LOGGED BY: Blake	Summers	ELEV	ATION:	1065.0) ft	
DATE DRILLED: Apr		BORII	NG DEI	PTH: 70	6 ft	
DRILLING METHOD	: Hollow Stem Auger		WATE		EL: ft	TOB WATER LEVEL: 56.0 ft
DEPTH (feet) ELEVATION (feet) GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	FIELD DATA N Value, blows/ft. 1 5 10 50 100
40.0 1025.0	RESIDUUM: Stiff, brown-red, sandy SILT (ML), trace clay (Continued) Loose, brown-red, silty fine SAND (SM)				455 554	
45.0 1020.0	Loose, brown-white, silty medium to fine SAND (SM), wet				4 3 4	
55.0 _ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Stiff, tan, sandy SILT (ML), wet				557	
60.0 1005.0	Medium dense, tan, silty fine SAND (SM), trace mica, moist				5 8 7 4 8 16	
70.0 995.0 CONTO	PARTIALLY WEATHERED ROCKDark gray, silty medium to fine SAND (SM), trace rock fragments Continued Next Page	-			4 7 11	
CONT	OUR ENGINEERING, LLC	Δ	= TIME	OF BO		REMARKS JTO HAMMER
						PAGE 2 OF 3

LOGGED BY	: Blake	Summers	ELEV	ATION:	: 1065.	0 ft								_	
DATE DRILL			BORII	NG DE	PTH: 7	6 ft									
DRILLING M	IETHOD	: Hollow Stem Auger		WATE		EL: ft		_			ER LE	VEL: 5	6.0	ft	_
			LAB	RESU	LTS			I	FIE	LD [DATA				
DEPTH (feet) ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1			Valu 5	ie, blow 10	/s/ft.	50	0 1	(
		PARTIALLY WEATHERED ROCKDark gray,					'		T	ÍП	П	\top	TÏ	N	
75.0 _ 989.		PARTIALLY WEATHERED ROCK Dark gray, silty medium to fine SAND (SM), trace rock fragments (Continued)				50/1"								 	_
303.	0 , 11, 11	Auger Refusal at 76 feet.												\forall	
80.0															
														П	
-															
85.0															
														П	
90.0													+	+	
- - - -															
95.0								\vdash	+	\mathbb{H}	H	++	+	\dashv	ŀ
- - - -															
100.0								\vdash	+	\mathbb{H}			+	+	ŀ
- - - -															
105.0 <u> </u>														$\frac{1}{1}$	
C	ONTO	DUR ENGINEERING, LLC	Δ	= TIME	OF BO	ORING	(TOB)			▼ =	= 24 HC	OUR R	EAD	AIC	Į
						A	ито н			₹					

LOGGED BY: Blake	Summers	1	ATION:	1065.0) ft							\dashv
DATE DRILLED: Ap	ril 12, 2014	BORII	NG DEI	PTH: 70) ft							
DRILLING METHOD	: Hollow Stem Auger	24 HR	WATE	R LEV	EL: ft	-	ГОВ \	VATE	ER LEV	EL: ft		
		LAB	RESU	LTS			FIE	LD D	ATA			
DEPTH (feet) ELEVATION (feet) GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1			e, blows		50 1	100
	FILL: Red-brown, sandy SILT (ML), trace rock											\prod
5.0 _ 1059.0	Red-brown, silty medium to fine SAND (SM), trace rock fragments Red-brown, clayey fine SAND (SC), trace rock fragments				656 611 7017 1055							
10.0 1055.0	Red-brown, sandy SILT (ML)				15		++	\mathbb{H}		H	#	\mathbb{H}
15.0 1050.0	RESIDUUM: Stiff, purple-brown-black, sandy SILT (ML)				4 6 9 4 7 8							
-	Firm, orange-brown-black, sandy SILT (ML), moist				3 3 4							
90000000000000000000000000000000000000	Medium dense, pink-red, silty fine SAND (SM) Stiff, purple-brown, sandy SILT (ML), moist				4 6 8							
25.0 1040.0 1035.0 25.0 1035.0 25.0					4 5 10				•			
Z L	Continued Next Page			l	1	LEGEN	ID		Ш			백
CONT	OUR ENGINEERING, LLC	Ā	= TIME	OF BO			KS		24 HOI	JR REA		

			Summers	ELEV	ATION:	: 1065.0							_
			il 12, 2014			PTH: 70		T	144.		-		
DRILLII	NG MET	THOD:	: Hollow Stem Auger			R LEV	EL: ft			TER LEV	EL: ft		_
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS			DATA ue, blows		50	10
40.0 _			Stiff, purple-brown, sandy SILT (ML), moist (Continued)				456						
45.0	1020.0		Stiff to very stiff, orange-brown-black, sandy SILT (ML), moist	-			356						
50.0							3 4 5						
55.0							4 6 6						
60.0	1005.0		Very stiff, white-pink-brown, sandy SILT (ML)				7 8 13						
65.0	1000.0		Very stiff, orange-brown-black, sandy SILT (ML)				8 10 15						
70.0	995.0		Boring Terminated at 70 feet.				7 7 9			•			
7													
_	CO	NT(DUR ENGINEERING, LLC	LEGEND									

ECCCED B1: Blanc	Summers	_		: 1066.0								
DATE DRILLED: Ap		BORII	NG DE	PTH: 12	27 ft							
DRILLING METHOD	: Hollow Stem Auger			R LEV	EL: ft	T			R LEVE	L: 50.	O ft	
		LAB	RESU	LTS			FIEL	D DA	ΛTA			
DEPTH (feet) ELEVATION (feet) GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1	N V 5		, blows/ 0		50 1	00
1063.0	FILL: Red-brown, silty coarse to medium SAND (SM), with rock fragments Red-brown, sandy SILT (ML), trace rock fragments				355							
5.0					5 5 6				$\left \cdot \right $		$\frac{1}{1}$	<u> </u>
					3 6 7							
10.0					4 6 7				•			
					336							
15.0 1051.0	RESIDUUM: Stiff to very stiff, brown-red, sandy SILT (ML), trace clay	_			6 469				•			
20.0					5 10 10							
30.0 1036.0	Firm, brown, sandy SILT (ML), trace mica				3 4 4			•				
25.0 1041.0 25.0 30.0 1036.0 CONT	Medium dense, tan-red, silty fine SAND (SM)				456				•			
	Continued Next Page					LEGEN	LLL D				Ш	Ш
CONT	OUR ENGINEERING, LLC	Ā	= TIME	OF BO			\S	<u>Z</u> = 2	24 HOU	R REA		

LOGGED BY: Blake Summers	ELEV	'ATION	: 1066.0	O ft								\exists
DATE DRILLED: April 22, 2014	BORI	NG DE	PTH: 1:	27 ft								
DRILLING METHOD: Hollow Stem Auger		R WATE		EL: ft				ER LE	VEL:	50.0	ft	
a		RESU				FIE	LD [DATA				_
DEPTH (feet) ELEVATION (feet) GRAPHIC LOG NOITHING THE PROPERTY OF THE PROP	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1	N	Valu	ie, blov	vs/ft.	5(D 10	00
Loose, brown, silty coarse to medium SAND (SM), trace rock fragments (Continued) 40.0 1026.0				3 4 4								
Firm, brown-red, sandy SILT (ML), moist				235								
Firm, brown-purple-white, sandy SILT (ML), moist				2 3 4								
Loose to medium dense, brown, silty medium to fine SAND (SM), wet				3 4 6								
60.0 1006.0 Very stiff, brown-white, sandy SILT (ML), moist	_			3 4 8				•				
65.0 1001.0 Very stiff to stiff, brown, sandy SILT (ML), trace				4 8 12				\				
CONTOUR ENGINEERING, LLC				4 6 12					•			
Continued Next Page								$\parallel \parallel /$				
Continued Next 1 age		1	1	ı	LEGE	ND						ш
CONTOUR ENGINEERING, LLC	Ā	= TIME	OF BO	ORING	(TOB) REMA	RKS	▼ =	= 24 H(DUR F	READ	NIC	G
				Al	JTO HA		R		PAGE	= 2	OF	_

LOGGI	ED BY: E	Blake :	Summers	ELEV	ATION:	1066.0) ft								\exists
DATE	DRILLEI	D: Apr	il 22, 2014	BORII	NG DEI	PTH: 12	27 ft								
DRILLI	ING MET	THOD	Hollow Stem Auger	24 HF	WATE	R LEV	EL: ft		TOI	3 W	ΆΤΕ	ER LEVE	L: 50.	0 ft	
				LAB	RESU	LTS			F	IEL	D D	ATA			
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1		N V 5		e, blows		50 <i>′</i>	100
75.0			Very stiff to stiff, brown, sandy SILT (ML), trace mica, moist (Continued)				4 5 8								
75.0 80.0							8 35 10					•			
-							458					•			
85.0 	981.0		Stiff, tan-white-red, sandy SILT (ML), trace mica, moist				58 456					•			
90.0	976.0		Very stiff, brown, sandy SILT (ML), trace mica, moist				6 3 7 10					•			
							4 6 9					•			
105.0							4 6 10					•			
			Continued Next Page												
					T18.40	05.51	מייום כ	LEGE	ND	_	-	04 110.	ID 55	۰	
	CO	NT(DUR ENCINEERING, LLC	Ţ	= TIME	OF BO		(TOB) REMA UTO H				24 HOL			
												P	AGE 3	01	F

LOGG	ED BY: I	Blake	Summers	ELEV	ATION:	: 1066.0	O ft									٦
DATE	DRILLEI	D: Apr	il 22, 2014	BORI	NG DE	PTH: 12	27 ft									٦
DRILLI	ING ME	THOD	: Hollow Stem Auger	24 HF	R WATE	R LEV	EL: ft		TOI	3 W	ATE	R LE	VEL:	50.0	ft	
				LAE	RESU	LTS			F	IEL	D D	ATA				
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1		N V 5		e, blow	/s/ft.	5(0 10	00
110.0 _	956.0		Very stiff, brown, sandy SILT (ML), trace mica, moist (Continued) Hard, brown, sandy SILT (ML), trace rock fragments, moist				6 10 12									
- - 115.0 _	951.0		Very stiff, brown-black, sandy SILT (ML), moist				10 15 20							>		
- - - 120.0 _	-						4 7 11									
-							8 11 17									
125.0 _	939.0		Auger Refusal at 127 feet.				17								#	
130.0 _									-						+	
135.0																
	-															
1000 1000	-															
ECH BORING	CO	NT(DUR ENGINEERING, LLC	Ā	= TIME	OF BO	DRING	LEGE (TOB)			<u> </u>	24 HC	DUR F	REAL	NIC	G
<u> </u>							Α	ито н					PAGE	- 4	<u>OF</u>	

LOGG	ED BY: I	Blake S	Summers		ATION:	1064.0) ft								
			l 12, 2014	BORII	NG DEI	PTH: 70) ft								
DRILL	ING ME	THOD:	Hollow Stem Auger	24 HR	WATE	R LEV	EL: 47.	0 ft	TOE	3 WA	ATE	R LEV	EL: 47	.0 ft	
				LAB	RESU	LTS			FI	ELC	DA C	TA			
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1	١	N Va		blows 0		50	10(
			FILL: Red-brown, silty medium to fine SAND (SM), some rock fragments												
-	1061.0		Tan-brown, silty medium to fine SAND (SM), trace rock fragments				999 569								
5.0_	1058.0						9				$\parallel \parallel$				Ш
-	1030.0		Red-brown, silty medium to fine SAND (SM), trace rock fragments				4 4 4								
_	-	\bowtie					2 3 6								
10.0 _	1						ĕ					<u> </u>			Н
- - - 15.0 _							5 7 8								
-							459					•			
20.0 _							569					•			
25.0 _ - - - 30.0 _ - - - - - - - - -	1039.0		White-tan-brown, silty coarse to fine SAND (SM), and rock fragments												
30.0 _	1034.0		Red-brown, silty medium to fine SAND (SM), some rock fragments				6 4 35 35								
35.0_	1029.0						3 4 6			Ш	Щ	\		$\perp \mid$	Ш
			Operations of Maria 2									\		\prod	
			Continued Next Page					LEGE	-ND	Ш	Ш				Ш
	CO	NTO	DUR ENGINEERING, LLC	Ā	= TIME	OF BO			RKS		_ = 2	4 HOU	JR RE	ADII	١G
			VIII V				A	O I O A	MIVI IVI	Ľĸ		D	AGE 1		_

			Summers	ELEV	ATION:	1064.0		
			il 12, 2014			PTH: 70		TOD WATER LEVEL 47.0 %
DKILLIN	NG ME I	HOD	: Hollow Stem Auger		RESU	R LEV	EL: 47.	7.0 ft TOB WATER LEVEL: 47.0 ft FIELD DATA
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	N Value, blows/ft.
40.0	1024.0		RESIDUUM: Firm to stiff, tan-orange-brown, sandy SILT (ML) (Continued)				4 7 7	—
- - - -			Firm, tan-orange-brown, sandy SILT (ML), moist				3 4 4	
¥	1019.0		Firm, orange-purple-brown, sandy SILT (ML), some rock fragments, wet	-			233	
- - -	1014.0		Firm to stiff, red-brown-black, sandy SILT (ML), trace mica, moist				233	
55.0							4 4	
60.0	000 0						4 4 5 6	
-	999.0		Stiff, orange-purple-brown, sandy SILT (ML), trace rock fragments, trace mica, moist				6 336	
70.0	994.0		Boring Terminated at 70 feet.				б	
	CO	NT(DUR ENGINEERING, LLC	Ā	= TIME	OF BO		LEGEND G (TOB)
							A	AUTO HAMMER PAGE 2 OF

LOGGED						: 1058.0) ft					_
			11, 2014			PTH: 70						_
DRILLING	3 METH	OD:	Hollow Stem Auger			R LEV	EL: ft		ER LEV	EL: ft		
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS		e, blows		50 ·	10
5.0_	055.0		FILL: Red-brown, sandy SILT (ML), trace organic material Red-brown, silty medium to fine SAND (SM), trace organic material Brown, sandy SILT (ML), trace mica				80 80 87 6					
	050.0		Brown-red, sandy SILT (ML) Brown-red, silty coarse to medium SAND (SM),				656 655				<u> </u>	
15.0 10	043.0		trace rock fragments Brown, sandy SILT (ML)				896					
20.0 10	038.0		Brown-red, silty coarse to medium SAND (SM), trace rock fragments	-			4 55 5 18 12					
25.0	033.0		Red, sandy SILT (ML), moist				18 12 10 20					
30.0							223					
35.0			Continued Next Page				232	LEGEND				
	CON	TC	OUR ENGINEERING, LLC	Δ	= TIME	OF BO	ORING AL		: 24 HOl	JR REA	1DI	NC

ATE DRILLED: April 11, 2014 RILLING METHOD: Hollow Stem Auger	24 HF		PTH: 70	O ft							
					To	D 14/	, TCC		-1		_
		RESU		⊑L: ft		JB W/		R LEVE	EL: ft		
GRAPHIC LOG GRAPHIC LOG GRAPHIC LOG GRAPHIC LOG	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1			blows/	/ft.	50	1(
Red, sandy SILT (ML), moist (Continued) 1018.0 RESIDUUM: Stiff, tan-brown, sandy SILT (ML),				555							
5.0 1013.0 Firm, brown-orange, sandy SILT (ML), moist				6 8 5							
0.0 1008.0 Firm to stiff, brown-purple, sandy SILT (ML), moist				233		•	•				
mica, moist				233			•				
				334							
5.0				345							
0.0 988.0				4 6 7							
Boring Terminated at 70 feet.											
CONTOUR ENGINEERING, LLC	Ţ	= TIME	OF BO		LEGEND (TOB) REMARK JTO HAM	S	<u> </u>	4 HOU	JR RE	ADI	ING

LOGGED BY: Blake	e Summers		ATION:	: 1060.0) ft							
DATE DRILLED: A	oril 22, 2014	BORII	NG DEI	PTH: 92	2 ft							_
DATE DRILLED: April 22, 2014 DRILLING METHOD: Hollow Stem Auger												
		LAB	RESU	LTS			FIEL	D D	ΑТА			
DEPTH (feet) ELEVATION (feet) GRAPHIC LOG		NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1					50	10
	FILL: Red-brown, sandy SILT (ML), trace rock											П
I IXXX	Hagments											
	material	_			3 3 4							
\(\lambda \cdot \frac{1}{2q \cdot \frac{1}{N}} \)	waterial				3 5 10							
15.0 1045.0	fragments				7 14 13				,			
20.0 1040.0	fragments				4 23 17)	
25.0 1035.0	Brown, sandy SILT (ML), some rock fragments				235			 				
	Red-brown, sandy SILT (ML)											
30.0 1030.0	Red-brown, sandy SILT (ML), moist	-			3 4 4							
35.0 1025.0	*	+			4		+	\mathbb{H}^{\setminus}	-		+	\mathbb{H}
-	Continued Next Page								\			
CONT	OUR ENGINEERING, LLC	∑	= TIME	OF BO		LEGENI (TOB) REMARK JTO HAM	S.		24 HO	UR RE	ADI	٧G
							=:\	•	F	PAGE	1 0	-

LOGG	ED BY: I	Blake	Summers	ELEV	ATION	: 1060.0	0 ft	
			1 22, 2014	BORI	NG DE	PTH: 9	2 ft	
DRILL	ING ME	THOD:	Hollow Stem Auger			R LEV	EL: ft	
				LAE	RESU	ILTS		FIELD DATA
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	N Value, blows/ft.
40.0_	1020.0		RESIDUUM: Stiff, red-brown, sandy SILT (ML), moist (Continued)				8 6 6	
- - - 45.0 _			Stiff, tan-black, sandy SILT (ML)				4666	•
50.0 _	1010.0						7 5 8	
55.0	√1005.0		Loose, tan-white, silty fine SAND (SM), moist				4 4 6	
-			Medium dense, tan-black, silty fine SAND (SM), moist				4 6 9	•
60.0	1000.0		Loose, tan-white, silty fine SAND (SM), wet				346	
65.0	995.0		Medium dense, tan-black, silty fine SAND (SM), wet				6 7 8 12	
70.0	990.0		Very stiff to hard, gray-brown, sandy SILT (ML), trace mica, moist Continued Next Page				12	LECEND
	CO	NT(OUR ENGINEERING, LLC	⊻	= TIME	OF BO	ORING AI	LEGEND G (TOB) T = 24 HOUR READIN REMARKS AUTO HAMMER
5 [PAGE 2 OF

DATE DRILLED: April 22, 2014 DRILLING METHOD: Hollow Stem Auger (table 1)	24 HR	WATE RESU (%) LIWIT GINDIT	R LEV			FIE	LD	ΓER L DATA ue, blo		.: 55	.0 f	t
SAMPLE DESCRIPTION BEALTH (feet) Compared to the compared to	LAB	RESU	LTS			FIE	LD	DATA	1	<u>-: 55</u>	<u>1 0.</u>	<u>t</u>
Very stiff to hard, gray-brown, sandy SILT (ML),				BLOW COUNTS								
Very stiff to hard, gray-brown, sandy SILT (ML),					1		5	10	_,		50	1
75.0 _				7 8 15								
80.0 _				12 15 22								
85.0 975.0 PARTIALLY WEATHERED ROCKSampled as				13 17 20							1	
gray, silty fine SAND (SM), trace mica				50/2"								\
968.0 Auger Refusal at 92 feet.											_	
95.0				_								
100.0											+	
105.0											+	
	∇	= TIMF	OF BO	ORING	LEGE	END		= 24 F	HOUR	RF		
CONTOUR ENGINEERING, LLC	<u> </u>		<u> </u>		REMA JTO HA					9E 3		

LOGG	ED BY: I	Blake \$	Summers	1		1062.0) ft								
DATE	DRILLEI	D: Apri	il 9, 2014	BORII	NG DE	PTH: 70) ft								
DRILL	ING ME	THOD:	Hollow Stem Auger			R LEV	EL: 48.	0 ft				R LEVE	L: 48	.0 ft	
				LAB	RESU	LTS			FII	ELD	DA	ATA			
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1	N	l Va		, blows/		50	100
			FILL: Red-brown, sandy SILT (ML), trace rock fragments								Ш			П	Ш
-	1059.0		Red-brown, silty medium to fine SAND (SM), trace rock fragments				4 5 7								
5.0_							7 13 13				Ш			\perp	Щ
-	1056.0		Red-brown, silty medium to fine SAND (SM), and rock fragments				10 21 6								
_			Red-brown, silty medium to fine SAND (SM), some rock fragments				555					•			
10.0 _	1052.0		Red-brown, sandy SILT (ML), trace rock fragments				5			\perp	₩		+	+	Н
15.0 _	-						356					•			
20.0	1042.0						4 7 5					•			
- - - 25.0_	1037.0		Red-brown, sandy SILT (ML), trace rock fragments, trace organic material				5 7 7					•			
-	1032.0		Red-brown, sandy SILT (ML), some rock fragments				4 6 7					•			
25.0	-		RESIDUUM: Medium dense, tan-brown, silty fine SAND (SM)				698					•			
35.0_	1027.0		Firm, tan-red-brown, sandy SILT (ML)				8		+	+	\parallel	 	\dashv	+	H
-	1	111	Continued Next Page					150-			Ш	'		Ш	Ш
	CO	NT(DUR ENGINEERING, LLC	Δ	= TIME	OF BO		LEGE (TOB) REMAI	RKS		= 2	24 HOU	R RE	ADII	٧G
;[V 11111				A	O I O III	- IVI IVI E	_r\		PA	AGE	1 0	F 2

LOGGED B			ELEV	ATION	: 1062.0								_
DATE DRIL		ril 9, 2014 b: Hollow Stem Auger	+		PTH: 70		0.4	-OD 1	۸/۸ -	-D -	/ EL . /	0.0.1	
DRILLING I		. Hollow Stern Auger		RESU	R LEV	EL: 48.	υπ μ			ER LE\ DATA	/EL: 4	8.01	π
DEPTH (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1	N		e, blow	s/ft.	50	10
40.0 _ 1022	2.0	Firm, tan-red-brown, sandy SILT (ML) (Continued)				4 4 4			•				
- - - -		Loose, tan-brown-black, silty medium to fine SAND (SM), moist				4 5 5							
_ _ _ _ _		Loose, gray-tan, silty fine SAND (SM), wet				345				•			
50.0		Medium dense, gray-tan, silty fine SAND (SM), moist	_			5 4 6 10							
60.0		Dense, gray-tan, silty coarse to fine SAND (SM), moist	-			17 20 16							
65.0 997	.0					15 18 20							
- - - -		Very dense, tan-gray-green, silty fine SAND (SM)				27 27 27 27							•
70.0 992	.5	Boring Terminated at 70 feet.				21							
C	ONT	OUR ENGINEERING, LLC	Ā	= TIME	OF BO		REMAR	KS		: 24 HC	UR R	EAD	IN
						Al	JTO HAI	vi iVi E h	۲		PAGE	2 (קר ס <i>ד</i>

LOGGI	ED BY:	Andrev	v Rebeiz	ELEV	ATION:	: 1063.3	3 ft								
DATE	DRILLE	D: Feb	ruary 10, 2012	BORI	NG DE	PTH: 20	O ft								
DRILLI	ING ME	THOD:	Hollow Stem Auger		WATE		EL: ft					ER LEV	EL: ft		
				LAE	RESU	LTS			F	IEL	DΩ	ATA			
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1		N V 5		e, blows	s/ft.	50	10
			FILL: Orange-tan silty SAND (SM), with rock fragments,				_								П
- -	1060.3		Red-brown sandy SILT (ML), with rock fragments	_			5 6 8 5 7 14						•		
5.0 _							14			+	$^{+}$	$\mathbb{H} \diagup$			\mathbb{H}
- - -							4 5 5								
10.0_							5 7 8								
-															
15.0 _							5 6 8								
	1046.3		RESIDUUM: Medium dense, tan-brown silty SAND (SM)				5 7 10								
-			Boring Terminated at 20 feet.				10								
-															
25.0															
35.0									_		Щ			Ш	\prod
_															
	CO	NT(OUR ENGINEERING, LLC	Σ	= TIME	OF BO	ORING	LEGE (TOB)			<u> </u>	: 24 HOl	JR RE	ADI	NG
							AUTO	MATION A			<u>1E</u> R		AGE	4.6	_

LOGGI	ED BY:	Andrev	v Rebeiz	ELEV	ATION	: 1064.	5 ft								
			ruary 10, 2012	BORII	NG DE	PTH: 20	O ft								
DRILLI	NG ME	THOD:	Hollow Stem Auger			R LEV	EL: ft					R LEVE	_: ft		
				LAB	RESU	LTS			FII	ELD	DA	ATA			
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1	N	I Va 5		, blows/fi		50 <i>′</i>	100
-	1061.5	7 7 7 7 7 7	FILL: Red-brown sandy SILT (ML), with rock fragments, with organic material consisting of topsoil with wood fragments and rock fragments				335				•				
5.0_			Red-brown sandy SILT (ML), with rock fragments				4 5 8								
-							6 8 12								
10.0 _							5 7 7					 			
- - - 15.0 _							545				•				
-	1047.5		Red-brown sandy SILT (ML), with organic material consisting of topsoil with wood fragment and rock fragments	s			4 6 8								
20.0_	1044.5		Boring Terminated at 20 feet.				8			\parallel			+	+	
25.0															
- - - - 30.0_															
25.0															
35.0_															
	CO	NTO	DUR ENGINEERING, LLC	Ā	= TIME	OF BO	ORING	(TOB) REMA		Ā	= 2	24 HOUF	REA	<u>IID</u>	١G
			,				AUTO	REMA MATI		ИМЕ	<u> R</u>	PA	GE 1	01	= 1

LOGGED BY: Andre	w Rebeiz	ELEV	ATION:	: 1066.6	6 ft								
DATE DRILLED: Feb	•	BORII	NG DE	PTH: 20	O ft								
DRILLING METHOD	: Hollow Stem Auger		R WATE		EL: ft					LEVE	L: ft		
DEPTH (feet) ELEVATION (feet) GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	RESU (%) LIMIT GINDIT	PLASTIC INDEX (%)	BLOW COUNTS				DAT	ΓΑ blows/	ft.		
1063.6	FILL: Red-brown sandy SILT (ML), with rock fragments, with organic material consisting of topsoil with wood fragments and rock fragments Red-brown sandy SILT (ML), with rock fragments	2		۵	4 56 4 55	1		5	10	•		50	100
5.0					55 57 10 568								
10.0 _					8 4 4 4								
20.0 1046.6					4 6 10								
-	Boring Terminated at 20 feet.												
30.0													
25.0													
CONT	DUR ENCINEERING, LLC	Ā	= TIME	OF BO		LEGE (TOB) REMA DMATIC	RKS			4 HOU	R RE		

LOGG	ED BY:	Andrev	v Rebeiz	ELEV	ATION	: 1064.	1 ft								
			ruary 10, 2012	BORII	NG DE	PTH: 40	0 ft								
DRILL	ING ME	THOD:	Hollow Stem Auger	_		R LEV	EL: ft					R LEVE	EL: ft		
				LAB	RESU	LTS			FIE	ELD	DA.	TA			
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1	N	Val	lue,	blows/	/ft.	50	100
- - - 5.0 _			FILL: Red-brown sandy SILT (ML), with rock fragments				345 455								
-	1058.1		Red-brown sandy SILT (ML), with rock fragments, with organic material consisting of topsoil with wood fragments and rock fragments	-			4 6 8								
10.0_			Red-brown sandy SILT (ML), with rock fragments				5 7 9								\prod
15.0_	1047.1						5 7 7								
20.0	1047.1		Red-brown-tan sandy SILT (ML), with rock fragments				4 5 5								
- - - 25.0 _	1042.1		Tan-brown silty SAND (SM), with rock fragments, moist				3 4 5				•				
30.0	1037.1		Red-brown sandy SILT (ML), with rock fragments, moist				4 5 7					•			
25.0	1032.1		Red-brown sandy SILT (ML), organic material consisting of topsoil with wood fragments and rock fragments moist Continued Next Page	_			5 6 6					•			
	CO	NT(OUR ENGINEERING, LLC	Ā	= TIME	OF BO		LEGE (TOB) REMA	RKS			4 HOL	JR RE	ADI	NG
							<u> </u>			VIL	<u></u> ,	PA	4 <i>GE</i>	1 0	F 2

DATE DRILLING METHOD: Hollow Stem Auger 24 HR WATER LEVEL: ft TOB WATER LEVEL: ft LAR RESULTS FIELD DATA LAR RESULTS FIELD DATA SAMPLE DESCRIPTION SAMPLE DESCRIPTION 1027.1 Besidum: Very stiff, red-brown-black sandy SIT. (ML) Boring Terminated at 40 feet. CONTOUR ENGINEERING, LLC CONTOUR ENGINEERING, LLC SERBOLUM: Very stiff, red-brown-black sandy ST. (ML) ST	LOGGED BY: Andrew Rebeiz	ELEV	ATION	: 1064.	1 ft									
Column C												_	_	_
1027.1 SAMPLE DESCRIPTION	DRILLING METHOD: Hollow Stem Auger				EL: ft		ТО	B W	/ATI	ER LEV	EL: ſ	ít		
1027.1 RESIDUM: Very stiff, red-brown-black sandy 1024.1		LAE	RESU	ILTS										_
RESIDUUM: Very stiff, red-brown-black sandy SILT (ML) Boring Terminated at 40 feet. 50.0 60.0 70.0	DEPTH (feet) ELEVATION (feet) GRAPHIC LOG OUTPER O	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1					s/ft.	5(0 -	1
RESIDUUM: Very stiff, red-brown-black sandy SILT (ML) Boring Terminated at 40 feet. 50.0 60.0 70.0	1027.1									\prod			П	I
Boring Terminated at 40 feet. 45.0	RESIDUUM: Very stiff, red-brown-black sandy SILT (ML)				5 8 10						•			
50.0	Boring Terminated at 40 feet.				10							П	Ť	1
55.0	45.0													
60.0	50.0													
60.0														
65.0	55.0													
70.0_	60.0													
	65.0													
CONTOUR ENGINEERING, LLC LEGEND	-													
GUNTUUM CREMENTE MINU, LLU REMARKS		Δ	= TIME	OF BO	ORING				<u>v</u> =	24 HO	UR R	ΕΑΓ	1IC	١
AUTOMATIC HAMMER	CUNTUUN ENDERFING, LLC					REMA	RKS	S						•

			v Rebeiz	_		: 1063.4								
			ruary 10, 2012			PTH: 20								
DRILL	ING ME	THOD:	Hollow Stem Auger			R LEV	EL: ft	1			ER LEVI	EL: ft		
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1		⁄alu	e, blows		50	100
5.0 _ 5.0 _ - 10.0 _ - 15.0 _	1060.4		FILL: Red-brown sandy SILT (ML), with rock fragments, some organic material consisting of topsoil with wood fragments and rock fragments Red-brown sandy SILT (ML), with rock fragments				568 691 555 333 455					•		
20.0	1043.4		Boring Terminated at 20 feet.				2 3 3					$\frac{1}{1}$		
25.0														
25.0 _														
	CO	NT(DUR ENCINEERING, LLC	Δ	= TIME	OF BO		LEGEN (TOB) REMAR DMATIC	KS .			JR REA		

LOGG	ED BY:	Andrev	v Rebeiz	ELEV	ATION	: 1060.2	2 ft								
			ruary 9, 2012	_	NG DE										
DRILLI	ING ME	THOD:	Hollow Stem Auger		WATE		EL: ft					LEVE	_: ft		
				LAE	RESU	LTS			FIE	ELD	DAT	Ά			
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1	N	l Valı 5	ue, b 10	olows/ft		50	100
-	1057.2		FILL: Brown-tan silty SAND (SM), with rock fragments Red-orange silty SAND (SM), with rock fragments				4 4 5								
5.0_	_						3 2 4 4)				
- 10.0 _	-						4 4 4 6 3 4								
-	1048.2		Red-brown sandy SILT (ML)				*								
15.0							6 11 12)		
- -	1043.2		RESIDUUM: Medium dense, brown-tan silty SAND (SM)				4 6 8								
20.0_	1040.2		Boring Terminated at 20 feet.				8								
25.0 _ - - - 30.0 _ - - 35.0 _															
30.0_															
- - 35.0 _															
	CO	NT(DUR ENGINEERING, LLC	Ā	= TIME	OF BO	DRING	LEGE (TOB)		<u>*</u>	= 24	HOUF	R REA	ADII	VG
							AUTO	OMATIO		ИМЕ	R	PA	GE 1	0	F 1

LOGG	ED BY: /	Andrev	v Rebeiz	ELEV	ATION:	: 1058.0) ft	
			ruary 9, 2012	BORII	NG DEI	PTH: 3	5 ft	
DRILL	ING ME	THOD:	Hollow Stem Auger		WATE		EL: ft	TOB WATER LEVEL: ft
				LAB	RESU	LTS		FIELD DATA
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	N Value, blows/ft. 1 5 10 50 100
-	1055.0		FILL: Brown-red silty SAND (SM), with rock fragments Red-brown sandy SILT (ML), with rock fragments				2 1 3	
5.0_			· · · · · · · · · · · · · · · · · · ·				4 5 5	
-	1050.0		Brown-red silty SAND (SM), with rock fragments				556	
10.0_	-		(2.4),				2 3 3	
15.0 _	-						336	
-	-						455	
20.0_	1036.0		Sampled as organic fill consisting of topsoil with wood fragments and rock fragments				3	
25.0 _	1031.0						1 2 1	
25.0	1031.0		Red-brown sandy SILT (ML)				7 9 10	
- -	1026.0		RESIDUUM: Very dense, red-brown-tan sandy SILT (ML)				a	
35.0	1023.0		Boring Terminated at 35 feet.				9 11 12	
	CO	NT(DUR ENGINEERING, LLC	Δ	= TIME	OF BO		REMARKS
							AUTO	OMATIC HAMMER PAGE 1 OF 1

LOGG	ED BY:	Andrev	v Rebeiz	ELEV	ATION	: 1056.3	3 ft								
			ruary 9, 2012	BORII	NG DE	PTH: 20	O ft								
DRILLI	ING ME	THOD:	Hollow Stem Auger		R WATE		EL: ft					R LEVE	_: ft		
	<u> </u>				RESU				FI	ELD) DA	ATA		—	_
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1	N	l Va		, blows/fi		50 ·	100
- -	1053.3		FILL: Medium dense, red-orange silty SAND (SM), with rock fragments Very stiff, red-brown sandy SILT (ML), with rock				3 7 6								
5.0_	1050.3		fragments				5 8 12					\prod	+	 	\prod
-	1048.3		Medium dense, orange-brown silty SAND (SM), with rock fragments	-			4 8 10								
10.0_	-		Stiff to firm, red-brown sandy SILT (ML), with rock fragments, some organic material consisting of topsoil with wood fragments and rock fragments				3 4 6						+	+	
- -							3 4 4				•				
15.0_	1039.3		Stiff, red-brown sandy SILT (ML), with rock fragments				4								
20.0	1036.3		Boring Terminated at 20 feet.				4 5 7					•			
- - -			Bolling Tellimated at 20 100t.												
25.0	-														
30.0 _	-														
35.0 _	-														
	CO	NT(DUR ENGINEERING, LLC	Ā	= TIME	OF BO	DRING	(TOB)		Ā	<u> </u>	24 HOUF	₹ RE	\DII	ΝG
							AUTO	OMATIO		ИМЕ	<u>E</u> R	PA	GE 1		F 1

RILLING			ruary 9, 2012 Hollow Stem Auger	24 HR	NG DEI	PTH: 20 R LEV		Т	OB I	VAT	ГЕР) E\/	EL: f	t	
			Hollow Stelli Augel		WAIL	K LEV	EL: π		$() \bowtie ($	/VAI	ᅡᅡ		EL: T	τ	
DEPTH (feet)	ELEVATION (feet)	HIC LOG			RESU			'	FIE					-	_
		GRAPI	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1	N			blows	/ft.	50) 1
5.0	042.5 1/2		FILL: Red-brown silty SAND (SM), with rock fragments Red-brown sandy SILT (ML), with rock fragments, with organic material consisting of topsoil with wood fragments and rock fragments				668 286 445 339				•	•			
5.0)33.5 <u> </u>		Sampled as organic fill consisting of topsoil with wood fragments and rock fragments				213		•						
25.0	030.5		Boring Terminated at 20 feet.	ood fragments and rock fragments			<u> </u>								
35.0															
	CON	NTC	OUR ENGINEERING, LLC	Ā	= TIME	OF BO		LEGEN (TOB) REMAR	ΚS			4 HOL	JR R	EAD	

DATE DRILLED: February 9, 201 RILLING METHOD: Hollow Ster (1994) ORIGINAL (1994) ORIGIN	SAMPLE DESCRIPTION	24 HF	NG DEFENSION OF SERVICE (%) LIMIT GINDIT	R LEV				WA1		R LEVE	EL: f	t	_
DEPTH (feet) ELEVATION (feet) GRAPHIC LOG	SAMPLE DESCRIPTION	LAE	RESU	LTS							EL: f	<u></u>	_ _
XXX FILL: Rec	d-brown sandy SILT (ML), with rock				v counts		r 1C	ַ ע	υ Α	17			
- FILL: Rec	d-brown sandy SILT (ML), with rock			PLA	BLOW	1		Valu 5	ue, 10	blows/	ft.	50	1
5.0	I <u>M:</u> Very stiff to stiff, red-brown-purple T (ML)				5 9 1 1 166 12 7 9 12 4 7 9 4 6 5								
20.0 1041.2	Boring Terminated at 20 feet.				5 6 8								
25.0													
30.0													
						LEGE	ND						
CONTOURE	NCINEERING, LLC	Ā	= TIME	OF BO		(TOB) REMAF				4 HOU	IR RI	<u>E</u> AD	IN

	bruary 9, 2012 D: Hollow Stem Auger	24 HR	NG DEI			-						_
	D: HOIIOW Stem Auger		'\/\/			1 -		 	. =			
feet) N (feet) LOG		1 1 1 1	RESU		EL: ft	T	OB V		LEVE	L: ft		
DEPTH (feet) ELEVATION (feet) GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1	N,		olows/i		50	1(
1058.8	FILL: Tan-brown silty SAND (SM), with rock fragments Red-brown silty SAND (SM), with rock fragments	-			455 788 678 579				•			
10.0	RESIDUUM: Very stiff to stiff, red-brown-purple sandy SILT (ML)				9 6811 555							
25.0	Boring Terminated at 20 feet.				•							
35.0												
CONT	OUR ENGINEERING, LLC	Δ	= TIME	OF BO		LEGEN (TOB) REMARI DMATIC I	KS		HOU	R RE	AD	N

LOGGI	ED BY:	Andrev	v Rebeiz	ELEV	ATION:	1060.8	3 ft								
			ruary 9, 2012	BORII	NG DEI	PTH: 20) ft								
DRILLI	ING ME	THOD:	Hollow Stem Auger		WATE		EL: ft						/EL: ft		
				LAB	RESU	LTS			F	IELI	D D	ATA			
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1	l	N V:		e, blow	s/ft.	50	10(
			FILL: Red-brown sandy SILT (ML), with rock												\prod
5.0			fragments				334 332			•	\big				
- 10.0 _							7 14 22 8 14 10								
- - -							7 9 9								
15.0 _	1043.8		RESIDUUM: Very stiff, red-brown sandy SILT (ML)												
20.0 _	1040.8		Boring Terminated at 20 feet.				7 10 10								
25.0 _															
25.0															
-								150						Ш	Ш
	CO	NTO	DUR ENGINEERING, LLC	Ā	= TIME	OF BO	ORING	LEGE (TOB) REMA			<u></u>	24 HO	UR RE	ADI	NG
							AUTO	DMATI			<u>E</u> R		PAGE	1 0	_

			v Rebeiz	ELEV	ATION:	: 1063.6									_
			ruary 9, 2012 Hollow Stem Auger			PTH: 20			TOI	2 14	/ A T		-1.4		_
JKILL	ING ME	1 100.	Hollow Stern Auger		RESU	R LEV	EL: π					ER LEV ATA	EL: π		_
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1			'alu	e, blows	/ft.	50	1
- - - 5.0 _	1060.6		FILL: Red-brown silty SAND (SM), with rock fragments Red-brown sandy SILT (ML), with rock fragments	-			335 587 8112						>		
- - _ 10.0 -	1055.6		agments Ted-brown sandy SILT (ML), with rock fragments an-brown silty SAND (SM), with rock fragments Ted-brown sandy SILT (ML), with rock fragments Ted-brown sandy SILT (ML), with rock fragments, reganic material consisting of topsoil with wood		12 3 7 6										
- - - 15.0 _ - -	1051.6		Red-brown sandy SILT (ML), with rock fragments Red-brown sandy SILT (ML), with rock fragments, organic material consisting of topsoil with wood			3 7 8					•				
- 20.0 - -	1043.6	70.71 7.74.	fragments and rock fragments				3 7 9					•			
- - 25.0 _ - -															
- - 30.0 _ - -															
- - 35.0 _ -															
	CO	NT(OUR ENGINEERING, LLC	ORING	LEGE (TOB) REMAR			<u>_</u> =	24 HOL	JR RE	AD	IN			

LOGGED BY: Shelley Zimmerman	ELEV	ATION:	: 1044.0) ft							
DATE DRILLED: February 1, 2012		NG DEI									
DRILLING METHOD: Komatsu PC130 Excavator		WATE			Т	OB W	/ATI	ER LEV	EL: ft		
		RESU						АТА			
DEPTH (feet) ELEVATION (feet) GRAPHIC LOG OUTPER O	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1	N V		e, blows		50	
FILL: Red tan sandy SILT (ML)											1
1042.0 UNSUITABLE FILL: Fill with organic topsoil, boulders and debris											
- \(\begin{align*} \begin{align*} \b											
10.0 _											
15.0 1029.0 Test Pit Terminated at 15 feet.											
20.0											
25.0											
35.0											
							$\parallel \parallel$				
CONTOUR ENGINEERING, LLC	Ţ	= TIME	OF BO	DRING	LEGENI (TOB) REMARK		<u> </u>	 24 HO	UR RE	ADI	
								E	PAGE	1 0	F

LOGGED BY: DATE DRILLE					: 1041.0 PTH: 1									_
		Komatsu PC130 Excavator	_		R LEV			то	D \\	'ΛΤI	ER LE	/EI ·	ft	_
Z. VILLING IVIL	ob.	TOTAL TO TOO EXCAVATOR	_	RESU		_ L. Il					ATA	v LL.		
DEPTH (feet) ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1			alu	e, blow	rs/ft.	5	0
_		FILL: Tan red sandy SILT (ML)								Ш			П	П
5.0	7 7 7 7 7 7 7 7 7 7 7 7	UNSUITABLE ORGANIC FILL: Fill material with organic topsoil, boulders and debris												
10.0														
15.0 1026.0		Test Pit Terminated at 15 feet.												
20.0 _														
30.0														
35.0 _														
CO	NT(OUR ENGINEERING, LLC	Σ	= TIME	OF BO	ORING	LEGI (TOB)			<u> </u>	24 HC	UR R	EAI	DI

OGGED BY: Shelley Zimmerman	ELEV	ATION	: 1049.0	O ft									
DATE DRILLED: February 1, 2012	_		PTH: 1										_
DRILLING METHOD: Komatsu PC130 Excavator	_		R LEV	EL: ft		_				EVE	∟: ft	_	
	LAB	RESU	LTS				FIE	_D	DATA			_	_
DEPTH (feet) ELEVATION (feet) GRAPHIC LOG NOITHGRAPHIC LOG	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1		N Y		ue, bli	ows/ft		50)
FILL: Red tan sandy SILT (ML)					 			, III	П			T	Τ
1047.0 UNSUITABLE FILL: Fill containing organic topsoil, boulders and debris 5.0													
10.0													
15.0 1034.0													
Test Pit Terminated at 15 feet.										<u> </u>			+
25.0 _													
30.0													
35.0_					LEG	END)						
CONTOUR ENGINEERING, LLC	$\overline{\Delta}$	= TIME	OF BO	ORING				▼ :	= 24 l	HOUF	≀ RE	AD)

LOGGI	ED BY:	Shelle	y Zimmerman	1	ATION:	: 1059.0) ft										_
			ruary 1, 2012	BORII	NG DEI	PTH: 1	5 ft										
DRILLI	ING ME	THOD:	Komatsu PC130 Excavator	_	WATE		EL: ft							L: ft			_
					RESU	LTS			F	IEL	.D [DATA	4			_	-
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1		N \ 5		ıe, bl	ows/	it.	50	1()(
	1058.5		FILL: Red sandy SILT (ML)														
- - 5.0 _ - -			BOULDER FILL: Red brown silty SAND (SM), with 50 percent rock fragments ranging in size from 8-inches to 30- inches in diameter.														
-																	
10.0 _																	
-	1044.0																
15.0 _	1044.0	XXXX	Test Pit Terminated at 15 feet.							\dagger	Ħ	Ш			\forall	\forall	+
- - - 20.0_																	
- - -																	
25.0 _ - - -																	
30.0 _																	
35.0 _	1									+	\parallel	H	-	+	\dashv	+	-
_	CO	NT(DUR ENGINEERING, LLC	Δ	= TIME	OF BO	DRING				<u> </u>	= 24	HOU	R RE	AD	ING	-
	UU	14 1 (JUN CHARLETINU, LLU					REMA	RKS	3				GE			_

1000	ED DV	01 11	PROJECT NO.:			4050	2.6									_
			y Zimmerman vruary 1, 2012		ATION: NG DEI											
			: Komatsu PC130 Excavator	+	R WATE				-OB	۱۸//	\TE	R LE\	/EI ·	f+		_
DIVILLI	INO ME	11100.	. Normalisa i O 100 Excavator	_	RESU		LL. II					ATA	<u>/ L L.</u>	11		_
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1			alue	, blow	s/ft.	5	0 1	00
	1052.5		<u>FILL:</u> Red sandy SILT (ML)	_									\prod	П	П	П
5.0 _ - - - -			FILL CONTAINING ROCK/BOULDERS:Red brown silty SAND (SM), with 50 percent rock/boulders ranging in size from 8" to 30" in diameter													
-	1	3														
10.0 _ - - -																
15.0 _	1038.0	. 7	Test Pit Terminated at 15 feet.								+		++	+	\mathbb{H}	$^{\parallel}$
- - - 20.0 _			restriction action to the control of													
- - - 25.0 _																
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_																
	00	NIT!		∇	= TIME	OF BO	ORING	LEGEN (TOB)	D	_▼	 : = :	 24 HO	UR R	LL REAI		IG
	UU	N I (DUR ENGINEERING, LLC					REMAR	KS							_
													PAGE	- 1	$\bigcap F$	-

LOGG	ED BY:				ATION:	1061.0) ft										\exists
DATE	DRILLE	D:		BORING DEPTH: 15 ft 24 HR WATER LEVEL: ft TOB WATER LEVEL: ft													
DRILLI	ING ME	THOD:					EL: ft		_					EL:	ft		
				LAB	RESU	LTS				FIEI	LD	DA	ATA				
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1			Val ō		blows 0	s/ft.	51	0 1	00
			FILL: Tan-red, sandy SILT (ML)														П
5.0_																	
10.0																	+
15.0	1046.0		Test Pit Terminated at 15 feet.														
- - - 20.0 _																	
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35.0_	1							\vdash	\dashv	+	\mathbb{H}	\mathbb{H}		\vdash	\dashv	+	#
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	CO	NT(DUR ENGINEERING, LLC	LEGEND													
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LOGGI	ED BY: I	3lake \$	Summers	ELEVATION: 1061.0 ft						_	_						
			l 16, 2014	BORING DEPTH: 15 ft 24 HR WATER LEVEL: ft TOB WATER LEVEL: ft													
DRILLI	ING ME	THOD:	CAT 325 Excavator				EL: ft							EL: f	t	_	
				LAB	RESU	LTS				FIE	LD	DΑ	ATA			_	
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1			Val		, blows	:/ft.	50) 1	00
		\bowtie	FILL: Red-brown, sandy SILT (ML), with rock														
5.0_	1056.0 1055.0	1 . 1 7 1	Fill material with topsoil and organics Tan-red-brown, silty SAND (SM)														
10.0			Tan red brown, sity OARD (OW)														
- - - 15.0 _	1046.0																
- 20.0 _		* * * *	Test Pit Terminated at 15 feet.														
-																	
25.0																	
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	CO	NT(DUR ENGINEERING, LLC	LEGEND													
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LOGG	ED BY: I	Blake	Summers	ELEVATION: 1065.0 ft							1						
			il 16, 2014	BORING DEPTH: 15 ft													
DRILL	ING ME	THOD:	CAT 325 Excavator	24 HR WATER LEVEL: ft TOB WATER LEVE LAB RESULTS FIELD DATA							EL: ft						
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DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1		N Y		ue, 1(blows	/ft.	50	10	0
			FILL: Red-brown, sandy SILT (ML)													П	Γ
5.0_	1063.0		Tan-red, sandy silty SAND (SM) Red-brown, sandy SILT (ML), with rock fragments														_
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15.0 _	1050.0		Test Pit Terminated at 15 feet.														_
20.0																	
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	CO	NT(DUR ENGINEERING, LLC	Ā	= TIME	OF BO	DRING	LEGE (TOB) REMA			<u> </u>	= 24	4 HOL	JR RE	⊔⊔ EADI	NG	\ -
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LOGG	ED BY: I	Blake :	Summers	ELEV	ATION:	: 1065.0) ft										\dashv
			il 16, 2014	BORING DEPTH: 15 ft 24 HR WATER LEVEL: ft TOB WATER LEVEL: ft													
DRILL	ING ME	THOD:	: CAT 325 Excavator				EL: ft		_					EL: f	<u>t</u>		
				LAB	RESU	LTS				FIE	LD	DA	TA				_
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1			Val	ue,	blows 0	/ft.	50) 1	00
			FILL: Tan-brown, silty SAND (SM), with rock												\prod	П	П
-	1062.0		fragments Red-brown, silty SAND (SM), with rock fragments														
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10.0															\parallel	\parallel	
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15.0_	1050.0															Ш	
-	-		Test Pit Terminated at 15 feet.														
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LOGGED BY: Blake				1065.0									_	_
DATE DRILLED: Ap	rii 16, 2014 D: CAT 325 Excavator	+		PTH: 19			ТО	D 14	/ A T I	-015	\/ \			_
DRILLING METHOL	J. CAT 323 EXCAVATOR		RESU		EL: π					ER LE ATA	VEL:	π		_
DEPTH (feet) ELEVATION (feet) GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1			′alue	e, blow	/s/ft.		50	_
5.0 1058.0 1057.0 1056.0	FILL: Red-brown, sandy SILT (ML) Fill material with topsoil and rock fragments Red-brown, sandy SILT (ML) Fill material with topsoil Red-brown, sandy SILT (ML)													
15.0 1050.0	Test Pit Terminated at 15 feet.													
25.0														_
35.0						LEGE	END							_
CONT	OUR ENGINEERING, LLC	<u>Ā</u>	= TIME	OF BO	DRING	(TOB) REMA	RKS		<u> </u>	24 HC	DUR I	REA	DI	١

LOGG	ED BY: I	Blake	Summers	ELEVATION: 1065.0 ft													
			il 16, 2014	BORING DEPTH: 15 ft 24 HR WATER LEVEL: ft TOB WATER LEVEL: ft													
DRILLI	ING ME	THOD:	: CAT 325 Excavator				EL: ft		_					EL: f	<u>t</u>		
				LAB	RESU	LTS				FIE	LD	D٨	ATA				
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1			Val 5		, blows	s/ft.	50) 1	00
	1064.0	\bowtie	FILL: Red-tan, silty SAND (SM)														
5.0 _	1060.0		Red-brown, sandy SILT (ML) Fill material with topsoil	-													
10.0															+		<u> </u>
- - - 15.0 _	1050.0																
- - - 20.0 _			Test Pit Terminated at 15 feet.														
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LOGGI	ED BY: I	Blake :	Summers	ELEVATION: 1065.0 ft						_							
			il 16, 2014	BORING DEPTH: 15 ft													
DRILLI	NG ME	THOD:	: CAT 325 Excavator	24 HR WATER LEVEL: ft TOB WATER LEV							EL:	ft		_			
				LAE	RESU	LTS				FIE	LD	DA	TA				
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1			Val		blows 0	s/ft.	5(0 1	00
		\bowtie	FILL: Red-brown, sandy SILT (ML)												П	П	П
5.0	1059.0		Fill material with topsoil														
10.0		<u> </u>										Ш			Ш	Ш	
15.0	1050.0		Test Pit Terminated at 15 feet.														
20.0																	
- - - - - - - 25.0 _																	
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LOGG	ED BY: I	3lake \$	Summers	ELEVATION: 1065.0 ft						_	\exists						
			il 16, 2014	BORING DEPTH: 15 ft 24 HR WATER LEVEL: ft TOB WATER LEVEL: ft													
DRILLI	ING ME	THOD:	CAT 325 Excavator				EL: ft		_					EL: f	<u>t</u>		
				LAB	RESU	LTS			I	FIEI	_D	DA	TA			_	
DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1		N Y		ue,	blows 0	/ft.	50	1	00
	1064.0		FILL: Red-brown, sandy SILT (ML)														
5.0_	1063.0		Tan-red, silty SAND (SM) Red-brown, sandy SILT (ML)														
-	1057.0		Fill material with topsoil	-													
10.0 _																	
15.0 _	1050.0		Test Pit Terminated at 15 feet.													H	H
20.0																	
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LOGGED BY: Blake	Summers	ELEVATION: 1064.0 ft												
DATE DRILLED: Apr		BORING DEPTH: 15 ft												
DRILLING METHOD	: CAT 325 Excavator			R LEV	EL: ft		_					/EL:	ft	_
		LAB	RESU	ILTS				FIE	LD	DA	ATA			
DEPTH (feet) ELEVATION (feet) GRAPHIC LOG	SAMPLE DESCRIPTION	NATURAL MOISTURE CONTENT (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	BLOW COUNTS	1	, blow	s/ft.	5	50				
	FILL: Red-brown, sandy SILT (ML)								5 	Ш			Ť	Ň
5.0 1059.0	Tan-red, silty SAND (SM)													
10.0	Fill material with topsoil													
15.0 1049.0														
20.0	Test Pit Terminated at 15 feet.													
-														
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CONT	DUR ENGINEERING, LLC	$\overline{\Delta}$	= TIME	OF BO	ORING				Ţ	= 2	24 HO	UR F	REA	DI

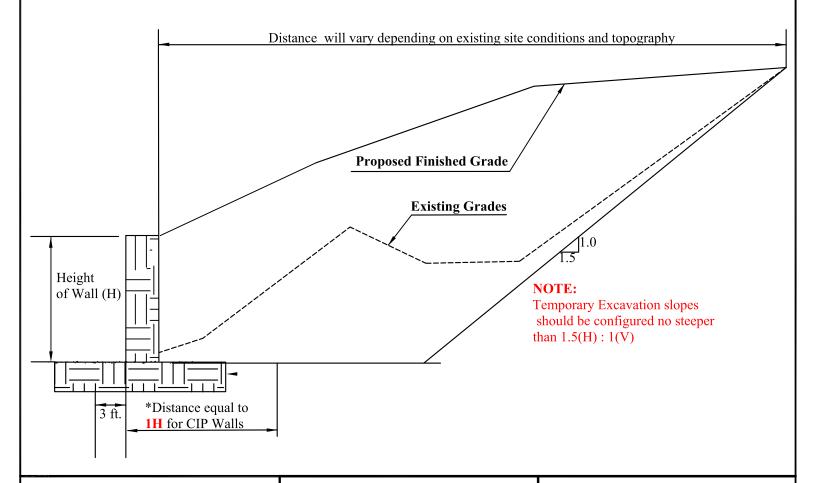
SOIL CLASSIFICATION CHART

	A 100 00.40	ONO	SYMI	BOLS	TYPICAL
M.	AJOR DIVISI	ONS	GRAPH	LETTER	DESCRIPTIONS
	GRAVEL AND	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	GRAVELLY SOILS	(LITTLE OR NO FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
COARSE GRAINED SOILS	MORE THAN 50% OF COARSE FRACTION	GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
	RETAINED ON NO. 4 SIEVE	(APPRECIABLE AMOUNT OF FINES)		GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS	SAND AND	CLEAN SANDS		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
LARGER THAN NO. 200 SIEVE SIZE	SANDY SOILS	(LITTLE OR NO FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE	SANDS WITH FINES		SM	SILTY SANDS, SAND - SILT MIXTURES
	FRACTION PASSING ON NO. 4 SIEVE	(APPRECIABLE AMOUNT OF FINES)		sc	CLAYEY SANDS, SAND - CLAY MIXTURES
				ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
GOILO				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE				МН	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		СН	INORGANIC CLAYS OF HIGH PLASTICITY
				ОН	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
н	GHLY ORGANIC S	SOILS		РТ	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

EARTHWORK RECOMMNEDATIONS FOR CAST-IN-PLACE (CIP) LOCATED ON THE EASTERN PORTION OF THE SITE

NOTES:

- 1. To allow for construction of the proposed retaining wall on the eastern portion of the site as a cast-in-place (CIP) retaining wall, unsuitable materials within the existing slope should be removed from the face of the wall to a distance behind the wall equal to the height of the wall (H, i.e. distance will vary depending on wall height throughout the length of the wall). Also, all unsuitable soils, if any, should be undercut beneath the retaining wall footing plus 3 feet in front and back of the concrete footing.
- 2. Temporary excavations slopes should be configured no steeper than 1.5 (Horizontally) to 1.0 (Vertically). Temporary slopes may require flattening depending on the materials exposed during temporary excavations.



CONTOUR ENGINEERING, LLC

1955 Vaughn Road, Suite 101, Kennesaw, GA 30144

Phone: (770) 794-0266 Fax: (770) 794-9483

Retaining Wall Detail

LEGEND:

Scale: Not to Scale

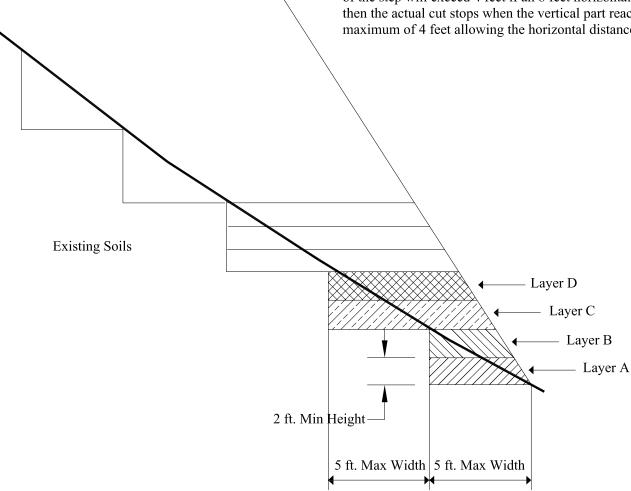
PROJECT:
Earthwork Recommendations for
Retaining Walls
Avalon Development

Alpharetta, Fulton County, Georgia Project No: G12NAP01

NOTES:

- 1. Where the new slope is to placed on an existing hillside, the new slope must be benched into the existing slope.
- 2. The detail shows that before Layer "A" is placed, the first step is to cut into the slope a maximum distance of about 8 feet.

 Successive Layer B is then placed. Before Layer C is placed, the second step is cut 8 feet into the slope and successive layers are then placed. If it is anticipated that the vertical part of the step will exceed 4 feet if an 8 feet horizontal cut is made, then the actual cut stops when the vertical part reaches a maximum of 4 feet allowing the horizontal distance to vary.





New Structural Fill for Slope

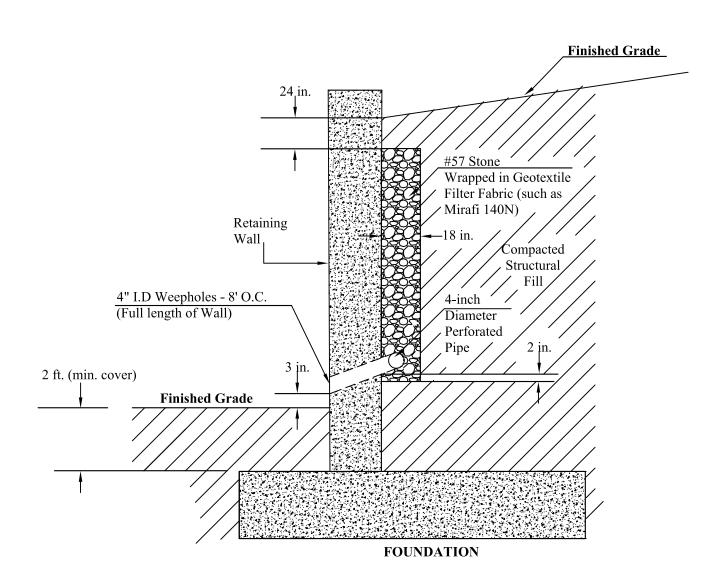
1955 Vaughn Road, Sulte 101, Kennesaw, GA 30144 Phone: (770) 794-0266 Fax: (770) 794-9483 **LEGEND**

Typical Benching Detail

Scale: Not To Scale

PROJECT
Geotechnical Exploration
Hotel and Conference Center

Avalon
Alpharetta, Fulton County, Georgia
Project No: G14NAP02



CONTOUR ENGINEERING, LLC

1955 Vaughn Road, Sulte 101, Kennesaw, GA 30144 Phone: (770) 794-0266 Fax: (770) 794-9483 LEGEND
Typical Detail for Concrete
Retaining Wall
Drainage System

Scale: Not to Scale

PROJECT Geotechnical Exploration Hotel and Conference Center

Avalon Alpharetta, Fulton County, Georgia Project No: G14NAP02