

DISPOSITION FORM (ADD 7/38)

For use of this form, see AR 340-15; the proponent agency is TAGO.

REFERENCE OR OFFICE SYMBOL LMNED-SP	SUBJECT Survey Plots - 17th St, Outfall Canal GDM - Lake Pontchartrain, La. & Vicinity (High Level Plan)
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TO <input checked="" type="checkbox"/> C/Des Br <input type="checkbox"/> C/F&M Br <input type="checkbox"/> C/Hyd & Hydro Br	FROM C/Des Svcs Br	DATE 26 Mar 86 <i>W.F.T.</i> Mr. Teckemeyer/dn/2611	CMT 1
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1. Enclosed are survey plots (traverse and cross-sections) for the subject GDM for your use and information.
2. If you have any questions, please contact Mr. Walter Teckemeyer on Ext. 2611.

Encl
Survey Plots

Thomas E. Harrington, Jr.
THOMAS E. HARRINGTON, JR.
Chief, Design Services Branch

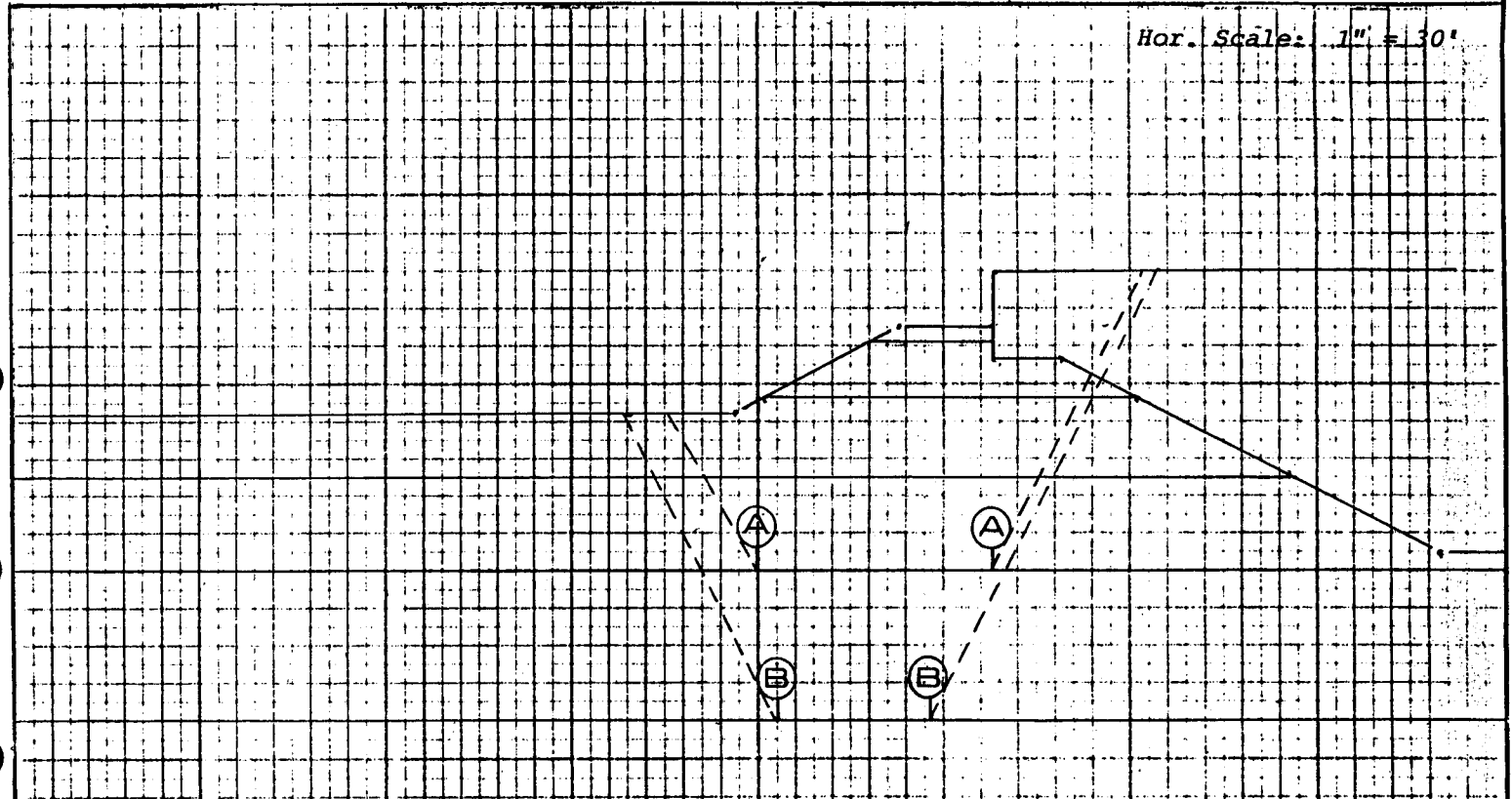
JUDLIN	MARSALONE	CINDY	<i>Ronero</i> DD	DE	DG	DL	DR	DW						SUSPENSE	RELEASE	FILE	DESTROY

STA. 554+00 TO STA. 574+00

ELEVATION IN FEET - C.D.

40
20
0
-20

Hor. Scale: 1" = 30'



TYPICAL COMPUTER ANALYSIS

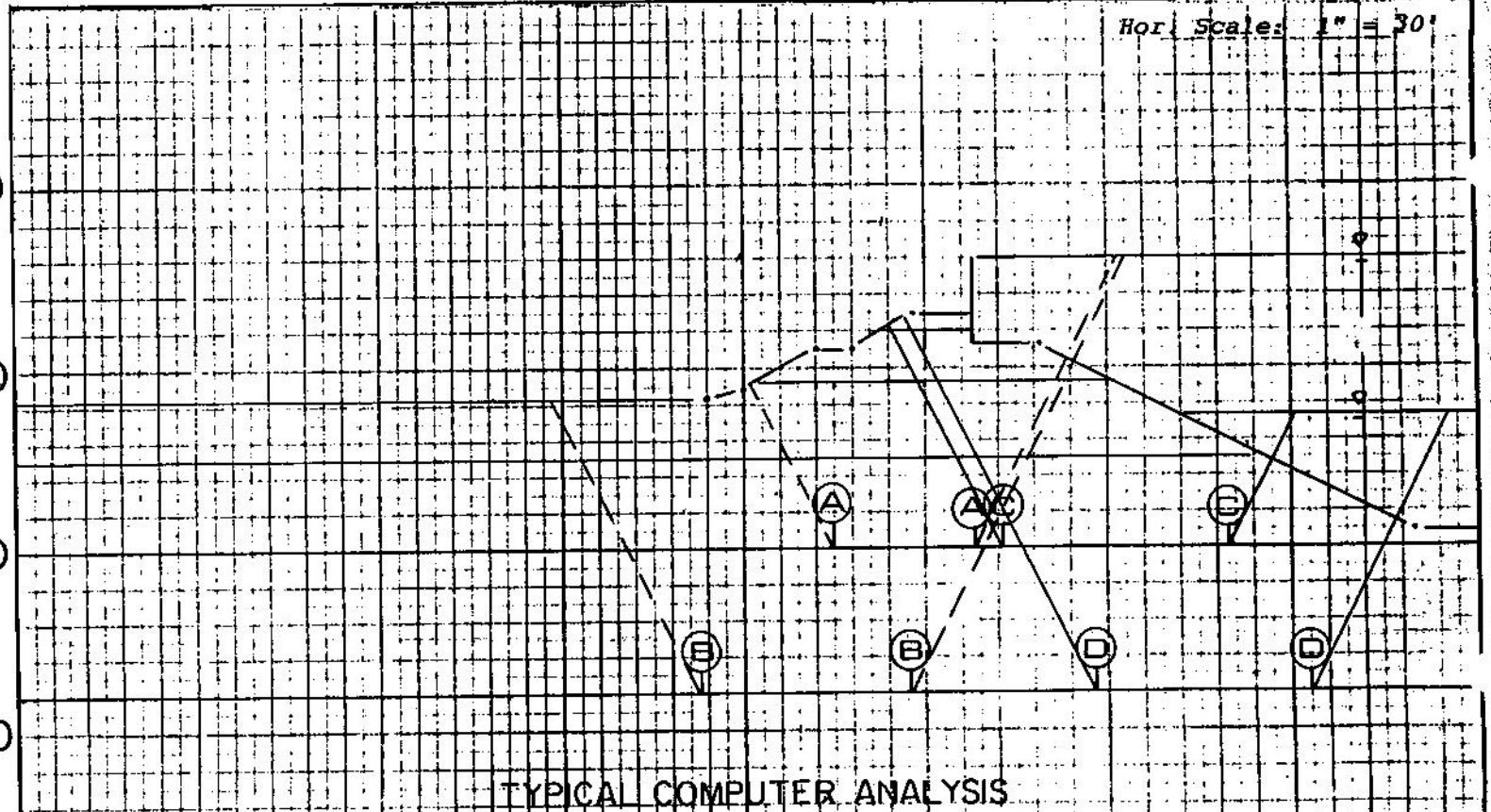
SURFACE		DRIVING FORCE			RESISTING FORCE			ΣR	FACTOR OF SAFETY
NO.	E.	D _A	D _P	ΣD	R _A	R _B	R _P		
AA	0.0	38313	11225	27088	12293	14440	10240	36973	1.365
BB	-16.0	77138	34040	43098	23175	9500	22400	55075	1.278

STA. 574+00 TO STA. 589+00

ELEVATION IN FEET - C.D.

40
20
0
-20

Hor. Scale: 1" = 30'



TYPICAL COMPUTER ANALYSIS

SURFACE		DRIVING FORCE			RESISTING FORCE			ΣR	FACTOR OF SAFETY
		NO.	EL.	D _A	D _P	ΣD	R _A		
AA	0.0	38318	15762	22551	12293	8740	10600	31633	1.403
BB	-16.0	77138	33306	43832	28175	13800	22400	58875	1.343
CC	0.0	23898	2203	21695	15193	14060	5940	35193	1.622
DD	-16.0	49172	8485	40688	27020	13300	13480	53800	1.322

MRC 8836 L J N
 STA 576+00 CANALSIDE

0. 16.5 54. 16.5 60. 17.5 63. 18.5
 72. 21. 78. 21. 84. 24. 88. 26.
 97.9 26. 98. 24. 98.1 22.5 109. 22.5
 120. 18.5 129. 15.5 146. 10. 170. 2.
 0. 16.5 54. 16.5 60. 17.5 63. 18.5
 72. 21. 78. 21. 84. 24. 98. 24.
 0. 16.5 54. 16.5 60. 17.5 63. 18.5

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

ACT. RANGE 98.0 FT. TO 118.0 FT. CRIT. PASS 160.00 FT. 6 PASS. WEDGES

DIST.	DA	RA	RB	DP	RP	F.S.
98.00	23391.02	13860.02	23560.00	436.21	2640.00	1.7452
103.00	23897.91	15193.27	21660.00	436.21	2640.00	1.6833
108.00	23554.48	16860.02	19760.00	436.21	2640.00	1.6982
113.00	21981.31	18526.65	17860.00	436.21	2640.00	1.8114
118.00	18809.55	18860.03	15960.00	436.21	2640.00	2.0388

** CRIT. ACT. WEDGE 103.00 FT. FROM ORIGIN ***

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

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 15193.3 + \text{RB} = 14060.0 + \text{RP} = 5940.0}{\text{DA} = 23897.9 - \text{DP} = 2203.4} = \frac{\text{SUM R} = 35193.3}{\text{SUM D} = 21694.5} = 1.622
 \end{aligned}$$

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

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 15193.3 + \text{RB} = 15960.0 + \text{RP} = 5115.0}{\text{DA} = 23897.9 - \text{DP} = 1639.2} = \frac{\text{SUM R} = 36268.3}{\text{SUM D} = 22258.7} = 1.629
 \end{aligned}$$

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

$$\text{FS} = \frac{\text{RA} = 15193.3 + \text{RB} = 17860.0 + \text{RP} = 4290.2 \quad \text{SUM R} = 37343.4}{\text{DA} = 23897.9 - \text{DP} = 1152.5 \quad \text{SUM D} = 22745.4} = 1.642$$

*** PASSIVE WEDGE 155.00 FT. FROM ORIGIN ***

$$\text{FS} = \frac{\text{RA} = 15193.3 + \text{RB} = 19760.0 + \text{RP} = 3465.1 \quad \text{SUM R} = 38418.3}{\text{DA} = 23897.9 - \text{DP} = 752.3 \quad \text{SUM D} = 23145.7} = 1.660$$

*** PASSIVE WEDGE 160.00 FT. FROM ORIGIN ***

$$\text{FS} = \frac{\text{RA} = 15193.3 + \text{RB} = 21660.0 + \text{RP} = 2640.0 \quad \text{SUM R} = 39493.3}{\text{DA} = 23897.9 - \text{DP} = 436.2 \quad \text{SUM D} = 23461.7} = 1.683$$

*** PASSIVE WEDGE 165.00 FT. FROM ORIGIN ***

$$\text{FS} = \frac{\text{RA} = 15193.3 + \text{RB} = 23560.0 + \text{RP} = 1815.1 \quad \text{SUM R} = 40568.3}{\text{DA} = 23897.9 - \text{DP} = 205.6 \quad \text{SUM D} = 23692.3} = 1.712$$

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

ACT. RANGE 98.0 FT. TO 123.0 FT. CRIT. PASS 153.00 FT. 7 PASS. WEDGES

SHEAR STRENGTH ALONG BASE

DISTANCE	NO. 6	NO. 7	USED
98.00	380.00	1241.88	380.00
98.10	380.00	1152.68	380.00
109.00	380.00	1152.68	380.00
120.00	380.00	914.81	380.00
129.00	380.00	736.41	380.00
146.00	380.00	606.22	380.00
170.00	380.00	416.85	380.00
400.00	380.00	416.85	380.00

DIST.	DA	RA	RB	DP	RP	F.S.
98.00	46392.73	23628.55	20900.00	8484.51	13480.02	1.5302
103.00	48123.66	24715.59	19000.00	8484.51	13480.02	1.4429
108.00	49288.80	25802.63	17100.00	8484.51	13480.02	1.3818
113.00	49771.86	26020.04	15200.00	8484.51	13480.02	1.3249
118.00	49172.24	27020.16	13300.00	8484.51	13480.02	1.3223
123.00	46859.65	28686.67	11400.00	8484.51	13480.02	1.3959

** CRIT. ACT. WEDGE 118.00 FT. FROM ORIGIN ***

*** PASSIVE WEDGE 133.00 FT. FROM ORIGIN ***

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 27020.2 + \text{RB} = 5700.0 + \text{RP} = 16615.0}{\text{DA} = 49172.2 - \text{DP} = 13979.3} = \frac{\text{SUM R} = 49335.2}{\text{SUM D} = 35193.0} = 1.402
 \end{aligned}$$

*** PASSIVE WEDGE 138.00 FT. FROM ORIGIN ***

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 27020.2 + \text{RB} = 7600.0 + \text{RP} = 15789.9}{\text{DA} = 49172.2 - \text{DP} = 12487.4} = \frac{\text{SUM R} = 50410.1}{\text{SUM D} = 36684.8} = 1.374
 \end{aligned}$$

*** PASSIVE WEDGE 143.00 FT. FROM ORIGIN ***

$$\text{FS} = \frac{\text{RA} = 27020.2 + \text{RB} = 9500.0 + \text{RP} = 14965.0}{\text{DA} = 49172.2 - \text{DP} = 11073.1} = \frac{\text{SUM R} = 51485.2}{\text{SUM D} = 38099.2} = 1.351$$

*** PASSIVE WEDGE 148.00 FT. FROM ORIGIN ***

$$\text{FS} = \frac{\text{RA} = 27020.2 + \text{RB} = 11400.0 + \text{RP} = 14139.8}{\text{DA} = 49172.2 - \text{DP} = 9735.0} = \frac{\text{SUM R} = 52560.0}{\text{SUM D} = 39437.2} = 1.333$$

*** PASSIVE WEDGE 153.00 FT. FROM ORIGIN ***

$$\text{FS} = \frac{\text{RA} = 27020.2 + \text{RB} = 13300.0 + \text{RP} = 13480.0}{\text{DA} = 49172.2 - \text{DP} = 8484.5} = \frac{\text{SUM R} = 53800.2}{\text{SUM D} = 40687.7} = 1.322$$

*** PASSIVE WEDGE 158.00 FT. FROM ORIGIN ***

$$\text{FS} = \frac{\text{RA} = 27020.2 + \text{RB} = 15200.0 + \text{RP} = 13480.0}{\text{DA} = 49172.2 - \text{DP} = 7493.8} = \frac{\text{SUM R} = 55700.2}{\text{SUM D} = 41678.5} = 1.336$$

*** PASSIVE

WEDGE 163.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 27020.2 + RB= 17100.0 + RP= 13480.0 \quad \text{SUM R} = 57600.2}{DA= 49172.2 - DP= 6845.7 \quad \text{SUM D} = 42326.6} = 1.361$$

WEDGE LOCATED ACT PAS	FAIL ELEV	RESISTING FORCES				DRIVING FORCES			FACTOR OF SAFETY
		RA	RB	RP	SUM R	DA	-DP	SUM D	
103 140	0.0	15193.	14060.	5940.	35193.	23898.	2203.	21695.	1.622 <i>CC</i>
103 145	0.0	15193.	15960.	5115.	36268.	23898.	1639.	22259.	1.629
103 150	0.0	15193.	17860.	4290.	37343.	23898.	1153.	22745.	1.642
103 155	0.0	15193.	19760.	3465.	38418.	23898.	752.	23146.	1.660
103 160	0.0	15193.	21660.	2640.	39493.	23898.	436.	23462.	1.683
103 165	0.0	15193.	23560.	1815.	40568.	23898.	206.	23692.	1.712
118 133	-16.0	27020.	5700.	16615.	49335.	49172.	13979.	35193.	1.402
118 138	-16.0	27020.	7600.	15790.	50410.	49172.	12487.	36685.	1.374
118 143	-16.0	27020.	9500.	14965.	51485.	49172.	11073.	38099.	1.351
118 148	-16.0	27020.	11400.	14140.	52560.	49172.	9735.	39437.	1.333
118 153	-16.0	27020.	13300.	13480.	53800.	49172.	8485.	40688.	1.322 <i>DD</i>
118 158	-16.0	27020.	15200.	13480.	55700.	49172.	7494.	41678.	1.336
118 163	-16.0	27020.	17100.	13480.	57600.	49172.	6846.	42327.	1.361

ELAPSED CPU TIME 62.2 SECONDS \$ 12.44 FOR USER LJN

MRC 8836 LJJ
 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 ***

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

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

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 8360.1 + \text{RB} = 9240.0 + \text{RP} = 3999.9 \quad \text{SUM R} = 21600.0}{\text{DA} = 18207.0 - \text{DP} = 3173.2 \quad \text{SUM D} = 15033.8} = 1.437
 \end{aligned}$$

**** PASSIVE

WEDGE 100.00 FT. FROM ORIGIN ***

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

**** PASSIVE

WEDGE 145.00 FT. FROM ORIGIN ***

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

*** 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 ***

$$FS = \frac{RA= 12293.4 + RB= 8740.0 + RP= 10599.9}{DA= 38313.1 - DP= 15761.8} = \frac{SUM R= 31633.2}{SUM D= 22551.3} = 1.403$$

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

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

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

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

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

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

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

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

*** PASSIVE

WEDGE 150.00 FT. FROM ORIGIN ***

RA= 12293.4 + RB= 18240.0 + RP= 10240.0 SUM R= 40773.4
 FS = ----- = 1.488
 DA= 38313.1 - DP= 10915.6 SUM D= 27397.4

*** 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 ***

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

**** PASSIVE WEDGE 142.00 FT. FROM ORIGIN ***

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

**** PASSIVE WEDGE 147.00 FT. FROM ORIGIN ***

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

**** PASSIVE WEDGE 152.00 FT. FROM ORIGIN ***

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

*** PASSIVE

WEDGE 107.00 FT. FROM ORIGIN ***

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

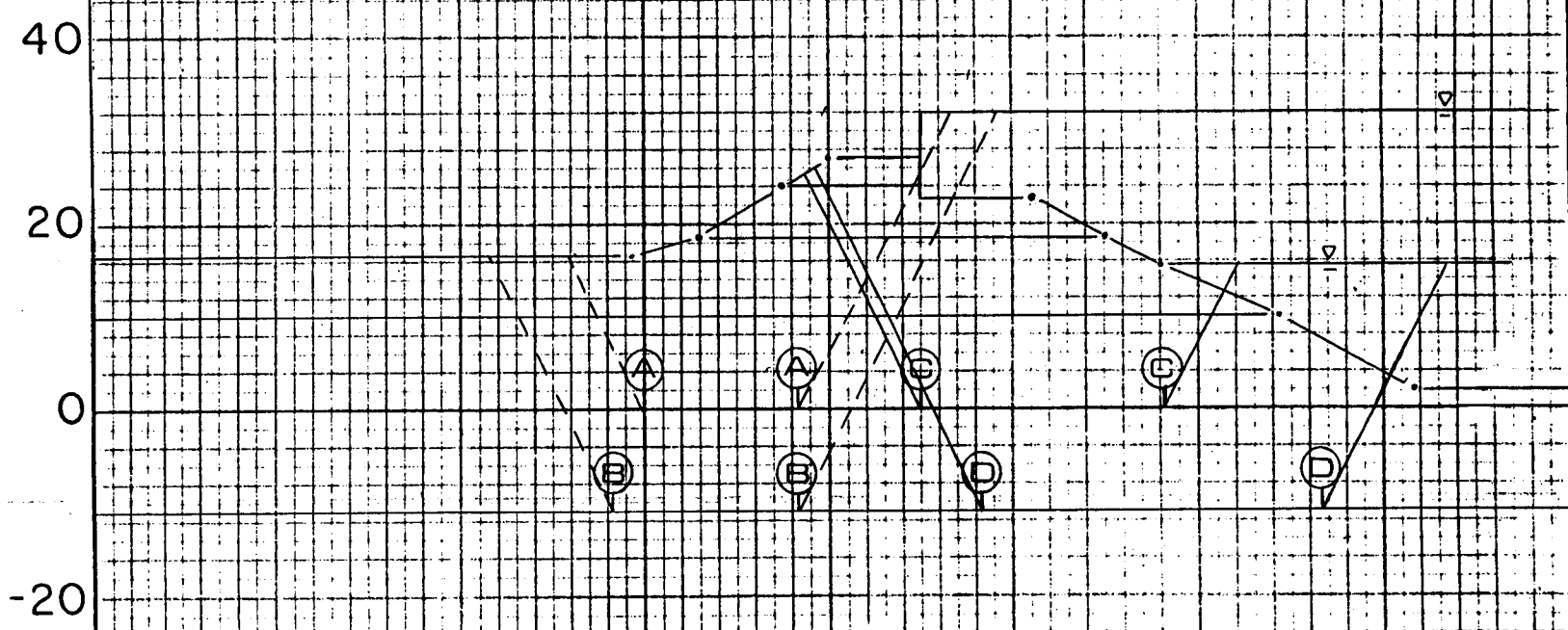
WEDGE LOCATED ACT PAS	FAIL ELEV	RESISTING FORCES				DRIVING FORCES			FACTOR OF SAFETY
		RA	RB	RP	SUM R	DA	-DP	SUM D	
102 130	10.0	8360.	7840.	4480.	20680.	18207.	4230.	13977.	1.480
102 135	10.0	8360.	9240.	4000.	21600.	18207.	3173.	15034.	1.437
102 140	10.0	8360.	10640.	3640.	22640.	18207.	2479.	15728.	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 AA
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 (AA)
102 145	0.0	12293.	16340.	10240.	38873.	38313.	10924.	27389.	1.419
102 150	0.0	12293.	18240.	10240.	40773.	38313.	10916.	27397.	1.488
112 137	-16.0	23175.	9500.	22400.	55075.	77138.	34040.	43098.	1.278 (BB)
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 RB_min = 3588
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

STA. 589+00 TO STA. 614+00

Hor. Scale: 1" = 30'

ELEVATION IN FEET -- C.D.



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	36988	10923	26065	15360	9500	10240	35100	1.347
BB	-11.0	64564	25206	39358	28720	11400	18600	53720	1.365
CC	0.0	29029	3501	25527	16563	15200	7316	39079	1.531
DD	-11.0	46489	4857	41632	24626	20900	10000	55526	1.334

MRC 8836 LJN

STA 592+00 LANDSIDE

0. 32. 105. 32. 105.1 27. 120. 27.
 128. 24. 141. 18.5 151. 16.5 400. 16.5
 0. 2. 25. 2. 49. 10. 75. 18.5
 87. 22.5 104.9 22.5 105. 24. 105.1 27.
 0. 2. 25. 2. 49. 10. 75. 18.5
 87. 22.5 104.9 22.5 105. 24. 128. 24.
 0. 2. 25. 2. 49. 10. 75. 18.5
 0. 2. 25. 2. 49. 10. 400. 10.

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

ACT. RANGE 110.0 FT. TO 120.0 FT. CRIT. PASS 140.00 FT. 5 PASS. WEDGES

DIST.	DA	RA	RB	DP	RP	F.S.
110.00	17851.92	8760.01	8400.00	3256.91	4059.95	1.4539
115.00	17480.74	8760.01	7000.00	3256.91	4059.95	1.3934
120.00	16968.11	11227.79	5600.00	3256.91	4059.95	1.5234

** CRIT. ACT. WEDGE 115.00 FT. FROM ORIGIN ***

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

$$FS = \frac{RA = 8760.0 + RB = 1200.0 + RP = 5503.2}{DA = 17480.7 - DP = 6255.9} = \frac{SUM R = 18463.2}{SUM D = 11224.9} = 1.645$$

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

$$FS = \frac{RA = 8760.0 + RB = 5600.0 + RP = 4526.7}{DA = 17480.7 - DP = 4448.9} = \frac{SUM R = 18886.7}{SUM D = 13031.9} = 1.449$$

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

$$FS = \frac{RA= 8760.0 + RB= 7000.0 + RP= 4060.0}{DA= 17480.7 - DP= 3256.9} = \frac{SUM R= 19820.0}{SUM D= 14223.8} = 1.393$$

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

$$FS = \frac{RA= 8760.0 + RB= 8400.0 + RP= 3640.0}{DA= 17480.7 - DP= 2541.0} = \frac{SUM R= 20800.0}{SUM D= 14939.7} = 1.392$$

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

$$FS = \frac{RA= 8760.0 + RB= 9800.0 + RP= 3640.0}{DA= 17480.7 - DP= 2180.5} = \frac{SUM R= 22200.0}{SUM D= 15300.2} = 1.451$$

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

ACT. RANGE 120.0 FT. TO 130.0 FT. CRIT. PASS 145.00 FT. 5 PASS. WEDGES

DIST.	DA	RA	RB	DP	RP	F.S.
120.00	37924.62	15360.02	9500.00	11286.49	10240.02	1.3177
125.00	36988.34	15360.02	7600.00	11286.49	10240.02	1.2917
130.00	34792.06	17827.80	5700.00	11286.49	10240.02	1.4366

** CRIT. ACT. WEDGE 125.00 FT. FROM ORIGIN ***

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

$$FS = \frac{RA= 15360.0 + RB= 3800.0 + RP= 10240.0}{DA= 36988.3 - DP= 13966.3} = \frac{SUM R= 29400.0}{SUM D= 23022.0} = 1.277$$

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

$$FS = \frac{RA= 15360.0 + RB= 5700.0 + RP= 10240.0}{DA= 36988.3 - DP= 12173.5} = \frac{SUM R= 31300.0}{SUM D= 24814.9} = 1.261$$

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

$$FS = \frac{RA= 15360.0 + RB= 7600.0 + RP= 10240.0}{DA= 36988.3 - DP= 11286.5} = \frac{SUM R= 33200.0}{SUM D= 25701.9} = 1.292$$

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

$$FS = \frac{RA= 15360.0 + RB= 9500.0 + RP= 10240.0}{DA= 36988.3 - DP= 10923.3} = \frac{SUM R= 35100.0}{SUM D= 26065.1} = 1.347$$

**** PASSIVE WEDGE 155.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 15360.0 + RB= 11400.0 + RP= 10240.0}{DA= 36988.3 - DP= 10915.7} = \frac{SUM R= 37000.0}{SUM D= 26072.6} = 1.419$$

*** STRATUM 6 ELEV. = - 00 FT. ***

ACT. RANGE 120.0 FT. TO 130.0 FT. CRIT. PASS 155.00 FT. 5 PASS. WEDGES

SHEAR STRENGTH ALONG BASE

DISTANCE	NO. 6	NO. 7	USED
120.00	380.00	1531.13	380.00
128.00	380.00	1323.29	380.00
141.00	380.00	996.22	380.00
151.00	380.00	877.28	380.00
400.00	380.00	877.28	380.00

DIST.	DA	RA	RB	DP	RP	F.S.
120.00	65498.67	23595.15	13300.00	25206.45	18600.03	1.3773
125.00	64564.21	23720.04	11400.00	25206.45	18600.03	1.3649
130.00	62503.55	23720.04	9500.00	25206.45	18600.03	1.3894

** CRIT. ACT. WEDGE 125.00 FT. FROM ORIGIN ***

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

$$\begin{aligned}
 & \text{RA} = 23720.0 + \text{RB} = 7600.0 + \text{RP} = 18600.0 \quad \text{SUM R} = 49920.1 \\
 \text{FS} = & \frac{\text{DA} = 64564.2 - \text{DP} = 25577.3}{\text{SUM D} = 38986.9} = 1.280
 \end{aligned}$$

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

$$\begin{aligned}
 & \text{RA} = 23720.0 + \text{RB} = 9500.0 + \text{RP} = 18600.0 \quad \text{SUM R} = 51820.1 \\
 \text{FS} = & \frac{\text{DA} = 64564.2 - \text{DP} = 25218.5}{\text{SUM D} = 39345.7} = 1.317
 \end{aligned}$$

*** PASSIVE WEDGE 155.00 FT. FROM ORIGIN ***

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 23720.0 + \text{RB} = 11400.0 + \text{RP} = 18600.0}{\text{DA} = 64564.2 - \text{DP} = 25206.4} = \frac{\text{SUM R} = 53720.1}{\text{SUM D} = 39357.8} = 1.365
 \end{aligned}$$

*** PASSIVE WEDGE 160.00 FT. FROM ORIGIN ***

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 23720.0 + \text{RB} = 13300.0 + \text{RP} = 18600.0}{\text{DA} = 64564.2 - \text{DP} = 25208.0} = \frac{\text{SUM R} = 55620.1}{\text{SUM D} = 39356.2} = 1.413
 \end{aligned}$$

*** PASSIVE WEDGE 165.00 FT. FROM ORIGIN ***

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 23720.0 + \text{RB} = 15200.0 + \text{RP} = 18600.0}{\text{DA} = 64564.2 - \text{DP} = 25206.1} = \frac{\text{SUM R} = 57520.1}{\text{SUM D} = 39358.1} = 1.461
 \end{aligned}$$

WEDGE LOCATED	FAIL ELEV	ACT PAS	RESISTING FORCES				DRIVING FORCES			FACTOR OF SAFETY
			RA	RB	RP	SUM R	DA	-DP	SUM D	
115	130	10.0	8760.	4200.	5503.	18463.	17481.	6256.	11225.	1.645
115	135	10.0	8760.	5600.	4527.	18887.	17481.	4449.	13032.	1.449
115	140	10.0	8760.	7000.	4060.	19820.	17481.	3257.	14224.	1.393
115	145	10.0	8760.	8400.	3640.	20800.	17481.	2541.	14940.	1.392
115	150	10.0	8760.	9800.	3640.	22200.	17481.	2181.	15300.	1.451
125	135	0.0	15360.	3800.	10240.	29400.	36988.	13966.	23022.	1.277
125	140	0.0	15360.	5700.	10240.	31300.	36988.	12173.	24815.	1.261
125	145	0.0	15360.	7600.	10240.	33200.	36988.	11286.	25702.	1.292
125	150	0.0	15360.	9500.	10240.	35100.	36988.	10923.	26065.	1.347
125	155	0.0	15360.	11400.	10240.	37000.	36988.	10916.	26073.	1.419
125	145	-11.0	23720.	7600.	18600.	49920.	64564.	25577.	38987.	1.280
125	150	-11.0	23720.	9500.	18600.	51820.	64564.	25219.	39346.	1.317
125	155	-11.0	23720.	11400.	18600.	53720.	64564.	25206.	39358.	1.365
125	160	-11.0	23720.	13300.	18600.	55620.	64564.	25208.	39356.	1.413
125	165	-11.0	23720.	15200.	18600.	57520.	64564.	25206.	39358.	1.461

Handwritten notes:
 1.365
 1.413
 1.461

MRC 8836 LJJ
 STA 592+00 CANALSIDE

0. 16.5 49. 16.5 59. 18.5 72. 24.
 80. 27. 94.9 27. 95. 24. 95.1 22.5
 113. 22.5 125. 18.5 134. 15.5 150. 10.
 0. 16.5 49. 16.5 59. 18.5 72. 24.
 0. 16.5 49. 16.5 59. 18.5 125. 16.5

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

ACT. RANGE 90.0 FT. TO 105.0 FT. CRIT. PASS 140.00 FT. 5 PASS. WEDGES

DIST.	DA	RA	RB	DP	RP	F.S.
90.00	13941.45	11350.96	14000.00	179.14	1432.54	1.9461
95.00	14659.01	12714.55	12600.00	179.14	1432.54	1.8472
100.00	12156.90	13260.02	11200.00	179.14	1432.54	2.1617
105.00	9585.06	13260.02	9800.00	179.14	1432.54	2.6040

** CRIT. ACT. WEDGE 95.00 FT. FROM ORIGIN ***

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

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 12714.6 + \text{RB} = 9800.0 + \text{RP} = 2865.1}{\text{DA} = 14659.0 - \text{DP} = 881.8} = \frac{\text{SUM R} = 25379.6}{\text{SUM D} = 13777.2} = 1.842
 \end{aligned}$$

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

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 12714.6 + \text{RB} = 11200.0 + \text{RP} = 2148.7}{\text{DA} = 14659.0 - \text{DP} = 404.5} = \frac{\text{SUM R} = 26063.2}{\text{SUM D} = 14254.5} = 1.828
 \end{aligned}$$

**** PASSIVE

WEDGE 140.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 12714.6 + RB= 12600.0 + RP= 1432.5}{DA= 14659.0 - DP= 179.1} = \frac{SUM R= 26747.1}{SUM D= 14479.9} = 1.847$$

**** PASSIVE

WEDGE 145.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 12714.6 + RB= 14000.0 + RP= 716.3}{DA= 14659.0 - DP= 45.1} = \frac{SUM R= 27430.8}{SUM D= 14613.9} = 1.877$$

**** PASSIVE

WEDGE 150.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 12714.6 + RB= 15400.0 + RP= .1}{DA= 14659.0 - DP= 0.0} = \frac{SUM R= 28114.6}{SUM D= 14659.0} = 1.918$$

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

ACT. RANGE 90.0 FT. TO 105.0 FT. CRIT. PASS 140.00 FT. 5 PASS. WEDGES

DIST.	DA	RA	RB	DP	RP	F.S.
90.00	26715.10	15076.21	19000.00	2751.25	6599.94	1.6974
95.00	29028.51	16562.78	17100.00	2751.25	6599.94	1.5322
100.00	28017.42	17950.91	15200.00	2751.25	6599.94	1.5733
105.00	26182.93	19314.74	13300.00	2751.25	6599.94	1.6736

** CRIT. ACT.

WEDGE 95.00 FT. FROM ORIGIN ***

**** PASSIVE

WEDGE 30.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 16562.8 + RB= 13300.0 + RP= 8032.6}{DA= 29028.5 - DP= 4502.8} = \frac{SUM R= 37895.4}{SUM D= 24525.7} = 1.545$$

**** PASSIVE

WEDGE 135.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 16562.8 + RB= 15200.0 + RP= 7316.3}{DA= 29028.5 - DP= 3501.1} = \frac{SUM R= 39079.1}{SUM D= 25527.4} = 1.531$$

**** PASSIVE

WEDGE 140.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 16562.8 + RB= 17100.0 + RP= 6599.9}{DA= 29028.5 - DP= 2751.2} = \frac{SUM R= 40262.7}{SUM D= 26277.3} = 1.532$$

**** PASSIVE

WEDGE 145.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 16562.8 + RB= 19000.0 + RP= 5800.1}{DA= 29028.5 - DP= 2099.8} = \frac{SUM R= 41362.8}{SUM D= 26928.7} = 1.536$$

**** PASSIVE

WEDGE 150.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 16562.8 + RB= 20900.0 + RP= 5000.1}{DA= 29028.5 - DP= 1550.8} = \frac{SUM R= 42462.9}{SUM D= 27477.8} = 1.545$$

*** STRATUM 6 ELEV. = -11.00 FT. ***

ACT. RANGE 100.0 FT. TO 0.0 FT. CRIT. PASS 160.00 5 PASS. WEDGES

SHEAR STRENGTH ALONG BASE

DISTANCE	NO. 6	NO. 7	USED
95.10	380.00	1037.21	380.00
113.00	380.00	1037.21	380.00
125.00	380.00	799.34	380.00
134.00	380.00	620.94	380.00
150.00	380.00	490.75	380.00
*** 164.62	380.00	380.00	380.00
175.00	380.00	301.38	301.38
400.00	380.00	301.38	301.38

DIST.	DA	RA	RB	DP	RP	F.S.
100.00	46571.06	23139.10	22800.00	4856.85	10000.11	1.3410
105.00	46488.92	24625.55	20900.00	4856.85	10000.11	1.3337
110.00	45628.81	26038.28	19000.00	4856.85	10000.11	1.3499

** CRIT. ACT. WEDGE 105.00 FT. FROM ORIGIN ***

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

$$FS = \frac{RA = 24625.6 + RB = 17100.0 + RP = 11600.0}{DA = 46488.9 - DP = 6784.1} = \frac{SUM R = 53325.5}{SUM D = 39704.8} = 1.343$$

*** PASSIVE WEDGE 155.00 FT. FROM ORIGIN ***

$$FS = \frac{RA = 24625.6 + RB = 19000.0 + RP = 10799.9}{DA = 46488.9 - DP = 5781.3} = \frac{SUM R = 54425.5}{SUM D = 40707.6} = 1.337$$

*** PASSIVE WEDGE 160.00 FT. FROM ORIGIN ***

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 24625.6 + \text{RB} = 20900.0 + \text{RP} = 10000.1}{\text{DA} = 46488.9 - \text{DP} = 4856.9} = \frac{\text{SUM R} = 55525.7}{\text{SUM D} = 41632.1} = 1.334
 \end{aligned}$$

*** PASSIVE WEDGE 165.00 FT. FROM ORIGIN ***

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 24625.6 + \text{RB} = 22799.5 + \text{RP} = 9680.0}{\text{DA} = 46488.9 - \text{DP} = 4056.8} = \frac{\text{SUM R} = 57105.0}{\text{SUM D} = 42432.1} = 1.346
 \end{aligned}$$

*** PASSIVE WEDGE 170.00 FT. FROM ORIGIN ***

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 24625.6 + \text{RB} = 24590.4 + \text{RP} = 9680.0}{\text{DA} = 46488.9 - \text{DP} = 3564.7} = \frac{\text{SUM R} = 58896.0}{\text{SUM D} = 42924.2} = 1.372
 \end{aligned}$$

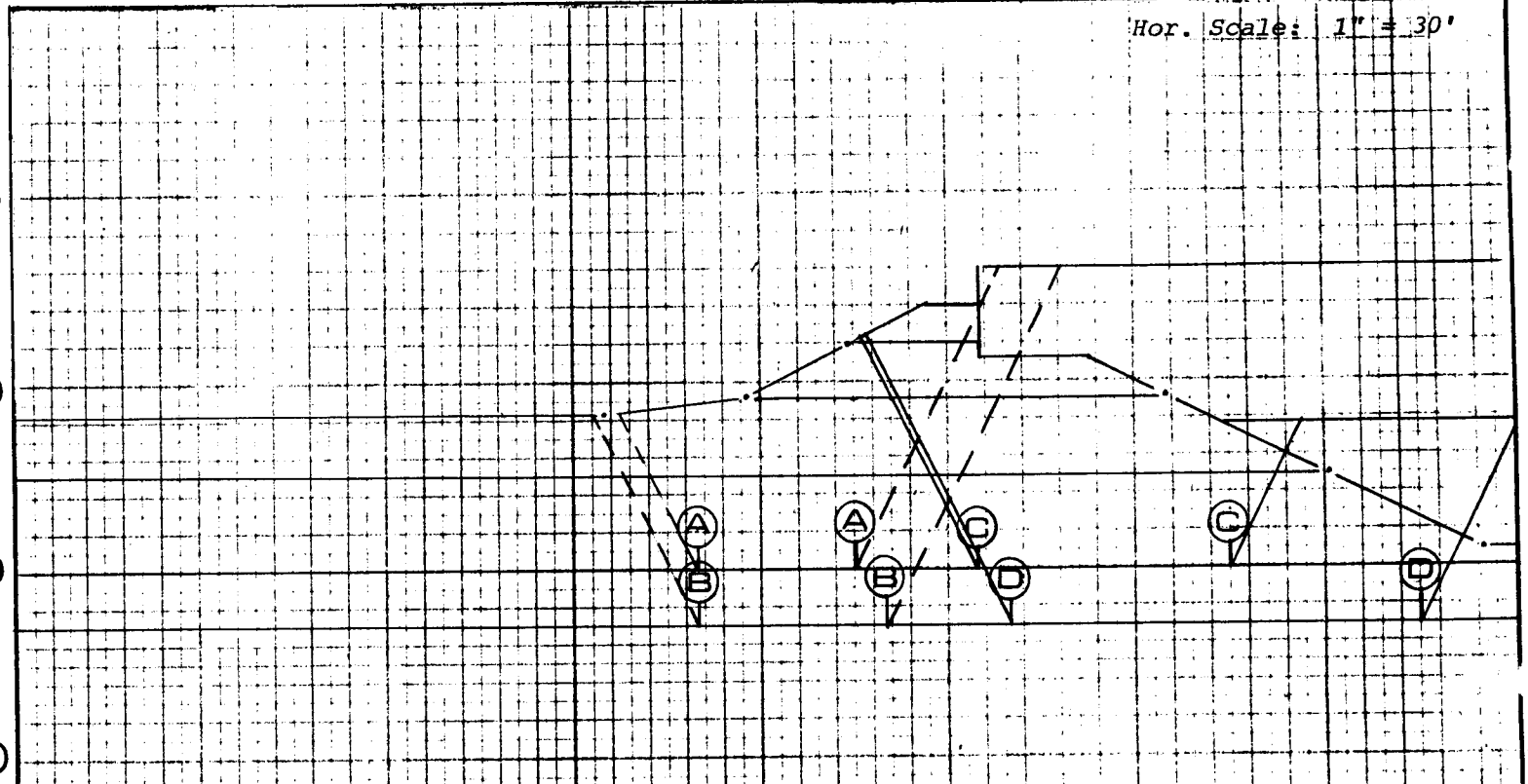
WEDGE LOCATED ACT PAS	FAIL ELEV	RESISTING FORCES				DRIVING FORCES			FACTOR OF SAFETY
		RA	RB	RP	SUM R	DA	-DP	SUM D	
95 130	10.0	12715.	9800.	2865.	25380.	14659.	882.	13777.	1.842
95 135	10.0	12715.	11200.	2149.	26063.	14659.	405.	14254.	1.828
95 140	10.0	12715.	12600.	1433.	26747.	14659.	179.	14480.	1.847
95 145	10.0	12715.	14000.	716.	27431.	14659.	45.	14614.	1.877
95 150	10.0	12715.	15400.	0.	28115.	14659.	0.	14659.	1.918
95 130	0.0	16563.	13300.	8033.	37895.	29029.	4503.	24526.	1.545
95 135	0.0	16563.	15200.	7316.	39079.	29029.	3501.	25527.	1.531 c c
95 140	0.0	16563.	17100.	6600.	40263.	29029.	2751.	26277.	1.532
95 145	0.0	16563.	19000.	5800.	41363.	29029.	2100.	26929.	1.536
95 150	0.0	16563.	20900.	5000.	42463.	29029.	1551.	27478.	1.545
105 150	-11.0	24626.	17100.	11600.	53326.	46489.	6784.	39705.	1.343
105 155	-11.0	24626.	19000.	10800.	54425.	46489.	5781.	40708.	1.337
105 160	-11.0	24626.	20900.	10000.	55526.	46489.	4857.	41632.	1.334 d d
105 165	-11.0	24626.	22799.	9680.	57105.	46489.	4057.	42432.	1.346
105 170	-11.0	24626.	24590.	9680.	58896.	46489.	3565.	42924.	1.372

STA. 614+00 TO STA. 625+00

Hor. Scale: 1" = 30'

ELEVATION IN FEET - C.D.

40
20
0
-20



TYPICAL COMPUTER ANALYSIS

SURFACE		DRIVING FORCE			RESISTING FORCE			ΣR	FACTOR OF SAFETY
NO.	EL.	D _A	D _F	ΣD	R _A	R _B	R _P		
AA	0.0	37761	11923	25838	15360	9500	10240	35100	1.358
BB	-6.0	53613	19116	34496	19920	11400	14800	46120	1.337
CC	0.0	29522	3501	26020	16093	15200	7316	38609	1.484
DD	-6.0	38451	1928	36523	20397	23776	6200	50372	1.379

MRC 3836 LJJ
 STA 622+00 CANALSIDE

0. 16.5 35. 16.5 58. 18.5 74. 24.
 85. 28. 94.9 28. 95. 24. 95.1 22.5
 113. 22.5 125. 18.5 134. 15.5 150. 10.
 0. 16.5 35. 16.5 58. 18.5 74. 24.
 0. 16.5 35. 16.5 58. 18.5 125. 18.5

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

ACT. RANGE 90.0 FT. TO 105.0 FT. CRIT. PASS 140.00 FT. 5 PASS. WEDGES

DIST.	DA	RA	RB	DP	RP	F.S.
90.00	26423.16	14813.63	19000.00	2751.25	6599.94	1.7072
95.00	29521.58	16092.69	17100.00	2751.25	6599.94	1.4864
100.00	28809.48	17393.29	15200.00	2751.25	6599.94	1.5041
105.00	27318.39	18726.73	13300.00	2751.25	6599.94	1.5723

** CRIT. ACT. WEDGE 95.00 FT. FROM ORIGIN ***

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

$$FS = \frac{RA= 16092.7 + RB= 13300.0 + RP= 8032.6}{DA= 29521.6 - DP= 4502.8} = \frac{SUM R= 37425.3}{SUM D= 25018.7} = 1.496$$

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

$$FS = \frac{RA= 16092.7 + RB= 15200.0 + RP= 7316.3}{DA= 29521.6 - DP= 3501.1} = \frac{SUM R= 38609.0}{SUM D= 26020.5} = 1.484$$

**** PASSIVE

WEDGE 140.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 16092.7 + RB= 17100.0 + RP= 6599.9}{DA= 29521.6 - DP= 2751.2} = \frac{SUM R= 39792.6}{SUM D= 26770.3} = 1.486$$

**** PASSIVE

WEDGE 145.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 16092.7 + RB= 19000.0 + RP= 5800.1}{DA= 29521.6 - DP= 2099.8} = \frac{SUM R= 40892.7}{SUM D= 27421.8} = 1.491$$

**** PASSIVE

WEDGE 150.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 16092.7 + RB= 20900.0 + RP= 5000.1}{DA= 29521.6 - DP= 1550.8} = \frac{SUM R= 41992.8}{SUM D= 27970.8} = 1.501$$

*** STRATUM 6 ELEV. = -6.00 FT. ***

ACT. RANGE 100.0 FT. TO 110.0 FT. CRIT. PASS 160.00 FT. 5 PASS. WEDGES

SHEAR STRENGTH ALONG BASE

DISTANCE	NO. 6	NO. 7	USED
95.10	380.00	921.74	380.00
113.00	380.00	921.74	380.00
125.00	380.00	683.87	380.00
134.00	380.00	505.47	380.00
*** 149.42	380.00	380.00	380.00
150.00	380.00	375.28	375.28
175.00	380.00	185.91	185.91
400.00	380.00	185.91	185.91

DIST.	DA	RA	RB	DP	RP	F.S.
100.00	38450.88	20396.84	22372.67	2523.22	7000.15	1.3853
105.00	37872.11	21686.63	20472.67	2523.22	7000.15	1.3907
110.00	36540.60	23019.89	18572.67	2523.22	7000.15	1.4285

** CRIT. ACT. WEDGE 100.00 FT. FROM ORIGIN ***

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

$$FS = \frac{RA= 20396.8 + RB= 18998.6 + RP= 8600.1 \quad \text{SUM R}= 47995.5}{DA= 38450.9 - DP= 3954.5 \quad \text{SUM D}= 34496.4} = 1.391$$

*** PASSIVE WEDGE 155.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 20396.8 + RB= 20780.3 + RP= 7800.0 \quad \text{SUM R}= 48977.2}{DA= 38450.9 - DP= 3199.1 \quad \text{SUM D}= 35251.7} = 1.389$$

*** PASSIVE WEDGE 160.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 20396.8 + RB= 22372.7 + RP= 7000.2 \quad \text{SUM R}= 49769.7}{DA= 38450.9 - DP= 2523.2 \quad \text{SUM D}= 35927.7} = 1.385$$

*** PASSIVE WEDGE 165.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 20396.8 + RB= 23775.6 + RP= 6199.9 \quad \text{SUM R}= 50372.4}{DA= 38450.9 - DP= 1928.0 \quad \text{SUM D}= 36522.9} = 1.379$$

*** PASSIVE

WEDGE 170.00 FT. FROM ORIGIN ***

$$\begin{aligned}
 &RA = 20396.8 + RB = 24989.2 + RP = 5880.0 \quad \text{SUM R} = 51266.1 \\
 FS = &\frac{\text{-----}}{\text{-----}} = 1.386 \\
 &DA = 38450.9 - DP = 1455.8 \quad \text{SUM D} = 36995.1
 \end{aligned}$$

WEDGE LOCATED ACT PAS	FAIL ELEV	RESISTING FORCES				DRIVING FORCES			FACTOR OF SAFETY
		RA	RB	RP	SUM R	DA	-DP	SUM D	
95 130	0.0	16093.	13300.	8033.	37425.	29522.	4503.	25019.	1.496
95 135	0.0	16093.	15200.	7316.	38609.	29522.	3501.	26020.	1.484
95 140	0.0	16093.	17100.	6600.	39793.	29522.	2751.	26770.	1.486
95 145	0.0	16093.	19000.	5800.	40893.	29522.	2100.	27422.	1.491
95 150	0.0	16093.	20900.	5000.	41993.	29522.	1551.	27971.	1.501
100 150	-6.0	20397.	18999.	8600.	47996.	38451.	3954.	34496.	1.391
100 155	-6.0	20397.	20780.	7800.	48977.	38451.	3199.	35252.	1.389
100 160	-6.0	20397.	22373.	7000.	49770.	38451.	2523.	35928.	1.385
100 165	-6.0	20397.	23776.	6200.	50372.	38451.	1928.	36523.	1.379
100 170	-6.0	20397.	24989.	5880.	51266.	38451.	1456.	36995.	1.386

DD

MRC 8836 L J N
 STA 622+00 LANDSIDE

0. 32. 105. 32. 105.1 28. 115. 28.
 126. 24. 142. 18.5 165. 16.5 400. 16.5
 0. 2. 25. 2. 49. 10. 75. 18.5
 87. 22.5 104.9 22.5 105. 24. 105.1 28.
 0. 2. 25. 2. 49. 10. 75. 18.5
 87. 22.5 104.9 22.5 105. 24. 126. 24.
 0. 2. 25. 2. 49. 10. 75. 18.5
 0. 2. 25. 2. 49. 10. 400. 10.

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

ACT. RANGE 110.0 FT. TO 120.0 FT. CRIT. PASS 140.00 FT. 5 PASS. WEDGES

DIST.	DA	RA	RB	DP	RP	F.S.
110.00	18447.59	8760.01	8400.00	3614.86	4468.67	1.4582
115.00	18676.61	8760.01	7000.00	3614.86	4468.67	1.3431
120.00	18216.32	11235.60	5600.00	3614.86	4468.67	1.4591

** CRIT. ACT. WEDGE 115.00 FT. FROM ORIGIN **

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

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 8760.0 + \text{RB} = 4200.0 + \text{RP} = 5655.3}{\text{DA} = 18676.6 - \text{DP} = 6103.1} = \frac{\text{SUM R} = 18615.3}{\text{SUM D} = 12573.5} = 1.481
 \end{aligned}$$

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

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 8760.0 + \text{RB} = 5600.0 + \text{RP} = 4692.9}{\text{DA} = 18676.6 - \text{DP} = 4576.3} = \frac{\text{SUM R} = 19052.9}{\text{SUM D} = 14100.3} = 1.351
 \end{aligned}$$

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

RA= 8760.0 + RB= 7000.0 + RP= 4468.7 SUM R= 20228.7
FS = ----- = 1.343
 DA= 18676.6 - DP= 3614.9 SUM D= 15061.7

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

RA= 8760.0 + RB= 8400.0 + RP= 4244.6 SUM R= 21404.6
FS = ----- = 1.384
 DA= 18676.6 - DP= 3210.4 SUM D= 15466.2

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

RA= 8760.0 + RB= 9800.0 + RP= 4020.8 SUM R= 22580.8
FS = ----- = 1.429
 DA= 18676.6 - DP= 2880.0 SUM D= 15796.6

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

ACT. RANGE 120.0 FT. TO 130.0 FT. CRIT. PASS 145.00 FT. 5 PASS. WEDGES

DIST.	DA	RA	RB	DP	RP	F.S.
120.00	39169.75	15360.02	9500.00	12656.17	10396.76	1.3298
125.00	37761.40	15360.02	7600.00	12656.17	10396.76	1.3287
130.00	35189.52	17835.61	5700.00	12656.17	10396.76	1.5059

** CRIT. ACT. WEDGE 125.00 FT. FROM ORIGIN ***

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

$$\text{FS} = \frac{\text{RA} = 15360.0 + \text{RB} = 3800.0 + \text{RP} = 10844.7}{\text{DA} = 37761.4 - \text{DP} = 14843.3} = \frac{\text{SUM R} = 30004.8}{\text{SUM D} = 22918.1} = 1.309$$

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

$$\text{FS} = \frac{\text{RA} = 15360.0 + \text{RB} = 5700.0 + \text{RP} = 10620.8}{\text{DA} = 37761.4 - \text{DP} = 13470.0} = \frac{\text{SUM R} = 31680.8}{\text{SUM D} = 24291.4} = 1.304$$

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

$$\text{FS} = \frac{\text{RA} = 15360.0 + \text{RB} = 7600.0 + \text{RP} = 10396.8}{\text{DA} = 37761.4 - \text{DP} = 12656.2} = \frac{\text{SUM R} = 33356.8}{\text{SUM D} = 25105.2} = 1.329$$

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

$$\text{FS} = \frac{\text{RA} = 15360.0 + \text{RB} = 9500.0 + \text{RP} = 10240.0}{\text{DA} = 37761.4 - \text{DP} = 11923.3} = \frac{\text{SUM R} = 35100.0}{\text{SUM D} = 25838.1} = 1.358$$

**** PASSIVE WEDGE 155.00 FT. FROM ORIGIN ***

$$\text{FS} = \frac{\text{RA} = 15360.0 + \text{RB} = 11400.0 + \text{RP} = 10240.0}{\text{DA} = 37761.4 - \text{DP} = 11363.5} = \frac{\text{SUM R} = 37000.0}{\text{SUM D} = 26397.9} = 1.402$$

*** STRATUM 6 ELEV. = -6.00 FT. ***

ACT. RANGE 120.0 FT. TO 130.0 FT. CRIT. PASS 155.00 FT. 5 PASS. WEDGES

SHEAR STRENGTH ALONG BASE

DISTANCE	NO. 6	NO. 7	USED
115.00	380.00	1484.95	380.00
126.00	380.00	1207.82	380.00
142.00	380.00	880.75	380.00
165.00	380.00	761.81	380.00
400.00	380.00	761.81	380.00

DIST.	DA	RA	RB	DP	RP	F.S.
120.00	53612.51	19920.03	13300.00	18559.54	14800.02	1.3699
125.00	52202.52	19920.03	11400.00	18559.54	14800.02	1.3709
130.00	49769.00	19920.03	9500.00	18559.54	14800.02	1.4169

** CRIT. ACT. WEDGE 120.00 FT. FROM ORIGIN ***

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

$$\begin{aligned}
 & \text{RA} = 19920.0 + \text{RB} = 9500.0 + \text{RP} = 14800.0 \quad \text{SUM R} = 44220.1 \\
 \text{FS} = & \frac{\text{SUM R}}{\text{DA} = 53612.5 - \text{DP} = 19901.1 \quad \text{SUM D} = 33711.4} = 1.312
 \end{aligned}$$

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

$$\begin{aligned}
 & \text{RA} = 19920.0 + \text{RB} = 11400.0 + \text{RP} = 14800.0 \quad \text{SUM R} = 46120.1 \\
 \text{FS} = & \frac{\text{SUM R}}{\text{DA} = 53612.5 - \text{DP} = 19116.3 \quad \text{SUM D} = 34496.2} = 1.337
 \end{aligned}$$

*** PASSIVE

WEDGE 5.00 FT. FROM ORIGIN ***

$$\begin{aligned}
 &RA = 19920.0 + RB = 13300.0 + RP = 14800.0 \quad \text{SUM R} = 48020.1 \\
 FS = &\frac{\text{---}}{\text{---}} = 1.370 \\
 &DA = 53612.5 - DP = 18559.5 \quad \text{SUM D} = 35053.0
 \end{aligned}$$

*** PASSIVE

WEDGE 160.00 FT. FROM ORIGIN ***

$$\begin{aligned}
 &RA = 19920.0 + RB = 15200.0 + RP = 14800.0 \quad \text{SUM R} = 49920.1 \\
 FS = &\frac{\text{---}}{\text{---}} = 1.411 \\
 &DA = 53612.5 - DP = 18223.7 \quad \text{SUM D} = 35388.8
 \end{aligned}$$

*** PASSIVE

WEDGE 165.00 FT. FROM ORIGIN ***

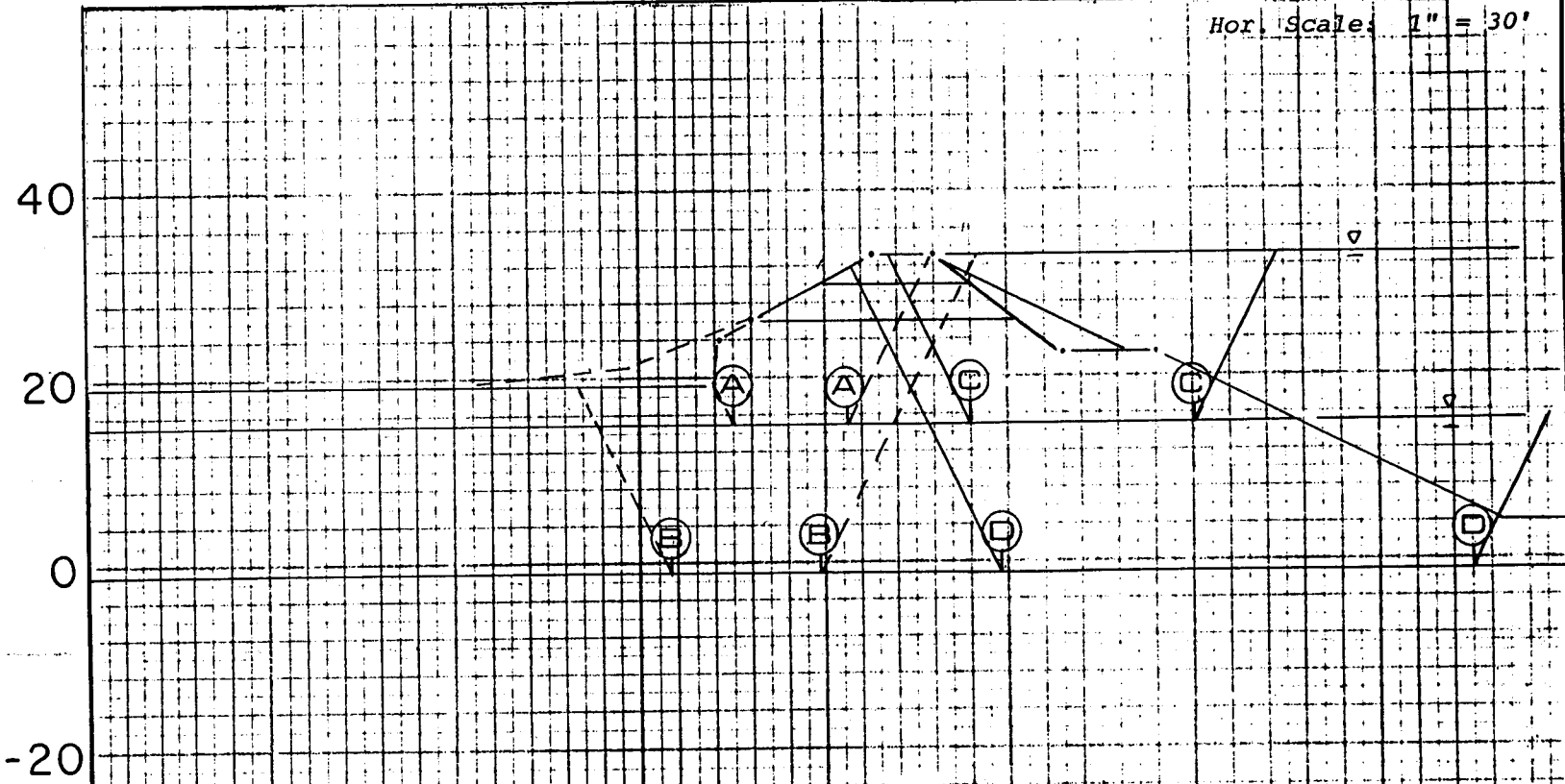
$$\begin{aligned}
 &RA = 19920.0 + RB = 17100.0 + RP = 14800.0 \quad \text{SUM R} = 51820.1 \\
 FS = &\frac{\text{---}}{\text{---}} = 1.460 \\
 &DA = 53612.5 - DP = 18111.7 \quad \text{SUM D} = 35500.8
 \end{aligned}$$

WEDGE LOCATED ACT PAS	FAIL ELEV	RESISTING FORCES				DRIVING FORCES			FACTOR OF SAFETY	
		RA	RB	RP	SUM R	DA	-DP	SUM D		
115	130	10.0	8760.	4200.	5655.	18615.	18677.	6103.	12573.	1.481
115	135	10.0	8760.	5600.	4693.	19053.	18677.	4576.	14100.	1.351
115	140	10.0	8760.	7000.	4469.	20229.	18677.	3615.	15062.	1.343
115	145	10.0	8760.	8400.	4245.	21405.	18677.	3210.	15466.	1.384
115	150	10.0	8760.	9800.	4021.	22581.	18677.	2880.	15797.	1.429
125	135	0.0	15360.	3800.	10845.	30005.	37761.	14843.	22918.	1.309
125	140	0.0	15360.	5700.	10621.	31681.	37761.	13470.	24291.	1.304
125	145	0.0	15360.	7600.	10397.	33357.	37761.	12656.	25105.	1.329
125	150	0.0	15360.	9500.	10240.	35100.	37761.	11923.	25838.	1.358
125	155	0.0	15360.	11400.	10240.	37000.	37761.	11364.	26398.	1.402
120	145	-6.0	19920.	9500.	14800.	44220.	53613.	19901.	33711.	1.312
120	150	-6.0	19920.	11400.	14800.	46120.	53613.	19116.	34496.	1.337
120	155	-6.0	19920.	13300.	14800.	48020.	53613.	18560.	35053.	1.370
120	160	-6.0	19920.	15200.	14800.	49920.	53613.	18224.	35389.	1.411
120	165	-6.0	19920.	17100.	14800.	51820.	53613.	18112.	35501.	1.460

RB from 23' at
RB from 30' at

STA. 635+00 TO STA. 670+00

ELEVATION IN FEET — C.D.



TYPICAL COMPUTER ANALYSIS

SURFACE		DRIVING FORCE			RESISTING FORCE			ΣR	FACTOR OF SAFETY
		D _A	D _P	ΣD	R _A	R _B	R _P		
NO.	EL.								
AA	15.5	16690	3292	13399	13680	7695	4669	26043	1.944
BB	-1.0	51442	14234	37208	25917	13680	18928	58525	1.578
CC	15.5	16150	1002	15148	14113	14580	2648	31341	2.069
DD	-1.0	49048	746	48302	27717	34754	4880	67351	1.394

MRC 9836 LJM
 STA 635+00 TO 670+00 LANDSIDE
 0. 33. 122. 33. 131. 33. 40. 30.
 152. 26. 157. 24. 168. 19.5 200. 19.5
 0. 4. 30. 4. 65. 15.5 86. 22.5
 101. 22.5 108. 26. 116. 30. 122. 33.
 0. 4. 30. 4. 65. 15.5 86. 22.5
 101. 22.5 108. 26. 116. 30. 140. 30.
 0. 4. 30. 4. 65. 15.5 86. 22.5
 0. 4. 30. 4. 65. 15.5 100. 15.5

*** STRATUM 4 ELEV. = 15.50 FT. ***

ACT. RANGE 121.0 FT. TO 141.0 FT. CRIT. PASS 160.00 FT. 6 PASS. WEDGES

DIST.	DA	RA	RB	DP	RP	F.S.
121.00	14237.51	8413.06	15795.00	2005.21	3644.00	2.2769
126.00	15659.60	10413.02	13770.00	2005.21	3644.00	2.0380
131.00	16636.09	12346.32	11745.00	2005.21	3644.00	1.8957
136.00	16690.50	13679.72	9720.00	2005.21	3644.00	1.8416
141.00	15357.33	14613.02	7695.00	2005.21	3644.00	1.9437

** CRIT. ACT. WEDGE 136.00 FT. FROM ORIGIN ***

*** PASSIVE WEDGE 155.00 FT. FROM ORIGIN ***

$$FS = \frac{RA = 13679.7 + RB = 7695.0 + RP = 4668.7 \quad \text{SUM R} = 26043.4}{DA = 16690.5 - DP = 3291.7 \quad \text{SUM D} = 13398.8} = 1.944$$

*** PASSIVE WEDGE 160.00 FT. FROM ORIGIN ***

$$FS = \frac{RA = 13679.7 + RB = 9720.0 + RP = 3644.0 \quad \text{SUM R} = 27043.7}{DA = 16690.5 - DP = 2005.2 \quad \text{SUM D} = 14685.3} = 1.842$$

*** PASSIVE WEDGE 165.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 13679.7 + RB= 11745.0 + RP= 2824.0}{DA= 16690.5 - DP= 1050.0} = \frac{SUM R= 28248.7}{SUM D= 15640.5} = 1.806$$

*** PASSIVE WEDGE 168.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 13679.7 + RB= 12960.0 + RP= 2824.0}{DA= 16690.5 - DP= 856.1} = \frac{SUM R= 29463.7}{SUM D= 15834.4} = 1.861$$

*** PASSIVE WEDGE 170.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 13679.7 + RB= 13770.0 + RP= 2824.0}{DA= 16690.5 - DP= 853.0} = \frac{SUM R= 30273.7}{SUM D= 15837.5} = 1.912$$

*** PASSIVE WEDGE 175.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 13679.7 + RB= 15795.0 + RP= 2824.0}{DA= 16690.5 - DP= 853.0} = \frac{SUM R= 32298.7}{SUM D= 15837.5} = 2.039$$

*** STRATUM 5 ELEV. = -1.00 FT. ***

ACT. RANGE 121.0 FT. TO 141.0 FT. CRIT. PASS 165.00 FT. 8 PASS. WEDGES

SHEAR STRENGTH ALONG BASE

DISTANCE	NO. 5	NO. 6	USED
0.00	570.00	1167.98	570.00
122.00	570.00	1546.72	570.00
131.00	570.00	1546.72	570.00
140.00	570.00	1347.54	570.00
152.00	570.00	1077.34	570.00
157.00	570.00	953.78	570.00
168.00	570.00	675.79	570.00
200.00	570.00	675.79	570.00
400.00	570.00	675.79	570.00

DIST.	DA	RA	RB	DP	RP	F.S.
121.00	44745.89	21046.03	25080.00	14233.94	18928.03	2.1321
126.00	47398.74	21399.03	22230.00	14233.94	18928.03	1.8862
131.00	49782.03	22575.61	19380.00	14233.94	18928.03	1.7127
136.00	51306.71	23917.09	16530.00	14233.94	18928.03	1.6016
141.00	51441.88	25917.09	13680.00	14233.94	18928.03	1.5729

** CRIT. ACT. WEDGE 141.00 FT. FROM ORIGIN **

**** PASSIVE WEDGE 155.00 FT. FROM ORIGIN **

$$\begin{aligned}
 & \text{RA} = 25917.1 + \text{RB} = 7980.0 + \text{RP} = 18928.0 \quad \text{SUM R} = 52825.1 \\
 \text{FS} = & \frac{\text{RA} + \text{RB} + \text{RP}}{\text{DA} - \text{DP}} = \frac{52825.1}{51441.9 - 17733.9} = \frac{52825.1}{33708.0} = 1.567
 \end{aligned}$$

**** PASSIVE WEDGE 160.00 FT. FROM ORIGIN **

$$\begin{aligned}
 & \text{RA} = 25917.1 + \text{RB} = 10830.0 + \text{RP} = 18928.0 \quad \text{SUM R} = 55675.1 \\
 \text{FS} = & \frac{\text{RA} + \text{RB} + \text{RP}}{\text{DA} - \text{DP}} = \frac{55675.1}{51441.9 - 15437.7} = \frac{55675.1}{36004.2} = 1.546
 \end{aligned}$$

**** PASSIVE WEDGE 165.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 25917.1 + RB= 13680.0 + RP= 18928.0}{DA= 51441.9 - DP= 14233.9} = \frac{SUM R= 58525.1}{SUM D= 37207.9} = 1.573$$

**** PASSIVE WEDGE 168.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 25917.1 + RB= 15390.0 + RP= 18928.0}{DA= 51441.9 - DP= 14038.4} = \frac{SUM R= 60235.1}{SUM D= 37403.5} = 1.610$$

**** PASSIVE WEDGE 170.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 25917.1 + RB= 16530.0 + RP= 18928.0}{DA= 51441.9 - DP= 14035.4} = \frac{SUM R= 61375.1}{SUM D= 37406.5} = 1.641$$

**** PASSIVE WEDGE 175.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 25917.1 + RB= 19380.0 + RP= 18928.0}{DA= 51441.9 - DP= 14038.4} = \frac{SUM R= 64225.1}{SUM D= 37403.5} = 1.717$$

**** PASSIVE WEDGE 180.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 25917.1 + RB= 22230.0 + RP= 18928.0}{DA= 51441.9 - DP= 14034.0} = \frac{SUM R= 67075.1}{SUM D= 37407.9} = 1.793$$

*** PASSIVE

WEDGE 185.00 FT. FROM ORIGIN ***

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 25917.1 + \text{RB} = 25080.0 + \text{RP} = 18928.0 \quad \text{SUM R} = 69925.1}{\text{DA} = 51441.9 - \text{DP} = 14037.1 \quad \text{SUM D} = 37404.8} = 1.869
 \end{aligned}$$

WEDGE LOCATED ACT PAS	FAIL ELEV	RESISTING FORCES				DRIVING FORCES			FACTOR OF SAFETY
		RA	RB	RP	SUM R	DA	-DP	SUM D	
136 155	15.5	13680.	7695.	4669.	26043.	16690.	3292.	13399.	1.9444A
136 160	15.5	13680.	9720.	3644.	27044.	16690.	2005.	14685.	1.842
136 165	15.5	13680.	11745.	2824.	28249.	16690.	1050.	15640.	1.806
136 168	15.5	13680.	12960.	2824.	29464.	16690.	856.	15834.	1.861
136 170	15.5	13680.	13770.	2824.	30274.	16690.	853.	15838.	1.912
136 175	15.5	13680.	15795.	2824.	32299.	16690.	853.	15838.	2.039
141 155	-1.0	25917.	7980.	18928.	52825.	51442.	17734.	33708.	1.567
141 160	-1.0	25917.	10830.	18928.	55675.	51442.	15438.	36004.	1.546
141 165	-1.0	25917.	13680.	18928.	58525.	51442.	14234.	37208.	1.57388
141 168	-1.0	25917.	15390.	18928.	60235.	51442.	14038.	37403.	1.610
141 170	-1.0	25917.	16530.	18928.	61375.	51442.	14035.	37406.	1.641
141 175	-1.0	25917.	19380.	18928.	64225.	51442.	14038.	37403.	1.717
141 180	-1.0	25917.	22230.	18928.	67075.	51442.	14034.	37408.	1.793
141 185	-1.0	25917.	25080.	18928.	69925.	51442.	14037.	37405.	1.869

MRC 8836 LNJ
 STA 635+00 TO 670+00 CANALSIDE
 0. 19.5 28. 21. 40. 24. 48. 26.
 60. 30. 69. 33. 78. 33. 84. 30.
 92. 26. 99. 22.5 114. 22.5 135. 15.5
 0. 19.5 28. 21. 40. 24. 48. 26.
 0. 19.5 28. 21. 40. 24. 48. 26.

*** STRATUM 3 ELEV. = 15.50 FT. ***

ACT. RANGE 79.0 FT. TO 94.0 FT. CRIT. PASS 125.00 FT. 4 PASS. WEDGES

DIST.	DA	RA	RB	DP	RP	F.S.
79.00	16440.54	13113.12	18630.00	444.28	1765.04	2.0947
84.00	16149.64	14113.12	16605.00	444.28	1765.04	2.0683
89.00	13784.92	14613.02	14580.00	444.28	1765.04	2.3206
94.00	9874.39	14613.02	12555.00	444.28	1765.04	3.0682

** CRIT. ACT. WEDGE 84.00 FT. FROM ORIGIN **

*** PASSIVE WEDGE 120.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 14113.1 + RB= 14580.0 + RP= 2647.7}{DA= 16149.6 - DP= 1001.7} = \frac{SUM R= 31340.8}{SUM D= 15148.0} = 2.069$$

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

$$FS = \frac{RA= 14113.1 + RB= 16605.0 + RP= 1765.0}{DA= 16149.6 - DP= 444.3} = \frac{SUM R= 32483.2}{SUM D= 15705.4} = 2.068$$

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

$$FS = \frac{RA= 14113.1 + RB= 18630.0 + RP= 882.5 \quad \text{SUM R}= 33625.6}{DA= 16149.6 - DP= 111.4 \quad \text{SUM D}= 16038.2} = 2.097$$

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

$$FS = \frac{RA= 14113.1 + RB= 20655.0 + RP= 0.0 \quad \text{SUM R}= 34768.1}{DA= 16149.6 - DP= 3.0 \quad \text{SUM D}= 16146.7} = 2.153$$

*** STRATUM 4 ELEV. = -1.00 FT. ***

ACT. RANGE 79.0 FT. TO 129.0 FT. CRIT. PASS 170.00 FT. 8 PASS. WEDGES

SHEAR STRENGTH ALONG BASE

DISTANCE	NO. 4	NO. 5	USED
78.00	570.00	1546.72	570.00
84.00	570.00	1347.54	570.00
92.00	570.00	1077.34	570.00
99.00	570.00	861.12	570.00
114.00	570.00	861.12	570.00
*** 128.14	570.00	570.00	570.00
135.00	570.00	428.68	428.68
170.00	570.00	129.90	129.90
400.00	570.00	129.90	129.90

DIST.	DA	RA	RB	DP	RP	F.S.
79.00	47014.77	24717.13	41210.37	561.27	4880.01	1.5243
84.00	49120.78	26217.19	38360.37	561.27	4880.01	1.4304
89.00	49047.77	27717.04	35510.37	561.27	4880.01	1.4047
94.00	46790.31	28917.14	32660.36	561.27	4880.01	1.4376
99.00	42455.46	29916.95	29810.36	561.27	4880.01	1.5422
104.00	36746.23	30717.05	26960.36	561.27	4880.01	1.7288
109.00	30809.35	30717.05	24110.36	561.27	4880.01	1.9739
114.00	25103.06	29116.95	21260.36	561.27	4880.01	2.2516
119.00	21320.48	23516.94	18410.36	561.27	4880.01	2.2548
124.00	19326.77	21046.03	15560.36	561.27	4880.01	2.2108
129.00	17095.59	21046.03	12718.03	561.27	4880.01	2.3372

** CRIT. ACT. WEDGE 89.00 FT. FROM ORIGIN ***

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

$$FS = \frac{RA= 27717.0 + RB= 25735.1 + RP= 12121.1}{DA= 49047.8 - DP= 4608.1} = \frac{SUM R= 65573.3}{SUM D= 44439.7} = 1.476$$

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

$$FS = \frac{RA= 27717.0 + RB= 27771.8 + RP= 10914.5}{DA= 49047.8 - DP= 3735.6} = \frac{SUM R= 66403.3}{SUM D= 45312.1} = 1.465$$

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

$$FS = \frac{RA= 27717.0 + RB= 29595.1 + RP= 9707.5}{DA= 49047.8 - DP= 2954.6} = \frac{SUM R= 67019.6}{SUM D= 46093.2} = 1.454$$

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

$$FS = \frac{RA= 27717.0 + RB= 31205.0 + RP= 8500.5}{DA= 49047.8 - DP= 2265.1} = \frac{SUM R= 67422.5}{SUM D= 46782.7} = 1.441$$

*** PASSIVE

WEDGE 110.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 27717.0 + RB= 32601.4 + RP= 7293.6}{DA= 49047.8 - DP= 1668.0} = \frac{SUM R= 67612.1}{SUM D= 47379.7} = 1.427$$

*** PASSIVE

WEDGE 160.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 27717.0 + RB= 33784.5 + RP= 6086.8}{DA= 49047.8 - DP= 1161.4} = \frac{SUM R= 67588.3}{SUM D= 47886.4} = 1.411$$

*** PASSIVE

WEDGE 165.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 27717.0 + RB= 34754.1 + RP= 4880.0}{DA= 49047.8 - DP= 746.1} = \frac{SUM R= 67351.2}{SUM D= 48301.7} = 1.394$$

*** PASSIVE

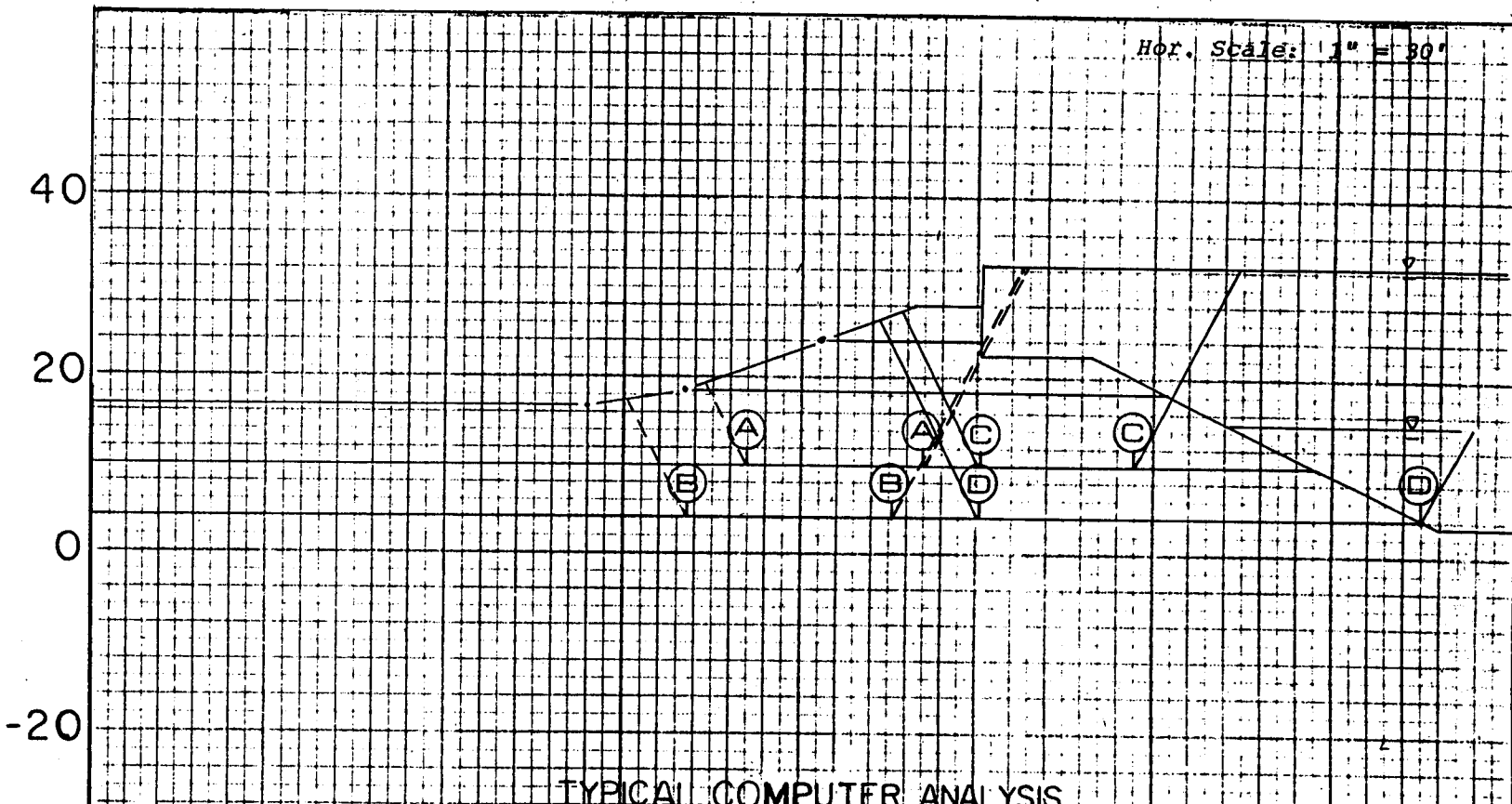
WEDGE 170.00 FT. FROM ORIGIN ***

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 27717.0 + \text{RB} = 35510.4 + \text{RP} = 4880.0}{\text{DA} = 49047.8 - \text{DP} = 561.3} = \frac{\text{SUM R} = 68107.4}{\text{SUM D} = 48486.5} = 1.405
 \end{aligned}$$

WEDGE LOCATED ACT PAS	FAIL ELEV	RESISTING FORCES				DRIVING FORCES			FACTOR OF SAFETY
		RA	RB	RP	SUM R	DA	-DP	SUM D	
84 120	15.5	14113.	14580.	2648.	31341.	16150.	1002.	15148.	2.069 CC
84 125	15.5	14113.	16605.	1765.	32483.	16150.	444.	15705.	2.068
84 130	15.5	14113.	18630.	883.	33626.	16150.	111.	16038.	2.097
84 135	15.5	14113.	20655.	0.	34768.	16150.	3.	16147.	2.153
89 135	-1.0	27717.	25735.	12121.	65573.	49048.	4608.	44440.	1.476
89 140	-1.0	27717.	27772.	10914.	66403.	49048.	3736.	45312.	1.465
89 145	-1.0	27717.	29595.	9707.	67020.	49048.	2955.	46093.	1.454
89 150	-1.0	27717.	31205.	8501.	67423.	49048.	2265.	46783.	1.441
89 155	-1.0	27717.	32601.	7294.	67612.	49048.	1668.	47380.	1.427
89 160	-1.0	27717.	33784.	6087.	67588.	49048.	1161.	47886.	1.411
89 165	-1.0	27717.	34754.	4880.	67351.	49048.	746.	48302.	1.394 DD
89 170	-1.0	27717.	35510.	4880.	68107.	49048.	561.	48486.	1.405

STA. 625+00 TO STA. 635+00

ELEVATION IN FEET — C.D.



Hor. Scale: 1" = 30'

TYPICAL COMPUTER ANALYSIS

SURFACE		DRIVING FORCE			RESISTING FORCE				FACTOR OF SAFETY
NO.	EL.	DA	DP	ΣD	RA	RB	RP	ΣR	
AA	10.0	19058	5083	13974	8760	8400	5226	22386	1.602
BB	4.0	31072	8674	22398	12480	11900	7640	32020	1.430
CC	10.0	16259	2794	13464	12927	7280	4130	24337	1.808
DD	4.0	25112	0	25112	15504	17943	-0	33447	1.332

MRC 8836 L J N
 STA 630+00 LANDSIDE

0. 32.5 109. 32.5 109.1 28. 120. 28.
 136. 24. 160. 18.5 176. 16.5 400. 16.5
 0. 3. 32. 3. 35. 4. 53. 10.
 79. 18.5 91. 22.5 108.9 22.5 109. 24.
 0. 3. 32. 3. 35. 4. 53. 10.
 79. 18.5 91. 22.5 108.9 22.5 109. 24.
 0. 3. 32. 3. 35. 4. 53. 10.
 0. 3. 32. 3. 35. 4. 53. 10.
 0. 3. 32. 3. 35. 4. 400. 4.

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

ACT. RANGE 114.0 FT. TO 129.0 FT. CRIT. PASS 139.00 FT. 5 PASS. WEDGES

DIST.	DA	RA	RB	DP	RP	F.S.
114.00	18983.82	8760.01	7000.00	7419.88	7090.46	1.9760
119.00	19057.70	8760.01	5600.00	7419.88	7090.46	1.8432
124.00	18751.64	11235.60	4200.00	7419.88	7090.46	1.9879
129.00	16651.92	14260.02	2800.00	7419.88	7090.46	2.6159

** CRIT. ACT. WEDGE 119.00 FT. FROM ORIGIN ***

*** PASSIVE WEDGE 149.00 FT. FROM ORIGIN ***

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 8760.0 + \text{RB} = 9400.0 + \text{RP} = 5226.1}{\text{DA} = 19057.7 - \text{DP} = 5083.3} = \frac{\text{SUM R} = 22386.1}{\text{SUM D} = 13974.4} = 1.602
 \end{aligned}$$

*** PASSIVE WEDGE 154.00 FT. FROM ORIGIN ***

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 8760.0 + \text{RB} = 9800.0 + \text{RP} = 4604.4}{\text{DA} = 19057.7 - \text{DP} = 1104.2} = \frac{\text{SUM R} = 23164.4}{\text{SUM D} = 14953.5} = 1.549
 \end{aligned}$$

**** PASSIVE WEDGE 159.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 8760.0 + RB= 11200.0 + RP= 4293.0}{DA= 19057.7 - DP= 3405.1} = \frac{SUM R= 24253.0}{SUM D= 15652.6} = 1.549$$

**** PASSIVE WEDGE 164.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 8760.0 + RB= 12600.0 + RP= 3982.1}{DA= 19057.7 - DP= 2924.1} = \frac{SUM R= 25342.1}{SUM D= 16133.6} = 1.571$$

**** PASSIVE WEDGE 169.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 8760.0 + RB= 14000.0 + RP= 3671.1}{DA= 19057.7 - DP= 2484.2} = \frac{SUM R= 26431.1}{SUM D= 16573.5} = 1.595$$

*** STRATUM 5 ELEV. = 4.00 FT. ***

ACT. RANGE 114.0 FT. TO 129.0 FT. CRIT. PASS 149.00 FT. 5 PASS. WEDGES

SHEAR STRENGTH ALONG BASE

DISTANCE	NO. 5	NO. 6	USED
109.10	340.00	1251.70	340.00
120.00	340.00	1251.70	340.00
136.00	340.00	974.57	340.00
160.00	340.00	647.50	340.00
176.00	340.00	528.56	340.00
400.00	340.00	528.56	340.00

DIST.	DA	RA	RB	DP	RP	F.S.
114.00	31168.25	12480.02	11900.00	11063.05	8262.04	1.6236
119.00	31239.77	12480.02	10200.00	11063.05	8262.04	1.5336
124.00	31072.16	12480.02	8500.00	11063.05	8262.04	1.4614
129.00	30121.68	13979.90	6800.00	11063.05	8262.04	1.5238

** CRIT. ACT. WEDGE 124.00 FT. FROM ORIGIN ***

**** PASSIVE WEDGE 149.00 FT. FROM ORIGIN ***

$$\begin{array}{r}
 \text{RA} = 12480.0 + \text{RB} = 8500.0 + \text{RP} = 8262.0 \quad \text{SUM R} = 29242.1 \\
 \text{FS} = \frac{\text{-----}}{\text{DA} = 31072.2 - \text{DP} = 11063.0 \quad \text{SUM D} = 20009.1} = 1.461
 \end{array}$$

**** PASSIVE WEDGE 154.00 FT. FROM ORIGIN ***

$$\begin{array}{r}
 \text{RA} = 12480.0 + \text{RB} = 10200.0 + \text{RP} = 7951.0 \quad \text{SUM R} = 30631.1 \\
 \text{FS} = \frac{\text{-----}}{\text{DA} = 31072.2 - \text{DP} = 9718.3 \quad \text{SUM D} = 21353.9} = 1.434
 \end{array}$$

**** PASSIVE WEDGE 159.00 FT. FROM ORIGIN ***

$$\begin{array}{r}
 \text{RA} = 12480.0 + \text{RB} = 11900.0 + \text{RP} = 7640.0 \quad \text{SUM R} = 32020.0 \\
 \text{FS} = \frac{\text{-----}}{\text{DA} = 31072.2 - \text{DP} = 8674.1 \quad \text{SUM D} = 22398.1} = 1.430
 \end{array}$$

**** PASSIVE

WEDGE 164.00 FT. FROM ORIGIN ***

$$\begin{aligned}
 &RA= 12480.0 + RB= 13600.0 + RP= 7360.0 \quad \text{SUM R} = 33440.0 \\
 \text{FS} = &\frac{\text{-----}}{\text{-----}} = 1.440 \\
 &DA= 31072.2 - DP= 7854.0 \quad \text{SUM D} = 23218.1
 \end{aligned}$$

**** PASSIVE

WEDGE 169.00 FT. FROM ORIGIN ***

$$\begin{aligned}
 &RA= 12480.0 + RB= 15300.0 + RP= 7360.0 \quad \text{SUM R} = 35140.0 \\
 \text{FS} = &\frac{\text{-----}}{\text{-----}} = 1.474 \\
 &DA= 31072.2 - DP= 7239.6 \quad \text{SUM D} = 23832.6
 \end{aligned}$$

WEDGE LOCATED ACT	FAIL ELEV PAS	FAIL ELEV	RESISTING FORCES				DRIVING FORCES			FACTOR OF SAFETY
			RA	RB	RP	SUM R	DA	-DP	SUM D	
119	149	10.0	8760.	8400.	5226.	22386.	19058.	5083.	13974.	1.602 <i>AA</i>
119	154	10.0	8760.	9800.	4604.	23164.	19058.	4104.	14953.	1.549
119	159	10.0	8760.	11200.	4293.	24253.	19058.	3405.	15653.	1.549
119	164	10.0	8760.	12600.	3982.	25342.	19058.	2924.	16134.	1.571
119	169	10.0	8760.	14000.	3671.	26431.	19058.	2484.	16574.	1.595
124	149	4.0	12480.	8500.	8262.	29242.	31072.	11063.	20009.	1.461
124	154	4.0	12480.	10200.	7951.	30631.	31072.	9718.	21354.	1.434
124	159	4.0	12480.	11900.	7640.	32020.	31072.	8674.	22398.	1.430 <i>BL</i>
124	164	4.0	12480.	13600.	7360.	33440.	31072.	7854.	23218.	1.440
124	169	4.0	12480.	15300.	7360.	35140.	31072.	7240.	23833.	1.474

MRC 9836 L J N

STA 630+00 CANALSIDE

0. 16.5 24. 16.5 40. 18.5 63. 24.
 80. 28. 90.9 28. 91. 24. 91.1 22.5
 109. 22.5 121. 18.5 130. 15.5 147. 10.
 0. 16.5 24. 16.5 40. 18.5 63. 24.
 0. 16.5 24. 16.5 40. 18.5 121. 18.5

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

ACT. RANGE 91.0 FT. TO 111.0 FT. CRIT. PASS 127.00 FT. 5 PASS. WEDGES

DIST.	DA	RA	RB	DP	RP	F.S.
91.00	16258.78	12926.77	10080.00	742.10	2737.87	1.6592
96.00	13607.29	13879.04	8680.00	742.10	2737.87	1.9663
101.00	10479.92	14260.02	7280.00	742.10	2737.87	2.4932
106.00	7264.07	14260.02	5880.00	742.10	2737.87	3.5078
111.00	7044.56	8760.01	4480.00	742.10	2737.87	2.5352

** CRIT. ACT. WEDGE 91.00 FT. FROM ORIGIN ***

*** PASSIVE WEDGE 117.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 12926.8 + RB= 7280.0 + RP= 4130.0 \quad \text{SUM R}= 24336.8}{DA= 16258.8 - DP= 2794.5 \quad \text{SUM D}= 13464.3} = 1.808$$

*** PASSIVE WEDGE 122.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 12926.8 + RB= 8680.0 + RP= 3430.1 \quad \text{SUM R}= 25036.8}{DA= 16258.8 - DP= 1636.3 \quad \text{SUM D}= 14622.5} = 1.712$$

**** PASSIVE WEDGE 127.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 12926.8 + RB= 10080.0 + RP= 2737.9}{DA= 16258.8 - DP= 742.1} = \frac{SUM R= 25744.6}{SUM D= 15516.7} = 1.659$$

**** PASSIVE WEDGE 132.00 FT. FROM ORIGIN ***

$$FS = \frac{RA= 12926.8 + RB= 11480.0 + RP= 2053.4}{DA= 16258.8 - DP= 363.6} = \frac{SUM R= 26460.2}{SUM D= 15895.1} = 1.665$$

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

$$FS = \frac{RA= 12926.8 + RB= 12880.0 + RP= 1369.0}{DA= 16258.8 - DP= 160.9} = \frac{SUM R= 27175.7}{SUM D= 16097.9} = 1.688$$

*** STRATUM 5 ELEV. = 4.00 FT. ***

ACT. RANGE 91.0 FT. TO 111.0 FT. CRIT. PASS 160.00 FT. 5 PASS. WEDGES

SHEAR STRENGTH ALONG BASE

DISTANCE	NO. 5	NO. 6	USED
91.00	340.00	777.69	340.00
91.10	340.00	688.49	340.00
109.00	340.00	688.49	340.00
121.00	340.00	450.62	340.00
*** 126.58	340.00	340.00	340.00
130.00	340.00	272.22	272.22
147.00	340.00	142.03	142.03
165.00	340.00	0.00	0.00
168.00	340.00	0.00 X**	340.00
400.00	340.00	0.00 X**	340.00

DIST.	DA	RA	RB	DP	RP	F.S.
91.00	25111.69	15503.95	17844.86	41.57	775.07	1.3611
96.00	23145.62	16456.29	16144.86	41.57	775.07	1.4446
101.00	20602.60	17408.68	14444.86	41.57	775.07	1.5869
106.00	17531.80	17980.03	12744.86	41.57	775.07	1.8010
111.00	14290.59	17980.03	11044.86	41.57	775.07	2.0914

** CRIT. ACT. WEDGE 91.00 FT. FROM ORIGIN ***

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

$$\begin{array}{r}
 \text{RA} = 15503.9 + \text{RB} = 16365.9 + \text{RP} = 3100.1 \quad \text{SUM R} = 34969.9 \\
 \text{FS} = \frac{\text{---}}{\text{---}} = 1.431 \\
 \text{DA} = 25111.7 - \text{DP} = 680.3 \quad \text{SUM D} = 24431.4
 \end{array}$$

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

$$\begin{array}{r}
 \text{RA} = 15503.9 + \text{RB} = 17055.8 + \text{RP} = 2325.1 \quad \text{SUM R} = 34884.8 \\
 \text{FS} = \frac{\text{---}}{\text{---}} = 1.411 \\
 \text{DA} = 25111.7 - \text{DP} = 383.2 \quad \text{SUM D} = 24728.5
 \end{array}$$

**** PASSIVE WEDGE 155.00 FT. FROM ORIGIN ***

$$\begin{array}{r}
 \text{RA} = 15503.9 + \text{RB} = 17549.0 + \text{RP} = 1550.1 \quad \text{SUM R} = 34603.0 \\
 \text{FS} = \frac{\text{---}}{\text{---}} = 1.387 \\
 \text{DA} = 25111.7 - \text{DP} = 170.8 \quad \text{SUM D} = 24940.9
 \end{array}$$

*** PASSIVE

WEDGE 160.00 FT. FROM ORIGIN ***

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 15503.9 + \text{RB} = 17844.9 + \text{RP} = 775.1 \quad \text{SUM R} = 34123.9}{\text{DA} = 25111.7 - \text{DP} = 41.6 \quad \text{SUM D} = 25070.1} = 1.361
 \end{aligned}$$

*** PASSIVE

WEDGE 165.00 FT. FROM ORIGIN ***

$$\begin{aligned}
 \text{FS} &= \frac{\text{RA} = 15503.9 + \text{RB} = 17943.5 + \text{RP} = -0.1 \quad \text{SUM R} = 33447.3}{\text{DA} = 25111.7 - \text{DP} = 0 \quad \text{SUM D} = 25111.7} = 1.332
 \end{aligned}$$

WEDGE LOCATED ACT PAS	FAIL ELEV	RESISTING FORCES				DRIVING FORCES			FACTOR OF SAFETY
		RA	RB	RP	SUM R	DA	-DP	SUM D	
91 117	10.0	12927.	7280.	4130.	24337.	16259.	2794.	13464.	1.808 CC
91 122	10.0	12927.	8680.	3430.	25037.	16259.	1636.	14623.	1.712
91 127	10.0	12927.	10080.	2738.	25745.	16259.	742.	15517.	1.659
91 132	10.0	12927.	11480.	2053.	26460.	16259.	364.	15895.	1.665
91 137	10.0	12927.	12880.	1369.	27176.	16259.	161.	16098.	1.688
91 145	4.0	15504.	16366.	3100.	34970.	25112.	680.	24431.	1.431
91 150	4.0	15504.	17056.	2325.	34885.	25112.	383.	24728.	1.411
91 155	4.0	15504.	17549.	1550.	34603.	25112.	171.	24941.	1.387
91 160	4.0	15504.	17845.	775.	34124.	25112.	42.	25070.	1.361
91 165	4.0	15504.	17943.	-0.	33447.	25112.	0.	25112.	1.332 DD