REQUEST FOR PROPOSALS

GEOTECHNICAL DATABASE DEVELOPMENT, PHASE II (10-2GT)

To equitably answer any questions regarding the 10-2GT Request for Proposals, this page will be updated with questions and answers (Q&A) and related documents regarding the project. The LADOTD makes these documents available for informational purposes only to aid in the efficient dissemination of information to interested parties. The LADOTD does not warrant the documents against deficiencies of any kind. The data contained within this web site is periodically updated. Interested parties are responsible to be aware of any updates. Additional emails or paper notices will not be distributed.

Q1. Will there be a DOTD representative to assist with the location of the Historical Boring data?

A1. Yes, the Pavement and Geotechnical Design Section will have staff available to provide instruction as to how to acquire the data.

Q2. How much historical boring data is there?

A2. Unknown, as the department has collected boring data for many years. Acquiring and incorporating all the historical data may not be possible based on the project's available time and funds. Thus historical data was only allocated 20% relative importance, as compared to establishing and implementing a system for future digital data (~70 relative importance). Regardless, proposers should detail strategies and provisions to deal with all data.

Q3. Does DOTD has the map layer of bridges which can be used in ArcGIS Info/Server environment? In other words do you have shape files of the layer bridges for mapping purpose?

A3. Yes. Both On and Off bridges are displayed. Data is taken from Structures Master (STRM) database.

Q4. Can you email me a typical boring log generated using gINT software?

A4. PDF files of a typical boring log and CPT log generated using gINT software are attached to this website.

Q5. Do you currently have electronic filing system for pile load tests and pile driving records? Can I get a sample report of these tests?

A5. There is not an electronic filing system. Most of the files are in written form. Report formats vary depending upon the collector/contractor. Some are recorded in spreadsheets while many are recorded on the as-build plans for older projects. As such, a sample report is not representative of the files in the system. An Excel spreadsheet for a load test performed in 2004 is attached. Note that not all spreadsheets have the same format.

Q6. Is it possible to view the GIS established through the Phase I (03-1GT) work?

A6. Viewing of the Phase I applications is available through the LTRC Transportation Training and Education Center (TTEC), 4099 Gourrier Avenue, Baton Rouge, LA 70808. Please coordinate appointments with Ms. Sandy Brady, (225) 767-9716 .

Q7. Is it possible to team with the researchers who conducted the Phase I (03-1GT) work?

A7. The Phase I (03-1GT) work was conducted in house at LTRC. Researchers, Gautreau and Bhandari will be part of the project advisory process and thus cannot partner on the Phase II (10-2GT) research.

Q8. Where are the reports available?

A8. The research report for the Phase I (03-1GT) work is detailed in report #446, and a second report entitled, Update of Correlations between Cone Penetration and Boring Log Data, (06-6GT), report #439, are available at http://www.ltrc.lsu.edu/pubs_final_reports.html

Q9. From discussions with other consultants who have done work with DOTD they have indicated the database platform chosen may depend on the IT person who is responsible for the project within DOTD. Is this correct? If so, what is the database platform that is most widely implemented within your GIS system? Is this database platform what LTRC prefers that new GIS applications are implemented with?

A9. The selection of a RDBMS is made by the application developer. DOTD supports IBM DB2 and Microsoft SQLserver. Both have been used with GIS applications. DB2 is the RDBMS used for the enterprise GIS Data Warehouse Server. LTRC has no role in information technology policy or practices at DOTD, see DOTD PPM-42 for details. DOTD GIS Application Standards are clearly stated at: http://gis.dotd.la.gov/Info/Help/GISAppStandards.aspx

Compression Test

State Project: 015-06-0038
Date: 8/23/2004

Initial Displacement: 0.000
Test Pile No.: 2
Sta.: 100+890

Compression				
Load (tons)	Load (kN)	Time	Displacement	1/16
8.3	73.9	9:16 AM	0.000	
8.3	73.9	9:21 AM	0.000	
16.6	147.9	9:21 AM	0.007	0.112
16.6	147.9	9:26 AM	0.007	0.112
24.9	221.8	9:26 AM	0.015	0.240
24.9	221.8	9:31 AM	0.015	0.240
33.2	295.8	9:31 AM	0.021	0.336
33.2	295.8	9:36 AM	0.021	0.336
41.6	369.7	9:37 AM	0.030	0.480
41.6	369.7	9:42 AM	0.030	0.480
49.9	443.6	9:42 AM	0.040	0.640
49.9	443.6	9:47 AM	0.041	0.656
58.2	517.6	9:47 AM	0.053	0.848
58.2	517.6	9:52 AM	0.053	0.848
66.5	591.5	9:52 AM	0.066	1.056
66.5	591.5	9:57 AM	0.066	1.056
74.8	665.5	9:58 AM	0.085	1.360
74.8	665.5	10:03 AM	0.085	1.360
83.1	739.4	10:03 AM	0.105	1.680
83.1	739.4	10:08 AM	0.105	1.680
91.4	813.3	10:08 AM	0.123	1.968
91.4	813.3	10:13 AM	0.125	2.000
99.7	887.3	10:14 AM	0.149	2.384
99.7	887.3	10:19 AM	0.151	2.416
108.0	961.2	10:19 AM	0.168	2.688
108.0	961.2	10:24 AM	0.168	2.688
116.4	1035.2	10:25 AM	0.186	2.976
116.4	1035.2	10:30 AM	0.186	2.976
124.7	1109.1	10:30 AM	0.210	3.360
124.7	1109.1	10:35 AM	0.213	3.408
133.0	1183.0	10:36 AM	0.231	3.696
133.0	1183.0	10:41 AM	0.235	3.760
141.3	1257.0	10:41 AM	0.251	4.016
141.3	1257.0	10:46 AM	0.253	4.048
149.6	1330.9	10:46 AM	0.274	4.384
149.6	1330.9	10:51 AM	0.276	4.416
157.9	1404.9	10:52 AM	0.300	4.800
157.9	1404.9	10:57 AM	0.303	4.848
166.2	1478.8	10:57 AM	0.329	5.264
166.2	1478.8	11:02 AM	0.332	5.312
174.5	1552.7	11:02 AM	0.359	5.744
174.5	1552.7	11:07 AM	0.382	6.112
182.8	1626.7	11:08 AM	0.415	6.640
182.8	1626.7	11:13 AM	0.429	6.864
191.1	1700.6	11:13 AM	0.448	7.168
191.1	1700.6	11:18 AM	0.465	7.440
199.5	1774.6	11:19 AM	0.508	8.128
199.5	1774.6	11:24 AM	0.539	8.624

Rebound				
Load (tons)	Load (kN)	Time	Displacement	1/16
0.0	**0	11:41 AM	0.124	1.984
0.0	0	11:46 AM	0.122	1.952
49.9	443.6	11:36 AM	0.205	3.280
49.9	443.6	11:41 AM	0.202	3.232
99.7	887.3	11:30 AM	0.300	4.800
99.7	887.3	11:35 AM	0.296	4.733
149.6	1330.9	11:25 AM	0.468	7.488
149.6	1330.9	11:30 AM	0.460	7.360

** Displacement at 12:16 pm was 0.121

TEST PILE NO
STA.:
LOCATION:
TYPE OF PILE:
TYPE OF HAMMER:
RATED ENERGY: FT. LBS.
DATE OF DRIVING:

WET DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	qu	SPT or SI	FAILURE MODE	SAMPLE NUMBER	DEPTH	ELEVATION	WATER TABLE
								0	175.0	
	15	N	P				D43			
125	13	N	P	0.0667		M.S.	D43	10	165.0	
		N	P		N=16		D43			
		N	P		N=32		D44	20	155.0	
		N	P		N=20		D45			
		N	P		N=20		D46	30	145.0	
109	30	57	28	0.456		M.S.	D47			
	38	58	31		N=13		D48	40	135.0	
111	31	69	33	0.172		S/S	D49			
		28	9		N=9		D50	50	125.0	
		N	P		N=18		D51			
		N	P		N=18		D52	60	115.0	
		N	P		N=21		D53			
		N	P		N=17		D54	70	105.0	
		28	15		N=12		D55			
		N	P		N=17		D56	80	95.0	
		N	P		N=14		D57			
	37	57	42		N=23		D58	90	85.0	
		N	P		N=18		D59			
		N	P		N=13		D60	100	75.0	
		N	P		N=18		D61			
	45	45	21		N=23		D62	110	65.0	
		N	P		N=22		D63			
		N	P		N=25		D64	120	55.0	
								130	45.0	
								140	35.0	

STA.: 126+00
LOCATION: 18' Rt CL Exist Rdwy
DATE TAKEN: 3/25/2008
LOG MILE:
DRIVING RESISTANCE (TONS)
STR. NO.: 62S9047S002461
SOD. LDR.: JS

SOIL TYPE AND COLOR	WET DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	qu	SPT or SI	FAILURE MODE	SAMPLE NUMBER	DEPTH	ELEVATION	WATER TABLE
Br Sa w/Sl & Grav Dip=2%									0	218.5	
			N	P				C1			
Br Sl Sa Dip=3%											
			N	P		N=4		D2	10	208.5	
			N	P		N=4		D3			
Gr Sl Sa											
			N	P		N=13		D4	20	198.5	
Gr Sa											
			N	P		N=17		D5			
Br Sl Sa											
			N	P		N=10		D6	30	188.5	
Br Sa w/Sl											
			N	P		N=32		D7			
Gr Sl Sa											
			N	P		N=14		D8	40	178.0	
Gr Sl											
		26	N	P		N=18		D9			
Gr Lean Cl											
	113	24	48	26	2.65		S/S	D10	50	168.5	
	118	21	36	18	2.79		M.S.	D11			
Gr Sa Lean Cl											
		22	26	10		N=15		D12	60	158.5	
Gr Fat Cl											
	124	26	59	33	2.61		M.S.	D13			
Gr Lean Cl											
	126	22	39	20	1.52		M.S.	D14	70	148.5	
	128	23	35	18	1.57		M.S.	D15			
	113	32	43	18	0.213		M.S.	D16	80	138.5	
Gr Fat Cl											
		28	57	32		N=34		D17			
Gr Lean Cl											
		21	44	23		N=39		D18	90	128.5	
	126	19	34	14	5.20		M.S.	D19			
Gr Sl w/Sa											
	128	21	N	P	1.17		M.S.	D20	100	118.5	
									110	108.5	
									120	98.5	
									130	88.5	
									140	78.5	

BORING NO. 6
STA.: 117+00
LATITUDE: 30.86819 N
LOCATION: 20' Lt CL Exist Rdwy
LONGITUDE: 90.00285 W
DATE TAKEN: 3/10/2008
CONT. SECT.:
LOG MILE:
DRIVING RESISTANCE (TONS)
STR. NO.: 0470400041
SOD. LDR.: JS

SOIL TYPE AND COLOR	WET DENSITY	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	qu	SPT or SI	FAILURE MODE	SAMPLE NUMBER	DEPTH	ELEVATION	WATER TABLE
Br Sa									0	202.0	
			N	P		N=5		D108			
Gr Sa											
			N	P		N=9		D109	10	192.0	
			N	P		N=14		D110			
Gr Sl Sa											
			N	P		N=11		D109	20	182.0	
			N	P		N=18		D108			
Tan Lean Cl											
	130	29	31	12	1.28 @21.3	M.S.	D111				
Gr Lean Cl									30	172.0	
	127	23	45	25	3.22 @27.5	M.S.	D111				
Gr Fat Cl											
	128	28	53	33	4.40 @31.66	S/S	D112				
Gr Lean Cl									40	162.0	
	124	21	49	27	2.5 @35.85	M.S.	D113				
Gr Sl Cl Sa											
	127	21	19	6	2.86 @40.0	M.S.	D114		50	152.0	
Gr Lean Cl											
	124	25	41	20	4.19 @44.16	S/S	D115				
	130	19	34	15	2.83	M.S.	D116		60	142.0	
	125	18	38	17	4.62	M.S.	D117				
	129	21	47	28	6.44	M.S.	D118		70	132.0	
	122	21	44	21	2.81	M.S.	D119				
	130	20	24	8	4.60	M.S.	D120		80	122.0	
Gr Sl Cl											
			24	6	N=46		D121				
		26	25	8	N=66		D122		90	112.0	
Gr Lean Cl											
		17	30	12	nc N=70		D123				
		20	34	15	N=77		D124		100	102.0	
Compressive Strength Reported is the Deviator Stress at Failure in tsf											
									110	92.0	
									120	82.0	
									130	72.0	
									140	62.0	

BORING NO. 7
STA.: 118+25
LATITUDE: 30.92056 N
LOCATION: 30' Lt CL Exist Rdwy
LONGITUDE: 90.00096 W
DATE TAKEN: 6/9/2009
CONT. SECT.:
LOG MILE:
DRIVING RESISTANCE (TONS)
STR. NO.: 62S9047S400641
SOD. LDR.: JS

TEST PILE NO
STA.:
LOCATION:
TYPE OF PILE:
TYPE OF HAMMER:
RATED ENERGY: FT. LBS.
DATE OF DRIVING:

RIGHT AVENUE
WASHINGTON
PARISH
FEDERAL PROJECT
STATE PROJECT
Design: 720-50-0009 Construction: 047-03-0014
DESIGNED
CHECKED
DETAILED
CHECKED
DATE
SHEET
REVISION DESCRIPTION
DATE
NO.

Lawrence, Bogalusa, and Coburn Creek Bridges
LA 10
MATERIALS AND TESTING SECTION

TIONS & DEFINITIONS

STRUCTURE:

ALT.	= Alternating
LAM.	= Laminated
LEN.	= Lens
LYR.	= Layer
MOT	= Mottled
PKT.	= Pocket
STK.	= Streak
STR.	= Strata
TR.	= Trace

FAILURE MODE:

M.S.	= Multiple Shear
SL.	= Slump
S/S	= Stickslipslide
V.S.	= Vertical Shear
RLD	= Rolls
SO S.	= Shear Angle

SOIL PROPERTIES

WET DENSITY	= Wet density of in-place soil, (pounds per cu. ft.) determined by AASHTO T 208.
MOISTURE CONTENT	= Moisture Content of in-place soil, expressed as a percentage of the dry weight of the soil, (%), determined by DOTD TR 406, Method B.
LIQUID LIMIT & PLASTICITY INDEX	= Atterberg limits and indices, DOTD TR 428
qu	= Unconfined compressive strength, AASHTO T 208, (tons per sq. ft.)
SPT	= Standard Penetration Test, AASHTO T 206, number of blows, N # , per foot of penetration; unless amount of penetration is shown otherwise
UU	= Unconsolidated Undrained triaxial test, AASHTO T 296, compressive strength (tons per sq. ft.), of one specimen confined at noted pressure (pounds per sq. in.)
C	= Soil cohesion, (tons per sq. ft.)
φ	= Soil angle of internal friction (degrees)
Δ	= Unconsolidated Undrained triaxial test, AASHTO T 296, (three specimens, (φ=)
*	= Consolidated drained direct shear test, AASHTO T 236, (c=)
#	= Pocket penetrometer strength, (tons per sq. ft)

MISCELLANEOUS:

S	= Location and identification of thin-walled tube sample, AASHTO T 207
CS	= Location and identification of thin-walled tube sample, AASHTO T 207, with a portion of the sample saved for consolidation testing
SS	= Location and identification of SPT sample, AASHTO T 206
N.C.	= No Cut, no preliminary 6 in. driving prior to securing SPT data
NO PEN	= No Penetration, unable to drive split spoon sampler into 6 inches of the Standard Penetration Test
NO RECV	= No Recovery, unable to recover sample for testing or classification
DIST	= Disturbed sample recovered with thin-walled tube sampler
▽ 24 HRS	= Water Table depth below ground surface recorded at noted time after completion of bore hole
⊗	= SOIL TYPE nomenclature is based on ASTM D 2487

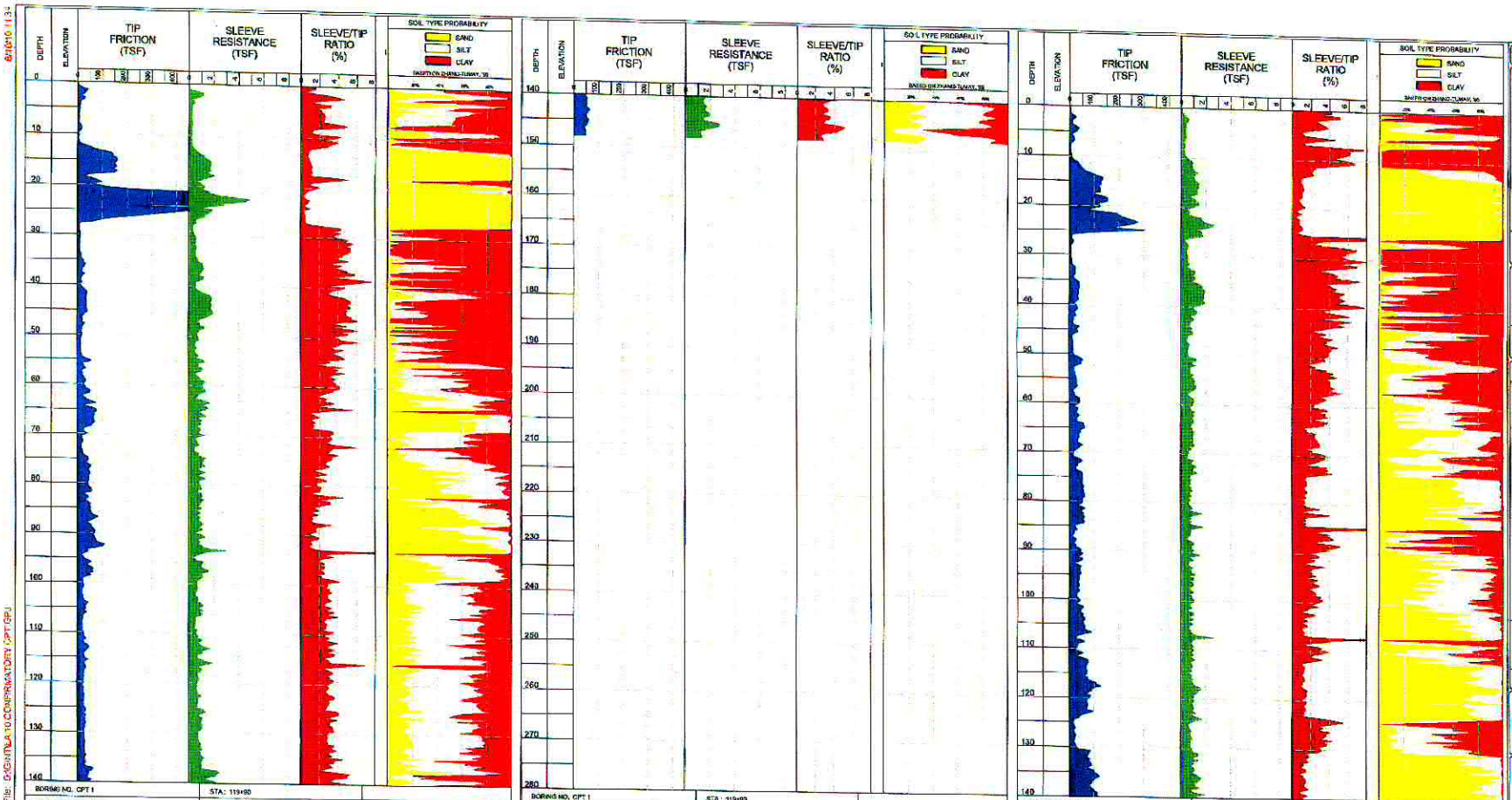
CORRELATION OF PENETRATION RESISTANCE AND SOIL PROPERTIES

SOIL		DESIGNATION	"N" (blows per ft.)	Approximate "qu" (tons per sq. ft.)
SAND AND SILT	RELATIVE DENSITY	VERY LOOSE	LESS THAN 4	
		LOOSE	4 - 10	
		MEDIUM	10 - 30	
		DENSE	30 - 50	
		VERY DENSE	OVER 50	
CLAY	CONSISTENCY	VERY SOFT	LESS THAN 2	LESS THAN 0.25
		SOFT	2 - 4	0.25 - 0.50
		MEDIUM	4 - 8	0.50 - 1.00
		STIFF	8 - 15	1.00 - 2.00
		VERY STIFF	15 - 30	2.00 - 4.00
		HARD	OVER 30	OVER 4.00

STATE OF LOUISIANA
JOHN BERTIN MEITZ
REG. No. 23477
REGISTERED PROFESSIONAL ENGINEER

THIS SIGNATURE AND SEAL APPLIES TO THIS DRAWING AS CERTIFICATION THAT THE LABORATORY TESTING AND ANALYSIS WAS PERFORMED ACCORDING TO THE LISTED PROCEDURES. NO DESIGN COMPUTATIONS WERE PERFORMED OR REVIEWED BY MC.

MATERIALS AND TESTING SECTION



STANDARD ABBREVIATIONS & DEFINITIONS

MATERIAL:
CL. = Clay
CONC. = Concretion
GRVL = Gravel
IO = Iron Ore
LIG. = Lignite
NP. = Non-Plastic
ORG. = Organic
PT = Peat
RT = Root
SA = Sand
SH = Shell
SI. = Silt
VEG = Vegetation
WA. = Water

COLOR:
BRN. = Brown
BK. = Black
BL. = Blue
GR. = Gray
GN. = Green
PK. = Pink
RD. = Red
TN. = Tan
WH = White
YE = Yellow

TOUGHNESS:
CO. = Coarse
FI = Fine
MED. = Medium

STRUCTURE:
ALT. = Alternating
LAM. = Laminated
LEN = Lens
LYR. = Layer
MOT. = Mottled
PKT. = Pocket
STK. = Streak
SHL. = Shale
TR. = Trace

FAILURE MODE:
MIX. = Multiple Shear
SL. = Slump
SLS = Slickensides
V.S. = Vertical Shear
YLD = Yield
SH S = Shear Angle

SOIL PROPERTIES

WET DENSITY = Wet density of the intact soil. (pounds per cu. ft.) determined by AASHTO T208.
MOISTURE CONTENT = Moisture Content of the intact soil, expressed as a percentage of the dry weight of the soil. (%), determined by DOTD TR 428, Method B.
LIQUID LIMIT & PLASTICITY INDEX = Atterberg limits and indices, DOTD TR 428
Su = Unconfined compressive strength, AASHTO T 208, (tons per sq. ft.)
SPT = Standard Penetration Test, AASHTO T 206, number of blows, N - , per foot of penetration. Unless amount of penetration is shown otherwise.
Qu = Unconsolidated Undrained triaxial test, AASHTO T 208, compressive strength (psi per sq. ft.) of core specimen confined at initial pressure (pounds per sq. in.)
C = Soil cohesion (tons per sq. ft.)
= Soil angle of internal friction (degrees)
= Unconsolidated Undrained triaxial test, AASHTO T 208, three specimens, (c- ,)
= Consolidated drained direct shear test, AASHTO T 236, (c- ,)
= Pocket penetrometer strength, (tons per sq. ft)

MISCELLANEOUS

= Location and identification of the undisturbed tube sample, AASHTO T 207
= Location and identification of thin walled tube sample, AASHTO T 207, with a portion of the sample saved for consolidation testing
= Location and identification of SPT sample, AASHTO T 206
= No Cut, no preliminary thin walled tube sample or SPT data
= No Penetration, unable to drive split spoon sampler initial 6 inches of the Standard Penetration Test
= No Recovery, unable to recover sample for testing or classification.
= Disturbed sample recovered with thin walled tube sampler.
= Water Table depth below ground surface recorded at noted time after completion of bore hole.
= SOIL TYPE nomenclature is based on ASTM D 2487

NTC = NO TEST
NO REC = NO RECOVERY
DIST. = DISTURBED
24 HRS = 24 HOURS

CORRELATION OF PENETRATION RESISTANCE AND SOIL PROPERTIES

SOIL		DESIGNATION	"N" (Blows per ft.)	Approximate "Su" (tons per sq. ft.)
SAND AND SILT	RELATIVE DENSITY	VERY LOOSE	LESS THAN 4	
		LOOSE	4 - 10	
		MEDIUM	10 - 30	
		DENSE	30 - 50	
		VERY DENSE	OVER 50	
CLAY	CONSISTENCY	VERY SOFT	LESS THAN 2	LESS THAN 0.25
		SOFT	2 - 4	0.25 - 0.50
		MEDIUM	4 - 8	0.50 - 1.00
		STIFF	8 - 15	1.00 - 2.00
		VERY STIFF	15 - 30	2.00 - 4.00
		HARD	OVER 30	OVER 4.00

NOTE: SOIL CLASSIFICATION: THE SOIL CLASSIFICATIONS PRESENTED ARE DERIVED FROM EMPIRICAL CORRELATIONS OF THE DATA OBTAINED FROM THE ELECTRICAL CONE PENETROMETER TEST AT THE SPECIFIC LOCATION AND DEPTH INDICATED ON THE CPT LOGS. THE EMPIRICAL CORRELATIONS FOR THE SOIL CLASSIFICATION ARE BASED ON WORK PREDICTION IN THE FINAL REPORT: "HANDLAUGER SOIL FIELD CALIBRATION OF ELECTRONIC CONE PENETRATION IN SOFT SOIL", DUNHAM, R.J., 1995. THE CLASSIFICATION PROVIDED IS AN ESTIMATION OF SOIL TYPE AND MAY VARY FROM ACTUAL CONDITIONS. THIS ESTIMATION IS PROVIDED AS A GENERAL GUIDE AND SHOULD BE USED FOR INFORMATIONAL PURPOSES ONLY.

THIS DRAWING SHALL BE ISSUED TO THE DRAWING AS CERTIFICATION THAT THE LABORATORY TESTING AND ANALYSES WAS PERFORMED ACCORDING TO THE LDOTD PROGRAMS. NO DESIGN COMPUTATIONS WERE PERFORMED OR REVIEWED BY ME.

PARISH: Washington
FEDERAL PROJECT:
STATE PROJECT:
DESIGNED: D. HERNANDEZ
CHECKED: D. HERNANDEZ
DETAILED: D. HERNANDEZ
CHECKED: D. HERNANDEZ
UNIT:
SHEET:
APPROVED BY:

SHEET NUMBER

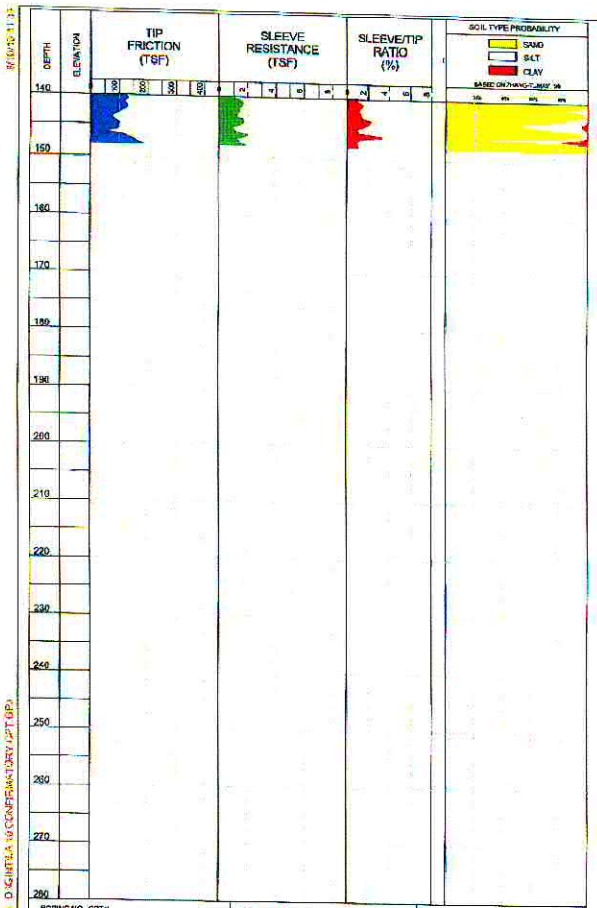
LA 10 Bridge Widening

LA 10

LOG OF ELECTRONIC CONE PENETROMETER TESTING

PAVEMENT & GEOTECHNICAL SERVICES

Report Form: LA_DOT_CPT_ENGLISH_JAN 2010 Project File: G:\CONTLA 10 CONFIRMATORY CPT.GPJ



BORING NO. CPT-2	STA: 126+25	
LATITUDE: 30.84804N	LOCATION: 21' RT EXISTING CL	
LONGITUDE: -90.1°443W	DATE TAKEN: 5/7/10	STR. NO.: Lawrence Creek
CONT SECT.:	LOG FILE:	CONE ID.: FT.SCKEV510

STANDARD ABBREVIATIONS & DEFINITIONS

MATERIAL:
CL = Clay
CONC = Concrete
GRAV = Gravel
I.O. = Iron Ore
LIG. = Lignite
N.P. = Non Plastic
ORG = Organic
PT. = Peat
RT. = Root
SA. = Sand
SH = Shell
SI. = Silt
VEG = Vegetation
WD. = Wood

COLOR:
BR. = Brown
BK. = Black
BL. = Blue
GR = Gray
GN = Green
PK = Pink
RD = Red
TN. = Tan
WH = White
YE. = Yellow

MOISTURE:
DRY = Dry
F. = Fine
MED. = Medium

STRUCTURE:
ALT = Alternating
LAM = Laminated
LEN. = Lens
LYR. = Layer
MOT = Mottled
PKT. = Pocket
STK. = Streak
STR. = Striae
TR. = Trace

FAILURE MODE:
M.E. = Multiple Failure
SL. = Slump
S.B. = Slickensides
V.S. = Vertical Shear
Y.G. = Yield
B.S. = Shear Angle

SOIL PROPERTIES

WET DENSITY = Wet density of in-place soil, (pounds per cu. ft.) obtained by AASHTO T208.
MOISTURE CONTENT = Moisture Content of in-place soil, expressed as a percentage of the dry weight of the soil. (M.C. determined by DOTD TR 428, Method B)
BOUND LIMIT & PLASTICITY INDEX = Atterberg Limits Indication, DOTD TR 428
qu = Unconfined compressive strength, AASHTO T 208, (tons per sq. ft.)
SPT = Standard Penetration Test, AASHTO T 206, number of blows, N = , per foot of penetration (unless otherwise noted on penetration in sheet of notes)
UU = Unconsolidated Undrained Triaxial test, AASHTO T 208, compressive strength (tons per sq. ft.) or axial stress (pounds per sq. in.)
C = Soil cohesion, (tons per sq. ft.)
= Soil angle of internal friction (degrees)
- = Unconsolidated Undrained triaxial test, AASHTO T 296, (tons per sq. ft.)
= Consolidated drained direct shear test, AASHTO T 236, (t.s.f.)
P = Pocket penetrometer strength, (tons per sq. ft)

MISCELLANEOUS

= Location and identification of thin-walled tube sample, AASHTO T 207
= Location and identification of thin-walled tube sample, AASHTO T 207, with a portion of the sample sealed for consolidation testing
= Location and identification of SPT sample, AASHTO T 206
N.C. = No Cut, no preliminary blow striking prior to securing SPT data
NO PEN = No Penetration, unable to drive split spoon sampler beyond 6 inches of the Standard Penetration Test
NO RECV. = No Recovery, unable to recover sample for testing or classification.
DIST. = Disturbed sample recovered with thin-walled tube sampler
12' / 24 HRS = Water Table depth below ground surface recorded at noted time after completion of bore hole.
- SOIL TYPE nomenclature is based on ASTM D2487

CORRELATION OF PENETRATION RESISTANCE AND SOIL PROPERTIES

SOIL		DESIGNATION	"N" (blows per ft.)	Approximate "qu" (tons per sq. ft.)
SAND AND SILT	NON-COHESIVE (COHESIONLESS)	VERY LOOSE	LESS THAN 4	
		LOOSE	4 - 10	
		MEDIUM	10 - 30	
		DENSE	30 - 50	
		VERY DENSE	OVER 50	
CLAY	COHESIVE (NON-COHESIVE)	VERY SOFT	LESS THAN 2	LESS THAN 0.25
		SOFT	2 - 4	0.25 - 0.50
		MEDIUM	4 - 8	0.50 - 1.00
		STIFF	8 - 15	1.00 - 2.00
		VERY STIFF	15 - 30	2.00 - 4.00
		HARD	OVER 30	OVER 4.00

NOTE: SOIL CLASSIFICATION, THE SOIL CLASSIFICATIONS PRESENTED ARE DERIVED FROM EMPIRICAL CORRELATIONS OF THE DATA OBTAINED WITH THE ELECTRONIC CONE PENETROMETER TESTS AT THE SPECIFIC LOCATIONS AND FOR THE INDICATED ON THIS OPT LOG. THE EMPIRICAL CORRELATIONS FOR THE SOIL CLASSIFICATIONS ARE BASED ON WORK PREVIOUSLY PERFORMED IN THE FINAL REPORT, "FHWA/LA/89/238 SOIL CALIBRATION OF ELECTRONIC CONE PENETRATION TESTS", T. TUMAY, H. LEE, 1989. THE CLASSIFICATIONS PROVIDED IN AN ESTIMATION OF SOIL TYPE AND MAY VARY FROM ACTUAL CONDITIONS. THIS ESTIMATION IS PROVIDED AS A GENERAL GUIDE AND IS TO BE USED FOR INFORMATIONAL PURPOSES ONLY.

THIS SIGNATURE AND SEAL ON THIS TS THIS DRAWING AS CERTIFICATION THAT THE LABORATORY TESTING AND ANALYSIS WAS PERFORMED ACCORDING TO THE LISTED PROCEDURES, AND DESIGN COMPUTATIONS WERE PERFORMED OR REVIEWED BY ME.

LA 10 Bridge Widening
LA 10
LOG OF ELECTRONIC CONE PENETROMETER 1.0.319

PAVEMENT & GEOTECHNICAL SERVICES

SHEET NUMBER
PARISH: Washington
H.C.S.N.
PROJECT
DESIGNED: B. ELSAWAHLI / D.K. DALIS
DETAILED: J.R. SCHWINGLE
CHECKED: B. ELSAWAHLI
REVIEWED: BRYDEN
DATE:
NO. | DATE | REVISION | BY