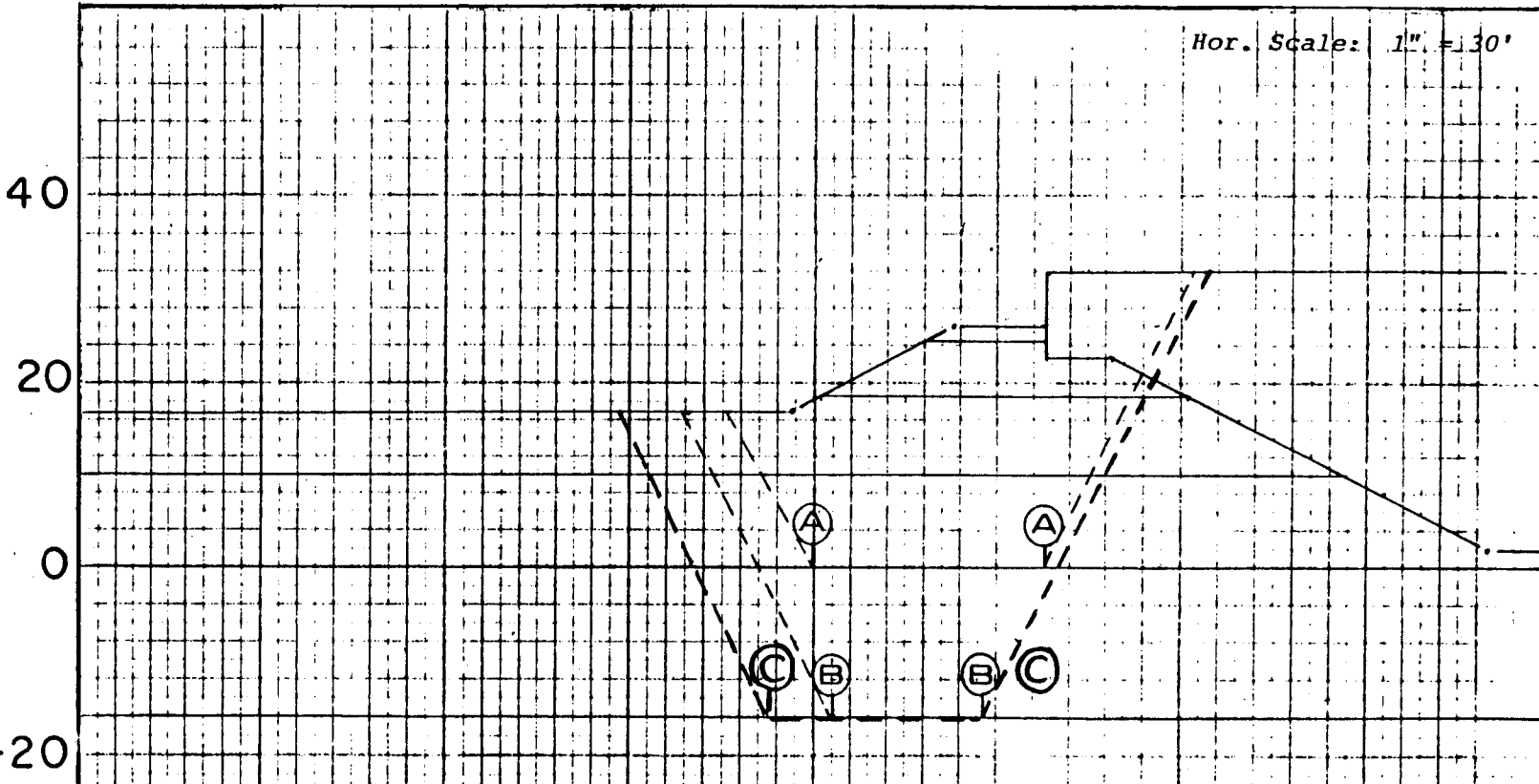
BTMjr:bw

cc: Mr. Ed Bailey
Mr. John Holtgreve

STA. 554+00 TO STA. 574+00

ELEVATION IN FEET - C.D.

Hor. Scale: 1" = 130'



TYPICAL COMPUTER ANALYSIS

SURFACE		DRIVING FORCE			RESISTING FORCE			ΣR	FACTOR OF SAFETY
NO.	EL.	D _A	D _P	ΣD	R _A	R _B	R _P		
AA	0.0	38313	11225	27088	12293	14440	10240	36973	1.365
BB	-16.0	77138	34040	43098	23175	9500	22400	55075	1.278
CC	-16.0	22138	15306	73032	23175	1300	22400	58875	1.343

Does Not Meet R_B Spacing Requirement

MRC 8836 LJN
 STA 576+00 LANDSIDE

0. 32. 102. 32. 102.1 26. 112. 26.
 116. 24. 122. 21. 128. 21. 136. 18.5
 0. 2. 30. 2. 54. 10. 80. 18.5
 91. 22.5 101.9 22.5 102. 24. 102.1 26.
 0. 2. 30. 2. 54. 10. 80. 18.5
 91. 22.5 101.9 22.5 102. 24. 116. 24.
 0. 2. 30. 2. 54. 10. 80. 18.5
 0. 2. 30. 2. 54. 10. 400. 10.

*** STRATUM 4 ELEV. = 10.00 FT. ***

ACT. RANGE 102.0 FT. TO 122.0 FT. CRIT. PASS 140.00 FT. 4 PASS. WEDGES

DIST.	DA	RA	RB	DP	RP	F.S.
102.00	18206.98	8360.11	10640.00	2479.25	3640.01	1.4375
107.00	17259.35	8760.01	9240.00	2479.25	3640.01	1.4641
112.00	16285.35	8760.01	7840.00	2479.25	3640.01	1.4660
117.00	14428.72	11212.41	6440.00	2479.25	3640.01	1.7819
122.00	10499.44	12260.02	5040.00	2479.25	3640.01	2.6109

** CRIT. ACT. WEDGE 102.00 FT. FROM ORIGIN **

**** PASSIVE WEDGE 130.00 FT. FROM ORIGIN **

$$FS = \frac{RA = 8360.1 + RB = 7840.0 + RP = 4480.0 \quad \text{SUM } R = 20680.1}{DA = 18207.0 - DP = 4230.1 \quad \text{SUM } D = 13976.8} = 1.480$$

**** PASSIVE WEDGE 135.00 FT. FROM ORIGIN **

$$RA = 8360.1 + RB = 9240.0 + RP = 7099.9 \quad \text{SUM } R = 24699.0$$

*** PASSIVE WEDGE 140.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 8360.1 + RB= 10640.0 + RP= 3640.0 \quad \text{SUM R}= 22640.1}{DA= 18207.0 - DP= 2479.2 \quad \text{SUM D}= 15727.7} = 1.440$$

*** PASSIVE WEDGE 145.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 8360.1 + RB= 12040.0 + RP= 3640.0 \quad \text{SUM R}= 24040.1}{DA= 18207.0 - DP= 2181.7 \quad \text{SUM D}= 16025.3} = 1.500$$

*** STRATUM 5 ELEV. = 0.00 FT. ***

ACT. RANGE 102.0 FT. TO 122.0 FT. CRIT. PASS 140.00 FT. 6 PASS. WEDGES

DIST.	DA	RA	RB	DP	RP	F.S.
102.00	38313.08	12293.37	14440.00	11224.73	10240.02	1.3649
107.00	37844.79	13626.62	12540.00	11224.73	10240.02	1.3676
112.00	37090.60	14960.00	10640.00	11224.73	10240.02	1.3856
117.00	35383.26	15360.02	8740.00	11224.73	10240.02	1.4214
122.00	32306.10	15359.97	6840.00	11224.73	10240.02	1.5388

** CRIT. ACT. WEDGE 102.00 FT. FROM ORIGIN ***

*** PASSIVE WEDGE 125.00 FT. FROM ORIGIN ***

S = ----- = 1.403
DA= 38313.1 - DP= 15761.8 SUM D= 22551.3

*** PASSIVE WEDGE 130.00 FT. FROM ORIGIN ***

RA= 12293.4 + RB= 10640.0 + RP= 10240.0 SUM R= 33173.4
FS = ----- = 1.345
DA= 38313.1 - DP= 13655.5 SUM D= 24657.6

*** PASSIVE WEDGE 135.00 FT. FROM ORIGIN ***

RA= 12293.4 + RB= 12540.0 + RP= 10240.0 SUM R= 35073.4
FS = ----- = 1.336
DA= 38313.1 - DP= 12065.0 SUM D= 26248.1

*** PASSIVE WEDGE 140.00 FT. FROM ORIGIN ***

RA= 12293.4 + RB= 14440.0 + RP= 10240.0 SUM R= 36973.4
FS = ----- = 1.365
DA= 38313.1 - DP= 11224.7 SUM D= 27088.3

*** PASSIVE WEDGE 145.00 FT. FROM ORIGIN ***

RA= 12293.4 + RB= 16340.0 + RP= 10240.0 SUM R= 38873.4
FS = ----- = 1.419
DA= 38313.1 - DP= 10924.4 SUM D= 27388.7

*** PASSIVE WEDGE 150.00 FT. FROM ORIGIN ***

*** STRATUM 6 ELEV. = -16.00 FT. ***

ACT. RANGE 102.0 FT. TO 122.0 FT. CRIT. PASS 140.00 FT. 5 PASS. WEDGES

SHEAR STRENGTH ALONG BASE

DISTANCE	NO. 6	NO. 7	USED
102.00	380.00	1725.12	380.00
102.10	380.00	1577.32	380.00
112.00	380.00	1577.32	380.00
116.00	380.00	1438.76	380.00
122.00	380.00	1260.36	380.00
128.00	380.00	1260.36	380.00
136.00	380.00	1111.69	380.00
140.00	380.00	1052.22	380.00
146.00	380.00	992.75	380.00
400.00	380.00	992.75	380.00

DIST.	DA	RA	RB	DP	RP	F.S.
102.00	76672.84	21795.39	14440.00	33613.80	22400.03	1.3617
107.00	77040.06	22485.21	12540.00	33613.80	22400.03	1.3224
112.00	77137.87	23175.28	10640.00	33613.80	22400.03	1.2916
117.00	76234.73	24186.66	8740.00	33613.80	22400.03	1.2981
122.00	73705.84	25520.04	6840.00	33613.80	22400.03	1.3659

** CRIT. ACT. WEDGE 112.00 FT. FROM ORIGIN **

**** PASSIVE WEDGE 137.00 FT. FROM ORIGIN ***

Distance between Active + passive wedge = 25' → N.G.

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 23175.3 + \text{RB} = 9500.0 + \text{RP} = 22400.0}{\text{DA} = 77137.9 - \text{DP} = 34039.9} = \frac{\text{SUM R} = 55075.3}{\text{SUM D} = 43098.0} = 1.278
 \end{aligned}$$

**** PASSIVE

WEDGE 142.00 FT. FROM ORIGIN ***

Distance between the Active & Passive Wedge = 30' N.G.

$$FS = \frac{RA= 23175.3 + RB= 11400.0 + RP= 22400.0 \quad \text{SUM R}= 56975.3}{DA= 77137.9 - DP= 33442.2 \quad \text{SUM D}= 43695.6} = 1.304$$

**** PASSIVE

WEDGE 147.00 FT. FROM ORIGIN ***

Distance between the Active & Passive Wedge = 35' Good!

$$FS = \frac{RA= 23175.3 + RB= 13300.0 + RP= 22400.0 \quad \text{SUM R}= 58875.3}{DA= 77137.9 - DP= 33305.6 \quad \text{SUM D}= 43832.2} = 1.343$$

**** PASSIVE

WEDGE 152.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 23175.3 + RB= 15200.0 + RP= 22400.0 \quad \text{SUM R}= 60775.3}{DA= 77137.9 - DP= 33304.4 \quad \text{SUM D}= 43833.5} = 1.387$$

**** PASSIVE

WEDGE 157.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 23175.3 + RB= 17100.0 + RP= 22400.0 \quad \text{SUM R}= 62675.3}{DA= 77137.9 - DP= 33307.4 \quad \text{SUM D}= 43830.5} = 1.430$$

WEDGE LOCATED ACT PAS	FAIL ELEV	RESISTING FORCES				DRIVING FORCES			FACTOR OF SAFETY
		RA	RB	RP	SUM R	DA	-DP	SUM D	
102 130	10.0	8360.	7840.	4480.	20680.	18207.	4230.	13977.	1.480
102 135	10.0	8360.	9240.	4000.	21600.	18207.	3173.	15034.	1.437
102 140	10.0	8360.	10640.	3640.	22640.	18207.	2479.	15728.	1.440
102 145	10.0	8360.	12040.	3640.	24040.	18207.	2182.	16025.	1.500
102 125	0.0	12293.	8740.	10600.	31633.	38313.	15762.	22551.	1.403
102 130	0.0	12293.	10640.	10240.	33173.	38313.	13655.	24658.	1.345
102 135	0.0	12293.	12540.	10240.	35073.	38313.	12065.	26248.	1.336
102 140	0.0	12293.	14440.	10240.	36973.	38313.	11225.	27088.	1.365
102 145	0.0	12293.	16340.	10240.	38873.	38313.	10824.	27389.	1.419

102	145	0.0	12293.	16340.	10240.	38873.	38313.	10921.	27389.	1.419
107	150	0.0	12293.	18240.	10240.	40773.	38313.	10916.	27397.	1.488
112	137	-16.0	23175.	9500.	22400.	55075.	77138.	34040.	43098.	1.278 88
112	142	-16.0	23175.	11400.	22400.	56975.	77138.	33442.	43696.	1.304
112	147	-16.0	23175.	13300.	22400.	58875.	77138.	33306.	43832.	1.343 88
112	152	-16.0	23175.	15200.	22400.	60775.	77138.	33304.	43833.	1.387
112	157	-16.0	23175.	17100.	22400.	62675.	77138.	33307.	43831.	1.430

ELAPSED CPU TIME 69.2 SECONDS \$ 13.84 FOR USER LJN

*** PASSIVE WEDGE 140.00 FT. FROM ORIGIN ***

$$\begin{array}{r}
 \text{RA} = 15193.3 + \text{RB} = 11060.0 + \text{RP} = 5940.0 \quad \text{SUM R} = 35193.3 \\
 \text{FS} = \frac{\text{DA} = 23897.9 - \text{DP} = 2203.4}{\text{SUM D} = 21694.5} = 1.622
 \end{array}$$

*** PASSIVE WEDGE 145.00 FT. FROM ORIGIN ***