



DEPTH, FT	WATER LEVEL SYMBOL	SAMPLES	BLOWS PER FOOT	LOCATION: See Plate 2 COORDINATES: 29° 43' 40" N 95° 03' 17" W SURFACE EL.: 7'	STRATUM DEPTH, FT	CLASSIFICATION						SHEAR STRENGTH				
				STRATUM DESCRIPTION		UNIT DRY WT, POF	PASSING NO. 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	KIPS PER SQ FT				
				FILL: GRAVEL, tan, with silt pockets	2.0											
5				CLAY, stiff, tan, with sand and fine gravel - firm, 5' to 10'		107		19								
				- soft below 10'			66		41	10	31					
10				- reddish-brown below 14'												
15																
				SILTY CLAY, soft, brown, with sand pockets	18.0											
20						103		24								
				SAND, loose, fine-grained, dark brown	23.0											
25			6				3									
30			4													
35			11	- medium dense, gray below 33'												
				SANDY CLAY, very stiff, brown and gray	38.0		72									
			18													

NOTES:

- ▽: Water First Noticed. ▼: Depth To Water after 15 minutes.
- Terms and symbols defined on Plates A-32a and A-32b.
- Coordinates obtained from handheld GPS.
- Consolidated Undrained test performed at 6'.

DATE: March 15, 2011
TOTAL DEPTH: 75'
CAVED DEPTH: Not Applicable
DRY AUGER: Surface to 14'
WET ROTARY: Below 14'
BACKFILL: Cement-Bentonite Grout
LOGGER: C. Alvarado

R:041202011 PROJECTS\0001-0099\0412-11-0003\DRAWING\0412-11-0003.GPJ FUGRO_SO (LAB DATA)_INDUSTRIAL (W/R_MV) 6/2/2011

LOG OF BORING NO. B-24
DOCKS, BRIDGE, AND BARNES ISLAND IMPROVEMENTS
BATTLEGROUND OIL SPECIALTY TERMINAL COMPANY
HARRIS COUNTY, TEXAS



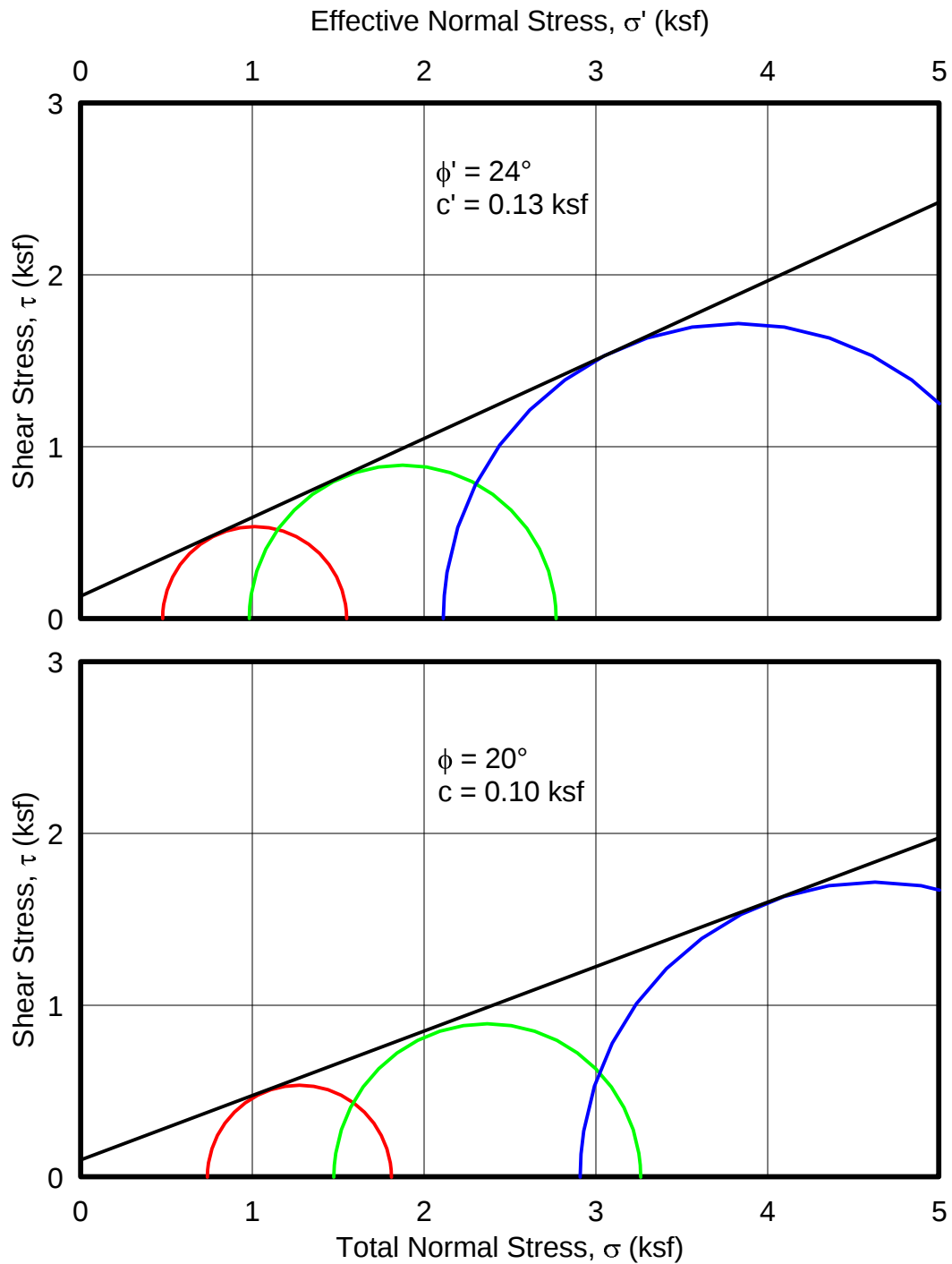


DEPTH, FT	WATER LEVEL SYMBOL	SAMPLES	BLOWS PER FOOT	LOCATION: See Plate 2 COORDINATES: 29° 43' 40" N 95° 03' 17" W SURFACE EL.: 7'	STRATUM DEPTH, FT	CLASSIFICATION						SHEAR STRENGTH				
						UNIT DRY WT, PCF	PASSING NO. 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	KIPS PER SQ FT				
				SANDY CLAY, very stiff, brown and gray												
45				CLAY, very stiff, brown, with silt pockets	43.0	111		18								
50																
55				- hard, 54' to 55'		118		15	46	10	36					5.6
60																
65			44					19								
70			49	- reddish-brown below 68'												
75			18		75.0											
NOTES:						DATE: March 15, 2011 TOTAL DEPTH: 75' CAVED DEPTH: Not Applicable DRY AUGER: Surface to 14' WET ROTARY: Below 14' BACKFILL: Cement-Bentonite Grout LOGGER: C. Alvarado										
1. ∇: Water First Noticed. ▼: Depth To Water after 15 minutes.																
2. Terms and symbols defined on Plates A-32a and A-32b.																
3. Coordinates obtained from handheld GPS.																
4. Consolidated Undrained test performed at 6'.																

R:041202011 PROJECTS\0001-0099\0412-11-0003\DRAWING\0412-11-0003.GPJ FUGRO_SO (LAB DATA)_INDUSTRIAL (WIR_MV) 6/2/2011

LOG OF BORING NO. B-24
DOCKS, BRIDGE, AND BARNES ISLAND IMPROVEMENTS
BATTLEGROUND OIL SPECIALTY TERMINAL COMPANY
HARRIS COUNTY, TEXAS





MATERIAL: CLAY, tan

INITIAL WATER CONTENT: 19 %

INITIAL WET UNIT WEIGHT: 127 pcf

INITIAL DRY UNIT WEIGHT: 107 pcf

INITIAL VOID RATIO: 0.608

LIQUID LIMIT: 41

PLASTIC LIMIT: 10

PLASTICITY INDEX: 31

SPECIFIC GRAVITY: 2.75 (assumed)

MULTI STAGE CONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION TEST RESULTS

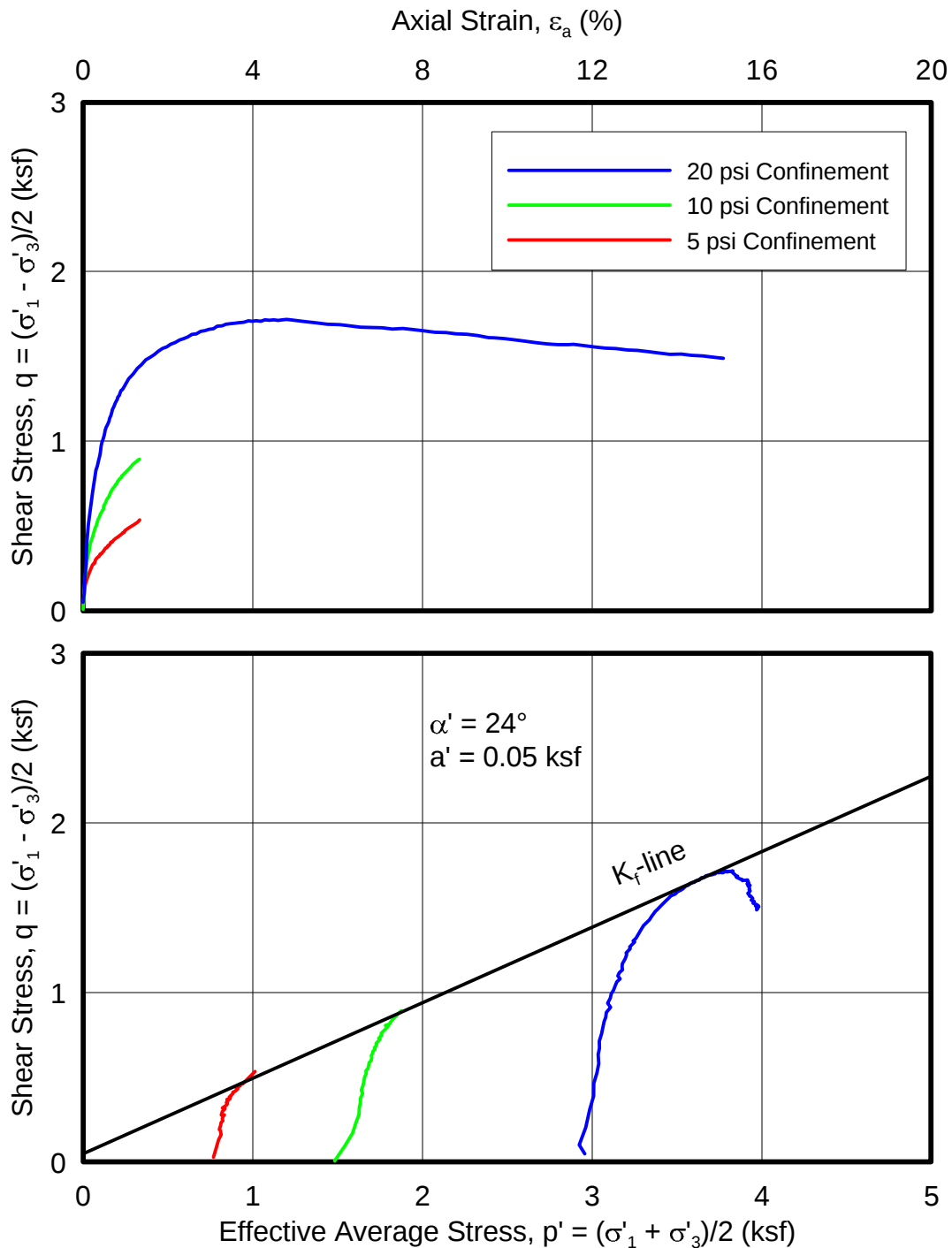
ISOTROPICALLY CONSOLIDATED - MOHR'S CIRCLES

BORING B-24, 6 FEET DEPTH

DOCKS, BRIDGE, AND BARNES ISLAND IMPROVEMENTS

BATTLEGROUNDS OIL SPECIALTY TERMINAL COMPANY

HARRIS COUNTY, TEXAS



MATERIAL: CLAY, tan

INITIAL WATER CONTENT: 19 %

INITIAL WET UNIT WEIGHT: 127 pcf

INITIAL DRY UNIT WEIGHT: 107 pcf

INITIAL VOID RATIO: 0.608

LIQUID LIMIT: 41

PLASTIC LIMIT: 10

PLASTICITY INDEX: 31

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MULTI STAGE CONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION TEST RESULTS

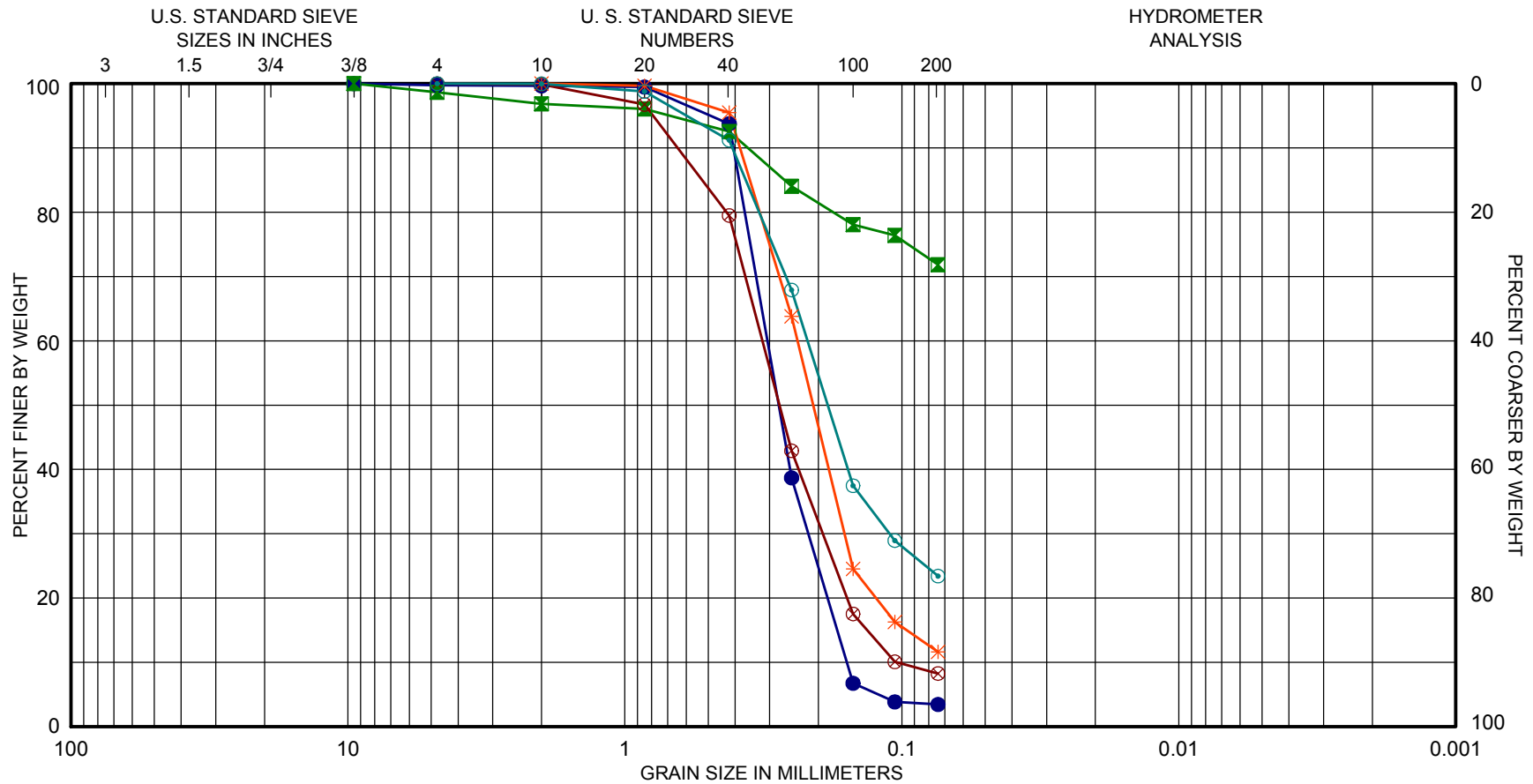
ISOTROPICALLY CONSOLIDATED - STRESS AND STRAIN CURVES

BORING B-24, 6 FEET DEPTH

DOCKS, BRIDGE, AND BARNES ISLAND IMPROVEMENTS

BATTLEGROUND OIL SPECIALTY TERMINAL COMPANY

HARRIS COUNTY, TEXAS



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

SYMBOL	BORING	DEPTH, FT	CLASSIFICATION
●	B-24	25	Sand, loose, fine-grained, dark brown
■	B-24	39	Sandy Clay, very stiff, brown and gray
*	B-25	20	Sand, loose, fine-grained, gray, with fine gravel
⊗	B-25	30	Sand, loose, fine-grained, gray, with fine gravel
⊙	B-25	40	Silty Sand, medium-dense, gray, with clay seams

GRAIN SIZE CURVES
DOCKS, BRIDGE, AND BARNES ISLAND IMPROVEMENTS
BATTLEGROUND OIL SPECIALTY TERMINAL COMPANY
HARRIS COUNTY, TEXAS