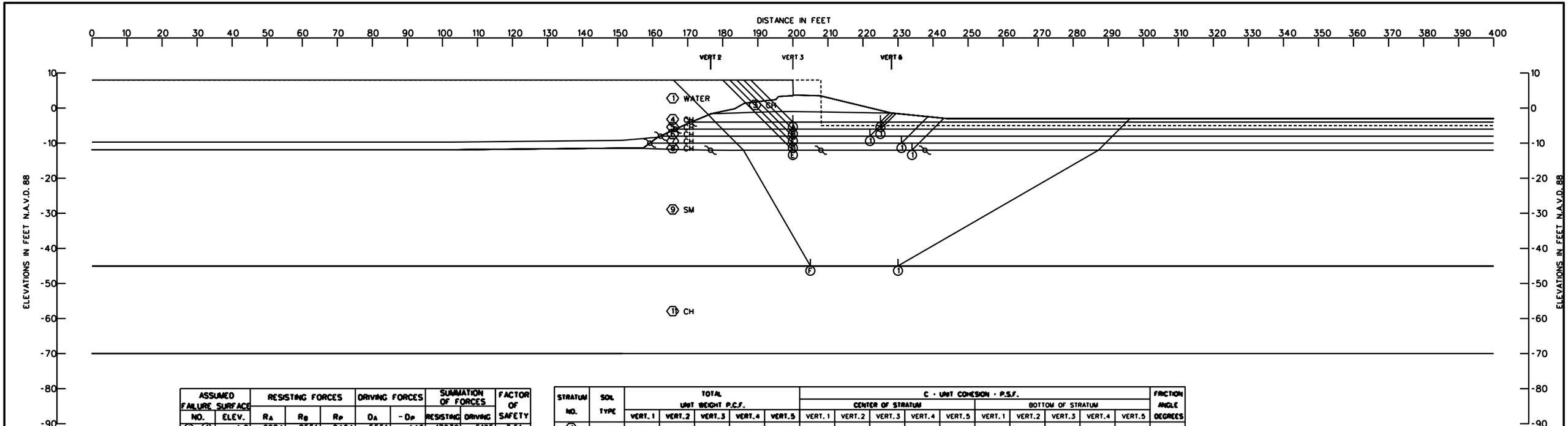


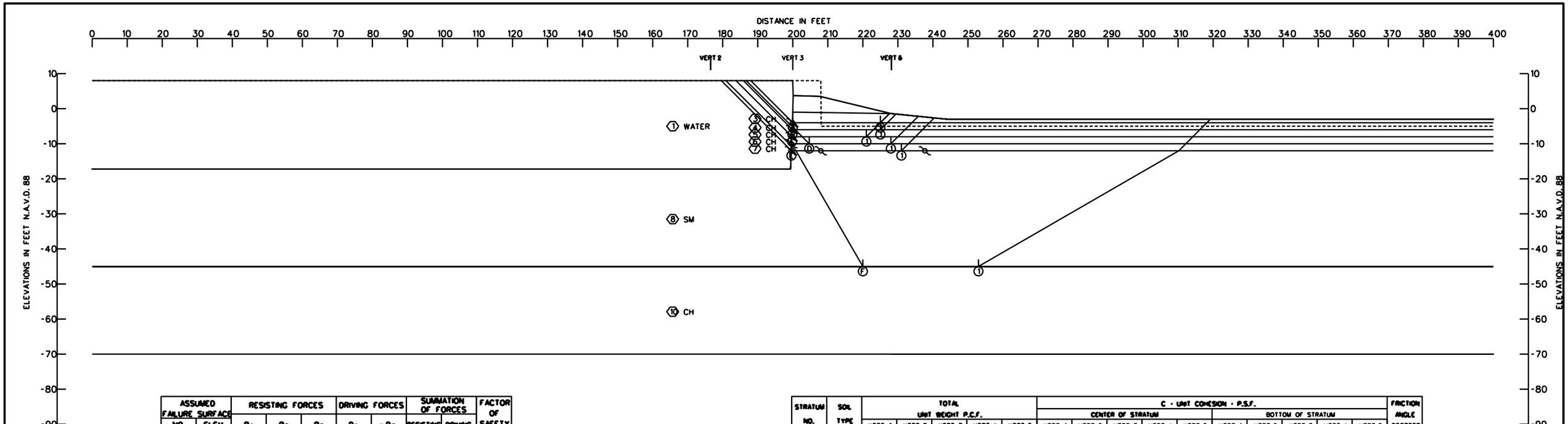
ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-4.0	6924	8551	2464	5551	446	17939	5105	3.51
B	1	-6.0	8022	8278	4315	7747	1119	20615	6628	3.11
C	1	-8.0	9141	7308	4953	10282	2553	21402	7729	2.77
D	1	-10.0	10253	9862	6818	13175	3074	26933	10101	2.67
E	1	-12.0	11356	9490	7470	16447	4494	28316	11953	2.37
F	1	-45.0	38973	19845	103502	137879	100556	162320	37323	4.35

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	FRICTION ANGLE DEGREES
1	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
2	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
3	CH	105	105	105	105	105	650	650	650	650	650	650	650	650	650	650	0
4	CH	96	96	105	96	96	600	450	450	450	600	600	450	450	450	600	0
5	CH	96	90	90	90	96	600	340	340	340	600	600	340	340	340	600	0
6	CH	104	104	90	104	104	320	320	340	320	320	320	320	340	320	320	0
7	CH	104	104	98	104	104	320	320	340	320	320	320	320	340	320	320	0
8	CH	96	96	98	96	96	300	300	340	300	300	300	300	340	300	300	0
9	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
10	CH	111	111	108	111	111	790	790	800	790	790	790	790	800	790	790	0
11	CH	111	111	108	111	111	870	870	900	870	870	950	950	1000	950	950	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 7 Rem Sta 59+00 to Sta 66+00
Protected Side Stability Analysis
Case: Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 30-JAN-12



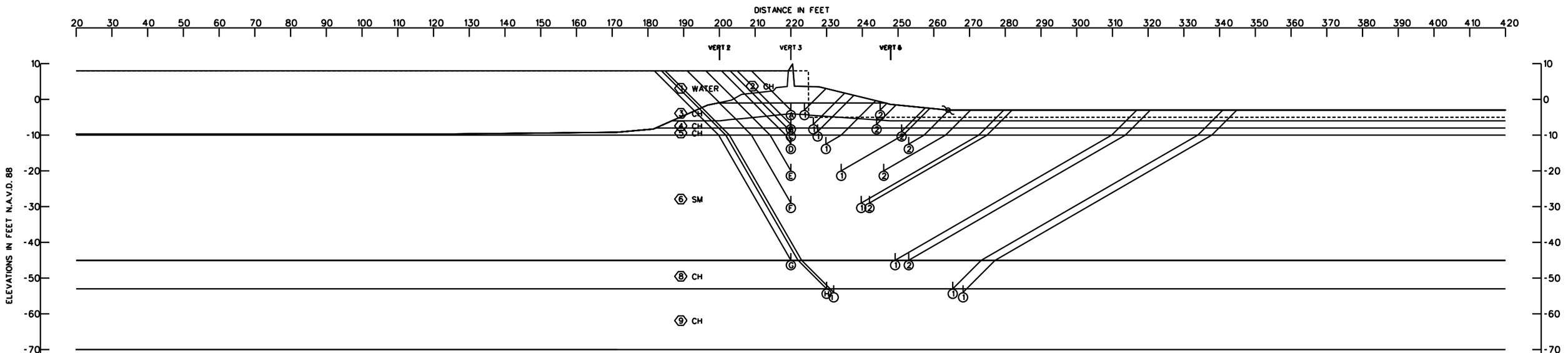
ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-4.0	97	8551	2464	4499	446	11112	4053	2.74
B	1	-6.0	71	8312	4315	6119	1119	12698	5000	2.54
C	1	-8.0	71	7051	5121	7990	2723	12243	5267	2.32
D	1	-10.0	3295	7380	7147	10873	3297	17822	7576	2.35
E	1	-12.0	69	8633	7799	12483	4762	16501	7721	2.14
F	1	-45.0	35885	26082	102408	127120	100009	164375	27111	6.06

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	FRICTION ANGLE DEGREES
1	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
2	CH	105	105	105	105	105	650	650	650	650	650	650	650	650	650	650	0
3	CH	96	96	105	96	96	600	450	450	450	600	600	450	450	450	600	0
4	CH	96	90	90	90	96	600	340	340	340	600	600	340	340	340	600	0
5	CH	104	104	90	104	104	320	320	340	320	320	320	320	340	320	320	0
6	CH	104	104	98	104	104	320	320	340	320	320	320	320	340	320	320	0
7	CH	96	96	98	96	96	300	300	340	300	300	300	300	340	300	300	0
8	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
9	CH	111	111	108	111	111	790	790	800	790	790	790	790	800	790	790	0
10	CH	111	111	108	111	111	870	870	900	870	870	950	950	1000	950	950	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 7 Rem Sta 59+00 to Sta 66+00
Protected Side Stability Analysis
Case: Gap Stability
March 2012

Lake Pontchartrain, LA & Vicinity Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 30-JAN-12



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-3.0	8045	1900	9285	4821	2200	19230	2621	7.34
A	2	-3.0	8045	12500	1892	4821	226	22437	4595	4.88
B	1	-7.0	10430	2128	10207	9191	4927	22765	4264	5.34
B	2	-7.0	10430	7954	5034	9191	1782	23418	7409	3.16
C	1	-9.0	11467	2530	10476	11910	6558	24473	5352	4.57
C	2	-9.0	11467	10199	6288	11910	2549	27954	9361	2.99
D	1	-12.5	12942	4688	13687	17894	9421	31317	8473	3.70
D	2	-12.5	12942	16454	9050	17894	5216	38446	12678	3.03
E	1	-20.0	14945	11039	26549	35341	19388	52533	15953	3.29
E	2	-20.0	14945	20281	22328	35341	16893	57554	18448	3.12
F	1	-29.0	20979	21726	47435	64959	40413	90140	24546	3.67
F	2	-29.0	20979	24197	46495	64959	39943	91671	25016	3.66
G	1	-45.0	40721	12759	109054	141374	103223	162534	38151	4.26
G	2	-45.0	40721	14374	108450	141374	102921	163545	38453	4.25
H	1	-53.0	54308	27058	119798	190336	146036	201164	44300	4.54
I	1	-54.0	56233	33892	121489	196576	151971	211614	44605	4.74

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	C · UNIT COHESION · P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	FRICTION ANGLE DEGREES
1	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
2	CH	106	106	106	106	106	900	900	900	900	900	900	900	900	900	900	0
3	CH	106	101	101	101	106	600	500	500	500	600	600	500	500	500	600	0
4	CH	101	101	90	101	101	320	320	340	320	320	320	320	340	320	320	0
5	CH	101	101	98	101	101	320	320	340	320	320	320	320	340	320	320	0
6	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
7	CH	111	111	108	111	111	425	425	450	425	425	425	425	450	425	425	0
8	CH	111	111	108	111	111	760	760	800	760	760	760	760	800	760	760	0
9	CH	111	111	108	111	111	845	845	890	845	845	930	930	980	930	930	0

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

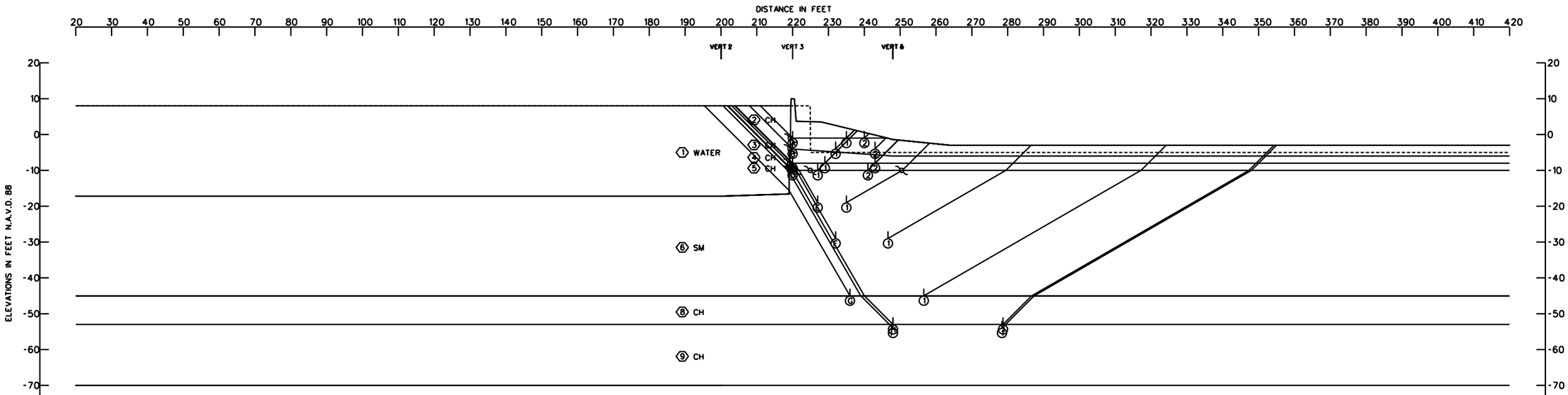
NOTES

ϕ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
∇ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

London Ave. Canal
Outfall Canal Reevaluation Report
Reach B Sta 66+00 to Sta 69+06
Protected Side Stability Analysis
Case: Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 26-JAN-12



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-1.0	1090	7500	4040	2834	332	12630	2502	5.05
A	2	-1.0	1090	10000	2276	2834	105	13366	2729	4.90
B	1	-4.0	691	5920	7043	4876	1790	13654	3086	4.43
B	2	-4.0	691	11420	3168	4876	606	15279	4270	3.58
C	1	-8.0	536	3031	9649	8456	5239	13216	3217	4.11
C	2	-8.0	536	7630	5682	8456	2512	13848	5944	2.33
D	1	-10.0	590	1540	10986	10633	7740	13116	2893	4.53
D	2	-10.0	590	6159	6979	10633	4345	13728	6288	2.18
E	1	-19.0	7205	6946	24078	28607	17268	38229	11339	3.37
F	1	-29.0	16284	16006	45081	58792	39236	77371	19556	3.96
G	1	-45.0	36220	8818	108043	130131	102718	153081	27413	5.58
H	1	-53.0	50562	23332	119798	176222	146035	193692	30187	6.42
I	1	-54.0	52131	28272	121488	182837	151971	201891	30866	6.54

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	FRICTION ANGLE DEGREES
1	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
2	CH	106	106	106	106	106	900	900	900	900	900	900	900	900	900	900	0
3	CH	106	101	101	101	106	600	500	500	500	600	600	500	500	500	600	0
4	CH	101	101	90	101	101	320	320	340	320	320	320	320	340	320	320	0
5	CH	101	101	98	101	101	320	320	340	320	320	320	320	340	320	320	0
6	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
7	CH	111	111	108	111	111	425	425	450	425	425	425	425	450	425	425	0
8	CH	111	111	108	111	111	760	760	800	760	760	760	760	800	760	760	0
9	CH	111	111	108	111	111	845	845	890	845	845	930	930	980	930	930	0

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

NOTES

ϕ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
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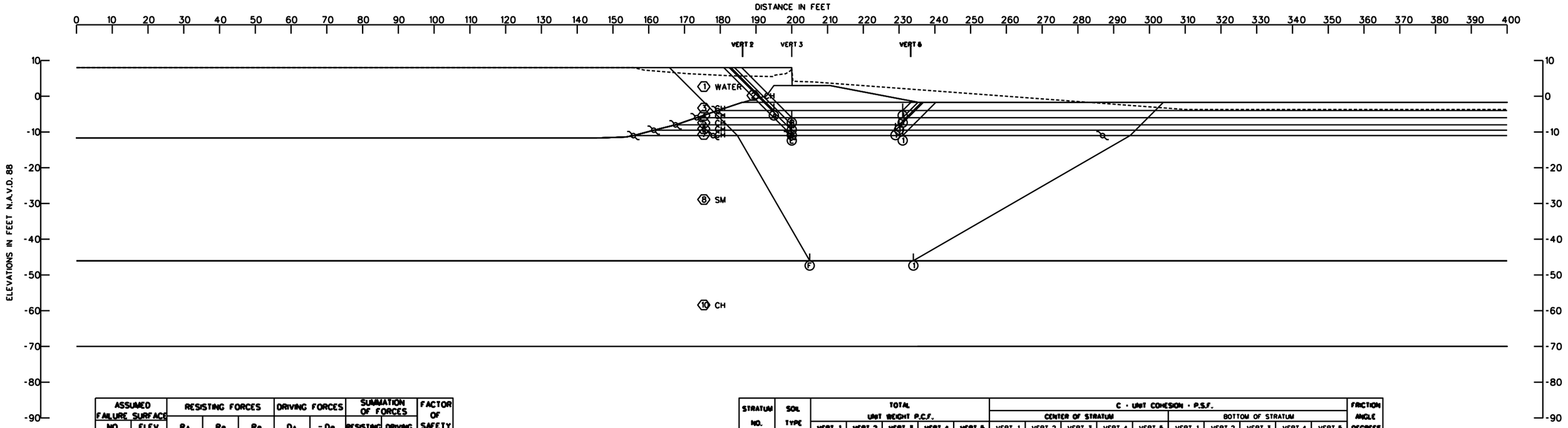
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

London Ave. Canal
Outfall Canal Reevaluation Report
Reach B Sta 66+00 to Sta 69+06
Protected Side Stability Analysis
Case: Gap Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 06-FEB-12



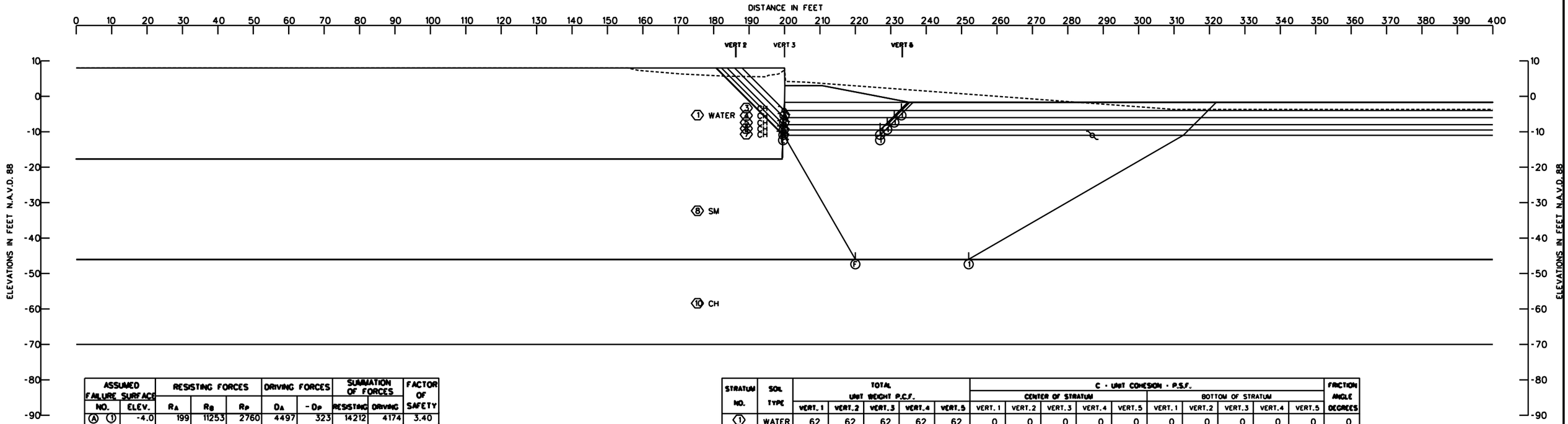
ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-4.0	6271	12260	3417	4970	423	21948	4547	4.83
B	1	-6.0	9881	10250	4120	7642	1106	24251	6536	3.71
C	1	-8.0	9510	9929	5405	10040	2213	24844	7827	3.17
D	1	-9.5	9731	8340	7410	12051	3357	25481	8694	2.93
E	1	-11.0	9928	6564	8076	14261	4470	24568	9791	2.51
F	1	-46.0	42262	24019	100367	141428	112155	166648	29273	5.69

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	FRICTION ANGLE DEGREES
1	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
2	CH	106	106	106	106	106	950	950	950	950	950	950	950	950	950	950	0
3	CH	102	102	106	102	102	600	600	950	600	600	600	600	950	600	600	0
4	CH	102	90	90	90	102	600	340	340	340	600	600	340	340	340	600	0
5	CH	101	90	90	90	101	320	320	340	320	320	320	320	340	320	320	0
6	CH	101	98	98	98	101	320	320	340	320	320	320	320	340	320	320	0
7	CH	101	98	98	98	101	220	220	340	220	220	220	220	340	220	220	0
8	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
9	CH	108	108	108	108	108	820	820	840	820	820	820	820	840	820	820	0
10	CH	108	108	108	108	108	930	930	960	930	930	1040	1040	1080	1040	1040	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 9 Sta 70+18 to Sta 74+00
Protected Side Stability Analysis
Case: Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 30-JAN-12

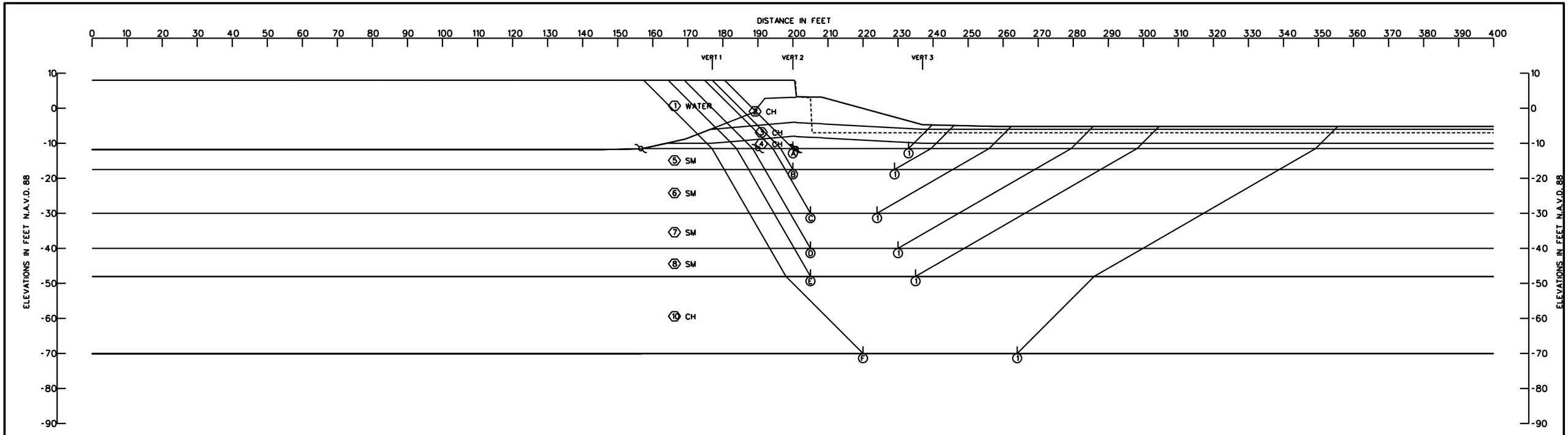


ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-4.0	199	11253	2760	4497	323	14212	4174	3.40
B	1	-6.0	71	10284	4120	6118	1106	14475	5012	2.89
C	1	-8.0	71	9675	5408	7990	2331	15154	5659	2.68
D	1	-9.5	69	7964	6530	9558	3630	14563	5928	2.46
E	1	-11.0	68	6170	7091	11266	4854	13329	6412	2.08
F	1	-46.0	32380	26292	105719	133268	112146	164391	21122	7.78

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	FRICTION ANGLE DEGREES
1	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
2	CH	106	106	106	106	106	950	950	950	950	950	950	950	950	950	950	0
3	CH	102	102	106	102	102	600	600	950	600	600	600	600	950	600	600	0
4	CH	102	90	90	90	102	600	340	340	340	600	600	340	340	340	600	0
5	CH	101	90	90	90	101	320	320	340	320	320	320	320	340	320	320	0
6	CH	101	98	98	98	101	320	320	340	320	320	320	320	340	320	320	0
7	CH	101	98	98	98	101	220	220	340	220	220	220	220	340	220	220	0
8	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
9	CH	108	108	108	108	108	820	820	840	820	820	820	820	840	820	820	0
10	CH	108	108	108	108	108	930	930	960	930	930	1040	1040	1080	1040	1040	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 9 Sta 70+18 to Sta 74+00
Protected Side Stability Analysis
Case: Gap Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 30-JAN-12



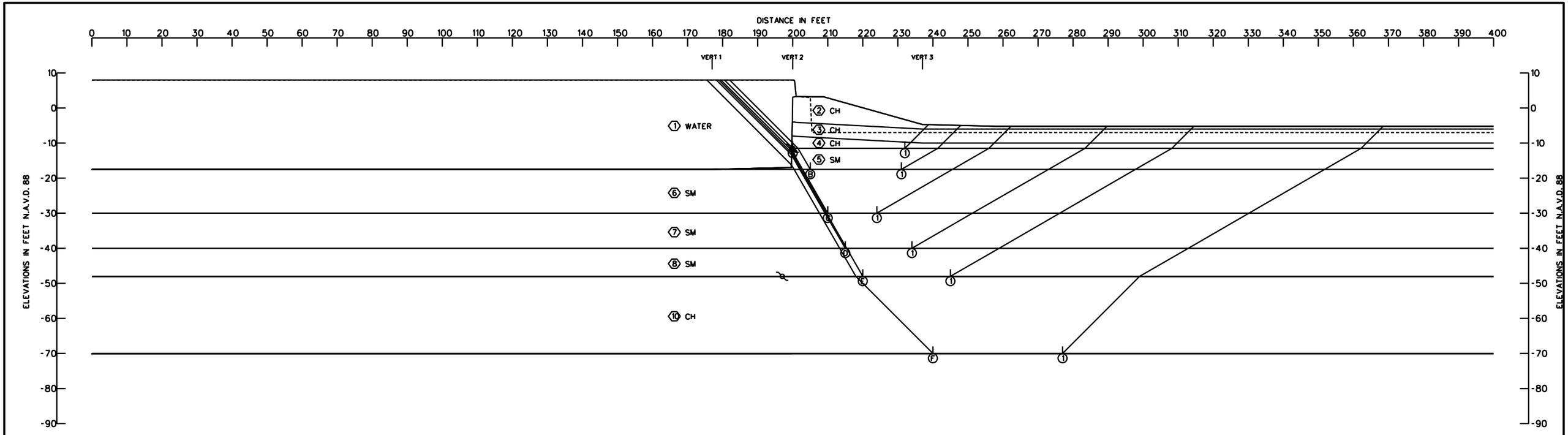
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-11.5	9123	7665	4108	15148	2484	20896	12664	1.65
Ⓑ ①	-17.5	10167	19868	11656	27084	8874	41691	18210	2.29
Ⓒ ①	-30.0	19447	22604	40331	64661	36239	82382	28422	2.90
Ⓓ ①	-40.0	29517	37251	72917	109008	70028	139685	38980	3.58
Ⓔ ①	-48.0	39859	28458	108279	152609	106210	176596	46399	3.81
Ⓕ ①	-70.0	83655	45994	148408	305563	243546	278057	62017	4.48

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	WATER	62.5	62.5	62.5	0	0	0	0	0	0	0
2	CH	99	101	99	600	750	600	600	750	600	0
3	CH	99	87	99	260	275	260	260	275	260	0
4	CH	96	98	96	180	275	180	180	275	180	0
5	SM	122	122	122	0	0	0	0	0	0	30
6	SM	122	122	122	0	0	0	0	0	0	30
7	SM	122	122	122	0	0	0	0	0	0	30
8	SM	122	122	122	0	0	0	0	0	0	30
9	CH	108	108	108	820	1100	820	820	1100	820	0
10	CH	108	108	108	930	1100	930	1040	1100	1040	0
11	CH	108	108	108	1040	1100	1040	1040	1100	1040	0

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 10, STA. 74+00 TO 79+50
PROTECTED SIDE STABILITY ANALYSIS,
CASE: GLOBAL STABILITY
MARCH 2012

LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 31-JAN-12



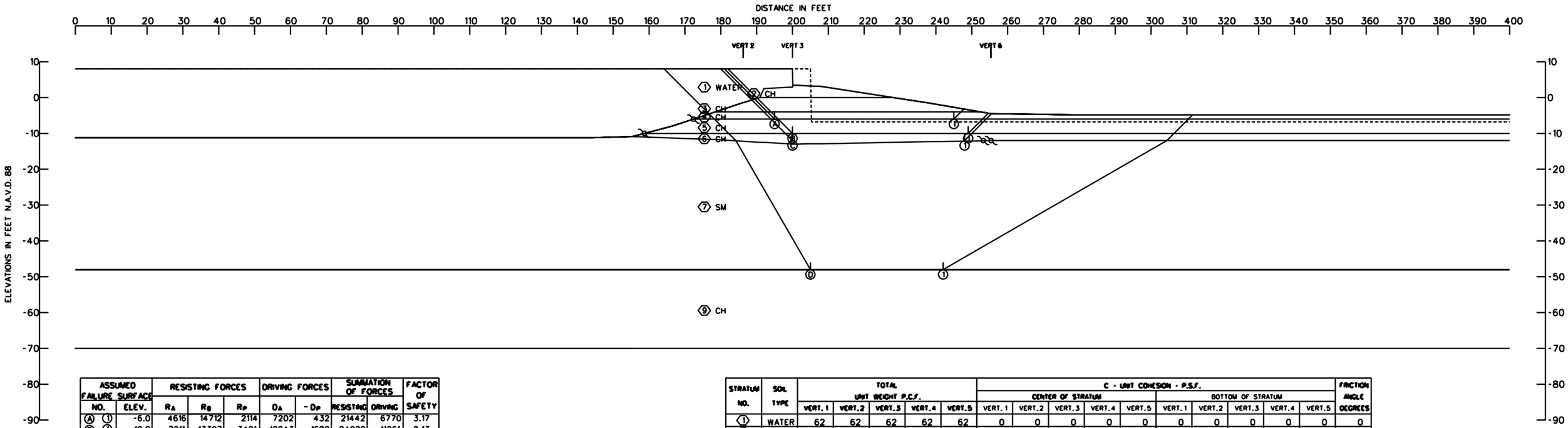
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-11.5	165	7485	4140	11944	2616	11790	9328	1.26
Ⓑ ①	-17.5	3750	18632	11189	23189	8638	33571	14551	2.31
Ⓒ ①	-30.0	15193	16368	40406	59352	36276	71967	23076	3.12
Ⓓ ①	-40.0	31157	26533	72073	101027	69606	129763	31421	4.13
Ⓔ ①	-48.0	46418	21593	107735	142306	105938	175746	36368	4.83
Ⓕ ①	-70.0	86973	38480	148408	285530	243546	273861	41984	6.52

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62.5	62.5	62.5	0	0	0	0	0	0	0
②	CH	99	101	99	600	750	600	600	750	600	0
③	CH	99	87	99	260	275	260	260	275	260	0
④	CH	96	98	96	180	275	180	180	275	180	0
⑤	SM	122	122	122	0	0	0	0	0	0	30
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	SM	122	122	122	0	0	0	0	0	0	30
⑧	SM	122	122	122	0	0	0	0	0	0	30
⑨	CH	108	108	108	820	1100	820	820	1100	820	0
⑩	CH	108	108	108	930	1100	930	1040	1100	1040	0
⑪	CH	108	108	108	1040	1100	1040	1040	1100	1040	0

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 10, STA. 74+00 TO 79+50
PROTECTED SIDE STABILITY ANALYSIS,
CASE: GAP STABILITY
MARCH 2012

LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 31-JAN-12



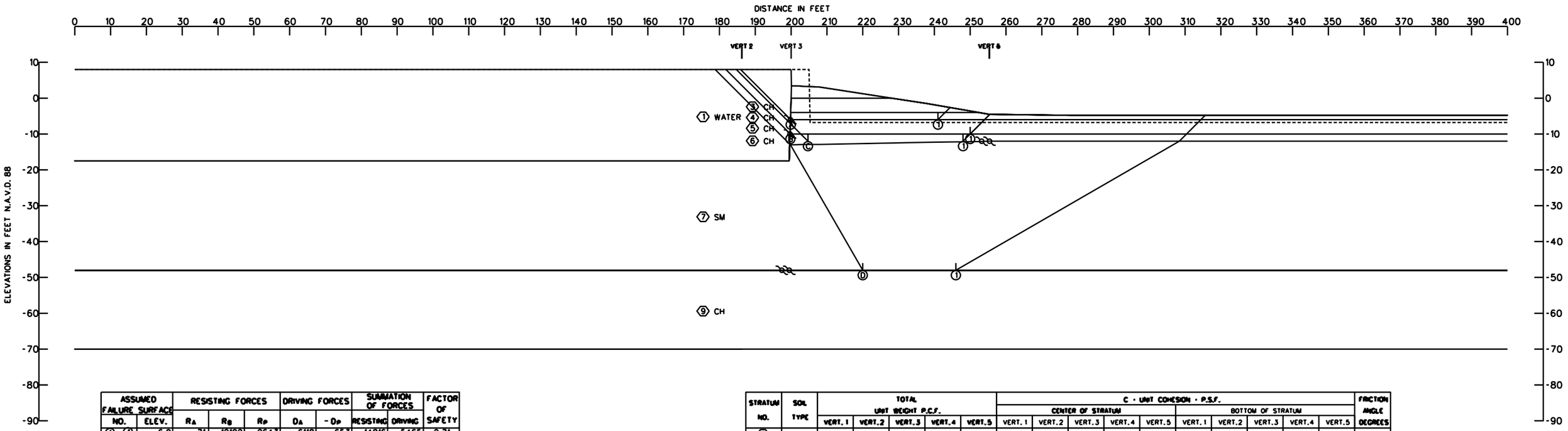
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-6.0	4616	14712	2114	7202	432	21442	6770	3.17
Ⓑ ①	-10.0	7211	13397	3421	12943	1682	24029	11261	2.13
Ⓒ ①	-12.0	7950	13150	4323	16065	3036	25423	13029	1.95
Ⓓ ①	-48.0	40554	36296	113070	152858	109043	189920	43815	4.33

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.					C - UNIT COHESION - P.S.F. CENTER OF STRATUM					C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM					FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	
①	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
②	CH	106	106	106	106	106	650	650	650	650	650	650	650	650	650	650	0
③	CH	104	104	104	104	104	450	450	450	450	450	450	450	450	450	450	0
④	CH	108	82	82	82	108	600	350	350	350	600	600	350	350	350	600	0
⑤	CH	100	100	100	100	100	285	285	300	285	285	285	285	300	285	285	0
⑥	CH	96	96	100	96	96	240	240	300	240	240	240	240	300	240	240	0
⑦	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
⑧	CH	106	106	106	106	106	820	820	1100	820	820	820	820	1100	820	820	0
⑨	CH	106	106	106	106	106	930	930	1100	930	930	1040	1040	1100	1040	1040	0

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 11, STA. 79+50 TO 84+81
PROTECTED SIDE STABILITY ANALYSIS,
CASE: GLOBAL STABILITY
MARCH 2012

LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 30-JAN-12



ASSUMED FAILURE SURFACE NO.		ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
Ⓐ	①	-6.0	71	12102	2643	6118	653	14816	5465	2.71
Ⓑ	①	-10.0	65	13704	3335	10117	1593	17104	8524	2.01
Ⓒ	①	-12.0	2942	11752	4323	13439	3036	19017	10403	1.83
Ⓓ	①	-48.0	40981	24254	112001	143112	108508	177236	34604	5.12

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	FRICTION ANGLE DEGREES
①	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
②	CH	106	106	106	106	106	650	650	650	650	650	650	650	650	650	650	0
③	CH	104	104	104	104	104	450	450	450	450	450	450	450	450	450	450	0
④	CH	108	82	82	82	108	600	350	350	350	600	600	350	350	350	600	0
⑤	CH	100	100	100	100	100	285	285	300	285	285	285	285	300	285	285	0
⑥	CH	96	96	100	96	96	240	240	300	240	240	240	240	300	240	240	0
⑦	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
⑧	CH	106	106	106	106	106	820	820	1100	820	820	820	820	1100	820	820	0
⑨	CH	106	106	106	106	106	930	930	1100	930	930	1040	1040	1100	1040	1040	0

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 11, STA. 79+50 TO 84+81
PROTECTED SIDE STABILITY ANALYSIS,
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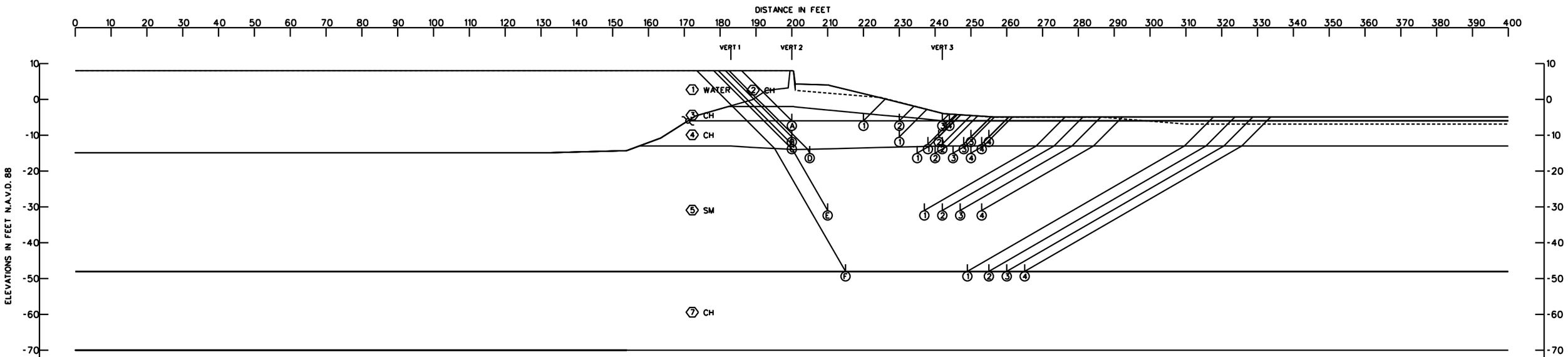
LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 30-JAN-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
A 1	-6.0	7217	4000	6882	7777	2387	18099	5390	3.36
A 2	-6.0	7217	6000	4818	7777	1079	18035	6698	2.69
A 3	-6.0	7217	8400	2291	7777	200	17908	7577	2.36
A 4	-6.0	7217	8800	2147	7777	174	18164	7603	2.39
B 1	-10.5	7383	6000	5611	13753	3783	18994	9970	1.91
B 2	-10.5	7383	8200	3839	13753	2097	19422	11656	1.67
B 3	-10.5	7383	10000	3191	13753	1728	20574	12025	1.71
B 4	-10.5	7383	11000	3120	13753	1597	21503	12156	1.77
C 1	-12.5	7821	7600	4711	16999	3877	20132	13122	1.53
C 2	-12.5	7821	8400	4423	16999	3470	20644	13529	1.53
C 3	-12.5	7821	9600	3991	16999	3162	21412	13837	1.55
C 4	-12.5	7821	10600	3920	16999	2967	22341	14032	1.59
D 1	-15.0	9687	12431	6658	21483	6611	28776	14872	1.93
D 2	-15.0	9687	13915	6130	21483	5915	29732	15568	1.91
D 3	-15.0	9687	15277	5720	21483	5547	30684	15936	1.93
D 4	-15.0	9687	16597	5676	21483	5299	31960	16184	1.97
E 1	-31.0	21394	25360	33947	68502	38717	80701	29785	2.71
E 2	-31.0	21394	29538	34423	68502	38232	85355	30270	2.82
E 3	-31.0	21394	33625	34470	68502	38003	89489	30499	2.93
E 4	-31.0	21394	38489	34655	68502	37854	94538	30648	3.08

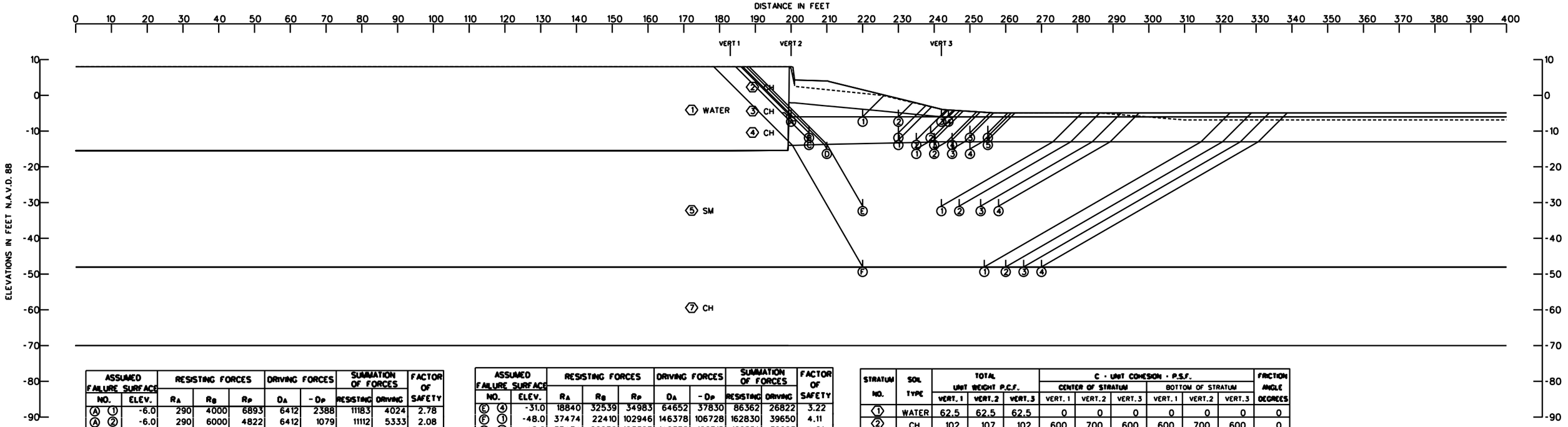
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
F 1	-48.0	46536	23256	102479	152721	106823	172271	45898	3.75
F 2	-48.0	46536	26916	103277	152721	106720	176729	46001	3.84
F 3	-48.0	46536	29966	103501	152721	106715	180003	46006	3.91
F 4	-48.0	46536	33016	103501	152721	106715	183053	46006	3.98

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	WATER	62.5	62.5	62.5	0	0	0	0	0	0	0
2	CH	102	107	102	600	700	600	600	700	600	0
3	CH	107	80	107	600	200	600	600	200	600	0
4	CH	101	101	101	200	200	200	200	200	200	0
5	SM	122	122	122	0	0	0	0	0	0	30
6	CH	108	108	108	610	900	610	610	900	610	0
7	CH	108	108	108	755	900	755	900	900	900	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 12A Sta 85+60 to Sta 89+50
Protected Side Stability Analysis
Case: Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 02-FEB-12



ASSUMED FAILURE SURFACE NO.		ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
A	1	-6.0	290	4000	6893	6412	2388	11183	4024	2.78
A	2	-6.0	290	6000	4822	6412	1079	11112	5333	2.08
A	3	-6.0	290	8400	2291	6412	200	10981	6212	1.77
A	4	-6.0	290	8800	2148	6412	174	11238	6238	1.80
B	1	-10.5	2283	5000	5612	12197	3784	12895	8413	1.53
B	2	-10.5	2283	6800	3984	12197	2276	13067	9921	1.32
B	3	-10.5	2283	9000	3192	12197	1728	14475	10469	1.38
B	4	-10.5	2283	10000	3120	12197	1597	15403	10600	1.45
C	1	-12.5	2286	5000	5949	15058	5511	13235	9547	1.39
C	2	-12.5	2286	6000	4927	15058	4390	13213	10668	1.24
C	3	-12.5	2286	7000	4568	15058	3634	13854	11424	1.21
C	4	-12.5	2286	8000	4208	15058	3313	14494	11745	1.23
C	5	-12.5	2286	10000	3920	15058	2933	16206	12125	1.34
D	1	-15.0	4716	10184	6689	19886	6611	21589	13275	1.63
D	2	-15.0	4716	11687	6137	19886	5915	22540	13971	1.61
D	3	-15.0	4716	13051	5712	19886	5548	23479	14338	1.64
D	4	-15.0	4716	14364	5659	19886	5299	24739	14587	1.70
E	1	-31.0	18840	19599	34385	64652	38232	72824	26420	2.76
E	2	-31.0	18840	23682	34399	64652	38003	76921	26649	2.89
E	3	-31.0	18840	28534	34555	64652	37854	81929	26798	3.06

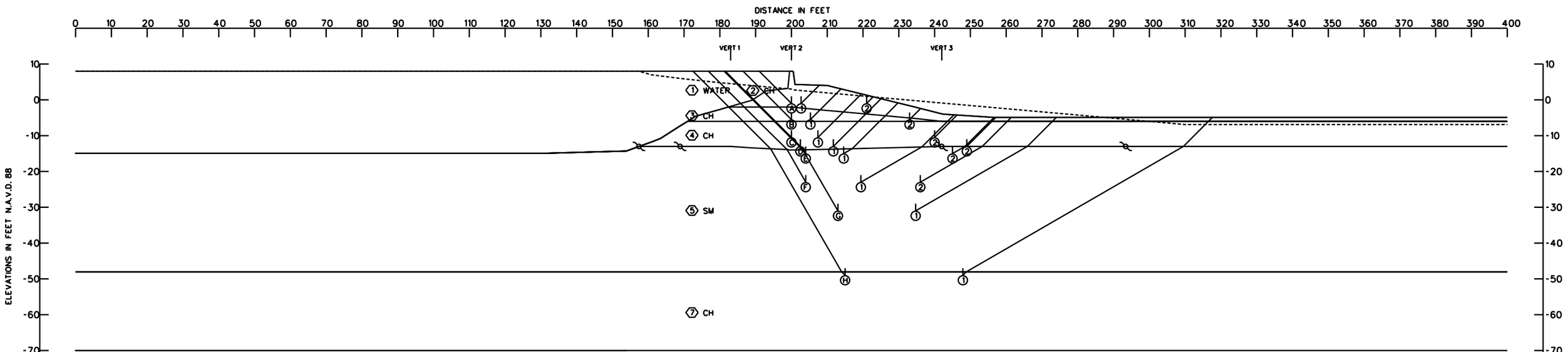
ASSUMED FAILURE SURFACE NO.		ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
E	4	-31.0	18840	32539	34983	64652	37830	86362	26822	3.22
F	1	-48.0	37474	22410	102946	146378	106728	162830	39650	4.11
F	2	-48.0	37474	26070	103307	146378	106715	166851	39663	4.21
F	3	-48.0	37474	29120	103343	146378	106715	169937	39663	4.28
F	4	-48.0	37474	32170	103378	146378	106715	173022	39663	4.36

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	TOTAL UNIT WEIGHT P.C.F. VERT. 2	TOTAL UNIT WEIGHT P.C.F. VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	CENTER OF STRATUM VERT. 2	CENTER OF STRATUM VERT. 3	BOTTOM OF STRATUM VERT. 1	BOTTOM OF STRATUM VERT. 2	BOTTOM OF STRATUM VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62.5	62.5	62.5	0	0	0	0	0	0	0
2	CH	102	107	102	600	700	600	600	700	600	0
3	CH	107	80	107	600	200	600	600	200	600	0
4	CH	101	101	101	200	200	200	200	200	200	0
5	SM	122	122	122	0	0	0	0	0	0	30
6	CH	108	108	108	610	900	610	610	900	610	0
7	CH	108	108	108	755	900	755	900	900	900	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 12A Sta 85+60 to Sta 89+50
Protected Side Stability Analysis
Case: Gap Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 02-FEB-12



ASSUMED FAILURE SURFACE NO.		ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-1.0	5324	1881	6985	3052	1417	14190	1635	8.68
A	2	-1.0	5324	14175	2434	3052	230	21933	2822	7.77
B	1	-5.5	7214	1194	9346	7220	4519	17754	2701	6.57
B	2	-5.5	7214	11787	3752	7220	617	22753	6603	3.45
C	1	-10.5	7383	1480	10191	13753	9315	19054	4438	4.29
C	2	-10.5	7383	8000	3912	13753	2176	19295	11577	1.67
D	1	-13.0	8383	1840	9934	17972	11259	20157	6713	3.00
D	2	-13.0	8383	8166	4120	17972	3509	20669	14463	1.43
E	1	-15.0	9317	5212	11069	21587	12743	25598	8844	2.89
E	2	-15.0	9317	14356	4975	21587	5548	28648	16039	1.79
F	1	-23.0	15090	11541	19690	41752	23347	46321	18405	2.52
F	2	-23.0	15090	21472	13645	41752	18656	50207	23096	2.17
G	1	-31.0	23476	19831	29787	68031	39063	73094	28968	2.52
H	1	-49.0	51501	29610	97491	158964	112024	178602	46940	3.80

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62.5	62.5	62.5	0	0	0	0	0	0	0
2	CH	102	107	102	600	700	600	600	700	600	0
3	CH	107	80	107	600	200	600	600	200	600	0
4	CH	101	101	101	200	200	200	200	200	200	0
5	SM	122	122	122	0	0	0	0	0	0	30
6	CH	108	108	108	610	900	610	610	900	610	0
7	CH	108	108	108	755	900	755	900	900	900	0

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

NOTES

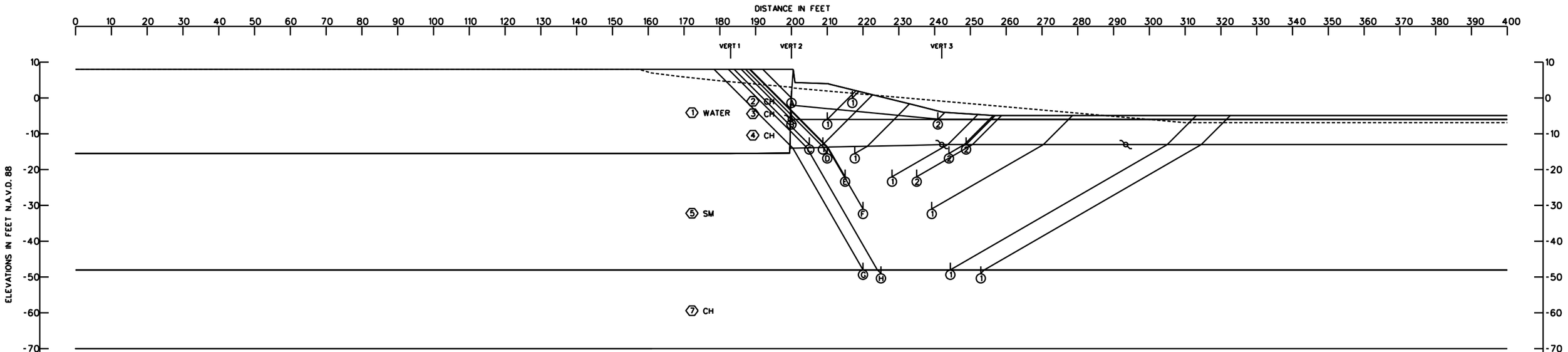
ϕ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
∇ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 12B, STA. 89+50 TO 93+00
PROTECTED SIDE STABILITY ANALYSIS,
CASE: GLOBAL STABILITY
MARCH 2012

LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 27-JAN-12



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	0.0	90	11556	2461	2001	229	14107	1772	7.96
B	1	-6.0	122	2000	8732	6156	4207	10854	1949	5.57
B	2	-6.0	122	8180	2368	6156	236	10670	5920	1.80
C	1	-13.0	2131	760	10488	15541	12209	13379	3332	4.02
C	2	-13.0	2131	7649	4120	15541	3519	13900	12022	1.16
D	1	-15.5	4704	3753	10862	20598	12263	19319	8335	2.32
D	2	-15.5	4704	11809	5275	20598	6143	21788	14455	1.51
E	1	-22.0	9805	8242	14505	35819	18449	32552	17370	1.87
E	2	-22.0	9805	11853	12390	35819	16868	34048	18951	1.80
F	1	-31.0	18370	16369	29469	64407	38458	64208	25949	2.47
G	1	-48.0	40738	16554	94610	146033	106995	151902	39038	3.89
H	1	-49.0	43044	25110	98350	151058	111893	166504	39165	4.25

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62.5	62.5	62.5	0	0	0	0	0	0	0
2	CH	102	107	102	600	700	600	600	700	600	0
3	CH	107	80	107	600	200	600	600	200	600	0
4	CH	101	101	101	200	200	200	200	200	200	0
5	SM	122	122	122	0	0	0	0	0	0	30
6	CH	108	108	108	610	900	610	610	900	610	0
7	CH	108	108	108	755	900	755	900	900	900	0

GENERAL NOTES:

CLASSFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

NOTES

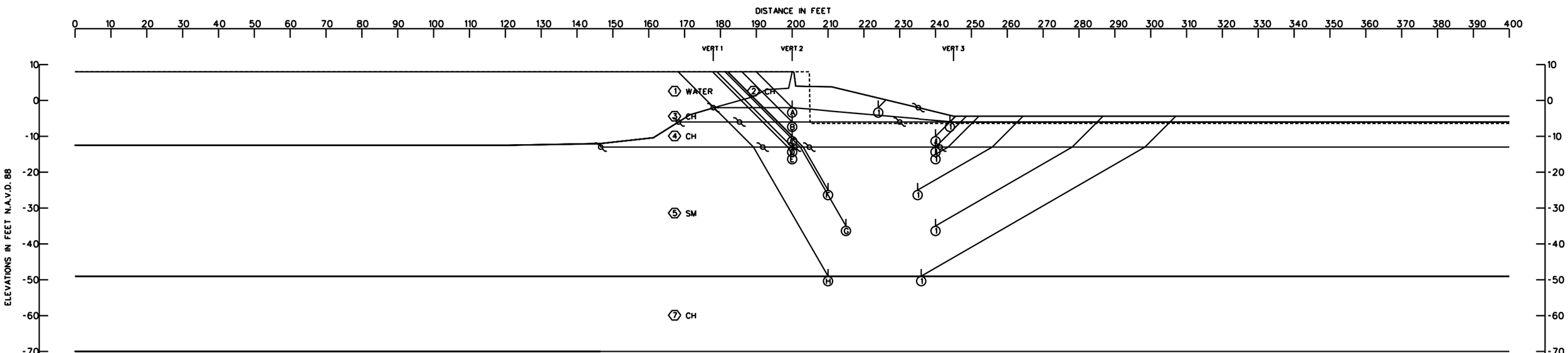
- Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
- C -- UNIT COHESION, P.S.F.
- ∇ -- STATIC WATER SURFACE
- D -- HORIZONTAL DRIVING FORCE IN POUNDS
- R -- HORIZONTAL RESISTING FORCE IN POUNDS
- A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
- B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
- P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 12B, STA. 89+50 TO 93+00
PROTECTED SIDE STABILITY ANALYSIS,
CASE: GAP STABILITY
MARCH 2012

LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 07-FEB-12



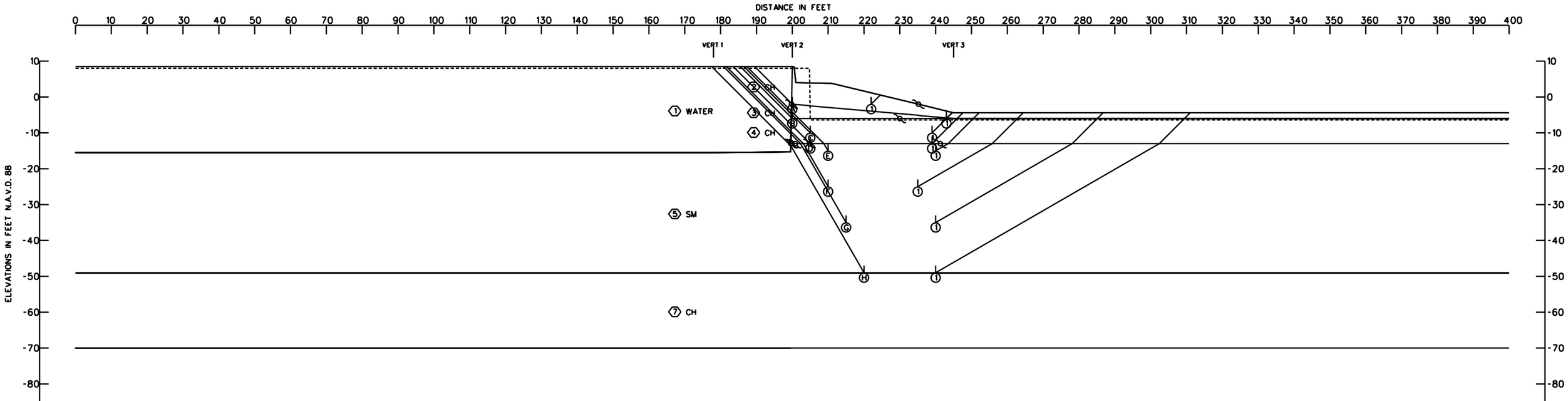
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
A 1	-2.0	7093	15710	2788	3887	316	25591	3571	7.17
B 1	-6.0	7919	10804	1864	7899	158	20587	7741	2.66
C 1	-10.0	8142	10800	3656	13103	1769	22598	11334	1.99
D 1	-13.0	8818	10440	5028	17887	3536	24286	14351	1.69
E 1	-15.0	9425	22342	6768	21811	5067	38535	16744	2.30
F 1	-25.0	19168	23536	21844	46807	21070	64548	25737	2.51
G 1	-35.0	30647	30125	46782	83750	48289	107554	35461	3.03
H 1	-49.0	53847	18454	103894	159816	107995	176195	51821	3.40

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	109	109	109	600	700	600	600	700	600	0
3	CH	75	75	75	250	250	250	250	250	250	0
4	CH	75	105	75	220	280	220	220	310	220	0
5	SM	122	122	122	0	0	0	0	0	0	30
6	CH	108	108	108	700	720	700	700	720	700	0
7	CH	108	108	108	800	820	800	900	930	900	0

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 13, STA. 93+00 TO 96+00
PROTECTED SIDE STABILITY ANALYSIS,
CASE: GLOBAL STABILITY
MARCH 2012

LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 31-JAN-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
A 1	-2.0	289	14637	3307	3490	439	18233	3051	5.98
B 1	-6.0	150	10581	1951	6624	198	12682	6426	1.97
C 1	-10.0	2849	9044	3753	11690	1907	15646	9783	1.60
D 1	-13.0	2952	9044	5047	16067	3685	17043	12382	1.38
E 1	-15.0	6613	16740	6768	19824	5067	30121	14757	2.04
F 1	-25.0	11197	23540	21845	44547	21070	56582	23477	2.41
G 1	-35.0	22538	30129	46782	81276	48289	99449	32987	3.01
H 1	-49.0	43701	14133	103125	151808	107610	160959	44198	3.64

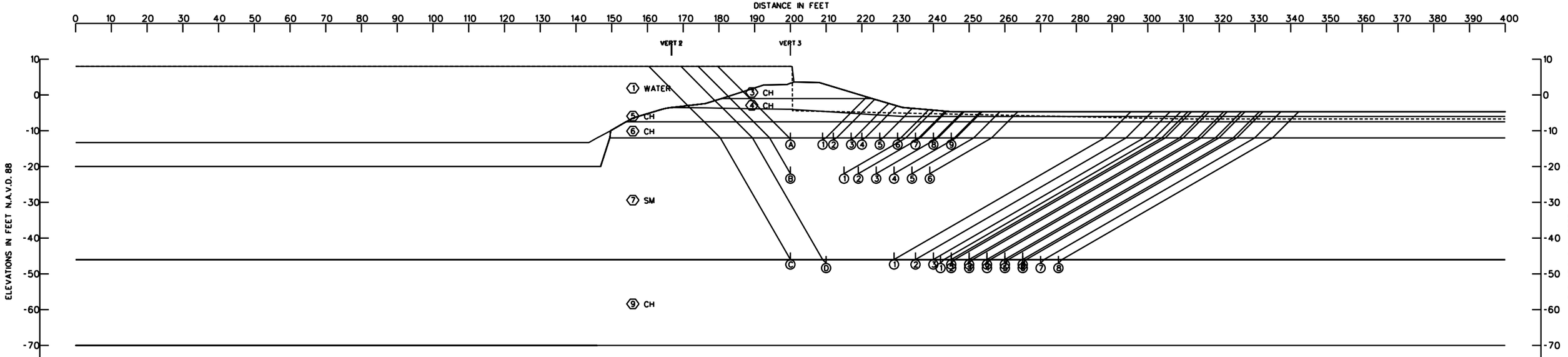
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	109	109	109	600	700	600	600	700	600	0
3	CH	75	75	75	250	250	250	250	250	250	0
4	CH	75	105	75	220	280	220	220	310	220	0
5	SM	122	122	122	0	0	0	0	0	0	30
6	CH	108	108	108	700	720	700	700	720	700	0
7	CH	108	108	108	800	820	800	900	930	900	0

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 13, STA. 93+00 TO 96+00
PROTECTED SIDE STABILITY ANALYSIS.
CASE: GAP STABILITY
MARCH 2012

LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS

CORPS OF ENGINEERS 31-JAN-12



ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
Ⓐ ①	-12.5	10904	5500	8845	17244	9080	25249	8164	3.09
Ⓐ ②	-12.5	10904	7236	7615	17244	7855	25755	9389	2.74
Ⓐ ③	-12.5	10904	9741	6675	17244	6095	27320	11149	2.45
Ⓐ ④	-12.5	10904	11011	6111	17244	5221	28026	12023	2.33
Ⓐ ⑤	-12.5	10904	12750	5467	17244	4097	29121	13147	2.22
Ⓐ ⑥	-12.5	10904	14116	5106	17244	3441	30126	13803	2.18
Ⓐ ⑦	-12.5	10904	15195	4814	17244	3108	30913	14136	2.19
Ⓐ ⑧	-12.5	10904	16169	4683	17244	2835	31756	14409	2.20
Ⓐ ⑨	-12.5	10904	17048	4652	17244	2742	32604	14502	2.25
Ⓑ ①	-22.0	13072	13693	21678	39187	19016	48443	20171	2.40
Ⓑ ②	-22.0	13072	16808	19519	39187	17742	49399	21445	2.30
Ⓑ ③	-22.0	13072	20268	17685	39187	16555	51025	22632	2.25
Ⓑ ④	-22.0	13072	23335	16527	39187	15852	52934	23335	2.27
Ⓑ ⑤	-22.0	13072	26085	15974	39187	15510	55131	23677	2.33
Ⓑ ⑥	-22.0	13072	28709	15711	39187	15312	57492	23875	2.41
Ⓒ ①	-46.0	36744	19285	93077	140768	96429	149106	44339	3.36
Ⓒ ②	-46.0	36744	23275	92832	140768	96039	152851	44729	3.42
Ⓒ ③	-46.0	36744	26600	92929	140768	95864	156273	44904	3.48
Ⓒ ④	-46.0	36744	29925	93253	140768	95803	159922	44965	3.56
Ⓒ ⑤	-46.0	36744	33250	93700	140768	95803	163694	44965	3.64

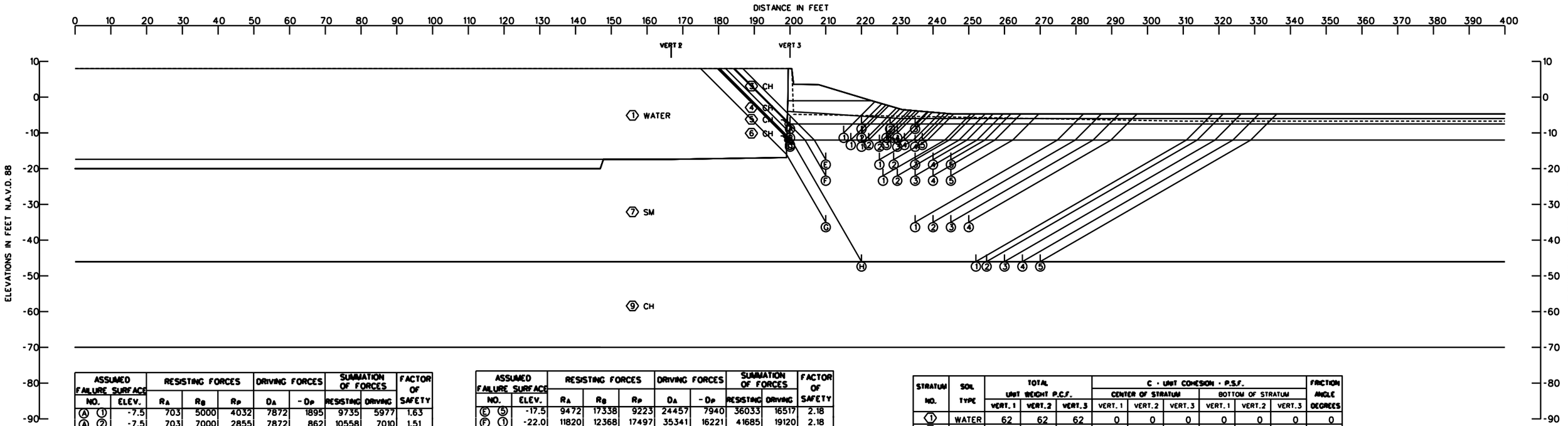
ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
Ⓒ ⑥	-46.0	36744	36575	93972	140768	95802	167291	44966	3.72
Ⓒ ⑦	-46.0	36744	39900	94195	140768	95802	170839	44966	3.80
Ⓒ ⑧	-46.0	36744	43225	94418	140768	95802	174387	44966	3.88
Ⓓ ①	-47.0	48378	28320	94624	147056	100708	171322	46348	3.70
Ⓓ ②	-47.0	48378	30975	94870	147056	100676	174223	46380	3.76
Ⓓ ③	-47.0	48378	35400	95317	147056	100676	179095	46380	3.86
Ⓓ ④	-47.0	48378	39825	95545	147056	100675	183748	46381	3.96
Ⓓ ⑤	-47.0	48378	44250	95768	147056	100676	188396	46380	4.06
Ⓓ ⑥	-47.0	48378	48675	95991	147056	100675	193044	46381	4.16
Ⓓ ⑦	-47.0	48378	53100	96215	147056	100676	197693	46380	4.26
Ⓓ ⑧	-47.0	48378	57525	96437	147056	100675	202340	46381	4.36

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	TOTAL UNIT WEIGHT P.C.F. VERT. 2	TOTAL UNIT WEIGHT P.C.F. VERT. 3	C · UNIT COHESION · P.S.F. CENTER OF STRATUM VERT. 1	CENTER OF STRATUM VERT. 2	CENTER OF STRATUM VERT. 3	BOTTOM OF STRATUM VERT. 1	BOTTOM OF STRATUM VERT. 2	BOTTOM OF STRATUM VERT. 3	FRICTION ANGLE DEGREES
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	90	90	90	0	0	0	0	0	0	20
③	CH	118	118	118	999	999	1000	999	999	1000	0
④	CH	90	90	90	600	300	300	600	300	300	0
⑤	CH	80	80	80	200	200	450	200	200	450	0
⑥	CH	80	80	97	200	200	250	200	200	250	0
⑦	SM	122	122	122	0	0	0	0	0	0	30
⑧	CH	104	104	104	650	650	665	650	650	665	0
⑨	CH	104	104	104	757	757	775	865	865	885	0

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 16, STA. 104+00 TO 112+50
PROTECTED SIDE STABILITY ANALYSIS,
CASE: GLOBAL STABILITY
MARCH 2012

LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 25-JAN-12



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-7.5	703	5000	4032	7872	1895	9735	5977	1.63
A	2	-7.5	703	7000	2855	7872	862	10558	7010	1.51
A	3	-7.5	703	8750	2487	7872	553	11940	7319	1.63
B	1	-10.0	423	3750	5667	10549	4677	9840	5872	1.68
B	2	-10.0	423	5000	4897	10549	3364	10320	7185	1.44
B	3	-10.0	423	6750	4007	10549	2115	11180	8434	1.33
B	4	-10.0	423	7500	3857	10549	1810	11780	8739	1.35
C	1	-12.0	444	4250	6051	12980	5747	10745	7233	1.49
C	2	-12.0	444	5500	5282	12980	4389	11226	8591	1.31
C	3	-12.0	444	6750	4904	12980	3440	12098	9540	1.27
C	4	-12.0	444	7923	4665	12980	2949	13032	10031	1.30
C	5	-12.0	444	8917	4423	12980	2652	13784	10328	1.33
D	1	-12.5	574	11287	6130	13796	5222	17991	8574	2.10
D	2	-12.5	574	13083	5486	13796	4098	19143	9698	1.97
D	3	-12.5	574	14502	5124	13796	3441	20200	10355	1.95
D	4	-12.5	574	15632	4831	13796	3108	21037	10688	1.97
E	1	-17.5	9472	9410	10909	24457	9228	29791	15229	1.96
E	2	-17.5	9472	11261	10082	24457	8640	30815	15817	1.95
E	3	-17.5	9472	13677	9573	24457	8176	32722	16281	2.01
E	4	-17.5	9472	15556	9285	24457	8001	34313	16456	2.09

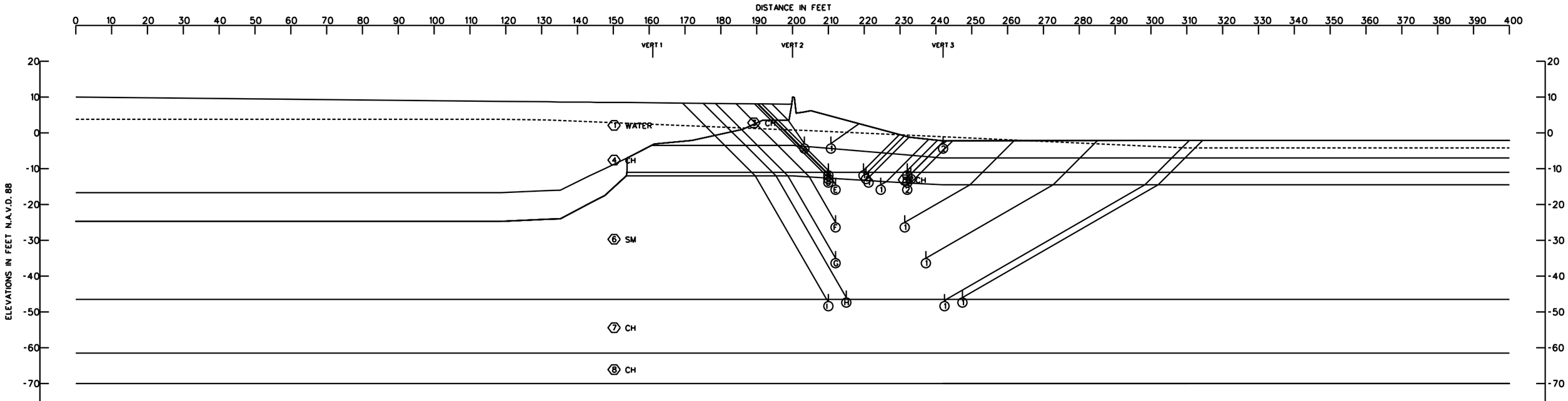
ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
E	5	-17.5	9472	17338	9223	24457	7940	36033	16517	2.18
F	1	-22.0	11820	12368	17497	35341	16221	41685	19120	2.18
F	2	-22.0	11820	14780	16691	35341	15760	43291	19581	2.21
F	3	-22.0	11820	17542	16201	35341	15461	45563	19880	2.29
F	4	-22.0	11820	20194	15961	35341	15286	47975	20055	2.39
F	5	-22.0	11820	22749	15947	35341	15225	50516	20116	2.51
G	1	-35.0	19444	28706	49308	79217	50384	97458	28833	3.38
G	2	-35.0	19444	33591	49209	79217	50210	102244	29007	3.52
G	3	-35.0	19444	38379	49337	79217	50148	107160	29069	3.69
G	4	-35.0	19444	43121	49588	79217	50148	112153	29069	3.86
H	1	-46.0	36380	21280	94281	131568	95802	151941	35766	4.25
H	2	-46.0	36380	23275	94392	131568	95802	154047	35766	4.31
H	3	-46.0	36380	26600	94576	131568	95802	157556	35766	4.41
H	4	-46.0	36380	29925	94762	131568	95802	161067	35766	4.50
H	5	-46.0	36380	33250	94947	131568	95802	164577	35766	4.60

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	WATER	90	90	90	0	0	0	0	0	0	20
3	CH	118	118	118	999	999	1000	999	999	1000	0
4	CH	90	90	90	600	300	300	600	300	300	0
5	CH	80	80	80	200	200	450	200	200	450	0
6	CH	80	80	97	200	200	250	200	200	250	0
7	SM	122	122	122	0	0	0	0	0	0	30
8	CH	104	104	104	650	650	665	650	650	665	0
9	CH	104	104	104	757	757	775	865	865	885	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 16 Sta 104+00 to Sta 112+50
Protected Side Stability Analysis
Case: Gap Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 02-FEB-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-3.0	1745	1924	1656	4517	1923	5325	2594	2.05
Ⓐ ②	-3.0	1745	4621	0	4517	29	6366	4488	1.42
Ⓑ ①	-10.5	14289	4679	9019	15361	6659	27987	8702	3.22
Ⓑ ②	-10.5	14289	10120	7030	15361	4008	31439	11353	2.77
Ⓒ ①	-11.5	12117	2902	7214	16628	7227	22233	9401	2.36
Ⓒ ②	-11.5	12117	5947	5742	16628	4603	23806	12025	1.98
Ⓓ ①	-12.5	12738	3501	7528	18442	8061	23767	10381	2.29
Ⓓ ②	-12.5	12738	6820	6430	18442	5646	25988	12796	2.03
Ⓔ ①	-14.5	14021	6035	8637	21936	9195	28693	12741	2.25
Ⓔ ②	-14.5	14021	8448	7752	21936	7802	30221	14134	2.14
Ⓕ ①	-25.0	23016	15217	22781	50442	27274	61014	23168	2.63
Ⓖ ①	-35.0	35239	27507	50143	90259	58266	112889	31993	3.53
Ⓗ ①	-46.0	53528	45504	97140	146703	106747	196172	39956	4.91
Ⓘ ①	-47.0	55063	23491	99446	153928	111852	178000	42076	4.23

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	90	90	90	0	0	0	0	0	0	20
③	CH	100	110	100	400	520	400	400	520	400	0
④	CH	85	90	85	200	320	200	200	320	200	0
⑤	CH	116	90	116	300	320	300	300	320	300	0
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	CH	109	110	109	710	750	710	710	750	710	0
⑧	CH	119	102	119	995	1050	995	995	1050	995	0

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

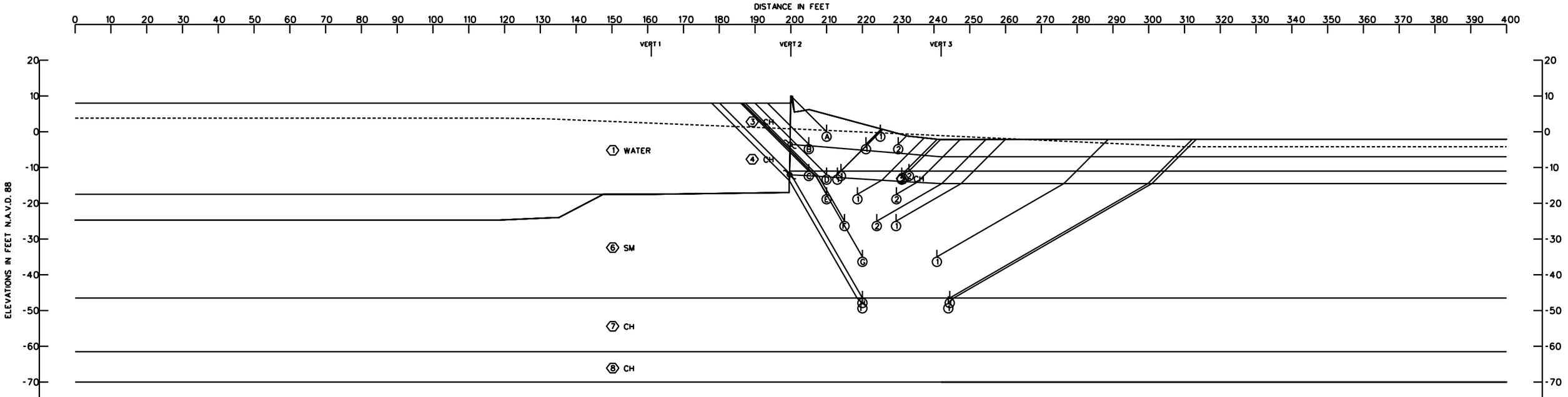
NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
∇ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 17, STA. 118+90 TO 119+63
PROTECTED SIDE STABILITY ANALYSIS,
CASE: GLOBAL STABILITY
MARCH 2012

LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 27-JAN-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.		ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ	①	0.0	6010	7050	595	1350	29	13655	1321	10.34
Ⓑ	①	-3.5	5276	7726	3877	5382	1209	16879	4173	4.05
Ⓑ	②	-3.5	5276	11750	2036	5382	363	19062	5019	3.80
Ⓒ	①	-11.0	3285	2636	8479	13870	8789	14400	5081	2.83
Ⓒ	②	-11.0	3285	7440	5527	13870	4183	16252	9687	1.68
Ⓓ	①	-12.0	7017	944	9106	16662	10316	17067	6346	2.69
Ⓓ	②	-12.0	7017	6515	6228	16662	5297	19760	11365	1.74
Ⓔ	①	-17.5	8318	5530	13727	27140	14861	27575	12279	2.25
Ⓔ	②	-17.5	8318	10915	11043	27140	12137	30276	15003	2.02
Ⓕ	①	-25.0	15449	11232	22983	47526	27429	49664	20097	2.47
Ⓕ	②	-25.0	15449	7391	24202	47526	28193	47042	19333	2.43
Ⓖ	①	-35.0	26940	21137	50472	84014	58226	98549	25788	3.82
Ⓗ	①	-46.5	43960	17554	99023	142120	109284	160537	32836	4.89
Ⓘ	①	-48.0	45270	17270	101363	150402	117109	163903	33293	4.92

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	90	90	90	0	0	0	0	0	0	20
③	CH	100	110	100	400	520	400	400	520	400	0
④	CH	85	90	85	200	320	200	200	320	200	0
⑤	CH	116	90	116	300	320	300	300	320	300	0
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	CH	109	110	109	710	750	710	710	750	710	0
⑧	CH	119	102	119	995	1050	995	995	1050	995	0

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

NOTES

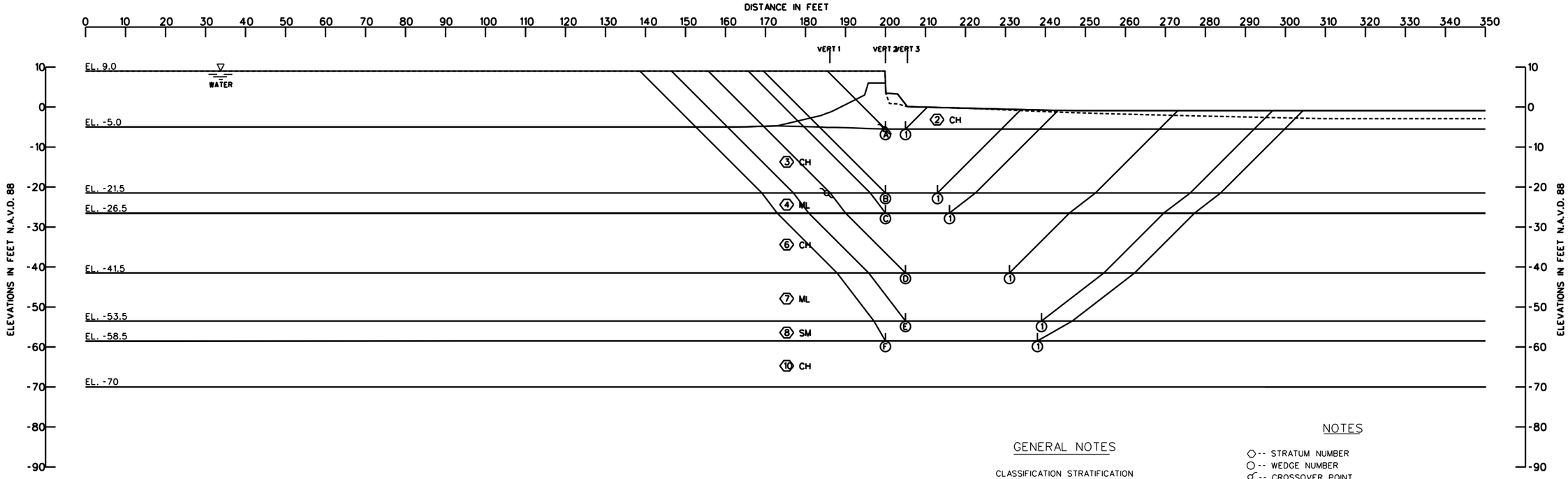
ϕ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
∇ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY $= \frac{R_A + R_B + R_P}{D_A - D_P}$

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 17, STA. 118+90 TO 119+63
PROTECTED SIDE STABILITY ANALYSIS,
CASE: GAP STABILITY
MARCH 2012

LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 07-FEB-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
A 1	-5.5	9640	2293	7125	9105	1786	19058	7319	2.60
B 1	-21.5	17979	5854	20638	41341	24744	44471	16597	2.68
C 1	-26.5	21469	5002	26890	57055	37254	53361	19801	2.69
D 1	-41.5	33936	10535	37027	116897	90163	81498	26734	3.05
E 1	-53.5	45291	29540	61567	182823	150383	136398	32440	4.20
F 1	-58.5	53546	23603	88064	216324	180628	165213	35696	4.63

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	115	115	115	650	650	650	650	650	650	0
3	CH	107	107	107	445	470	445	445	470	445	0
4	ML	117	117	117	200	200	200	200	200	200	15
5	CH	101	101	101	280	470	280	280	470	280	0
6	CH	101	101	101	343	545	343	405	620	405	0
7	ML	117	117	117	200	200	200	200	200	200	15
8	SM	122	122	122	0	0	0	0	0	0	30
9	CH	107	107	107	615	700	615	615	700	615	0
10	CH	107	107	107	673	758	673	730	815	730	0

GENERAL NOTES

CLASSIFICATION STRATIFICATION SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS. SEE BORING DATA PLATES.

SHEAR STRENGTHS BETWEEN VERTICALS WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

NOTES

◇ -- STRATUM NUMBER
○ -- WEDGE NUMBER
ᔑ -- CROSSOVER POINT
ϕ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
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A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
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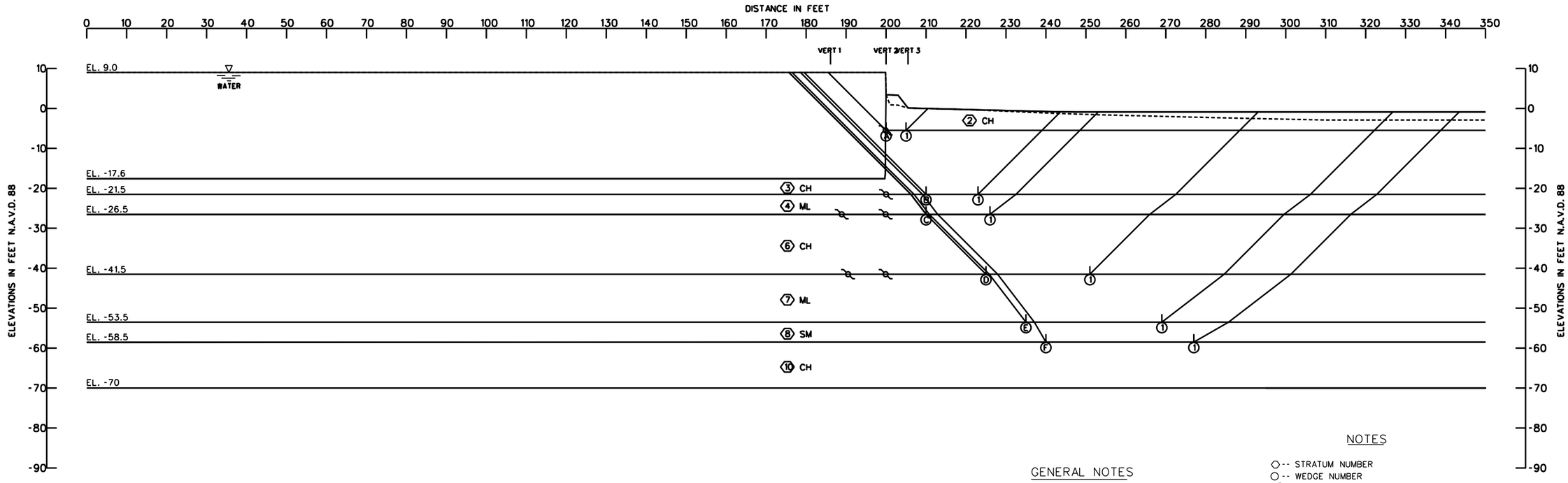
$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_A - D_P}$$

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 20, STA. 1+57 TO 6+30
PROTECTED SIDE STABILITY ANALYSIS,
CASE: GLOBAL STABILITY
MARCH 2012

LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 25-JAN-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
(A) (1)	-5.5	0	2293	7125	6570	1786	9418	4784	1.97
(B) (1)	-21.5	9094	5785	20335	32917	24174	35214	8743	4.03
(C) (1)	-26.5	9675	4480	26749	45826	36596	40904	9230	4.43
(D) (1)	-41.5	19953	10530	37157	100808	89794	67640	11014	6.14
(E) (1)	-53.5	35003	29591	62111	161957	150308	126705	11649	10.88
(F) (1)	-58.5	45610	22755	89276	192312	180556	157641	11756	13.41

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
(1)	WATER	62	62	62	0	0	0	0	0	0	0
(2)	CH	115	115	115	650	650	650	650	650	650	0
(3)	CH	107	107	107	445	470	445	445	470	445	0
(4)	ML	117	117	117	200	200	200	200	200	200	15
(5)	CH	101	101	101	280	470	280	280	470	280	0
(6)	CH	101	101	101	343	545	343	405	620	405	0
(7)	ML	117	117	117	200	200	200	200	200	200	15
(8)	SM	122	122	122	0	0	0	0	0	0	30
(9)	CH	107	107	107	615	700	615	615	700	615	0
(10)	CH	107	107	107	673	758	673	730	815	730	0

GENERAL NOTES

CLASSIFICATION STRATIFICATION SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS. SEE BORING DATA PLATES.

SHEAR STRENGTHS BETWEEN VERTICALS WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

NOTES

◇ -- STRATUM NUMBER
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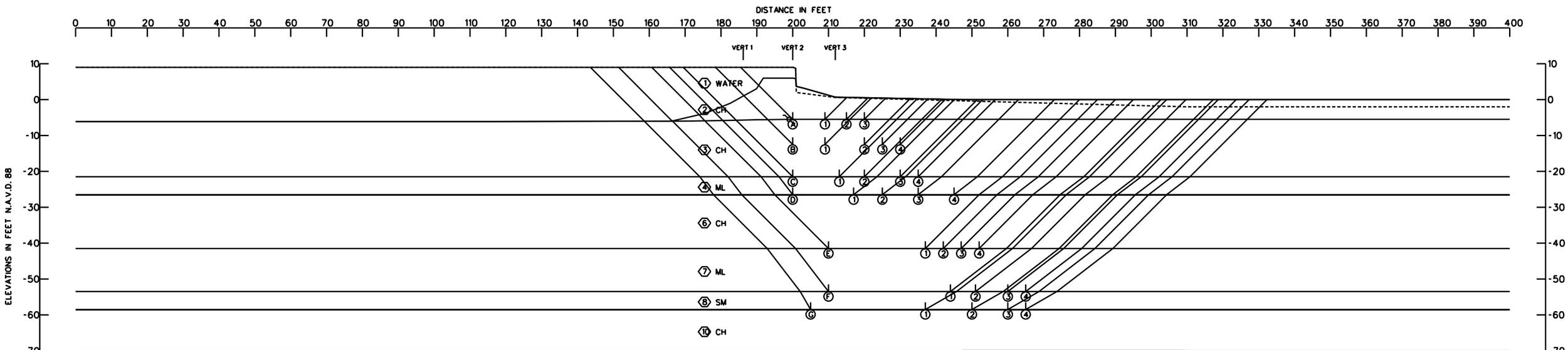
FACTOR OF SAFETY $= \frac{R_A + R_B + R_P}{D_A - D_P}$

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 20, STA. 1+57 TO 6+30
PROTECTED SIDE STABILITY ANALYSIS,
CASE: GAP STABILITY
MARCH 2012

LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 25-JAN-12



ASSUMED FAILURE SURFACE NO.		ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
A	1	-5.5	12329	3082	7977	10051	2395	23388	7656	3.05
A	2	-5.5	12329	5069	7825	10051	2180	25223	7871	3.20
A	3	-5.5	12329	6719	7699	10051	2110	26747	7941	3.37
B	1	-12.5	13462	3082	12420	22077	10028	28964	12049	2.40
B	2	-12.5	13462	6719	12143	22077	9568	32324	12509	2.58
B	3	-12.5	13462	8369	12017	22077	9419	33848	12658	2.67
B	4	-12.5	13462	10019	11891	22077	9272	35372	12805	2.76
C	1	-21.5	15660	4409	18033	43828	27049	38102	16779	2.27
C	2	-21.5	15660	6719	17856	43828	26695	40235	17133	2.35
C	3	-21.5	15660	10019	17710	43828	26213	43389	17615	2.46
C	4	-21.5	15660	11669	17710	43828	26040	45039	17788	2.53
D	1	-26.5	18678	5406	24539	59780	40100	48623	19680	2.47
D	2	-26.5	18678	7726	24463	59780	39644	50867	20136	2.53
D	3	-26.5	18678	10626	24439	59780	39275	53743	20505	2.62
D	4	-26.5	18678	13526	24427	59780	39136	56631	20644	2.74
E	1	-41.5	29413	11082	34952	120389	94581	75447	25808	2.92
E	2	-41.5	29413	13132	34981	120389	94490	77526	25899	2.99
E	3	-41.5	29413	15182	35010	120389	94457	79605	25932	3.07
E	4	-41.5	29413	17232	35039	120389	94457	81684	25932	3.15
F	1	-53.5	40226	29825	59722	185040	156061	129773	28979	4.48

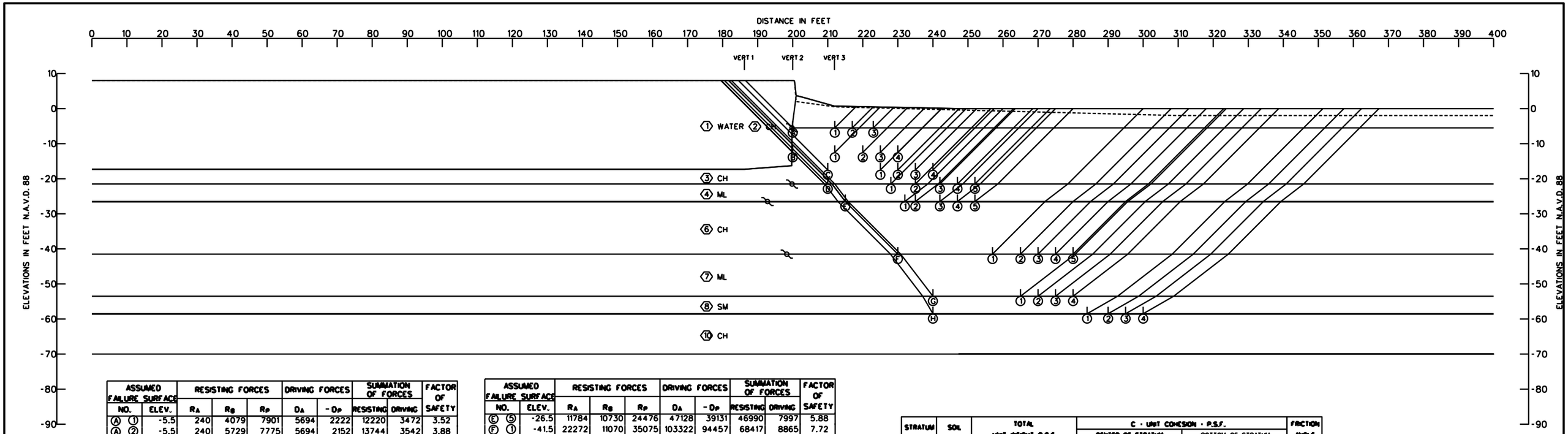
ASSUMED FAILURE SURFACE NO.		ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
F	2	-53.5	40226	35942	59853	185040	156051	136021	28989	4.69
F	3	-53.5	40226	43833	60030	185040	156052	144089	28988	4.97
F	4	-53.5	40226	48233	60128	185040	156052	148587	28988	5.13
G	1	-58.5	50648	20000	86399	218460	186822	157047	31638	4.96
G	2	-58.5	50648	28060	86730	218460	186751	165438	31709	5.22
G	3	-58.5	50648	34260	87092	218460	186751	172000	31709	5.42
G	4	-58.5	50648	37360	87271	218460	186750	175279	31710	5.53

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C · UNIT COHESION · P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	118	118	118	650	650	650	650	650	650	0
3	CH	107	107	107	330	350	330	330	350	330	0
4	ML	117	117	117	200	200	200	200	200	200	15
5	CH	99	99	99	290	370	290	290	370	290	0
6	CH	99	99	99	350	430	350	410	490	410	0
7	ML	117	117	117	200	200	200	200	200	200	15
8	SM	122	122	122	0	0	0	0	0	0	30
9	CH	104	104	104	620	700	620	620	700	620	0
10	CH	104	104	104	673	753	673	725	805	725	0

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 21, STA. 6+30 TO 10+00
PROTECTED SIDE STABILITY ANALYSIS,
CASE: GLOBAL STABILITY
MARCH 2012

LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 25-JAN-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-5.5	240	4079	7901	5694	2222	12220	3472	3.52
Ⓐ ②	-5.5	240	5729	7775	5694	2152	13744	3542	3.88
Ⓐ ③	-5.5	240	7709	7624	5694	2069	15573	3625	4.30
Ⓑ ①	-12.5	184	4079	12345	13192	9808	16608	3384	4.91
Ⓑ ②	-12.5	184	6719	12143	13192	9568	19046	3624	5.26
Ⓑ ③	-12.5	184	8369	12017	13192	9419	20570	3773	5.45
Ⓑ ④	-12.5	184	10019	11891	13192	9272	22094	3920	5.64
Ⓒ ①	-17.5	6984	4953	15191	24571	17830	27128	6741	4.02
Ⓒ ②	-17.5	6984	6603	15070	24571	17625	28657	6946	4.13
Ⓒ ③	-17.5	6984	8253	15070	24571	17453	30307	7118	4.26
Ⓒ ④	-17.5	6984	9903	15070	24571	17338	31957	7233	4.42
Ⓓ ①	-21.5	7010	5943	17710	33261	26299	30663	6962	4.40
Ⓓ ②	-21.5	7010	8253	17710	33261	26040	32973	7221	4.57
Ⓓ ③	-21.5	7010	10563	17710	33261	25897	35283	7364	4.79
Ⓓ ④	-21.5	7010	12213	17710	33261	25864	36933	7397	4.99
Ⓓ ⑤	-21.5	7010	13863	17710	33261	25864	38583	7397	5.22
Ⓔ ①	-26.5	11784	4930	24463	47128	39361	41177	7767	5.30
Ⓔ ②	-26.5	11784	5800	24455	47128	39276	42039	7852	5.35
Ⓔ ③	-26.5	11784	7830	24438	47128	39156	44052	7972	5.53
Ⓔ ④	-26.5	11784	9280	24448	47128	39131	45512	7997	5.69

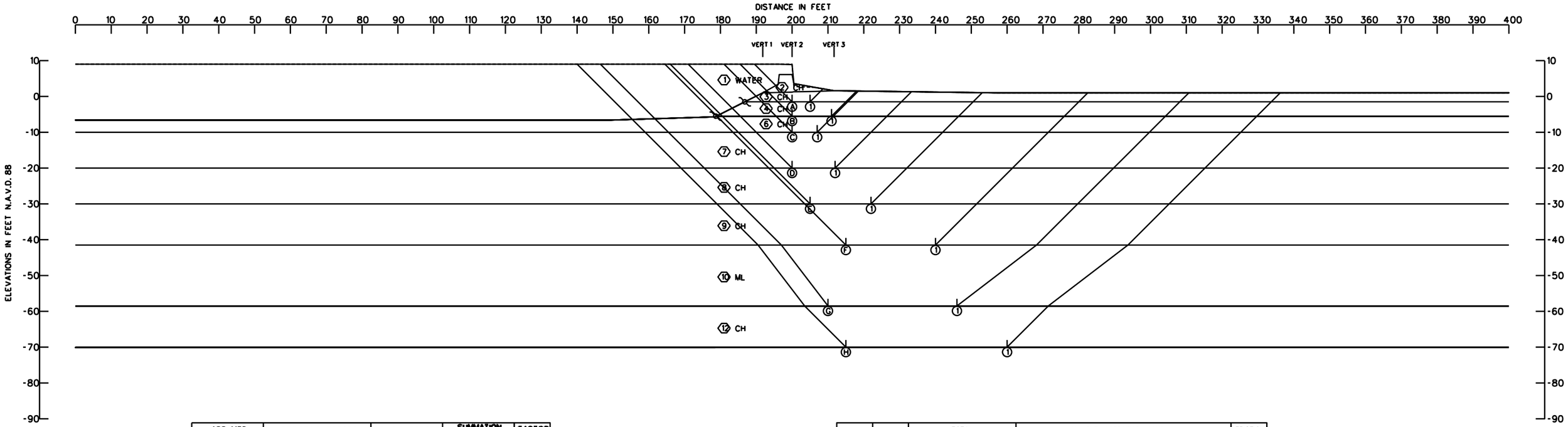
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓔ ⑤	-26.5	11784	10730	24476	47128	39131	46990	7997	5.88
Ⓕ ①	-41.5	22272	11070	35075	103322	94457	68417	8865	7.72
Ⓕ ②	-41.5	22272	14350	35120	103322	94457	71742	8865	8.09
Ⓕ ③	-41.5	22272	16400	35148	103322	94457	73820	8865	8.33
Ⓕ ④	-41.5	22272	18450	35175	103322	94457	75897	8865	8.56
Ⓕ ⑤	-41.5	22272	20500	35203	103322	94457	77975	8865	8.80
Ⓖ ①	-53.5	37320	21928	60150	165271	156052	119398	9219	12.95
Ⓖ ②	-53.5	37320	26342	60245	165271	156052	123907	9219	13.44
Ⓖ ③	-53.5	37320	30767	60333	165271	156052	128420	9219	13.93
Ⓖ ④	-53.5	37320	35203	60412	165271	156052	132935	9219	14.42
Ⓗ ①	-58.5	44384	27280	87884	195961	186750	159548	9211	17.32
Ⓗ ②	-58.5	44384	31000	88031	195961	186751	163415	9210	17.74
Ⓗ ③	-58.5	44384	34100	88144	195961	186750	166628	9211	18.09
Ⓗ ④	-58.5	44384	37200	88257	195961	186749	169841	9212	18.44

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C · UNIT COHESION · P.S.F. CENTER OF STRATUM			C · UNIT COHESION · P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	CH	118	118	118	650	650	650	650	650	650	0
③	CH	107	107	107	330	350	330	330	350	330	0
④	ML	117	117	117	200	200	200	200	200	200	15
⑤	CH	99	99	99	290	370	290	290	370	290	0
⑥	CH	99	99	99	350	430	350	410	490	410	0
⑦	ML	117	117	117	200	200	200	200	200	200	15
⑧	SM	122	122	122	0	0	0	0	0	0	30
⑨	CH	104	104	104	620	700	620	620	700	620	0
⑩	CH	104	104	104	673	753	673	725	805	725	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 21 Sta 6+30 to Sta 10+00
Protected Side Stability Analysis
Case: Gap Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 01-FEB-12



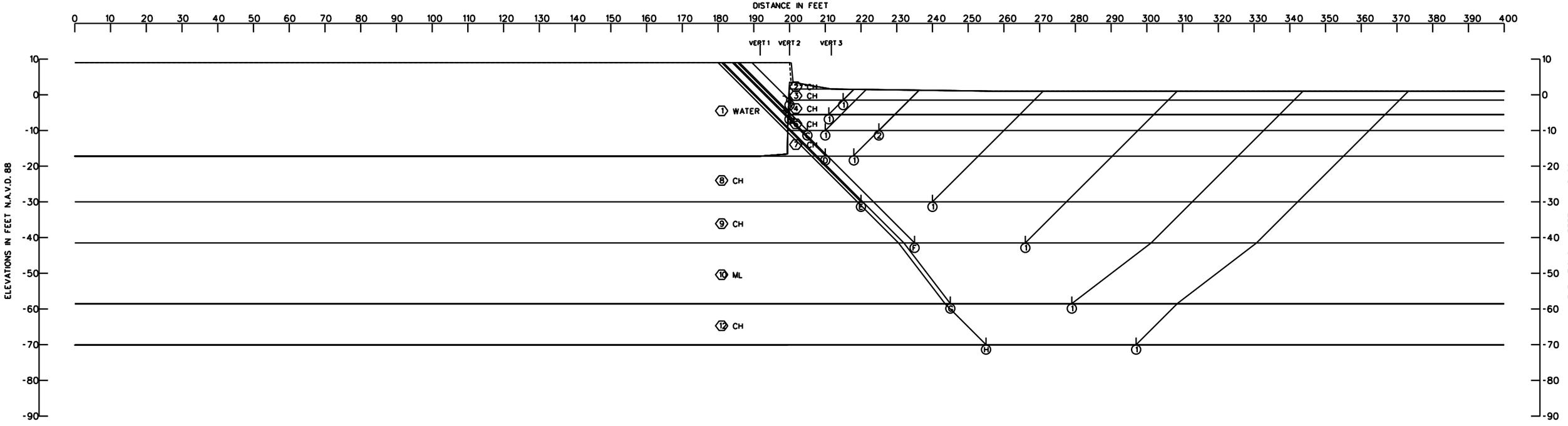
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	O_A	$-O_P$	RESISTING	DRIVING	
A 1	-1.5	7546	3777	6258	4556	890	17581	3666	4.80
B 1	-5.5	11342	1873	9428	8878	2847	22643	6031	3.75
C 1	-10.0	9115	1527	11116	15603	7887	21758	7716	2.82
D 1	-20.0	9199	3801	15920	37777	26549	28920	11228	2.58
E 1	-30.0	14960	6948	22586	70557	56580	44494	13977	3.18
F 1	-41.5	25158	13000	33148	121174	105110	71306	16064	4.44
G 1	-58.5	49336	25746	74770	225786	206069	149852	19717	7.60
H 1	-70.0	68680	38475	92703	315345	293636	199858	21709	9.21

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	114	114	114	825	825	825	825	825	825	0
3	CH	114	114	114	900	825	900	900	825	900	0
4	CH	114	114	114	500	825	500	500	825	500	0
5	CH	117	117	117	165	175	165	165	175	165	0
6	CH	117	117	117	187	198	187	209	222	209	0
7	CH	117	117	117	259	274	259	308	326	308	0
8	CH	117	117	117	357	378	357	406	430	406	0
9	CH	117	117	117	463	490	463	520	550	520	0
10	ML	117	117	117	200	200	200	200	200	200	15
11	CH	118	118	118	715	765	715	715	765	715	0
12	CH	118	118	118	780	835	780	855	905	855	0
13	CH	118	118	118	855	905	855	855	905	855	0

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 22, STA. 10+00 TO 11+85
AND STA. 13+55 TO 21+00
PROTECTED SIDE STABILITY ANALYSIS,
CASE: GLOBAL STABILITY
MARCH 2012

LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 25-JAN-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
A 1	-1.5	334	9400	5428	3469	525	15162	2944	5.15
B 1	-5.5	508	1873	9428	6641	2847	11809	3794	3.11
C 1	-10.0	3051	1068	11024	12581	7656	15143	4925	3.07
C 2	-10.0	3051	4205	10669	12581	7369	17925	5212	3.44
D 1	-17.0	5067	2466	14295	25398	19482	21828	5916	3.69
E 1	-30.0	13215	8120	23047	63144	55888	44382	7256	6.12
F 1	-41.5	25141	16120	33696	112897	104897	74957	8000	9.37
G 1	-58.5	48630	24310	75325	214520	206002	148265	8518	17.41
H 1	-70.0	65927	35910	93251	302159	293634	195088	8525	22.88

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	114	114	114	825	825	825	825	825	825	0
3	CH	114	114	114	900	825	900	900	825	900	0
4	CH	114	114	114	500	825	500	500	825	500	0
5	CH	117	117	117	165	175	165	165	175	165	0
6	CH	117	117	117	187	198	187	209	222	209	0
7	CH	117	117	117	259	274	259	308	326	308	0
8	CH	117	117	117	357	378	357	406	430	406	0
9	CH	117	117	117	463	490	463	520	550	520	0
10	ML	117	117	117	200	200	200	200	200	200	15
11	CH	118	118	118	715	765	715	715	765	715	0
12	CH	118	118	118	780	835	780	855	905	855	0
13	CH	118	118	118	855	905	855	855	905	855	0

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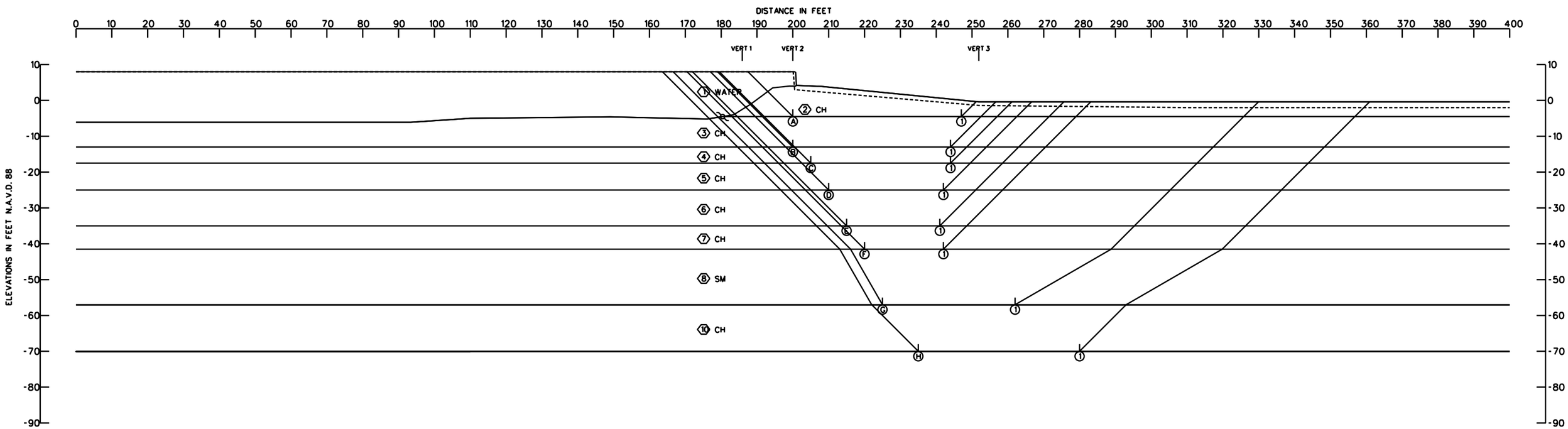
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 02-FEB-12



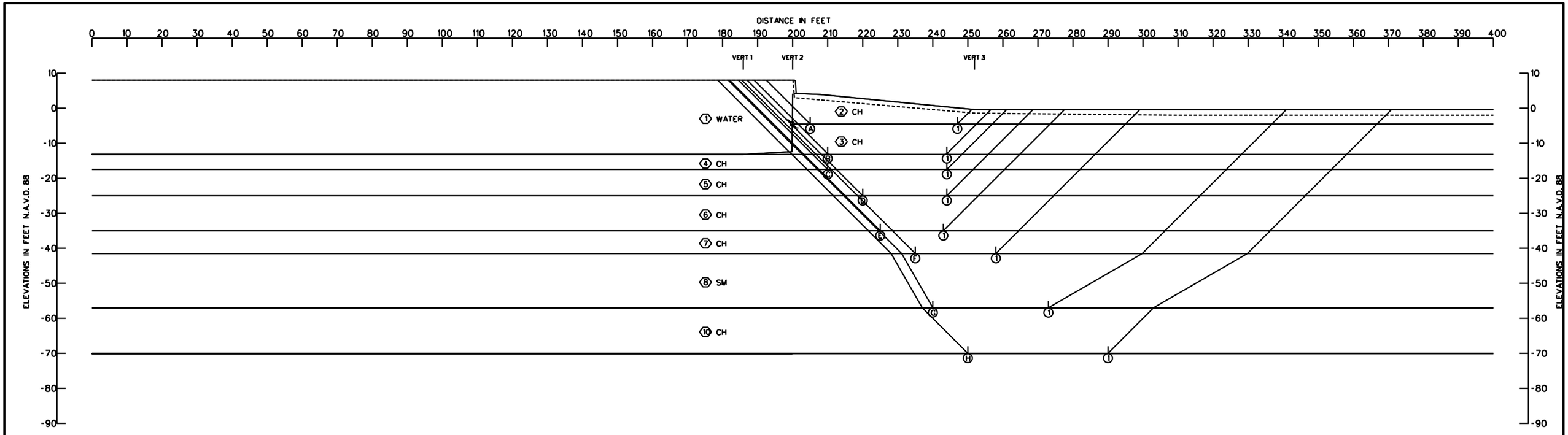
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
A 1	-4.5	10616	22968	6341	6646	1118	39925	5528	7.22
B 1	-13.0	13522	21534	14337	19800	9536	49393	10264	4.81
C 1	-17.5	18345	15232	18607	30079	17210	52184	12869	4.05
D 1	-25.0	22750	12479	24318	51236	34882	59547	16354	3.64
E 1	-35.0	27559	10119	31928	87313	66868	69606	20445	3.40
F 1	-41.5	32116	8537	36855	115743	92716	77508	23027	3.37
G 1	-57.0	56667	22401	107614	202502	173670	186682	28832	6.47
H 1	-70.0	74887	32785	125021	296199	263792	232693	32407	7.18

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	117	117	117	760	760	760	760	760	760	0
3	CH	114	114	114	475	500	475	475	500	475	0
4	CH	114	114	114	475	500	475	475	500	475	0
5	CH	98	98	98	380	400	380	380	400	380	0
6	CH	98	98	98	380	400	380	380	400	380	0
7	CH	98	98	98	380	400	380	380	400	380	0
8	SM	122	122	122	0	0	0	0	0	0	30
9	CH	112	112	112	580	715	580	580	715	580	0
10	CH	112	112	112	650	788	650	720	860	720	0
11	CH	112	112	112	720	860	720	720	860	720	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 23 Sta 21+00 to Sta 24+00
Protected Side Stability Analysis
Case: Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 25-JAN-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
(A) (1)	-4.5	7668	20474	6341	5551	1118	34483	4433	7.78
(B) (1)	-13.0	10869	16558	14337	17946	9536	41764	8410	4.97
(C) (1)	-17.5	10096	13246	18606	26828	17210	41948	9618	4.36
(D) (1)	-25.0	18449	9304	24306	47982	34678	52059	13304	3.91
(E) (1)	-35.0	21426	6964	31912	82297	66641	60302	15656	3.85
(F) (1)	-41.5	29851	8795	36822	110374	92155	75468	18219	4.14
(G) (1)	-57.0	50526	19324	107834	194350	173670	177684	20680	8.59
(H) (1)	-70.0	66051	28805	125120	285283	263791	219976	21492	10.24

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	117	117	117	760	760	760	760	760	760	0
3	CH	114	114	114	475	500	475	475	500	475	0
4	CH	114	114	114	475	500	475	475	500	475	0
5	CH	98	98	98	380	400	380	380	400	380	0
6	CH	98	98	98	380	400	380	380	400	380	0
7	CH	98	98	98	380	400	380	380	400	380	0
8	SM	122	122	122	0	0	0	0	0	0	30
9	CH	112	112	112	580	715	580	580	715	580	0
10	CH	112	112	112	650	788	650	720	860	720	0
11	CH	112	112	112	720	860	720	720	860	720	0

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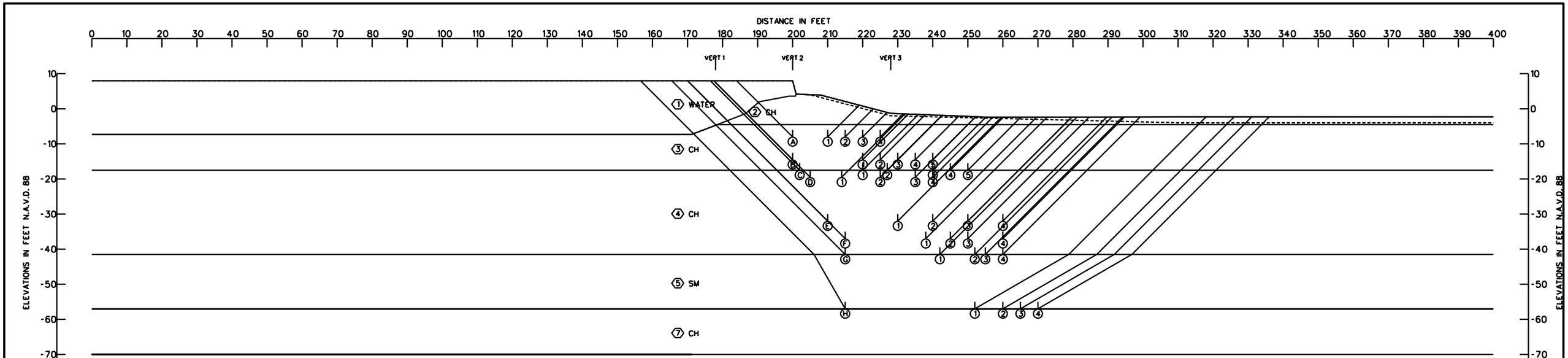

ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
A 1	-8.0	13019	4955	11867	11153	6009	29841	5144	5.80
A 2	-8.0	13019	7399	10279	11153	4723	30697	6430	4.77
A 3	-8.0	13019	9821	8692	11153	3591	31532	7562	4.17
A 4	-8.0	13019	12221	7995	11153	2734	33235	8419	3.95
B 1	-14.5	14884	9821	14129	22921	10998	38834	11923	3.26
B 2	-14.5	14884	12221	13787	22921	9974	40892	12947	3.16
B 3	-14.5	14884	14600	13499	22921	9551	42983	13370	3.21
B 4	-14.5	14884	16975	13211	22921	9262	45070	13659	3.30
B 5	-14.5	14884	19350	12923	22921	8977	47157	13944	3.38
C 1	-17.5	17333	7059	16787	29924	15967	41179	13957	2.95
C 2	-17.5	17333	9741	16349	29924	14621	43423	15303	2.84
C 3	-17.5	17333	14681	15600	29924	13680	47614	16244	2.93
C 4	-17.5	17333	16581	15553	29924	13371	49467	16553	2.99
C 5	-17.5	17333	18481	15567	29924	13179	51381	16745	3.07
D 1	-19.5	19483	3539	18668	35151	22005	41690	13146	3.17
D 2	-19.5	19483	7786	17875	35151	18661	45144	16490	2.74
D 3	-19.5	19483	11589	17293	35151	17727	48365	17424	2.78
D 4	-19.5	19483	13489	17065	35151	17334	50037	17817	2.81
E 1	-32.0	25922	7716	26572	75396	50010	60210	25386	2.37
E 2	-32.0	25922	11516	26600	75396	49055	64038	26341	2.43

ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
E 3	-32.0	25922	15316	26628	75396	48583	67866	26813	2.53
E 4	-32.0	25922	19116	26657	75396	48558	71695	26838	2.67
F 1	-37.0	29833	8800	30409	95370	66191	69042	29179	2.37
F 2	-37.0	29833	11460	30428	95370	65750	71721	29620	2.42
F 3	-37.0	29833	13360	30443	95370	65580	73636	29790	2.47
F 4	-37.0	29833	17160	30471	95370	65565	77464	29805	2.60
G 1	-41.5	31511	10320	33853	115261	83298	75684	31963	2.37
G 2	-41.5	31511	14120	33881	115261	82944	79512	32317	2.46
G 3	-41.5	31511	15260	33889	115261	82932	80660	32329	2.49
G 4	-41.5	31511	17160	33903	115261	82971	82574	32290	2.56
H 1	-57.0	54045	21867	100027	201589	161068	175939	40521	4.34
H 2	-57.0	54045	26507	100408	201589	161118	180960	40471	4.47
H 3	-57.0	54045	29407	100677	201589	161157	184129	40432	4.55
H 4	-57.0	54045	32307	100945	201589	161191	187297	40398	4.64

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	117	117	117	760	760	760	760	760	760	0
3	CH	114	114	114	475	500	475	475	500	475	0
4	CH	98	98	98	380	400	380	380	400	380	0
5	SM	122	122	122	0	0	0	0	0	0	30
6	CH	112	112	112	580	715	580	580	715	580	0
7	CH	112	112	112	650	788	650	720	860	720	0

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 25, STA. 33+00 TO 37+00
PROTECTED SIDE STABILITY ANALYSIS,
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U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
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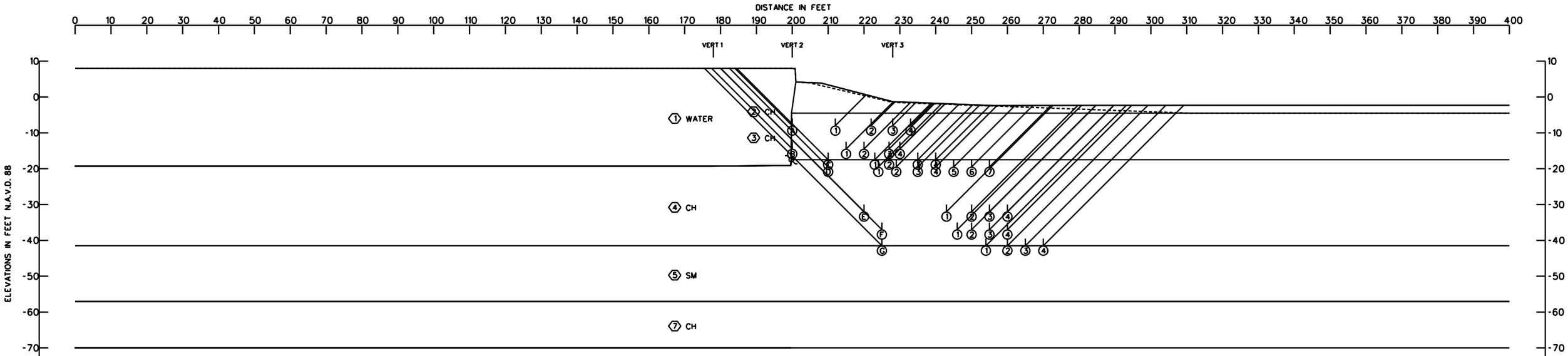

ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
A 1	-8.0	228	5936	11232	8033	5477	17396	2556	6.80
A 2	-8.0	228	10784	8186	8033	3184	19198	4849	3.96
A 3	-8.0	228	13650	7814	8033	2514	21692	5519	3.93
A 4	-8.0	228	16025	7526	8033	2367	23779	5666	4.20
B 1	-14.5	282	7399	14507	15926	12663	22188	3263	6.80
B 2	-14.5	282	9821	14129	15926	10998	24232	4928	4.92
B 3	-14.5	282	13174	13672	15926	9744	27128	6182	4.39
B 4	-14.5	282	14600	13499	15926	9551	28381	6375	4.45
C 1	-17.5	10135	5047	16580	26594	15236	31762	11358	2.80
C 2	-17.5	10135	6575	16349	26594	14621	33059	11973	2.76
C 3	-17.5	10135	9616	15888	26594	14032	35639	12562	2.84
C 4	-17.5	10135	11516	15600	26594	13680	37251	12914	2.88
D 1	-19.5	9758	5430	17935	30924	18837	33123	12087	2.74
D 2	-19.5	9758	7336	17639	30924	18208	34733	12716	2.73
D 3	-19.5	9758	9616	17293	30924	17727	36667	13197	2.78
D 4	-19.5	9758	11516	17065	30924	17334	38339	13590	2.82
D 5	-19.5	9758	13416	17079	30924	17024	40253	13900	2.90
D 6	-19.5	9758	15316	17093	30924	16835	42167	14089	2.99
D 7	-19.5	9758	17216	17107	30924	16767	44081	14157	3.11
E 1	-32.0	17071	8763	26609	68448	48863	52443	19585	2.68

ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
E 2	-32.0	17071	11423	26628	68448	48584	55122	19864	2.77
E 3	-32.0	17071	13323	26643	68448	48529	57037	19919	2.86
E 4	-32.0	17071	15223	26657	68448	48558	58951	19890	2.96
F 1	-37.0	20910	7983	30431	86916	65707	59324	21209	2.80
F 2	-37.0	20910	9503	30443	86916	65580	60856	21336	2.85
F 3	-37.0	20910	11403	30457	86916	65531	62770	21385	2.94
F 4	-37.0	20910	13303	30471	86916	65565	64684	21351	3.03
G 1	-41.5	20053	11023	33887	104488	82931	64963	21557	3.01
G 2	-41.5	20053	13303	33904	104488	82971	67260	21517	3.13
G 3	-41.5	20053	15203	33918	104488	83014	69174	21474	3.22
G 4	-41.5	20053	17103	33932	104488	83056	71088	21432	3.32

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	TOTAL UNIT WEIGHT P.C.F. VERT. 2	TOTAL UNIT WEIGHT P.C.F. VERT. 3	C · UNIT COHESION · P.S.F. CENTER OF STRATUM VERT. 1	CENTER OF STRATUM VERT. 2	CENTER OF STRATUM VERT. 3	BOTTOM OF STRATUM VERT. 1	BOTTOM OF STRATUM VERT. 2	BOTTOM OF STRATUM VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	117	117	117	760	760	760	760	760	760	0
3	CH	114	114	114	475	500	475	475	500	475	0
4	CH	98	98	98	380	400	380	380	400	380	0
5	SM	122	122	122	0	0	0	0	0	0	30
6	CH	112	112	112	580	715	580	580	715	580	0
7	CH	112	112	112	650	788	650	720	860	720	0

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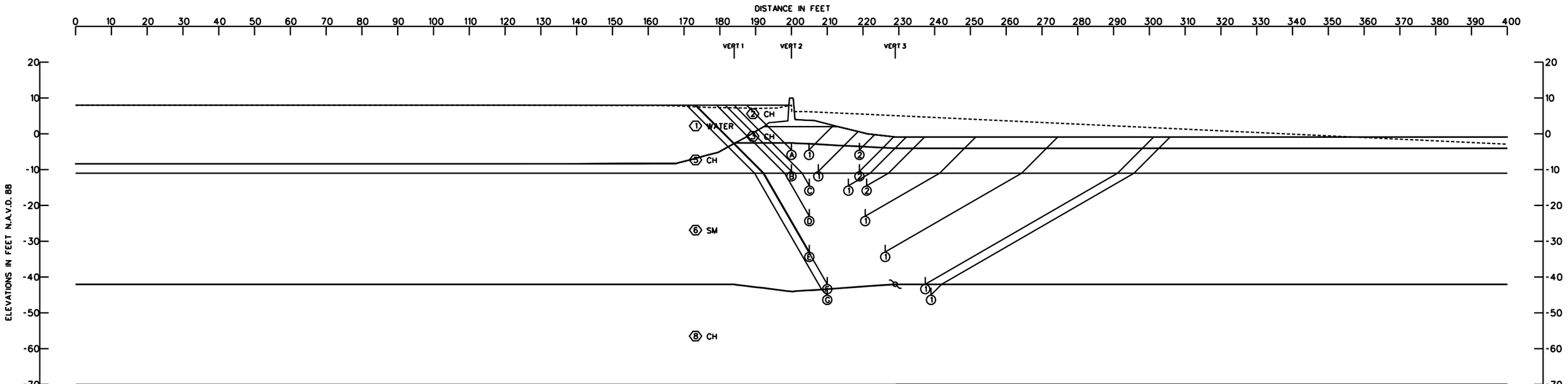

ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF
NO.		ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	SAFETY
A	1	-4.5	6465	1526	6430	6599	3169	14421	3430	4.20
A	2	-4.5	6465	5835	4299	6599	1111	16599	5488	3.02
B	1	-10.5	7384	2330	8253	14686	8244	17967	6442	2.79
B	2	-10.5	7384	5835	7094	14686	5498	20313	9188	2.21
C	1	-14.5	10040	3743	9425	21988	10671	23208	11317	2.05
C	2	-14.5	10040	4917	8846	21988	10052	23803	11936	1.99
D	1	-23.0	14731	9393	17894	44771	27115	42018	17656	2.38
E	1	-33.0	23959	19325	40688	82202	58238	83972	23964	3.50
F	1	-42.0	36091	26517	74269	125060	96849	136877	28211	4.85
G	1	-45.0	40643	23542	78935	141851	111867	143120	29984	4.77

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	110	110	110	600	600	600	600	600	600	0
3	CH	105	110	105	600	500	600	600	500	600	0
4	CH	105	103	105	235	237	235	235	237	235	0
5	CH	105	103	105	265	275	265	295	313	295	0
6	SM	122	122	122	0	0	0	0	0	0	30
7	CH	109	110	109	500	640	500	500	640	500	0
8	CH	109	110	109	643	775	643	785	910	785	0

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
∇ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

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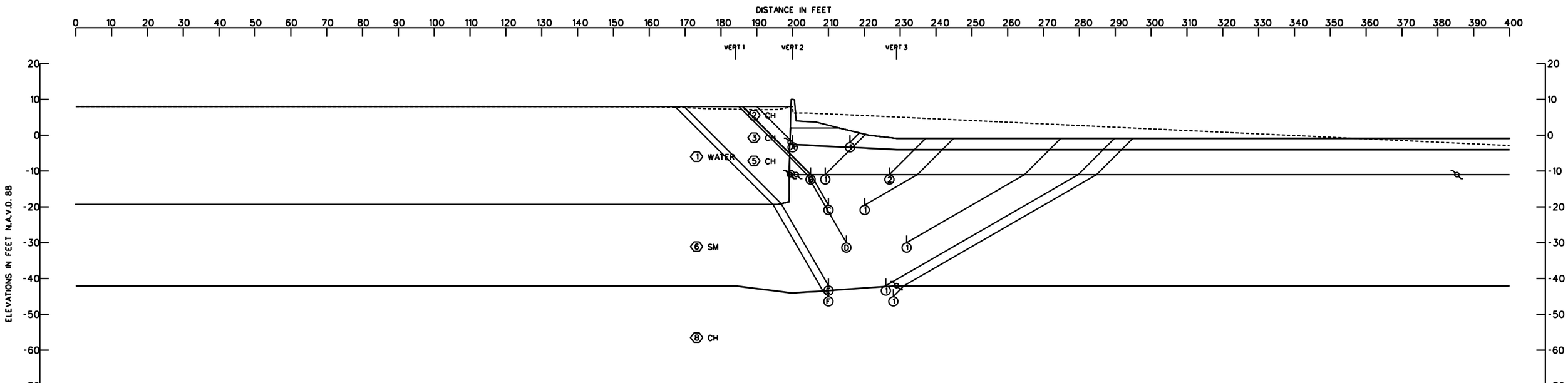
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 31-JAN-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-2.0	687	8442	2939	3492	463	12068	3029	3.98
Ⓑ ①	-11.0	3200	1112	8168	13725	8339	12480	5386	2.32
Ⓑ ②	-11.0	3200	3339	7424	13725	5381	13963	8344	1.67
Ⓒ ①	-19.5	7282	4545	13109	31084	19061	24936	12023	2.07
Ⓓ ①	-30.0	14988	12172	33045	63433	47525	60205	15908	3.78
Ⓔ ①	-42.0	23416	19007	72261	111257	96882	114684	14375	7.98
Ⓕ ①	-45.0	25718	14984	76952	124306	111873	117654	12433	9.46

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C · UNIT COHESION · P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	CH	110	110	110	600	600	600	600	600	600	0
③	CH	105	110	105	600	500	600	600	500	600	0
④	CH	105	103	105	235	237	235	235	237	235	0
⑤	CH	105	103	105	265	275	265	295	313	295	0
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	CH	109	110	109	500	640	500	500	640	500	0
⑧	CH	109	110	109	643	775	643	785	910	785	0

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

NOTES

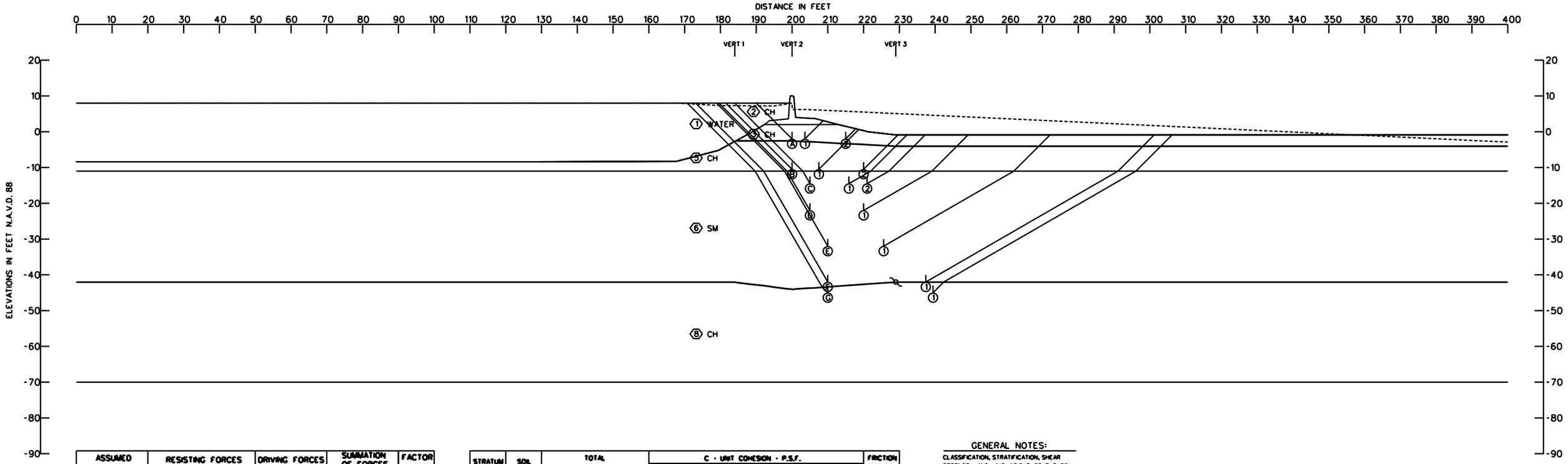
Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_A - D_P}$$

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 26A, STA. 37+00 TO 47+00
PROTECTED SIDE STABILITY ANALYSIS.
CASE: GAP STABILITY
MARCH 2012

LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 09-FEB-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-2.0	5522	1822	5480	4132	1709	12824	2423	5.29
Ⓐ ②	-2.0	5522	7888	3141	4132	536	16551	3596	4.60
Ⓑ ①	-10.5	7384	2330	8253	14690	8244	17967	6446	2.79
Ⓑ ②	-10.5	7384	6136	7082	14690	5357	20602	9333	2.21
Ⓒ ①	-14.5	10034	3731	9423	21991	10671	23188	11320	2.05
Ⓒ ②	-14.5	10034	4905	8846	21991	10052	23785	11939	1.99
Ⓓ ①	-22.0	13981	8568	16395	41666	24692	38944	16974	2.29
Ⓔ ①	-32.0	23096	13197	37775	76659	54567	74068	22092	3.35
Ⓕ ①	-42.0	36032	26512	74269	125065	96849	136813	28216	4.85
Ⓖ ①	-45.0	40560	23856	79007	141857	111867	143423	29990	4.78

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	CH	110	110	110	600	600	600	600	600	600	0
③	CH	105	110	105	600	500	600	600	500	600	0
④	CH	105	103	105	235	237	235	235	237	235	0
⑤	CH	105	103	105	265	275	265	295	313	295	0
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	CH	109	110	109	500	640	500	500	640	500	0
⑧	CH	109	110	109	643	775	643	785	910	785	0

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

NOTES

ϕ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
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D -- HORIZONTAL DRIVING FORCE IN POUNDS
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A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
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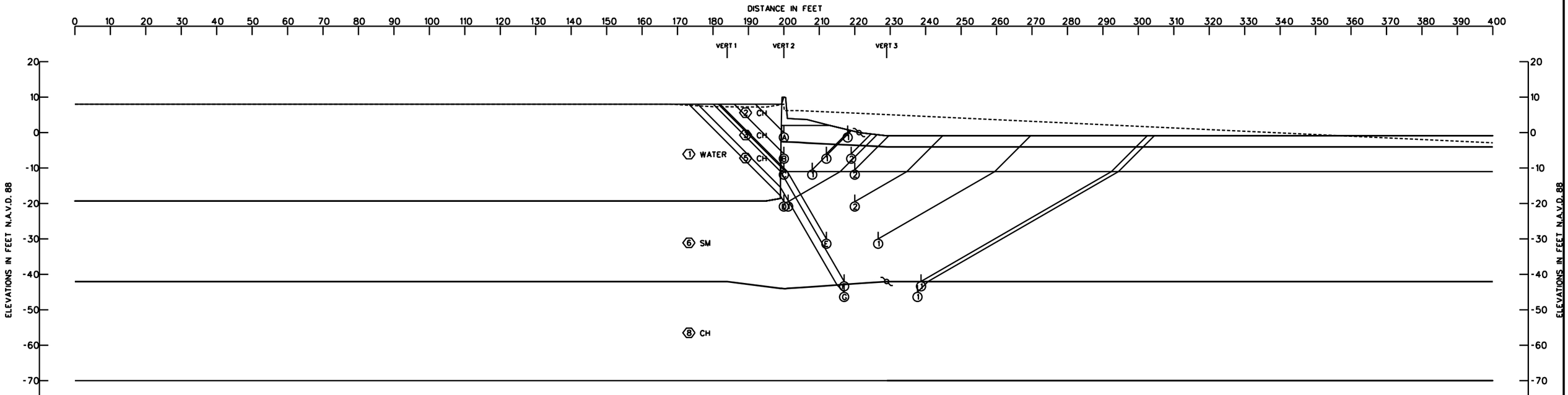
$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_A - D_P}$$

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 2&B, STA. 47+00 TO 48+50
PROTECTED SIDE STABILITY ANALYSIS,
CASE: GLOBAL STABILITY
MARCH 2012

LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 01-FEB-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
(A) (1)	0.0	758	9559	705	2339	27	11022	2312	4.77
(B) (1)	-6.0	458	3711	5817	6665	2936	9986	3729	2.68
(B) (2)	-6.0	458	5835	5008	6665	1892	11301	4773	2.37
(C) (1)	-10.5	490	2484	8176	11386	8092	11150	3294	3.39
(C) (2)	-10.5	490	6136	7084	11386	5357	13710	6029	2.27
(D) (1)	-19.5	1362	987	18973	25632	23540	21322	2092	10.19
(D) (2)	-19.5	1362	10489	13118	25632	19068	24969	6564	3.80
(E) (1)	-30.0	14063	11091	32509	63856	47546	57663	16310	3.54
(F) (1)	-42.0	27701	18454	74505	117252	96849	120660	20403	5.91
(G) (1)	-45.0	30879	16560	78698	131931	111867	126137	20064	6.29

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
(1)	WATER	62	62	62	0	0	0	0	0	0	0
(2)	CH	110	110	110	600	600	600	600	600	600	0
(3)	CH	105	110	105	600	500	600	600	500	600	0
(4)	CH	105	103	105	235	237	235	235	237	235	0
(5)	CH	105	103	105	265	275	265	295	313	295	0
(6)	SM	122	122	122	0	0	0	0	0	0	30
(7)	CH	109	110	109	500	640	500	500	640	500	0
(8)	CH	109	110	109	643	775	643	785	910	785	0

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

NOTES

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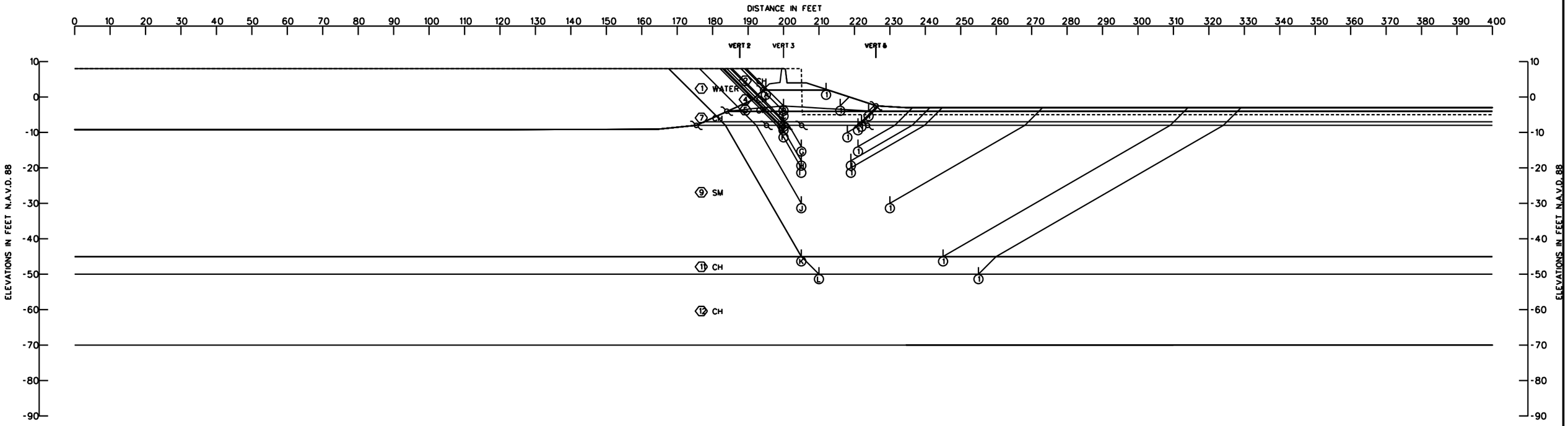
FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 26B, STA. 47+00 TO 48+50
PROTECTED SIDE STABILITY ANALYSIS,
CASE: GAP STABILITY
MARCH 2012

LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 03-FEB-12



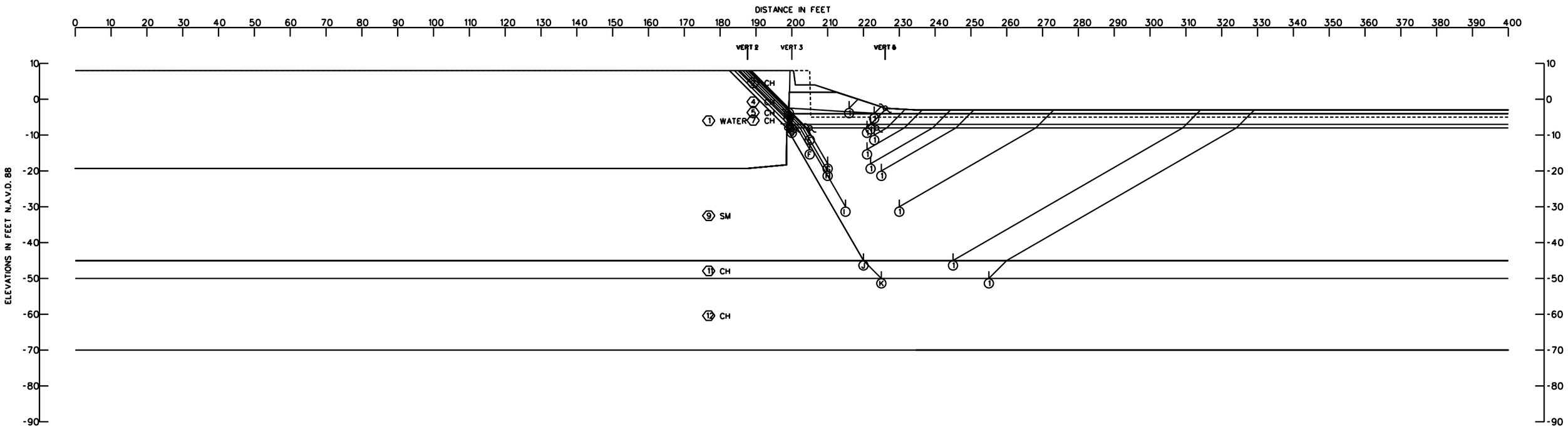
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.		ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ	①	2.0	471	3060	145	1130	1	3676	1129	3.25
Ⓑ	①	-2.5	2980	5040	1244	4506	465	9264	4041	2.29
Ⓒ	①	-4.0	3208	5834	828	5953	200	9870	5753	1.72
Ⓓ	①	-7.0	4005	6020	2238	9387	1401	12263	7986	1.54
Ⓔ	①	-8.0	4312	5459	2784	10693	2098	12555	8595	1.46
Ⓕ	①	-10.0	4975	9082	5942	13885	3873	19999	10012	2.00
Ⓖ	①	-14.0	6588	11212	10005	20842	7175	27805	13667	2.03
Ⓗ	①	-18.0	8780	12015	17110	30534	13446	37905	17088	2.22
Ⓘ	①	-20.0	10090	12977	21054	36046	17168	44121	18878	2.34
Ⓙ	①	-30.0	19227	29074	46294	70305	42288	94595	28017	3.38
Ⓚ	①	-45.0	37503	25419	108817	142235	104019	171739	38216	4.49
Ⓛ	①	-50.0	44787	30759	115290	172393	130520	190836	41873	4.56

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.					C - UNIT COHESION - P.S.F. CENTER OF STRATUM					C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM					FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	
①	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
②	CH	111	111	111	111	111	600	600	600	600	600	600	600	600	600	600	0
③	CH	105	111	111	111	105	400	180	180	180	400	400	180	180	180	400	0
④	CH	105	111	111	111	105	400	248	248	248	400	400	315	315	315	400	0
⑤	CH	103	103	103	103	103	350	350	350	350	350	350	350	350	350	350	0
⑥	CH	105	105	103	105	105	235	235	250	235	235	235	235	250	235	235	0
⑦	CH	105	105	103	105	105	250	250	265	250	250	265	265	280	265	265	0
⑧	CH	99	99	103	99	99	270	270	285	270	270	275	275	290	275	275	0
⑨	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
⑩	CH	107	107	110	107	107	620	620	693	620	620	620	620	693	620	620	0
⑪	CH	107	107	110	107	107	648	648	719	648	648	676	676	745	676	676	0
⑫	CH	112	112	110	112	112	788	788	850	788	788	900	900	955	900	900	0

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 27, STA. 48+50 TO 58+50
PROTECTED SIDE STABILITY ANALYSIS,
CASE: GLOBAL STABILITY
MARCH 2012

LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 24-JAN-12



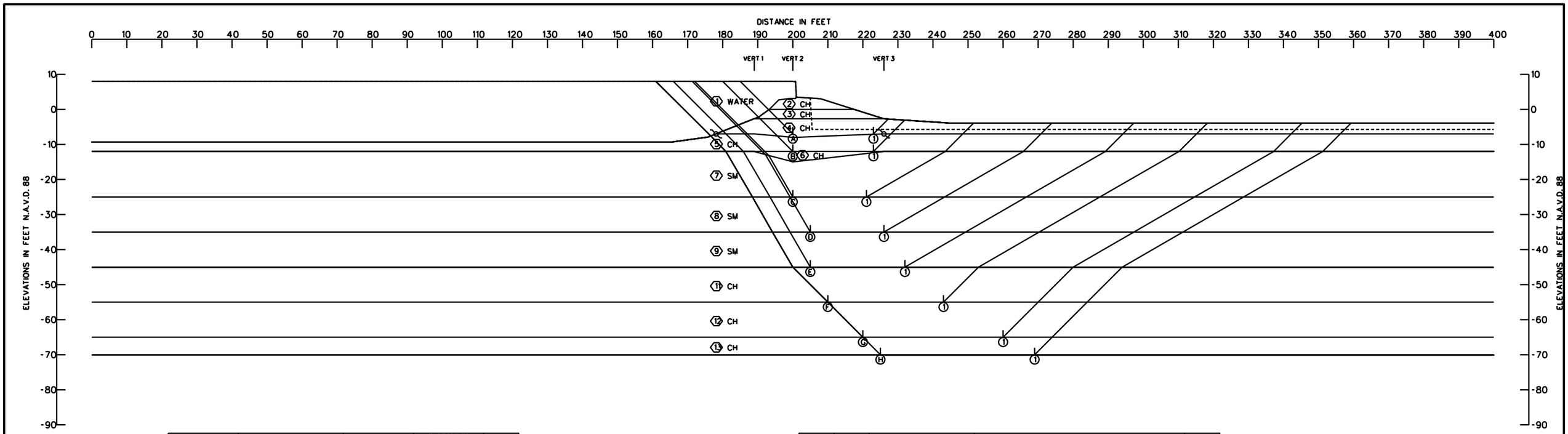
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
A 1	-2.5	12	5291	1239	3440	465	6542	2975	2.20
B 1	-4.0	30	5822	962	4493	265	6814	4228	1.61
C 1	-7.0	565	6020	2238	7505	1401	8823	6104	1.45
D 1	-8.0	638	5459	2784	8516	2098	8881	6418	1.38
E 1	-10.0	3112	9776	4987	12329	2990	17875	9339	1.91
F 1	-14.0	3281	11212	10005	19110	7175	24498	11935	2.05
G 1	-18.0	9259	9377	16257	28148	13020	34893	15128	2.31
H 1	-20.0	10335	12282	19708	33288	16495	42325	16793	2.52
I 1	-30.0	20090	15980	46294	64932	42288	82364	22644	3.64
J 1	-45.0	41093	15550	108817	134345	104019	165460	30326	5.46
K 1	-50.0	47663	20281	115290	161812	130520	183234	31292	5.86

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.					C - UNIT COHESION - P.S.F. CENTER OF STRATUM					C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM					FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	
1	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
2	CH	111	111	111	111	111	600	600	600	600	600	600	600	600	600	600	0
3	CH	105	111	111	111	105	400	180	180	180	400	400	180	180	180	400	0
4	CH	105	111	111	111	105	400	248	248	248	400	400	315	315	315	400	0
5	CH	103	103	103	103	103	350	350	350	350	350	350	350	350	350	350	0
6	CH	105	105	103	105	105	235	235	250	235	235	235	235	250	235	235	0
7	CH	105	105	103	105	105	250	250	265	250	250	265	265	280	265	265	0
8	CH	99	99	103	99	99	270	270	285	270	270	275	275	290	275	275	0
9	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
10	CH	107	107	110	107	107	620	620	693	620	620	620	620	693	620	620	0
11	CH	107	107	110	107	107	648	648	719	648	648	676	676	745	676	676	0
12	CH	112	112	110	112	112	788	788	850	788	788	900	900	955	900	900	0

LONDON AVE CANAL
OUTFALL CANAL REEVALUATION REPORT
REACH 27, STA. 48+50 TO 58+50
PROTECTED SIDE STABILITY ANALYSIS,
CASE: GAP STABILITY
MARCH 2012

LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 23-JAN-12



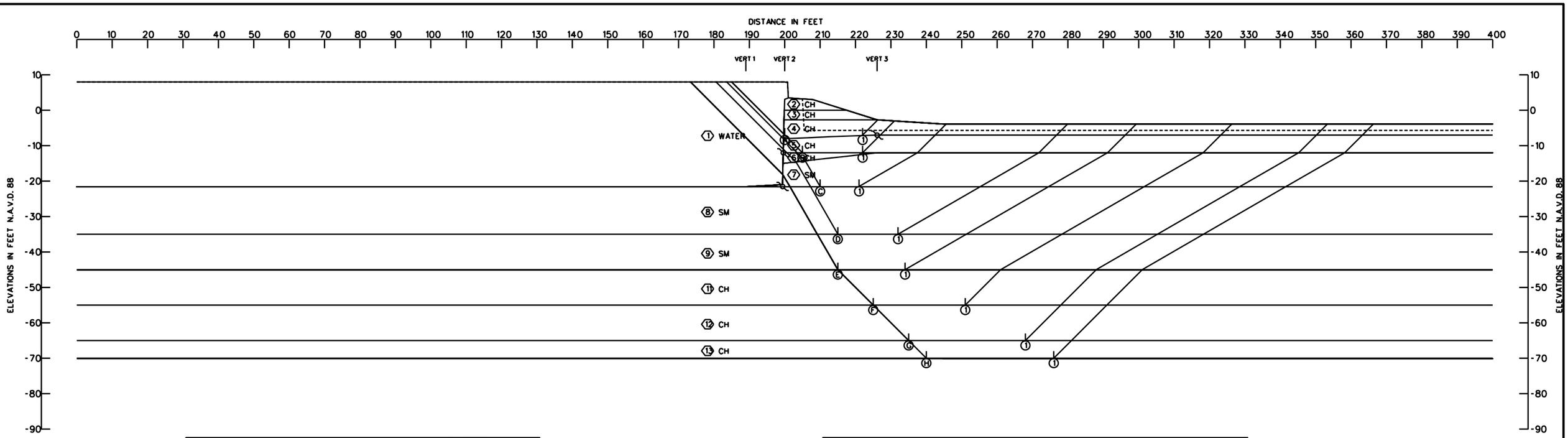
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	SAFETY
(A) (1)	-7.0	6856	7404	3341	8633	1070	17601	7563	2.33
(B) (1)	-12.0	6546	5827	5594	15450	4356	17967	11094	1.62
(C) (1)	-25.0	11934	18753	28248	46311	25345	58935	20966	2.81
(D) (1)	-35.0	21452	26401	56858	83066	54832	104711	28234	3.71
(E) (1)	-45.0	33437	18657	97797	132652	96740	149891	35912	4.17
(F) (1)	-55.0	47065	26338	111899	192658	150405	185302	42253	4.39
(G) (1)	-65.0	64398	36193	128858	261620	215552	229449	46068	4.98
(H) (1)	-70.0	73784	42241	138177	299389	252330	254202	47059	5.40

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	111	111	111	850	850	850	850	850	850	0
3	CH	103	103	103	850	850	850	850	850	850	0
4	CH	100	86	100	400	260	400	400	260	400	0
5	CH	100	97	100	245	260	245	245	260	245	0
6	CH	100	89	100	245	260	245	245	260	245	0
7	SM	122	122	122	0	0	0	0	0	0	30
8	SM	122	122	122	0	0	0	0	0	0	30
9	SM	122	122	122	0	0	0	0	0	0	30
10	CH	112	106	112	680	715	680	680	715	680	0
11	CH	112	106	112	736	774	736	792	833	792	0
12	CH	112	106	112	848	892	848	904	951	904	0
13	CH	112	106	112	932	981	932	960	1010	960	0
14	CH	112	106	112	960	1010	960	960	1010	960	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 28 Sta 58+50 to Sta 68+12
Protected Side Stability Analysis
Case: Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 26-JAN-12



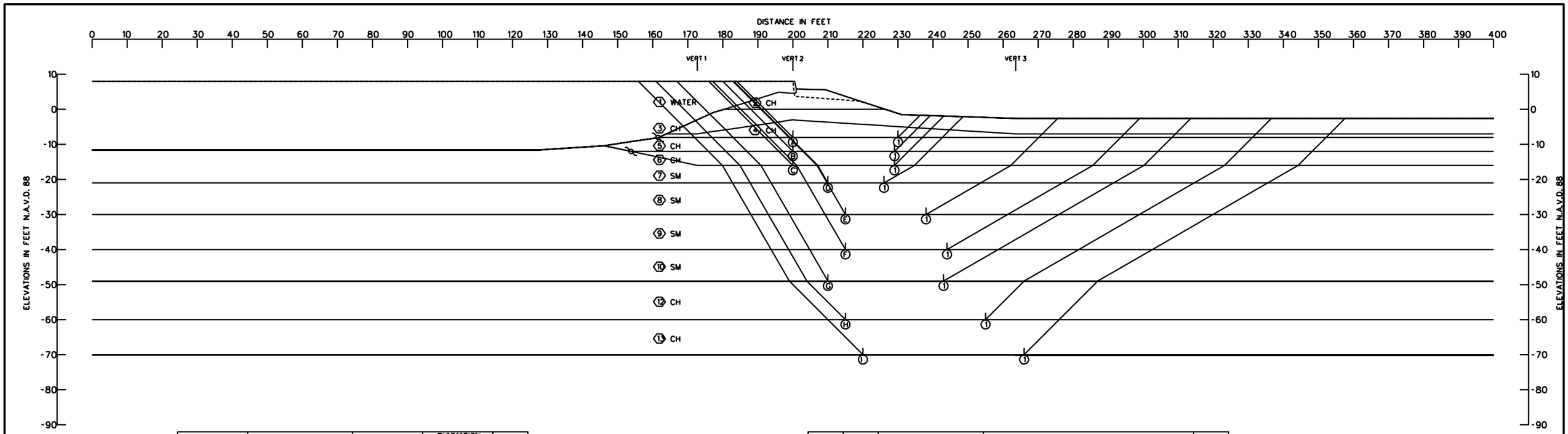
ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-7.0	149	7018	3340	7070	1186	10507	5884	1.79
B	1	-12.0	2739	4288	5648	13631	4493	12675	9138	1.39
C	1	-21.5	9753	8798	20457	32508	17778	39008	14730	2.65
D	1	-35.0	24133	19572	56156	76917	54481	99861	22436	4.45
E	1	-45.0	34533	13003	97623	122844	96652	145159	26192	5.54
F	1	-55.0	49419	20593	111900	179561	150395	181912	29166	6.24
G	1	-65.0	66379	29832	128859	245684	215553	225070	30131	7.47
H	1	-70.0	75699	34560	138179	282696	252331	248438	30365	8.18

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	111	111	111	850	850	850	850	850	850	0
3	CH	103	103	103	850	850	850	850	850	850	0
4	CH	100	86	100	400	260	400	400	260	400	0
5	CH	100	97	100	245	260	245	245	260	245	0
6	CH	100	89	100	245	260	245	245	260	245	0
7	SM	122	122	122	0	0	0	0	0	0	30
8	SM	122	122	122	0	0	0	0	0	0	30
9	SM	122	122	122	0	0	0	0	0	0	30
10	CH	112	106	112	680	715	680	680	715	680	0
11	CH	112	106	112	736	774	736	792	833	792	0
12	CH	112	106	112	848	892	848	904	951	904	0
13	CH	112	106	112	932	981	932	960	1010	960	0
14	CH	112	106	112	960	1010	960	960	1010	960	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 28 Sta 58+50 to Sta 68+12
Protected Side Stability Analysis
Case: Gap Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 02-FEB-12



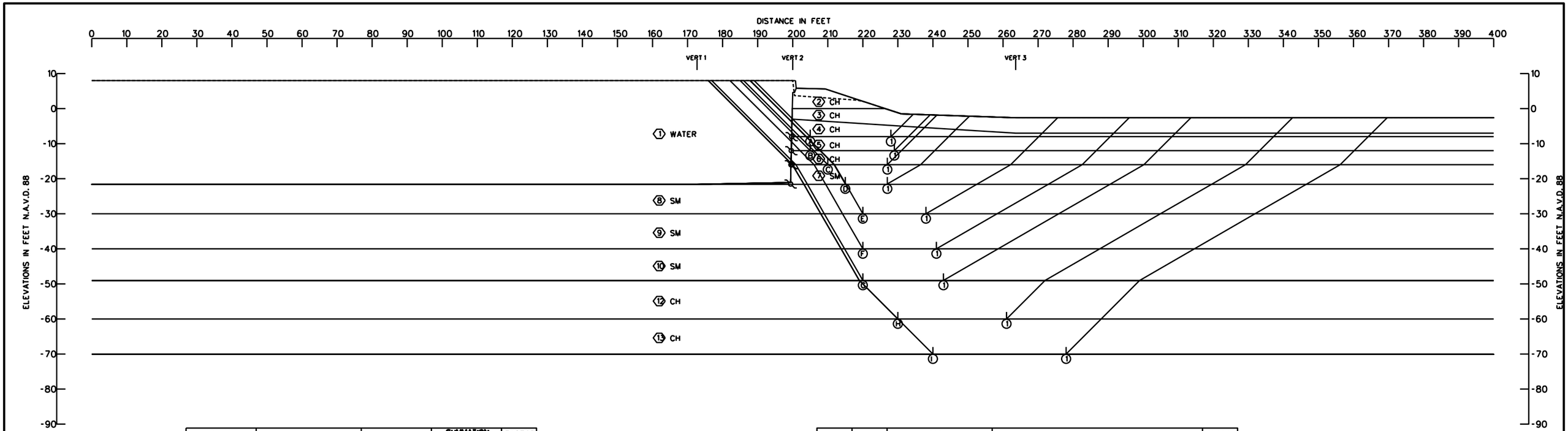
ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
Ⓐ	①	-8.0	12398	7517	5511	11290	2087	25426	9203	2.76
Ⓑ	①	-12.0	12778	7276	7295	17673	5434	27349	12239	2.23
Ⓒ	①	-16.0	12996	7276	9005	25388	10217	29277	15171	1.93
Ⓓ	①	-21.0	19926	9552	15231	38227	18754	44709	19473	2.30
Ⓔ	①	-30.0	28572	18931	33366	67254	40171	80869	27083	2.99
Ⓕ	①	-40.0	40015	33541	65934	111958	76557	139490	35401	3.94
Ⓖ	①	-49.0	49558	24804	105478	163226	119942	179840	43284	4.15
Ⓗ	①	-60.0	64404	30804	119028	236263	185505	214236	50758	4.22
Ⓘ	①	-70.0	79307	37456	133087	312433	257003	249850	55430	4.51

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
⟨1⟩	WATER	62	62	62	0	0	0	0	0	0	0
⟨2⟩	CH	114	114	114	850	850	850	850	850	850	0
⟨3⟩	CH	100	103	100	400	850	400	400	850	400	0
⟨4⟩	CH	100	93	100	220	260	220	220	260	220	0
⟨5⟩	CH	100	97	100	220	260	220	220	260	220	0
⟨6⟩	CH	100	90	100	220	260	220	220	260	220	0
⟨7⟩	SM	122	122	122	0	0	0	0	0	0	30
⟨8⟩	SM	122	122	122	0	0	0	0	0	0	30
⟨9⟩	SM	122	122	122	0	0	0	0	0	0	30
⟨10⟩	SM	122	122	122	0	0	0	0	0	0	30
⟨11⟩	CH	112	106	113	544	900	544	544	900	544	0
⟨12⟩	CH	112	106	112	604	900	604	664	900	664	0
⟨13⟩	CH	112	106	112	719	900	719	773	900	773	0
⟨14⟩	CH	112	106	112	773	900	773	773	900	773	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 29 Sta 69+09 to Sta 70+50
Protected Side Stability Analysis
Case: Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 26-JAN-12



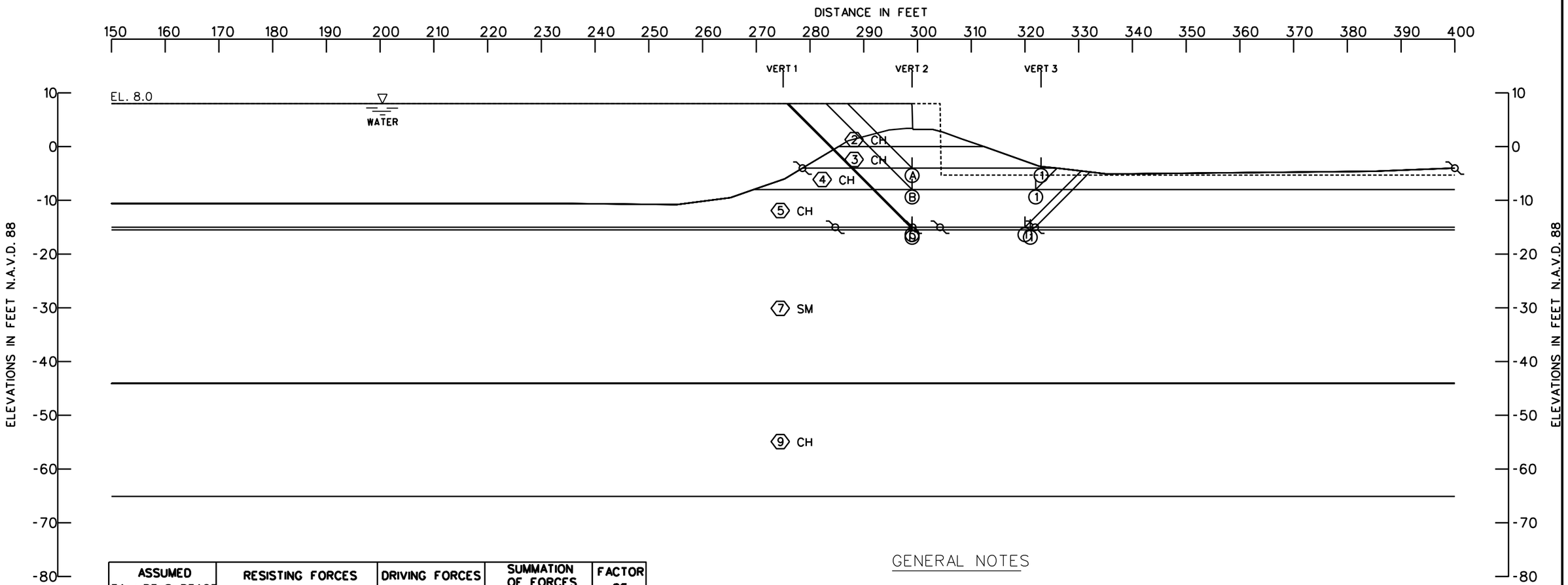
ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-8.0	2943	5741	5606	9884	2248	14290	7636	1.87
B	1	-12.0	2733	5983	7299	15055	5434	16015	9621	1.66
C	1	-16.0	5276	4222	9127	23405	10478	18625	12927	1.44
D	1	-21.5	9926	6841	15839	36903	19611	32606	17292	1.89
E	1	-30.0	17417	14415	33366	63009	40171	65198	22838	2.85
F	1	-40.0	28509	23954	65949	105643	76653	118412	28990	4.08
G	1	-49.0	41856	16644	105478	153616	119942	163978	33674	4.87
H	1	-60.0	58529	22666	118708	222474	185435	199903	37039	5.40
I	1	-70.0	74537	29930	133087	294329	257002	237554	37327	6.36

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	114	114	114	850	850	850	850	850	850	0
3	CH	100	103	100	400	850	400	400	850	400	0
4	CH	100	93	100	220	260	220	220	260	220	0
5	CH	100	97	100	220	260	220	220	260	220	0
6	CH	100	90	100	220	260	220	220	260	220	0
7	SM	122	122	122	0	0	0	0	0	0	30
8	SM	122	122	122	0	0	0	0	0	0	30
9	SM	122	122	122	0	0	0	0	0	0	30
10	SM	122	122	122	0	0	0	0	0	0	30
11	CH	112	106	113	544	900	544	544	900	544	0
12	CH	112	106	112	604	900	604	664	900	664	0
13	CH	112	106	112	719	900	719	773	900	773	0
14	CH	112	106	112	773	900	773	773	900	773	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 29 Sta 69+09 to Sta 70+50
Protected Side Stability Analysis
Case: Gap Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 03-FEB-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-4.0	7821	4800	366	5712	5	12987	5707	2.28
Ⓑ ①	-8.0	8422	4600	1597	10423	735	14619	9688	1.51
Ⓒ ①	-15.0	9321	4886	4889	21593	5361	19096	16232	1.18
Ⓓ ①	-15.5	9404	8829	5277	22582	5630	23510	16952	1.39

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	CH	115	115	115	600	600	600	600	600	600	0
③	CH	102	102	102	600	600	600	600	600	600	0
④	CH	80	80	80	200	200	200	200	200	200	0
⑤	CH	94	94	94	250	250	250	250	250	250	0
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	SM	122	122	122	0	0	0	0	0	0	30
⑧	CH	105	105	105	750	750	750	750	750	750	0
⑨	CH	105	105	105	850	850	850	950	950	950	0

GENERAL NOTES

CLASSIFICATION STRATIFICATION SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS. SEE BORING DATA PLATES.

SHEAR STRENGTHS BETWEEN VERTICALS WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

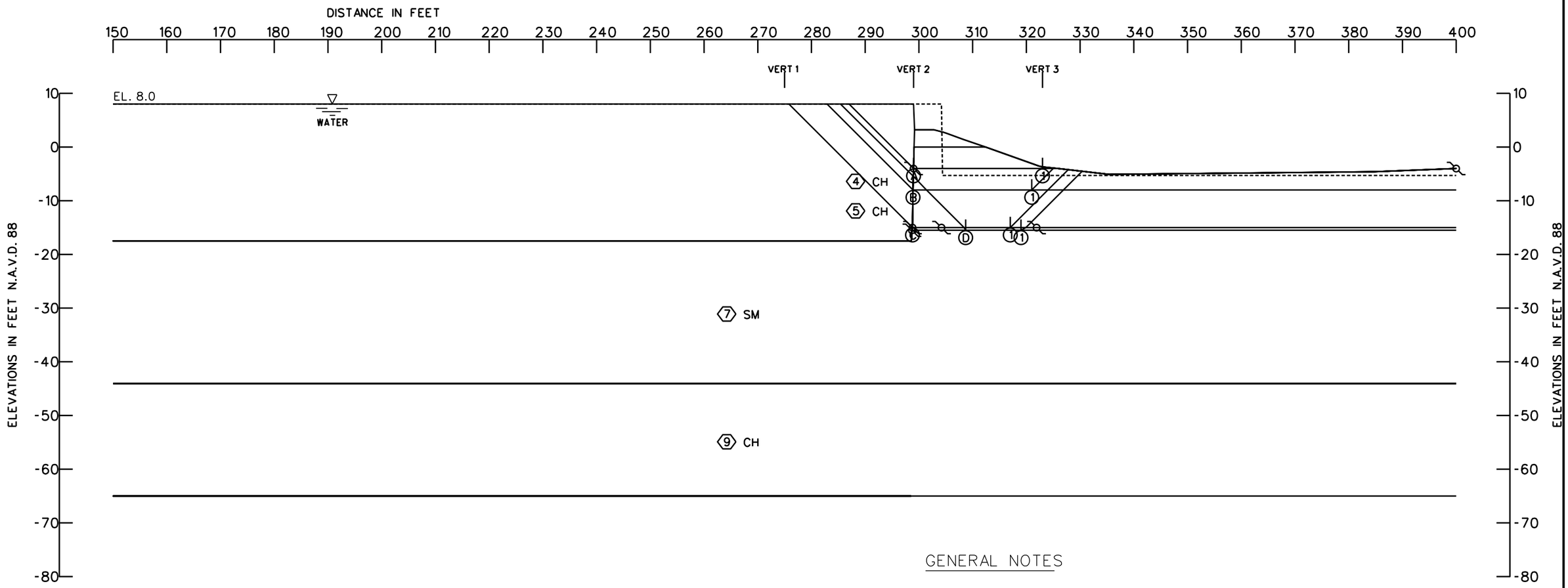
NOTES

◇ -- STRATUM NUMBER
○ -- WEDGE NUMBER
ᔑ -- CROSSOVER POINT
ϕ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT,REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT REFERS TO PASSIVE WEDGE

$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_A - D_P}$$

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 30 Sta 74+13 to Sta 76+90
Protected Side Stability Analysis
Case: Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 12-JAN-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-4.0	10	4820	366	4492	5	5196	4487	1.16
Ⓑ ①	-8.0	2	4420	1717	7987	807	6139	7180	0.86
Ⓒ ①	-15.0	26	4150	5014	16505	6008	9190	10497	0.88
Ⓓ ①	-15.5	4805	4512	5433	18385	5965	14750	12420	1.19

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
⟨1⟩	WATER	62	62	62	0	0	0	0	0	0	0
⟨2⟩	CH	115	115	115	600	600	600	600	600	600	0
⟨3⟩	CH	102	102	102	600	600	600	600	600	600	0
⟨4⟩	CH	80	80	80	200	200	200	200	200	200	0
⟨5⟩	CH	94	94	94	250	250	250	250	250	250	0
⟨6⟩	SM	122	122	122	0	0	0	0	0	0	30
⟨7⟩	SM	122	122	122	0	0	0	0	0	0	30
⟨8⟩	CH	105	105	105	750	750	750	750	750	750	0
⟨9⟩	CH	105	105	105	850	850	850	950	950	950	0

GENERAL NOTES

CLASSIFICATION STRATIFICATION SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS. SEE BORING DATA PLATES.

SHEAR STRENGTHS BETWEEN VERTICALS WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

NOTES

⟨⟩ -- STRATUM NUMBER
◯ -- WEDGE NUMBER
-- CROSSOVER POINT
ϕ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
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D -- HORIZONTAL DRIVING FORCE IN POUNDS
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A -- AS A SUBSCRIPT,REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT REFERS TO CENTRAL BLOCK
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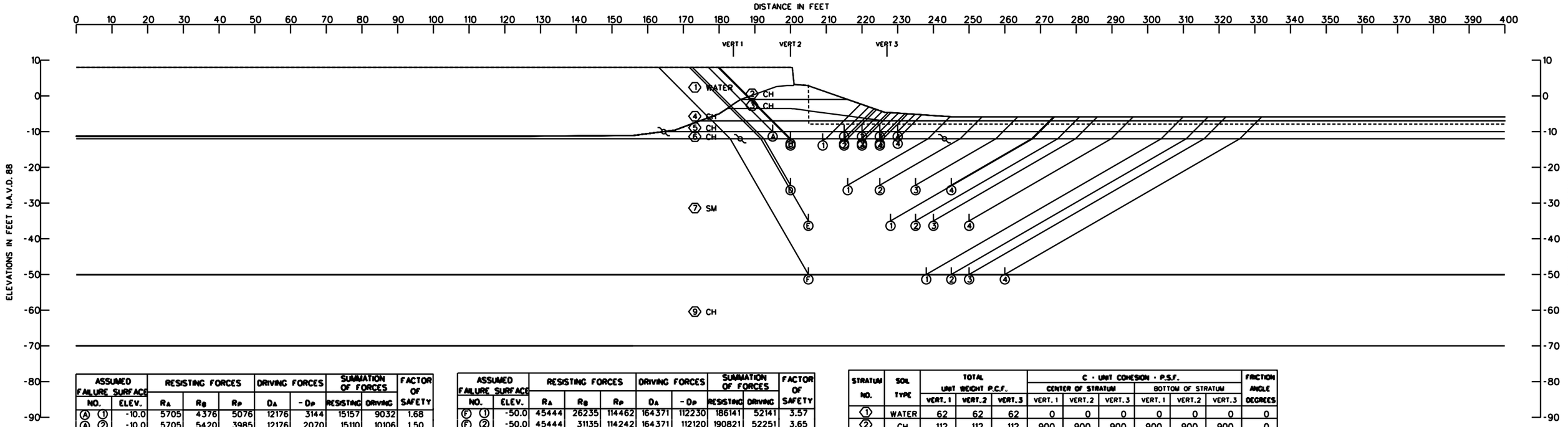
$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_A - D_P}$$

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 30 Sta 74+13 to Sta 76+90
Protected Side Stability Analysis
Case: Gap Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 12-JAN-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	O_A	$-O_P$	RESISTING	DRIVING	
A 1	-10.0	5705	4376	5076	12176	3144	15157	9032	1.68
A 2	-10.0	5705	5420	3985	12176	2070	15110	10106	1.50
A 3	-10.0	5705	6441	3653	12176	1383	15799	10793	1.46
A 4	-10.0	5705	7443	3305	12176	1196	16453	10980	1.50
B 1	-12.0	8086	3271	5475	16078	4608	16832	11470	1.47
B 2	-12.0	8086	4315	4590	16078	3302	16991	12776	1.33
B 3	-12.0	8086	5336	4317	16078	2551	17739	13527	1.31
B 4	-12.0	8086	6337	3966	16078	2304	18389	13774	1.34
C 1	-12.5	8128	4377	7701	16943	6960	20206	9983	2.02
C 2	-12.5	8128	7787	6119	16943	4914	22034	12029	1.83
C 3	-12.5	8128	10035	5249	16943	3590	23412	13353	1.75
C 4	-12.5	8128	11801	4754	16943	2876	24683	14067	1.75
D 1	-25.0	12350	15147	26723	48002	22236	54220	25766	2.10
D 2	-25.0	12350	22536	23546	48002	20521	58432	27481	2.13
D 3	-25.0	12350	29504	22345	48002	19921	64199	28081	2.29
D 4	-25.0	12350	36084	21919	48002	19708	70353	28294	2.49
E 1	-35.0	23621	28753	51092	85451	48107	103466	37344	2.77
E 2	-35.0	23621	35986	50350	85451	47736	109957	37715	2.92
E 3	-35.0	23621	41040	50044	85451	47583	114705	37868	3.03
E 4	-35.0	23621	50904	49922	85451	47522	124447	37929	3.28

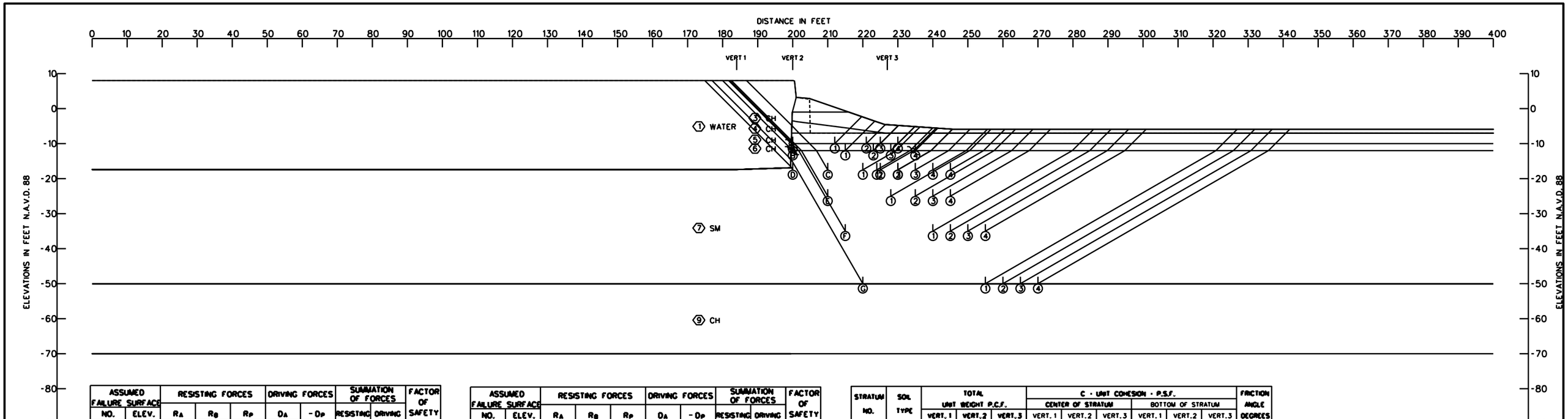
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	O_A	$-O_P$	RESISTING	DRIVING	
F 1	-50.0	45444	26235	114462	164371	112230	186141	52141	3.57
F 2	-50.0	45444	31135	114242	164371	112120	190821	52251	3.65
F 3	-50.0	45444	34635	114241	164371	112120	194320	52251	3.72
F 4	-50.0	45444	41635	114241	164371	112120	201320	52251	3.85

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	112	112	112	900	900	900	900	900	900	0
3	CH	96	103	96	550	600	550	550	600	550	0
4	CH	92	92	92	225	225	225	225	225	225	0
5	CH	96	92	96	215	225	215	215	225	215	0
6	CH	96	92	96	200	225	200	200	225	200	0
7	SM	122	122	122	0	0	0	0	0	0	30
8	CH	106	106	106	700	1050	700	700	1050	700	0
9	CH	106	106	106	800	1050	800	900	1050	900	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 31 Sta 76+90 to Sta 83+73
Protected Side Stability Analysis
Case: Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 25-JAN-12



ASSUMED FAILURE SURFACE NO.		ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
A	1	-10.0	178	2633	5752	10182	3936	8563	6246	1.37
A	2	-10.0	178	4521	3772	10182	1884	8471	8298	1.02
A	3	-10.0	178	5336	3653	10182	1383	9167	8799	1.04
A	4	-10.0	178	6337	3305	10182	1196	9820	8986	1.09
B	1	-12.0	218	3270	5479	12579	4608	8967	7971	1.13
B	2	-12.0	218	4930	4464	12579	2768	9612	9811	0.98
B	3	-12.0	218	5937	4105	12579	2391	10260	10188	1.01
B	4	-12.0	218	7336	3619	12579	2092	11173	10487	1.07
C	1	-17.5	7545	8431	9816	22794	7865	25792	14929	1.73
C	2	-17.5	7545	10972	8887	22794	7364	27404	15430	1.78
C	3	-17.5	7545	12951	8526	22794	7067	29022	15727	1.85
C	4	-17.5	7545	14838	8225	22794	6913	30608	15881	1.93
D	1	-17.5	307	13005	10907	20750	8442	24219	12308	1.97
D	2	-17.5	307	15466	9618	20750	7759	25391	12991	1.95
D	3	-17.5	307	17554	8887	20750	7364	26748	13386	2.00
D	4	-17.5	307	23212	8105	20750	6853	31624	13897	2.28
E	1	-25.0	11506	14792	21624	41966	20292	47922	21674	2.21
E	2	-25.0	11506	19393	20882	41966	19921	51781	22045	2.35
E	3	-25.0	11506	22567	20576	41966	19768	54649	22198	2.46
E	4	-25.0	11506	25648	20457	41966	19708	57611	22258	2.59

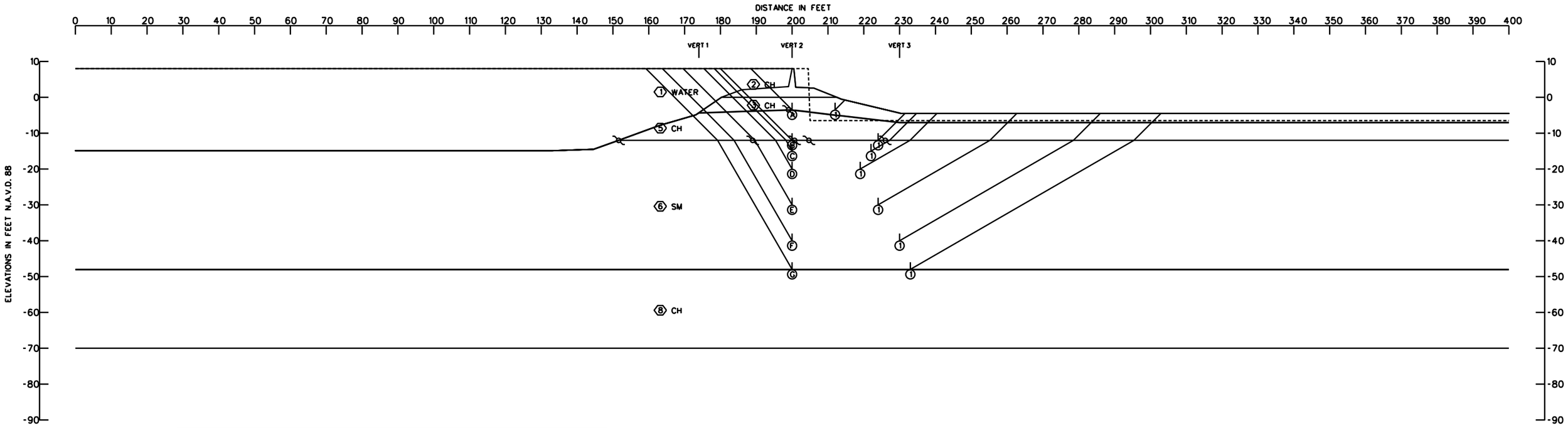
ASSUMED FAILURE SURFACE NO.		ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
F	1	-35.0	22314	26389	47456	76112	47583	96159	28529	3.37
F	2	-35.0	22314	31188	47337	76112	47523	100839	28589	3.53
F	3	-35.0	22314	35927	47335	76112	47523	105576	28589	3.69
F	4	-35.0	22314	40666	47335	76112	47523	110315	28589	3.86
G	1	-50.0	40361	24817	109966	148956	112120	175144	36836	4.75
G	2	-50.0	40361	28317	109966	148956	112120	178644	36836	4.85
G	3	-50.0	40361	31817	109966	148956	112119	182144	36837	4.94
G	4	-50.0	40361	35317	109966	148956	112119	185644	36837	5.04

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	112	112	112	900	900	900	900	900	900	0
3	CH	96	103	96	550	600	550	550	600	550	0
4	CH	92	92	92	225	225	225	225	225	225	0
5	CH	96	92	96	215	225	215	215	225	215	0
6	CH	96	92	96	200	225	200	200	225	200	0
7	SM	122	122	122	0	0	0	0	0	0	30
8	CH	106	106	106	700	1050	700	700	1050	700	0
9	CH	106	106	106	800	1050	800	900	1050	900	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 31 Sta 76+90 to Sta 83+73
Protected Side Stability Analysis
Case: Gap Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 31-JAN-12

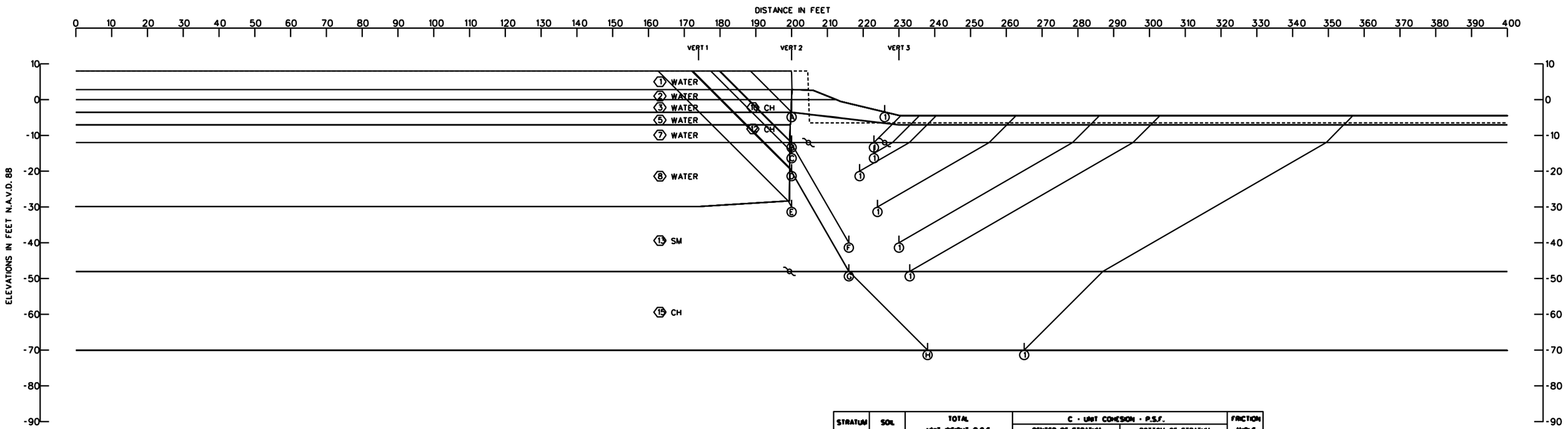


STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT.2	VERT.3	VERT. 1	VERT.2	VERT.3	VERT. 1	VERT.2	VERT.3	DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	112	112	112	600	600	600	600	600	600	0
3	CH	85	105	85	500	600	500	500	600	500	0
4	CH	95	98	95	250	260	250	250	260	250	0
5	CH	95	98	95	250	300	250	250	340	250	0
6	SM	122	122	122	0	0	0	0	0	0	30
7	CH	106	106	106	660	900	660	660	900	660	0
8	CH	106	106	106	770	900	770	880	900	880	0

ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
A 1	-3.5	7304	6790	3052	5190	474	17146	4716	3.64
B 1	-12.0	11544	6594	5006	16943	2992	23144	13951	1.66
C 1	-15.0	12417	11385	8438	22965	5656	32240	17309	1.86
D 1	-20.0	14373	13314	16085	35142	12808	43772	22334	1.96
E 1	-30.0	20769	24568	37155	68095	34906	82492	33189	2.49
F 1	-40.0	30699	40065	70895	112569	69588	141659	42981	3.30
G 1	-48.0	41606	25379	106855	156319	106319	173840	50000	3.48

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 32 Sta 84+41 to Sta 90+00
Protected Side Stability Analysis
Case: Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 03-FEB-12

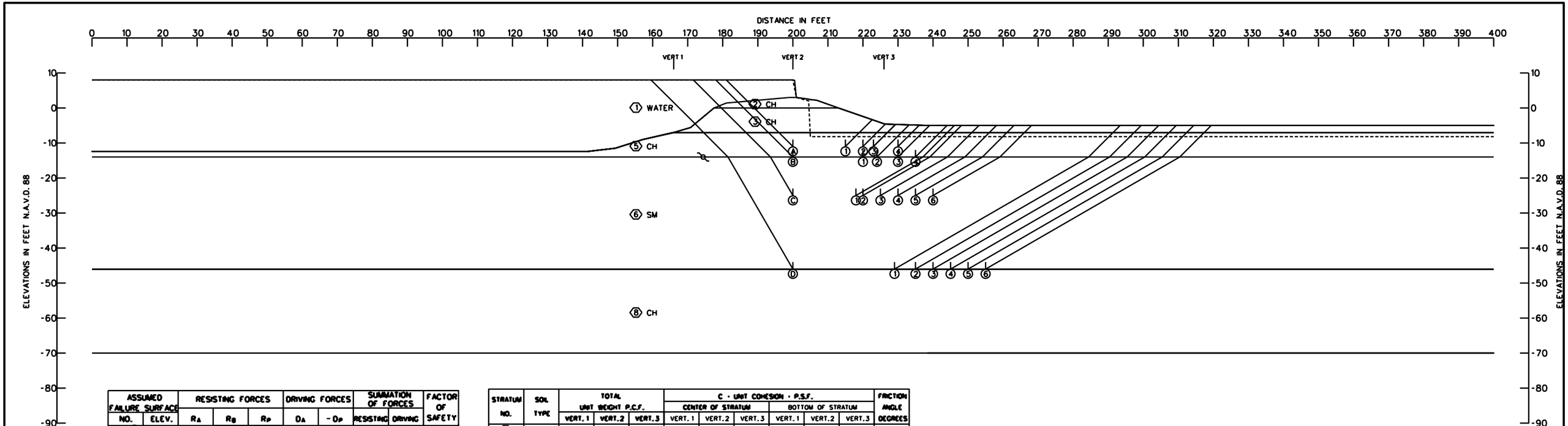


ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-3.5	171	14438	43	4133	0	14652	4133	3.54
B	1	-12.0	299	6164	4962	12595	3156	11425	9439	1.21
C	1	-15.0	228	11551	8285	16847	5523	20064	11324	1.77
D	1	-20.0	410	13064	16088	25076	12810	29562	12266	2.41
E	1	-30.0	808	24319	37158	46270	34907	62285	11363	5.48
F	1	-40.0	25888	17741	70895	97885	69588	114524	28297	4.05
G	1	-48.0	35043	12004	106855	137541	106319	153902	31222	4.93
H	1	-70.0	69484	23760	140712	277339	243715	233956	33624	6.96

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	WATER	62	62	62	0	0	0	0	0	0	0
3	WATER	62	62	62	0	0	0	0	0	0	0
4	WATER	62	62	62	0	0	0	0	0	0	0
5	WATER	62	62	62	0	0	0	0	0	0	0
6	WATER	62	62	62	0	0	0	0	0	0	0
7	WATER	62	62	62	0	0	0	0	0	0	0
8	WATER	62	62	62	0	0	0	0	0	0	0
9	CH	112	112	112	600	600	600	600	600	600	0
10	CH	85	105	85	500	600	500	500	600	500	0
11	CH	95	98	95	250	260	250	250	260	250	0
12	CH	95	98	95	250	300	250	250	340	250	0
13	SM	122	122	122	0	0	0	0	0	0	30
14	CH	106	106	106	660	900	660	660	900	660	0
15	CH	106	106	106	770	900	770	880	900	880	0
16	CH	106	106	106	880	900	880	880	900	880	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 32 Sta 84+41 to Sta 90+00
Protected Side Stability Analysis
Case: Gap Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 07-FEB-12



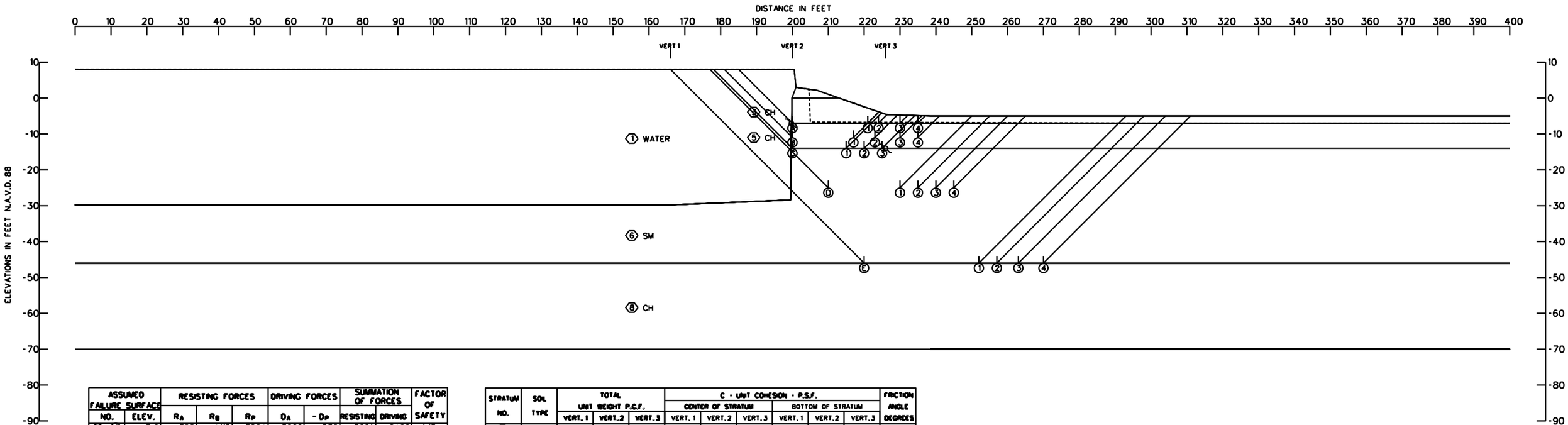
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
A 1	-11.0	12256	3650	5420	15197	3612	21326	11585	1.84
A 2	-11.0	12256	4723	3980	15197	2426	20959	12771	1.64
A 3	-11.0	12256	5332	3833	15197	1948	21421	13249	1.62
A 4	-11.0	12256	6675	3599	15197	1682	22530	13515	1.67
B 1	-14.0	13196	4723	5017	20749	4575	22936	16174	1.42
B 2	-14.0	13196	5529	4833	20749	3958	23558	16791	1.40
B 3	-14.0	13196	6675	4660	20749	3746	24531	17003	1.44
B 4	-14.0	13196	7625	4660	20749	3664	25481	17085	1.49
C 1	-25.0	19104	17051	23743	50216	20960	59898	29256	2.05
C 2	-25.0	19104	18692	23182	50216	20677	60978	29539	2.06
C 3	-25.0	19104	22412	22364	50216	20268	63880	29948	2.13
C 4	-25.0	19104	25740	22169	50216	20170	67013	30046	2.23
C 5	-25.0	19104	29014	22075	50216	20123	70193	30093	2.33
C 6	-25.0	19104	32251	22055	50216	20113	73410	30103	2.44
D 1	-46.0	39413	18505	95388	144542	92611	153306	51931	2.95
D 2	-46.0	39413	22105	95265	144542	92550	156783	51992	3.02
D 3	-46.0	39413	25105	95246	144542	92540	159764	52002	3.07
D 4	-46.0	39413	28105	95246	144542	92541	162764	52001	3.13
D 5	-46.0	39413	31105	95246	144542	92540	165764	52002	3.19
D 6	-46.0	39413	34105	95246	144542	92540	168764	52002	3.25

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	112	112	112	600	600	600	600	600	600	0
3	CH	84	105	84	500	600	500	500	600	500	0
4	CH	94	104	94	190	200	190	190	200	190	0
5	CH	94	104	94	190	233	190	190	265	190	0
6	SM	122	122	122	0	0	0	0	0	0	30
7	CH	106	106	106	600	685	600	600	685	600	0
8	CH	106	106	106	700	800	700	800	915	800	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 33 Sta 90+00 to Sta 93+00
Protected Side Stability Analysis
Case: Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 24-JAN-12

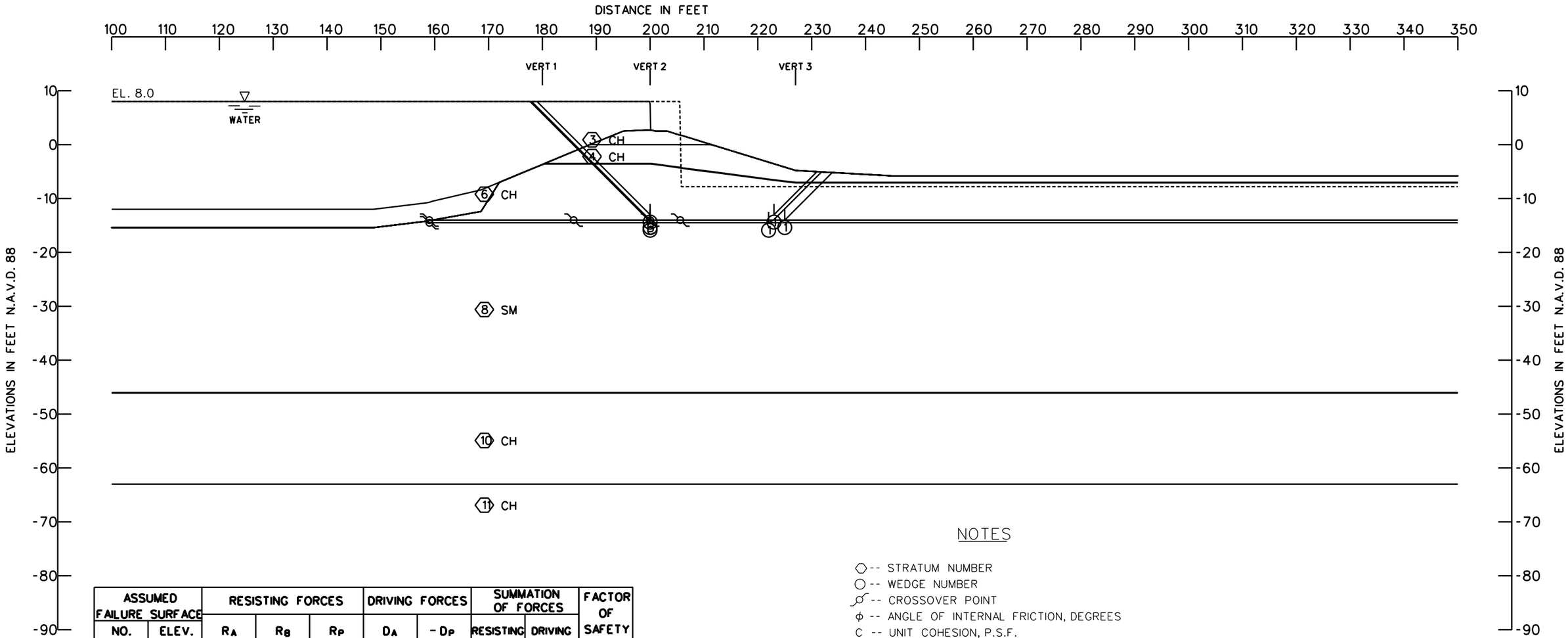


ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	SAFETY
Ⓐ ①	-7.0	302	4115	3204	7066	570	7621	6496	1.17
Ⓐ ②	-7.0	302	4689	2408	7066	315	7399	6751	1.10
Ⓐ ③	-7.0	302	5830	2205	7066	211	8337	6855	1.22
Ⓐ ④	-7.0	302	6780	2047	7066	182	9129	6884	1.33
Ⓑ ①	-11.0	143	3344	4746	11363	3103	8233	8260	1.00
Ⓑ ②	-11.0	143	4498	3822	11363	1948	8463	9415	0.90
Ⓑ ③	-11.0	143	5830	3599	11363	1682	9572	9681	0.99
Ⓑ ④	-11.0	143	6780	3520	11363	1609	10443	9754	1.07
Ⓒ ①	-14.0	160	2957	5620	15248	6052	8737	9196	0.95
Ⓒ ②	-14.0	160	3923	4973	15248	4574	9056	10674	0.85
Ⓒ ③	-14.0	160	4880	4802	15248	3888	9842	11360	0.87
Ⓓ ①	-25.0	4685	4169	8840	39790	18518	17694	21272	0.83
Ⓓ ②	-25.0	4685	5119	8840	39790	18436	18644	21354	0.87
Ⓓ ③	-25.0	4685	6069	8840	39790	18420	19594	21370	0.92
Ⓓ ④	-25.0	4685	7019	8840	39790	18420	20544	21370	0.96
Ⓔ ①	-46.0	8883	6132	16820	110253	78205	31835	32048	0.99
Ⓔ ②	-46.0	8883	7082	16820	110253	78205	32785	32048	1.02
Ⓔ ③	-46.0	8883	8222	16820	110253	78205	33925	32048	1.06
Ⓔ ④	-46.0	8883	9552	16820	110253	78205	35255	32048	1.10

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	CH	112	112	112	600	600	600	600	600	600	0
③	CH	84	105	84	500	600	500	500	600	500	0
④	CH	94	104	94	190	200	190	190	200	190	0
⑤	CH	94	104	94	190	233	190	190	265	190	0
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	CH	106	106	106	600	685	600	600	685	600	0
⑧	CH	106	106	106	700	800	700	800	915	800	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 33 Sta 90+00 to Sta 93+00
Protected Side Stability Analysis
Case: Gap Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 01-FEB-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-13.0	7911	5392	4404	17724	3196	17707	14528	1.22
Ⓑ ①	-14.0	8643	6006	4619	19511	3739	19268	15772	1.22
Ⓒ ①	-14.5	8741	9706	5378	20488	4494	23825	15994	1.49

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	90	90	90	0	0	0	0	0	0	20
③	CH	112	112	112	600	600	600	600	600	600	0
④	CH	84	98	84	500	600	500	500	600	500	0
⑤	CH	94	102	94	200	260	200	200	260	200	0
⑥	CH	94	102	94	200	300	200	200	340	200	0
⑦	SM	122	122	122	0	0	0	0	0	0	30
⑧	SM	122	122	122	0	0	0	0	0	0	30
⑨	CH	107	107	107	600	665	600	600	665	600	0
⑩	CH	107	107	107	699	750	699	798	835	798	0
⑪	CH	122	122	122	839	870	839	880	905	880	0

NOTES

◇ -- STRATUM NUMBER
○ -- WEDGE NUMBER
ơ -- CROSSOVER POINT
ϕ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT,REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT REFERS TO PASSIVE WEDGE

$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_A - D_P}$$

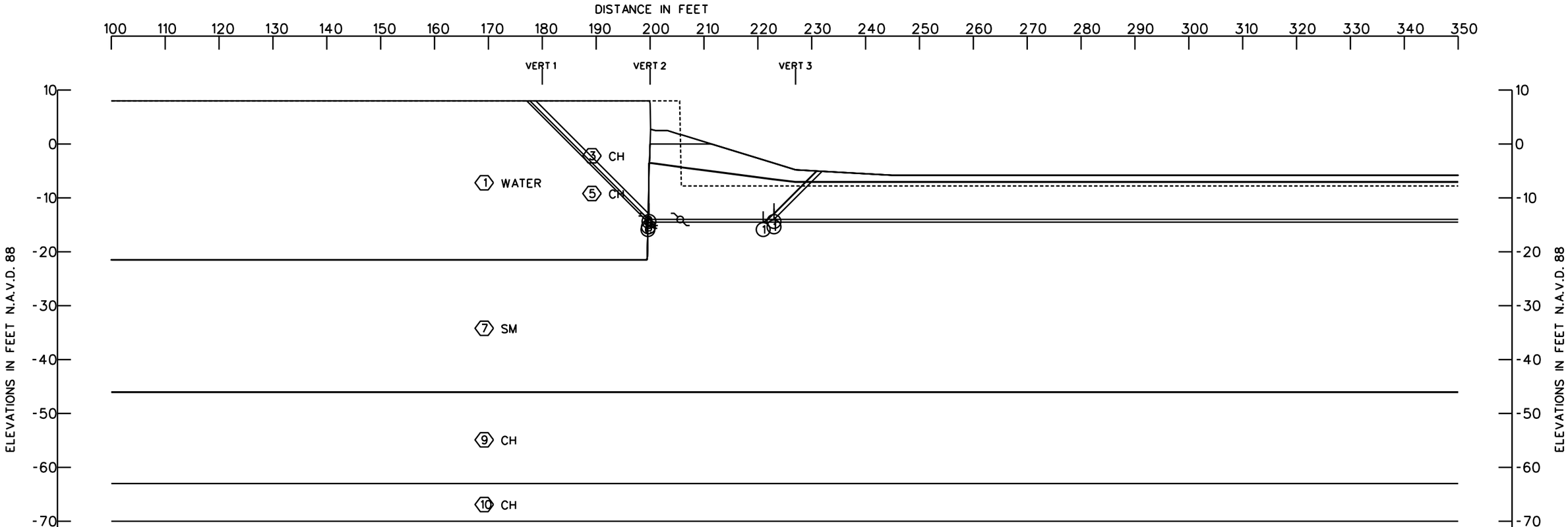
GENERAL NOTES

CLASSIFICATION STRATIFICATION SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS. SEE BORING DATA PLATES.

SHEAR STRENGTHS BETWEEN VERTICALS WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 34 Sta 93+00 to Sta 99+53
Protected Side Stability Analysis
Case: Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 11-JAN-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-13.0	51	5444	4404	13777	3196	9899	10581	0.94
Ⓑ ①	-14.0	37	5636	4753	15101	3966	10426	11135	0.94
Ⓒ ①	-14.5	0	9394	5514	15794	4673	14908	11121	1.34

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	DEGREES
①	WATER	62	62	62	0	0	0	0	0	0	0
②	CH	112	112	112	600	600	600	600	600	600	0
③	CH	84	98	84	500	600	500	500	600	500	0
④	CH	94	102	94	200	260	200	200	260	200	0
⑤	CH	94	102	94	200	300	200	200	340	200	0
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	SM	122	122	122	0	0	0	0	0	0	30
⑧	CH	107	107	107	600	665	600	600	665	600	0
⑨	CH	107	107	107	699	750	699	798	835	798	0
⑩	CH	122	122	122	839	870	839	880	905	880	0

GENERAL NOTES

CLASSIFICATION STRATIFICATION SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS. SEE BORING DATA PLATES.

SHEAR STRENGTHS BETWEEN VERTICALS WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

NOTES

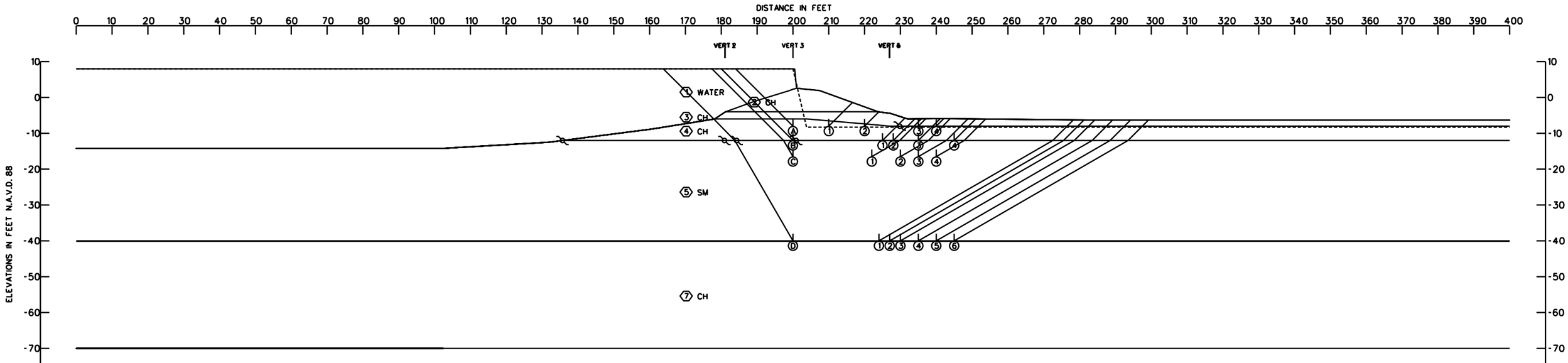
◇ -- STRATUM NUMBER
○ -- WEDGE NUMBER
ᔕ -- CROSSOVER POINT
ϕ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT,REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT REFERS TO PASSIVE WEDGE

$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_A - D_P}$$

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 34 Sta 93+00 to Sta 99+53
Protected Side Stability Analysis
Case: Gap Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 11-JAN-12



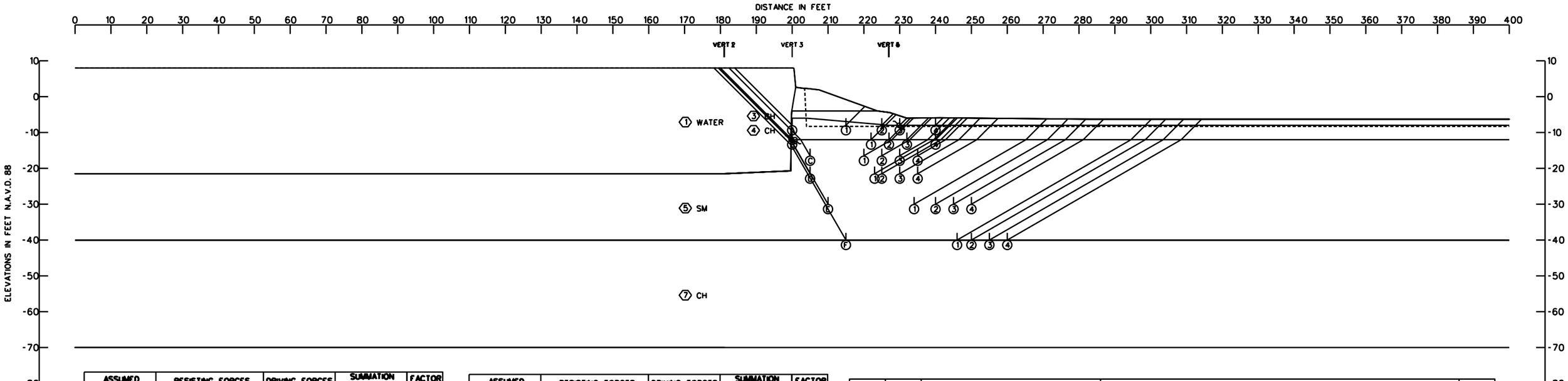
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-8.0	6308	2518	5339	9712	3093	14165	6619	2.14
Ⓐ ②	-8.0	6308	4570	3270	9712	992	14148	8720	1.62
Ⓐ ③	-8.0	6308	6774	2466	9712	200	15548	9512	1.63
Ⓐ ④	-8.0	6308	7345	2510	9712	211	16163	9501	1.70
Ⓑ ①	-12.0	7450	5409	3895	15479	2430	16754	13049	1.28
Ⓑ ②	-12.0	7450	5868	3626	15479	1980	16944	13499	1.26
Ⓑ ③	-12.0	7450	6918	3718	15479	1766	18086	13713	1.32
Ⓑ ④	-12.0	7450	8418	3607	15479	1748	19475	13731	1.42
Ⓒ ①	-16.5	8473	14642	9162	24126	6241	32277	17885	1.80
Ⓒ ②	-16.5	8473	18119	8089	24126	5650	34681	18476	1.88
Ⓒ ③	-16.5	8473	19926	8001	24126	5618	36400	18508	1.97
Ⓒ ④	-16.5	8473	21710	7945	24126	5591	38128	18535	2.06
Ⓓ ①	-40.0	24782	12258	70156	107410	66006	107196	41404	2.59
Ⓓ ②	-40.0	24782	13489	69464	107410	65661	107735	41749	2.58
Ⓓ ③	-40.0	24782	14689	68986	107410	65417	108457	41993	2.58
Ⓓ ④	-40.0	24782	16689	68752	107410	65291	110223	42119	2.62
Ⓓ ⑤	-40.0	24782	18689	68554	107410	65192	112025	42218	2.65
Ⓓ ⑥	-40.0	24782	20689	68340	107410	65085	113811	42325	2.69

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.					C - UNIT COHESION - P.S.F.										FRICTION ANGLE DEGREES
							CENTER OF STRATUM					BOTTOM OF STRATUM					
		VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	
①	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
②	CH	110	110	110	110	110	450	450	450	450	450	450	450	450	450	450	0
③	CH	96	88	88	88	96	600	450	450	450	600	600	450	450	450	600	0
④	CH	96	96	88	96	96	150	150	275	150	150	150	150	275	150	150	0
⑤	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
⑥	CH	107	107	108	107	107	400	400	600	400	400	400	400	600	400	400	0
⑦	CH	107	107	108	107	107	550	550	750	550	550	700	700	900	700	700	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 35A Sta 102+42 to Sta 103+50
Protected Side Stability Analysis
Case: Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 24-JAN-12



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES O_A	$-O_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-8.0	129	3602	4274	8008	1910	8005	6098	1.31
A	2	-8.0	129	5423	2797	8008	561	8349	7447	1.12
A	3	-8.0	129	6181	2400	8008	254	8710	7754	1.12
A	4	-8.0	129	7345	2510	8008	211	9984	7797	1.28
B	1	-12.0	166	4866	4791	12527	2757	9823	9770	1.01
B	2	-12.0	166	5672	3613	12527	2118	9451	10409	0.91
B	3	-12.0	166	6422	3679	12527	1747	10267	10780	0.95
B	4	-12.0	166	7622	3664	12527	1774	11452	10753	1.06
C	1	-16.5	4358	10413	9574	20529	6655	24345	13874	1.75
C	2	-16.5	4358	12795	8822	20529	5992	25975	14537	1.79
C	3	-16.5	4358	14906	8089	20529	5650	27353	14879	1.84
C	4	-16.5	4358	16713	8001	20529	5618	29072	14911	1.95
D	1	-21.5	6046	14994	16894	31560	13405	37934	18155	2.09
D	2	-21.5	6046	16230	16445	31560	13184	38721	18376	2.11
D	3	-21.5	6046	19200	15676	31560	12800	40922	18760	2.18
D	4	-21.5	6046	21865	15556	31560	12741	43467	18819	2.31
E	1	-30.0	14189	23492	35073	57295	31774	72754	25521	2.85
E	2	-30.0	14189	28414	34862	57295	31671	77465	25624	3.02
E	3	-30.0	14189	32524	34641	57295	31562	81354	25733	3.16
E	4	-30.0	14189	36622	34464	57295	31460	85275	25835	3.30

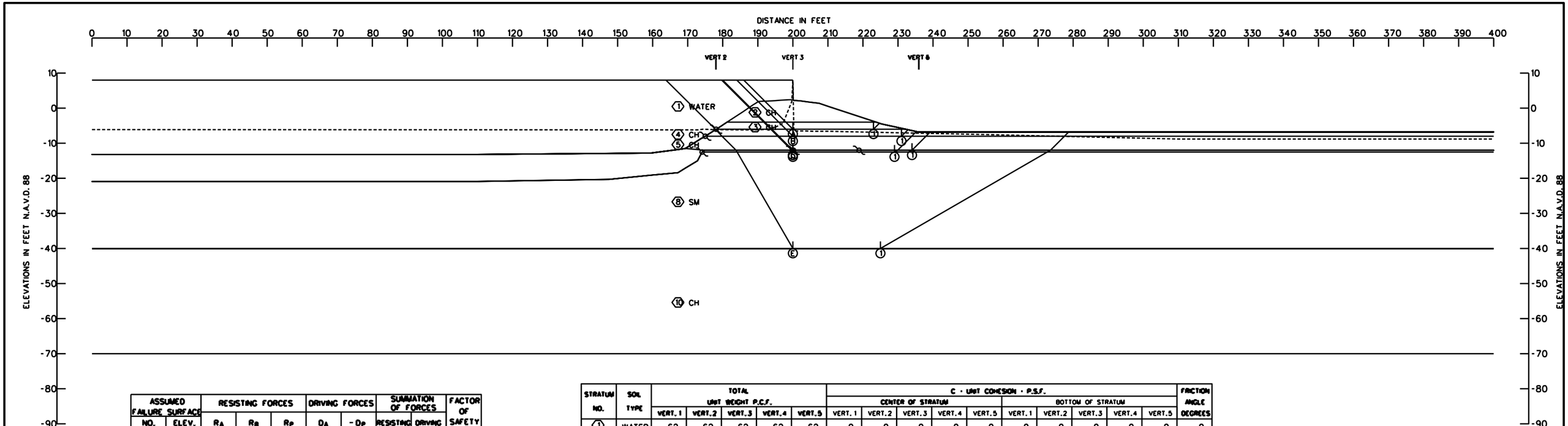
ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES O_A	$-O_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
F	1	-40.0	25779	12926	68301	97128	65065	107006	32063	3.34
F	2	-40.0	25779	14526	68152	97128	64991	108457	32137	3.37
F	3	-40.0	25779	16526	67991	97128	64910	110296	32218	3.42
F	4	-40.0	25779	18526	67856	97128	64843	112161	32285	3.47

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	FRICTION ANGLE DEGREES
1	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
2	CH	110	110	110	110	110	450	450	450	450	450	450	450	450	450	450	0
3	CH	96	88	88	88	96	600	450	450	450	600	600	450	450	450	600	0
4	CH	96	96	88	96	96	150	150	275	150	150	150	150	275	150	150	0
5	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
6	CH	107	107	108	107	107	400	400	600	400	400	400	400	600	400	400	0
7	CH	107	107	108	107	107	550	550	750	550	550	700	700	900	700	700	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 35A Sta 102+42 to Sta 103+50
Protected Side Stability Analysis
Case: Gap Stability
March 2012

Lake Pontchartrain, LA & Vicinity Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 01-FEB-12



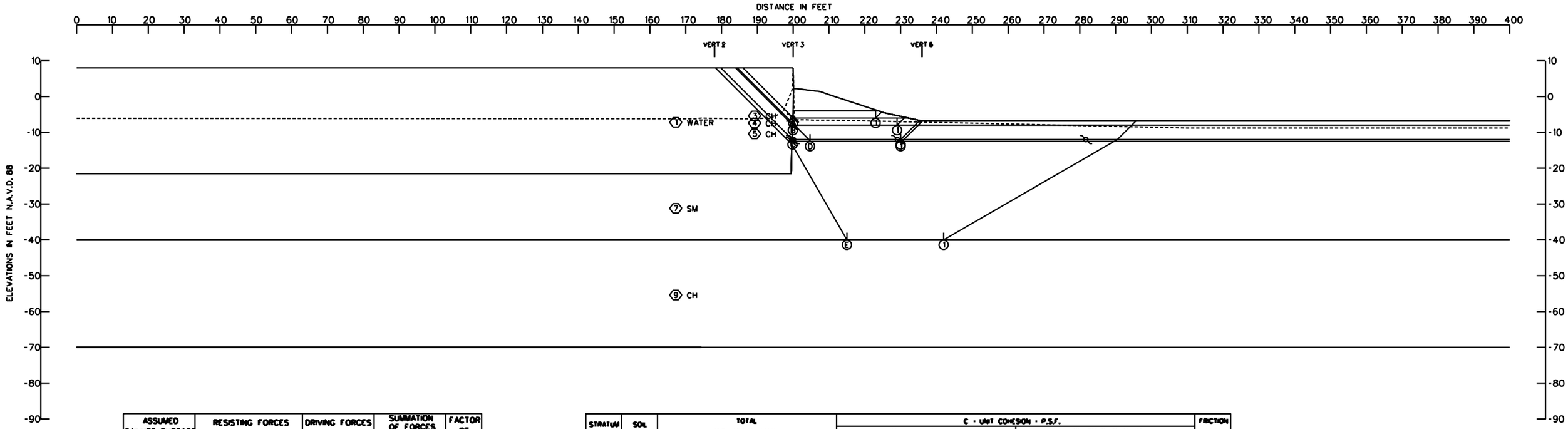
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-6.0	7202	6325	1528	7679	171	15055	7508	2.01
Ⓑ ①	-8.0	8175	6852	1015	10271	183	16042	10088	1.59
Ⓒ ①	-12.0	8861	6567	2640	16349	1332	18068	15017	1.20
Ⓓ ①	-12.5	8974	12306	2355	17213	1900	23635	15313	1.54
Ⓔ ①	-40.0	34929	13258	62702	109136	63779	110889	45357	2.44

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.					C - UNIT COHESION - P.S.F. CENTER OF STRATUM					C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM					FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	
①	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
②	CH	110	110	110	110	110	450	450	450	450	450	450	450	450	450	450	0
③	CH	88	88	88	88	88	450	450	450	450	450	450	450	450	450	450	0
④	CH	96	88	88	88	96	600	275	275	275	600	600	275	275	275	600	0
⑤	CH	96	96	88	96	96	150	150	275	150	150	150	150	275	150	150	0
⑥	CH	90	90	90	90	90	0	0	0	0	0	0	0	0	0	0	20
⑦	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
⑧	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
⑨	CH	107	107	108	107	107	400	400	600	400	400	400	400	600	400	400	0
⑩	CH	107	107	108	107	107	550	550	750	550	550	700	700	900	700	700	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 35B Sta 103+50 to Sta 114+66
Protected Side Stability Analysis
Case: Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 02-FEB-12



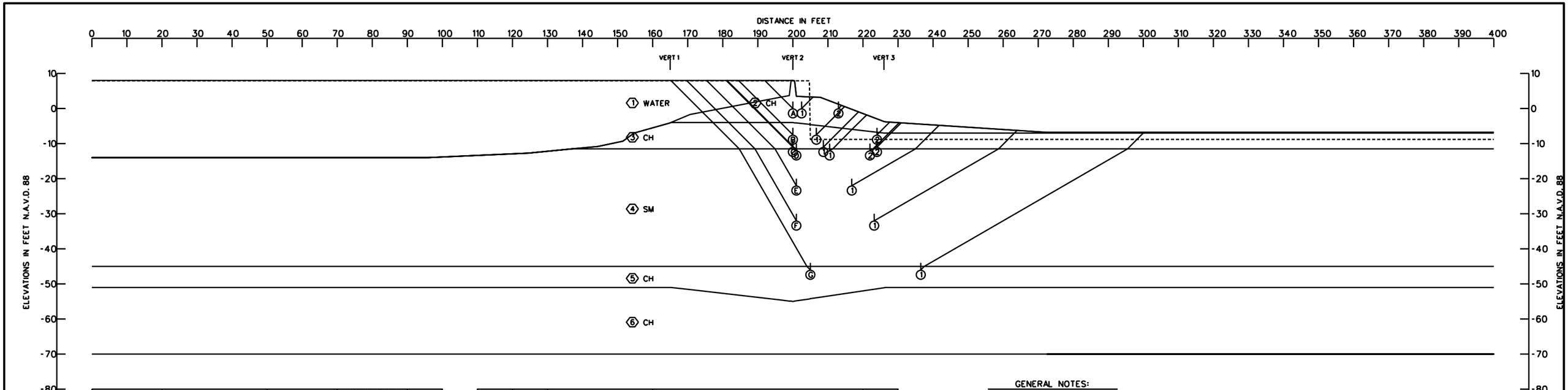
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-6.0	93	6325	1528	6118	171	7946	5947	1.34
Ⓑ ①	-8.0	56	6538	1285	7990	261	7879	7729	1.02
Ⓒ ①	-12.0	70	6703	2028	12485	1568	8801	10917	0.81
Ⓓ ①	-12.5	2797	9692	2238	13461	1792	14727	11669	1.26
Ⓔ ①	-40.0	27440	12016	62646	95597	63098	102102	32499	3.14

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.					C - UNIT COHESION - P.S.F. CENTER OF STRATUM					C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM					FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	
①	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
②	CH	110	110	110	110	110	450	450	450	450	450	450	450	450	450	450	0
③	CH	88	88	88	88	88	450	450	450	450	450	450	450	450	450	450	0
④	CH	96	88	88	88	96	600	275	275	275	600	600	275	275	275	600	0
⑤	CH	96	96	88	96	96	150	150	275	150	150	150	150	275	150	150	0
⑥	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
⑦	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
⑧	CH	107	107	108	107	107	400	400	600	400	400	400	400	600	400	400	0
⑨	CH	107	107	108	107	107	550	550	750	550	550	700	700	900	700	700	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 35B Sta 103+50 to Sta 114+66
Protected Side Stability Analysis
Case: Gap Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 02-FEB-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	SAFETY
Ⓐ ①	0.0	3991	1517	3716	2520	657	9224	1863	4.95
Ⓐ ②	0.0	3991	6905	776	2520	63	11672	2457	4.75
Ⓑ ①	-7.5	8471	1610	6197	10472	4998	16278	5474	2.97
Ⓑ ②	-7.5	8471	5169	1713	10472	843	15353	9629	1.59
Ⓒ ①	-11.0	9137	2066	5969	15793	7400	17172	8393	2.05
Ⓒ ②	-11.0	9137	5169	2853	15793	2556	17159	13237	1.30
Ⓓ ①	-12.0	9624	5141	6422	17746	7418	21187	10328	2.05
Ⓓ ②	-12.0	9624	11657	3756	17746	3475	25037	14271	1.75
Ⓔ ①	-22.0	14595	14554	21583	42045	16923	50732	25122	2.02
Ⓕ ①	-32.0	22776	27397	43797	77483	38780	93970	38703	2.43
Ⓖ ①	-46.0	40760	22704	87228	146480	88410	150692	58070	2.59

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	DEGREES
①	WATER	62	62	62	0	0	0	0	0	0	0
②	CH	108	118	108	250	625	250	250	625	250	0
③	CH	74	90	74	175	250	175	175	250	175	0
④	SM	122	122	122	0	0	0	0	0	0	30
⑤	CH	103	107	103	710	750	710	710	750	710	0
⑥	CH	118	120	118	710	1000	710	710	1000	710	0

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

NOTES

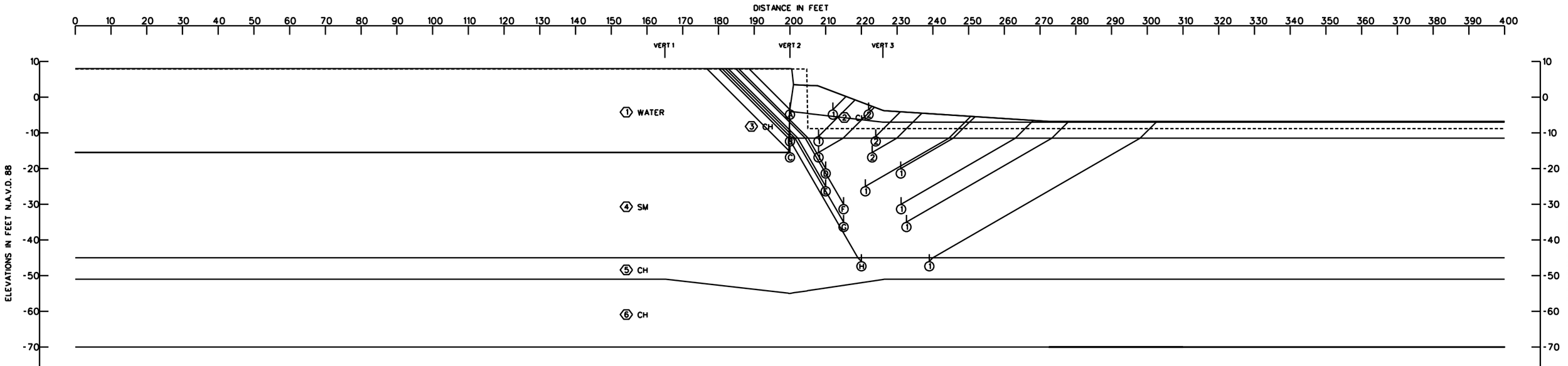
Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_A - D_P}$$

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 36 Sta 120+39 to Sta 126+67
Protected Side Stability Analysis
Case: Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 30-JAN-12



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-3.5	39	6461	3160	4126	1071	9660	3055	3.16
A	2	-3.5	39	10258	591	4126	73	10888	4053	2.69
B	1	-11.0	100	1908	6195	11294	7711	8203	3583	2.29
B	2	-11.0	100	5169	2853	11294	2556	8122	8738	0.93
C	1	-15.5	108	4474	14431	17388	11604	19013	5784	3.29
C	2	-15.5	108	15064	8047	17388	6272	23219	11116	2.09
D	1	-20.0	11377	15641	13868	30172	11220	40886	18952	2.16
E	1	-25.0	12051	11445	26234	43909	21724	49730	22185	2.24
F	1	-30.0	17536	16545	35618	59568	31820	69699	27748	2.51
G	1	-35.0	23142	20928	49680	79352	46097	93750	33255	2.82
H	1	-46.0	38457	13518	86544	130791	88050	138519	42741	3.24

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	108	118	108	250	625	250	250	625	250	0
3	CH	74	90	74	175	250	175	175	250	175	0
4	SM	122	122	122	0	0	0	0	0	0	30
5	CH	103	107	103	710	750	710	710	750	710	0
6	CH	118	120	118	710	1000	710	710	1000	710	0

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

NOTES

ϕ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
∇ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 36 Sta 120+39 to Sta 126+67
Protected Side Stability Analysis
Case: Gap Stability
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Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
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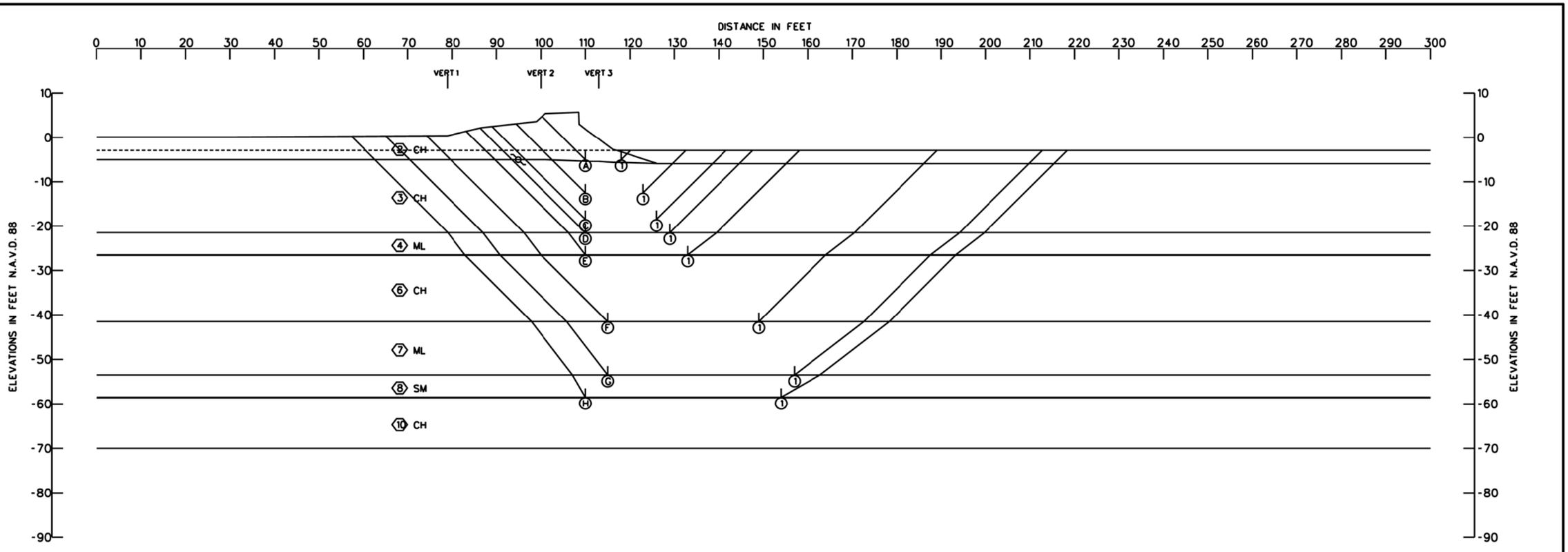
APPENDIX P.2 METHOD OF PLANES (MOP) FLOODSIDE Q-CASE STABILITY ANALYSIS



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-5.0	12836	3209	2036	5909	202	18081	5707	3.17
Ⓑ ①	-12.5	16750	5209	5280	16585	4025	27239	12560	2.17
Ⓒ ①	-18.5	21025	6409	10080	29056	11451	37514	17605	2.13
Ⓓ ①	-21.5	23202	7609	12480	36630	16707	43291	19923	2.17
Ⓔ ①	-26.5	27645	9324	17967	51300	27426	54936	23874	2.30
Ⓕ ①	-41.5	40474	19040	32412	106621	74431	91926	32190	2.86
Ⓖ ①	-53.5	55724	29158	52505	166778	127695	137387	39083	3.52
Ⓗ ①	-58.5	66445	28408	72154	197632	154113	167007	43519	3.84

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	CH	118	116	118	650	650	650	650	650	650	0
③	CH	111	112	111	400	425	400	400	425	400	0
④	ML	90	90	90	200	200	200	200	200	200	15
⑤	CH	102	101	102	405	430	405	405	430	405	0
⑥	CH	102	101	102	482	510	482	560	590	560	0
⑦	ML	90	90	90	200	200	200	200	200	200	15
⑧	SM	122	122	122	0	0	0	0	0	0	30
⑨	CH	112	112	112	645	725	645	645	725	645	0
⑩	CH	112	112	112	710	792	710	775	860	775	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 1 Sta 2+44 to Sta 10+00
Flood Side Stability Analysis
Case 0-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
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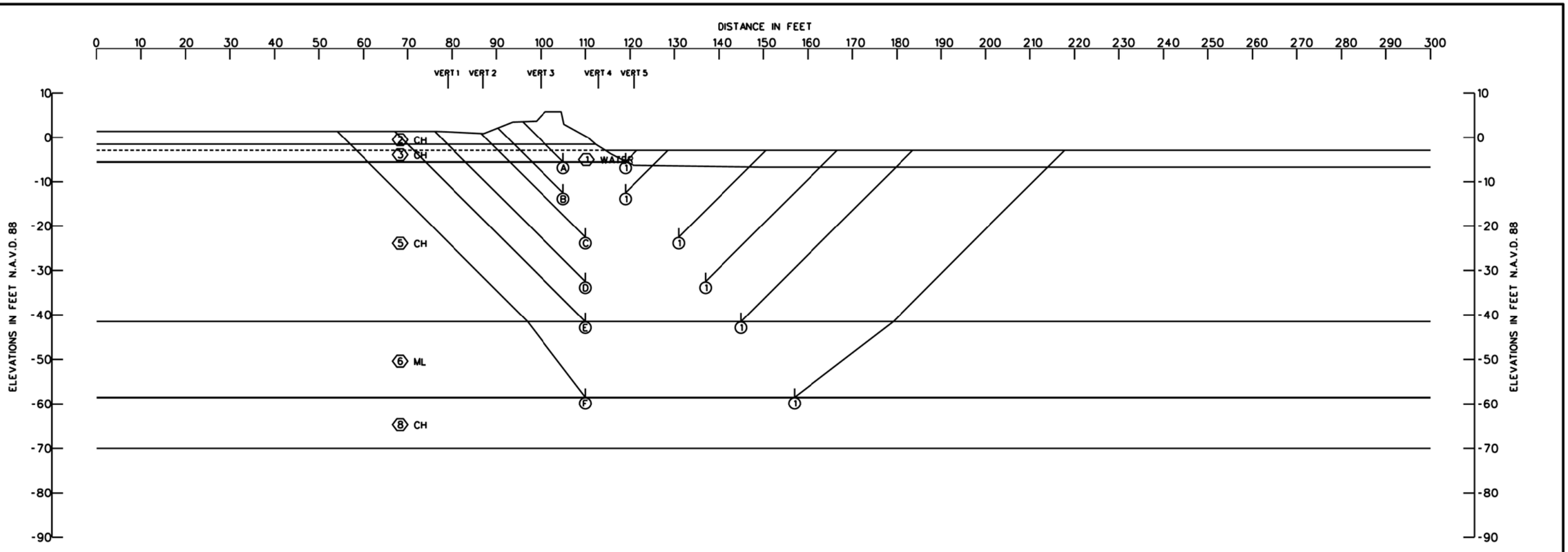
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12

PLATE:



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-5.5	14390	4026	97	6056	211	18513	5845	3.17
Ⓑ ①	-12.5	16871	5660	4200	15852	3947	26731	11905	2.25
Ⓒ ①	-22.5	21050	8408	10832	38001	18801	40290	19200	2.10
Ⓓ ①	-32.5	28506	10808	17647	71259	45232	56961	26027	2.19
Ⓔ ①	-41.5	34418	14008	23803	111347	78948	72229	32399	2.23
Ⓕ ①	-58.5	62085	33393	60263	213910	168501	155741	45409	3.43

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.					C - UNIT COHESION - P.S.F.										FRICTION ANGLE DEGREES
							CENTER OF STRATUM					BOTTOM OF STRATUM					
		VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	
①	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
②	CH	116	116	116	116	116	900	825	825	825	900	900	825	825	825	900	0
③	CH	116	116	116	116	116	500	500	825	500	500	500	500	825	500	500	0
④	CH	116	116	116	116	116	285	285	300	285	285	285	285	300	285	285	0
⑤	CH	116	116	116	116	116	342	342	363	342	342	400	400	425	400	400	0
⑥	ML	117	117	117	117	117	200	200	200	200	200	200	200	200	200	200	15
⑦	CH	105	105	105	105	105	710	710	780	710	710	710	710	780	710	710	0
⑧	CH	105	105	105	105	105	765	765	835	765	765	820	820	890	820	820	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 2 Sta. 10+00 to Sta. 12+21
Flood Side Stability Analysis
Case 0-case F/S Global Stability
March 2012

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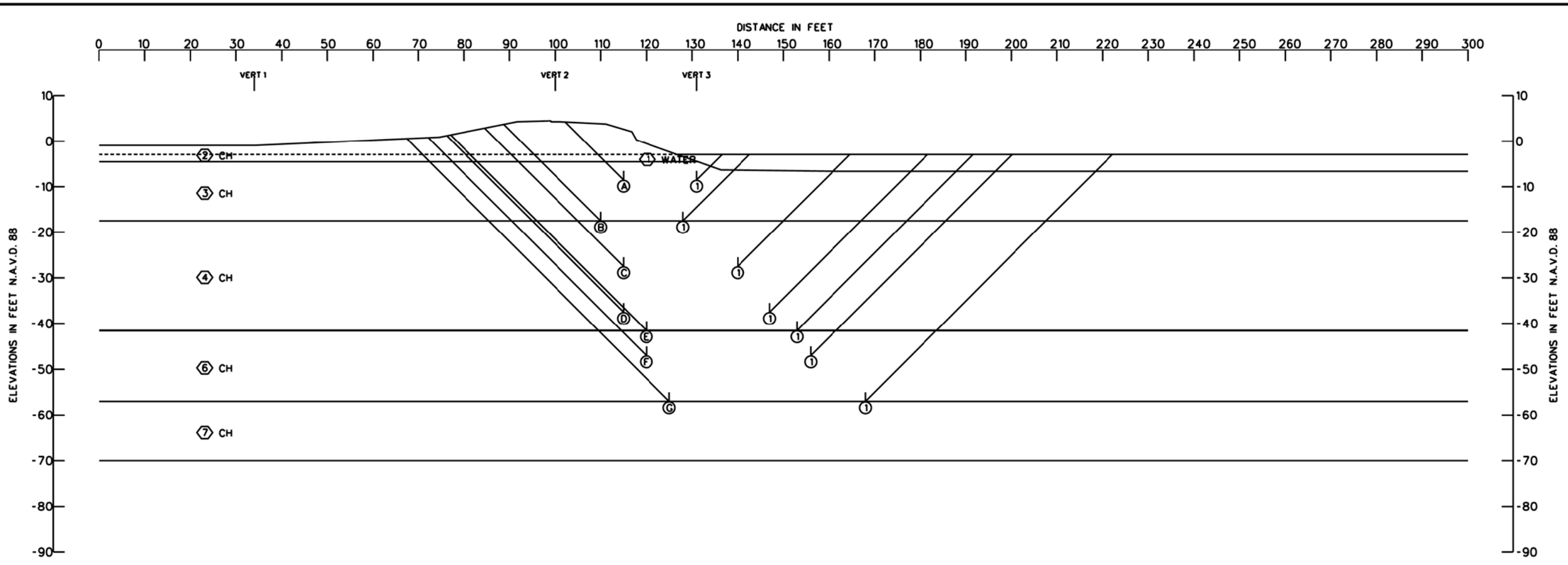
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12

PLATE:



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-8.5	17196	7703	2869	8771	1298	27768	7473	3.72
Ⓑ ①	-17.5	25421	6979	10607	27272	10525	43007	16747	2.57
Ⓒ ①	-27.5	32091	9583	17955	56147	29487	59629	26660	2.24
Ⓓ ①	-37.5	37472	12243	25555	93344	58844	75270	34500	2.18
Ⓔ ①	-41.5	40816	12579	28595	110457	73321	81990	37136	2.21
Ⓕ ①	-47.0	47075	21143	35142	136801	96048	103360	40753	2.54
Ⓖ ①	-57.0	59545	25018	46742	191768	146063	131305	45705	2.87

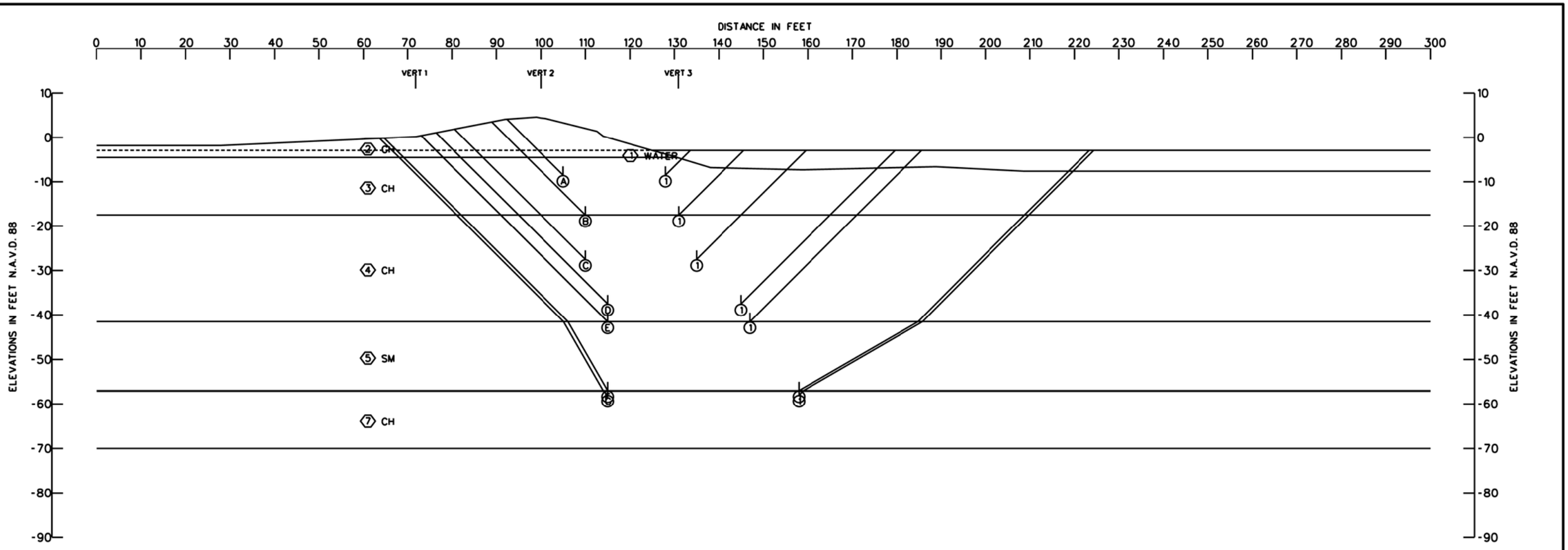
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	CH	117	117	117	760	760	760	760	760	760	0
③	CH	114	114	114	475	500	475	475	500	475	0
④	CH	98	98	98	380	400	380	380	400	380	0
⑤	SM	122	122	122	0	0	0	0	0	0	30
⑥	CH	112	112	112	580	715	580	580	715	580	0
⑦	CH	112	112	112	650	788	650	720	860	720	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 3 Sta. 21+00 to Sta. 33+00
Flood Side Stability Analysis
Case: 0-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12

PLATE:



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	SAFETY
Ⓐ ①	-8.5	17094	11193	3492	9407	1435	31779	7972	3.99
Ⓑ ①	-17.5	25110	8121	10084	26224	9995	43315	16229	2.67
Ⓒ ①	-27.5	30500	9641	17371	54371	29023	57512	25348	2.27
Ⓓ ①	-37.5	37085	11482	25262	90703	57965	73829	32738	2.26
Ⓔ ①	-41.5	39242	12242	28438	107714	72450	79922	35264	2.27
Ⓕ ①	-57.0	65110	25492	85090	191394	145853	175692	45541	3.86
Ⓖ ①	-58.0	66824	31532	86412	197941	151560	184768	46381	3.98

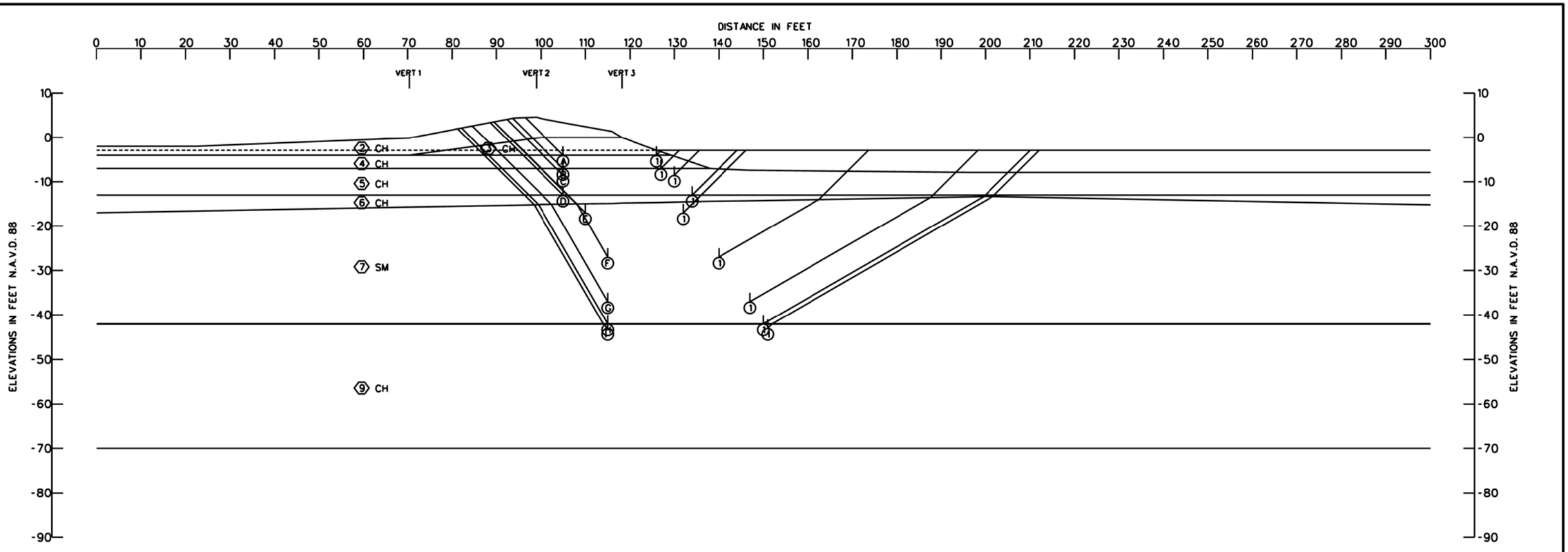
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	CH	117	117	117	760	760	760	760	760	760	0
③	CH	114	114	114	475	500	475	475	500	475	0
④	CH	98	98	98	380	400	380	380	400	380	0
⑤	SM	122	122	122	0	0	0	0	0	0	30
⑥	CH	112	112	112	580	715	580	580	715	580	0
⑦	CH	112	112	112	650	788	650	720	860	720	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 4 Sta. 33+00 to Sta. 37+00
Flood Side Stability Analysis
Case: O-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12

PLATE:



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-4.0	9414	9563	782	3488	58	19759	3430	5.76
Ⓑ ①	-7.0	11984	10013	2537	6657	783	24534	5874	4.18
Ⓒ ①	-8.5	13105	11363	2849	8565	1312	27317	7253	3.77
Ⓓ ①	-13.0	16490	8836	5320	15573	4208	30646	11365	2.70
Ⓔ ①	-17.0	19201	6653	7640	23250	8868	33494	14382	2.33
Ⓕ ①	-27.0	29670	19170	23504	50382	28188	72344	22194	3.26
Ⓖ ①	-37.0	43416	34552	50722	90640	60026	128690	30614	4.20
Ⓗ ①	-42.0	51972	17629	68875	115308	80545	138476	34763	3.98
Ⓘ ①	-43.0	53426	28897	70146	120690	85014	152469	35676	4.27

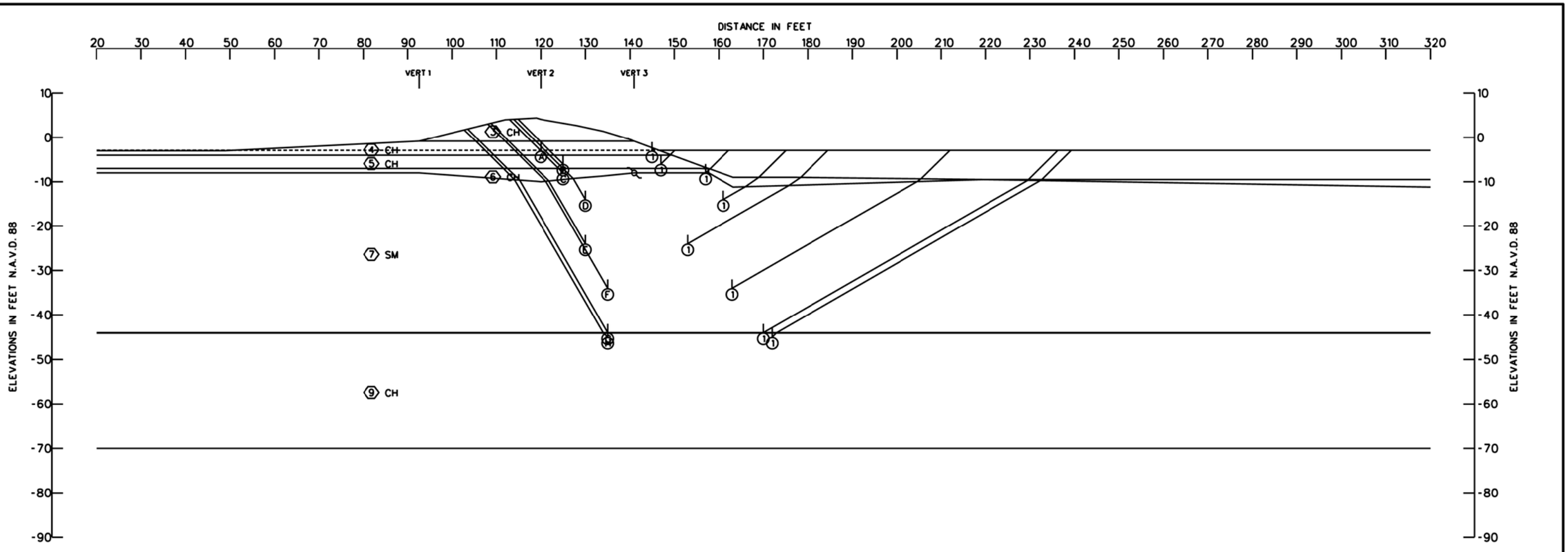
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	112	105	112	500	625	500	500	625	500	0
3	CH	107	107	107	475	475	475	475	475	475	0
4	CH	112	104	112	450	475	450	450	475	450	0
5	CH	112	111	112	450	475	450	450	475	450	0
6	CH	100	99	99	300	330	300	300	330	300	0
7	SM	122	122	122	0	0	0	0	0	0	30
8	CH	111	111	111	503	595	503	503	595	503	0
9	CH	111	111	111	652	895	652	802	895	802	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 5 Sta. 37+00 to Sta. 40+00
Flood Side Stability Analysis
Case: 0-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12

PLATE:



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
Ⓐ	①	-3.0	8114	9012	355	2809	18	17481	2791	6.26
Ⓑ	①	-6.0	10622	7852	1495	5265	421	19969	4844	4.12
Ⓒ	①	-8.0	11836	7713	443	7556	831	19992	6725	2.97
Ⓓ	①	-14.0	15924	11727	958	16077	4356	28609	11721	2.44
Ⓔ	①	-24.0	24241	17830	13036	41077	20450	55107	20627	2.67
Ⓕ	①	-34.0	36904	28330	34537	76692	47494	99771	29198	3.42
Ⓖ	①	-44.0	53495	18733	69820	125673	87696	142048	37977	3.74
Ⓗ	①	-45.0	54976	29645	71211	131299	92385	155832	38914	4.00

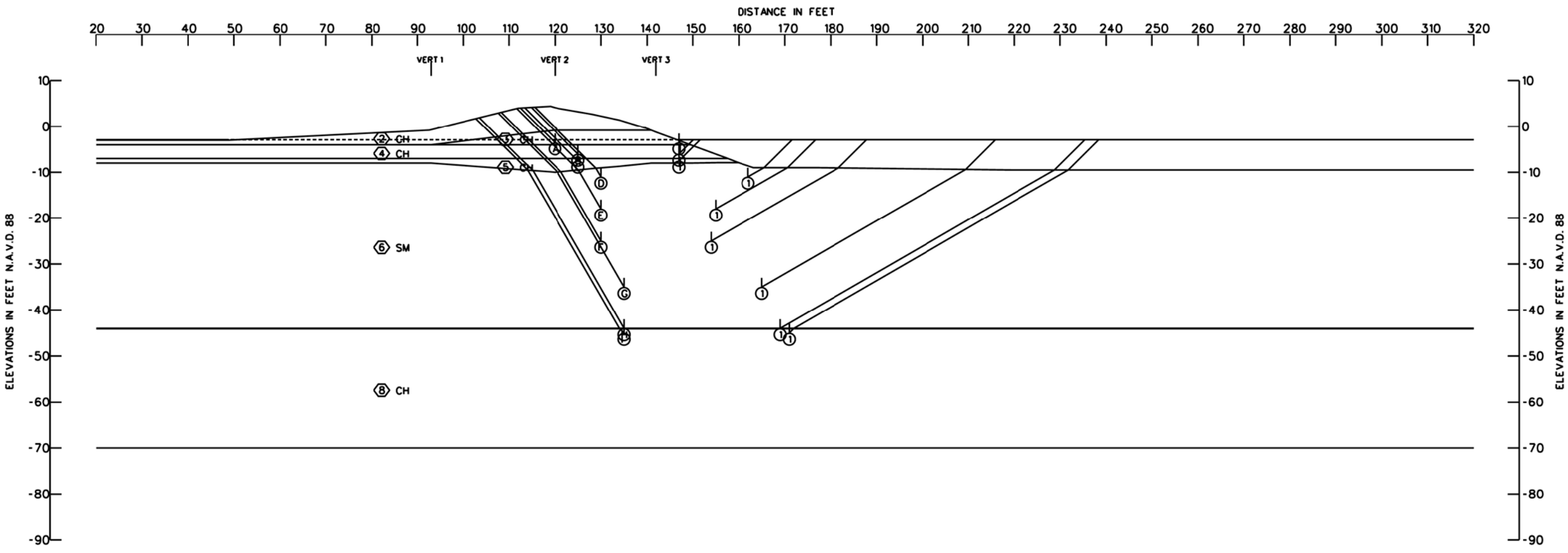
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	90	90	90	0	0	0	0	0	0	20
③	CH	109	108	109	500	700	500	500	700	500	0
④	CH	101	101	101	350	375	350	350	375	350	0
⑤	CH	101	96	101	350	375	350	350	375	350	0
⑥	CH	101	103	101	350	375	350	350	375	350	0
⑦	SM	122	122	122	0	0	0	0	0	0	30
⑧	CH	109	109	109	530	744	530	530	744	530	0
⑨	CH	109	109	109	663	883	663	796	1022	796	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 6A Sta. 40+00 to Sta. 47+00
Flood Side Stability Analysis
Case: 0-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12

PLATE:



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-3.5	8584	9725	226	3197	14	18535	3183	5.82
Ⓑ ①	-6.0	10634	7864	1495	5265	421	19993	4844	4.13
Ⓒ ①	-7.5	11644	7864	2259	6948	937	21767	6011	3.62
Ⓓ ①	-11.0	14080	8691	252	10933	2175	23023	8758	2.63
Ⓔ ①	-18.0	19148	13883	5507	24654	9877	38538	14777	2.61
Ⓕ ①	-25.0	25728	19262	16068	44246	23295	61058	20951	2.91
Ⓖ ①	-35.0	38829	31219	39755	81078	52076	109803	29002	3.79
Ⓗ ①	-44.0	54181	18258	71775	125747	88673	144214	37074	3.89
Ⓘ ①	-45.0	55712	28907	72972	131388	93327	157591	38061	4.14

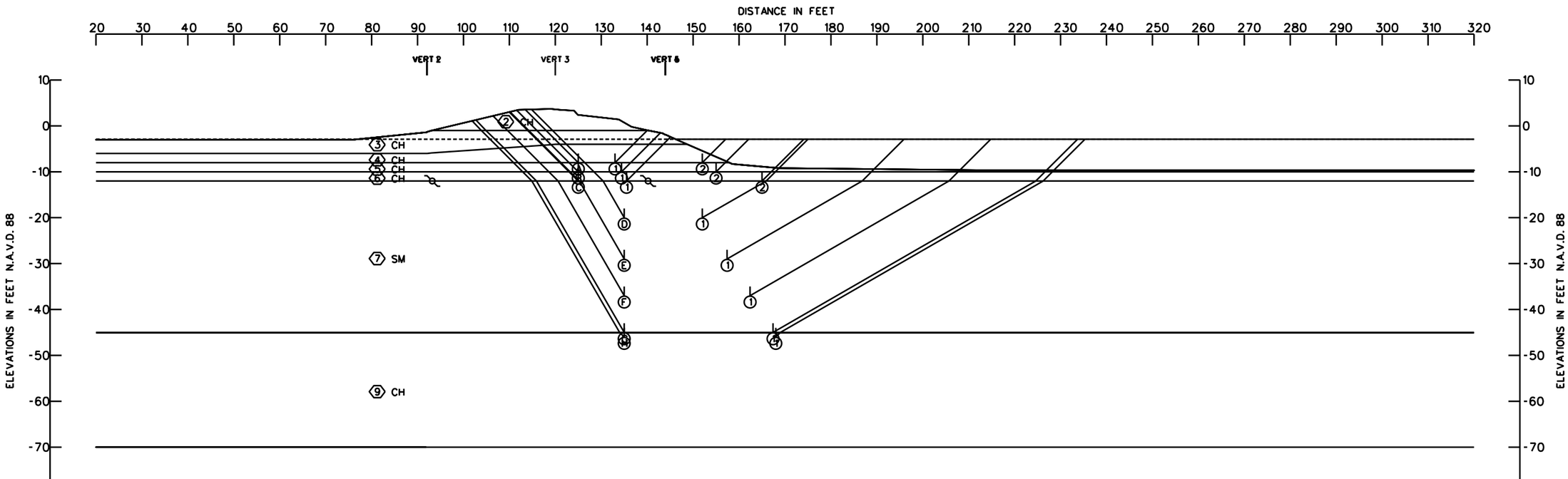
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	CH	109	108	109	500	700	500	500	700	500	0
③	CH	101	101	101	350	375	350	350	375	350	0
④	CH	101	96	101	350	375	350	350	375	350	0
⑤	CH	101	103	101	350	375	350	350	375	350	0
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	CH	109	109	109	530	744	530	530	744	530	0
⑧	CH	109	109	109	663	883	663	796	1022	796	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 6B Sta. 47+00 to Sta. 59+00
Flood Side Stability Analysis
Case: 0-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12

PLATE:



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-8.0	11304	2660	5388	6756	3238	19352	3518	5.50
A	2	-8.0	11304	8789	1142	6756	907	21235	5849	3.63
B	1	-10.0	12500	3043	6138	9242	4406	21681	4836	4.48
B	2	-10.0	12500	9299	1453	9242	1726	23252	7516	3.09
C	1	-12.0	13371	3390	7035	12058	5927	23796	6131	3.88
C	2	-12.0	13371	8679	1759	12058	2754	23809	9304	2.56
D	1	-20.0	19359	9079	8051	25978	12464	36489	13514	2.70
E	1	-29.0	28225	18134	22356	52963	31798	68715	21165	3.25
F	1	-37.0	38829	28971	43362	85236	57393	111162	27843	3.99
G	1	-45.0	52094	25613	72000	125012	90782	149707	34230	4.37
H	1	-46.0	53873	31433	73683	130563	95511	158989	35052	4.54

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	C · UNIT COHESION · P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	FRICTION ANGLE DEGREES
1	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
2	CH	104	104	104	104	104	650	650	650	650	650	650	650	650	650	650	0
3	CH	96	96	104	96	96	600	450	450	450	600	600	450	450	450	600	0
4	CH	104	104	90	104	104	320	320	340	320	320	320	320	340	320	320	0
5	CH	104	104	98	104	104	320	320	340	320	320	320	320	340	320	320	0
6	CH	96	96	98	96	96	300	300	340	300	300	300	300	340	300	300	0
7	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
8	CH	111	111	108	111	111	790	790	800	790	790	790	790	800	790	790	0
9	CH	111	111	108	111	111	870	870	900	870	870	950	950	1000	950	950	0

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
∇ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

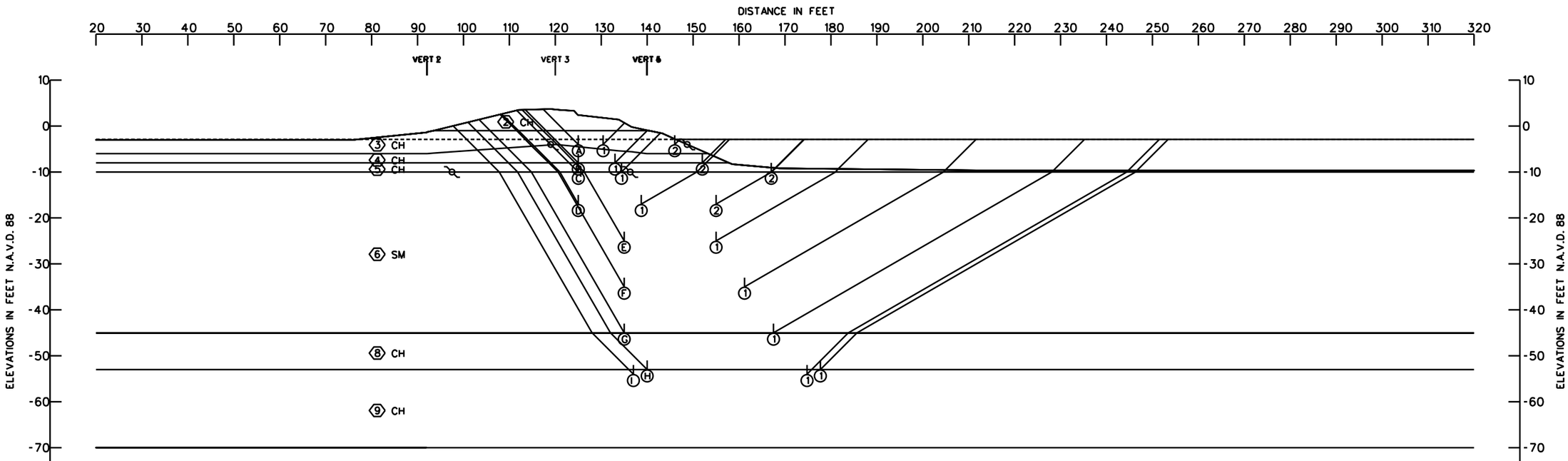
FACTOR OF SAFETY $= \frac{R_A + R_B + R_P}{D_A - D_P}$

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 7 Sta 59+00 to 66+00
Flood Side Stability Analysis
Case: 0-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 08-NOV-11

PLATE:



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
Ⓐ	①	-4.0	11374	2700	6007	2907	1512	20081	1395	14.40
Ⓐ	②	-4.0	11374	11113	987	2907	60	23474	2847	8.24
Ⓑ	①	-8.0	13906	2648	6260	6813	3304	22814	3509	6.50
Ⓑ	②	-8.0	13906	8752	1140	6813	902	23798	5911	4.03
Ⓒ	①	-10.0	15001	3104	7873	9300	4542	25978	4758	5.46
Ⓒ	②	-10.0	15001	7777	559	9300	1589	23337	7711	3.03
Ⓓ	①	-17.0	18739	8750	10208	21410	10538	37697	10872	3.47
Ⓓ	②	-17.0	18739	15558	4349	21410	8124	38646	13286	2.91
Ⓔ	①	-25.0	27003	14374	15148	40552	22629	56525	17923	3.15
Ⓕ	①	-35.0	39009	26854	38784	77965	51457	104647	26508	3.95
Ⓖ	①	-45.0	54991	13828	74407	127086	92494	143226	34592	4.14
Ⓗ	①	-53.0	66829	28652	86158	173308	133785	181639	39523	4.60
Ⓘ	①	-54.0	67842	35165	87876	180146	139489	190883	40657	4.69

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	C · UNIT COHESION · P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	FRICTION ANGLE DEGREES
①	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
②	CH	106	106	106	106	106	900	900	900	900	900	900	900	900	900	900	0
③	CH	106	101	101	101	106	600	500	500	500	600	600	500	500	500	600	0
④	CH	101	101	90	101	101	320	320	340	320	320	320	320	340	320	320	0
⑤	CH	101	101	98	101	101	320	320	340	320	320	320	320	340	320	320	0
⑥	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
⑦	CH	111	111	108	111	111	425	425	450	425	425	425	425	450	425	425	0
⑧	CH	111	111	108	111	111	760	760	800	760	760	760	760	800	760	760	0
⑨	CH	111	111	108	111	111	845	845	890	845	845	930	930	980	930	930	0

NOTES

ϕ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
∇ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

GENERAL NOTES:

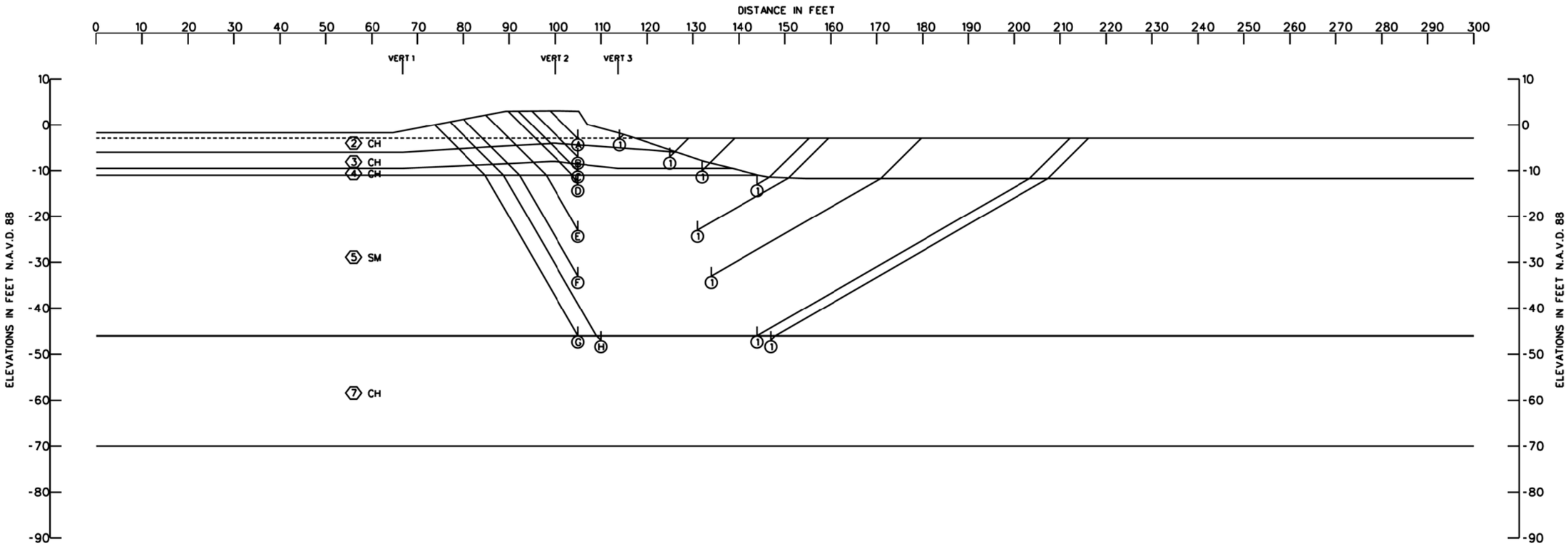
CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

London Ave. Canal
Outfall Canal Reevaluation Report
Reach B Sta 66+00 to 69+06
Flood Side Stability Analysis
Case: Q-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 08-NOV-11

PLATE:



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-3.0	10980	6366	1097	1938	56	18443	1882	9.80
Ⓑ ①	-7.0	15393	6455	797	5299	559	22645	4740	4.78
Ⓒ ①	-10.0	16697	6271	989	8775	1643	23957	7132	3.36
Ⓓ ①	-13.0	18446	8651	187	13174	3278	27284	9896	2.76
Ⓔ ①	-23.0	25396	16187	9373	35497	17308	50956	18189	2.80
Ⓕ ①	-33.0	36136	27587	28220	69468	42419	91943	27049	3.40
Ⓖ ①	-46.0	56074	32035	70106	131017	93099	158215	37918	4.17
Ⓗ ①	-47.0	58219	38500	71827	135879	97844	168546	38035	4.43

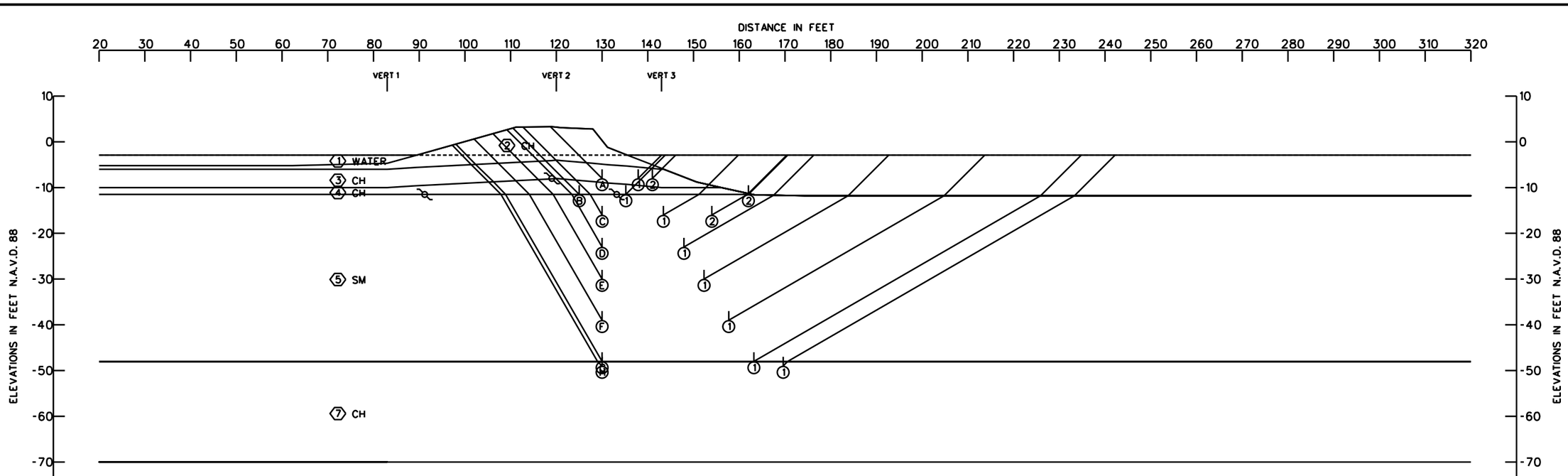
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	CH	102	106	102	600	950	600	600	950	600	0
③	CH	101	90	101	320	340	320	320	340	320	0
④	CH	101	98	101	220	340	220	220	340	220	0
⑤	SM	122	122	122	0	0	0	0	0	0	30
⑥	CH	108	108	108	820	840	820	820	840	820	0
⑦	CH	108	108	108	930	955	930	1040	1080	1040	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 9 Sta. 70+18 to Sta. 74+00
Flood Side Stability Analysis
Case: 0-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12

PLATE:



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-8.0	13516	2388	2314	5745	1036	18218	4709	3.87
Ⓐ ②	-8.0	13516	3359	1415	5745	927	18290	4818	3.80
Ⓑ ①	-11.5	14319	2343	3834	10553	3266	20496	7287	2.81
Ⓑ ②	-11.5	14319	4455	58	10553	2312	18832	8241	2.29
Ⓒ ①	-16.0	17295	4494	3421	17559	6702	25210	10857	2.32
Ⓒ ②	-16.0	17295	6901	1611	17559	6133	25807	11426	2.26
Ⓓ ①	-23.0	22751	9924	8840	34182	17045	41515	17137	2.42
Ⓔ ①	-30.0	29763	17290	20494	56504	33197	67547	23307	2.90
Ⓕ ①	-39.0	41676	29471	44323	93493	62886	115470	30607	3.77
Ⓖ ①	-48.0	56753	28252	78043	139685	102584	163048	37101	4.39
Ⓗ ①	-49.0	58711	41404	79811	145384	107580	179926	37804	4.76

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C · UNIT COHESION · P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62.5	62.5	62.5	0	0	0	0	0	0	0
②	CH	99	101	99	600	750	600	600	750	600	0
③	CH	99	87	99	320	275	320	320	275	320	0
④	CH	96	98	96	180	275	180	180	275	180	0
⑤	SM	122	122	122	0	0	0	0	0	0	30
⑥	CH	108	108	108	820	1100	820	820	1100	820	0
⑦	CH	108	108	108	930	1100	930	1040	1100	1040	0

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

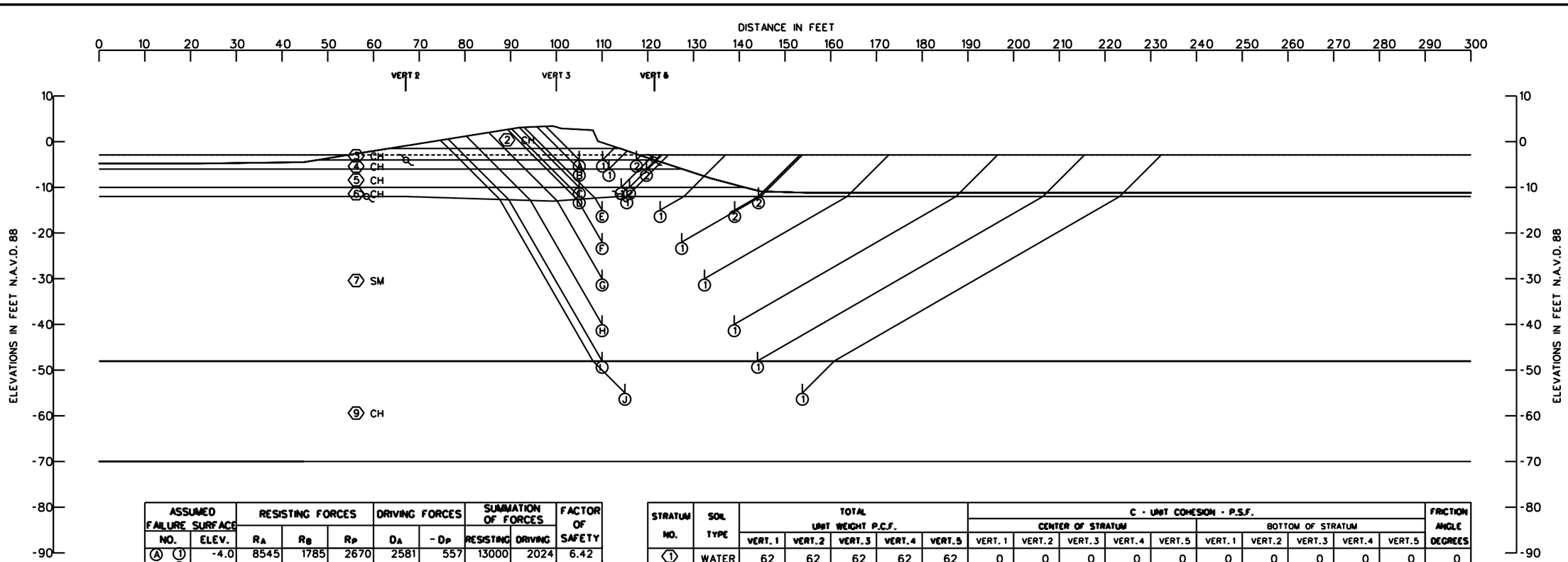
$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_A - D_P}$$

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 10 Sta 74+00 to 79+50
Flood Side Stability Analysis
Case: 0-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 26-MAR-12

PLATE:



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-4.0	8545	1785	2670	2581	557	13000	2024	6.42
Ⓐ ②	-4.0	8545	4375	859	2581	65	13779	2516	5.48
Ⓑ ①	-6.0	9838	1912	3167	4283	1051	14917	3232	4.62
Ⓑ ②	-6.0	9838	4283	1364	4283	360	15485	3923	3.95
Ⓒ ①	-10.0	11996	2512	3987	8762	2570	18495	6192	2.99
Ⓒ ②	-10.0	11996	2976	3611	8762	2311	18583	6451	2.88
Ⓓ ①	-12.0	12802	2800	5142	11551	3875	20744	7676	2.70
Ⓓ ②	-12.0	12802	5979	520	11551	2605	19301	8946	2.16
Ⓔ ①	-15.0	14672	4131	4385	15620	6072	23188	9548	2.43
Ⓔ ②	-15.0	14672	7505	1436	15620	5050	23613	10570	2.23
Ⓕ ①	-22.0	19961	9486	8881	31399	15599	38328	15800	2.43
Ⓖ ①	-30.0	28328	17903	21620	56522	33575	67851	22947	2.96
Ⓗ ①	-40.0	42652	32309	48785	98693	67220	123746	31473	3.93
Ⓘ ①	-48.0	56849	28729	79433	140819	103093	165011	37726	4.37
Ⓙ ①	-55.0	71009	40409	92356	182194	140561	203774	41633	4.89

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.					C · UNIT COHESION · P.S.F.										FRICTION ANGLE DEGREES
							CENTER OF STRATUM					BOTTOM OF STRATUM					
		VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	
①	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
②	CH	106	106	106	106	106	650	650	650	650	650	650	650	650	650	650	0
③	CH	104	104	104	104	104	450	450	450	450	450	450	450	450	450	450	0
④	CH	106	82	82	82	106	600	350	350	350	600	600	350	350	350	600	0
⑤	CH	100	100	100	100	100	285	285	300	285	285	285	285	300	285	285	0
⑥	CH	96	96	100	96	96	240	240	300	240	240	240	240	300	240	240	0
⑦	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
⑧	CH	106	106	108	106	106	820	820	1100	820	820	820	820	1100	820	820	0
⑨	CH	106	106	108	106	106	930	930	1100	930	930	1040	1040	1100	1040	1040	0

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
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D -- HORIZONTAL DRIVING FORCE IN POUNDS
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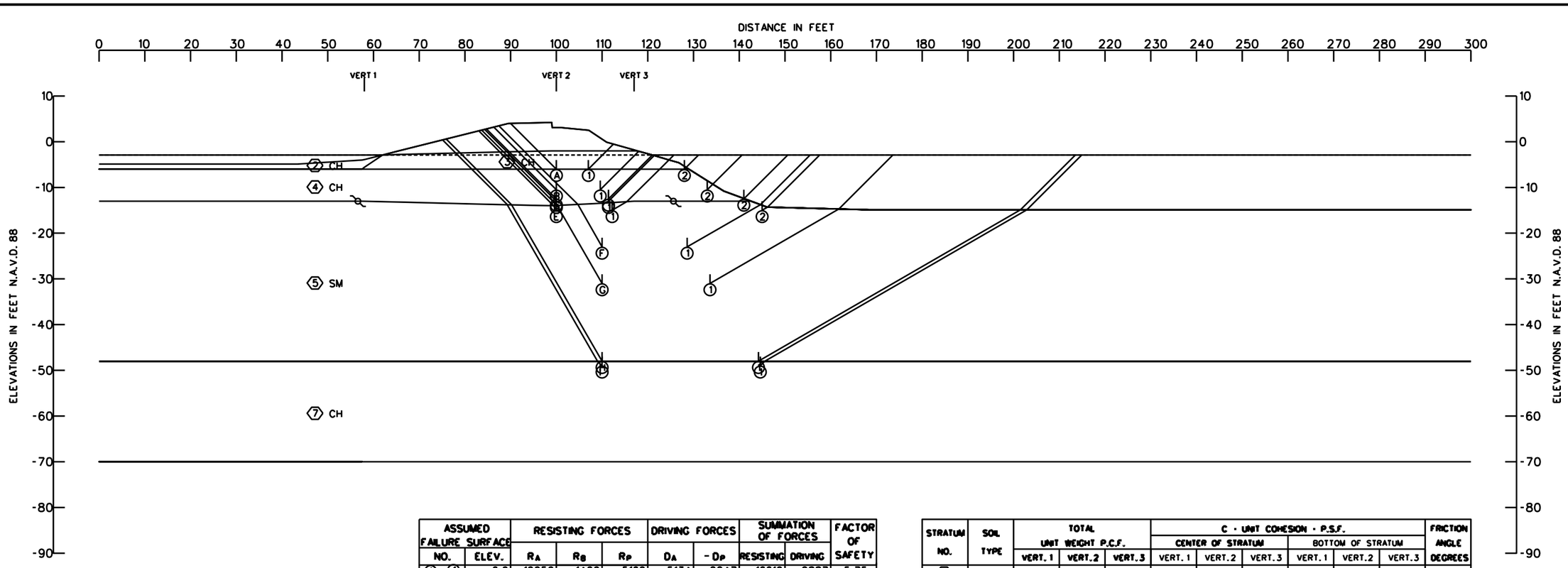
FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 11 Sta 79+50 to 84+81
Flood Side Stability Analysis
Case: Q-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 09-NOV-11

PLATE:



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-6.0	10050	1400	5160	5134	2247	16610	2887	5.75
Ⓐ ②	-6.0	10050	5600	463	5134	306	16113	4828	3.34
Ⓑ ①	-10.5	11058	1920	6321	10352	4641	19299	5711	3.38
Ⓑ ②	-10.5	11058	6600	483	10352	1851	18141	8501	2.13
Ⓒ ①	-12.5	11456	2280	6318	13206	6048	20054	7158	2.80
Ⓒ ②	-12.5	11456	8200	24	13206	2880	19680	10326	1.91
Ⓓ ①	-13.0	11556	2280	6380	13971	6557	20216	7414	2.73
Ⓔ ①	-15.0	12320	6781	7738	17271	8314	26839	8957	3.00
Ⓔ ②	-15.0	12320	14208	45	17271	4597	26573	12674	2.10
Ⓕ ①	-23.0	19873	11454	7836	34856	16543	39163	18313	2.14
Ⓖ ①	-31.0	28202	20288	18025	61003	33688	66515	27315	2.44
Ⓗ ①	-48.0	55523	21279	65767	141345	96446	142569	44899	3.18
Ⓘ ①	-49.0	57370	31140	67148	147316	101296	155658	46020	3.38

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62.5	62.5	62.5	0	0	0	0	0	0	0
②	CH	102	107	102	600	700	600	600	700	600	0
③	CH	107	80	107	600	200	600	600	200	600	0
④	CH	101	101	101	200	200	200	200	200	200	0
⑤	SM	122	122	122	0	0	0	0	0	0	30
⑥	CH	108	108	108	610	900	610	610	900	610	0
⑦	CH	108	108	108	755	900	755	900	900	900	0

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
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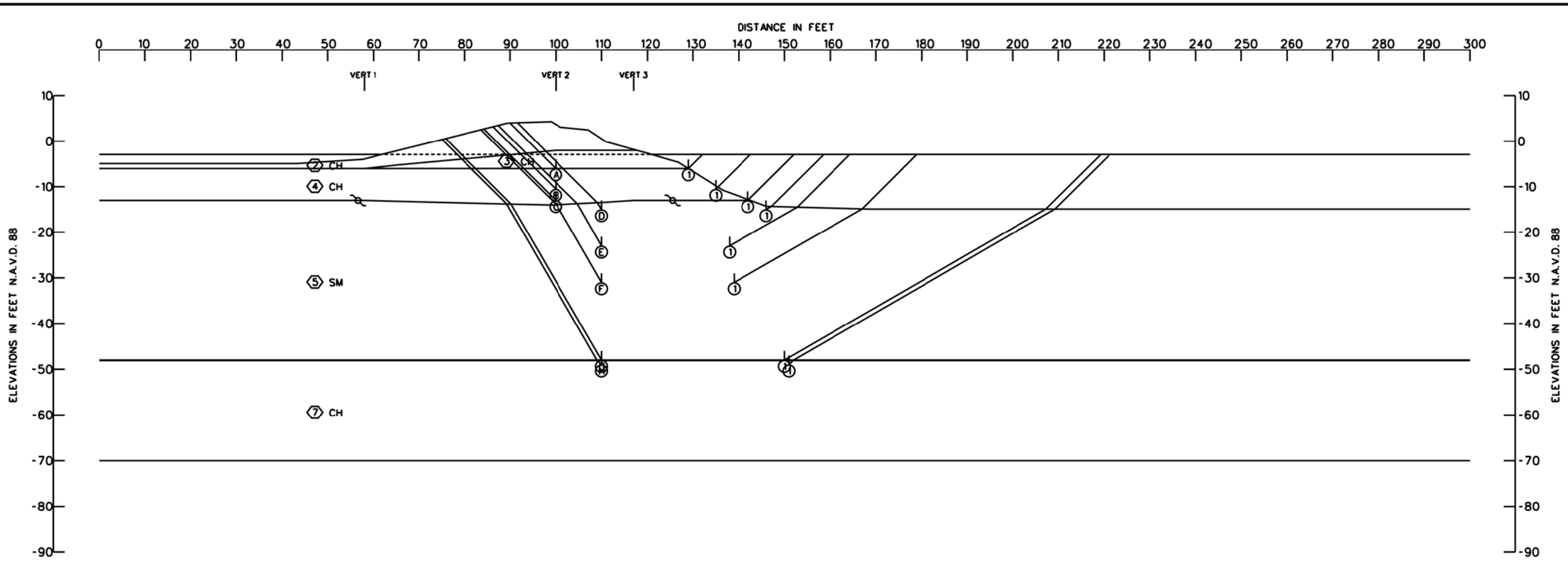
$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_A - D_P}$$

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 12a Sta 85+60 to 89+50
Flood Side Stability Analysis
Case: 0-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 04-NOV-11

PLATE:



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-6.0	10285	5800	-4	5288	300	16081	4988	3.22
Ⓑ ①	-10.5	11490	7000	173	10544	1811	18663	8733	2.14
Ⓒ ①	-13.0	12076	6658	63	14195	3188	18797	11007	1.71
Ⓓ ①	-15.0	13974	8450	28	16493	4589	22452	11904	1.89
Ⓔ ①	-23.0	20247	15584	5198	35065	15224	41029	19841	2.07
Ⓕ ①	-31.0	28771	23930	16754	61285	33052	69455	28233	2.46
Ⓖ ①	-48.0	56524	24817	65496	141970	96310	146837	45660	3.22
Ⓗ ①	-49.0	58393	36900	66913	147974	101147	162206	46827	3.46

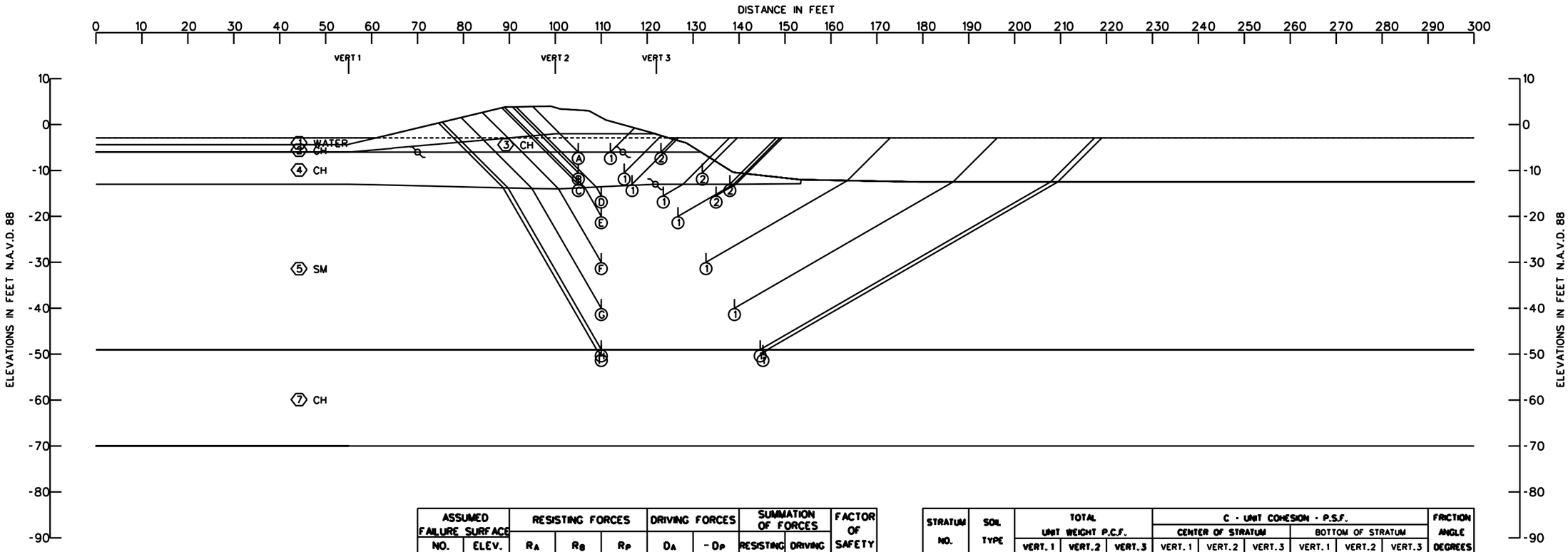
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62.5	62.5	62.5	0	0	0	0	0	0	0
②	CH	102	107	102	600	700	600	600	700	600	0
③	CH	107	80	107	600	200	600	600	200	600	0
④	CH	101	101	101	200	200	200	200	200	200	0
⑤	SM	122	122	122	0	0	0	0	0	0	30
⑥	CH	108	108	108	610	900	610	610	900	610	0
⑦	CH	108	108	108	755	900	755	900	900	900	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 12B Sta. 89+50 to Sta. 93+00
Flood Side Stability Analysis
Case: 0-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12

PLATE:



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-6.0	10237	1750	3573	4776	1654	15560	3122	4.98
A	2	-6.0	10237	4360	1384	4776	388	15981	4388	3.64
B	1	-10.5	12705	2691	3889	10051	3447	19285	6604	2.92
B	2	-10.5	12705	6531	1164	10051	1874	20400	8177	2.49
C	1	-13.0	13973	3108	4455	13908	4710	21536	9198	2.34
C	2	-13.0	13973	5224	1062	13908	3225	20259	10683	1.90
D	1	-15.5	15303	4209	3546	17252	5798	23058	11454	2.01
D	2	-15.5	15303	5879	1596	17252	5289	22778	11963	1.90
E	1	-20.0	18757	7303	5035	26881	11175	31095	15706	1.98
F	1	-30.0	28415	16959	18556	57209	32224	63930	24985	2.56
G	1	-40.0	42889	30735	45298	99883	65657	118922	34226	3.47
H	1	-49.0	59745	24285	79553	148745	106185	163583	42560	3.84
I	1	-50.0	61292	31778	81141	154423	111289	174211	43134	4.04

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C · UNIT COHESION · P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	109	109	109	600	700	600	600	700	600	0
3	CH	75	75	75	250	250	250	250	250	250	0
4	CH	75	105	75	220	280	220	220	310	220	0
5	SM	122	122	122	0	0	0	0	0	0	30
6	CH	108	108	108	700	720	700	700	720	700	0
7	CH	108	108	108	800	820	800	900	930	900	0

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
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P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

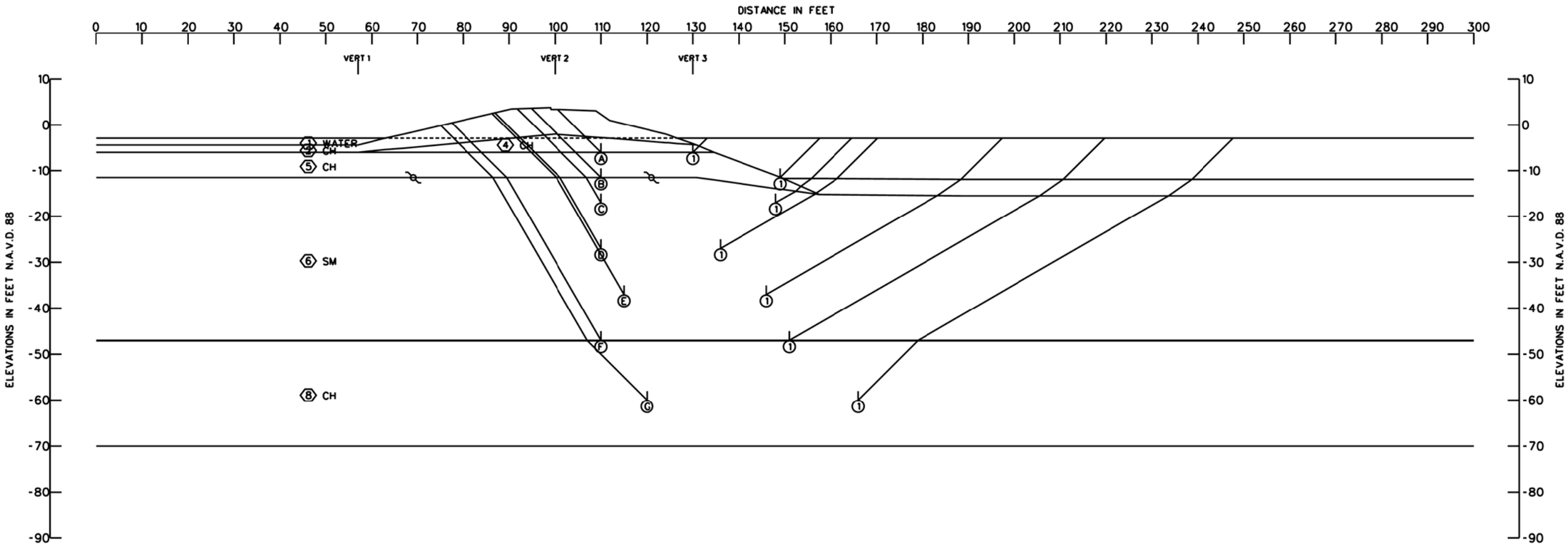
FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 13 Sta 93+00 to 96+00
Flood Side Stability Analysis
Case: 0-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 09-NOV-11

PLATE:



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-6.0	9819	4600	599	4364	325	15018	4039	3.72
Ⓑ ①	-11.5	12579	6402	23	11017	2308	19004	8709	2.18
Ⓒ ①	-17.0	16520	12298	1231	20909	6657	30049	14252	2.11
Ⓓ ①	-27.0	26125	19090	12333	48444	24353	57548	24091	2.39
Ⓔ ①	-37.0	38791	30449	32537	85803	52684	101777	33119	3.07
Ⓕ ①	-47.0	57527	26330	65787	139266	93749	149644	45517	3.29
Ⓖ ①	-60.0	77341	41458	85281	218939	164254	204080	54685	3.73

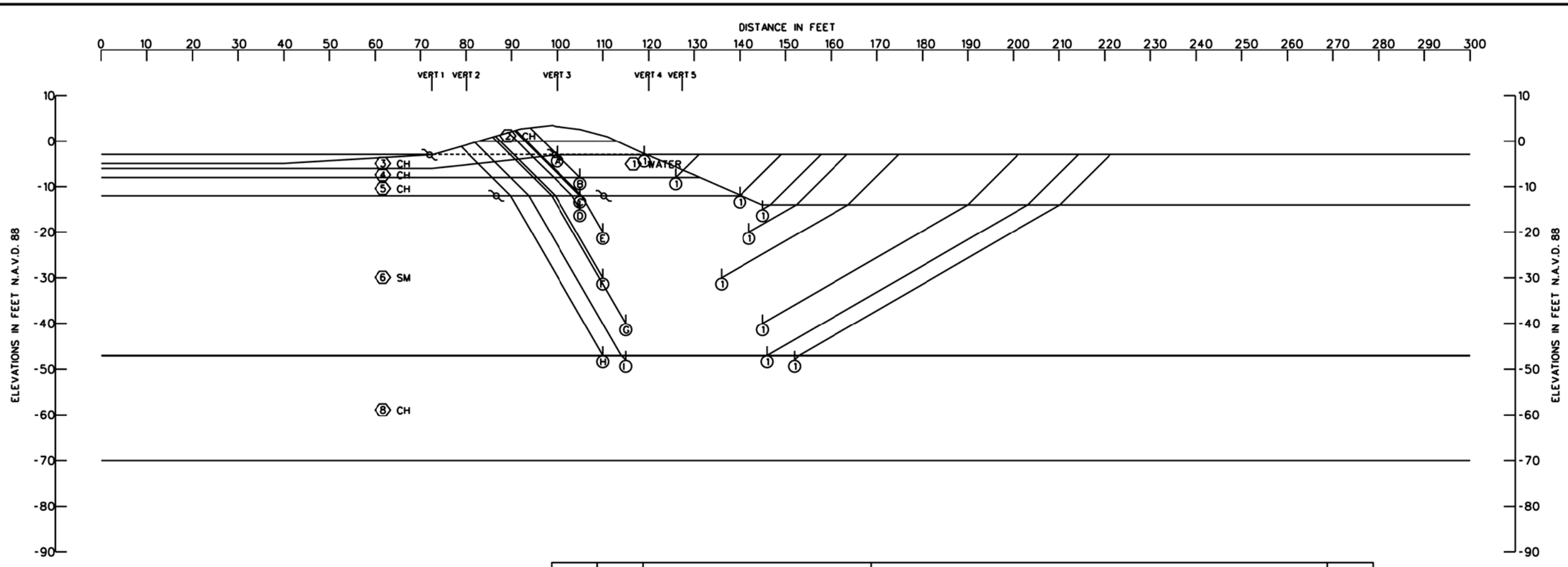
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C · UNIT COHESION · P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	CH	107	107	107	700	700	600	700	700	600	0
③	CH	90	90	90	0	0	0	0	0	0	20
④	CH	80	80	80	220	250	220	220	250	220	0
⑤	CH	80	109	80	220	250	220	220	250	220	0
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	CH	108	108	108	630	705	630	630	705	630	0
⑧	CH	108	108	108	765	820	765	900	935	900	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 14 Sta. 96+00 to Sta. 100+28
Flood Side Stability Analysis
Case: 0-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12

PLATE:



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
A 1	-3.0	8870	7600	203	2134	3	16673	2131	7.83
B 1	-8.0	12870	8035	853	6369	858	21758	5511	3.95
C 1	-12.0	14907	5890	60	11378	2584	20857	8794	2.37
D 1	-15.0	16114	10119	57	16214	4598	26290	11616	2.26
E 1	-20.0	20506	12662	2257	26081	10260	35425	15821	2.24
F 1	-30.0	29295	19908	16230	56129	31059	65433	25070	2.61
G 1	-40.0	42313	30907	40161	96014	63086	113381	32928	3.44
H 1	-47.0	54982	23488	64716	133920	93127	143186	40793	3.51
I 1	-48.0	55812	31773	66185	138425	97897	153770	40528	3.79

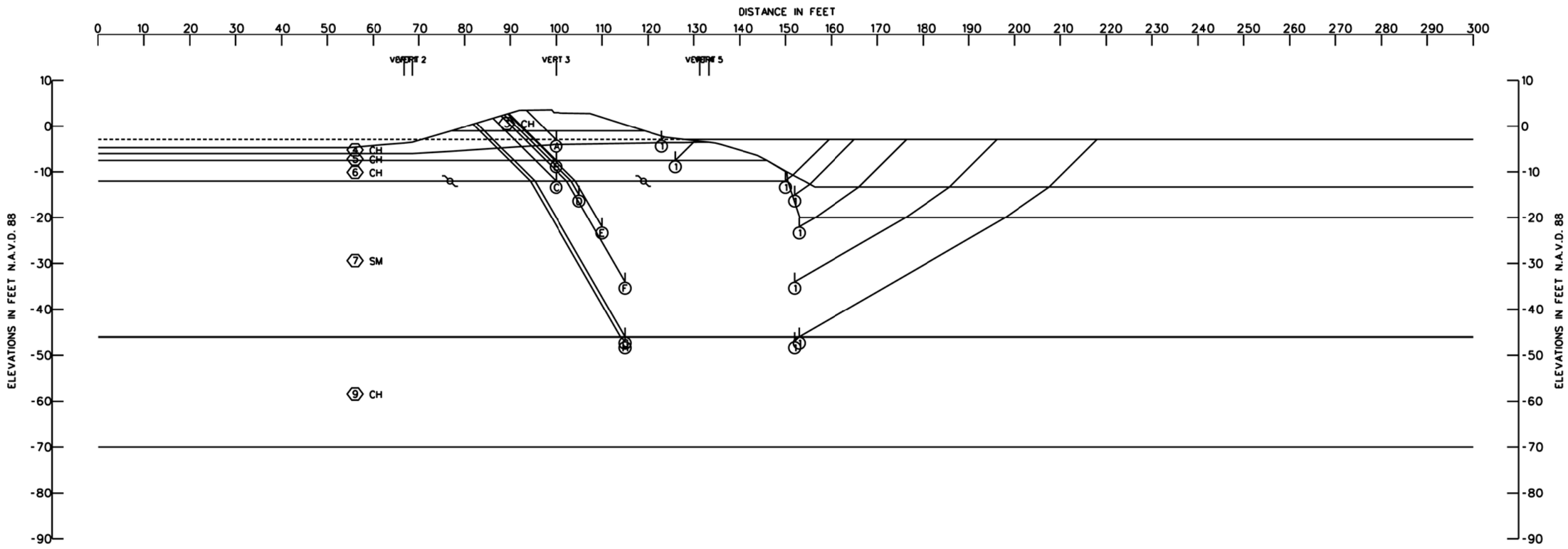
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.					C - UNIT COHESION - P.S.F. CENTER OF STRATUM					C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM					FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	
1	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
2	CH	113	113	113	113	113	999	999	1000	999	999	999	999	1000	999	999	0
3	CH	100	100	100	100	100	600	500	500	500	600	600	500	500	500	600	0
4	CH	87	87	87	87	87	250	400	400	400	250	250	400	400	400	250	0
5	CH	87	87	109	87	87	250	400	400	400	250	250	400	400	400	250	0
6	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
7	CH	104	104	104	104	104	640	680	640	680	640	640	680	640	680	640	0
8	CH	104	104	104	104	104	745	785	745	785	745	850	890	850	890	850	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 15 Sta. 100+28 to Sta. 104+00
Flood Side Stability Analysis
Case: 0-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12

PLATE:



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-3.0	10237	6900	388	2430	25	17525	2405	7.29
Ⓑ ①	-7.5	12408	5960	2021	6362	887	20389	5475	3.72
Ⓒ ①	-12.0	12255	7288	197	11565	2616	19740	8949	2.21
Ⓓ ①	-15.0	15892	12979	169	16694	4709	29040	11985	2.42
Ⓔ ①	-22.0	21981	20393	1709	31929	12542	44083	19387	2.27
Ⓕ ①	-34.0	34233	31834	17665	70558	39345	83732	31213	2.68
Ⓖ ①	-46.0	51281	24764	50482	128032	83578	126527	44454	2.85
Ⓗ ①	-47.0	52737	32090	51975	133718	88172	136802	45546	3.00

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.					C - UNIT COHESION - P.S.F. CENTER OF STRATUM					C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM					FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	
①	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
②	WATER	90	90	90	90	90	0	0	0	0	0	0	0	0	0	0	20
③	CH	118	118	118	118	118	999	999	1000	999	999	999	999	1000	999	999	0
④	CH	90	90	90	90	90	600	300	300	300	600	600	300	300	300	600	0
⑤	CH	80	80	80	80	80	200	200	450	200	200	200	200	450	200	200	0
⑥	CH	80	80	97	80	80	200	200	250	200	200	200	200	250	200	200	0
⑦	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
⑧	CH	104	104	104	104	104	650	650	665	650	650	650	650	665	650	650	0
⑨	CH	104	104	104	104	104	757	757	775	757	757	865	865	885	865	865	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 16 Sta. 104+00 to Sta. 112+50
Flood Side Stability Analysis
Case: 0-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12

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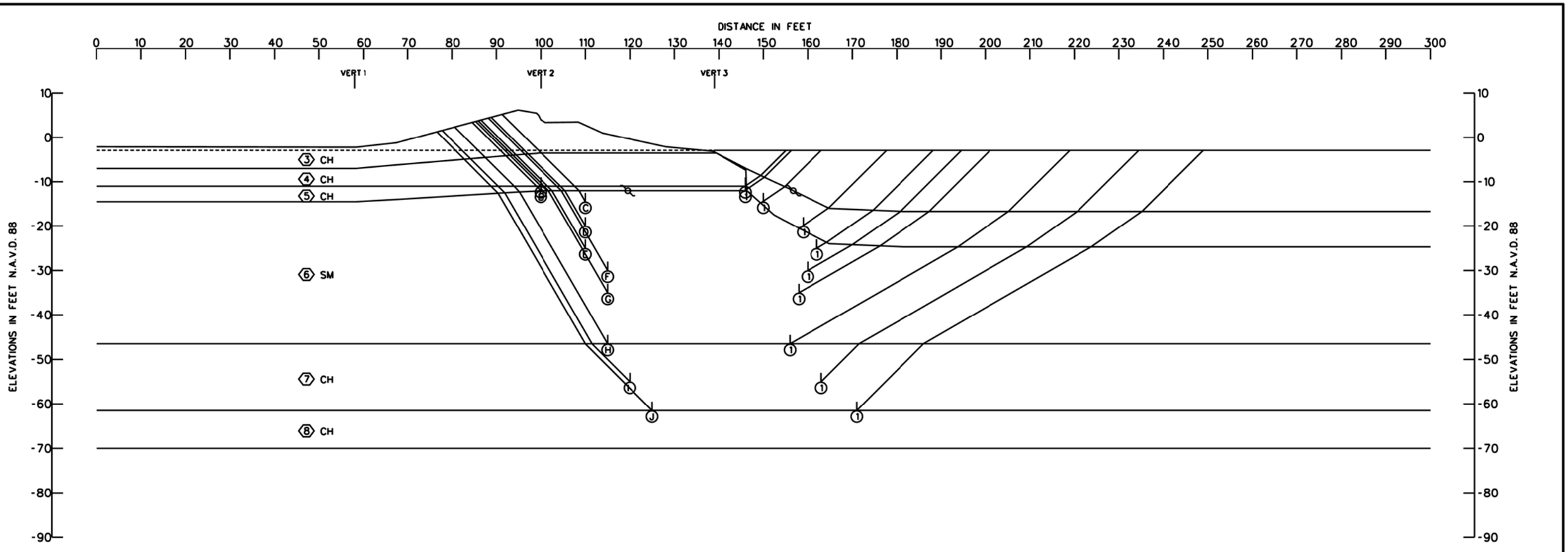


ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
A 1	-11.0	11840	11540	197	13574	2182	23577	11392	2.07
B 1	-12.0	12225	10793	345	15056	2800	23363	12256	1.91
C 1	-14.5	15756	11980	332	18319	4472	28068	13847	2.03
D 1	-20.0	19804	21038	504	30724	9521	41346	21203	1.95
E 1	-25.0	24369	30138	1549	44974	16396	56056	28578	1.96
F 1	-30.0	29958	33030	5883	60077	26276	68871	33801	2.04
G 1	-35.0	36445	39548	13272	80353	39226	89265	41127	2.17
H 1	-46.5	56561	29405	40890	138778	80257	126856	58521	2.17
I 1	-55.0	70287	30715	50921	190431	119567	151923	70864	2.14
J 1	-61.5	79996	32760	60008	233654	155173	172764	78481	2.20

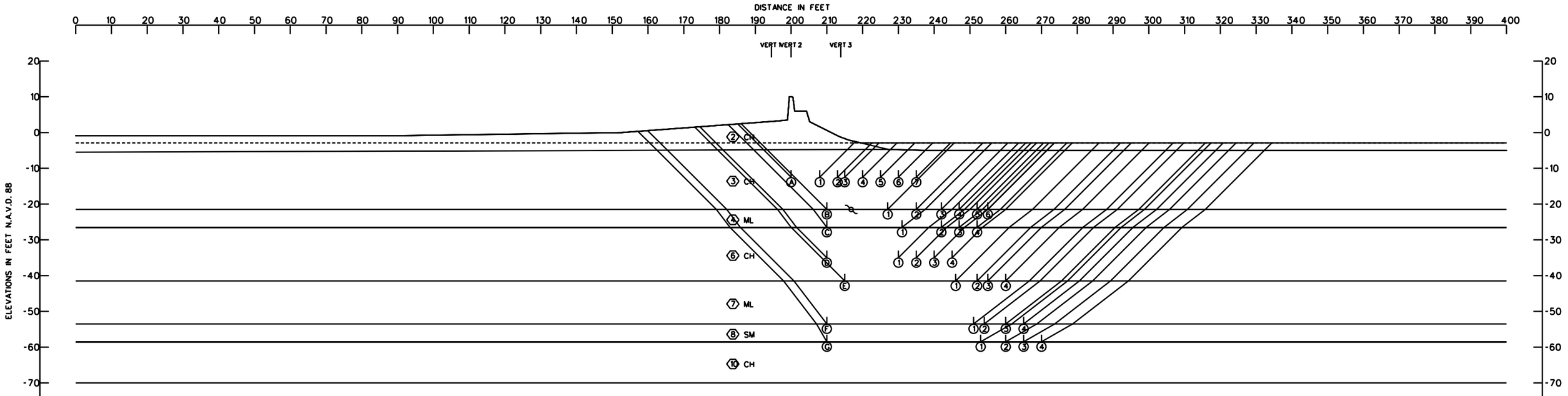
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C · UNIT COHESION · P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	WATER	62	62	62	0	0	0	0	0	0	0
2	WATER	90	90	90	0	0	0	0	0	0	20
3	CH	100	110	100	400	520	400	400	520	400	0
4	CH	85	90	85	200	320	200	200	320	200	0
5	CH	116	90	116	300	320	300	300	320	300	0
6	SM	122	122	122	0	0	0	0	0	0	30
7	CH	109	110	109	710	750	710	710	750	710	0
8	CH	119	102	119	995	999	995	995	999	995	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 17 Sta. 118+90 to Sta. 119+63
Flood Side Stability Analysis
Case: 0-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12

PLATE:



ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
A 1	-12.5	16358	3702	9821	14076	7537	29881	6539	4.57
A 2	-12.5	16358	5958	8515	14076	5660	30831	8416	3.66
A 3	-12.5	16358	6849	8016	14076	5209	31223	8867	3.52
A 4	-12.5	16358	9074	6924	14076	4545	32356	9531	3.39
A 5	-12.5	16358	11299	6793	14076	4238	34450	9838	3.50
A 6	-12.5	16358	13524	6675	14076	4163	36557	9913	3.69
A 7	-12.5	16358	15749	6675	14076	4132	38782	9944	3.90
B 1	-21.5	25075	7314	14685	35266	16932	47074	18334	2.57
B 2	-21.5	25075	10504	14685	35266	16867	50264	18399	2.73
B 3	-21.5	25075	13282	14685	35266	16865	53042	18401	2.88
B 4	-21.5	25075	15265	14685	35266	16865	55025	18401	2.99
B 5	-21.5	25075	17249	14685	35266	16864	57009	18402	3.10
B 6	-21.5	25075	18439	14685	35266	16864	58199	18402	3.16
C 1	-26.5	29106	5984	20343	49668	27828	55433	21840	2.54
C 2	-26.5	29106	9064	20330	49668	27809	58500	21859	2.68
C 3	-26.5	29106	10464	20330	49668	27809	59900	21859	2.74
C 4	-26.5	29106	11864	20330	49668	27809	61300	21859	2.80
D 1	-35.0	36849	8217	26149	80716	52584	71215	28132	2.53
D 2	-35.0	36849	10242	26149	80716	52553	73240	28163	2.60
D 3	-35.0	36849	12267	26148	80716	52550	75264	28166	2.67

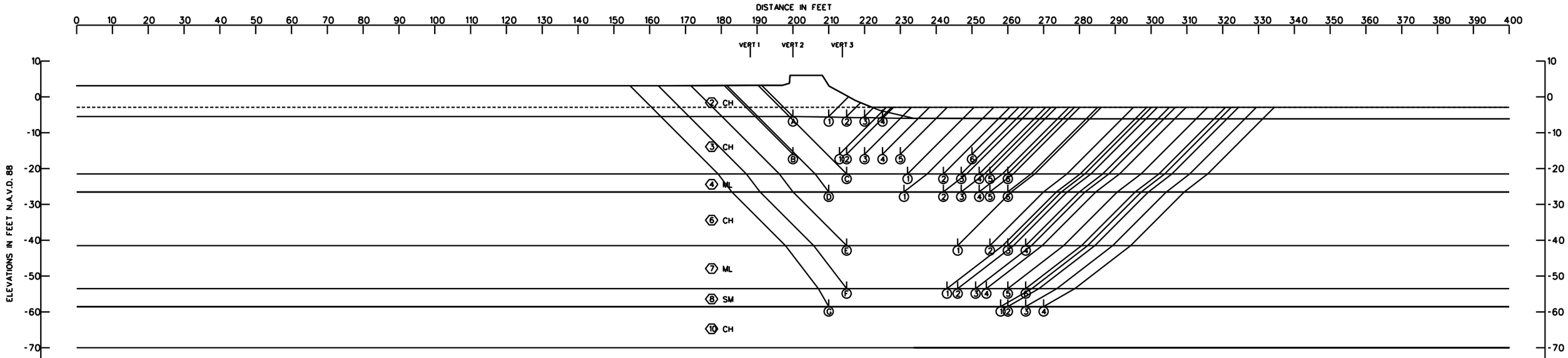
ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
D 4	-35.0	36849	14292	26149	80716	52550	77290	28166	2.74
E 1	-41.5	41520	12555	30607	107109	76393	84682	30716	2.76
E 2	-41.5	41520	14985	30608	107109	76393	87113	30716	2.84
E 3	-41.5	41520	16200	30607	107109	76393	88327	30716	2.88
E 4	-41.5	41520	18225	30607	107109	76393	90352	30716	2.94
F 1	-53.5	54299	33632	52877	171720	132773	140808	38947	3.62
F 2	-53.5	54299	36031	52877	171720	132773	143207	38947	3.68
F 3	-53.5	54299	40830	52878	171720	132774	148007	38946	3.80
F 4	-53.5	54299	44828	52877	171720	132774	152004	38946	3.90
G 1	-58.5	64907	26491	76743	203455	161300	168141	42155	3.99
G 2	-58.5	64907	30796	76743	203455	161300	172446	42155	4.09
G 3	-58.5	64907	33871	76743	203455	161300	175521	42155	4.16
G 4	-58.5	64907	36946	76743	203455	161300	178596	42155	4.24

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	TOTAL UNIT WEIGHT P.C.F. VERT. 2	TOTAL UNIT WEIGHT P.C.F. VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	CENTER OF STRATUM VERT. 2	CENTER OF STRATUM VERT. 3	BOTTOM OF STRATUM VERT. 1	BOTTOM OF STRATUM VERT. 2	BOTTOM OF STRATUM VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	115	115	115	650	650	650	650	650	650	0
3	CH	107	107	107	445	470	445	445	470	445	0
4	ML	117	117	117	200	200	200	200	200	200	15
5	CH	101	101	101	280	470	280	280	470	280	0
6	CH	101	101	101	343	545	343	405	620	405	0
7	ML	117	117	117	200	200	200	200	200	200	15
8	SM	122	122	122	0	0	0	0	0	0	30
9	CH	107	107	107	615	700	615	615	700	615	0
10	CH	107	107	107	673	758	673	730	815	730	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 20 Sta 1+57 to Sta 6+30
Flood Side Stability Analysis
Case: O-Case F/S Global Stability
March 2012

Lake Pontchartrain, LA & vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 21-OCT-11



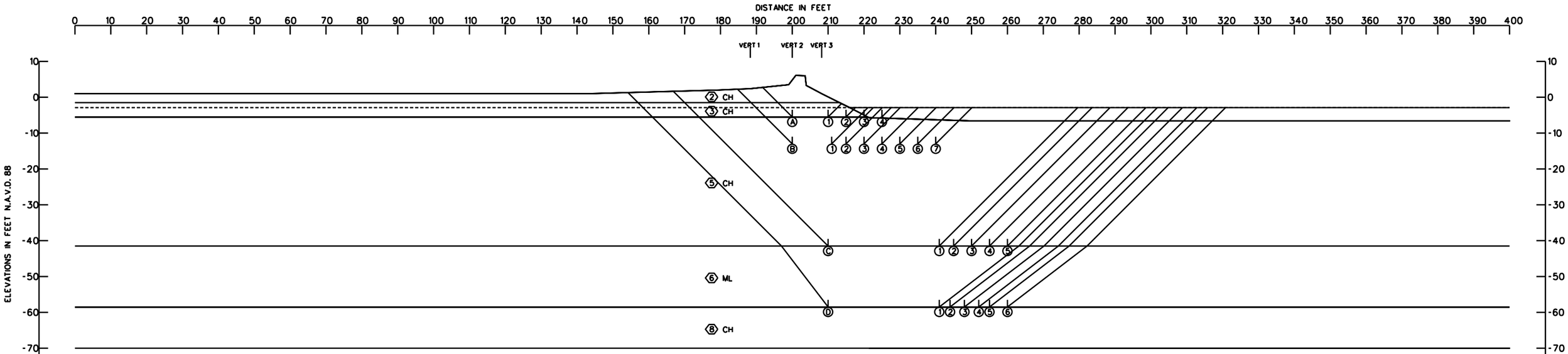
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
A 1	-5.5	11291	6199	7181	4838	2787	24671	2051	12.03
A 2	-5.5	11291	9449	5047	4838	1303	25787	3535	7.30
A 3	-5.5	11291	12699	3179	4838	499	27169	4339	6.26
A 4	-5.5	11291	15949	1622	4838	264	28862	4574	6.31
B 1	-16.0	18418	4427	9137	21478	11551	31982	9927	3.22
B 2	-16.0	18418	5088	8668	21478	10527	32174	10951	2.94
B 3	-16.0	18418	6738	7493	21478	8862	32649	12616	2.59
B 4	-16.0	18418	8388	6598	21478	8076	33404	13402	2.49
B 5	-16.0	18418	10038	6592	21478	7674	35048	13804	2.54
B 6	-16.0	18418	16638	6565	21478	7565	41621	13913	2.99
C 1	-21.5	22163	5610	10212	37073	16163	37985	20910	1.82
C 2	-21.5	22163	8910	10198	37073	16129	41271	20944	1.97
C 3	-21.5	22163	10560	10191	37073	16122	42914	20951	2.05
C 4	-21.5	22163	12210	10185	37073	16114	44558	20959	2.13
C 5	-21.5	22163	13200	10180	37073	16110	45543	20963	2.17
C 6	-21.5	22163	14850	10174	37073	16103	47187	20970	2.25
D 1	-26.5	27929	6132	15720	53375	26895	49781	26480	1.88
D 2	-26.5	27929	9322	15675	53375	26836	52926	26539	1.99
D 3	-26.5	27929	10772	15667	53375	26827	54368	26548	2.05
D 4	-26.5	27929	12222	15658	53375	26817	55809	26558	2.10

ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
D 5	-26.5	27929	13092	15653	53375	26812	56674	26563	2.13
D 6	-26.5	27929	14542	15645	53375	26802	58116	26573	2.19
E 1	-41.5	38624	12710	26132	113235	74464	77466	38771	2.00
E 2	-41.5	38624	16400	26129	113235	74438	81153	38797	2.09
E 3	-41.5	38624	18450	26127	113235	74428	83201	38807	2.14
E 4	-41.5	38624	20500	26126	113235	74419	85250	38816	2.20
F 1	-53.5	56570	22726	47760	179217	129898	127056	49319	2.58
F 2	-53.5	56570	25064	47757	179217	129889	129391	49328	2.62
F 3	-53.5	56570	28961	47752	179217	129875	133283	49342	2.70
F 4	-53.5	56570	31298	47750	179217	129868	135618	49349	2.75
F 5	-53.5	56570	35973	47745	179217	129856	140288	49361	2.84
F 6	-53.5	56570	39868	47741	179217	129848	144179	49369	2.92
G 1	-58.5	67732	29802	70834	213833	157987	168368	55846	3.01
G 2	-58.5	67732	31042	70830	213833	157983	169604	55850	3.04
G 3	-58.5	67732	34142	70823	213833	157977	172697	55856	3.09
G 4	-58.5	67732	37242	70817	213833	157973	175791	55860	3.15

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C · UNIT COHESION · P.S.F. CENTER OF STRATUM			C · UNIT COHESION · P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	118	118	118	650	650	650	650	650	650	0
3	CH	107	107	107	330	350	330	330	350	330	0
4	ML	117	117	117	200	200	200	200	200	200	15
5	CH	99	99	99	290	370	290	290	370	290	0
6	CH	99	99	99	350	430	350	410	490	410	0
7	ML	117	117	117	200	200	200	200	200	200	15
8	SM	122	122	122	0	0	0	0	0	0	30
9	CH	104	104	104	620	700	620	620	700	620	0
10	CH	104	104	104	673	753	673	725	805	725	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 21 Sta 6+30 to Sta 10+00
Flood Side Stability Analysis
Case: O-Case F/S Global Stability
March 2012

Lake Pontchartrain, LA & vicinity
Hurricane Protection Project
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 21-OCT-11



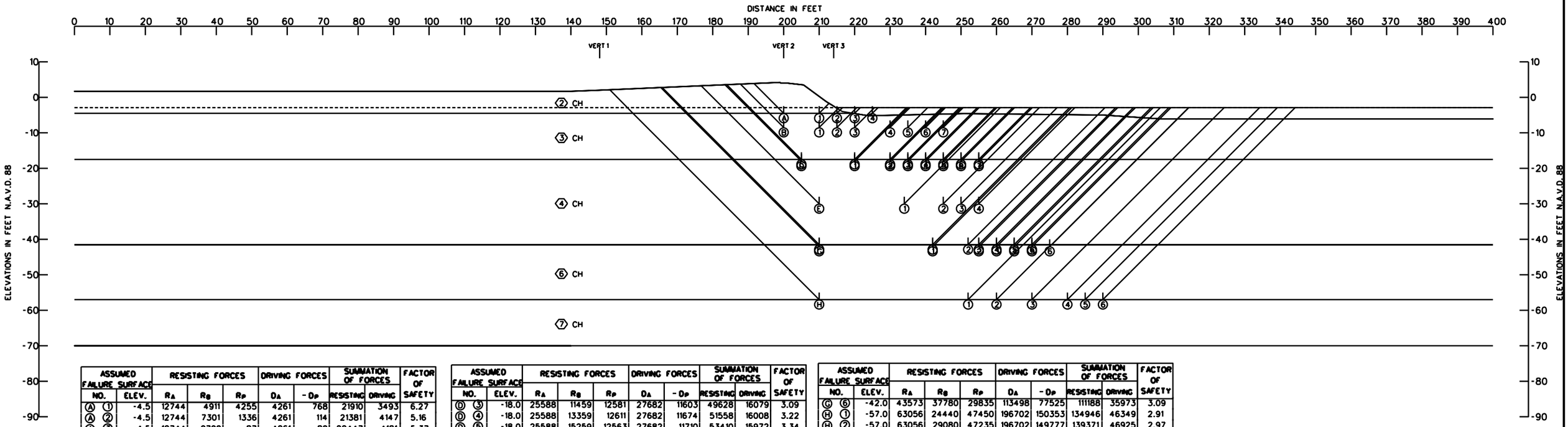
ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-5.5	11361	1709	6152	4359	1190	19222	3169	6.06
A	2	-5.5	11361	2584	3380	4359	389	17325	3970	4.36
A	3	-5.5	11361	3459	609	4359	216	15429	4143	3.72
A	4	-5.5	11361	4334	-105	4359	213	15590	4146	3.76
B	1	-13.0	15856	5927	6848	14450	6379	28631	8071	3.55
B	2	-13.0	15856	8127	5282	14450	5206	29265	9244	3.17
B	3	-13.0	15856	10877	5173	14450	4639	31906	9811	3.25
B	4	-13.0	15856	13627	5064	14450	4552	34547	9898	3.49
B	5	-13.0	15856	16377	4954	14450	4493	37187	9957	3.74
B	6	-13.0	15856	19127	4845	14450	4436	39828	10014	3.98
B	7	-13.0	15856	21877	4736	14450	4380	42469	10070	4.22
C	1	-41.5	34348	17050	25337	112643	79813	76735	32830	2.34
C	2	-41.5	34348	19250	25337	112643	79762	78935	32881	2.40
C	3	-41.5	34348	22000	25337	112643	79736	81685	32907	2.48
C	4	-41.5	34348	24750	25337	112643	79736	84435	32907	2.57
C	5	-41.5	34348	27500	25337	112643	79735	87185	32908	2.65
D	1	-58.5	61810	23715	62317	215533	170040	147842	45493	3.25
D	2	-58.5	61810	26010	62295	215533	170008	150115	45525	3.30
D	3	-58.5	61810	29070	62278	215533	169985	153158	45548	3.36
D	4	-58.5	61810	32130	62275	215533	169980	156215	45553	3.43

ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
D	5	-58.5	61810	34425	62275	215533	169981	158510	45552	3.48
D	6	-58.5	61810	38250	62275	215533	169980	162335	45553	3.56

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	114	114	114	900	825	825	900	825	825	0
3	CH	114	114	114	500	500	825	500	500	825	0
4	CH	117	117	117	165	165	175	165	165	175	0
5	CH	117	117	117	343	343	363	520	520	550	0
6	ML	117	117	117	200	200	200	200	200	200	15
7	CH	118	118	118	715	715	765	715	715	765	0
8	CH	118	118	118	785	785	835	855	855	905	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 22 Sta 13+55 to Sta 21+00
Flood Side Stability Analysis
Case: O-Case F/S Global Stability
March 2012

Lake Pontchartrain, LA & vicinity
Hurricane Protection Project
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 21-OCT-11



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-4.5	12744	4911	4255	4261	768	21910	3493	6.27
A	2	-4.5	12744	7301	1336	4261	114	21381	4147	5.16
A	3	-4.5	12744	9790	-87	4261	80	22447	4181	5.37
A	4	-4.5	12744	13590	-1050	4261	93	25284	4168	6.07
B	1	-8.5	16489	4911	5742	9058	2639	27142	6419	4.23
B	2	-8.5	16489	7301	3926	9058	1510	27716	7548	3.67
B	3	-8.5	16489	9676	3215	9058	1322	29380	7736	3.80
B	4	-8.5	16489	14426	3338	9058	1290	34253	7768	4.41
B	5	-8.5	16489	16801	3446	9058	1310	36736	7748	4.74
B	6	-8.5	16489	19176	3554	9058	1331	39219	7727	5.08
B	7	-8.5	16489	21551	3662	9058	1353	41702	7705	5.41
C	1	-17.5	25232	5759	11866	26458	10659	42857	15799	2.71
C	2	-17.5	25232	9559	12082	26458	10731	46873	15727	2.98
C	3	-17.5	25232	11459	12190	26458	10804	48881	15654	3.12
C	4	-17.5	25232	13359	12236	26458	10874	50827	15584	3.26
C	5	-17.5	25232	15259	12188	26458	10911	52679	15547	3.39
C	6	-17.5	25232	17159	12139	26458	10905	54530	15553	3.51
C	7	-17.5	25232	19059	12091	26458	10872	56382	15586	3.62
D	1	-18.0	25588	5759	12257	27682	11449	43604	16233	2.69
D	2	-18.0	25588	9559	12473	27682	11527	47620	16155	2.95

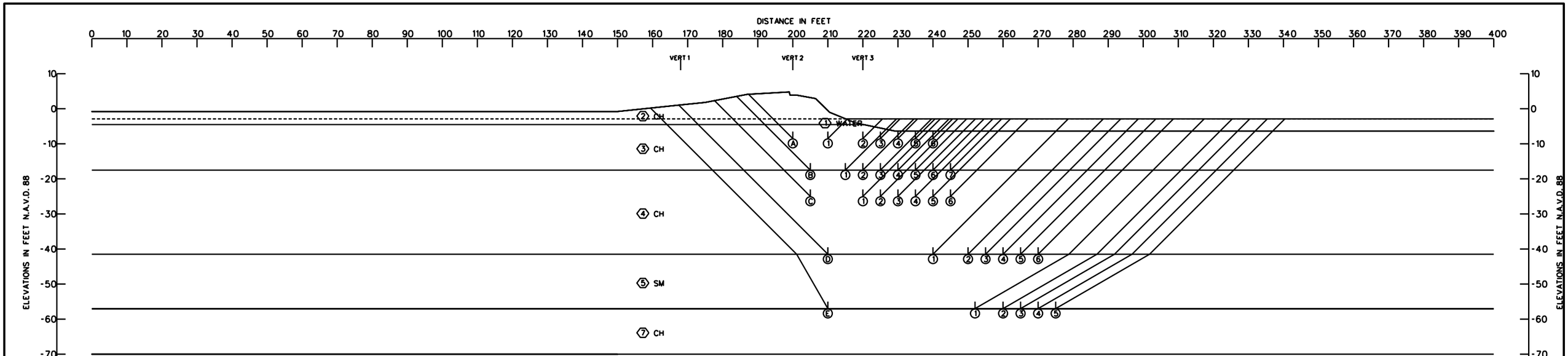
ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
D	3	-18.0	25588	11459	12581	27682	11603	49628	16079	3.09
D	4	-18.0	25588	13359	12611	27682	11674	51558	16008	3.22
D	5	-18.0	25588	15259	12563	27682	11710	53410	15972	3.34
D	6	-18.0	25588	17159	12515	27682	11703	55262	15979	3.46
D	7	-18.0	25588	19059	12466	27682	11668	57113	16014	3.57
E	1	-30.0	34542	9132	21673	63422	38125	65347	25297	2.58
E	2	-30.0	34542	13312	21567	63422	38188	69421	25234	2.75
E	3	-30.0	34542	15212	21519	63422	38150	71273	25272	2.82
E	4	-30.0	34542	17112	21471	63422	38084	73125	25338	2.89
F	1	-41.5	42985	12172	30225	111152	76756	85382	34396	2.48
F	2	-41.5	42985	15972	30129	111152	76629	89086	34523	2.58
F	3	-41.5	42985	17112	30026	111152	76568	90123	34584	2.61
F	4	-41.5	42985	19012	29731	111152	76418	91728	34734	2.64
F	5	-41.5	42985	20912	29436	111152	76201	93333	34951	2.67
F	6	-41.5	42985	22812	29141	111152	75917	94938	35235	2.69
G	1	-42.0	43573	18640	30986	113498	78727	93199	34771	2.68
G	2	-42.0	43573	26180	30759	113498	78531	100512	34967	2.87
G	3	-42.0	43573	29080	30464	113498	78373	103117	35125	2.94
G	4	-42.0	43573	31980	30168	113498	78147	105721	35351	2.99
G	5	-42.0	43573	34880	29873	113498	77854	108326	35644	3.04

ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
G	6	-42.0	43573	37780	29835	113498	77525	111188	35973	3.09
H	1	-57.0	63056	24440	47450	196702	150353	134946	46349	2.91
H	2	-57.0	63056	29080	47235	196702	149777	139371	46925	2.97
H	3	-57.0	63056	34880	47234	196702	149077	145170	47625	3.05
H	4	-57.0	63056	40680	47230	196702	148432	150966	48270	3.13
H	5	-57.0	63056	43580	47227	196702	148130	153863	48572	3.17
H	6	-57.0	63056	46480	47223	196702	147841	156759	48861	3.21

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	117	117	117	760	760	760	760	760	760	0
3	CH	114	114	114	475	500	475	475	500	475	0
4	CH	98	98	98	380	400	380	380	400	380	0
5	SM	122	122	122	0	0	0	0	0	0	30
6	CH	112	112	112	580	715	580	580	715	580	0
7	CH	112	112	112	650	788	650	720	860	720	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 23 Sta 21+00 to Sta 24+00
Flood Side Stability Analysis
Case: O-Case F/S Global Stability
March 2012

Lake Pontchartrain, LA & vicinity
Hurricane Protection Project
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 26-OCT-11



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	O_A	$-O_P$	RESISTING	DRIVING	
Ⓐ ①	-8.5	17092	4937	6085	9713	2443	28114	7270	3.87
Ⓐ ②	-8.5	17092	9750	3175	9713	1327	30017	8386	3.58
Ⓐ ③	-8.5	17092	12125	2356	9713	1170	31573	8543	3.70
Ⓐ ④	-8.5	17092	14500	1995	9713	1092	33587	8621	3.90
Ⓐ ⑤	-8.5	17092	16875	1995	9713	1092	35962	8621	4.17
Ⓐ ⑥	-8.5	17092	19250	1995	9713	1092	38337	8621	4.45
Ⓑ ①	-17.5	25163	3900	11070	27079	10936	40133	16143	2.49
Ⓑ ②	-17.5	25163	5812	10545	27079	10295	41520	16784	2.47
Ⓑ ③	-17.5	25163	7712	10545	27079	9929	43420	17150	2.53
Ⓑ ④	-17.5	25163	9612	10545	27079	9829	45320	17250	2.63
Ⓑ ⑤	-17.5	25163	11512	10545	27079	9829	47220	17250	2.74
Ⓑ ⑥	-17.5	25163	13412	10545	27079	9829	49120	17250	2.85
Ⓑ ⑦	-17.5	25163	15312	10545	27079	9829	51020	17250	2.96
Ⓒ ①	-25.0	29159	5812	16245	47459	24179	51216	23280	2.20
Ⓒ ②	-25.0	29159	7712	16245	47459	23813	53116	23646	2.25
Ⓒ ③	-25.0	29159	9612	16245	47459	23713	55016	23746	2.32
Ⓒ ④	-25.0	29159	11512	16245	47459	23714	56916	23745	2.40
Ⓒ ⑤	-25.0	29159	13412	16245	47459	23714	58816	23745	2.48
Ⓒ ⑥	-25.0	29159	15312	16245	47459	23714	60716	23745	2.56
Ⓓ ①	-41.5	40113	11450	28785	109224	73663	80348	35561	2.26

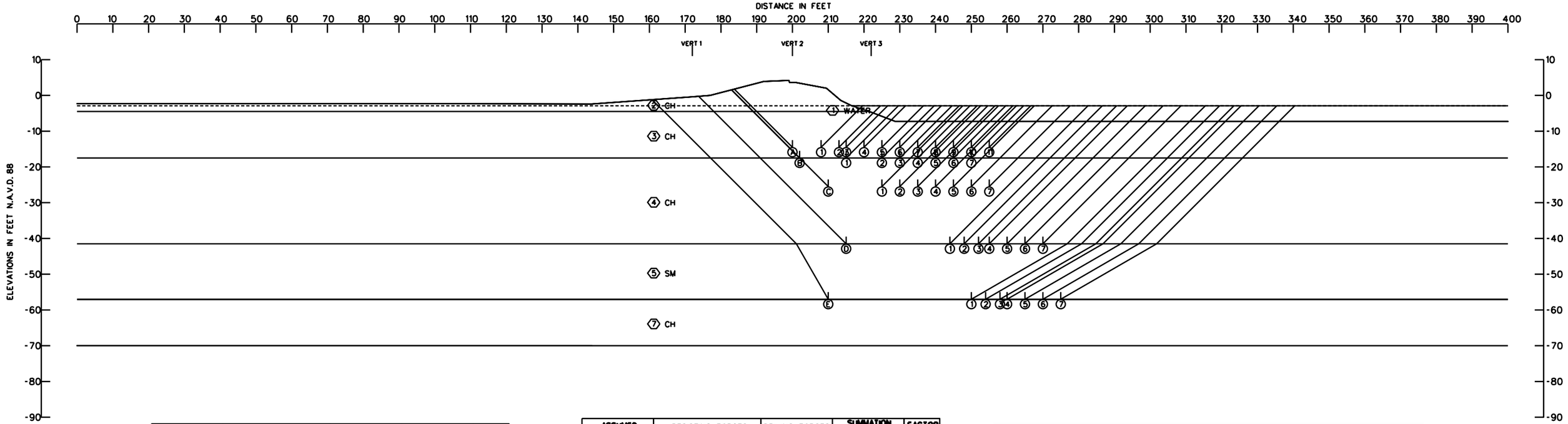
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	O_A	$-O_P$	RESISTING	DRIVING	
Ⓓ ②	-41.5	40113	15250	28785	109224	73663	84148	35561	2.37
Ⓓ ③	-41.5	40113	17150	28785	109224	73663	86048	35561	2.42
Ⓓ ④	-41.5	40113	19050	28785	109224	73663	87948	35561	2.47
Ⓓ ⑤	-41.5	40113	20950	28785	109224	73662	89848	35562	2.53
Ⓓ ⑥	-41.5	40113	22850	28785	109224	73662	91748	35562	2.58
Ⓔ ①	-57.0	66330	24697	87198	194028	147770	178225	46258	3.85
Ⓔ ②	-57.0	66330	29337	87197	194028	147770	182864	46258	3.95
Ⓔ ③	-57.0	66330	32237	87197	194028	147769	185764	46259	4.02
Ⓔ ④	-57.0	66330	35137	87197	194028	147770	188664	46258	4.08
Ⓔ ⑤	-57.0	66330	38037	87197	194028	147769	191564	46259	4.14

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C · UNIT COHESION · P.S.F. CENTER OF STRATUM			C · UNIT COHESION · P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	CH	117	117	117	760	760	760	760	760	760	0
③	CH	114	114	114	475	500	475	475	500	475	0
④	CH	98	98	98	380	400	380	380	400	380	0
⑤	SM	122	122	122	0	0	0	0	0	0	30
⑥	CH	112	112	112	580	715	580	580	715	580	0
⑦	CH	112	112	112	650	788	650	720	860	720	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 24 Sta 24+00 to Sta 33+00
Flood Side Stability Analysis
Case: O-Case F/S Global Stability
March 2012

Lake Pontchartrain, LA & vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 12-SEP-13



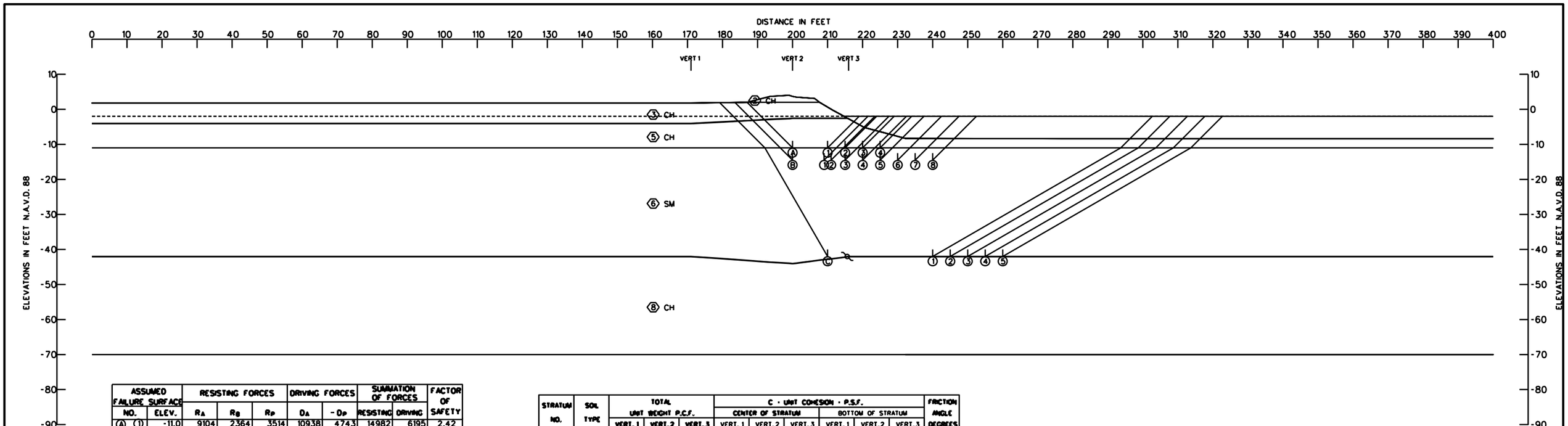
ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
A 1	-14.5	19419	3964	11013	18434	10310	34396	8124	4.23
A 2	-14.5	19419	6404	9195	18434	7661	35018	10773	3.25
A 3	-14.5	19419	7372	8628	18434	7116	35419	11318	3.13
A 4	-14.5	19419	9773	7261	18434	6280	36453	12154	3.00
A 5	-14.5	19419	12150	6840	18434	5678	38409	12756	3.01
A 6	-14.5	19419	14525	6840	18434	5536	40784	12898	3.16
A 7	-14.5	19419	16900	6840	18434	5536	43159	12898	3.35
A 8	-14.5	19419	19275	6840	18434	5536	45534	12898	3.53
A 9	-14.5	19419	21650	6840	18434	5536	47909	12898	3.71
A 10	-14.5	19419	24025	6840	18434	5536	50284	12898	3.90
A 11	-14.5	19419	26400	6840	18434	5536	52659	12898	4.08
B 1	-17.5	22090	5100	10673	24971	11133	37863	13838	2.74
B 2	-17.5	22090	8922	9690	24971	9477	40702	15494	2.63
B 3	-17.5	22090	10822	9690	24971	9335	42602	15636	2.72
B 4	-17.5	22090	12722	9690	24971	9335	44502	15636	2.85
B 5	-17.5	22090	14622	9690	24971	9335	46402	15636	2.97
B 6	-17.5	22090	16522	9690	24971	9334	48302	15637	3.09
B 7	-17.5	22090	18422	9690	24971	9334	50202	15637	3.21
C 1	-25.5	28403	5765	15770	46649	24112	49938	22537	2.22
C 2	-25.5	28403	7665	15770	46649	23969	51838	22680	2.29

ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
C 3	-25.5	28403	9565	15770	46649	23969	53738	22680	2.37
C 4	-25.5	28403	11465	15770	46649	23969	55638	22680	2.45
C 5	-25.5	28403	13365	15770	46649	23969	57538	22680	2.54
C 6	-25.5	28403	15265	15770	46649	23969	59438	22680	2.62
C 7	-25.5	28403	17165	15770	46649	23969	61338	22680	2.70
D 1	-41.5	38192	11042	27930	104227	72054	77164	32173	2.40
D 2	-41.5	38192	12562	27930	104227	72053	78684	32174	2.45
D 3	-41.5	38192	14082	27930	104227	72054	80204	32173	2.49
D 4	-41.5	38192	15222	27930	104227	72053	81344	32174	2.53
D 5	-41.5	38192	17122	27930	104227	72053	83244	32174	2.59
D 6	-41.5	38192	19022	27930	104227	72053	85144	32174	2.65
D 7	-41.5	38192	20922	27930	104227	72053	87044	32174	2.71
E 1	-57.0	64421	23641	84903	187685	145441	172965	42244	4.09
E 2	-57.0	64421	25961	84903	187685	145441	175285	42244	4.15
E 3	-57.0	64421	28281	84903	187685	145441	177605	42244	4.20
E 4	-57.0	64421	29441	84903	187685	145441	178765	42244	4.23
E 5	-57.0	64421	32341	84902	187685	145440	181664	42245	4.30
E 6	-57.0	64421	35241	84903	187685	145441	184565	42244	4.37
E 7	-57.0	64421	38141	84902	187685	145440	187464	42245	4.44

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	TOTAL UNIT WEIGHT P.C.F. VERT. 2	TOTAL UNIT WEIGHT P.C.F. VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	CENTER OF STRATUM VERT. 2	CENTER OF STRATUM VERT. 3	BOTTOM OF STRATUM VERT. 1	BOTTOM OF STRATUM VERT. 2	BOTTOM OF STRATUM VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	117	117	117	760	760	760	760	760	760	0
3	CH	114	114	114	475	500	475	475	500	475	0
4	CH	98	98	98	380	400	380	380	400	380	0
5	SM	122	122	122	0	0	0	0	0	0	30
6	CH	112	112	112	580	715	580	580	715	580	0
7	CH	112	112	112	650	788	650	720	860	720	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 25 Sta 33+00 to Sta 37+00
Flood Side Stability Analysis
Case: 0-Case F/S Global Stability
March 2012

Lake Pontchartrain, LA & vicinity
Hurricane Protection Project
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 26-OCT-11



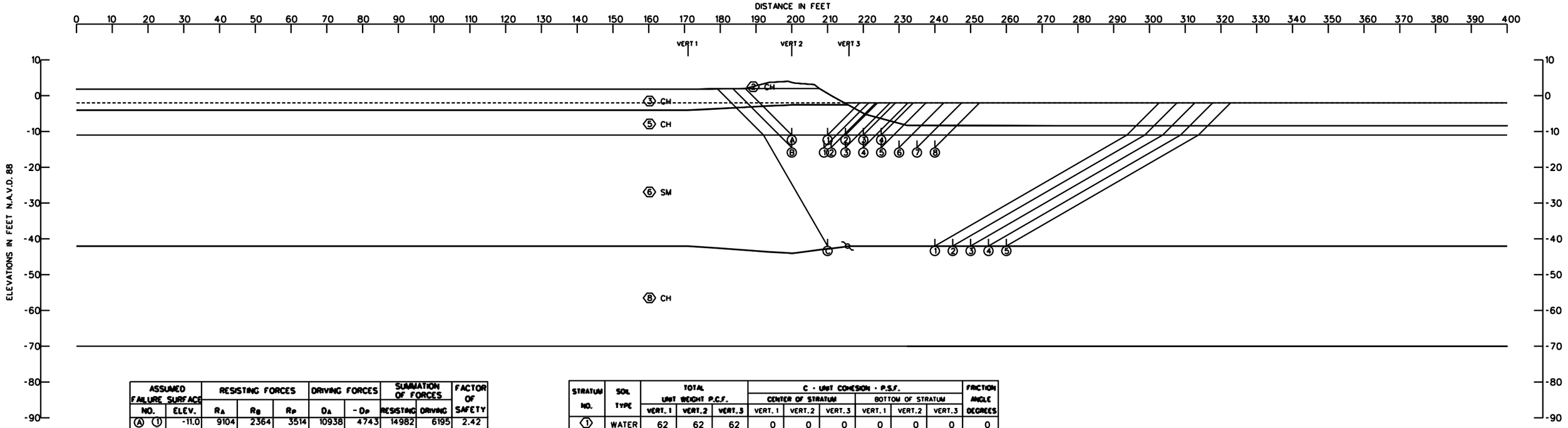
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-11.0	9104	2364	3514	10938	4743	14982	6195	2.42
Ⓐ ②	-11.0	9104	3541	2696	10938	3597	15341	7341	2.09
Ⓐ ③	-11.0	9104	4716	2204	10938	3121	16024	7817	2.05
Ⓐ ④	-11.0	9104	5891	1712	10938	2885	16707	8053	2.07
Ⓑ ①	-14.5	11757	2771	5367	16351	8785	19895	7566	2.63
Ⓑ ②	-14.5	11757	3375	4970	16351	8004	20102	8347	2.41
Ⓑ ③	-14.5	11757	4568	4506	16351	7007	20831	9344	2.23
Ⓑ ④	-14.5	11757	6044	3952	16351	6374	21753	9977	2.18
Ⓑ ⑤	-14.5	11757	7519	3397	16351	5982	22673	10369	2.19
Ⓑ ⑥	-14.5	11757	8994	3281	16351	5720	24032	10631	2.26
Ⓑ ⑦	-14.5	11757	10469	3275	16351	5690	25501	10661	2.39
Ⓑ ⑧	-14.5	11757	11944	3269	16351	5687	26970	10664	2.53
Ⓒ ①	-42.0	48555	19489	65438	114571	82170	133482	32401	4.12
Ⓒ ②	-42.0	48555	21989	65420	114571	82161	135964	32410	4.20
Ⓒ ③	-42.0	48555	24489	65403	114571	82153	138447	32418	4.27
Ⓒ ④	-42.0	48555	26989	65390	114571	82146	140934	32425	4.35
Ⓒ ⑤	-42.0	48555	29489	65379	114571	82140	143423	32431	4.42

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	DEGREES
①	WATER	62	62	62	0	0	0	0	0	0	0
②	CH	110	110	110	600	600	600	600	600	600	0
③	CH	105	110	105	600	500	600	600	500	600	0
④	CH	105	103	105	235	237	235	235	237	235	0
⑤	CH	105	103	105	265	275	265	295	313	295	0
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	CH	109	110	109	500	640	500	500	640	500	0
⑧	CH	109	110	109	643	775	643	785	910	785	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 26A Sta 37+00 to Sta 47+00
Flood Side Stability Analysis
Case: O-Case F/S Global Stability
March 2012

Lake Pontchartrain, LA & vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 19-OCT-11



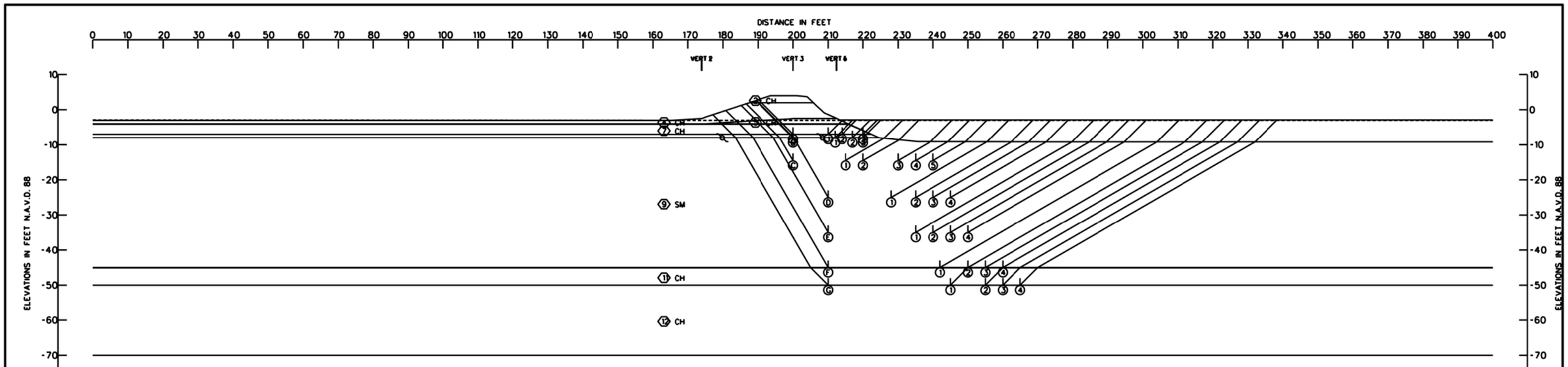
ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-11.0	9104	2364	3514	10938	4743	14982	6195	2.42
A	2	-11.0	9104	3541	2696	10938	3597	15341	7341	2.09
A	3	-11.0	9104	4716	2204	10938	3121	16024	7817	2.05
A	4	-11.0	9104	5891	1712	10938	2885	16707	8053	2.07
B	1	-14.5	11757	2771	5367	16351	8785	19895	7566	2.63
B	2	-14.5	11757	3375	4970	16351	8004	20102	8347	2.41
B	3	-14.5	11757	4568	4506	16351	7007	20831	9344	2.23
B	4	-14.5	11757	6044	3952	16351	6374	21753	9977	2.18
B	5	-14.5	11757	7519	3397	16351	5982	22673	10369	2.19
B	6	-14.5	11757	8994	3281	16351	5720	24032	10631	2.26
B	7	-14.5	11757	10469	3275	16351	5690	25501	10661	2.39
B	8	-14.5	11757	11944	3269	16351	5687	26970	10664	2.53
C	1	-42.0	48555	19489	65438	114571	82170	133482	32401	4.12
C	2	-42.0	48555	21989	65420	114571	82161	135964	32410	4.20
C	3	-42.0	48555	24489	65403	114571	82153	138447	32418	4.27
C	4	-42.0	48555	26989	65390	114571	82146	140934	32425	4.35
C	5	-42.0	48555	29489	65379	114571	82140	143423	32431	4.42

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	110	110	110	600	600	600	600	600	600	0
3	CH	105	110	105	600	500	600	600	500	600	0
4	CH	105	103	105	235	237	235	235	237	235	0
5	CH	105	103	105	265	275	265	295	313	295	0
6	SM	122	122	122	0	0	0	0	0	0	30
7	CH	109	110	109	500	640	500	500	640	500	0
8	CH	109	110	109	643	775	643	785	910	785	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 26B Sta 47+00 to Sta 48+50
Flood Side Stability Analysis
Case: O-Case F/S Global Stability
March 2012

Lake Pontchartrain, LA & vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 20-OCT-11



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	O_A	$-O_P$	RESISTING	DRIVING	
Ⓐ ①	-7.0	5851	2745	2107	6350	1142	10703	5208	2.06
Ⓐ ②	-7.0	5851	3808	1314	6350	735	10973	5615	1.95
Ⓐ ③	-7.0	5851	5398	375	6350	542	11624	5808	2.00
Ⓑ ①	-8.0	6101	3163	2001	7449	1305	11265	6144	1.83
Ⓑ ②	-8.0	6101	3736	1218	7449	983	11055	6466	1.71
Ⓑ ③	-8.0	6101	3940	748	7449	872	10789	6577	1.64
Ⓒ ①	-14.5	10216	8530	3548	17648	5938	22294	11710	1.90
Ⓒ ②	-14.5	10216	10042	2662	17648	5497	22920	12151	1.89
Ⓒ ③	-14.5	10216	12363	1899	17648	5119	24478	12529	1.95
Ⓒ ④	-14.5	10216	13359	1790	17648	5064	25365	12584	2.02
Ⓒ ⑤	-14.5	10216	14302	1781	17648	5060	26299	12588	2.09
Ⓓ ①	-25.0	20519	11781	15381	43360	22852	47681	20508	2.33
Ⓓ ②	-25.0	20519	15725	15159	43360	22742	51403	20618	2.49
Ⓓ ③	-25.0	20519	18472	15136	43360	22730	54127	20630	2.62
Ⓓ ④	-25.0	20519	21216	15113	43360	22718	56848	20642	2.75
Ⓔ ①	-35.0	34485	24313	40038	81791	52056	98836	29735	3.32
Ⓔ ②	-35.0	34485	28777	40005	81791	52040	103267	29751	3.47
Ⓔ ③	-35.0	34485	33239	39977	81791	52025	107701	29766	3.62
Ⓔ ④	-35.0	34485	37699	39952	81791	52013	112136	29778	3.77
Ⓕ ①	-45.0	52382	19856	76755	131199	93540	148993	37659	3.96

ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	O_A	$-O_P$	RESISTING	DRIVING	
Ⓕ ②	-45.0	52382	24816	76713	131199	93519	153911	37680	4.08
Ⓕ ③	-45.0	52382	27916	76693	131199	93509	156991	37690	4.17
Ⓕ ④	-45.0	52382	31016	76676	131199	93500	160074	37699	4.25
Ⓖ ①	-50.0	59192	23675	83188	159461	118740	166055	40721	4.08
Ⓖ ②	-50.0	59192	30435	83151	159461	118715	172778	40746	4.24
Ⓖ ③	-50.0	59192	33815	83139	159461	118705	176146	40756	4.32
Ⓖ ④	-50.0	59192	37195	83131	159461	118697	179518	40764	4.40

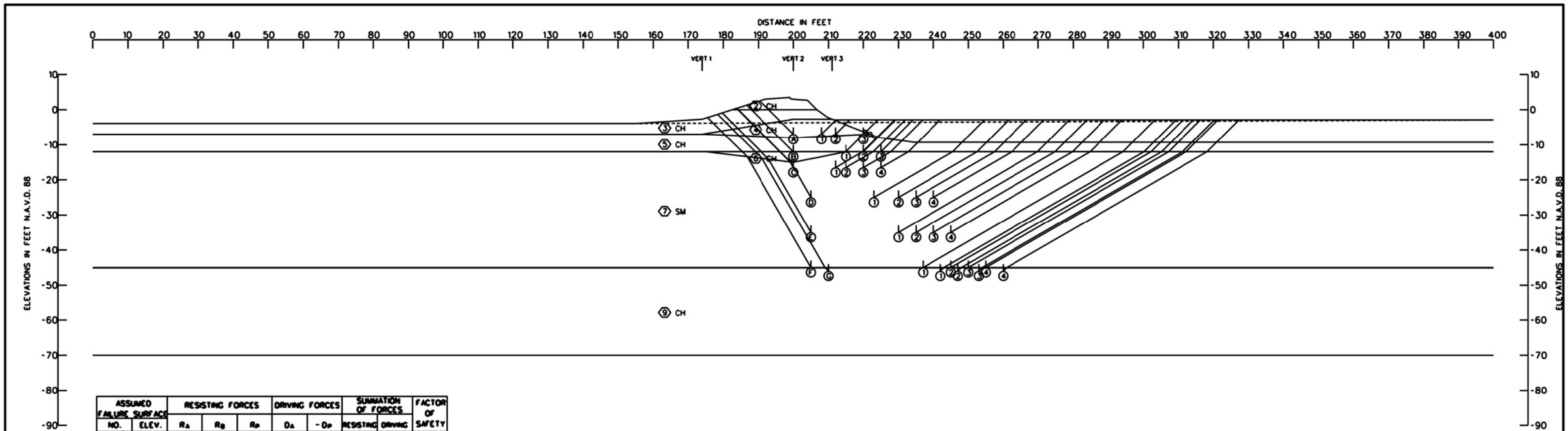
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.					C - UNIT COHESION - P.S.F.										FRICTION ANGLE DEGREES
							CENTER OF STRATUM					BOTTOM OF STRATUM					
		VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	
①	WATER	62	62.5	62	62	62	0	0	0	0	0	0	0	0	0	0	0
②	CH	111	111	111	111	111	600	600	600	600	600	600	600	600	600	600	0
③	CH	105	111	111	111	105	400	180	180	180	400	400	180	180	180	400	0
④	CH	105	111	111	111	105	400	248	248	248	400	400	315	315	315	400	0
⑤	CH	103	103	103	103	103	350	350	350	350	350	350	350	350	350	350	0
⑥	CH	105	105	103	105	105	235	235	250	235	235	235	235	250	235	235	0
⑦	CH	105	105	103	105	105	251	251	265	251	251	265	265	281	265	265	0
⑧	CH	99	99	103	99	99	265	265	281	265	265	275	275	290	275	275	0
⑨	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
⑩	CH	107	107	110	107	107	620	620	693	620	620	620	620	693	620	620	0
⑪	CH	112	112	110	112	112	648	648	719	648	648	676	676	745	676	676	0
⑫	CH	112	112	110	112	112	788	788	850	788	788	900	900	955	900	900	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 27 Sta. 48+50 to Sta. 58+50
Flood Side Stability Analysis
Case: 0-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 30-JAN-12

PLATE:



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES O_A	$-O_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-7.0	11218	2080	2057	5360	1013	15355	4347	3.53
A	2	-7.0	11218	3120	1465	5360	655	15803	4705	3.36
A	3	-7.0	11218	5173	280	5360	529	16671	4831	3.45
B	1	-12.0	11829	3757	2733	10899	3251	18319	7648	2.40
B	2	-12.0	11829	4982	2022	10899	3018	18833	7881	2.39
B	3	-12.0	11829	6207	1719	10899	2847	19755	8052	2.45
C	1	-16.5	12789	6149	5812	17592	7889	24750	9703	2.55
C	2	-16.5	12789	7135	5387	17592	7650	25311	9942	2.55
C	3	-16.5	12789	8693	4641	17592	7332	26123	10260	2.55
C	4	-16.5	12789	10107	4082	17592	7102	26978	10490	2.57
D	1	-25.0	20489	11645	15488	38164	21928	47622	16236	2.93
D	2	-25.0	20489	15526	15105	38164	21760	51120	16404	3.12
D	3	-25.0	20489	18201	15014	38164	21731	53704	16433	3.27
D	4	-25.0	20489	20844	14981	38164	21731	56314	16433	3.43
E	1	-35.0	31712	24114	39244	72268	50412	95070	21856	4.35
E	2	-35.0	31712	28507	39127	72268	50383	99346	21885	4.54
E	3	-35.0	31712	32868	39069	72268	50383	103649	21885	4.74
E	4	-35.0	31712	37225	39010	72268	50383	107947	21885	4.93
F	1	-45.0	46945	21817	75019	117923	91236	143781	26687	5.39
F	2	-45.0	46945	27257	74883	117923	91236	149085	26687	5.59

ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES O_A	$-O_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
F	3	-45.0	46945	30657	74799	117923	91235	152401	26688	5.71
F	4	-45.0	46945	34057	74714	117923	91235	155716	26688	5.83
G	1	-46.0	48285	30722	76529	122380	95987	155536	26393	5.89
G	2	-46.0	48285	35522	76445	122380	95987	160252	26393	6.07
G	3	-46.0	48285	41282	76343	122380	95987	165910	26393	6.29
G	4	-46.0	48285	48002	76225	122380	95986	172512	26394	6.54

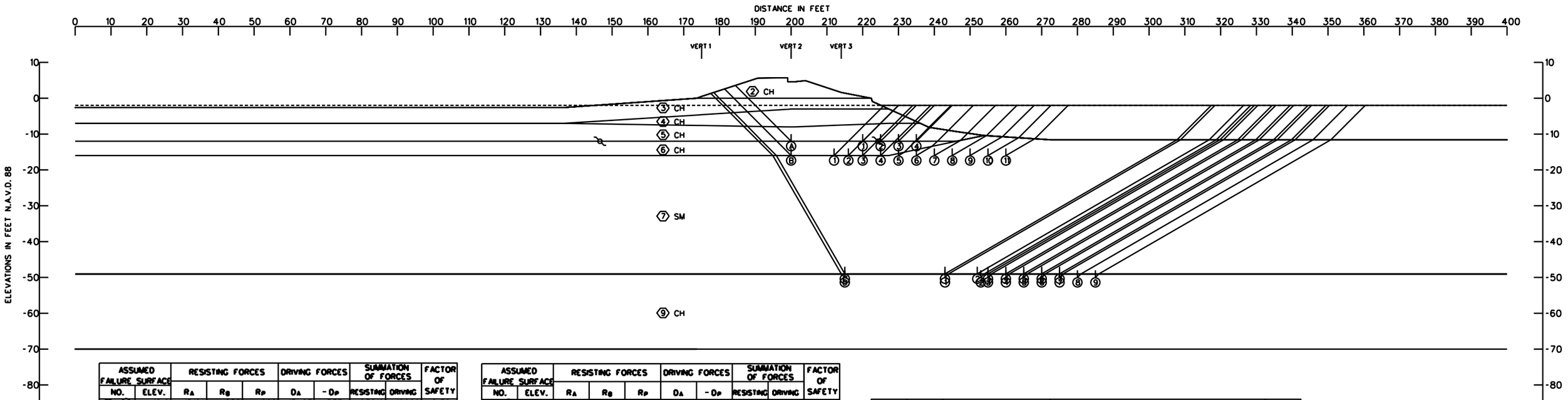
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	111	111	111	850	850	850	850	850	850	0
3	CH	100	103	100	400	850	400	400	850	400	0
4	CH	86	86	86	260	260	260	260	260	260	0
5	CH	100	97	100	245	260	245	245	260	245	0
6	CH	100	89	100	245	260	245	245	260	245	0
7	SM	122	122	122	0	0	0	0	0	0	30
8	CH	112	106	112	680	715	680	680	715	680	0
9	CH	112	106	112	820	863	820	960	1010	960	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 2B Sta. 58+50 to Sta. 68+12
Flood Side Stability Analysis
Case: D-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 30-JAN-12

PLATE:



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-12.0	15121	4680	4009	15463	5374	23810	10089	2.36
Ⓐ ②	-12.0	15121	5774	3190	15463	4276	24085	11187	2.15
Ⓐ ③	-12.0	15121	6664	2378	15463	3842	24163	11621	2.08
Ⓐ ④	-12.0	15121	7348	1693	15463	3509	24162	11954	2.02
Ⓑ ①	-16.0	15111	7744	6634	22247	12913	29489	9334	3.16
Ⓑ ②	-16.0	15111	9781	5769	22247	11229	30661	11018	2.78
Ⓑ ③	-16.0	15111	11602	5112	22247	9769	31825	12478	2.55
Ⓑ ④	-16.0	15111	13446	4300	22247	8480	32857	13767	2.39
Ⓑ ⑤	-16.0	15111	14778	3796	22247	7778	33685	14469	2.33
Ⓑ ⑥	-16.0	15111	15965	3466	22247	7298	34542	14949	2.31
Ⓑ ⑦	-16.0	15111	17010	2738	22247	7127	34859	15120	2.31
Ⓑ ⑧	-16.0	15111	18002	1900	22247	7071	35013	15176	2.31
Ⓑ ⑨	-16.0	15111	18980	1798	22247	7020	35889	15227	2.36
Ⓑ ⑩	-16.0	15111	19942	1627	22247	6934	36680	15313	2.40
Ⓑ ⑪	-16.0	15111	20861	1442	22247	6841	37414	15406	2.43
Ⓒ ①	-49.0	58974	15232	84883	152750	111468	159089	41282	3.85
Ⓒ ②	-49.0	58974	20128	84074	152750	111063	163176	41687	3.91
Ⓒ ③	-49.0	58974	21760	83827	152750	110940	164561	41810	3.94
Ⓒ ④	-49.0	58974	24480	83494	152750	110773	166948	41977	3.98
Ⓒ ⑤	-49.0	58974	27200	83272	152750	110662	169446	42088	4.03

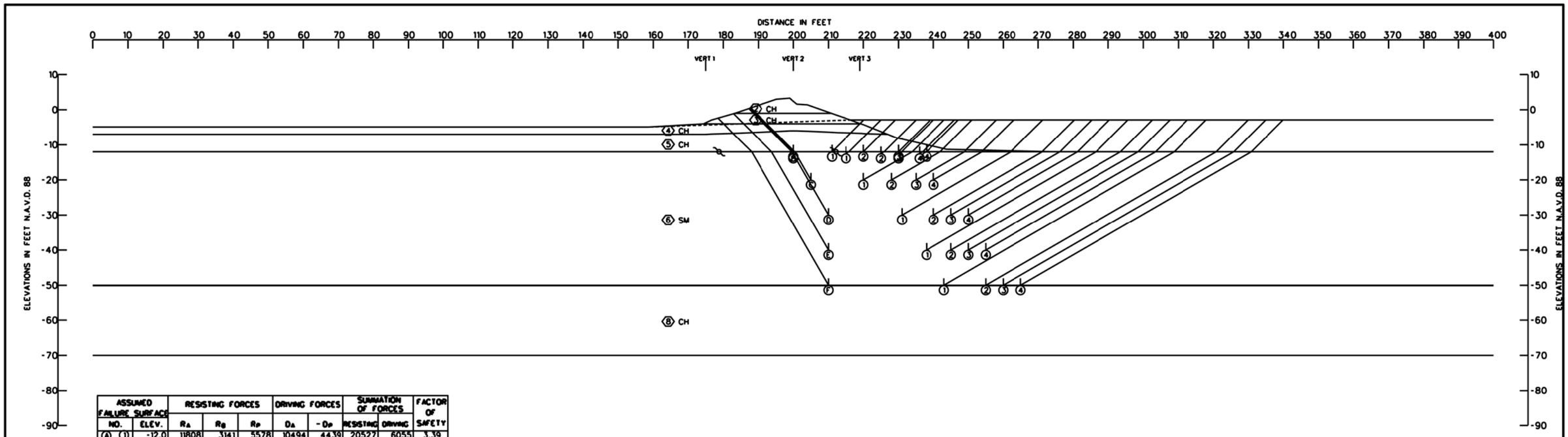
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓒ ⑥	-49.0	58974	29920	83160	152750	110607	172054	42143	4.08
Ⓒ ⑦	-49.0	58974	32640	83146	152750	110599	174760	42151	4.15
Ⓓ ①	-50.0	60191	21644	86083	158815	116719	167918	42096	3.99
Ⓓ ②	-50.0	60191	29374	85201	158815	116269	174766	42546	4.11
Ⓓ ③	-50.0	60191	30920	85046	158815	116185	176157	42630	4.13
Ⓓ ④	-50.0	60191	34785	84735	158815	116010	179711	42805	4.20
Ⓓ ⑤	-50.0	60191	38650	84536	158815	115892	183377	42923	4.27
Ⓓ ⑥	-50.0	60191	42515	84446	158815	115827	187152	42988	4.35
Ⓓ ⑦	-50.0	60191	46380	84441	158815	115817	191012	42998	4.44
Ⓓ ⑧	-50.0	60191	50245	84441	158815	115817	194877	42998	4.53
Ⓓ ⑨	-50.0	60191	54110	84441	158815	115817	198742	42998	4.62

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	CH	114	114	114	850	850	850	850	850	850	0
③	CH	100	103	100	400	850	400	400	850	400	0
④	CH	93	93	93	260	260	260	260	260	260	0
⑤	CH	100	97	100	220	260	220	220	260	220	0
⑥	CH	100	90	100	220	260	220	220	260	220	0
⑦	SM	122	122	122	0	0	0	0	0	0	30
⑧	CH	112	106	113	544	900	544	544	900	544	0
⑨	CH	112	106	112	659	900	659	773	900	773	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 29 Sta 69+09 to Sta 70+50
Flood Side Stability Analysis
Case: O-Case F/S Global Stability
March 2012

Lake Pontchartrain, LA & vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 26-OCT-11



ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
A ①	-12.0	11808	3141	5578	10494	4439	20527	6055	3.39
A ②	-12.0	11808	4947	3010	10494	3265	19765	7229	2.73
A ③	-12.0	11808	5994	1571	10494	2775	19373	7719	2.51
A ④	-12.0	11808	6420	825	10494	2637	19053	7857	2.42
B ①	-12.5	11999	5873	4487	11183	4068	22359	7115	3.14
B ②	-12.5	11999	7485	2146	11183	3302	21630	7881	2.74
B ③	-12.5	11999	8003	1623	11183	3115	21625	8068	2.68
B ④	-12.5	11999	8450	1020	11183	2988	21469	8195	2.62
C ①	-20.0	17660	8155	7590	25403	12437	33405	12966	2.58
C ②	-20.0	17660	11250	5646	25403	11740	34556	13663	2.53
C ③	-20.0	17660	13622	4743	25403	11369	36025	14034	2.57
C ④	-20.0	17660	15189	4390	25403	11219	37239	14184	2.63
D ①	-30.0	27119	16226	20711	53548	33237	64056	20311	3.15
D ②	-30.0	27119	22214	19807	53548	32836	69140	20712	3.34
D ③	-30.0	27119	25396	19594	53548	32743	72109	20805	3.47
D ④	-30.0	27119	28541	19482	53548	32687	75142	20861	3.60
E ①	-40.0	40505	30531	47263	94858	66640	118299	28218	4.19
E ②	-40.0	40505	37420	46944	94858	66480	124869	28378	4.40
E ③	-40.0	40505	42282	46832	94858	66424	129619	28434	4.56
E ④	-40.0	40505	47134	46741	94858	66379	134380	28479	4.72

ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
F ①	-50.0	57830	18659	86245	146829	112444	162734	34385	4.73
F ②	-50.0	57830	25307	85990	146829	112316	169127	34513	4.90
F ③	-50.0	57830	28077	85921	146829	112281	171828	34548	4.97
F ④	-50.0	57830	30847	85873	146829	112257	174550	34572	5.05

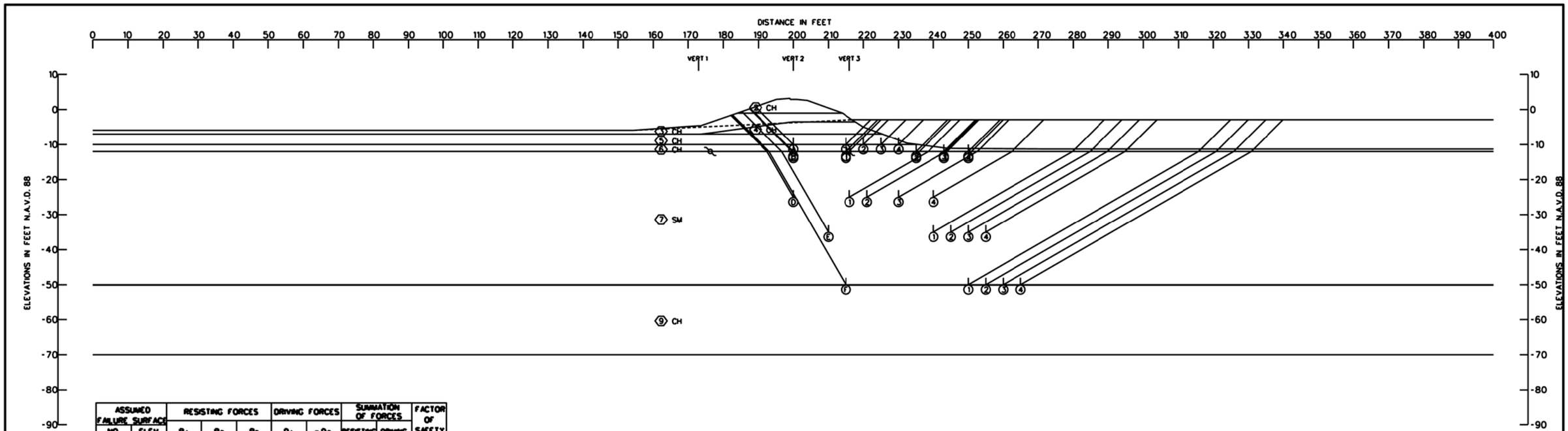
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	112	112	112	900	900	900	900	900	900	0
3	CH	103	103	103	600	600	600	600	600	600	0
4	CH	94	103	94	500	500	500	500	500	500	0
5	CH	94	96	94	250	300	250	250	300	250	0
6	SM	122	122	122	0	0	0	0	0	0	30
7	CH	107	107	107	554	731	554	554	731	554	0
8	CH	107	107	107	652	827	652	750	923	750	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 30 Sta. 74+13 to Sta. 76+90
Flood Side Stability Analysis
Case: 0-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 30-JAN-12

PLATE:



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES O_A	$-O_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-10.0	9660	3199	2189	7843	2272	15048	5571	2.70
A	2	-10.0	9660	4200	1581	7843	1860	15441	5983	2.58
A	3	-10.0	9660	5200	986	7843	1694	15846	6149	2.58
A	4	-10.0	9660	6200	404	7843	1593	16264	6250	2.60
B	1	-12.0	9767	3199	2746	10093	3654	15712	6439	2.44
B	2	-12.0	9767	5242	732	10093	2647	15741	7446	2.11
B	3	-12.0	9767	5478	369	10093	2600	15614	7493	2.08
B	4	-12.0	9767	5596	341	10093	2596	15704	7497	2.09
C	1	-12.5	9976	6705	3034	10762	3995	19715	6767	2.91
C	2	-12.5	9976	9106	774	10762	2973	19856	7789	2.55
C	3	-12.5	9976	9480	405	10762	2913	19861	7849	2.53
C	4	-12.5	9976	9718	381	10762	2909	20075	7853	2.56
D	1	-25.0	18887	13809	14583	36626	22289	47279	14337	3.30
D	2	-25.0	18887	16788	13097	36626	21642	48772	14984	3.25
D	3	-25.0	18887	21660	11663	36626	20934	52210	15692	3.33
D	4	-25.0	18887	26535	11119	36626	20675	56541	15951	3.54
E	1	-35.0	32420	27494	32978	73578	48553	92892	25025	3.71
E	2	-35.0	32420	31550	32898	73578	48513	96868	25065	3.86
E	3	-35.0	32420	35583	32863	73578	48496	100866	25082	4.02
E	4	-35.0	32420	39612	32836	73578	48482	104868	25096	4.18

ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES O_A	$-O_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
F	1	-50.0	56598	24511	87980	146639	113179	169089	33460	5.05
F	2	-50.0	56598	28011	87952	146639	113165	172561	33474	5.16
F	3	-50.0	56598	31511	87931	146639	113154	176040	33485	5.26
F	4	-50.0	56598	35011	87917	146639	113147	179526	33492	5.36

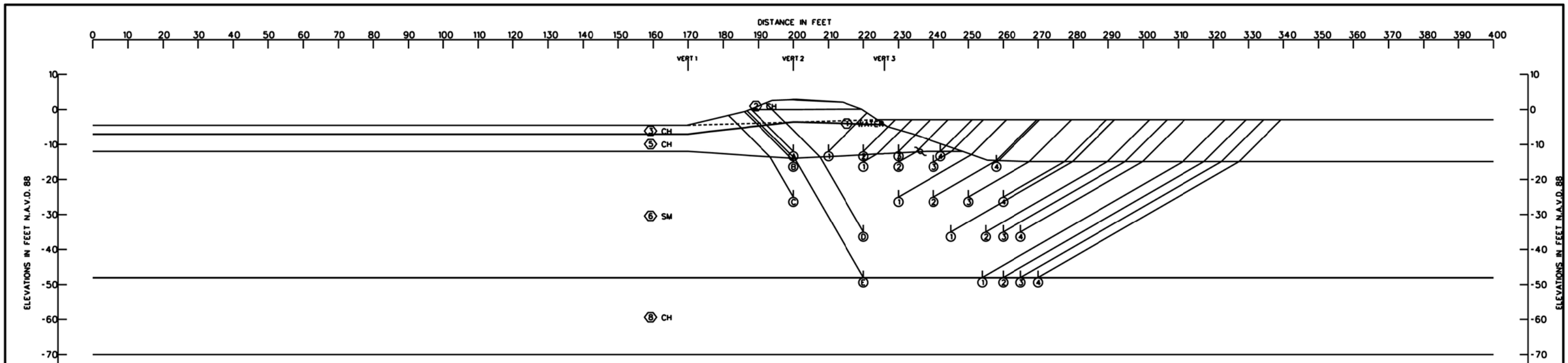
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	112	112	112	900	900	900	900	900	900	0
3	CH	96	103	96	550	600	550	550	600	550	0
4	CH	92	92	92	225	225	225	225	225	225	0
5	CH	96	92	96	215	225	215	215	225	215	0
6	CH	96	92	96	200	225	200	200	225	200	0
7	SM	122	122	122	0	0	0	0	0	0	30
8	CH	106	106	106	700	1050	700	700	1050	700	0
9	CH	106	106	106	800	1050	800	900	1050	900	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 31 Sta. 76+90 to Sta. 83+73
Flood Side Stability Analysis
Case I: D-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 27-JAN-12

PLATE:



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
A 1	-12.0	9612	3227	7603	9952	8385	20442	1567	13.05
A 2	-12.0	9612	6108	3594	9952	4178	19314	5774	3.34
A 3	-12.0	9612	8670	2382	9952	3067	20664	6885	3.00
A 4	-12.0	9612	10545	819	9952	2643	20976	7309	2.87
B 1	-15.0	10743	11426	5644	14012	6698	27813	7314	3.80
B 2	-15.0	10743	14127	3298	14012	5605	28168	8407	3.35
B 3	-15.0	10743	15998	1336	14012	5045	28077	8967	3.13
B 4	-15.0	10743	17534	8	14012	4573	28285	9439	3.00
C 1	-25.0	18993	24433	12038	35791	21277	55464	14514	3.82
C 2	-25.0	18993	29738	9014	35791	19763	57745	16028	3.60
C 3	-25.0	18993	34406	6704	35791	18608	60103	17183	3.50
C 4	-25.0	18993	38170	6102	35791	18306	63265	17485	3.62
D 1	-35.0	33604	22451	25679	73574	45032	81734	28542	2.86
D 2	-35.0	33604	30108	24159	73574	44272	87871	29302	3.00
D 3	-35.0	33604	33614	24045	73574	44215	91263	29359	3.11
D 4	-35.0	33604	37090	23992	73574	44189	94686	29385	3.22
E 1	-48.0	54249	22606	65324	137412	96217	142179	41195	3.45
E 2	-48.0	54249	26566	65160	137412	96135	145975	41277	3.54
E 3	-48.0	54249	29866	65108	137412	96109	149223	41303	3.61
E 4	-48.0	54249	33166	65103	137412	96107	152518	41305	3.69

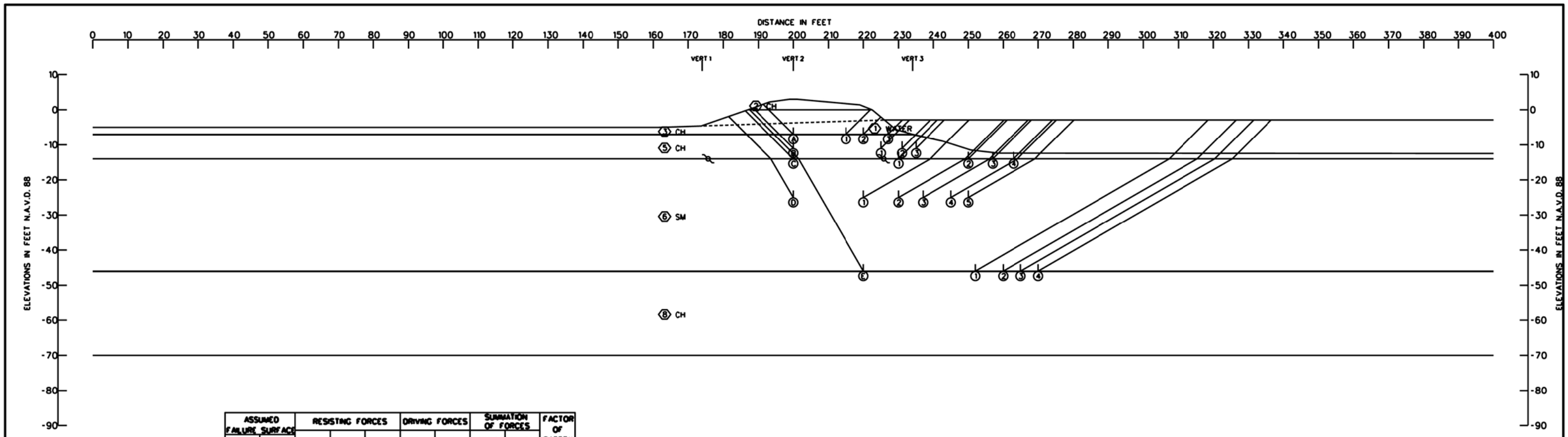
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	112	112	112	600	600	600	600	600	600	0
3	CH	85	105	85	500	600	500	500	600	500	0
4	CH	95	98	95	250	260	250	250	260	250	0
5	CH	95	98	95	250	300	250	250	340	250	0
6	SM	122	122	122	0	0	0	0	0	0	30
7	CH	106	106	106	660	900	660	660	900	660	0
8	CH	106	106	106	770	900	770	880	900	880	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 32 Sta. 84+41 to Sta. 90+00
Flood Side Stability Analysis
Case I Q-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 30-JAN-12

PLATE:



ASSUMED FAILURE SURFACE NO.	ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES O_A	$-O_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
Ⓐ ①	-7.0	10099	2967	7804	4765	3267	20870	1498	13.93
Ⓐ ②	-7.0	10099	3941	5283	4765	1951	19323	2814	6.87
Ⓐ ③	-7.0	10099	5293	1826	4765	597	17218	4168	4.13
Ⓑ ①	-11.0	10459	5936	2751	8876	2698	19146	6178	3.10
Ⓑ ②	-11.0	10459	7155	1466	8876	2330	19080	6546	2.91
Ⓑ ③	-11.0	10459	7925	1171	8876	2232	19555	6644	2.94
Ⓒ ①	-14.0	10731	6826	2466	12658	4652	20023	8016	2.50
Ⓒ ②	-14.0	10731	8839	879	12658	3940	20449	8728	2.34
Ⓒ ③	-14.0	10731	9114	608	12658	3889	20453	8779	2.33
Ⓒ ④	-14.0	10731	9287	606	12658	3884	20624	8784	2.35
Ⓓ ①	-25.0	19020	18909	16481	36200	22977	54410	13223	4.11
Ⓓ ②	-25.0	19020	25365	12016	36200	20917	56401	15283	3.69
Ⓓ ③	-25.0	19020	28925	10523	36200	20247	58468	15953	3.67
Ⓓ ④	-25.0	19020	32729	9395	36200	19691	61144	16509	3.70
Ⓓ ⑤	-25.0	19020	34936	9044	36200	19516	63000	16684	3.78
Ⓔ ①	-46.0	52277	19445	64740	127970	90155	136462	37815	3.61
Ⓔ ②	-46.0	52277	24245	64637	127970	90105	141159	37865	3.73
Ⓔ ③	-46.0	52277	27245	64628	127970	90101	144150	37869	3.81
Ⓔ ④	-46.0	52277	30245	64620	127970	90097	147142	37873	3.89

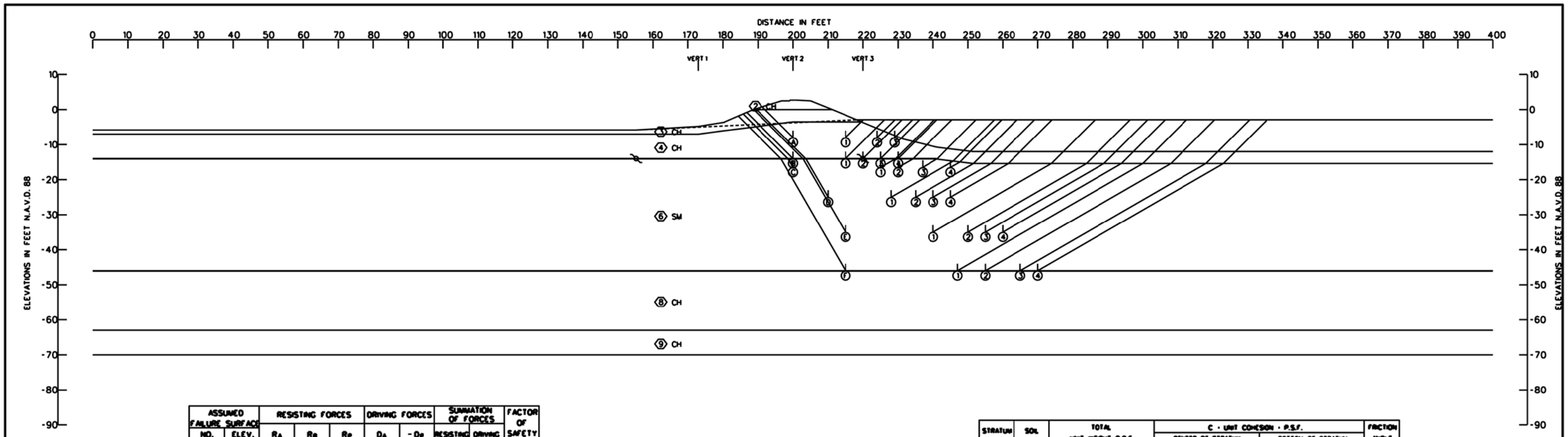
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
①	WATER	62	62	62	0	0	0	0	0	0	0
②	CH	112	112	112	600	600	600	600	600	600	0
③	CH	84	105	84	500	600	500	500	600	500	0
④	CH	94	104	94	190	200	190	190	200	190	0
⑤	CH	94	104	94	190	233	190	190	265	190	0
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	CH	106	106	106	600	685	600	600	685	600	0
⑧	CH	106	106	106	700	800	700	800	915	800	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 33 Sta. 90-00 to Sta. 93-00
Flood Side Stability Analysis
Case I: O-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 27-JAN-12

PLATE:



ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
A 1	-8.0	7632	3562	1904	5041	1379	13098	3662	3.58
A 2	-8.0	7632	5400	752	5041	891	13784	4150	3.32
A 3	-8.0	7632	6400	166	5041	815	14198	4226	3.36
B 1	-14.0	9021	3562	3537	11549	5666	16120	5883	2.74
B 2	-14.0	9021	4600	2917	11549	5034	16538	6515	2.54
B 3	-14.0	9021	5600	2333	11549	4603	16954	6946	2.44
B 4	-14.0	9021	6600	1917	11549	4298	17538	7251	2.42
C 1	-16.5	10422	11361	3486	15546	7019	25269	8527	2.96
C 2	-16.5	10422	12436	2813	15546	6690	25671	8856	2.90
C 3	-16.5	10422	13676	2123	15546	6394	26221	9152	2.86
C 4	-16.5	10422	14824	1715	15546	6187	26961	9359	2.88
D 1	-25.0	19130	10925	11112	37373	20368	41167	17005	2.42
D 2	-25.0	19130	14285	10030	37373	19772	43445	17601	2.47
D 3	-25.0	19130	16541	9428	37373	19471	45099	17902	2.52
D 4	-25.0	19130	18684	9053	37373	19284	46867	18089	2.59
E 1	-35.0	29656	21490	28924	69980	46157	80070	23823	3.36
E 2	-35.0	29656	29105	28386	69980	45888	87147	24092	3.62
E 3	-35.0	29656	32782	28378	69980	45883	90816	24097	3.77
E 4	-35.0	29656	36455	28378	69980	45884	94489	24096	3.92
F 1	-46.0	46950	19241	63647	121636	89368	129838	32268	4.02

ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
F 2	-46.0	46950	24041	63566	121636	89328	134557	32308	4.16
F 3	-46.0	46950	30041	63566	121636	89328	140557	32308	4.35
F 4	-46.0	46950	33041	63566	121636	89328	143557	32308	4.44

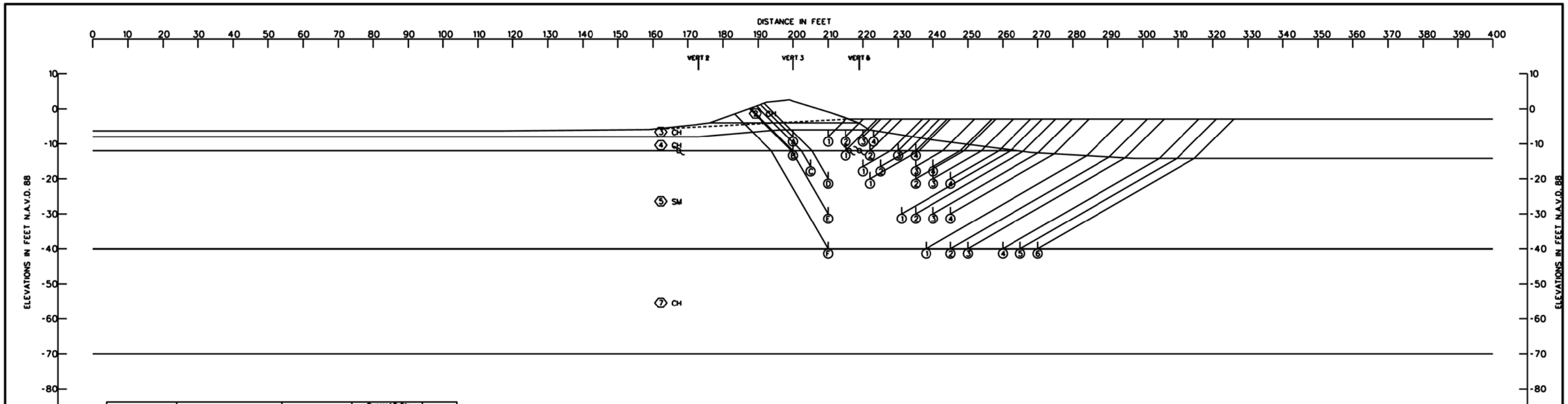
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	112	112	112	600	600	600	600	600	600	0
3	CH	84	98	84	500	600	500	500	600	500	0
4	CH	94	102	94	200	260	200	200	260	200	0
5	CH	94	102	94	200	300	200	200	340	200	0
6	SM	122	122	122	0	0	0	0	0	0	30
7	CH	107	107	107	600	665	600	600	665	600	0
8	CH	107	107	107	699	750	699	798	835	798	0
9	CH	122	122	122	839	870	839	880	905	880	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 34 Sta. 93+00 to Sta. 99+53
Flood Side Stability Analysis
Case I: D-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 30-JAN-12

PLATE:



ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
A 1	-8.0	7618	2419	3756	5439	1931	13793	3508	3.93
A 2	-8.0	7618	3381	2402	5439	1166	13401	4273	3.14
A 3	-8.0	7618	4181	591	5439	915	12390	4524	2.74
A 4	-8.0	7618	4631	468	5439	859	12717	4580	2.78
B 1	-12.0	8791	3381	2255	9647	3587	14427	6060	2.38
B 2	-12.0	8791	4418	1545	9647	3100	14754	6547	2.25
B 3	-12.0	8791	5241	1213	9647	2902	15245	6745	2.26
B 4	-12.0	8791	5655	1005	9647	2803	15451	6844	2.26
C 1	-16.5	12054	6129	4246	16940	7615	22429	9325	2.41
C 2	-16.5	12054	7486	3766	16940	7371	23306	9569	2.44
C 3	-16.5	12054	9937	2923	16940	6984	24914	9956	2.50
C 4	-16.5	12054	11046	2548	16940	6835	25648	10105	2.54
D 1	-20.0	14477	5593	7377	23006	12541	27447	10465	2.62
D 2	-20.0	14477	10403	5869	23006	11863	30749	11143	2.76
D 3	-20.0	14477	12113	5343	23006	11654	31933	11352	2.81
D 4	-20.0	14477	13755	4829	23006	11462	33061	11544	2.86
E 1	-30.0	23579	16193	22100	51589	33961	61872	17628	3.51
E 2	-30.0	23579	18991	21373	51589	33632	63943	17957	3.56
E 3	-30.0	23579	22418	20547	51589	33219	66544	18370	3.62
E 4	-30.0	23579	25778	19751	51589	32820	69108	18769	3.68

ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
F 1	-40.0	37132	11619	47082	91689	66548	95833	25141	3.81
F 2	-40.0	37132	14419	45518	91689	65766	97069	25923	3.74
F 3	-40.0	37132	16419	44443	91689	65228	97994	26461	3.70
F 4	-40.0	37132	20419	42483	91689	64248	100034	27441	3.65
F 5	-40.0	37132	22419	41683	91689	63847	101234	27842	3.64
F 6	-40.0	37132	24419	41059	91689	63536	102610	28153	3.64

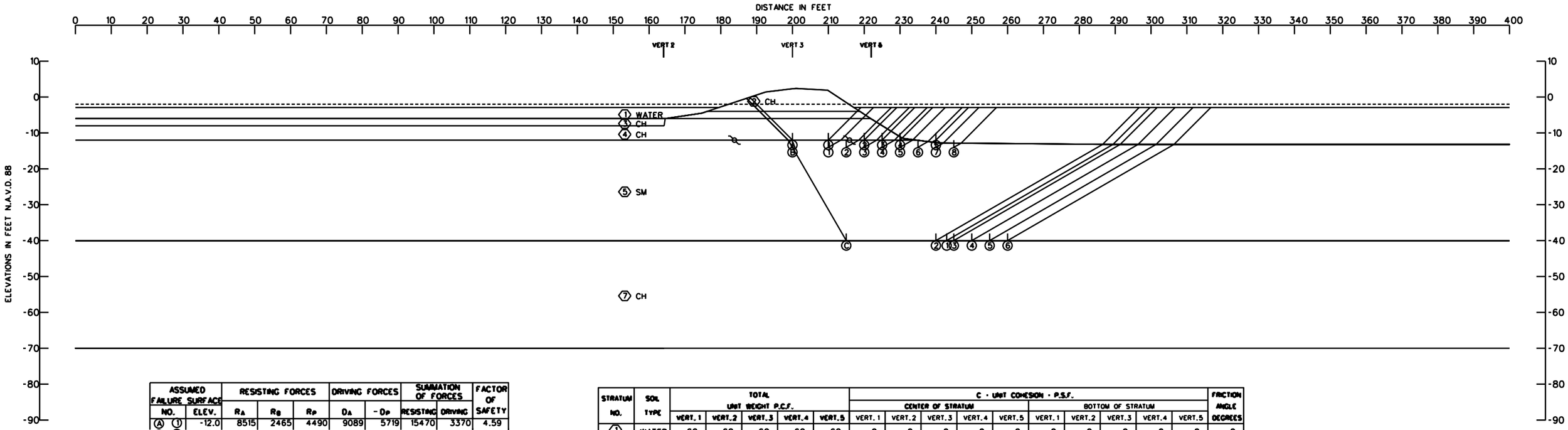
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	FRICTION ANGLE DEGREES
1	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
2	CH	110	110	110	110	110	450	450	450	450	450	450	450	450	450	450	0
3	CH	96	88	88	88	96	600	450	450	450	600	600	450	450	450	600	0
4	CH	96	96	88	96	96	150	150	275	150	150	150	150	275	150	150	0
5	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
6	CH	107	107	108	107	107	400	400	600	400	400	400	400	600	400	400	0
7	CH	107	107	108	107	107	550	550	750	550	550	700	700	900	700	700	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 35A Sta. 102+42 to Sta. 103+50
Flood Side Stability Analysis
Case: 0-case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 27-JAN-12

PLATE:



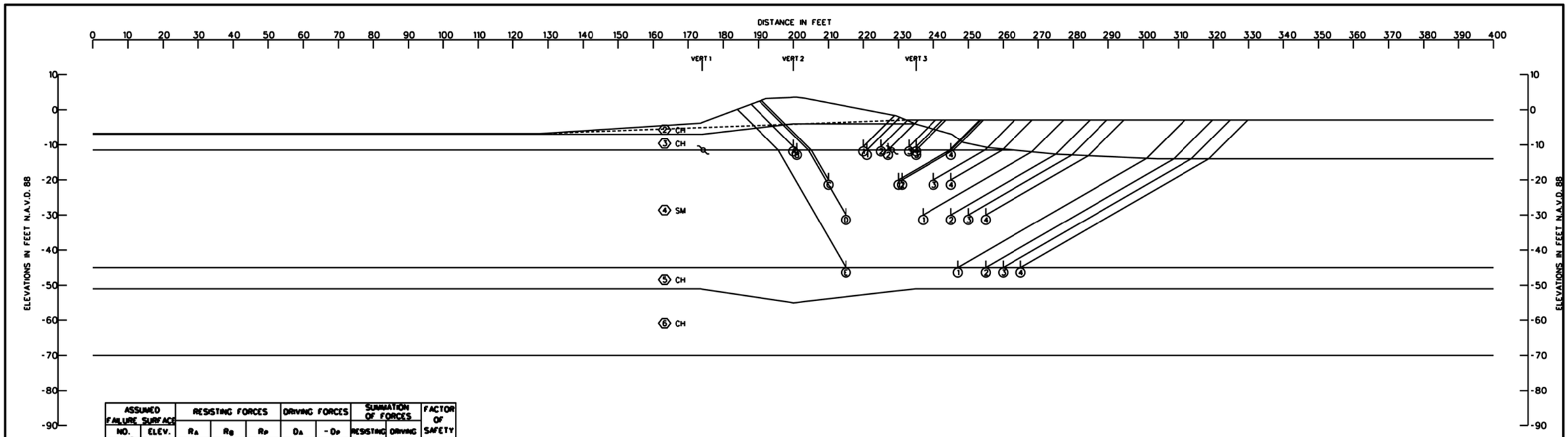
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-12.0	8515	2465	4490	9089	5719	15470	3370	4.59
Ⓐ ②	-12.0	8515	4178	1318	9089	3111	14011	5978	2.34
Ⓐ ③	-12.0	8515	4559	745	9089	2751	13819	6338	2.18
Ⓐ ④	-12.0	8515	4708	173	9089	2593	13396	6496	2.06
Ⓐ ⑤	-12.0	8515	5520	-185	9089	2591	13850	6498	2.13
Ⓑ ①	-14.0	9309	5119	5702	11809	6908	20130	4901	4.11
Ⓑ ②	-14.0	9309	7078	2883	11809	5275	19270	6534	2.95
Ⓑ ③	-14.0	9309	8133	1734	11809	4621	19176	7188	2.67
Ⓑ ④	-14.0	9309	8845	754	11809	4198	18908	7611	2.48
Ⓑ ⑤	-14.0	9309	9264	102	11809	3990	18675	7819	2.39
Ⓑ ⑥	-14.0	9309	9470	2	11809	3936	18781	7873	2.39
Ⓑ ⑦	-14.0	9309	9584	0	11809	3888	18893	7921	2.39
Ⓑ ⑧	-14.0	9309	9625	0	11809	3884	18934	7925	2.39
Ⓒ ①	-40.0	36877	11417	40263	93787	64646	88557	29141	3.04
Ⓒ ②	-40.0	36877	10217	40343	93787	64687	87437	29100	3.00
Ⓒ ③	-40.0	36877	12217	40211	93787	64620	89305	29167	3.06
Ⓒ ④	-40.0	36877	14217	40093	93787	64561	91187	29226	3.12
Ⓒ ⑤	-40.0	36877	16217	39989	93787	64509	93083	29278	3.18
Ⓒ ⑥	-40.0	36877	18217	39899	93787	64464	94993	29323	3.24

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.					C - UNIT COHESION - P.S.F.										FRICTION ANGLE DEGREES
							CENTER OF STRATUM					BOTTOM OF STRATUM					
		VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	
①	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
②	CH	110	110	110	110	110	450	450	450	450	450	450	450	450	450	450	0
③	CH	96	88	88	88	96	600	450	450	450	600	600	450	450	450	600	0
④	CH	96	96	88	96	96	150	150	275	150	150	150	150	275	150	150	0
⑤	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
⑥	CH	107	107	108	107	107	400	400	600	400	400	400	400	600	400	400	0
⑦	CH	107	107	108	107	107	550	550	750	550	550	700	700	900	700	700	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 35B
Sta 103+50 to Sta 114+66
Flood Side Stability Analysis
Case: O-Case F/S Global Stability
March 2012

Lake Pontchartrain, LA & vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 26-OCT-11



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_D	DRIVING FORCES O_A	$-O_D$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-10.5	9017	4571	4163	9965	4549	17751	5416	3.28
A	2	-10.5	9017	5580	3011	9965	3429	17608	6536	2.69
A	3	-10.5	9017	7083	1908	9965	2049	18008	7916	2.28
A	4	-10.5	9017	7437	1753	9965	1989	18207	7976	2.28
B	1	-11.5	9520	4528	4104	11485	5108	18152	6377	2.85
B	2	-11.5	9520	5720	2806	11485	3566	18046	7919	2.28
B	3	-11.5	9520	6701	2025	11485	2557	18246	8928	2.04
B	4	-11.5	9520	7099	960	11485	2382	17579	9103	1.93
C	1	-20.0	17775	12347	6942	28355	12164	37064	16191	2.29
C	2	-20.0	17775	12774	6591	28355	12050	37140	16305	2.28
C	3	-20.0	17775	15932	5184	28355	11602	38891	16753	2.32
C	4	-20.0	17775	17567	4709	28355	11440	40051	16915	2.37
D	1	-30.0	28191	18774	21169	57719	33530	68134	24189	2.82
D	2	-30.0	28191	24160	20097	57719	32994	72448	24725	2.93
D	3	-30.0	28191	27437	19452	57719	32671	75080	25048	3.00
D	4	-30.0	28191	30657	18846	57719	32368	77694	25351	3.06
E	1	-45.0	51207	22948	62963	126330	86863	137118	39467	3.47
E	2	-45.0	51207	28628	61416	126330	86089	141251	40241	3.51
E	3	-45.0	51207	32178	60522	126330	85642	143907	40688	3.54
E	4	-45.0	51207	35728	59672	126330	85217	146607	41113	3.57

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	CH	108	118	108	250	625	250	250	625	250	0
3	CH	74	90	74	175	250	175	175	250	175	0
4	SM	122	122	122	0	0	0	0	0	0	30
5	CH	103	107	103	710	750	710	710	750	710	0
6	CH	118	120	118	710	1000	710	710	1000	710	0

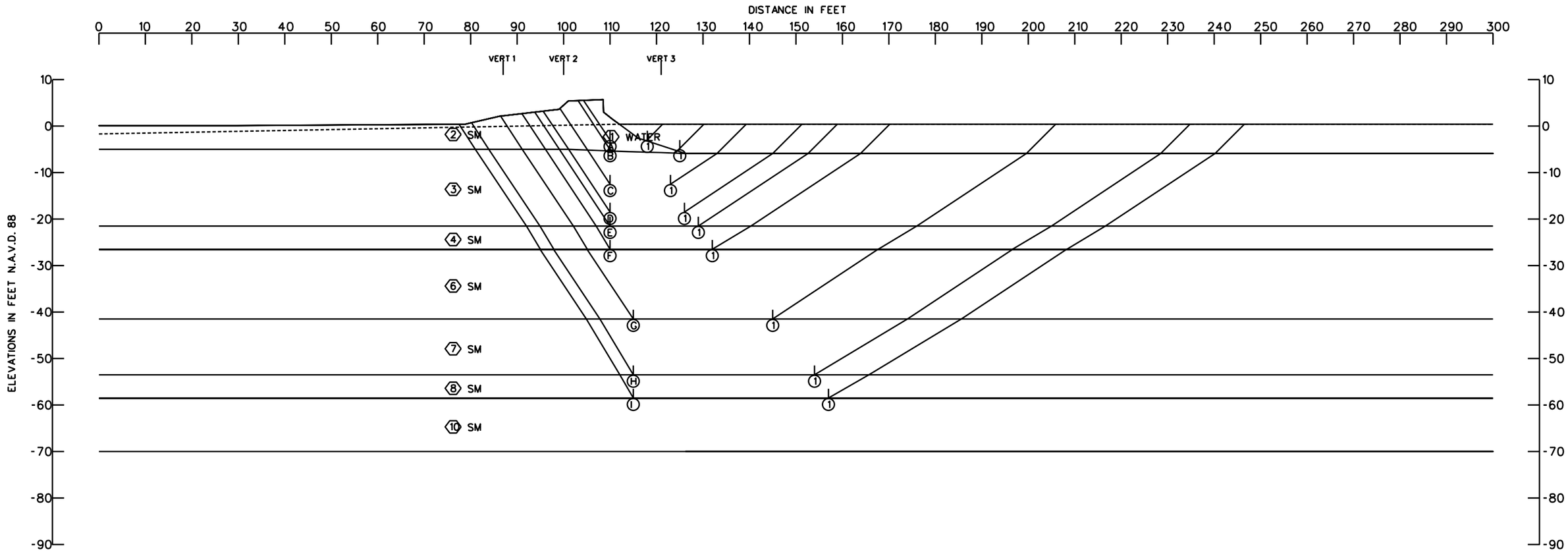
London Ave. Canal
Outfall Canal Reevaluation Report
Reach 36 Sta. 120-39 to Sta. 126-67
Flood Side Stability Analysis
Case I-Case F/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 30-JAN-12

PLATE:

APPENDIX P.3 METHOD OF PLANES (MOP) PROTECTED SIDE AND FLOOD SIDE S-CASE STABILITY ANALYSIS



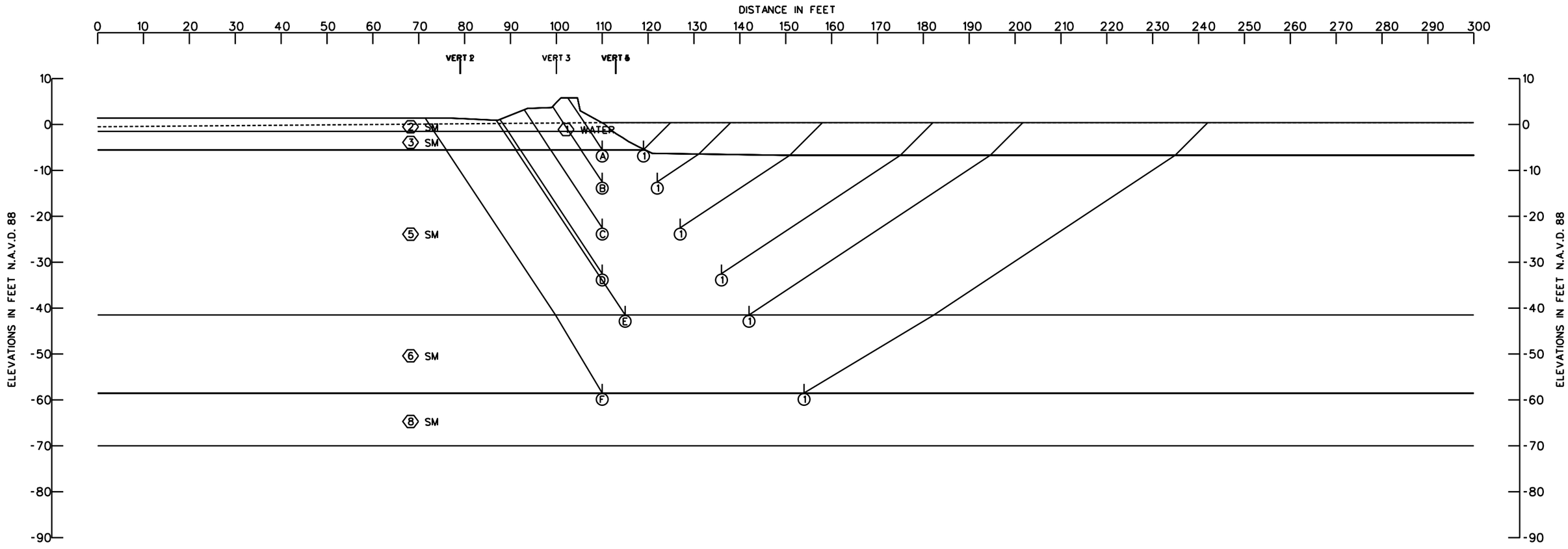
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-3.0	1793	416	0	3541	362	2209	3179	0.70
Ⓑ ①	-5.0	2600	920	12	5758	912	3532	4846	0.73
Ⓒ ①	-12.5	7023	2933	1427	17606	6311	11383	11295	1.01
Ⓓ ①	-18.5	10992	5362	4928	30544	15003	21282	15541	1.37
Ⓔ ①	-21.5	13294	7317	7556	38413	20877	28167	17536	1.61
Ⓕ ①	-26.5	18318	10824	15451	53729	32963	44593	20766	2.15
Ⓖ ①	-41.5	33629	21120	40935	112901	85082	95684	27819	3.44
Ⓗ ①	-53.5	52136	47775	82302	177623	144380	182213	33243	5.48
Ⓘ ①	-58.5	61789	46340	106537	209327	174123	214666	35204	6.10

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	118	116	118	0	0	0	0	0	0	23
③	WATER	111	112	111	0	0	0	0	0	0	23
④	SM	117	117	117	0	0	0	0	0	0	28
⑤	SM	102	101	102	0	0	0	0	0	0	23
⑥	SM	102	101	102	0	0	0	0	0	0	23
⑦	SM	117	117	117	0	0	0	0	0	0	28
⑧	SM	122	122	122	0	0	0	0	0	0	30
⑨	SM	112	112	112	0	0	0	0	0	0	23
⑩	SM	112	112	112	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 1 Sta 2+44 to Sta 10+00
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 30-JAN-12



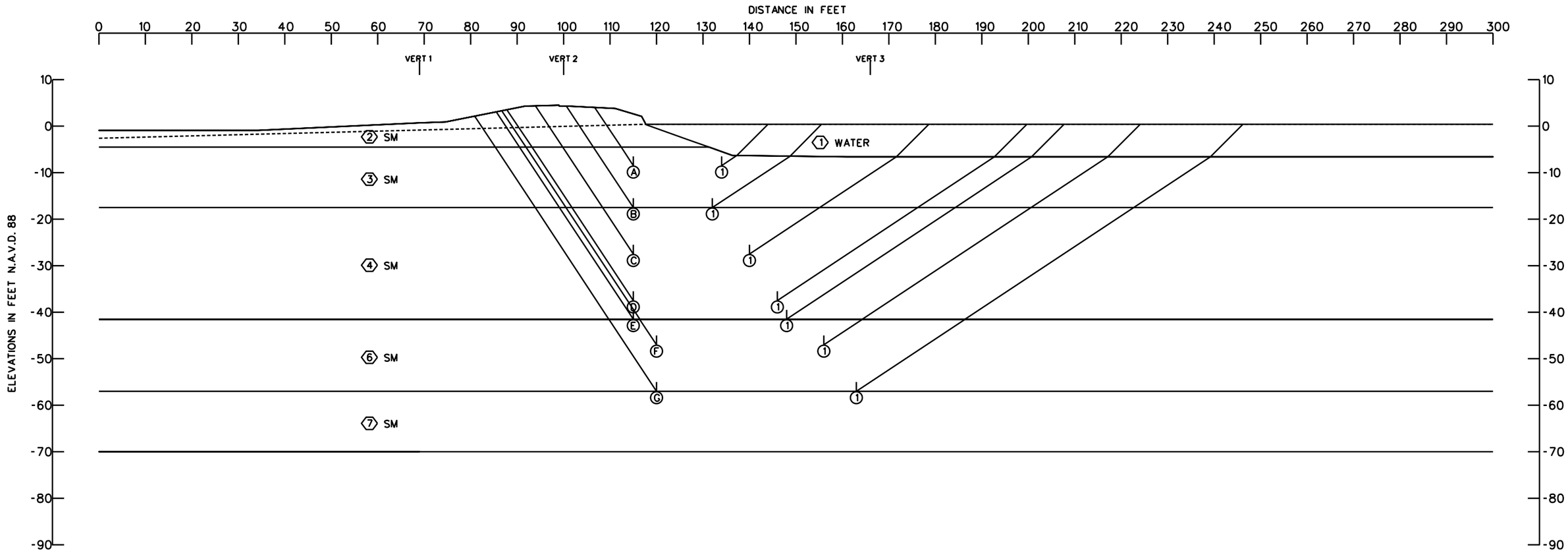
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-5.5	1510	556	0	3770	1086	2066	2684	0.77
Ⓑ ①	-12.5	5669	2429	1280	15261	6196	9378	9065	1.03
Ⓒ ①	-22.5	13155	6986	8710	39712	23176	28851	16536	1.74
Ⓓ ①	-32.5	22747	16169	22870	74125	51654	61786	22471	2.75
Ⓔ ①	-41.5	32513	21703	41533	112492	87242	95749	25250	3.79
Ⓕ ①	-58.5	64604	53035	111442	215629	180288	229081	35341	6.48

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.					C - UNIT COHESION - P.S.F.										FRICTION ANGLE
							CENTER OF STRATUM					BOTTOM OF STRATUM					
		VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	DEGREES
①	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
②	WATER	116	116	116	116	116	0	0	0	0	0	0	0	0	0	0	23
③	WATER	116	116	116	116	116	0	0	0	0	0	0	0	0	0	0	23
④	WATER	116	116	116	116	116	0	0	0	0	0	0	0	0	0	0	23
⑤	WATER	116	116	116	116	116	0	0	0	0	0	0	0	0	0	0	23
⑥	SM	117	117	117	117	117	0	0	0	0	0	0	0	0	0	0	28
⑦	SM	105	105	105	105	105	0	0	0	0	0	0	0	0	0	0	23
⑧	SM	105	105	105	105	105	0	0	0	0	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 2 Sta 10+00 to Sta 12+21
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 30-JAN-12



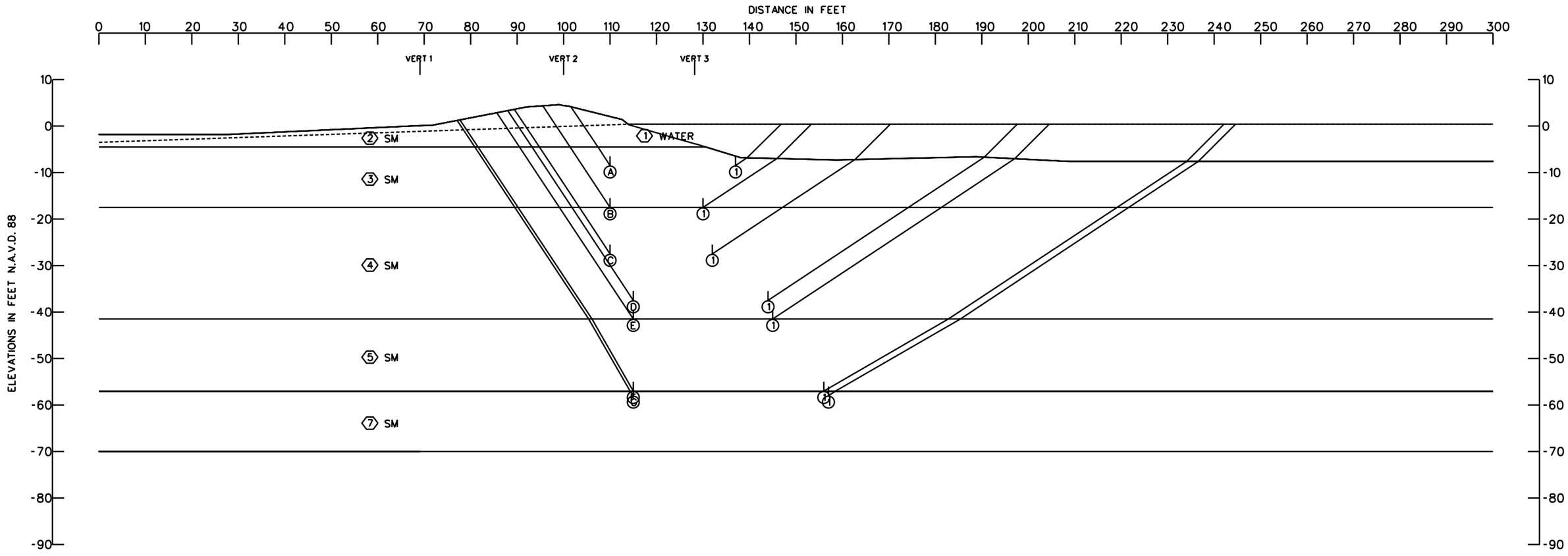
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-8.5	3429	2905	199	8500	2628	6533	5872	1.11
Ⓑ ①	-17.5	9314	6102	4237	26347	13314	19653	13033	1.51
Ⓒ ①	-27.5	18355	11897	13497	56470	34846	43749	21624	2.02
Ⓓ ①	-37.5	29229	18929	27460	96001	66294	75618	29707	2.55
Ⓔ ①	-41.5	33954	22004	34328	114203	81624	90286	32579	2.77
Ⓕ ①	-47.0	39874	27011	45323	140134	105466	112208	34668	3.24
Ⓖ ①	-57.0	54679	41058	70112	198701	157542	165849	41159	4.03

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	DEGREES
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	117	117	117	0	0	0	0	0	0	23
③	WATER	114	114	114	0	0	0	0	0	0	23
④	WATER	98	98	98	0	0	0	0	0	0	23
⑤	SM	122	122	122	0	0	0	0	0	0	30
⑥	SM	112	112	112	0	0	0	0	0	0	23
⑦	SM	112	112	112	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 3 Sta 21+00 to Sta 33+00
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 30-JAN-12



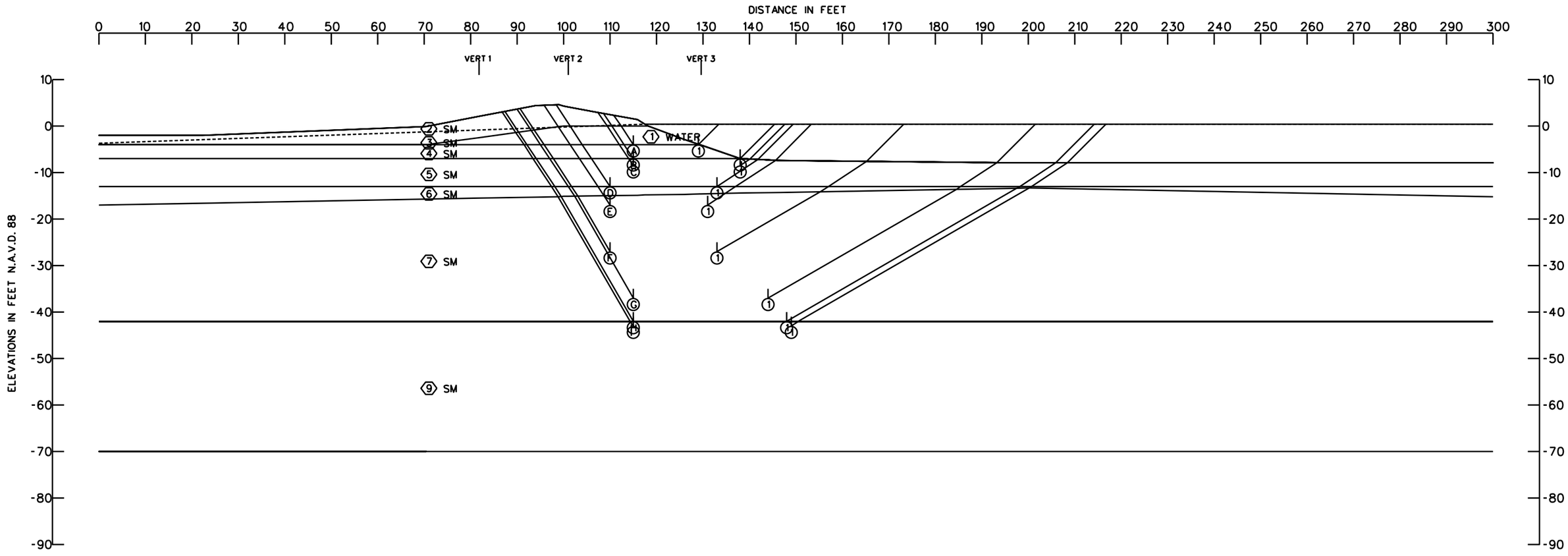
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-8.5	3047	3802	101	7772	2551	6950	5221	1.33
Ⓑ ①	-17.5	9139	7263	4178	25911	13268	20580	12643	1.63
Ⓒ ①	-27.5	18029	11141	13047	55646	34494	42217	21152	2.00
Ⓓ ①	-37.5	27261	17293	26599	92472	65623	71153	26849	2.65
Ⓔ ①	-41.5	31951	19633	33419	110578	80915	85003	29663	2.87
Ⓕ ①	-57.0	57658	42159	90052	196549	157123	189869	39426	4.82
Ⓖ ①	-58.0	59360	44019	93019	203054	163031	196398	40023	4.91

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	DEGREES
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	117	117	117	0	0	0	0	0	0	23
③	WATER	114	114	114	0	0	0	0	0	0	23
④	WATER	98	98	98	0	0	0	0	0	0	23
⑤	SM	122	122	122	0	0	0	0	0	0	30
⑥	SM	112	112	112	0	0	0	0	0	0	23
⑦	SM	112	112	112	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 4 Sta 33+00 to Sta 37+00
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 31-JAN-12



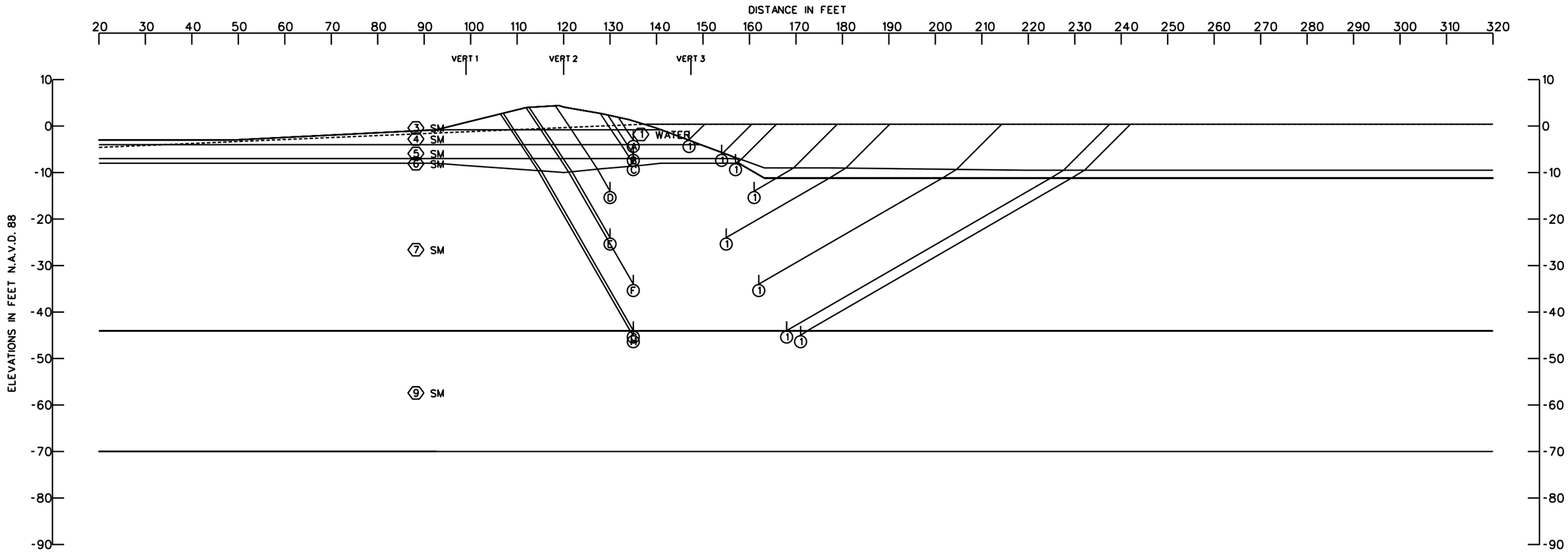
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-4.0	739	756	0	1883	604	1495	1279	1.17
Ⓑ ①	-7.0	1587	1893	0	4458	1708	3480	2750	1.27
Ⓒ ①	-8.5	2128	2614	65	6160	2523	4807	3637	1.32
Ⓓ ①	-13.0	5212	5774	1303	14548	6624	12289	7924	1.55
Ⓔ ①	-17.0	7822	7194	3327	22892	12052	18343	10840	1.69
Ⓕ ①	-27.0	18166	18380	19711	51859	33694	56257	18165	3.10
Ⓖ ①	-37.0	30986	30797	46800	91184	67400	108583	23784	4.57
Ⓗ ①	-42.0	39456	29656	65002	116071	88938	134114	27133	4.94
Ⓘ ①	-43.0	41020	31193	67563	121405	93613	139776	27792	5.03

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	112	105	112	0	0	0	0	0	0	23
③	WATER	107	107	107	0	0	0	0	0	0	23
④	WATER	112	104	112	0	0	0	0	0	0	23
⑤	WATER	112	111	112	0	0	0	0	0	0	23
⑥	WATER	100	99	99	0	0	0	0	0	0	23
⑦	SM	122	122	122	0	0	0	0	0	0	30
⑧	SM	111	111	111	0	0	0	0	0	0	23
⑨	SM	111	111	111	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 5 Sta 37+00 to Sta 40+00
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 31-JAN-12



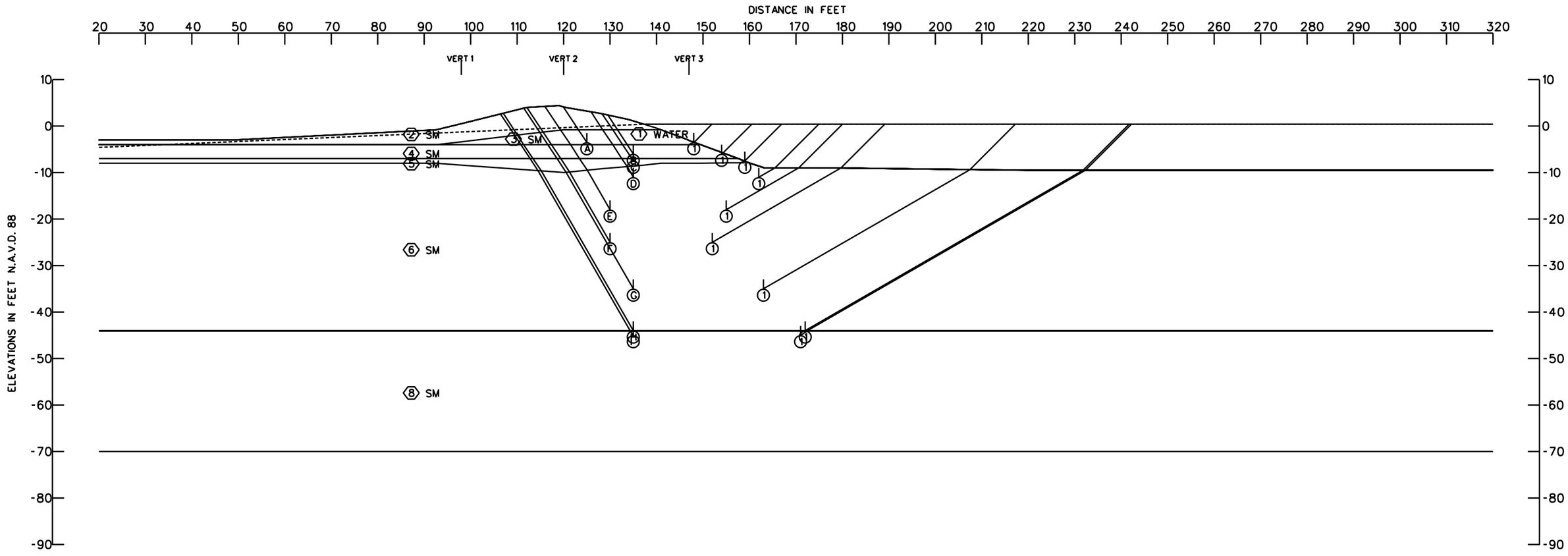
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-3.0	422	459	0	1082	361	881	721	1.22
Ⓑ ①	-6.0	1093	1229	2	3152	1279	2324	1873	1.24
Ⓒ ①	-8.0	1698	1923	22	5117	2218	3643	2899	1.26
Ⓓ ①	-14.0	5841	10302	993	15762	6980	17136	8782	1.95
Ⓔ ①	-24.0	14971	17608	12459	41318	24837	45038	16481	2.73
Ⓕ ①	-34.0	26623	26639	33639	77000	53800	86901	23200	3.75
Ⓖ ①	-44.0	43562	31535	67559	126247	95384	142656	30863	4.62
Ⓗ ①	-45.0	45195	34807	70096	131796	100188	150098	31608	4.75

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	SM	90	90	90	0	0	0	0	0	0	28
③	SM	109	108	109	0	0	0	0	0	0	23
④	SM	101	101	101	0	0	0	0	0	0	23
⑤	SM	101	96	101	0	0	0	0	0	0	23
⑥	SM	101	103	101	0	0	0	0	0	0	23
⑦	SM	122	122	122	0	0	0	0	0	0	30
⑧	SM	109	109	109	0	0	0	0	0	0	23
⑨	SM	109	109	109	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 6A Sta 40+00 to Sta 47+00
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 01-FEB-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-3.5	1338	2166	0	2728	475	3504	2253	1.55
Ⓑ ①	-6.0	1093	1229	2	3152	1279	2324	1873	1.24
Ⓒ ①	-7.5	1535	1757	0	4581	1947	3292	2634	1.25
Ⓓ ①	-11.0	2966	5414	251	8940	4182	8631	4758	1.81
Ⓔ ①	-18.0	9015	12463	5501	24556	13326	26979	11230	2.40
Ⓕ ①	-25.0	16112	16554	16444	44542	28379	49110	16163	3.04
Ⓖ ①	-35.0	28161	28574	39789	81442	59051	96524	22391	4.31
Ⓗ ①	-44.0	43603	35325	71650	126318	97425	150578	28893	5.21
Ⓘ ①	-45.0	45242	35152	74331	131876	102326	154725	29550	5.24

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	109	108	109	0	0	0	0	0	0	23
③	WATER	101	101	101	0	0	0	0	0	0	23
④	WATER	101	96	101	0	0	0	0	0	0	23
⑤	WATER	101	103	101	0	0	0	0	0	0	23
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	SM	109	109	109	0	0	0	0	0	0	23
⑧	SM	109	109	109	0	0	0	0	0	0	23

London Ave. Canal
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Reach 6B Sta 47+00 to Sta 59+00
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March 2012

Lake Pontchartrain, LA & Vicinity
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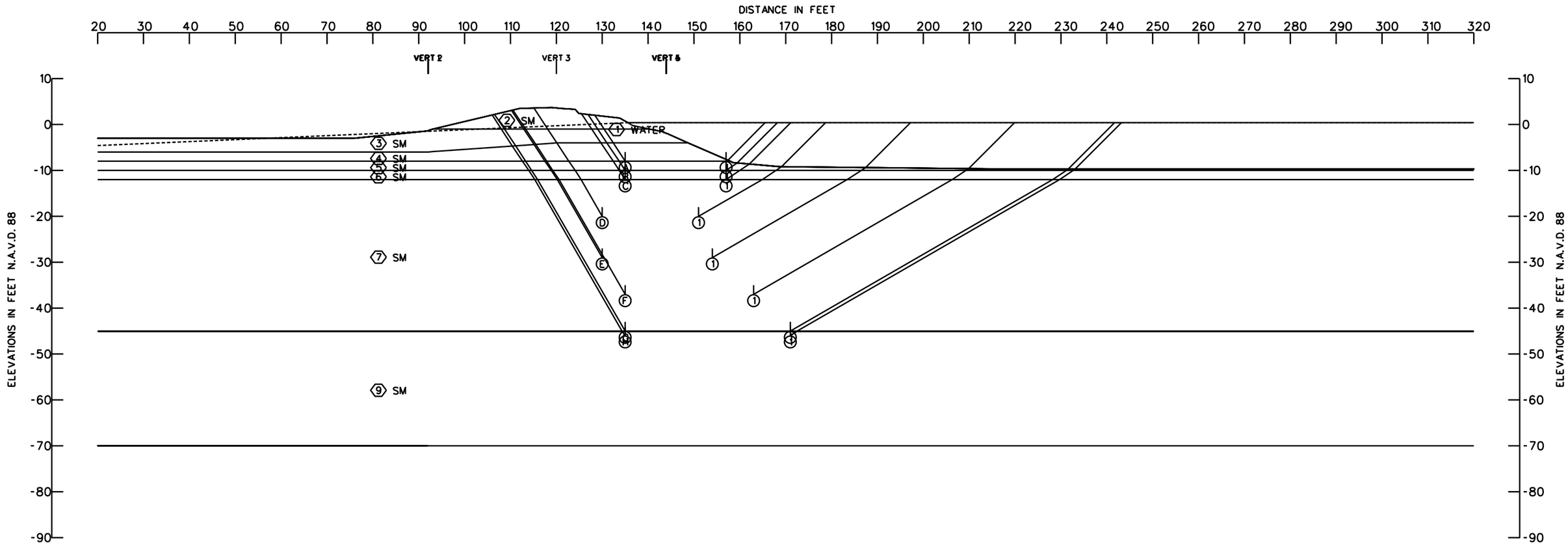
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 31-JAN-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-8.0	1415	1759	2	4648	2203	3176	2445	1.30
Ⓑ ①	-10.0	2027	2524	92	6877	3448	4643	3429	1.35
Ⓒ ①	-12.0	2742	3152	336	9532	5063	6230	4469	1.39
Ⓓ ①	-20.0	9025	10961	6716	27121	16416	26702	10705	2.49
Ⓔ ①	-29.0	18279	19633	21308	54584	37705	59220	16879	3.51
Ⓕ ①	-37.0	27920	28799	41996	85713	64740	98715	20973	4.71
Ⓖ ①	-45.0	41187	33860	70616	125717	99746	145663	25971	5.61
Ⓗ ①	-46.0	42753	34599	73256	131225	104684	150608	26541	5.67

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.					C - UNIT COHESION - P.S.F. CENTER OF STRATUM					C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM					FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	
①	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
②	WATER	104	104	104	104	104	0	0	0	0	0	0	0	0	0	0	23
③	WATER	96	96	104	96	96	0	0	0	0	0	0	0	0	0	0	23
④	WATER	104	104	90	104	104	0	0	0	0	0	0	0	0	0	0	23
⑤	WATER	104	104	98	104	104	0	0	0	0	0	0	0	0	0	0	23
⑥	WATER	96	96	98	96	96	0	0	0	0	0	0	0	0	0	0	23
⑦	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
⑧	SM	111	111	108	111	111	0	0	0	0	0	0	0	0	0	0	23
⑨	SM	111	111	108	111	111	0	0	0	0	0	0	0	0	0	0	23

London Ave. Canal
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Reach 7 Sta 59+00 to Sta 66+00
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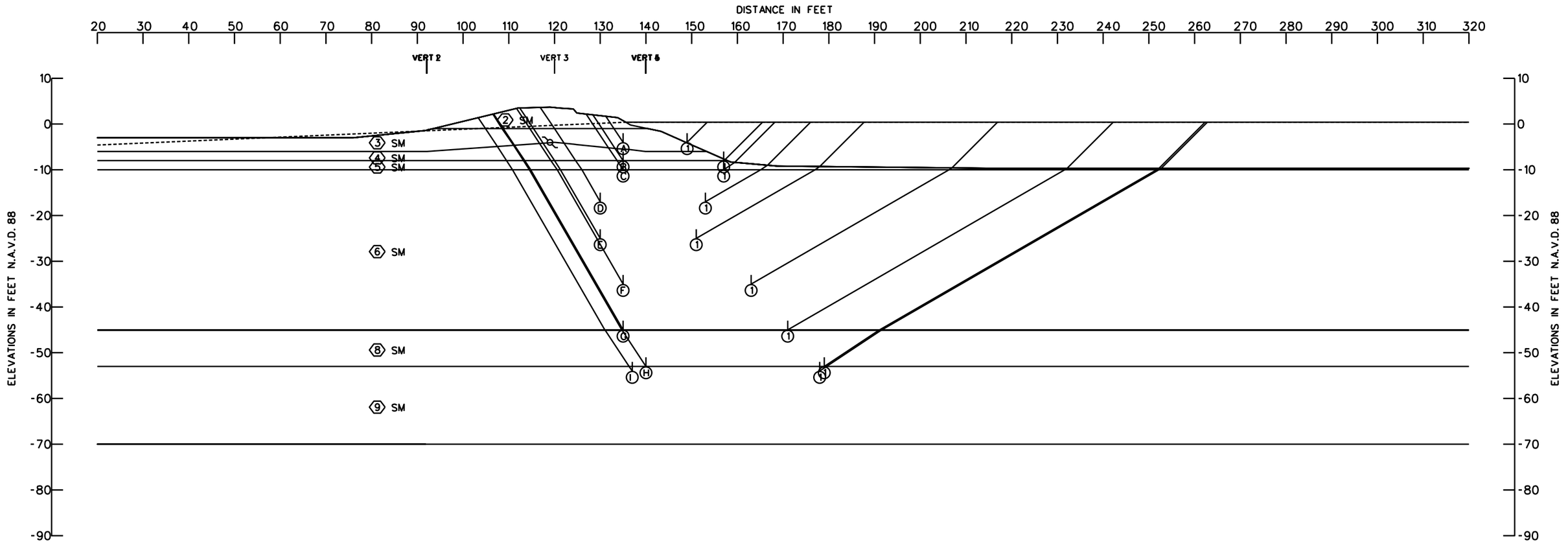
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 01-FEB-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-4.0	522	598	0	1511	604	1120	907	1.24
Ⓑ ①	-8.0	1459	1828	2	4727	2203	3289	2524	1.30
Ⓒ ①	-10.0	2082	2545	84	6975	3441	4711	3534	1.33
Ⓓ ①	-17.0	7076	10195	4055	20531	11492	21326	9039	2.36
Ⓔ ①	-25.0	14470	15280	15340	42017	27830	45090	14187	3.18
Ⓕ ①	-35.0	26058	27723	38421	78257	58367	92202	19890	4.64
Ⓖ ①	-45.0	42628	34650	74114	127644	101464	151392	26180	5.78
Ⓗ ①	-53.0	54628	43022	97376	173629	144393	195026	29236	6.67
Ⓘ ①	-54.0	57115	46411	100602	180690	150278	204128	30412	6.71

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.					C - UNIT COHESION - P.S.F.										FRICTION ANGLE
							CENTER OF STRATUM					BOTTOM OF STRATUM					
		VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	DEGREES
①	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
②	WATER	106	106	106	106	106	0	0	0	0	0	0	0	0	0	0	23
③	WATER	106	101	101	101	106	0	0	0	0	0	0	0	0	0	0	23
④	WATER	101	101	90	101	101	0	0	0	0	0	0	0	0	0	0	23
⑤	WATER	101	101	98	101	101	0	0	0	0	0	0	0	0	0	0	23
⑥	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
⑦	SM	111	111	108	111	111	0	0	0	0	0	0	0	0	0	0	23
⑧	SM	111	111	108	111	111	0	0	0	0	0	0	0	0	0	0	23
⑨	SM	111	111	108	111	111	0	0	0	0	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach B Sta 66+00 to Sta 69+06
Flood Side Stability Analysis
March 2012

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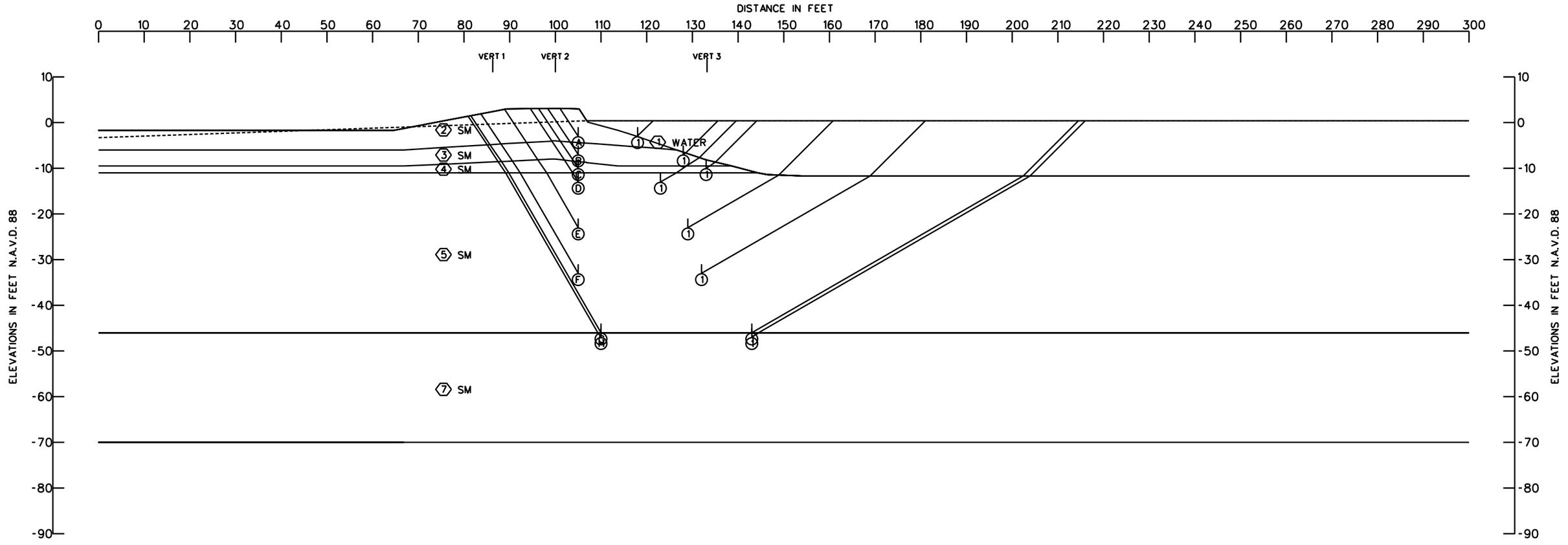
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 02-FEB-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-3.0	894	558	0	1931	361	1452	1570	0.92
Ⓑ ①	-7.0	2058	1709	4	5305	1712	3771	3593	1.05
Ⓒ ①	-10.0	3105	2914	62	8789	3424	6081	5365	1.13
Ⓓ ①	-13.0	4509	4837	1458	13180	6448	10804	6732	1.60
Ⓔ ①	-23.0	12020	14154	9781	35690	21994	35955	13696	2.63
Ⓕ ①	-33.0	23322	24904	28559	69935	49133	76785	20802	3.69
Ⓖ ①	-46.0	42501	31819	70141	130741	102343	144461	28398	5.09
Ⓗ ①	-47.0	44108	32456	72764	136411	107342	149328	29069	5.14

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	102	106	102	0	0	0	0	0	0	23
③	WATER	101	90	101	0	0	0	0	0	0	23
④	WATER	101	98	101	0	0	0	0	0	0	23
⑤	SM	122	122	122	0	0	0	0	0	0	30
⑥	SM	108	108	108	0	0	0	0	0	0	23
⑦	SM	108	108	108	0	0	0	0	0	0	23

London Ave. Canal
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Reach 9 Sta 70+18 to Sta 74+00
Flood Side Stability Analysis
March 2012

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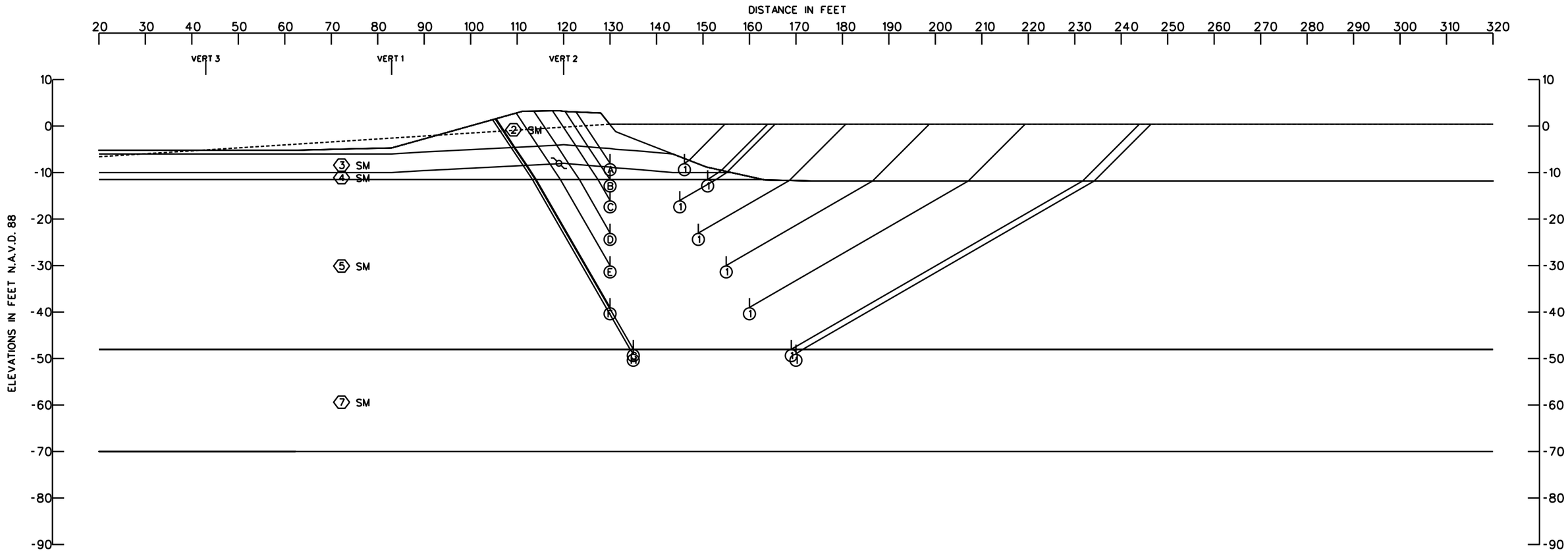
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 02-FEB-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-8.0	1886	1040	15	5476	2217	2941	3259	0.90
Ⓑ ①	-11.5	3181	2127	117	9911	4516	5425	5395	1.01
Ⓒ ①	-16.0	5677	4754	2379	17603	9618	12810	7985	1.60
Ⓓ ①	-23.0	11347	10279	8666	34570	21444	30292	13126	2.31
Ⓔ ①	-30.0	18958	18955	20219	57356	38989	58132	18367	3.17
Ⓕ ①	-39.0	31401	31523	44196	94864	70609	107120	24255	4.42
Ⓖ ①	-48.0	45203	32922	77982	139950	112196	156107	27754	5.62
Ⓗ ①	-49.0	46859	34515	80766	145788	117426	162140	28362	5.72

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62.5	62.5	62.5	0	0	0	0	0	0	0
②	WATER	99	101	99	0	0	0	0	0	0	23
③	WATER	99	87	99	0	0	0	0	0	0	23
④	WATER	96	98	96	0	0	0	0	0	0	23
⑤	SM	122	122	122	0	0	0	0	0	0	30
⑥	SM	108	108	108	0	0	0	0	0	0	23
⑦	SM	108	108	108	0	0	0	0	0	0	23

London Ave. Canal
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Reach 10 Sta 74+00 to Sta 79+50
Flood Side Stability Analysis
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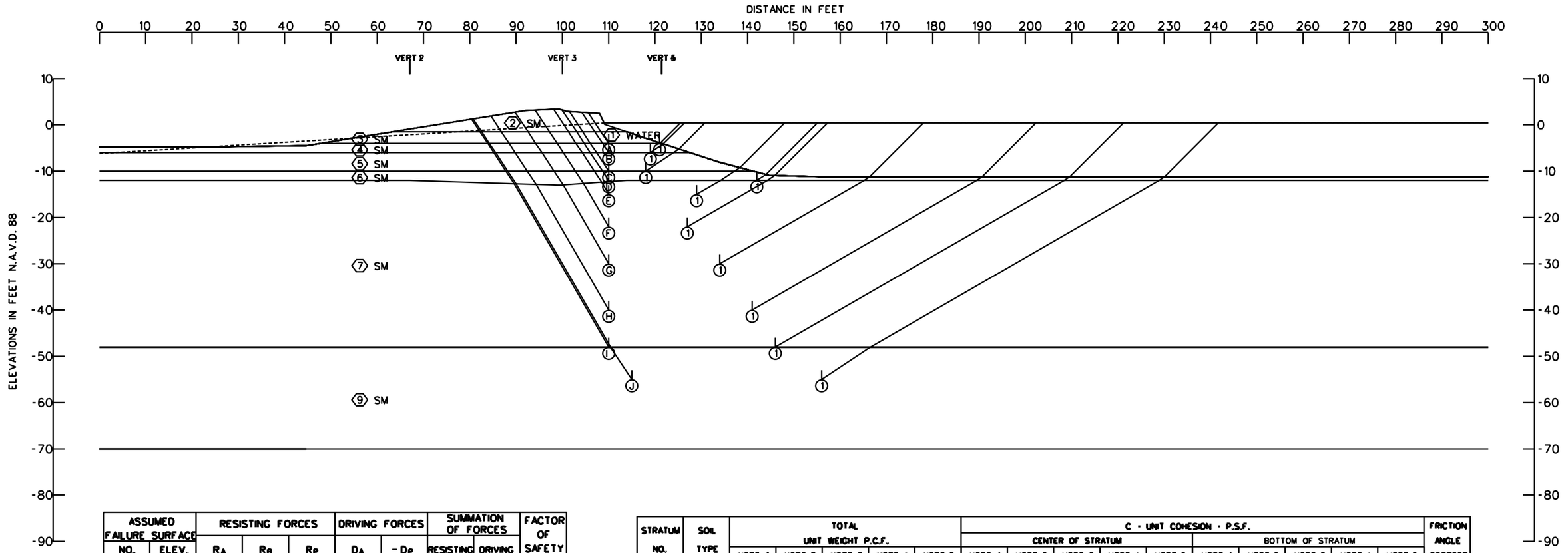
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 02-FEB-12



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-4.0	632	380	0	1717	604	1012	1113	0.91
B	1	-6.0	1143	513	83	3284	1344	1739	1940	0.90
C	1	-10.0	2426	989	657	7598	3891	4072	3707	1.10
D	1	-12.0	3221	3128	48	10394	4836	6397	5558	1.15
E	1	-15.0	4777	5266	1780	15424	8364	11823	7060	1.67
F	1	-22.0	10076	8904	8470	31514	19915	27450	11599	2.37
G	1	-30.0	18512	18634	21012	57033	39382	58158	17651	3.29
H	1	-40.0	32523	34027	48267	99326	75135	114817	24191	4.75
I	1	-48.0	46370	35928	79013	141405	112708	161311	28697	5.62
J	1	-55.0	56799	45098	99790	182752	151626	201687	31126	6.48

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	FRICTION ANGLE DEGREES
1	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
2	WATER	106	106	106	106	106	0	0	0	0	0	0	0	0	0	0	23
3	WATER	104	104	104	104	104	0	0	0	0	0	0	0	0	0	0	23
4	WATER	106	82	82	82	106	0	0	0	0	0	0	0	0	0	0	23
5	WATER	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	23
6	WATER	96	96	100	96	96	0	0	0	0	0	0	0	0	0	0	23
7	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
8	SM	106	106	108	106	106	0	0	0	0	0	0	0	0	0	0	23
9	SM	106	106	108	106	106	0	0	0	0	0	0	0	0	0	0	23

London Ave. Canal
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Reach 11 Sta 79+50 to Sta 84+81
Flood Side Stability Analysis
March 2012

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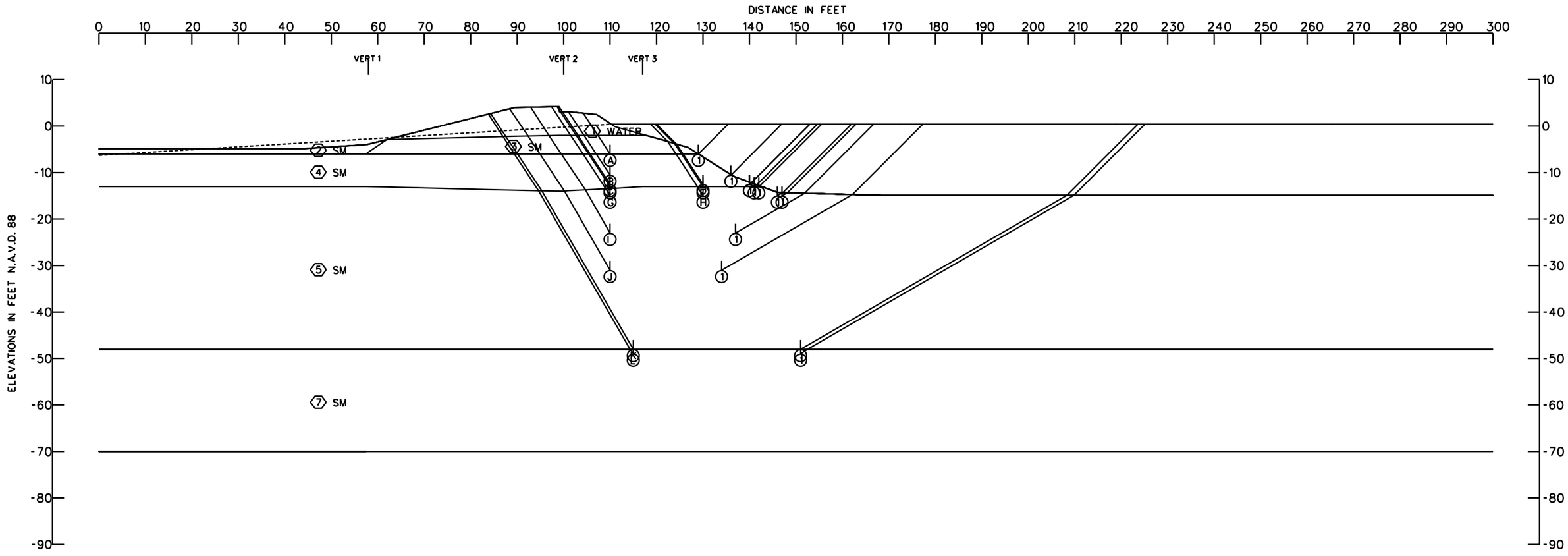
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 02-FEB-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-6.0	1177	1162	0	3319	1280	2339	2039	1.15
Ⓑ ①	-10.5	2686	2837	0	8339	3713	5523	4626	1.19
Ⓒ ①	-12.5	3488	3757	3	11193	5203	7248	5990	1.21
Ⓓ ①	-12.5	614	475	3	6293	5203	1092	1090	1.00
Ⓔ ①	-13.0	3740	4006	5	12037	5615	7751	6422	1.21
Ⓕ ①	-13.0	714	568	1	6882	5612	1283	1270	1.01
Ⓖ ①	-15.0	4875	7862	26	15616	7424	12763	8192	1.56
Ⓗ ①	-15.0	1256	1799	28	9528	7425	3083	2103	1.47
Ⓘ ①	-23.0	11186	14587	5382	34698	19802	31155	14896	2.09
Ⓙ ①	-31.0	20121	19959	17908	61515	39765	57988	21750	2.67
Ⓚ ①	-48.0	45403	34586	65463	140920	105935	145452	34985	4.16
Ⓛ ①	-49.0	47078	35281	68006	146796	110987	150365	35809	4.20

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62.5	62.5	62.5	0	0	0	0	0	0	0
②	WATER	102	107	102	0	0	0	0	0	0	23
③	WATER	107	80	107	0	0	0	0	0	0	23
④	WATER	101	101	101	0	0	0	0	0	0	23
⑤	SM	122	122	122	0	0	0	0	0	0	30
⑥	SM	108	108	108	0	0	0	0	0	0	23
⑦	SM	108	108	108	0	0	0	0	0	0	23

London Ave. Canal
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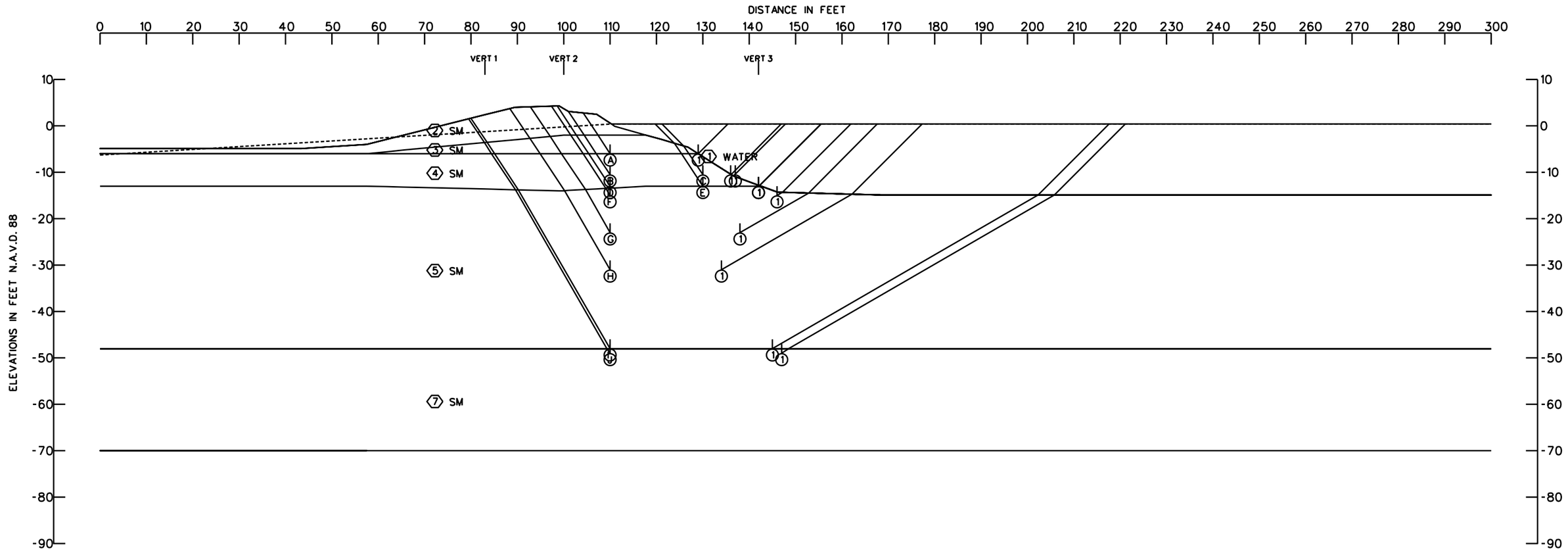
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-6.0	1158	854	0	3285	1280	2012	2005	1.00
Ⓑ ①	-10.5	2608	2528	0	8199	3713	5136	4486	1.14
Ⓒ ①	-10.5	267	210	0	4188	3715	477	473	1.01
Ⓓ ①	-13.0	3745	3704	1	12045	5612	7450	6433	1.16
Ⓔ ①	-13.0	672	568	1	6807	5612	1241	1195	1.04
Ⓕ ①	-15.0	4868	7419	28	15613	7425	12315	8188	1.50
Ⓖ ①	-23.0	11161	14552	5199	34693	19710	30912	14983	2.06
Ⓗ ①	-31.0	20152	19539	17908	61611	39765	57599	21846	2.64
Ⓘ ①	-48.0	47300	34602	65703	143023	106056	147605	36967	3.99
Ⓙ ①	-49.0	49035	37024	68146	148937	111060	154205	37877	4.07

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62.5	62.5	62.5	0	0	0	0	0	0	0
②	WATER	102	107	102	0	0	0	0	0	0	23
③	WATER	107	80	107	0	0	0	0	0	0	23
④	WATER	101	101	101	0	0	0	0	0	0	23
⑤	SM	122	122	122	0	0	0	0	0	0	30
⑥	SM	108	108	108	0	0	0	0	0	0	23
⑦	SM	108	108	108	0	0	0	0	0	0	23

London Ave. Canal
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Reach 12B Sta 89+50 to Sta 93+00
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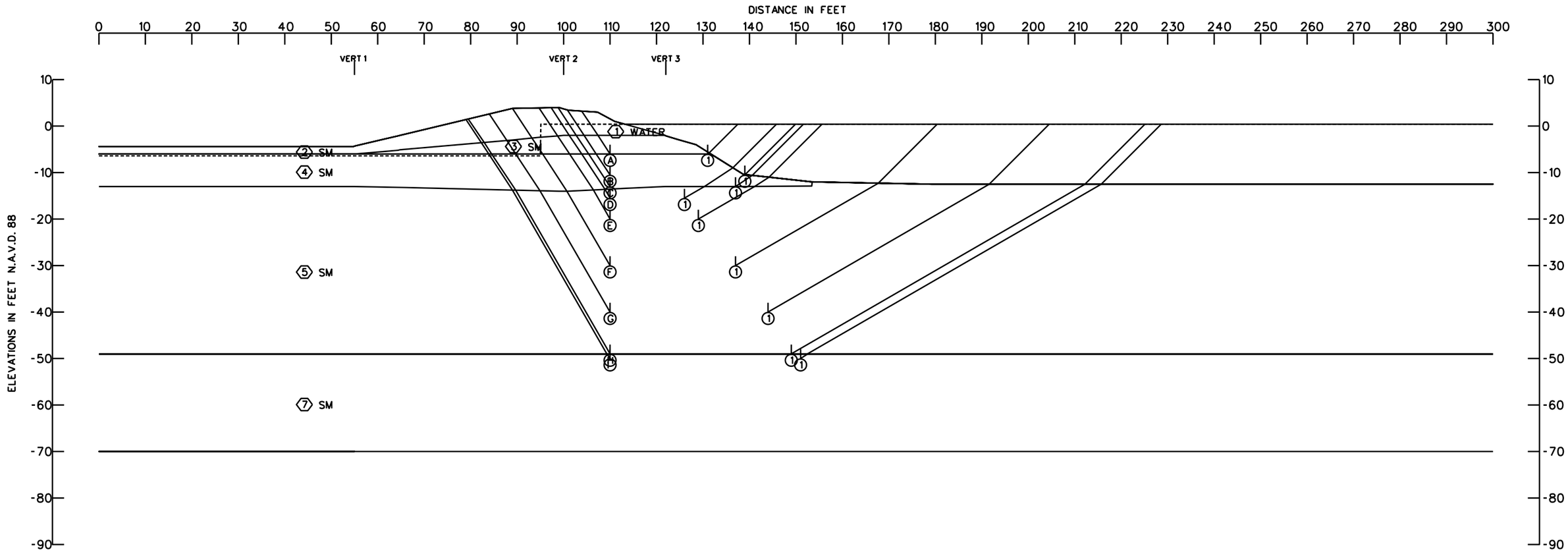
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12



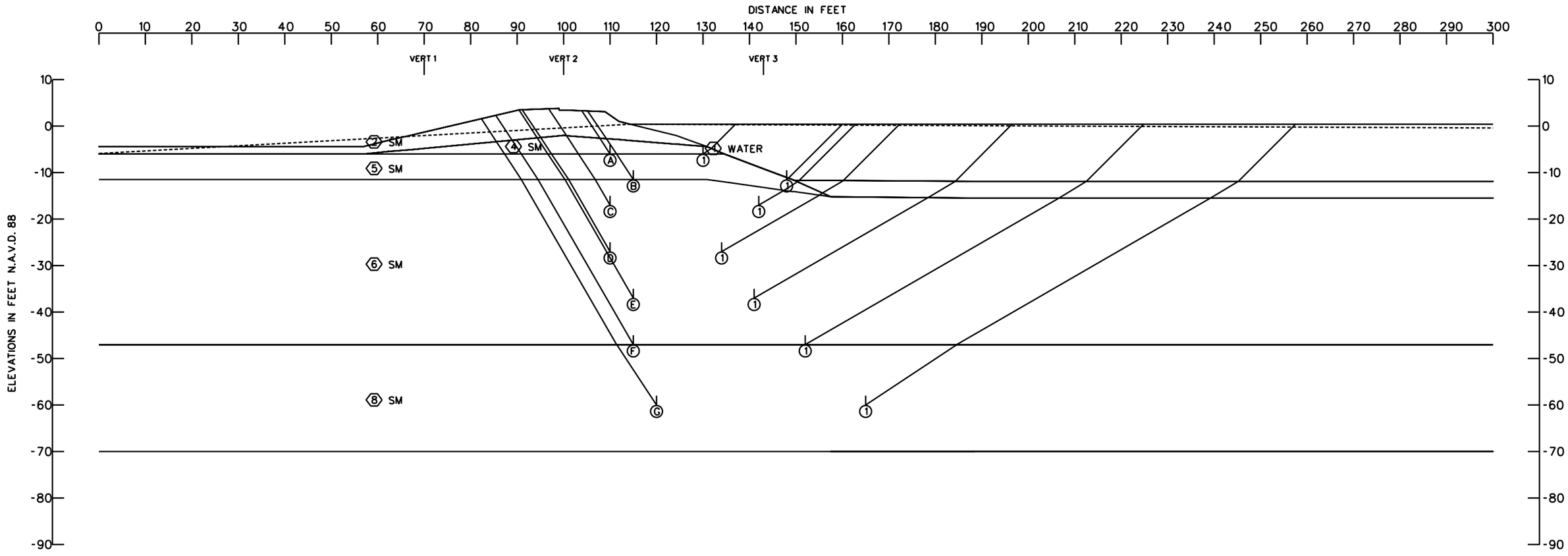
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-6.0	1456	796	1	3872	1279	2253	2593	0.87
Ⓑ ①	-10.5	2844	1585	0	8774	3707	4429	5067	0.87
Ⓒ ①	-13.0	3853	2042	58	12468	5650	5953	6818	0.87
Ⓓ ①	-15.5	5124	3534	1179	16807	8555	9837	8252	1.19
Ⓔ ①	-20.0	8107	6929	3816	26613	14916	18852	11697	1.61
Ⓕ ①	-30.0	18831	18481	18461	57606	38102	55773	19504	2.86
Ⓖ ①	-40.0	38545	34373	45281	100762	73637	118199	27125	4.36
Ⓗ ①	-49.0	55751	37595	79558	149684	116032	172904	33652	5.14
Ⓘ ①	-50.0	57220	40222	82397	155385	121353	179839	34032	5.28

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C · UNIT COHESION · P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	109	109	109	0	0	0	0	0	0	23
③	WATER	75	75	75	0	0	0	0	0	0	23
④	WATER	75	105	75	0	0	0	0	0	0	23
⑤	SM	122	122	122	0	0	0	0	0	0	30
⑥	SM	108	108	108	0	0	0	0	0	0	23
⑦	SM	108	108	108	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 13 Sta 93+00 to Sta 96+00
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12



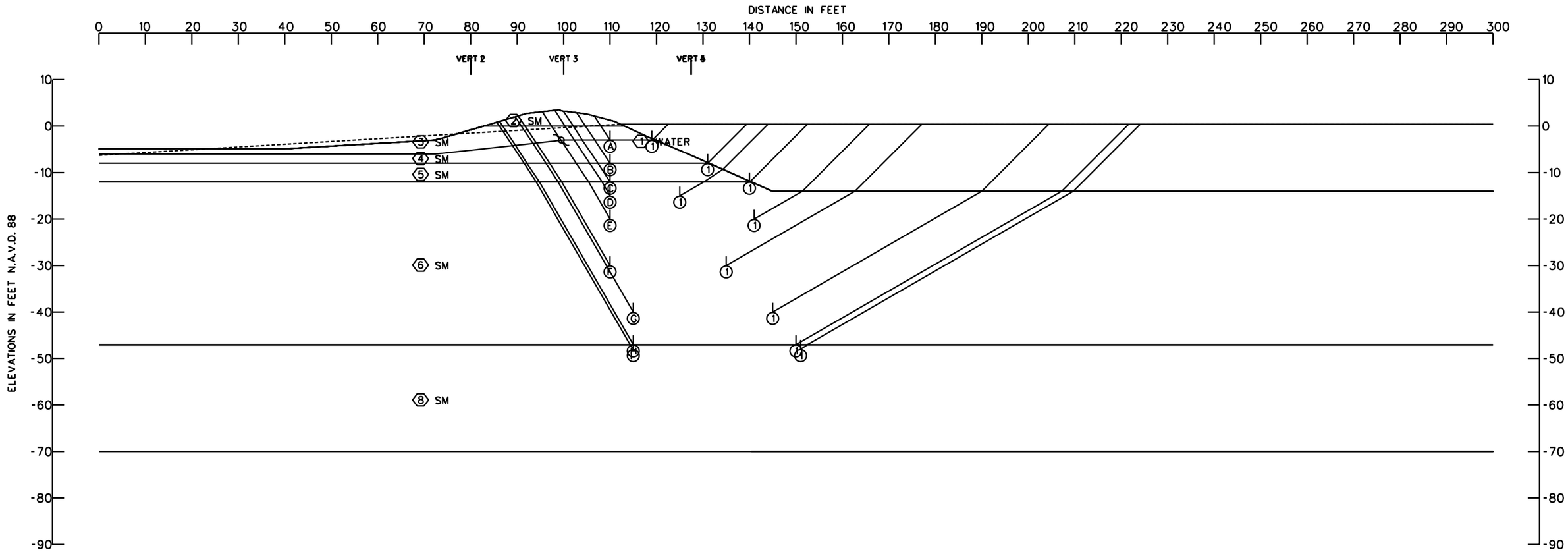
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-6.0	1765	1418	33	4286	1299	3216	2987	1.08
Ⓑ ①	-11.5	2649	2625	4	9004	4419	5278	4585	1.15
Ⓒ ①	-17.0	7244	10694	1283	20893	10073	19221	10820	1.78
Ⓓ ①	-27.0	16846	17161	13056	48807	29875	47063	18932	2.49
Ⓔ ①	-37.0	28537	26023	33865	86421	60335	88425	26086	3.39
Ⓕ ①	-47.0	46077	35269	67132	138356	103156	148478	35200	4.22
Ⓖ ①	-60.0	67997	52327	105564	220055	176328	225888	43727	5.17

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
⟨1⟩	WATER	62	62	62	0	0	0	0	0	0	0
⟨2⟩	WATER	107	107	107	0	0	0	0	0	0	23
⟨3⟩	SM	90	90	90	0	0	0	0	0	0	28
⟨4⟩	SM	80	80	80	0	0	0	0	0	0	23
⟨5⟩	SM	80	109	80	0	0	0	0	0	0	23
⟨6⟩	SM	122	122	122	0	0	0	0	0	0	30
⟨7⟩	SM	108	108	108	0	0	0	0	0	0	23
⟨8⟩	SM	108	108	108	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 14 Sta 96+00 to Sta 100+28
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12



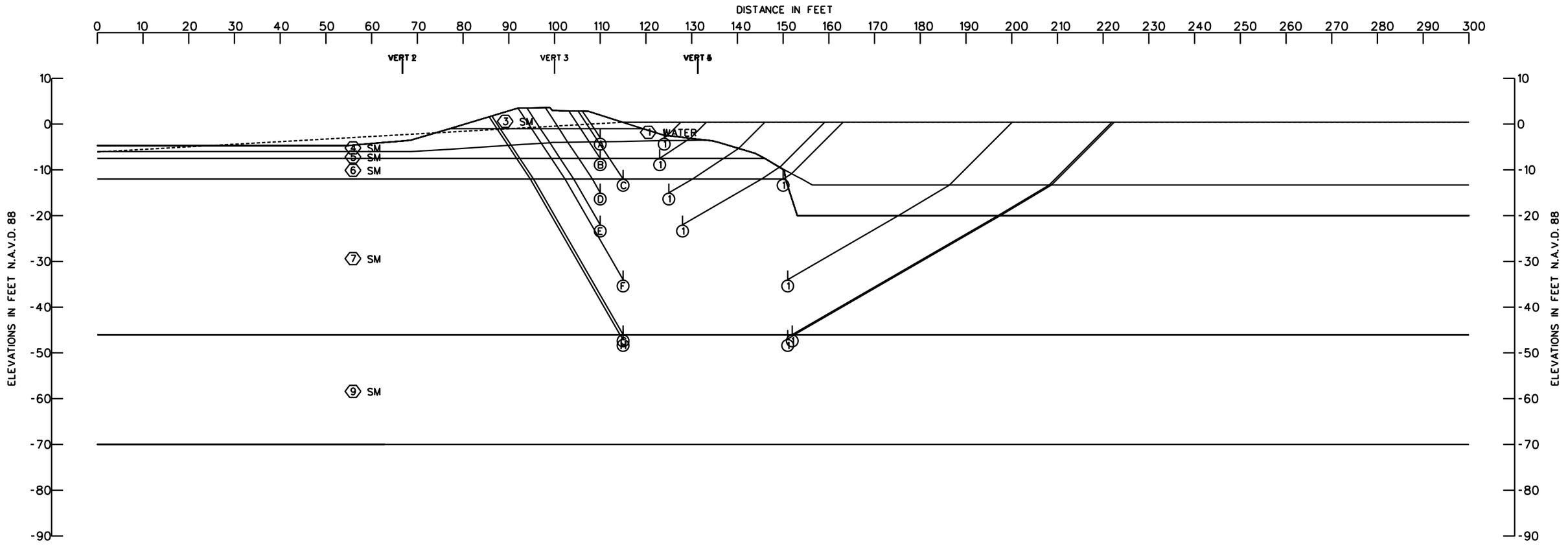
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-3.0	488	382	1	1189	362	871	827	1.05
Ⓑ ①	-8.0	1793	1189	0	5244	2202	2982	3042	0.98
Ⓒ ①	-12.0	3295	2469	0	10385	4797	5764	5588	1.03
Ⓓ ①	-15.0	4933	4166	1546	15440	8232	10645	7208	1.48
Ⓔ ①	-20.0	8527	11871	2357	26308	14173	22755	12135	1.88
Ⓕ ①	-30.0	18772	18727	16418	56957	37078	53917	19879	2.71
Ⓖ ①	-40.0	31020	30854	40144	97200	71066	102018	26134	3.90
Ⓗ ①	-47.0	43107	32153	64695	133769	102548	139955	31221	4.48
Ⓘ ①	-48.0	44712	33620	67238	139452	107524	145570	31928	4.56

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.					C - UNIT COHESION - P.S.F. CENTER OF STRATUM					C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM					FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	
①	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
②	WATER	113	113	113	113	113	0	0	0	0	0	0	0	0	0	0	23
③	WATER	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	23
④	WATER	87	87	87	87	87	0	0	0	0	0	0	0	0	0	0	23
⑤	WATER	87	87	109	87	87	0	0	0	0	0	0	0	0	0	0	23
⑥	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
⑦	SM	104	104	104	104	104	0	0	0	0	0	0	0	0	0	0	23
⑧	SM	104	104	104	104	104	0	0	0	0	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 15 Sta 100+28 to Sta 104+00
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12



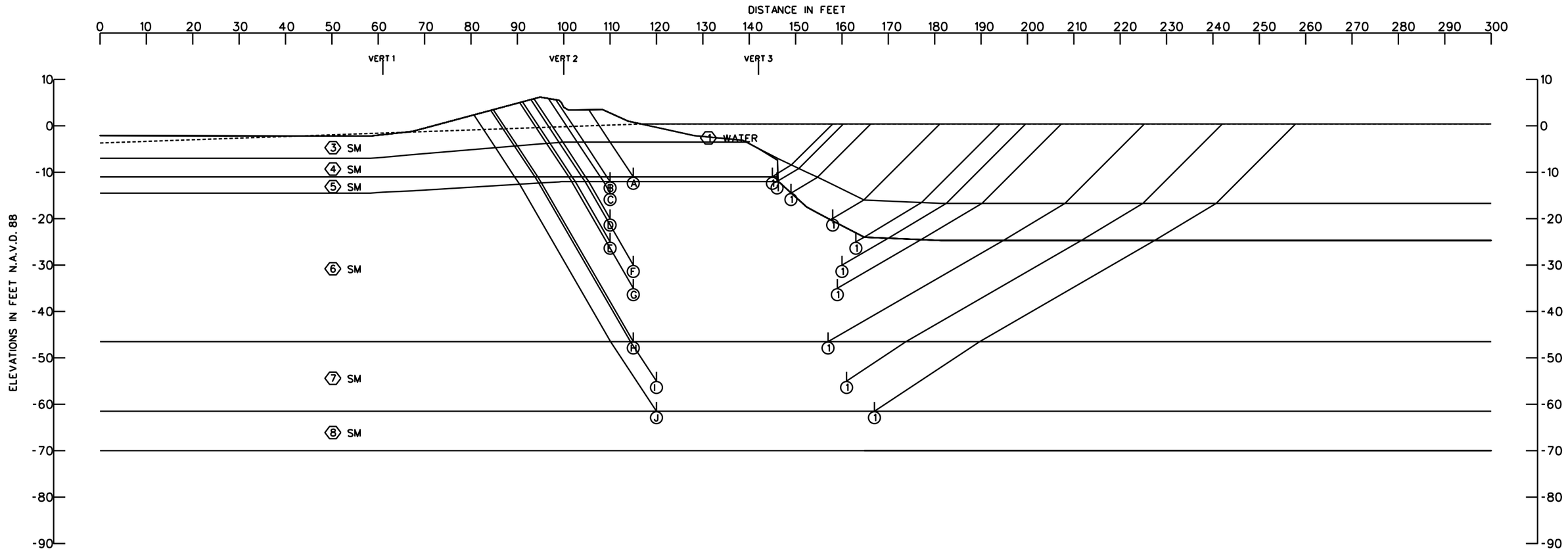
ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
Ⓐ ①	-3.0	810	730	5	1736	365	1545	1371	1.13
Ⓑ ①	-7.5	2068	1198	306	5431	2188	3572	3243	1.10
Ⓒ ①	-12.0	2648	2389	46	9347	4827	5083	4520	1.12
Ⓓ ①	-15.0	5247	4267	2292	15858	8751	11806	7107	1.66
Ⓔ ①	-22.0	10607	9221	8728	31906	20079	28556	11827	2.41
Ⓕ ①	-34.0	22520	30474	18363	70834	46222	71357	24612	2.90
Ⓖ ①	-46.0	41778	34148	51043	128982	92861	126969	36121	3.52
Ⓗ ①	-47.0	43379	33950	53461	134561	97701	130790	36860	3.55

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	FRICTION ANGLE DEGREES
①	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
②	SM	90	90	90	90	90	0	0	0	0	0	0	0	0	0	0	28
③	SM	118	118	118	118	118	0	0	0	0	0	0	0	0	0	0	23
④	SM	90	90	90	90	90	0	0	0	0	0	0	0	0	0	0	23
⑤	SM	80	80	80	80	80	0	0	0	0	0	0	0	0	0	0	23
⑥	SM	80	80	97	80	80	0	0	0	0	0	0	0	0	0	0	23
⑦	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
⑧	SM	104	104	104	104	104	0	0	0	0	0	0	0	0	0	0	23
⑨	SM	104	104	104	104	104	0	0	0	0	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 16 Sta 104+00 to Sta 112+50
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12



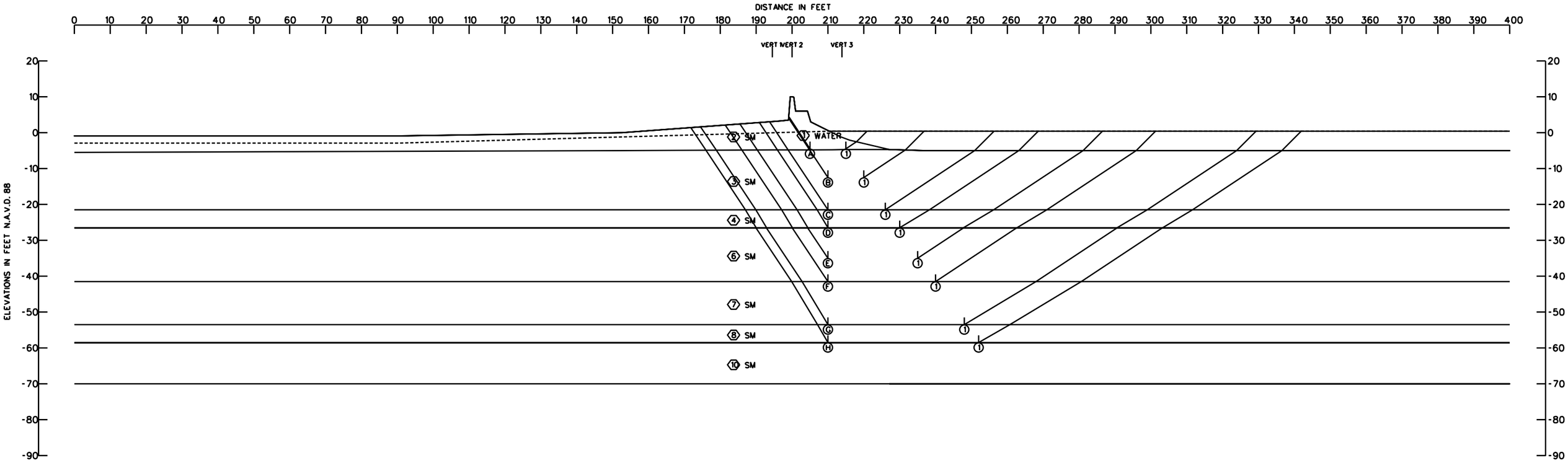
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-11.0	2943	3057	224	9165	4203	6224	4962	1.25
Ⓑ ①	-12.0	4445	4872	335	12430	4997	9652	7433	1.30
Ⓒ ①	-14.5	6156	10155	508	17162	7217	16819	9945	1.69
Ⓓ ①	-20.0	10922	19210	798	30407	13396	30930	17011	1.82
Ⓔ ①	-25.0	16190	28626	1988	45420	21233	46804	24187	1.94
Ⓕ ①	-30.0	20107	31883	6461	59975	32189	58451	27786	2.10
Ⓖ ①	-35.0	27305	39015	13603	80985	46043	79923	34942	2.29
Ⓗ ①	-46.5	47372	39967	41166	139944	89405	128505	50539	2.54
Ⓘ ①	-55.0	60371	44613	58635	190041	130689	163619	59352	2.76
Ⓙ ①	-61.5	73344	55722	75407	235793	167616	204473	68177	3.00

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	DEGREES
①	WATER	62	62	62	0	0	0	0	0	0	0
②	SM	90	90	90	0	0	0	0	0	0	28
③	SM	100	110	100	0	0	0	0	0	0	23
④	SM	85	90	85	0	0	0	0	0	0	23
⑤	SM	116	90	116	0	0	0	0	0	0	23
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	SM	109	110	109	0	0	0	0	0	0	23
⑧	SM	119	102	119	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 17 Sta 118+90 to Sta 119+63
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12



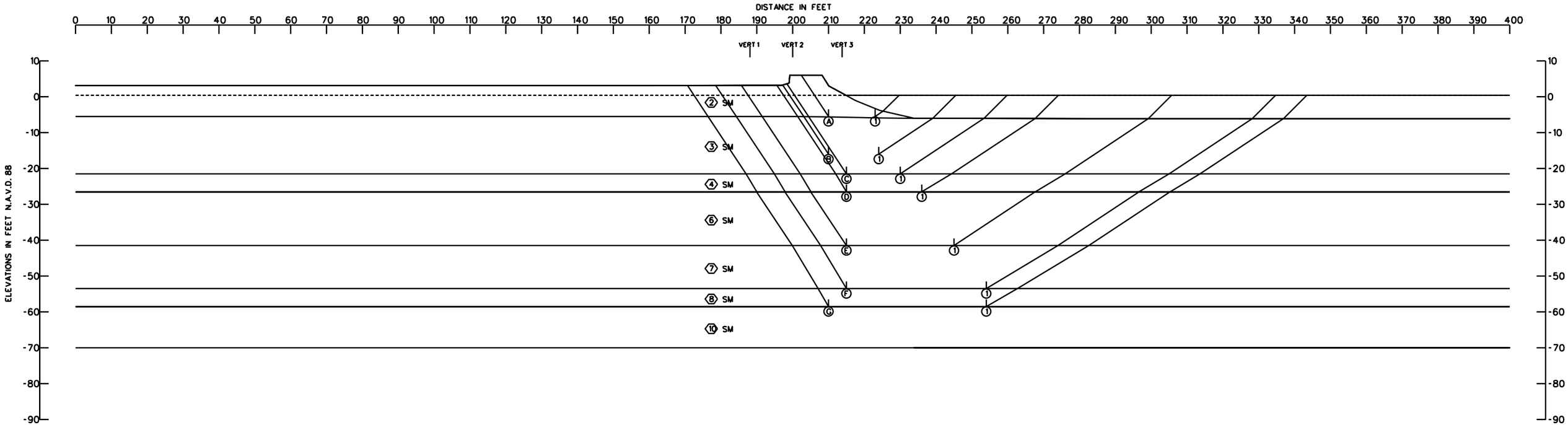
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
A 1	-4.5	3546	1346	179	7003	889	5071	6114	0.83
B 1	-12.5	6359	2185	1985	16416	6747	10529	9669	1.09
C 1	-21.5	12274	5918	7833	36549	21093	26025	15456	1.68
D 1	-26.5	16847	9501	15490	51319	33029	41838	18290	2.29
E 1	-35.0	25535	15122	28210	82654	59502	68867	23152	2.97
F 1	-41.5	32797	21140	40367	111050	84681	94304	26369	3.58
G 1	-53.5	51296	46431	80942	175367	143532	178669	31835	5.61
H 1	-58.5	61168	46170	104805	207257	173089	212143	34168	6.21

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	WATER	62	62	62	0	0	0	0	0	0	0
2	WATER	115	115	115	0	0	0	0	0	0	23
3	WATER	107	107	107	0	0	0	0	0	0	23
4	SM	117	117	117	0	0	0	0	0	0	28
5	SM	101	101	101	0	0	0	0	0	0	23
6	SM	101	101	101	0	0	0	0	0	0	23
7	SM	117	117	117	0	0	0	0	0	0	28
8	SM	122	122	122	0	0	0	0	0	0	30
9	SM	107	107	107	0	0	0	0	0	0	23
10	SM	107	107	107	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 20F Sta 1+57 to Sta 6+30
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 11-JAN-12



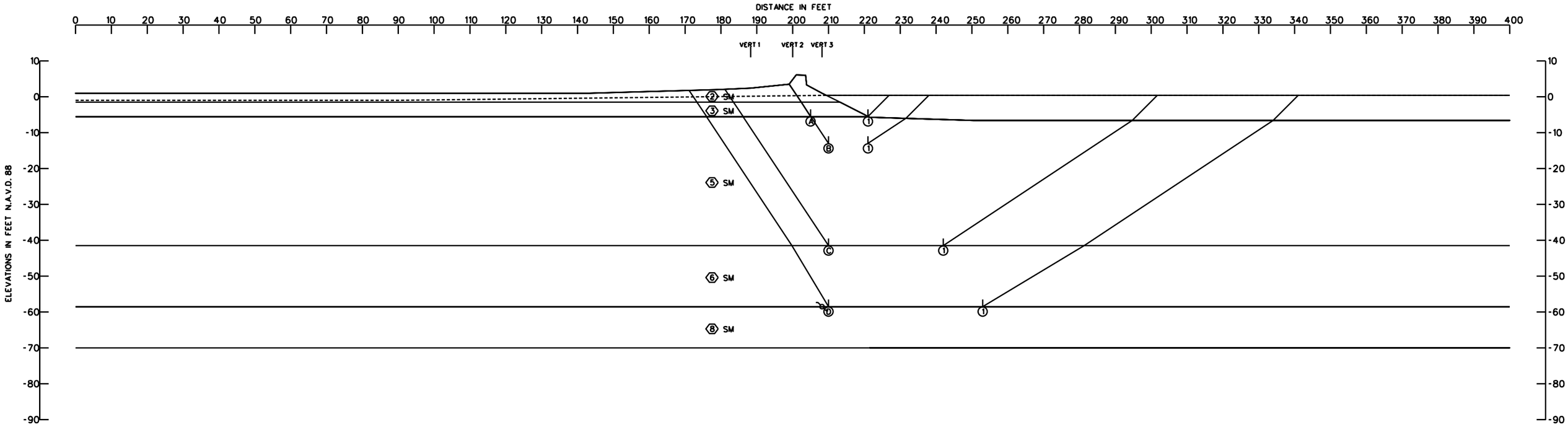
ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES O_A	$-O_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-5.5	3510	1754	111	7335	1174	5375	6161	0.87
B	1	-16.0	10023	4594	3362	26243	11024	17979	15219	1.18
C	1	-21.5	13100	5489	6906	38302	20370	25495	17932	1.42
D	1	-26.5	17794	9712	14101	53411	32038	41607	21373	1.95
E	1	-41.5	34293	20355	37755	114635	82735	92403	31900	2.90
F	1	-53.5	53255	46274	76635	180488	140619	176164	39869	4.42
G	1	-58.5	64728	48161	99709	214891	169779	212598	45112	4.71

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	WATER	118	118	118	0	0	0	0	0	0	23
3	WATER	107	107	107	0	0	0	0	0	0	23
4	SM	117	117	117	0	0	0	0	0	0	28
5	SM	99	99	99	0	0	0	0	0	0	23
6	SM	99	99	99	0	0	0	0	0	0	23
7	SM	117	117	117	0	0	0	0	0	0	28
8	SM	122	122	122	0	0	0	0	0	0	30
9	SM	104	104	104	0	0	0	0	0	0	23
10	SM	104	104	104	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 2F Sta 6+30 to Sta 10+00
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 12-JAN-12



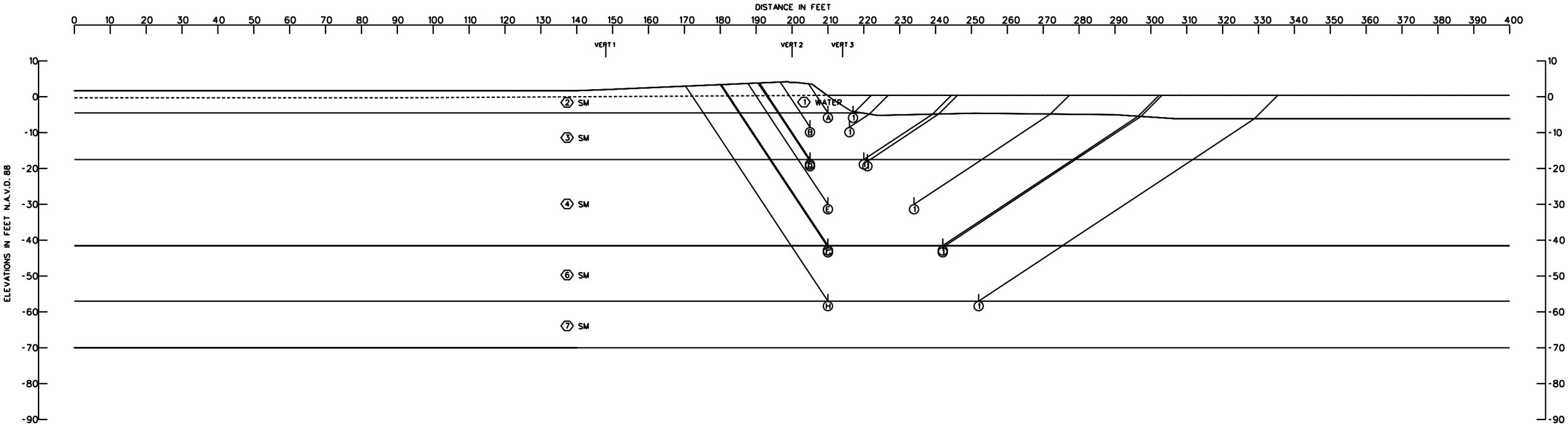
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
A 1	-5.5	2875	1567	1	6178	1086	4443	5092	0.87
B 1	-13.0	5493	2587	1783	15347	7000	9863	8347	1.18
C 1	-41.5	33715	27077	42588	114453	88064	103380	26389	3.92
D 1	-58.5	65801	64554	113673	217597	181768	244028	35829	6.81

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	WATER	114	114	114	0	0	0	0	0	0	23
3	WATER	114	114	114	0	0	0	0	0	0	23
4	WATER	117	117	117	0	0	0	0	0	0	23
5	WATER	117	117	117	0	0	0	0	0	0	23
6	SM	117	117	117	0	0	0	0	0	0	28
7	SM	118	118	118	0	0	0	0	0	0	23
8	SM	118	118	118	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 22F Sta 13+55 to Sta 21+00
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 12-JAN-12



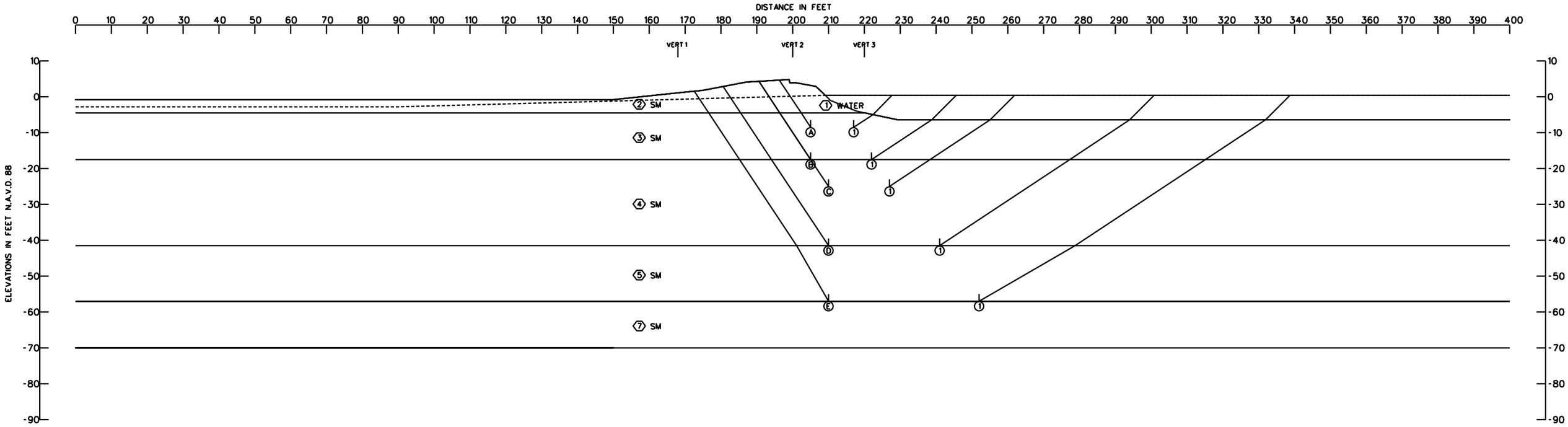
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
(A) (1)	-4.5	977	388	5	2486	753	1370	1733	0.79
(B) (1)	-8.5	3693	2321	560	9022	2910	6574	6112	1.08
(C) (1)	-17.5	9396	5646	5150	26665	14027	20192	12638	1.60
(D) (1)	-18.0	9777	6048	5565	27907	14917	21390	12990	1.65
(E) (1)	-30.0	19485	11575	19446	63448	44040	50506	19408	2.60
(F) (1)	-41.5	32169	20832	38455	111903	84842	91456	27061	3.38
(G) (1)	-42.0	32792	21181	39515	114292	86901	93488	27391	3.41
(H) (1)	-57.0	54069	40943	74348	198752	160840	169360	37912	4.47

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
(1)	WATER	62	62	62	0	0	0	0	0	0	0
(2)	WATER	117	117	117	0	0	0	0	0	0	23
(3)	WATER	114	114	114	0	0	0	0	0	0	23
(4)	WATER	98	98	98	0	0	0	0	0	0	23
(5)	SM	122	122	122	0	0	0	0	0	0	30
(6)	SM	112	112	112	0	0	0	0	0	0	23
(7)	SM	112	112	112	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 23F Sta 21+00 to Sta 24+00
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 12-JAN-12



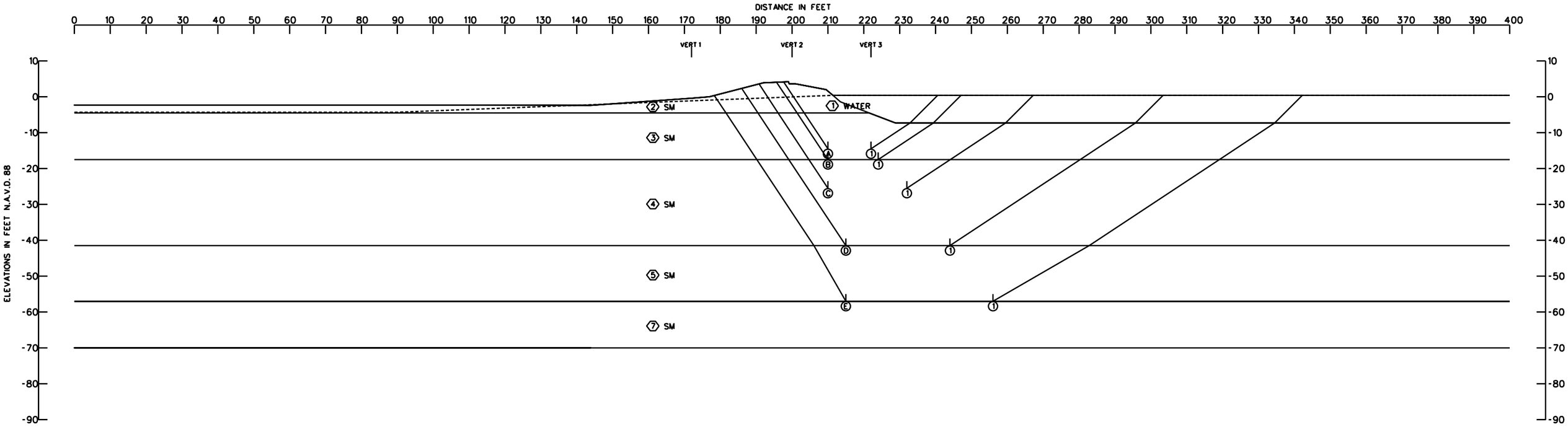
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-8.5	3762	2335	551	9068	2904	6648	6164	1.08
Ⓑ ①	-17.5	9833	6135	4303	27218	13365	20271	13853	1.46
Ⓒ ①	-25.0	15035	7038	10856	46598	28623	32929	17975	1.83
Ⓓ ①	-41.5	32850	19733	34747	112411	81951	87330	30460	2.87
Ⓔ ①	-57.0	58745	42819	93149	198640	159250	194713	39390	4.94

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	117	117	117	0	0	0	0	0	0	23
③	WATER	114	114	114	0	0	0	0	0	0	23
④	WATER	98	98	98	0	0	0	0	0	0	23
⑤	SM	122	122	122	0	0	0	0	0	0	30
⑥	SM	112	112	112	0	0	0	0	0	0	23
⑦	SM	112	112	112	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 24F Sta 24+00 to Sta 33+00
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 13-JAN-12



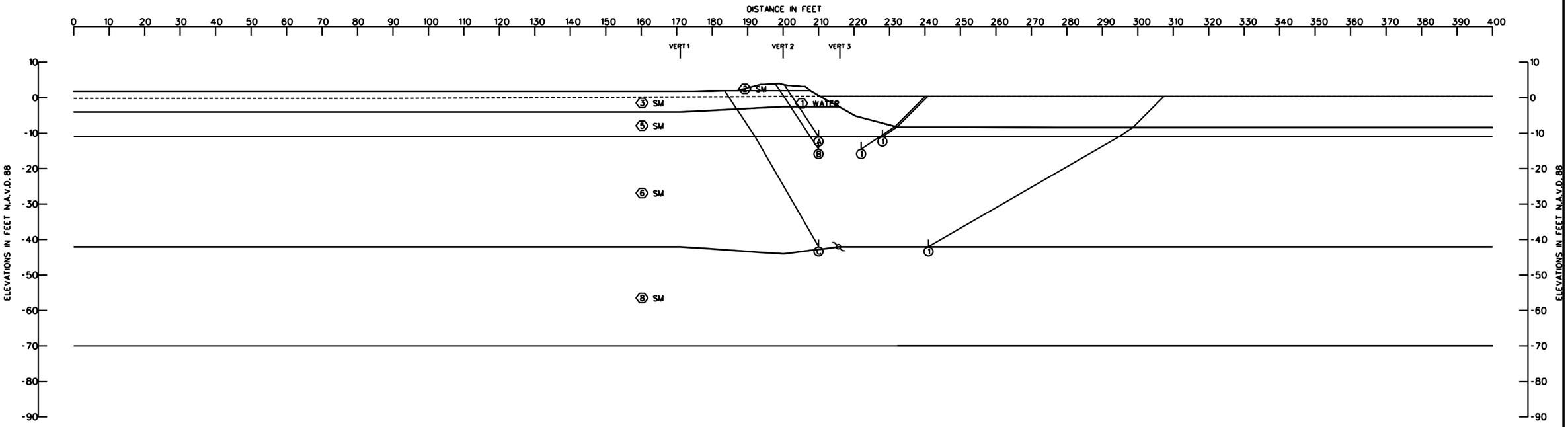
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-14.5	6210	3301	2093	17767	8567	11604	9200	1.26
Ⓑ ①	-17.5	8434	4631	3619	24713	12832	16684	11881	1.40
Ⓒ ①	-25.5	15295	9161	10265	47575	28963	34721	18612	1.87
Ⓓ ①	-41.5	30375	17756	32684	107801	80341	80815	27460	2.94
Ⓔ ①	-57.0	55170	40818	89646	192411	156921	185634	35490	5.23

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	DEGREES
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	117	117	117	0	0	0	0	0	0	23
③	WATER	114	114	114	0	0	0	0	0	0	23
④	WATER	98	98	98	0	0	0	0	0	0	23
⑤	SM	122	122	122	0	0	0	0	0	0	30
⑥	SM	112	112	112	0	0	0	0	0	0	23
⑦	SM	112	112	112	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 25F Sta 33+00 to Sta 37+00
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 13-JAN-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-11.0	3359	2291	280	10025	4276	5930	5749	1.03
Ⓑ ①	-14.5	5217	2855	1536	16198	8132	9608	8066	1.19
Ⓒ ①	-42.0	38611	29175	64222	114802	88338	132008	26464	4.99

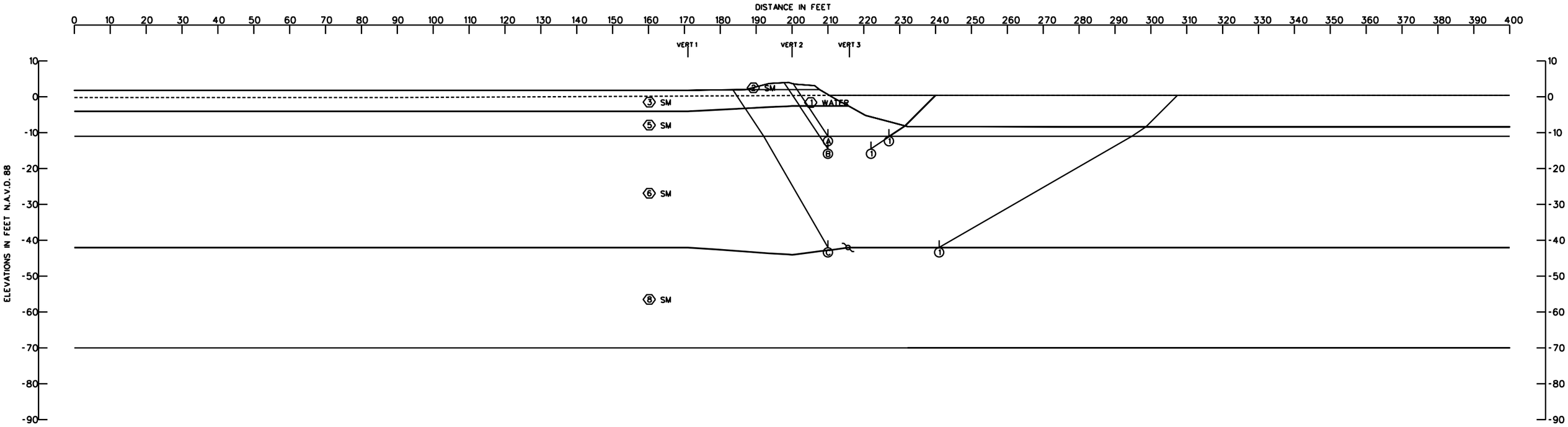
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	110	110	110	0	0	0	0	0	0	23
③	WATER	105	110	105	0	0	0	0	0	0	23
④	WATER	105	103	105	0	0	0	0	0	0	23
⑤	WATER	105	103	105	0	0	0	0	0	0	23
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	SM	109	110	109	0	0	0	0	0	0	23
⑧	SM	109	110	109	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 26AF Sta 47+00 to Sta 48+50
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 13-JAN-12

PLATE:



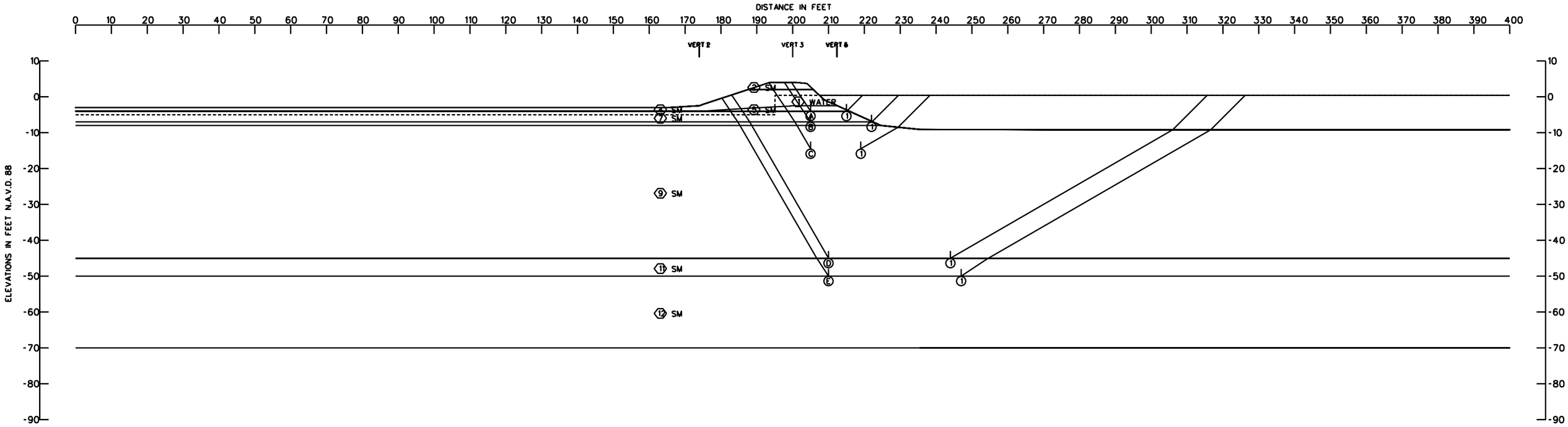
ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
Ⓐ ①	-11.0	3359	2221	321	10025	4308	5901	5717	1.03
Ⓑ ①	-14.5	5217	2855	1536	16198	8132	9608	8066	1.19
Ⓒ ①	-42.0	38611	29175	64222	114802	88338	132008	26464	4.99

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	110	110	110	0	0	0	0	0	0	23
③	WATER	105	110	105	0	0	0	0	0	0	23
④	WATER	105	103	105	0	0	0	0	0	0	23
⑤	WATER	105	103	105	0	0	0	0	0	0	23
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	SM	109	110	109	0	0	0	0	0	0	23
⑧	SM	109	110	109	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 26BF Sta 47+00 to Sta 48+50
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 13-JAN-12



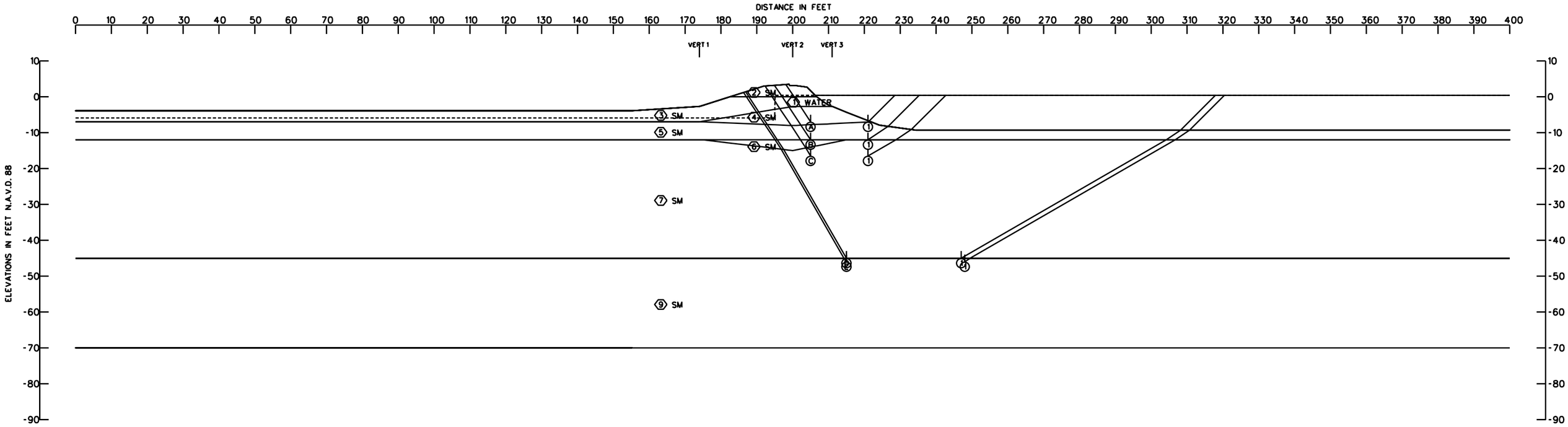
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
(A) (1)	-4.0	1533	642	2	3334	606	2177	2728	0.80
(B) (1)	-7.0	2651	1400	0	6429	1709	4051	4720	0.86
(C) (1)	-14.5	7207	5266	2727	18584	8297	15200	10287	1.48
(D) (1)	-45.0	49960	32208	76273	131898	102543	158441	29355	5.40
(E) (1)	-50.0	57632	38803	90692	160312	128767	187127	31545	5.93

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.					C - UNIT COHESION - P.S.F. CENTER OF STRATUM					C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM					FRICTION ANGLE DEGREES
		VERT. 1	VERT.2	VERT.3	VERT.4	VERT.5	VERT. 1	VERT.2	VERT.3	VERT.4	VERT.5	VERT. 1	VERT.2	VERT.3	VERT.4	VERT.5	
(1)	WATER	62	62.5	62	62	62	0	0	0	0	0	0	0	0	0	0	0
(2)	WATER	111	111	111	111	111	0	0	0	0	0	0	0	0	0	0	23
(3)	WATER	105	111	111	111	105	0	0	0	0	0	0	0	0	0	0	23
(4)	WATER	105	111	111	111	105	0	0	0	0	0	0	0	0	0	0	23
(5)	WATER	103	103	103	103	103	0	0	0	0	0	0	0	0	0	0	23
(6)	WATER	105	105	103	105	105	0	0	0	0	0	0	0	0	0	0	23
(7)	WATER	105	105	103	105	105	0	0	0	0	0	0	0	0	0	0	23
(8)	WATER	99	99	103	99	99	0	0	0	0	0	0	0	0	0	0	23
(9)	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
(10)	SM	107	107	110	107	107	0	0	0	0	0	0	0	0	0	0	23
(11)	SM	112	112	110	112	112	0	0	0	0	0	0	0	0	0	0	23
(12)	SM	112	112	110	112	112	0	0	0	0	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 27 Sta 48+50 to Sta 58+50
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12



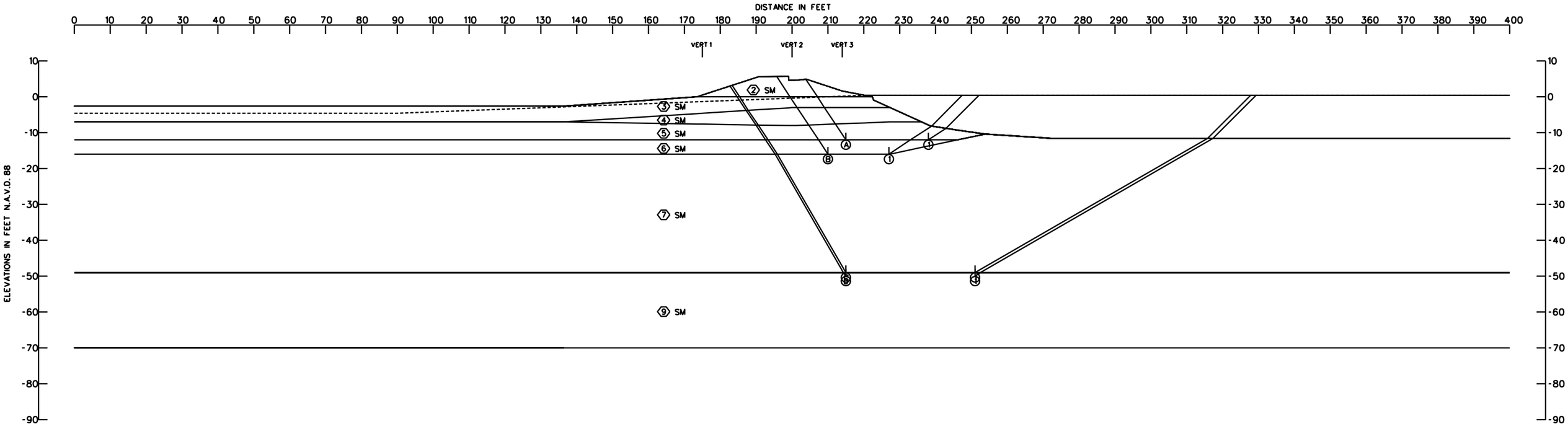
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
(A) (1)	-7.0	1901	702	1	5094	1709	2604	3385	0.77
(B) (1)	-12.0	3641	1927	446	11354	5148	6014	6206	0.97
(C) (1)	-16.5	5900	4951	2838	18990	10406	13689	8584	1.59
(D) (1)	-45.0	36121	28556	71580	117477	100244	136257	17233	7.91
(E) (1)	-46.0	37753	30125	74259	122803	105202	142137	17601	8.08

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
(1)	WATER	62	62	62	0	0	0	0	0	0	0
(2)	WATER	111	111	111	0	0	0	0	0	0	23
(3)	WATER	100	103	100	0	0	0	0	0	0	23
(4)	WATER	86	86	86	0	0	0	0	0	0	23
(5)	WATER	100	97	100	0	0	0	0	0	0	23
(6)	WATER	100	89	100	0	0	0	0	0	0	23
(7)	SM	122	122	122	0	0	0	0	0	0	30
(8)	SM	112	106	112	0	0	0	0	0	0	23
(9)	SM	112	106	112	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 28 Sta 58+50 to Sta 68+12
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12



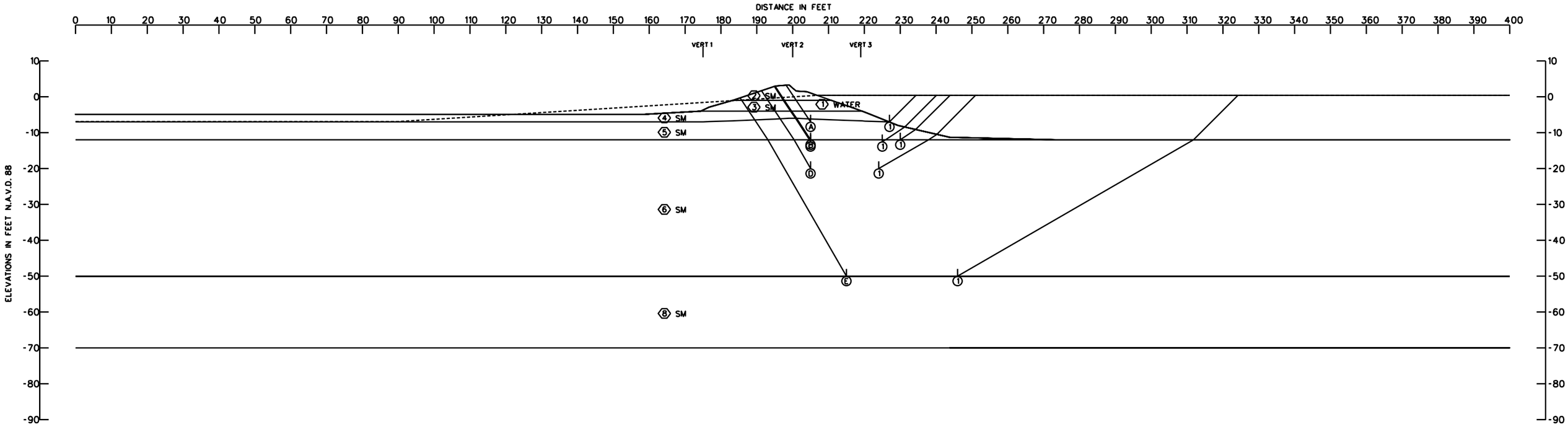
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-12.0	3995	3311	307	11643	5040	7613	6603	1.15
Ⓑ ①	-16.0	7966	4664	2342	21984	10226	14972	11758	1.27
Ⓒ ①	-49.0	52158	36777	84141	154615	118324	173076	36291	4.77
Ⓓ ①	-50.0	53887	37535	86991	160623	123700	178413	36923	4.83

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	114	114	114	0	0	0	0	0	0	23
③	WATER	100	103	100	0	0	0	0	0	0	23
④	WATER	93	93	93	0	0	0	0	0	0	23
⑤	WATER	100	97	100	0	0	0	0	0	0	23
⑥	WATER	100	90	100	0	0	0	0	0	0	23
⑦	SM	122	122	122	0	0	0	0	0	0	30
⑧	SM	112	106	113	0	0	0	0	0	0	23
⑨	SM	112	106	112	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 29F Sta 66+98 to Sta 70+50
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 17-JAN-12



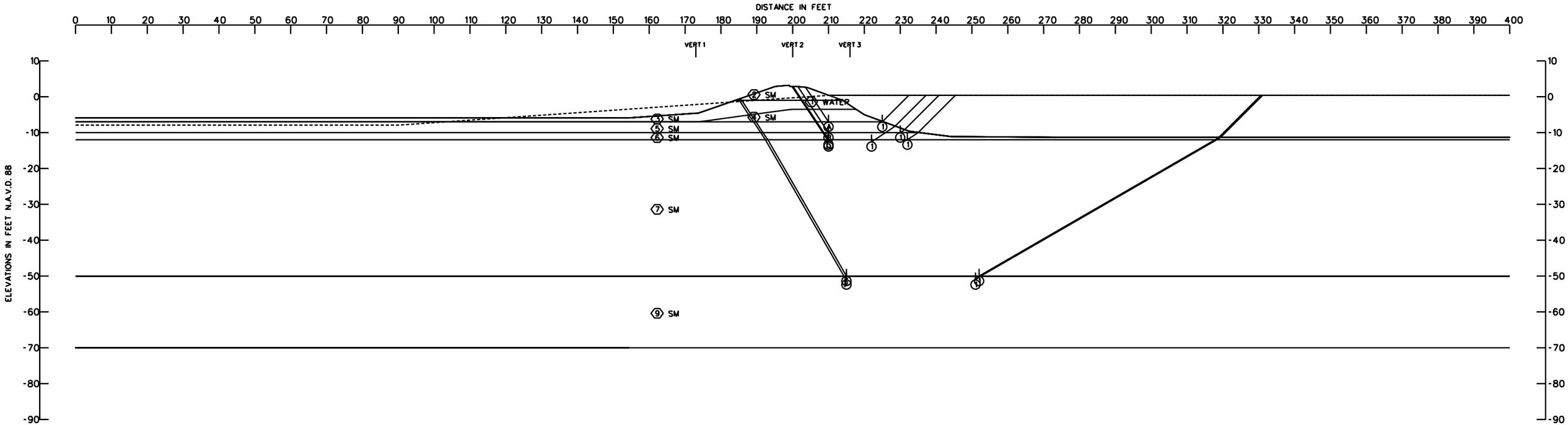
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-7.0	1469	1439	0	4209	1708	2908	2501	1.16
Ⓑ ①	-12.0	3495	3104	220	10752	4972	6819	5780	1.18
Ⓒ ①	-12.5	3743	4135	562	11518	5581	8440	5937	1.42
Ⓓ ①	-20.0	8495	8905	5785	26251	15909	23185	10342	2.24
Ⓔ ①	-50.0	46226	31552	86143	147620	122443	163921	25177	6.51

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	112	112	112	0	0	0	0	0	0	23
③	WATER	103	103	103	0	0	0	0	0	0	23
④	WATER	94	103	94	0	0	0	0	0	0	23
⑤	WATER	94	96	94	0	0	0	0	0	0	23
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	SM	107	107	107	0	0	0	0	0	0	23
⑧	SM	107	107	107	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 30F Sta 74+13 to Sta 76+90
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 25-JAN-12



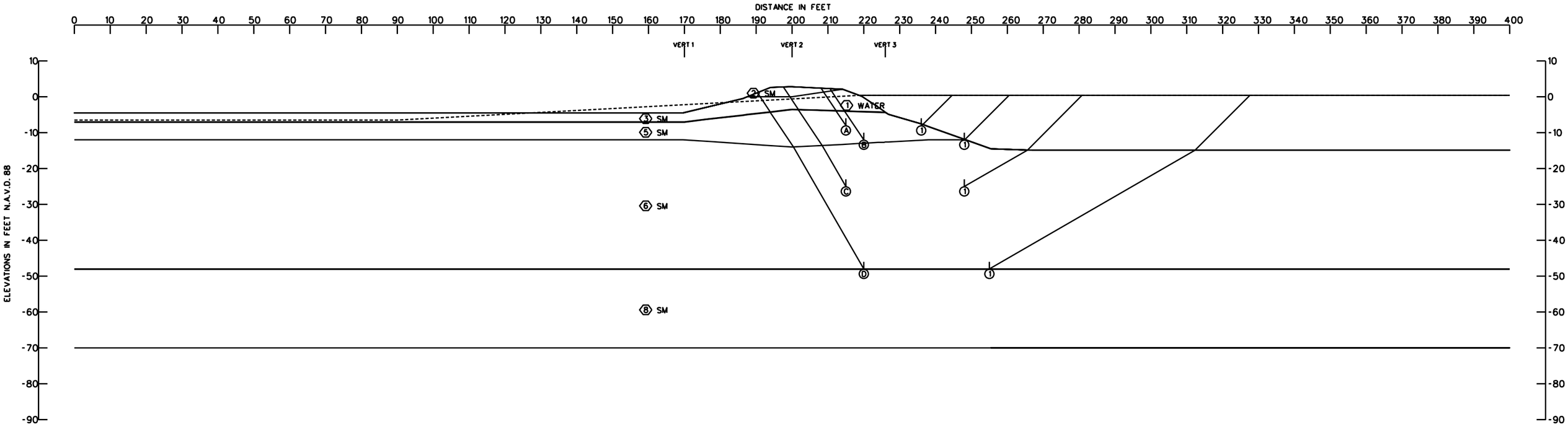
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-7.0	1211	758	0	3788	1709	1969	2079	0.95
Ⓑ ①	-10.0	2225	1547	22	7189	3392	3794	3797	1.00
Ⓒ ①	-12.0	3019	2195	106	9963	4882	5320	5081	1.05
Ⓓ ①	-12.5	3245	2349	691	10703	5676	6285	5027	1.25
Ⓔ ①	-50.0	46853	37276	87672	147920	123211	171801	24709	6.95
Ⓕ ①	-51.0	48426	36969	90632	153747	128701	176027	25046	7.03

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	112	112	112	0	0	0	0	0	0	23
③	WATER	96	103	96	0	0	0	0	0	0	23
④	WATER	92	92	92	0	0	0	0	0	0	23
⑤	WATER	96	92	96	0	0	0	0	0	0	23
⑥	WATER	96	92	96	0	0	0	0	0	0	23
⑦	SM	122	122	122	0	0	0	0	0	0	30
⑧	SM	106	106	106	0	0	0	0	0	0	23
⑨	SM	106	106	106	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 3F Sta 76+90 to Sta 83+73
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 26-JAN-12



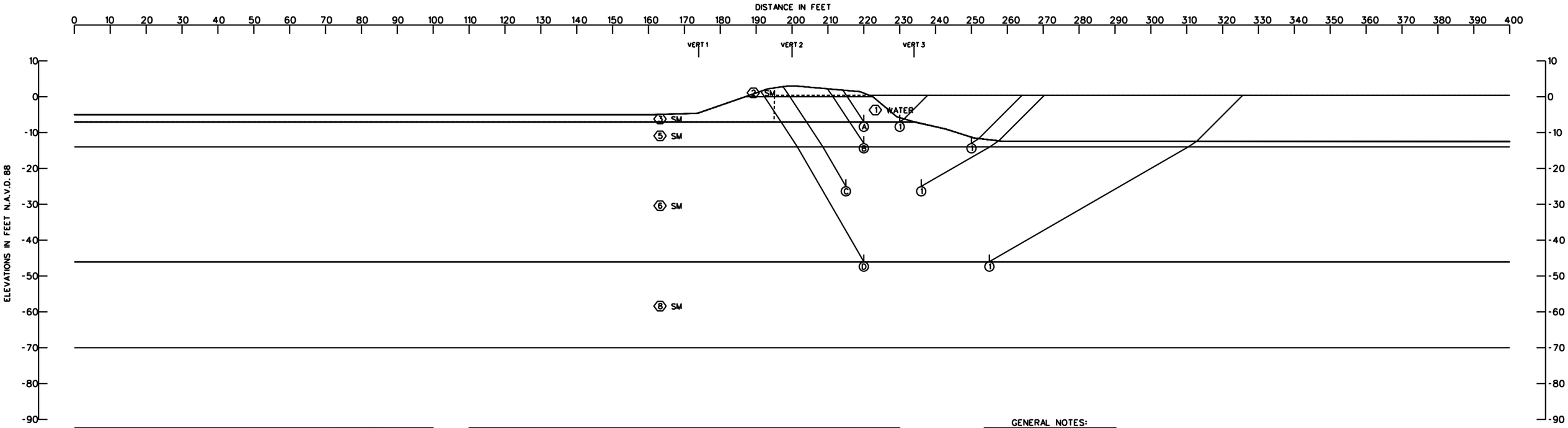
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	O_A	$-O_P$	RESISTING	DRIVING	
Ⓐ ①	-8.0	1693	1372	3	5043	2204	3068	2839	1.08
Ⓑ ①	-12.0	2157	1976	0	8514	4797	4133	3717	1.11
Ⓒ ①	-25.0	12264	18496	7071	38876	23685	37831	15191	2.49
Ⓓ ①	-48.0	43714	33501	65253	138000	105819	142468	32181	4.43

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	112	112	112	0	0	0	0	0	0	23
③	WATER	85	105	85	0	0	0	0	0	0	23
④	WATER	95	98	95	0	0	0	0	0	0	23
⑤	WATER	95	98	95	0	0	0	0	0	0	23
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	SM	106	106	106	0	0	0	0	0	0	23
⑧	SM	106	106	106	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 32F Sta 84+41 to Sta 90+00
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 26-JAN-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
(A) (1)	-7.0	1085	599	14	3641	1720	1698	1921	0.88
(B) (1)	-13.0	2901	2677	42	10775	5637	5620	5138	1.09
(C) (1)	-25.0	12288	12714	10104	39891	25223	35106	14668	2.39
(D) (1)	-46.0	41352	31529	64103	129116	99336	136984	29780	4.60

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	DEGREES
(1)	WATER	62	62	62	0	0	0	0	0	0	0
(2)	WATER	112	112	112	0	0	0	0	0	0	23
(3)	WATER	84	105	84	0	0	0	0	0	0	23
(4)	WATER	94	104	94	0	0	0	0	0	0	23
(5)	WATER	94	104	94	0	0	0	0	0	0	23
(6)	SM	122	122	122	0	0	0	0	0	0	30
(7)	SM	106	106	106	0	0	0	0	0	0	23
(8)	SM	106	106	106	0	0	0	0	0	0	23

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

NOTES

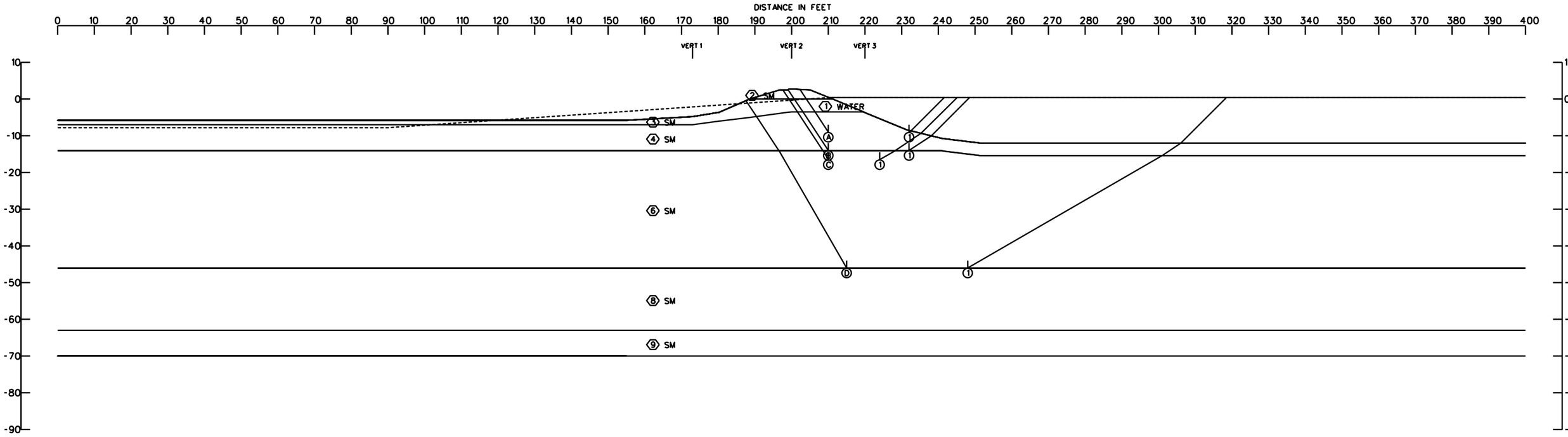
Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
∇ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 33F Sta 90+00 to 93+00
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 29-MAR-12



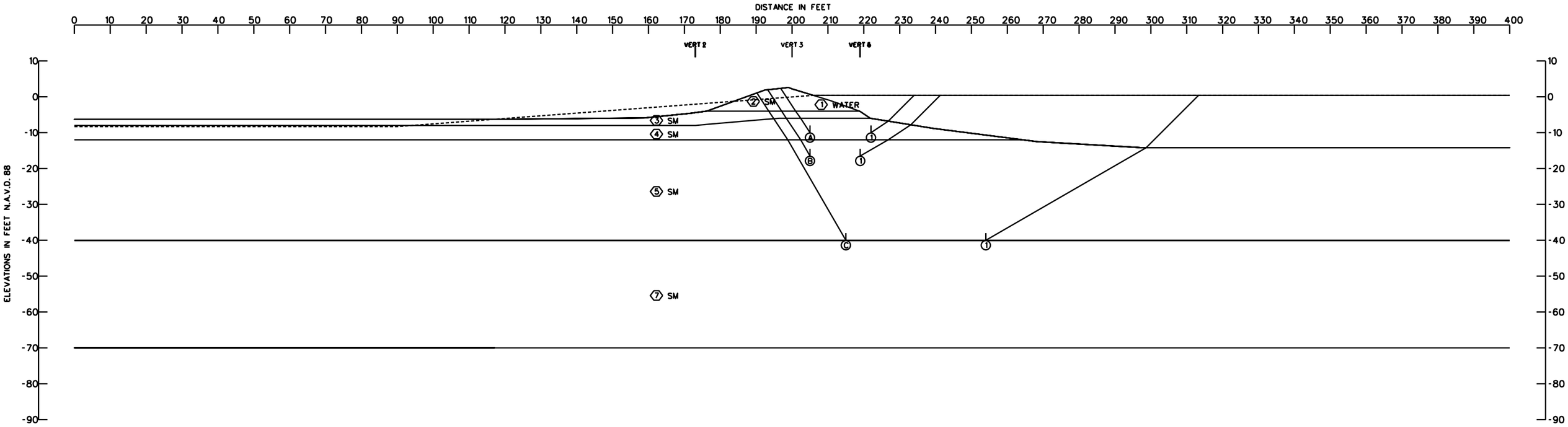
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-9.0	1829	1457	3	5889	2759	3289	3130	1.05
Ⓑ ①	-14.0	3854	2970	437	13048	6815	7261	6233	1.17
Ⓒ ①	-16.5	5202	4204	2174	17522	10187	11580	7335	1.58
Ⓓ ①	-46.0	38041	29404	62463	123255	98567	129908	24688	5.26

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	112	112	112	0	0	0	0	0	0	23
③	WATER	84	98	84	0	0	0	0	0	0	23
④	WATER	94	102	94	0	0	0	0	0	0	23
⑤	WATER	94	102	94	0	0	0	0	0	0	23
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	SM	107	107	107	0	0	0	0	0	0	23
⑧	SM	107	107	107	0	0	0	0	0	0	23
⑨	SM	122	122	122	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 34F Sta 93+00 to Sta 99+53
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 27-JAN-12



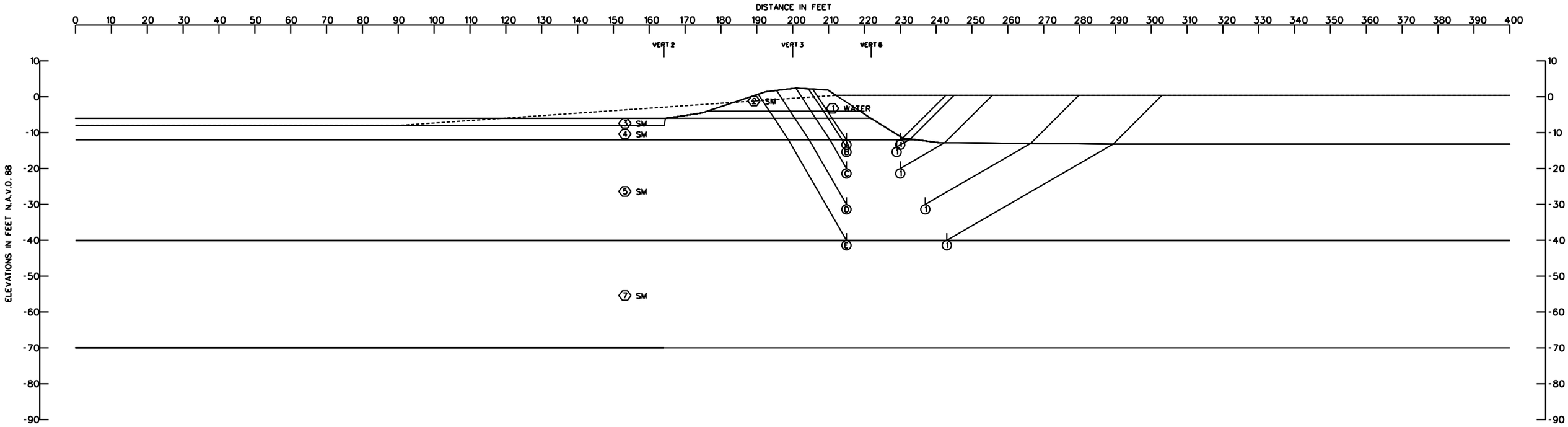
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	O_A	$-O_P$	RESISTING	DRIVING	
Ⓐ ①	-10.0	2322	1916	270	7311	3588	4508	3723	1.21
Ⓑ ①	-16.5	5280	4983	3496	17320	10800	13759	6520	2.11
Ⓒ ①	-40.0	27467	29932	43592	92060	72790	100991	19270	5.24

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.					C - UNIT COHESION - P.S.F.										FRICTION ANGLE DEGREES
							CENTER OF STRATUM					BOTTOM OF STRATUM					
		VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	
1	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
2	WATER	110	110	110	110	110	0	0	0	0	0	0	0	0	0	0	23
3	WATER	96	88	88	88	96	0	0	0	0	0	0	0	0	0	0	23
4	WATER	96	96	88	96	96	0	0	0	0	0	0	0	0	0	0	23
5	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
6	SM	107	107	108	107	107	0	0	0	0	0	0	0	0	0	0	23
7	SM	107	107	108	107	107	0	0	0	0	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 35A Sta 102+42 to Sta 103+50
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 27-JAN-12



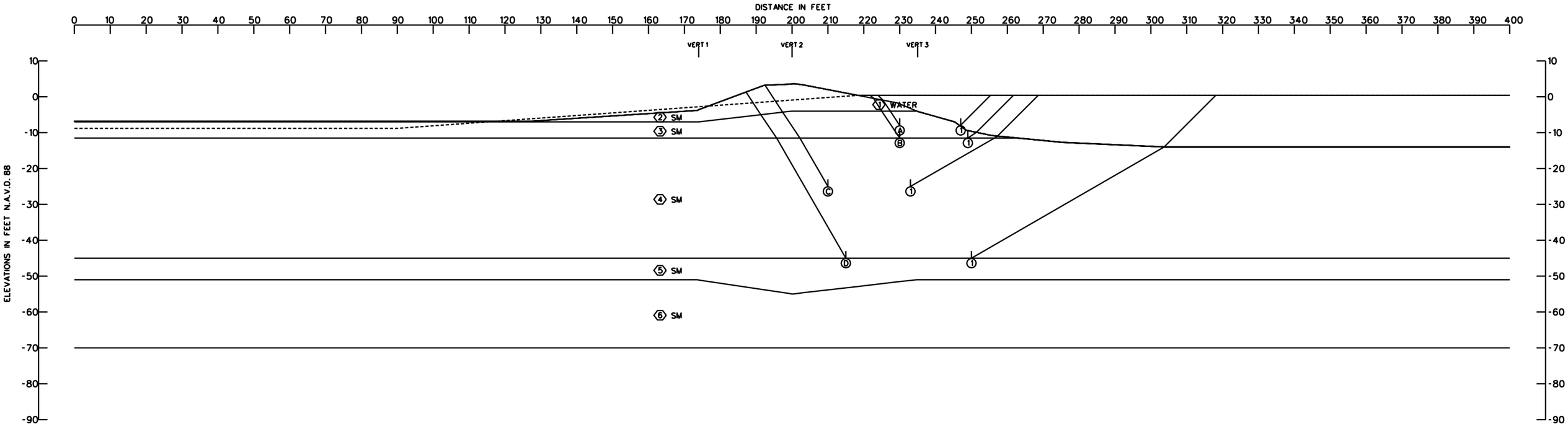
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-12.0	2340	1167	9	8872	4805	3516	4067	0.86
Ⓑ ①	-14.0	3198	2526	328	11868	6637	6052	5231	1.16
Ⓒ ①	-20.0	6873	5710	3545	23902	14769	16128	9133	1.77
Ⓓ ①	-30.0	16429	15202	17429	53616	37585	49060	16031	3.06
Ⓔ ①	-40.0	29704	20874	43261	94768	72626	93839	22142	4.24

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.					C - UNIT COHESION - P.S.F.										FRICTION ANGLE
							CENTER OF STRATUM					BOTTOM OF STRATUM					
		VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	DEGREES
①	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
②	WATER	110	110	110	110	110	0	0	0	0	0	0	0	0	0	0	23
③	WATER	96	88	88	88	96	0	0	0	0	0	0	0	0	0	0	23
④	WATER	96	96	88	96	96	0	0	0	0	0	0	0	0	0	0	23
⑤	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
⑥	SM	107	107	108	107	107	0	0	0	0	0	0	0	0	0	0	23
⑦	SM	107	107	108	107	107	0	0	0	0	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 35B Sta 103+50 to Sta 114+66
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 18-JAN-12



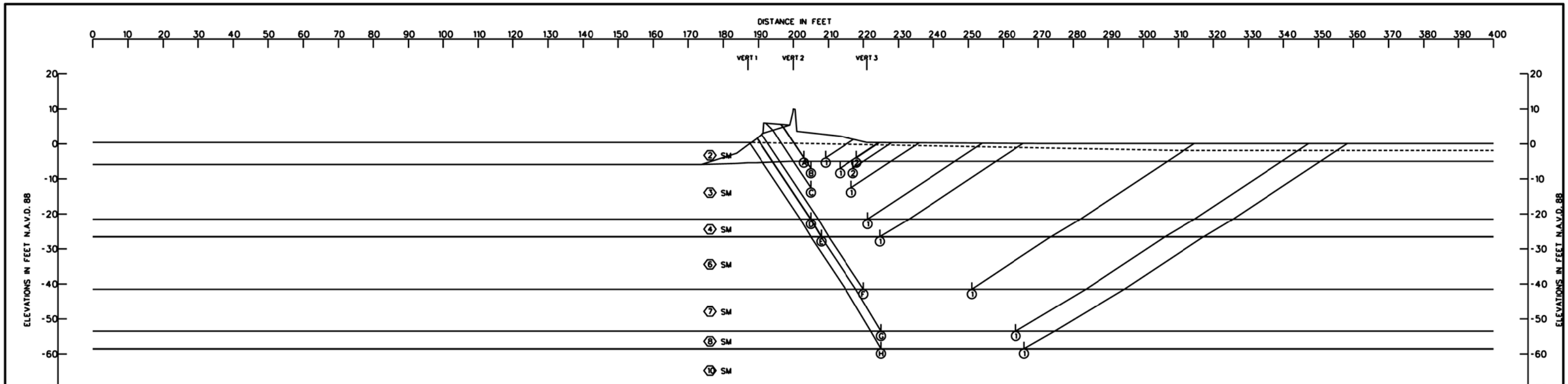
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-8.0	428	330	0	2967	2202	758	765	0.99
Ⓑ ①	-11.5	913	650	22	6051	4437	1585	1614	0.98
Ⓒ ①	-25.0	15318	15245	12160	42811	26235	42723	16576	2.58
Ⓓ ①	-45.0	43288	32268	62346	127321	95574	137902	31747	4.34

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	108	118	108	0	0	0	0	0	0	23
③	WATER	74	90	74	0	0	0	0	0	0	23
④	SM	122	122	122	0	0	0	0	0	0	30
⑤	SM	103	107	103	0	0	0	0	0	0	23
⑥	SM	118	120	118	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 36 Sta 120+39 to Sta 126+67
Flood Side Stability Analysis
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 27-JAN-12



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-4.0	2675	1486	2137	5316	2152	6298	3164	1.99
A	2	-4.0	2675	3214	1006	5316	1231	6895	4085	1.69
B	1	-7.0	3796	2405	2964	8360	3767	9165	4593	2.00
B	2	-7.0	3796	3331	2480	8360	3361	9607	4999	1.92
C	1	-12.5	7101	4530	6572	17770	9768	18203	8002	2.27
D	1	-21.5	13455	9076	17102	38682	27085	39633	11597	3.42
E	1	-26.5	18446	10886	28549	54009	40679	57881	13330	4.34
F	1	-41.5	34236	26465	63075	113833	97040	123776	16793	7.37
G	1	-53.5	52498	54772	114489	178006	159961	221759	18045	12.29
H	1	-58.5	62012	51631	143235	209814	191241	256878	18573	13.83

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	WATER	62	62	62	0	0	0	0	0	0	0
2	WATER	118	116	118	0	0	0	0	0	0	23
3	WATER	111	112	111	0	0	0	0	0	0	23
4	SM	117	117	117	0	0	0	0	0	0	28
5	SM	102	101	102	0	0	0	0	0	0	23
6	SM	102	101	102	0	0	0	0	0	0	23
7	SM	117	117	117	0	0	0	0	0	0	28
8	SM	122	122	122	0	0	0	0	0	0	30
9	SM	112	112	112	0	0	0	0	0	0	23
10	SM	112	112	112	0	0	0	0	0	0	23

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
∇ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

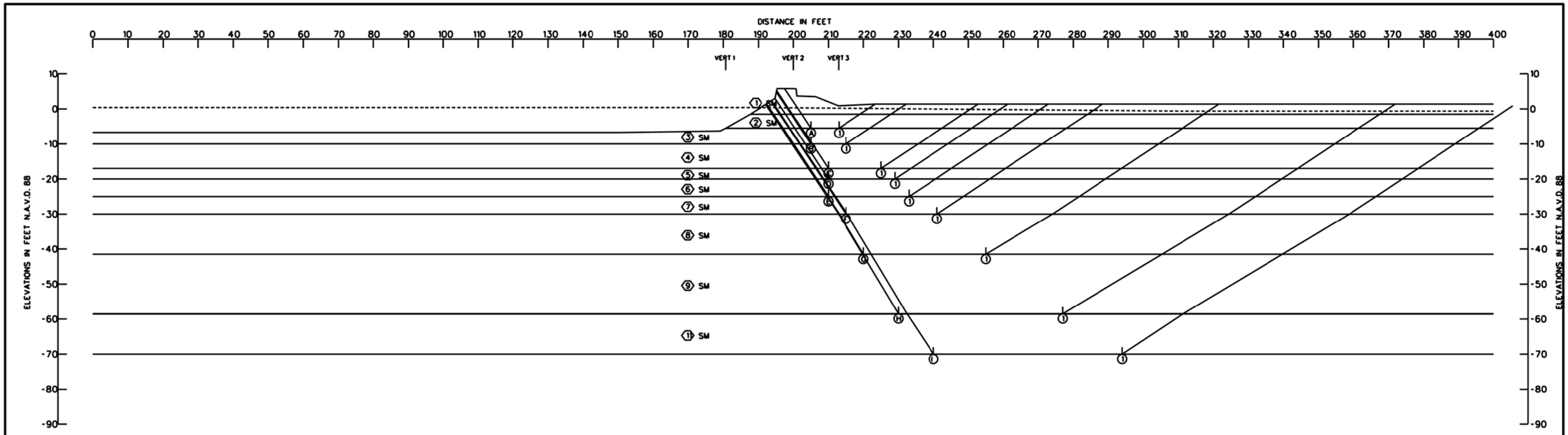
FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 1 Sta. 2+44 to Sta. 10+00
Protected Side Stability Analysis
Case: 5-case P/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 09-FEB-12

PLATE:



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES O_A	$-O_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-5.5	2689	1885	1994	5835	2562	6568	3273	2.01
B	1	-10.0	5351	3259	5397	12844	7416	14007	5428	2.58
C	1	-17.0	9435	6704	13679	26129	19702	29818	6427	4.64
D	1	-20.0	11893	9852	18245	34037	26666	39990	7371	5.43
E	1	-25.0	16000	14623	27262	48490	40613	57885	7877	7.35
F	1	-30.0	20461	19632	38159	65067	57485	78252	7582	10.32
G	1	-41.5	35720	44983	81922	114838	107388	162625	7450	21.83
H	1	-58.5	66902	66894	170200	216891	209502	303996	7389	41.14
I	1	-70.0	90049	0	223835	304170	296833	313884	7337	42.78

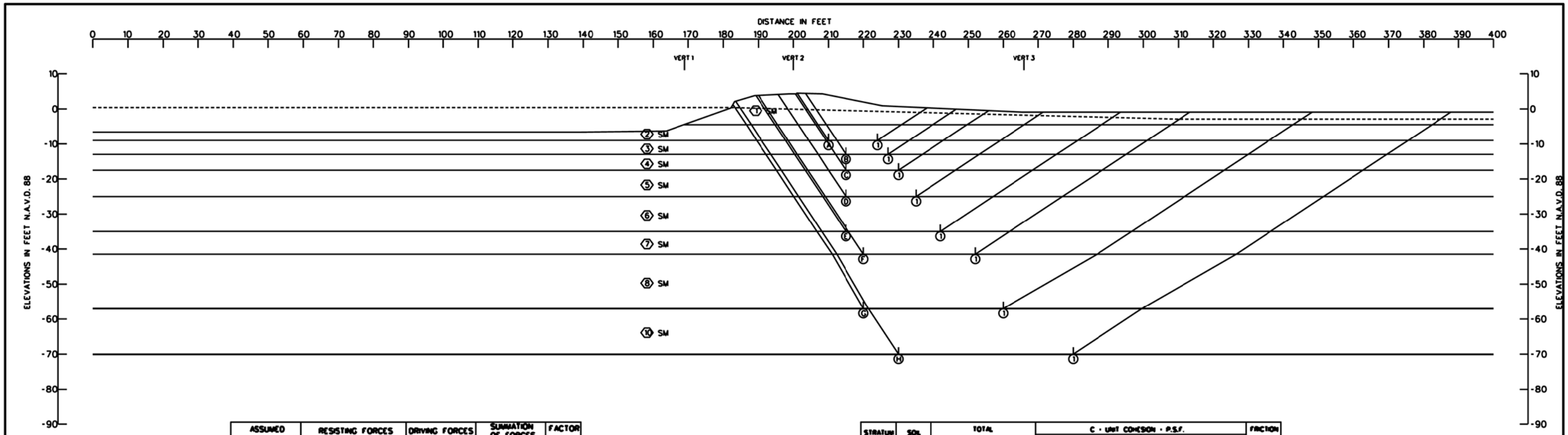
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	SM	116	116	116	0	0	0	0	0	0	23
2	SM	116	116	116	0	0	0	0	0	0	23
3	SM	117	117	117	0	0	0	0	0	0	23
4	SM	117	117	117	0	0	0	0	0	0	23
5	SM	117	117	117	0	0	0	0	0	0	23
6	SM	117	117	117	0	0	0	0	0	0	23
7	SM	117	117	117	0	0	0	0	0	0	23
8	SM	117	117	117	0	0	0	0	0	0	28
9	SM	117	117	117	0	0	0	0	0	0	28
10	SM	105	105	105	0	0	0	0	0	0	23
11	SM	105	105	105	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 2 Sta. 10+00 to Sta. 12+00
Protected Side Stability Analysis
Case: S-case P/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 06-FEB-12

PLATE:



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
A 1	-9.0	4490	4805	4280	10389	5420	13575	4969	2.73
B 1	-13.0	6547	4737	7518	16663	10371	18802	6292	2.99
C 1	-17.5	9912	7259	12226	26887	17887	29397	9000	3.27
D 1	-25.0	16442	11725	21993	48432	34526	50160	13906	3.61
E 1	-35.0	26667	19607	39340	85421	65148	85614	20273	4.22
F 1	-41.5	33799	25626	53523	113403	90089	112948	23314	4.84
G 1	-57.0	60286	47418	124710	200923	170422	232414	30501	7.62
H 1	-70.0	83477	71868	177487	293160	259734	332832	33426	9.96

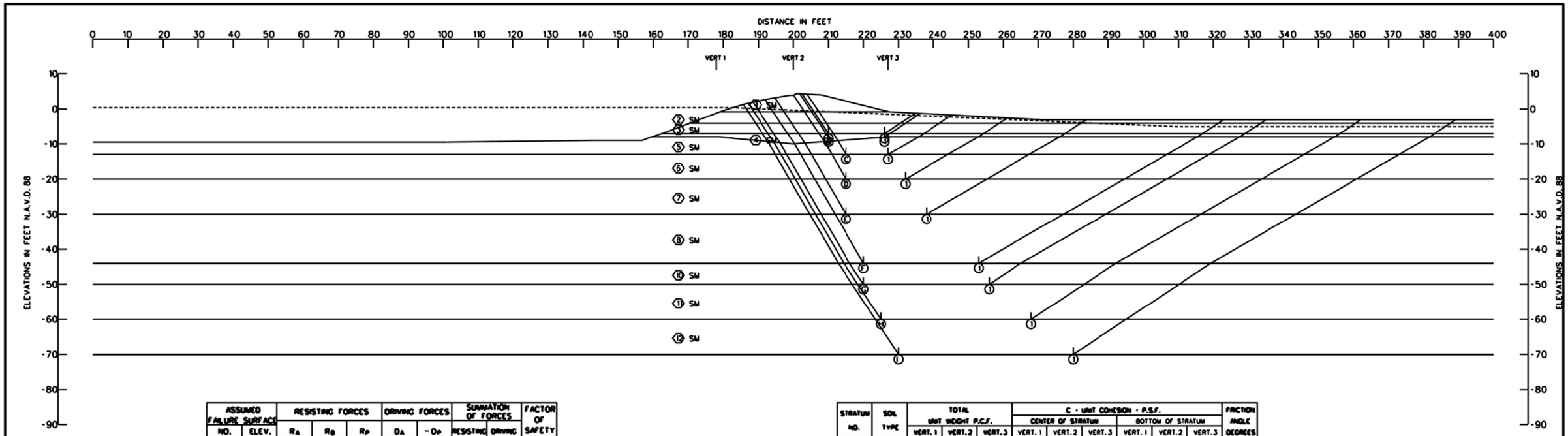
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	SM	117	117	117	0	0	0	0	0	0	23
2	SM	114	114	114	0	0	0	0	0	0	23
3	SM	114	114	114	0	0	0	0	0	0	23
4	SM	114	114	114	0	0	0	0	0	0	23
5	SM	98	98	98	0	0	0	0	0	0	23
6	SM	98	98	98	0	0	0	0	0	0	23
7	SM	98	98	98	0	0	0	0	0	0	23
8	SM	122	122	122	0	0	0	0	0	0	30
9	SM	112	112	112	0	0	0	0	0	0	23
10	SM	112	112	112	0	0	0	0	0	0	23
11	SM	112	112	112	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 3 Sta 21+00 to Sta 33+00
Protected Side Stability Analysis
Case: S-Case P/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 06-FEB-12

PLATE:



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES O_A	$-O_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-7.0	2939	3539	1360	6483	1969	7838	4514	1.74
B	1	-8.0	3386	3805	1746	7712	2626	8937	5086	1.76
C	1	-13.0	5788	5407	6322	14347	7449	17517	6898	2.54
D	1	-20.0	11677	11337	16945	30260	18542	39959	11718	3.41
E	1	-30.0	23077	22836	41336	62707	43843	87249	18864	4.63
F	1	-44.0	44653	34709	97885	126716	99339	177247	27377	6.47
G	1	-50.0	54321	42043	118325	161365	130616	214689	30749	6.98
H	1	-60.0	71833	58031	157847	226294	191266	287711	35028	8.21
I	1	-70.0	91478	76901	203265	301217	263185	371644	38032	9.77

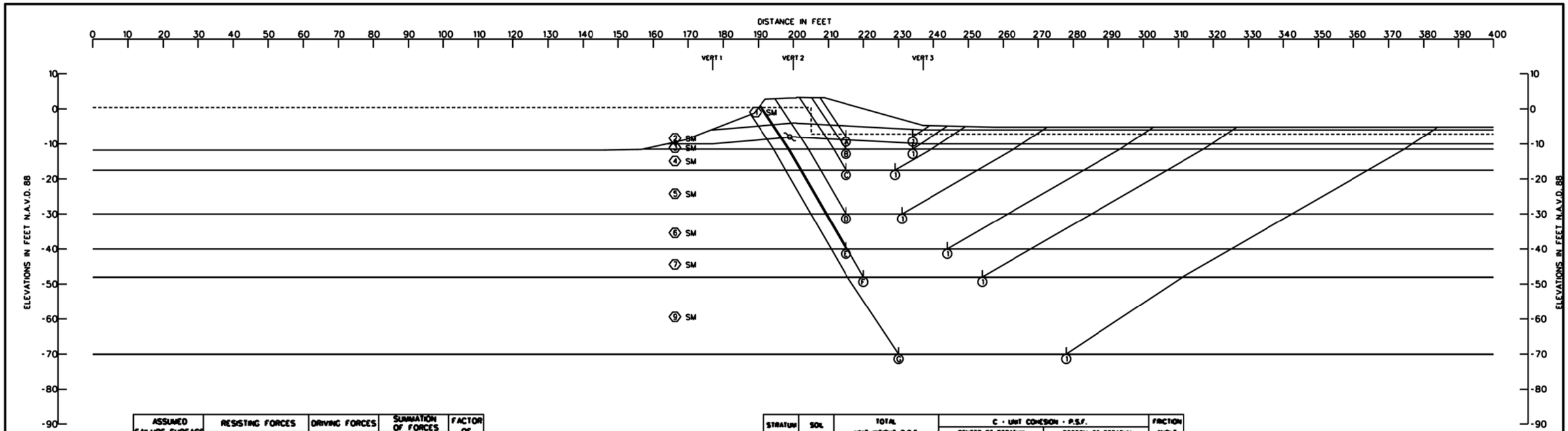
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	SM	109	108	109	0	0	0	0	0	0	23
2	SM	109	101	109	0	0	0	0	0	0	23
3	SM	101	96	101	0	0	0	0	0	0	23
4	SM	101	103	101	0	0	0	0	0	0	23
5	SM	122	122	122	0	0	0	0	0	0	30
6	SM	122	122	122	0	0	0	0	0	0	30
7	SM	122	122	122	0	0	0	0	0	0	30
8	SM	122	122	122	0	0	0	0	0	0	30
9	SM	109	109	109	0	0	0	0	0	0	23
10	SM	109	109	109	0	0	0	0	0	0	23
11	SM	109	109	109	0	0	0	0	0	0	23
12	SM	109	109	109	0	0	0	0	0	0	23
13	SM	109	109	109	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 6B Sta. 47+00 to Sta. 59+00
Protected Side Stability Analysis
Case: S-Case P/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 07-FEB-12

PLATE:



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-8.0	3040	4953	767	5430	618	8760	4812	1.82
B	1	-11.5	5211	5932	2239	9851	2324	13382	7527	1.78
C	1	-17.5	10447	9373	9953	20550	8862	29773	11688	2.55
D	1	-30.0	22909	17334	36610	56833	35046	76853	21787	3.53
E	1	-40.0	36552	38805	70333	98948	69283	145690	29665	4.91
F	1	-48.0	51749	38615	106637	140162	105835	197001	34327	5.74
G	1	-70.0	92755	72428	191903	286737	243545	357086	43192	8.27

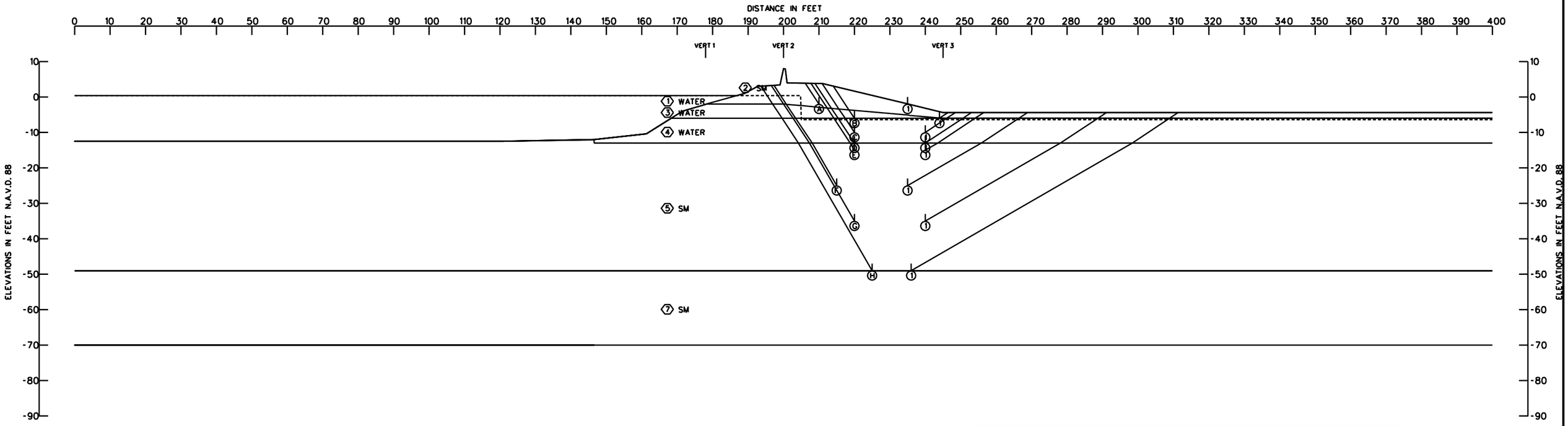
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	SM	99	101	99	0	0	0	0	0	0	23
2	SM	99	87	99	0	0	0	0	0	0	23
3	SM	96	98	96	0	0	0	0	0	0	23
4	SM	122	122	122	0	0	0	0	0	0	30
5	SM	122	122	122	0	0	0	0	0	0	30
6	SM	122	122	122	0	0	0	0	0	0	30
7	SM	122	122	122	0	0	0	0	0	0	30
8	SM	108	108	108	0	0	0	0	0	0	23
9	SM	108	108	108	0	0	0	0	0	0	23
10	SM	108	108	108	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 10 Sta. 74+00 to Sta. 79+50
Protected Side Stability Analysis
Case: 5-case P/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 07-FEB-12

PLATE:



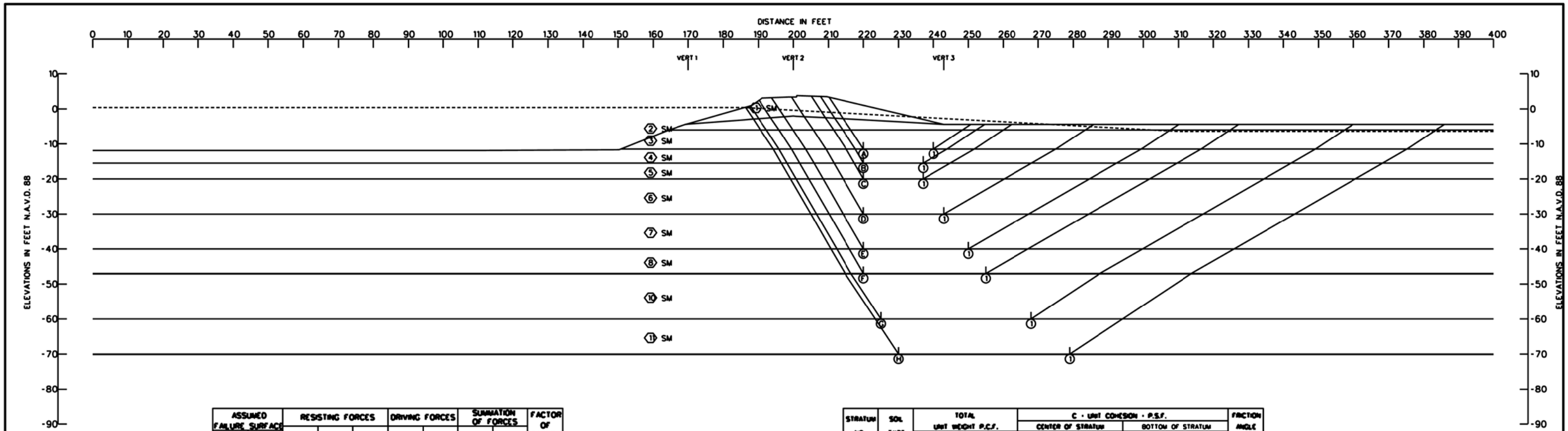
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-2.0	1051	3514	0	1870	0	4565	1870	2.44
Ⓑ ①	-6.0	2075	4889	195	3692	152	7159	3540	2.02
Ⓒ ①	-10.0	4390	5443	1604	8218	1656	11437	6562	1.74
Ⓓ ①	-13.0	6370	6017	2622	12697	3406	15009	9291	1.62
Ⓔ ①	-15.0	7999	9557	4154	16150	5055	21710	11095	1.96
Ⓕ ①	-25.0	18603	18032	19200	43182	21070	55835	22112	2.53
Ⓖ ①	-35.0	32509	23298	44137	78778	48289	99944	30489	3.28
Ⓗ ①	-49.0	52216	13246	101250	148329	107995	166712	40334	4.13

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	109	109	109	0	0	0	0	0	0	23
③	WATER	75	75	75	0	0	0	0	0	0	23
④	WATER	75	105	75	0	0	0	0	0	0	23
⑤	SM	122	122	122	0	0	0	0	0	0	30
⑥	SM	108	108	108	0	0	0	0	0	0	23
⑦	SM	108	108	108	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 13 Sta. 93+00 to Sta. 96+00
Protected Side Stability Analysis
Case: S-case P/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 31-JAN-12



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-11.5	3475	3168	229	9450	2364	6872	7086	0.97
Ⓑ ①	-15.5	5885	6346	2193	16284	6000	14424	10284	1.40
Ⓒ ①	-20.0	9407	8974	6439	26391	12179	24820	14212	1.75
Ⓓ ①	-30.0	20225	19097	25832	57875	34472	65154	23403	2.78
Ⓔ ①	-40.0	34861	34154	59836	101385	69253	128851	32132	4.01
Ⓕ ①	-47.0	47362	35100	91645	139054	100859	174107	38195	4.56
Ⓖ ①	-60.0	69270	52605	139688	220711	174231	261563	46480	5.63
Ⓗ ①	-70.0	88283	68819	182522	294330	243090	339624	51240	6.63

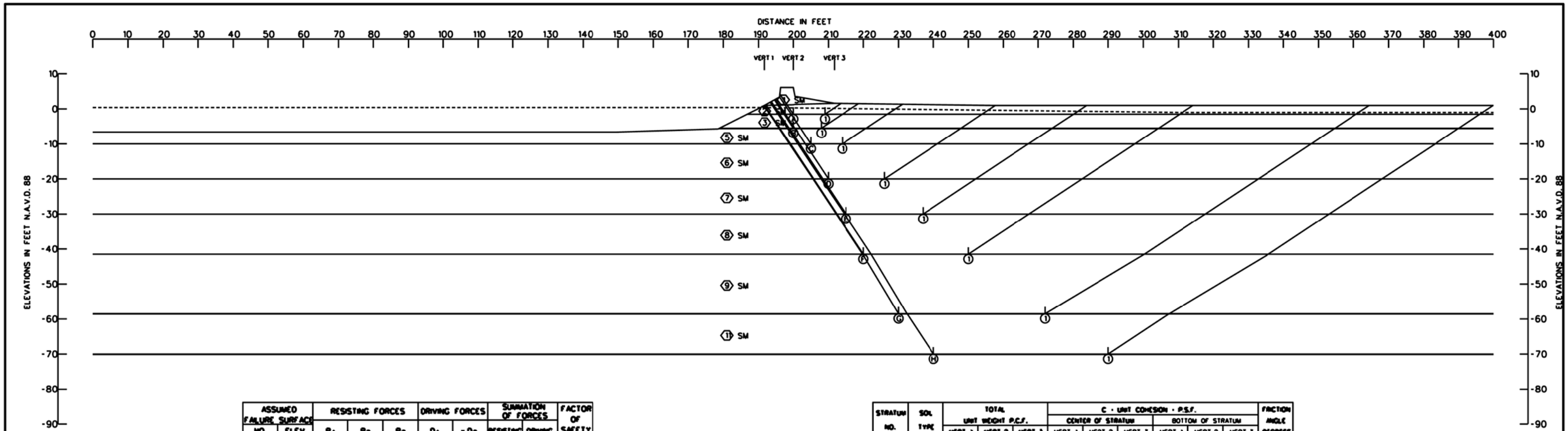
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	SM	107	107	107	0	0	0	0	0	0	23
②	SM	107	80	107	0	0	0	0	0	0	23
③	SM	80	109	80	0	0	0	0	0	0	23
④	SM	122	122	122	0	0	0	0	0	0	30
⑤	SM	122	122	122	0	0	0	0	0	0	30
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	SM	122	122	122	0	0	0	0	0	0	30
⑧	SM	122	122	122	0	0	0	0	0	0	30
⑨	SM	108	108	108	0	0	0	0	0	0	23
⑩	SM	108	108	108	0	0	0	0	0	0	23
⑪	SM	108	108	108	0	0	0	0	0	0	23
⑫	SM	108	108	108	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 14 Sta. 96+00 to Sta. 100+28
Protected Side Stability Analysis
Case: 5-case P/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 07-FEB-12

PLATE:



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES O_A	$-O_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-1.5	1657	1518	651	3050	595	3826	2455	1.56
B	1	-5.5	2835	2085	2494	6101	2941	7414	3160	2.35
C	1	-10.0	4859	2864	5593	11944	7509	13316	4435	3.00
D	1	-20.0	10895	8442	17523	32205	25926	36860	6279	5.87
E	1	-30.0	19561	16623	36555	63373	55871	72739	7502	9.70
F	1	-41.5	33102	30559	67707	113297	104920	131368	8377	15.68
G	1	-58.5	64272	59152	155015	215205	206001	278439	9204	30.25
H	1	-70.0	87852	83999	209531	303154	293633	381382	9521	40.06

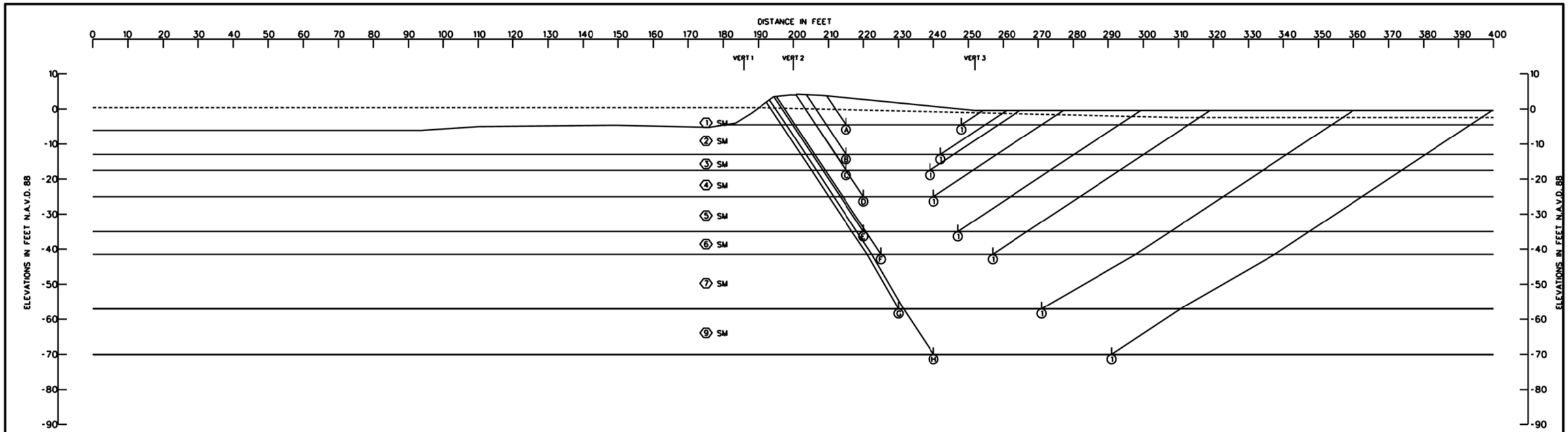
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	SM	114	114	114	0	0	0	0	0	0	23
2	SM	114	114	114	0	0	0	0	0	0	23
3	SM	114	114	114	0	0	0	0	0	0	23
4	SM	117	117	117	0	0	0	0	0	0	23
5	SM	117	117	117	0	0	0	0	0	0	23
6	SM	117	117	117	0	0	0	0	0	0	23
7	SM	117	117	117	0	0	0	0	0	0	23
8	SM	117	117	117	0	0	0	0	0	0	23
9	SM	117	117	117	0	0	0	0	0	0	28
10	SM	118	118	118	0	0	0	0	0	0	23
11	SM	118	118	118	0	0	0	0	0	0	23
12	SM	118	118	118	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 22 Sta. 13+55 to Sta. 21+00
Protected Side Stability Analysis
Case: 5-case P/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 07-FEB-12

PLATE:



ASSUMED FAILURE SURFACE NO.		ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-4.5	1759	6549	848	3722	1041	9156	2681	3.41
B	1	-13.0	6195	10719	6498	16242	9551	23412	6691	3.50
C	1	-17.5	9430	12042	11550	26303	17483	33022	8820	3.74
D	1	-25.0	15369	12040	21969	46721	34858	49378	11863	4.16
E	1	-35.0	25455	19922	40064	83529	66278	85441	17251	4.95
F	1	-41.5	32575	25790	55163	111555	92155	113528	19400	5.85
G	1	-57.0	58557	48248	127911	198080	173669	234716	24411	9.62
H	1	-70.0	81804	73314	180866	290431	263791	335984	26640	12.61

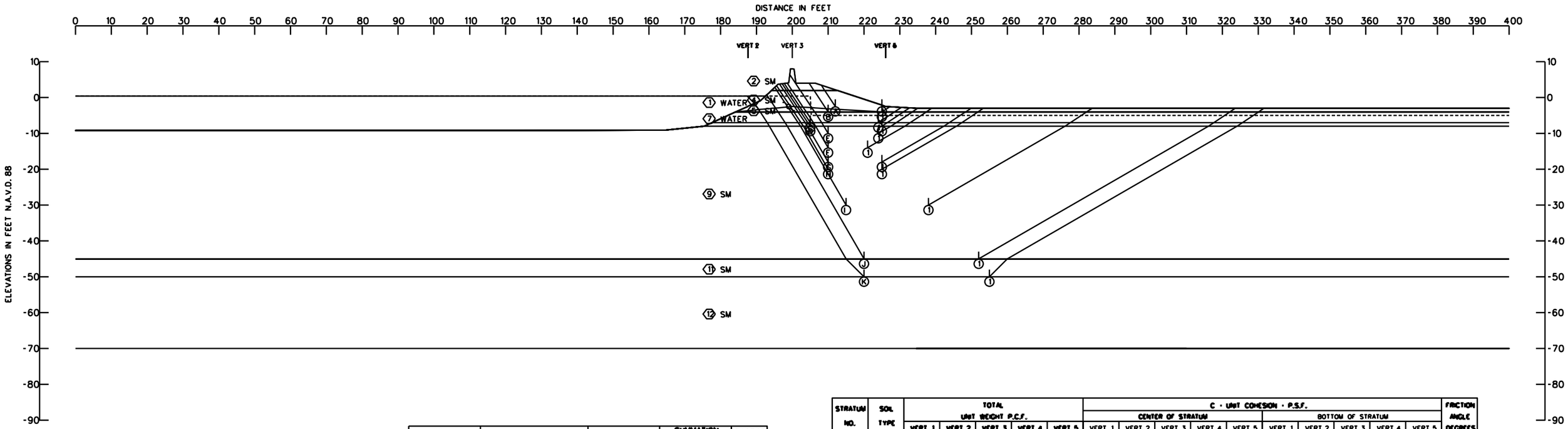
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
1	SM	117	117	117	0	0	0	0	0	0	23
2	SM	114	114	114	0	0	0	0	0	0	23
3	SM	114	114	114	0	0	0	0	0	0	23
4	SM	98	98	98	0	0	0	0	0	0	23
5	SM	98	98	98	0	0	0	0	0	0	23
6	SM	98	98	98	0	0	0	0	0	0	23
7	SM	122	122	122	0	0	0	0	0	0	30
8	SM	112	112	112	0	0	0	0	0	0	23
9	SM	112	112	112	0	0	0	0	0	0	23
10	SM	112	112	112	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 23 Sta 21+00 to Sta 24+00
Protected Side Stability Analysis
Case: S-Case P/S Global Stability
March 2012

Lake Pontchartrain, LA & vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 08-FEB-12

PLATE:



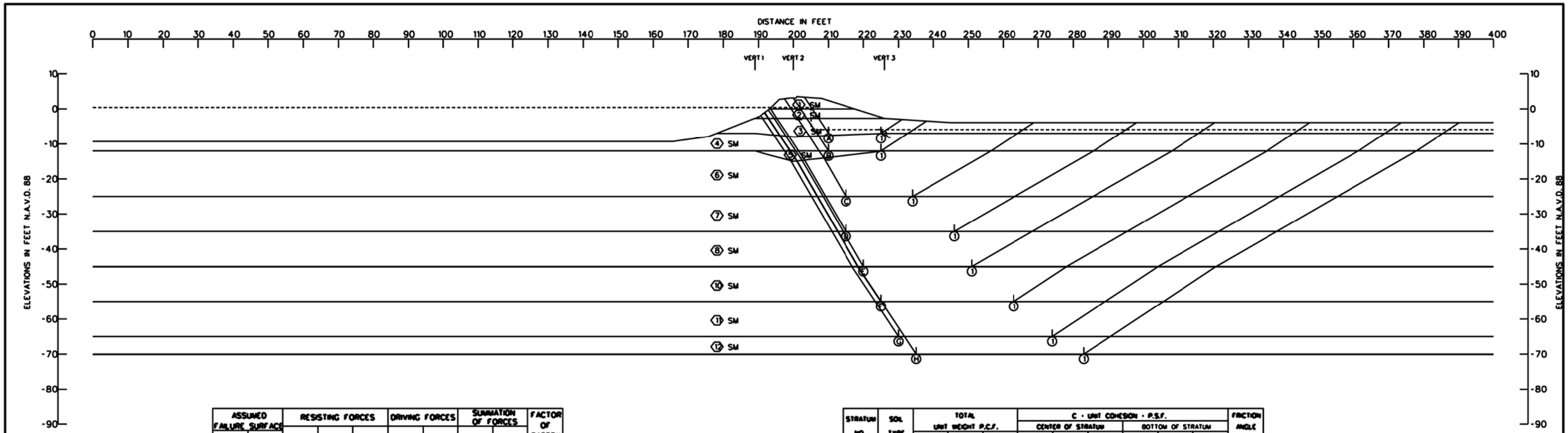
ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES O_A	$-O_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-2.5	865	1538	6	1540	5	2409	1535	1.57
B	1	-4.0	1792	3046	167	3190	130	5005	3060	1.64
C	1	-7.0	3334	6206	1214	7645	1072	10754	6573	1.64
D	1	-8.0	3745	6706	1577	8870	1511	12028	7359	1.63
E	1	-10.0	5936	6800	3347	10951	2861	16083	8090	1.99
F	1	-14.0	9083	7199	8514	18433	7165	24796	11268	2.20
G	1	-18.0	11676	11251	14246	27450	12773	37173	14677	2.53
H	1	-20.0	13748	12282	18190	32633	16495	44220	16138	2.74
I	1	-30.0	25392	23594	44700	64267	42251	93686	22016	4.26
J	1	-45.0	49424	0	107298	132946	104018	156722	28928	5.42
K	1	-50.0	49718	0	107297	161335	130520	157015	30815	5.10

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	VERT. 4	VERT. 5	FRICTION ANGLE DEGREES
1	WATER	62	62	62	62	62	0	0	0	0	0	0	0	0	0	0	0
2	WATER	111	111	111	111	111	0	0	0	0	0	0	0	0	0	0	23
3	WATER	105	111	111	111	105	0	0	0	0	0	0	0	0	0	0	23
4	WATER	105	111	111	111	105	0	0	0	0	0	0	0	0	0	0	23
5	WATER	103	103	103	103	103	0	0	0	0	0	0	0	0	0	0	23
6	WATER	105	105	103	105	105	0	0	0	0	0	0	0	0	0	0	23
7	WATER	105	105	103	105	105	0	0	0	0	0	0	0	0	0	0	23
8	WATER	99	99	103	99	99	0	0	0	0	0	0	0	0	0	0	23
9	SM	122	122	122	122	122	0	0	0	0	0	0	0	0	0	0	30
10	SM	107	107	110	107	107	0	0	0	0	0	0	0	0	0	0	0
11	SM	107	107	110	107	107	0	0	0	0	0	0	0	0	0	0	0
12	SM	112	112	110	112	112	0	0	0	0	0	0	0	0	0	0	0

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 27 Sta. 48+50 to Sta. 58+50
Protected Side Stability Analysis
Case: S-case P/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 01-FEB-12



ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES O_A	$-O_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
A	1	-7.0	2937	3976	1081	5266	881	7994	4385	1.82
B	1	-12.0	5339	5128	3655	11634	4012	14122	7622	1.85
C	1	-25.0	15733	15330	24350	39388	24335	55413	15053	3.68
D	1	-35.0	26534	34524	53910	74151	54177	114968	19974	5.76
E	1	-45.0	42806	32474	95801	119823	96436	171081	23387	7.32
F	1	-55.0	58923	47110	129656	175923	150394	235689	25529	9.23
G	1	-65.0	77352	63468	169858	242303	215550	310678	26753	11.61
H	1	-70.0	87189	74086	192340	279295	252329	353615	26966	13.11

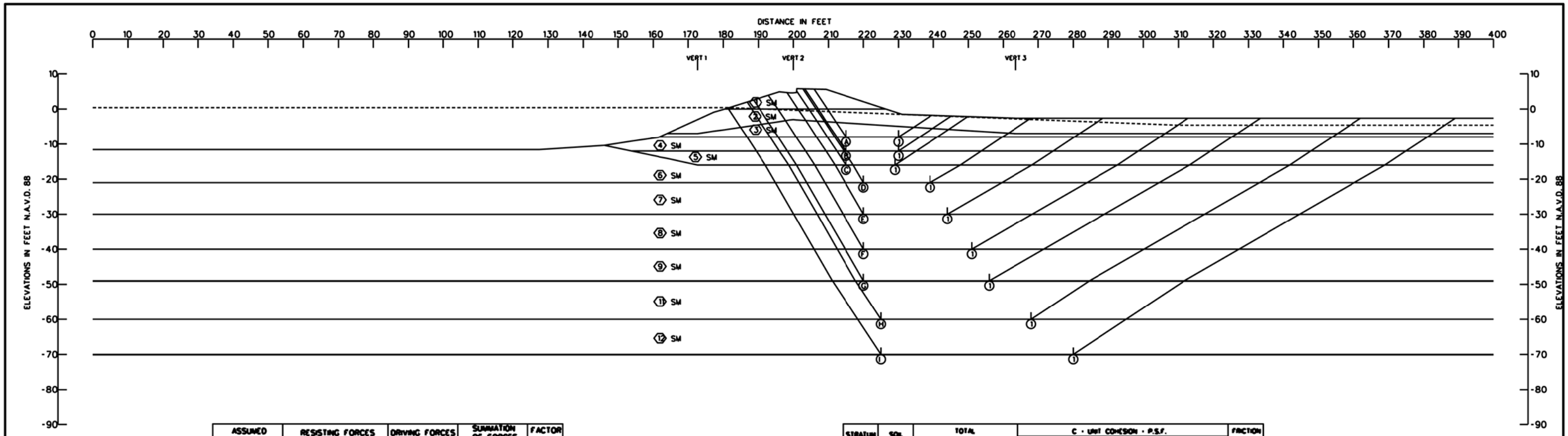
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F. VERT. 1	VERT. 2	VERT. 3	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	VERT. 2	VERT. 3	BOTTOM OF STRATUM VERT. 1	VERT. 2	VERT. 3	FRICTION ANGLE DEGREES
1	SM	111	111	111	0	0	0	0	0	0	23
2	SM	103	103	103	0	0	0	0	0	0	23
3	SM	100	86	100	0	0	0	0	0	0	23
4	SM	100	97	100	0	0	0	0	0	0	23
5	SM	100	89	100	0	0	0	0	0	0	23
6	SM	122	122	122	0	0	0	0	0	0	30
7	SM	122	122	122	0	0	0	0	0	0	30
8	SM	122	122	122	0	0	0	0	0	0	30
9	SM	112	106	112	0	0	0	0	0	0	23
10	SM	112	106	112	0	0	0	0	0	0	23
11	SM	112	106	112	0	0	0	0	0	0	23
12	SM	112	106	112	0	0	0	0	0	0	23
13	SM	112	106	112	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 28 Sta 58+50 to Sta 68+12
Protected Side Stability Analysis
Case: S-Case P/S Global Stability
March 2012

Lake Pontchartrain, LA & vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 08-FEB-12

PLATE:



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-8.0	4264	3268	1018	9206	2047	8550	7159	1.19
Ⓑ ①	-12.0	6618	4174	2567	15731	5266	13359	10465	1.28
Ⓒ ①	-16.0	9247	4728	4852	23773	10037	18827	13736	1.37
Ⓓ ①	-21.0	12356	9962	11246	33697	17711	33564	15986	2.10
Ⓔ ①	-30.0	22484	19722	31222	63064	39980	73428	23084	3.18
Ⓕ ①	-40.0	37356	35814	66163	106872	76397	139333	30475	4.57
Ⓖ ①	-49.0	53452	38636	108497	155620	119680	200585	35940	5.58
Ⓗ ①	-60.0	72094	55060	150738	225626	185425	277892	40201	6.91
Ⓘ ①	-70.0	90968	81844	195337	300061	257002	368149	43059	8.55

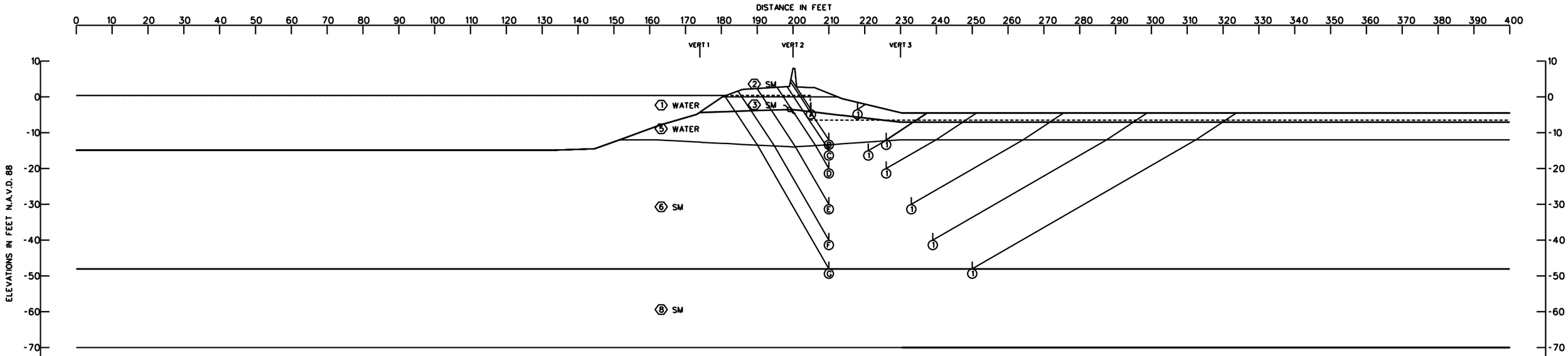
STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F. CENTER OF STRATUM			C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM			FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	SM	114	114	114	0	0	0	0	0	0	23
②	SM	100	103	100	0	0	0	0	0	0	23
③	SM	100	93	100	0	0	0	0	0	0	23
④	SM	100	97	100	0	0	0	0	0	0	23
⑤	SM	100	90	100	0	0	0	0	0	0	23
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	SM	122	122	122	0	0	0	0	0	0	30
⑧	SM	122	122	122	0	0	0	0	0	0	30
⑨	SM	122	122	122	0	0	0	0	0	0	30
⑩	SM	112	106	113	0	0	0	0	0	0	23
⑪	SM	112	106	112	0	0	0	0	0	0	23
⑫	SM	112	106	112	0	0	0	0	0	0	23
⑬	SM	112	106	112	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 29 Sta 69+09 to Sta 70+50
Protected Side Stability Analysis
Case: S-Case P/S Global Stability
March 2012

Lake Pontchartrain, LA & vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 09-FEB-12

PLATE:



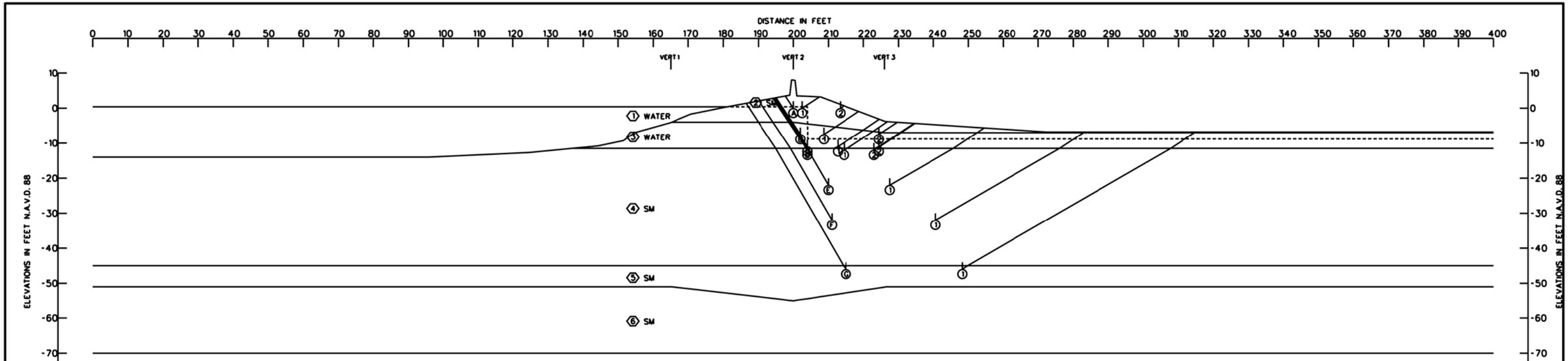
ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-3.5	1612	2245	168	2874	131	4025	2743	1.47
Ⓑ ①	-12.0	4837	4509	2192	11538	2655	11538	8883	1.30
Ⓒ ①	-15.0	6905	5622	5602	16649	5715	18129	10934	1.66
Ⓓ ①	-20.0	11654	10343	11542	27299	12030	33539	15269	2.20
Ⓔ ①	-30.0	20440	21686	33665	57477	34653	75791	22824	3.32
Ⓕ ①	-40.0	35465	36549	67907	99607	69587	139921	30020	4.66
Ⓖ ①	-48.0	49773	44337	103869	141241	106319	197979	34922	5.67

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	112	112	112	0	0	0	0	0	0	23
③	WATER	85	105	85	0	0	0	0	0	0	23
④	WATER	95	98	95	0	0	0	0	0	0	23
⑤	WATER	95	98	95	0	0	0	0	0	0	23
⑥	SM	122	122	122	0	0	0	0	0	0	30
⑦	SM	106	106	106	0	0	0	0	0	0	23
⑧	SM	106	106	106	0	0	0	0	0	0	23

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 32 Sta 84+41 to Sta 90+00
Protected Side Stability Analysis
Case: S-Case P/S Global Stability
March 2012

Lake Pontchartrain, LA & vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 12-SEP-13



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	0.0	753	574	681	1344	641	2008	703	2.86
Ⓐ ②	0.0	753	2163	55	1344	43	2971	1301	2.28
Ⓑ ①	-7.5	3405	2888	4858	8010	3788	11151	4222	2.64
Ⓑ ②	-7.5	3405	8147	973	8010	759	12525	7251	1.73
Ⓒ ①	-11.0	4841	4646	6217	12676	4999	15704	7677	2.05
Ⓒ ②	-11.0	4841	8836	2895	12676	2408	16572	10268	1.61
Ⓓ ①	-12.0	5302	7667	6473	14166	5083	19442	9083	2.14
Ⓓ ②	-12.0	5302	11950	3892	14166	3174	21144	10992	1.92
Ⓔ ①	-22.0	14434	14844	17646	35724	14795	46924	20929	2.24
Ⓕ ①	-32.0	27347	32130	37547	69012	35816	97024	33196	2.92
Ⓖ ①	-46.0	50658	36439	85137	134406	86884	172234	47522	3.62

STRATUM NO.	SOIL TYPE	TOTAL UNIT WEIGHT P.C.F.			C - UNIT COHESION - P.S.F.						FRICTION ANGLE DEGREES
					CENTER OF STRATUM			BOTTOM OF STRATUM			
		VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	VERT. 1	VERT. 2	VERT. 3	
①	WATER	62	62	62	0	0	0	0	0	0	0
②	WATER	108	118	108	0	0	0	0	0	0	23
③	WATER	74	90	74	0	0	0	0	0	0	23
④	SM	122	122	122	0	0	0	0	0	0	30
⑤	SM	103	107	103	0	0	0	0	0	0	23
⑥	SM	118	120	118	0	0	0	0	0	0	23

GENERAL NOTES:

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHT OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE BORING DATA PLATES.

NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

London Ave. Canal
Outfall Canal Reevaluation Report
Reach 3B Sta. 120-39 to Sta. 126-67
Protected Side Stability Analysis
Case I 5-case P/S Global Stability
March 2012

Lake Pontchartrain, LA & Vicinity
Hurricane Protection Project

U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS 04-FEB-12

PLATE: