## ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

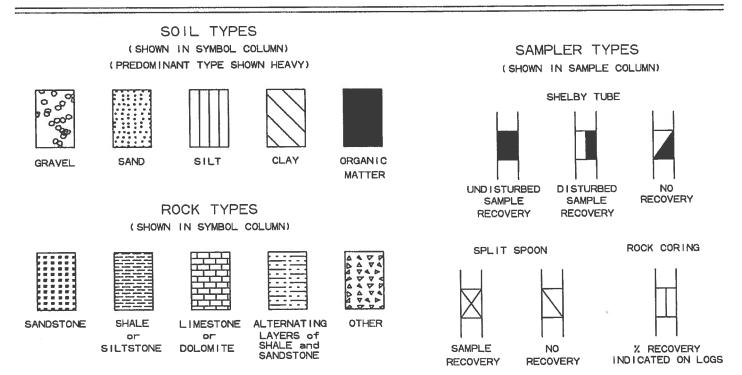


## SUBSURFACE INVESTIGATION

STATE JOB NO		100760	
FEDERAL AID PROJE	ECT NO. S	TPF-0047(47)	
LEFT I	HAND CHUTE OF	LITTLE RIVER STRS. 8	APPRS. (S)
STATE HIGHWAY	77 & 140	SECTION	3 & 2
IN	1	MISSISSIPPI	COUNTY
LETTING OF	JAN	NUARY 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.

## IFGFND



## TERMS DESCRIBING CONSISTENCY OR CONDITION

GRANU	LAR SOIL		CLAY	CL/	AY-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'
0ver 50	Very Dense	16-30	Very Stiff	16-30	Very Stiff	Penetrati	on
		31-60	Hard	31-60	Hard	in 60 Blo	ws: Medium Hard
		0ver 60	Very Hard	Over 60	Very Hard	Less than	2'
						Penetrati	on
						in 60 Blo	ws: 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<sub>f</sub>) can be obtained by

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

		HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORIN PAGE			F 3					
JOB NO.		100760 Mississippi County		DATE:	- 1		Octo	her	14 2	014		
JOB NO.  JOB NAME:		Left Hand Chute Strs. & Apprs. (Site 1)		TYPE O	F DR				Rotar		ash	
JOD ITAME.		S.H. 77		20				-		,		
STATION:		109+59		EQUIPN	1ENT	:	CN	Æ 7	750 v	v/ CI	Æ	
LOCATION		20' Right of Center Line of Construction					Au	toma	atic I	Tamı	mer	
LOGGED B	Y: S	Stanley Bates		HAMM	ER C	ORREC	TION	FAC	TOR:		1.23	
COMPLET	(OI	N DEPTH: 101.5										
D s	S											
								Ţ	S/		%	%
T M	M P	DESCRIPTION OF MATERIAL	SOIL				HE	:O:	Õ		S	R
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		Moist, Medium Dense, Gray Clayey Sand with			*				! ا	5		
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			4							4		
10	X									-7		
		Moist, Medium Dense, Gray Clayey Sand										
	3	Wolst, Wouldn't Bolloo, Gray Glayby Garla										
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JOB N			100760 Mississippi County		DATE:				ber 1	14, 20	14		$\neg$
JOB N			Left Hand Chute Strs. & Apprs. (Site 1)		түре о	F DR	ILLING	:	F	Rotary	/ Wa	ısh	
		;	S.H. 77										
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LOCA			20' Right of Center Line of Construction							atic F			l
			tanley Bates		HAMM	ER CO	ORREC'	TION	FAC	TOR:		1.23	
COM	PLET		DEPTH: 101.5										Ç.
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	L	Ε			PLASTIC LIMIT	% MOIST	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
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55			Wet, Medium Dense, Gray Sand								5		
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JOB N			100760 Mississippi County		DATE:		MATERIA CO.		ber 1	4, 20	)14	-	$\neg$
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			HWY. & TRANS. DEPARTMENT		BORIN			r 2					
			DIVISION - GEOTECHNICAL SEC.		PAGE	1		F 3	oh or	0 20	1.4		
JOB N			100760 Mississippi County		DATE:	L 222				8, 20 Rotar		ek	
JOB N	AME:		Left Hand Chute Strs. & Apprs. (Site 1)		TYPE O	r DR	ILLING	/4	Т	Cotat	y wa	1211	
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LOCA			44' Right of Center Line of Construction +		EQUITIV	IEIVI	•			atic I			
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REN	/IAR	S:	+ Boring was drilled through the existing bridge de	CK.									

			HWY. & TRANS. DEPARTMENT		BORIN			. 2					
			DIVISION - GEOTECHNICAL SEC.		PAGE	2		Oct	her	8, 20	114		$\dashv$
JOB N			100760 Mississippi County		DATE:	ימען ק				8, 20 lotar		ich	
JOB N	AME:		Left Hand Chute Strs. & Apprs. (Site 1) S.H. 77		TYPE O	r DK	LLING	•	r	Cial	y 44 ¢	1154	
STAT	IONI-		5.n. 77 111+29		EQUIPM	ENT	:	CN	ME 7	750 w	v/ CN	Æ	
LOCA			44' Right of Center Line of Construction +		2601114					atic I			
			stanley Bates		HAMMI	ER CO	ORREC	TION	FAC	TOR:		1.23	
			V DEPTH: 103.5										
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RE	MARI	KS:	+ Boring was drilled through the existing bridge de	ck.									

			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BOR PAG			), 2 Ol	. a				
JOB N			100760 Mississippi County		DATI		_			her	8, 20	14	
JOB N			Left Hand Chute Strs. & Apprs. (Site 1)		1		DRI	LLING			Rotar		ısl
JOB 112			S.H. 77										
STATI	ON:		111+29		EQU	[PM]	ENT	:			750 w		
LOCA'	TION:	:	44' Right of Center Line of Construction +						Au	toma	atic F		
LOGG	ED B	Y: S	tanley Bates		HAN	ME	R CC	RREC	TION	FAC	TOR:		1.
COM	PLET	OI	N DEPTH: 103.5									-	_
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80			Wet, Medium Stiff, Gray Clay with Sand										l
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95			Wet, Dense, Gray Sand with some Gravel and										
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-	_		Boring Terminated										
105			+ Boring was drilled through the existing bridge d								1		_

			HWY. & TRANS. DEPARTMENT		BORIN								
-			DIVISION - GEOTECHNICAL SEC.		PAGE	1		Oote	hor	7, 201	14		-
JOB N			100760 Mississippi County		DATE: TYPE O	r nn				7, 201 Rotary		ch	
JOB N	AME:		Left Hand Chute Strs. & Apprs. (Site 1)		TYPEO	r DK	ILLING	:	I	COLALY	wa	211	- 1
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25	-		Wet, Medium Dense, Gray Sand										
35 RE	MAD	<u>:1</u> KQ:	+ Boring was drilled through the existing bridge dec	k. * Si	olit-spr	on !	samni	ler a	dva	nced	1.5'	bv :	static
T NEI	VICTO	ι.Ο.	weight of hammer.	0	opc							- ,	

ARKANSAS HWY. & TRANS. DEPARTMENT  MATERIALS DIVISION - GEOTECHNICAL SEC.  BORING NO. 3  PAGE 2 OF 3													
					DATE:			Octo	her '	7. 20	)14		$\dashv$
JOB N			100760 Mississippi County Left Hand Chute Strs. & Apprs. (Site 1)		TYPE O	E DD					y Wa	sh	
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STAT	ION:		111+82		EQUIPN	/ENT	`:	CM	1E 7	′50 v	v/ CN	Æ	
LOCA			44' Right of Center Line of Construction +					Aut	toma	atic I	Hamr	ner	
			Stanley Bates		HAMM	ER C	ORREC	TION	FAC	ror:		1.23	
			N DEPTH: 98.5										
D		s											
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45			Wet, Soft, Gray Clay					İ					
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RE	MARI	KS:	+ Boring was drilled through the existing bridge de	ck. * S	olit-spo	on:	sampl	ler a	dva	nce	1.5	by:	statio
			weight of hammer.	9 363 10									

			WY. & TRANS. DEPARTMENT		BORIN PAGE	G NO		3					
			DIVISION - GEOTECHNICAL SEC.  100760 Mississippi County		DATE:	3			ber	7, 20	14		$\dashv$
JOB N			Left Hand Chute Strs. & Apprs. (Site 1)		TYPE O	F DRI				lotar		sh	
JOD IV	ALVIE.		S.H. 77							•			
STATI	ON:		111+82		EQUIPM	ENT	:			750 w			
LOCA	TION:	: 4	44' Right of Center Line of Construction +							atic I			
			tanley Bates		HAMMI	ER CO	ORREC'	TION	FAC	TOR:		1.23	_
COM	PLET		DEPTH: 98.5										-
D E	S	S A											
P	Υ	м	DESCRIPTION OF MATERIAL					E	FT.	WS		% S	% R
Т	M B	Р	DESCRIPTION OF MATERIAL	SOIL GROU		نا ا		1GF	CC	BLO	7	C	Q
Н	O	L			STIC	OIS		W	PEF	OF.	PER 6-IN.	R	D
FT.	L		SURFACE ELEVATION: 217.1 (Top of Ground)		PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER		
	1												
			MALA NATIONAL CONTRACTOR OF THE CONTRACTOR OF TH										
		$\bigvee$	Wet, Very Soft, Gray Clay							1	0*		
	1										0		
75	//												
-	//			-						1	5		
		X								23	-25		
			Wet, Dense, Gray Sand with some Gravel	ļ									
80			Wet, Delise, Gray Sand with Some Graver										
				ł									
<del> </del>											4		
一 -										29	-31		
85			Wet, Very Dense, Gray Sand										
										.	4.4		
		X									14 1-25		
L													
90			Wet, Dense, Gray Sand										
<u> </u>													
	oP80;			-							15		
<u> </u>	0	X								16	5-17		
	800		Wet, Dense, Gray Sand with Gravel										
95	9.00	Pug	Wet, Belies, Gray Galla Mai Graver										
	00:0	a											
		X	Wet, Very Dense, Gray Sand	7							12 1-34		
		+	Boring Terminated			+		+			. 04	+	-
100			Donny reminated										
L .	_												
<u> </u>													
<b>L</b> .	4												
<b>-</b>	-			ŀ									
105	AAD'	<u> </u>	+ Boring was drilled through the existing bridge de	ck * 5:	lit-eno	00.4	amn	ler s	dva	ncer	115	' by	static
KEN	VIAK	<b>\</b> 0:	weight of hammer.	UN. 3	ли-ари	OIT S	Jampi		uva	. 1066	. 1.0	Jy	- Calif

			WY. & TRANS. DEPARTMENT		BORIN	G NO		₹ 3					
			DIVISION - GEOTECHNICAL SEC.		PAGE				har 2	0.20	201	Λ	
JOB N			100760 Mississippi County	İ	DATE:	o n. n.	_			9-30 lotar			
JOB N	AME:		Left Hand Chute Strs. & Apprs. (Site 1)		TYPE O	FDK	ILLING	:	Р	cotai	y vv a	1211	l
			S.H. 77		EQUIPM	CENT		CI	ATE 7	750 w	,/ <i>C</i> N	Æ	
STATI			113+19		EQUIPN	IENI	:			atic I			1
LOCA			28' Right of Center Line of Construction stanley Bates		НАММІ	R C	DRREC'					1.23	
			DEPTH: 101.5										
			(DE) 111, 101.5		T		,					- 1	
D E	S	S A											
P	Υ	м	DESCRIPTION OF MATERIAL	0011				₽	I.F.	SW.		% S	% K
Т	M B	Р	DESCRIPTION OF WATERIAL	SOIL GROU		۱.,		ISI	CC	BLC	٠,٠	C	Q
Н	0	빌			HEL	SIO	le E	M	PEF	OF	0-D	R	D
FT.	L	E S	SURFACE ELEVATION: 217.3		PLASTIC LIMIT	% MOIST.	LIQUID	)RY	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.		
-		3	SURFACE ELEVATION. 217.3			0	ППП						
<u> </u>	1												
<u> </u>													
<u> </u>													
<u> </u>			Maint Van Coff Brown and Gray Clay with								1		
5	//	X	Moist, Very Soft, Brown and Gray Clay with some Organic Matter							1	-0		
<u> </u>			30/110 Organio Wallor										
	//												
		1											
L -													П
10	H	1		1							0		
	//	X								0	-0*		
	1/												
			Wet, Very Soft, Brown and Gray Clay										
15	11										•		
	X									-0	0		
_										ľ			
			Wet, Very Soft, Brown and Gray Clay with Sand										
			and some Organic Matter										
20	$\mathbb{N}$	3											
				7							0		
		$\bigvee$								'	4-4		
<b> </b>			Wet, Medium Stiff, Gray Sandy Clay										
-												1	
25	1											-	
45	N									_	2		
- ·		VX									2-4		
-·			Wet, Medium Stiff, Gray Sandy, Silty Clay										
-			Wot, Wouldin Still, Stay Sandy, Sity Stay		-								
-	-[N	N		1									
30				-							3		
-	11	$\mathbb{N}^{\times}$									5-5		
-	<b>- N</b>		Mad Chill Comp. Comds. Cills. Class										
<u> </u>			Wet, Stiff, Gray Sandy, Silty Clay										
<u> </u>	-11												
35	KIN			h4 -C!									
RE	MAR	KS:	* Split-spoon sampler advanced 1.5' by static weig	nt of na	ammer	•							

E			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.			RIN(		). 4 OI	7 3					
JOB N			100760 Mississippi County		1	TE:				her 2	9-30	201	4	$\dashv$
JOB N			Left Hand Chute Strs. & Apprs. (Site 1)		1		י חח	ILLING			lotar			
N aut	AWE:		S.H. 77		' ' '	LOI	DK	LLING	•		COLMI	,		
Gm A m	IOM.		113+19		EO	UIPM	ENT		CN	AE 7	′50 v	// CN	Æ	- 1
					l <sub>EQ</sub>	UIFW	ENI	•	_		atic I			
LOCA			28' Right of Center Line of Construction		<b></b>		D 00	ND D C C					1.23	
			itanley Bates		HA	MME	RCC	ORREC'	IION	FAC	IOK:		1.23	-
COM	PLET	CION	DEPTH: 101.5		_					-				_
D	s	S												
E	Y	Α								H	S	İ	%	%
Р	М	М	DESCRIPTION OF MATERIAL	SOIL		1			H	U.F	OW		S	R
T	В	Р		GROU	лР	.	Ţ.			C	BL	ż	C	Q
Н	0	L			Ę		OIS	IE H	≩	PE	OF	0-J	R	D
FT.	L	E S	OUDEAGE ELEVATION: 047.0			FLASIIC	% MOIST.	LIQUID LIMIT	RY	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
F1.	1. 1.1.1	0	SURFACE ELEVATION: 217.3		- 1	거기	%	그	Ω	귀	2			
L -		X										10		
				ŀ							3-	10		
			Wet, Medium Dense, Gray Sandy Silt						١		İ			
_														
<u> </u>													ĺ	
40												1		
<u> </u>		X									6	-5		
<b>L</b> -														
L			Moist, Stiff, Gray Clay											
													1	
45													ļ	
70	17					NP						0		
	11	X		SC	_						13	-17		
	111													
		3	Wet, Medium Dense, Gray Sand with Clay											
L -	111	3		"	١									
50														
				SV		NP						11 5-9		
_												0-9		
			Wet, Medium Dense, Gray Sand						1					
	-		Vet, Wedidin Dense, Cray Cand											
-	4.88													
55		1							İ			0		
L.	$\mathcal{N}$	$\mathbb{Y}$			1							-3	1	
	1	$\Psi$	1								'	. •		
	1/	1	Moist, Soft, Gray Clay											
	1/	1		-										
<u></u>	1/	1												
60		4										2		
<b>-</b>		X									10	)-12		ĺ
L.		3	Moist, Very Stiff, Gray Clay with Sand and											
		2	Organic Matter											
Γ.		200	Organio Matter										1	
65		ğ												
00				6111		NP						11		
-	-	IIX		SW-	SM						2	0-23		
<u> </u>	_													
L.														
				-										1
70														
	MARI	⟨S·	* Split-spoon sampler advanced 1.5' by static w	eight of h	amr	ner.								
1 '``	v 11 11		about about antibiot antibiotal tie of applied to											

1716	NIO		MAY O TO ANO DEDADTMENT		DODDI	C N(			-				-
			WY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.	- 1	BORIN PAGE		). 4 OI	3					
JOB N			00760 Mississippi County		DATE:	_			ber 2	9-30	, 201	4	
JOB N	AME:	L	eft Hand Chute Strs. & Apprs. (Site 1)		TYPE O	F DR	ILLING	:	F	Rotar	y Wa	ish	
		S	S.H. 77										
STATI	_		13+19		EQUIPN	IENT	:			750 w atic I			
LOCA			28' Right of Center Line of Construction		1143434	7D (7)	אים מומר					1.23	
			anley Bates DEPTH: 101.5		HAMM	ERC	JRREC	HON	FAC	TOK:		1,45	- T
D		S	DEI 111. 101.5		T								
Ë	S Y	A							<u>ا</u>	60			.,
Р	M	М	DESCRIPTION OF MATERIAL	SOIL				H	U.F.	W.O		% S	% R
T H	В	P		GROUI	ျှ	H.		EIG	RC	BL	ż		Q D
	0	E			PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.	K	ע
FT.	L		SURFACE ELEVATION: 217.3			%	111	ä	EB				
		X	Wet, Dense, Gray Sand with Silt	SW-SI	MP					1	1 -23		
					-					'''	-23		
				_									
75					NP						2		
		XI	Wet, Medium Dense, Gray Sand with Silt and	SW-S	M '''					1	-15		
			Trace of Gravel										
				-									
80				0)4/ 0	NP						8		
<del>-</del> -		$\boxtimes$	Wet, Medium Dense, Gray Sand with Silt and	SW-S	M					13	-17		
<del> </del>			some Gravel										
				-									
85												ĺ	
05	<b>0</b>	M		SW-S	M NP					1	8		
				000	<u>''</u>					1/	-17		
<u> </u>													
				-									
90			Wet, Dense to Very Dense, Gray Sand with Silt										
	9.0		and Gravel	sw-s	M NP						11 )-31		
					-					-			
L .													
L -				-									
95	P 2	2			NF	,					25		
				SW-S	M INF						5-28		
			Wet, Very Dense, Gray Sand with Silt and some										
<u> </u>			Gravel	_									
-	-												
100	क्षाक्ष				NF	,					6		
		X	Wet, Dense, Gray Sand with Silt and Gravel	SW-S	SM					1	7-28		
<b>-</b>	-		Boring Terminated	-									
-	1												
105	1												
		(S: '	the split-spoon sampler advanced 1.5' by static weight	nt of ha	mmer								
1			-h										

MAT	ERIA		HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORIN PAGE			F 3					
JOB N			100760 Mississippi County		DATE:				ober	1, 20	)14		
	IAME:		Left Hand Chute Strs. & Apprs. (Site 1)	1	TYPE O	F DR					y Wa	ash	
3021	TI LIVILS.		S.H. 77						_		,		
ТАТ	ION:		113+79		EQUIPM	IENT		CN	ME '	750 v	v/ Cl	ΜE	
			15' Left of Center Line of Construction				•				Ham		
			Stanley Bates		HAMMI	ER CO	ORREC	TION	FAC	TOR:		1.23	
			N DEPTH: 101.5		-								
D		S							-				Γ
E P T H	S Y M B O	A M P L	DESCRIPTION OF MATERIAL	SOIL GROUI	TIC	IST.	Α.	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	-IN.	% S C R	
FT.	L	E S	SURFACE ELEVATION: 218.2		PLASTIC LIMIT	% MOIST	LIQUID	DRY	LBSF	NO.0	PER 6-IN.		L
5		X	Moist, Soft, Brown and Gray Clay with Sand and some Organic Matter	d .						2	1-2		
10			Wet, Very Soft, Brown and Gray Clay with Sand and some Organic Matter	1						C	0 )-1		
20		X	Wet, Very Soft, Gray Sandy, Silty Clay								0		
30		$\times$	Wet, Soft, Gray Sandy, Silty Clay					4			1 2-2 2 2-2		

			WY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORING PAGE	G NO		3					
JOB N	-		100760 Mississippi County		DATE:				ber	1, 20	14		
JOB N			Left Hand Chute Strs. & Apprs. (Site 1)		TYPE O	FDR				lotary		sh	
1000			S.H. 77										
STAT	ION:		113+79		EQUIPM	IENT	:			′50 w			
LOCA	TION		15' Left of Center Line of Construction					Au	toma	atic F			l
LOGG	ED B	y: S	tanley Bates		HAMMI	R C	ORREC	TION	FAC'	ror:		1.23	
COM	PLET	ION	I DEPTH: 101.5	,								-	_
D	s	S											ľ
E	Y	Α							FT.	٧S		%	%
P	М	M P	DESCRIPTION OF MATERIAL	SOIL				GH	CG.	20		S C	R
H	В	L		GROU	1∺	IST	A.	WEI	ER	FB	Z	R	Q D
	0	E			PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
FT.		S	SURFACE ELEVATION: 218.2		불급	%	13 13	ā					
		M								1-			
L											۱ ا		
	MI		Wet, Medium Stiff, Gray Silty Clay										
	$\mathcal{H}\mathcal{H}$												
40	KM									2			
		$\mathbb{N}$								3.			
		1											
			Wet, Loose, Gray Sandy Silt										
45										.			
		$\mathbf{X}$									4		
											•		
			Moist, Medium Stiff, Gray Clay with Sand										
50											,		
							l l				9 -12		
	199	$\leftarrow$								''	-		1
		7	Wet, Medium Dense, Gray Sand with Clay				ļ						
55										1	7		
											7 -17		
										"	• • •		
	1												
60			Wet, Medium Dense, Gray Sand								7	1	ļ
		$\cdot \setminus$	vvet, Medium Dense, Gray Sand		1						7 3-13		
		$\cdot$											
65											0		
			1								9 5-18		
	7		7							"	, 10		
	7:												
	7:::	4											
70	7:::					1							
RE	MAR	KS:	* Split-spoon sampler advanced 1.5' by static weig	ht of h	ammer	•							

			WY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORIN	G NO		3					
JOB N			100760 Mississippi County		DATE:				ber	1, 20	14		
JOB N			Left Hand Chute Strs. & Apprs. (Site 1)		TYPE O	F DR				lotar		sh	
JOB M.	AIVIL.		S.H. 77							•	•		
STATI	ON.		113+79		EQUIPM	IENT	:	CN	ИЕ 7	750 w	/ CN	Œ	
LOCA			15' Left of Center Line of Construction					Au	toma	atic I	Iamr	ner	
			tanley Bates		HAMMI	ER CO	ORREC	TION	FAC	TOR:		1.23	
			DEPTH: 101.5		-								
D		s											
E	S	A											
Р		м	DESCRIPTION OF MATERIAL	SOIL				ļ.	J.FT	§ §		% S	% R
Т	M B	P	DESCRIPTION OF MINTERIAL	GROU	P	l .:		15	CC	37	12	C	Q
Н	0	니니			12	SIC	181	WE	PEF	OF.	4-9	R	D
FT.	L	E S	SURFACE ELEVATION: 218.2		PLASTIC LIMIT	"MOIST	LIQUID	RY	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
F1.		\ \ /	Wet, Dense, Gray Sand			-	НН	Н		1			
		X	vvot, belise, elay calla							16			
<u> </u>													
75				-						1	1		
L _	緵										-17		
L -													
			Wet, Dense, Gray Sand with Organic Matter							1			
		7000											
80							Ì				_		
											8 -16		
-										14	-10		
													Į
<b>-</b>													
05			Wet, Medium Dense to Dense, Gray Sand with										
85	-		some Gravel								10_		
<b>-</b>	-	X	Somo Clavo.							16	-18		
-										1			
<u> </u> -	-			1									
<u> </u> -													
90				4						1	19		
<u>_</u> -	0.00										<b>7-17</b>		
L -	200	8											
L .	Α̈́	q											
L		o											
95	90.0		Wet, Dense, Gray Sand with Gravel								0		
	0.0		Viet, Delise, Glay Saliu Willi Glavel	-						15	9 3-21		
	90	:9								"			
	, a 6	P.											
	48												
100	00 ¤	96											
100			Wet Dance Grov Sand with some Grovel	7						-	9		
-	-اننا		Wet, Dense, Gray Sand with some Gravel	-		-		+		1	7-18	-	-
H .	-		Boring Terminated										
- ·	$\dashv$												
100	-												
105		VO:	* Calif anon complex advanced 4 51 by static wais	ht of b	ammer		_1						
I KEI	VIAK	NO:	* Split-spoon sampler advanced 1.5' by static weig	TIL OF Th	ATTRITICE	•							

			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.	1	BORIN PAGE	G NO		- 3					
	·		100760 Mississippi County		DATE:	1			nher	24	2014		
JOB N			Left Hand Chute Strs. & Apprs. (Site 1)		TYPE O	E DDI		-			y Wa		
JOBIN	(Alvie:		S.H. 77		THEO	r DK	ILLING	•	•	COtur	, ,,,		
STAT	IONI		114+19		EQUIPN	/ENT		C۱	ИЕ 7	750 v	v/ CN	/Æ	
LOCA			22' Right of Center Line of Construction		LQUIL	ILITI	•				Hamr		
			Stanley Bates		HAMM	FR C	ORREC					1.23	
			DEPTH: 101.5		TI UVIIVI	LIK O	JIGGE	11011	1110	1010			
	L LL		DEI III. 101.5		1								
DE	S	SA											
P	Y	м	DESCRIPTION OF MATERIAL					出	F	WS		%	%
T	M	Р	DESCRIPTION OF WATERIAL	SOIL GROUI	,			IGH	CO	LO		S C	R Q
Н	ВО	L		dicool		ISI		WE	ER	)F B	Z	R	Ď
	L	E			PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
FT.		S	SURFACE ELEVATION: 228.3			%		Ω	ㅁ	Z	<u> </u>		
L -													
L.													
											_		
5		$\nabla$	Moist, Stiff, Brown Clay with Sand and some							1	3 -6		
			Organic Matter							"	-0		
-													
-	$\mathbb{N}$											]	
<b> </b>											•		
10											2		
-		$\swarrow$								4	-4		
<u> </u>	$\langle \cdot \rangle$		Moist, Medium Stiff, Brown Clay with Sand and				12						
			some Organic Matter										
L -													
15		_						İ			^		
										-	0		
											1-1		
		N	Wet, Soft, Gray Silty Clay										
H -		1											
20		1											
20	KIN			1							1		
	-101/										)-1		
<b>-</b>													
<u> </u> .			Wet, Very Soft, Gray Silty Clay										
<u> </u>		I			İ								
25	MM.	1_									2		
		$1\!\!1\!\!1$								1	2 2-2		
	M	K)	4							'	<b>6.</b>		
	MH-	1											
		1											
30													
30			Wet, Soft, Gray Silty Clay								1		
-		NX.									2-2		
-	<b>-WH</b>												
		N)											
<u> </u>		N											
35	N.												
RE	MARI	KS:											

	HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORING PAGE			- 3					
JOB NO.	100760 Mississippi County Left Hand Chute Strs. & Apprs. (Site 1)		DATE:		Se	epten		24, 2 lotary			
;	S.H. 77							·			
STATION:	114+19 22' Right of Center Line of Construction	:	EQUIPM	IENT	:			50 w atic H			
LOGGED BY: S	tanley Bates		HAMMI	ER CO	ORREC	TION	FACT	TOR:		1.23	
	DEPTH: 101.5	T	1								-
D E P M B O L	DESCRIPTION OF MATERIAL	SOIL	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% S C R	% R Q D
FT. S	SURFACE ELEVATION: 228.3		12.13	%	27	Ω	ä	ž 5			—
	Wet, Stiff, Gray Silty Clay				A ANALYSIS			7-	7		
X 	Wet, Stiff, Gray Sandy Clay							6-			
50	Wet, Medium Dense, Gray Sand							12-	7-13		
	Wet, Medium Dense, Gray Sand with Clay							9-			
									<del>4</del> -5		
60	Wet, Medium Dense, Gray Sand								8-17		
65	Wet, Medium Dense, Gray Sand with Organic Matter							1	7 -15		

	HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORING PAGE		). 6 OI	- 3					
JOB NO.	100760 Mississippi County		DATE:				nber	24, 2	2014		-
JOB NAME:	Left Hand Chute Strs. & Apprs. (Site 1)		TYPE OF	DRI		-		Rotary			
	S.H. 77										
STATION:			EQUIPM	ENT	:			750 w			
	22' Right of Center Line of Construction							atic H			
	Stanley Bates		HAMME	R CC	RREC	TION	FAC	TOR:		1.23	_
7	N DEPTH: 101.5										
D S S											
D I Y I M	1					E	Ŧ.	WS		%	%
T   M   P	DESCRIPTION OF MATERIAL	SOIL GROUP		ان		Ę.	CG	3LO		S C	R Q
			STIC	OIS	e H	WE	PER	OF I	49	R	Ď
FT.   E	SURFACE ELEVATION: 228.3		PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.		
	OON ACE LEEVATION. 220.0		1 -	8,				9			
— — X								15-	25		
	Wet, Dense, Gray Sand										1
	Troi, Boriso, Gray Caria										
75											
		1	1					1			
— <b>-</b>								25-	31		
	Wet, Very Dense, Gray Sand										
80											
								22.	5		
<b>-</b> 7								22.	-23		
85	Wet, Dense, Gray Sand			ļ					2		
	vvet, belise, Gray Gallo								3 -21		
	4										
90		4				Ì			10		
									-20		
	Wet, Dense, Gray Sand with Trace of Gravel										
95		4						.	14		
									-22		
	Wat David Care										
	Wet, Dense, Gray Sand										
100		-							16		
	Wet, Dense, Gray Sand with some Gravel								3-25	=	_
	Boring Terminated										
<b> </b>											
105											
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			HWY. & TRANS. DEPARTMENT		BORIN			- 0					
			DIVISION - GEOTECHNICAL SEC.		PAGE	1		F 3	nha	. 22	2014		
JOB N			100760 Mississippi County		DATE: TYPE O	r DD		-			2014 y Wa		
10R I	NAME:		Left Hand Chute Strs. & Apprs. (Site 2) S.H. 140		TYPEO	r DK	ILLING	:	1	COLAI	y wa	1511	
CTAT	TON.		215+49		EQUIPN	#ENIT	٠.	CI	ME 7	750 v	v/ CN	Æ	
			25' Left of Center Line of Construction		EQUIF	ALCIN I	•				Hami		
1			Stanley Bates	İ	HAMM	FR C	ORREC					1.23	
			N DEPTH: 101.3		1174141141	LIC C.	oldae	11011	1710	1010		1120	
		s	( DEI 111, 101.5					<u> </u>		111			
DE	S	A											
P	Y	М	DESCRIPTION OF MATERIAL		1			닏	FT.	WS		%	%
T	M B	Р	DESCRIPTION OF WATERIAL	SOIL GROU	, l	١,.		<u>5</u>	CO	LO		S C	R Q
Н	0	L		GROOM	1≌	ISI	ا ۱	WE	ER	F B	Z	R	Ď
	L	E			PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
FT.	1550	S	SURFACE ELEVATION: 233.0		<u> </u>	%		Ω	口	Z	교		
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											2		
L.		$\mathbb{X}$	Moist, Loose, Brown Sand with Clay and some								3 -5	П	
5			Organic Matter										
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10		$\triangle$								3	4		
10													
			Moist, Medium Stiff, Brown and Gray Clay with										
<del> </del>		4	Sand and some Organic Matter										
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15				$\dashv$							1		
<b> </b>	-//	]X								2	2-3		
	//	J	Moist, Medium Stiff, Brown and Gray Clay with					1					
<b>L</b> .	//	J	some Organic Matter										
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		$1\times$								- 8	2 -11		
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			Wet, Medium Dense, Gray Sand with Clay	1									
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RE	MARI	KS:											

			WY. & TRANS. DEPARTMENT		BORIN					<del></del>			
			DIVISION - GEOTECHNICAL SEC.		PAGE DATE:	2		3 3	nhe-	23, 20	14		-
JOB N			100760 Mississippi County Left Hand Chute Strs. & Apprs. (Site 2)		DATE:	E DD		-		25, 20 Cotary			
JOR M	AME:		S.H. 140		TTPEO	r DK	ILLING	•	T	cotary	77 G311		
CD A D	TONT.		5.⊓. 140 215+49		EQUIPM	(ENT		CN	ATE 7	/50 w/	CMR		
			25' Left of Center Line of Construction		EQUIFN	IEIAI	•			atic Ha			
					HAMM	3D C(	אסטפרי				1.2		- 1
			Itanley Bates		LIVIATIALI	SIC CC	JAKEC	HON	TAC	OK.	112		$\dashv$
	PLE	·	I DEPTH: 101.3		T							Т	ᅱ
D E	S	S											
P	Y	M	DECORUDION OF MATERIAL					н	FT.	WS	%		%
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Н	В	L		GROOM		IST	la.	WEI	ER	FB	Z R		Ď
	L	Е			PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.	İ	
FT.		S	SURFACE ELEVATION: 233.0		12 17	%	33	ā	- 13			+	_
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	ł::::	1	Wet, Dense, Gray Sand										
-			vvet, Delise, Gray Sand										
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45				-		1				16	İ		
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L.			Gravel										
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-			Wet, Dense, Gray Sand					1					
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<b>-</b>		$\mathbb{I}X$								32-	15		
			Wet, Very Dense, Gray Sand with Trace of										
L .			Gravel							1		1	
L.													
60	<b></b>												
			1							12-			
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	7		Wet, Medium Dense, Gray Sand										
	7.												
65	<b>-</b>												
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H-	-	:								18-	22		
<b>-</b>	-		Wet, Dense, Gray Sand with some Gravel and										ı
<u> </u>	_[		Organic Matter										
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70	1					$\perp$							
RE	MARI	KS:											

	ALS	DIVISION - GEOTECHNICAL SEC.  100760 Mississippi County		PAGE	3		F 3	mhar	r 23,	2014		-
IOB NO. IOB NAME	E:	100760 Mississippi County Left Hand Chute Strs. & Apprs. (Site 2)		DATE: TYPE O	F DR		_		Rotar			
		S.H. 140					-		_			
		215+49		EQUIPM	IENT	:			750 v			
		25' Left of Center Line of Construction							atic I			
		Stanley Bates		HAMMI	ER CO	DRREC	TION	FAC	TOR:		1.23	
	_	N DEPTH: 101.3	Γ	T					T			
D S	S											
$P \mid \frac{1}{2}$	M	DESCRIPTION OF MATERIAL	SOIL				臣	J.F.	)WS		% S	% F
்   B			GROU	. O	l ï		EIG	R C	BL	ż	S C	(
0	L			PLASTIC LIMIT	WMOIST	18.5	ΥW	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.	R	Ι
FT.	S	SURFACE ELEVATION: 233.0		LI PL	% 1	LIQUID	NA NA	<u>r</u> B	-			
	X								28	8		
	+								20	-30		
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75	1	Wet, Very Dense, Gray Sand								4		
	$\times$								26	-35		
- 1												
80						1						
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	3								20	-U I		
\$	1200	Wet, Very Dense, Gray Sand with Organic Matte	4									
🞇												
85			-							9		
	$\rangle$					1				-39		
		Wet, Very Dense, Gray Sand										
- +		vvet, very berise, Gray Sand										
90		1										
			1						100	14		
_ 7	1								21	-26		
		Wet, Dense, Gray Sand										
95			1							17		
_ 4										9-39		
	*	Wet, Very Dense, Gray Sand with Trace of										
		Gravel										
100 B.P	7	Wet, Very Dense, Gray Sand with Gravel	1							24		
— — e è	8.9/	Boring Terminated	+	+	+	-	+		12	7-60 (3")	1	+
		Boning reminiated							-	-		
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105												
REMAF	RKS:						7,-					

			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORIN PAGE			F 3					
JOB N			100760 Mississippi County		DATE:	· ·			nbei	: 16,	2014		
JOB N	AME:	1	Left Hand Chute Strs. & Apprs. (Site 2)		TYPE O	F DR		_		Rotar			
			S.H. 140										
STATI			217+14		EQUIPM	1ENT	:			750 v			
LOCA			28' Left of Center Line of Construction							atic l			
			stanley Bates		HAMMI	ER CC	DRREC	TION	FAC	TOR:		1.23	
	PLEI		N DEPTH: 101.5										
D	S	S A											
E P	Y	м	DESCRIPTION OF MATERIAL					l	FT.	WS		%	%
Т	M B	Р	DESCRIPTION OF WATERIAL	SOIL GROU		ن ا		IGH	D)	31.0	<u></u> :	S C	R Q
Н	o	L E			STI	OIS	le E	WE	PER	OF I	4-IN	R	D
FT.	L		SURFACE ELEVATION: 232.0		PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	)RY	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.		
			CONTACT LEEVATION. 202.0			8,		<del>                                     </del>	Н		PH .		
<del> </del>													
<u> </u>			Maint Madium Stiff Brown and Crow Clay with		19		42				1		
5		X	Moist, Medium Stiff, Brown and Gray Clay with Sand and some Organic Matter (Grassroots)	CL	"		'-			3	-4		
Ť			Cana and Cana Cagania manus (Canaca C										
-				_									
	Pin				- NP						1		
10		X		ML						3	-3		
	1		Moist, Loose, Brown and Gray Silt										
				-									
	]												
15											•		
				CL	21		29			-	2-2		
		$\mathcal{Y}$			-					'			
L.			Wet, Soft, Brown and Gray Clay with some Sand										
		1		-									
20	1	1			_ 22		45				0		
	1	١X		CL	22		45				)-1		
<u> </u>	1/	Y											
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	1	1											
25	//	4	Wet, Very Soft to Soft, Gray Clay		21		35				0		
-	-//	$\sqrt{\chi}$		CL						-	1-2		
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-	-{/			_									
	1/												
30	1	1	<u>                                     </u>	1	17		35			_	0		
H-	1	$\sqrt{X}$		CL						-	1-2		
H-	1/	1	Wet, Soft, Gray Clay										
-	1		Troi, coit, city oldy	-									
35	1/												
	MAR	KS.					-						<u> </u>
1,75	41/_/! //	٠٠٠,											

ARKANSAS HWY. & TRANS. DEPARTMENT						BORING NO. 8											
MATERIALS DIVISION - GEOTECHNICAL SEC.						PAGE 2 OF 3  DATE: September 16, 2014											
JOB NO. 100760 Mississippi County JOB NAME: Left Hand Chute Strs. & Apprs. (Site 2)						DATE: September 16, 2014  TYPE OF DRILLING: Rotary Wash											
S.H. 140							The or Biddelito.										
STATION: 217+14							EQUIPMENT: CME 750 w/ CME										
LOCATION: 28' Left of Center Line of Construction						Automatic Hammer											
			Stanley Bates		HAMMI	ER CO	ORREC	TION	FAC	TOR:		1.23					
			N DEPTH: 101.5		· · · · · · · · · · · · · · · ·												
D		s															
E	S	Α							Ţ.	S		%	%				
P T	М	М	DESCRIPTION OF MATERIAL	SOIL				臣	U.F	O.W		S	R				
Н	В	P L		GROUP	ပည	T		EIG	R.C	BE	z	S C	Q				
''	0	E			TS/	% MOIST.	旨旨	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.	R	D				
FT,	L		SURFACE ELEVATION: 232.0		PLASTIC LIMIT	%	LIQUID	DR	LB	N N	PEI						
		$\bigvee$		ML	NP					1							
		$\bowtie$								1-	-1						
			Wet, Very Loose, Gray Silt														
				-													
40						1											
		V		SC	NP					6	3						
					_					D.	-/						
			Wet, Medium Dense, Gray Sand with Clay														
45		4															
	IPRI	$\bigvee$		SM	NP						4						
				Olvi	-					10	-15						
			Wet, Medium Dense, Gray Silty Sand with Gravel		1												
				-													
50			2														
		$\bigvee$		SW-S	C NP					-	16						
					-					21	-25						
			Wet, Dense, Gray Sand with Silt, some Clay and Trace of Gravel														
			Trace of Graver	-													
55			=-														
		V		SW-S	M NP					1000	16 1-27						
			\ =		-					20	-21						
		9	Wet, Dense, Gray Sand with Silt and Trace of Gravel														
		***	Clavel	-													
60					_												
	N/S	N N		sw	NP						13 '-30						
		*		-						21	-30						
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	×	223		-													
65	<b>1888</b>	9 2 2 2 2	Wet, Very Dense to Dense, Gray Sand with								_						
		$\exists \nabla$	Organic Matter and some Gravel	SW	NP	·				10.0	8 1-20						
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		9															
	<b>談</b>	ğ		-													
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MATERIALS DIVISION - GEOTECHNICAL SEC.					PAGE 3 OF 3										
JOB NO. 100760 Mississippi County  JOB NAME: Left Hand Chute Strs. & Apprs. (Site 2)  S.H. 140					DATE: September 16, 2014 TYPE OF DRILLING: Rotary Wash										
STATION: 217+14  LOCATION: 28' Left of Center Line of Construction				EQUIPMENT: CME 750 w/ CME Automatic Hammer											
			Stanley Bates		HAMME	ER CO	ORREC	TION	FAC	TOR:		1.			
			N DEPTH: 101.5									-			
D		S				=									
E P	S Y	A M	DESCRIPTION OF MATERIAL					E	FT.	WS		9			
T H	M B	P L	DESCRIPTION OF WATERIAL	SOIL GROUP	IIC	IST.	۵	VEIGH	LBS PER CU.FT.	NO. OF BLOWS	Ä				
FT.	O L	E	SURFACE ELEVATION: 232.0		PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT	LBS P	NO. 0	PER 6-IN.				
		X		sw	NP						3 -35				
			Wet, Very Dense, Gray Sand with Organic Matte and Trace of Gravel	-											
75		X		SW-SN	NP						9				
			Wet, Very Dense, Gray Sand with Silt and Organic Matter							02	-50				
80			Organic Matter	-											
	13-143	X	Wet, Dense, Gray Sand	sw						1	17 5-23				
			vvet, Derise, Gray Gariu	-											
 85				-							40				
	-	X	Wet, Dense, Gray Sand with Silt and some	SW-SI	MP M					1	10 I-27				
			Gravel	_											
90					NP						15				
<u> </u>		X	Mot Van Dance Com Sand with Silt and	SW-SI	M ' '						0-33				
			Wet, Very Dense, Gray Sand with Silt and Organic Matter	-											
95				SW	NP						17				
			Wat Van Danes Cray Sand	344						2	8-32				
			Wet, Very Dense, Gray Sand	-											
100	8,0.		Wet, Very Dense, Gray Sand with Gravel	sw	NP	)					18				
	- 0.00 -	9/\ 	Boring Terminated	-						2	6-35	+			
<u> </u>															
105															