TOLUNAY-WONG ENGINEERS, INC.

Boring No.	Sample No.	Sample Depth (feet)	Elevation (feet)	Pocket Pen. (tsf)	Soil Description	USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	Finer than No. 200 (%)	Unit Dry Weight (pcf)	Dev./Compr. Stress (tsf)	Failure Strain (%)	Confining Pressure (psi)	Failure Type
07-22	N 13843175.52, E 3153555.49		55.64													
	1	0-2	53.64	4.50	Reddish-brown and gray FAT CLAY	CH	25.9									
	2	2-4	51.64	4.50	Reddish-brown and gray FAT CLAY	CH	28.1									
	3	4-6	49.64	4.50	Gray and tan SANDY LEAN CLAY	CL	17.3									
	4	6-8	47.64	3.00	Reddish-brown and gray FAT CLAY	CH	24.6									
	5	8-10	45.64	4.00	Gray and tan FAT CLAY	CH	21.0									
	6	10-12	43.64	3.00	Gray and reddish-brown FAT CLAY	CH	23.2									
	7	12-14	41.64	4.50	Gray and tan FAT CLAY	CH	20.4									
	8	14-16	39.64	4.00	Dark gray and tan FAT CLAY	CH	24.8									
	9	16-18	37.64	2.50	Gray and tan FAT CLAY	CH	22.9	73	21	52		102.6	2.78	7.0		Bulge
	10	18-20	35.64	3.00	Gray and reddish-brown FAT CLAY	CH	24.7									
	11	20-22	33.64	4.50	Dark gray and tan FAT CLAY	CH	21.1									
	12	22-24	31.64	4.25	Dark gray and tan FAT CLAY	CH	25.3									
	13	24-25	30.64	3.50	Dark gray and tan FAT CLAY	CH	19.8									
07-23	N 13843712.30, E 3153531.10		55.54													
	1	0-2	53.54	4.50	Dark gray and tan FAT CLAY	CH	20.9									
	2	2-4	51.54	4.50	Gray and reddish-brown FAT CLAY	CH	17.8									
	3	4-6	49.54	4.50	Gray and tan FAT CLAY	CH	20.5									
	4	6-8	47.54	3.50	Gray and tan FAT CLAY	CH	24.0									
	5	8-10	45.54	3.00	Reddish-brown and gray FAT CLAY	CH	26.2									
	6	10-12	43.54	2.50	Tan and gray FAT CLAY	CH	23.2									
	7	12-14	41.54	3.00	Dark gray and tan FAT CLAY	CH	22.9									
	8	14-16	39.54	4.25	Dark gray and tan FAT CLAY; calcareous nodules	CH	20.2									
	9	16-18	37.54	3.00	Reddish-brown and gray FAT CLAY	CH	31.5									
	10	18-20	35.54	3.25	Dark gray and tan FAT CLAY	CH	24.8									
	11	20-22	33.54	4.25	Reddish-brown and gray FAT CLAY; calcareous nodules	CH	26.4									
	12	22-24	31.54	3.50	Dark gray and tan FAT CLAY; calcareous nodules	CH	23.2									
	13	24-25	30.54	3.00	Reddish-brown and gray FAT CLAY	CH	27.2									
07-24	N 13844248.75, E 3153507.26		55.87													
	1	0-2	53.87	3.25	Gray and reddish-brown FAT CLAY	CH	26.0									
	2	2-4	51.87	2.75	Reddish-brown and gray FAT CLAY	CH	26.6									
	3	4-6	49.87	3.25	Gray and reddish-brown FAT CLAY	CH	24.3									
	4	6-8	47.87	3.00	Gray and tan FAT CLAY	CH	27.3									
	5	8-10	45.87	3.25	Gray and tan FAT CLAY	CH	23.7									
	6	10-12	43.87	4.25	Gray and tan FAT CLAY	CH	24.2									
	7	12-14	41.87	3.25	Gray and tan FAT CLAY; calcareous nodules	CH	21.1									
	8	14-16	39.87	3.25	Gray and reddish-brown FAT CLAY	CH	23.6									
	9	16-18	37.87	4.00	Gray and tan FAT CLAY	CH	20.1									
	10	18-20	35.87	4.00	Reddish-brown and gray FAT CLAY	CH	23.4	85	25	60		99.6	1.97	3.4	17	Slickensided
	11	20-22	33.87	2.25	Reddish-brown and gray FAT CLAY	CH	30.1					97.6	2.09	2.0		Slickensided
	12	22-24	31.87	3.25	Gray and tan FAT CLAY	CH	23.3									
	13	24-26	29.87	2.75	Reddish-brown and gray FAT CLAY	CH	26.7									
	14	26-28	27.87	1.75	Gray and tan FAT CLAY	CH	29.6									
	15	28-30	25.87	2.50	Gray and tan FAT CLAY	CH	30.1									
	16	30-32	23.87	2.25	Tan and gray FAT CLAY	CH	32.2									
	17	32-34	21.87	2.50	Tan and gray FAT CLAY	CH	32.8									
	18	34-36	19.87	3.75	Tan and gray FAT CLAY; calcareous and ferrous	CH	29.8									
	19	36-38	17.87	3.00	Tan and gray SANDY LEAN CLAY	CL	21.0									
	20	38-40	15.87	1.75	Tan and gray SANDY SILTY CLAY	CL-ML	21.3	28	21	7		106.2	0.56	4.8		60 degree
07-25	N 13844793.06, E 3153475.64															
	1	0-2		3.50	Reddish-brown and gray FAT CLAY	CH	33.0									
	2	2-4		3.50	Reddish-brown and gray FAT CLAY	CH	32.0									
	3	4-6		3.75	Gray, tan and dark gray FAT CLAY	CH	21.5									
	4	6-8		3.50	Reddish-brown, dark gray and tan FAT CLAY	CH	29.3									
	5	8-10			Brown and gray FAT CLAY		32.0	77	23	54		87.4	1.42	1.0		Slickensided
	6	10-12		3.50	Gray, tan and dark gray FAT CLAY; tree roots and ferrous	CH	25.3									

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Hole No. 07-23

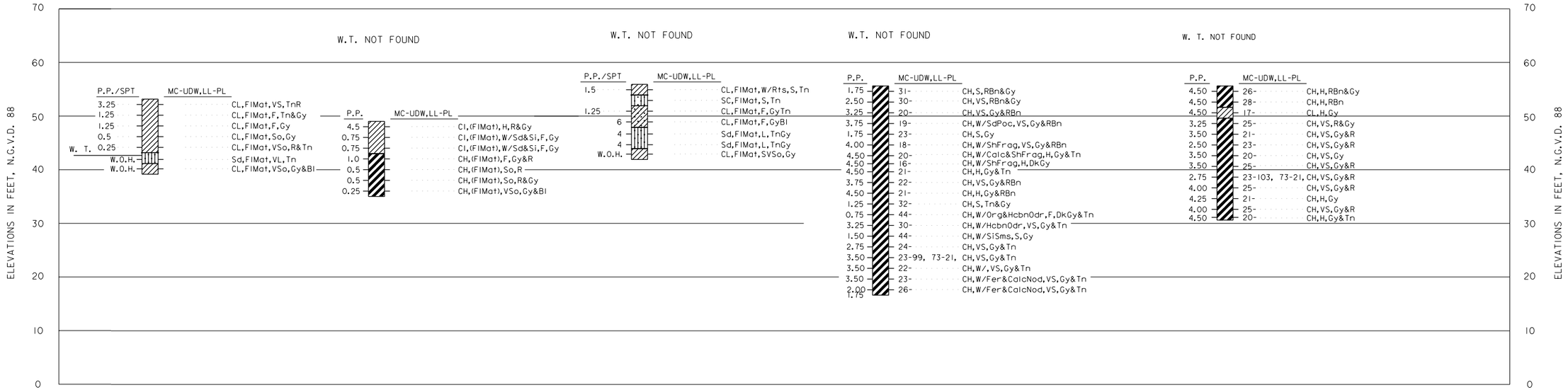
BORING LOG	DISTRICT	INSTALLATION	SHEET 1 OF 1 SHEETS

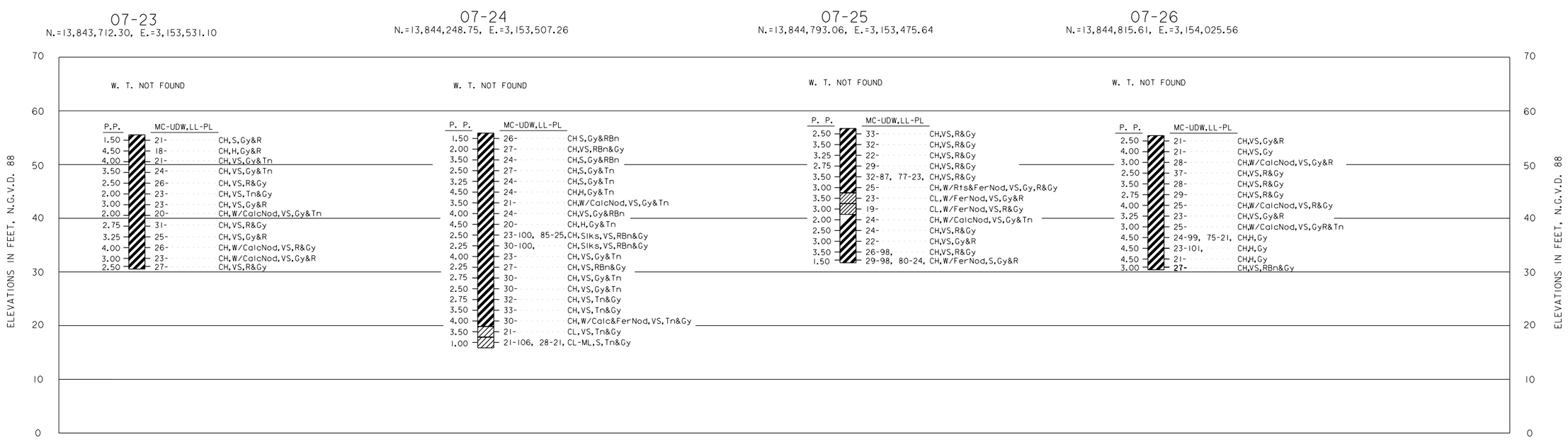
1. PROJECT House Tract Placement Area	7. ELEVATION OF HOLE 54.85 ft
2. LOCATION (Coordinates or Station) N=13839721.54 E=3154790.83	8. DATUM FOR ELEVATION
3. DRILLING AGENCY T.R.I.	9. ELEVATION OF GROUNDWATER ▽ TOD: ▼ 24-HR:
4. LABORATORY TESTING AGENCY Tolunay-Wong Engineers, Inc.	10. DRILLING DATE and TIME STARTED: 2/20/07 COMPLETED: 2/20/07
5. DEPTH OF WATER ▽ TOD: ▼ 24-HR:	11. CLASSIFICATION REFERENCE
6. DEPTH OF HOLE 25 ft	12. ENGINEER

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE	NUMBER	RECOVERY (%)	SPT (N)	PENETROMETER (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	FINES CONTENT (% <200)
			FAT CLAY"FILL", stiff, gray & tan, w/ ferrous nodules & sand pockets		1	63		1.50		20.9				
			-very stiff to hard @ 2' - 8' -gray & reddish brown @ 2' - 4'		2	58		4.50		17.8				
5			-w/ calcareous nodules below 4'		3	35		4.00		20.5				
					4	46		3.50		24.0				
			-gray & reddish brown @ 8' - 10'		5	54		2.50		26.2				
10					6	58		2.00		23.2				
			-very stiff @ 12' - 14'		7	67		3.00		22.9				
15					8	65		2.00		20.2				
			-gray & reddish brown @ 16' - 18'		9	75		2.75		31.5				
			-very stiff @ 18' - 24'		10	67		3.25		24.8				
20			-gray & reddish brown @ 20' - 22'		11	63		4.00		26.4				
					12	58		3.00		23.2				
	29.9		-reddish brown & gray below 24'		13	92		2.50		27.2				
25			Boring terminated at 25 ft.											
30														

SWG 1836 BOR 03.14.859-057.GPJ TOLUNAY-WONG ENGINEERS.GDT 3/4/08

ENG FORM: SWG 1836 BOR





NOTE:
FOR BORING LOG NOTES AND CLASSIFICATIONS, SEE DRAWING NO. F-46.

SOLICITATION NO.
W912HY-
08-B-0016

US Army Corps of Engineers
Galveston District

Rev.	Description	Date	By

TIME:$TIME$ DATE:$DATE$ BY:$USER$

Drawn by:
Designed by: SK,SL,RB
Checked by: SL,RB
Submitted by: LORI K. THOMAS, P.E. Chief,Section 1, Structure Section
Approved by: PETE G. PEREZ, P.E. Chief, Engineering and Construction Division
Date: APRIL, 2008
Scale: AS SHOWN
Rev. --
Approval Recommended: HARRISON T. SUTCLIFFE, P.E. Chief, Engineering Branch

U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

PREPARED UNDER THE DIRECTION OF
DAVID C. WESTON, COL., C.E.
DISTRICT COMMANDER

HOUSTON SHIP CHANNEL, TEXAS
HOUSE TRACT PLACEMENT AREA
INTERIOR REHABILITATION, EXTERIOR LEVEE
REHABILITATION, AND DRAINAGE DITCH REPAIR

LOGS OF BORINGS

Drawing No.:
F-44
Sheet 47 of 49

File:$FILE$

File No. HSC 401-515

4/14/2008 1:42:56 PM w:\cadd\projects\hsc\401-515 house tract\housetract plans\F44 Log of Borings 2.dgn