## ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

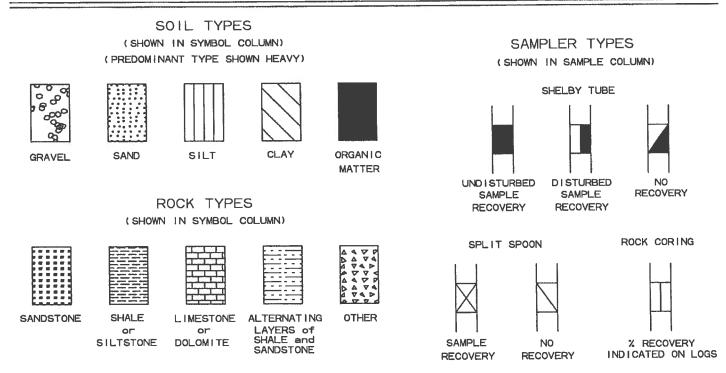


## SUBSURFACE INVESTIGATION

STATE JOB NO		061084	
FEDERAL AID PROJEC	CT NO	STPF-0030(16)	
UPR	R & PINE S	T. STR. & APPRS. (DONALI	DSON) (S)
STATE HIGHWAY	67	SECTION	7
IN		HOT SPRING	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



## TERMS DESCRIBING CONSISTENCY OR CONDITION

GRANU	LAR SOIL		CLAY	CL	Y-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	0ver 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				
1		Over 60	Very Hard	Over 60	Very Hard	Less than	2'				
						Penetrati	on				
						in 60 Blo	wsı Hard				
I .		I .				L .					

- 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.	<u> </u>	BORI PAGI		o. NE 1 o	W 1 F 2	1				
JOB N			061084 Hot Spring County		DATE		1	Vove	mbe	r 2, 2	005		
JOB N.	AME:		UP RR & Pine St. Str. & Apprs.		TYPE	OF DI	RILLING	G:	F	Rotar	y Wa	ash	
			U.S. 67										
STATI			224+28 **		EQUII	MEN	Т:			350 v atic I			
LOCA			169' Right of New Center Line of Construction		11437	AED C	ORREC					1.29	
		_	Richard Martin N DEPTH: 66.5		HAIVII	MERC	OKKEC	TION	TAC	TOK.		1.27	
D		S	V DEF TH. 00.5		1	Т	[	Т					
E	S	A							ئے	-			
Р	Y M	М	DESCRIPTION OF MATERIAL	SOIL				HT	U.F.	M <sub>C</sub>		% S	% R
T H	В	Р		GROU	P	<u> </u>		EIG	K.C.	BL	z	C	Q
П	0	E			PLASTIC	LLIMII 1 % MOIST	15,5	<b>%</b>	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.	R	D
FT.	L	S	SURFACE ELEVATION: 221.3		PL/		LIQUID	M	LB	8	PE		
			Moist, Medium Dense, Brown Sandy Silt with								_		
		X	Traces of Gravel Moist, Medium Dense, Brown Sandy Silt								7 -8		
		$\langle \cdot \rangle$								1	4		
		$\triangle$	Moist, Loose, Brown Sandy Silt							3	-4		
5					İ						5		
			Moist, Stiff, Brown and Gray Clay with Sand and			-					-8		
<u> </u>			Traces of Gravel										
<u> </u>			Moist, Stiff, Reddish Brown and Gray Clay with							1	3		
<u> </u>			Sand and Traces of Gravel							4	-8		
10	000										17		
-	440	X	Moist, Dense, Brown and Gray Gravel with Sand	-						29	-20		
<u> </u>	\$ 6.0	4	and some Clay										
-	950										2		
15	900									-	3 -15		
13	ф. оо	8	Moist to Wet, Medium Dense, Brown Sand with										
	0,00	ğ	Gravel *										
-	- · · · · ·	2			- 1								
	18.5	3		-							0		
20	1	$] \times$						İ		(	)-6		
		1	Wet, Medium Stiff, Gray and Brown Clay										
		1	Wet, Medium Still, Gray and Brown Clay										
	N	1											
	5:0		W 4 14 11 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1							6		
25	800		Wet, Medium Dense, Brown and Gray Gravel with Sand								7-8		
<u> </u>	- 22	0	THAT GUITA	-									
	1	1					-						
-	1	1											
<b>-</b>	1	Y	7							-	6 0-15		
30	1	Y	Moist, Very Stiff, Dark Gray Clay with Traces of							'	0-19		
<b>-</b>	1		Gravel										
	1	1											
-	1												
25	1/	1											
35 REI	MARI	KS.	Hollow stem augers were utilized to a depth of 29.2	2'. Wa	er lev	el w	as 10	0' a	t 24	hrs.	* A \	vate	r
	IAIL ZI	٠٠٠.	stratum was encountered at 14.0'. ** Old Station 23	23+50	39' F	Right	of Ce	nter	Line	e of (	Cons	struc	tion.
	-	-							-	-			

			IWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORIN PAGE			W 1					
JOB N		<i></i>	061084 Hot Spring County		DATE:				mbe	r 2. 2	2005		
	NAME: UP RR & Pine St. Str. & Apprs.  U.S. 67												
10011			• •						_				
STATI	ON:		224+28 **	- 1	EQUIPM	IENT	:	CN	Æ 8	50 v	v/ CN	Æ	
LOCA			169' Right of New Center Line of Construction		-			Au	toma	atic 1	Hamı	ner	
	OGGED BY: Richard Martin HAMMER CORRECTION FACTOR: 1.29 COMPLETION DEPTH: 66.5												
COM	PLET	TION	DEPTH: 66.5										
D	0	S											
Ε	S	Α							Τ.	S		%	%
P	М	M	DESCRIPTION OF MATERIAL	SOIL				HT	U.F	ΟW		S	R
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''	0	Ē			ST	% MOIST	5.5	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN	K	ט
FT.	L		SURFACE ELEVATION: 221.3		PLASTIC LIMIT	%	LIQUID	DR	LB	NO	PEI		
	1	M									3		
	//	$\bowtie$								11	-16		
_	11		Moist, Very Stiff, Dark Gray Calcareous Clay with										
	11		some Silt Lenses		t								
40	11												
40	H									1	В		
-		$\triangle$								13	-16		
	1	1	Moist, Very Stiff, Dark Gray Calcareous Clay with										
<del> </del>		1	some Shells										
45	/										8		
<u> </u> -		X	Moist, Hard, Dark Gray Calcareous Clay with		1					13	-19		ĺ
-	//		some Shells										
<u> </u>	T.	9	Hard, Gray Cemented Silt (47.5' to 47.9')										
			Moist, Hard, Dark Gray Calcareous Clay										
50		-	Hard, Gray Siltstone (50.0' to 50.3')								60		
-										(	3")		
⊢-	1												
			Moist, Hard, Dark Gray Calcareous Clay										
-	11											1	
55		<b>L</b>		-							8		
		IX								13	3-18		
	MH-	1	Moist, Hard, Dark Gray Calcareous Clay with Silt										
<u> </u> -	MH-		Lenses										
	<b>M</b>							1					
60	껪	1		-							a		
L .	1	$\mathbb{J}X$								1	4-20		
L .	1	<del>                                     </del>	1							'			
	1		M										
L	//		Moist, Hard, Dark Gray Calcareous Clay										
65	1										46		
	//	V	1							1	10 4-21		
	<b>}</b>	4	Boring Terminated	-	+-	+		+-		+'	7-21	+	+
			Domig Tommand										
70													
REI	MARI	KS:	Hollow stem augers were utilized to a depth of 29.2	. Wate	er level	wa	s 10.0	o' at	24 I	nrs.	* A v	vate	•
			stratum was encountered at 14.0'. ** Old Station 22	23+50,	39' Rig	ght c	of Cer	nter	Line	of (	Cons	truc	tion.

			WY. & TRANS. DEPARTMENT		BORIN								
			DIVISION - GEOTECHNICAL SEC.		PAGE	1		F 3	ala a	2 2	2005		$\dashv$
JOB N			061084 Hot Spring County		DATE:	** ***					2005 y Wa		1
JOB N	AME:		UP RR & Pine St. Str. & Apprs.		TYPE O	F DR	ILLING	i:	r	cotar	y wa	ISII	
OTD A TOT	IONI:		U.S. 67 225+47		EQUIPM	ABNIT!		CI	VE 8	ነናበ ነ	v/ CN	Æ	
STATI LOCA			225+47 126' Right of New Center Line of Construction		EQUIPN	IENI	•				Hamr		
			cichard Martin		HAMMI	RR CO	ORREC					1.29	
	•		I DEPTH: 86.5										
D		S	221111 500							-			
E	S	A							٠.				
Р	Y M	М	DESCRIPTION OF MATERIAL	SOIL				量	J.F.I	)WS		% S	% R
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Н	Ō	E			STI	OIS		<b>[</b> 8	PEI	OF	П <b>-</b> 9	R	D
FT.	L		SURFACE ELEVATION: 221.2		PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DR.	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.		
	JE .				1	-							
<del> </del>	3		Moist, Medium Dense, Brown Sandy Silt with Gravel and Cobbles				Ì						
-	43		Graver and Cobbles										
5	<b>南</b> 民									,	3		
<u>ا</u>		X					İ			1	-6	'	
			Moist, Medium Dense, Brown Sandy Silt with										
<u> </u>			some Clay and Traces of Gravel										
-													
10			-								4		
10	6 000 6 000									4	4 -11		
<u> </u>	900		Moist, Medium Dense, Brown Sand with Gravel								• •		
<b> </b>	то о		and some Clay										
<u> </u>	800												
45	P.o.d			1									
15	O. O.										4 )-12		
<del> </del>	- 8	4								"			
-	9,0	Ä	Wet, Medium Dense, Brown Gravel with Sand *										
	6	,						İ					
	- 00 - 12 0	9											
20	-N	$\bigvee$	Wet, Very Stiff, Brown and Gray Silty Clay with				ł			1	0 -20		
	NI		Sand Seams and some Gravel	-						-	-20		
	- 6°	શે											
	-B	9	Wet, Medium Dense, Brown Sand with Gravel and Cobbles										
<u> -</u> -	-00		and Copples										
25	100			-						-	4 1-6		
<b> </b>	1	$\checkmark$	\							'	T-U		
-	1	1	Maint Chiff Const Olavi										
-	-1	1	Moist, Stiff, Gray Clay										
<b>L</b> .	1	4											
30	N	1		-							6		
<b>-</b> .	-\\	XĽ								1	0-12		
<u> </u>	1/	1	Moist, Very Stiff, Dark Gray Clay with some Silt	1									
<b>L</b> .	1/		Lenses									Ì	
L .	1	1											
35		7											
REI	MAR	KS:	Hollow stem augers were utilized to a depth of 29.5	5'. * A v	vater s	tratı	ım wa	as e	ncol	ınte	red a	at 14	.0'. *
			Old Station 224+50, 3' Left of Center Line of Const	ruction	•								

MATERIALS DIVISION - GEOTECHNICAL SEC. PAGE 2 OF 3		
JOB NO. 061084 Hot Spring County DATE: November 2-3, 2	005	
JOB NAME: UP RR & Pine St. Str. & Apprs.  Type of Drilling: Rotary		
U.S. 67		
STATION: 225+47 EQUIPMENT: CME 850 w/		
LOCATION: 126' Right of New Center Line of Construction  Automatic H		
LOGGED BY: Richard Martin HAMMER CORRECTION FACTOR:	1.29	9
COMPLETION DEPTH: 86.5		
D S S		
	%	%
P M M DESCRIPTION OF MATERIAL SOIL GROUP (1)	S C	R Q
GROUP OF THE SERVICE	Z R	
P T M M P L E SURFACE ELEVATION: 221.2  DESCRIPTION OF MATERIAL  SOIL GROUP  SOIL GROUP  FT. S SURFACE ELEVATION: 221.2	PER 6-IN.	
FT. S SURFACE ELEVATION: 221.2 로그 왕 크리 그 호		+
Molst, Very Stiff, Dark Gray Calcareous Clay with		
some Silt Lenses		
40	.	
	C. C. C. C. C. C. C. C. C. C. C. C. C. C	
Moist, Very Stiff, Dark Gray Calcareous Clay with some Shells		
45 some Shells		
Hard, Gray Cemented Silt (47.5' to 47.6')		
50	,	
	-15	
Shells		
55	9	
	-16	
Moist, Very Stiff, Dark Gray Calcareous Clay with	,	
NIN / Silt Longes	9	
	10	
65		
	8 1-19	
	פויי	
Moist, Hard, Dark Gray Calcareous Clay with	[	
some Shells		
70		
REMARKS: Hollow stem augers were utilized to a depth of 29.5'. * A water stratum was encounter	ed at	14.0'. *
Old Station 224+50, 3' Left of Center Line of Construction.		

			HWY. & TRANS. DEPARTMENT		BORIN								
MATERIALS DIVISION - GEOTECHNICAL SEC.PAGE 3 OF 3JOB NO.061084 Hot Spring CountyDATE: November 2-3, 2005JOB NAME:UP RR & Pine St. Str. & Apprs.TYPE OF DRILLING: Rotary Wash													
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אן מטנ	AIVIE:		U.S. 67		1 1 1 1 5 U	. DR	שוייים	•	1		, ,,,		
STATI	ON:		225+47		EQUIPM	IENT	:	CN	ڮ 8	50 v	v/ CN	Æ	
LOCA			126' Right of New Center Line of Construction								lamı		
			lichard Martin		HAMMI	ER CO	ORREC"	IION	FAC	ror:		1.29	
COM	PLET	OI											
D	S	S											
E	Y	Α							F	S/		%	%
P T	М	M P	DESCRIPTION OF MATERIAL	SOIL				HE	Ö	NO.		S	R
H	В	L		GROU	ှဲ ဥ	ST.		VEI	ER (	F BI	Ż	C R	Q
	0	E			PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
FT.		S	SURFACE ELEVATION: 221.2		52	%	33	ā.	E				
		$\times$									-20		
L _										1 1 -4.	-20		
75			Moist, Hard, Dark Gray Calcareous Clay								9		
L -		X	Molet, Flara, Bark Gray Galear Gray								-21		
L -													
	1												
.80					Ì					۱ ،	0		
		łX	Moist, Hard, Dark Gray Calcareous Clay with								-25		
L -			some Shells _ Hard, Gray Cemented Silt (81.7' to 82.3')	-									
	1	1		7									
L -		1											
85			Moist, Hard, Dark Gray Calcareous Clay								10		
	//	١X									-22		
<u> </u>			Boring Terminated										
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90	4												
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95	-												
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105		<u></u>	Hallow store surers was stilled to a death of 00	E! * A	oter of	lent.	Im to		200:	unto:	od a	+ 4.4	0' *
KEN	NAK	(3:	Hollow stem augers were utilized to a depth of 29. Old Station 224+50, 3' Left of Center Line of Cons	truction	raiti Si	uall	IIII Wč	13 C	IUUL	n KG	cu č	ic 14	.0.

			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORI		o. NE	W 3	}				
JOB N			061084 Hot Spring County		DATE				nber	7-8,	2005	5	
JOB N.	AME:		UP RR & Pine St. Str. & Apprs.		ТҮРЕ	OF DR	ILLING	i:	F	lotar	y Wa	ash	
			U.S. 67					C)	<b></b>	.50	-/ (7)	ATC:	
STATI			226+48		EQUI	PMENT	Γ:				v/ CN Hami		
LOCA			130' Right of New Center Line of Construction Richard Martin		нам	MER C	ORREC					1.29	
			N DEPTH: 86.5		211 1012		0						
D		S											
E	S	A							Ľ.	S		%	%
P	м	M	DESCRIPTION OF MATERIAL	SOIL				H	C.F	ΜO		S	R
.T H	В	P L		GROU	P ည	ST.		EIG	RC	BI.	Z	C R	Q
''	0	E			PLASTIC	LIMIT % MOIST.	LIQUID	X	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.	K	ט
FT.	L	S	SURFACE ELEVATION: 221.0		PL,	% E	<u> </u>	DR	LB LB	ž	PE		
L _			Moist, Medium Dense, Brown Sand with Traces										
			of Gravel						٠				
5											5		
		X								9-	12		
			Moist, Very Stiff, Brown and Gray Clay with Sand										
			i work, very Still, blown and Gray Gray with Gand										
10	000.0									1	18		
<u> </u>	66.8									23	-23		
<u> </u>	Ago.		Moist to Wet, Dense, Brown Sand with Gravel *										
<u> </u>	- 868:	8											
15	0.0	5											
13	- 185 C			1						-	3 -12		
-	- 60 26									٦	-12		
-	- <sub>600</sub> . 6		Wet, Medium Dense, Brown Sand with Gravel		Ì								
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20	0.00	<u> </u>									40		
20	9	8 8 8									12 9-25		
	- a 8	3								"	, 20		
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25	ဝီဝ ဝ	<u> </u>				1					6		
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L.	//			8									
35	7	7										$\perp$	
RE	MARI	KS:	Hollow stem augers utilized to a depth of 29.8'. * A	water	strati	ım e	ncoul	ntere	ed at	13.	5'. W	/ate	leve
			was 8.0' upon completion of drilling. ** Old Station	ZZ3+/	u, ce	нег		1 00	นเรน	uGU(	)    <sub> </sub>		

			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORIN PAGE	IG NO		W 3	}				
JOB N			061084 Hot Spring County		DATE:		No	oven		7-8,			
JOB N			UP RR & Pine St. Str. & Apprs.		TYPE (	F DR	ILLING	:	F	lotar	y Wa	sh	
			U.S. 67					-				•	
STATI			226+48		EQUIP:	MENT	:			350 w atic F			
LOCA			130' Right of New Center Line of Construction		HAMM	מם כו	ገወወፎር					1.29	
			Richard Martin N DEPTH: 86.5		PIAIVILV	ERC	JKKEC	HOIN	I'AC	IOK.		1.227	
		S	DEF1H. 80.5										
D E	S	A							ے	<b>70</b>			
Р	Y M	М	DESCRIPTION OF MATERIAL	SOIL				H	UF	O.W		% S	% R
T	В	Р		GROU	IP O	T.		EIG	R.C.	BL	ż	C R	Q
Н	0	E			PLASTIC	% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	R 6-1	K	D
FT.	L	s	SURFACE ELEVATION: 221.0		PLAST	1 %	125	DR	LB		PER 6-IN.		
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		$\sqrt{}$									13		
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		1			- 1							1	
L -			Moist, Very Stiff, Dark Gray Calcareous Clay with	1									
45	1		Shells								7		
<u> </u>		JX								10	-15		
-													
<u> </u> -	1	Ł	Hard, Gray Cemented Silt (48.0' to 48.3')	1									
<del>-</del> -	1	1	Moist, Very Stiff, Dark Gray Calcareous Clay with	ו									
50	-\\		some Silt Lenses								7		
-		ŽŽ	Hard, Gray Cemented Silt (51.0' to 51.3')							111	-60 4")		
-										`	٠,		
-	//	J											
55	1												
33		$\checkmark$	Moist, Very Stiff, Dark Gray Calcareous Clay wit	h							7		
- ·	1	$\checkmark$	some Silt Lenses							10	)-14		
·	1												
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		V								1	8 2-17		
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	/	1	Moist, Very Stiff, Dark Gray Calcareous Clay										
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65	7	7		4							8		
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70	<u>V</u> ,	7		111242	04754			otor	od c	+ 12	5' \/	Vata	rlöv
RE	MAR	KS:	Hollow stem augers utilized to a depth of 29.8'. * A was 8.0' upon completion of drilling. ** Old Station	watei 225+1	stratu 70 Cel	m 6 nter	incoul	ntero of Co	eu a onst	ı 13. ructir	o.v on.	vale	i ievi
	···		was old upon completion of drilling. Old otation		0, 00								

			WY. & TRANS. DEPARTMENT		BORIN								
<del></del>	MATERIALS DIVISION - GEOTECHNICAL SEC.  PAGE 3 OF 3  JOB NO. 061084 Hot Spring County  JOB NAME: UP RR & Pine St. Str. & Apprs.  PAGE 3 OF 3  DATE: November 7-8, 2005  TYPE OF DRILLING: Rotary Wash												
						יממום							
JOB N	AME:		* *		TYPEO	· DKI	LLING	•	1	lotary	y vv a	211	
am ı mı	0) !		U.S. 67 226+48		EQUIPM	IBNT:		CN	/IE.8	50 w	/ CN	Œ	
STATI LOCA			220+46 130' Right of New Center Line of Construction		EQUITM	ILINI.				atic H			
			cichard Martin		HAMM	ER CC	RREC	LION	FACT	ron:		1.29	
			I DEPTH: 86.5										
D		s											
E	S Y	A							انر	S		%	%
Р	M	М	DESCRIPTION OF MATERIAL	SOIL				HT	U.F	ΜO		S	R
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			Moist, Hard, Dark Gray Calcareous Clay with										
80		1	some Shells								^		
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	1		Hard, Gray Cemented Silt (83,6' to 84.1')	1									
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105	MAD	KG.	Hollow stem augers utilized to a depth of 29.8'. * A	water	stratur	n e	ncon	ntere	ed a	t 13.	5'. V	/ate	leve
I KE	IVIAL	NO.	was 8.0' upon completion of drilling. ** Old Station	225+7	0, Cen	ter L	ine c	f Co	nsti	ructio	on.		

			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORI PAGI		o. NE		}				
JOB N			061084 Hot Spring County		DATE				27	& 31	, 200	15	一
JOB N			UP RR & Pine St. Str. & Apprs.				ILLING			Rotar			
	i i		U.S. 67										
STAT	ION:		227+57 *		EQUII	PMENT	:			350 v			
LOCA			132' Right of New Center Line of Construction	Automatic Hammer HAMMER CORRECTION FACTOR: 1.29									
			lichard Martin		HAM	MER C	ORREC	TION	FAC	TOR:		1.29	
	PLET		DEPTH: 86.5			1							
D E	s	S A											
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Т	M B	Р	DESCRIPTION OF WATERIAL	SOIL GROU		ن ا		IGE	CO	3.0		S C	R Q
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FT.	L		SURFACE ELEVATION: 219.8		PLASTIC	MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
-	X		SON ACE ELEVATION: 213.0		124	1 8		<del>   </del>			- P+4		
5			Moist, Very Stiff, Brown and Gray Clay with Sand							(	3		
		X	Wolst, very our, brown and cray day with dand							10	-12		
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10		$\triangle$	Moist, Medium Dense, Brown and Gray Sand							7-	10		
-			with Clay Seams and Gravel										
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	20.0		Wet, Medium Dense, Brown Sand with Gravel								1		
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<u>-</u>	86.		Wet, Medium Dense, Brown Gravel with Sand	-						10	-13		
	0.00	4											
		1	Wet, Medium Dense, Brown Gravel with Sand and some Clay										
	80 0	2	and some oray										
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35	11	1											
	MARK	S:	Hollow stem augers were utilized to a depth of 29.2	'. Wate	er lev	el wa	s 8.0'	at 2	4 hi	rs. *	Old	Stati	on
			226+80, Center Line of Construction.	·····									

			WY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORIN PAGE			W 4					
JOB N			061084 Hot Spring County		DATE:				27 8	& 31	, 200	5	
JOB NAME: UP RR & Pine St. Str. & Apprs.  U.S. 67													
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STATI	ON:		227+57 *		EQUIPM	IENT	:	CN	Æ 8	50 v	// CN	Æ	
LOCA			132' Right of New Center Line of Construction		-			Au	toma	itic I	lamr	ner	
			chard Martin HAMMER CORRECTION FACTOR: 1.29										
COM	PLET	ION	DEPTH: 86.5										
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''	0	E			PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	~	U
FT.	L		SURFACE ELEVATION: 219.8		F 및	1%	HH	DR	LB		-		
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	7	$\langle \cdot \rangle$	Gravel							6-	11		
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			Moist, Very Stiff, Dark Gray Clay										
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	1	$\bigvee$									3		
										12	-16		
			Moist, Very Stiff, Dark Gray Calcareous Clay with										
<u> </u>	//		some Shells										
45	11			i 						ļ			
73	1		Moiet Vany Stiff Dark Gray Colography Claywith								9		
<del> </del>	11		Moist, Very Stiff, Dark Gray Calcareous Clay with Shells	,						12	-18		
			OTOTO	1									
-			Moist, Very Stiff, Dark Gray Calcareous Clay with										
F^-	$\{\ \ \ $		Thin Cemented Silt Seams										
50	1			1						1	0		
-	11	$\bigvee$								13	-18		
	11		Moist, Hard, Dark Gray Calcareous Clay with										
<u> </u>	1	1	Shells										
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60		\	Moist, Very Stiff to Hard, Dark Gray Calcareous								9		
L .	M	$\mathbb{X}$	Clay with Silt Lenses							-	1-17		
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	MARI	S:	Hollow stem augers were utilized to a depth of 29.2	.'. Wat	er leve	wa	s 8.0'	at 2	4 hr	s. *	Old	Stati	on
		-	226+80, Center Line of Construction.										

	-		HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BOR PAG			NE OI						
JOB N			061084 Hot Spring County		DATE: October 27 & 31, 2005									
JOB N	AME:		UP RR & Pine St. Str. & Apprs.		TYPI	E OF	DRI	LLING	:	R	otar	y Wa	sh	ļ
			U.S. 67											
STAT	ON:	4	227+57 *		EQU	IPME	ENT:				50 w			
LOCA			132' Right of New Center Line of Construction								itic F			
			Richard Martin		HAM	имен	R CO	RREC'	TION	FAC	ror:		1.29	
-	PLET		N DEPTH: 86.5			-								
D	S	S												
E P	Υ	A M	DECODIDION OF MATERIAL							ET.	WS		%	%
T	M	Р	DESCRIPTION OF MATERIAL	SOIL GROU	p				E	CO	3LO	_	S C	R Q
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FT.	L	E S	SURFACE ELEVATION: 219.8		LAS	LIMIT	% MC	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.		
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<del> </del>		$\triangle$						İ			15-	21		
<u> </u>			Moist, Hard, Dark Gray Calcareous Clay											
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<u> </u>	$\mathbb{N}$	$ \swarrow$	Moist, Hard, Dark Gray Calcareous Clay with					1			17	-22		
		1	some Shells											
	KUIT	ğ	Hard, Gray Cemented Sand (83.2' to 83.5')	1										
85		1	Moist, Hard, Dark Gray Calcareous Clay with Sill	:										
		$\sqrt{}$	Lenses and some Shells			1						-23		
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RE	MAR	KS:	Hollow stem augers were utilized to a depth of 29.	2'. Wa	ter le	evel	wa	s 8.0	at 2	24 h	rs. *	Old	Stati	ion

226+80, Center Line of Construction.

			-IWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORIN PAGE			W 5	5				
JOB N			061084 Hot Spring County		DATE:	··········			r 20	& 24	, 200	)5	$\neg$
JOB N	AME:		UP RR & Pine St. Str. & Apprs.		TYPE C	F DR	ILLING	i:	F	Rotar	y Wa	ash	
			U.S. 67									_	
STAT			228+57 *		EQUIP	MENT	:			350 v atic I			
LOCA			128' Right of New Center Line of Construction Richard Martin		HAMM	ED C	ADDEC					1.29	
			N DEPTH: 81.5		FLAIVIIV	EKC	JAKEC	HON	FAC	TOK.		1.27	
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Р	Y M	М	DESCRIPTION OF MATERIAL	SOIL				토	E	×		% S	% R
	В	Р		GROU	ا ا	H		EIG	2	BL	ż		Q
Н	0	L			PLASTIC LIMIT	% MOIST		DRY WEIGHT	PE	NO. OF BLOWS	П-9	R	D
FT.	L		SURFACE ELEVATION: 221.5		PLAST	%  %	LIQUID	DR	LBS PER CU.FT	NO.	PER 6-IN.		
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	MM												
5	MM		Moist, Very Stiff, Brown and Gray Silty Clay								В		
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35	MARI	<u> </u>	Hollow stem augers were utilized to a depth of 29.2	) \/\/atr	ar levo	l wa	9 12 (	ـــــــــــــــــــــــــــــــــــــ	24 1	are '	• Old	L Sta	tion
	vi <i>r</i> \f\	<b>\</b> 0:	227+80, Center Line of Construction.	vvalt	31 16VB	ı vva	J 10,1	J al	<u> </u>	113.		. Ola	UOII

MATERIALS DIVISION - GEOTECHNICAL SEC. PAGE 2 OF 3	
JOB NO. 061084 Hot Spring County DATE: October 20 & 24, 2005	
JOB NAME: UP RR & Pine St. Str. & Apprs.  TYPE OF DRILLING: Rotary Wash	
U.S. 67	
STATION: 228+57 * EQUIPMENT: CME 850 w/ CME	
LOCATION: 128' Right of New Center Line of Construction Automatic Hammer	
LOGGED BY: Richard Martin HAMMER CORRECTION FACTOR: 1.29	
COMPLETION DEPTH: 81.5	
D S S	
	%
P M M P DESCRIPTION OF MATERIAL SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOI	R
GROUP LIST C GROUP C R	Q
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10-13	
Moist, Very Stiff, Dark Gray Calcareous Clay	
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11-16	
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14-18	
Moist, Hard, Dark Gray Calcareous Clay with	
Shells	
50	
Hard, Gray Limestone (50.4' to 50.8') (5.5")	
55 Naciat Many Stiff Borth Come Colognosus Clay with	
Wolst, Very Stiff, Dark Gray Calcareous Clay With 8	
Shells 13-14	
60	
15-17	
65	
14-18	
Moist, Hard, Dark Gray Calcareous Clay with	
some Silt Lenses	
70	
REMARKS: Hollow stem augers were utilized to a depth of 29.2'. Water level was 13.0' at 24 hrs. * Old Sta 227+80, Center Line of Construction.	ation

			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.	BORIN PAGE			W 5 ₹ 3					
JOB N			061084 Hot Spring County		DATE:				20 &	£ 24, 2	2005	
JOB N			UP RR & Pine St. Str. & Apprs.		TYPE O	F DR				otary		1
10211			U.S. 67									
STATI	ON:		228+57 *		EQUIPN	1ENT	:	CM	1E 8	50 w/	CME	
LOCA			128' Right of New Center Line of Construction					Aut	oma	tic Ha	mme	r
			Richard Martin		HAMM	ER CO	ORREC	ΓΙΟΝ	FACT	OR:	1.2	29
COM	PLET	ION	I DEPTH: 81.5									777
D		s										
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Р	М	М	DESCRIPTION OF MATERIAL	SOIL				HT	U.F	MC	9	
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FT.	L		SURFACE ELEVATION: 221.5		PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	
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			Moist, Hard, Dark Gray Calcareous Clay with									
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<u> </u>		X	Moist, Hard, Dark Gray Calcareous Clay with some Silt Lenses							15-2		
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KEN	vir-\r <r< td=""><td>\O:</td><td>227+80, Center Line of Construction.</td><td> vval</td><td>GI 1676</td><td>wd</td><td>3 10.6</td><td>, al</td><td><u> </u></td><td>. ·</td><td></td><td>, auton</td></r<>	\O:	227+80, Center Line of Construction.	vval	GI 1676	wd	3 10.6	, al	<u> </u>	. ·		, auton

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JOB N		-	061084 Hot Spring County		DATE				er 24	<b>-25</b> ,	2004	 5	
JOB N			UP RR & Pine St. Str. & Apprs.		1		ILLING			Rotar			
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STAT	ION:		229+57 *		EQUIF	MFNT	ne.	CN	VIE. 8	350 v	v/ CN	Æ	
LOCA			128' Right of New Center Line of Construction		20					atic I			
			Richard Martin		HAMN	AER C	ORREC	TION	FAC	TOR:		1.29	
			N DEPTH: 71.5										
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FI.		0	SURFACE ELEVATION: 221.0			1 %			<u> </u>	Z	P		
<u> </u>			Moist. Stiff, Brown Clay with Traces of Gravel	ĺ									
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5		$\vee$	Major Stiff Provinced Crow Clay with Sand	1							3		
		$\triangle$	Moist, Stiff, Brown and Gray Clay with Sand							4	-5		
10		<b>.</b>	Major Stiff Brown and Croy Clay with Sand and								5		
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L	1/	X	/								7 I-13		
	//	Y_`	National Visual Control of the Contr							'	1-13		
	7/	1	Moist, Very Stiff, Dark Gray Clay with some Silt										
	1/		Lenses and Traces of Shells										
35	1/												
	AA DL	(2)	Hollow stem augers were utilized to a depth of 29.3		or leve	al wa	ا. م ۱۹ ۵۰	at 2	4 hr	S * /	Old i	Stati	nn nn
	A11.21.7U	νΟ.	228+80, Center Line of Construction.		OI 1646	71 AACI	J J,U	ul Z	. 7 (1)	J. '	Jiu (	Jean	J11
			ELO-SO, COIROI EINO OI CONSTRUCTION										

			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.	BORING NO. NEW 6 PAGE 2 OF 3										
JOB N			061084 Hot Spring County		DATE: October 24-25, 2005									
JOB N			UP RR & Pine St. Str. & Apprs.		TYPE O	E DD				r-25, Rotar				
JOB N.	AWIE.		U.S. 67		11FE C	r DK	ILLINC		1	Cotai	y *** ¢	4011		
STATI	ON.		229+57 *		EQUIPN	/ENT	٠.	Ci	VTE. S	350 v	v/ CN	Æ		
			128' Right of New Center Line of Construction		LQUII	ALIVI	•			atic I				
			Richard Martin		НАММ	ER CO	ORREC					1.29		
		-	V DEPTH: 71.5		111/11/11/11		<u> </u>	11011	1110	TOIL				
D		s	4 DD1 111, 71,3											
E P T H	S Y M B	3 A M P I	DESCRIPTION OF MATERIAL	SOIL GROU	P O	ST.		DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	Ž.	% S C	% R Q	
FT.	0 L	E	SUBSACE SUSVATIONS 224.0		PLASTIC LIMIT	% MOIST.	LIQUID	RY W	BS PE	10. OF	PER 6-IN.	R	D	
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40		X	Moist, Very Stiff, Dark Gray Clay with some Silt Lenses							10-	-11			
		$\bigvee$									3			
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			Moist, Very Stiff, Dark Gray Calcareous Clay with some Silt Lenses		1									
45	//													
45	1	X									B -13			
			Moist, Very Stiff, Dark Gray Calcareous Clay with Shells											
50		7									8			
<b>-</b>	1		Hard, Gray Limestone (50.8' to 51.0')	1						38	-24			
55			Moist, Hard, Dark Gray Calcareous Clay with								9			
60			Shells		:					13	-18			
		X	Moist, Hard, Dark Gray Calcareous Clay with some Silt Lenses				and the second s				9  -18			
65		X	Moist, Hard, Dark Gray Calcareous Clay with some Silt Lenses and Shells				110000000000000000000000000000000000000				10 I-18	- introduction		
70 REM	IARK		Hollow stem augers were utilized to a depth of 29.3 228+80, Center Line of Construction.	l '. Wat	er level	was	s 9.0'	at 2	4 hr	s. * (	) blC	<u>I</u> Statio	on	

•			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORING PAGE			:W 6 ₹ 3					
JOB N			061084 Hot Spring County		DATE:				r 24	-25,2	2005	j	
JOB N	AME:		UP RR & Pine St. Str. & Apprs.		TYPE O	FDRI	LLING	:	R	otary	y Wa	ısh	
am : ==			U.S. 67		EQ11151	مدد جنراا		C)	MIC O	50 w	,/ CP	Æ.	
STATI LOCA			229+57 * 128' Right of New Center Line of Construction		EQUIPM	IENT				ou w			
			Richard Martin		HAMME	R CC	RREC	TION	FAC'	ror:		1.29	
COM	PLET	'IOI	N DEPTH: 71.5										
D	S	S									İ		
E P	Υ	A M	DECODIDETION OF MATERIAL					H	FT.	WS		%	%
T	M B	Р	DESCRIPTION OF MATERIAL	SOIL GROU		Γ.		IGH	CC	31.0		S C	R Q
Н	0	F			12	% MOIST	8 =	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	R	D
FT,	L	S	SURFACE ELEVATION: 221.0		PLAST LIMIT	W %	LIQUID LIMIT	DRY	LBS	NO.	PER		
		X								10			
	دد	/_\	Boring Terminated		1					14-	-0		
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	IARK	S:	Hollow stem augers were utilized to a depth of 29.3	3'. Wate	er level	was	9.0'	at 2	4 hr	s. * C	Old S	Stati	on
			228+80, Center Line of Construction.										

		HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORIN PAGE			W 7	,				
JOB NO.			October 25-26, 2005									
JOB NAN		UP RR & Pine St. Str. & Apprs.		TYPE O	F DR	ILLING	i:	F	Rotar	y Wa	ısh	
STATION		U.S. 67 230+88 *		EQUIPM	ENIT		CN	ATE S	350 w	/ CN	/IE	
		180' Right of New Center Line of Construction		EQUIFW	IEIAI	•			atic I			
		Richard Martin		HAMMI	ER CO	ORREC	TION	FAC	TOR:		1.29	
COMPL	ETIO	N DEPTH: 76.5			_							
	SA											
P	M M	DESCRIPTION OF MATERIAL	SOIL				   	H.	WS.		% S	% R
	B P	52001 (II 11010 0) (WA (121 (II) 12	GROU	PU	T.		EIGI	RCI	BLC	ż	C	Q
'	O E			PLASTIC LIMIT	% MOIST	LIQUID	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	R	D
PI.	L s	SURFACE ELEVATION: 221.5		P.L.	% ]	35	ä	E.	ž	JE.		
		Moist, Medium Dense, Brown Silty Sand with Gravel							4	ı		
	IIIX	Moist, Medium Dense, Brown Silty Sand with							5-	6		
	$\times$	Traces of Gravel							6.			
5		Moist, Medium Dense, Brown Silt with Sand										
	$\mathbb{A}$								3.	5		
	<b>%</b>	Moist, Loose, Brown Clayey, Sandy Silt							3			
									1	3		
	$\backslash\!$	Moist, Stiff, Brown and Gray Clay with Sand							6	-5		
10			1							5		
		Wet, Medium Dense, Brown and Gray Sand with							7-	10		
	<b>23</b>	Gravel and Clay Seams										
20	89: \/									1	}	
15	, d								18	-16		
— — ·	60 S 6 S	Wet, Dense, Brown Sand with Gravel										
	6	Wet, Dense, Brown Gand with Graver										
	000											
20	8		-							6		
	88.4								8	-9		
	6 pc	Wet, Medium Dense, Brown Gravel with Sand										
	6 #											
25	0. 20		_							3		
23	X								1	-11		
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30	W	Moist, Very Stiff, Dark Gray Clay								11		
H +	V								13	3-11		
T 1												
35	77									_		
REMA	ARKS:	Hollow stem augers were utilized to a depth of 29.4	'. Wate	er level	wa	s 9.5'	at 2	4 hi	rs. *	Old	Stati	on
L		230+20, 53' Right of Center Line of Construction.		·							_	

	_	-	HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORI PAGE		o. NE	W 7	,				
JOB N			061084 Hot Spring County		DATE				er 25	-26,	2005		
JOB N			UP RR & Pine St. Str. & Apprs.		ТҮРЕ	OF DE	ILLING	i;	F	Rotar	y Wa	sh	
			U.S. 67										
STAT	ION:		230+88 *		EQUII	PMENT	Γ:			350 W			Ì
LOCA			180' Right of New Center Line of Construction		İ					atic F			
			Richard Martin		HAM	MER C	ORREC	TION	FAC	TOR:		1,29	-
COM	PLET	OI	N DEPTH: 76.5				1						_
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E P	Υ	A M						<u></u>	FT.	٧S		%	%
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	0	E			PLASTIC	LIMIT % MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
FT.	_	S	SURFACE ELEVATION: 221.5		딦	3 8	127	ā	Ë	_			
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40			Moist, Very Stiff, Dark Gray Calcareous Clay with							Ι,	,		
L.		$\mathbb{N}$	some Silt Lenses								9 -15		
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		$\swarrow$								'2	-10		
	1/		Moist, Very Stiff, Dark Gray Calcareous Clay										
50													
			BALLA VALORES DANIE CARROLL CARROLL CONTROL CONTROLL CONTROLL CONTROLL CONT								8		
		$\bigvee$	Moist, Very Stiff, Dark Gray Calcareous Clay with Shells	1						111	-16		
-	//			-									
-	7		Hard, Gray Cemented Silt with some Clay (52.6' to 52.8')										
55		1	Moist, Hard, Dark Gray Calcareous Clay with	1						Ì			
33	1		Shells	-							10		
	1/	X								14	l-17		
<b> </b>	1	1	Moist, Hard, Dark Gray Calcareous Clay with										
-	1	J	Shells and Traces of Gravel										
60	11	1											
1 30	1	4		1							11		***************************************
H -	1	VX								14	1-18		
-	1/	1	Moist, Hard, Dark Gray Calcareous Clay with										
H -	1	1	Shells										
	1	1											
65	NI			4							9		
-	411	$\mathbb{N}^{\times}$								13	3-18		
-	全	W	Moist, Hard, Dark Gray Calcareous Clay with Sil	t									
	<b>W</b> -	H	Lenses		1								
_	W-	H											
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RE	MAR	KS:	Hollow stem augers were utilized to a depth of 29.4	Ŧ. Wai	ter lev	el wa	as 9.5	at 2	24 h	rs. *	UId	Stat	ION
			230+20, 53' Right of Center Line of Construction.										

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JOB N			061084 Hot Spring County		DATE:			tobe					
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STATI			230+88 *		EQUIPM	ENT:	:			50 w tic H			
LOCA			180' Right of New Center Line of Construction Richard Martin		HAMME	R CC	RREC					1.29	
			DEPTH: 76.5										
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E	S Y	Α							Ц.	ία		%	%
P T	М	M P	DESCRIPTION OF MATERIAL	SOIL				HT	J.F.	.o		S	R
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	0 L	Е			PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	2	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	.	
FT.	SHE ISS	S	SURFACE ELEVATION: 221.5		<u> </u>	%	111	Ω	3				_
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			Lenses and Shells										
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75	MA		Moist, Hard, Dark Gray Calcareous Clay with							9			
	77	$\triangle$	Shells							14-	19		
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REN	MARI	KS:	Hollow stem augers were utilized to a depth of 29.4 230+20, 53' Right of Center Line of Construction.	r. wat	er ievel	wa	s 9.5'	at 2	4 nr	s. * (		ाहार	on 