

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT



**SUBSURFACE INVESTIGATION**

STATE JOB NO. 100760

FEDERAL AID PROJECT NO. STPF-0047(47)

LEFT HAND CHUTE OF LITTLE RIVER STRS. & APPRS. (S)

STATE HIGHWAY 77 & 140 SECTION 3 & 2

IN MISSISSIPPI COUNTY

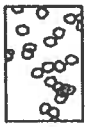
LETTING OF JANUARY 13, 2016

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.

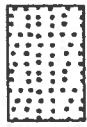
# LEGEND

## SOIL TYPES

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



GRAVEL



SAND



SILT



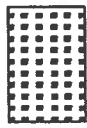
CLAY



ORGANIC  
MATTER

## ROCK TYPES

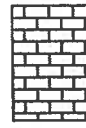
(SHOWN IN SYMBOL COLUMN)



SANDSTONE



SHALE  
or  
SILTSTONE



LIMESTONE  
or  
DOLOMITE



ALTERNATING  
LAYERS of  
SHALE and  
SANDSTONE



OTHER

## SAMPLER TYPES

(SHOWN IN SAMPLE COLUMN)

### SHELBY TUBE



UNDISTURBED  
SAMPLE  
RECOVERY



DISTURBED  
SAMPLE  
RECOVERY



NO  
RECOVERY

### SPLIT SPOON



SAMPLE  
RECOVERY



NO  
RECOVERY

### ROCK CORING



% RECOVERY  
INDICATED ON LOGS

## 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. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 1)  
S.H. 77  
STATION: 109+59  
LOCATION: 20' Right of Center Line of Construction  
LOGGED BY: Stanley Bates

DATE: October 14, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

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.	% C R	% R Q D
5		X	Moist, Medium Dense, Gray Clayey Sand with some Organic Matter							5 5-7		
10		X	Moist, Medium Dense, Gray Clayey Sand							4 8-7		
15		X								2 2-1		
20		X	Moist to Wet, Very Loose, Gray Clayey Sand							4 4-4		
25		X								0 1-2		
30		X	Wet, Soft, Gray Sandy Clay							1 2-3		
35												

REMARKS:

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

BORING NO. 1  
PAGE 2 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 1)  
S.H. 77  
STATION: 109+59  
LOCATION: 20' Right of Center Line of Construction  
LOGGED BY: Stanley Bates

DATE: October 14, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

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 R	% R O D
40		X	Wet, Loose, Gray Silty Sand							3 6-4		
45		X	Wet, Very Loose, Gray Silty Sand							1 1-3		
50		X	Wet, Medium Dense, Gray Sand							6 8-14		
55		X								10 12-13		
60		X								6 10-12		
65		X	Moist, Stiff, Gray Clay							12 14-16		
70		X								1 3-7		

REMARKS:

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

BORING NO. 1  
PAGE 3 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 1)  
S.H. 77  
STATION: 109+59  
LOCATION: 20' Right of Center Line of Construction  
LOGGED BY: Stanley Bates

DATE: October 14, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

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
75		X	Wet, Medium Stiff to Stiff, Gray Clay							0 2-3		
80		X	Wet, Medium Dense, Gray Sand							0 6-7		
85		X								9 14-15		
90		X								9 14-15		
95		X								6 14-16		
100		X	Wet, Dense, Gray Sand							9 14-12		
		X	Wet, Dense, Gray Sand							15 20-28		
			Boring Terminated									
105												

REMARKS:

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

BORING NO. 2  
PAGE 1 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 1)  
S.H. 77  
STATION: 111+29  
LOCATION: 44' Right of Center Line of Construction +  
LOGGED BY: Stanley Bates

DATE: October 8, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

COMPLETION DEPTH: 103.5

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: 217.4 (Top of Ground)									
5		X	Moist, Soft, Brown and Gray Clay with some Organic Matter and Concrete Fragments							0 1-3		
10		X	Moist, Very Soft, Gray Clay							0 0-1		
15		X	Wet, Very Loose, Gray Sand							1 2-2		
20		X	Wet, Very Loose, Gray Sand with Clay							2 1-1		
25		X	Wet, Medium Dense, Gray Sand							2 6-5		
30		X	Wet, Dense, Gray Sand							11 19-22		
35		X								9 12-12		

REMARKS: + Boring was drilled through the existing bridge deck.

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

BORING NO. 2  
PAGE 2 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 1)  
S.H. 77  
STATION: 111+29  
LOCATION: 44' Right of Center Line of Construction +  
LOGGED BY: Stanley Bates

DATE: October 8, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

COMPLETION DEPTH: 103.5

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: 217.4 (Top of Ground)									
40			Wet, Medium Dense, Gray Sand with Trace of Gravel							20 26-19		
45		X	Wet, Dense, Gray Sand							1 3-3		
50		X	Wet, Medium Stiff, Gray Clay with Sand							15 18-23		
55		X	Wet, Dense, Gray Sand							0 1-2		
60		X								0 1-2		
65		X	Wet, Soft, Gray Clay							0 1-3		
70		X								0 1-3		

REMARKS: + Boring was drilled through the existing bridge deck.

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

BORING NO. 2  
PAGE 3 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 1)  
S.H. 77  
STATION: 111+29  
LOCATION: 44' Right of Center Line of Construction +  
LOGGED BY: Stanley Bates

DATE: October 8, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

COMPLETION DEPTH: 103.5

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: 217.4 (Top of Ground)									
75		X	Wet, Soft, Gray Clay with Sand							0 1-3		
80		X	Wet, Medium Stiff, Gray Clay with Sand							1 3-4		
85		X	Wet, Very Dense, Gray Sand							16 27-31		
90		X	Wet, Very Dense, Gray Sand							13 23-30		
95		X	Wet, Dense, Gray Sand with some Gravel and Organic Matter							16 19-23		
100		X	Wet, Dense to Very Dense, Gray Sand with Gravel							17 31-18		
105			Boring Terminated							13 30-29		

REMARKS: + Boring was drilled through the existing bridge deck.



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

BORING NO. 3  
PAGE 1 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 1)  
S.H. 77  
STATION: 111+82  
LOCATION: 44' Right of Center Line of Construction +  
LOGGED BY: Stanley Bates

DATE: October 7, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

COMPLETION DEPTH: 98.5

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 R	% R D
			SURFACE ELEVATION: 217.1 (Top of Ground)									
5		X	Moist, Soft, Brown and Gray Clay with Sand and some Organic Matter							0 0-2		
10		X	Wet, Very Soft, Gray Clay							0 0-0*		
15		X										
20		X	Wet, Very Loose, Gray Clayey Sand							0 0-0*		
25		X	Wet, Very Soft, Gray Sandy, Silty Clay							0 0-0*		
30		X	Wet, Dense, Gray Clayey Sand							8 15-21		
35		X	Wet, Medium Dense, Gray Sand							5 11-13		

REMARKS: + Boring was drilled through the existing bridge deck. \* Split-spoon sampler advanced 1.5' by static weight of hammer.

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

BORING NO. 3  
PAGE 2 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 1)  
S.H. 77  
STATION: 111+82  
LOCATION: 44' Right of Center Line of Construction +  
LOGGED BY: Stanley Bates

DATE: October 7, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

COMPLETION DEPTH: 98.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS		% S C R	% R Q D
										PER 6-IN.			
			SURFACE ELEVATION: 217.1 (Top of Ground)										
40		X	Wet, Loose, Gray Sand with Clay							8 4-4			
45		X	Wet, Soft, Gray Clay							0 0-2			
50		X	Wet, Very Soft, Gray Clay							0 0-0*			
55		X								0 0-2			
60		X	Wet, Soft, Gray Clay							0 0-2			
65		X								0 0-2			
70		X								0 0-1			

REMARKS: + Boring was drilled through the existing bridge deck. \* Split-spoon sampler advanced 1.5' by static weight of hammer.

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

BORING NO. 3  
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JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 1)  
S.H. 77  
STATION: 111+82  
LOCATION: 44' Right of Center Line of Construction +  
LOGGED BY: Stanley Bates

DATE: October 7, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME  
Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

COMPLETION DEPTH: 98.5

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: 217.1 (Top of Ground)									
75		X	Wet, Very Soft, Gray Clay							0 0-0*		
80		X	Wet, Dense, Gray Sand with some Gravel							15 23-25		
85		X	Wet, Very Dense, Gray Sand							14 29-31		
90		X	Wet, Dense, Gray Sand							14 24-25		
95		X	Wet, Dense, Gray Sand with Gravel							15 16-17		
		X	Wet, Very Dense, Gray Sand							12 21-34		
100			Boring Terminated									
105												

REMARKS: + Boring was drilled through the existing bridge deck. \* Split-spoon sampler advanced 1.5' by static weight of hammer.

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

BORING NO. 4  
PAGE 1 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Aprs. (Site 1)  
S.H. 77  
STATION: 113+19  
LOCATION: 28' Right of Center Line of Construction  
LOGGED BY: Stanley Bates

DATE: September 29-30, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

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
5		X	Moist, Very Soft, Brown and Gray Clay with some Organic Matter							1 1-0		
10		X	Wet, Very Soft, Brown and Gray Clay							0 0-0*		
15		X	Wet, Very Soft, Brown and Gray Clay with Sand and some Organic Matter							0 0-0*		
20		X	Wet, Medium Stiff, Gray Sandy Clay							0 4-4		
25		X	Wet, Medium Stiff, Gray Sandy, Silty Clay							2 2-4		
30		X	Wet, Stiff, Gray Sandy, Silty Clay							3 5-5		
35												

REMARKS: \* Split-spoon sampler advanced 1.5' by static weight of hammer.

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

BORING NO. 4  
PAGE 2 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Aprs. (Site 1)  
S.H. 77  
STATION: 113+19  
LOCATION: 28' Right of Center Line of Construction  
LOGGED BY: Stanley Bates

DATE: September 29-30, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

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: 217.3									
40		X	Wet, Medium Dense, Gray Sandy Silt							3 9-10		
45		X	Moist, Stiff, Gray Clay							1 6-5		
50		X	Wet, Medium Dense, Gray Sand with Clay	SC	NP					10 13-17		
55		X	Wet, Medium Dense, Gray Sand	SW	NP					11 15-9		
60		X	Moist, Soft, Gray Clay							0 1-3		
65		X	Moist, Very Stiff, Gray Clay with Sand and Organic Matter							2 10-12		
70		X		SW-SM	NP					11 20-23		

REMARKS: \* Split- spoon sampler advanced 1.5' by static weight of hammer.

<b>ARKANSAS HWY. &amp; TRANS. DEPARTMENT MATERIALS DIVISION - GEOTECHNICAL SEC.</b>		BORING NO. 4 PAGE 3 OF 3
JOB NO. 100760	Mississippi County	DATE: September 29-30, 2014
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 1) S.H. 77		TYPE OF DRILLING: Rotary Wash
STATION: 113+19		EQUIPMENT: CME 750 w/ CME Automatic Hammer
LOCATION: 28' Right of Center Line of Construction		HAMMER CORRECTION FACTOR: 1.23
LOGGED BY: Stanley Bates		

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: 217.3									
		X	Wet, Dense, Gray Sand with Silt	SW-SM	MP					11 17-23		
75		X	Wet, Medium Dense, Gray Sand with Silt and Trace of Gravel	SW-SM	NP					2 11-15		
80		X	Wet, Medium Dense, Gray Sand with Silt and some Gravel	SW-SM	NP					8 13-17		
85		X	Wet, Dense to Very Dense, Gray Sand with Silt and Gravel	SW-SM	NP					8 17-17		
90		X	Wet, Dense to Very Dense, Gray Sand with Silt and Gravel	SW-SM	NP					11 20-31		
95		X	Wet, Very Dense, Gray Sand with Silt and some Gravel	SW-SM	NP					25 35-28		
100		X	Wet, Dense, Gray Sand with Silt and Gravel	SW-SM	NP					6 17-28		
			Boring Terminated	-								
105												

REMARKS: \* Split- spoon sampler advanced 1.5' by static weight of hammer.

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

BORING NO. 5  
PAGE 1 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 1)  
S.H. 77  
STATION: 113+79  
LOCATION: 15' Left of Center Line of Construction  
LOGGED BY: Stanley Bates

DATE: October 1, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

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: 218.2									
5		X	Moist, Soft, Brown and Gray Clay with Sand and some Organic Matter							1 2-2		
10		X	Wet, Very Soft, Brown and Gray Clay with Sand and some Organic Matter							0 0-1		
15		X								0 0-1		
20		X	Wet, Very Soft, Gray Sandy, Silty Clay							0 0-0*		
25		X								1 2-2		
30		X	Wet, Soft, Gray Sandy, Silty Clay							2 2-2		
35												

REMARKS: \* Split-spoon sampler advanced 1.5' by static weight of hammer.

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

BORING NO. 5  
PAGE 2 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 1)  
S.H. 77  
STATION: 113+79  
LOCATION: 15' Left of Center Line of Construction  
LOGGED BY: Stanley Bates

DATE: October 1, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

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: 218.2									
40		X	Wet, Medium Stiff, Gray Silty Clay							0 1-4		
45		X	Wet, Loose, Gray Sandy Silt							2 3-4		
50		X	Moist, Medium Stiff, Gray Clay with Sand							1 1-4		
55		X	Wet, Medium Dense, Gray Sand with Clay							9 11-12		
60		X	Wet, Medium Dense, Gray Sand							7 13-17		
65		X								7 13-13		
70		X								9 15-18		

REMARKS: \* Split-spoon sampler advanced 1.5' by static weight of hammer.



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

BORING NO. 5  
PAGE 3 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 1)  
S.H. 77  
STATION: 113+79  
LOCATION: 15' Left of Center Line of Construction  
LOGGED BY: Stanley Bates

DATE: October 1, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

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
75		X	Wet, Dense, Gray Sand							11 16-20		
80		X	Wet, Dense, Gray Sand with Organic Matter							11 16-17		
85		X	Wet, Medium Dense to Dense, Gray Sand with some Gravel							8 14-16		
90		X	Wet, Dense, Gray Sand with Gravel							10 16-18		
95		X	Wet, Dense, Gray Sand with Gravel							19 17-17		
100		X	Wet, Dense, Gray Sand with Gravel							9 18-21		
		X	Wet, Dense, Gray Sand with some Gravel							9 17-18		
			Boring Terminated									
105												

REMARKS: \* Split-spoon sampler advanced 1.5' by static weight of hammer.

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

BORING NO. 6  
PAGE 1 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 1)  
S.H. 77  
STATION: 114+19  
LOCATION: 22' Right of Center Line of Construction  
LOGGED BY: Stanley Bates

DATE: September 24, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

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: 228.3									
5		X	Moist, Stiff, Brown Clay with Sand and some Organic Matter							$\frac{3}{4-6}$		
10		X	Moist, Medium Stiff, Brown Clay with Sand and some Organic Matter							$\frac{2}{2-4}$		
15		X	Wet, Soft, Gray Silty Clay							$\frac{0}{1-1}$		
20		X	Wet, Very Soft, Gray Silty Clay							$\frac{1}{0-1}$		
25		X								$\frac{2}{2-2}$		
30		X	Wet, Soft, Gray Silty Clay							$\frac{1}{2-2}$		
35												

REMARKS:

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

BORING NO. 6  
PAGE 2 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 1)  
S.H. 77  
STATION: 114+19  
LOCATION: 22' Right of Center Line of Construction  
LOGGED BY: Stanley Bates

DATE: September 24, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

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: 228.3									
40		X	Wet, Stiff, Gray Silty Clay							5 7-7		
45		X	Wet, Stiff, Gray Sandy Clay							5 6-6		
50		X	Wet, Medium Dense, Gray Sand							7 12-13		
55		X	Wet, Medium Dense, Gray Sand with Clay							5 9-11		
60		X	Wet, Medium Dense, Gray Sand							4 9-5		
65		X	Wet, Medium Dense, Gray Sand							8 13-17		
70		X	Wet, Medium Dense, Gray Sand with Organic Matter							7 11-15		

REMARKS:

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

BORING NO. 6  
PAGE 3 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 1)  
S.H. 77  
STATION: 114+19  
LOCATION: 22' Right of Center Line of Construction  
LOGGED BY: Stanley Bates

DATE: September 24, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

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
75		X	Wet, Dense, Gray Sand							9 15-25		
80		X	Wet, Very Dense, Gray Sand							16 25-31		
85		X	Wet, Dense, Gray Sand							15 22-23		
90		X	Wet, Dense, Gray Sand with Trace of Gravel							13 19-21		
95		X	Wet, Dense, Gray Sand							10 17-20		
100		X	Wet, Dense, Gray Sand							14 19-22		
		X	Wet, Dense, Gray Sand with some Gravel							16 23-25		
			Boring Terminated									
105												

REMARKS:

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

BORING NO. 7  
PAGE 1 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 2)  
S.H. 140  
STATION: 215+49  
LOCATION: 25' Left of Center Line of Construction  
LOGGED BY: Stanley Bates

DATE: September 23, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

COMPLETION DEPTH: 101.3

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: 233.0									
5		X	Moist, Loose, Brown Sand with Clay and some Organic Matter							$\frac{3}{4-5}$		
10		X	Moist, Medium Stiff, Brown and Gray Clay with Sand and some Organic Matter							$\frac{3}{3-4}$		
15		X	Moist, Medium Stiff, Brown and Gray Clay with some Organic Matter							$\frac{1}{2-3}$		
20		X	Wet, Medium Dense, Gray Sand with Clay							$\frac{2}{8-11}$		
25		X	Wet, Medium Dense, Gray Sand							$\frac{4}{5-6}$		
30		X	Wet, Medium Dense, Gray Sand							$\frac{6}{11-16}$		
35		X										

REMARKS:

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

BORING NO. 7  
PAGE 2 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 2)  
S.H. 140  
STATION: 215+49  
LOCATION: 25' Left of Center Line of Construction  
LOGGED BY: Stanley Bates

DATE: September 23, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

COMPLETION DEPTH: 101.3

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: 233.0							9 9-5		
40		X	Wet, Dense, Gray Sand							7 15-23		
45		X	Wet, Very Dense, Gray Sand with Trace of Gravel							16 27-29		
50		X	Wet, Dense, Gray Sand							12 19-27		
55		X	Wet, Very Dense, Gray Sand with Trace of Gravel							20 32-45		
60		X	Wet, Medium Dense, Gray Sand							11 12-16		
65		X	Wet, Dense, Gray Sand with some Gravel and Organic Matter							13 18-22		
70		X										

REMARKS:

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

BORING NO. 7  
PAGE 3 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 2)  
S.H. 140  
STATION: 215+49  
LOCATION: 25' Left of Center Line of Construction  
LOGGED BY: Stanley Bates

DATE: September 23, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

COMPLETION DEPTH: 101.3

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: 233.0							18 28-36		
75			Wet, Very Dense, Gray Sand							14 26-35		
80			Wet, Very Dense, Gray Sand with Organic Matter							14 23-31		
85			Wet, Very Dense, Gray Sand							19 31-39		
90			Wet, Dense, Gray Sand							14 21-26		
95			Wet, Very Dense, Gray Sand with Trace of Gravel							17 29-39		
100			Wet, Very Dense, Gray Sand with Gravel							24 27-60 (3")		
			Boring Terminated									
105												

REMARKS:

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

BORING NO. 8  
PAGE 1 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 2)  
S.H. 140  
STATION: 217+14  
LOCATION: 28' Left of Center Line of Construction  
LOGGED BY: Stanley Bates

DATE: September 16, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

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: 232.0									
5		X	Moist, Medium Stiff, Brown and Gray Clay with Sand and some Organic Matter (Grassroots)	CL	19		42			1 3-4		
10		X	Moist, Loose, Brown and Gray Silt	ML	NP					1 3-3		
15		X	Wet, Soft, Brown and Gray Clay with some Sand	CL	21		29			2 2-2		
20		X	Wet, Very Soft to Soft, Gray Clay	CL	22		45			0 0-1		
25		X	Wet, Very Soft to Soft, Gray Clay	CL	21		35			0 1-2		
30		X	Wet, Soft, Gray Clay	CL	17		35			0 1-2		
35		X	Wet, Soft, Gray Clay									

REMARKS:



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

BORING NO. 8  
PAGE 2 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 2)  
S.H. 140  
STATION: 217+14  
LOCATION: 28' Left of Center Line of Construction  
LOGGED BY: Stanley Bates

DATE: September 16, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

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: 232.0									
40		X	Wet, Very Loose, Gray Silt	ML	NP					1 1-1		
45		X	Wet, Medium Dense, Gray Sand with Clay	SC	NP					8 6-7		
50		X	Wet, Medium Dense, Gray Silty Sand with Gravel	SM	NP					4 10-15		
55		X	Wet, Dense, Gray Sand with Silt, some Clay and Trace of Gravel	SW-SC	NP					16 21-25		
60		X	Wet, Dense, Gray Sand with Silt and Trace of Gravel	SW-SM	NP					16 20-27		
65		X	Wet, Very Dense to Dense, Gray Sand with Organic Matter and some Gravel	SW	NP					13 27-30		
70		X		SW	NP					8 14-20		

REMARKS:

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

BORING NO. 8  
PAGE 3 OF 3

JOB NO. 100760 Mississippi County  
JOB NAME: Left Hand Chute Strs. & Apprs. (Site 2)  
S.H. 140  
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LOCATION: 28' Left of Center Line of Construction  
LOGGED BY: Stanley Bates

DATE: September 16, 2014  
TYPE OF DRILLING: Rotary Wash  
EQUIPMENT: CME 750 w/ CME Automatic Hammer  
HAMMER CORRECTION FACTOR: 1.23

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: 232.0									
75		X	Wet, Very Dense, Gray Sand with Organic Matter and Trace of Gravel	SW	NP					13 30-35		
80		X	Wet, Very Dense, Gray Sand with Silt and Organic Matter	SW-SM	NP					19 32-38		
85		X	Wet, Dense, Gray Sand	SW						17 25-23		
90		X	Wet, Dense, Gray Sand with Silt and some Gravel	SW-SM	NP					10 21-27		
95		X	Wet, Very Dense, Gray Sand with Silt and Organic Matter	SW-SM	NP					15 30-33		
100		X	Wet, Very Dense, Gray Sand	SW	NP					17 28-32		
		X	Wet, Very Dense, Gray Sand with Gravel	SW	NP					18 26-35		
			Boring Terminated									
105												

REMARKS: