

Safety is a Part of Your Contract

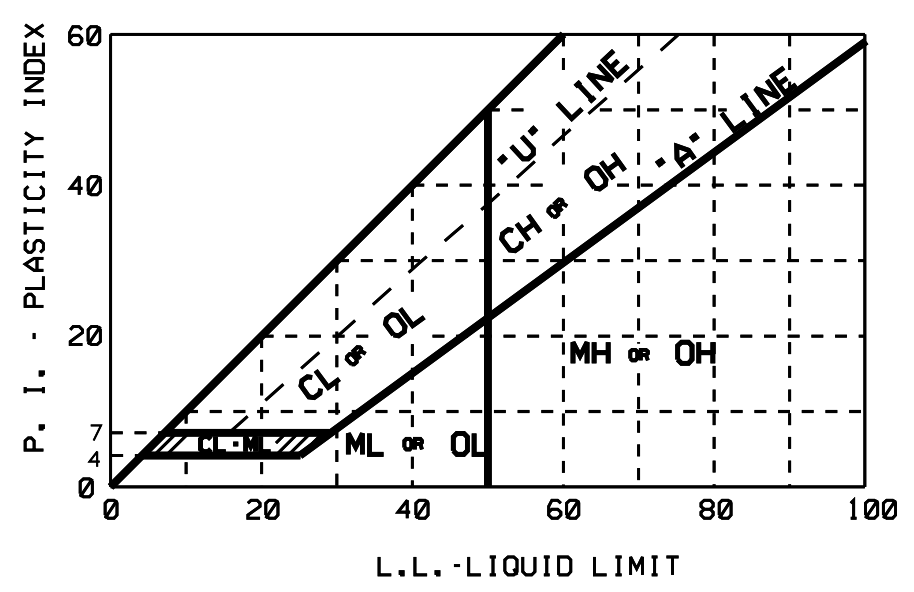
UNIFIED SOIL CLASSIFICATION

MAJOR DIVISION	TYPE	LETTERS & SYM SYMBOL	TYPICAL NAMES	
COARSE - GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE.	GRAVELS	CLEAN GRAVEL (LITTLE OR NO FINES)	GW	GRAVEL, WELL GRADED, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVEL WITH FINES (APPRECIABLE AMOUNT OF FINES)	GP	GRAVEL, POORLY GRADED, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		CLEAN SAND (LITTLE OR NO FINES)	GM	SILTY GRAVEL, GRAVEL-SAND-SILT MIXTURES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)	GC	CLAYEY GRAVEL, GRAVEL-SAND-CLAY MIXTURES
		CLEAN SAND (LITTLE OR NO FINES)	SW	SAND, WELL-GRADED, GRAVELLY SANDS
	SANDS MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 4 SIEVE SIZE.	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)	SP	SAND, POORLY-GRADED, GRAVELLY SANDS
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)	SM	SILTY SAND, SAND-SILT MIXTURES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)	SC	CLAYEY SAND, SAND-CLAY MIXTURES
		SILTS AND CLAYS (LIQUID LIMIT < 50)	ML	SILT & VERY FINE SAND, SILTY OR CLAYEY FINE SAND OR CLAYEY SILT WITH SLIGHT PLASTICITY
		SILTS AND CLAYS (LIQUID LIMIT < 50)	CL	LEAN CLAY, SANDY CLAY, SILTY CLAY, OF LOW TO MEDIUM PLASTICITY
FINE - GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE.	SILTS AND CLAYS (LIQUID LIMIT > 50)	OL	ORGANIC SILTS, AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
	SILTS AND CLAYS (LIQUID LIMIT > 50)	MH	SILT, FINE SANDY OR SILTY SOIL WITH HIGH PLASTICITY	
	SILTS AND CLAYS (LIQUID LIMIT > 50)	CH	FAT CLAY, INORGANIC CLAY OF HIGH PLASTICITY	
	SILTS AND CLAYS (LIQUID LIMIT > 50)	OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
HIGHLY ORGANIC SOILS	PT	PEAT, AND OTHER HIGHLY ORGANIC SOIL		
WOOD	WD	WOOD		
SHELLS	SI	SHELLS		
NO SAMPLE	NS	NO SAMPLE RETRIEVED		

NOTE: SOILS POSSESSING CHARACTERISTICS OF TWO GROUPS ARE DESIGNATED BY COMBINATIONS OF GROUP SYMBOLS.

DESCRIPTIVE SYMBOLS

COLOR		CONSISTENCY FOR COHESIVE SOILS			MODIFICATIONS	
COLOR	SYMBOL	CONSISTENCY	COHESION IN LBS./SQ.FT. FROM UNCONFINED COMPRESSION TEST	SYMBOL	MODIFICATION	SYMBOL
TAN	T	VERY SOFT	< 250	VSO	TRACES	TR
YELLOW	Y	SOFT	250-500	SO	FINE	F
RED	R	MEDIUM	500-1000	M	MEDIUM	M
BLACK	BK	STIFF	1000-2000	ST	CONCRETIONS	CC
GRAY	GR	VERY STIFF	2000-4000	VST	ROOTLETS	RT
LIGHT GRAY	IGR	HARD	> 4000	H	LIGNITE FRAGMENTS	LG
DARK GRAY	DGR				SHALE FRAGMENTS	SH
BROWN	BR				SANDSTONE FRAGMENTS	SDS
LIGHT BROWN	IBR				SHELL FRAGMENTS	SLF
DARK BROWN	DBR				ORGANIC MATTER	O
BROWNISH-GRAY	BRGR				CLAY STRATA OR LENSES	CS
GRAYISH-BROWN	GYBR				SILT STRATA OR LENSES	SIS
GREENISH-GRAY	GNGR				SAND STRATA OR LENSES	SS
GRAYISH-GREEN	GYGN				SANDY	S
GREEN	GN				GRAVELLY	G
BLUE	BL				BOULDERS	B
BLUE-GREEN	BLGN				SLICKENSIDES	SL
WHITE	WH				WOOD	WD
MOTTLED	MOT				OXIDIZED	OX



PLASTICITY CHART

FOR CLASSIFICATION OF FINE-GRAINED SOILS IN ACCORDANCE WITH ASTM D 2487

NOTES:

FIGURES TO LEFT OF BORING UNDER COLUMN "W OR D"

ARE NATURAL WATER CONTENTS IN PERCENT DRY WEIGHT

WHEN UNDERLINED DENOTES d_w SIZE IN MM

FIGURES TO LEFT OF BORING UNDER COLUMNS "LL" AND "PL"

ARE LIQUID AND PLASTIC LIMITS, RESPECTIVELY

SYMBOLS TO LEFT OF BORING

▽ GROUND-WATER SURFACE AND DATE OBSERVED

⊙ DENOTES LOCATION OF CONSOLIDATION TEST

⊕ DENOTES LOCATION OF CONSOLIDATED-DRAINED DIRECT SHEAR TEST

⊗ DENOTES LOCATION OF CONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION TEST

⊖ DENOTES LOCATION OF UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION TEST

⊙ DENOTES LOCATION OF SAMPLE SUBJECTED TO CONSOLIDATION TEST AND EACH OF THE ABOVE THREE TYPES OF SHEAR TEST*

FW DENOTES FREE WATER ENCOUNTERED IN BORING OR SAMPLE

FIGURES TO RIGHT OF BORING

ARE VALUES OF COHESION IN LBS./SQ.FT. FROM UNCONFINED COMPRESSION TESTS

IN PARENTHESIS ARE DRIVING RESISTANCES BLOWS PER FOOT DETERMINED WITH A STANDARD SPLIT SPOON SAMPLER $\frac{3}{8}$ / " I.D., 2" O.D.) AND A 140 LB. DRIVING HAMMER WITH A 30" DROP

WHERE UNDERLINED WITH A SOLID LINE DENOTES LABORATORY PERMEABILITY IN CENTIMETERS PER SECOND OF UNDISTURBED SAMPLE

WHERE UNDERLINED WITH A DASHED LINE DENOTES LABORATORY PERMEABILITY IN CENTIMETERS PER SECOND OF SAMPLE REMOULDED TO THE ESTIMATED NATURAL VOID RATIO

*THE D_{10} SIZE OF A SOIL IS THE GRAIN DIAMETER IN MILLIMETERS OF WHICH 10% OF THE SOIL IS FINER, AND 90% COARSER THAN d_{10} .

**RESULTS OF THESE TESTS ARE AVAILABLE FOR INSPECTION IN THE U.S. ARMY ENGINEER DISTRICT OFFICE, IF THESE SYMBOLS APPEAR BESIDE THE BORING LOGS ON THE DRAWINGS.

TYPICAL NOTES:

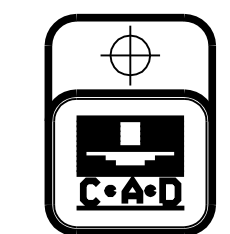
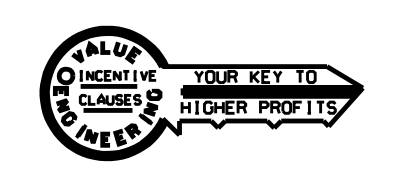
- WHILE THE BORINGS ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THEIR RESPECTIVE LOCATIONS AND FOR THEIR RESPECTIVE VERTICAL REACHES, LOCAL VARIATIONS CHARACTERISTIC OF THE SUBSURFACE MATERIALS OF THE REGION ARE ANTICIPATED AND, IF ENCOUNTERED, SUCH VARIATIONS WILL NOT BE CONSIDERED AS DIFFERING MATERIALLY WITHIN THE PURVIEW OF THE CONTRACT CLAUSE ENTITLED "DIFFERING SITE CONDITIONS".
- GROUND-WATER ELEVATIONS SHOWN ON THE BORING LOGS REPRESENT GROUND-WATER SURFACES ENCOUNTERED IN SUCH BORINGS ON THE DATES SHOWN. ABSENCE OF WATER SURFACE DATA ON CERTAIN BORINGS INDICATES THAT NO GROUND-WATER DATA ARE AVAILABLE FROM THE BORING BUT DOES NOT NECESSARILY MEAN THAT GROUND-WATER WILL NOT BE ENCOUNTERED AT THE LOCATIONS OR WITHIN THE VERTICAL REACHES OF SUCH BORINGS.
- CONSISTENCY OF COHESIVE SOILS SHOWN ON THE BORING LOGS IS BASED ON DRILLER'S LOG AND VISUAL EXAMINATION AND IS APPROXIMATE, EXCEPT WITHIN THOSE VERTICAL REACHES OF THE BORINGS WHERE SHEAR STRENGTHS FROM UNCONFINED COMPRESSION TESTS ARE SHOWN.
- UNLESS OTHERWISE NOTED:
 - UNDISTURBED BORINGS, INDICATED BY THE LETTER "U", ARE TAKEN WITH A 5" I.D. PISTON TYPE SAMPLER.
 - GENERAL TYPE BORINGS ARE TAKEN WITH A $\frac{7}{8}$ " I.D. TUBE SAMPLER AND/OR A $\frac{1}{2}$ " I.D. SPLIT SPOON SAMPLER.

REVISIONS	DATE	APPROVED
REVISED	25 JUN 92	

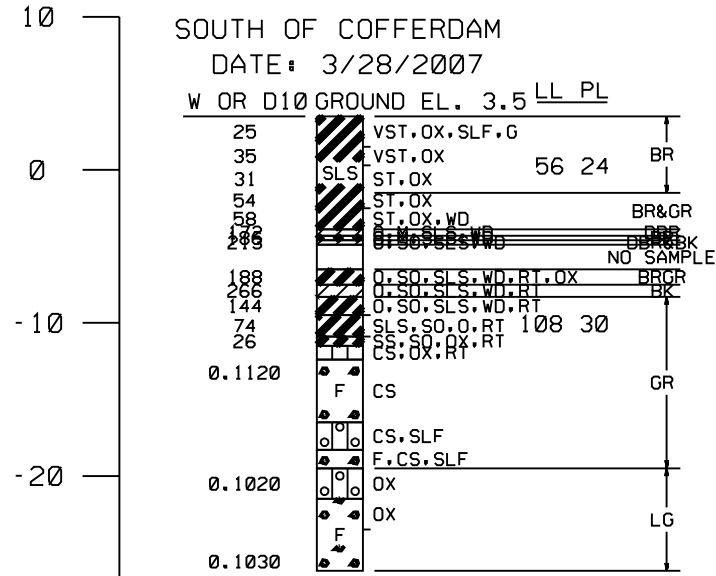
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

SOIL BORING LEGEND

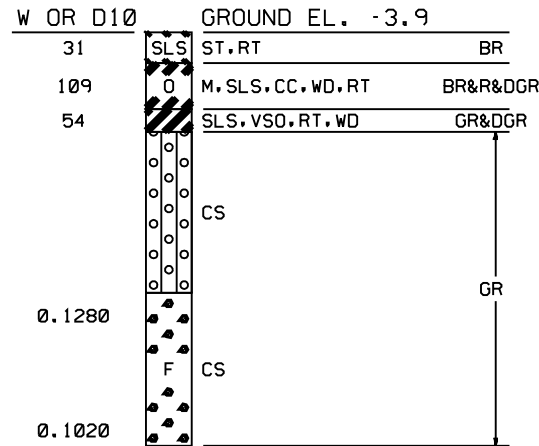
DESIGNED BY:	DATE:	PLOT SCALE:	PLOT DATE:
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CHECKED BY:			FILE NO. X
SUBMITTED BY:	CADD FILE: BORLEGA3.DGN		SOLICITATION NO. DACW29
DESIGN ENGINEER			DWG. 16 OF 27



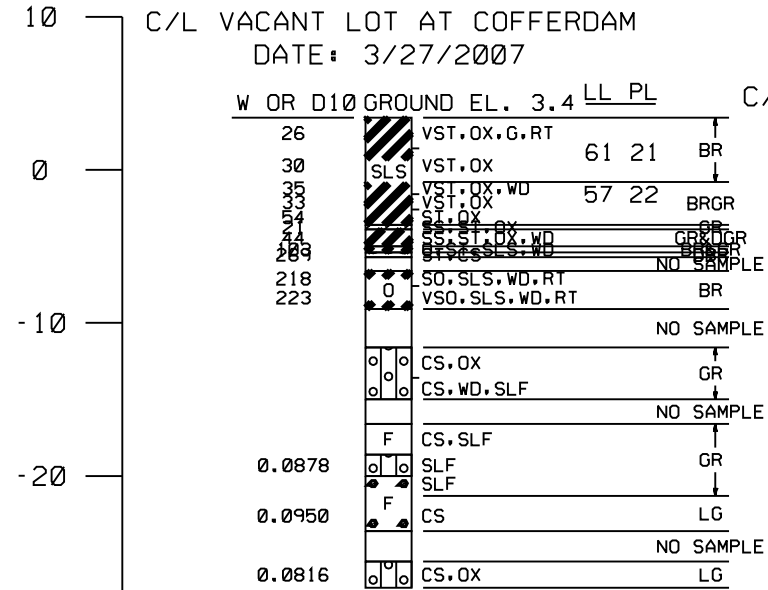
30°01'05.200" 90°04'12.601"
BOR. LKGSC-1 (07-556C)
STA. 19+50
C/L LEVEE



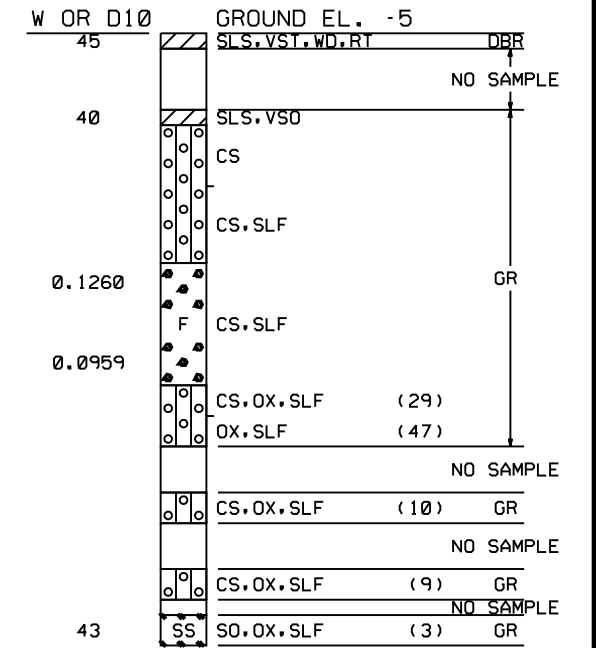
30°01'05.009" 90°04'12.299"
BOR. LKGST-1 (07-556C)
STA. 19+50
P.S. TOE
SOUTH OF COFFERDAM
DATE: 3/28/2007



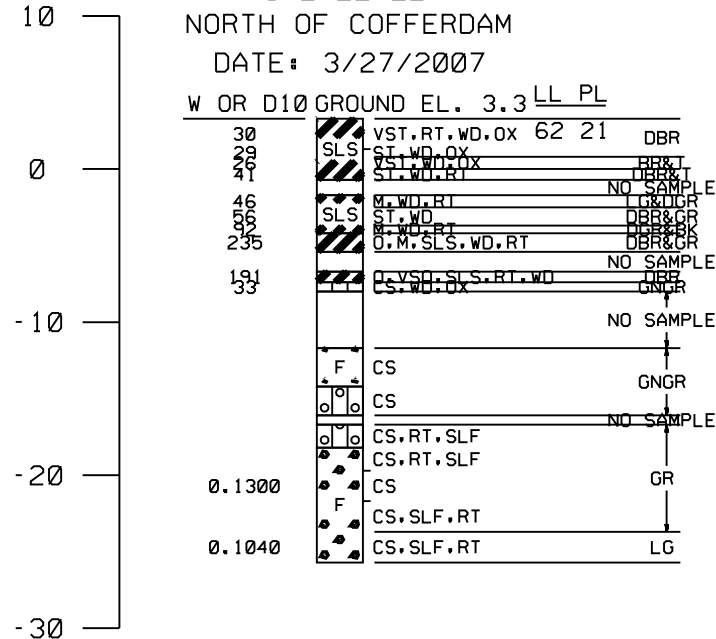
30°01'06.100" 90°04'12.500"
BOR. LKGSC-2 (07-556C)
STA. 18+50
C/L LEVEE



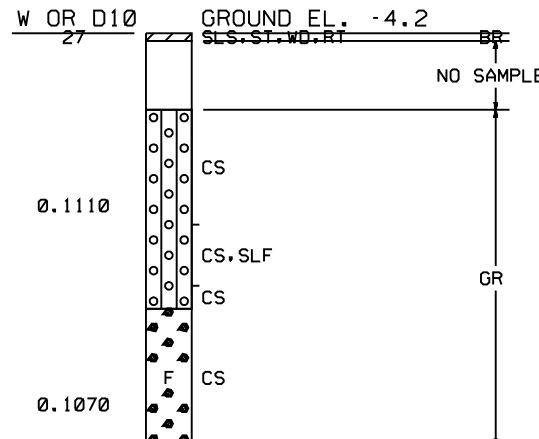
30°01'06.100" 90°04'12.400"
BOR. LKGST-2 (07-556C)
STA. 18+50
P.S. TOE
C/L VACANT LOT AT COFFERDAM
DATE: 4/9/2007



30°01'07.201" 90°04'12.601"
BOR. LKGSC-3 (07-556C)
STA. 17+55
C/L LEVEE



30°01'07.399" 90°04'12.299"
BOR. LKGST-3 (07-556C)
STA. 17+55
P.S. TOE
NORTH OF COFFERDAM
DATE: 4/3/2007

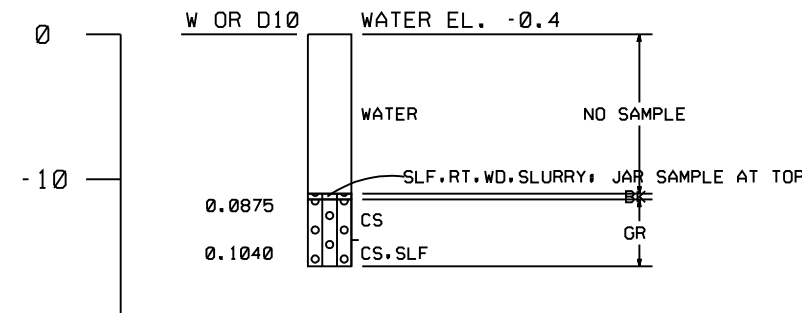


LAKE PONCHARTRAIN & VICINITY
LONDON AVENUE CANAL
**GEOPROBE BORINGS
LKG'S BORINGS**
U.S. Army ENGINEER DISTRICT - NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA
DESIGNED BY: VOJNOVIC PLOT SCALE: PLOT DATE: CAD FILE: K051-3.00A
DRAWN BY: WOODS 10/1/07 FILE NO.
CHECKED BY: VOJNOVIC DATE: MAY 2007

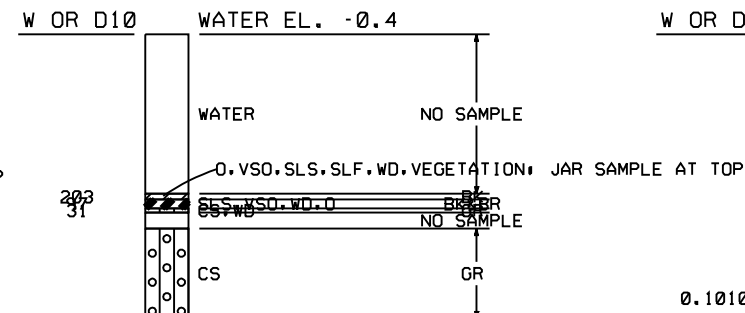
ELEVATIONS IN FEET N.A.V.D.

ELEVATIONS IN FEET N.A.V.D.

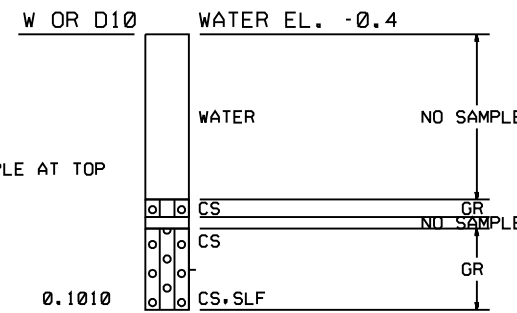
BOR. S1LCGP-1 (07-41B)
STA. 110+21.2 EAST B/L
68.5 FT F.S. B/L
WATER DEPTH 11.0 FT
DATE: 1/30/2007



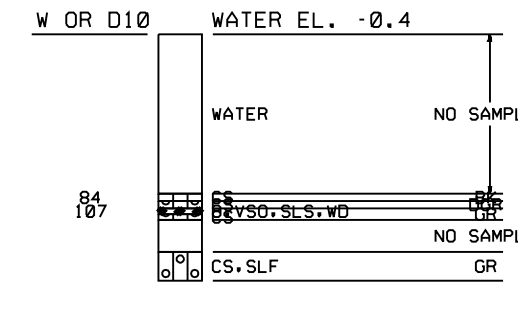
BOR. S1LCGP-2 (07-41B)
STA. 110+01.46 EAST B/L
43.8 FT F.S. B/L
WATER DEPTH 11.0 FT
DATE: 1/30/2007



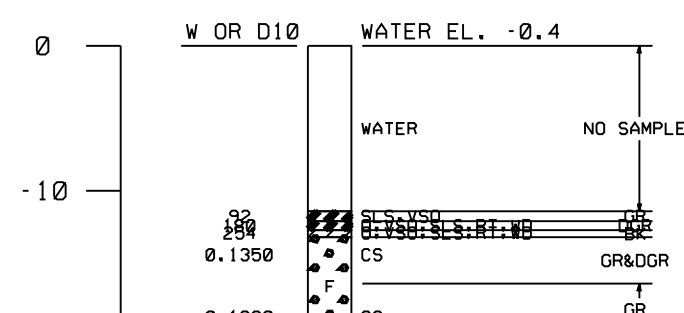
BOR. S1LCGP-3 (07-41B)
STA. 109+40.18 EAST B/L
48.6 FT F.S. B/L
WATER DEPTH 11.0 FT
DATE: 1/30/2007



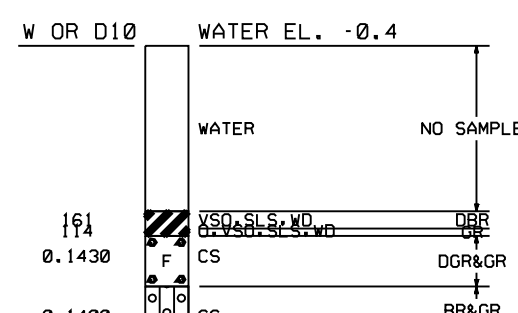
BOR. S1ALCGP-1 (07-41B)
STA. 106+37.90 EAST B/L
29.7 FT F.S. B/L
WATER DEPTH 11.0 FT
DATE: 2/10/2007



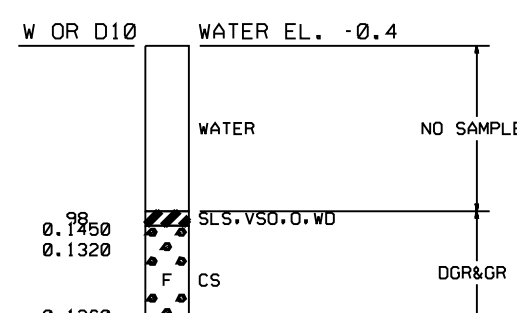
BOR. S2LCGP-1 (07-41B)
STA. 83+79.50 EAST B/L
44.3 FT F.S. B/L
WATER DEPTH 11.0 FT
DATE: 1/31/2007



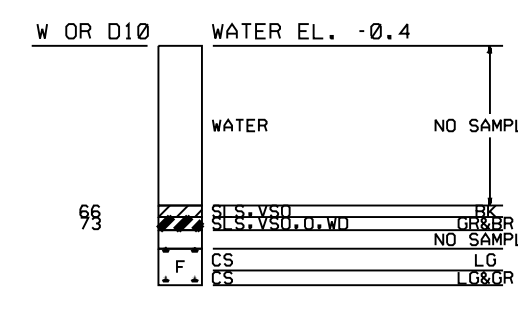
BOR. S2LCGP-2 (07-41B)
STA. 83+37.21 EAST B/L
28.2 FT F.S. B/L
WATER DEPTH 11.0 FT
DATE: 1/31/2007



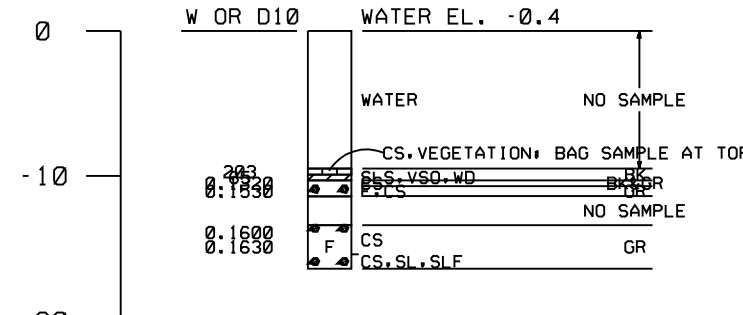
BOR. S2LCGP-3 (07-41B)
STA. 82+57.41 EAST B/L
42.2 FT F.S. B/L
WATER DEPTH 11.0 FT
DATE: 1/31/2007



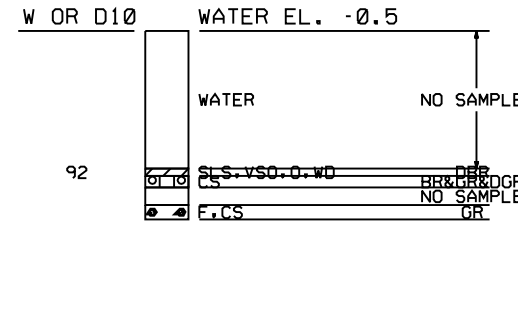
BOR. S2ALCGP-1 (07-41B)
STA. 76+00 EAST B/L
28.5 FT F.S. B/L
WATER DEPTH 11.0 FT
DATE: 2/10/2007



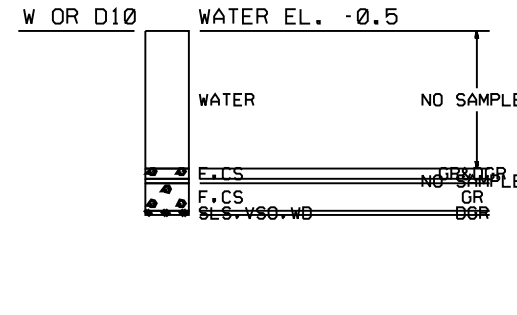
BOR. S3LCGP-1 (07-41B)
STA. 54+81.77 EAST B/L
40.6 FT F.S. B/L
WATER DEPTH 9.5 FT
DATE: 1/31/2007



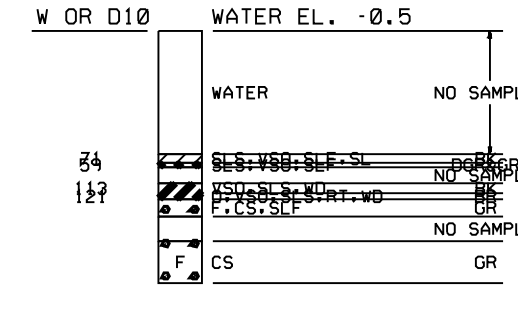
BOR. S3LCGP-2 (07-41B)
STA. 54+41.77 EAST B/L
43.2 FT F.S. B/L
WATER DEPTH 9.0 FT
DATE: 1/31/2007



BOR. S3LCGP-3 (07-41B)
STA. 53+61.38 EAST B/L
50.9 FT F.S. B/L
WATER DEPTH 9.0 FT
DATE: 2/9/2007

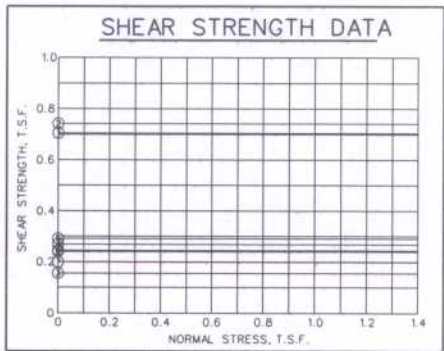
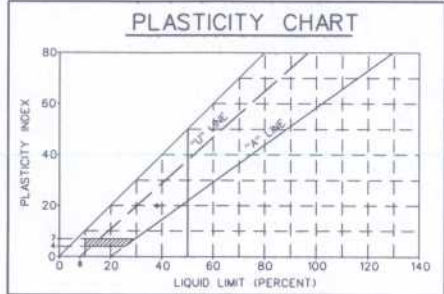
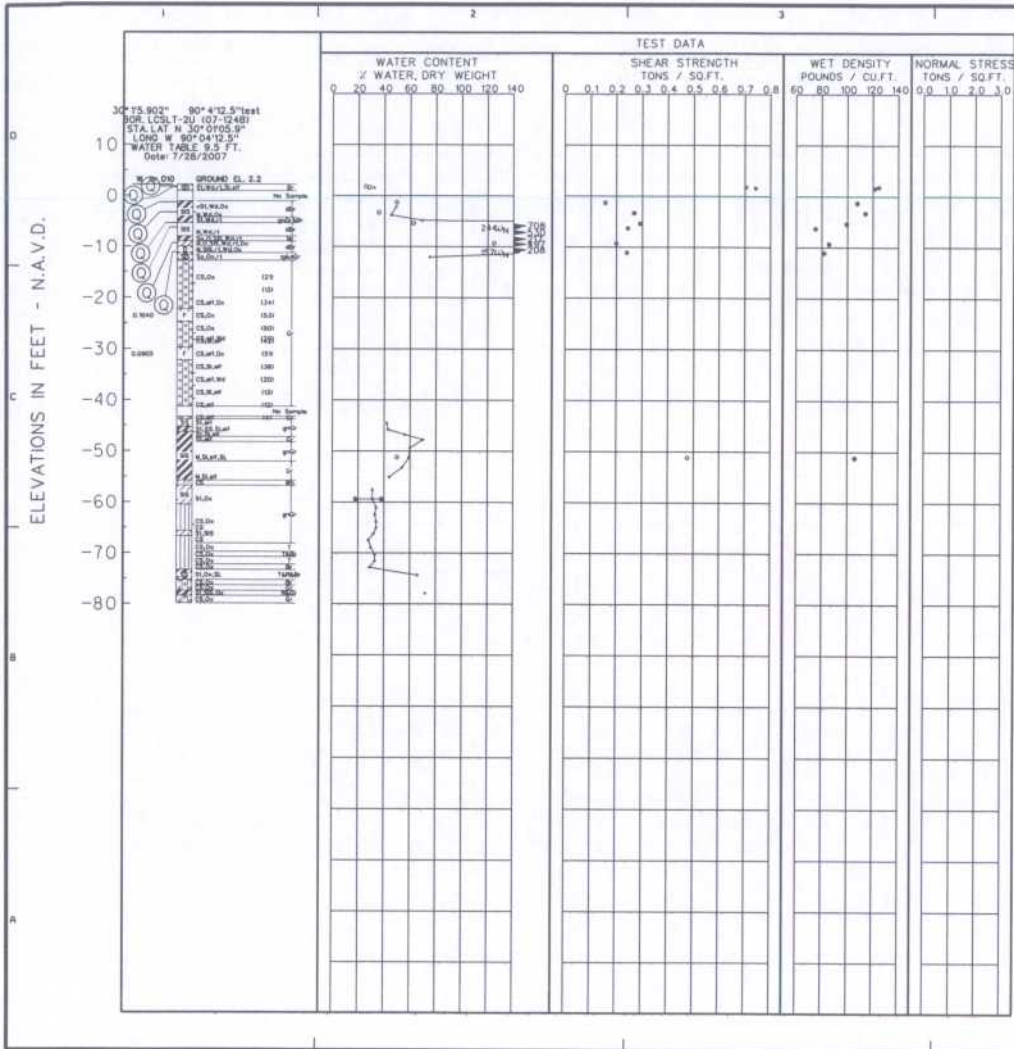


BOR. S3ALCGP-1 (07-41B)
STA. 44+59.52 EAST B/L
41.7 FT F.S. B/L
WATER DEPTH 8.0 FT
DATE: 2/9/2007



LAKE PONCHARTRAIN, LA & VICINITY
LONDON AVENUE CULVERT
CROSSINGS IN CHANNEL
TEST SITES 1-2-63
GEOPHORES
BORINGS S1LCGP-1 THRU S3ALCGP-1
U.S. Army ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA
DESIGNED BY: VJ,MDV/PLOT SCALE: 1"=10' PLOT DATE: 02/11/2007 FILE NO.:
DRAWN BY: WOODS 2/11/2007
CHECKED BY: VJ,MDV/DATE: 02/11/2007

PLATE



TABULAR TEST DATA

ENVELOPE NO.	EL.	TYPE	STRENGTH		CLASS
			ϕ	c - tsf	
1	1.8	Q	0.0	0.705	CH
2	1.6	Q	0.0	0.742	CH
3	-1.3	Q	0.0	0.155	CH
4	-3.3	Q	0.0	0.268	CH
5	-5.4	Q	0.0	0.251	CH
6	-6.3	Q	0.0	0.244	CH
7	-9.3	Q	0.0	0.189	CH
8	-11.3	Q	0.0	0.240	CH

NOTES

- - (UC) UNCONFINED COMPRESSION TEST
- - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST
- _w ○_N ○_L - ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
 FOR SOIL BORING LEGEND SEE PLATE A.
 FOR LOCATION OF BORINGS SEE PLATE
 FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

PROJECT NO. _____

DATE _____

SCALE _____

DESIGNER _____

CHECKED _____

APPROVED _____

SHEET IDENTIFICATION NUMBER

