

April 22, 2014

Economic Development Group of Wabash County, Inc. 214 S Wabash Street Wabash, Indiana 46992 Attention: Mr. Bill Konyha

#### **Report of Subsurface Investigation and Geotechnical Recommendations**

RE: Borgers – Wabash Site Wabash, Indiana A&W Project No.: 14FW0034

Dear Mr. Konyha:

In compliance with your request, we have completed a subsurface investigation for the proposed Borgers Site in Wabash, Indiana. It is our pleasure to provide the following information for your review, a full report of our findings and full recommendations will be provided within a supplemental report.

This investigation was conducted at the request of Mr. Bill Konyha of the Economic Development Group of Wabash County, Inc. The purpose of this subsurface investigation was to determine the engineering characteristics of the subsurface materials and to provide criteria for use by the design engineers and architects in preparing the foundation design for the proposed building to be constructed in Wabash, Indiana.

#### Site Description

The Site is located on the north side of Wabash, Indiana within the Wabash Northeast Business Complex. The Site is located within Lots 5, 6, 10 & 11 near the southwest corner of the Northeast Business Complex (*Exhibit 1*).

#### **Exhibit 1:** General Site Location



#### **Field Methods**

Field activities in the scope of the investigation included reconnaissance of the project site, soil borings, standard penetration tests, and collection of soil samples by means of standard split-spoon sampling. Boring locations were staked in the field by Alt & Witzig Engineering using hand held GPS equipment at the approximate locations provided by the Economic Development Group of Wabash County, Inc.

The soil borings were performed with a drilling rig equipped with a rotary head. Conventional hollow-stem augers were used to advance the holes. Borings were accessed by a track mounted drilling rig. Representative samples were obtained employing split-spoon sampling procedures in accordance with ASTM Procedure D-1586.

During the sampling procedure, standard penetration tests were performed at regular intervals to obtain the standard penetration value of the soil. The standard penetration value is defined as the number of blows a 140 lb hammer, falling 30 inches, required to advance the split-spoon sampler 12 inches into the soil. The results of the standard penetration tests indicate the relative density and comparative consistency of the soils, and thereby provide a basis for estimating the relative strength and compressibility of the soil profile components.

#### Laboratory Investigation

In addition to the field investigations, a supplemental laboratory investigation was conducted to ascertain additional pertinent engineering characteristics of the subsurface materials necessary in

analyzing the behavior of the proposed roadway. All phases of the laboratory investigation were conducted in accordance with applicable ASTM Specifications and INDOT's Geotechnical Manual. The laboratory-testing program included:

- Classification of soils in accordance with ASTM D 2488
- Moisture content tests were performed in accordance with ASTM 2216.
- Unconfined Compressive Strength using Hand Held Penetrometer

#### **Subsurface Conditions**

The borings performed at this site indicated approximately four (4) inches of topsoil at the surface. Beneath the upper topsoil layer the borings typically encountered medium stiff to hard cohesive soils that continued to the termination depth of the borings. However some intermittent sand layers and sand seems were noted at various locations throughout the site. For a more detailed description of the soils please refer to the Soil Borings presented in the Appendix.

#### **Project Description**

Design plans indicate that this project will consist of a pre-engineered manufacturing building is to be constructed at the site previously mentioned. The building has been indicated to be a 165,400 square foot, one story steel frame building with a large machine pad near the center of the building at the location of borings B-16 and B-17. In order to balance the site it has been indicated that the grade may be dropped slightly, however it is anticipated that the finished floor elevation will be founded within one (1) foot of the existing grade.

#### **Engineering Assumptions**

It is assumed that structural loads for this building will be transferred to the soils by a combination of spread footings and continuous wall footings. For the purpose of our analysis, a maximum column load of two hundred (200) kips and continuous wall footing loads of less than three (3) klf have been assumed.

If the final design loads exceed these used in our analysis, they should be submitted to Alt & Witzig Engineering, Inc. for review. Further, the grading plans were not available for the proposed building. The grading plans should also be submitted to Alt & Witzig. After a review of this information, it will be determined if changes to these recommendations are warranted.

#### **Foundation Recommendations**

Considering the encountered soil conditions at the boring locations, the anticipated load of the structure, and the relative economics of the available foundation types, conventional spread and continuous wall footings are anticipated to be the most economical with the existing soil conditions.

Based upon the observed soil conditions, a net allowable soil bearing pressure of 4,000 psf may be used for the design of spread and continuous wall footings for the proposed building.

Using the above mentioned bearing pressure and recommendations, total settlements of less than one (1) inch and differential settlements of one half  $(\frac{1}{2})$  inch or less can be anticipated.

Wherever unsuitable material is encountered during the excavation of footings, it may be necessary to undercut these areas to suitable bearing materials. Some softer soils were encountered in the northwest portion of the site near borings B-1, B-4 and B-8. All foundation excavations should be inspected by Alt & Witzig Engineering, Inc. to verify that the materials in the base of the footings are suitable prior to placement of the concrete

#### **Floor Slab Recommendations**

Based upon the existing soil conditions the floor slab for the proposed structure may be constructed as a slab on grade founded upon the existing soils if a passing proofroll inspection can be achieved. In the areas where the existing grade is above the final floor elevation, the building area should be undercut and a six (6) inch layer of granular material should be placed beneath the slab. In those areas where the existing grade is below the final floor elevation, a well-compacted structural fill will be necessary to raise the site to desired grade. Where structural compacted fill is required for portions of the building pads, they may consist of the on-site natural soils, with the exception of topsoil.

Prior to placing fill and floor slab, it is recommended that the exposed subgrade be proofrolled in the presence of a representative of Alt & Witzig Engineering, Inc. with approved equipment. This proofrolling is intended to identify the presence of any soft unsuitable materials immediately below the exposed subgrade. Where soft unsuitable areas are detected during the proofroll, the areas should be undercut and replaced with approved structural fill material. If filling in confined spaces, granular material must be utilized. Cohesive fills may only be utilized at near optimum moisture conditions during mass filling operations.

#### Heavily Loaded Slab Recommendations

It has been indicated that some heavily loaded equipment pads are expected at this site. In order to constructed the floor slab at these areas a thickened slab may be constructed at this location. Based upon the soils at this site the following modulus of subgrade reaction values are recommended:

	<b>REACTION FO</b>	MODULUS OF SUBGRA R VARIOUS METHODS ADE PREPARATION	
	Compact 12'' Subgrade	Compact 6'' Pit Run	Compact 6'' #53 Stone
K <sub>s</sub> , pci	125	175	200

#### Site Grading

The predominate soil type near the surface at this site consisted of cohesive materials. These materials (excluding the topsoil) should be suitable for use during mass earthwork at this site. However if these soils are exposed to excessive moisture (such as rain) they will become soft which will cause rutting and pumping under construction traffic. Additionally repeated construction traffic

across the subgrade may cause rutting and pumping over time.

#### **Statement of Limitations**

An inherent limitation of any geotechnical engineering study is that conclusions must be drawn on the basis of data collected at a limited number of discrete locations. The geotechnical parameters provided in this report were developed from the information obtained from the test borings that depict subsurface conditions only at these specific locations and on the particular date indicated on the boring logs. Soil conditions at other locations may differ from conditions encountered at these boring locations and groundwater levels shall be expected to vary with time. The nature and extent of variations between the borings may not become evident until the course of construction.

Often, because of design and construction details that occur, questions arise concerning the soils conditions.

Sincerely, ALT & WITZIG ENGINEERING, INC.

Jason R. Bennett, P.E.

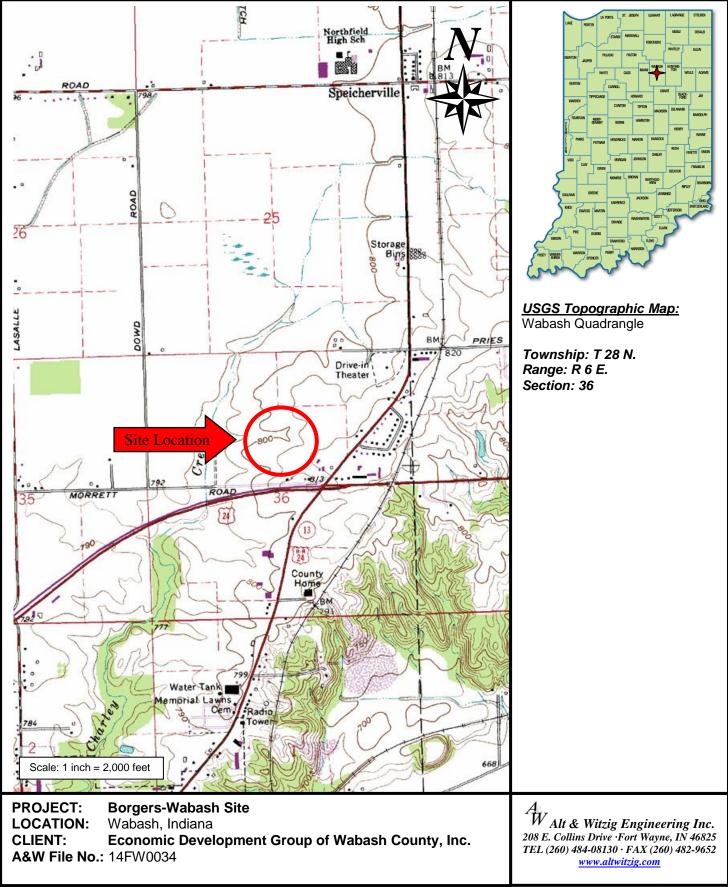
Thomas J. Coffey, P.E.

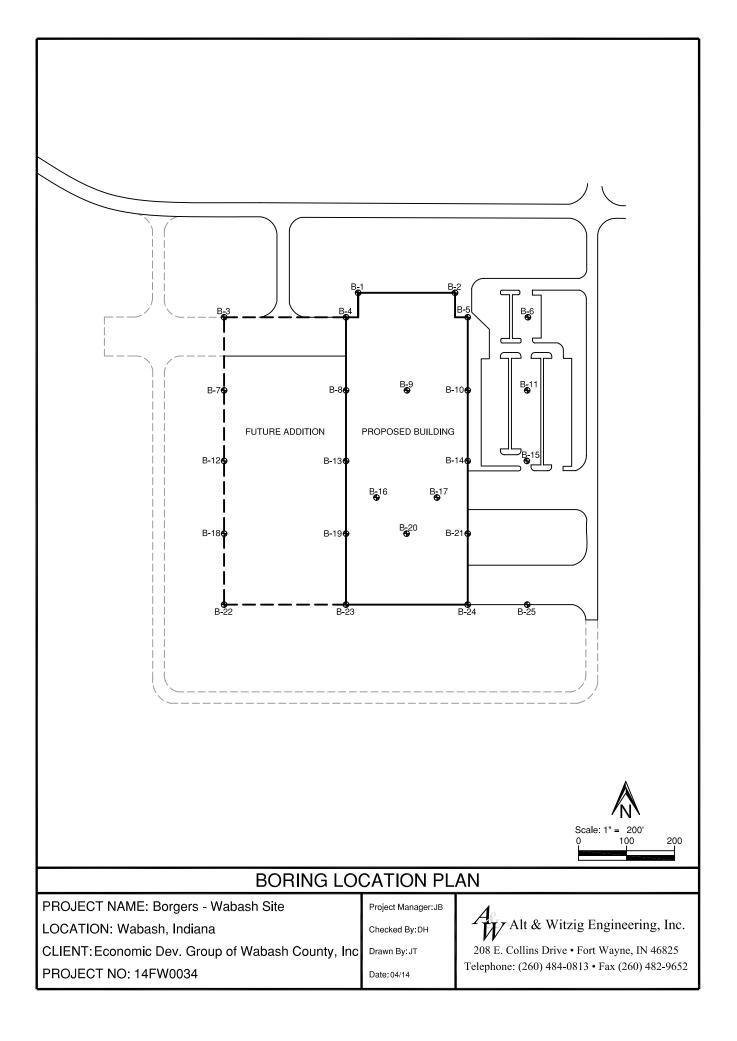


#### APPENDIX

Site Location Map Boring Location Plan Logs of Test Borings General Notes

# SITE LOCATION MAP







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					_								
				15 -	- 5	ss			14				2 Attempts No
					-	-	Д	Ţ					Recovery
					-								
					]								
			20.0		-								
				20 -	6	SS	X		12		1.8		
					-			驖					
	Grav I FAN	CLAY with Sand Seams		-	-								
					1								
			26.0	25 -	7	SS	X		50/3		4.5		
+//1-	End c	of Boring at 26 feet	20.0		+	1	Π						
		-											
Sample Ty	/De		Gr	oundwa	ter						Boring	g Metho	d
Driven Split S	poon	С	During Drillir			Dry f	<u>t.</u>				ollow S	tem Au	gers
<ul> <li>Pressed Shelt</li> <li>Continuous Fl</li> </ul>		$\overline{\Delta}$	At Completic	n _	n 00	Dry f					ontinuo riving C		nt Augers
Rock Core	J		Caved At Co			π.				1D - N	lud Drill	ing	



	Borgers - Wat					ALT	& V	/IIZIG	FILE #_	14	W0034	1
DJECT LOCATIO	N Wabash	, IN										
	DRILLING and	SAMPLING INFORMATION	l									
Date Started	4/21/14	Hammer Wt.	<b>140</b> lbs									
Date Completed	4/21/14	Hammer Drop	<b>30</b> in.						тс	ST DAT	- ^	
Boring Method	HSA	Spoon Sampler OD	<b>2</b> _in.									
Driller D. Mc	Wherter	Rig Type <b>B-57</b>	Truck					tion ot	l ingth	eter	% ocf)	
					e	aphics	ter	enetra ws/fo	infined e Stre	Penetrometer	ight (p	
RATA	SOIL CL	ASSIFICATION		٩	le Typ	ler Gr /ery G	id Wat	ard Pe N - blo	f Unco ressiv	f et Pen	ire Co <i>ìit We</i>	rks
ELEV.	SURFA	CE ELEVATION	Strata Depth	Depth Scale Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket I	Moisture Content % Dry Unit Weight (pcf)	Remarks
	Dark	Brown TOPSOIL		_								
				- 1	SS			13		3.0		
						Д						
				5 - 2	ss	X		16		1.5		
				-								
	Brown LEAN	CLAY with Sand Seams		3	SS	Χ		11		4.0		
				-								
				10 - 4	SS	Х		10		3.5		
				-								
				-								
			15.0	15 - 5	ss	X		11		3.0		
						$\square$						
				-								
	Gra	ay LEAN CLAY		20 - 6	SS	Х	驖	10		1.3		
				-			Ţ					
				-								
				25 - 7	SS	X		48		4.5		
	End o	f Boring at 26 feet	26.0	1								
Sample Typ				Indwater							Method	
- Driven Split Spo - Pressed Shelby	Tube		During Drilling At Completion	I	Dry f Dry f			С	FA - C	ontinuo	tem Aug us Flight	ers Augers
<ul> <li>Continuous Flig</li> <li>Rock Core</li> </ul>	nt Auger	题	Caved At Cor After <u>2</u> hours		ft.				)C - D 1D - M	riving C lud Drill	asing ing	



	Borgers - Wal	<u>ent Group of Wab</u> pash Site		-								<u>B-1</u>		
	ION Wabash								CC VI	11210	· ILC #_	1-+1	110034	r
	DRILLING and	SAMPLING INFORMAT	ΓΙΟΝ											
Date Started	4/21/14	Hammer Wt	140	_lbs.										
Date Completed	d <u>4/21/14</u>	Hammer Drop	30	_in.							TE	ST DAT	ГΔ	
Boring Method	HSA	Spoon Sampler OI	D <u>2</u>	_in.										
Driller <b>D. M</b>	cWherter	Rig Type B	-57 Truck	_				~		t o	ngth	ter	3£)	
								phics	L	etrati s/foo	fined	rome	ent %	
TRATA	SOIL CI	ASSIFICATION					Type	r Grap	Wate	d Pen - blow	Jncont	Penet	e Cont Weig	S
		CE ELEVATION	trata	Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphic	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % Dry Unit Weight (pcf)	Remarks
		Brown TOPSOIL		0.4	00	sΖ	S	S R	0	sμ	00	66	ΣQ	2
	Daik		/		-									
						1	SS	X		11		2.8		
					-									
					5 -	2	SS	X		12		3.0		
					-									
	Bro	wn LEAN CLAY				3	SS	X		16		4.3		
					-									
					10 -	4	SS	Х		17		4.5		
					-	-								
			1	4.5	-	_	00			10		4.5		
					15 -	5	SS	Х		18		4.5		
	<u></u>				-									
	G	ay LEAN CLAY			-	-			Ţ					
			2	20.0	20 —	6	SS			18		4.5		
							55	Å	¥			1.0		
					-				國					
	Gray LEAN	CLAY with Sand Seams			-				0					
					25 —	7	SS			31		3.0		
			2	6.0	-			А				-		
	End c	of Boring at 26 feet												
Sample T	уре			Grou	ndwat	er				I	-	Boring	g Method	
- Driven Split S - Pressed She			<ul> <li>○ During Dr</li> <li>□ At Completion</li> </ul>				23 ft 21 ft			C	FA - C	ontinuo	tem Auge us Flight	
- Continuous F - Rock Core			E Caved A	t Con				•		D	)C - D	riving C lud Drill	asing	
- Cuttings	ube		After <u>3</u> h	nours	18 f	<u> </u>				IV	vi - v			



	ME Borge	-	ent Group of Wab ash Site		-				ALT	& V	VITZIG	FILE #_	14F	W0034	4
JECT LO		Wabash,	IN												
	DR	ILLING and	Sampling Informa	TION											
)ate Starte	d <b>4/17</b>	/14	Hammer Wt.	140	) lbs										
ate Comp		/14				-									
Boring Meth			- ·									TE	ST DAT	TA	
-	I. Winkler										ç	gth [	~		
									ohics aphics	Ļ	vs/foot	fined Strenç	tromete	tent % tht (pcf	
RATA		SOIL CL	ASSIFICATION				e	Sample Type	er Gra	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	re Con it Weig	ş
LEV.		SURFAC	E ELEVATION		Strata Depth	Depth Scale	Sample No.	Sampl	Sampler Graphics Recovery Graphics	Ground	Standa Test, N	Qu-tsf Compr	PP-tsf Pocket	Moisture Content % Dry Unit Weight (pcf)	Remarks
		Dark E	Brown TOPSOIL	/	0.4		1								
Ĩ						-									
							- 1	SS	Д		8	2.1	2.3	21.0	
						5 -	2	SS			9		2.5	19.3	
						-									
		Brow	/n LEAN CLAY			- 	3	SS	X		10		4.0		
		BIOW				-									
						10 -	4	SS	X		17	5.2	4.5		
							-								
					15.5	15 -	5	SS	X	Ţ	15		4.5		
									$\square$						
						-									
						20	6	SS			19		12		
		Gra	y LEAN CLAY			20 -	0	55	Å		19		4.3		
					26.0	25 -	7	SS	X		16		4.5		
		End of	Boring at 26 feet			-									
<u>Samp</u> Driven Sp	<u>ole Type</u> olit Spoon			<ul> <li>During</li> </ul>		<u>indwat</u> 1	er	Dry ft	<u>.</u>		Н	ISA - H		<u>g Method</u> tem Aug	
- Pressed	Shelby Tube us Flight Auge	r		⊈ At Com				Dry ft			С	FA - C		us Flight	t Augers
· Rock Col · Cuttings				▼ After 2	24 hou	re 15	ft						lud Drill		



	Borgers - Wal	ent Group of Wabas bash Site	<b>_</b>								<u>B-1</u>		R4
	ION Wabash						ALI	av	11219	FILE #_	1-71	11000	77
	DRILLING and	SAMPLING INFORMATIO	NC										
Date Started	4/18/14	Hammer Wt.	<b>140</b> lb:	s.									
Date Completed	4/18/14	Hammer Drop	<b>30</b> in							TF	ST DAT	ГА	
Boring Method	HSA												
Driller M. W	/inkler	Rig TypeRig Type	ack ATV				ŝ		t io	ngth	ter	cf)	
							phics	2	netrat vs/foc	Ifined Strei	trome	tent 9 3ht (p	
TRATA	SOIL C	LASSIFICATION				Sample Type	Sampler Graphics Recovery Graphic	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	Penetrometer	Moisture Content % Dry Unit Weight (pcf)	s
ELEV.	SURFA	CE ELEVATION	Strata Depth	Depth Scale	Sample No.	ample	ample	round	tanda est, N	u-tsf l ompre	PP-tsf Pocket I	oistur y Uni	Remarks
-7777		Brown TOPSOIL	<u>م م</u> ر 0.4	o ص	νz	S	vor ∏	U	ώĔ	<u>συ</u>	<u> </u>	ΣQ	<u>۲</u>
	Dain		] 0.4										
				-	1	SS	X		10		1.5	18.6	
						1		¥					
				5 -	2	SS	X		13	5.2	4.5	13.2	
	Brown LEAN	I CLAY with Sand Seams				1							
				-	3	SS	Х		16		4.5		
						]							
				10 -	4	SS	Х		18		4.5		
			13.0										
					<u> </u>								
	0			15 -	5	SS	Д		8				
	Grays	Sandy LEAN CLAY											
			19.0		-								
			10.0	20 -	6	SS	$\square$		50/3				
				20		00	Й		00/0				Driving on a Roo
	0				]								
	Gray LEAN	CLAY with Sand Seams			1								
				25 -	7	SS			50/0				
	E a da		26.0			-	А						Driving on a Roc
	End C	of Boring at 26 feet											
Sample T	VDe		 	undwat	er						Boring	g Metho	
- Driven Split S	poon		O During Drillin	g	<u></u>	Dry f					lollow S	tem Au	gers
- Pressed Shel - Continuous F		7	☑ At Completio	n		Dry f	<u>t.</u>		D	)C - D	riving C	asing	ht Augers
<ul> <li>Rock Core</li> <li>Cuttings</li> </ul>	ube	_	After <u>24 ho</u> u	urs <u>4 f</u>	<u>t.</u>				N	1D - N	lud Drill	ing	



		Borgers - Wal Wabash							ALT	«ν	VITZIG	FILE #_	14F	<u>vv003</u> 2	+
		DRILLING and	SAMPLING INFORMATIO	N											
ate Star	ted	4/18/14	Hammer Wt.	140	lbs.										
ate Con	npleted	4/18/14			_									- •	
oring Me	ethod _	HSA	Spoon Sampler OD	2	in.								ST DAT		
riller	M. Win	kler	Rig Type Rig Type	ack ATV	_						5	gth	e	Ĵ.	
								٥	Sampler Graphics Recovery Graphics	er	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % Dry Unit Weight (pcf)	
RATA		SOIL C	ASSIFICATION			5 0	ole	Sample Type	oler Gra verv Gi	Ground Water	ard Pe N - blo	f Uncol	if et Pene	ure Coi Init Wei	arks
LEV.		SURFA	CE ELEVATION	Strata	Depth	Depth Scale	Sample No.	Samp	Samp Reco	Grou	Stand Test,	Qu-ts Comp	PP-ts Pock	Moist Dry U	Remarks
-		Dark	Brown TOPSOIL	/	0.3	-									
-						-	- 1	SS		Ţ	16		3.3	16.7	
-						-			Д						
-						5 -	2	SS	X		32	5.3	4.5	13.2	
-						-	_								
		Dra	wn LEAN CLAY				3	SS	X		14		4.5		
-		BIC	WITLEAN CLAT			-									
						10 —	4	SS	X		15				
-						-	_								
						-									
-						-									
-				1	6.0	15	5	SS	Х		14		1.8		
-						-	-								
						-									
_						20 —	6	SS			12		4.5		
		C	ay LEAN CLAY			20	0	33	Д		12		4.5		
_		GI	ay LEAN CLAT			-									
						-									
-						 25 —	7	SS			76				
-				2	6.0	25		33	Д		/0				
		End o	of Boring at 26 feet												
	<u>nple Type</u> Split Spoc		C	⊃ During Dr		ndwate		Dry f	7		н	ISA - H		<u>g Method</u> tem Aug	
Presse	d Shelby <sup>-</sup> Jous Fligh	Tube		Z At Comple				Dry f			С	FA - C	ontinuo	us Flight	
Rock C	ore	it Auger	_	After <u>24</u>									riving C lud Drill		



	Borgers - Wal	ent Group of Waba bash Site	ish County, I							FILE #_		4 W003	4
DJECT LOCAT	ION Wabash	, IN											
	DRILLING and	SAMPLING INFORMATI	ION										
Date Started	4/17/14	Hammer Wt.	<b>140</b> lbs	5.									
Date Completed	4/17/14	Hammer Drop	<b>30</b> in.							TE	ST DAT	ГΔ	
Boring Method	HSA	Spoon Sampler OD	<b>2</b> _in.										
Driller M. V	/inkler	Rig Type <b>D-50 T</b>	rack ATV				~		t o	lgth	ter	د) درا	
						U	aphics	er	ws/foc	nfined e Strei	etrome	ntent 9 ig <i>ht (p</i>	
TRATA	SOIL CI	LASSIFICATION			e	Sample Type	ler Grä	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	ire Col <i>it We</i> l	sk
ELEV.	SURFA	CE ELEVATION	Strata	Depth Scale	Sample No.	Sampl	Sampler Graphics Recovery Graphics	Groun	Stand: Test, I	Qu-tsf Comp	PP-tsf Pocke	Moisture Content % Dry Unit Weight (pcf)	Remarks
	Dark	Brown TOPSOIL	0.3										
					- 1	SS			14	5.4		12.6	
				5 -	2	SS	X		24		4.5		
								¥	0.5				
	Bro	wn LEAN CLAY			- 3	SS	Х	Ŧ	25				
				10 -	4	SS	V		24		4.5		
					-		Α						
				· -   .									
			14.5										
				15 -	5	SS	Х		15		2.5		
				· · -									
	Gr	ay LEAN CLAY		20 -	6	SS	X		15		4.5		
		•				1							
				25 -	- 7	SS			15				
	End	of Boring at 26 feet	26.0				Д						
		of Boring at 26 feet											
Sample T				undwat	er		~			-		g Method	
- Driven Split S - Pressed Shel	by Tube		<ul> <li>○ During Drilling</li> <li>☑ At Completion</li> </ul>			Dry f Dry f			C	CFA - C	ontinuo		jers t Augers
- Continuous F - Rock Core - Cuttings	lignt Auger		After <u>24 hou</u>		- 4	_				DC - D /ID - N	riving C lud Drill		



	Borgers - Wal	<u>ent Group of Wabas</u> bash Site							3 # VITZIG			W0034	4
	Dongers - Wal						, <u>,</u> , , , , , , , , , , , , , , , , ,	~ ~		<i></i> _	1.71		-
		I SAMPLING INFORMATIO	N										
Date Started	4/17/14												
Date Completed										TE	ST DAT	ГА	
Boring Method	HSA									_			
Driller <u>IVI. VV</u>	inkler	Rig Type_ <b>D-50 Tra</b>					ics hics		foot	ied trength	meter	nt % * (pcf)	
	SOIL CI	ASSIFICATION				Sample Type	Sampler Graphics Recovery Graphic	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % Dry Unit Weight (pcf)	<i>(</i> 0
			a t	le th	Sample No.	uple	npler	/ pun	ndaro t, N -	tsf U npres	tsf ket F	sture Unit	Remarks
	SURFA	CE ELEVATION	Strata Depth	Depth Scale	Sar No.	Sar	Sar	Gro	Sta Tes	0° Co	Poc	Moi: Dry	Rer
-	Dark	Brown TOPSOIL	0.4		1								
				.	- 1	SS		Ŧ	11		4.5		
	Brown	Sandy LEAN CLAY					Α						
			5.0	5 -	2	ss			19		4.5		
							Α						
-				-	3	SS			23		4.5		
						-	А						
	Bro	wn LEAN CLAY		10 -	4	SS			30		4.5		
	D.O					-	А						
				. _	4								
			15.0	15 -	5	SS	X		16		4.5		
					-		$\square$						
				-									
					-								
				20 -	6	SS	X	l	22		4.5		
	Gray LEAN	CLAY with Sand Seams			-								
				-	-								
					1								
			26.0	25 -	7	SS	X		9		3.0		
	End c	of Boring at 26 feet				1							
Sample Ty - Driven Split Sp			Gro During Drilling	undwat n	er	Dry f	t		н	ISA - H		<u>g Methoo</u> tem Aug	
<ul> <li>Pressed Shelb</li> <li>Continuous Fli</li> </ul>	y Tube		At Completion			Dry f			C	FA - C		us Fligh	t Augers
- Rock Core - Cuttings	gin Auger	-	After <u>24 hou</u>	urs 2 f	4				N	1D - N	lud Drill	ing	



	Borgers - Wal												l
	DRILLING and	SAMPLING INFORMAT	ΓΙΟΝ										
Date Started	4/18/14	Hammer Wt.	<b>140</b> lb	s									
Date Completed		Hammer Drop											
Boring Method	HSA									TE	ST DAT	ΓΑ Ι Γ	
•	inkler								t a	lgth	fer		
						0	iphics aphics	5	netrati ws/foo	nfined e Strer	etrome	itent % ght (po	
RATA	SOIL CI	LASSIFICATION			e	e Type	er Gra erv Gr	d Wate	ard Pe N - blo	Uncor	t Pene	re Cor nit Wei	ks
LEV.	SURFA	CE ELEVATION	Strata	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % Dry Unit Weight (pcf)	Remarks
	Dark	Brown TOPSOIL						-					
				-	- 1	SS		   	8		4.5	21.6	
								¥					
				5 -	2	SS	X		10	4.5	4.5	14.9	
	Bro	wn LEAN CLAY		_	- 3	SS	M		19		4.5		
	DIU	WII LEAN CLAT			-		Α						
				10 -	4	SS			23		4.5		
				_									
			14.5		-								
				15 -	5	SS			14		4.5		
					-								
	Gr	ay LEAN CLAY		20 -	6	SS	X		27		4.3		
					-								
					-								
				25 -	7	SS			12		3.8		
	End c	of Boring at 26 feet	26.0										
Sample Ty Driven Split Sp Pressed Shelt Continuous Fl Rock Core	poon by Tube		O During Drillir		er	Dry fi Dry fi			C D		ollow S ontinuo riving C	<u>g Method</u> tem Auge us Flight casing	ers



	Borgers - Wal						ALT	* & V	VITZIG	FILE #_	14F	W003	34
		, <b>.</b>											
	DRILLING and	SAMPLING INFORMATIC	ON										
Date Started	4/18/14	Hammer Wt.	<b>140</b> II	os.									
Date Completed	4/18/14	Hammer Drop	<b>30</b> ir	۱.						TE	ST DAT	ΓA	
Boring Method	HSA			۱.							_		
Driller <u>M. Wi</u>	nkler	Rig Type_ <b>D-50 Tr</b> a	ack ATV				ohics aphics		Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % Dry Unit Weight (pcf)	
TRATA	SOIL C	LASSIFICATION			e	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	ard Per N - blow	Uncon	t Penet	re Cont iit Weig	
ELEV.	SURFA	CE ELEVATION	Strata	Depth	Sample No.	Sampl	Sampl Recov	Groun	Standa Test, N	Qu-tsf Compr	PP-tsf Pockei	Moistu Dry Un	Remarks
	Dark	Brown TOPSOIL	0.3	3	-			¥					
				-	- 1	ss		¥	22	5.4	4.5		
						_							
				5 -	2	SS	Х		31		4.5		
	Bro	wn LEAN CLAY		-	3	SS			34		4.5		
	Dic					_							
				10 -	4	SS	Д		20		4.5		
			15.0	)	-			¥					
				/ 15 ·	5	SS	Щ	¥	29				Two Attempts N Recovery
					-								
				20 -	6	ss		0	26		4.5		
	Gr	ay LEAN CLAY		20			А				1.0		
					-								
				25 -	- 7	ss		-	17				
	·		26.0		1	-	Щ						
		of Boring at 26 feet											
Sample Ty	<u>pe</u>		Gr	oundwa	ter						Boring	g Metho	<u>bd</u>
Driven Split Sp Pressed Shelb Continuous Flip	y Tube		<ul> <li>During Drilli</li> <li>At Completion</li> </ul>			<u>19.5 f</u> 15 f			C D		ontinuo riving C	us Fligl asing	gers ht Augers



	Borgers - Wal						ALI	αV	viizig	FILE #_	146	W0034	4
	DRILLING and	SAMPLING INFORMATION	N										
Date Started	4/18/14	Hammer Wt.	<b>140</b> lbs										
Date Completed	4/18/14	Hammer Drop	<b>30</b> in.							TF	ST DAT	ГА	
Boring Method	HSA	Spoon Sampler OD	2 in.										
riller <u>M. W</u>	/inkler	Rig Type D-50 Tra	ck ATV						t a	igth	ter	<del>.</del>	
						0	iphics aphics	er -	netrati ws/foo	nfined e Strer	etrome	ntent % ght (po	
RATA	SOIL C	ASSIFICATION			e	Sample Type	er Gra	Ground Water	ard Pe N - blov	Uncor	t Pene	re Cor iit Wei	rks
LEV.	SURFA	CE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sampl	Sampler Graphics Recovery Graphic	Groun	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % Dry Unit Weight (pcf)	Remarks
	Dark	Brown TOPSOIL										-	
	Brown	Sandy LEAN CLAY			-			¥					
	2.000		3.0	-   -	1	SS	X		8	2.5	2.0	16.0	
				5	2	SS			14		4.5		
					-		Å				1.0		
					3	SS	X		13		4.3		
						-							
				10 -	4	ss	X		13		3.8		
	Brown LEAN	I CLAY with Sand Seams				-							
				-									
					-	00			00				
				15 -	5	SS	Х		26		4.0		
-													
			18.0	- -									
				20 -	6	SS	V		14		4.0		
					]		$\square$						
	Gr	ay LEAN CLAY		-   -									
				-	-								
			26.0	25 -	7	ss	X		87		4.5		
	End o	of Boring at 26 feet	20.0										
Sample Ty Driven Split S		$\sim$	<u>Grou</u> During Drilling	undwat n	er	Dry f	ł		H	ISA - H		<u>g Methoo</u> tem Aug	
- Pressed Shell	by Tube		At Completion			Dry f			C	FA - C	ontinuo	us Fligh	t Augers
- Continuous F - Rock Core - Cuttings	iight Auger	_	After <u>24 hou</u>		- a				L N	DC - D 11D - N	lud Drill	ing	



JECT NAME	Borgers - Wal	oash Site					ALT	& V	VITZIG	FILE #_	14F	W003	4
JECT LOCATI	ON Wabash	, IN											
	DRILLING and	I SAMPLING INFORMAT	ION										
ate Started	4/18/14	Hammer Wt.	<b>140</b> II	DS.									
ate Completed												- •	
oring Method	HSA										EST DAT		
riller <u>M. W</u>	linkler	Rig Type <b>D-50 T</b>	rack ATV			e e	Sampler Graphics Recovery Graphics	ter	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % Dry Unit Weight (pcf)	
RATA	SOIL CL	ASSIFICATION			ole	Sample Type	very G	Ground Water	lard P	f Unco pressiv	if et Pen	ure Co 'nit We	arks
LEV.	SURFA	CE ELEVATION	Strata	Depth Scale	Sample No.	Samp	Samp Reco	Groui	Stanc Test,	Qu-ts Comp	PP-ts Pocke	Moisti Dry U	Remarks
	Dark	Brown TOPSOIL		3	-								
				-	- 1	ss	X		21	5.4	4.5	11.9	
				5 -	2	SS	X		22		4.5		
				-	- 3	ss	X		23		4.5		
						-	$\square$						
				10 -	4	SS	X	Ţ	25				
				-									
	Brown LEAN	I CLAY with Sand Seams		15 -	5	SS	X		14				
				_	-								
								0					
				20 -	6	SS	X		11				
				-									
					-								
			26.0	25 -	- 7	SS	X		8				
	End o	f Boring at 26 feet											
Sample T Driven Split S Pressed Shell Continuous F Rock Core	poon oy Tube		<u> </u>		ter	19 fi Dry fi			C D	CFA - C C - D	lollow S	asing	



	Borgers - Wa	<u>ient Group of Wabas</u> bash Site	<b>,</b> ,									 W0034	1
	ION Wabash							αv	11210	· ILC #_	. 71		T
	DRILLING and	d SAMPLING INFORMATIC	N										
Date Started	4/21/14		<b>140</b> lbs										
Date Completed										TE	ST DAT	ΓA	
Boring Method	HSA												
Driller <u>M. V</u>	/inkler	Rig Type <b>D-50 Tra</b>	ack AIV				cs ics		ation oot	ed rength	neter	t % (pcf)	
						ype	Sampler Graphics Recovery Graphic	ater/	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % Dry Unit Weight (pcf)	
RATA	SOIL C	LASSIFICATION	@	чa	ple	Sample Type	pler Q	Ground Water	dard N - b	sf Un press	sf iet Pe	ture C Init M	arks
LEV.	SURFA	CE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sam	Sam	Grou	Stan Test,	Qu-t: Com	PP-ts Pock	Moist Dry L	Remarks
	Dark	Brown TOPSOIL	0.4		1								
				· · ·	- 1	SS			6	1.2	1.3		
					·		Å						
				5 -	2	SS	V		20	5.4	4.5		
	Bro	own LEAN CLAY			1	-	Α						
				-	3	SS	$\square$		19	5.4	4.5		
							Α						
			10.5	10 -	4	SS	X		18		3.3		
	Brown LEAN C	CLAY with Wet Sand Seams	13.0	· -									
				15 -	5	SS	Χ		14		4.5		
								¥					
				-									
						-							
	Gray LEAN	CLAY with Sand Seams		20 -	6	SS	Х		14		4.5		
				25 -	- 7	SS			9				
			26.0	20 -		33	Д		9				
	End	of Boring at 26 feet											
Sample T	vpe		Grou	undwat	 er						Boring	g Method	1
- Driven Split S	poon		During Drilling	]		Dry f					ollow S	tem Aug	ers
- Pressed Shel - Continuous F		Ž	Z At Completior	۱ <u> </u>		Dry f	t		C	)C - D	riving C	asing	t Augers
- Rock Core - Cuttings - Continuous T		<u> </u>	After <u>24 hou</u>	rs <u>17</u>	ft.				N	טי - N	lud Drill	ng	



	Borgers - Wa						_	ALI	άW	/II∠IG	FILE #_	146	<u>W003</u>	4
			<b>O</b> V											
		SAMPLING INFORMATI												
ate Started	4/21/14		140	_										
ate Completed	-	Hammer Drop									TE	ST DAT	ΓA	
oring Method	HSA													
riller <u>IVI. V</u>	linkler	Rig Type_ <b>D-50 T</b> I	rack AIV	_				ics hics		tration /foot	ied trength	meter	nt % t (pcf)	
DATA	SOIL C	LASSIFICATION					Type	Sampler Graphics Recovery Graphic	Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % Dry Unit Weight (pcf)	Ø
RATA		CE ELEVATION	trata	Depth	Depth Scale	Sample No.	Sample Type	ampler	Ground Water	tandar est, N	u-tsf U ompre	P-tsf ocket F	oisture ry Unit	Remarks
		Brown TOPSOIL		0.4		ωZ	S	<u>8</u>	0	ω⊢	00		≥Q	Ľ
			/		-		00							
					-	- 1	SS	Д		23	5.4	4.5		
					5 —	2	SS	X		26		4.5		
					-									
						3	SS	Д		22	5.2	4.5		
	Bro	wn LEAN CLAY			- 10 —	4	SS			22	5.4	4.5		
					-			Δ						
					- - 15 —	- 5	SS			19	5.4	4.5		
					-			μ				-		
			1	8.0	-  -				Ţ					
					- - 20 —	6	SS			12		4.0		
						Ĭ		А						
	Gray LEAN	CLAY with Sand Seams							0					
					-									
			2	6.0	25 —	7	SS	X		18		4.0		
	End	of Boring at 26 feet												
Sample T					ndwate	er	00.4				IGA		g Method	
Driven Split S Pressed Shel Continuous F Rock Core	by Tube		<ul> <li>○ During Dr</li> <li>☑ At Completion</li> </ul>				23 ft Dry ft			C D	FA - C	ontinuo riving C	asing	jers t Augers



_	Borgers - Wal						ALT	& V	VITZIG	FILE #_	14F	W0034	1
JECT LOCATI	ON <u>Wabash</u>	, IIN											
	DRILLING and	SAMPLING INFORMATIO	N										
Date Started	4/21/14	Hammer Wt.	<b>140</b> lbs										
Date Completed			<b>30</b> in.									- ^	
Boring Method	HSA	Spoon Sampler OD	<b>2</b> in.								ST DAT	A	
riller <u>M. W</u>	inkler	Rig Type D-50 Tra	ack ATV						5	gth	e	Ĵ.	
							phics aphics	2	netratio vs/foot	nfined e Stren	Penetrometer	itent % ght (pc	
RATA	SOIL CI	ASSIFICATION			Ð	Sample Type	Sampler Graphics Recovery Graphic	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	t Pene	re Cor nit Wei	rks
LEV.	SURFA	CE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sampl	Sampl Recov	Groun	Standa Test, N	Qu-tsf Compi	PP-tsf Pocket I	Moisture Content % Dry Unit Weight (pcf)	Remarks
	Dark	Brown TOPSOIL	0.4	-									
					1				-		10		
	Brown L	EAN CLAY with Sand		-	1	SS	Д		7		1.0		
			5.0	5 -	2	SS			9		4.5		
							Å				4.5		
				· ·	3	SS			12		3.5		
	5			•			Å	¥			0.0		
	Bro	wn LEAN CLAY		10 —	4	SS		Ŧ	14		4.5		
							Å				4.0		
			12.5										
-				-									
				15 -	5	SS			12		4.5		
							Д				_		
-													
								⊻					
				20 -	6	SS	$\forall$		12		1.3		
						-	$\square$						
	Grav I FAN	CLAY with Sand Seams		-	1								
					]								
				25 -	7	SS			50/1		4.5		
	End	of Boring at 26 feet	26.0				Ĥ						
		5000g at 20 100t											
<u>Sample Ty</u> Driven Split Sp		~		undwat	er	Drif	4		Ц	_ ۱۹۵۱ –		Method	
- Pressed Shelb	y Tube		<ul> <li>During Drilling</li> <li>At Completion</li> </ul>			Dry f 18.5 f			С	FA - C	ontinuo	tem Aug us Flight	
- Continuous Fli - Rock Core - Cuttings	ıyın Auger	_	After <u>4</u> hours	0.4						0C - D 1D - N	riving C lud Drill	ing	



JECT NAME	Borgers - Wa	bash Site						ALT	& V	VITZIG	FILE #_	14F	W0034	
JECT LOCATI	ON <b>Wabash</b>	, IN												
	DRILLING and	SAMPLING INFORMATION	N											
ate Started	4/21/14	Hammer Wt.	140	lbs										
ate Completed				-										
oring Method	HSA			-			[				TE	ST DAT	A	
-	linkler		ck ATV	-				ss		ation oot	id ength	leter	% pcf)	
	5011.0	LASSIFICATION					Lype	Sampler Graphics Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % Dry Unit Weight (pcf)	
	501L C	LASSIFICATION	ta	Ę	le th	Sample No.	Sample Type	npler	∧ pun	ndarc t, N -	tsf UI npres	tsf ket P	sture Unit	Remarks
LEV.	SURFA	CE ELEVATION	Strata	Dep	Depth Scale	San No.	San	San	Gro	Stal Tes	90 So	Poc	Moi Dry	Rer
	Dark	Brown TOPSOIL	(	).4	-									
					-	1	SS			13		4.5		
					-				1					
					5 -	2	SS	X		18		4.5		
					-	_								
						3	SS	X		17		4.5		
					-	-								
	Brown LEAN	I CLAY with Sand Seams			10 -	4	SS	X		20		4.5		
					-	-								
					-									
					 15 —	- 5	SS		Ţ	10		3.8		
					-			А						
					-									
					-									
			20	0.0	20 -	6	SS			13		4.5		
					-	-								
	Gi	ay LEAN CLAY				]								
					-									
	Grav Siltv	CLAY with Sand Seams		5.0 5.0	25 -	7	SS	$\mathbb{X}$		16		1.0		
		of Boring at 26 feet			-									
Sample T		~			ndwat	er	Dreif			1	-		<u>Method</u> tem Auge	_
Pressed Shell	by Tube		During Dri At Comple				Dry f Dry f			C	FA - C	ontinuo	us Flight /	
Continuous F Rock Core Cuttings	iight Auger	-	After <u>5</u> h									riving C lud Drill		



_	AME Borgers - Wabash Site						ALT & WITZIG FILE #_			14FW0034			
		,											
	DRILLING and	SAMPLING INFORMATIO	N										
ate Started	4/21/14	Hammer Wt.	<b>140</b> I	os.									
ate Completed	4/21/14	Hammer Drop	<b>30</b> i	۱.						ТЕ	ST DAT	-0	
oring Method	HSA	Spoon Sampler OD	<b>2_</b> i	۱.									
riller <u>M. W</u>	inkler	Rig Type <u>D-50 Tr</u>	ack ATV				ss		ation oot	ength	neter	t % (pcf)	
	5011.0	LASSIFICATION				[ype	Sampler Graphics Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % Dry Unit Weight (pcf)	
	3012 0	LASSIFICATION	a =	Ę	Scale Sample	Sample Type	over	/ pun	ndarc t, N -	tsf Ui npres	tsf ket P	sture Unit	Remarks
LEV.	SURFA	CE ELEVATION	Strata	Depth	Sca San	San	San Rec	Gro	Star Test	Qu-t Con	PP-1	Mois Dry	Ren
	Dark	Brown TOPSOIL	0.4	ŧ	-								
					- 1	SS			23		4.5		
						_ 33	Д		23		4.5		
											4.5		
					i — 2	SS	Х		26		4.5		
					+	_							
	Bro	wn LEAN CLAY			- 3	SS	Х		20	5.4	4.5		
					-								
				10	4	SS	X		25		4.5		
					-								
					_								
			14.5	5	4								
				1	5 - 5	SS	X		24	5.4	4.5		
						-	$\square$						
					_								
				20	6	ss			10		3.3		
	Gi	ay LEAN CLAY			+	-	Д	ļ					
					_								
					-								
						_			10				
			26.0	25	i — 7 7	SS	Х		12		2.0		
	End	of Boring at 26 feet											
	20										Porine	Mothad	
<u>Sample Ty</u> Driven Split Sp	boon	(	 During Drilli		vater	Dry	ft.				lollow S	<u>1 Method</u> tem Auge	ers
Pressed Shelb Continuous Fli	v Tube		Z At Completi			Dry			C	CFA - C		us Flight	
Rock Core			After <u>8</u> hou	ure D	n f					1D - N	lud Drill	ing	



	nomic Development Group of Wabash Cou Borgers - Wabash Site											
DJECT LOCAT	ION Wabash	, IN										
	DRILLING and	SAMPLING INFORMATIO	N									
Date Started			140_lbs									
Date Complete									TE	ST DAT	ΓA	
Boring Method												
vriller <u>M. V</u>	Vinkler	Rig Type_ <b>D-50 Tra</b>			e	Sampler Graphics Recovery Graphics	ter	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % Dry Unit Weight (pcf)	
RATA	SOIL CI	LASSIFICATION		<u>e</u>	Sample Type	ler Gr /erv G	Ground Water	ard P	f Unco	f et Pen	ure Co nit We	irks
LEV.	SURFA	CE ELEVATION	Strata Depth	Depth Scale Sample No.	Samp	Samp Recov	Grour	Stand Test,	Qu-ts Comp	PP-ts Pocke	Moistu Dry U	Remarks
	Dark	Brown TOPSOIL	ſ 0.4	_								
				- 1	ss			12		2.5		
	Brown	Sandy LEAN CLAY			- 33	X				2.5		
			5.0	5 - 2	ss			21	5.4	4.5		
					-	Δ						
	Bro	wn LEAN CLAY		- 3	ss	X		25	5.4	4.5		
	2.0				-							
			10.0	10 - 4	ss	X		26		4.5		
				15 - 5	ss	X		15		4.0		
	Gr	ay LEAN CLAY		-								
				20 - 6	ss			11		4.5		
				25 - 7	ss			14		3.0		
			26.0			Ъ				5.0		
	End c	of Boring at 26 feet										
Sample T				undwater							g Methoo	
<ul> <li>Driven Split S</li> <li>Pressed She</li> <li>Continuous F</li> <li>Rock Core</li> <li>Cuttings</li> </ul>	by Tube	Ϋ́	<ul> <li>During Drilling</li> <li>At Completion</li> <li>After <u>7 hours</u></li> </ul>	ı	Dry : Dry :			C	FA - C	ontinuo riving C	asing	gers it Augers

#### MATERIAL GRAPHICS LEGEND



CL: USCS Low Plasticity Clay

SW-SC: USCS Well-graded

Sand with Clay



CL-ML: USCS Low Plasticity Silty Clay

SM: USCS Silty Sand

TOPSOIL

### SOIL PROPERTY SYMBOLS

N: Standard "N" penetration value. Blows per foot of a 140-lb hammer falling 30" on a 2" O.D. split-spoon.

 Qu: Unconfined Compressive Strength, tsf
 PP: Pocket Penetrometer, tsf

LL: Liquid Limit, % PL: Plastic Limit, %

### PI: Plasticity Index, %

#### DRILLING AND SAMPLING SYMBOLS

#### **GROUNDWATER SYMBOLS**

• Apparent water level noted while drilling.

*♀* Apparent water level noted upon completion.

Apparent water level noted upon delayed time.

#### RELATIVE DENSITY & CONSISTANCY CLASSIFICATION (NON-COHESIVE SOILS)

Very Loose 0 - 5 Loose 6 - 10	<u>RM</u>	BLOWS PER FOOT
Medium Dense11 - 30Dense31 - 50Very Dense>51	ose n Dense ense	6 - 10 11 - 30 31 - 50

#### RELATIVE DENSITY & CONSISTANCY CLASSIFICATION (COHESIVE SOILS)

<u>TERM</u>	BLOWS PER
Very Soft Soft	0 - 3 4 - 5
Medium Stiff	6 - 10
Stiff Very Stiff	11 - 15 16 - 30
Hard	>31



Alt & Witzig Engineering, Inc.

Telephone: Fax:

#### **GENERAL NOTES**

Project: Borgers - Wabash Site Location: Wabash, IN

FOOT

Number: 14FW0034

ERAL NOTES - PROJECT SPECIFIC 14FW0025 04.01.14.GPJ US EVAL.GDT 4/22/14

SS: Split Spoon

SAMPLER SYMBOLS

#### MATERIAL GRAPHICS LEGEND



CL: USCS Low Plasticity Clay

SW-SC: USCS Well-graded

Sand with Clay



CL-ML: USCS Low Plasticity Silty Clay

SM: USCS Silty Sand

TOPSOIL

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#### RELATIVE DENSITY & CONSISTANCY CLASSIFICATION (NON-COHESIVE SOILS)

Very Loose 0 - 5 Loose 6 - 10	<u>RM</u>	BLOWS PER FOOT
Medium Dense11 - 30Dense31 - 50Very Dense>51	ose n Dense ense	6 - 10 11 - 30 31 - 50

#### RELATIVE DENSITY & CONSISTANCY CLASSIFICATION (COHESIVE SOILS)

<u>TERM</u>	BLOWS PER
Very Soft Soft	0 - 3 4 - 5
Medium Stiff	6 - 10
Stiff Very Stiff	11 - 15 16 - 30
Hard	>31



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#### **GENERAL NOTES**

Project: Borgers - Wabash Site Location: Wabash, IN

FOOT

Number: 14FW0034

ERAL NOTES - PROJECT SPECIFIC 14FW0025 04.01.14.GPJ US EVAL.GDT 4/22/14

SS: Split Spoon

SAMPLER SYMBOLS