

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT



**SUBSURFACE INVESTIGATION**

STATE JOB NO. 110217

FEDERAL AID PROJECT NO. NHPP-5439(1)

WALNUT CORNER-CYPRESS CORNER (S)

STATE HIGHWAY 1 SECTION 8 & 9

IN LEE & PHILLIPS COUNTY

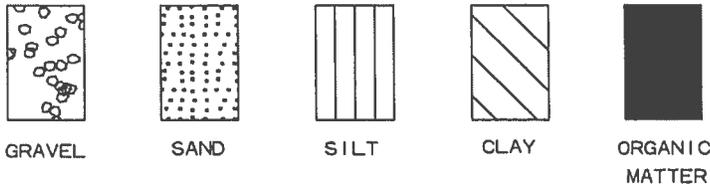
LETTING OF JANUARY 13, 2016

The information contained herein was obtained by the Department for design and estimating purposes only. It is being furnished with the express understanding that said information does not constitute a part of the Proposal or Contract and represents only the best knowledge of the Department as to the location, character and depth of the materials encountered. The information is only included and made available so that bidders may have access to subsurface information obtained by the Department and is not intended to be a substitute for personal investigation, interpretation and judgment of the bidder. The bidder should be cognizant of the possibility that conditions affecting the cost and/or quantities of work to be performed may differ from those indicated herein.

# LEGEND

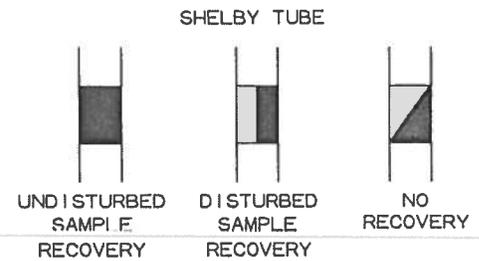
## SOIL TYPES

( SHOWN IN SYMBOL COLUMN)  
( PREDOMINANT TYPE SHOWN HEAVY)



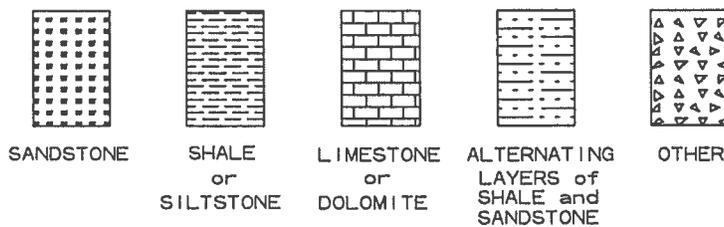
## SAMPLER TYPES

( SHOWN IN SAMPLE COLUMN)



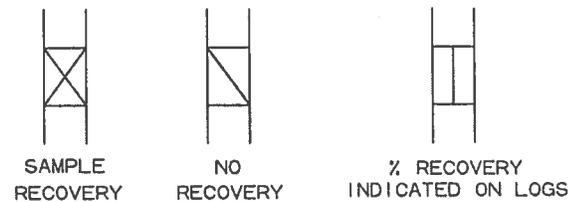
## ROCK TYPES

( SHOWN IN SYMBOL COLUMN)



## SPLIT SPOON

## ROCK CORING



## TERMS DESCRIBING CONSISTENCY OR CONDITION

GRANULAR SOIL		CLAY		CLAY-SHALE		SHALE	
'N' Value	Density	'N' Value	Consistency	'N' Value	Consistency	'N' Value	Consistency
0-4	Very Loose	0-1	Very Soft	0-1	Very Soft		
5-10	Loose	2-4	Soft	2-4	Soft	31-60	Soft
11-30	Medium Dense	5-8	Medium Stiff	5-8	Medium Stiff	Over 60	
31-50	Dense	9-15	Stiff	9-15	Stiff	More than 2'	
Over 50	Very Dense	16-30	Very Stiff	16-30	Very Stiff	Penetration	
		31-60	Hard	31-60	Hard	in 60 Blows: Medium Hard	
		Over 60	Very Hard	Over 60	Very Hard	Less than 2'	
						Penetration	
						in 60 Blows: Hard	

1. Ground water elevations indicated on boring logs represent ground water elevations at date or time shown on boring log. Absence of water surface implies that no ground water data is available but does not necessarily mean that ground water will not be encountered at locations or within the vertical reaches of these borings.
2. Borings represent subsurface conditions at their respective locations for their respective depths. Variations in conditions between or adjacent to boring locations may be encountered.
3. Terms used for describing soils according to their texture or grain size distribution are in accordance with the Unified Soil Classification System.

Standard Penetration Test – Driving a 2.0" O.D., 1-3/8" I.D. sampler a distance of 1.0 foot into undisturbed soil with a 140 pound hammer free falling a distance of 30 inches. It is customary to drive the spoon 6.0 inches to seat into undisturbed soil, then perform the test. The number of hammer blows for seating the spoon and performing the test are recorded for each 6 inches of penetration on the drill log. The field "N" Value ( $N_f$ ) can be obtained by

adding the bottom two numbers for example:  $\frac{6}{8-9} \Rightarrow 8+9 = 17 \text{ blows/ft}$ . The "N" Value corrected to 60% efficiency ( $N_{60}$ ) can be obtained by multiplying  $N_f$  by the hammer correction factor published on the boring log.

**ARKANSAS HWY. & TRANS. DEPARTMENT  
MATERIALS DIVISION - GEOTECHNICAL SEC.**

BORING NO. 1  
PAGE 1 OF 3

JOB NO. 110217 Phillips County  
JOB NAME: Walnut Corner - Cypress Corner  
S.H. 1 -  
STATION: 420+95  
LOCATION: 4' Right of Center Line of Construction  
LOGGED BY: Paul Christenberry

DATE: April 30 - May 1, 2013  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 75 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 101.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% S C R	% R Q D
			SURFACE ELEVATION: 204.9									
5		X	Moist, Medium Stiff, Brown Clay with some Iron Nodules	CL	22		36			$\frac{2}{3-5}$		
10		X	Moist, Medium Stiff, Gray Clay	CL	22		34			$\frac{2}{2-3}$		
15		X	Wet, Soft, Gray Clay	CL	22		34			$\frac{0}{0-2}$		
20		X	Wet, Loose, Brown and Gray Silt with some Iron Nodules	ML	25		30			$\frac{1}{2-3}$		
25		X		ML	25		30			$\frac{0}{0-0^*}$		
30		X		ML	NP					$\frac{0}{0-2}$		
35		X										

REMARKS: Hollow stem augers were utilized to a depth of 9.4'. \* Split-spoon sampler advanced 1.5' by static weight of hammer.

**ARKANSAS HWY. & TRANS. DEPARTMENT  
MATERIALS DIVISION - GEOTECHNICAL SEC.**

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			SURFACE ELEVATION: 204.9									
		X	Wet, Very Loose, Gray Silt	ML	23		29			0 1-2		
40		X		ML	NP					1 1-2		
45		X	Wet, Loose, Gray Silt	ML	25		37			0 2-3		
50		X	Wet, Loose, Gray Silty Sand	SM	NP					1 4-3		
55		X	Wet, Medium Dense, Gray Silty Sand	SM	NP					8 10-14		
60		X	Wet, Dense, Gray Sand with Silt	SW-SM	NP					10 14-19		
65		X	Wet, Medium Dense, Gray Sand with Trace of Gravel	SW	NP					6 10-10		
70												

REMARKS: Hollow stem augers were utilized to a depth of 9.4'. \* Split-spoon sampler advanced 1.5' by static weight of hammer.

**ARKANSAS HWY. & TRANS. DEPARTMENT  
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			SURFACE ELEVATION: 204.9									
75		X	Wet, Dense, Gray Sand	SW	NP					11 17-25		
80		X	Wet, Medium Dense, Gray Sand	SW	NP					10 12-14		
85		X	Wet, Dense, Gray Sand	SW	NP					11 21-25		
90		X	Wet, Medium Dense, Gray Silty Sand with some Gravel	SM	NP					8 8-17		
95		X	Wet, Very Dense, Gray Sand with Silt and some Gravel	SW-SM	NP					13 20-32		
100		X	Wet, Dense, Gray Sand with Silt and Gravel	SW-SM	NP					11 15-16		
		X	Wet, Dense, Gray Sand	SW	NP					15 18-21		
			Boring Terminated									
105												

REMARKS: Hollow stem augers were utilized to a depth of 9.4'. \* Split-spoon sampler advanced 1.5' by static weight of hammer.

**ARKANSAS HWY. & TRANS. DEPARTMENT  
MATERIALS DIVISION - GEOTECHNICAL SEC.**

BORING NO. 2  
PAGE 1 OF 3

JOB NO. 110217 Phillips County  
JOB NAME: Walnut Corner - Cypress Corner  
S.H. 1 -  
STATION: 425+86  
LOCATION: 3' Right of Center Line of Construction  
LOGGED BY: Paul Christenberry

DATE: April 29-30, 2013  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 75 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 101.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% S C R	% R O D
			SURFACE ELEVATION: 205.1									
5		X	Moist, Medium Stiff, Gray Clay with some Iron Nodules and Asphalt Fragments							3 3-4		
10		X	Moist, Medium Stiff, Gray Clay							2 3-4		
15		X								0 1-2		
20		X	Wet, Soft, Brown and Gray Clay with some Iron Nodules							2 1-2		
25		X								0 0-0*		
30		X	Wet, Very Loose, Gray Silt							0 0-0*		
35		X										

REMARKS: Hollow stem augers were utilized to a depth of 9.5'. \* Split-spoon sampler advanced 1.5' by static weight of hammer.

**ARKANSAS HWY. & TRANS. DEPARTMENT  
MATERIALS DIVISION - GEOTECHNICAL SEC.**

BORING NO. 2  
PAGE 2 OF 3

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LOCATION: 3' Right of Center Line of Construction  
LOGGED BY: Paul Christenberry

DATE: April 29-30, 2013  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 75 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.38

COMPLETION DEPTH: 101.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% S C R	% R Q D
			SURFACE ELEVATION: 205.1									
40			Wet, Soft, Gray Silty Clay							0 0-2		
45										1 2-2		
50			Wet, Loose, Gray Sand with Trace of Clay							3 4-6		
55			Wet, Dense, Gray Clayey Sand							17 23-25		
60			Wet, Dense, Gray and Brown Sand with some Gravel							9 14-17		
65			Wet, Medium Dense, Gray Sand with Clay							5 9-16		
70			Wet, Medium Dense, Gray Sand									

REMARKS: Hollow stem augers were utilized to a depth of 9.5'. \* Split-spoon sampler advanced 1.5' by static weight of hammer.

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			SURFACE ELEVATION: 205.1									
75		X	Wet, Very Dense, Gray Sand							21 33-41		
80		X	Wet, Medium Dense, Gray Sand							9 11-17		
85		X	Wet, Dense, Gray Sand							16 20-24		
90		X	Wet, Dense, Gray and Brown Sand with Trace of Clay							11 17-21		
		X	Gravel (89.6' to 89.9')							11 23-33		
95		X	Wet, Dense, Gray and Brown Sand							12 16-13		
100		X	Wet, Medium Dense, Gray and Brown Sand with Trace of Gravel and Clay							12 19-27		
		X	Wet, Dense, Gray and Brown Sand							12 19-27		
			Boring Terminated									
105												

REMARKS: Hollow stem augers were utilized to a depth of 9.5'. \* Split-spoon sampler advanced 1.5' by static weight of hammer.